DSR-PDX10/PDX10P

RMT-811

SERVICE MANUAL

Ver 1.5 2004. 07

Revision History

US Model
Canadian Model
DSR-PDX10
AEP Model
UK Model
E Model
DSR-PDX10P

J MECHANISM

Link

SPECIFICATIONS	BLOCK DIAGRAMS	PRINTED WIRING BOARDS
SERVICE NOTE	FRAME SCHEMATIC DIAGRAMS	REPAIR PARTS LIST
DISASSEMBLY	SCHEMATIC DIAGRAMS	ADJUSTMENTS

- INSTRUCTION MANUAL is shown at the end of this document.

DVCAM™ DIGITAL CAMCORDER

SONY®

COVER

Self Diagnosis Supported model

DVCAM™

Mini DV Digital Video Cassette

MEMORY STICK

Cassette Memory

InfoLITHIUM™ M SERIES

SPECIFICATIONS

Video camera recorder

System

Video recording system
2 rotary heads
Helical scanning system
Audio recording system
Rotary heads, PCM system
Quantization: Fs 32 kHz (12 bits, channels 1/2, channels 3/4), Fs 48 kHz (16 bits, channels 1/2)
Video signal
DSR-PDX10:
NTSC color, EIA standards
DSR-PDX10P:
PAL colour, CCIR standards
Usable cassette
Mini DVCAM cassette with the DVCAM mark printed
Mini DV cassette with the Mini DV mark printed
Tape speed
DVCAM format:
Approx. 28.218 mm/s
DV format SP mode:
Approx. 18.812 mm/s
Recording/playback time (using cassette PDVM-40ME)
DVCAM format: 40 min.
DV format SP mode: 1 hour
Fastforward/rewind time (using cassette PDVM-40ME)
When using the battery pack:
Approx. 2 min. and 30 seconds
When using the AC power adaptor:
Approx. 1 min. and 45 seconds
Viewfinder
Electric viewfinder (B&W)
Image device
3.8 mm (1/4.7 type) 3 CCD (Charge Coupled Device)
Gross: Approx. 1 070 000 pixels
Effective (still):
Approx. 1 000 000 pixels
Effective (moving):
Approx. 690 000 pixels

Lens
Combined power zoom lens
Filter diameter: 37 mm (1 1/2 in)
12× (Optical), 48× (Digital)
F 1.6 – 2.8
Focal length
3.6 – 43.2 mm (5/32 – 1 3/4 in.)
When converted to a 35 mm still camera
In CAMERA
4:3 mode :
49 – 588 mm (1 15/16 – 23 1/4 in.)
16:9 mode :
41 – 492 mm (1 5/8 – 19 3/8 in.)
In MEMORY
41 – 492 mm (1 5/8 – 19 3/8 in.)
Colour temperature
Auto, Indoor (3 200 K), Outdoor (5 800 K),
Minimum illumination
7 lx (lux) (F 1.6)

Input/Output connectors

S video input/output
4-pin mini DIN
Luminance signal: 1 Vp-p, 75 Ω (ohms), unbalanced
DSR-PDX10:
Chrominance signal: 0.286 Vp-p 75 Ω (ohms), unbalanced
DSR-PDX10P:
Chrominance signal: 0.3 Vp-p, 75 Ω (ohms), unbalanced
Audio/Video input/output
AV MINI JACK, 1 Vp-p, 75 Ω (ohms), unbalanced, sync negative
327 mV, (at output impedance more than 47 kΩ (kilohms))
Output impedance with less than 2.2 kΩ (kilohms)/Stereo minijack (ø 3.5 mm)
Input impedance more than 47 kΩ (kilohms)
DV input/output
4-pin connector
Headphone jack
Stereo minijack (ø 3.5 mm)
LANC jack
Stereo mini-minijack (ø 2.5 mm)
USB jack
mini-B

MIC jack
Minijack, 0.388 mV low impedance with 2.5 to 3.0 V DC, output impedance 6.8 kΩ (kilohms) (ø 3.5 mm)
Stereo type
INPUT1/INPUT2 connectors
XLR 3-pin, female, –60 dBu: 3 kilohms, +4 dBu: 10 kilohms
(0 dBu = 0.775 Vrms)

LCD screen

Picture
8.8 cm (3.5 type)
72.2 × 50.4 mm (2 7/8 × 2 in.)
Total dot number
246 400 (1 120 × 220)

General

Peak inrush current
Hot switching inrush current, measured in accordance with European standard EN55103-1:
6.3 A (230 V)
Power requirements
7.2 V (battery pack)
8.4 V (AC power adaptor)
Average power consumption (when using the battery pack)
During camera recording using LCD
6.3 W
Viewfinder
5.0 W
Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to + 60°C
(–4°F to + 140°F)
Dimensions (Approx.)
93 × 99 × 202 mm
(3 3/4 × 4 × 8 in.) (w/h/d)
Mass (Approx.)
950 g (2 lb 1 oz)
main unit only
1.4 kg (3 lb)
including the battery pack NP-FM50, the XLR adaptor, the Microphone, cassette PDVM-40ME, the lens cap and shoulder strap
Supplied accessories
See page 3.

AC power adaptor

Power requirements
100 – 240 V AC, 50/60 Hz
Power consumption
23 W
Output voltage
DC OUT: 8.4 V, 1.5 A in the operating mode
Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to + 60°C
(–4°F to + 140°F)
Dimensions (approx.)
125 · 39 · 62 mm
(5 × 1 9/16 × 2 1/2 in.) (w/h/d)
excluding projecting parts
Mass (approx.)
280 g (9.8 oz)
excluding mains lead

Battery pack

Maximum output voltage
DC 8.4 V
Output voltage
DC 7.2 V
Capacity
8.5 Wh (1 180 mAh)
Dimensions (approx.)
38.2 × 20.5 × 55.6 mm
(1 9/16 × 13/16 × 2 1/4 in.)
(w/h/d)
Mass (approx.)
76 g (2.7 oz)
Type
Lithium ion

"Memory Stick"

Memory
Flash memory
8MB: MSA-8A
Operating voltage
2.7 – 3.6 V
Power consumption
Approx. 45 mA in the operating mode
Approx. 130 µA in the standby mode
Dimensions (approx.)
50 × 2.8 × 21.5 mm
(2 × 1/8 × 7/8 in.) (w/h/d)
Mass (approx.)
4 g (0.14 oz)

Design and specifications are subject to change without notice.

CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

SAFETY-RELATED COMPONENT WARNING!!

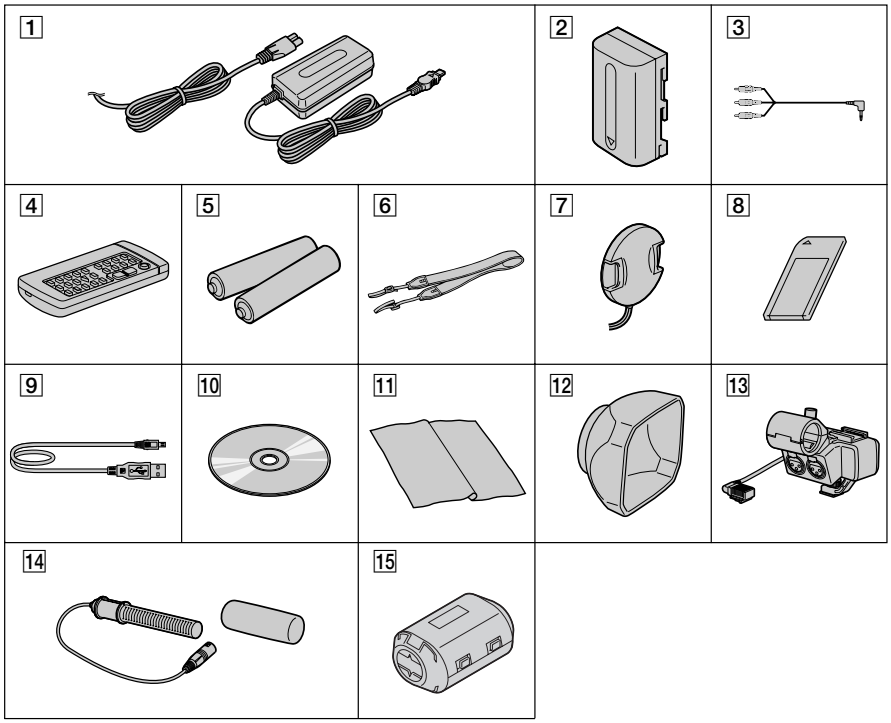
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

• SUPPLIED ACCESSORIES

Make sure that the following accessories are supplied with your camcorder.



1 **AC-L10A/L10B/L10C AC power adaptor** (1), **mains lead** (1)
2 **NP-FM50 battery pack** (1)
3 **A/V connecting cable** (1)
4 **Wireless Remote Commander** (RMT-811)(1)
5 **R6 (Size AA) battery for Remote Commander** (2)
6 **Shoulder strap** (1)
7 **Lens cap** (1)
8 **"Memory Stick"** (1)
9 **USB cable** (1)
10 **CD-ROM (SPVD-008 USB Driver)** (1)(DSR-PDX10P)
CD-ROM (SPVD-008 (I) USB Driver) (1)(DSR-PDX10)
11 **Cleaning cloth** (1)
12 **Wide lens hood** (1)
13 **XLR adaptor (with a Microphone holder)** (1)
14 **Microphone** (1)**, Wind screen** (1)
15 **Clamp filter** (1)

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

TABLE OF CONTENTS

1. SERVICE NOTE

1-1. NOTE FOR REPAIR ····· 1-1
1-2. POWER SUPPLY DURING REPAIRS ····· 1-2
1-3. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT) ····· 1-2
1-4. NOTES ON HANDLING THE LASER DIODE ····· 1-3
1-4-1. Soldering Conditions of Laser Unit (D501) ····· 1-3
1-5. SELF-DIAGNOSIS FUNCTION ····· 1-4
1-5-1. Self-diagnosis Function ····· 1-4
1-5-2. Self-diagnosis Display ····· 1-4
1-5-3. Service Mode Display ····· 1-4
1-5-4. Self-diagnosis Code Table ····· 1-5

2. DISASSEMBLY

2-1. CABINET (R) BLOCK ····· 2-2
2-2. P CABINET (C) ····· 2-2
2-3. LCD MODULE ····· 2-3
2-4. LCD BLOCK ····· 2-4
2-5. FP-495 FLEXIBLE BOARD ····· 2-4
2-6. CK-134 BOARD ····· 2-5
2-7. F PANEL BLOCK ····· 2-5
2-8. AF LASER BRACKET ASSEMBLY ····· 2-6
2-9. MA-425 BOARD ····· 2-7
2-10. FP-504 FLEXIBLE BOARD ····· 2-7
2-11. BATTERY PANEL BLOCK ····· 2-8
2-12. DB-016 BOARD ····· 2-8
2-13. MD BLOCK ····· 2-9
2-14. LENS BLOCK ····· 2-10
2-15. VC-318 BOARD ····· 2-10
2-16. MECHANISM DECK (J210) ····· 2-11
2-17. EVF BLOCK ····· 2-11
2-18. FP-497 FLEXIBLE BOARD ····· 2-12
2-19. JK-222 BOARD ····· 2-12
2-20. CONTROL SWITCH BLOCK (PS-1870) ····· 2-15
2-21. SE-132 BOARD ····· 2-15
2-22. GRIP CABINET BLOCK ····· 2-16
2-23. CONTROL SWITCH BLOCK (CF-1870) ····· 2-17
2-24. MS ASSEMBLY ····· 2-17
2-25. VF LENS ASSEMBLY ····· 2-18
2-26. XLR BLOCK ····· 2-19
2-27. XK-001 BOARD ····· 2-19
2-28. XM-002 BOARD, XD-002 BOARD, XS-002 BOARD ··2-20
2-29. CIRCUIT BOARDS LOCATION ····· 2-21
2-30. FLEXIBLE BOARDS LOCATION ····· 2-22

3. BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/5) ····· 3-1
3-2. OVERALL BLOCK DIAGRAM (2/5) ····· 3-3
3-3. OVERALL BLOCK DIAGRAM (3/5) ····· 3-5
3-4. OVERALL BLOCK DIAGRAM (4/5) ····· 3-7
3-5. OVERALL BLOCK DIAGRAM (5/5) ····· 3-9
3-6. POWER BLOCK DIAGRAM (1/3) ····· 3-11
3-7. POWER BLOCK DIAGRAM (2/3) ····· 3-13
3-8. POWER BLOCK DIAGRAM (3/3) ····· 3-15

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/4) ····· 4-1
FRAME SCHEMATIC DIAGRAM (2/4) ····· 4-3
FRAME SCHEMATIC DIAGRAM (3/4) ····· 4-5
FRAME SCHEMATIC DIAGRAM (4/4) ····· 4-7
4-2. SCHEMATIC DIAGRAMS
• CD-389 (CCD IMAGER) SCHEMATIC DIAGRAM ····· 4-11
• SE-132 (PITCH/YAW SENSOR) SCHEMATIC DIAGRAM ····· 4-13
• MA-425 (MIC AMP, AF LASER CONTROL) SCHEMATIC DIAGRAM ····· 4-15
• CK-134 (CONTROL SWITCH) SCHEMATIC DIAGRAM ····· 4-17
• JK-222 (AV IN/OUT, DV/USB CONNECTOR) SCHEMATIC DIAGRAM ····· 4-19
• PD-191 (1/2) (LCD DRIVER, TIMING GENERATOR) SCHEMATIC DIAGRAM ····· 4-21
• PD-191 (2/2) (LCD DRIVER, BACKLIGHT) SCHEMATIC DIAGRAM ····· 4-23
• LB-089 (EVF, EVF BACKLIGHT) SCHEMATIC DIAGRAM ····· 4-25
• FP-504 FLEXIBLE SCHEMATIC DIAGRAM ····· 4-27
• FP-100, FP-102, FP-228 FLEXIBLE SCHEMATIC DIAGRAM ····· 4-29
• VC-318 (1/17) (A/D CONVERTER, TIMING GENERATOR) SCHEMATIC DIAGRAM ····· 4-31
• VC-318 (2/17) (CAMERA RGB PROCESSOR) SCHEMATIC DIAGRAM ····· 4-33
• VC-318 (3/17) (CAMERA PROCESSOR) SCHEMATIC DIAGRAM ····· 4-35
• VC-318 (4/17) (MPEG MOVIE/DIGITAL STILL PROCESS) SCHEMATIC DIAGRAM ····· 4-37
• VC-318 (5/17) (HI CONTROL, DIGITAL STILL CONTROL) SCHEMATIC DIAGRAM ····· 4-39
• VC-318 (6/17) (FLASH MEMORY, SDRAM) SCHEMATIC DIAGRAM ····· 4-41
• VC-318 (7/17) (DV SIGNAL PROCESS) SCHEMATIC DIAGRAM ····· 4-43
• VC-318 (8/17) (DV INTERFACE) SCHEMATIC DIAGRAM ····· 4-45
• VC-318 (9/17) (REC/PB AMP) SCHEMATIC DIAGRAM ····· 4-47
• VC-318 (10/17) (USB INTERFACE) SCHEMATIC DIAGRAM ····· 4-49
• VC-318 (11/17) (VIDEO A/D CONVERTER) SCHEMATIC DIAGRAM ····· 4-51
• VC-318 (12/17)(DRUM/CAPSTAN/LOADING DRIVE) SCHEMATIC DIAGRAM ····· 4-53
• VC-318 (13/17) (CAMERA/MECHA CONTROL) SCHEMATIC DIAGRAM ····· 4-55
• VC-318 (14/17) (HI CONTROL) SCHEMATIC DIAGRAM ····· 4-57
• VC-318 (15/17) (LANC, RESET, BEEP, AFLD) SCHEMATIC DIAGRAM ····· 4-59
• VC-318 (16/17) (CONNECTOR) SCHEMATIC DIAGRAM ····· 4-61
• VC-318 (17/17) (CONNECTOR, EVR) SCHEMATIC DIAGRAM ····· 4-63
• DB-016 (1/9) (LENS MOTOR DRIVE) SCHEMATIC DIAGRAM ····· 4-65
• DB-016 (2/9) (VAP DRIVER) SCHEMATIC DIAGRAM ····· 4-67
• DB-016 (3/9) (MIC VOL) SCHEMATIC DIAGRAM ····· 4-69
• DB-016 (4/9) (AUDIO PROCESSOR 1) SCHEMATIC DIAGRAM ····· 4-71
• DB-016 (5/9) (AUDIO PROCESSOR 2) SCHEMATIC DIAGRAM ····· 4-73
• DB-016 (6/9) (VIDEO IN/OUT) SCHEMATIC DIAGRAM ····· 4-75
• DB-016 (7/9) (EVF DRIVE, TIMING GENERATOR) SCHEMATIC DIAGRAM ····· 4-77

• DB-016 (8/9) (CONNECTOR)
SCHEMATIC DIAGRAM ····· 4-79
• DB-016 (9/9) (DC/DC CONTROL)
SCHEMATIC DIAGRAM ····· 4-81
• XD-002/XS-002 (DC/DC CONVERTER, MIC SELECT)
SCHEMATIC DIAGRAM ····· 4-83
• XM-002 (MIC AMP) SCHEMATIC DIAGRAM ···· 4-85

4-3. PRINTED WIRING BOARDS
• SE-132 (PITCH/YAW SENSOR)
PRINTED WIRING BOARD ····· 4-89
• CD-389 (CCD IMAGER)
PRINTED WIRING BOARD ····· 4-91
• MA-425 (MIC AMP, AF LASER CONTROL)
PRINTED WIRING BOARD ····· 4-95
• PD-191(LCD DRIVER, TIMING GENERATOR, BACKLIGHT)
PRINTED WIRING BOARD ····· 4-97
• JK-222 (AV IN/OUT, DV/USB CONNECTOR)
PRINTED WIRING BOARD ····· 4-9
• CK-134 (CONTROL SWITCH)
PRINTED WIRING BOARD ····· 4-103
• LB-089 (EVF, EVF BACKLIGHT)
PRINTED WIRING BOARD ····· 4-107
• FP-504 FLEXIBLE BOARD ····· 4-109
• FP-495, FP-497 FLEXIBLE BOARD ····· 4-111
• FP-100, FP-102, FP-228 FLEXIBLE BOARD ····· 4-113
• XD-002 (DC/DC CONVERTER), XS-002 (MIC SELECT)
PRINTED WIRING BOARD ····· 4-115
• XM-002 (MIC AMP), XK-001 (LOW CUT SW)
PRINTED WIRING BOARD ····· 4-117
• VC-318 (A/D CONVERTER, TIMING GENERATOR, CAMERA RGB PROCESSOR, CAMERA PROCESSOR, MPEG MOVIE/DIGITAL STILL PROCESS, HI CONTROL, DIGITAL STILL CONTROL, FLASH MEMORY, SDRAM, DV SIGNAL PROCESS, DV INTERFACE, REC/PB AMP, USB INTERFACE, VIDEO A/D CONVERTER, DRUM/CAPSTAN/LOADING DRIVE, CAMERA/MECHA CONTROL, HI CONTROL, LANC, RESET, BEEP, AFLD, CONNECTOR, EVR)
PRINTED WIRING BOARD ····· 4-119
• DB-016 (LENS MOTOR DRIVE, VAP DRIVER, MIC VOL, AUDIO PROCESSOR 1, AUDIO PROCESSOR 2, VIDEO IN/OUT, EVF DRIVE, TIMING GENERATOR, CONNECTOR, DC/DC CONTROL)
PRINTED WIRING BOARD ····· 4-123

4-4. WAVEFORMS ····· 4-127
4-5. MOUNTED PARTS LOCATION ····· 4-132

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS ····· 5-1
5-1-1. MAIN SECTION ····· 5-1
5-1-2. F PANEL BLOCK ····· 5-2
5-1-3. CABINET (R) BLOCK ····· 5-3
5-1-4. LCD BLOCK ····· 5-4
5-1-5. CABINET (L) BLOCK ····· 5-5
5-1-6. GRIP CABINET BLOCK ····· 5-6
5-1-7. XLR BLOCK ····· 5-7
5-1-8. EVF BLOCK ····· 5-8
5-1-9. BATTERY PANEL BLOCK ····· 5-9
5-1-10. MD BLOCK ····· 5-10
5-1-11. LENS BLOCK ····· 5-11
5-1-12. OVERALL MECHANISM DECK SECTION (J210) ·5-12
5-1-13. LS CHASSIS BLOCK ASSEMBLY ····· 5-13
5-1-14. MECHANISM CHASSIS BLOCK ASSEMBLY ····· 5-14
5-2. ELECTRICAL PARTS LIST ····· 5-15

6. ADJUSTMENT

1. Before starting adjustment ····· 6-1
1-1. Adjusting items when replacing main parts and boards ··6-2
6-1. CAMERA SECTION ADJUSTMENT ····· 6-4
1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION) ····· 6-4
1-1-1. List of Service Tools ····· 6-4
1-1-2. Preparations ····· 6-6
1-1-3. Precaution ····· 6-8
1-2. INITIALIZATION OF 8, A, B, C, D, E, F, 1B, 1E, 1F PAGE DATA ····· 6-10
1-2-1. INITIALIZATION OF A, D PAGE DATA ····· 6-11
1. Initializing the A, D Page Data ····· 6-11
2. Modification of A, D Page Data ····· 6-11
3. A Page Table ····· 6-12
4. D Page Table ····· 6-12
1-2-2. INITIALIZATION OF 8, C PAGE DATA ····· 6-13
1. Initializing the 8, C Page Data ····· 6-13
2. Modification of 8, C Page Data ····· 6-13
3. 8 Page Table ····· 6-13
4. C Page Table ····· 6-14
1-2-3. INITIALIZATION OF E, F, 1E, 1F PAGE DATA ····· 6-15
1. Initializing the E, F, 1E, 1FA Page Data ····· 6-15
2. Modification of E, F, 1E, 1F Page Data ····· 6-15
3. E Page Table ····· 6-16
4. F Page Table ····· 6-17
5. 1E Page Table ····· 6-18
6. 1F Page Table ····· 6-19
1-2-4. INITIALIZATION OF B, 1B PAGE DATA ····· 6-20
1. Initializing the B, 1B Page Data ····· 6-20
2. Modification of B, 1B Page Data ····· 6-20
3. B Page Table ····· 6-20
4. 1B Page Table ····· 6-20
1-3. CAMERA SYSTEM ADJUSTMENTS ····· 6-21
1. 66MHz/54MHz Origin Oscillation Adjustment ····· 6-21 (VC-318 board) ····· 6-21
2. HALL Adjustment ····· 6-22
3. MR Adjustment ····· 6-23
4. Flange Back Adjustment (Using Minipattern Box) ··· 6-24
5. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500m Away) ····· 6-25
5-1. Flange Back Adjustment (1) ····· 6-25
5-2. Flange Back Adjustment (2) ····· 6-25
6. Flange Back Check ····· 6-26
7. Picture Frame Setting ····· 6-26
8. Auto White Balance Standard Data Input ····· 6-27
9. MAX GAIN Adjustment ····· 6-27
10. F No. & ND Light Quantity Standard Data Input ····· 6-28
11. LV Standard Data Input ····· 6-28
12. Auto White Balance Adjustment ····· 6-29
13. Color Reproduction Adjustment ····· 6-30
14. White Balance Check ····· 6-31
15. PSD Sensor Gain Adjustment ····· 6-32
15-1. PSD Sensor Gain Adjustment (1) ····· 6-32
15-2. PSD Sensor Gain Adjustment (2) ····· 6-33
16. Angular Velocity Sensor Sensitivity Adjustment ····· 6-34
17. Mechanical Shutter Adjustment ····· 6-34
18. AF Laser Output Adjustment ····· 6-35
19. AF Laser Axis Check ····· 6-36
1-4. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT ····· 6-37
1. VCO Adjustment (DB-016 board) ····· 6-37
2. RGB AMP Adjustment (DB-016 board) ····· 6-38
3. Contrast Adjustment (DB-016 board) ····· 6-38
4. Backlight Adjustment (DB-016 board) ····· 6-39
1-5. LCD SYSTEM ADJUSTMENT ····· 6-40
1. VCO Adjustment (PD-191 board) ····· 6-40

2. RGB AMP Adjustment (PD-191 board) ····· 6-41
3. Contrast Adjustment (PD-191 board) ····· 6-41
4. COM AMP Adjustment (PD-191 board) ····· 6-42
5. V COM Adjustment (PD-191 board) ····· 6-42
6. White Balance Adjustment (PD-191 board) ····· 6-43
6-2. MECHANICAL SECTION ADJUSTMENT ····· 6-44
2-1. Preparations for Check, Adjustment and Replacement of Mechanism Block ····· 6-44
2-1-1. Cassette Compartment Assy, Damper Assy ····· 6-44
2-2. Periodic Inspection and Maintenance ····· 6-45
2-2-1. Rotary Drum Cleaning ····· 6-45
2-2-2. Tape Path System Cleaning (Refer to Fig. 6-2-2.) ····· 6-45
2-2-3. Periodic Inspection List ····· 6-46
2-2-4. Mode Selector II Operating Procedure ····· 6-47
2-4-1. Introduction ····· 6-47
2-4-2. Mechanism Status (Position) Transition Table Using Mode Selector II ····· 6-48
2-3. Check, Adjustment and Replacement of Mechanical Parts ····· 6-49
2-3-1. Drum ····· 6-49
2-3-2. 6-L. Motor Holder Block Assy (Loading) and FP-228 Flexible Wiring Board (DEW Sensor) ····· 6-50
2-3-3. Retainer Plate Assy, LED Retainer ····· 6-51
2-3-4. Brake-T Block Assy, T-reel Table Assy, Gooseneck Gear Assy ····· 6-52
2-3-5. TG1 Assy, Tension Coil Spring (Tension Regulator) ··6-53
2-3-6. TG1 FWD Position Adjustment ····· 6-54
2-3-7. FWD Back-tension Adjustment ····· 6-55
2-3-8. Reel Torque Check ····· 6-55
2-3-9. TG3 Guide Zenith Adjustment ····· 6-55
2-3-10. TG6 Guide Zenith Adjustment ····· 6-56
2-3-11. LS Cam Plate Position Adjustment ····· 6-56
2-3-12. LS Chassis Block Assy, LS Guide Retainer ····· 6-57
2-3-13. LS Cam Plate, Tension Coil Spring (Brake-S), Brake-S, Torsion Coil Spring (Brake Arm), Cassette Position Set-S, Brake-S Driving Arm Assy ····· 6-58
2-3-14. TG7 Block Assy, Torsion Coil Spring (TG7 Return, Pinch Return), Pinch Arm Assy ····· 6-59
2-3-15. Layout Diagram of FP-102 Flexible Wiring Board ··· 6-60
2-3-16. TG1 Cam Slider, LS Arm, LS Roller, Mode Gear Assy, LS Guide Roller ····· 6-61
2-3-17. Guide Rail ····· 6-62
2-3-18. Gear Cover B, GL Driving Gear ····· 6-63
2-3-19. Drum Base Block Assy, Coaster-S Block Assy, Coaster-T Block Assy ····· 6-64
2-3-20. DC Motor (Capstan), Conversion Gear, Relay Gear ··6-65
2-3-21. Gear Cover C, Pinch Driving Arm Assy, Cam Gear B ····· 6-66
2-3-22. Gear Cover A, FP-100 Flexible Wiring Board ····· 6-67
2-3-23. Deceleration Gear, Mode Gear Assy, FP-100 Flexible Wiring Board, Cam Gear A ····· 6-68
2-4. Tape Path Adjustment ····· 6-69
2-4-1. Adjustment Preparation ····· 6-69
2-4-2. Tracking Adjustment ····· 6-70
2-4-3. TG3 Guide Adjustment ····· 6-70
2-4-4. TG7 Guide Adjustment ····· 6-71
2-4-5. Check upon Completion of Adjustment ····· 6-71
6-3. VIDEO SECTION ADJUSTMENT ····· 6-73
3-1. PREPARATIONS BEFORE ADJUSTMENTS ····· 6-73
3-1-1. Equipment to Required ····· 6-73
3-1-2. Precautions on Adjustment ····· 6-74
3-1-3. HOW TO ENTER RECORD MODE WITHOUT CASSETTE ····· 6-74
3-1-4. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE ····· 6-74
3-1-5. Adjustment Connectors ····· 6-75
3-1-6. Connecting the Equipment ····· 6-75
3-1-7. Alignment Tapes ····· 6-76
3-1-8. Input/Output Level and Impedance ····· 6-76
3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT ···· 6-77
1. 6-Initialization of 8, A, B, C, D, E, F, 1B, 1E, 1F Page Data ····· 6-77
2. Touch Panel Adjustment ····· 6-77
3. Serial No. Input ····· 6-78
3-1. Company ID Input ····· 6-78
3-2. Serial No. Input ····· 6-78
3-3. SERVO AND RF SYSTEM ADJUSTMENT ····· 6-80
1. Cap FG Duty Adjustment (VC-318 Board) ····· 6-80
2. PLL f_0 & LPF f_0 Pre-Adjustment (VC-318 Board) ··· 6-80
3. Switching Position Adjustment (VC-318 Board) ····· 6-81
4. AGC Center Level and APC & AEQ Adjustment ····· 6-81
4-1. Preparations before adjustments ····· 6-81
4-2. AGC Center Level Adjustment (VC-318 Board) ····· 6-81
4-3. APC & AEQ Adjustment (VC-318 Board) ····· 6-82
4-4. Processing after Completing Adjustments ····· 6-82
5. PLL f_0 & LPF f_0 Fine Adjustment (VC-318 Board) ··· 6-83
3-4. VIDEO SYSTEM ADJUSTMENTS ····· 6-84
1. Chroma BPF f_0 Adjustment (DB-016 Board) ····· 6-84
2. S VIDEO OUT Y Level Adjustment (VC-318 Board) ····· 6-84
3. S VIDEO OUT Chroma Level Adjustment (VC-318 Board) ····· 6-85
4. VIDEO OUT Y, Chroma Level Check (VC-318 Board) ····· 6-85
3-5. AUDIO SYSTEM ADJUSTMENTS ····· 6-86
1. Playback Level Check ····· 6-86
2. Overall Level Characteristics Check ····· 6-86
3. Overall Distortion Check ····· 6-86
4. Overall Noise Level Check ····· 6-87
5. Overall Separation Check ····· 6-87
3-6. XLR ADAPTER ADJUSTMENT ····· 6-88
1. Audio Level Check ····· 6-88
6-4. SERVICE MODE ····· 6-89
4-1. ADJUSTMENT REMOTE COMMANDER ····· 6-89
1. Using the adjustment remote commander ····· 6-89
2. Precautions upon using the adjustment remote commander ····· 6-89
4-2. DATA PROCESS ····· 6-90
4-3. SERVICE MODE ····· 6-91
1. Setting the Test Mode ····· 6-91
2. Emergence Memory Address ····· 6-91
2-1. EMG Code (Emergency Code) ····· 6-91
2-2. MSW Code ····· 6-92
3. Bit value discrimination ····· 6-93
4. Switch check (1) ····· 6-93
5. Switch check (2) ····· 6-93
6. Switch check (3) ····· 6-94
7. LED, LCD (display window) check ····· 6-94
8. Record of Use check (1) ····· 6-94
9. Record of Use check (2) ····· 6-95
10. Record of Self-diagnosis check ····· 6-95

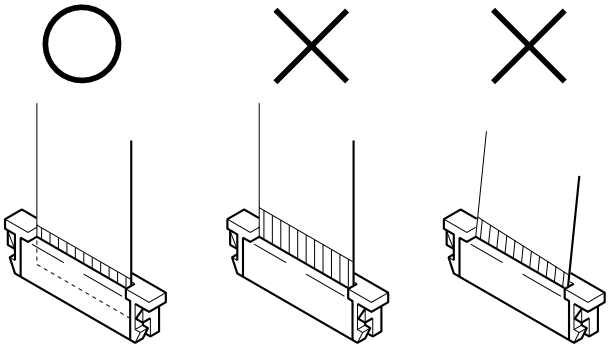
* Color reproduction frame is shown on page 323.

COVER

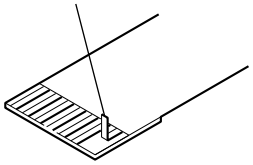
SECTION 1
SERVICE NOTE

1-1. NOTE FOR REPAIR

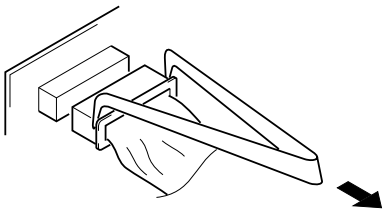
Make sure that the flat cable and flexible board are not cracked of bent at the terminal.
Do not insert the cable insufficiently nor crookedly.



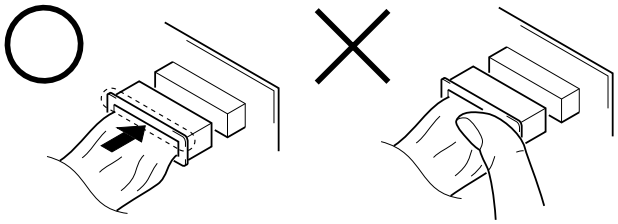
Cut and remove the part of gilt which comes off at the point. (Be careful or some pieces of gilt may be left inside)



When remove a connector, don't pull at wire of connector.
It is possible that a wire is snapped.



When installing a connector, don't press down at wire of connector. It is possible that a wire is snapped.



1-2. POWER SUPPLY DURING REPAIRS

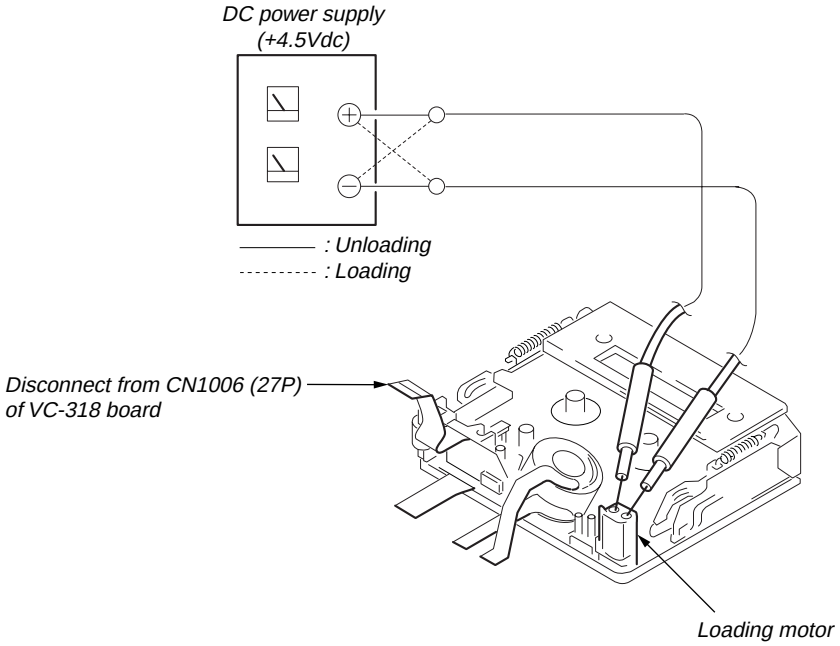
In this unit, about 10 seconds after power is supplied to the battery terminal using the regulated power supply (8.4V), the power is shut off so that the unit cannot operate.
These following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.
Use the AC power adaptor (AC-L10, AC-VQ800 etc.).

Method 2.
Connect the servicing remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the commander switch to the “ADJ” side.

1-3. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

① Refer to 2-2. to remove the cabinet (R) block assembly.
② Refer to 2-7. to remove the F panel block.
③ Refer to 2-11. to remove the battery panel block.
④ Refer to 2-21. to remove the CS frame block.
⑤ Refer to 2-12. to remove the DB-016 board.
⑥ Refer to 2-13. to remove the MD block.
⑦ Supply +4.5V from the DC power supply to the loading motor and unload with a pressing the cassette compartment.



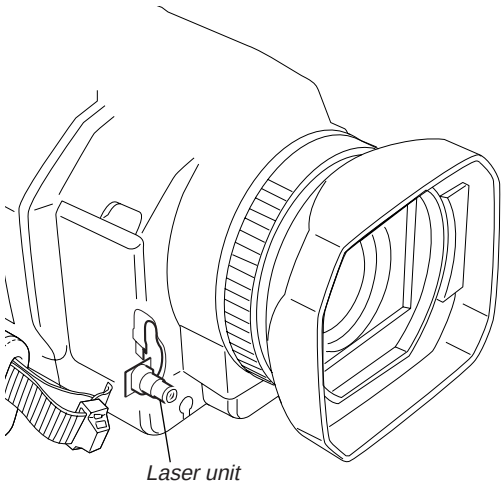
1-4. NOTES ON HANDLING THE LASER DIODE [LASER UNIT (D501)]

The laser diode may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

1-4-1. Soldering Conditions of Laser Unit (D501)

Temperature of the Soldering Iron	Less than 350 °C
Time to Solder	Within 3 seconds
Interval to Solder	Next terminal is soldered after waiting for 1 second

Note: Adjustment is needed when laser unit (D501) is replaced. Refer to “18. AF Laser Output Adjustment” and “19. AF Laser Axis Check” of “6-1. CAMERA SECTION ADJUSTMENT”.



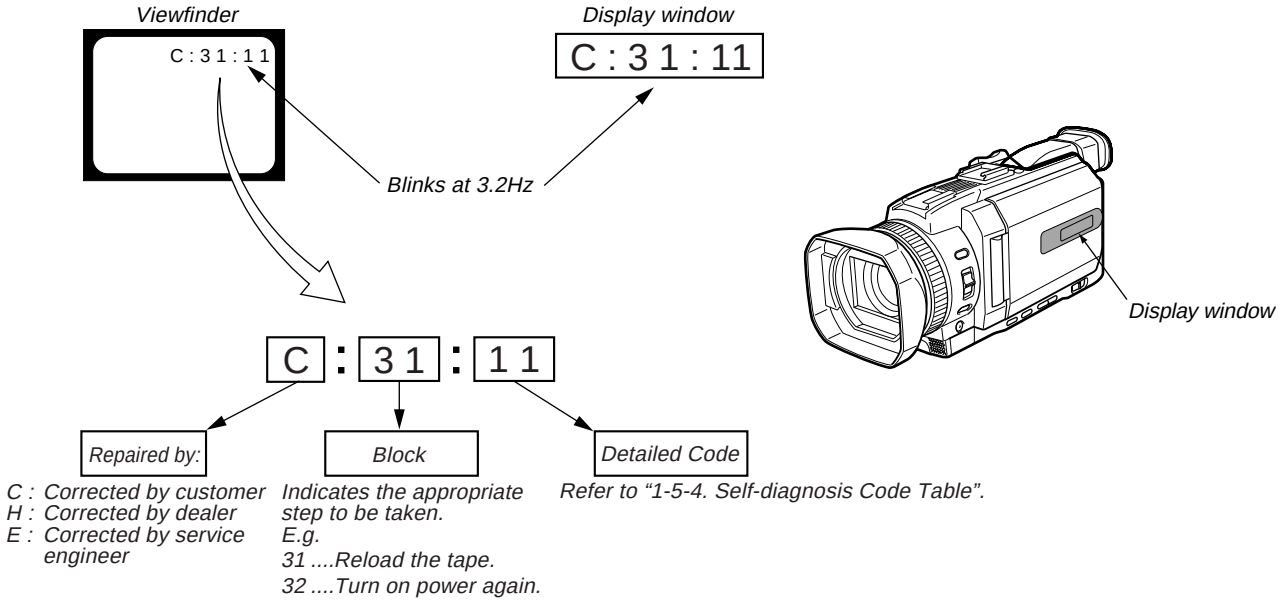
1-5. SELF-DIAGNOSIS FUNCTION

1-5-1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or Display window what to do. This function consists of two display; self-diagnosis display and service mode display.
Details of the self-diagnosis functions are provided in the Instruction manual.

1-5-2. Self-diagnosis Display

When problems occur while the unit is operating, the counter of the viewfinder or Display window shows a 4-digit display consisting of an alphabet and numbers, which blinks at 3.2 Hz. This 5-character display indicates the "repaired by:", "block" in which the problem occurred, and "detailed code" of the problem.

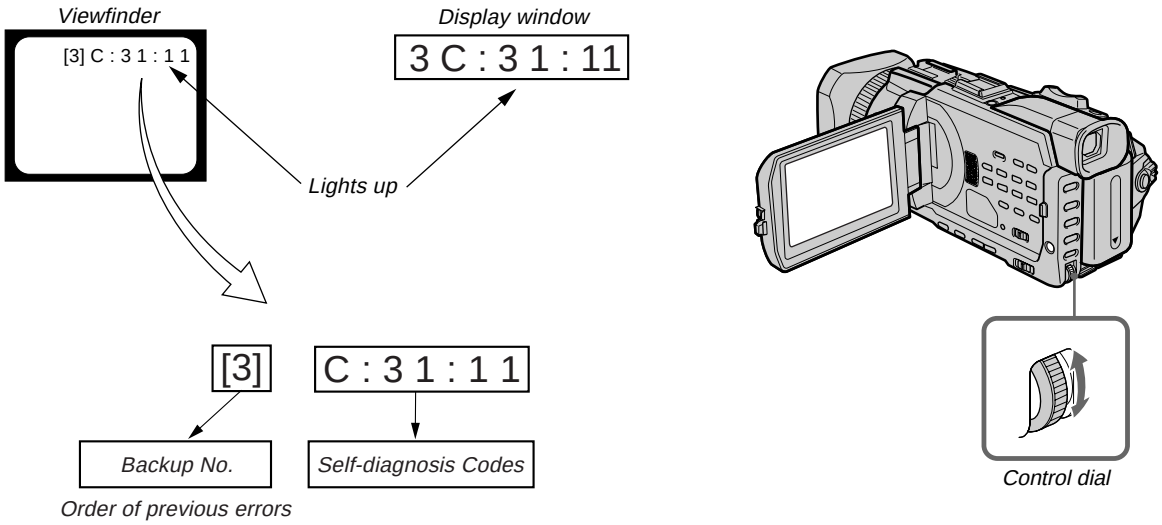


1-5-3. Service Mode Display

The service mode display shows up to six self-diagnosis codes shown in the past.

1. Display Method

While pressing the "STOP" key, set the switch from OFF to "VCR", and continue pressing the "STOP" key for 5 seconds continuously. The service mode will be displayed, and the counter will show the backup No. and the 5-character self-diagnosis codes.



2. Switching of Backup No.

By rotating the control dial, past self-diagnosis codes will be shown in order. The backup No. in the [] indicates the order in which the problem occurred. (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.)

[1] : Occurred first time [4] : Occurred fourth time
[2] : Occurred second time [5] : Occurred fifth time
[3] : Occurred third time [6] : Occurred the last time

3. End of Display

Turning OFF the power supply will end the service mode display.

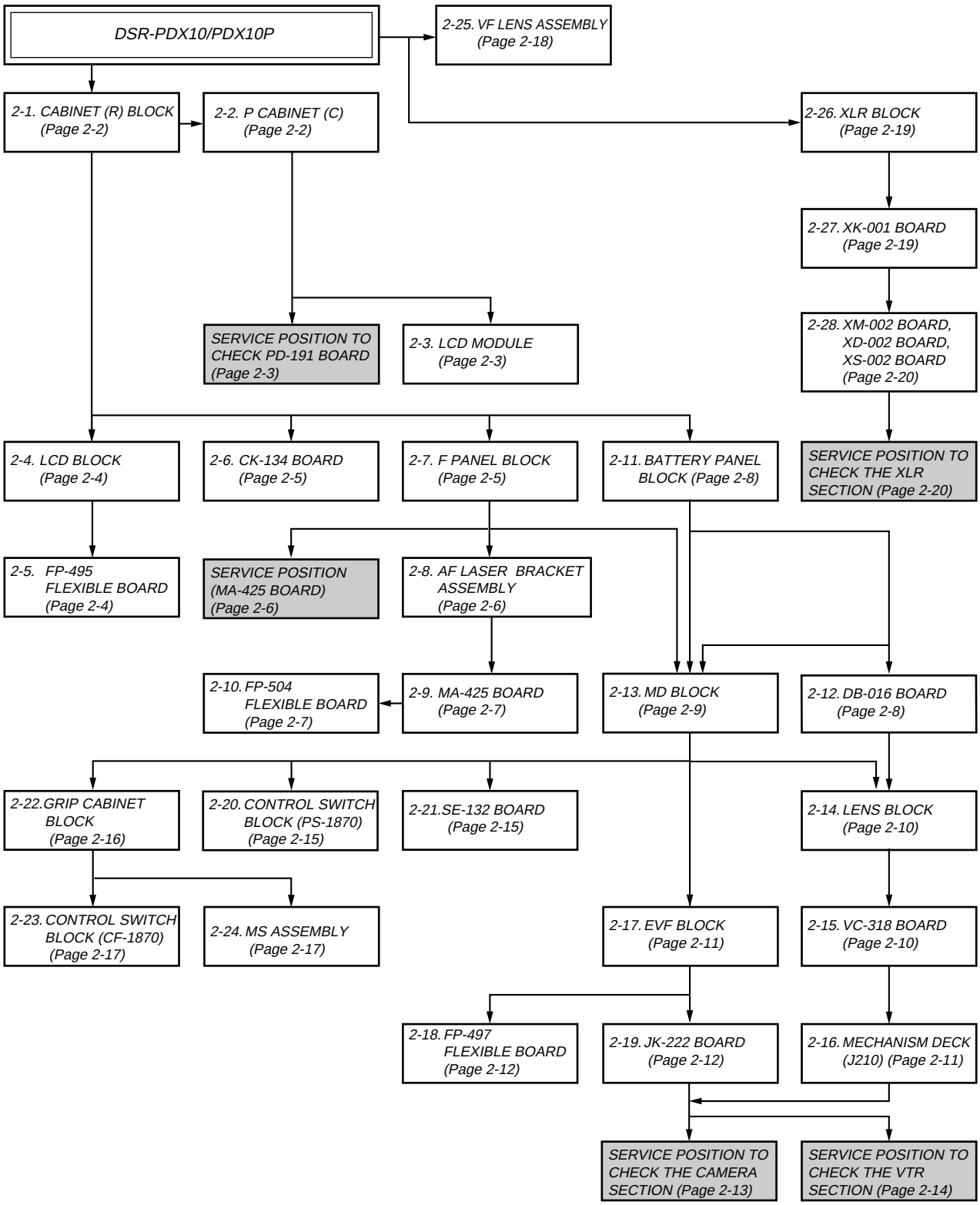
Note: The "self-diagnosis display" data will not be erased (reset) when the lithium 3 V supply (CK-134 board BT5201) is removed.

1-5-4. Self-diagnosis Code Table

Self-diagnosis Code					Symptom/State	Correction
Repaired by:	Block Function		Detailed Code			
C	0	4	0	0	Non-standard battery is used.	Use the info LITHIUM battery.
C	2	1	0	0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2	2	0	0	Video head is dirty.	Clean with the optional cleaning cassette.
C	3	1	1	0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	1	1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	2	0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3	1	2	1	Winding S reel fault when counting the rest of tape.	Load the tape again, and perform operations from the beginning.
C	3	1	2	2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	2	3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	2	4	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	3	0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3	1	4	0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3	1	4	2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	2	1	0	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	1	1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	1	Winding S reel fault when counting the rest of tape.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	4	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	3	0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	0	FG fault when starting drum	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	2	FG fault during normal drum operations	Remove the battery or power cable, connect, and perform operations from the beginning.
E	2	0	0	0	EEPROM data error	Initialize A, D page data (EEPROM data).
E	6	1	0	0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus MR (Pin ⑭, ⑮ of DB-016 board CN1004) when focusing is performed when the focus ring is rotated in the focus manual mode, and the focus motor drive circuit (IC3402 of DB-016 board) when the focusing is not performed.
E	6	1	1	0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom MR (Pin ⑩, ⑫ of DB-016 board CN1004) when zooming is performed when the zoom lens is operated and the zoom motor drive circuit (IC3402 of DB-016 board) when zooming is not performed.
E	6	2	0	0	Steadyshot function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE4001 of SE-132 board) peripheral circuits.
E	6	2	0	1	Steadyshot function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE4002 of SE-132 board) peripheral circuits.
E	9	1	0	1	Abnormality when flash is being charged.	Checking of flash unit or replacement of flash unit.

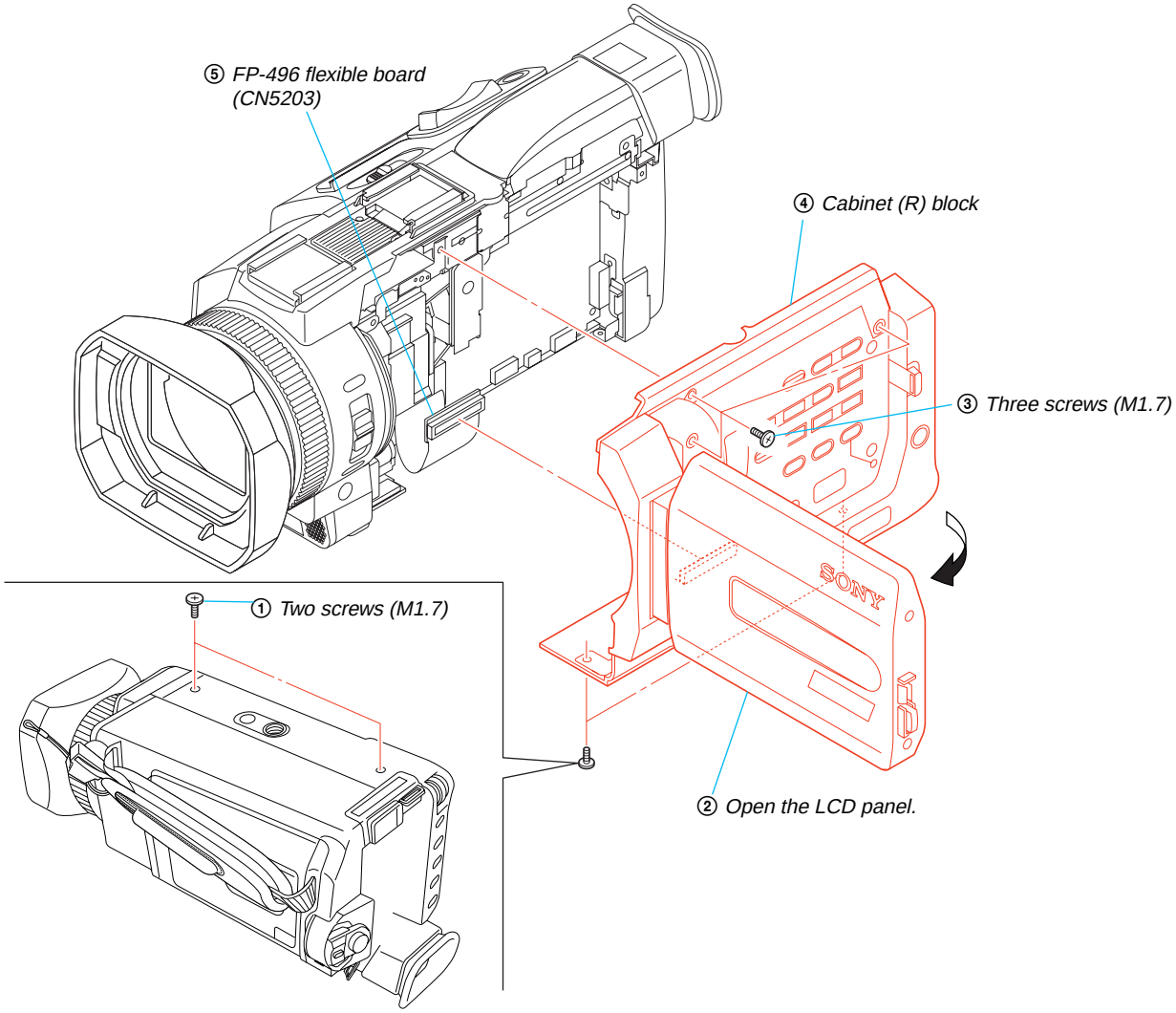
SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.

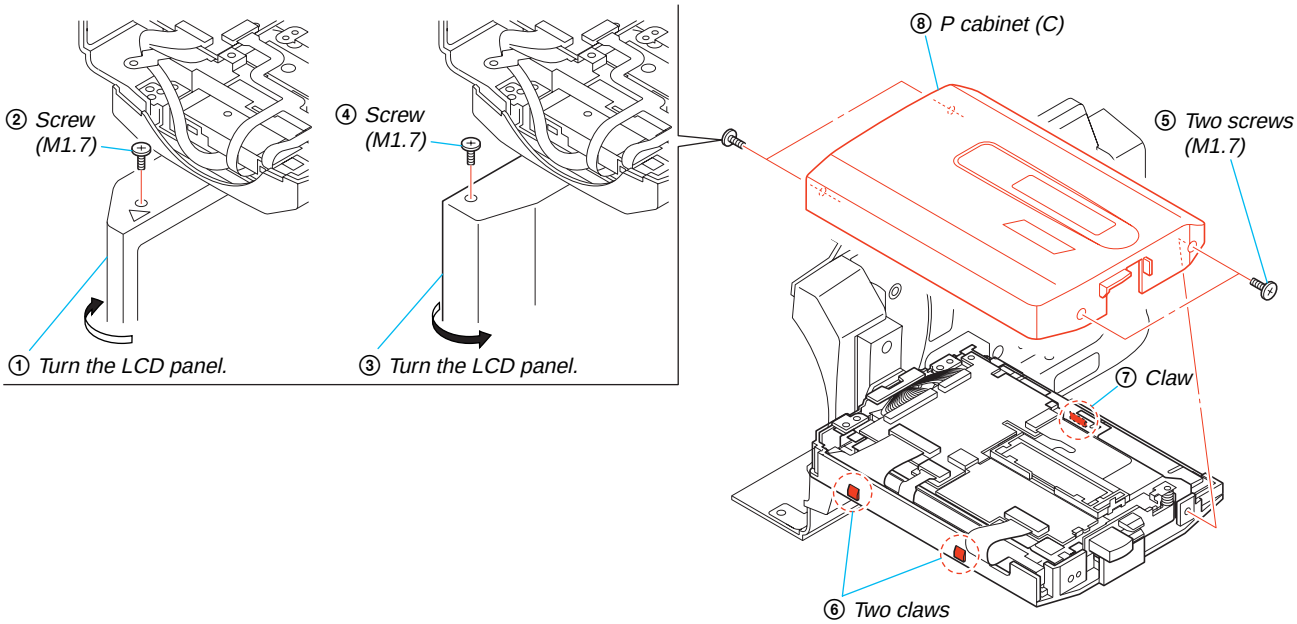


NOTE: Follow the disassembly procedure in the numerical order given.

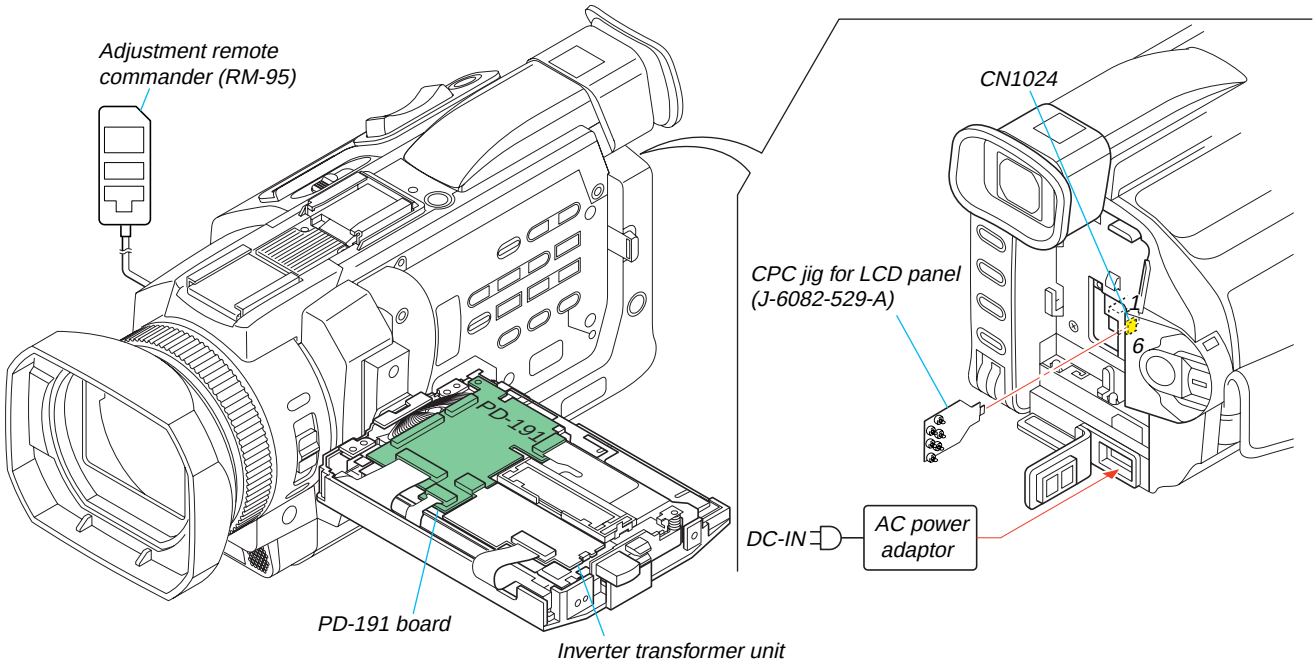
2-1. CABINET (R) BLOCK



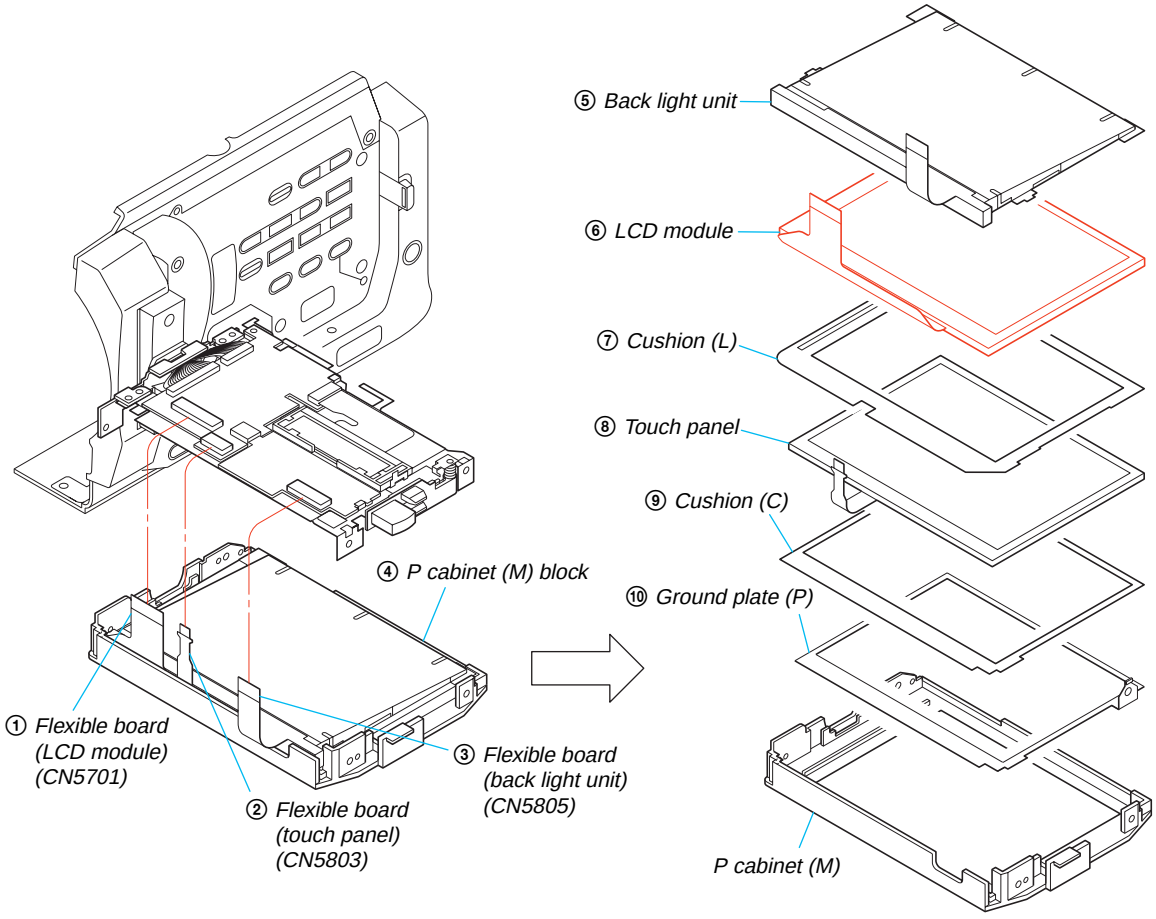
2-2. P CABINET (C)



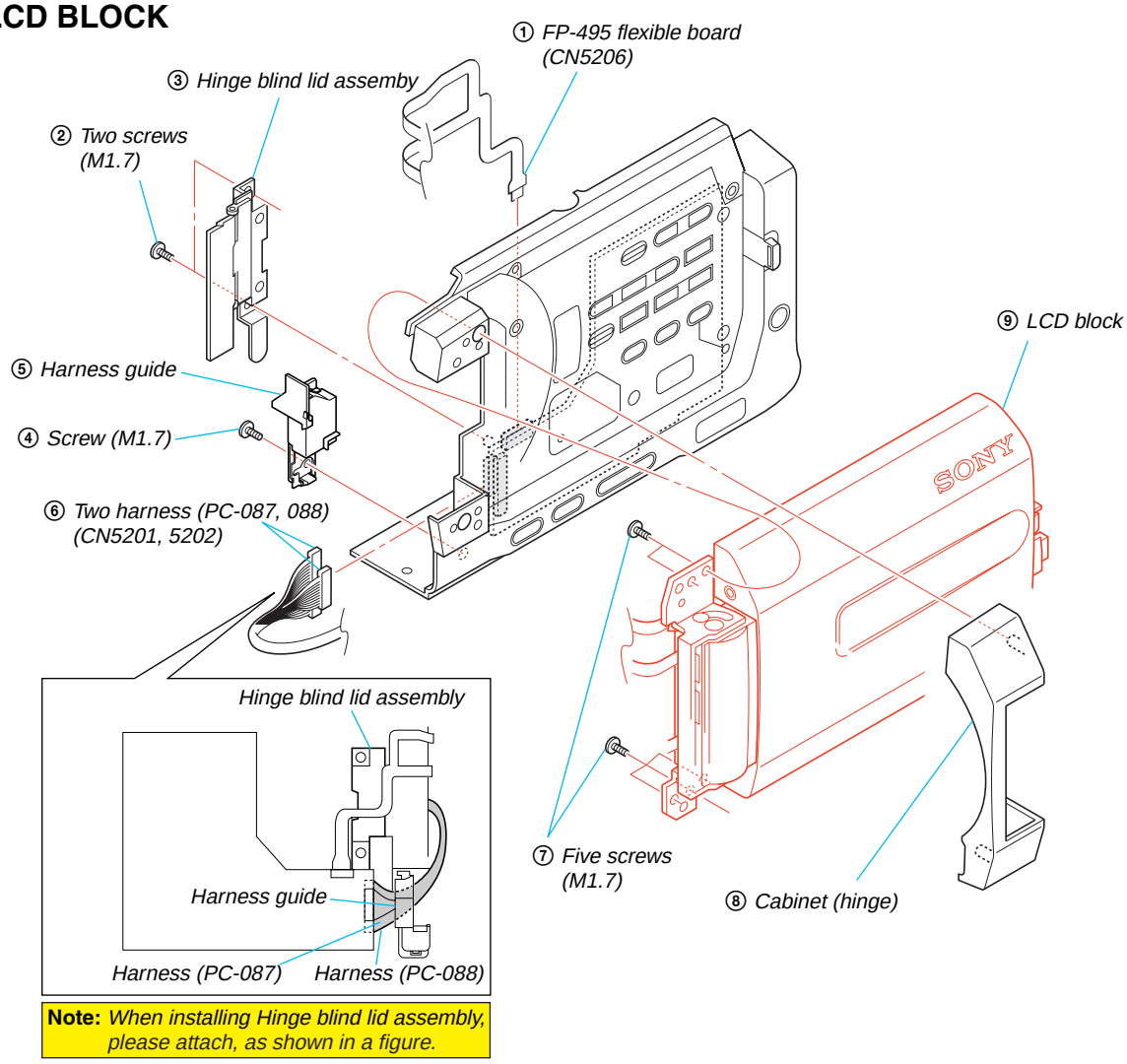
[SERVICE POSITION TO CHECK PD-191 BOARD]



2-3. LCD MODULE

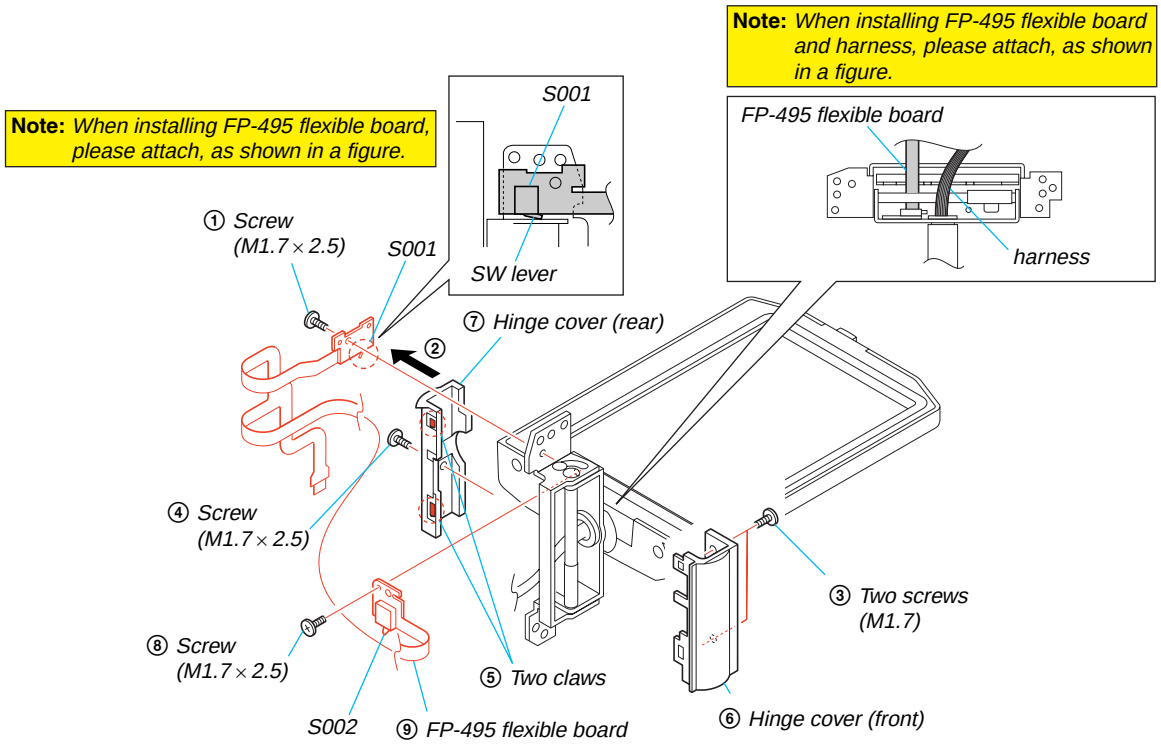


2-4. LCD BLOCK

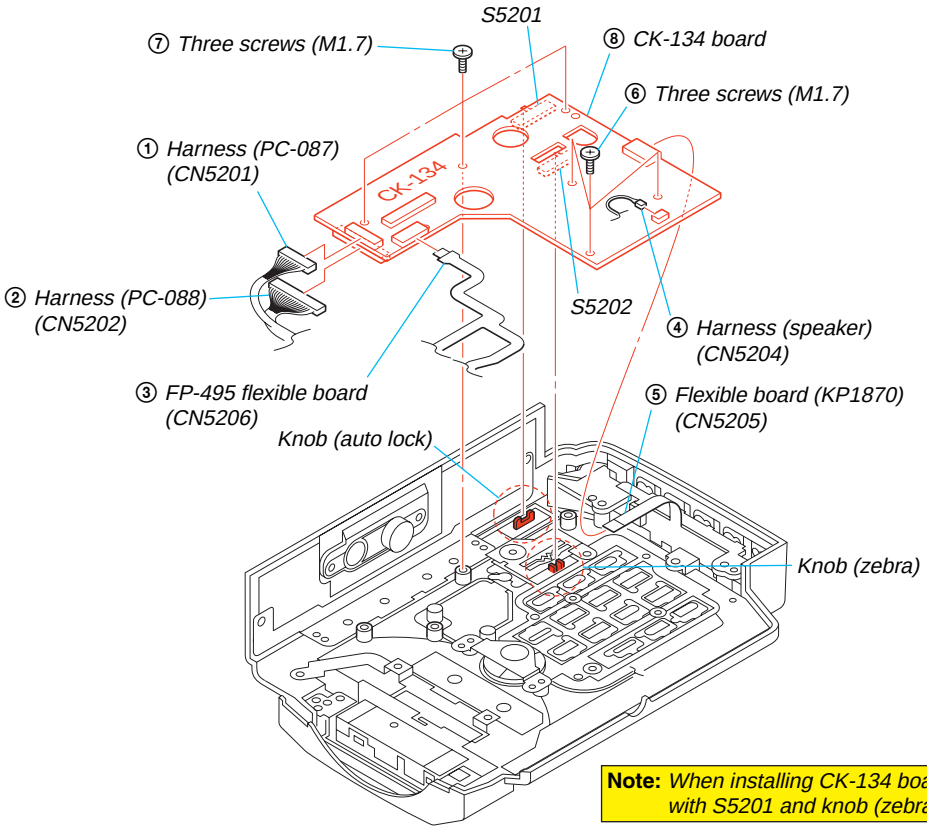


Note: *When installing Hinge blind lid assembly, please attach, as shown in a figure.*

2-5. FP-495 FLEXIBLE BOARD

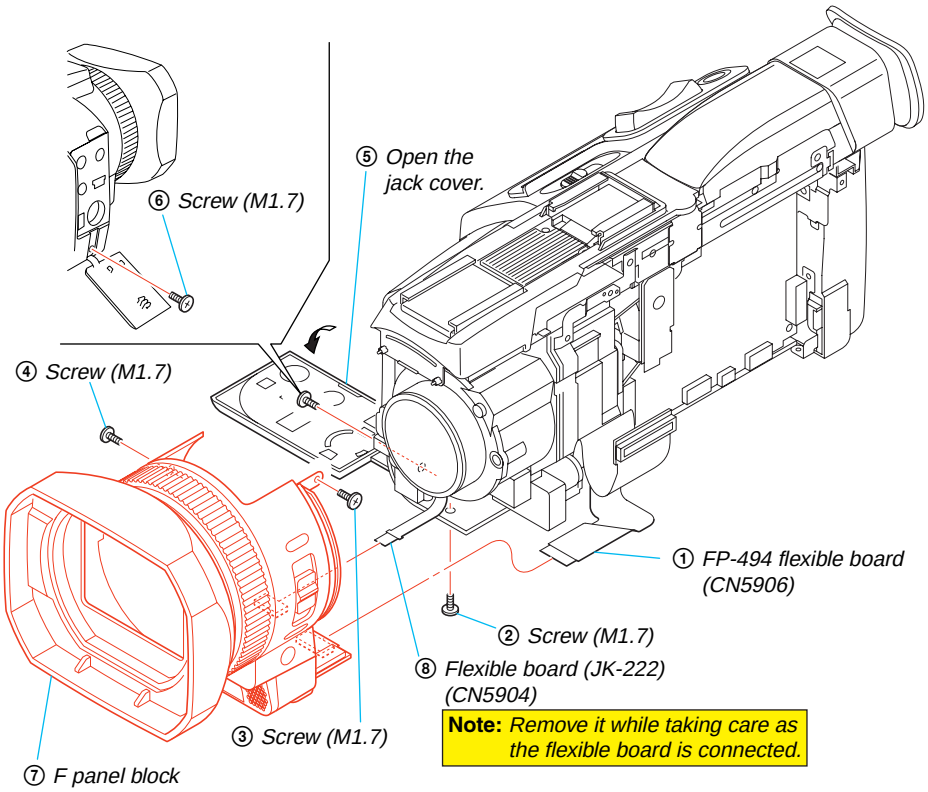


2-6. CK-134 BOARD



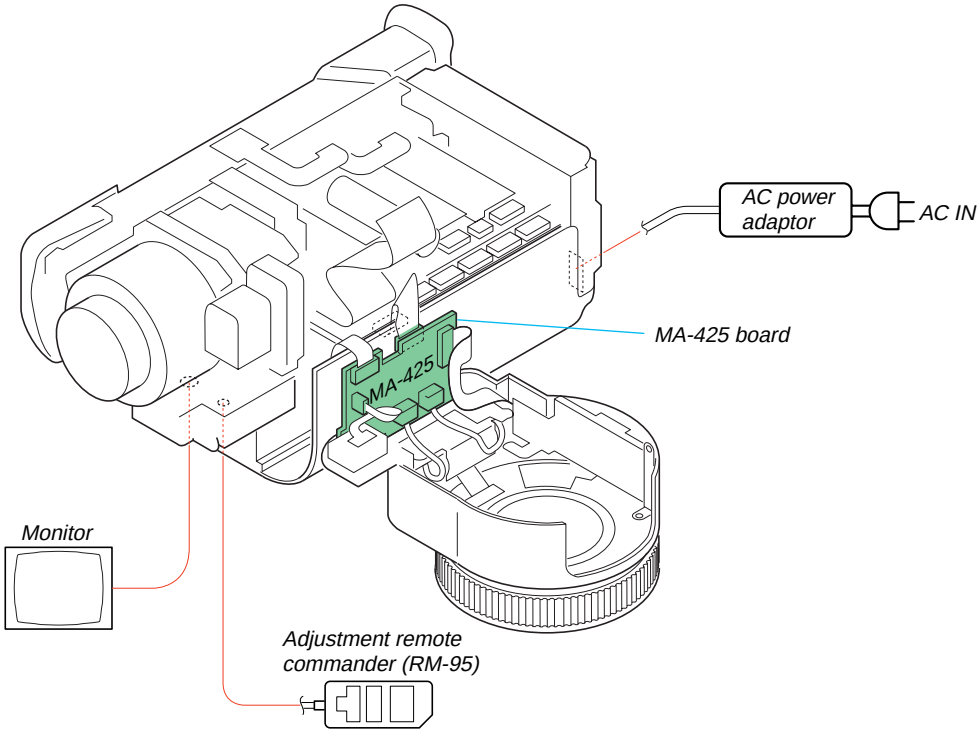
Note: *When installing CK-134 board, connect knob (auto lock) with S5201 and knob (zebra) with S5202.*

2-7. F PANEL BLOCK

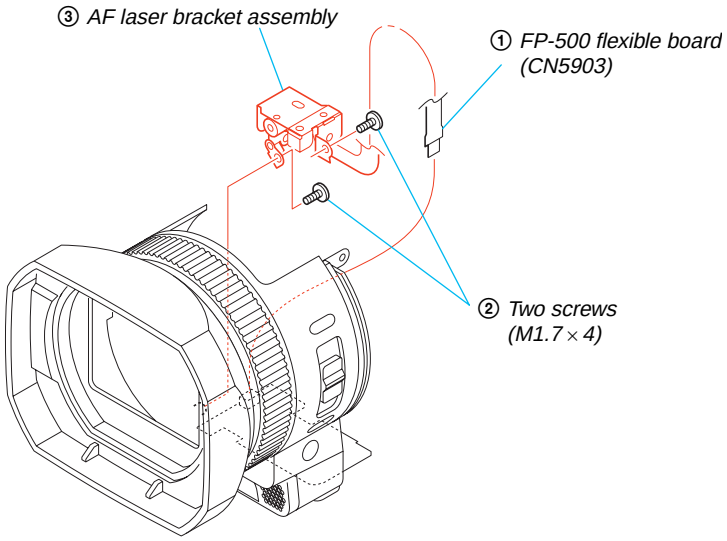


Note: *Remove it while taking care as the flexible board is connected.*

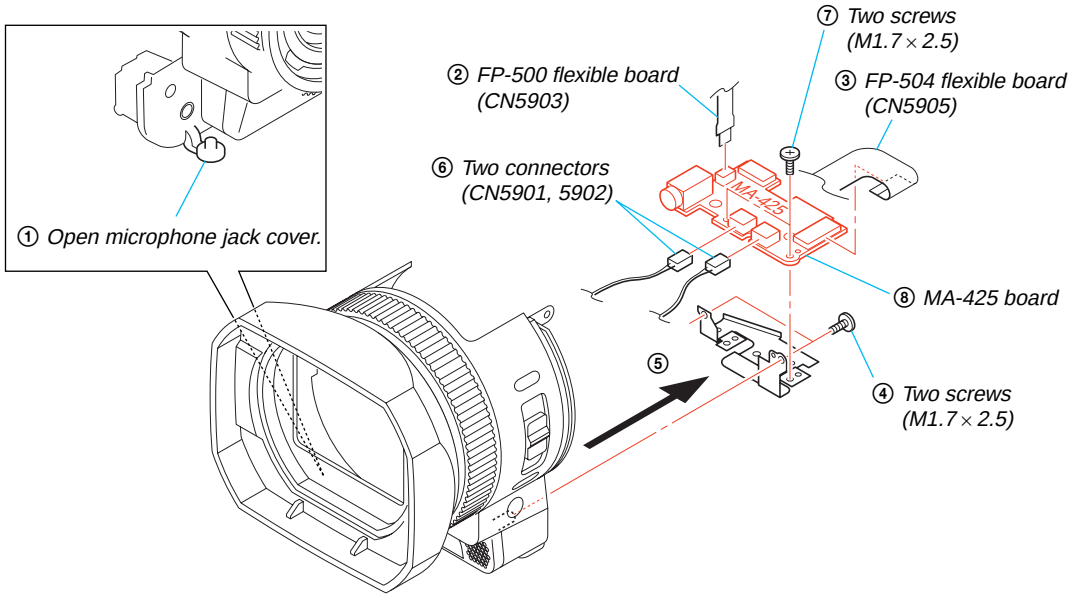
[SERVICE POSITION TO CHECK MA-425 BOARD]



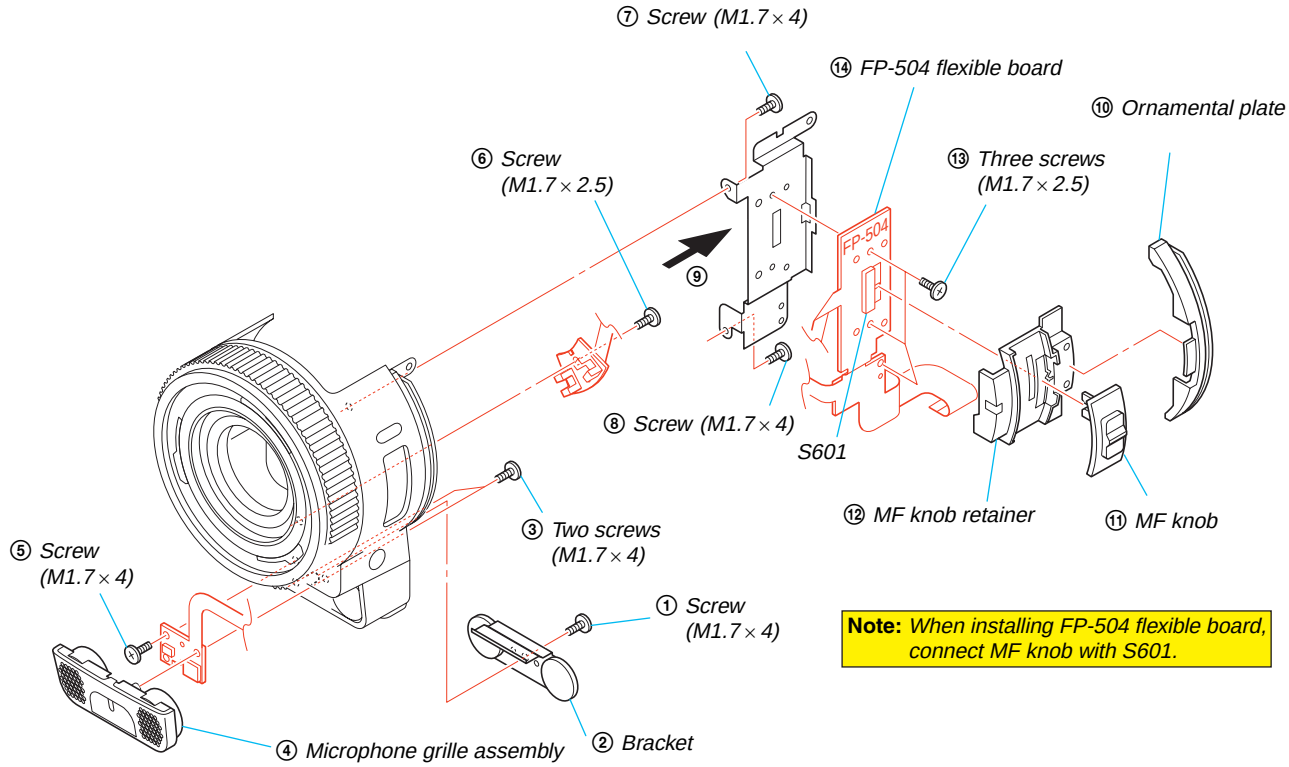
2-8. AF LASER BRACKET ASSEMBLY



2-9. MA-425 BOARD

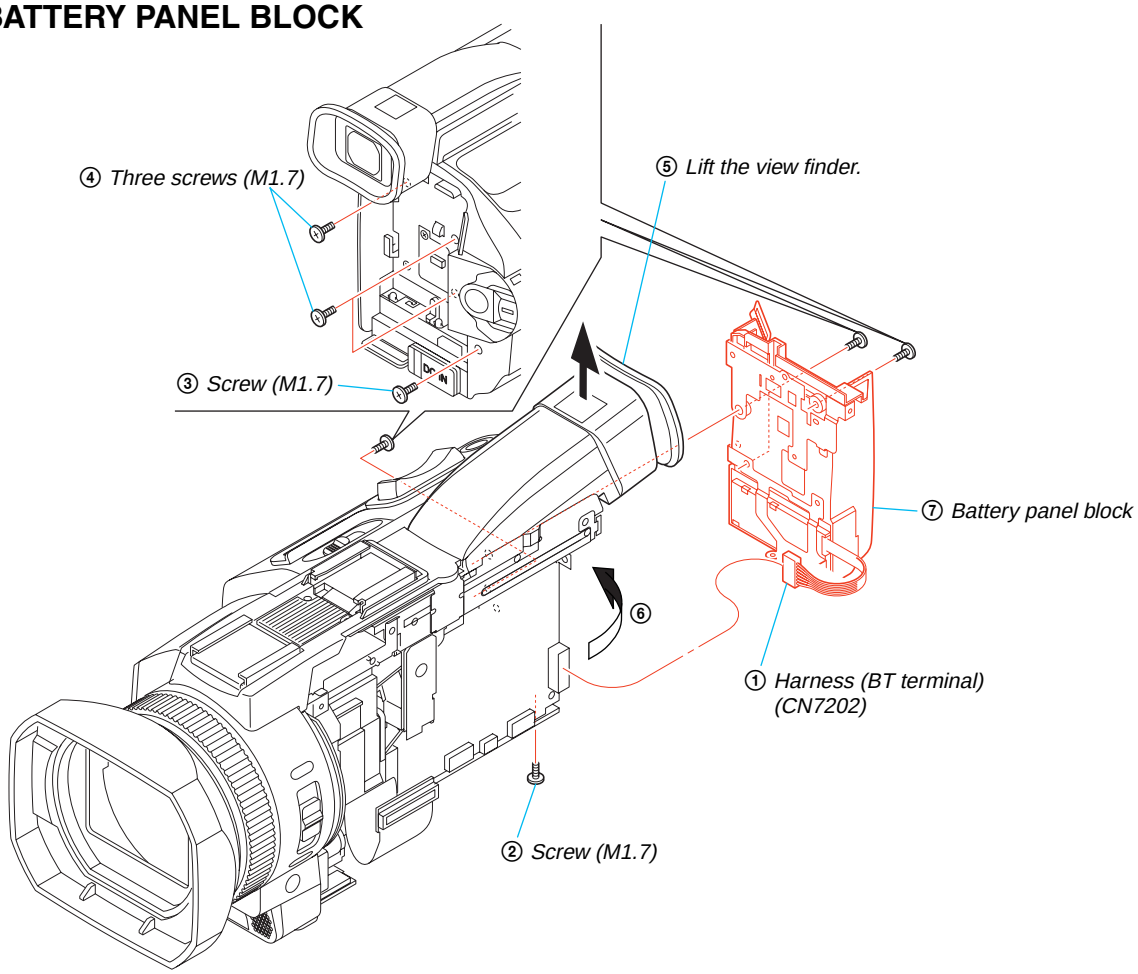


2-10. FP-504 FLEXIBLE BOARD

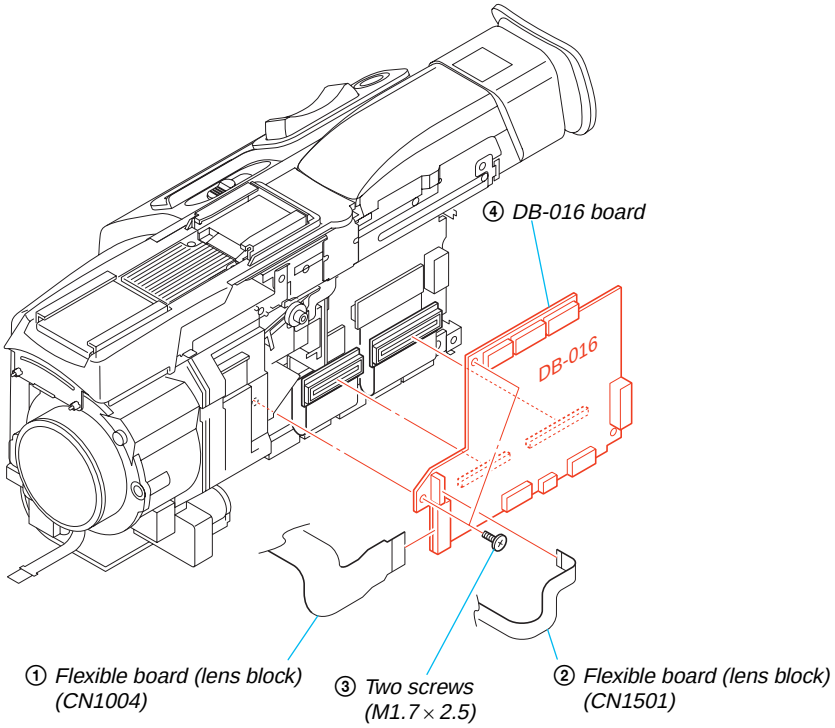


Note: *When installing FP-504 flexible board, connect MF knob with S601.*

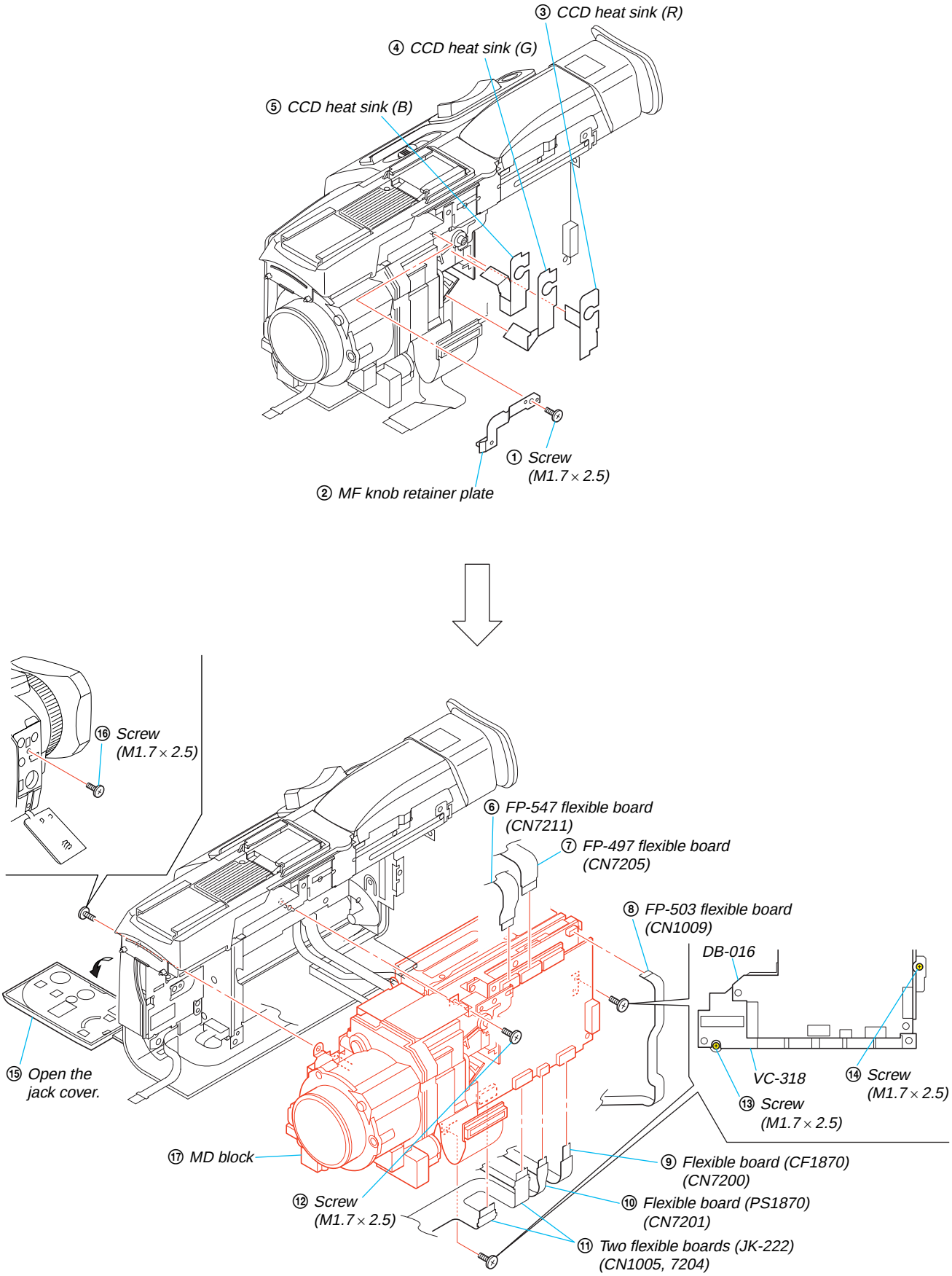
2-11. BATTERY PANEL BLOCK



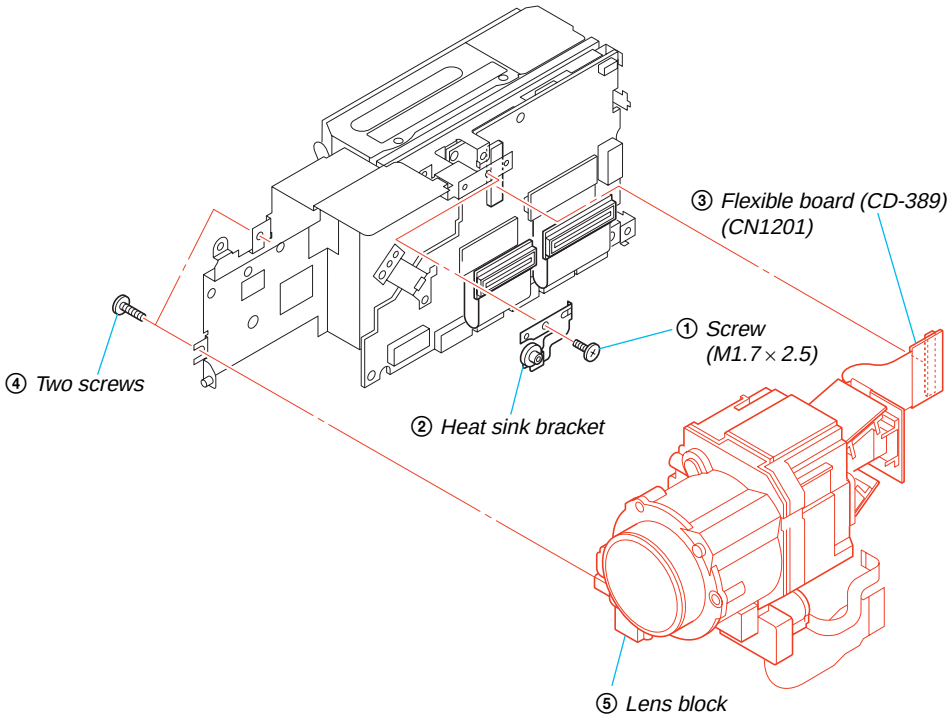
2-12. DB-016 BOARD



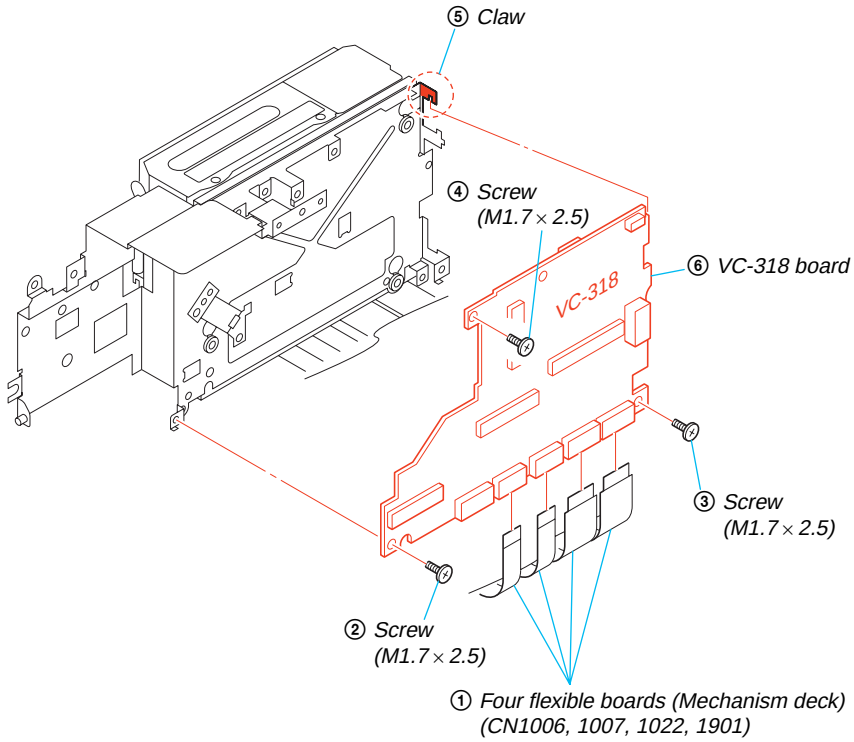
2-13. MD BLOCK


③ CCD heat sink (R)
④ CCD heat sink (G)
⑤ CCD heat sink (B)
① Screw (M1.7 × 2.5)
② MF knob retainer plate
⑯ Screw (M1.7 × 2.5)
⑥ FP-547 flexible board (CN7211)
⑦ FP-497 flexible board (CN7205)
⑧ FP-503 flexible board (CN1009)
DB-016
VC-318
⑭ Screw (M1.7 × 2.5)
⑬ Screw (M1.7 × 2.5)
⑮ Open the jack cover.
⑰ MD block
⑨ Flexible board (CF1870) (CN7200)
⑫ Screw (M1.7 × 2.5)
⑩ Flexible board (PS1870) (CN7201)
⑪ Two flexible boards (JK-222) (CN1005, 7204)

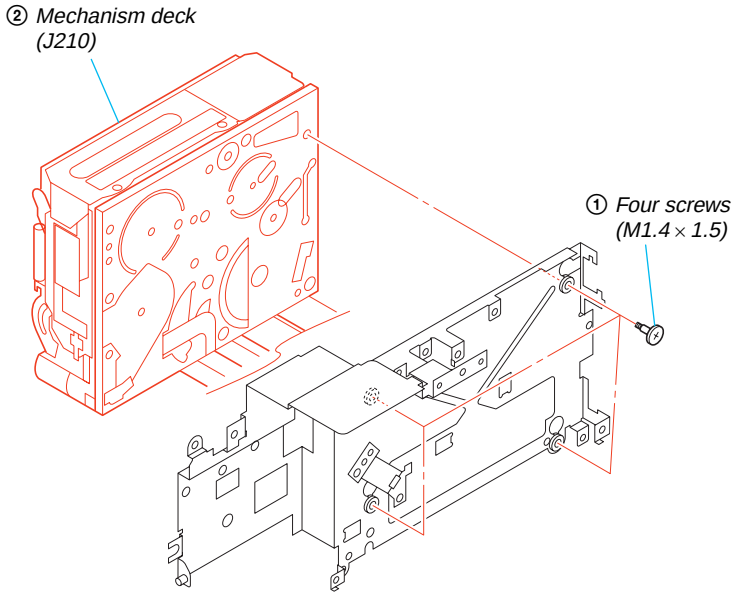
2-14. LENS BLOCK



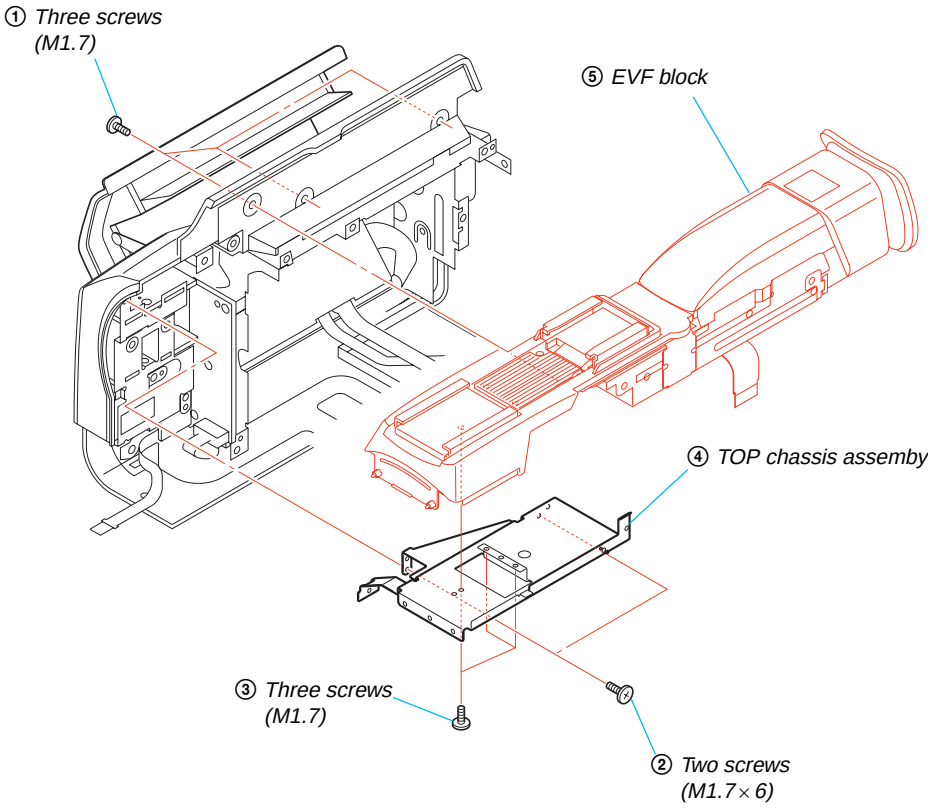
2-15. VC-318 BOARD



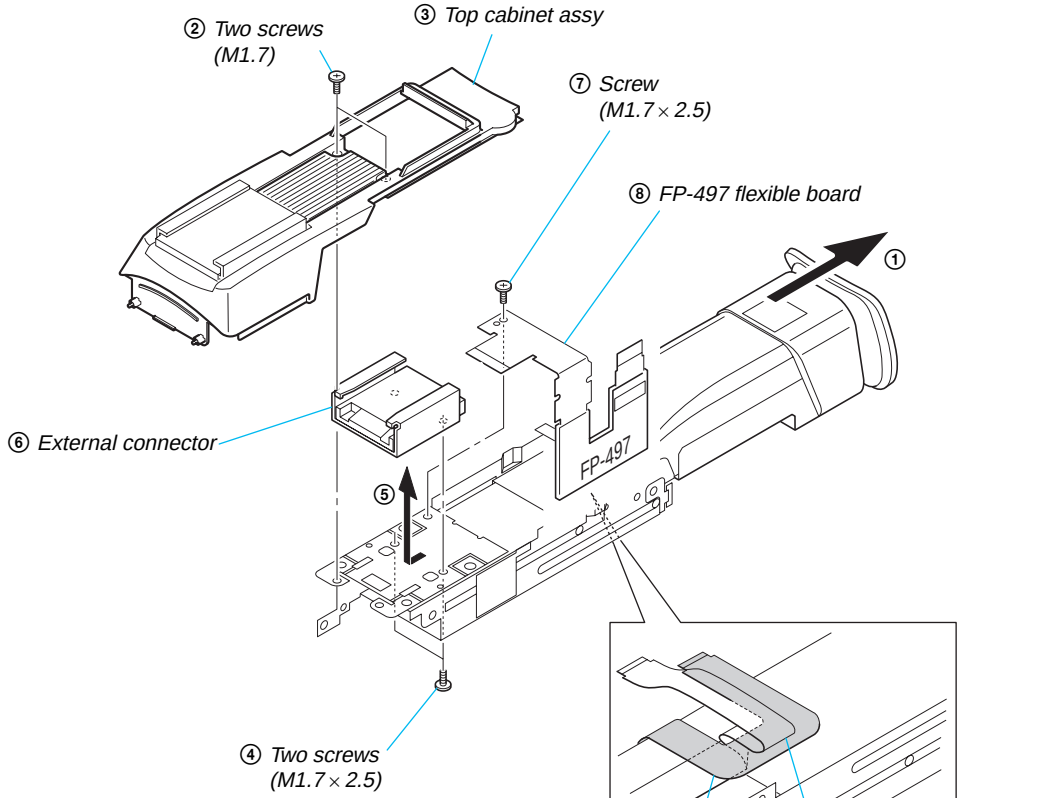
2-16. MECHANISM DECK (J210)



2-17. EVF BLOCK

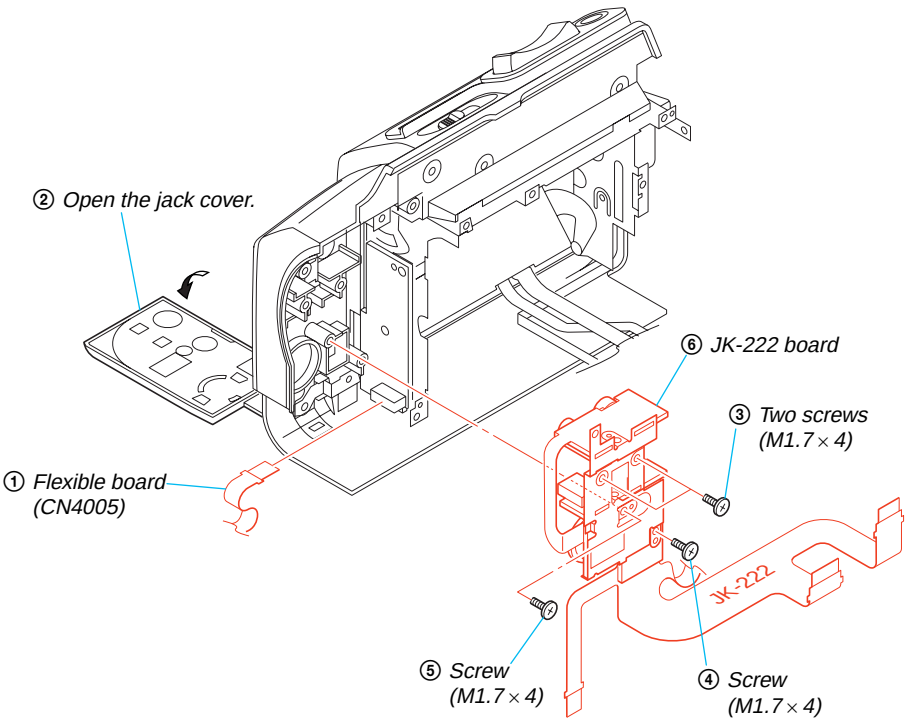


2-18. FP-497 FLEXIBLE BOARD



Note: *When installing FP-497 flexible board and FP-547 flexible board, please attach, as shown in a figure.*

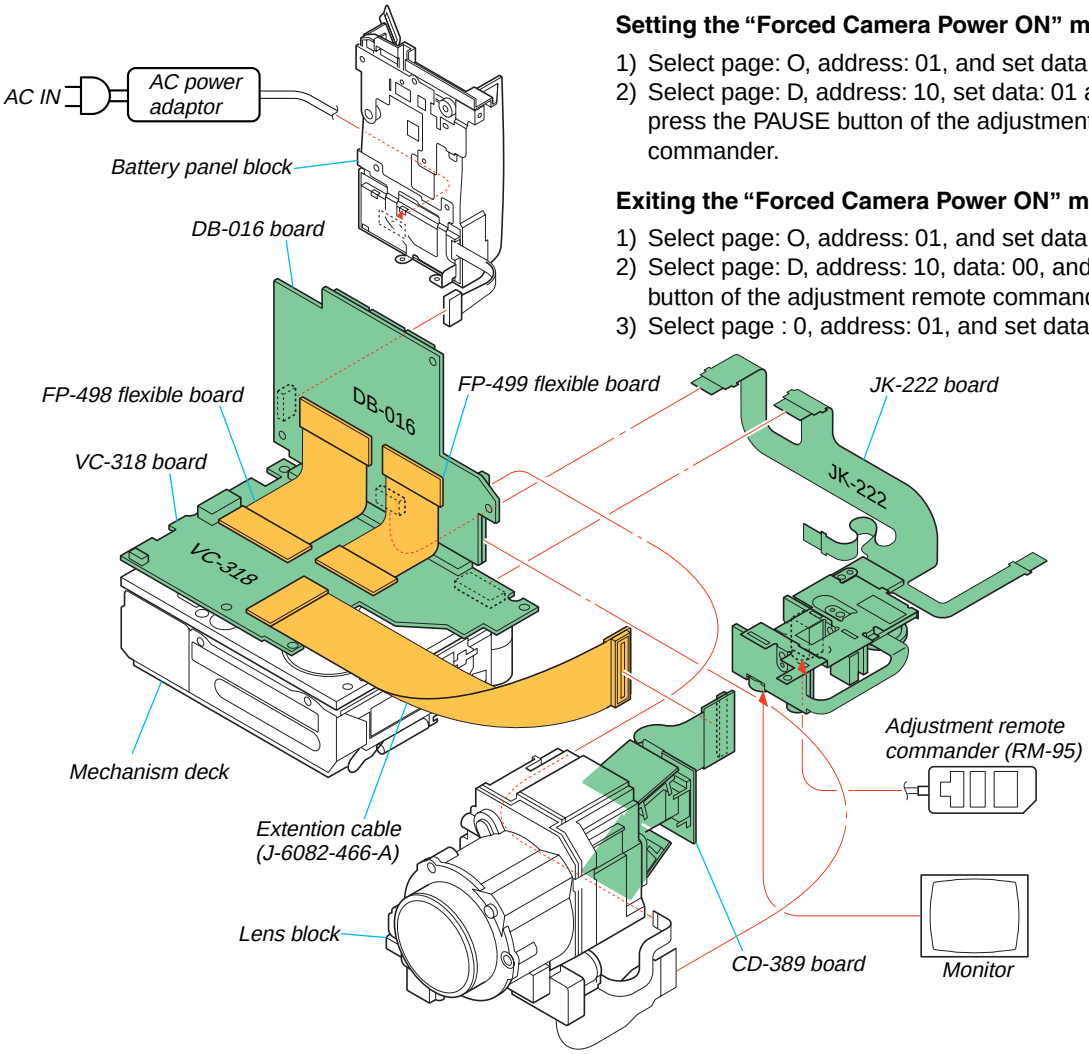
2-19. JK-222 BOARD



[SERVICE POSITION TO CHECK THE CAMERA SECTION]

Connection to Check the Camera Section

To check the camera section, set the camera to the “Forced camera power ON” mode.
Operate the camera functions of the zoom and focus using the adjustment remote commander (with the HOLD switch set in the OFF position).



Setting the “Forced Camera Power ON” mode

1) Select page: O, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01 and press the PAUSE button of the adjustment remote commander.

Exiting the “Forced Camera Power ON” mode

1) Select page: O, address: 01, and set data: 01.
2) Select page: D, address: 10, data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page : 0, address: 01, and set data: 00.

[SERVICE POSITION TO CHECK THE VTR SECTION]

Connection to Check the VTR Section

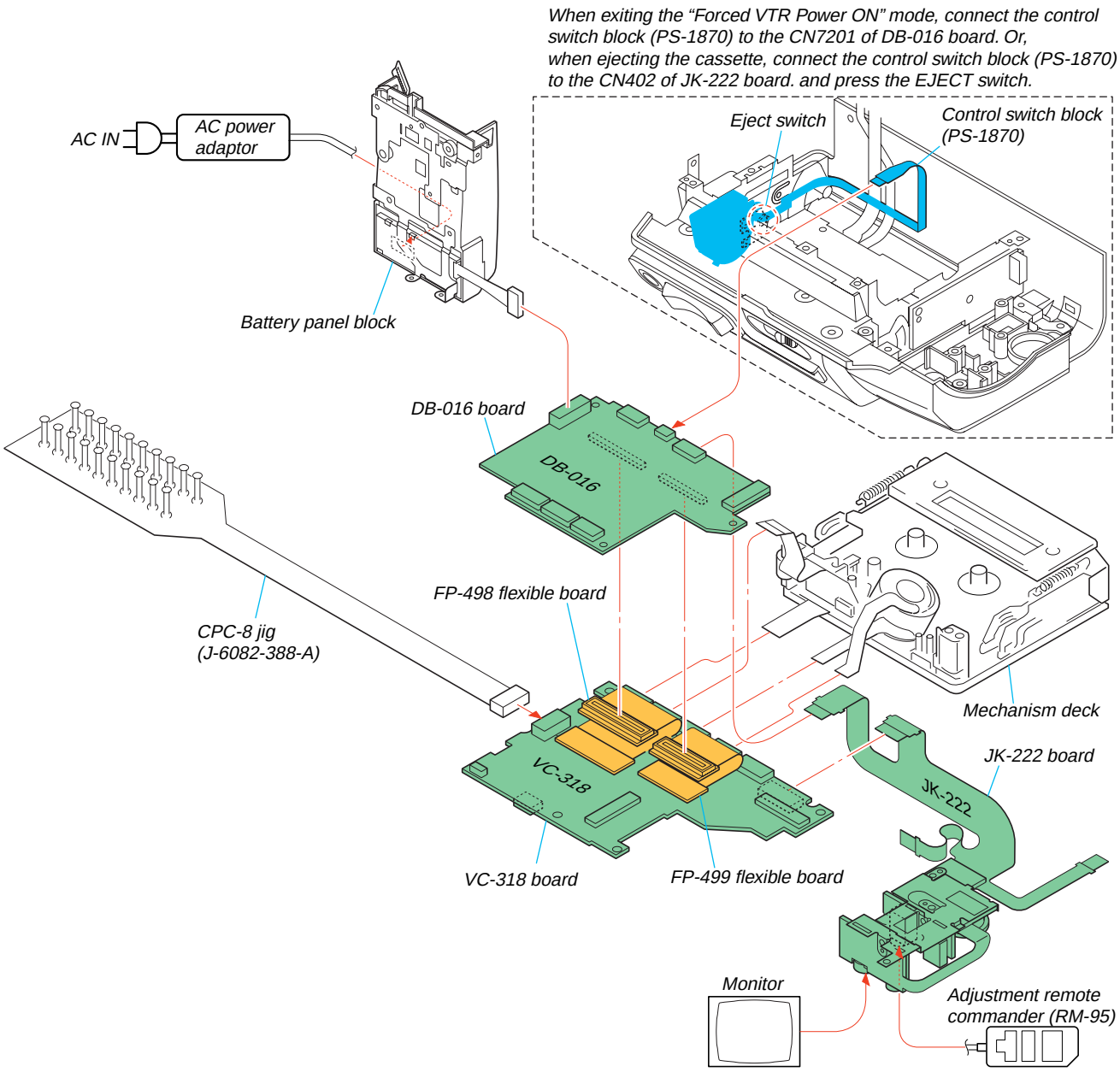
To check the VTR section, set the VTR to the “Forced VTR power ON” mode. (Or, connect the control switch block (PS-1870) to the CN7201 of DB-016board and set the power switch to the “VIDEO” position.)
Operate the VTR function using the adjustment remote commander (with the HOLD switch set in the OFF position).

Setting the “Forced VTR Power ON” mode

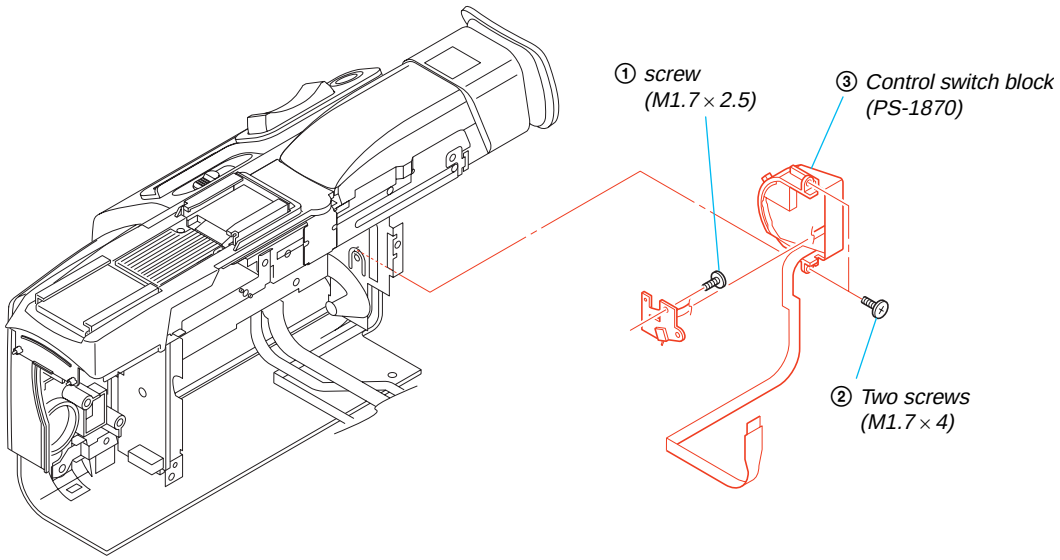
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02 and press the PAUSE button of the adjustment remote commander.

Exiting the “Forced VTR Power ON” mode

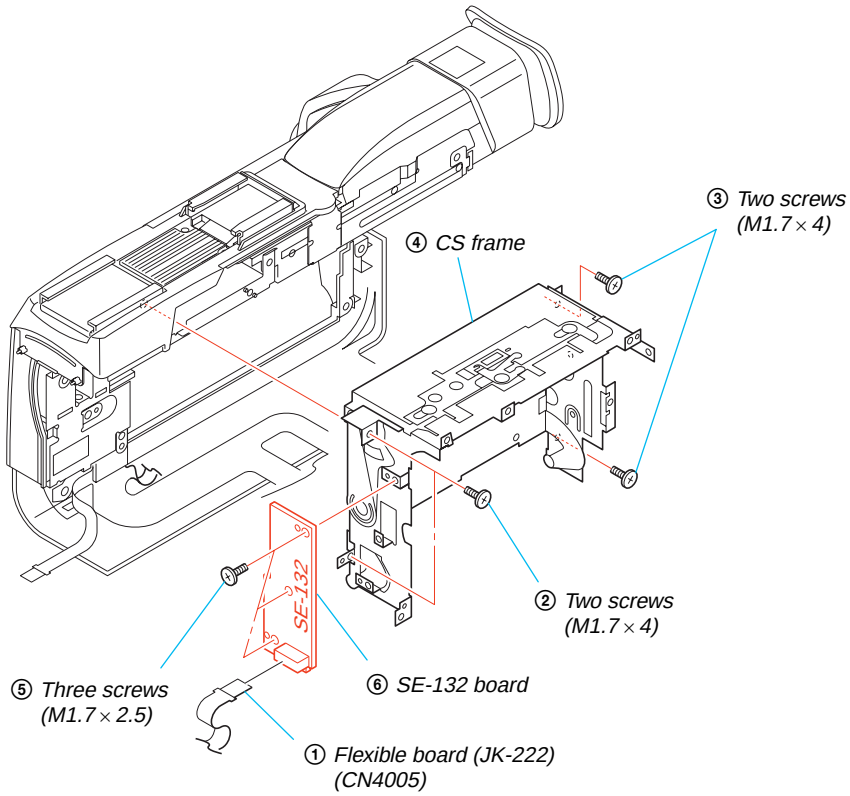
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.



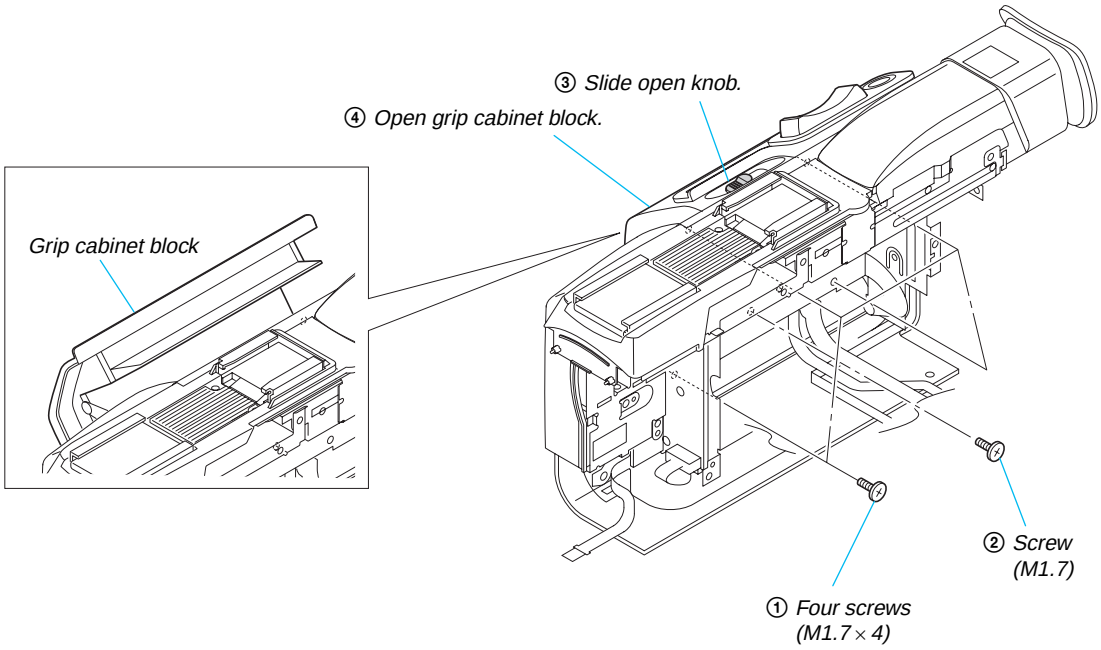
2-20. CONTROL SWITCH BLOCK (PS-1870)

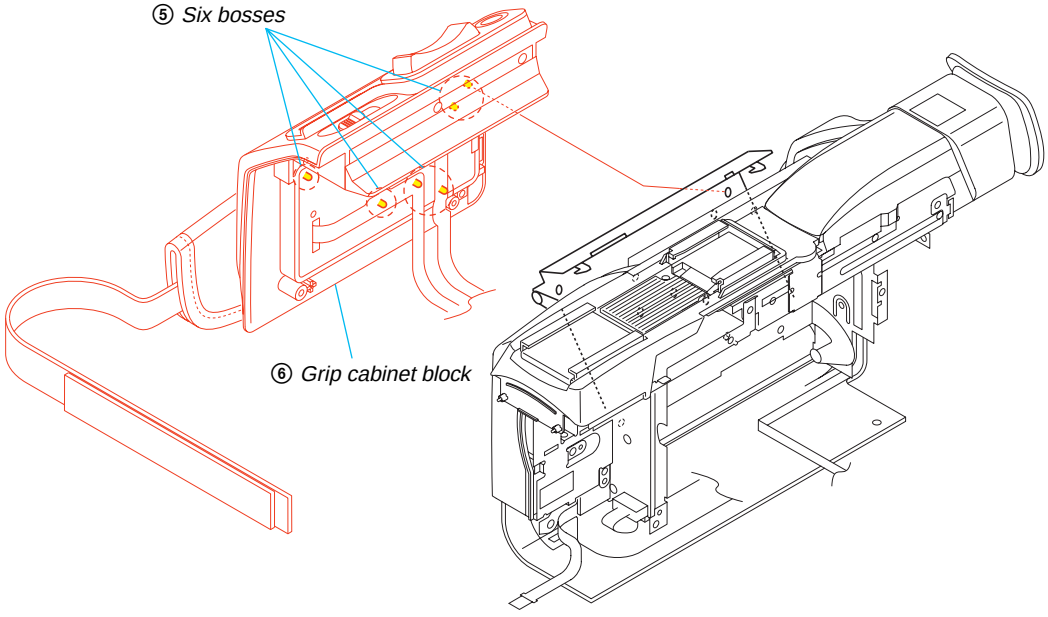


2-21. SE-132 BOARD

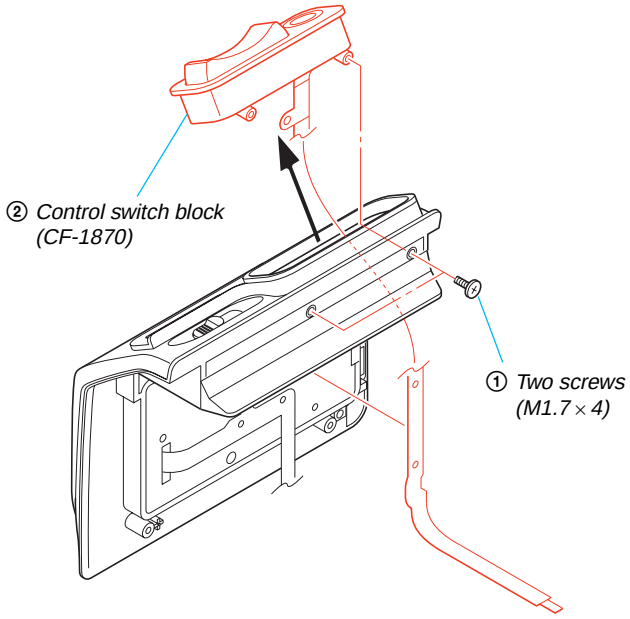


2-22. GRIP CABINET BLOCK

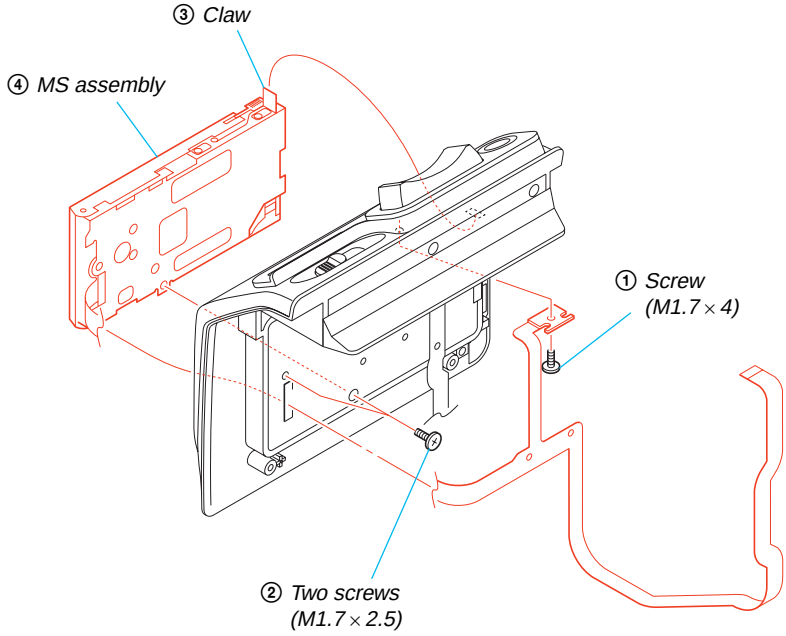




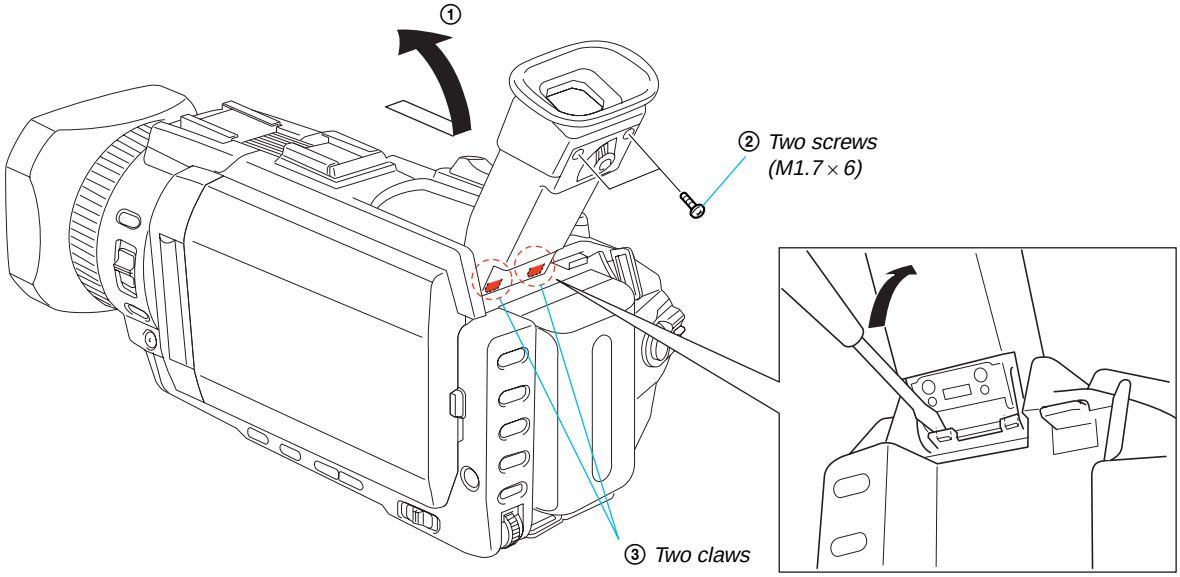
2-23. CONTROL SWITCH BLOCK (CF-1870)

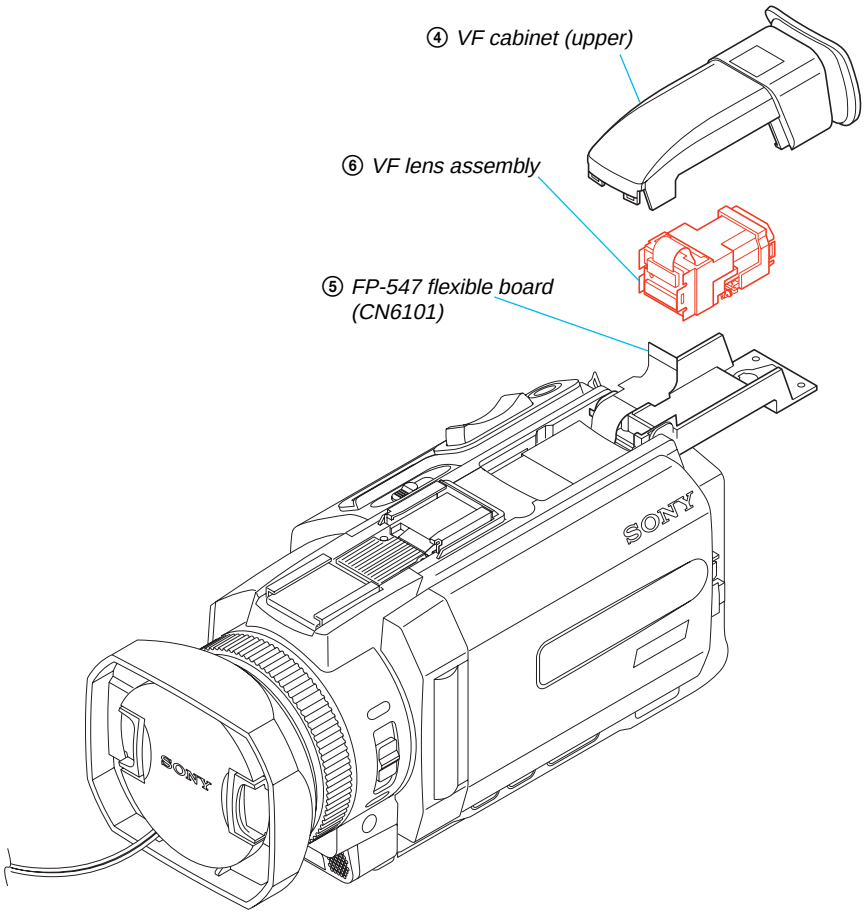


2-24. MS ASSEMBLY

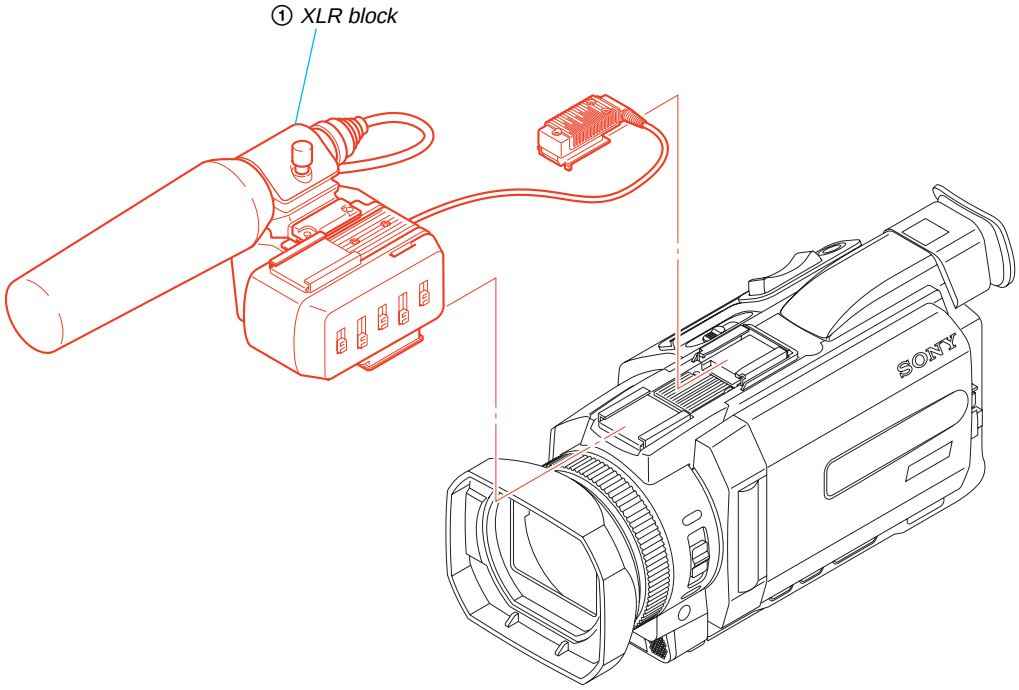


2-25. VF LENS ASSEMBLY

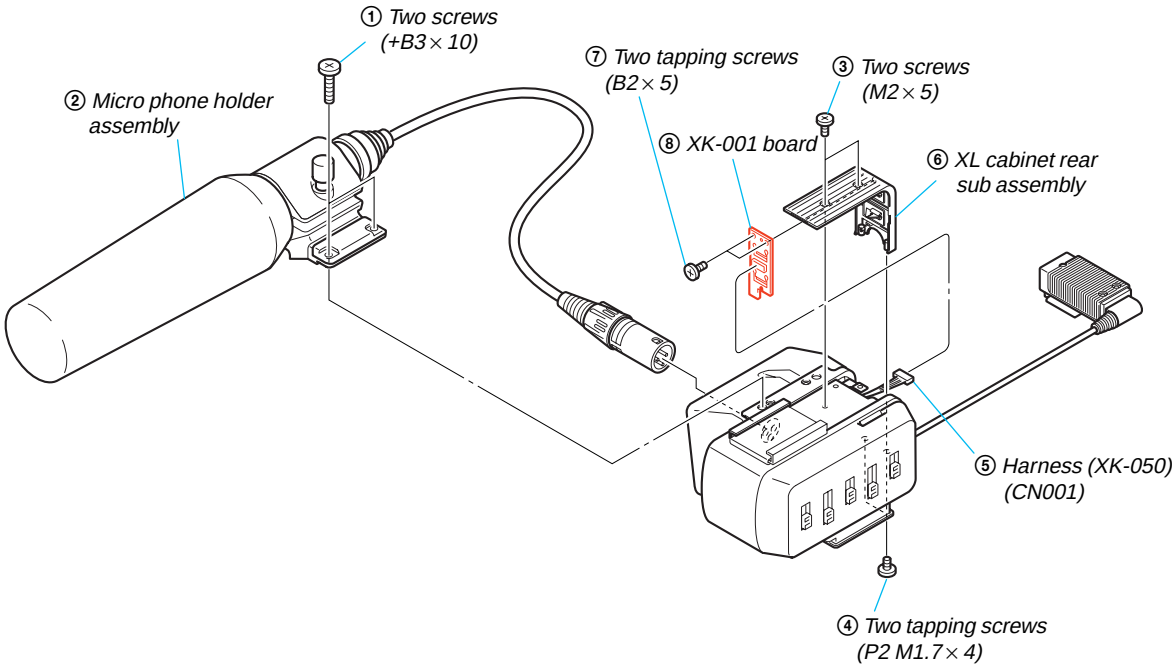




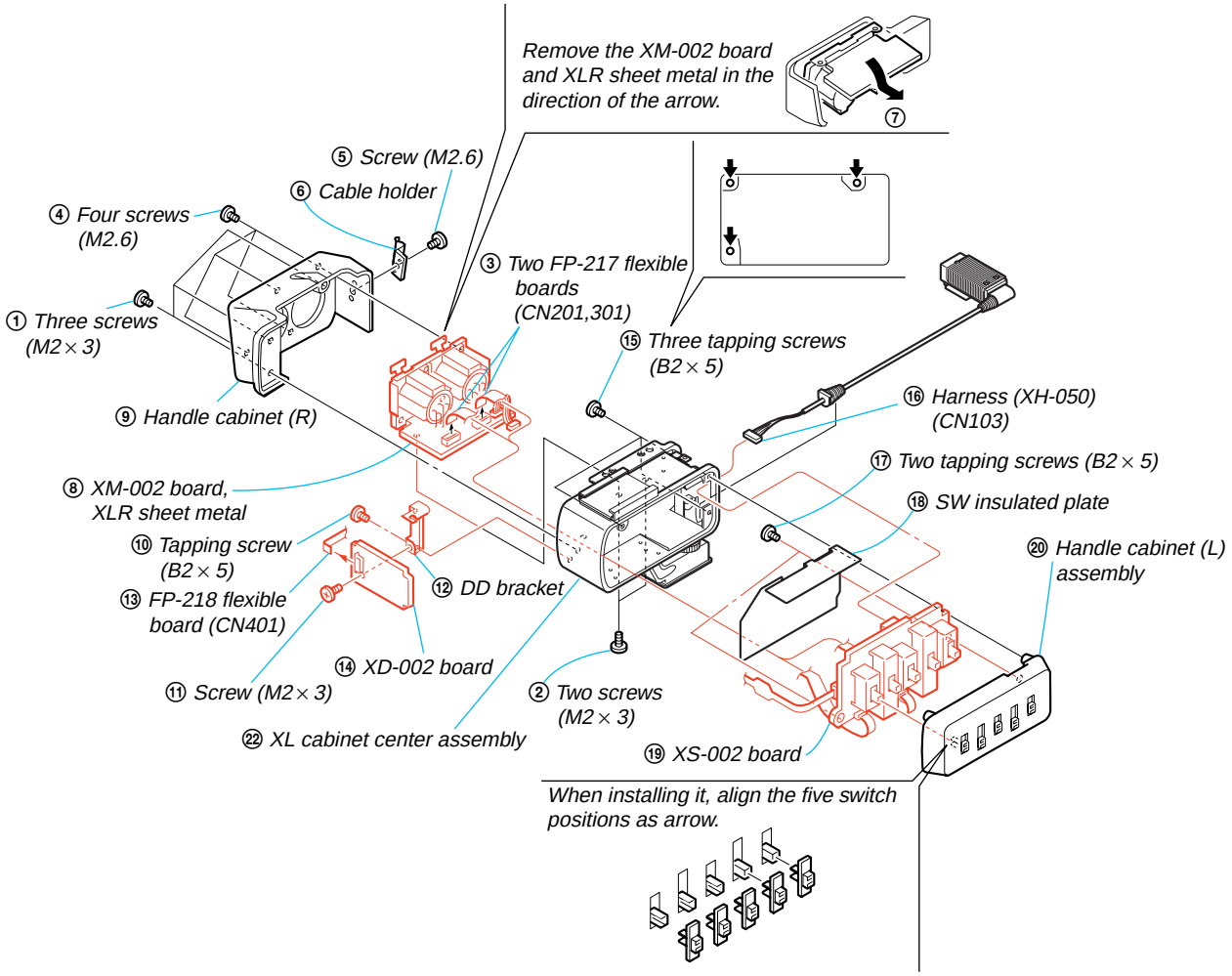
2-26. XLR BLOCK



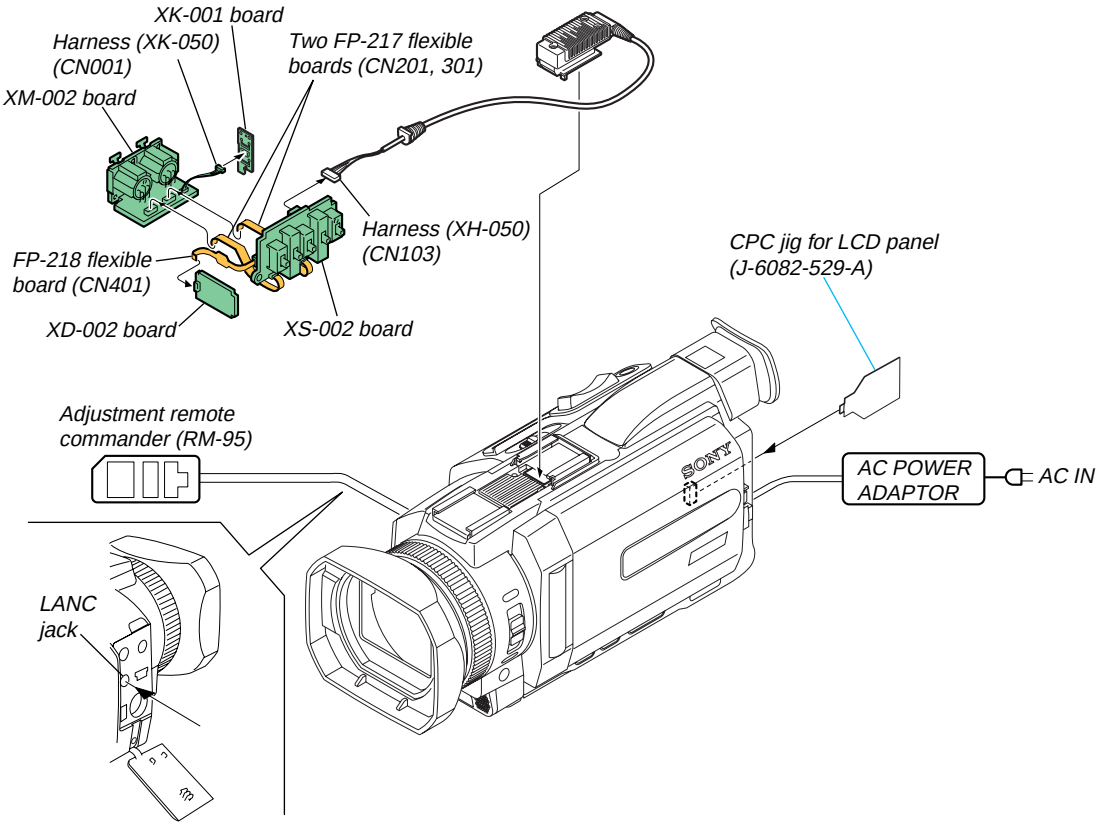
2-27. XK-001 BOARD



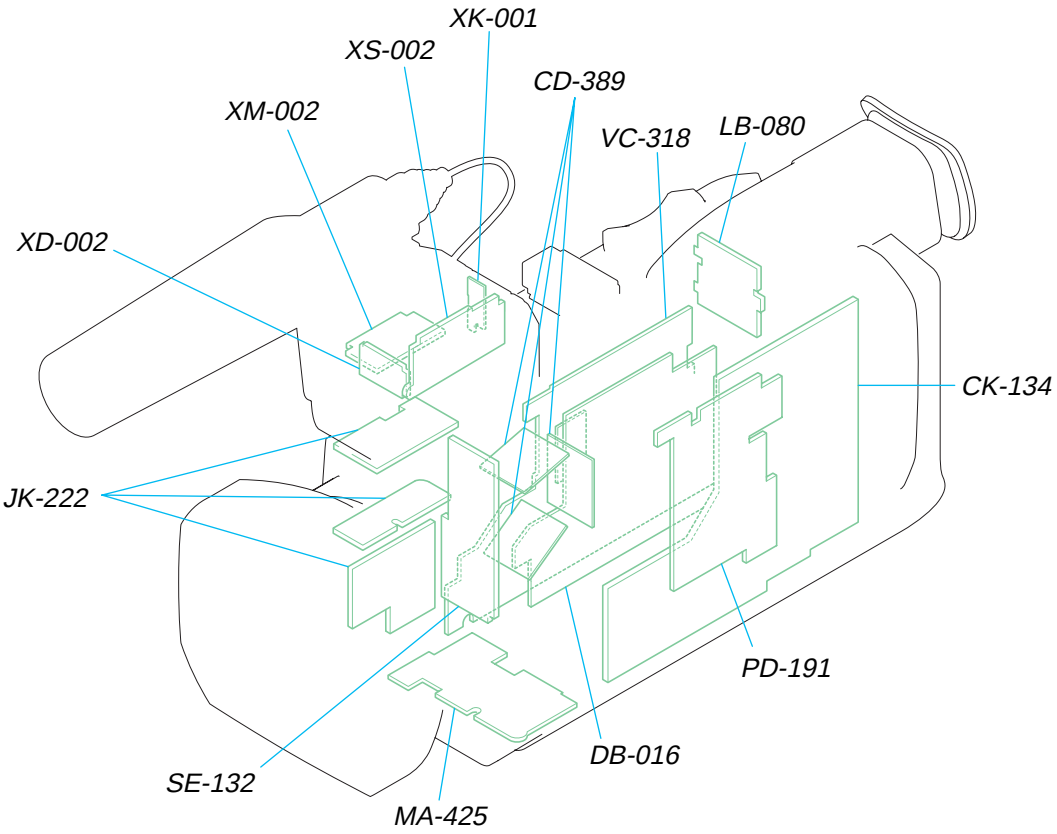
2-28. XM-002 BOARD, XD-002 BOARD, XS-002 BOARD



[SERVICE POSITION TO CHECK XLR SECTION]

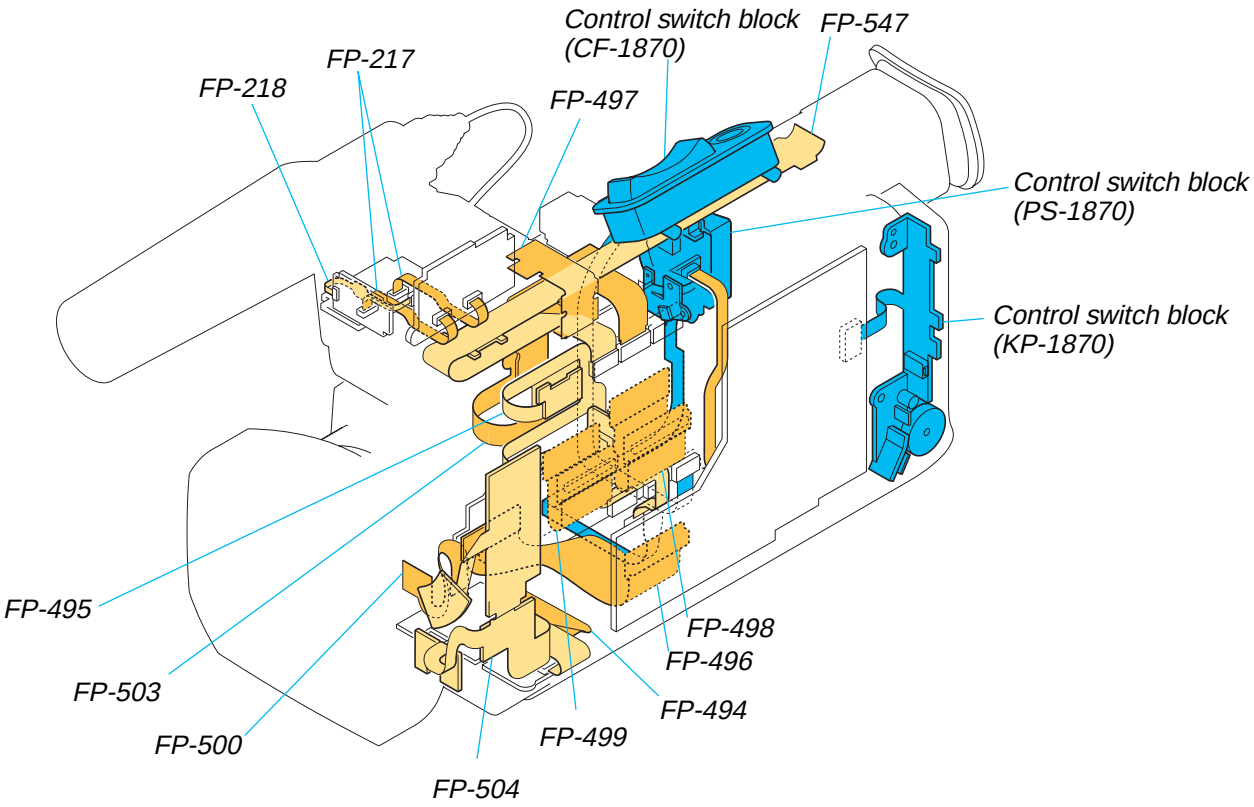


2-29. CIRCUIT BOARDS LOCATION



Board Name	Function
CD-389	CCD IMAGER
CK-134	CONTROL SWITCH
DB-016	LENS MOTOR DRIVE, VAP DRIVER, MIC VOL, AUDIO PROCESS, VIDEO IN/OUT, EVF DRIVE, TIMING GENERATOR, CONNECTOR, DC/DC CONTROL
JK-222	AV IN/OUT, DV/USB CONNECTOR
LB-080	EVF, EVF BACK LIGHT
MA-425	MIC AMP, AF LASER CONTROL
PD-191	LCD DRIVER TIMING GENERATOR, BACK LIGHT
SE-132	PITCH/YAW SENSOR
VC-318	A/D CONVERTER, TIMING GENERATOR, CAMERA RGB PROCESS, CAMERA PROCESS, MPEG MOVIE/DIGITAL STILL PROCESS, HI CONTROL, DIGITAL STILL CONTROL, FLASH MEMORY, SDRAM, DV SIGNAL PROCESS, DV INTERFACE, REC/PB AMP, USB INTERFACE, VIDEO A/D CONVERTER, DRUM/CAPSTAN/LOADING DRIVE, CAMERA/MECHA CONTROL, HI CONTROL, LANC, RESET, BEEP, AFLD, CONNECTOR, EVR
XD-002	DC/DC CONVERTER SIRCS
XK-001	LOW CUT SW
XM-002	MIC AMP
XS-002	MIC SELECT

2-30. FLEXIBLE BOARDS LOCATION



COVER

3. BLOCK DIAGRAMS

Link

OVERALL BLOCK DIAGRAM (1/5)	POWER BLOCK DIAGRAM (1/3)
OVERALL BLOCK DIAGRAM (2/5)	POWER BLOCK DIAGRAM (2/3)
OVERALL BLOCK DIAGRAM (3/5)	POWER BLOCK DIAGRAM (3/3)
OVERALL BLOCK DIAGRAM (4/5)	
OVERALL BLOCK DIAGRAM (5/5)	

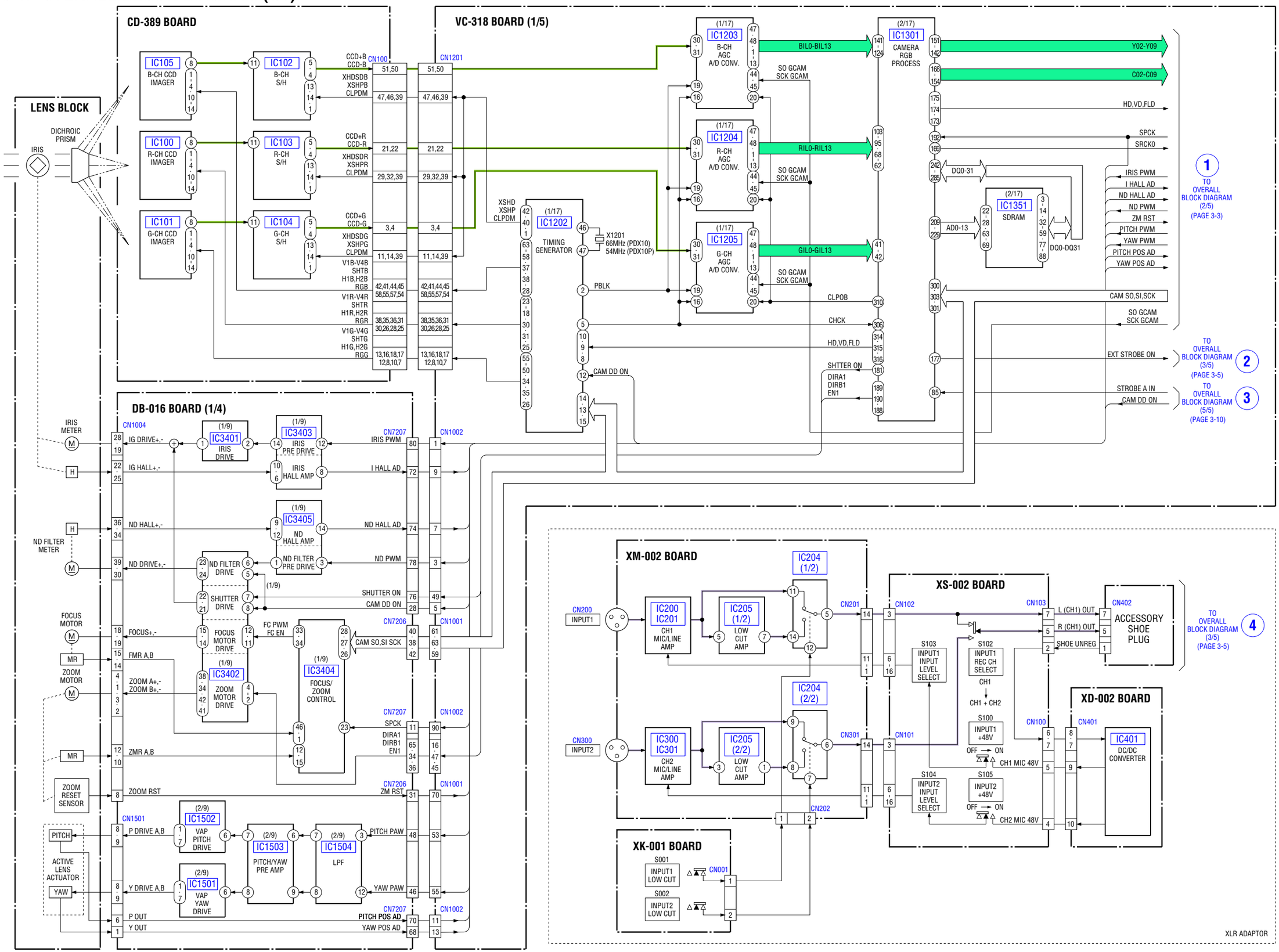
COVER

SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/5)

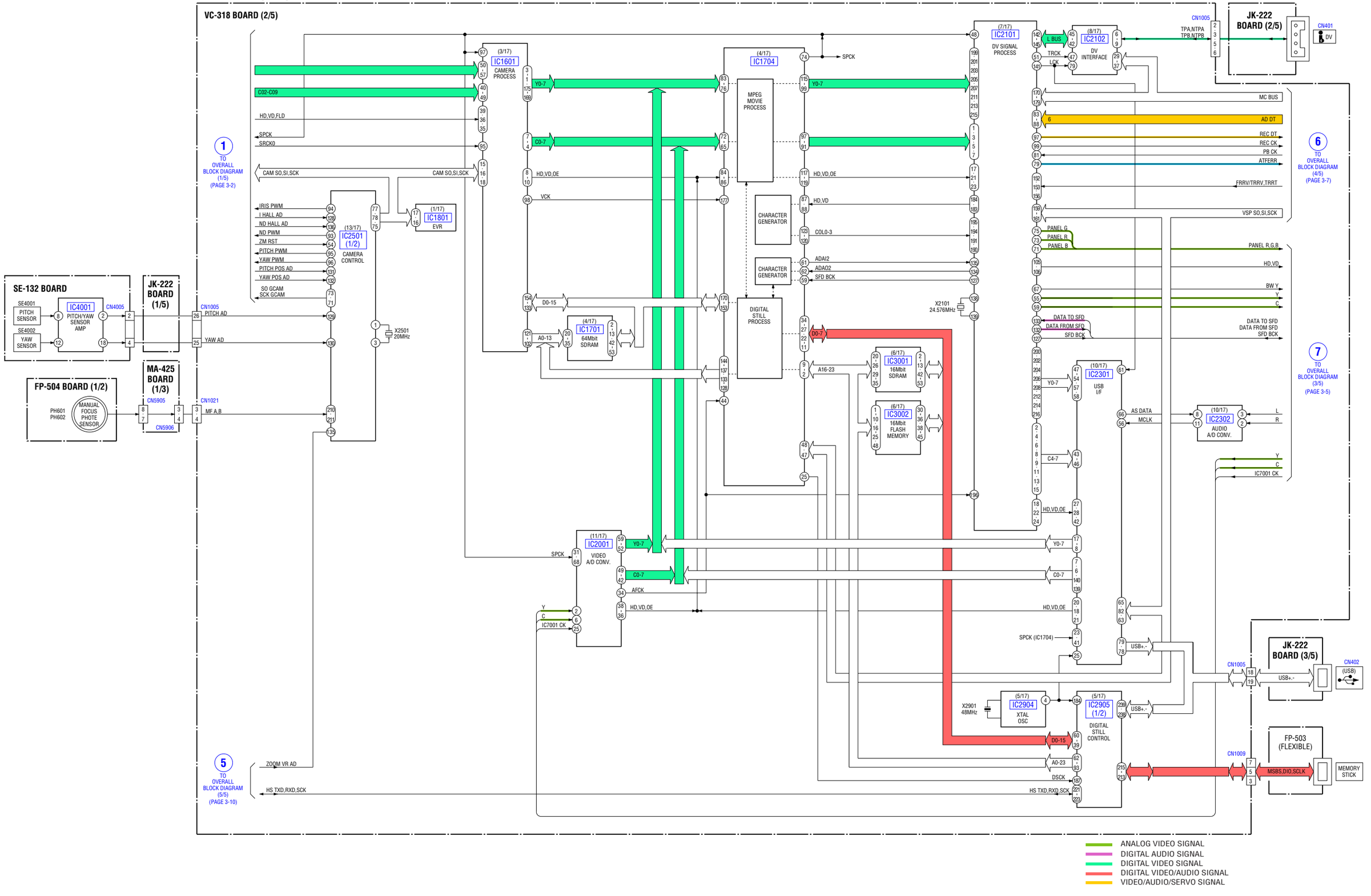
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

ANALOG VIDEO SIGNAL
ANALOG AUDIO SIGNAL
DIGITAL VIDEO SIGNAL



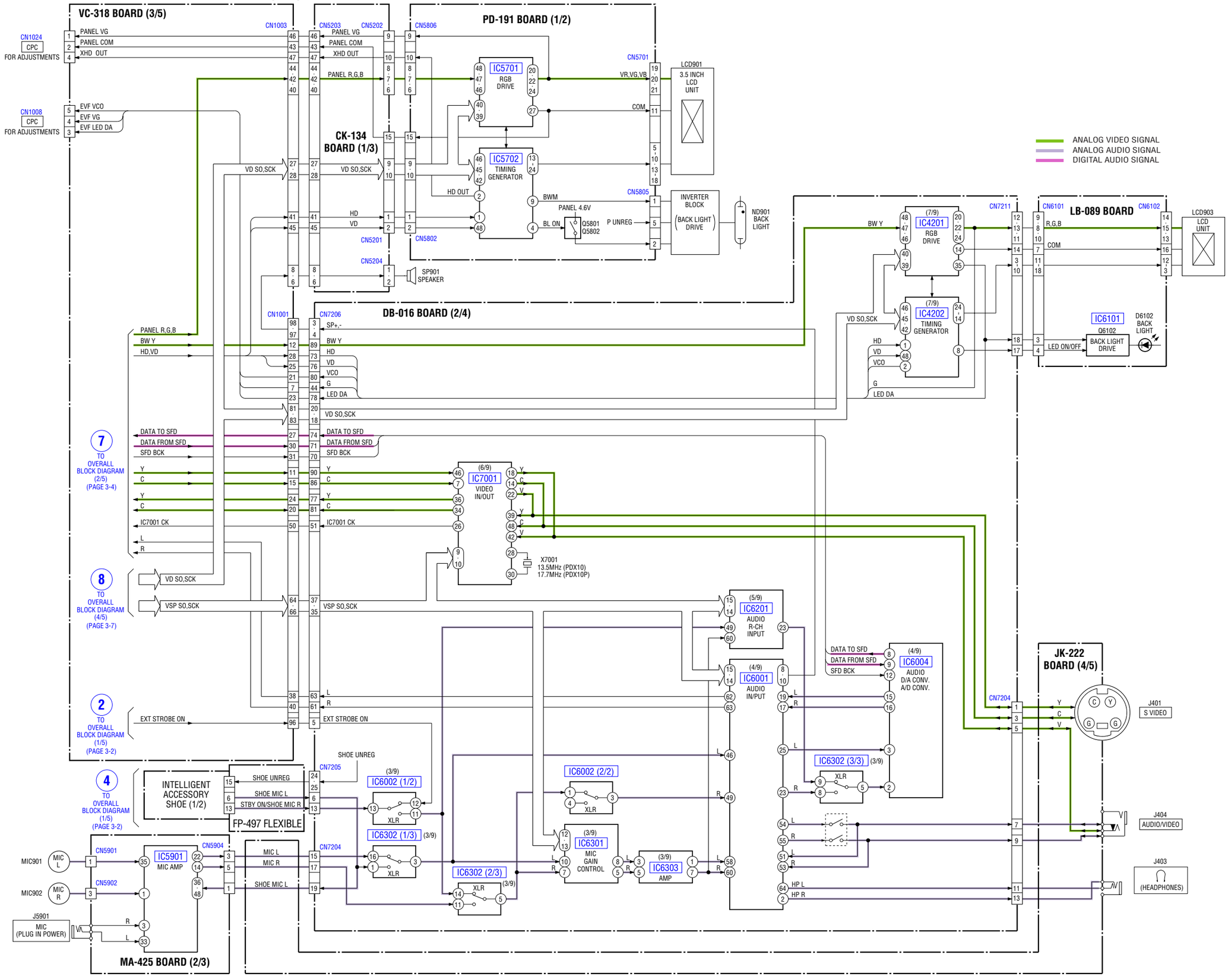
3-2. OVERALL BLOCK DIAGRAM (2/5)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



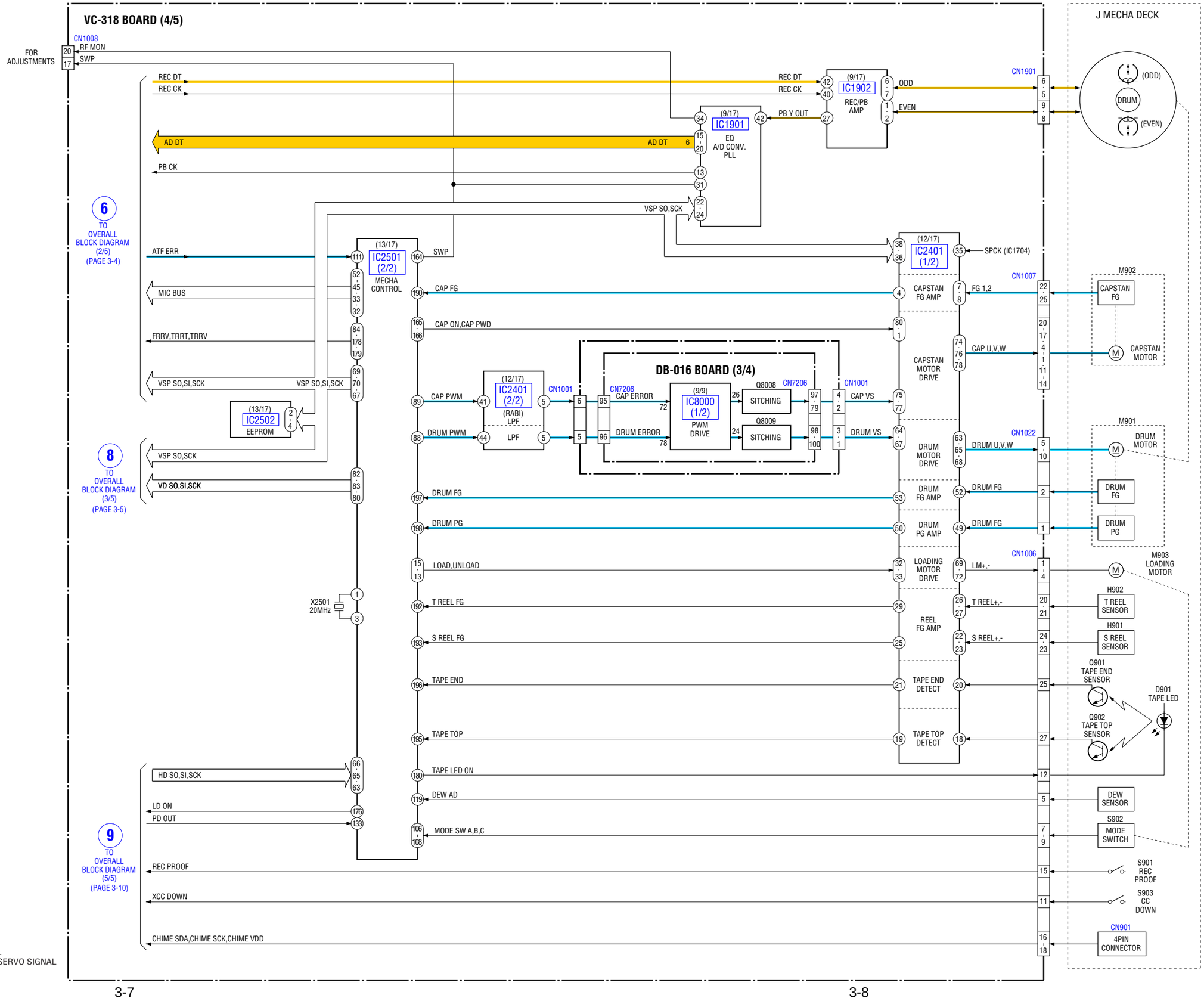
3-3. OVERALL BLOCK DIAGRAM (3/5)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3-4. OVERALL BLOCK DIAGRAM (4/5)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

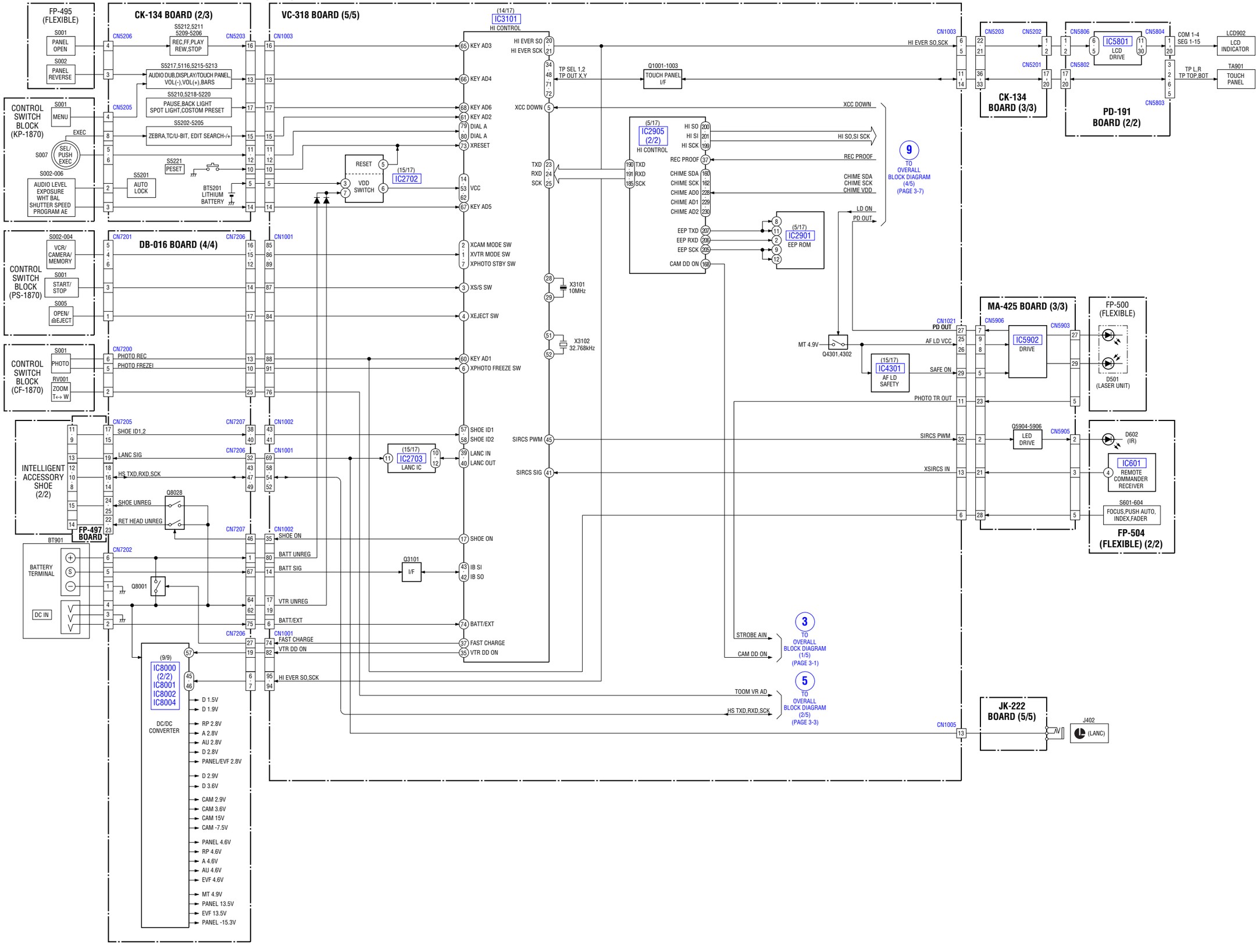


COVER

3. BLOCK DIAGRAMS

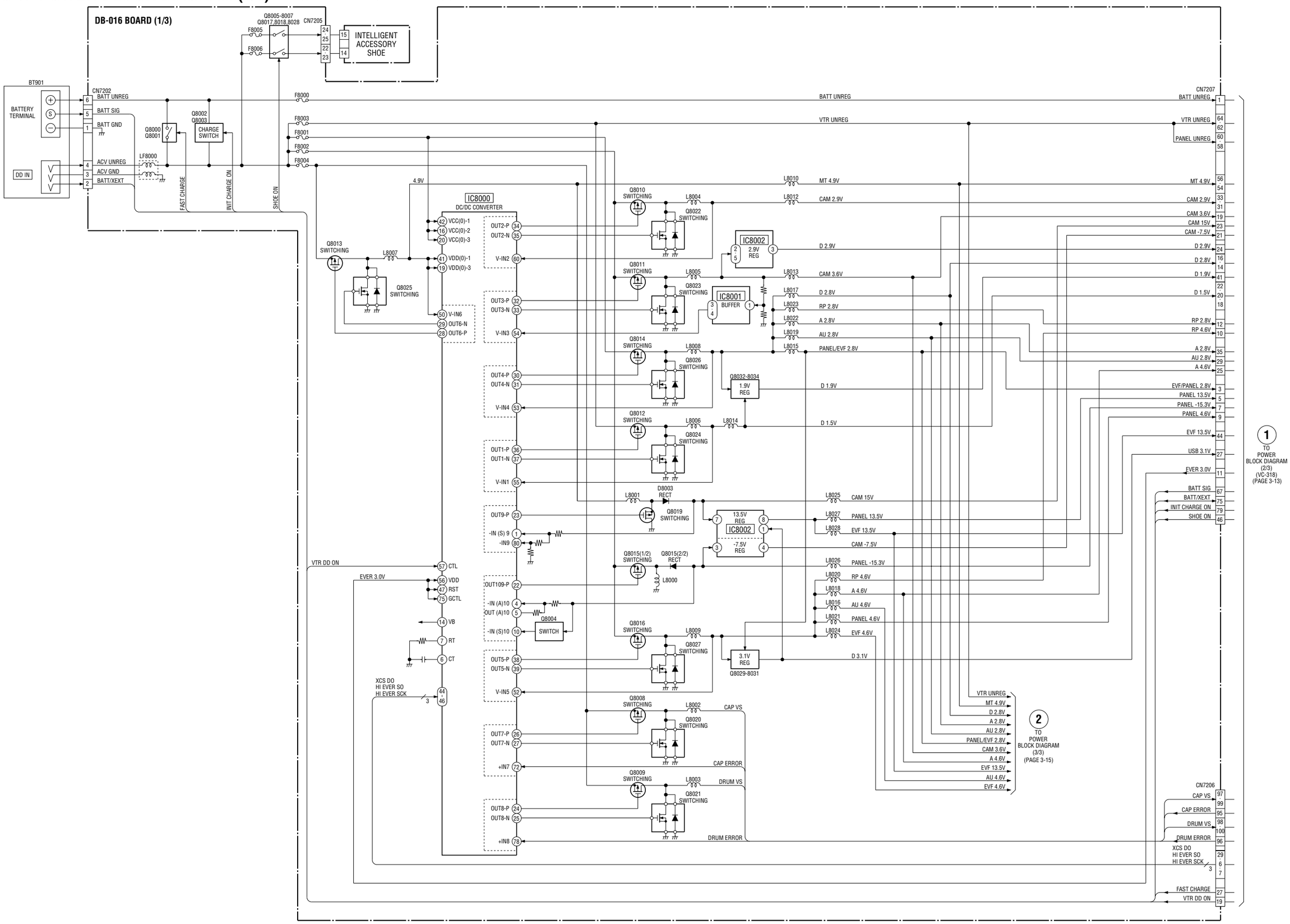
3-5. OVERALL BLOCK DIAGRAM (5/5)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3-6. POWER BLOCK DIAGRAM (1/3)

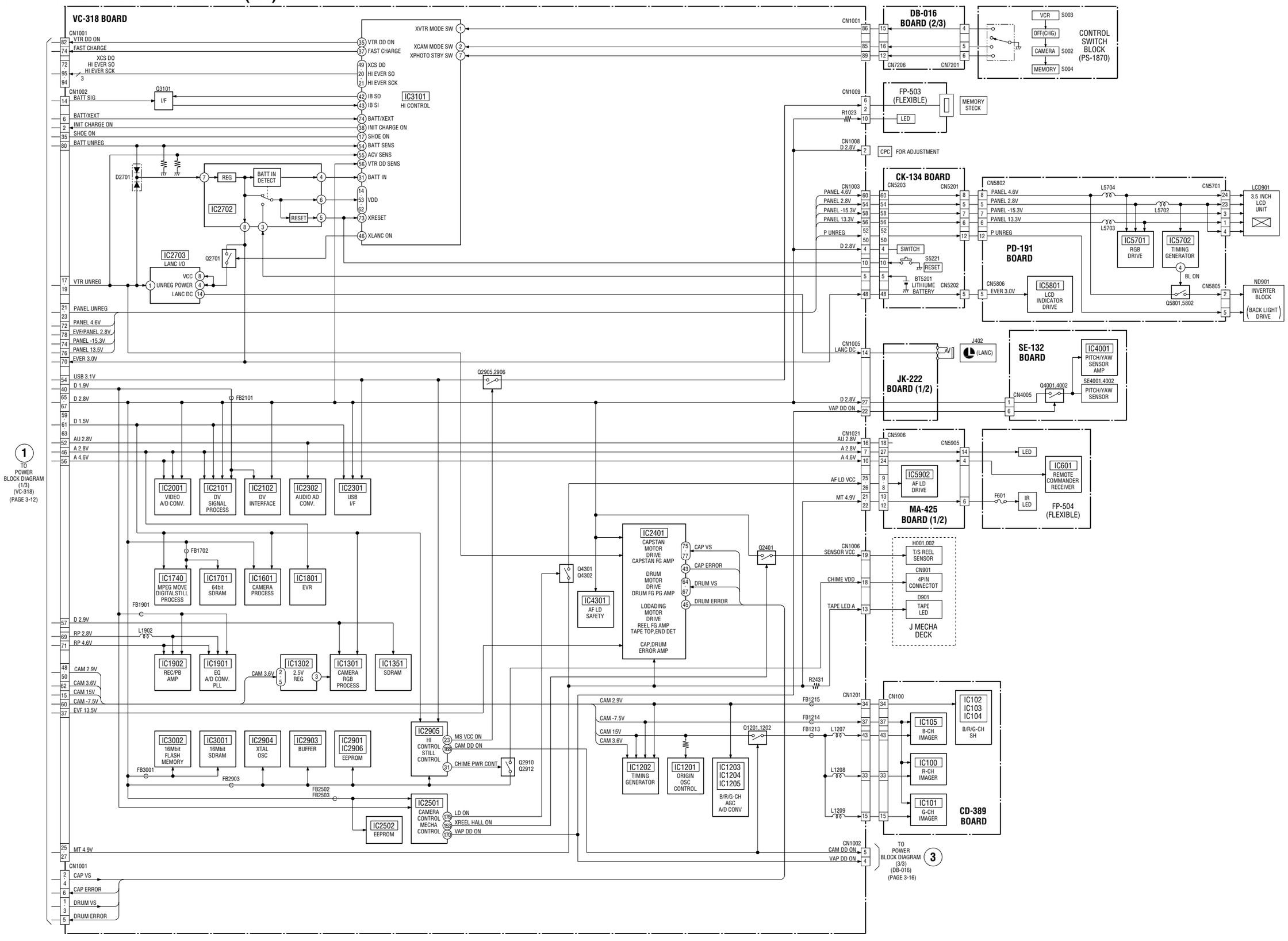
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



COVER

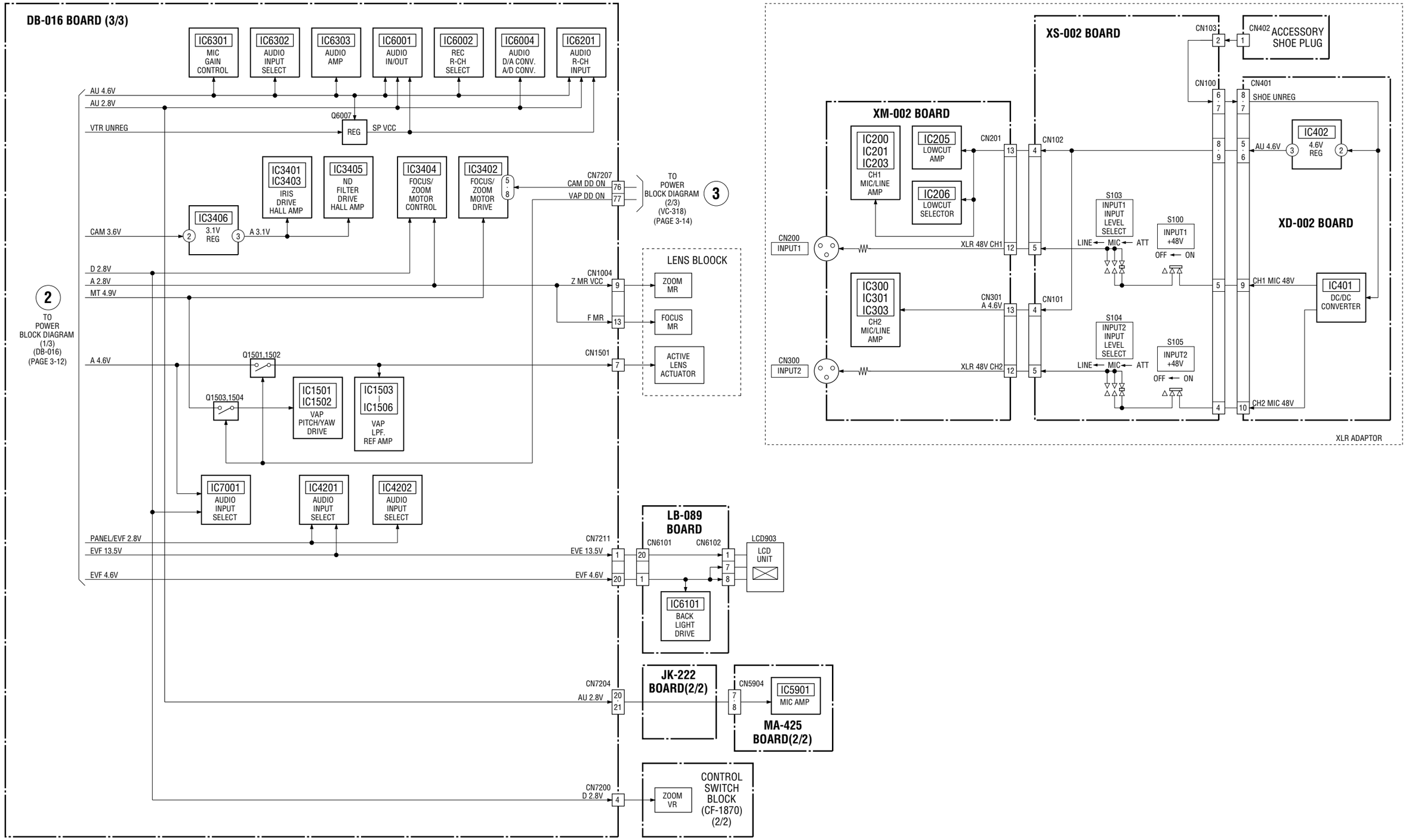
3-7. POWER BLOCK DIAGRAM (2/3)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



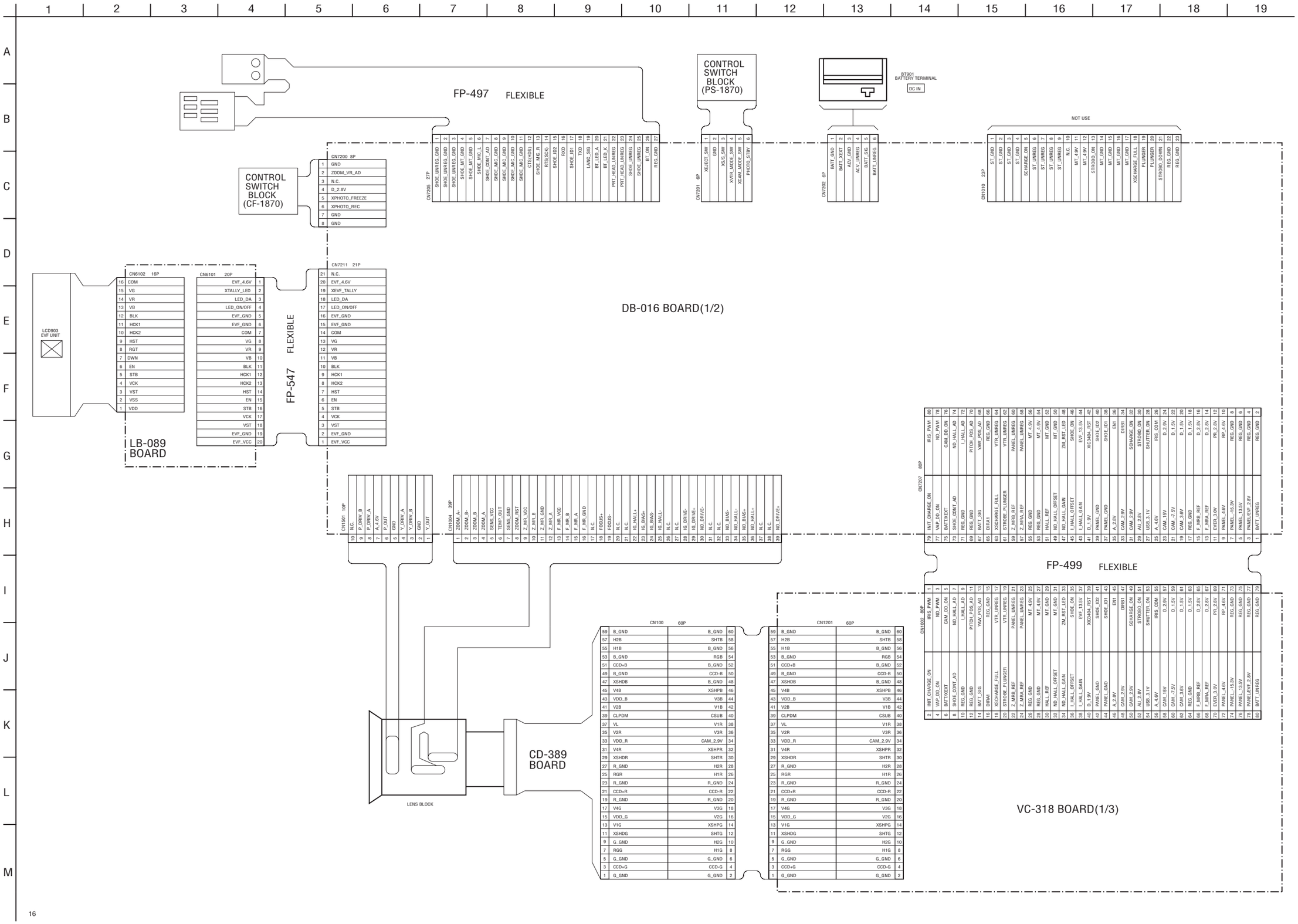
3-8. POWER BLOCK DIAGRAM (3/3)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.

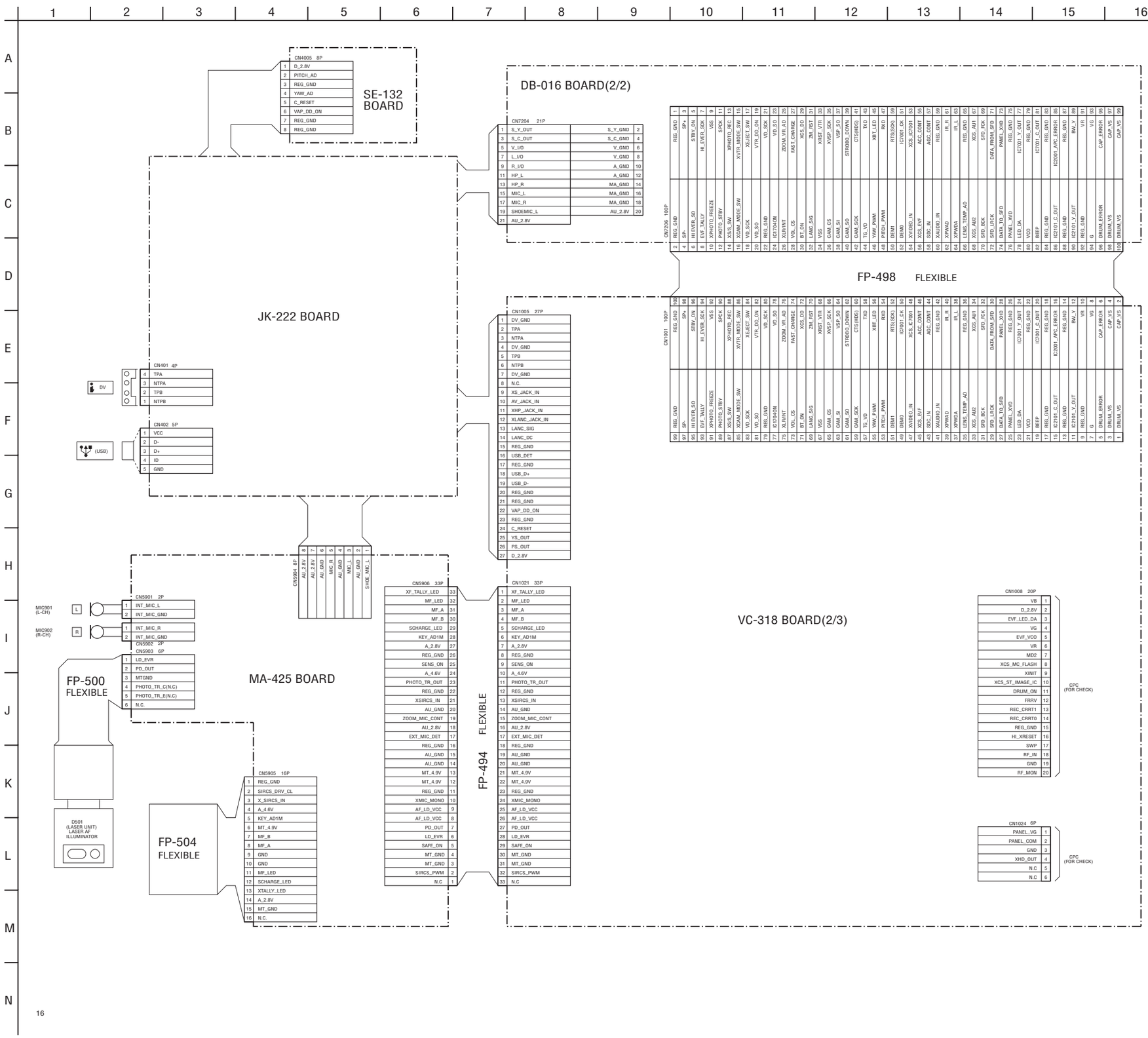


SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/4)



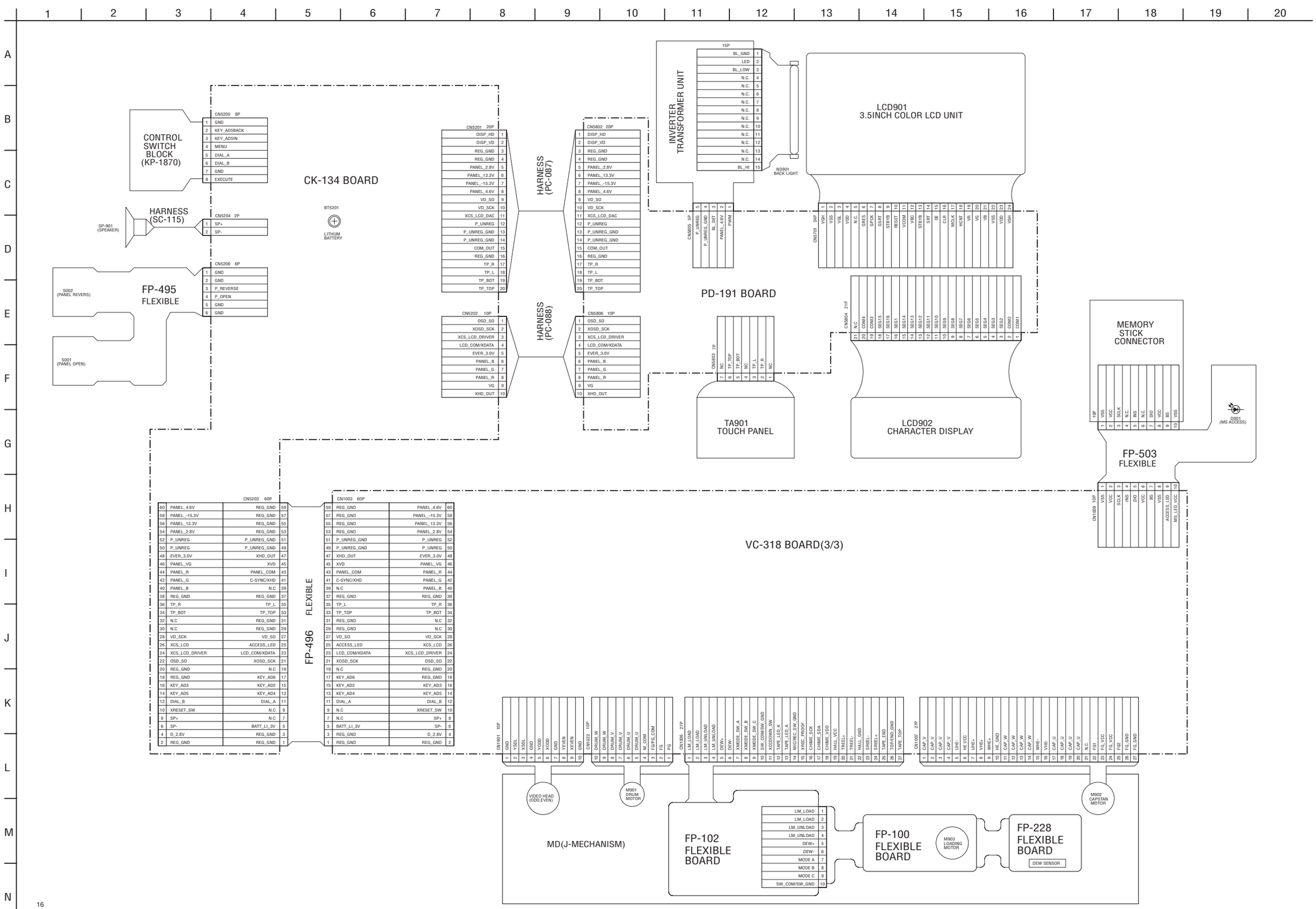
FRAME SCHEMATIC DIAGRAM (2/4)



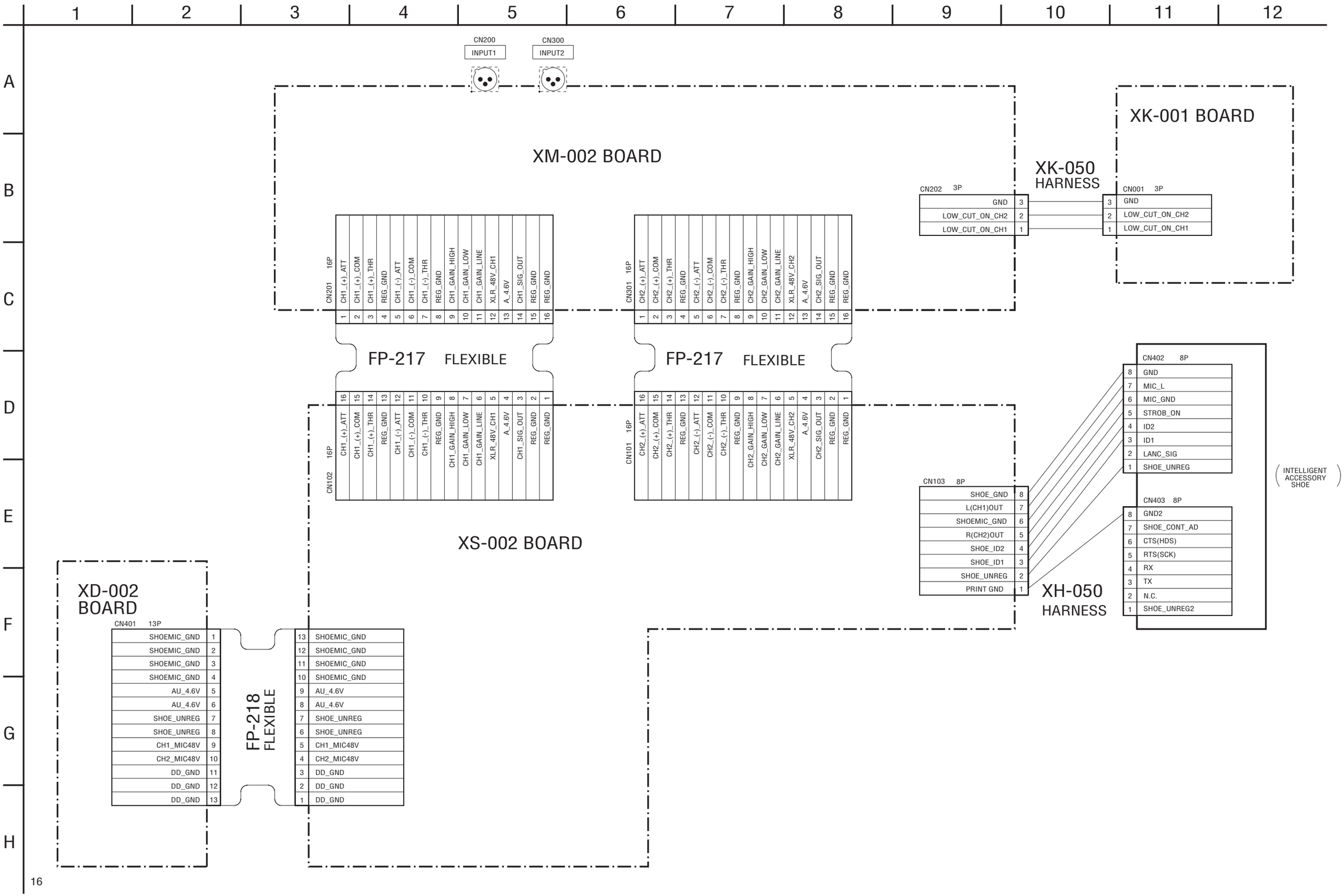
16

FRAME SCHEMATIC DIAGRAM (2/4)

FRAME SCHEMATIC DIAGRAM (3/4)



FRAME SCHEMATIC DIAGRAM (4/4)



COVER

4-2. SCHEMATIC DIAGRAMS (1/2)

Link

TO (2/2)

CD-389 BOARD (CCD IMAGER)	VC-318 BOARD (5/17) (HI CONTROL, DIGITAL STILL CONTROL)
SE-132 BOARD (PITCH/YAW SENSOR)	VC-318 BOARD (6/17) (FLASH MEMORY, SDRAM)
MA-425 BOARD (MIC AMP, AF LASER CONTROL)	VC-318 BOARD (7/17) (DV SIGNAL PROCESS)
CK-134 BOARD (CONTROL SWITCH)	VC-318 BOARD (8/17) (DV INTERFACE)
JK-222 BOARD (AV IN/OUT, DV/USB CONNECTOR)	VC-318 BOARD (9/17) (REC/PB AMP)
PD-191 BOARD (1/2) (LCD DRIVER, TIMING GENERATOR)	VC-318 BOARD (10/17) (USB INTERFACE)
PD-191 BOARD (2/2) (LCD DRIVER, BACKLIGHT)	VC-318 BOARD (11/17) (VIDEO A/D CONVERTER)
LB-089 BOARD (EVF, EVF BACK LIGHT)	VC-318 BOARD (12/17) (DRUM/CAPSTAN/LOADING DRIVE)
FP-504 FLEXIBLE BOARD	VC-318 BOARD (13/17) (CAMERA/MECHA CONTROL)
FP-100, FP-228, FP-102 FLEXIBLE BOARD (MODE SWITCH, DEW SENSOR, TAPE TOP/END SENSOR, S/T REEL)	VC-318 BOARD (14/17) (HI CONTROL)
VC-318 BOARD (1/17) (A/D CONVERTER, TIMING GENERATOR)	VC-318 BOARD (15/17) (LANC, RESET, BEEP, AFLD)
VC-318 BOARD (2/17) (CAMERA RGB PROCESSOR)	VC-318 BOARD (16/17) (CONNECTOR)
VC-318 BOARD (3/17) (CAMERA PROCESSOR)	VC-318 BOARD (17/17) (CONNECTOR, EVR)
VC-318 BOARD (4/17) (MPEG MOVIE/DIGITAL STILL PROCESS)	

COMMON NOTE FOR SCHEMATIC DIAGRAMS	WAVEFORMS

COVER

4-2. SCHEMATIC DIAGRAMS (2/2)

Link

TO (1/2)

- DB-016 BOARD (1/9) (LENS MOTOR DRIVE)
- DB-016 BOARD (2/9) (VAP DRIVER)
- DB-016 BOARD (3/9) (MIC VOL)
- DB-016 BOARD (4/9) (AUDIO PROCESSOR 1)
- DB-016 BOARD (5/9) (AUDIO PROCESSOR 2)
- DB-016 BOARD (6/9) (VIDEO IN/OUT)
- DB-016 BOARD (7/9) (EVF DRIVE, TIMING GENERATOR)
- DB-016 BOARD (8/9) (CONNECTOR)
- DB-016 BOARD (9/9) (DC/DC CONTROL)
- XD-002 BOARD (DC/DC CONVERTER)
- XS-002 BOARD (MIC SELECT)
- XM-002 BOARD (MIC AMP)
- XK-001 BOARD (LOW CUT SW)

- COMMON NOTE FOR SCHEMATIC DIAGRAMS
- WAVEFORMS

COVER

4-2. SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For schematic diagrams)

- All capacitors are in μF unless otherwise noted. pF : μμF. 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. kΩ=1000 Ω, MΩ=1000 kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example

C541	L452
22U	10UH
TA A	2520

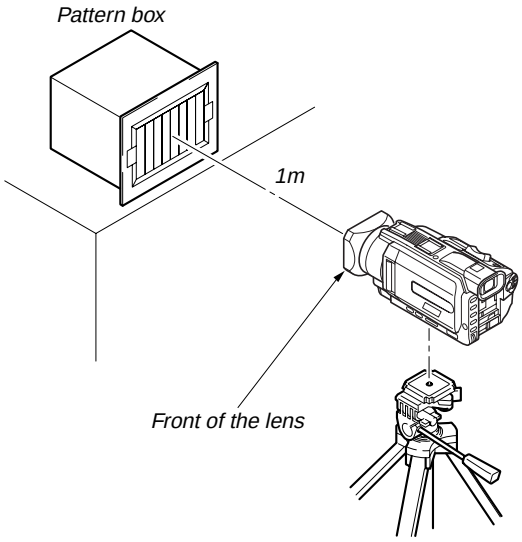
Kinds of capacitor
Temperature characteristics
External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination.
  Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B– Line
- : IN/OUT direction of (+,–) B LINE.
- : adjustment for repair.
- : VIDEO SIGNAL (ANALOG)
- : AUDIO SIGNAL (ANALOG)
- : VIDEO/AUDIO SIGNAL
- : VIDEO/AUDIO/SERVO SIGNAL
- : SERVO SIGNAL
- Circled numbers refer to waveforms.

(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.
  (VOM of DC 10 MΩ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

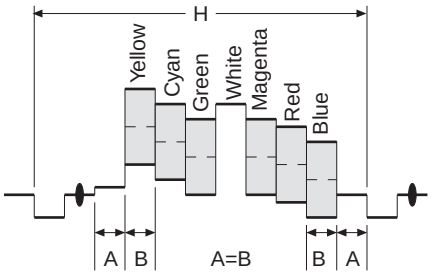


Fig. a (Video output terminal output waveform)

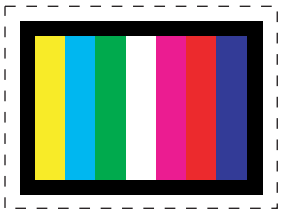


Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

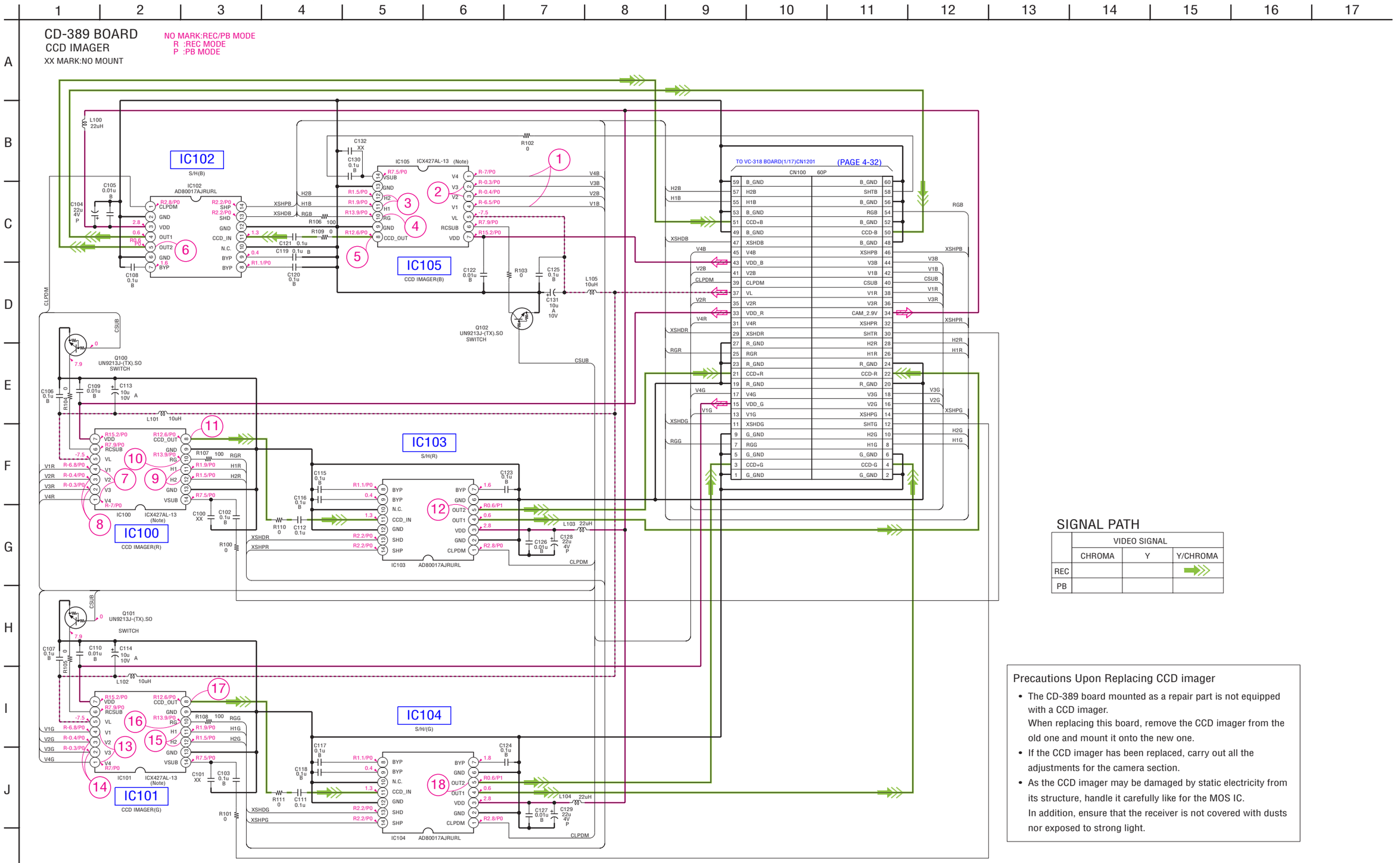
Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note : Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifie.

4-2. SCHEMATIC DIAGRAMS

For Schematic Diagram

• Refer to page 4-91 for printed wiring board.



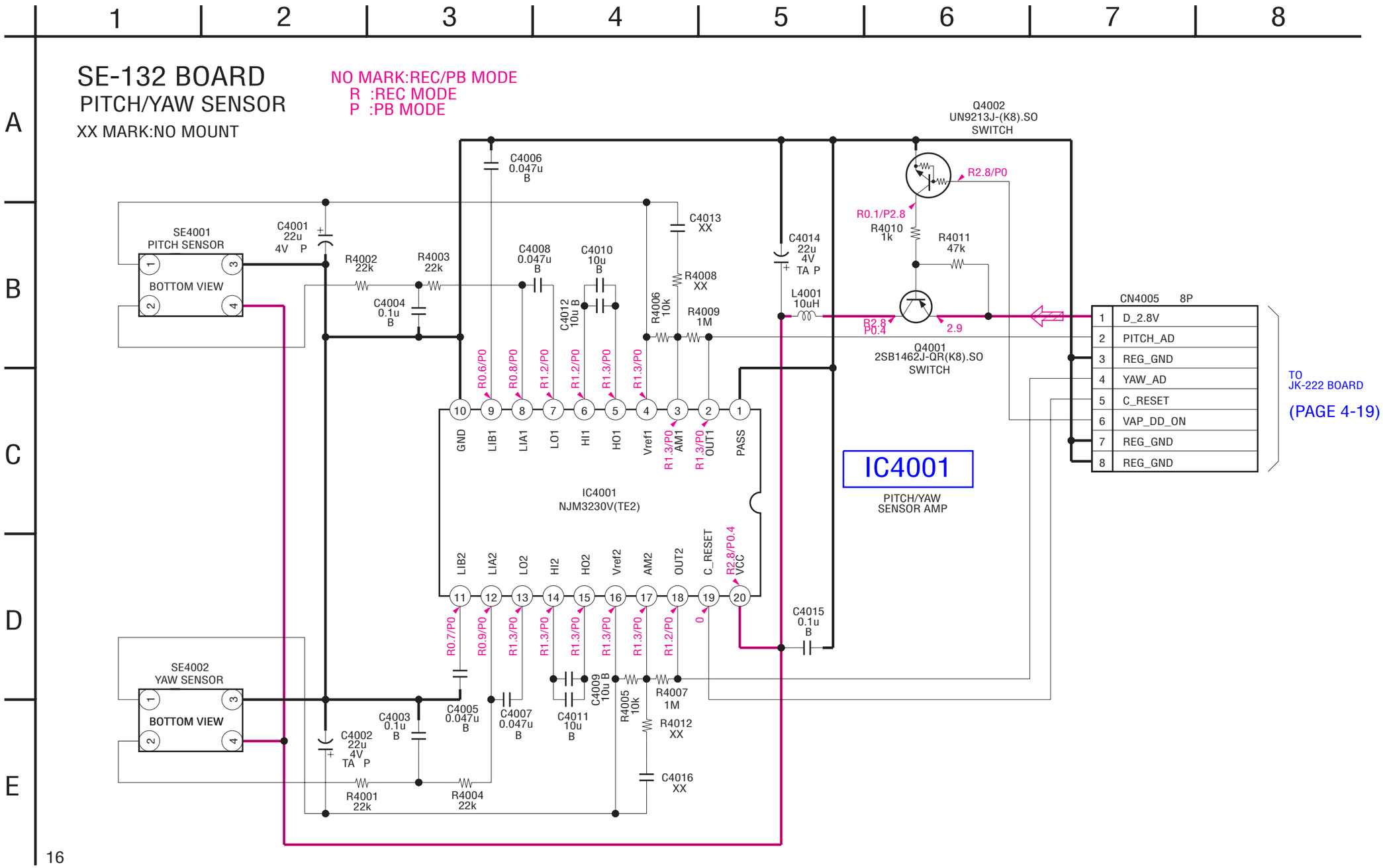
Note:Pin number and index mark of IC100,IC101,and IC105 are shown as viewed from the bottom.

Precautions Upon Replacing CCD imager

- The CD-389 board mounted as a repair part is not equipped with a CCD imager.
  When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

For Schematic Diagram

• Refer to page 4-89 for printed wiring board.



For Schematic Diagram

• Refer to page 4-95 for printed wiring board.

MA-425 BOARD

MIC AMP,AF LASER CONTROL

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

IC5901

MIC AMP
IC5901
AN2901FHQ-EB

IC5902

AF LASER CONTROL

FP-500 FLEXIBLE

D501
RLD65MQT1+02B
(LASER UNIT)
LASER AF ILLUMINATOR

CN5903 6P

LD_EVR	1
PD_OUT	2
MTGND	3
PHOTO_TR_C	4
PHOTO_TR_E	5
N.C.	6

CN5904 8P

1	SHOE_MIC_L
2	AU_GND
3	MIC_L
4	AU_GND
5	MIC_R
6	AU_GND
7	AU_2.8V
8	AU_2.8V

TO JK-222 BOARD (PAGE 4-19)

CN5905 16P

1	REG_GND
2	SIRCS_DRV_CL
3	X_SIRCS_IN
4	A_4.6V
5	KEY_AD1M
6	MT_4.9V
7	MF_B
8	MF_A
9	GND
10	GND
11	MF_LED
12	SCHARGE_LED
13	XTALLY_LED
14	A_2.8V
15	MT_GND
16	N.C.

TO FP-504 FLEXIBLE (PAGE 4-28)

CN5906 33P

33	XF_TALLY_LED
32	MF_LED
31	MF_A
30	MF_B
29	SCHARGE_LED
28	KEY_AD1M
27	A_2.8V
26	REG_GND
25	SENS_ON
24	A_4.6V
23	PHOTO_TR_OUT
22	REG_GND
21	XSIRCS_IN
20	AU_GND
19	ZOOM_MIC_CONT
18	AU_2.8V
17	EXT_MIC_DET
16	REG_GND
15	AU_GND
14	AU_GND
13	MT_4.9V
12	MT_4.9V
11	REG_GND
10	XMIC_MONO
9	AF_LD_VCC
8	AF_LD_VCC
7	PD_OUT
6	LD_EVR
5	SAFE_ON
4	MT_GND
3	MT_GND
2	SIRCS_PWM
1	N.C.

TO VC-318 BOARD (15/17) CN1021 (THROUGH THE FP-494 FLEXIBLE) (PAGE 4-60)

SIGNAL PATH

	AUDIO SIGNAL
REC	⇨
PB	

Note: Be sure to read "SERVICE NOTE" on page 1-3 when replacing the laser unit (D501) and the FP-500 flexible board.

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

For Schematic Diagram

• Refer to page 4-103 for printed wiring board.

CK-134 BOARD
CONTROL SWITCH
XX MARK:NO MOUNT

TO VC-318 BOARD(16/17)CN1003
(THROUGH THE FP-496 FLEXIBLE)
(PAGE 4-61)

CN5203 60P

PANEL_4.6V	60	PANEL_4.6V	REG_GND	59	
PANEL_-15.3V	58	PANEL_-15.3V	REG_GND	57	
PANEL_13.3V	56	PANEL_13.3V	REG_GND	55	
PANEL_2.8V	54	PANEL_2.8V	REG_GND	53	
	52	P_UNREG	P_UNREG_GND	51	
	50	P_UNREG	P_UNREG_GND	49	
EVER_3.0V	48	EVER_3.0V	XHD_OUT	47	XHD_OUT
PANEL_VG	46	PANEL_VG	XVD	45	DISP_VD
PANEL_R	44	PANEL_R	PANEL_COM	43	COM_OUT
PANEL_G	42	PANEL_G	C-SYNC/XHD	41	DISP_HD
PANEL_B	40	PANEL_B	N.C	39	
REG_GND	38	REG_GND	REG_GND	37	
TP_R	36	TP_R	TP_L	35	TP_L
TP_BOT	34	TP_BOT	TP_TOP	33	TP_TOP
	32	N.C	REG_GND	31	
	30	N.C	REG_GND	29	
VD_SCK	28	VD_SCK	VD_SO	27	VD_SO
XCS_LCD	26	XCS_LCD	ACCESS_LED	25	
XCS_LCD_DRIVER	24	XCS_LCD_DRIVER	LCD_COM/XDATA	23	LCD_COM/XDATA
OSD_SO	22	OSD_SO	XOSD_SCK	21	XOSD_SCK
	20	REG_GND	N.C	19	
KEY_AD3	18	REG_GND	KEY_AD6	17	KEY_AD6
KEY_AD5	16	KEY_AD3	KEY_AD2	15	KEY_AD2
DIAL_B	14	KEY_AD5	KEY_AD4	13	KEY_AD4
XRESET_SW	12	DIAL_B	DIAL_A	11	DIAL_A
SP+	10	XRESET_SW	N.C	9	
SP-	8	SP+	N.C	7	
	6	SP-	BATT_LI_3V	5	
	4	D_2.8V	REG_GND	3	
	2	REG_GND	REG_GND	1	

CN5201 20P

DISP_HD	1	DISP_HD
DISP_VD	2	DISP_VD
REG_GND	3	
REG_GND	4	
PANEL_2.8V	5	PANEL_2.8V
PANEL_13.3V	6	PANEL_13.3V
PANEL_-15.3V	7	PANEL_-15.3V
PANEL_4.6V	8	PANEL_4.6V
VD_SO	9	VD_SO
VD_SCK	10	VD_SCK
XCS_LCD_DAC	11	XCS_LCD
P_UNREG	12	
P_UNREG_GND	13	
P_UNREG_GND	14	
COM_OUT	15	COM_OUT
REG_GND	16	
TP_R	17	TP_R
TP_L	18	TP_L
TP_BOT	19	TP_BOT
TP_TOP	20	TP_TOP

TO PD-191 BOARD (2/2) CN5802 (THROUGH THE PC-087 HARNESS) (PAGE 4-23)

CN5202 10P

OSD_SO	1	OSD_SO
XOSD_SCK	2	XOSD_SCK
XCS_LCD_DRIVER	3	XCS_LCD_DRIVER
LCD_COM/XDATA	4	LCD_COM/XDATA
EVER_3.0V	5	EVER_3.0V
PANEL_B	6	PANEL_B
PANEL_G	7	PANEL_G
PANEL_R	8	PANEL_R
VG	9	PANEL_VG
XHD_OUT	10	XHD_OUT

TO PD-191 BOARD (2/2) CN5806 (THROUGH THE PC-088 HARNESS) (PAGE 4-23)

R5243 470 — R5244 0 — R5245 XX

L5201 100uH — L5202 100uH — L5203 100uH — L5204 100uH

KEY_AD2 — KEY_AD3 — KEY_AD4 — KEY_AD6 — KEY_AD5

R5202 XX — R5203 XX — R5204 XX — R5205 XX — R5206 XX

R5211 0 — R5212 0 — R5208 0 — R5209 0 — R5210 0

R5213 1200 — R5214 1200 — R5215 1200 — R5216 1200 — R5217 1500 — R5218 1500 — R5219 1500 — R5220 1500 — R5221 2200 — R5222 2200 — R5223 2200 — R5224 2200 — R5226 3900 — R5227 3900 — R5228 3900 — R5229 3900 — R5231 8200 — R5232 8200 — R5233 8200 — R5234 8200 — R5235 27k — R5236 27k — R5237 27k — R5238 27k

TC/U-BIT — EDIT SEARCH — ZEBRA_SW — OFF — 70 — 100

S5202 — S5203 — S5204 — S5205

STOP — REW — PLAY — FF — REC

S5206 — S5207 — S5208 — S5209 — S5211 — S5212

VOLUME — BARS — DISPLAY/ TOUCH PANEL — AUDIO_DUB

S5213 — S5214 — S5215 — S5116 — S5217

PAUSE — BACK_LIGHT — SPOT_LIGHT — CUSTOM_PRESET

S5210 — S5218 — S5219 — S5220

R5225 8200 — R5230 27k — S5201 — AUTO_LOCK_SW — AUTO LOCK — AUTO LOCK RELEASE — HOLD

S5221 RESET — XRESET_SW — C5203 XX — BT5201 LITHIUM BATTERY (SECONDARY)

D5201 MAZS082008S0 — D5202 01ZA8.2(TPL3) — D5203 01ZA8.2(TPL3) — D5204 MAZS082008S0

D5208 01ZA8.2(TPL3) — D5209 01ZA8.2(TPL3) — D5205 01ZA8.2(TPL3) — D5206 01ZA8.2(TPL3) — D5207 01ZA8.2(TPL3)

DIAL_A — DIAL_B — R5241 XX — R5239 0 — R5240 0 — R5242 XX

SP+ — SP-

CN5204 2P

1	SP+
2	SP-

SP901 (SPEAKER)

CN5205 8P

1	GND
2	KEY_ADSBACK
3	KEY_ADSIN
4	MENU
5	DIAL_A
6	DIAL_B
7	GND
8	EXECUTE

CONTROL SWITCH BLOCK (KP-1870)

S007 SEL/PUSH EXEC

S001 — S002 — S003 — S004 — S005 — S006

R001 1200 — R002 1500 — R003 2200 — R009 3900

MENU — AUDIO LEVEL — EXPOSURE — WHTBAL — SHUTTER SPEED — PROGRAM.AE

CN5206 6P

1	GND
2	GND
3	P_REVERSE
4	P_OPEN
5	GND
6	GND

FP-495 FLEXIBLE

S002 (PANEL REVERSE)

S001 (PANEL OPEN)

CONTROL SWITCH BLOCK(KP-1870) is replaced as block, so that PRINTED WIRING BOARD is omitted.

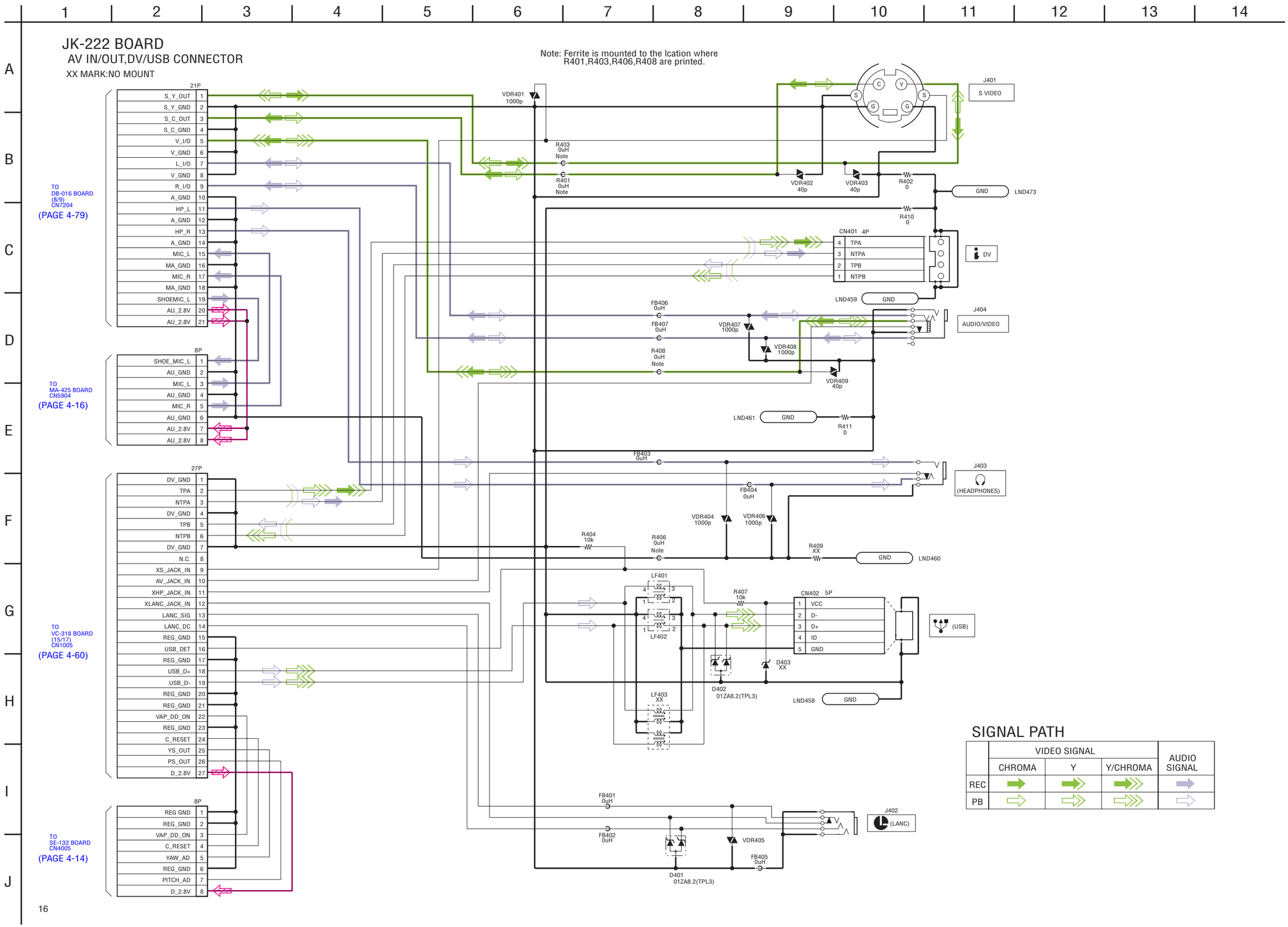
LN5201 SEIDEN_GND — LN5202 SEIDEN_GND — LN5203 SEIDEN_GND — LN5204 SEIDEN_GND

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡			
PB	⇨			⇨

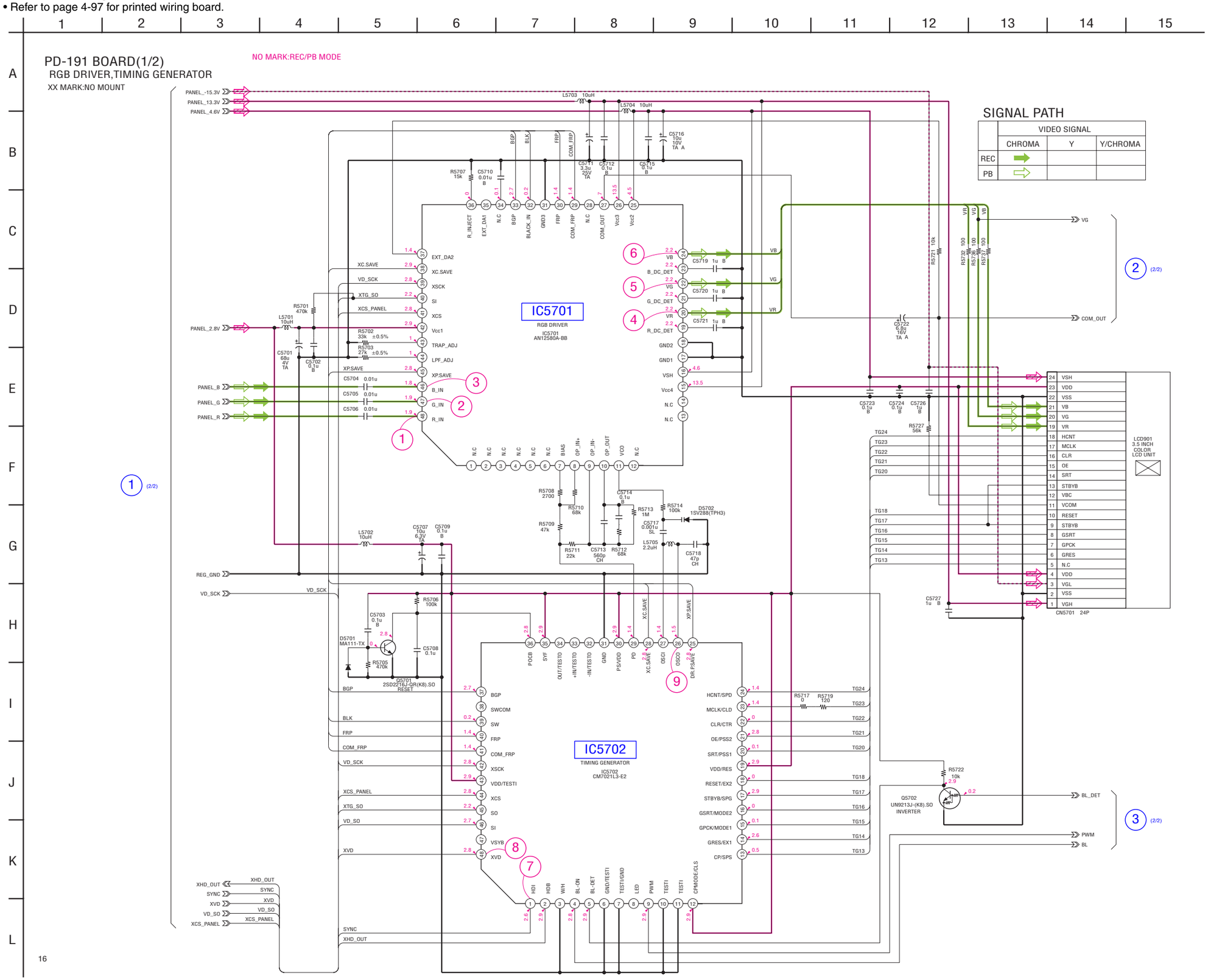
For Schematic Diagram

• Refer to page 4-99 for printed wiring board.



For Schematic Diagram

• Refer to page 4-97 for printed wiring board.



For Schematic Diagram

• Refer to page 4-97 for printed wiring board.

PD-191 BOARD(2/2)

LCD DRIVER,BACKLIGHT

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

IC5801

LCD DRIVER

IC5801
BU9735K-E2

CN5806 10P

OSD_SO	1
XOSD_SCK	2
XCS_LCD_DRIVER	3
LCD_COM/XDATA	4
EVER_3.0V	5
PANEL_B	6
PANEL_G	7
PANEL_R	8
VG	9
XHD_OUT	10

TO CK-134 BOARD CN5202 (THROUGH THE PC-088 HARNESS) (PAGE 4-17)

CN5802 20P

DISP_HD	1
DISP_VD	2
REG_GND	3
REG_GND	4
PANEL_2.8V	5
PANEL_13.3V	6
PANEL_-15.3V	7
PANEL_4.6V	8
VD_SO	9
VD_SCK	10
XCS_LCD_DAC	11
P_UNREG	12
P_UNREG_GND	13
P_UNREG_GND	14
COM_OUT	15
REG_GND	16
TP_R	17
TP_L	18
TP_BOT	19
TP_TOP	20

TO CK-134 BOARD CN5201 (THROUGH THE PC-087 HARNESS) (PAGE 4-17)

CN5803 7P

TA901 TOUCH PANEL

NC	1
TP_R	2
TP_L	3
NC	4
TP_BOT	5
TP_TOP	6
NC	7

CN5804 21P

1	COM1
2	COM2
3	SEG2
4	SEG3
5	SEG4
6	SEG5
7	SEG6
8	SEG7
9	SEG8
10	SEG9
11	SEG10
12	SEG11
13	SEG12
14	SEG13
15	SEG14
16	SEG1
17	SEG16
18	SEG15
19	COM3
20	COM4
21	N.C

LCD902 CHARACTER DISPLAY

CN5805 5P

1	PWM
2	PANEL_4.6V
3	BL_DET
4	P_UNREG_GND
5	P_UNREG

INVERTER TRANSFOROMER UNIT

15P

15	BL_HI
14	N.C.
13	N.C.
12	N.C.
11	N.C.
10	N.C.
9	N.C.
8	N.C.
7	N.C.
6	N.C.
5	N.C.
4	N.C.
3	BL_LOW
2	LED
1	BL_GND

ND901 BACK LIGHT

(LED) (STARTER)

Q5801 UN9214J-(K8).SO SWITCH

Q5802 2SB1462J-QR(K8).SO SWITCH

LND581

1 (1/2) 2 (1/2) 3 (1/2)

SIGNAL PATH

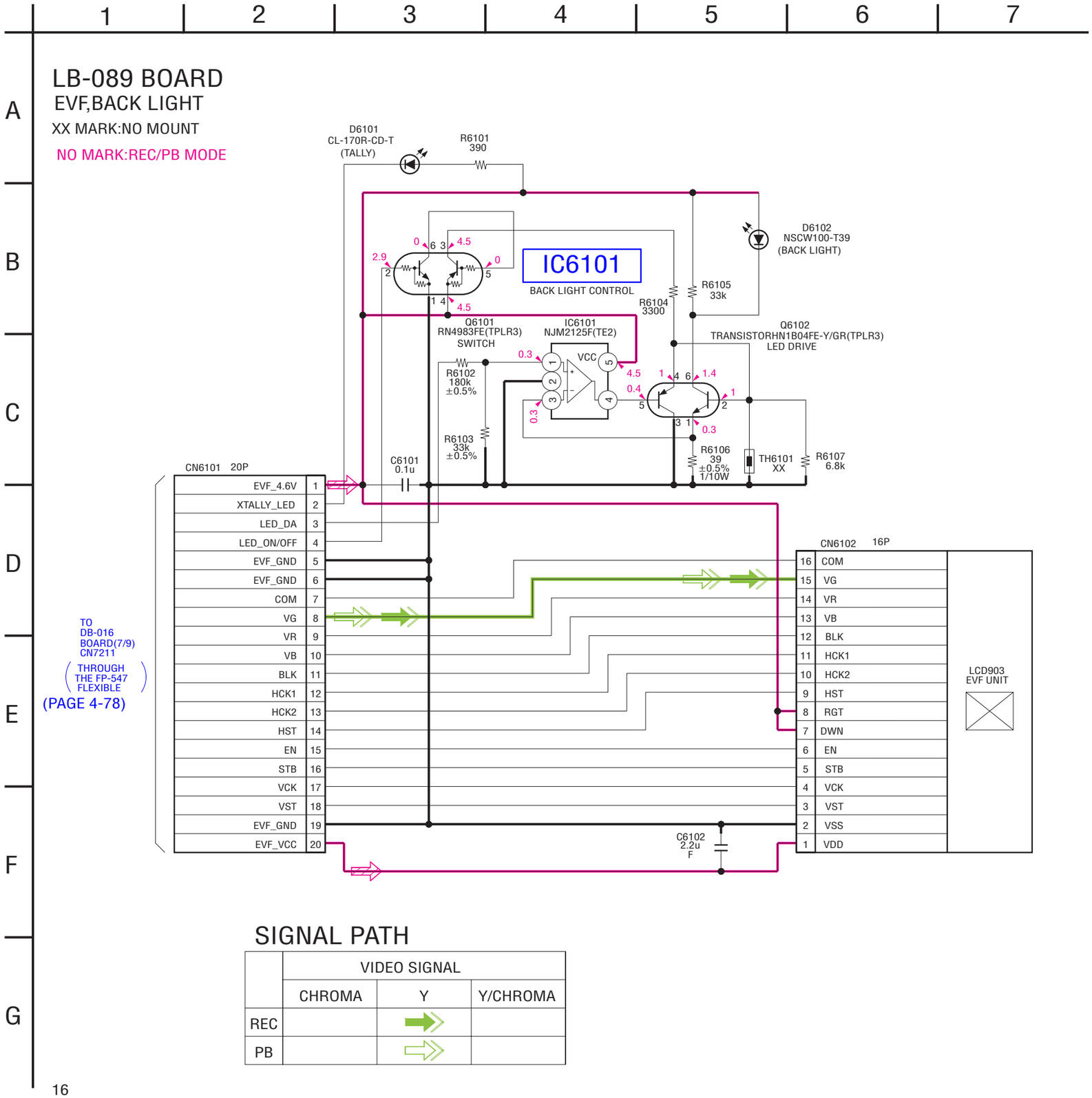
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

For Schematic Diagram

• Refer to page 4-107 for printed wiring board.

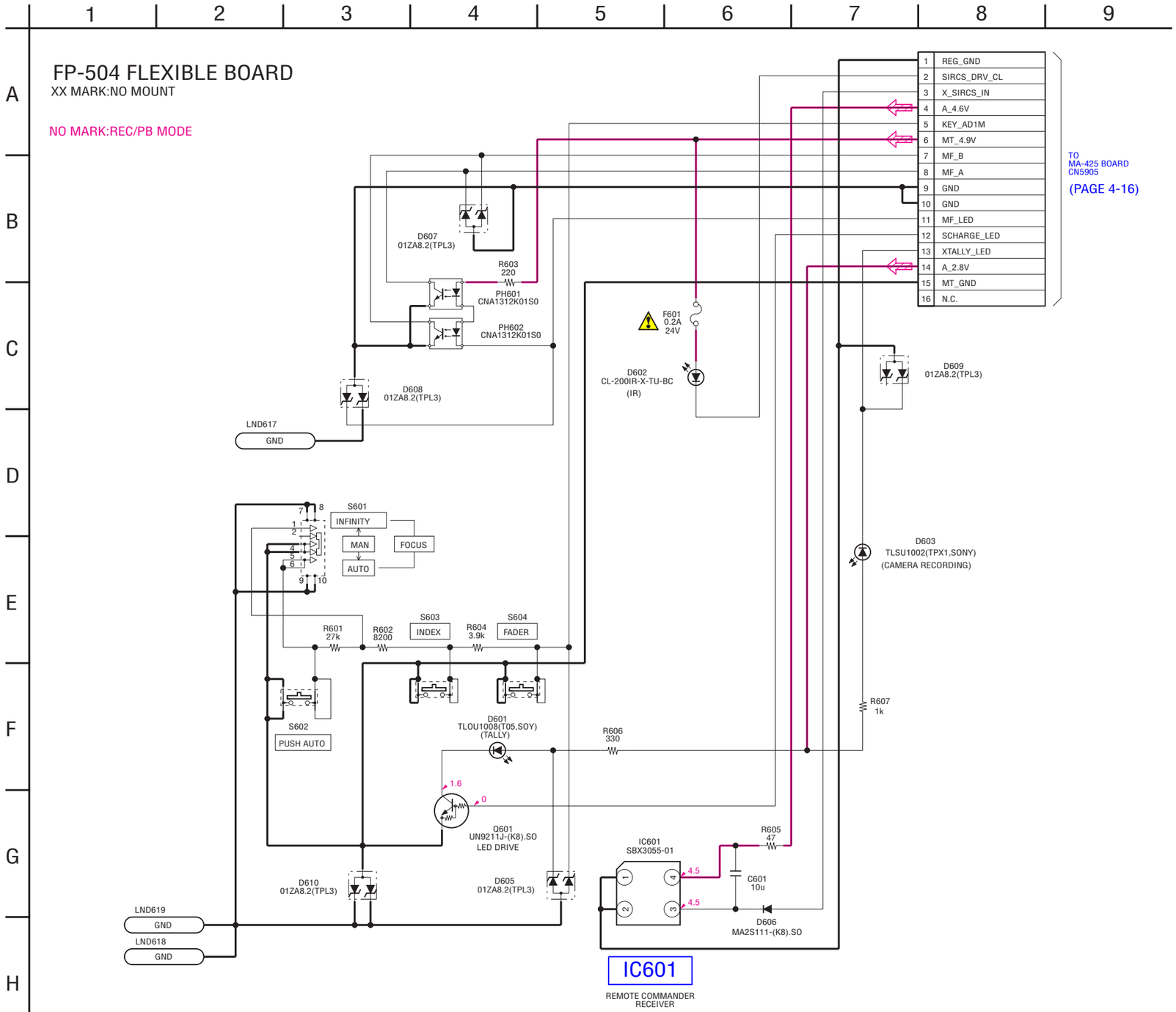


SIGNAL PATH

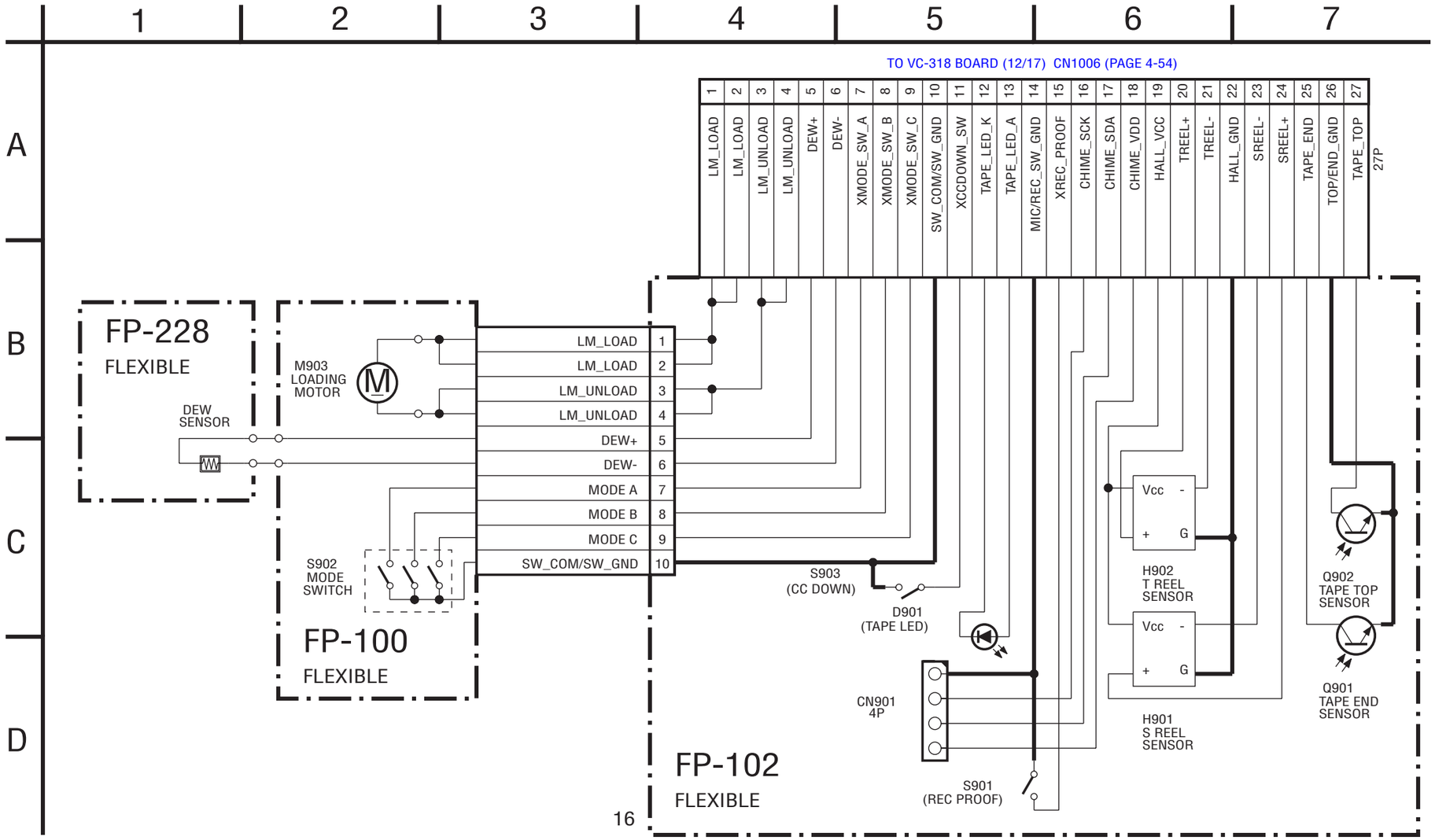
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC		➡	
PB		⇨	

For Schematic Diagram

• Refer to page 4-109 for printed wiring board.



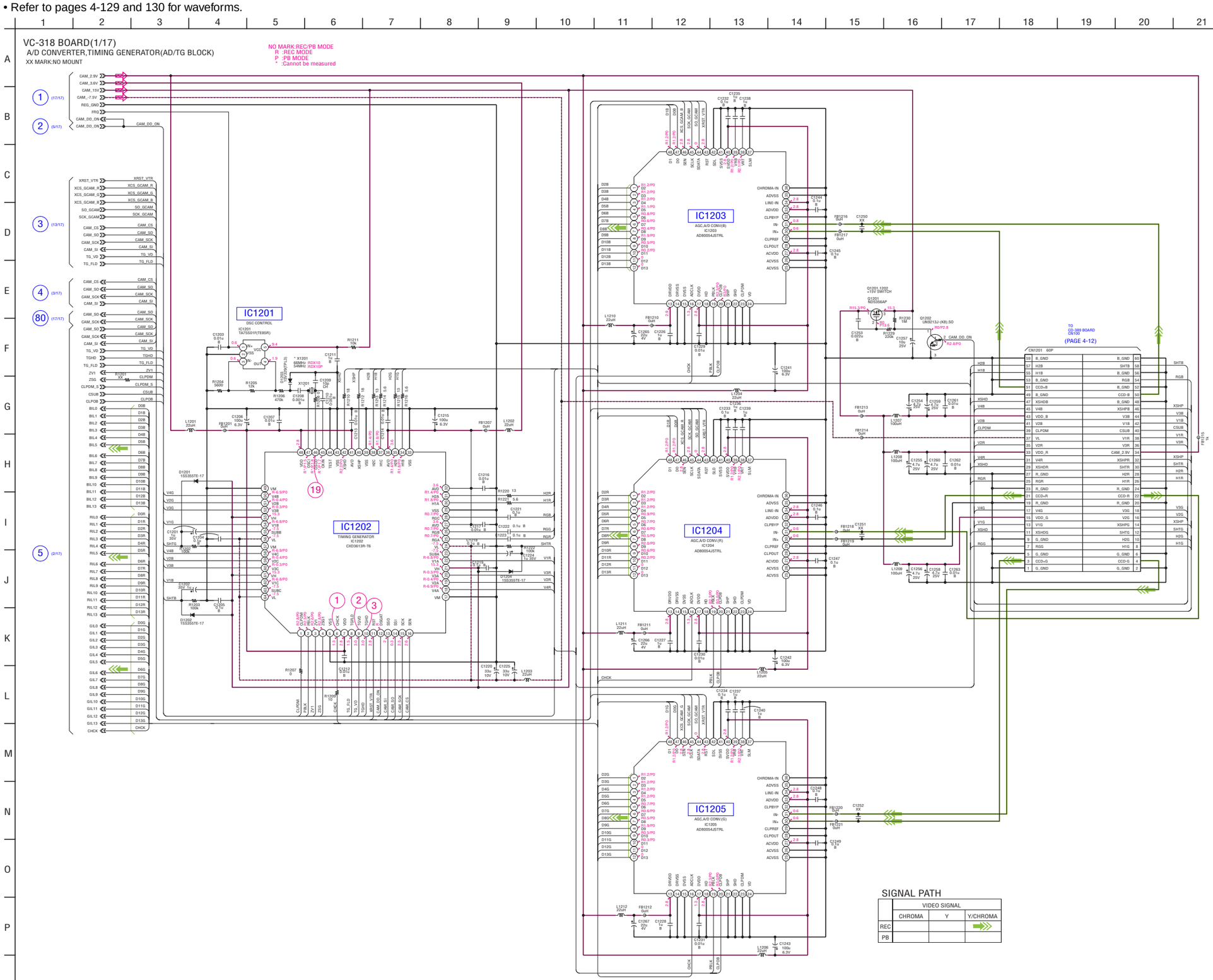
Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.


1
2
3
4
5
6
7
A
B
C
D
TO VC-318 BOARD (12/17) CN1006 (PAGE 4-54)
LM_LOAD 1
LM_LOAD 2
LM_UNLOAD 3
LM_UNLOAD 4
DEW+ 5
DEW- 6
XMODE_SW_A 7
XMODE_SW_B 8
XMODE_SW_C 9
SW_COM/SW_GND 10
XCCDOWN_SW 11
TAPE_LED_K 12
TAPE_LED_A 13
MIC/REC_SW_GND 14
XREC_PROOF 15
CHIME_SCK 16
CHIME_SDA 17
CHIME_VDD 18
HALL_VCC 19
TREEL+ 20
TREEL- 21
HALL_GND 22
SREEL- 23
SREEL+ 24
TAPE_END 25
TOP/END_GND 26
TAPE_TOP 27
27P
FP-228
FLEXIBLE
M903
LOADING
MOTOR
DEW
SENSOR
S902
MODE
SWITCH
FP-100
FLEXIBLE
S903
(CC DOWN)
D901
(TAPE LED)
CN901
4P
S901
(REC PROOF)
FP-102
FLEXIBLE
Vcc
-
+
G
H902
T REEL
SENSOR
H901
S REEL
SENSOR
Q902
TAPE TOP
SENSOR
Q901
TAPE END
SENSOR
16

COVER

For Schematic Diagram

- Refer to page 4-119 for printed wiring board.
- Refer to pages 4-129 and 130 for waveforms.



For Schematic Diagram

• Refer to page 4-119 for printed wiring board.

VC-318 BOARD(2/17)

CAMERA RGB PROCESS(RGB BLOCK)

XX MARK:NO MOUNT

▲Voltage measurement of the CSP IC and the Transistors with ▲mark,is not possible.

NO MARK:REC/PB MODE

IC1351 SDRAM

IC1301 CAMERA RGB PROCESS

IC1302

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡➡	➡➡➡
PB			

For Schematic Diagram

• Refer to page 4-119 for printed wiring board.

VC-318 BOARD(3/17)

CAMERA PROCESS(CA BLOCK)

XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲mark,is not possible.

IC1601

CAMERA PROCESSOR

▲ IC1601
M65515WG-DF0Z
CSP(CHIP SIZE PACKAGE)IC

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	→	⇒	
PB			

For Schematic Diagram

• Refer to page 4-119 for printed wiring board.

VC-318 BOARD(4/17)

MPEG MOVIE/DIGITAL STILL PROCESS(MPEG BLOCK)

XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲mark,is not possible.

IC1701

64Mbit SDRAM

▲ IC1701

MB81F641642J-15PB-ER

IC1704

MPEG MOVIE/DIGITAL STILL PROCESS

▲ IC1704

HG76C0208P71LV

CSP(CHIP SIZE PACKAGE)IC

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	⇒	⇒	⇒	⇒
PB	⇨	⇨	⇨	⇨

For Schematic Diagram

• Refer to page 4-119 for printed wiring board.
• Refer to page 4-129 for waveforms.

VC-318 BOARD(5/17)
HI CONTROL.DIGITAL STILL CONTROL(D-STILL BLOCK)
XX MARK:NO MOUNT

▲Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.

NO MARK:REC/PB MODE

IC2904 XTAL OSC
IC2902 BUFFER
IC2903 BUFFER
IC2901 64K EEPROM
IC2906
IC2905 HI CONTROL,DIGITAL STILL CONTROL ▲ IC2905 HD64177190BP2110BHV CSP(CHIP SIZE PACKAGE)IC

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			⇒	⇨
PB			⇒	⇨

For Schematic Diagram

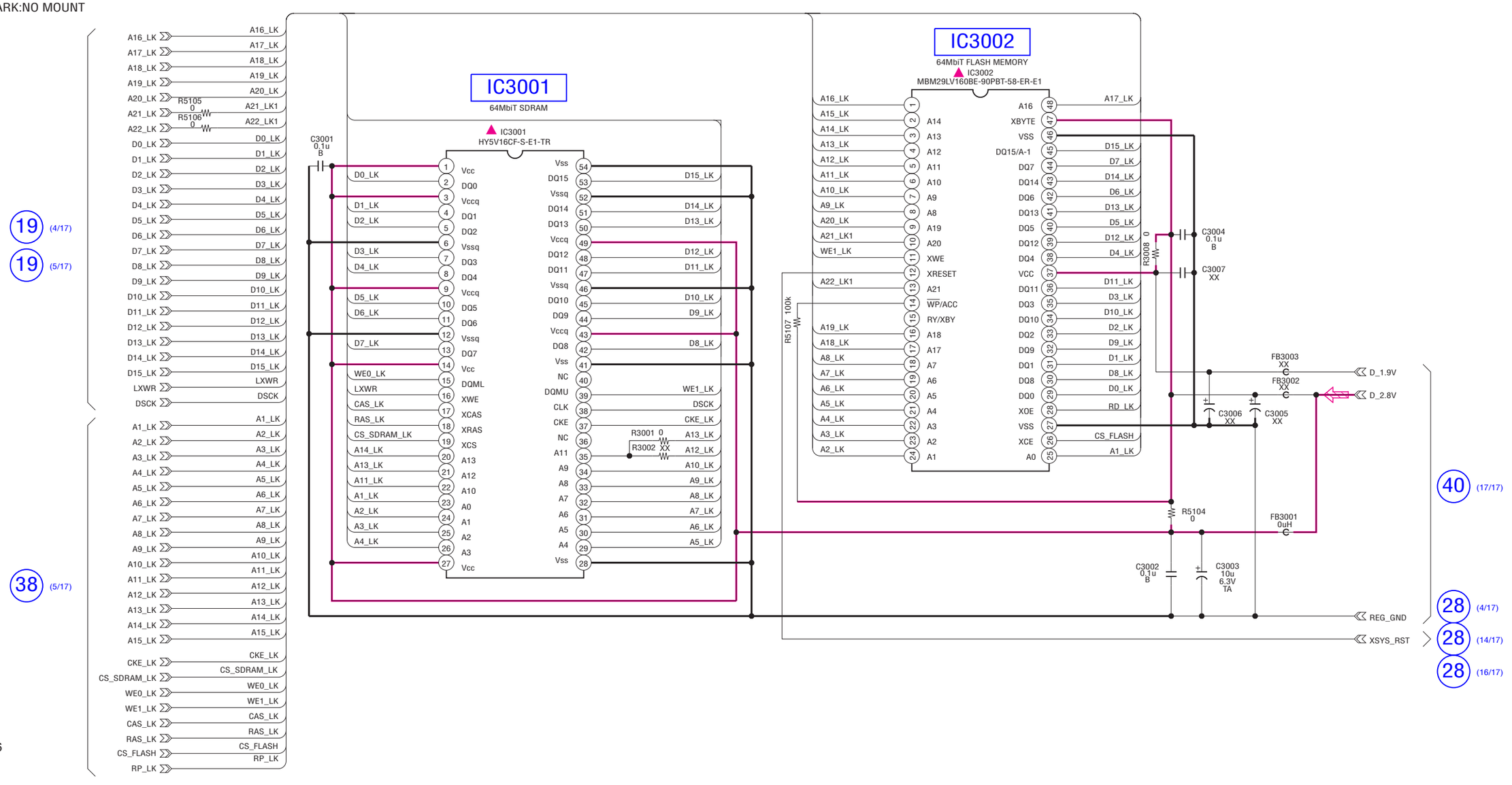
• Refer to page 4-119 for printed wiring board.

VC-318 BOARD(6/17)

FLASH MEMORY,SDRAM(MEMRY BLOCK)

XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲mark,is not possible.



For Schematic Diagram

- Refer to page 4-119 for printed wiring board.
- Refer to page 4-130 for waveforms.

VC-318 BOARD(7/17)

DV SIGNAL PROCESS(JC-1 BLOCK)

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

▲:Voltage measurement of the CSP IC and the Transistors with ▲mark,is not possible.

IC2101

DV SIGNAL PROCESS

▲ IC2101
CAIN-CSP
CSP(CHIP SIZE PACKAGE)IC

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	▶	▶	▶	▶
PB	▷	▷	▷	▷

SIGNAL PATH

	REC	REC/PB	PB
Ref.signal	▶		▷

For Schematic Diagram

• Refer to page 4-119 for printed wiring board.

VC-318 BOARD(8/17)

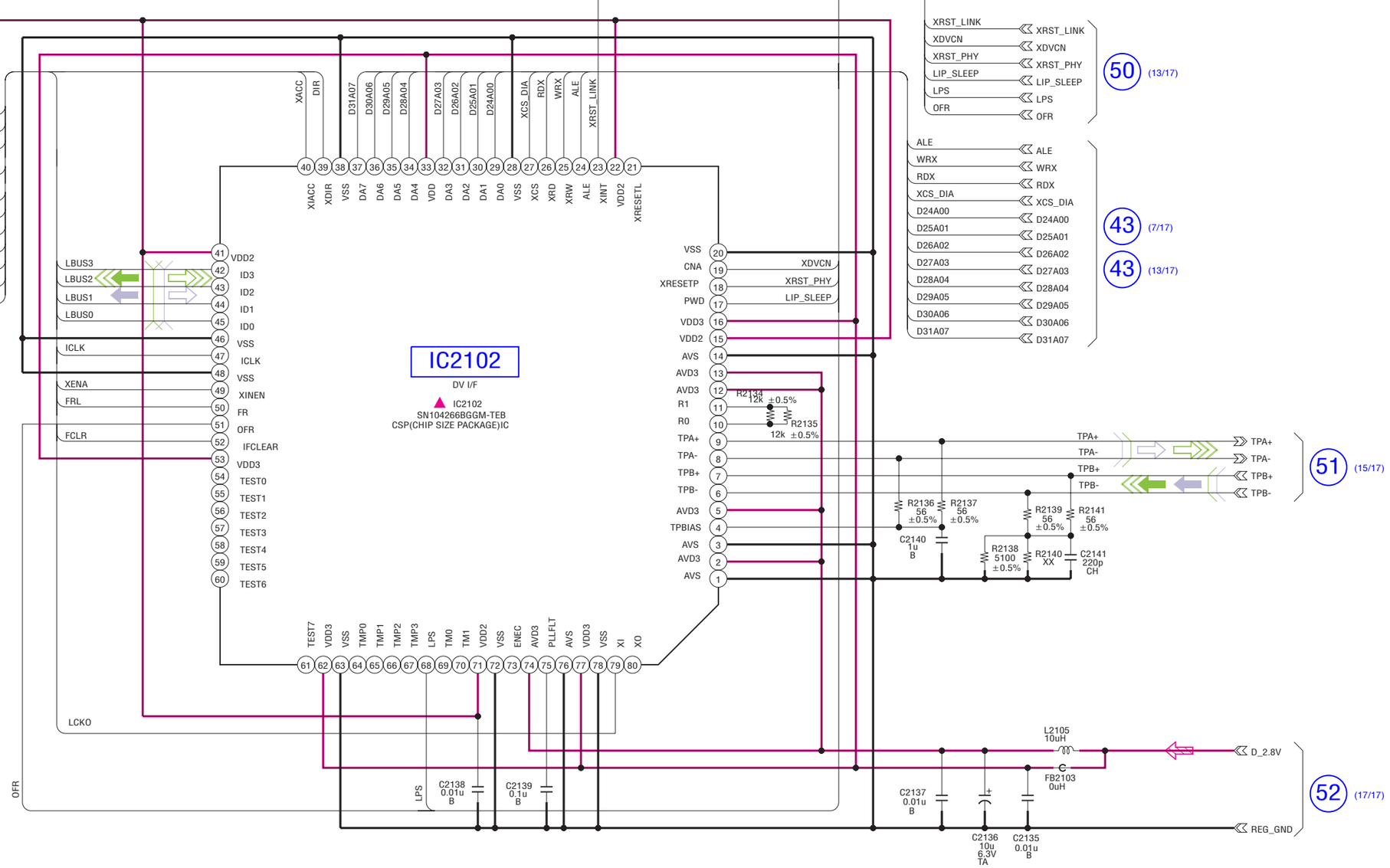
DV INTERFACE(JC-2 BLOCK)

XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲mark,is not possible.

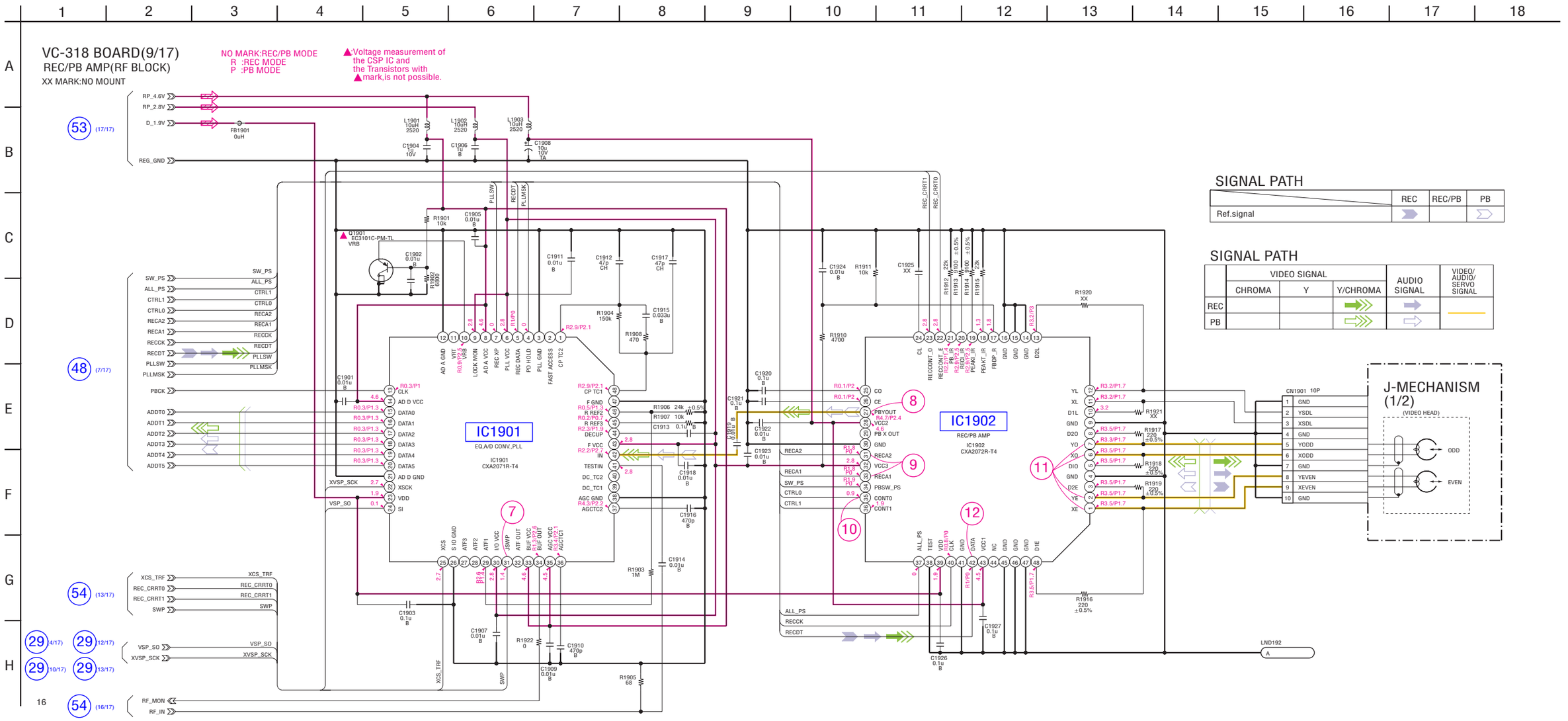
SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨



For Schematic Diagram

• Refer to page 4-119 for printed wiring board.
• Refer to page 4-129 for waveforms.



For Schematic Diagram

• Refer to page 4-119 for printed wiring board.

VC-318 BOARD(10/17)

USB I/F(USB BLOCK)

XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

▲:Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.

IC2301
USB I/F
▲ IC2301
CXD3155GA-T6
CSP(CHIP SIZE PACKAGE)IC

IC2302
AUDIO A/D CONV.
IC2302
AK5355VT-E2

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB	⇨	⇨	⇨	⇨

For Schematic Diagram

• Refer to page 4-119 for printed wiring board.

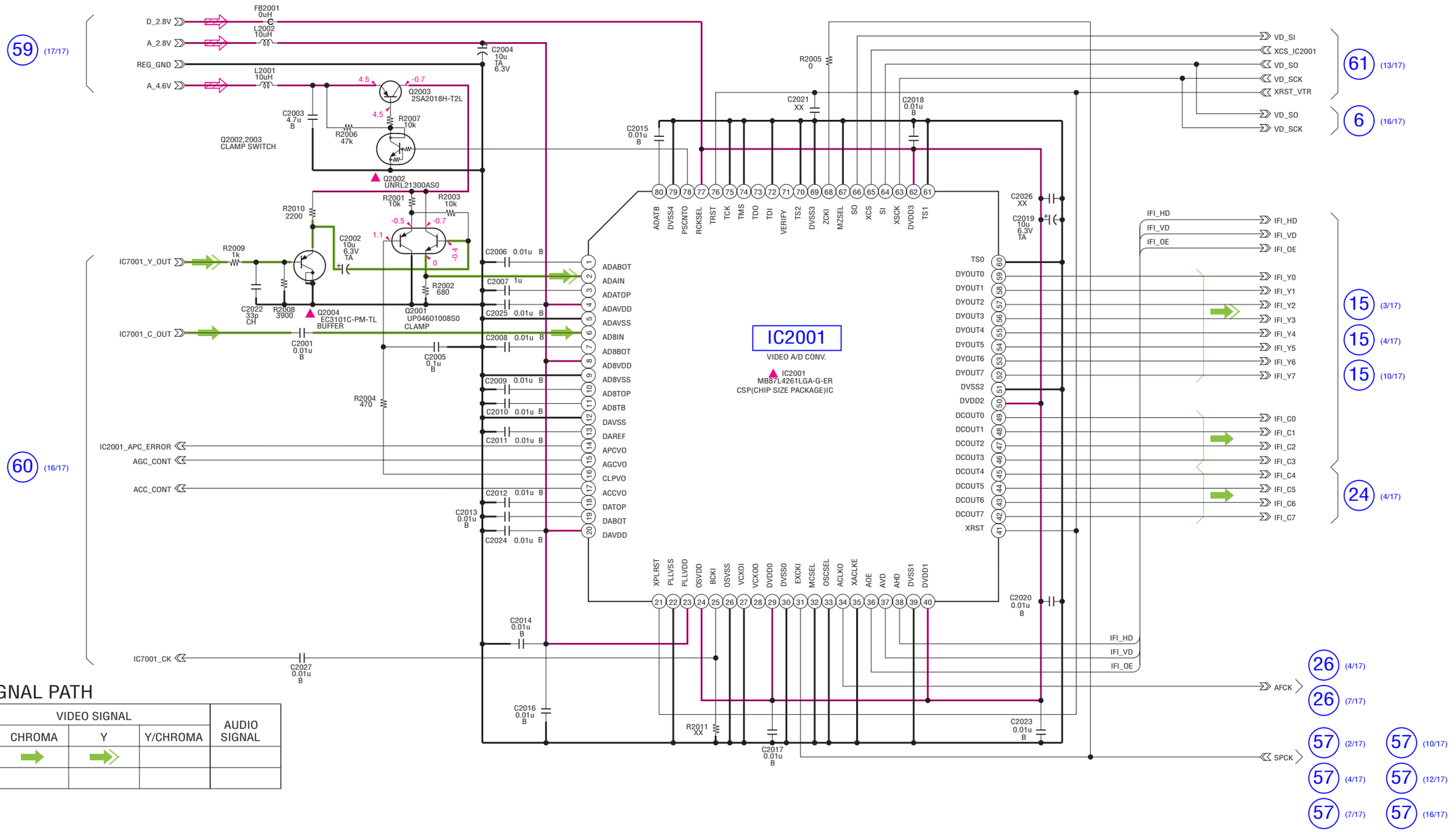
VC-318 BOARD(11/17)

VIDEO A/D CONVERTER(A/D BLOCK)

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

▲:Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.

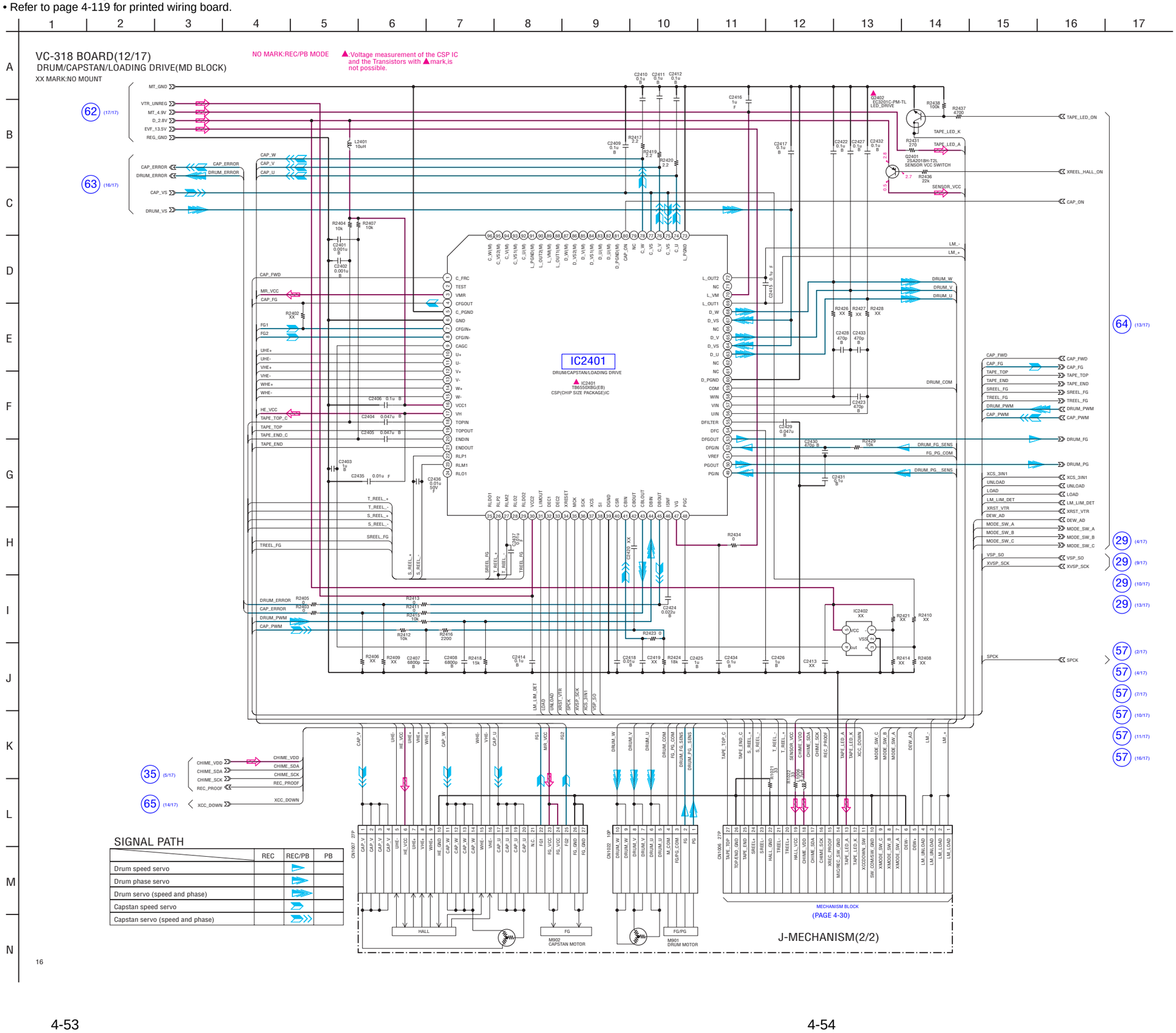


SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	→	⇒		
PB				

For Schematic Diagram

• Refer to page 4-119 for printed wiring board.



For Schematic Diagram

- Refer to page 4-119 for printed wiring board.
- Refer to page 4-130 for waveforms.

VC-318 BOARD(13/17)
CAMERA/MECHA CONTROL(C/M CONT BLOCK)
XX MARK:NO MOUNT

NO MARK:REC/PB MODE

▲Voltage measurement of the CSP IC and the Transistors with ▲mark,is not possible.

IC2502
EEPROM
IC2502
BR9014ARFVM-WTR

IC2501
CAMERA/MECHA CONTROL
▲ IC2501
MB91194LGA-G-120-ER
CSP(CHIP SIZE PACKAGE)IC

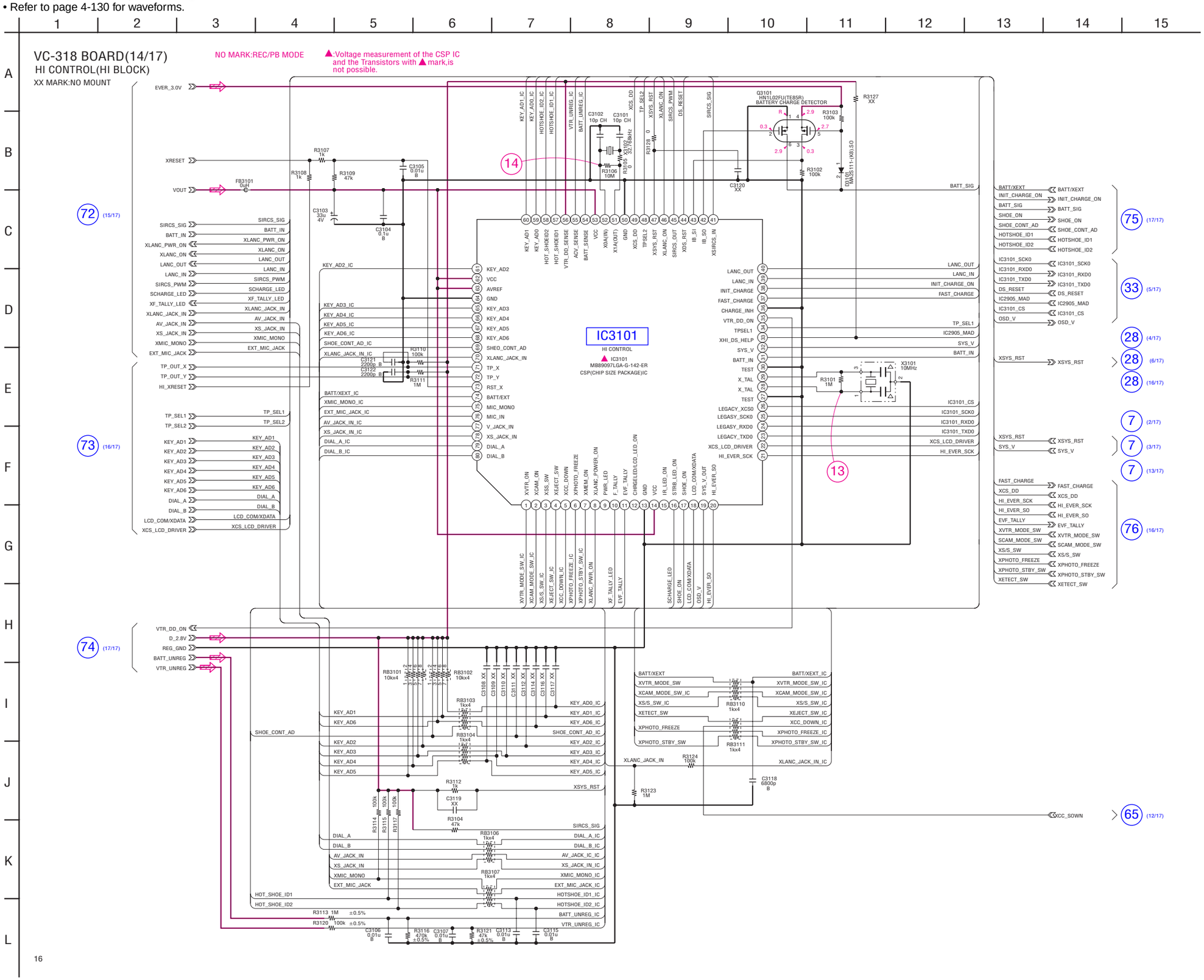
Q2501
UNRL21100AS0
LED DRIVE

SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶	
Drum servo (speed and phase)		▶	▶
Capstan speed servo		▶	
Capstan phase servo			
Capstan servo (speed and phase)		▶	▶
Ref.signal			▷

For Schematic Diagram

- Refer to page 4-119 for printed wiring board.
- Refer to page 4-130 for waveforms.



For Schematic Diagram

• Refer to page 4-119 for printed wiring board.

VC-318 BOARD(15/17)

LANC,RESET,BEEP,AFLD(LANC/RESET/BEEP/AFLD BLOCK)

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

▲:Voltage measurement of the CSP IC and the Transistors with ▲mark,is not possible.

IC4301 AF LASER MULTI VIBRATOR

IC2701

IC2702 INITIAL RESET,BACK UP VCC

IC2703 LANC I/O

Q4302 EC3101C-PM-TL AF LD VCC SWITCH

Q4303 UNRL21300AS0 AF LASER CONTROL

Q2701 UNRL11100AS0 SWITCH

Q2703,2704 MODULATOR

Q2704 EC3201C-PM-TL

Q2703 UNRL21300AS0

D2701 MA132WK-(K8).SO

D2702 MA4L728B0AS0

D2703 MA4L11100AS0

D4301 MAZS11-(K8).SO

CN1021 33P

1	XF_TALLY_LED
2	MF_LED
3	MF_A
4	MF_B
5	SCHARGE_LED
6	KEY_AD1M
7	A_2.8V
8	REG_GND
9	SENS_ON
10	A_4.6V
11	PHOTO_TR_OUT
12	REG_GND
13	XSIRCS_IN
14	AU_GND
15	ZOOM_MIC_CONT
16	AU_2.8V
17	EXT_MIC_DET
18	REG_GND
19	AU_GND
20	AU_GND
21	MT_4.9V
22	MT_4.9V
23	REG_GND
24	XMIC_MONO
25	AF_LD_VCC
26	AF_LD_VCC
27	PD_OUT
28	LD_EVR
29	SAFE_ON
30	MT_GND
31	MT_GND
32	SIRCS_PWM
33	N.C

TO MA-425 BOARD CN5906 THROUGH THE FP-494 FLEXIBLE

(PAGE 4-16)

CN1005 27P

1	DV_GND
2	TPA
3	NTPA
4	DV_GND
5	TPB
6	NTPB
7	DV_GND
8	N.C.
9	XS_JACK_IN
10	AV_JACK_IN
11	XHP_JACK_IN
12	XLANC_JACK_IN
13	LANC_SIG
14	LANC_DC
15	REG_GND
16	USB_DET
17	REG_GND
18	USB_D+
19	USB_D-
20	REG_GND
21	REG_GND
22	VAP_DD_ON
23	REG_GND
24	C_RESET
25	YS_OUT
26	PS_OUT
27	D_2.8V

TO JK-222 BOARD

(PAGE 4-19)

77 (17/17) — A_2.8V, A_4.6V, AU_2.8V, MT_4.9V, D_2.8V, BATT_UNREG, VTR_UNREG

MT_GND, VAP_DD_ON, REG_GND, ZOOM_MIC_CONT, LD_EVR, EVER_3.0V

13 (2/17) — STROBE_AIN

32 (5/17), 32 (10/17) — USB_D+, USB_D-

36 (5/17) — USB_DET, MELODY_ENV, MELODY

51 (8/17) — TPA+, TPA-, TPB+, TPB-

67 (13/17) — LD_ON, MF_LED, MF_A, MF_B, SENS_ON, PD_OUT, HP_JACK_IN, C_RESET, YAW_AD, PITCH_AD

72 (14/17) — BOUT, EVER_3.0V, XLANC_ON, XLANC_PWR_ON, LANC_OUT, LANC_IN, XRESET, BATT_IN, XF_TALLY_LED, SCHARGE_LED, SIRCS_SIG, EXT_MIC_JACK, MIC_MONO, SIRCS_PWM, XS_JACK_IN, AV_JACK_IN, XLANC_JACK_IN

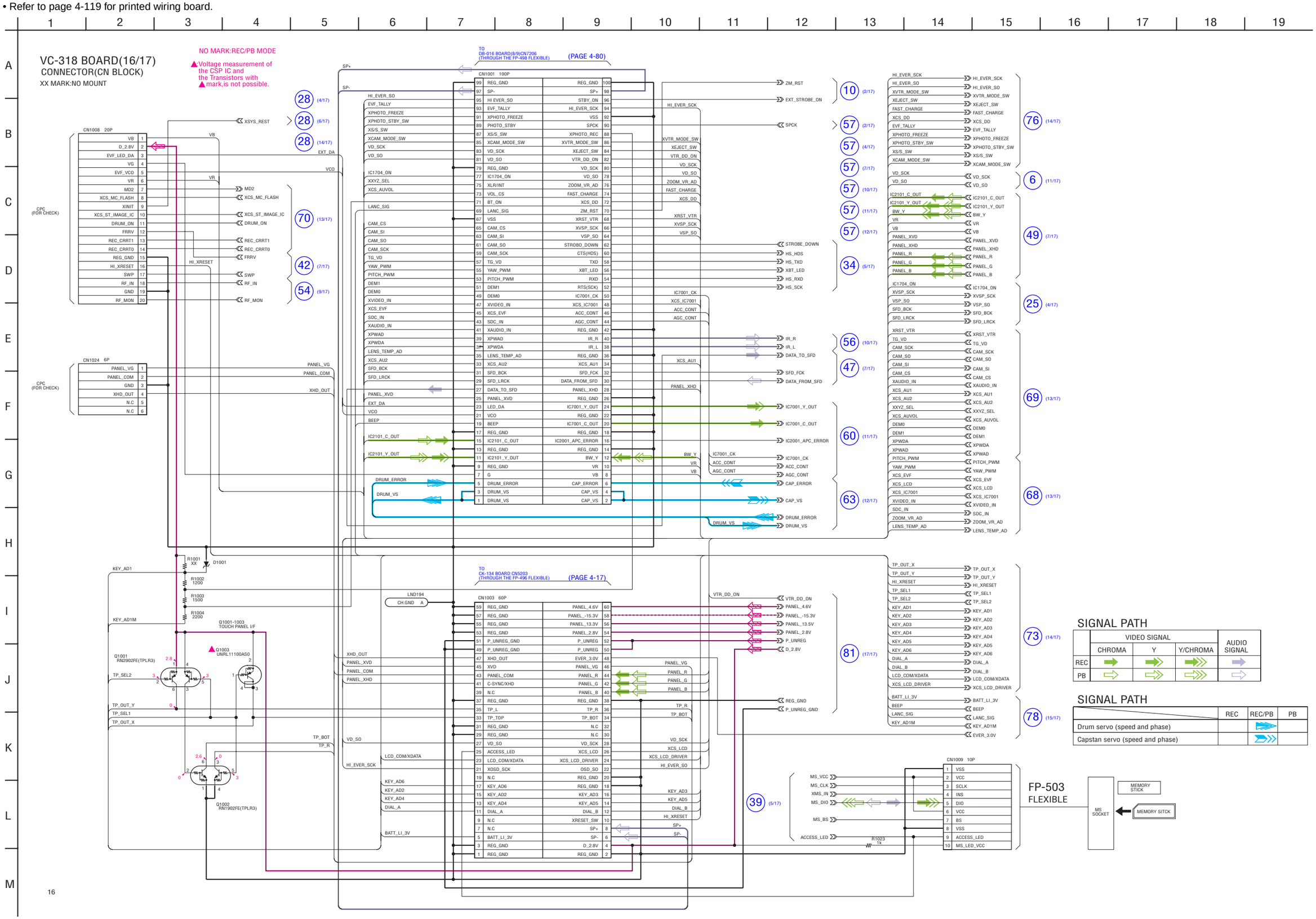
78 (16/17) — BATT_LI_3V, BEEP, LENC_SIG, EVER_3.0V, KEY_AD1M

SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
ANALOG IN			▶	▶
DV IN			▷	▷

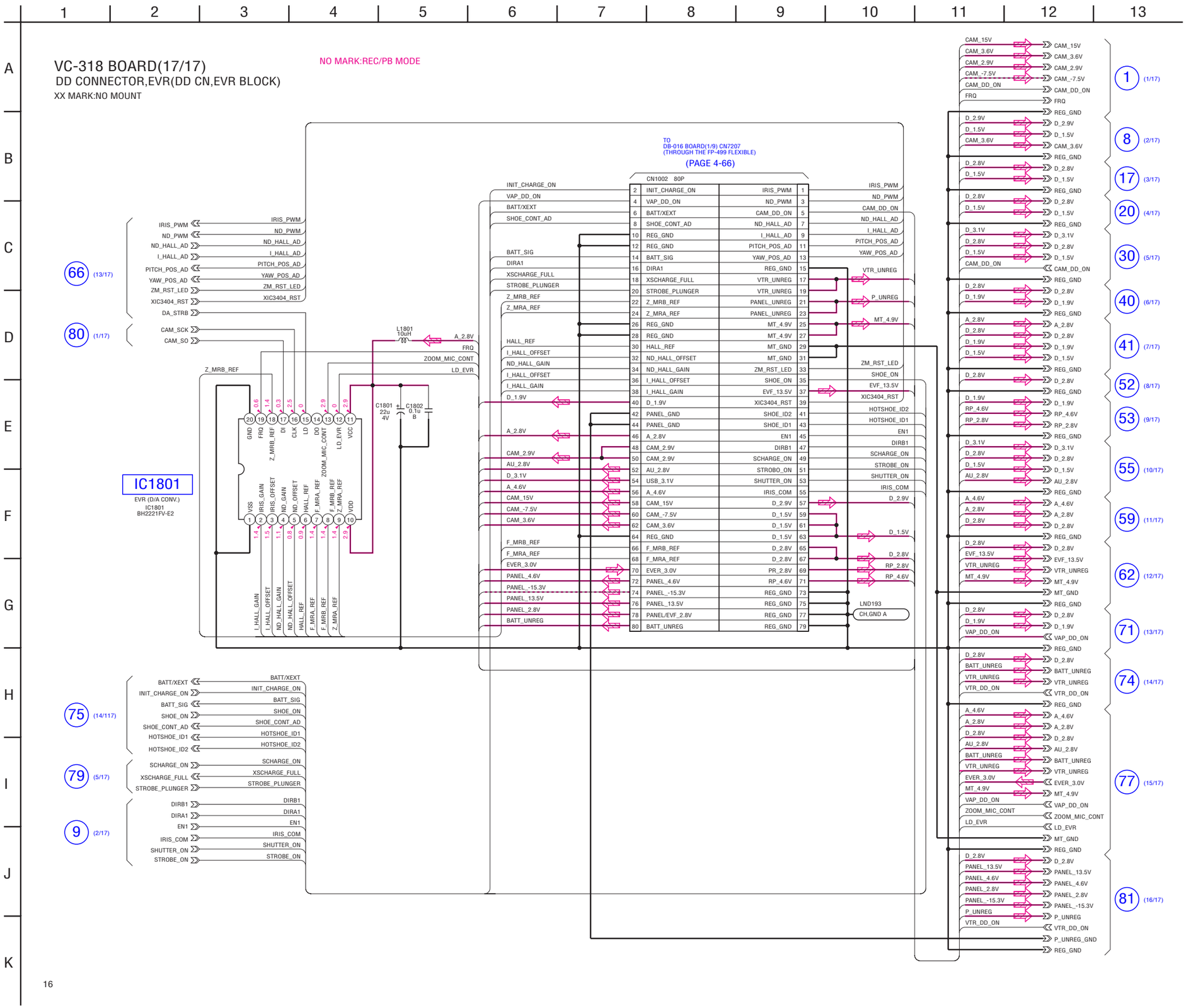
For Schematic Diagram

• Refer to page 4-119 for printed wiring board.



For Schematic Diagram

• Refer to page 4-119 for printed wiring board.



For Schematic Diagram

• Refer to page 4-123 for printed wiring board.

DB-016 BOARD(1/9)
LENS MOTOR DRIVE(LD BLOCK)
XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲mark,is not possible.

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
* :Cannot be measured

IC3401 IRIS CONTROL
IC3403 HALL BIAS CONTROL
IC3405 HALL AMP ND FILTER CONTROL
IC3406 3.1V REG
IC3402 FOCUS/ZOOM IRIS DRIVE
IC3404 FOCUS/ZOOM CONTROL

LENS BLOCK (1/2)

LENS BLOCK is replaced as a block.
So that there PRINTED WIRING BOARD and SCHEMATIC DIAGRAM are omitted.

1 (8/9)
2 (9/9)
3 (2/9)
4 (9/9)

For Schematic Diagram

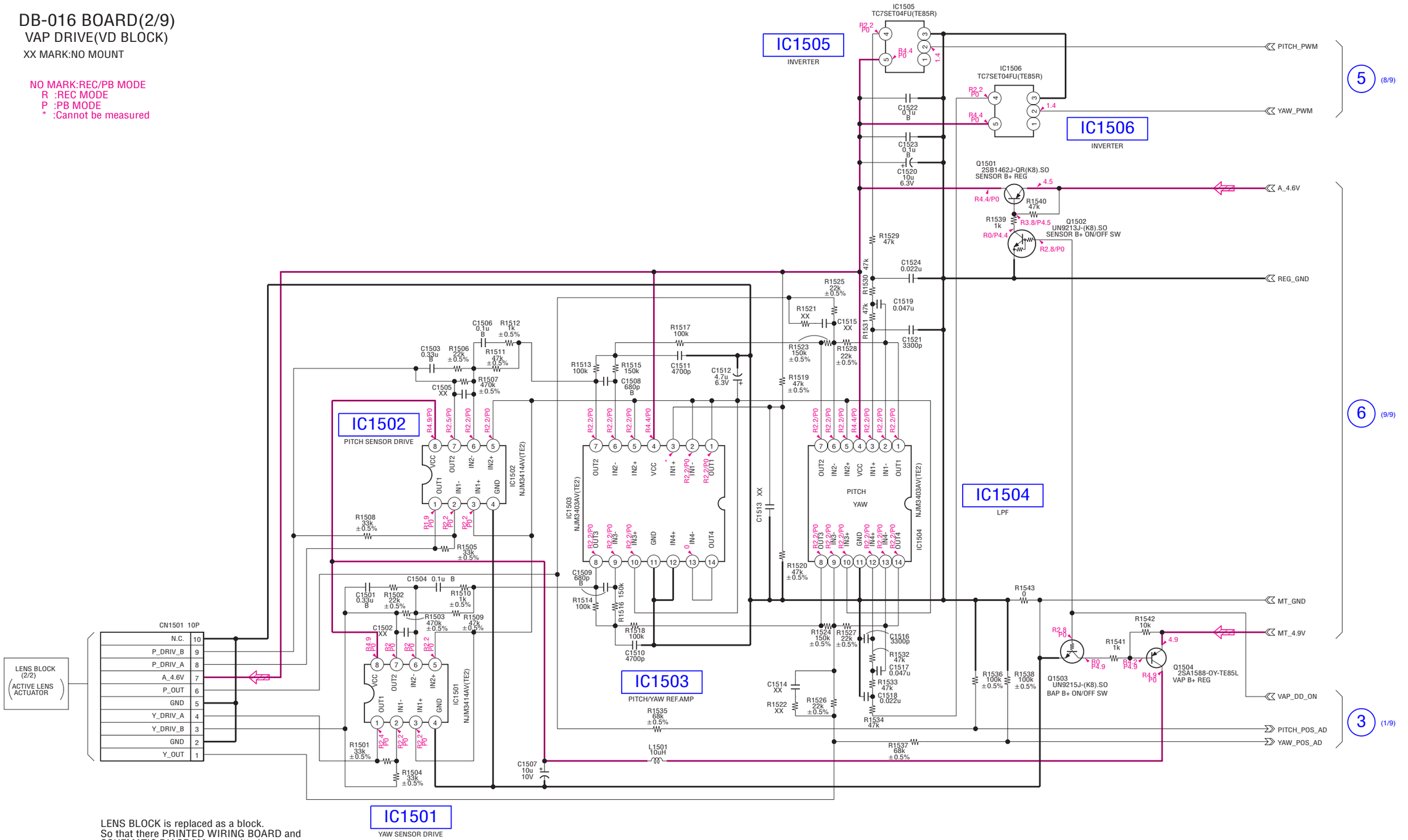
• Refer to page 4-123 for printed wiring board.

DB-016 BOARD(2/9)

VAP DRIVE(VD BLOCK)

XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
* :Cannot be measured



LENS BLOCK is replaced as a block.
So that there PRINTED WIRING BOARD and SCHEMATIC DIAGRAM are omitted.

For Schematic Diagram

• Refer to page 4-123 for printed wiring board.

DB-016 BOARD(3/9)

MIC AMP(MA BLOCK)

XX MARK:NO MOUNT

NO MARK:REC/PB MODE

Measurement at ■ Mark is not possible physically due to the parts mounted on Side B.
When disk access fails,supply of power is stopped due to power save.As the result, most of the measurement points show"0"(zero).

IC6302 AUDIO SELECT

IC6305 BUFFER

IC6304 REF AMP

IC6301 MIC GAIN CONTROL

IC6303 BUFFER

SIGNAL PATH

	AUDIO SIGNAL
REC	→
PB	

For Schematic Diagram

• Refer to page 4-123 for printed wiring board.

DB-016 BOARD(4/9)

AUDIO PROCESSOR(AU1 BLOCK)

XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲mark,is not possible.

NO MARK:REC/PB MODE

Measurement at ■ Mark is not possible physically due to the parts mounted on Side B.
When disk access fails,supply of power is stopped due to power save.As the result, most of the measurement points show"0"(zero).

Note:Resister is mounted to the Location where C6032,C6043 are printed.

IC6001
AUDIO IN/OUT SELECT
▲ IC6001
LA74208GL-TBM
CSP(CHIP SIZE PACKAGE)IC

IC6004
A/D,D/A CONVERTER
▲ IC6004
AK4550VL-L

IC6002
AUDIO SELECTOR

SIGNAL PATH

	AUDIO SIGNAL
REC	⇨
PB	⇦

For Schematic Diagram

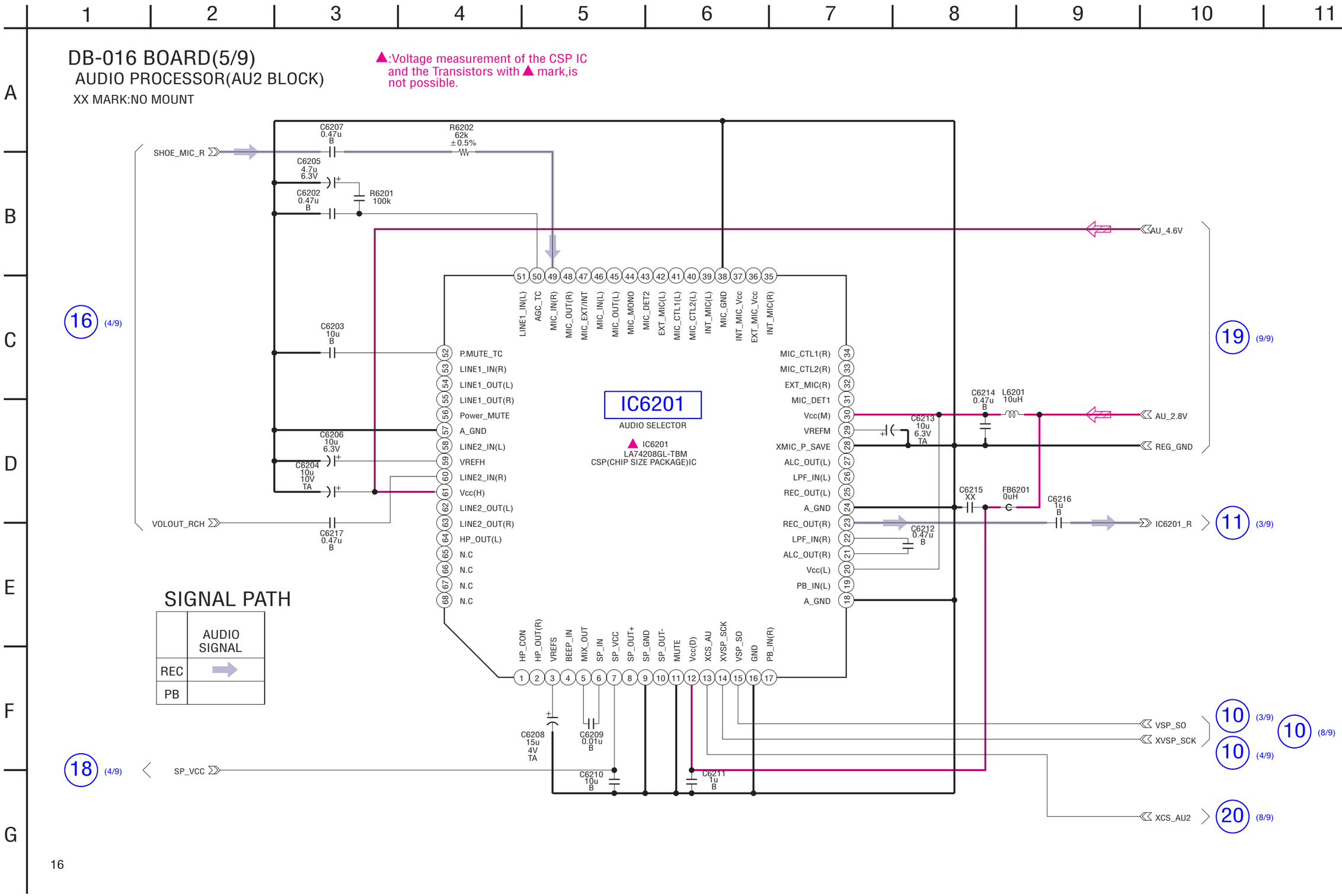
• Refer to page 4-123 for printed wiring board.

DB-016 BOARD(5/9)

AUDIO PROCESSOR(AU2 BLOCK)

XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲ mark,is not possible.



For Schematic Diagram

• Refer to page 4-123 for printed wiring board.

DB-016 BOARD(6/9)

VIDEO IN/OUT SELECT(I/O BLOCK)

XX MARK:NO MOUNT

▲:Voltage measurement of the CSP IC and the Transistors with ▲mark,is not possible.

IC7001

VIDEO IN/OUT SELECT

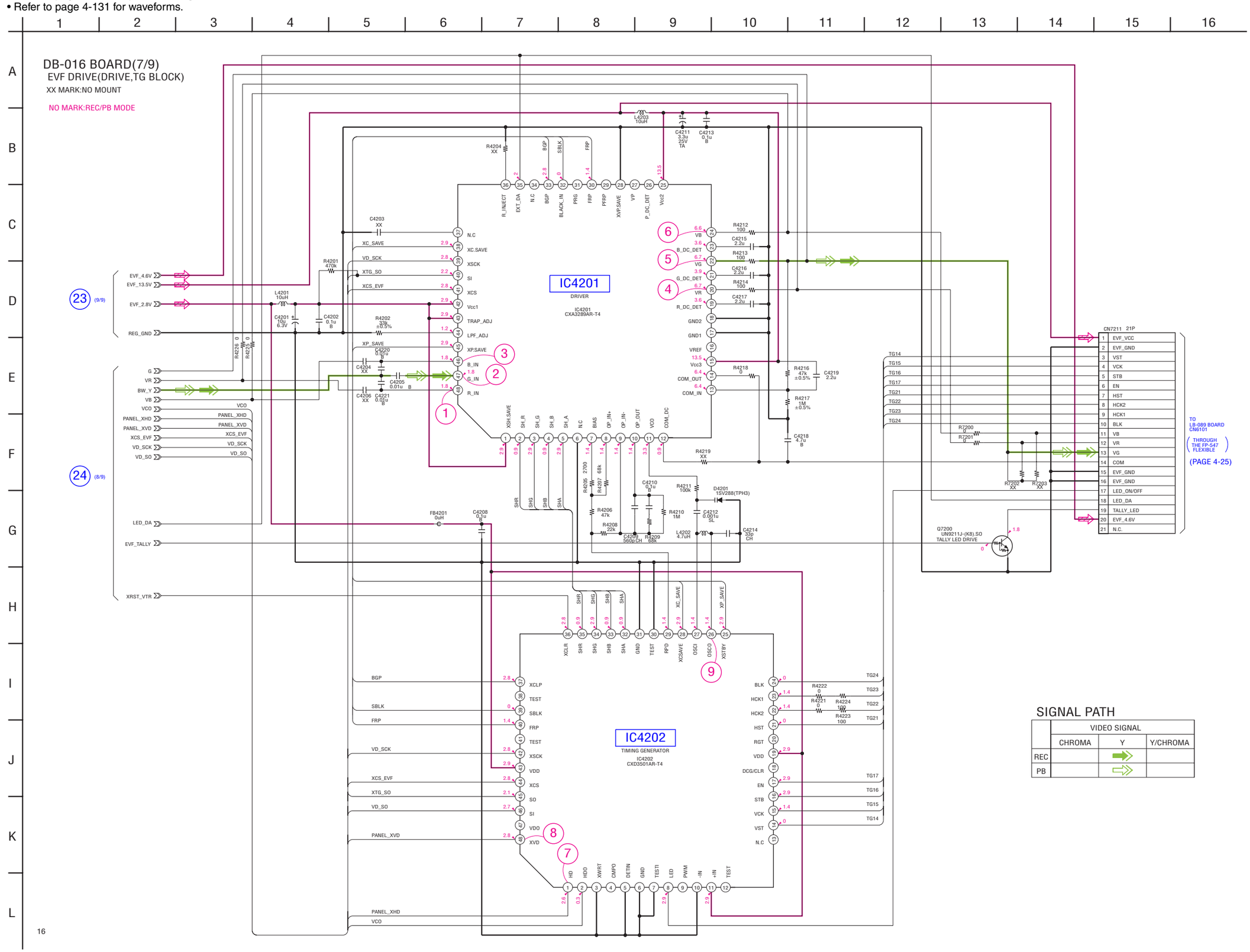
▲ IC7001 AN2225NB8TBA CSP(CHIP SIZE PACKAGE)IC

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	➡
PB	⇨	⇨	⇨

For Schematic Diagram

- Refer to page 4-123 for printed wiring board.
- Refer to page 4-131 for waveforms.



For Schematic Diagram

• Refer to page 4-123 for printed wiring board.

FP-497 FLEXIBLE

DB-016 BOARD(8/9)
CONNECTOR(CN BLOCK)
XX MARK:NO MOUNT

CONTROL SWITCH BLOCK (CF-1870)

CONTROL SWITCH BLOCK (PS-1870)

CONTROL SWITCH BLOCK(PS-1870,CF-1870) and FP-497 Flexible is replaced as a block.
So that there PRINTED WIRING BOARD are omitted.

SIGNAL PATH

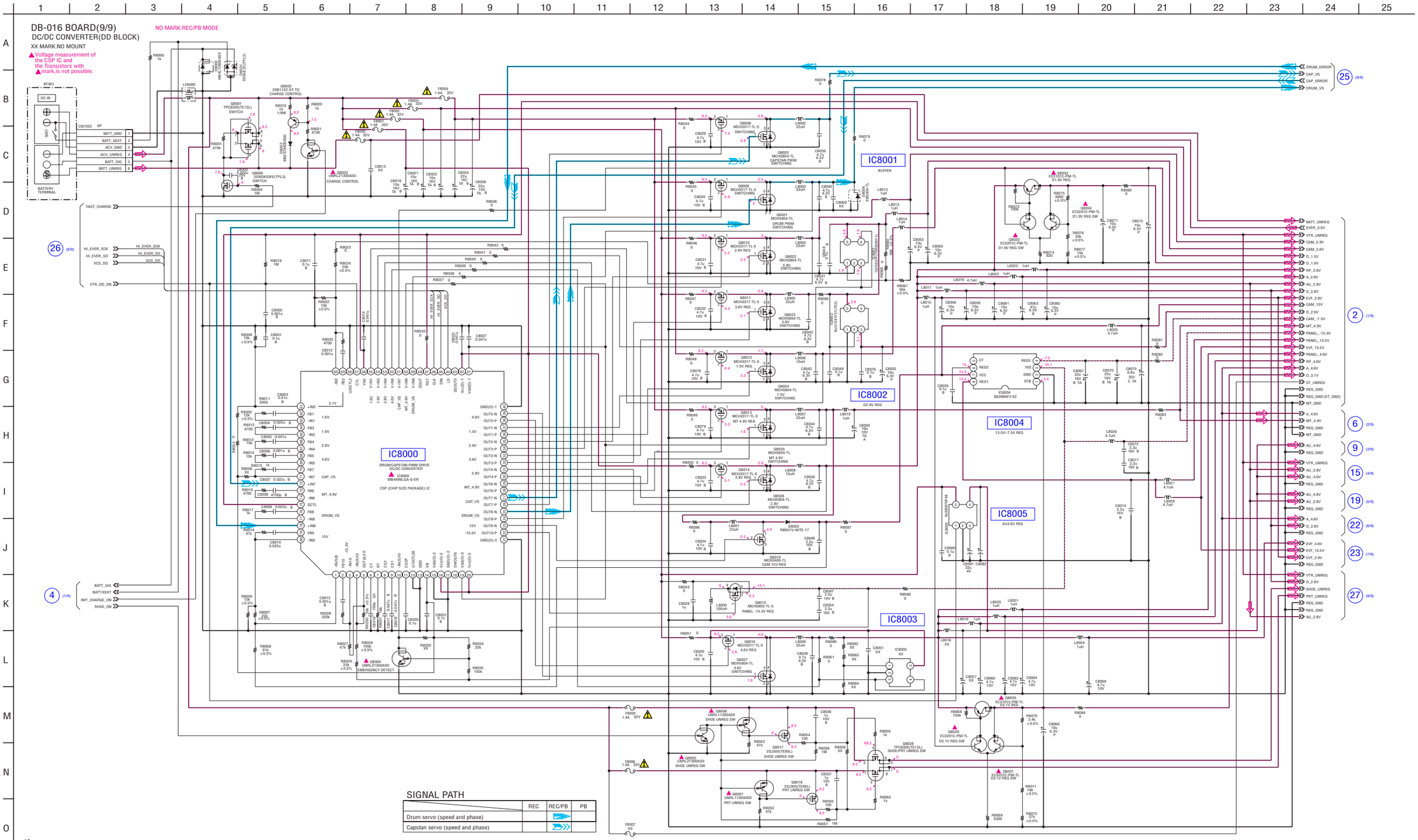
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB				

SIGNAL PATH

	REC	REC/PB	PB
Drum servo (speed and phase)			
Capstan servo (speed and phase)			

For Schematic Diagram

• Refer to page 4-123 for printed wiring board.

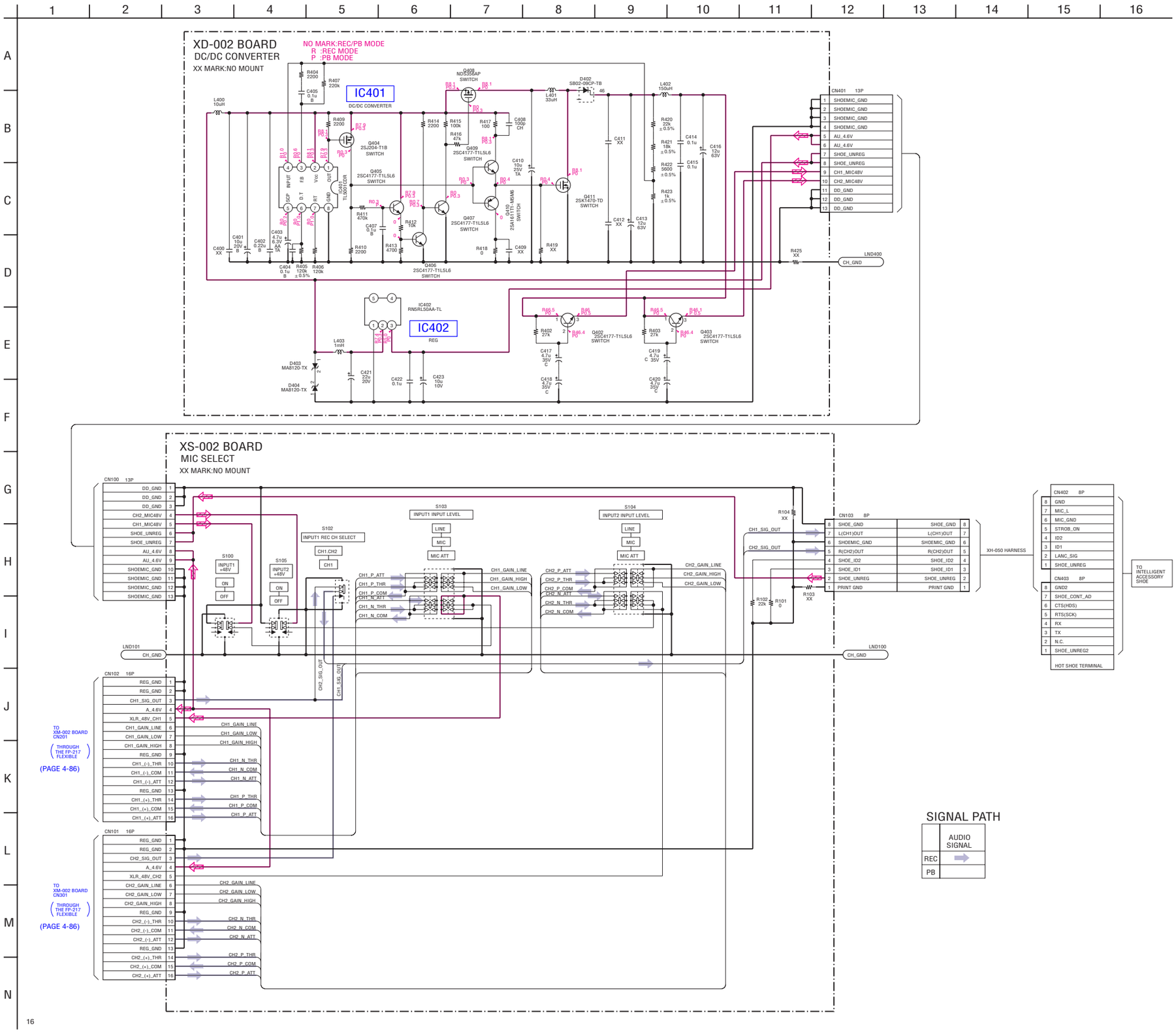


Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

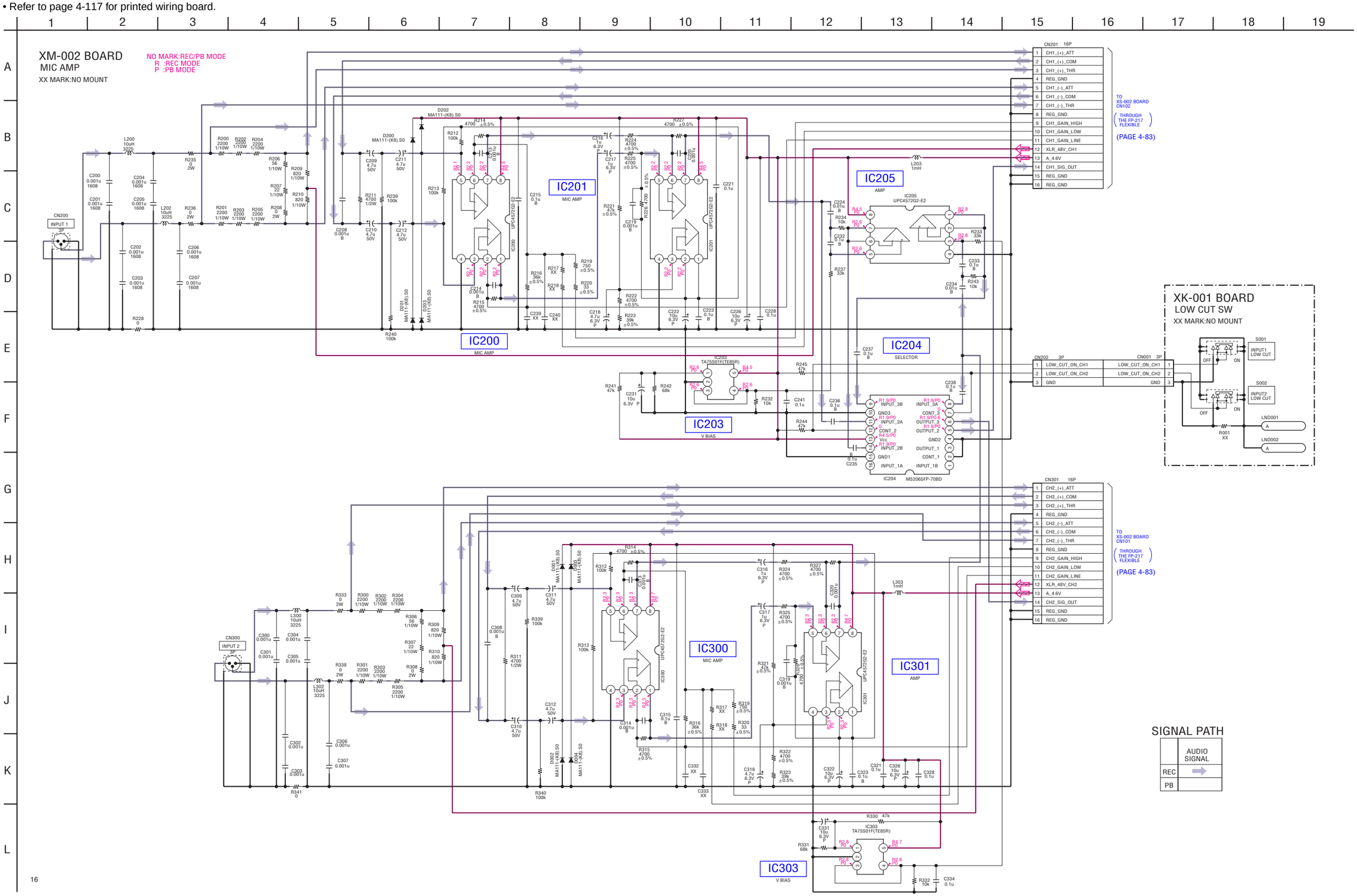
For Schematic Diagram

• Refer to page 4-115 for printed wiring board.



For Schematic Diagram

• Refer to page 4-117 for printed wiring board.



COVER

4-3. PRINTED WIRING BOARDS

Link

SE-132 BOARD	FP-495 FLEXIBLE BOARD
CD-389 BOARD (SIDE A)	FP-497 FLEXIBLE BOARD
CD-389 BOARD (SIDE B)	FP-100, FP-102, FP-228 FLEXIBLE BOARD
MA-425 BOARD	XD-002 BOARD
PD-191 BOARD	XS-002 BOARD
JK-222 BOARD (SIDE A)	XM-002 BOARD
JK-222 BOARD (SIDE B)	XK-001 BOARD
CK-134 BOARD (SIDE A)	VC-318 BOARD (SIDE A)
CK-134 BOARD (SIDE B)	VC-318 BOARD (SIDE B)
LB-089 BOARD	DB-016 BOARD (SIDE A)
FP-504 FLEXIBLE BOARD	DB-016 BOARD (SIDE B)

COMMON NOTE FOR PRINTED WIRING BOARDS		WAVEFORMS
MOUNTED PARTS LOCATION	CIRCUIT BOARDS LOCATION	FLEXIBLE BOARDS LOCATION

COVER

4-3. PRINTED WIRING BOARDS

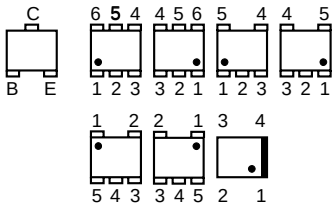
THIS NOTE IS COMMON FOR WIRING BOARDS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

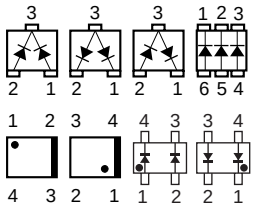
- : Uses unleaded solder.
- : Pattern from the side which enables seeing. (The other layers' patterns are not indicated)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- : panel designation

- Chip parts.

Transistor



Diode

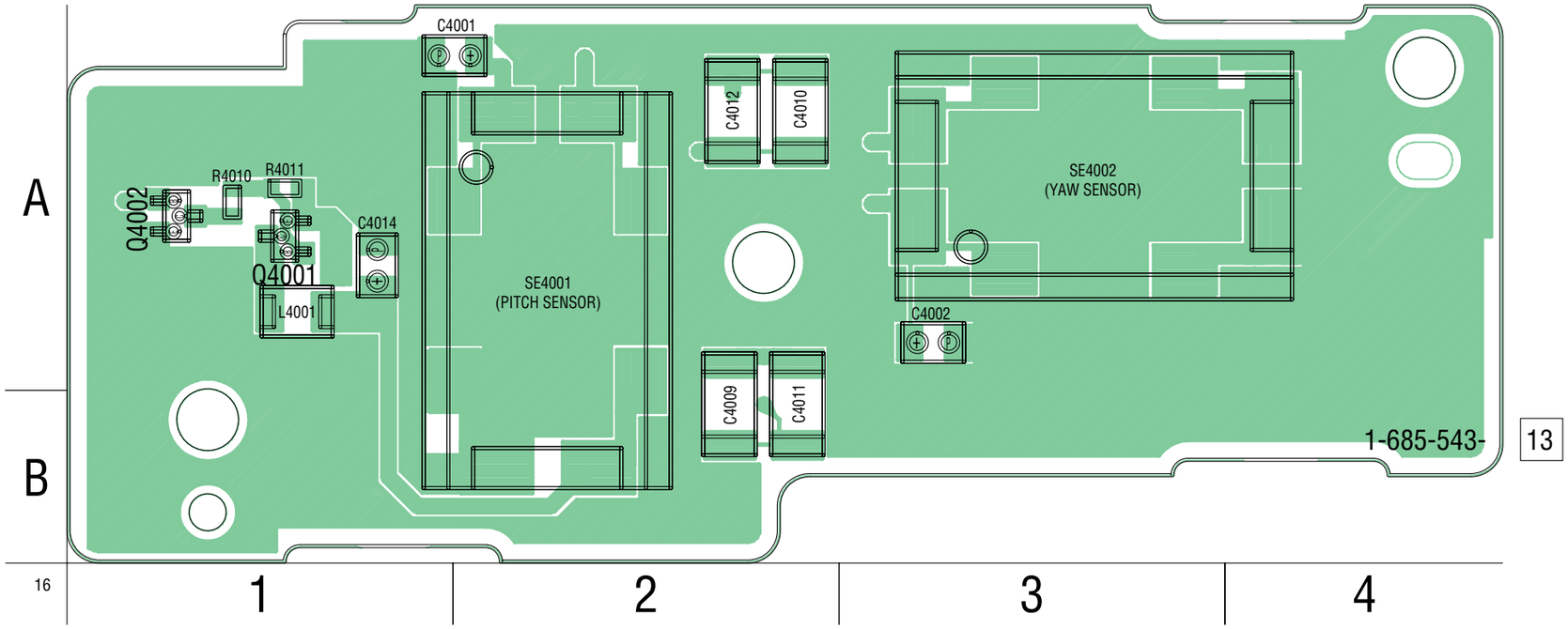


4-3. PRINTED WIRING BOARDS

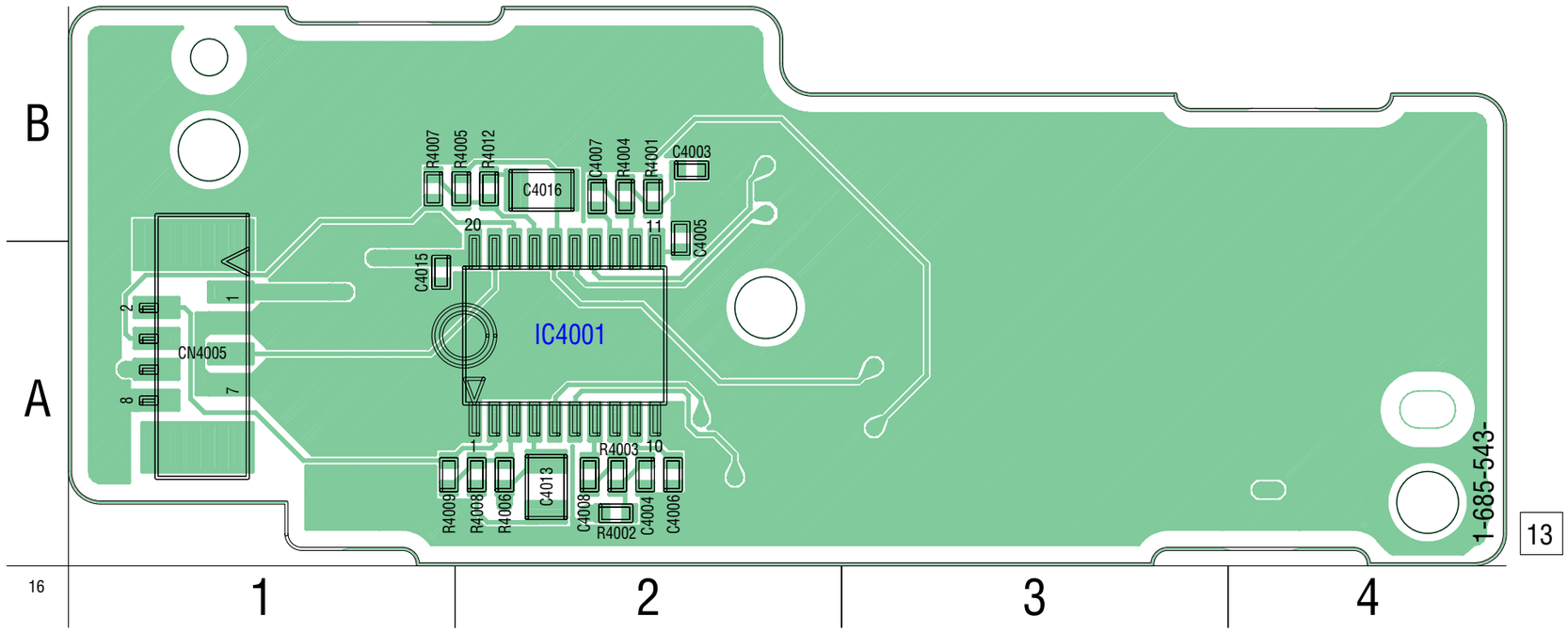
SE-132 (PITCH/YAW SENSOR) PRINTED WIRING BOARD

• : Uses unleaded solder.

SE-132 BOARD (SIDE A)



SE-132 BOARD (SIDE B)



For printed wiring boards

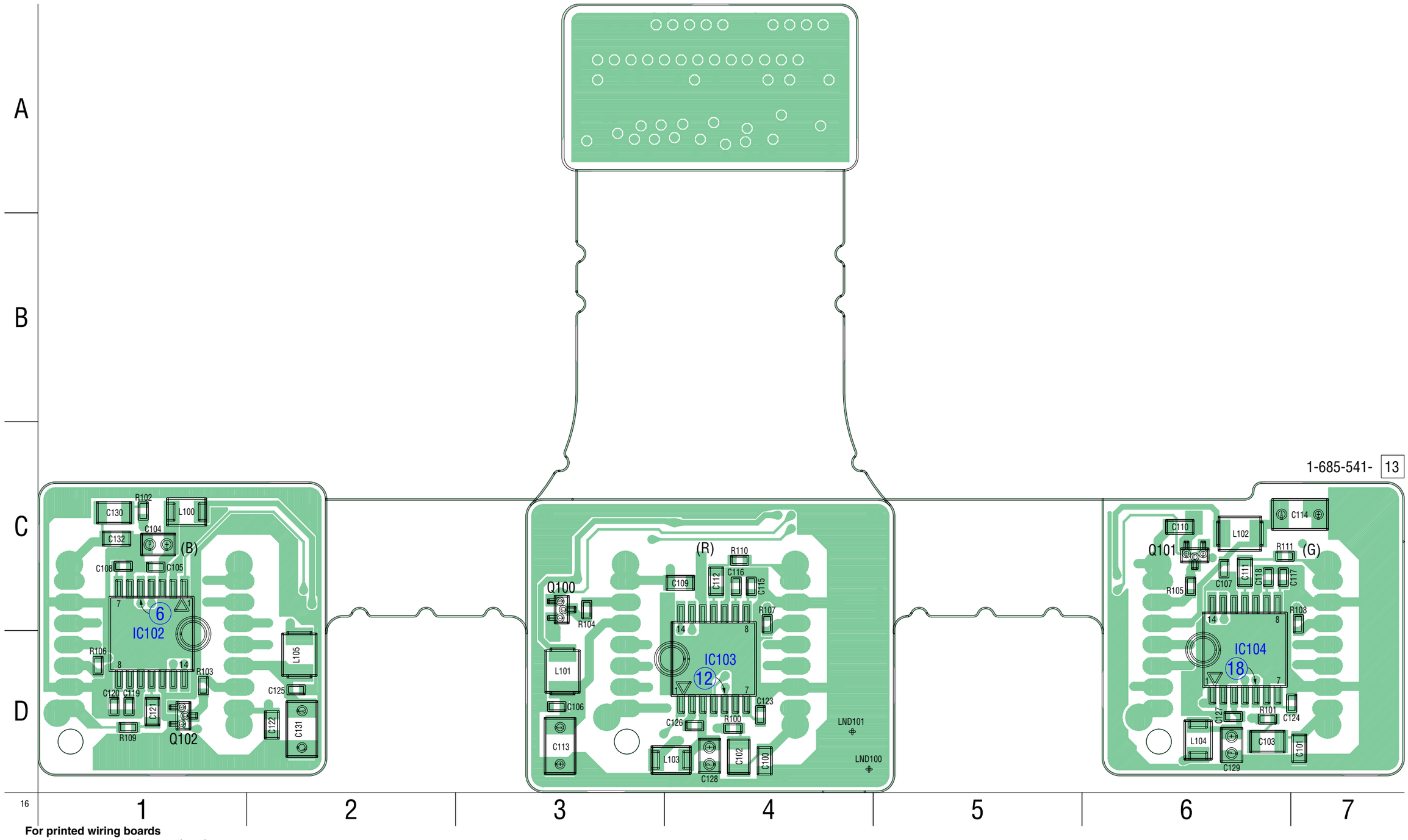
- Refer to page 4-132 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

CD-389 (CCD IMAGER) PRINTED WIRING BOARD

- : Uses unleaded solder.

CD-389 BOARD (SIDE A)



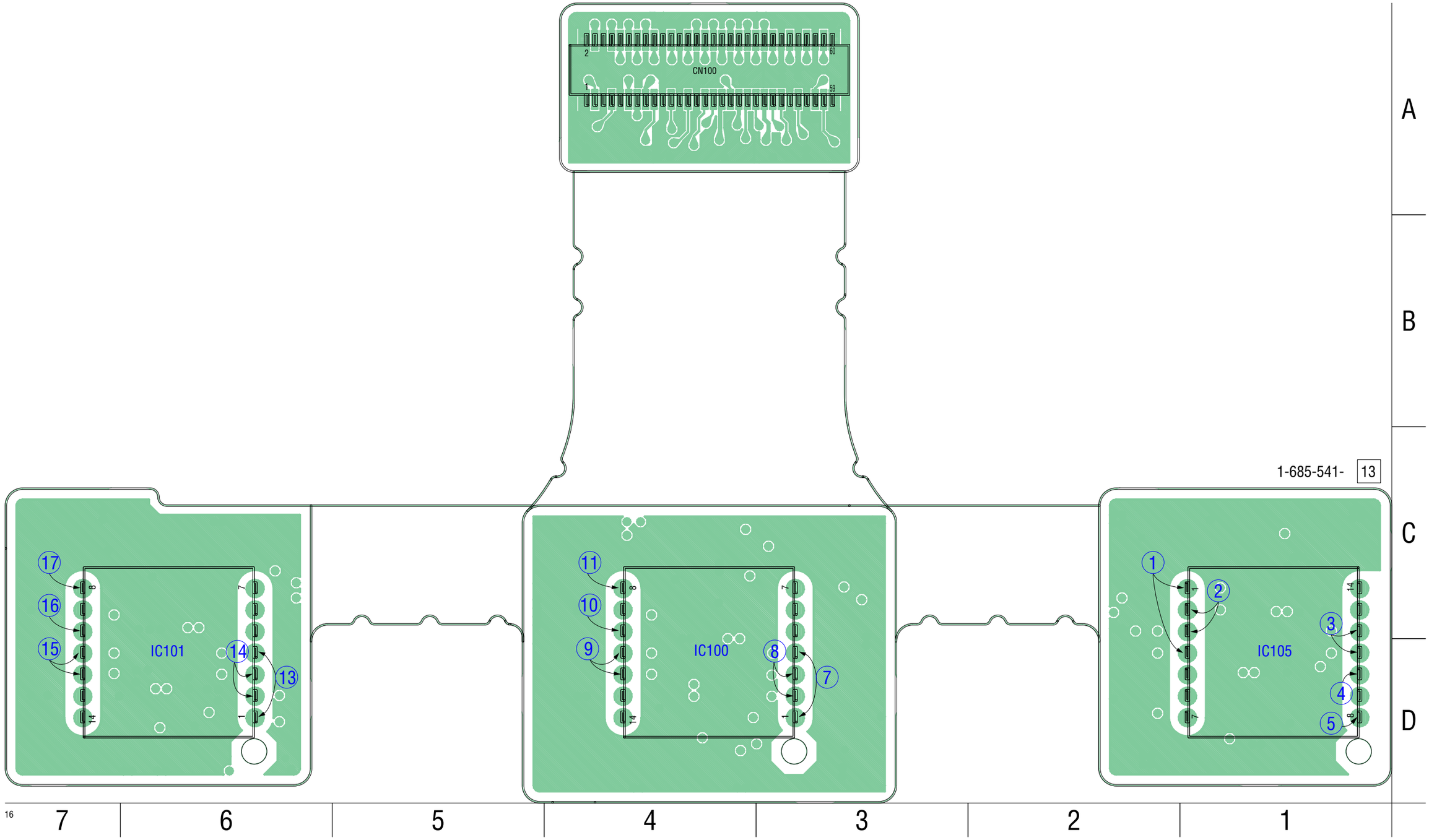
For printed wiring boards

- Refer to page 4-132 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

• : Uses unleaded solder.

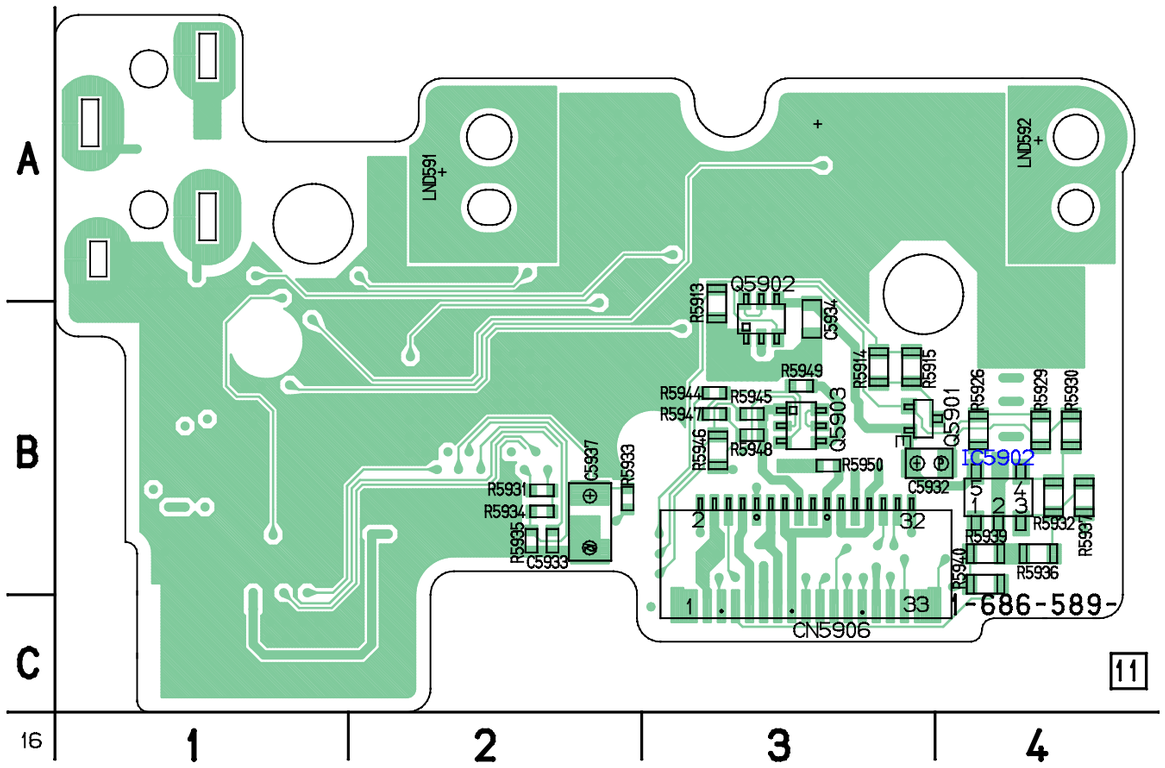
CD-389 BOARD (SIDE B)



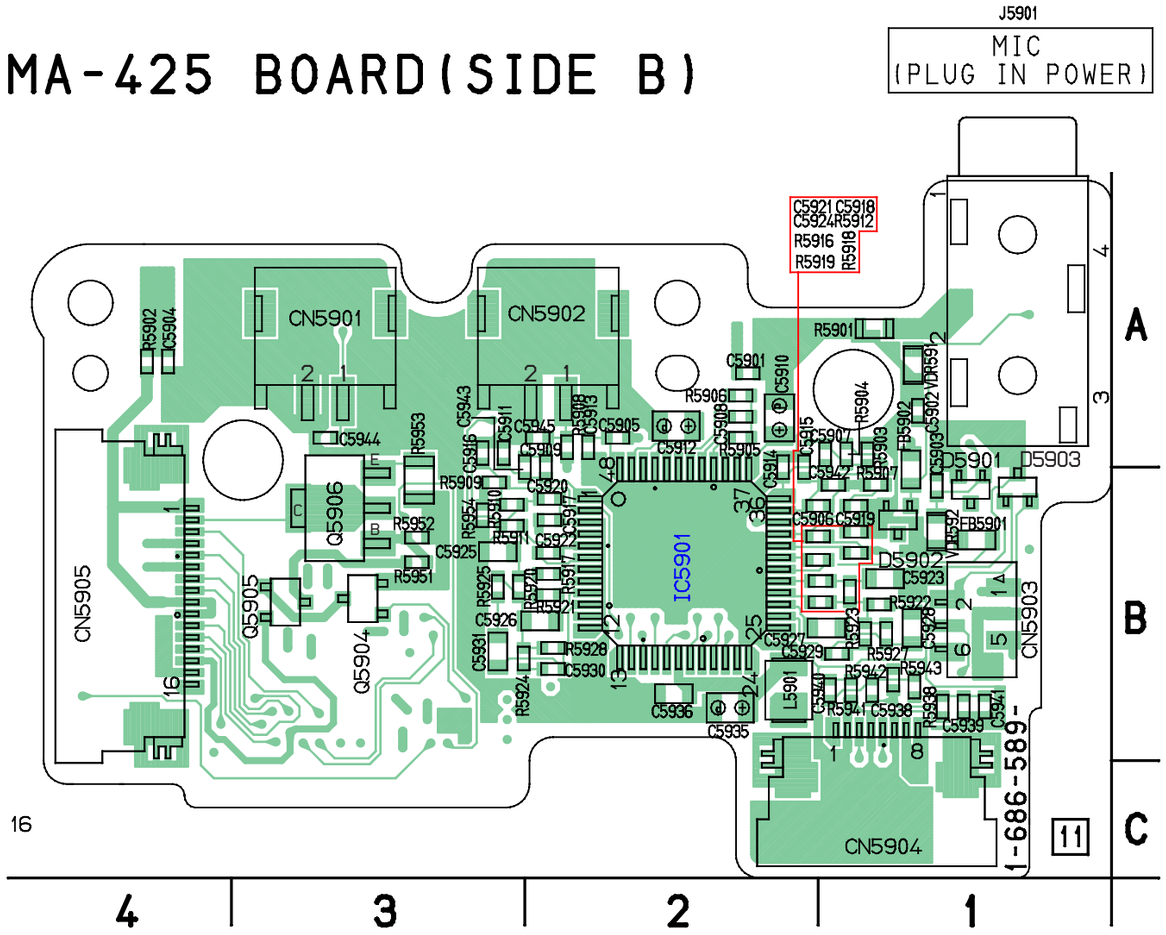
MA-425 (MIC AMP, AF LASER CONTROL) PRINTED WIRING BOARD

- : Uses unleaded solder.

MA-425 BOARD(SIDE A)



MA-425 BOARD(SIDE B)



For printed wiring boards

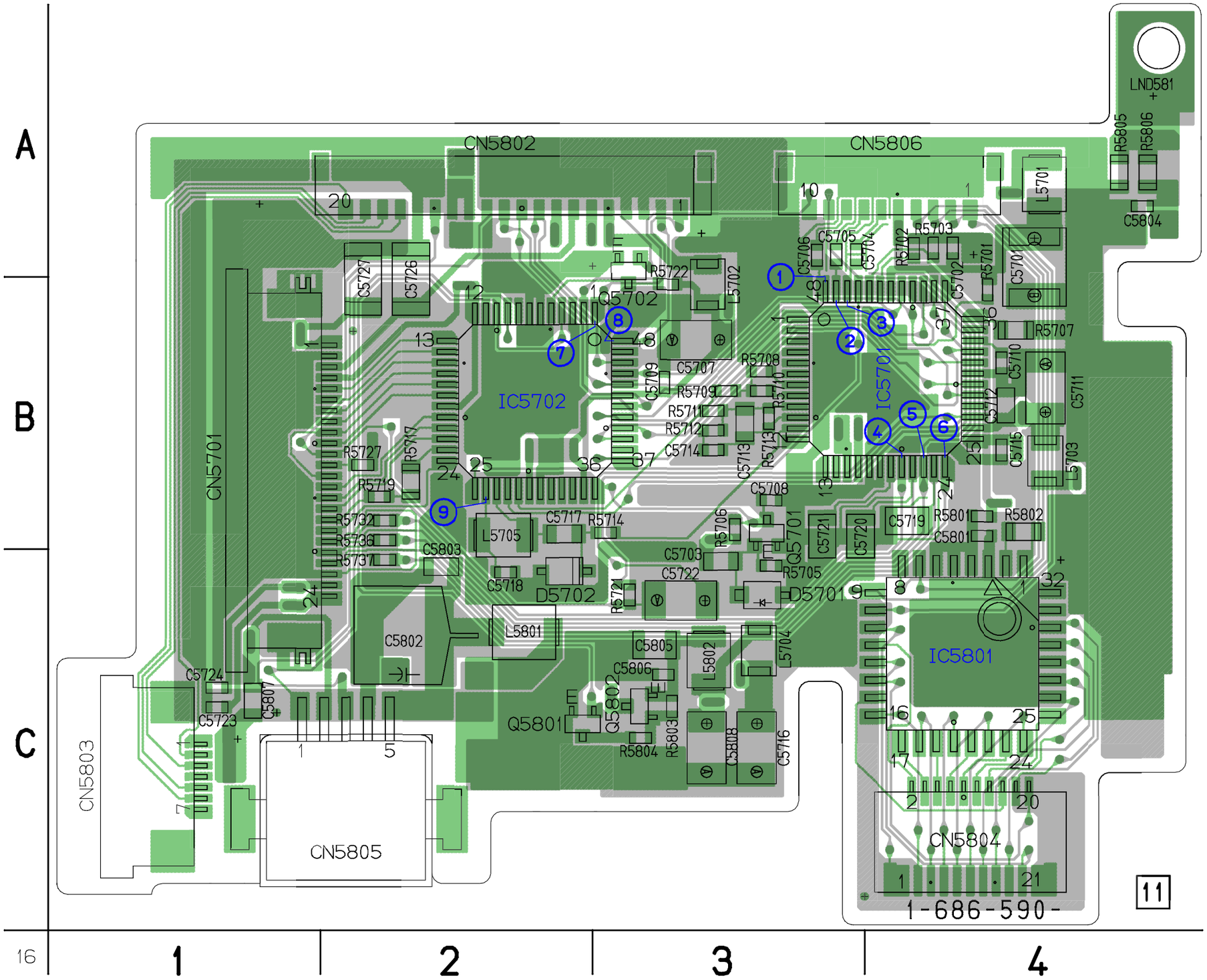
- Refer to page 4-132 for parts location.
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

PD-191 (LCD DRIVER, TIMING GENERATOR, BACKLIGHT) PRINTED WIRING BOARD

- : Uses unleaded solder.

PD-191 BOARD



For printed wiring boards

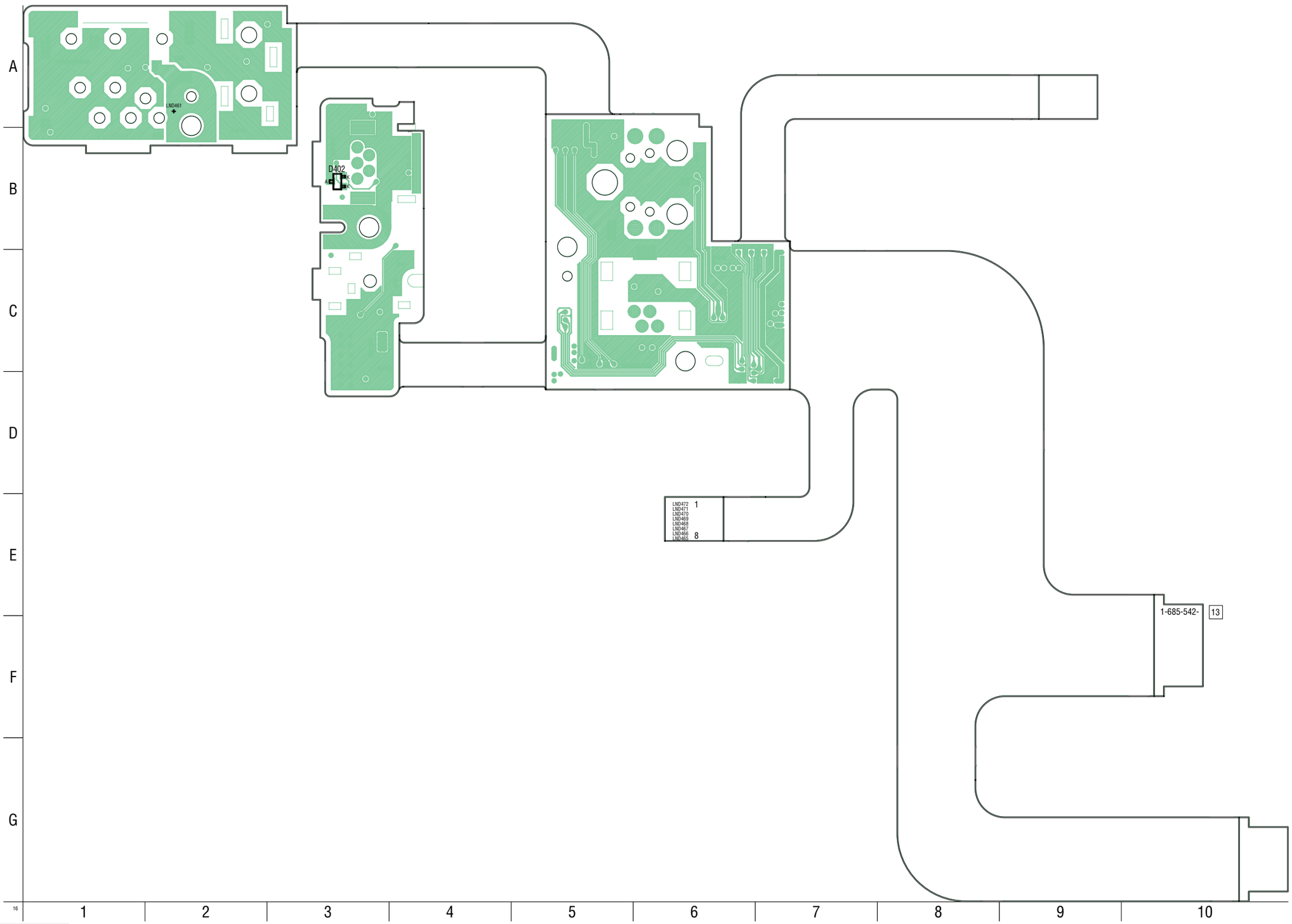
- Refer to page 4-132 for parts location.
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

JK-222 (AV IN/OUT, DV/USB CONNECTOR) PRINTED WIRING BOARD

- : Uses unleaded solder.

JK-222 BOARD (SIDE A)



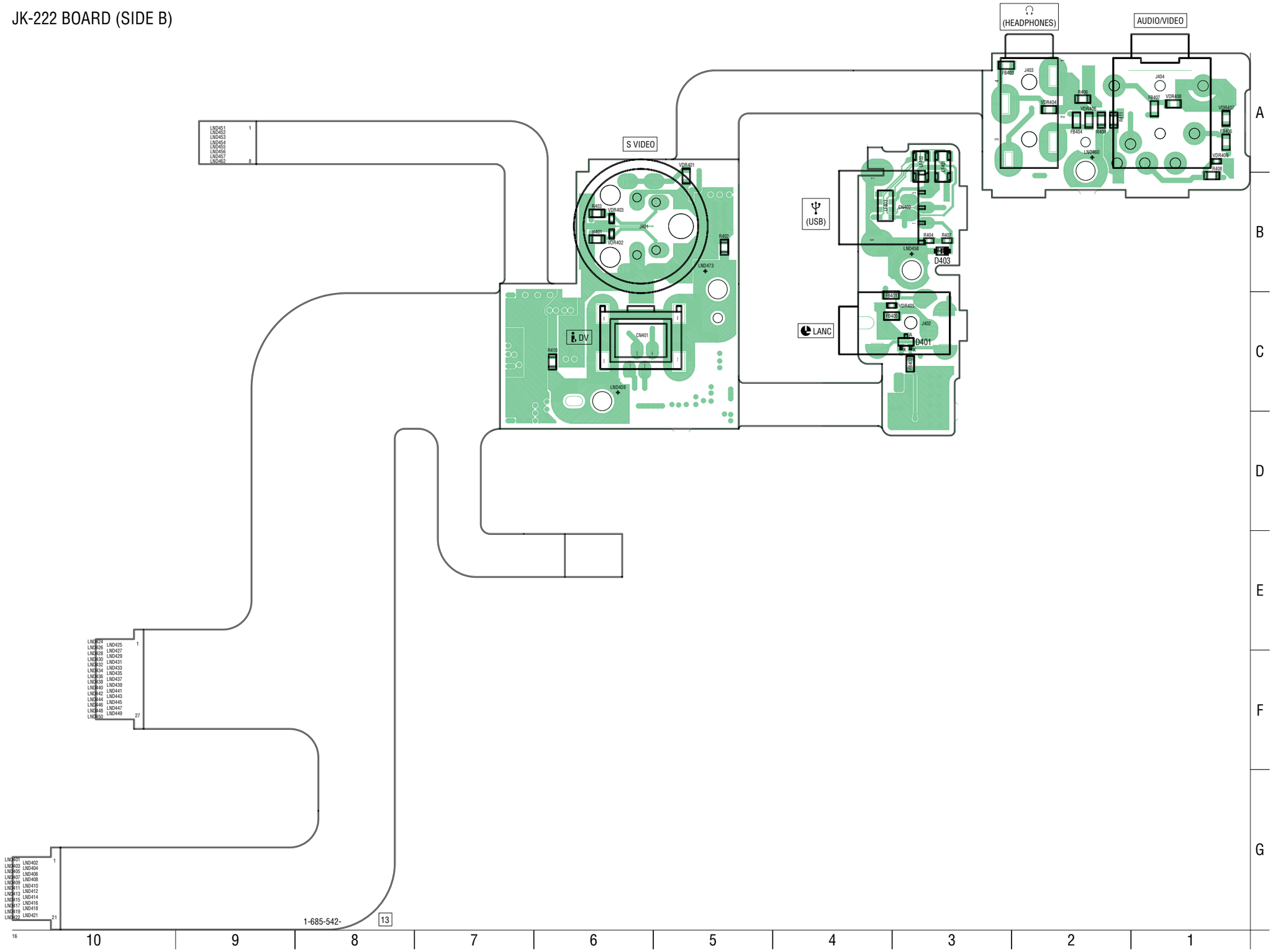
For printed wiring boards

- Refer to page 4-133 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

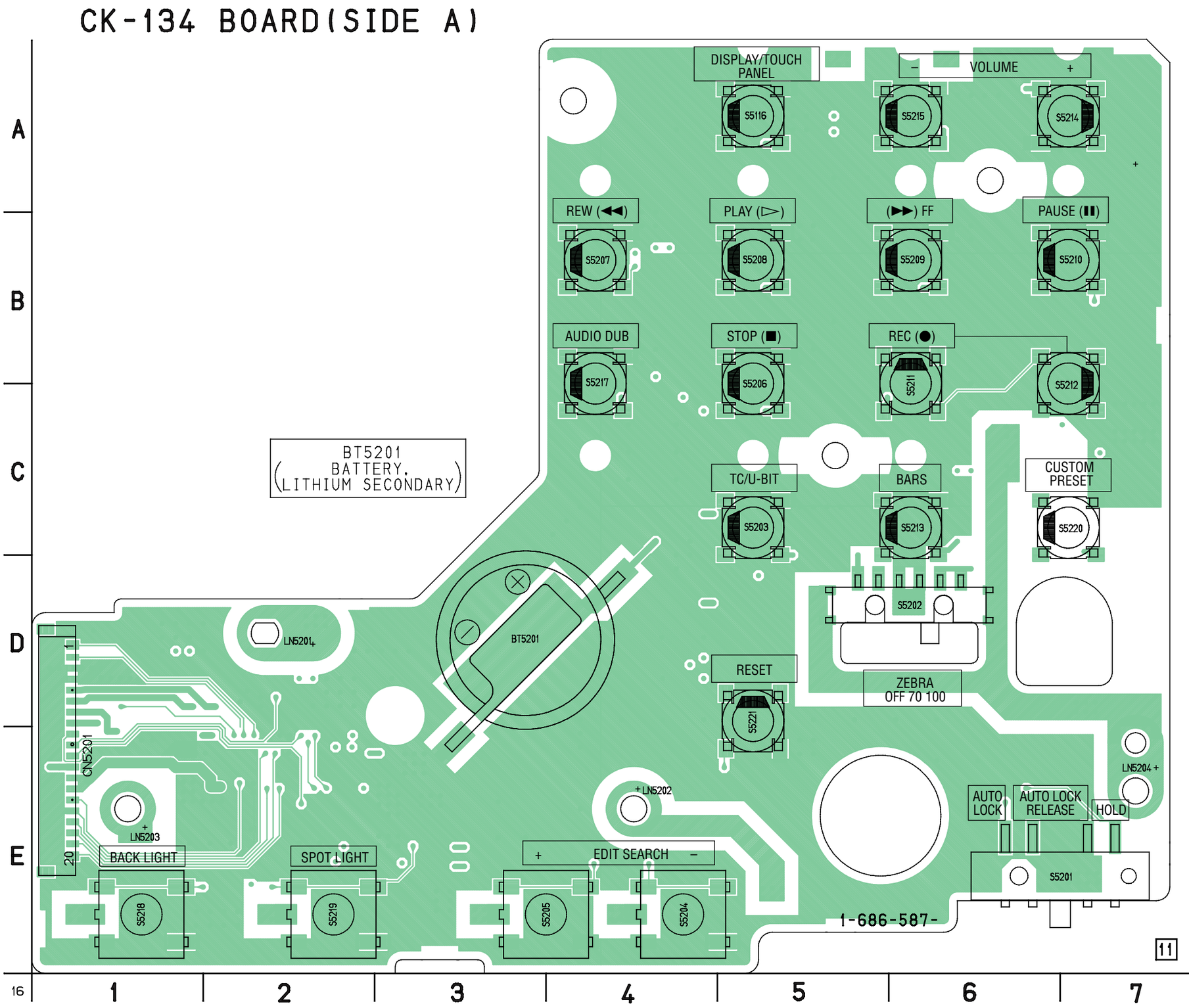
- : Uses unleaded solder.

JK-222 BOARD (SIDE B)



CK-134 (CONTROL SWITCH) PRINTED WIRING BOARD

• : Uses unleaded solder.



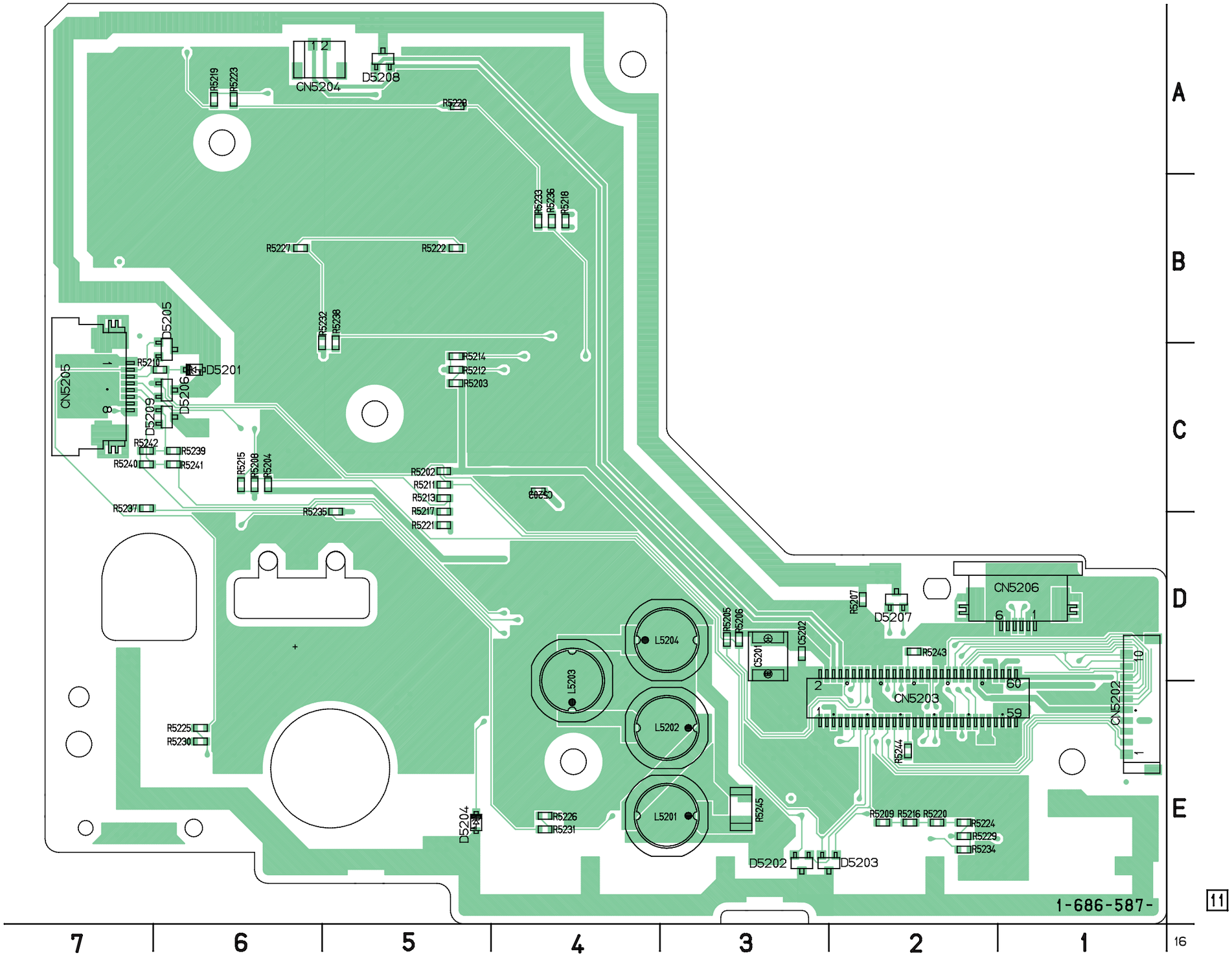
For printed wiring boards

- Refer to page 4-133 for parts location.
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

- : Uses unleaded solder.

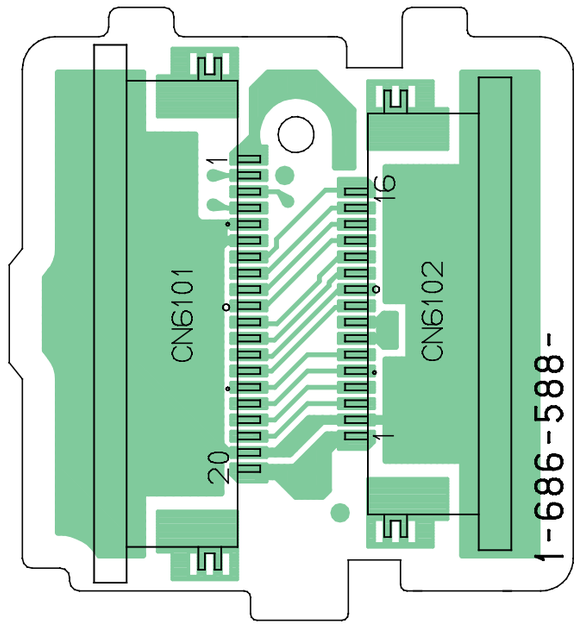
CK-134 BOARD(SIDE B)



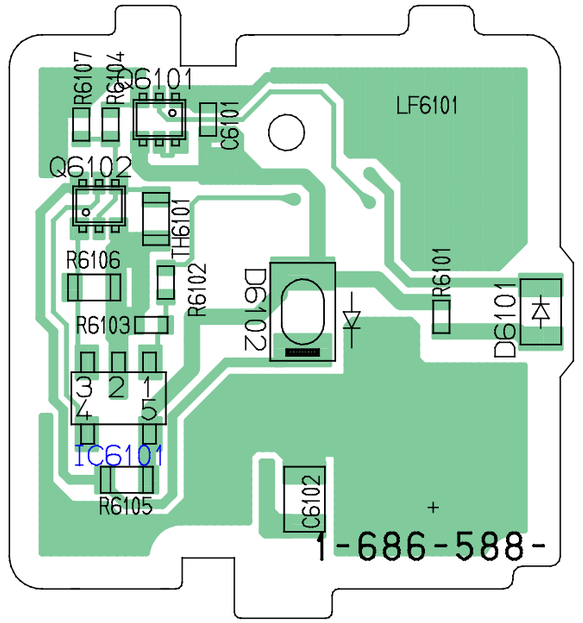
LB-089 (EVF, EVF BACKLIGHT) PRINTED WIRING BOARD

• : Uses unleaded solder.

LB-089 BOARD
(SIDE A)



LB-089 BOARD
(SIDE B)



For printed wiring boards

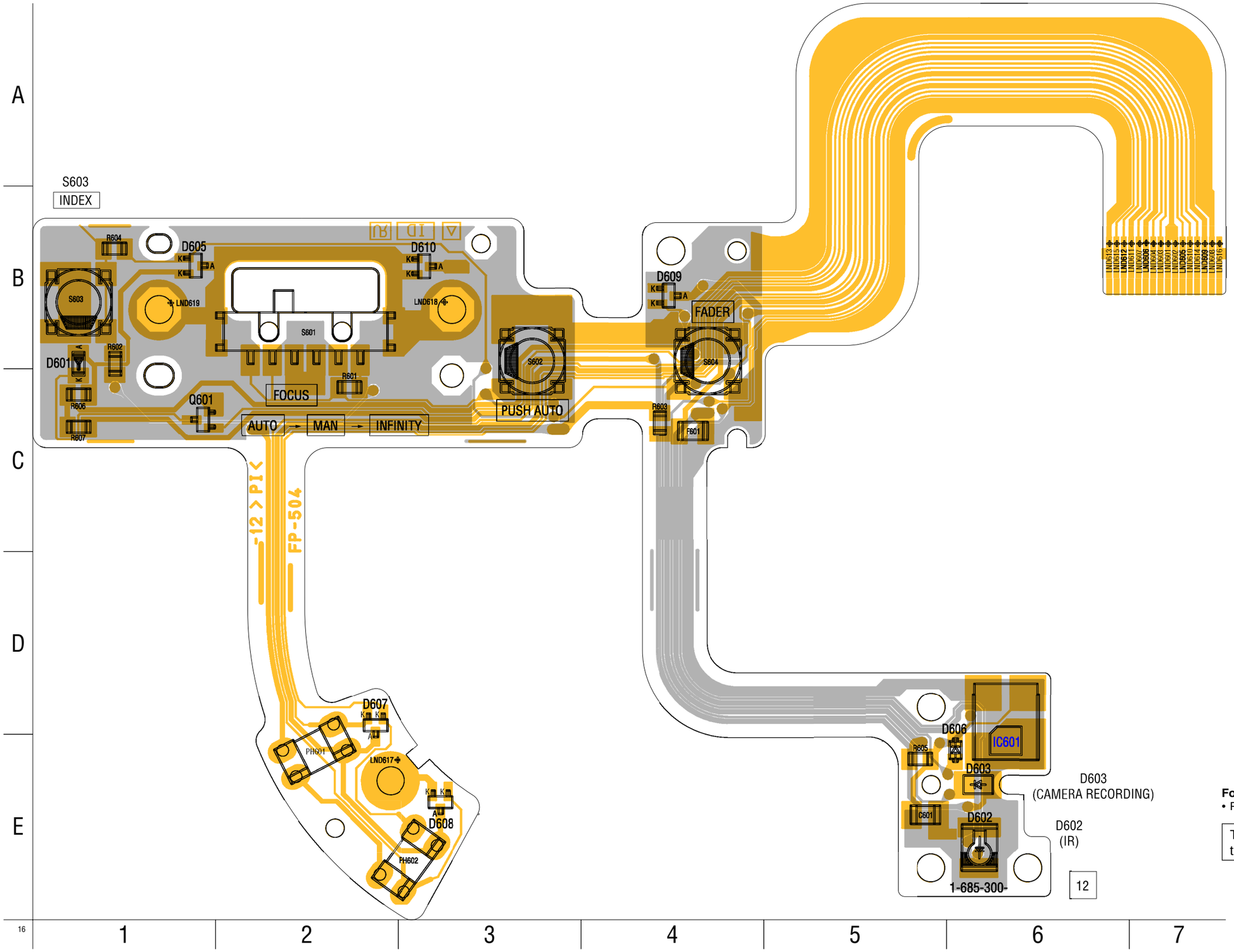
- This board is four-layer print board. However, the patterns of layers two and three have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

FP-504 FLEXIBLE BOARD

• : Uses unleaded solder.

FP-504 FLEXIBLE BOARD



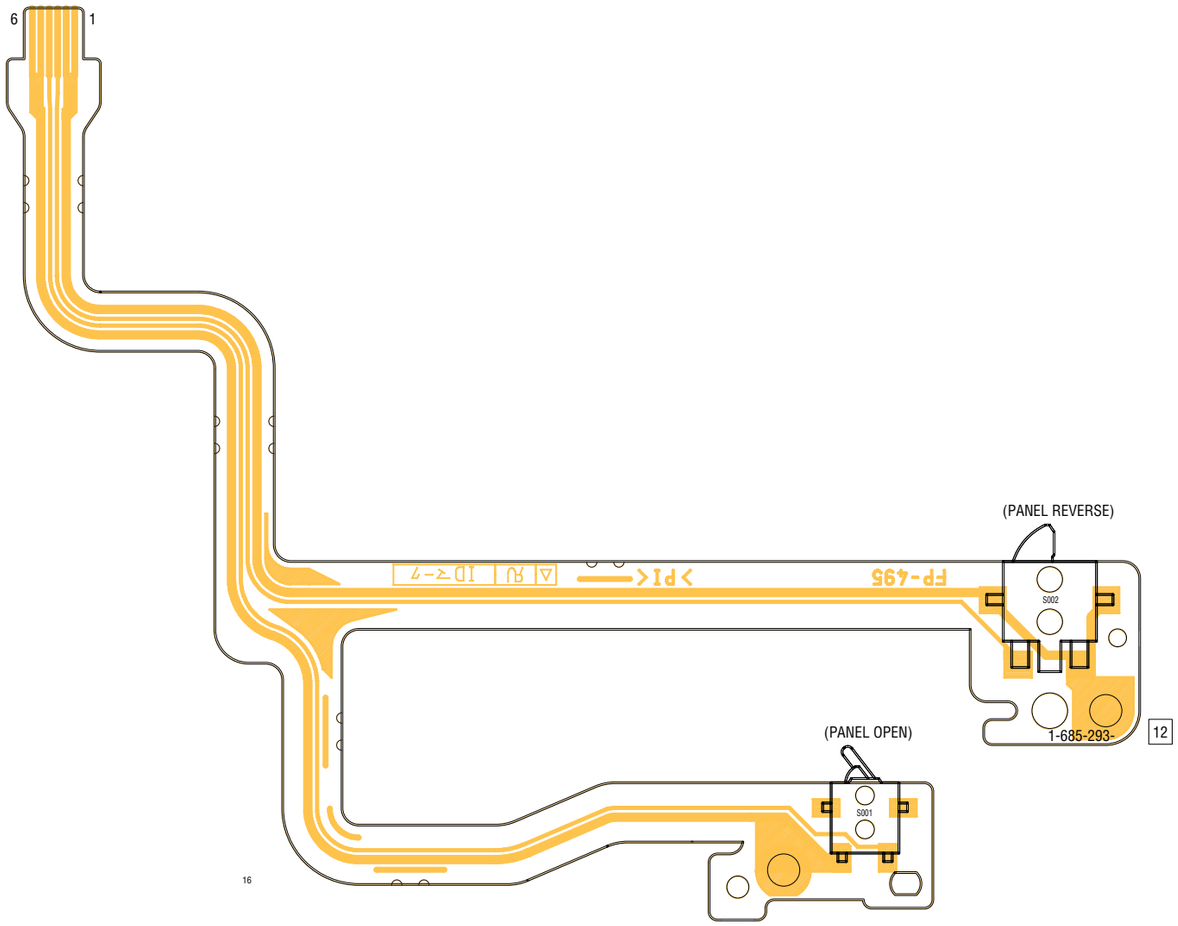
For printed wiring boards

• Refer to page 4-133 for parts location.

There are a few cases that the part printed on this diagram isn't mounted in this model.

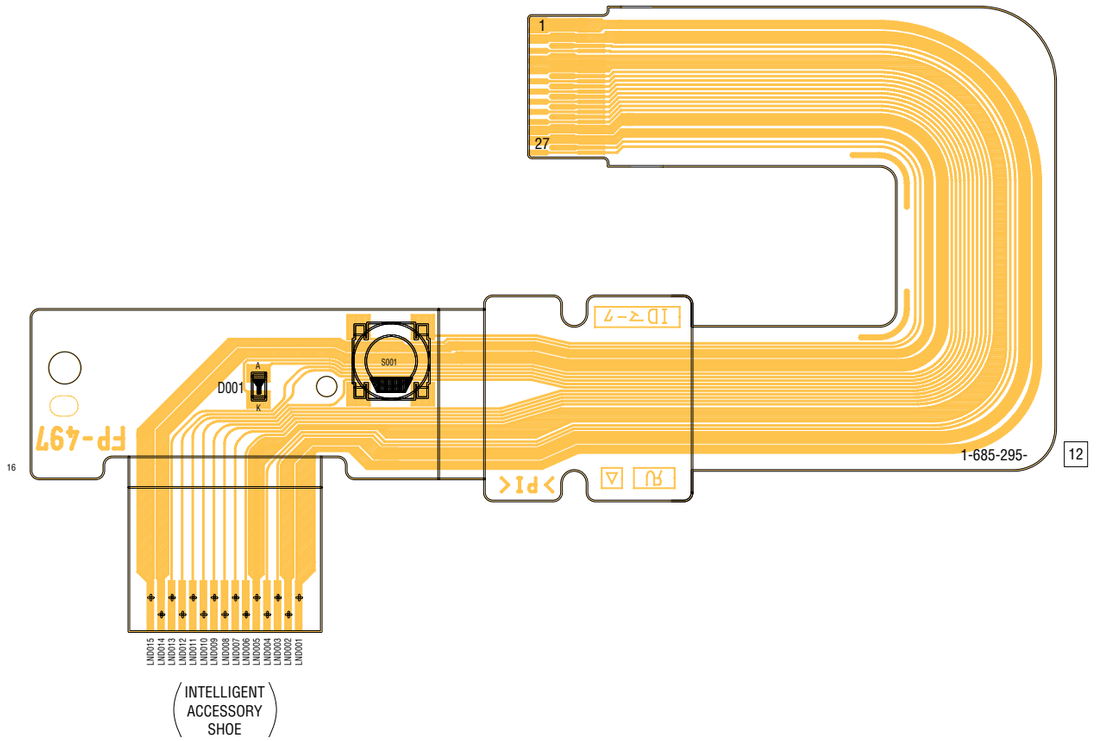
FP-495 FLEXIBLE BOARD

FP-495 FLEXIBLE BOARD



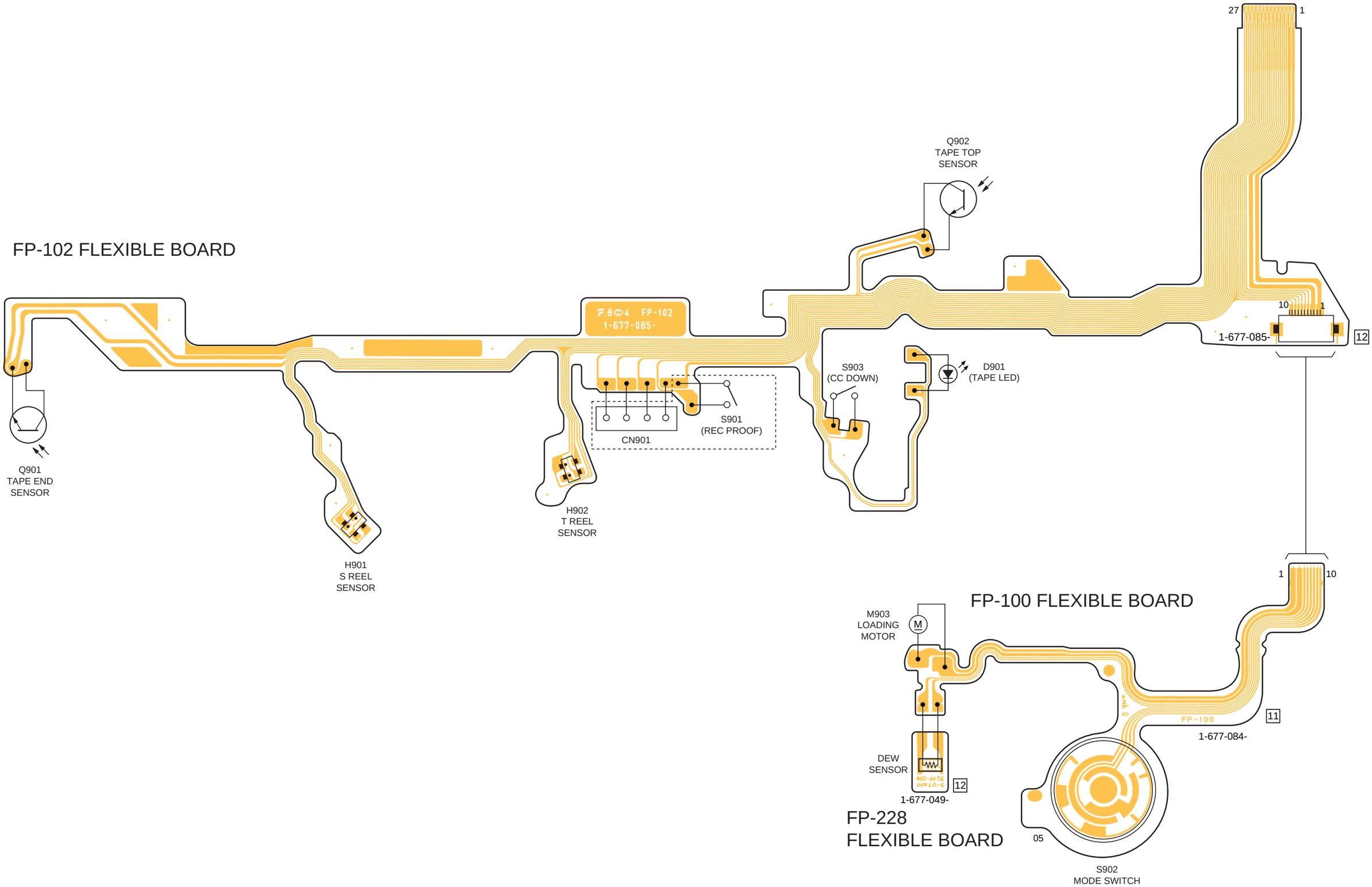
FP-497 FLEXIBLE BOARD

FP-497 FLEXIBLE BOARD



FP-100 (MODE SWITCH), FP-228 (DEW SENSOR), FP-102 (TAPE TOP/END SENSOR, S/T REEL) FLEXIBLE BOARDS

FP-102 FLEXIBLE BOARD

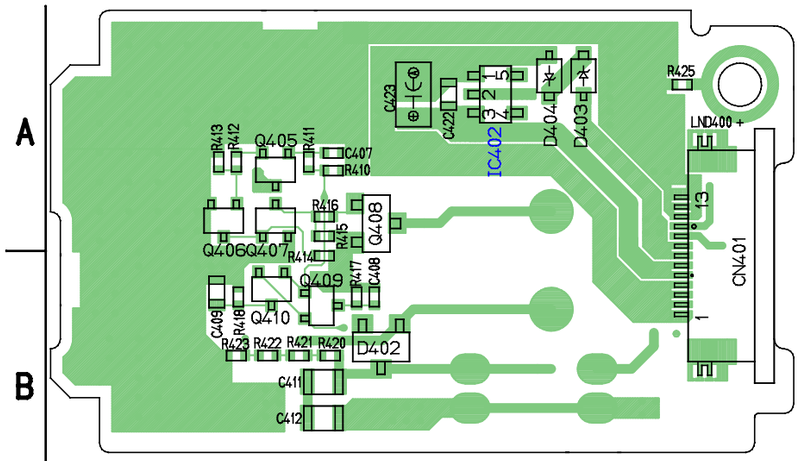


FP-100 FLEXIBLE BOARD

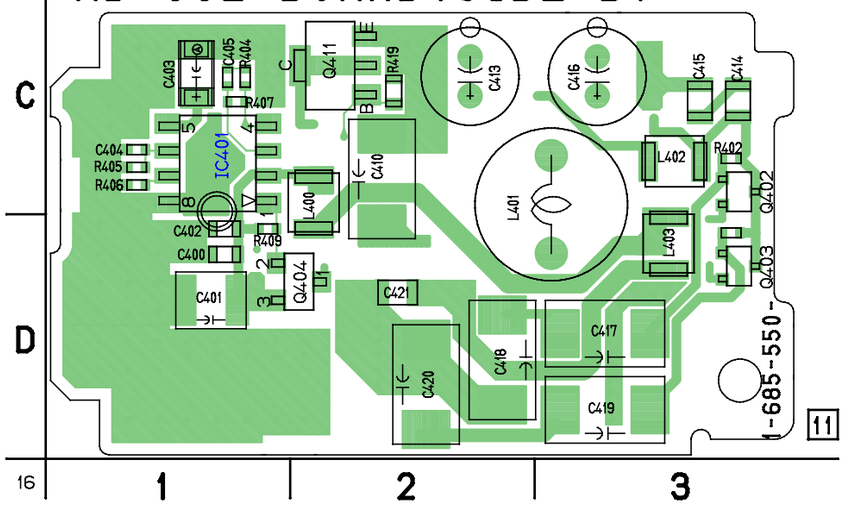
FP-228
FLEXIBLE BOARD

XD-002 (DC/DC CONVERTER), XS-002 (MIC SELECT) PRINTED WIRING BOARDS

XD-002 BOARD(SIDE A)



XD-002 BOARD(SIDE B)

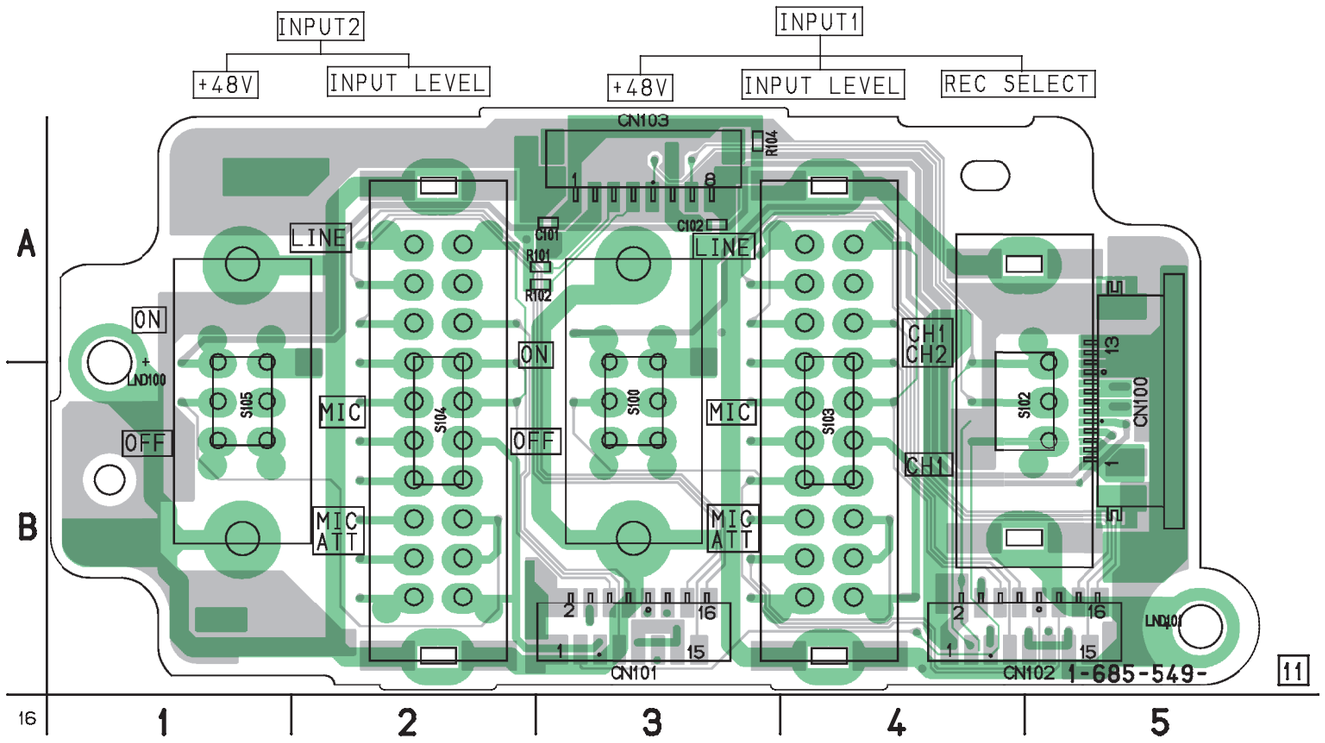


For printed wiring boards

- Refer to page 4-133 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

XS-002 BOARD



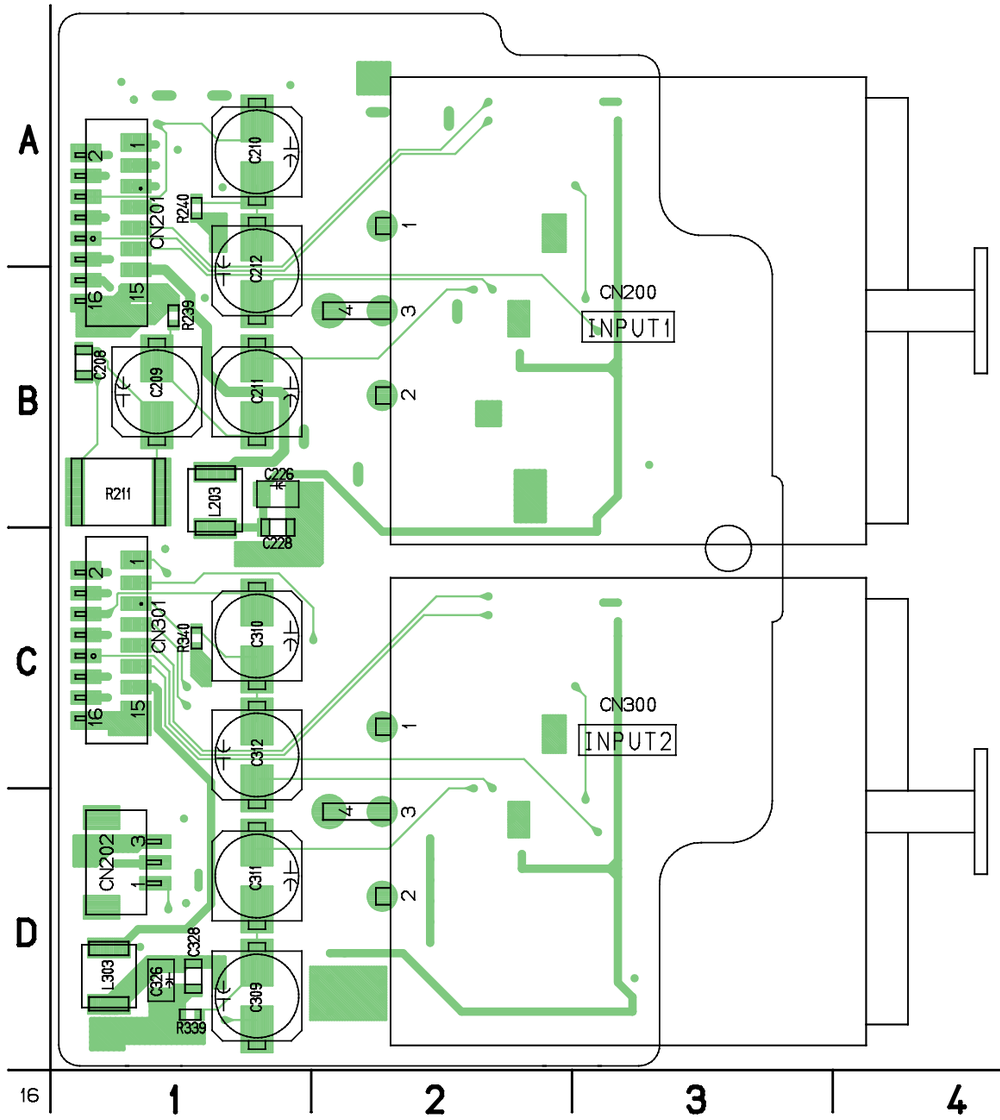
For printed wiring boards

- Refer to page 4-134 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.

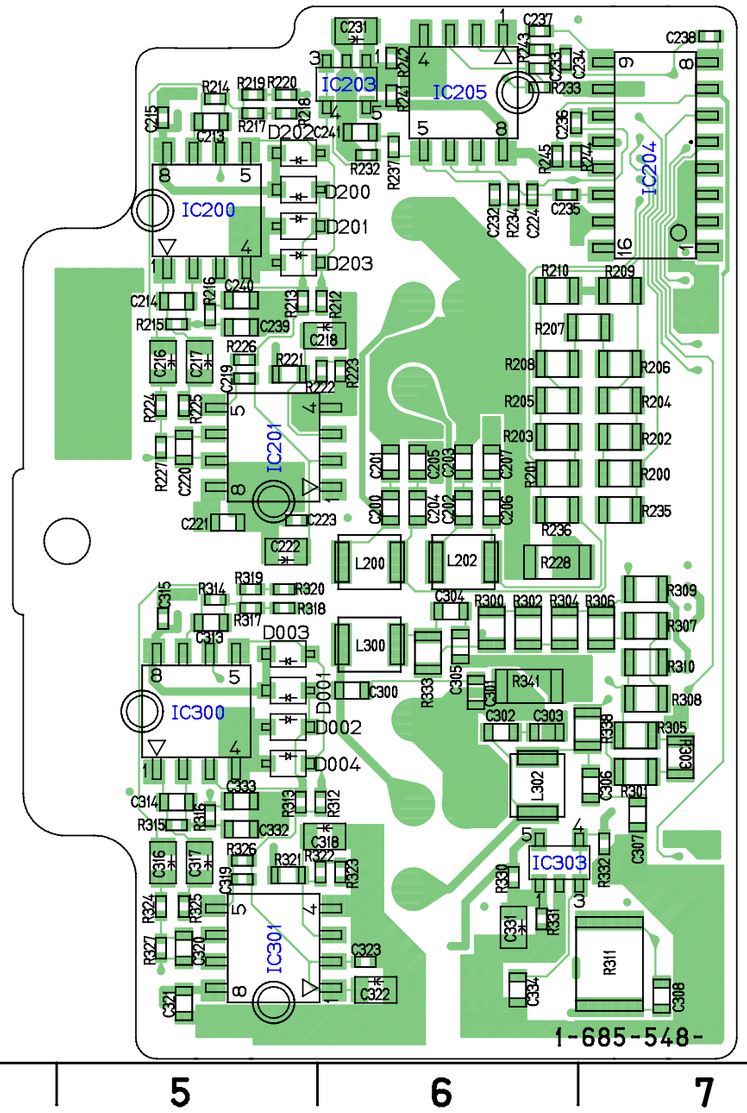
There are a few cases that the part printed on this diagram isn't mounted in this model.

XM-002 (MIC AMP), XK-001 (LOW CUT SW) PRINTED WIRING BOARDS

XM-002 BOARD(SIDE A)



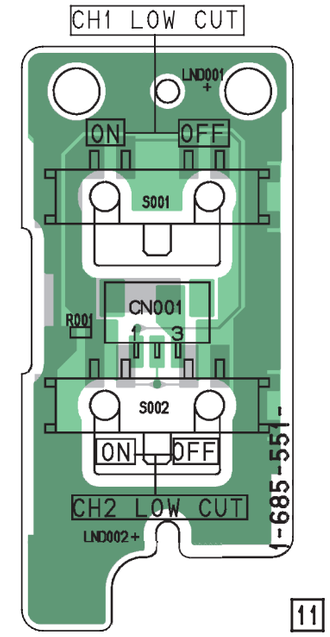
XM-002 BOARD(SIDE B)



For printed wiring boards
- Refer to page 4-134 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

XK-001 BOARD



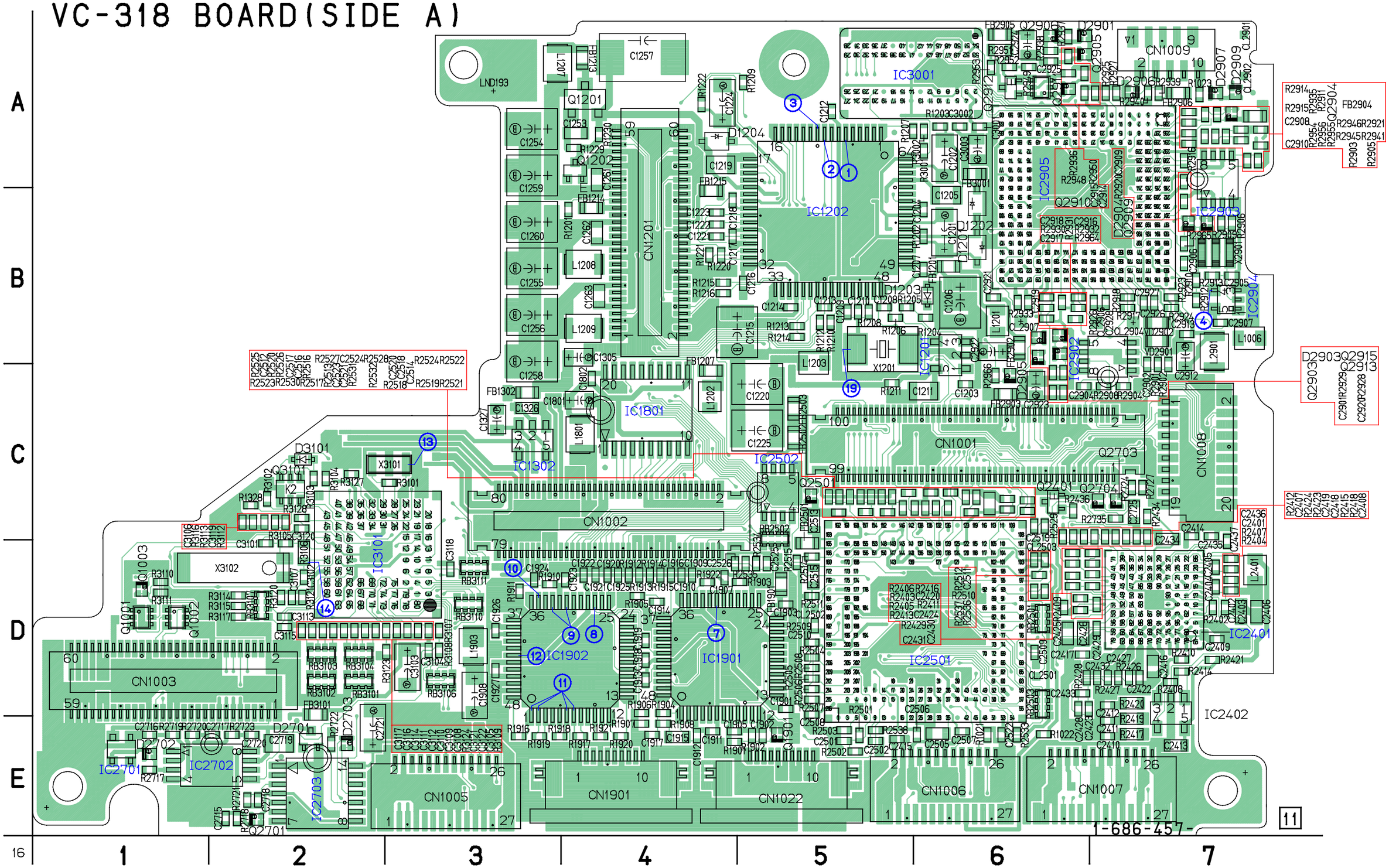
For printed wiring boards
- Refer to page 4-134 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

VC-318 (A/D CONVERTER, TIMING GENERATOR, CAMERA RGB PROCESS, CAMERA PROCESS, MPEG MOVIE/DIGITAL STILL PROCESS, HI CONTROL, DIGITAL STILL CONTROL, FLASH MEMORY, SDRAM, DV SIGNAL PROCESS, DV INTERFACE, REC/PB AMP, USB INTERFACE, VIDEO A/D CONVERTER, DRUM/CAPSTAN/LOADING DRIVE, CAMERA/MECHA CONTROL, HI CONTROL, LANC, RESET, BEEP, AFLD, CONNECTOR, EVR) PRINTED WIRING BOARD

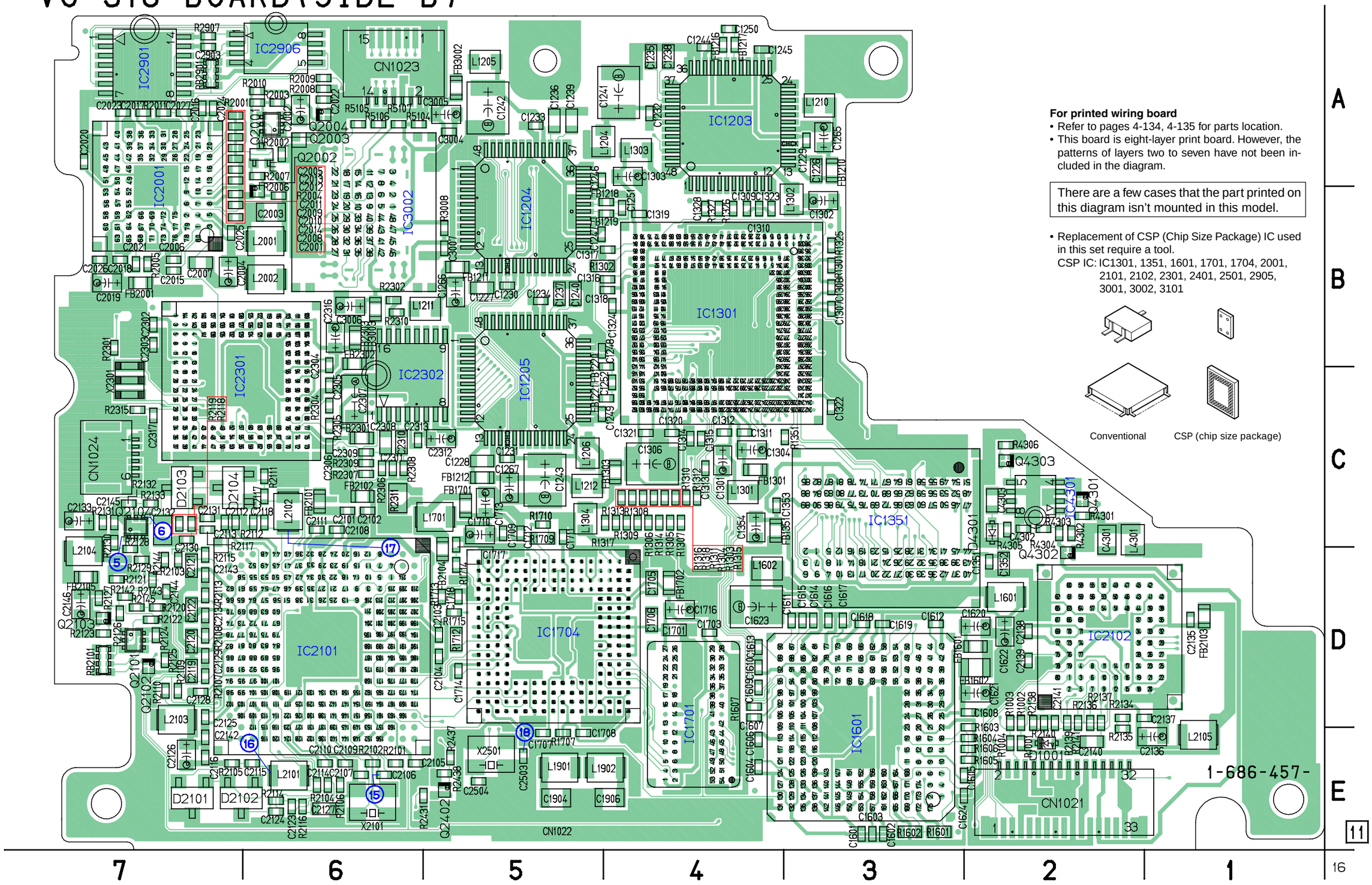
- : Uses unleaded solder.

VC-318 BOARD(SIDE A)



• : Uses unleaded solder.

VC-318 BOARD (SIDE B)



For printed wiring board

- Refer to pages 4-134, 4-135 for parts location.
- This board is eight-layer print board. However, the patterns of layers two to seven have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

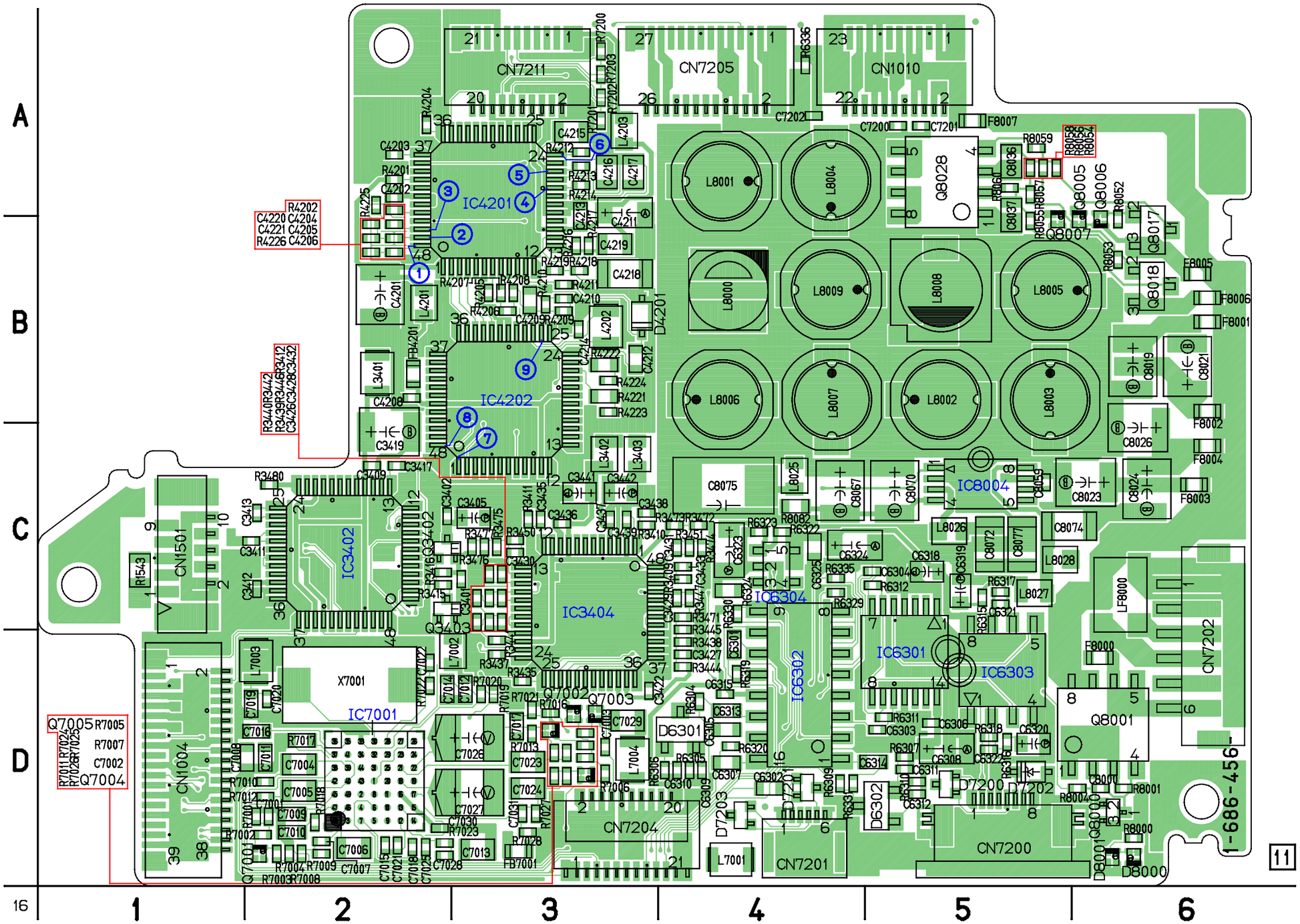
- Replacement of CSP (Chip Size Package) IC used in this set require a tool.
  CSP IC: IC1301, 1351, 1601, 1701, 1704, 2001, 2101, 2102, 2301, 2401, 2501, 2905, 3001, 3002, 3101

Conventional CSP (chip size package)

DB-016 (LENS MOTOR DRIVE, VAP DRIVER, MIC VOL, AUDIO PROCESSOR 1, AUDIO PROCESSOR 2, VIDEO IN/OUT, EVF DRIVE, TIMING GENERATOR, CONNECTOR, DC/DC CONTROL) PRINTED WIRING BOARD

• : Uses unleaded solder.

DB-016 BOARD(SIDE A)

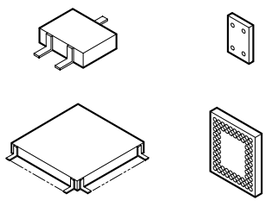


For printed wiring board

- Refer to page 4-136, 4-137 for parts location.
- This board is eight-layer print board. However, the patterns of layers two to seven have not been included in the diagram.

There are a few cases that the part printed on this diagram isn't mounted in this model.

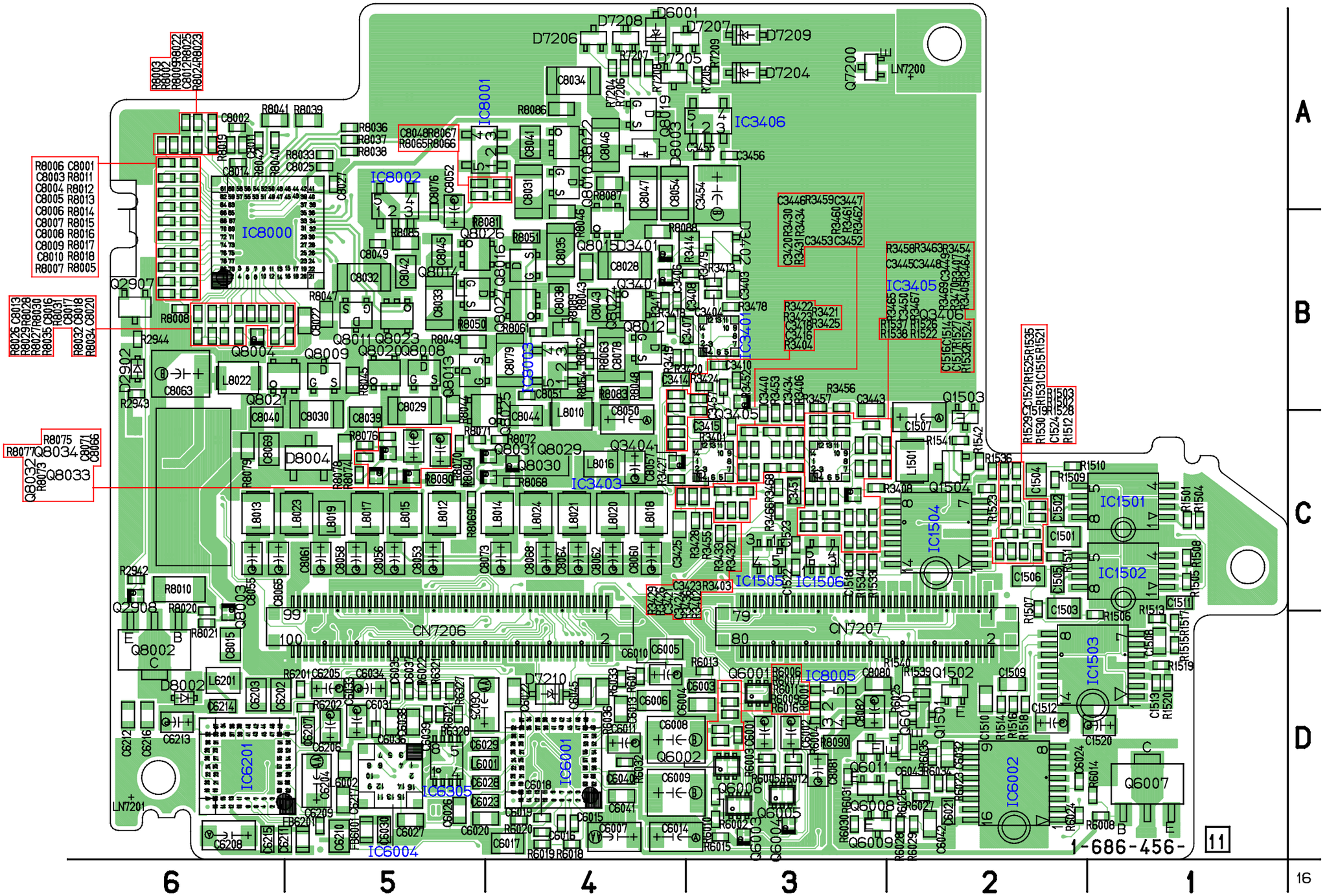
- Replacement of CSP (Chip Size Package) IC used in this set require a tool.
  CSP IC: IC3401, 3403, 3405, 6001, 6004, 6201, 7001, 8000



Conventional CSP (chip size package)

• 4F : Uses unleaded solder.

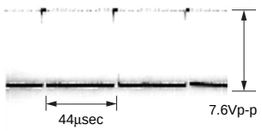
DB-016 BOARD (SIDE B)



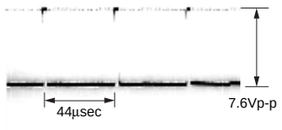
4-4. WAVEFORMS

CD-389 BOARD

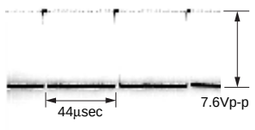
① IC105 ①,④ REC



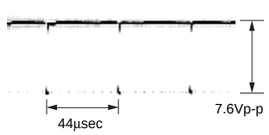
⑦ IC100 ①,④ REC



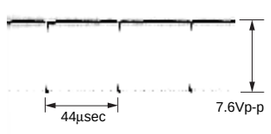
⑬ IC101 ①,④ REC



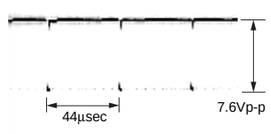
② IC105 ②,③ REC



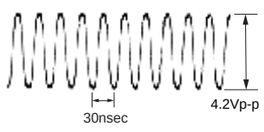
⑧ IC100 ②,③ REC



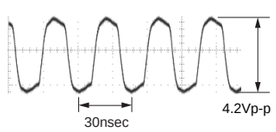
⑭ IC101 ②,③ REC



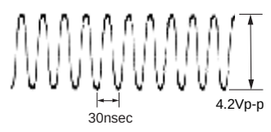
③ IC105 ⑪,⑫ REC



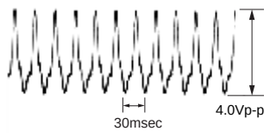
⑨ IC100 ⑪,⑫ REC



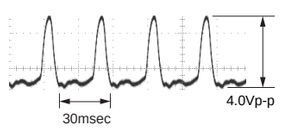
⑮ IC101 ⑪,⑫ REC



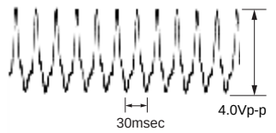
④ IC105 ⑩ REC



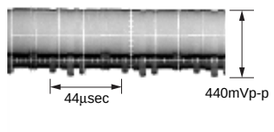
⑩ IC100 ⑩ REC



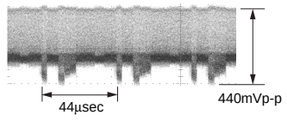
⑯ IC101 ⑩ REC



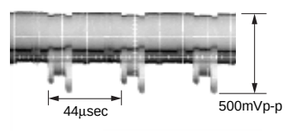
⑤ IC105 ⑧ REC



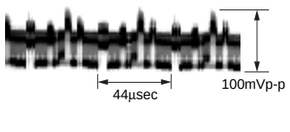
⑪ IC100 ⑧ REC



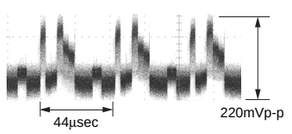
⑰ IC101 ⑧ REC



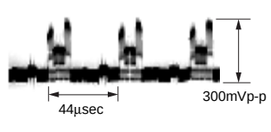
⑥ IC102 ⑤ REC



⑫ IC103 ⑤ REC

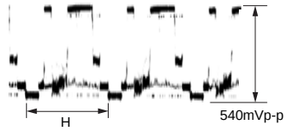


⑱ IC104 ⑤ REC

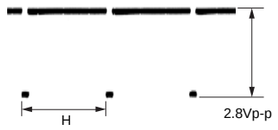


PD-191 BOARD

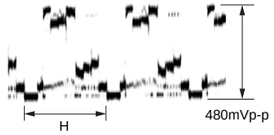
① IC5701 ㊽ REC/PB



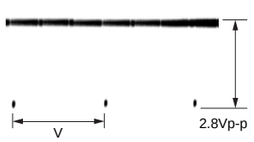
⑦ IC5702 ① REC/PB



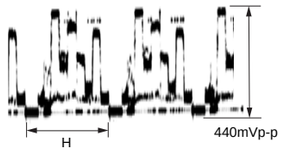
② IC5701 ㊼ REC/PB



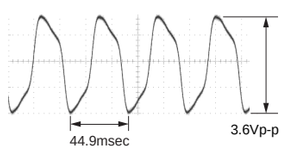
⑧ IC5702 ㊽ REC/PB



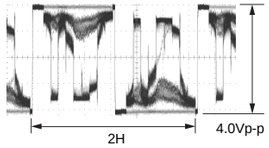
③ IC5701 ㊻ REC/PB



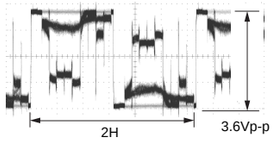
⑨ IC5702 ㉖ REC/PB



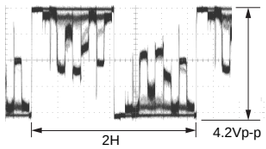
④ IC5701 ⑳ REC/PB



⑤ IC5701 ㉒ REC/PB

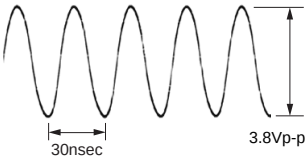


⑥ IC5701 ㉔ REC/PB

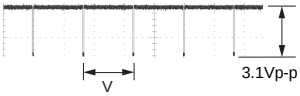


VC-318 BOARD

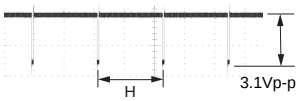
① IC1202 ⑥ REC/PB



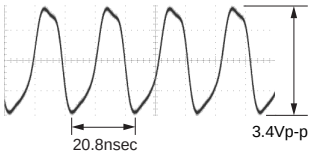
② IC1202 ⑨ REC/PB



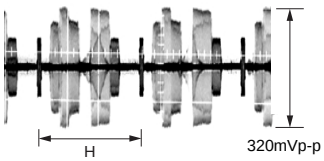
③ IC1202 ⑩ REC/PB



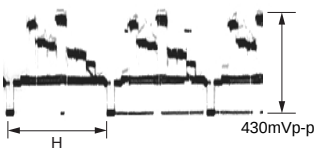
④ IC2904 ④ REC/PB



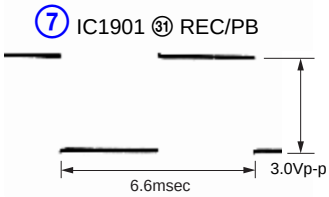
⑤ Q2104 ① REC/PB
(S VIDEO CONNECT)



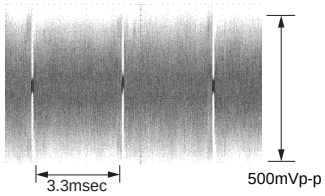
⑥ Q2104 ④ REC/PB
(S VIDEO CONNECT)



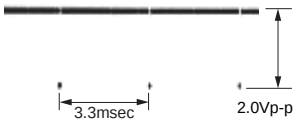
⑦ IC1901 ㉛ REC/PB



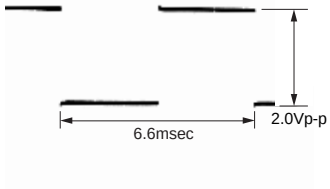
⑧ IC1902 ㉗ PB



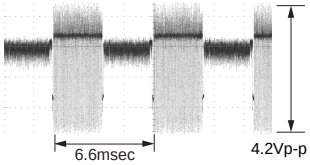
⑨ IC1902 ㉛,㉝ REC



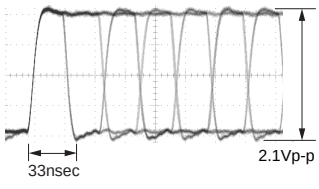
⑩ IC1902 ㉟ REC/PB



⑪ IC1902 ①,②,⑥,⑦ REC

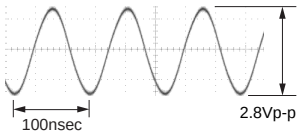


⑫ IC1902 ㊷ REC

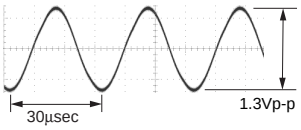


VC-318 BOARD

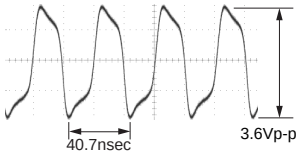
⑬ X3101 (IC3101 ㉘) REC/PB



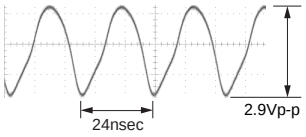
⑭ X3102 (IC3101 ㊷) REC/PB



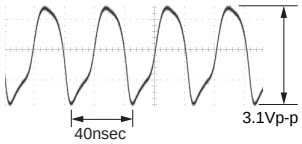
⑮ X2101 (IC2101 ⑱) REC/PB



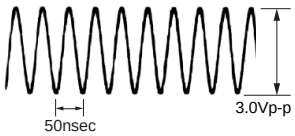
⑯ IC2101 ⑬ (L2101) REC/PB



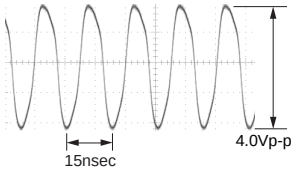
⑰ IC2101 ㊺ (L2102) REC/PB



⑱ X2501 (IC2501 ①) REC/PB

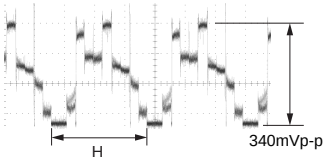


⑲ X1202 (IC1202 ㊻)

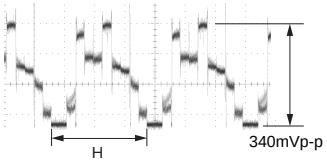


DB-016 BOARD

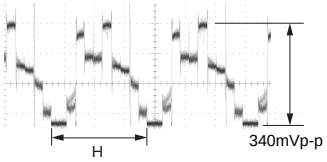
① IC4201 ㊽ EVF



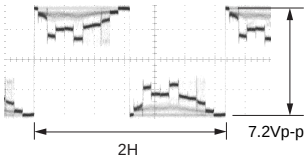
② IC4201 ㊼ EVF



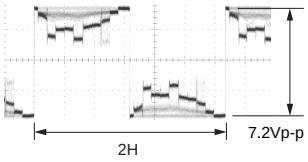
③ IC4201 ㊻ EVF



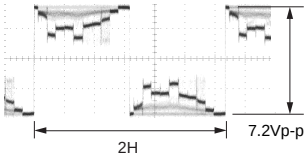
④ IC4201 ⑳ EVF



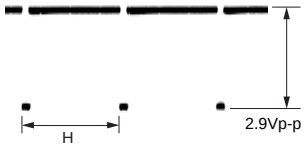
⑤ IC4201 ㉒ EVF



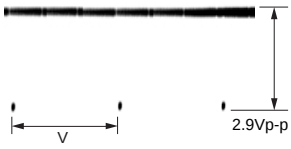
⑥ IC4201 ㉔ EVF



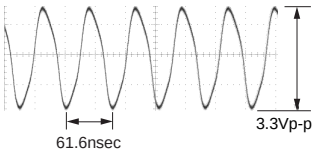
⑦ IC4202 ① EVF



⑧ IC4202 ㊽ EVF



⑨ IC4202 ㉖ EVF



4-5. MOUNTED PARTS LOCATION

no mark : side A
* mark : side B

SE-132 BOARD

	C4001	A-2
	C4002	A-3
*	C4003	A-2
*	C4004	A-2
*	C4005	A-2
*	C4006	A-2
*	C4007	A-2
*	C4008	A-2
	C4009	B-2
	C4010	A-2
	C4011	B-2
	C4012	A-2
	C4014	A-1
*	C4015	A-1
*	CN4005	A-1
*	IC4001	A-2
	L4001	A-1
	Q4001	A-1
	Q4002	A-1
*	R4001	A-2
*	R4002	A-2
*	R4003	A-2
*	R4004	A-2
*	R4005	A-2
*	R4006	A-2
*	R4007	A-1
*	R4009	A-1
	R4010	A-1
	R4011	A-1
	SE4001	A-2
	SE4002	A-3

CD-389 BOARD

	C102	D-4
	C103	D-6
	C104	C-1
	C105	C-1
	C106	D-3
	C107	C-6
	C108	C-1
	C109	C-4
	C110	C-6
	C111	C-6
	C112	C-4
	C113	D-3
	C114	C-7
	C115	C-4
	C116	C-4
	C117	C-6
	C118	C-6
	C119	D-1
	C120	D-1
	C121	D-1
	C122	D-2
	C123	D-4
	C124	D-7
	C125	D-2
	C126	D-4
	C127	D-6
	C128	D-4
	C129	D-6
	C130	C-1
	C131	D-2
*	CN100	A-4
	IC100	D-4
	IC101	D-6
	IC102	D-1
	IC103	D-4
	IC104	D-6
	IC105	D-1
	L100	C-1
	L101	D-3
	L102	C-6
	L103	D-4
	L104	D-6
	L105	D-2
	Q100	C-3
	Q101	C-6
	Q102	D-1
	R100	D-4
	R101	D-6
	R102	C-1
	R103	D-1
	R104	C-3
	R105	C-6
	R106	D-1
	R107	C-4
	R108	C-7
	R109	D-1
	R110	C-4
	R111	C-6

MA-425 BOARD

*	C5901	A-2
*	C5902	A-1
*	C5903	B-1
*	C5904	A-4
*	C5905	A-2
*	C5906	B-2
*	C5907	A-1
*	C5908	A-2
*	C5909	A-2
*	C5910	A-2
*	C5911	A-3
*	C5912	A-2
*	C5913	A-2
*	C5914	A-2
*	C5915	A-2
*	C5916	A-3
*	C5917	B-2
*	C5918	B-1
*	C5919	B-1
*	C5920	A-2
*	C5921	B-2
*	C5922	B-2
*	C5923	B-1
*	C5924	B-2
*	C5925	B-3
*	C5926	B-3
*	C5927	B-1
*	C5928	B-1
*	C5929	B-1
*	C5930	B-2
*	C5931	B-3
	C5932	B-3
	C5933	B-2
	C5934	B-3
*	C5935	B-2
*	C5936	B-2
	C5937	B-2
*	C5938	B-1
*	C5939	B-1
*	C5940	B-1
*	C5941	B-1
*	C5942	B-1
*	C5943	B-3
*	C5944	A-3
*	C5945	A-2
*	CN5901	A-3
*	CN5902	A-2
*	CN5903	B-1
*	CN5904	C-1
*	CN5905	B-4
	CN5906	B-3
*	D5901	B-1
*	D5902	B-1
*	FB5901	B-1
*	FB5902	A-1
*	IC5901	B-2
	IC5902	B-4
*	J5901	A-1
*	L5901	B-2
	Q5901	B-3
	Q5902	B-3
	Q5903	B-3
*	Q5904	B-3
*	Q5905	B-3
*	Q5906	B-3
*	R5901	A-1
*	R5902	A-4
*	R5903	A-1
*	R5904	A-1
*	R5905	A-2
*	R5906	A-2
*	R5907	B-1
*	R5908	A-2
*	R5909	B-3
*	R5910	B-3
*	R5911	B-3
*	R5912	B-1
	R5913	B-3
	R5914	B-3
	R5915	B-3
*	R5916	B-2
*	R5917	B-2
*	R5918	B-1
*	R5919	B-2
*	R5920	B-3
*	R5921	B-2
*	R5922	B-1
*	R5923	B-1
*	R5924	B-3
*	R5925	B-3
	R5926	B-4
*	R5927	B-1
*	R5928	B-2
	R5929	B-4
	R5930	B-4
	R5931	B-2
	R5932	B-4
	R5933	B-2
	R5934	B-2
	R5935	B-2
	R5936	B-4
	R5937	B-4
*	R5938	B-1
	R5939	B-4
	R5940	B-4
*	R5941	B-1
*	R5942	B-1
*	R5943	B-1
	R5944	B-3
	R5945	B-3
	R5946	B-3
	R5947	B-3
	R5948	B-3
	R5949	B-3
	R5950	B-3
*	R5951	B-3
*	R5952	B-3
*	R5953	B-3
*	R5954	B-3
*	VDR591	A-1
*	VDR592	B-1

PD-191 BOARD

	C5701	A-4
	C5702	A-4
	C5703	C-3
	C5704	A-3
	C5705	A-3
	C5706	A-3
	C5707	B-3
	C5708	B-3
	C5709	B-3
	C5710	B-4
	C5711	B-4
	C5712	B-4
	C5713	B-3
	C5714	B-3
	C5715	B-4
	C5716	C-3
	C5717	B-2
	C5718	C-2
	C5719	B-4
	C5720	B-3
	C5721	B-3
	C5722	C-3
	C5723	C-1
	C5724	C-1
	C5726	B-2
	C5727	B-2
	C5801	B-4
	C5802	C-2
	C5803	C-2
	C5804	A-4
	C5805	C-3
	C5806	C-3
	C5807	C-1
	C5808	C-3
	CN5701	B-1
	CN5802	A-2
	CN5803	C-1
	CN5804	C-4
	CN5805	C-2
	CN5806	A-4
	D5701	C-3
	D5702	C-2
	IC5701	B-4
	IC5702	B-2
	IC5801	C-4
	L5701	A-4
	L5702	B-3
	L5703	B-4
	L5704	C-3
	L5705	B-2
	L5801	C-2
	L5802	C-3
	Q5701	B-3
	Q5702	B-3
	Q5801	C-2
	Q5802	C-3
	R5701	B-4
	R5702	A-4
	R5703	A-4
	R5705	C-3
	R5706	B-3
	R5707	B-4
	R5708	B-3
	R5709	B-3
	R5710	B-3
	R5711	B-3
	R5712	B-3
	R5713	B-3
	R5714	B-3
	R5717	B-2
	R5719	B-2
	R5721	C-3
	R5722	B-3
	R5727	B-2
	R5732	B-2
	R5736	B-2
	R5737	C-2
	R5801	B-4
	R5802	B-4
	R5803	C-3
	R5804	C-3
	R5805	A-4
	R5806	A-4

COVER

4-3. PRINTED WIRING BOARDS

no mark : side A
* mark : side B

JK-222 BOARD

*	CN401	C-6
*	CN402	B-3
*	D401	C-3
	D402	B-3
*	FB401	C-3
*	FB402	C-3
*	FB403	A-3
*	FB404	A-2
*	FB405	C-3
*	FB406	A-1
*	FB407	A-1
*	J401	B-6
*	J402	C-3
*	J403	A-2
*	J404	A-1
*	LF401	A-3
*	LF402	A-3
*	R401	B-6
*	R402	B-5
*	R403	B-6
*	R404	B-3
*	R406	A-2
*	R407	B-3
*	R408	B-1
*	R409	A-2
*	R410	C-6
*	R411	A-2
*	VDR401	B-5
*	VDR402	B-6
*	VDR403	B-6
*	VDR404	A-2
*	VDR405	C-3
*	VDR406	A-2
*	VDR407	A-1
*	VDR408	A-1
*	VDR409	A-1

CK-134 BOARD

	BT5201	D-3
*	C5201	D-3
*	C5202	D-3
*	C5203	C-4
	CN5201	E-1
*	CN5202	E-1
*	CN5203	E-2
*	CN5204	A-6
*	CN5205	C-7
*	CN5206	D-1
*	D5201	C-6
*	D5202	E-3
*	D5203	E-2
*	D5204	E-5
*	D5205	C-6
*	D5206	C-6
*	D5207	D-2
*	D5208	A-5
*	D5209	C-6
*	L5201	E-3
*	L5202	E-3
*	L5203	E-4
*	L5204	D-3
*	R5202	C-5
*	R5203	C-5
*	R5204	C-6
*	R5205	D-3
*	R5206	D-3
*	R5207	D-2
*	R5208	C-6
*	R5209	E-2
*	R5210	C-6
*	R5211	C-5
*	R5212	C-5
*	R5213	C-5
*	R5214	C-5
*	R5215	C-6
*	R5216	E-2
*	R5217	C-5
*	R5218	B-4
*	R5219	A-6
*	R5220	E-2
*	R5222	B-5
*	R5223	A-6
*	R5224	E-2
*	R5225	E-6
*	R5226	E-4
*	R5227	B-6
*	R5228	A-5
*	R5229	E-2
*	R5230	E-6
*	R5231	E-4
*	R5232	B-5
*	R5233	B-4
*	R5234	E-2
*	R5235	C-5
*	R5236	B-4
*	R5237	C-7
*	R5238	B-5
*	R5239	C-6
*	R5240	C-7
*	R5241	C-6
*	R5242	C-7
*	R5243	D-2
*	R5244	E-2
*	R5245	E-3
	S5201	E-7
	S5202	D-6
	S5203	C-5
	S5204	E-4
	S5205	E-4
	S5206	B-5
	S5207	B-4
	S5208	B-5
	S5209	B-6
	S5210	B-7
	S5211	B-6
	S5212	B-7
	S5213	C-6
	S5214	A-7
	S5215	A-6
	S5217	B-4
	S5218	E-1
	S5219	E-2
	S5220	C-7
	S5221	D-5
	S5516	A-5

FP-504 BOARD

	C601	E-5
	D601	B-1
	D602	E-6
	D603	E-6
	D605	B-1
	D606	E-6
	D607	D-2
	D608	E-3
	D609	B-4
	D610	B-3
	F601	C-4
	IC601	D-6
	PH601	E-2
	PH602	E-3
	Q601	C-1
	R601	C-2
	R602	B-1
	R603	C-4
	R604	B-1
	R605	E-5
	R606	C-1
	R607	C-1
	S601	B-2
	S602	B-3
	S603	B-1
	S604	B-4

XD-002 BOARD

*	C400	D-1
*	C401	D-1
*	C402	D-1
*	C403	C-1
*	C404	C-1
*	C405	C-1
	C407	A-2
	C408	B-2
	C409	B-1
*	C410	C-2
	C411	B-2
	C412	B-2
*	C413	C-2
*	C414	C-3
*	C415	C-3
*	C416	C-3
*	C417	D-3
*	C418	D-2
*	C419	D-3
*	C420	D-2
*	C421	D-2
	C422	A-2
	C423	A-2
	CN401	B-3
	D402	B-2
	D403	A-3
	D404	A-3
*	IC401	C-1
	IC402	A-2
*	L400	C-2
*	L401	C-3
*	L402	C-3
*	L403	D-3
*	Q402	C-3
*	Q403	D-3
*	Q404	D-2
	Q405	A-1
	Q406	A-1
	Q407	A-1
	Q408	A-2
	Q409	B-2
	Q410	B-1
*	Q411	C-2
	R142	A-1
	R143	A-1
*	R402	C-3
*	R404	C-1
*	R405	C-1
*	R406	C-1
*	R407	C-1
*	R409	D-1
	R410	A-2
	R411	A-2
	R414	B-2
	R415	A-2
	R416	A-2
	R417	B-2
	R418	B-1
*	R419	C-2
	R420	B-2
	R421	B-2
	R422	B-1
	R423	B-1
	R425	A-3

COVER

4-3. PRINTED WIRING BOARDS

no mark : side A
* mark : side B

XS-002 BOARD

S105	B-1
S104	B-2
CN103	A-3
R104	A-3
C102	A-3
C101	A-3
R101	A-3
R102	A-3
S100	B-3
CN101	B-3
S103	B-4
S102	B-5
CN100	B-5
CN102	B-5

XM-002 BOARD

* C200	B-6
* C201	B-6
* C202	B-6
* C203	B-6
* C204	B-6
* C205	B-6
* C206	B-6
* C207	B-6
C208	B-1
C209	B-1
C210	A-1
C211	B-1
C212	A-1
* C213	A-5
* C214	B-5
* C215	A-5
* C216	B-5
* C217	B-5
* C218	B-5
* C219	B-5
* C220	B-5
* C221	C-5
* C222	C-5
* C223	C-5
* C224	A-6
C226	B-1
* C231	A-6
* C232	A-6
* C233	A-6
* C234	A-6
* C235	A-6
* C236	A-6
* C237	A-6
* C238	A-7
* C239	B-5
* C240	B-5
* C241	A-6
* C300	C-6
* C301	C-6
* C302	C-6
* C303	C-6
* C304	C-6
* C305	C-6
* C306	D-7
* C307	D-7
* C308	D-7
C309	D-1
C310	C-1
C311	D-1
C312	C-1
* C313	C-5
* C314	D-5
* C315	C-5
* C316	D-5
* C317	D-5
* C318	D-6
* C319	D-5
* C320	D-5
* C321	D-5
* C322	D-6
* C323	D-6
C326	D-1
C328	D-1
* C331	D-6
* C332	D-5
* C333	D-5
* C334	D-6

CN200	B-3
CN201	A-1
CN202	D-1
CN300	C-3
CN301	C-1
* D001	C-5
* D002	C-5
* D003	C-5
* D004	C-5
* D200	A-5
* D201	A-5
* D202	A-5
* D203	A-5
* IC200	A-5
* IC201	B-5
* IC203	A-6
* IC204	A-7
* IC205	A-6
* IC300	C-5
* IC301	D-5
* IC303	D-6
* L200	C-6
* L202	C-6
L203	B-1
* L300	C-6
* L302	D-6
L303	D-1
* R200	B-7
* R201	B-6
* R202	B-7
* R203	B-6
* R204	B-7
* R205	B-6
* R206	B-7
* R207	B-6
* R208	B-6
* R209	B-7
* R210	B-6
R211	B-1
* R212	B-6
* R213	B-5
* R214	A-5
* R215	B-5
* R216	B-5
* R217	A-5
* R218	A-5
* R219	A-5
* R219	C-5
* R220	A-5
* R221	B-5
* R222	B-6
* R223	B-6
* R224	B-5
* R225	B-5
* R226	B-5
* R227	B-5
* R228	C-6
* R232	A-6
* R233	A-6
* R234	A-6
* R235	B-7
* R236	B-6
* R237	A-6

R239	B-1
R240	A-1
* R241	A-6
* R242	A-6
* R243	A-6
* R244	A-7
* R245	A-6
* R300	C-6
* R301	C-7
* R302	C-6
* R303	C-7
* R304	C-6
* R305	C-7
* R306	C-7
* R307	C-7
* R308	C-7
* R309	C-7
* R310	C-7
* R311	D-7
* R312	D-6
* R313	D-5
* R314	C-5
* R315	D-5
* R316	D-5
* R317	C-5
* R318	C-5
* R320	C-5
* R321	D-5
* R322	D-6
* R323	D-6
* R324	D-5
* R325	D-5
* R326	D-5
* R327	D-5
* R330	D-6
* R331	D-6
* R332	D-7
* R333	C-6
* R338	C-7
R339	D-1
R340	C-1
* R341	C-6

VC-318 BOARD

C1201	B-6
C1202	A-6
C1203	C-6
C1204	B-6
C1205	B-6
C1206	B-6
C1207	B-6
C1208	B-5
C1209	B-5
C1210	B-5
C1211	C-6
C1212	A-5
C1213	B-5
C1214	B-5
C1215	B-5
C1216	B-5
C1217	B-4
C1218	B-4
C1219	A-4
C1220	C-5
C1221	B-4
C1222	B-4
C1223	B-4
C1224	A-4
C1225	C-5
* C1226	A-3
* C1227	B-5
* C1228	C-5
* C1229	A-3
* C1230	B-5
* C1231	C-5
* C1232	A-4
* C1233	A-5
* C1234	B-5
* C1235	A-4
* C1236	A-5
* C1237	B-5
* C1238	A-4
* C1239	A-5
* C1240	B-5
* C1241	A-4
* C1242	A-5
* C1243	C-5
* C1244	A-4
* C1245	A-4
* C1246	A-4
* C1247	B-4
* C1248	B-4
* C1249	C-4
* C1250	A-4
* C1251	B-4
* C1252	C-4
C1253	A-4
C1254	A-3
C1255	B-3
C1256	B-3
C1257	A-4
C1258	C-3
C1259	A-3
C1260	B-3
C1261	A-4
C1262	B-4
C1263	B-4
* C1265	A-3
* C1266	B-5
* C1267	C-5
* C1301	C-4
* C1302	B-3
* C1303	A-4
* C1304	C-4
C1305	B-4
* C1306	C-4
* C1307	B-3
* C1308	B-3
* C1309	B-4
* C1310	B-4
* C1311	C-4
* C1312	C-4
* C1313	C-4
* C1314	C-4
* C1315	C-4
* C1316	B-4
* C1317	B-4
* C1318	B-4

* C1319	B-4
* C1320	C-4
* C1321	C-4
* C1322	C-3
* C1323	B-4
* C1324	B-4
C1326	C-3
C1327	C-3
* C1328	B-4
* C1351	D-2
* C1352	D-2
* C1353	C-4
* C1354	C-4
* C1601	E-3
* C1602	E-3
* C1603	E-3
* C1604	E-4
* C1605	E-2
* C1606	E-4
* C1607	D-4
* C1608	D-2
* C1609	D-4
* C1610	D-4
* C1611	D-3
* C1612	D-3
* C1613	D-4
* C1614	D-3
* C1615	D-3
* C1616	D-3
* C1617	D-3
* C1618	D-3
* C1619	D-3
* C1620	D-2
* C1621	D-2
* C1622	D-2
* C1623	D-4
* C1624	E-2
* C1701	D-4
* C1703	D-4
* C1705	D-4
* C1706	D-4
* C1707	E-5
* C1708	E-5
* C1709	C-5
* C1710	C-5
* C1711	C-5
* C1712	C-5
* C1713	C-5
* C1714	D-5
* C1716	D-4
* C1717	C-5
* C1718	D-5
C1801	C-4
C1802	C-4
C1901	D-5
C1902	E-5
C1903	D-5
* C1904	E-5
C1905	E-4
* C1906	E-4
C1907	D-4
C1908	D-3
C1909	D-4
C1910	D-4
C1911	E-4
C1912	E-4
C1913	D-4
C1914	D-4
C1915	E-4
C1916	D-4
C1917	E-4
C1918	D-4
C1919	D-4
C1920	D-4
C1921	D-4
C1922	D-4
C1923	D-4
C1924	D-3
C1925	D-4
C1926	D-3
C1927	D-3
* C2001	B-7
* C2002	A-6
* C2003	B-6

* C2004	B-7
* C2005	A-7
* C2006	B-7
* C2007	B-7
* C2008	B-7
* C2009	A-7
* C2010	A-7
* C2011	A-7
* C2012	A-7
* C2013	A-7
* C2014	B-7
* C2015	B-7
* C2016	A-7
* C2017	A-7
* C2018	B-7
* C2019	B-7
* C2020	A-7
* C2021	B-7
* C2022	A-6
* C2023	A-7
* C2024	A-7
* C2025	B-7
* C2026	B-7
* C2027	A-7
* C2101	C-6
* C2102	C-6
* C2103	D-5
* C2104	D-5
* C2105	E-6
* C2106	E-6
* C2107	E-6
* C2108	C-6
* C2109	E-6
* C2110	E-6
* C2111	C-6
* C2112	C-7
* C2113	C-7
* C2114	E-6
* C2115	E-6
* C2116	E-7
* C2117	C-6
* C2118	C-6
* C2119	D-7
* C2120	D-7
* C2121	D-7
* C2122	D-7
* C2123	E-6
* C2124	E-6
* C2125	D-7
* C2126	E-7
* C2127	E-6
* C2128	D-7
* C2129	D-7
* C2130	C-7
* C2131	C-7
* C2132	C-7
* C2133	C-7
* C2134	D-7
* C2135	D-1
* C2136	E-1
* C2137	D-1
* C2138	D-2
* C2139	D-2
* C2140	E-2
* C2141	D-2
* C2142	E-7
* C2143	D-7
* C2144	D-7
* C2145	C-7
* C2146	D-7
* C2302	B-7
* C2303	B-7
* C2304	B-6
* C2305	C-6
* C2306	C-6
* C2307	C-6
* C2308	C-6
* C2309	C-6
* C2310	C-6
* C2311	C-6
* C2312	C-5
* C2313	C-6
* C2316	B-6
* C2317	C-7

— Continued on next page —

COVER

4-3. PRINTED WIRING BOARDS

no mark : side A
* mark : side B

VC-318 BOARD

C2401	D-7	C2916	B-6	FB1201	B-6	L1202	C-4	R1210	B-5	* R2104	E-6	R2501	E-5	R2940	A-7
C2402	D-7	C2917	B-6	* FB1204	D-5	L1203	B-5	R1211	C-5	* R2105	E-7	R2502	E-5	R2941	A-7
C2403	D-7	C2918	B-6	FB1207	C-4	* L1204	A-4	R1212	B-5	* R2106	E-6	R2503	E-5	R2945	A-7
C2404	D-7	C2919	B-6	* FB1210	A-3	* L1205	A-5	R1213	B-5	* R2107	D-7	R2504	D-5	R2946	A-7
C2405	D-7	C2920	C-6	* FB1211	B-5	* L1206	C-5	R1214	B-5	* R2108	D-7	R2505	D-5	R2948	A-6
C2406	D-7	C2921	B-6	* FB1212	C-5	L1207	A-4	R1215	B-4	* R2109	D-7	R2506	D-5	R2949	A-6
C2407	C-6	C2922	B-6	FB1213	A-4	L1208	B-4	R1216	B-4	* R2110	D-7	R2507	D-5	R2950	A-6
C2408	C-7	C2923	C-6	FB1214	B-4	L1209	B-4	R1220	B-4	* R2111	C-6	R2508	D-5	R2951	A-6
C2409	D-7	C2924	A-6	FB1215	A-4	* L1210	A-3	R1221	B-4	* R2112	C-6	R2509	D-5	R2952	A-6
C2410	E-7	C2925	A-6	* FB1216	A-4	* L1211	B-5	R1222	A-4	* R2113	D-7	R2510	D-6	R2953	A-6
C2411	E-7	C2926	B-7	* FB1217	A-4	* L1212	C-5	R1229	A-4	* R2114	E-6	R2511	D-5	R2954	A-7
C2412	D-7	C2927	B-7	* FB1218	B-4	* L1301	C-4	R1230	A-4	* R2115	D-7	R2512	D-6	R2955	A-7
C2413	E-7	C2928	B-7	* FB1219	B-4	* L1302	B-3	* R1301	B-3	* R2116	E-6	R2513	C-5	R2956	A-7
C2414	C-7	C3001	A-6	* FB1220	C-4	* L1303	A-4	* R1302	B-4	* R2117	C-7	R2514	D-5	R2964	B-6
C2415	E-5	C3002	A-6	* FB1221	C-4	* L1304	C-5	* R1303	C-4	* R2118	C-7	R2515	D-5	R2965	B-7
C2416	D-7	C3003	A-6	* FB1301	C-4	* L1601	D-2	* R1304	C-4	* R2119	C-7	R2516	C-5	R2966	C-6
C2417	D-6	* C3004	A-5	FB1302	C-3	* L1602	D-4	* R1305	C-4	* R2120	D-7	R2517	C-5	R3001	A-6
C2418	C-7	* C3005	A-5	* FB1303	C-4	* L1701	C-5	* R1306	C-4	* R2121	D-7	R2518	C-6	R3002	A-6
C2419	C-7	* C3006	B-6	* FB1351	C-4	L1801	C-4	* R1307	C-4	* R2122	D-7	R2519	C-6	* R3008	B-5
C2420	D-7	* C3007	B-5	* FB1601	D-2	* L1901	E-5	* R1308	C-4	* R2123	D-7	R2520	C-5	R3101	C-3
C2422	D-7	C3101	D-2	* FB1602	D-2	* L1902	E-5	* R1309	C-4	* R2124	D-7	R2521	C-6	R3102	C-2
C2423	D-7	C3102	D-2	* FB1701	C-5	L1903	D-3	* R1310	C-4	* R2125	D-7	R2522	C-6	R3103	C-2
C2424	D-7	C3103	D-3	* FB1702	D-4	* L2001	B-6	* R1311	C-4	* R2126	D-7	R2523	C-5	R3104	C-2
C2425	D-6	C3104	D-3	FB1901	D-5	* L2002	B-6	* R1312	C-4	* R2127	D-7	R2524	C-6	R3105	D-2
C2426	D-6	C3105	D-3	* FB2001	B-7	* L2101	E-6	* R1313	C-4	* R2128	D-7	R2525	C-5	R3106	D-2
C2427	D-7	C3106	C-2	* FB2101	C-6	* L2102	C-6	* R1314	C-4	* R2129	D-7	R2526	C-5	R3107	D-3
C2428	D-6	C3107	D-2	* FB2102	C-6	* L2103	D-7	* R1315	C-4	* R2130	C-7	R2527	C-5	R3108	D-3
C2429	D-7	C3108	D-2	* FB2103	D-1	* L2104	D-7	* R1316	C-4	* R2131	C-7	R2528	C-6	R3109	D-3
C2430	D-7	C3109	D-2	* FB2105	D-7	* L2105	E-1	* R1317	C-4	* R2132	C-7	R2529	C-6	R3110	D-1
C2431	D-6	C3110	D-2	* FB2301	C-6	L2401	D-7	* R1318	C-4	* R2133	C-7	R2530	C-5	R3111	D-1
C2432	D-7	C3111	D-2	* FB2302	B-6	L2901	B-7	* R1325	B-3	* R2134	D-2	R2531	C-6	R3112	C-2
C2433	D-6	C3112	D-2	* FB2303	B-6	* L4301	C-2	* R1326	B-4	* R2135	E-2	R2532	C-6	R3113	C-2
C2434	C-7	C3113	D-2	FB2501	C-5			* R1327	B-4	* R2136	D-2	R2533	E-6	R3114	D-2
C2435	C-7	C3114	D-2	FB2502	C-5	Q1001	D-1	R1328	C-2	* R2137	D-2	R2534	D-5	R3115	D-2
C2436	D-7	C3115	D-2	FB2503	C-5	Q1002	D-1	* R1351	C-4	* R2138	D-2	R2535	D-5	R3116	C-2
C2437	C-7	C3116	D-2	FB2902	B-6	Q1003	D-1	* R1601	E-3	* R2139	D-2	R2536	D-6	R3117	D-2
C2501	E-5	C3116	D-2	FB2903	C-6	Q1201	A-4	* R1602	E-3	* R2140	D-2	R2537	D-6	R3120	D-2
C2502	E-5	C3117	D-2	FB2904	A-7	Q1202	A-4	* R1603	E-2	* R2141	D-2	R2538	E-5	R3121	D-2
* C2503	E-5	C3117	D-2	FB2905	A-6	Q1901	E-5	* R1604	E-2	* R2142	D-7	R2717	E-1	R3123	D-2
* C2504	E-5	C3118	D-3	FB2906	A-7	* Q2001	A-6	* R1605	E-2	* R2143	D-7	R2718	E-2	R3124	D-2
C2505	E-6	C3119	C-2	FB3001	A-6	* Q2002	B-6	* R1606	E-2	* R2144	D-7	R2719	E-1	R3127	C-2
C2506	E-6	C3120	C-2	* FB3002	A-5	* Q2003	A-6	* R1607	D-4	* R2145	D-7	R2720	E-1	R3128	C-2
C2507	E-6	C3121	D-3	* FB3003	B-6	* Q2004	A-6	* R1707	E-5	* R2301	B-7	R2721	E-2	* R4301	C-2
C2508	D-5	C3122	D-3	FB3101	D-2	* Q2101	D-7	* R1709	C-5	* R2302	B-6	R2722	E-2	* R4302	C-2
C2509	D-6	* C4301	C-2			* Q2102	D-7	* R1710	C-5	* R2304	C-6	R2723	E-2	* R4303	C-2
C2510	D-5	* C4302	C-2	IC1201	B-6	* Q2103	D-7	* R1712	D-5	* R2305	C-6	R2724	C-7	* R4304	C-2
C2511	D-6	* C4303	C-2	IC1202	B-5	* Q2104	C-7	* R1713	D-5	* R2306	C-6	R2727	C-7	* R4305	C-2
C2512	C-5			* IC1203	A-4	Q2401	C-6	* R1714	D-5	* R2307	C-6	R2735	C-7	* R4306	C-2
C2513	C-5	CN1001	C-6	* IC1204	B-5	* Q2402	E-5	* R1715	D-5	* R2308	C-6	R2901	B-7	* R5104	A-6
C2514	C-6	CN1002	C-4	* IC1205	C-5	Q2501	C-5	R1901	E-4	* R2309	C-6	R2902	B-7	* R5105	A-6
C2515	D-5	CN1003	D-1	* IC1301	B-4	Q2701	E-2	R1902	E-5	* R2310	B-6	R2903	A-7	* R5106	A-6
C2516	C-5	CN1005	E-3	IC1302	C-3	Q2703	C-7	R1903	D-5	* R2311	C-6	R2904	C-7	* R5107	A-6
C2517	C-5	CN1006	E-6	* IC1351	C-3	Q2704	C-7	R1904	D-4	* R2315	C-7	R2905	A-7		
C2518	C-6	CN1007	E-7	* IC1601	E-3	Q2903	B-6	R1905	D-4	R2402	D-7	R2906	B-7	* RB2101	D-7
C2519	C-6	CN1008	C-7	* IC1701	D-4	Q2904	A-7	R1906	D-4	R2403	D-6	* R2907	A-7	RB2501	D-6
C2520	C-6	CN1009	A-7	* IC1704	D-5	Q2905	A-6	R1907	E-4	R2404	D-7	R2908	C-7	RB2502	C-5
C2521	C-6	* CN1021	E-2	IC1801	C-4	Q2906	A-6	R1908	E-4	R2405	D-6	R2909	B-7	RB2503	D-6
C2522	E-6	CN1022	E-5	IC1901	D-4	Q2909	B-7	R1910	D-3	R2406	D-6	R2910	B-7	* RB2901	A-7
C2523	C-5	* CN1023	A-6	IC1902	D-4	Q2910	A-6	R1911	D-3	R2407	D-7	R2911	A-7	RB3101	D-2
C2524	C-6	* CN1024	C-7	* IC2001	B-7	Q2911	A-6	R1912	D-4	R2408	D-7	R2912	B-7	RB3102	D-2
C2525	D-5	CN1201	B-4	* IC2101	D-6	Q2912	A-6	R1913	D-4	R2409	D-6	R2913	B-7	RB3103	D-2
C2526	D-4	CN1901	E-4	* IC2102	D-2	Q2913	B-6	R1914	D-4	R2410	D-7	R2914	A-7	RB3104	D-2
C2715	E-2			* IC2301	C-7	Q2915	B-6	R1915	D-4	R2411	D-7	R2915	A-7	RB3106	D-3
C2716	E-1	* D1001	E-2	* IC2302	C-6	Q3101	C-2	R1916	E-3	R2412	C-6	R2916	A-7	RB3107	D-2
C2717	E-2	D1201	B-6	IC2401	D-7	* Q4301	C-2	R1917	E-4	R2413	D-6	R2917	B-7	RB3110	D-3
C2718	E-2	D1202	B-6	IC2402	D-7	* Q4302	D-2	R1918	E-3	R2414	D-7	R2918	B-7	RB3111	D-3
C2719	E-2	D1203	B-6	IC2501	D-6	* Q4303	C-2	R1919	E-3	R2415	C-7	R2920	B-7		
C2720	E-2	D1204	A-4	IC2502	C-5			R1920	E-4	R2416	D-7	R2921	A-7	VD2901	B-7
C2721	E-2	* D2101	E-7	IC2701	E-1	* R1001	E-2	R1921	E-4	R2417	E-7	R2923	B-7	VD2902	B-7
C2725	C-7	* D2102	E-7	IC2702	E-1	* R1002	D-2	R1922	D-4	R2418	C-7	R2924	B-7		
C2901	C-6	* D2103	C-7	IC2703	E-2	* R1003	D-2	* R2001	A-6	R2419	E-7	R2925	A-7	X1201	B-5
C2902	B-7	* D2104	C-7	* IC2901	A-7	* R1004	E-2	* R2002	A-6	R2420	D-7	R2926	B-7	* X2101	E-6
* C2903	A-7	D2701	E-2	IC2902	B-7	R1021	E-6	* R2003	A-6	R2421	D-7	R2927	A-7	* X2301	C-7
C2904	C-6	D2702	E-1	IC2903	A-7	R1022	E-6	* R2004	A-7	R2423	C-7	R2928	C-6	* X2501	E-5
C2905	B-7	D2703	E-2	IC2904	B-7	R1023	A-7	* R2005	B-7	R2424	C-6	R2929	C-6	X2901	B-7
C2906	B-7	D2901	A-6	IC2905	A-6	R1201	B-4	* R2006	B-6	R2426	D-7	R2930	B-6	X3101	C-2
C2907	B-7	D2903	B-6	* IC2906	A-6	R1202	B-6	* R2007	A-6	R2427	D-7	R2931	B-6	X3102	D-2
C2908	A-7	D2904	B-7	IC3001	A-5	R1203	A-6	* R2008	A-6	R2428	D-6	R2932	B-6		
C2909	A-7	D2905	C-6	* IC3002	B-6	R1204	B-6	* R2009	A-6	R2429	D-6	R2933	B-6		
C2910	A-7	D2906	A-7	IC3101	D-2	R1205	B-5	* R2010	A-6	* R2431	E-5	R2935	A-7		
C2912	B-7	D2907	A-7	* IC4301	C-2	R1206	B-5	* R2011	A-7	R2434	C-7	R2936	A-6		
C2913	B-7	D2909	A-7			R1207	A-6	* R2101	E-6	R2436	C-6	R2937	A-6		
C2914	A-7	D3101	C-2	L1006	B-7	R1208	B-5	* R2102	E-6	* R2437	E-5	R2938	A-6		
C2915	A-6	* D4301	C-2	L1201	B-6	R1209	A-5	* R2103	D-7	* R2438	E-5	R2939	A-7		

no mark : side A
* mark : side B

DB-016 BOARD

* C1501	C-2	C4205	B-2	C6310	D-4	C8036	A-5	F8001	B-6	L8027	C-5	* R1515	D-1	* R3456	B-3
* C1502	C-2	C4206	B-2	C6311	D-5	C8037	B-5	F8002	B-6	L8028	C-5	* R1516	D-2	* R3457	C-3
* C1503	C-2	C4208	B-2	C6312	D-5	* C8038	B-4	F8003	C-6			* R1517	D-1	* R3458	C-3
* C1504	C-2	C4209	B-3	C6313	D-4	* C8039	C-5	F8004	C-6	LF8000	C-6	* R1518	D-2	* R3459	C-3
* C1505	C-2	C4210	B-3	C6314	D-5	* C8040	C-6	F8005	B-6			* R1519	D-1	* R3460	C-3
* C1506	C-2	C4211	B-3	C6315	D-4	* C8041	A-4	F8006	B-6	* Q1501	D-2	* R1520	D-1	* R3461	C-3
* C1507	C-2	C4212	B-3	C6318	C-5	* C8042	B-5	F8007	A-5	* Q1502	D-2	* R1521	C-2	* R3462	C-3
* C1508	D-1	C4213	B-3	C6319	C-5	* C8043	B-4			* Q1503	C-2	* R1522	C-3	* R3463	C-3
* C1509	D-2	C4214	B-3	C6320	D-5	* C8044	C-4	FB4201	B-2	* Q1504	C-2	* R1523	C-2	* R3464	C-3
* C1510	D-2	C4215	A-3	C6321	C-5	* C8045	B-5	* FB6001	D-5	* Q2907	B-6	* R1524	C-3	* R3465	C-3
* C1511	C-1	C4216	A-3	C6322	D-5	* C8046	A-4	* FB6201	D-5	* Q2908	C-6	* R1525	C-2	* R3466	C-3
* C1512	D-2	C4217	A-3	C6323	C-4	* C8047	A-4	FB7001	D-3	* Q3401	B-4	* R1526	C-3	* R3467	C-3
* C1513	D-1	C4218	B-3	C6324	C-4	* C8048	A-5			Q3402	C-2	* R1527	C-3	* R3468	C-3
* C1514	C-3	C4219	B-3	C6325	C-4	* C8049	B-5	* IC1501	C-1	Q3403	C-2	* R1528	C-2	* R3469	C-3
* C1515	C-2	C4220	B-2	C7001	D-2	* C8050	C-4	* IC1502	C-1	* Q3404	C-4	* R1529	C-2	* R3470	C-3
* C1516	C-3	C4221	B-2	C7002	D-3	* C8051	B-4	* IC1503	D-1	* Q3405	B-3	* R1530	C-2	R3471	C-4
* C1517	C-3	* C6001	D-3	C7003	D-3	* C8052	B-5	* IC1504	C-2	* Q3406	C-3	* R1531	C-2	R3472	C-4
* C1518	C-3	* C6002	D-3	C7004	D-2	* C8053	C-5	* IC1505	C-3	* Q6001	D-3	* R1532	C-3	R3473	C-4
* C1519	C-2	* C6003	D-3	C7005	D-2	* C8054	A-4	* IC1506	C-3	* Q6002	D-3	* R1533	C-3	R3474	C-4
* C1520	D-1	* C6004	D-3	C7006	D-2	* C8055	C-6	* IC3401	B-3	* Q6003	D-3	* R1534	C-3	R3475	C-3
* C1521	C-2	* C6005	D-4	C7007	D-2	* C8056	C-5	IC3402	C-2	* Q6004	D-3	* R1535	C-2	R3476	C-3
* C1522	C-3	* C6006	D-4	C7008	D-2	* C8057	C-4	* IC3403	C-3	* Q6005	D-3	* R1536	C-2	R3477	C-3
* C1523	C-3	* C6007	D-4	C7009	D-2	* C8058	C-5	IC3404	C-3	* Q6006	D-3	* R1537	C-3	* R3478	B-3
* C1524	C-2	* C6008	D-4	C7010	D-2	C8059	C-5	* IC3405	C-3	* Q6007	D-1	* R1538	C-3	* R3479	B-3
C3401	C-3	* C6009	D-4	C7011	D-2	* C8060	C-4	* IC3406	A-3	* Q6008	D-3	* R1539	D-2	R3480	C-2
C3402	C-2	* C6010	D-4	C7012	D-3	* C8061	C-5	IC4201	A-3	* Q6009	D-3	* R1540	D-2	R4201	A-2
* C3403	B-3	* C6011	D-4	C7013	D-3	* C8062	C-4	IC4202	B-3	* Q6010	D-2	* R1541	C-2	R4202	A-2
* C3404	B-3	* C6013	D-4	C7014	D-2	* C8063	B-6	* IC6001	D-4	* Q6011	D-3	* R1542	C-2	R4204	A-2
C3405	C-3	* C6014	D-4	C7015	D-2	* C8064	C-4	* IC6002	D-2	Q7001	D-2	R1543	C-1	R4205	B-3
* C3406	B-4	* C6015	D-4	C7016	D-2	* C8065	C-6	* IC6004	D-5	Q7002	D-3	* R2942	C-6	R4206	B-3
* C3407	B-3	* C6016	D-4	C7017	D-3	* C8066	C-5	* IC6201	D-6	Q7003	D-3	* R2943	B-6	R4207	B-3
* C3408	B-3	* C6017	D-4	C7018	D-2	C8067	C-4	IC6301	D-5	Q7004	D-3	* R2944	B-6	R4208	B-3
C3409	C-2	* C6018	D-4	C7019	D-2	* C8068	C-4	IC6302	D-4	Q7005	D-3	* R3401	C-3	R4209	B-3
* C3410	B-3	* C6019	D-4	C7020	D-2	* C8069	C-6	IC6303	D-5	* Q7200	A-3	* R3402	C-3	R4210	B-3
C3411	C-2	* C6020	D-5	C7021	D-2	C8070	C-5	IC6304	C-4	Q8000	D-6	* R3403	C-3	R4211	B-3
C3412	C-2	* C6021	D-2	C7022	D-2	* C8071	C-5	* IC6305	D-5	Q8001	D-6	* R3404	C-4	R4212	A-3
C3413	C-2	* C6022	D-4	C7023	D-3	C8072	C-5	IC7001	D-2	* Q8002	D-6	* R3405	C-3	R4213	A-3
* C3414	B-4	* C6023	D-5	C7024	D-3	* C8073	C-4	* IC8000	B-6	* Q8003	D-6	* R3406	C-3	R4214	A-3
* C3415	C-3	* C6024	D-2	C7025	D-2	C8074	C-5	* IC8001	A-4	* Q8004	B-6	* R3407	C-3	R4216	B-3
* C3416	C-4	* C6025	D-5	C7026	D-3	C8075	C-4	* IC8002	A-5	Q8005	B-6	* R3408	C-3	R4217	B-3
C3417	C-2	* C6026	D-5	C7027	D-3	* C8076	B-5	* IC8003	B-4	Q8006	B-6	R3409	C-4	R4218	B-3
* C3418	C-4	* C6027	D-5	C7028	D-2	C8077	C-5	IC8004	C-5	Q8007	B-5	R3410	C-3	R4219	B-3
C3419	C-2	* C6028	D-5	C7030	D-2	* C8078	B-4	* IC8005	D-3	* Q8008	B-5	R3411	C-3	R4221	B-3
* C3420	C-3	* C6029	D-5	C7031	D-3	* C8079	B-4			* Q8009	B-5	R3412	C-3	R4222	B-3
* C3421	C-3	* C6030	D-5	C7200	A-5	* C8080	D-3	* L1501	C-2	* Q8010	A-4	* R3413	B-3	R4223	B-3
C3422	D-3	* C6031	D-5	C7201	A-5	* C8081	D-3	L3402	C-3	* Q8011	B-5	* R3414	B-3	R4224	B-3
* C3423	C-3	* C6032	D-2	C7202	A-4	* C8082	D-3	L3403	C-3	* Q8012	B-4	R3415	C-2	R4225	A-2
* C3424	C-3	* C6033	D-5	C7211	A-3			L4201	B-2	* Q8013	B-5	R3416	C-2	R4226	B-2
* C3425	C-4	* C6034	D-5	C8000	D-6	CN1004	D-1	L4202	B-3	* Q8014	B-5	* R3417	B-4	* R6001	D-3
C3426	C-3	* C6035	D-5	* C8001	A-6	CN1010	A-5	L4203	A-3	* Q8015	B-4	* R3418	B-4	* R6002	D-3
C3427	D-4	* C6036	D-5	* C8002	A-6	CN1501	C-1	L43401	B-2	* Q8016	B-4	* R3419	B-4	* R6003	D-3
C3428	C-3	* C6037	D-5	* C8003	A-6	CN7200	D-5	* L6001	D-5	Q8017	B-6	* R3420	B-3	* R6004	D-3
C3429	C-4	* C6038	D-5	* C8004	A-6	CN7201	D-4	* L6002	D-5	Q8018	B-6	* R3421	B-3	* R6005	D-3
C3430	C-3	* C6039	D-5	* C8005	B-6	CN7202	D-6	* L6201	D-6	* Q8019	A-4	* R3422	B-4	* R6006	D-3
C3431	C-4	* C6040	D-4	* C8006	B-6	CN7204	D-3	L7001	D-4	* Q8020	B-5	* R3423	B-4	* R6007	D-3
C3432	C-3	* C6041	D-4	* C8007	B-6	CN7205	A-4	L7002	D-3	* Q8021	B-6	* R3424	B-3	* R6008	D-1
C3433	C-4	* C6042	D-2	* C8008	B-6	* CN7206	D-5	L7003	D-2	* Q8022	A-4	* R3425	B-3	* R6009	D-3
* C3434	C-3	* C6043	D-2	* C8009	B-6	* CN7207	D-3	L7004	D-3	* Q8023	B-5	* R3426	C-3	* R6010	D-3
C3435	C-3	* C6045	D-4	* C8010	B-6			L8000	B-4	* Q8024	B-4	* R3427	C-4	* R6011	D-3
C3436	C-3	* C6202	D-6	* C8011	A-6	* D2902	B-6	L8001	A-4	* Q8025	C-4	* R3428	C-3	* R6012	D-3
C3437	C-3	* C6203	D-6	* C8012	A-6	* D3401	B-4	L8002	B-5	* Q8026	B-5	* R3429	C-4	* R6013	D-3
C3438	C-3	* C6204	D-5	* C8013	B-6	* D3402	B-3	L8003	B-5	* Q8027	B-4	* R3430	C-3	* R6014	D-1
C3439	C-3	* C6205	D-5	* C8014	A-6	D4201	B-3	L8004	A-4	Q8028	A-5	* R3431	C-3	* R6015	D-3
* C3440	C-3	* C6206	D-5	* C8015	D-6	* D6001	A-4	L8005	B-5	* Q8029	C-4	* R3432	C-3	* R6016	D-3
C3441	C-3	* C6207	D-5	* C8016	B-6	D6301	D-4	L8006	B-4	* Q8030	C-4	* R3433	C-3	* R6017	D-4
C3442	C-3	* C6208	D-6	* C8017	B-6	D6302	D-5	L8007	B-4	* Q8031	C-4	* R3434	C-3	* R6018	D-4
* C3443	B-3	* C6209	D-5	* C8018	B-6	D7200	D-5	L8008	B-5	* Q8032	C-5	R3435	D-3	* R6019	D-4
* C3445	C-3	* C6210	D-5	C8019	B-6	D7201	D-4	L8009	B-4	* Q8033	C-5	* R3436	C-3	* R6020	D-4
* C3446	C-3	* C6211	D-6	* C8020	B-5	D7202	D-5	* L8010	C-4	* Q8034	C-5	R3437	D-3	* R6021	D-5
* C3447	C-3	* C6212	D-6	C8021	B-6	D7203	D-4	* L8012	C-5			R3438	D-4	* R6022	D-5
* C3448	C-3	* C6213	D-6	* C8022	B-5	* D7204	A-3	* L8013	C-6	* R1501	C-1	R3439	C-3	* R6023	D-2
* C3449	C-3	* C6214	D-6	C8023	C-6	* D7205	A-4	* L8014	C-4	* R1502	C-2	R3440	C-3	* R6024	D-2
* C3450	C-3	* C6215	D-6	C8024	C-6	* D7206	A-4	* L8015	C-5	* R1503	C-2	R3441	D-3	* R6025	D-2
* C3451	C-3	* C6216	D-6	* C8025	A-5	* D7207	A-3	* L8016	C-4	* R1504	C-1	R3442	C-3	* R6026	D-2
* C3452	C-3	* C6217	D-5	C8026	C-6	* D7208	A-4	* L8017	C-5	* R1505	C-1	R3444	D-4	* R6027	D-2
* C3453	C-3	C6301	D-4	* C8027	A-5	* D7209	A-3	* L8018	C-4	* R1506	D-1	R3445	D-4	* R6028	D-2
* C3454	A-3	C6302	D-4	* C8028	B-4	* D7210	D-4	* L8019	C-5	* R1507	C-2	R3446	C-3	* R6029	D-2
* C3455	A-3	C6303	D-5	* C8029	B-5	D8000	D-6	* L8020	C-4	* R1508	C-1	R3447	C-4	* R6030	D-3
* C3456	A-3	C6304	C-5	* C8030	C-5	D8001	D-6	* L8021	C-4	* R1509	C-2	R3450	C-3	* R6031	D-3
* C3457	B-3	C6305	D-4	* C8031	A-4	* D8002	D-6	* L8022	B-6	* R1510	C-2	R3451	C-4	* R6032	D-4
C4201	B-2	C6306	D-5	* C8032	B-5	* D8003	A-4	* L8023	C-5	* R1511	C-2	* R3452	B-3	* R6033	D-4
C4202	A-2	C6307	D-4	* C8033	B-5	* D8004	C-5	* L8024	C-4	* R1512	C-2	* R3453	C-3	* R6034	D-2
C4203	A-2	C6308	D-5	* C8034	A-4			L8025	C-4	* R1513	D-1	* R3454	C-3	* R6035	D-2
C4204	B-2	C6309	D-4	* C8035	B-4	F8000	D-6	L8026	C-5	* R1514	D-2	* R3455	C-3	* R6036	D-4

— Continued on next page —

COVER

4-3. PRINTED WIRING BOARDS

no mark : side A
* mark : side B

DB-016 BOARD

*	R6201	D-5	*	R8020	D-6
*	R6202	D-5	*	R8021	D-6
	R6304	D-4	*	R8022	A-6
	R6305	D-4	*	R8023	A-6
	R6306	D-4	*	R8024	A-6
	R6307	D-5	*	R8025	A-6
	R6309	D-4	*	R8026	B-6
	R6310	D-5	*	R8027	B-6
	R6311	D-5	*	R8028	B-6
	R6312	C-5	*	R8029	B-6
	R6315	C-5	*	R8030	B-6
	R6316	D-5	*	R8031	B-6
	R6317	C-5	*	R8032	B-6
	R6318	D-5	*	R8033	A-5
	R6319	D-4	*	R8034	B-5
	R6320	D-4	*	R8035	B-6
*	R6321	D-5	*	R8036	A-5
	R6322	C-4	*	R8037	A-5
	R6323	C-4	*	R8038	A-5
	R6324	C-4	*	R8039	A-5
*	R6327	D-5	*	R8040	A-6
*	R6328	D-5	*	R8041	A-6
	R6329	C-4	*	R8042	A-6
	R6330	C-4	*	R8043	B-4
	R6331	D-4	*	R8044	C-5
	R6335	C-4	*	R8045	B-5
	R6336	A-4	*	R8046	B-4
	R7001	D-2	*	R8047	B-5
	R7002	D-2	*	R8048	B-4
	R7003	D-2	*	R8049	B-5
	R7004	D-2	*	R8050	B-5
	R7005	D-3	*	R8051	B-4
	R7006	D-3		R8052	B-6
	R7007	D-3		R8053	B-6
	R7008	D-2		R8054	A-5
	R7009	D-2		R8055	B-5
	R7010	D-2		R8056	A-5
	R7011	D-3		R8057	A-5
	R7012	D-2		R8058	A-5
	R7013	D-3		R8059	A-5
	R7016	D-3		R8060	A-5
	R7017	D-2	*	R8061	B-4
	R7018	D-2	*	R8062	B-4
	R7019	D-3	*	R8063	B-4
	R7020	D-3	*	R8064	B-4
	R7021	D-3	*	R8065	A-5
	R7022	D-2	*	R8066	A-4
	R7023	D-2	*	R8067	A-4
	R7024	D-3	*	R8068	C-4
	R7025	D-3	*	R8069	C-5
	R7026	D-3	*	R8070	C-5
	R7027	D-3	*	R8071	C-5
	R7028	D-3	*	R8072	C-4
	R7029	D-3	*	R8073	C-5
	R7200	A-3	*	R8074	C-5
	R7201	A-3	*	R8075	C-5
	R7202	A-3	*	R8076	C-5
	R7203	A-3	*	R8077	C-5
*	R7204	A-4	*	R8078	C-5
*	R7205	A-3	*	R8079	C-6
*	R7206	A-4	*	R8080	C-5
*	R7207	A-4	*	R8081	B-4
*	R7208	A-4		R8082	C-4
*	R7209	A-3	*	R8083	B-4
	R8000	D-6	*	R8084	C-5
	R8001	D-6	*	R8085	B-5
*	R8002	A-6	*	R8086	A-4
*	R8003	A-6	*	R8087	A-4
	R8004	D-6	*	R8088	B-4
*	R8005	B-6	*	R8089	B-4
*	R8006	A-6	*	R8090	D-3
*	R8007	B-6			
*	R8008	B-6		X7001	D-2
*	R8009	A-6			
*	R8010	C-6			
*	R8011	A-6			
*	R8012	A-6			
*	R8013	B-6			
*	R8014	B-6			
*	R8015	B-6			
*	R8016	B-6			
*	R8017	B-6			
*	R8018	B-6			
*	R8019	A-6			

COVER

SECTION 5
REPAIR PARTS LIST

5-1. EXPLODED VIEWS

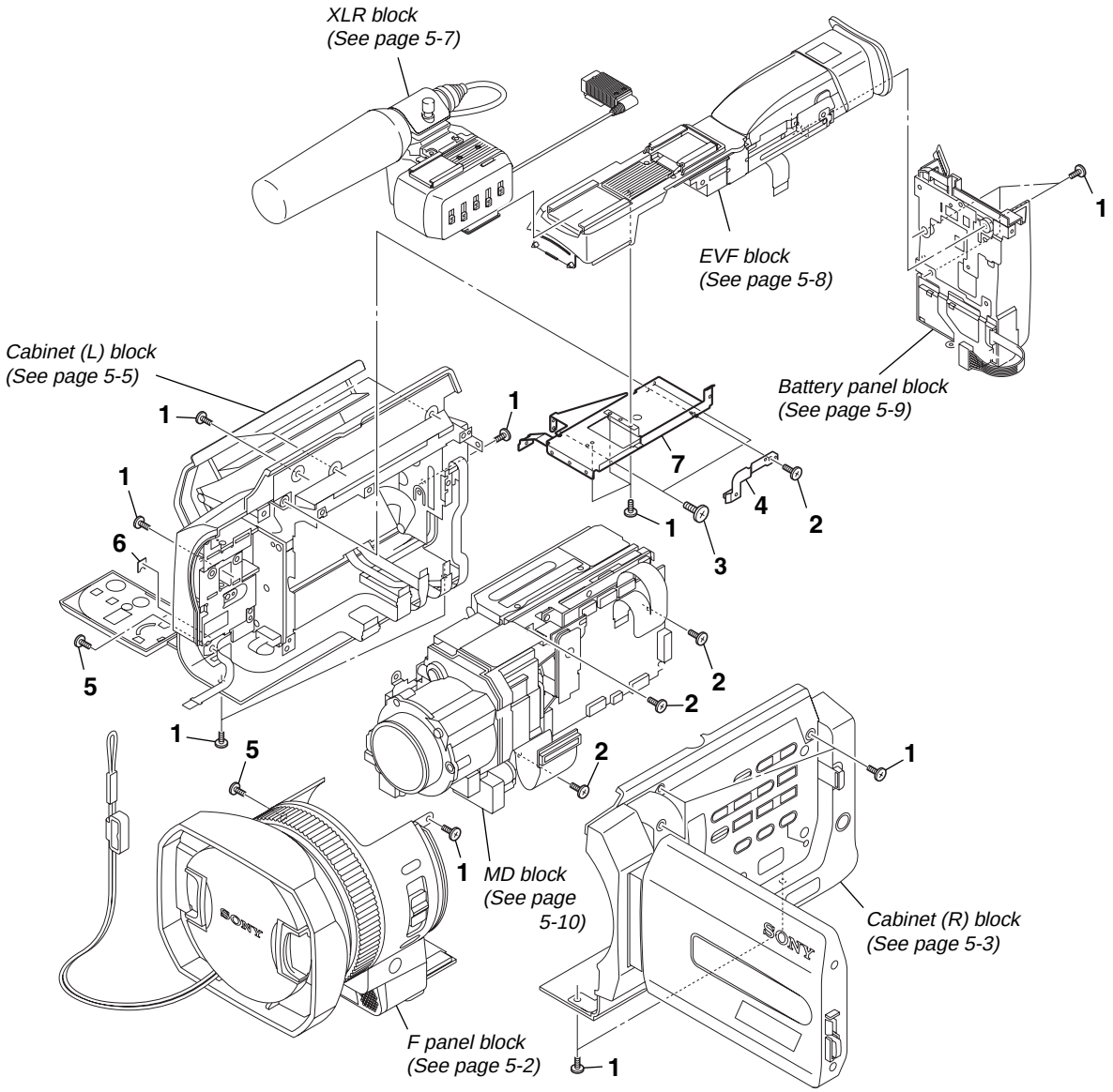
NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by mark ⚠or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

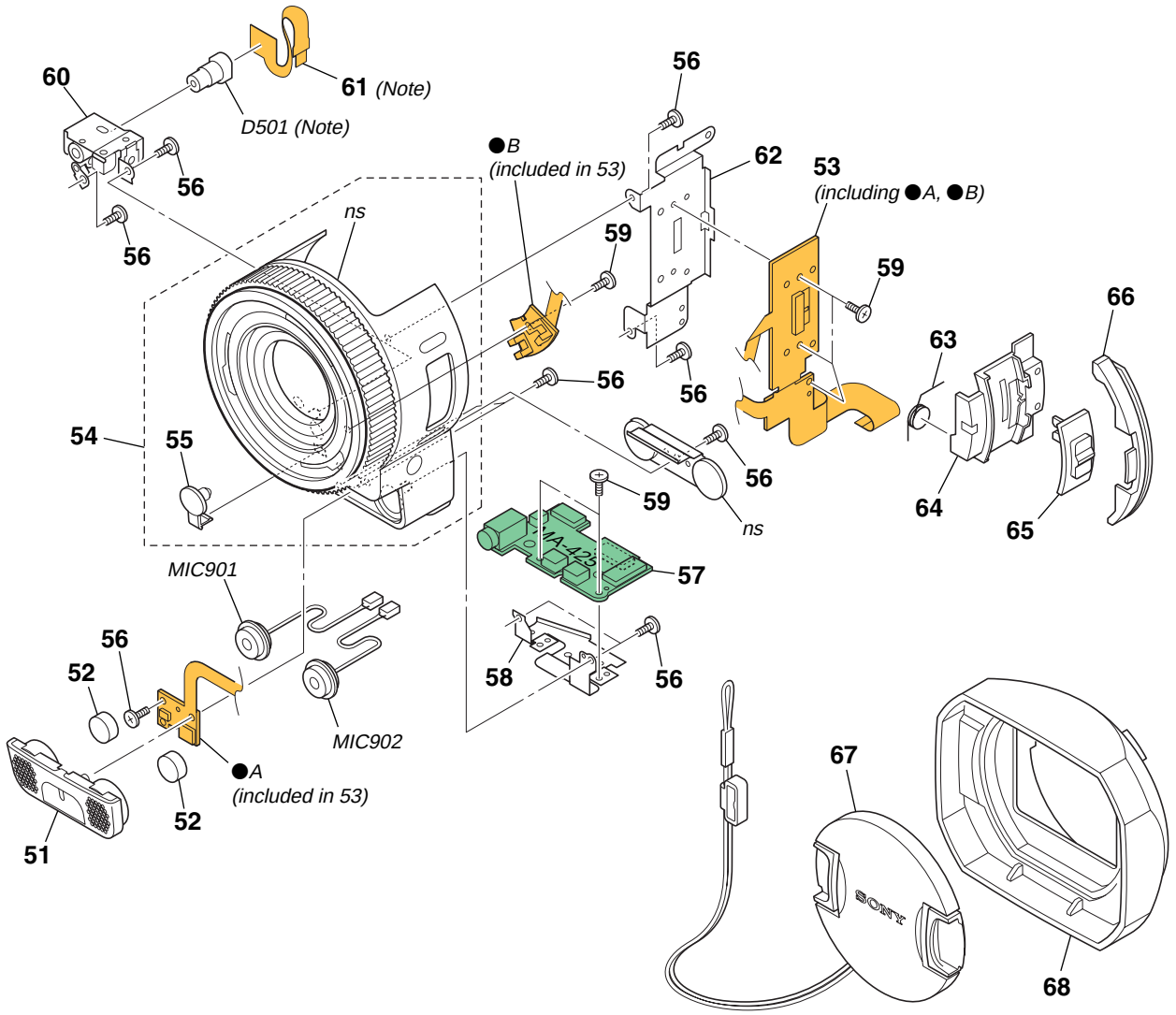
5-1-1. MAIN SECTION



Ref. No.	Part No.	Description
1	3-989-735-81	SCREW (M1.7), LOCK ACE, P2
2	3-989-859-01	SCREW (M1.7) STEP, HEAD
3	3-713-791-31	SCREW (M1.7X6), TAPPING, P2
4	X-3952-813-1	RETAINER (B) ASSY, MF KNOB
5	3-055-573-21	SCREW (M1.7), LOCK ACE, P2
6	3-076-834-01	SHEET, AF BLIND
7	X-3952-923-1	CHASSIS ASSY, TOP

5-1-2. F PANEL BLOCK

ns : not supplied



Note :
Be sure to read “SERVICE NOTE” on page 1-3 when replacing the laser unit (D501) and the FP-500 flexible board.

Ref. No.	Part No.	Description
51	X-3952-617-1	GRILLE ASSY, MICROPHONE
52	3-076-349-01	SHEET, GRILLE
53	A-7078-341-A	FP-504 BOARD, COMPLETE
54	X-3952-656-1	PANEL ASSY, FRONT
55	3-076-276-01	COVER, MICROPHONE JACK
56	3-713-791-01	SCREW (M1.7X4), TAPPING, P2
57	A-7078-515-A	MOUNTED PWB, MA-425
58	3-076-348-01	BRACKET, MA
59	4-974-725-01	SCREW (M1.7X2.5), P
60	X-3952-608-1	BRACKET ASSY, AF LASER

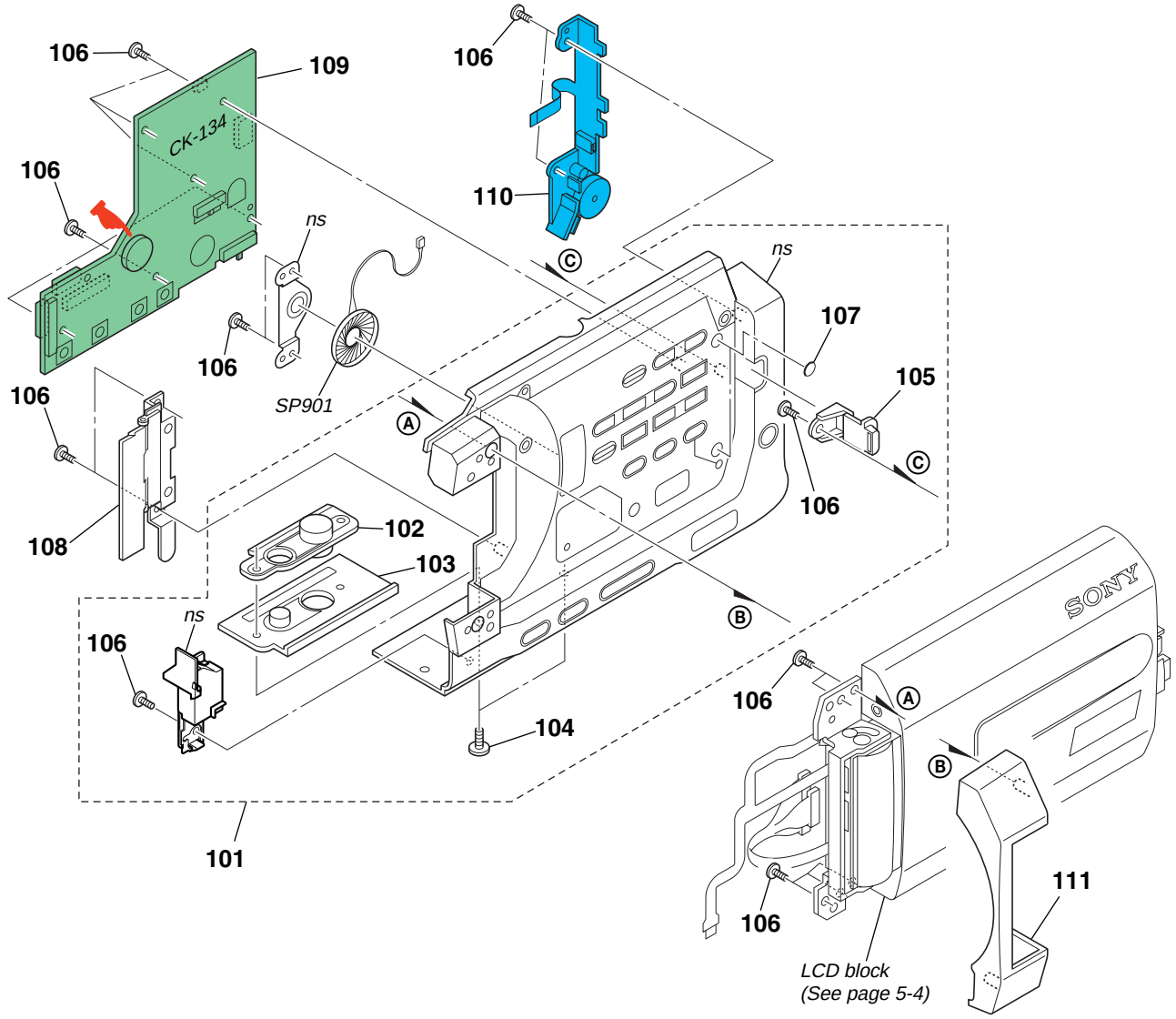
Ref. No.	Part No.	Description
61	1-685-298-12	FP-500 FLEXIBLE
62	3-076-354-01	PLATE (A), MF KNOB RETAINER
63	3-076-353-01	SPRING, MF KNOB RETURN
64	3-076-351-01	RETAINER, MF KNOB
65	3-076-350-02	KNOB, MF
66	3-076-352-01	PLATE, ORNAMENTAL
67	X-3952-595-1	CAP ASSY, LENS
68	X-3952-594-1	HOOD ASSY
⚠D501	1-804-531-11	LASER UNIT
MIC901	1-542-312-11	MICROPHONE (Lch)
MIC902	1-542-312-11	MICROPHONE (Rch)

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

5-1-3. CABINET (R) BLOCK

ns : not supplied



: BT5201 (BATTERY, LITHIUM SECONDARY)
Board on the mount position. (See page 4-105.)

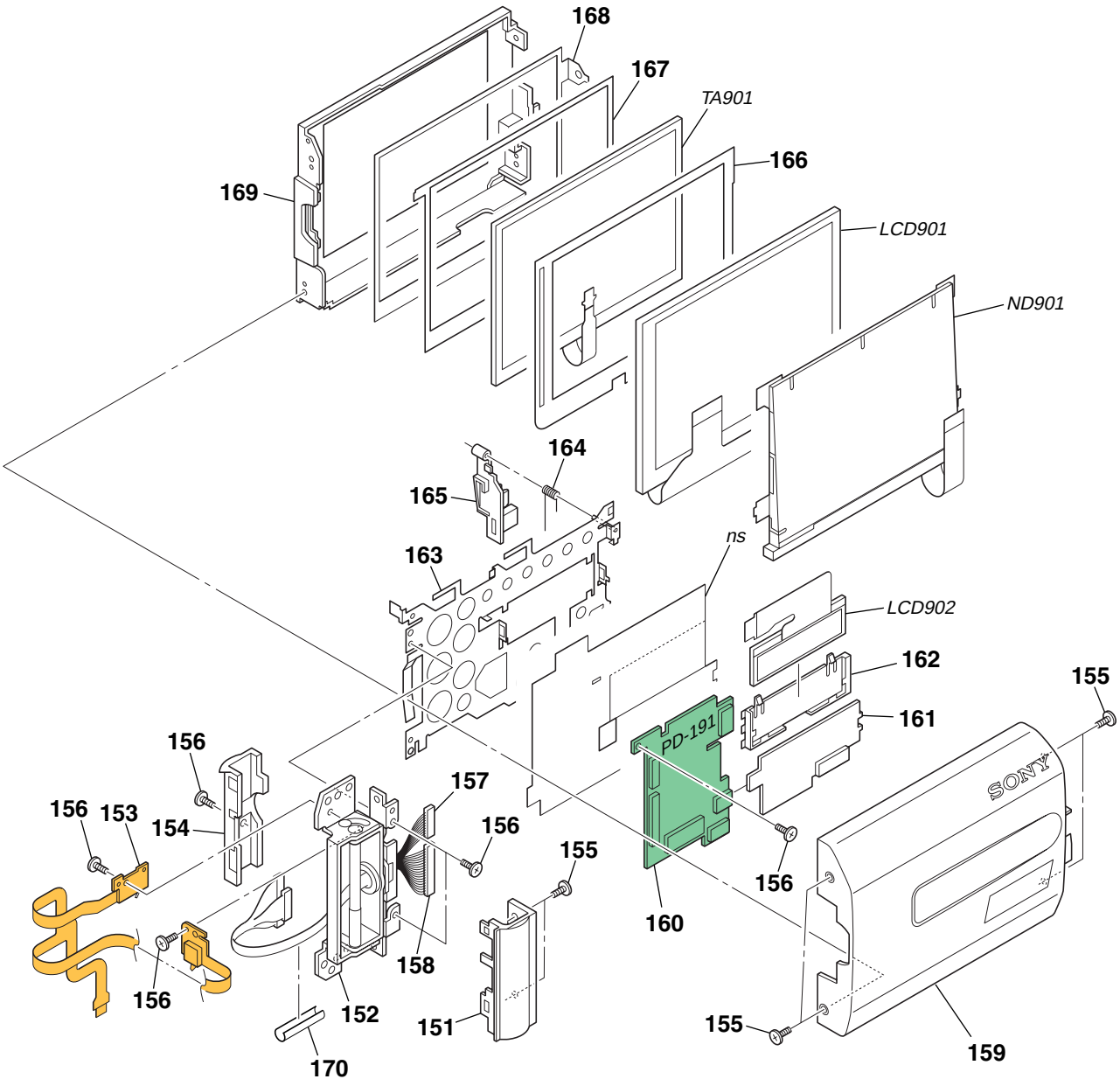
CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

Ref. No.	Part No.	Description
101	X-3952-654-1	CABINET (R) ASSY
102	3-051-840-01	SCREW, TRIPOD
103	3-076-305-01	BASE, TRIPOD TABLE
104	3-958-217-01	SCREW (M2)
105	3-076-299-01	CLAW, PANEL LOCK
106	3-989-735-51	SCREW (M1.7), LOCK ACE, P2

Ref. No.	Part No.	Description
107	3-077-269-01	CUSHION, PANEL
108	X-3952-655-1	LID ASSY, HINGE BLIND
109	A-7078-514-A	CK-134 BOARD, COMPLETE
110	1-477-338-11	SWITCH BLOCK, CONTROL (KP1870)
111	3-076-344-11	CABINET (HINGE)
SP901	1-529-857-21	SPEAKER (1.6 CM)

5-1-4. LCD BLOCK

ns : not supplied



Ref. No.	Part No.	Description
151	3-076-448-11	COVER (FRONT), HINGE
152	X-3952-604-1	HINGE ASSY
153	A-7078-342-A	FP-495 BOARD, COMPLETE
154	3-076-447-11	COVER (REAR), HINGE
155	3-989-735-51	SCREW (M1.7), LOCK ACE, P2
156	4-974-725-01	SCREW (M1.7X2.5), P
157	1-961-814-11	HARNESS (PC-087)
158	1-961-815-11	HARNESS (PC-088)
159	X-3952-653-1	P CABINET (C) ASSY
160	A-7078-516-A	PD-191 BOARD, COMPLETE
⚠161	1-477-187-11	TRANSFORMER UNIT, INVERTER
162	3-055-289-01	HOLDER, LCD

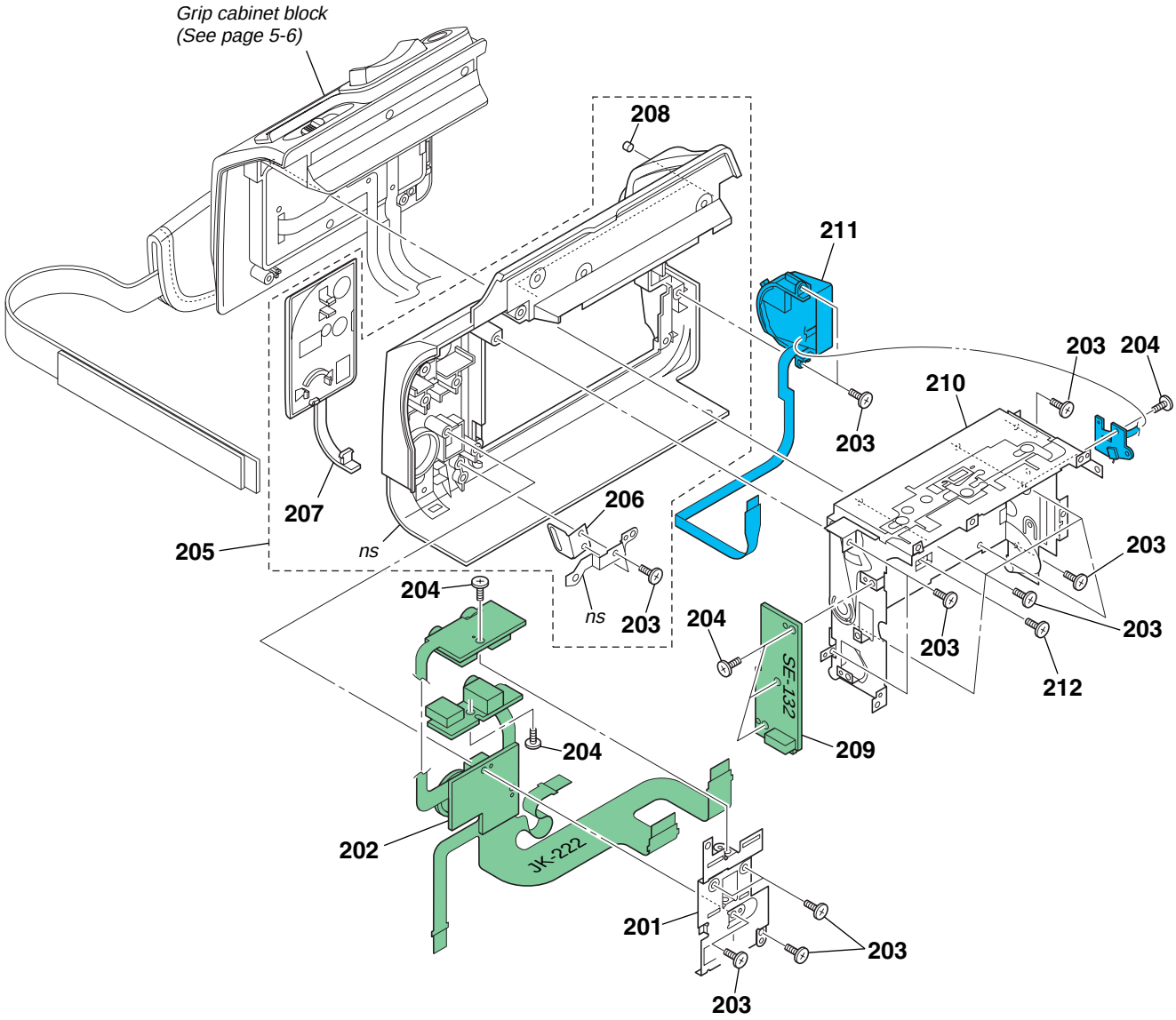
Ref. No.	Part No.	Description
163	X-3952-612-1	FRAME ASSY, P
164	3-076-453-01	SPRING (P), TORSION COIL
165	3-076-449-01	BUTTON, OPEN
166	3-076-451-01	CUSHION (L)
167	3-076-450-01	CUSHION (C)
168	3-076-452-01	PLATE (P), GROUND
169	3-076-446-11	CABINET (M), P
170	3-076-631-01	TAPE (H)
TA901	1-477-189-11	PANEL, TOUCH
⚠ND901	1-518-797-11	TUBE, FLUORESCENT,COLD CATHODE
LCD901	1-804-599-21	INDICATOR MODULE LIQUID CRYST
LCD902	A-7096-726-A	INDICATION LCD BLOCK ASSY

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

5-1-5. CABINET (L) BLOCK

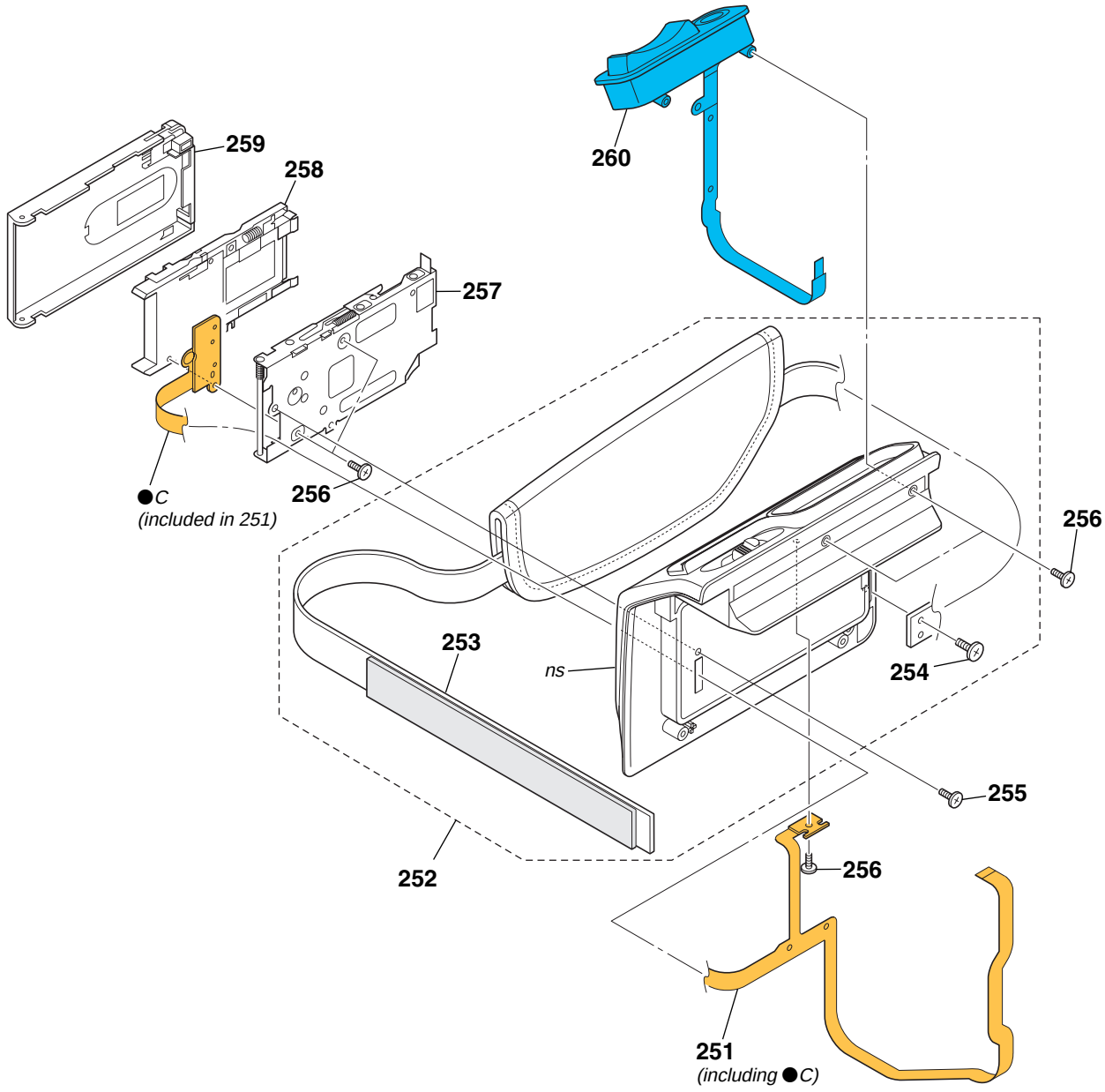
ns : not supplied



Ref. No.	Part No.	Description
201	3-076-343-01	BRACKET, JK
202	A-7078-332-A	JK-222 BOARD, COMPLETE
203	3-713-791-01	SCREW (M1.7X4), TAPPING, P2
204	4-974-725-01	SCREW (M1.7X2.5), P
205	X-3952-652-1	CABINET (L) ASSY
206	3-076-309-01	BRACKET (FRONT), GRIP BELT

Ref. No.	Part No.	Description
207	X-3952-618-1	COVER ASSY, TERMINAL
208	3-077-139-01	CUSHION, (LG)
209	A-7078-339-A	SE-132 BOARD, COMPLETE
210	X-3952-593-1	CS FRAME ASSY
211	1-477-337-33	SWITCH BLOCK, CONTROL (PS1870)
212	3-713-791-01	SCREW (M1.7X4), TAPPING, P2

5-1-6. GRIP CABINET BLOCK

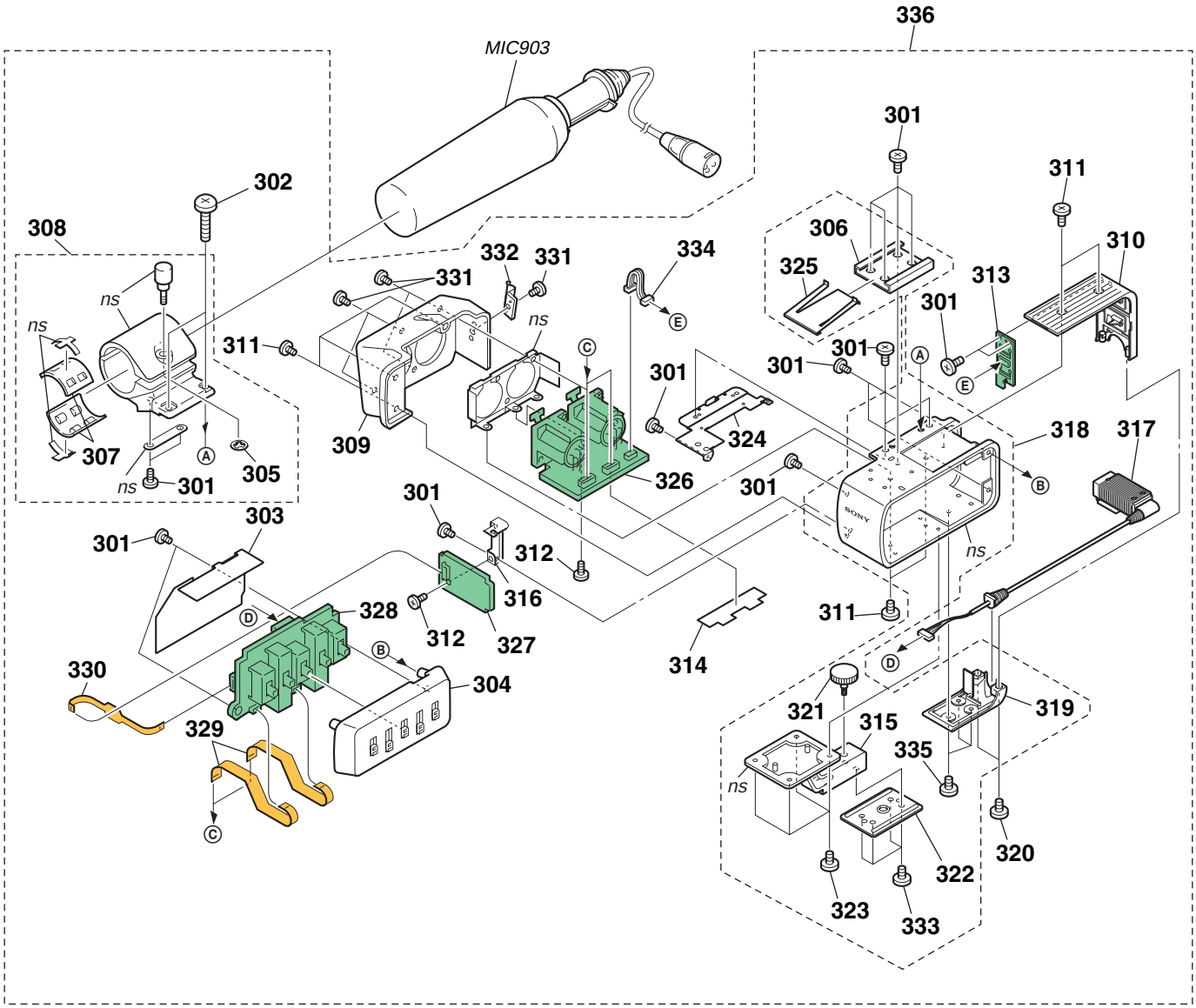


Ref. No.	Part No.	Description
251	1-685-299-22	FP-503 FLEXIBLE
252	X-3952-660-1	CABINET ASSY, GRIP
253	3-076-322-11	BELT, GRIP
254	3-679-362-11	SCREW
255	4-974-725-01	SCREW (M1.7X2.5), P

Ref. No.	Part No.	Description
256	3-713-791-01	SCREW (M1.7X4), TAPPING, P2
257	X-3952-598-1	CHASSIS ASSY, MS
258	1-785-593-31	CONNECTOR, MEMORY STICK
259	X-3952-624-1	CABINET ASSY, MS
260	1-477-339-22	SWITCH BLOCK, CONTROL (CF1870)

5-1-7. XLR BLOCK

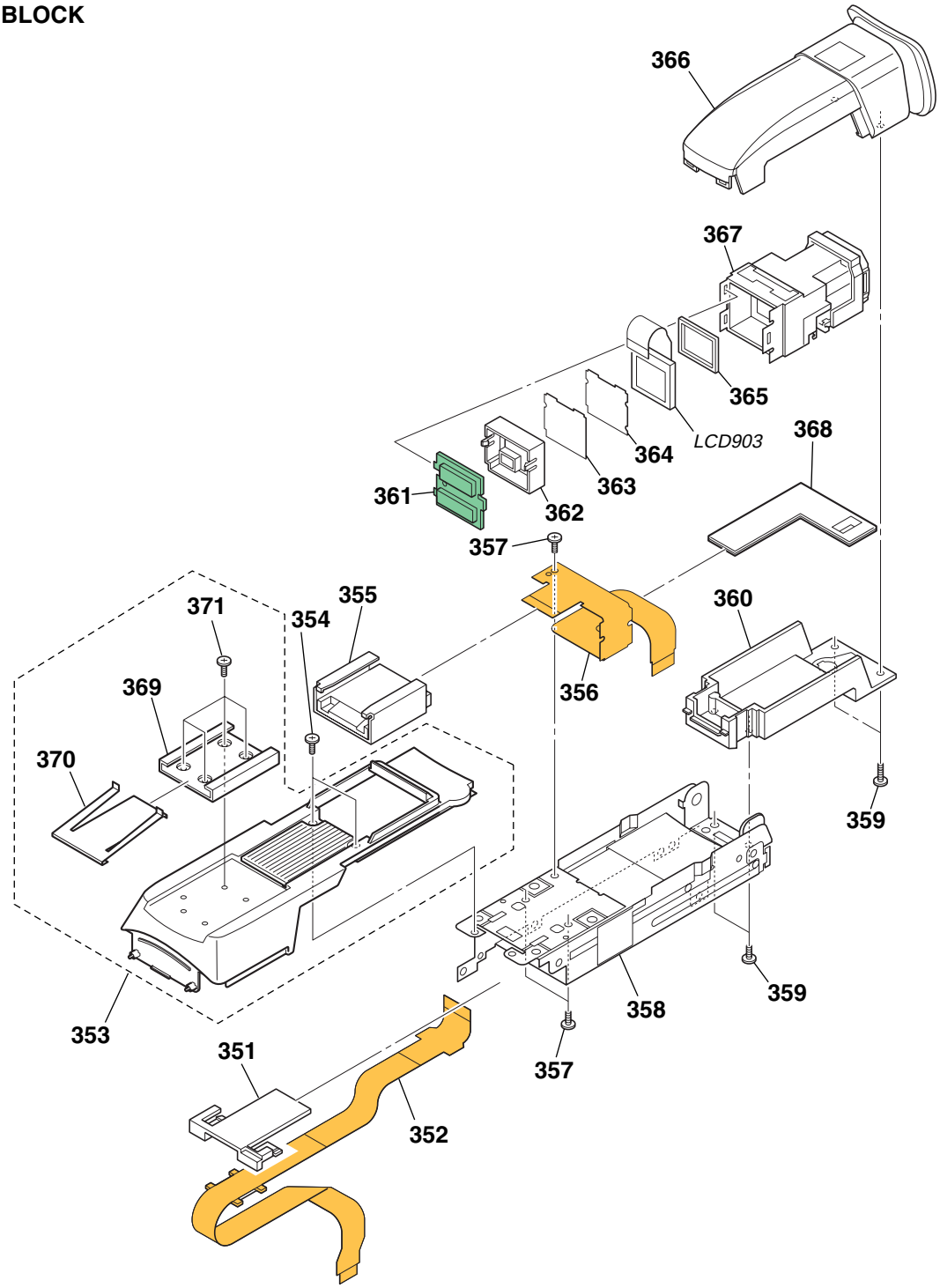
ns : not supplied



Ref. No.	Part No.	Description
301	3-948-339-61	TAPPING
302	7-682-549-09	SCREW +B 3X10
* 303	3-060-814-01	INSULATED PLATE, SW
304	X-3950-603-3	CABINET (L) ASSY, HANDLE
305	3-165-904-01	WASHER, SCREW STOPPER
306	3-069-286-01	SHOE, ACCESSORY
307	3-608-303-01	RUBBER
308	X-3950-604-1	HOLDER ASSY, MICROPHONE
309	3-060-813-02	CABINET (R), HANDLE
310	X-3952-786-1	REAR SUB ASSY, XL CABINET
311	3-968-729-61	SCREW (M2X3), LOCK ACE, P2
312	3-968-729-51	SCREW (M2), LOCK ACE, P2
313	A-7078-396-A	XK-001 (UPD) BOARD, COMPLETE
314	3-063-408-01	SHEET, XLR
315	3-077-771-01	FOOT, XL
* 316	3-060-815-01	BRACKET, DD
317	1-961-918-11	HARNESS (XH-050)
318	X-3952-785-1	CENTER ASSY, XL CABINET
319	3-077-773-01	BOTTOM, XL CABINET

Ref. No.	Part No.	Description
320	3-713-791-71	SCREW (M1.7X4)
321	3-077-767-01	XL KNOB
322	3-077-768-01	XL SHOE PLATE
323	3-945-884-11	SCREW (2X6)
324	3-064-629-01	RETAINER (UPPER) D, HOLDER
325	3-688-754-11	SPRING
326	A-7078-393-A	XM-002 (UPD) BOARD, COMPLETE
327	A-7078-395-A	XD-002 (UPD) BOARD, COMPLETE
328	A-7078-394-A	XS-002 (UPD) BOARD, COMPLETE
329	1-678-052-11	FP-217 FLEXIBLE
330	1-678-053-11	FP-218 FLEXIBLE
331	3-061-062-01	BOLT (M2.6)
* 332	3-678-684-00	HOLDER, CABLE
333	3-053-121-11	BOLT (M2), SPRING
334	1-961-917-11	HARNESS (XK-050)
335	3-053-121-31	BOLT (M2), SPRING
336	A-7013-029-A	XLR BLOCK ASSY
MIC903	8-814-298-90	MICROPHONE ECM-NV1

5-1-8. EVF BLOCK

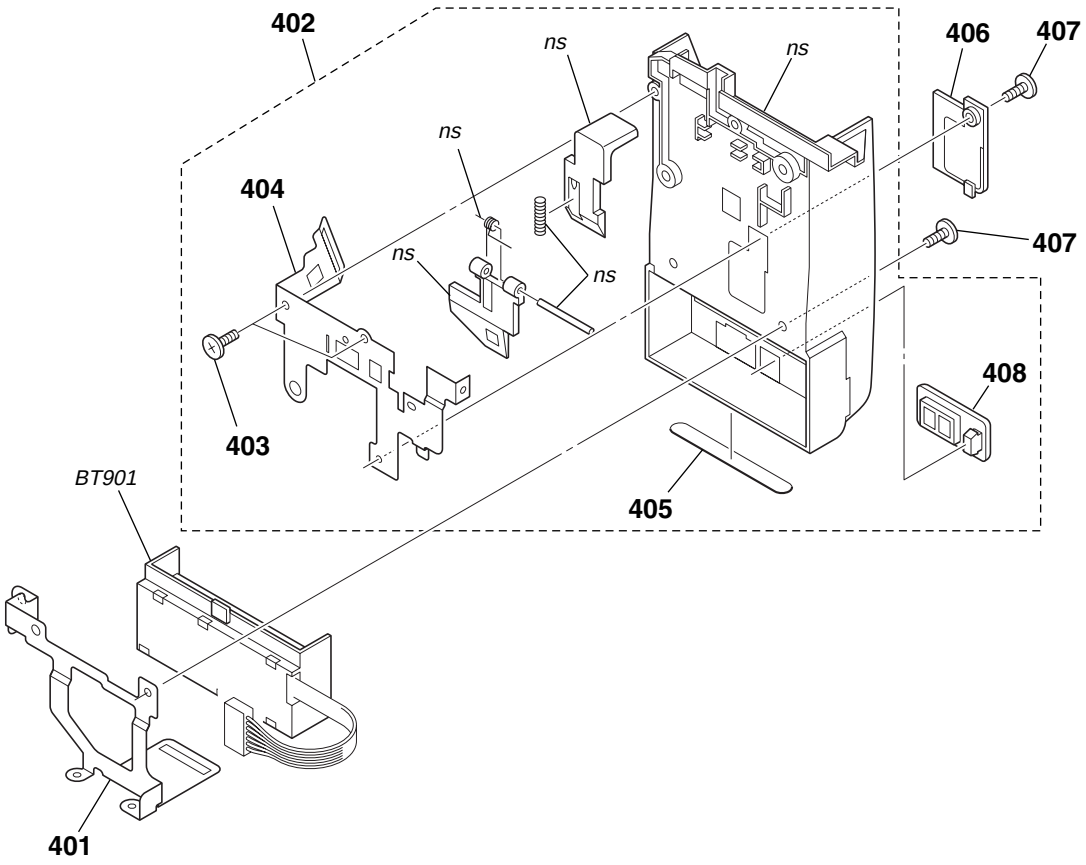


Ref. No.	Part No.	Description
351	3-076-345-01	HOLDER, VF FLEXIBLE
352	1-685-301-12	FP-547 FLEXIBLE
353	X-3952-787-1	CABINET ASSY, TOP
354	3-989-735-81	SCREW (M1.7), LOCK ACE, P2
355	1-815-124-11	CONNECTOR, EXTERNAL (HOT SHOE)
356	A-7078-344-A	FP-497 BOARD, COMPLETE
357	4-974-725-01	SCREW (M1.7X2.5), P
358	X-3952-600-2	BASE ASSY, EVF
359	3-713-791-31	SCREW (M1.7X6), TAPPING, P2
360	X-3952-784-1	VF CABINET (LOWER) ASSY
361	A-7078-399-A	LB-089 (UPD) BOARD, COMPLETE
362	3-072-214-01	GUIDE (20), LAMP

Ref. No.	Part No.	Description
363	3-072-211-01	ILLUMINATOR
364	3-072-210-01	SHEET, PRISM
365	3-059-734-01	CUSHION (1), LCD
366	X-3952-783-1	VF CABINET (UPPER) ASSY
367	X-3952-616-1	LENS ASSY, VF
368	3-077-288-01	SHEET(C), COPY
369	3-069-286-01	SHOE, ACCESSORY
370	3-688-754-11	SPRING
371	3-968-729-11	SCREW (M2), LOCK ACE, P2
BT901	1-694-772-11	TERMINAL BOARD, BATTERY
LCD903	8-753-028-56	LCX033AP-1

5-1-9. BATTERY PANEL BLOCK

ns : not supplied

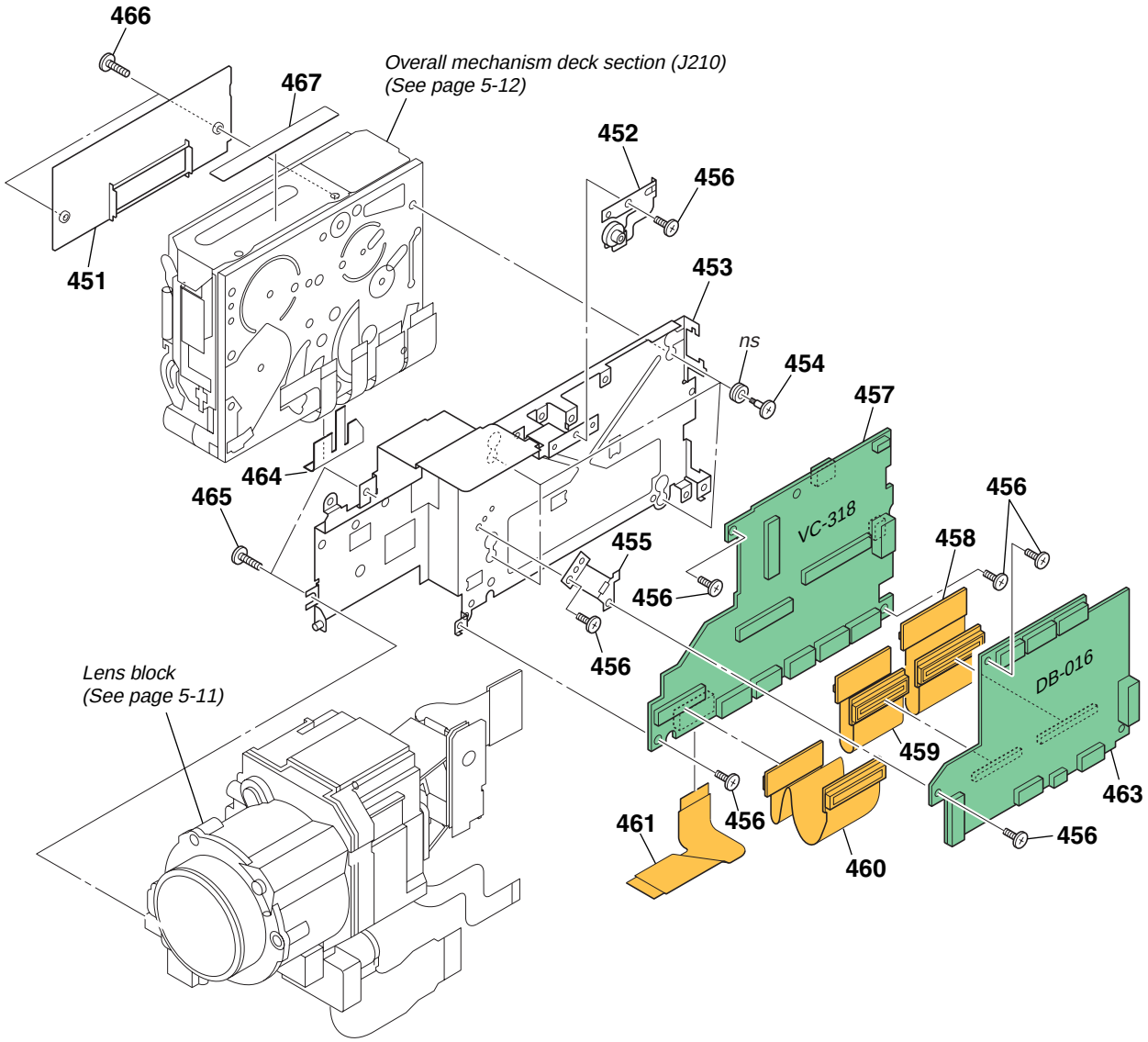


Ref. No.	Part No.	Description
401	3-076-245-01	BRACKET (LOWER), STRAP
402	X-3952-603-1	PANEL ASSY, BATTERY
403	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2
404	3-076-335-01	BRACKET (UPPER), STRAP
405	3-076-337-01	FOOT, RUBBER

Ref. No.	Part No.	Description
406	3-076-239-01	LID, CPC
407	3-989-735-81	SCREW (M1.7), LOCK ACE, P2
408	3-065-290-11	LID, JACK
BT901	1-694-772-11	TERMINAL BOARD, BATTERY

5-1-10. MD BLOCK

ns : not supplied

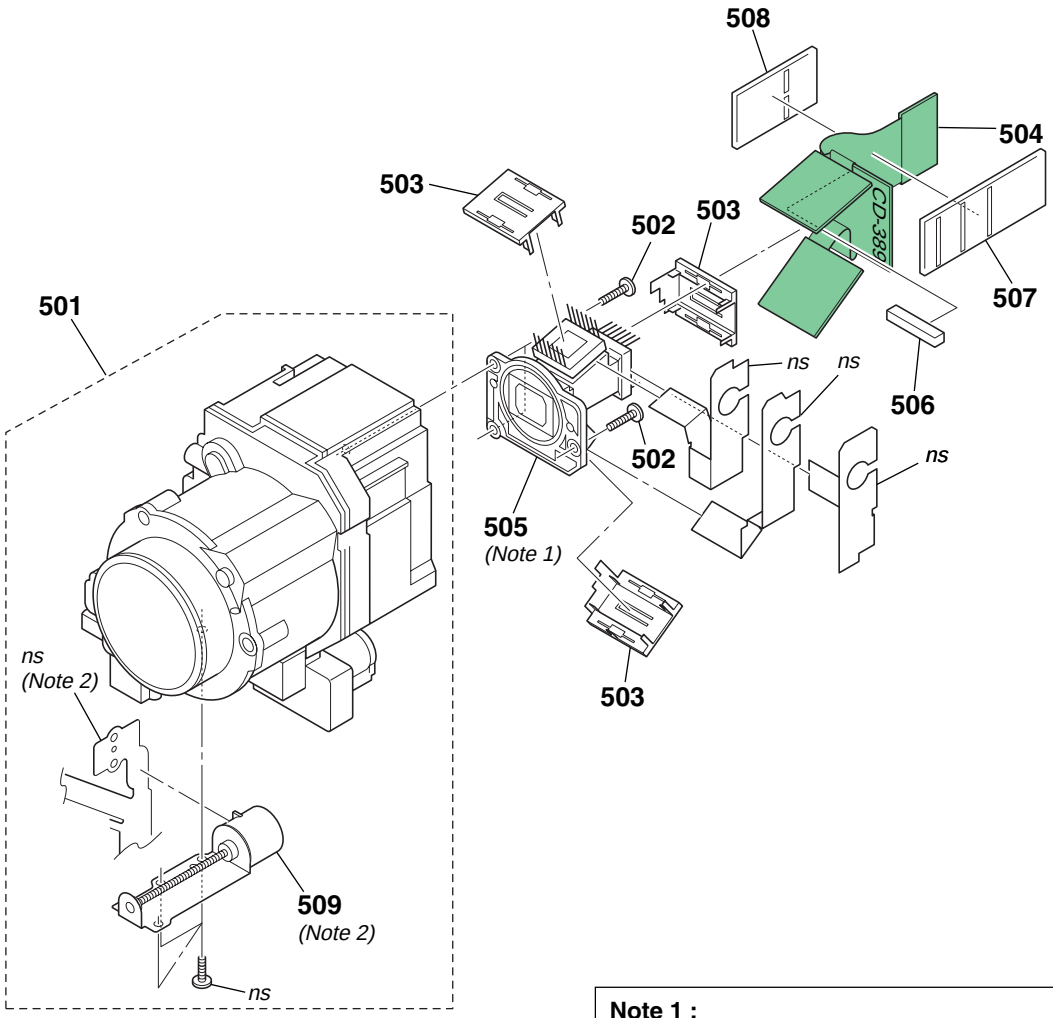


Ref. No.	Part No.	Description
451	3-059-722-01	COVER, CASSETTE COMPARTMENT
452	X-3952-662-1	BRACKET ASSY, HEAT SINK
453	X-3952-599-1	FRAME ASSY, MD
454	3-059-718-01	SCREW (M1.4X1.5)
455	3-076-338-01	BRACKET, DB
456	4-974-725-01	SCREW (M1.7X2.5), P
457	A-7078-397-A	VC-318 (UDN) BOARD, COMPLETE (SERVICE) (PDX10)
457	A-7078-400-A	VC-318 (UDP) BOARD, COMPLETE (SERVICE) (PDX10P)
458	A-7078-345-A	FP-498 BOARD, COMPLETE

Ref. No.	Part No.	Description
459	A-7078-346-A	FP-499 BOARD, COMPLETE
460	A-7078-343-A	FP-496 BOARD, COMPLETE
461	1-685-292-12	FP-494 FLEXIBLE
463	A-7078-398-A	DB-016 (UDN) BOARD, COMPLETE (SERVICE) (PDX10)
463	A-7078-401-A	DB-016 (UDP) BOARD, COMPLETE (SERVICE) (PDX10P)
464	3-070-940-01	TAPE (3), DF
465	3-948-339-01	SCREW, TAPPING
466	3-989-735-01	SCREW (M1.7), LOCK ACE, P2
467	3-059-725-01	LABEL, LS

5-1-11. LENS BLOCK

ns : not supplied



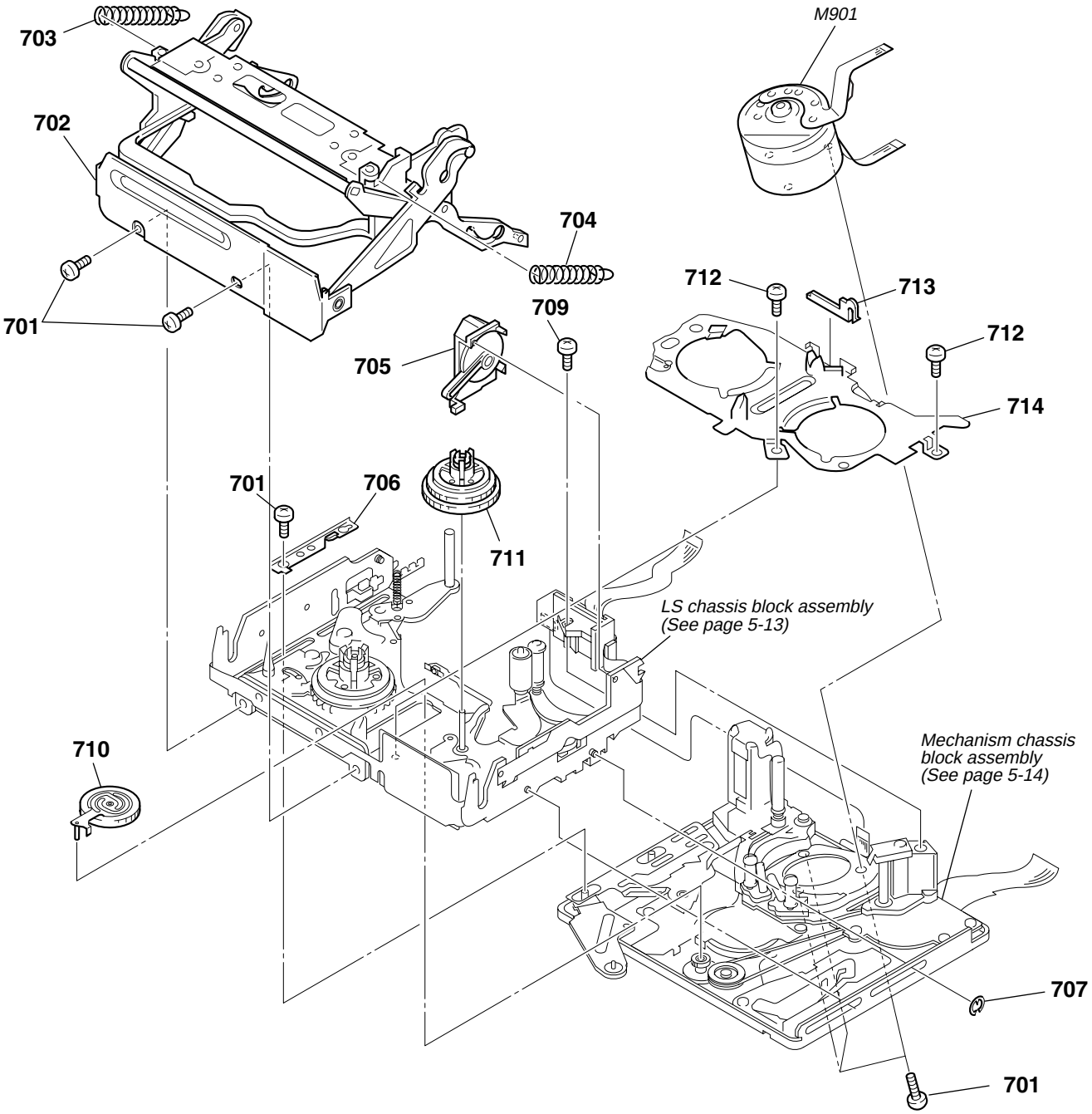
Note 1 :
Be sure to read "Precuations for Replacement of CCD Imager" on page 4-12 when changing the prism block.

Note 2 :
Replace only with the same or equivalent type. Flexible board of video lens is not supplied. Please be careful not to break the flexible board when you change the motor unit.

Ref. No.	Part No.	Description
501	1-758-757-11	LENS, VIDEO (B144A)
502	3-713-791-61	SCREW (M1.7X7), TAPPING, P2
503	3-076-331-01	COVER (A), CCD
504	A-7078-335-A	CD-389 BOARD, COMPLETE
505	A-7012-866-A	PRISM BLOCK (ZGDSY2) (FOR SERVICE)

Ref. No.	Part No.	Description
506	3-053-354-01	CUSHION, CD FLEXIBLE
507	3-077-290-01	SHEET (E), COPY
508	3-077-291-01	SHEET (F), COPY
509	3-709-679-01	MOTOR, ZOOM
M801	3-709-679-01	MOTOR, ZOOM

5-1-12. OVERALL MECHANISM DECK SECTION (J210)

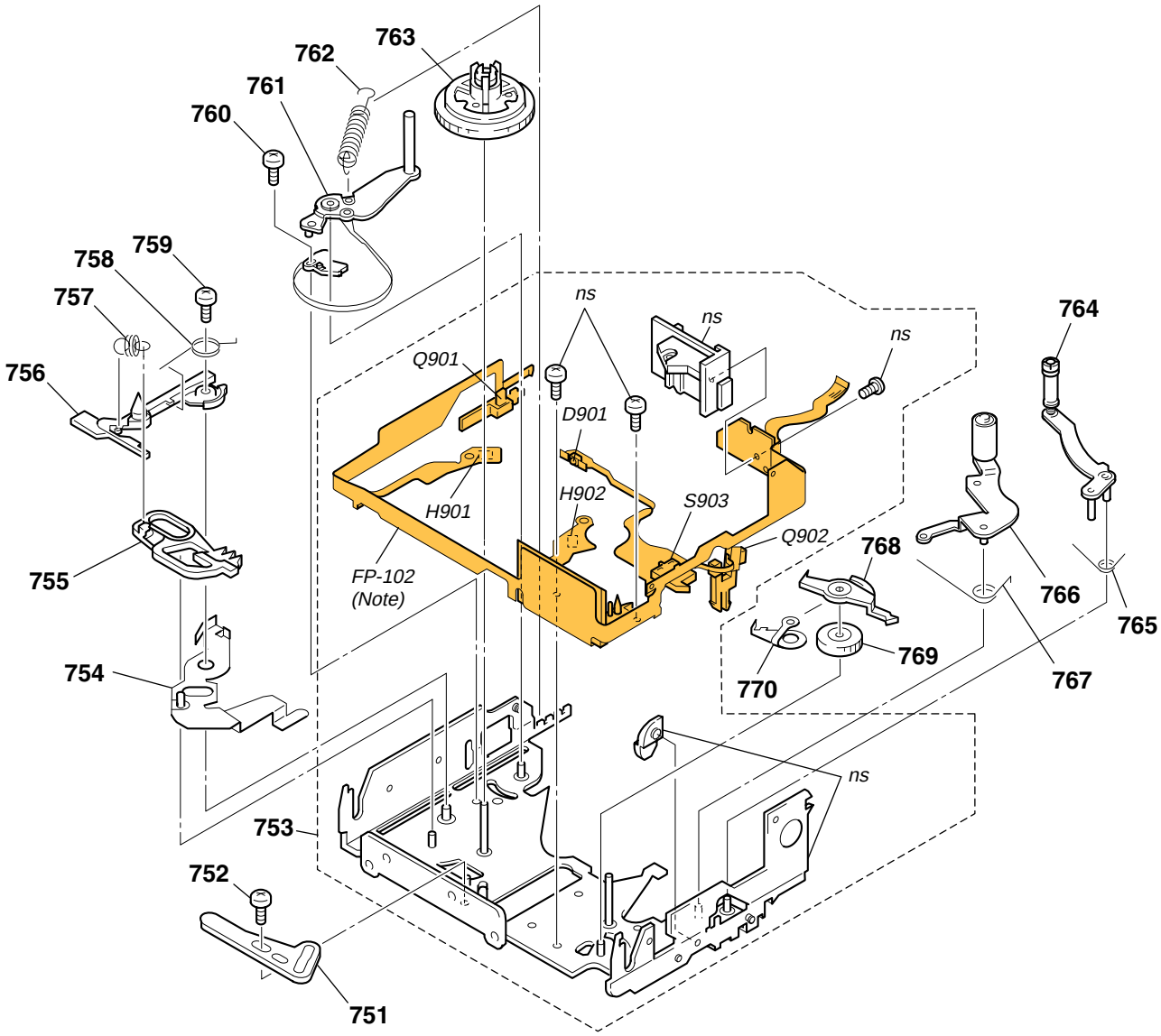


Ref. No.	Part No.	Description
701	3-703-816-14	SCREW (M1.4)
702	X-3952-017-3	CASSETTE COMPARTMENT ASSY
703	3-059-082-01	SPRING, TENSION
704	3-059-208-01	SPRING(CASSETTE COMPARTMENT T)
705	X-3950-370-3	DAMPER ASSY
706	3-059-101-03	RETAINER, LS GUIDE
707	7-624-102-04	STOP RING 1.5, TYPE -E

Ref. No.	Part No.	Description
709	3-704-197-21	SCREW (M1.4X2.5), SPECIAL HEAD
710	X-3950-364-1	GEAR ASSY, GOOSENECK
711	X-3950-366-1	TABLE ASSY, T REEL
712	3-075-097-01	SCREW (M1.4X1.4), SPECIAL HEAD
713	3-059-093-01	RETAINER, LED
714	X-3950-361-1	PLATE ASSY, RETAINER
M901	A-7048-970-A	DRUM MOTOR (DEH-23A)

5-1-13. LS CHASSIS BLOCK ASSEMBLY

ns : not supplied



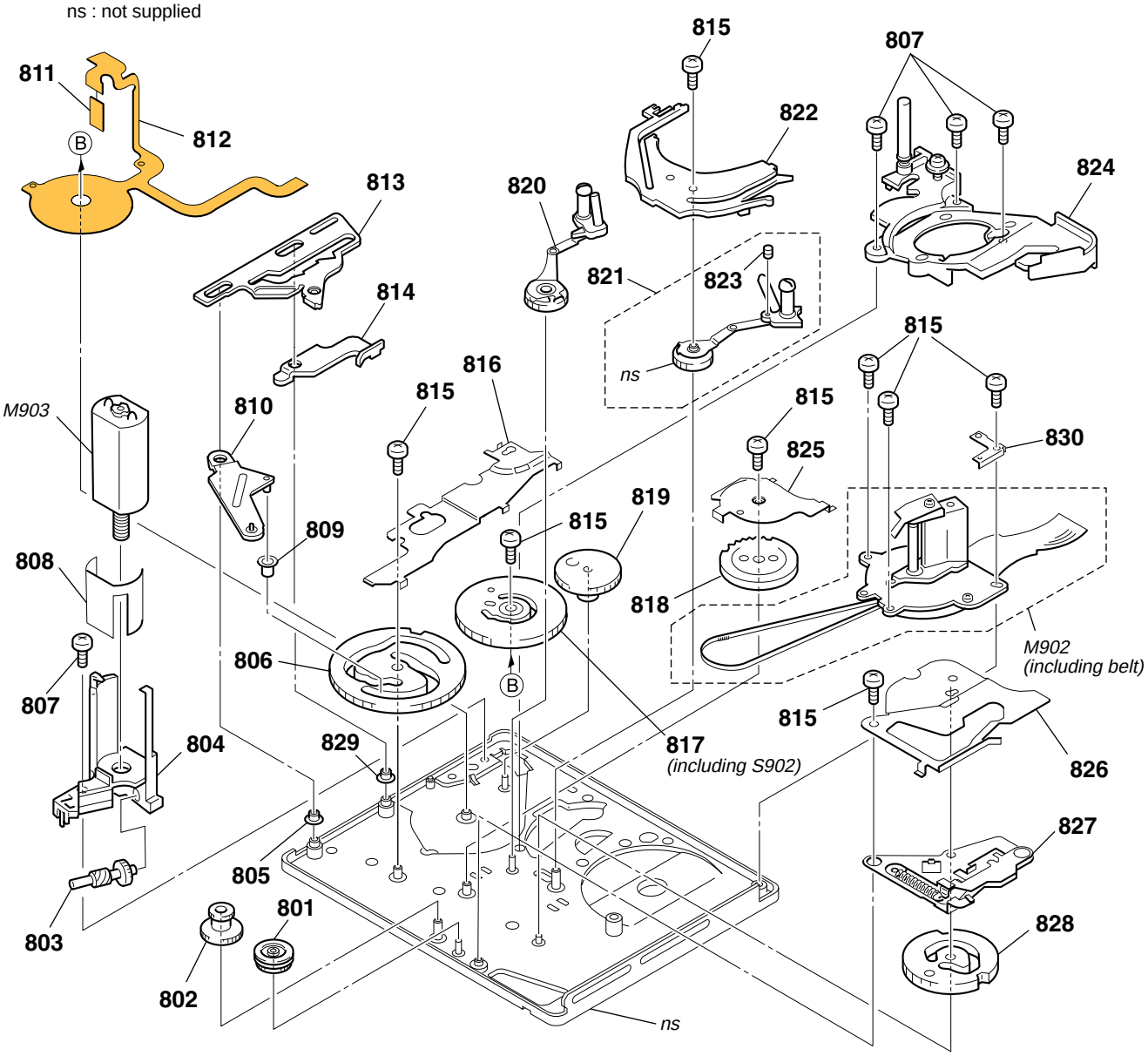
Note: *FP-102 is included in the LS sub assy and is attached to chassis by hot-press.*
Because installation of FP-102 requires a very high accuracy, FP-102 is not supplied as an independent service parts.

Ref. No.	Part No.	Description
751	3-059-173-01	PLATE, LS CAM
752	3-075-097-01	SCREW (M1.4X1.4), SPECIAL HEAD
753	A-7094-816-B	LS BLOCK ASSY
754	X-3950-371-1	ARM ASSY, BRAKE (S) DRIVING
755	3-059-166-02	BRAKE (S)
756	3-059-146-01	POSITIONING (S), CASSETTE
757	3-059-167-01	SPRING (BRAKE S), TENSION COIL
758	3-059-169-01	SPRING (BRAKE S ARM), TORSION
759	3-703-816-14	SCREW (M1.4)
760	3-059-090-01	SCREW (M1.4X2.5), SPECIAL HEAD
* 761	X-3950-358-4	TG1 ASSY
762	3-059-156-01	SPRING (TENSION REGULATOR)
763	X-3950-365-2	TABLE ASSY, S REEL

Ref. No.	Part No.	Description
764	A-7094-819-A	TG7 BLOCK ASSY
765	3-059-165-01	SPRING (TG7 RETURN), TORSION
766	X-3950-359-1	ARM ASSY, PINCH
767	3-059-161-01	SPRING (PINCH RETURN), TORSION
768	3-059-170-01	BRAKE (T)
769	3-059-171-01	GEAR (T), BRAKE
770	3-059-172-01	SPRING (T), BRAKE
D901	8-719-078-71	DIODE LN57A.SO (TAPE LED)
H901	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (S REEL)
H902	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (T REEL)
Q901	8-729-028-71	TRANSISTOR PN166.SO (TAPE END)
Q902	8-729-028-71	TRANSISTOR PN166.SO (TAPE TOP)
S903	1-572-288-11	SWITCH, PUSH (CC DOWN)

5-1-14. MECHANISM CHASSIS BLOCK ASSEMBLY

ns : not supplied



Ref. No.	Part No.	Description
801	3-059-211-01	GEAR, CONVERSION
802	3-059-220-01	GEAR, RELAY
803	3-059-187-01	SHAFT, WORM
804	3-059-186-02	HOLDER, MOTOR
805	3-060-002-01	ROLLER, LS GUIDE
806	3-059-189-01	GEAR (A), CAM
807	3-704-197-21	SCREW (M1.4X2.5), SPECIAL HEAD
808	3-059-225-01	SHIELD, MOTOR
809	3-059-191-01	ROLLER, LS
810	3-059-190-01	ARM, LS
811	1-677-049-11	FP-228 FLEXIBLE
812	1-677-084-11	FP-100 FLEXIBLE
813	3-059-149-01	SLIDER, TG1 CAM
814	3-059-148-01	ARM, TG1 DRIVING
815	3-703-816-14	SCREW (M1.4)
816	3-059-117-01	COVER (A), GEAR

Ref. No.	Part No.	Description
817	X-3950-367-1	GEAR ASSY, MODE
818	3-059-139-01	GEAR, GL DRIVING
819	3-059-188-01	GEAR, DECELERATION
820	A-7094-818-A	COASTER (S) BLOCK ASSY
821	A-7094-817-A	COASTER (T) BLOCK ASSY
822	3-059-126-01	RAIL, GUIDE
823	3-962-914-01	SCREW (M1.4X2)
824	A-7094-822-A	DRUM BASE BLOCK ASSY
825	3-059-118-01	COVER (B), GEAR
826	3-059-083-01	COVER (C), GEAR
827	X-3950-368-1	ARM ASSY, PINCH DRIVING
828	3-059-192-01	GEAR (B), CAM
829	3-063-355-01	ROLLER (S1), LS GUIDE
830	3-065-202-01	SUPPORT, TG7
M902	8-835-685-01	MOTOR, DC SCD18A/C-NP (CAPSTAN)
M903	A-7094-823-A	MOTOR BLOCK ASSY, L (LOADING)

5-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Abbreviation
  CND : Canadian model

Ref. No.	Part No.	Description			
	A-7078-335-A	CD-389 BOARD, COMPLETE			
		**********			
		(IC100,101 and 105 are not included in this complete board.)			
		< CAPACITOR >			
C102	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C103	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C104	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C105	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C106	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C107	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C108	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C109	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C110	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C111	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C112	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C113	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C114	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C115	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C116	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C117	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C118	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C119	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C120	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C121	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C122	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C123	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C124	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C125	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C126	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C127	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C128	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C129	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C130	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C131	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
		< CONNECTOR >			
CN100	1-784-938-21	CONNECTOR, BOARD TO BOARD 60P			
		< IC >			
IC100	A-7012-866-A	PRISM BLOCK(ZGDSY2)(CCD IMAGER)(SERVICE)			
IC101	A-7012-866-A	PRISM BLOCK(ZGDSY2)(CCD IMAGER)(SERVICE)			
IC102	6-701-755-01	IC AD80017AJRURL			
IC103	6-701-755-01	IC AD80017AJRURL			
IC104	6-701-755-01	IC AD80017AJRURL			
IC105	A-7012-866-A	PRISM BLOCK(ZGDSY2)(CCD IMAGER)(SERVICE)			

Ref. No.	Part No.	Description			
		< COIL >			
L100	1-469-058-11	INDUCTOR	22uH		
L101	1-469-525-91	INDUCTOR	10uH		
L102	1-469-525-91	INDUCTOR	10uH		
L103	1-469-058-11	INDUCTOR	22uH		
L104	1-469-058-11	INDUCTOR	22uH		
L105	1-469-525-91	INDUCTOR	10uH		
		< TRANSISTOR >			
Q100	8-729-037-74	TRANSISTOR	UN9213J-(TX).SO		
Q101	8-729-037-74	TRANSISTOR	UN9213J-(TX).SO		
Q102	8-729-037-74	TRANSISTOR	UN9213J-(TX).SO		
		< RESISTOR >			
R100	1-218-990-11	SHORT CHIP	0		
R101	1-218-990-11	SHORT CHIP	0		
R102	1-218-990-11	SHORT CHIP	0		
R103	1-218-990-11	SHORT CHIP	0		
R104	1-218-990-11	SHORT CHIP	0		
R105	1-218-990-11	SHORT CHIP	0		
R106	1-218-941-81	RES-CHIP	100	5%	1/16W
R107	1-218-941-81	RES-CHIP	100	5%	1/16W
R108	1-218-941-81	RES-CHIP	100	5%	1/16W
R109	1-218-990-11	SHORT CHIP	0		
R110	1-218-990-11	SHORT CHIP	0		
R111	1-218-990-11	SHORT CHIP	0		
	A-7078-514-A	CK-134 BOARD, COMPLETE			
		**********			
		< BATTERY >			
BT5201	1-756-128-11	BATTERY, LITHIUM (SECONDARY)			
		< CAPACITOR >			
C5201	1-135-957-91	TANTAL. CHIP	10uF	20%	16V
C5202	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN5201	1-794-997-11	PIN, CONNECTOR 20P			
CN5202	1-816-463-11	PIN, CONNECTOR (PC BOARD) 10P			
CN5203	1-784-938-21	CONNECTOR, BOARD TO BOARD 60P			
CN5204	1-794-375-21	PIN, CONNECTOR 2P			
CN5205	1-816-684-11	CONNECTOR, FFC/FPC (ZIF) 8P			
CN5206	1-766-336-21	CONNECTOR, FFC/FPC 6P			

Be sure to read "Precautions upon replacing CCD imager" on page 4-12 when changing the CCD imager.

CAUTION :
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

Ref. No.	Part No.	Description			
		< DIODE >			
D5201	8-719-056-61	DIODE MAZS082008SO			
D5202	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D5203	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D5204	8-719-056-61	DIODE MAZS082008SO			
D5205	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D5206	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D5207	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D5208	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D5209	8-719-062-16	DIODE 01ZA8.2(TPL3)			
		< COIL >			
L5201	1-419-387-21	INDUCTOR	100uH		
L5202	1-419-387-21	INDUCTOR	100uH		
L5203	1-419-387-21	INDUCTOR	100uH		
L5204	1-419-387-21	INDUCTOR	100uH		
		< RESISTOR >			
R5208	1-218-990-11	SHORT CHIP	0		
R5209	1-218-990-11	SHORT CHIP	0		
R5210	1-218-990-11	SHORT CHIP	0		
R5211	1-218-990-11	SHORT CHIP	0		
R5212	1-218-990-11	SHORT CHIP	0		
R5213	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R5214	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R5215	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R5216	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R5217	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R5218	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R5219	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R5220	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R5221	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5222	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5223	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5224	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5225	1-218-964-11	RES-CHIP	8.2K	5%	1/16W
R5226	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R5227	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R5228	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R5229	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R5230	1-218-970-11	RES-CHIP	27K	5%	1/16W
R5231	1-218-964-11	RES-CHIP	8.2K	5%	1/16W
R5232	1-218-964-11	RES-CHIP	8.2K	5%	1/16W
R5233	1-218-964-11	RES-CHIP	8.2K	5%	1/16W
R5234	1-218-964-11	RES-CHIP	8.2K	5%	1/16W
R5235	1-218-970-11	RES-CHIP	27K	5%	1/16W
R5236	1-218-970-11	RES-CHIP	27K	5%	1/16W
R5237	1-218-970-11	RES-CHIP	27K	5%	1/16W
R5238	1-218-970-11	RES-CHIP	27K	5%	1/16W
R5239	1-218-990-11	SHORT CHIP	0		
R5240	1-218-990-11	SHORT CHIP	0		
R5243	1-218-949-11	RES-CHIP	470	5%	1/16W
R5244	1-218-990-11	SHORT CHIP	0		
		< SWITCH >			
S5116	1-771-138-82	SWITCH, KEY BOARD (DISPLAY/TOUCH PANEL)			
S5201	1-572-342-11	SWITCH, SLIDE (AUTO LOCK/AUTO LOCK RELEASE/HOLD)			
S5202	1-762-648-21	SWITCH, SLIDE (ZEBRA OFF/70/100)			
S5203	1-771-138-82	SWITCH, KEY BOARD (TC/U-BIT)			
S5204	1-571-787-31	SWITCH, TACTILE (EDITSEARCH-)			
S5205	1-571-787-31	SWITCH, TACTILE (EDITSEARCH+)			
S5206	1-771-138-82	SWITCH, KEY BOARD (STOP)			
S5207	1-771-138-82	SWITCH, KEY BOARD (REW)			
S5208	1-771-138-82	SWITCH, KEY BOARD (PLAY)			
S5209	1-771-138-82	SWITCH, KEY BOARD (FF)			
S5210	1-771-138-82	SWITCH, KEY BOARD (PAUSE)			
S5211	1-771-138-82	SWITCH, KEY BOARD (REC)			
S5212	1-771-138-82	SWITCH, KEY BOARD (REC)			
S5213	1-771-138-82	SWITCH, KEY BOARD (BARS)			
S5214	1-771-138-82	SWITCH, KEY BOARD (VOLUME+)			
S5215	1-771-138-82	SWITCH, KEY BOARD (VOLUME-)			
S5217	1-771-138-82	SWITCH, KEY BOARD (AUDIO DUB)			
S5218	1-571-787-31	SWITCH, TACTILE (BACK LIGHT)			
S5219	1-571-787-31	SWITCH, TACTILE (SPOT LIGHT)			
S5220	1-771-138-82	SWITCH, KEY BOARD (CUSTOM PRESET)			
S5221	1-771-138-82	SWITCH, KEY BOARD (RESET)			
	A-7078-398-A	DB-016 (UDN) BOARD, COMPLETE (SERVICE) (PDX10)			
		**********			
	A-7078-401-A	DB-016 (UDP) BOARD, COMPLETE (SERVICE) (PDX10P)			
		**********			
		< CAPACITOR >			
C1501	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C1503	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C1504	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C1506	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C1507	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C1508	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C1509	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C1510	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C1511	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C1512	1-125-926-91	TANTAL. CHIP	4.7uF	20%	6.3V
C1516	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C1517	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C1518	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C1519	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C1520	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1521	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C1522	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1523	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1524	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C3401	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3402	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3403	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C3404	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C3405	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C3406	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3407	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3408	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C3409	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3410	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3411	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3412	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3413	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3414	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C3415	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3416	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V

Ref. No.	Part No.	Description			
C3417	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3418	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3419	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C3420	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C3421	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3422	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3423	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3424	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C3428	1-164-936-11	CERAMIC CHIP	680PF	10%	50V
C3429	1-164-936-11	CERAMIC CHIP	680PF	10%	50V
C3430	1-164-936-11	CERAMIC CHIP	680PF	10%	50V
C3431	1-164-936-11	CERAMIC CHIP	680PF	10%	50V
C3434	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3436	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3437	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3439	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3441	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C3442	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C3443	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C3445	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C3447	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3449	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C3450	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3451	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C3452	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3453	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C3454	1-128-964-91	TANTAL. CHIP	100uF	20%	6.3V
C3455	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3456	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3457	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C4201	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C4202	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4205	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4208	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4209	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C4210	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4211	1-100-502-11	TANTAL. CHIP	3.3uF	20%	25V
C4212	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C4213	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4214	1-164-862-11	CERAMIC CHIP	33PF	5%	50V
C4215	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C4216	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C4217	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C4218	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4219	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C4220	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C4221	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C6001	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C6002	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C6003	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6004	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6005	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C6006	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C6007	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C6008	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C6009	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C6010	1-125-926-91	TANTAL. CHIP	4.7uF	20%	6.3V
C6011	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C6013	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6014	1-135-158-21	TANTALUM CHIP	15uF	20%	4V

Ref. No.	Part No.	Description			
C6015	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C6016	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C6017	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C6018	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C6019	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C6020	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6021	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6022	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6023	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6024	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C6025	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C6026	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6027	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6028	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6029	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6031	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C6032	1-216-864-11	METAL CHIP	0	5%	1/16W (Note)
C6033	1-127-895-11	TANTAL. CHIP	22uF	20%	4V
C6034	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C6036	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6037	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C6038	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6039	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C6040	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6041	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6042	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6043	1-216-864-11	METAL CHIP	0	5%	1/16W (Note)
C6045	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6202	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C6203	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C6204	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C6205	1-125-926-91	TANTAL. CHIP	4.7uF	20%	6.3V
C6206	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C6207	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6208	1-135-158-21	TANTALUM CHIP	15uF	20%	4V
C6209	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C6210	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C6211	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6212	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6213	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C6214	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6216	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6217	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C6301	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6302	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6303	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C6304	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C6305	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6306	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C6307	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6308	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C6313	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6314	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C6315	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C6318	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V

Note : Resistors are mounted to the location where C6032, C6043 are printed.

DB-016

Ref. No.	Part No.	Description			
C6319	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C6320	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C6321	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C6322	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C6323	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C6324	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C6325	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C7001	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7002	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7004	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C7005	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C7006	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C7007	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7008	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C7009	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7010	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7011	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C7012	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7013	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C7014	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7016	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7017	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C7018	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7019	1-164-388-91	CERAMIC CHIP	270PF	5%	50V
C7020	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C7021	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C7023	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C7024	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C7025	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7026	1-100-610-91	TANTAL. CHIP	220uF	20%	5V
C7027	1-100-610-91	TANTAL. CHIP	220uF	20%	5V
C7028	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C7029	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C7031	1-164-858-11	CERAMIC CHIP	22PF	5%	50V
C7200	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C7201	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8000	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C8001	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8002	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C8003	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C8004	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C8005	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C8006	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C8007	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C8008	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C8009	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C8010	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C8011	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8012	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C8013	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C8014	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C8016	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C8017	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C8018	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C8019	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C8020	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8021	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C8022	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C8023	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C8024	1-119-751-11	TANTAL. CHIP	22uF	20%	16V

Ref. No.	Part No.	Description			
C8025	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C8026	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C8027	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C8028	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C8029	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C8030	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C8031	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C8032	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C8033	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C8034	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C8035	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C8036	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C8037	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C8038	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C8039	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C8040	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C8041	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C8042	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C8043	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C8044	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C8045	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C8046	1-127-861-11	CERAMIC CHIP	2.2uF	10%	16V
C8047	1-127-861-11	CERAMIC CHIP	2.2uF	10%	16V
C8048	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8049	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8050	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C8052	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8053	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8054	1-127-861-11	CERAMIC CHIP	2.2uF	10%	16V
C8055	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8056	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8057	1-131-860-91	TANTAL. CHIP	4.7uF	20%	10V
C8058	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8059	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8060	1-131-860-91	TANTAL. CHIP	4.7uF	20%	10V
C8061	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8062	1-131-860-91	TANTAL. CHIP	4.7uF	20%	10V
C8063	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C8064	1-131-860-91	TANTAL. CHIP	4.7uF	20%	10V
C8065	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8066	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8067	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C8068	1-131-860-91	TANTAL. CHIP	4.7uF	20%	10V
C8070	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C8071	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8072	1-127-861-11	CERAMIC CHIP	2.2uF	10%	16V
C8073	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C8074	1-127-861-11	CERAMIC CHIP	2.2uF	10%	16V
C8075	1-107-690-11	TANTAL. CHIP	6.8uF	20%	35V
C8076	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C8077	1-127-861-11	CERAMIC CHIP	2.2uF	10%	16V
C8078	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C8079	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C8080	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C8081	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C8082	1-131-860-91	TANTAL. CHIP	4.7uF	20%	10V

Ref. No.	Part No.	Description
		< CONNECTOR >
CN1004	1-784-423-21	CONNECTOR, FFC/FPC (ZIF) 39P
CN1010	1-785-902-21	CONNECTOR, FFC/FPC (ZIF) 23P
CN1501	1-779-329-11	CONNECTOR, FFC/FPC 10P
CN7200	1-691-372-21	CONNECTOR, FFC/FPC 8P
CN7201	1-794-766-21	CONNECTOR, FFC/FPC (LIF) 6P
CN7202	1-573-806-21	PIN, CONNECTOR (1.5MM) (SMD)6P
CN7204	1-794-764-11	CONNECTOR, FPC (ZIF) 21P
CN7205	1-784-421-11	CONNECTOR, FFC/FPC (ZIF) 27P
CN7206	1-785-969-21	CONNECTOR, BOARD TO BOARD 100P
CN7207	1-815-854-11	CONNECTOR, BOARD TO BOARD 80P
CN7211	1-784-420-11	CONNECTOR, FFC/FPC (ZIF) 21P
		< DIODE >
D2902	8-719-056-23	DIODE MA2S111-(K8).SO
D3401	8-719-077-54	DIODE MA4L11100AS0
D3402	8-719-075-62	DIODE 1SS401(TE85L)
D4201	8-719-084-46	DIODE 1SV288(TPH3)
D6001	8-719-056-85	DIODE UDZSTE-178.2B
D7200	8-719-062-16	DIODE 01ZA8.2(TPL3)
D7201	8-719-062-16	DIODE 01ZA8.2(TPL3)
D7202	8-719-056-85	DIODE UDZSTE-178.2B
D7203	8-719-062-16	DIODE 01ZA8.2(TPL3)
D7204	8-719-056-85	DIODE UDZSTE-178.2B
D7205	8-719-062-16	DIODE 01ZA8.2(TPL3)
D7206	8-719-062-16	DIODE 01ZA8.2(TPL3)
D7207	8-719-062-16	DIODE 01ZA8.2(TPL3)
D7208	8-719-062-16	DIODE 01ZA8.2(TPL3)
D7209	8-719-056-85	DIODE UDZSTE-178.2B
D7210	8-719-056-85	DIODE UDZSTE-178.2B
D8000	8-719-077-48	DIODE MA4L72800AS0
D8001	8-719-077-57	DIODE DF3A8.2C(TPL3)
D8002	8-719-077-74	DIODE MA2S784008S0
D8003	8-719-058-24	DIODE RB501V-40TE-17
D8004	8-719-076-80	DIODE SBS004-TL
		< FUSE >
⚠F8000	1-576-406-21	FUSE, MICRO (1.4A/32V) (1608)
⚠F8001	1-576-406-21	FUSE, MICRO (1.4A/32V) (1608)
⚠F8002	1-576-406-21	FUSE, MICRO (1.4A/32V) (1608)
⚠F8003	1-576-406-21	FUSE, MICRO (1.4A/32V) (1608)
⚠F8004	1-576-406-21	FUSE, MICRO (1.4A/32V) (1608)
⚠F8005	1-576-406-21	FUSE, MICRO (1.4A/32V) (1608)
⚠F8006	1-576-406-21	FUSE, MICRO (1.4A/32V) (1608)
		< FERRITE BEAD >
FB4201	1-469-676-22	FERRITE 0uH
FB6001	1-469-676-22	FERRITE 0uH
FB6201	1-469-676-22	FERRITE 0uH
FB7001	1-469-676-22	FERRITE 0uH
		< IC >
IC1501	8-759-359-49	IC NJM3414AV(TE2)
IC1502	8-759-359-49	IC NJM3414AV(TE2)
IC1503	8-759-058-45	IC NJM3403AV(TE2)
IC1504	8-759-058-45	IC NJM3403AV(TE2)
IC1505	8-759-478-92	IC TC7SET04FU(TE85R)
IC1506	8-759-478-92	IC TC7SET04FU(TE85R)
IC3401	1-804-268-11	IC WTGA-NJM12902C
IC3402	6-701-957-01	IC M50230FP-DF0T
IC3403	1-804-268-11	IC WTGA-NJM12902C
IC3404	8-759-662-18	IC CXD9571R-TEB
IC3405	1-804-268-11	IC WTGA-NJM12902C
IC3406	6-700-709-01	IC NJU7241F31(TE2)
IC4201	8-752-100-95	IC CXA3289AR-T4
IC4202	8-752-405-57	IC CXD3501AR-T4
IC6001	8-759-826-24	IC LA74208GL-TBM
IC6002	8-759-833-99	IC TC74HC4052AFT(EL)
IC6004	8-759-826-26	IC AK4550VL-L
IC6201	8-759-826-24	IC LA74208GL-TBM
IC6301	6-701-112-01	IC DS1801E-02V-T/R
IC6302	6-702-589-01	IC M52065FP-70BD
IC6303	8-759-111-56	IC uPC4572G2-E2
IC6304	8-759-710-79	IC NJM2107F-TE2
IC6305	8-759-675-54	IC TC7W53FK(TE85R)
IC7001	6-701-656-01	IC AN2225NBBTBA
IC8000	6-700-019-01	IC MB4499LGA-G-ER
IC8001	8-759-387-30	IC TA75S01F(T5RSONY1)
IC8002	6-700-709-01	IC NJU7241F31(TE2)
IC8004	6-700-711-01	IC BA3986FV-E2
		< COIL >
L1501	1-414-754-11	INDUCTOR 10uH
L3401	1-469-525-91	INDUCTOR 10uH
L3402	1-414-771-91	INDUCTOR 10uH
L3403	1-414-771-91	INDUCTOR 10uH
L4201	1-414-771-91	INDUCTOR 10uH
L4202	1-412-947-11	INDUCTOR 4.7uH
L4203	1-414-771-91	INDUCTOR 10uH
L6001	1-400-137-11	INDUCTOR 10uH
L6002	1-400-137-11	INDUCTOR 10uH
L6201	1-414-771-91	INDUCTOR 10uH
L7001	1-469-525-91	INDUCTOR 10uH
L7002	1-414-771-91	INDUCTOR 10uH
L7003	1-412-937-11	INDUCTOR 0.68uH
L7004	1-469-525-91	INDUCTOR 10uH
L8000	1-419-311-21	INDUCTOR 100uH
L8001	1-419-354-21	INDUCTOR 22uH
L8002	1-419-354-21	INDUCTOR 22uH
L8003	1-416-670-11	INDUCTOR 33uH
L8004	1-419-354-21	INDUCTOR 22uH
L8005	1-419-354-21	INDUCTOR 22uH
L8006	1-416-668-41	INDUCTOR 10uH
L8007	1-419-354-21	INDUCTOR 22uH
L8008	1-416-344-11	INDUCTOR 10uH
L8009	1-419-354-21	INDUCTOR 22uH
L8010	1-469-522-91	INDUCTOR 1uH
L8012	1-469-522-91	INDUCTOR 1uH
L8013	1-469-522-91	INDUCTOR 1uH
L8014	1-469-522-91	INDUCTOR 1uH
L8015	1-469-522-91	INDUCTOR 1uH
L8017	1-469-522-91	INDUCTOR 1uH

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	
L8018	1-469-522-91	INDUCTOR	1uH
L8019	1-414-770-91	INDUCTOR	4.7uH
L8020	1-469-522-91	INDUCTOR	1uH
L8021	1-469-522-91	INDUCTOR	1uH
L8022	1-469-522-91	INDUCTOR	1uH
L8023	1-469-522-91	INDUCTOR	1uH
L8024	1-469-522-91	INDUCTOR	1uH
L8025	1-414-770-91	INDUCTOR	4.7uH
L8026	1-414-770-91	INDUCTOR	4.7uH
L8027	1-414-770-91	INDUCTOR	4.7uH
L8028	1-414-770-91	INDUCTOR	4.7uH
		< LINE FILTER >	
LF8000	1-411-957-11	FILTER, COMMON MODE	
		< TRANSISTOR >	
Q1501	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO
Q1502	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO
Q1503	8-729-037-76	TRANSISTOR	UN9215J-(K8).SO
Q1504	8-729-013-31	TRANSISTOR	2SA1588-OY-TE85L
Q2907	8-729-013-31	TRANSISTOR	2SA1588-OY-TE85L
Q2908	8-729-050-93	TRANSISTOR	UNRL21500AS0
Q3401	8-729-050-76	TRANSISTOR	EC3201C-PM-TL
Q3402	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO
Q3403	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO
Q3404	8-729-050-76	TRANSISTOR	EC3201C-PM-TL
Q3405	8-729-050-76	TRANSISTOR	EC3201C-PM-TL
Q3406	8-729-050-76	TRANSISTOR	EC3201C-PM-TL
Q6001	8-729-054-52	TRANSISTOR	RN1910FE(TPLR3)
Q6002	8-729-054-52	TRANSISTOR	RN1910FE(TPLR3)
Q6003	8-729-050-83	TRANSISTOR	UNRL11500AS0
Q6004	8-729-050-91	TRANSISTOR	UNRL21300AS0
Q6005	8-729-054-51	TRANSISTOR	RN2910FE(TPLR3)
Q6006	8-729-054-52	TRANSISTOR	RN1910FE(TPLR3)
Q6007	8-729-024-39	TRANSISTOR	2SD1511-R/S(TX)
Q6008	8-729-037-52	TRANSISTOR	2SC4738F-Y/GR(TPL3)
Q6009	8-729-037-52	TRANSISTOR	2SC4738F-Y/GR(TPL3)
Q6010	8-729-037-59	TRANSISTOR	UN9111J-(TX).SO
Q6011	8-729-037-74	TRANSISTOR	UN9213J-(TX).SO
Q7001	8-729-050-76	TRANSISTOR	EC3201C-PM-TL
Q7002	8-729-050-81	TRANSISTOR	UNRL11300AS0
Q7004	8-729-050-73	TRANSISTOR	2SC5376C-B(TPL3)
Q7005	8-729-050-73	TRANSISTOR	2SC5376C-B(TPL3)
Q7200	8-729-037-72	TRANSISTOR	UN9211J-(K8).SO
Q8000	8-729-047-68	TRANSISTOR	SSM3K03FE(TPL3)
Q8001	8-729-051-49	TRANSISTOR	TPC8305(TE12L)
Q8002	8-729-804-41	TRANSISTOR	2SB1122-ST-TD
Q8003	8-729-050-91	TRANSISTOR	UNRL21300AS0
Q8004	8-729-050-91	TRANSISTOR	UNRL21300AS0
Q8005	8-729-050-91	TRANSISTOR	UNRL21300AS0
Q8006	8-729-050-81	TRANSISTOR	UNRL11300AS0
Q8007	8-729-050-81	TRANSISTOR	UNRL11300AS0
Q8008	6-550-171-01	TRANSISTOR	MCH3317-TL-E
Q8009	6-550-171-01	TRANSISTOR	MCH3317-TL-E
Q8010	6-550-171-01	TRANSISTOR	MCH3317-TL-E
Q8011	6-550-171-01	TRANSISTOR	MCH3317-TL-E

Ref. No.	Part No.	Description	
Q8012	6-550-171-01	TRANSISTOR	MCH3317-TL-E
Q8013	6-550-171-01	TRANSISTOR	MCH3317-TL-E
Q8014	6-550-171-01	TRANSISTOR	MCH3317-TL-E
Q8015	8-729-056-72	TRANSISTOR	MCH5805-TL-E
Q8016	6-550-171-01	TRANSISTOR	MCH3317-TL-E
Q8017	8-729-023-89	TRANSISTOR	2SJ305(TE85L)
Q8018	8-729-023-89	TRANSISTOR	2SJ305(TE85L)
Q8019	8-729-056-01	TRANSISTOR	MCH3405-TL-E
Q8020	8-729-056-02	TRANSISTOR	MCH5804-TL-E
Q8021	8-729-056-02	TRANSISTOR	MCH5804-TL-E
Q8022	8-729-056-02	TRANSISTOR	MCH5804-TL-E
Q8023	8-729-056-02	TRANSISTOR	MCH5804-TL-E
Q8024	8-729-056-02	TRANSISTOR	MCH5804-TL-E
Q8025	8-729-056-02	TRANSISTOR	MCH5804-TL-E
Q8026	8-729-056-02	TRANSISTOR	MCH5804-TL-E
Q8027	8-729-056-02	TRANSISTOR	MCH5804-TL-E
Q8028	8-729-051-49	TRANSISTOR	TPC8305(TE12L)
Q8029	8-729-050-76	TRANSISTOR	EC3201C-PM-TL
Q8030	8-729-050-74	TRANSISTOR	EC3101C-PM-TL
Q8031	8-729-050-76	TRANSISTOR	EC3201C-PM-TL
Q8032	8-729-050-76	TRANSISTOR	EC3201C-PM-TL
Q8033	8-729-050-74	TRANSISTOR	EC3101C-PM-TL
Q8034	8-729-050-76	TRANSISTOR	EC3201C-PM-TL
		< RESISTOR >	
R1501	1-208-719-11	METAL CHIP	33K 0.5% 1/16W
R1502	1-208-715-11	METAL CHIP	22K 0.5% 1/16W
R1503	1-218-985-11	METAL CHIP	470K 0.5% 1/16W
R1504	1-208-719-11	METAL CHIP	33K 0.5% 1/16W
R1505	1-208-719-11	METAL CHIP	33K 0.5% 1/16W
R1506	1-208-715-11	METAL CHIP	22K 0.5% 1/16W
R1507	1-218-985-11	METAL CHIP	470K 0.5% 1/16W
R1508	1-208-719-11	METAL CHIP	33K 0.5% 1/16W
R1509	1-208-927-11	METAL CHIP	47K 0.5% 1/16W
R1510	1-208-683-11	METAL CHIP	1K 0.5% 1/16W
R1511	1-208-927-11	METAL CHIP	47K 0.5% 1/16W
R1512	1-208-683-11	METAL CHIP	1K 0.5% 1/16W
R1513	1-218-977-11	RES-CHIP	100K 5% 1/16W
R1514	1-218-977-11	RES-CHIP	100K 5% 1/16W
R1515	1-218-979-11	RES-CHIP	150K 5% 1/16W
R1516	1-218-979-11	RES-CHIP	150K 5% 1/16W
R1517	1-218-977-11	RES-CHIP	100K 5% 1/16W
R1518	1-218-977-11	RES-CHIP	100K 5% 1/16W
R1519	1-208-927-11	METAL CHIP	47K 0.5% 1/16W
R1520	1-208-927-11	METAL CHIP	47K 0.5% 1/16W
R1523	1-208-939-11	METAL CHIP	150K 0.5% 1/16W
R1524	1-208-939-11	METAL CHIP	150K 0.5% 1/16W
R1525	1-208-715-11	METAL CHIP	22K 0.5% 1/16W
R1526	1-208-715-11	METAL CHIP	22K 0.5% 1/16W
R1527	1-208-715-11	METAL CHIP	22K 0.5% 1/16W
R1528	1-208-715-11	METAL CHIP	22K 0.5% 1/16W
R1529	1-218-973-11	RES-CHIP	47K 5% 1/16W
R1530	1-218-973-11	RES-CHIP	47K 5% 1/16W
R1531	1-218-973-11	RES-CHIP	47K 5% 1/16W
R1532	1-218-973-11	RES-CHIP	47K 5% 1/16W
R1533	1-218-973-11	RES-CHIP	47K 5% 1/16W
R1534	1-218-973-11	RES-CHIP	47K 5% 1/16W
R1535	1-208-931-11	METAL CHIP	68K 0.5% 1/16W
R1536	1-208-935-11	METAL CHIP	100K 0.5% 1/16W
R1537	1-208-931-11	METAL CHIP	68K 0.5% 1/16W

Ref. No.	Part No.	Description			
R1538	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R1539	1-218-953-11	RES-CHIP	1K	5%	1/16W
R1540	1-218-973-11	RES-CHIP	47K	5%	1/16W
R1541	1-218-953-11	RES-CHIP	1K	5%	1/16W
R1542	1-218-965-11	RES-CHIP	10K	5%	1/16W
R1543	1-216-295-91	SHORT CHIP	0		
R2942	1-218-947-11	RES-CHIP	330	5%	1/16W
R2943	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2944	1-218-990-11	SHORT CHIP	0		
R3401	1-218-990-11	SHORT CHIP	0		
R3402	1-218-990-11	SHORT CHIP	0		
R3403	1-218-990-11	SHORT CHIP	0		
R3404	1-218-990-11	SHORT CHIP	0		
R3405	1-218-990-11	SHORT CHIP	0		
R3406	1-218-990-11	SHORT CHIP	0		
R3407	1-218-990-11	SHORT CHIP	0		
R3408	1-218-990-11	SHORT CHIP	0		
R3409	1-218-990-11	SHORT CHIP	0		
R3410	1-218-990-11	SHORT CHIP	0		
R3411	1-218-990-11	SHORT CHIP	0		
R3412	1-218-990-11	SHORT CHIP	0		
R3413	1-218-977-11	RES-CHIP	100K	5%	1/16W
R3414	1-216-001-00	METAL CHIP	10	5%	1/10W
R3415	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3416	1-218-973-11	RES-CHIP	47K	5%	1/16W
R3417	1-218-945-11	RES-CHIP	220	5%	1/16W
R3418	1-218-977-11	RES-CHIP	100K	5%	1/16W
R3419	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3420	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R3421	1-218-973-11	RES-CHIP	47K	5%	1/16W
R3422	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3423	1-218-968-11	RES-CHIP	18K	5%	1/16W
R3424	1-218-972-11	RES-CHIP	39K	5%	1/16W
R3425	1-218-980-11	RES-CHIP	180K	5%	1/16W
R3426	1-218-980-11	RES-CHIP	180K	5%	1/16W
R3427	1-208-671-11	METAL CHIP	330	0.5%	1/16W
R3428	1-218-958-11	METAL CHIP	2.7K	0.5%	1/16W
R3429	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3430	1-218-980-11	RES-CHIP	180K	5%	1/16W
R3431	1-208-941-11	METAL CHIP	180K	0.5%	1/16W
R3432	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R3433	1-218-966-11	RES-CHIP	12K	5%	1/16W
R3434	1-218-980-11	RES-CHIP	180K	5%	1/16W
R3435	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3436	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R3437	1-218-990-11	SHORT CHIP	0		
R3438	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R3439	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R3440	1-218-974-11	METAL CHIP	56K	0.5%	1/16W
R3441	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R3442	1-218-990-11	SHORT CHIP	0		
R3444	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R3445	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R3446	1-218-978-11	METAL CHIP	120K	0.5%	1/16W
R3447	1-218-978-11	METAL CHIP	120K	0.5%	1/16W
R3450	1-218-978-11	METAL CHIP	120K	0.5%	1/16W
R3451	1-218-978-11	METAL CHIP	120K	0.5%	1/16W
R3452	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3453	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3454	1-218-953-11	RES-CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			
R3456	1-208-711-11	METAL CHIP	15K	0.5%	1/16W
R3457	1-218-985-11	RES-CHIP	470K	5%	1/16W
R3458	1-218-985-11	METAL CHIP	470K	0.5%	1/16W
R3459	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R3460	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R3461	1-218-981-11	RES-CHIP	220K	5%	1/16W
R3463	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3464	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3465	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3466	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3467	1-208-671-11	METAL CHIP	330	0.5%	1/16W
R3468	1-218-973-11	RES-CHIP	47K	5%	1/16W
R3469	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3470	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3471	1-218-990-11	SHORT CHIP	0		
R3472	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R3473	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R3474	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R3475	1-218-974-11	METAL CHIP	56K	0.5%	1/16W
R3476	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R3477	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R3478	1-218-990-11	SHORT CHIP	0		
R3479	1-218-990-11	SHORT CHIP	0		
R3480	1-218-990-11	SHORT CHIP	0		
R4201	1-218-985-11	RES-CHIP	470K	5%	1/16W
R4202	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R4205	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R4206	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4207	1-218-975-11	RES-CHIP	68K	5%	1/16W
R4208	1-218-969-11	RES-CHIP	22K	5%	1/16W
R4209	1-218-975-11	RES-CHIP	68K	5%	1/16W
R4210	1-218-989-11	RES-CHIP	1M	5%	1/16W
R4211	1-218-977-11	RES-CHIP	100K	5%	1/16W
R4212	1-218-941-81	RES-CHIP	100	5%	1/16W
R4213	1-218-941-81	RES-CHIP	100	5%	1/16W
R4214	1-218-941-81	RES-CHIP	100	5%	1/16W
R4216	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R4217	1-218-989-11	METAL CHIP	1M	0.5%	1/16W
R4218	1-218-990-11	SHORT CHIP	0		
R4221	1-216-864-11	METAL CHIP	0	5%	1/16W
R4222	1-216-864-11	METAL CHIP	0	5%	1/16W
R4223	1-218-941-81	RES-CHIP	100	5%	1/16W
R4224	1-218-941-81	RES-CHIP	100	5%	1/16W
R6001	1-218-937-11	RES-CHIP	47	5%	1/16W
R6002	1-218-937-11	RES-CHIP	47	5%	1/16W
R6003	1-218-953-11	RES-CHIP	1K	5%	1/16W
R6004	1-218-953-11	RES-CHIP	1K	5%	1/16W
R6006	1-218-973-11	RES-CHIP	47K	5%	1/16W
R6007	1-218-973-11	RES-CHIP	47K	5%	1/16W
R6008	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R6009	1-218-937-11	RES-CHIP	47	5%	1/16W
R6010	1-218-937-11	RES-CHIP	47	5%	1/16W
R6011	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R6013	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R6014	1-218-971-11	RES-CHIP	33K	5%	1/16W
R6015	1-218-965-11	RES-CHIP	10K	5%	1/16W
R6016	1-218-965-11	RES-CHIP	10K	5%	1/16W
R6017	1-218-977-11	RES-CHIP	100K	5%	1/16W
R6018	1-218-953-11	RES-CHIP	1K	5%	1/16W
R6019	1-218-949-11	RES-CHIP	470	5%	1/16W

DB-016

Ref. No.	Part No.	Description			
R6020	1-218-969-11	RES-CHIP	22K	5%	1/16W
R6021	1-218-949-11	RES-CHIP	470	5%	1/16W
R6022	1-218-949-11	RES-CHIP	470	5%	1/16W
R6025	1-218-965-11	RES-CHIP	10K	5%	1/16W
R6028	1-218-971-11	RES-CHIP	33K	5%	1/16W
R6029	1-218-973-11	RES-CHIP	47K	5%	1/16W
R6030	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R6031	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R6035	1-218-990-11	SHORT CHIP	0		
R6036	1-216-864-11	METAL CHIP	0	5%	1/16W
R6201	1-218-977-11	RES-CHIP	100K	5%	1/16W
R6202	1-208-930-11	METAL CHIP	62K	0.5%	1/16W
R6304	1-208-920-81	METAL CHIP	24K	0.5%	1/16W
R6309	1-218-990-11	SHORT CHIP	0		
R6311	1-218-977-11	RES-CHIP	100K	5%	1/16W
R6312	1-218-977-11	RES-CHIP	100K	5%	1/16W
R6315	1-218-953-11	RES-CHIP	1K	5%	1/16W
R6316	1-218-953-11	RES-CHIP	1K	5%	1/16W
R6317	1-218-967-11	RES-CHIP	15K	5%	1/16W
R6318	1-218-967-11	RES-CHIP	15K	5%	1/16W
R6322	1-218-973-11	RES-CHIP	47K	5%	1/16W
R6323	1-218-973-11	RES-CHIP	47K	5%	1/16W
R6327	1-218-973-11	RES-CHIP	47K	5%	1/16W
R6328	1-218-973-11	RES-CHIP	47K	5%	1/16W
R6331	1-208-920-81	METAL CHIP	24K	0.5%	1/16W
R6336	1-218-990-11	SHORT CHIP	0		
R7001	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R7002	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R7003	1-218-941-81	RES-CHIP	100	5%	1/16W
R7004	1-218-981-11	RES-CHIP	220K	5%	1/16W
R7006	1-218-953-11	RES-CHIP	1K	5%	1/16W
R7007	1-218-953-11	RES-CHIP	1K	5%	1/16W
R7008	1-218-935-11	RES-CHIP	33	5%	1/16W
R7009	1-218-935-11	RES-CHIP	33	5%	1/16W
R7010	1-218-935-11	RES-CHIP	33	5%	1/16W
R7011	1-218-935-11	RES-CHIP	33	5%	1/16W
R7012	1-218-935-11	RES-CHIP	33	5%	1/16W
R7013	1-218-935-11	RES-CHIP	33	5%	1/16W
R7016	1-218-965-11	RES-CHIP	10K	5%	1/16W
R7017	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R7018	1-218-953-11	RES-CHIP	1K	5%	1/16W
R7019	1-218-971-11	RES-CHIP	33K	5%	1/16W
R7020	1-218-953-11	RES-CHIP	1K	5%	1/16W
R7021	1-218-972-11	RES-CHIP	39K	5%	1/16W
R7022	1-218-945-11	RES-CHIP	220	5%	1/16W
R7023	1-218-965-11	RES-CHIP	10K	5%	1/16W
R7024	1-218-953-11	RES-CHIP	1K	5%	1/16W
R7025	1-218-953-11	RES-CHIP	1K	5%	1/16W
R7026	1-218-953-11	RES-CHIP	1K	5%	1/16W
R7027	1-218-953-11	RES-CHIP	1K	5%	1/16W
R7028	1-218-953-11	RES-CHIP	1K	5%	1/16W
R7200	1-218-990-11	SHORT CHIP	0		
R7201	1-218-990-11	SHORT CHIP	0		
R7204	1-218-990-11	SHORT CHIP	0		
R7205	1-218-990-11	SHORT CHIP	0		
R7206	1-218-990-11	SHORT CHIP	0		
R7207	1-218-990-11	SHORT CHIP	0		
R7208	1-218-990-11	SHORT CHIP	0		
R7209	1-218-953-11	RES-CHIP	1K	5%	1/16W
R8000	1-218-953-11	RES-CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			
R8001	1-218-985-11	RES-CHIP	470K	5%	1/16W
R8002	1-208-709-11	METAL CHIP	12K	0.5%	1/16W
R8003	1-218-990-11	SHORT CHIP	0		
R8004	1-218-989-11	RES-CHIP	1M	5%	1/16W
R8005	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R8007	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R8008	1-220-206-11	METAL CHIP	91K	0.5%	1/16W
R8009	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R8010	1-216-150-91	RES-CHIP	10	5%	1/8W
R8011	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R8012	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R8013	1-218-965-11	RES-CHIP	10K	5%	1/16W
R8014	1-218-965-11	RES-CHIP	10K	5%	1/16W
R8015	1-218-953-11	RES-CHIP	1K	5%	1/16W
R8016	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R8017	1-218-953-11	RES-CHIP	1K	5%	1/16W
R8018	1-218-973-11	RES-CHIP	47K	5%	1/16W
R8019	1-218-989-11	RES-CHIP	1M	5%	1/16W
R8020	1-218-953-11	RES-CHIP	1K	5%	1/16W
R8021	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R8022	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R8023	1-218-990-11	SHORT CHIP	0		
R8024	1-218-878-11	METAL CHIP	20K	0.5%	1/16W
R8025	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R8026	1-218-981-11	RES-CHIP	220K	5%	1/16W
R8027	1-218-973-11	RES-CHIP	47K	5%	1/16W
R8028	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R8029	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R8030	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R8031	1-218-968-11	RES-CHIP	18K	5%	1/16W
R8033	1-218-990-11	SHORT CHIP	0		
R8034	1-218-969-11	RES-CHIP	22K	5%	1/16W
R8035	1-218-979-11	RES-CHIP	150K	5%	1/16W
R8036	1-218-990-11	SHORT CHIP	0		
R8037	1-218-990-11	SHORT CHIP	0		
R8038	1-218-990-11	SHORT CHIP	0		
R8039	1-216-864-11	METAL CHIP	0	5%	1/16W
R8040	1-218-990-11	SHORT CHIP	0		
R8041	1-216-864-11	METAL CHIP	0	5%	1/16W
R8042	1-218-990-11	SHORT CHIP	0		
R8043	1-216-864-11	METAL CHIP	0	5%	1/16W
R8044	1-216-864-11	METAL CHIP	0	5%	1/16W
R8045	1-216-864-11	METAL CHIP	0	5%	1/16W
R8046	1-216-864-11	METAL CHIP	0	5%	1/16W
R8047	1-216-864-11	METAL CHIP	0	5%	1/16W
R8048	1-216-864-11	METAL CHIP	0	5%	1/16W
R8049	1-216-864-11	METAL CHIP	0	5%	1/16W
R8050	1-216-864-11	METAL CHIP	0	5%	1/16W
R8051	1-216-864-11	METAL CHIP	0	5%	1/16W
R8052	1-218-973-11	RES-CHIP	47K	5%	1/16W
R8053	1-218-973-11	RES-CHIP	47K	5%	1/16W
R8054	1-218-941-81	RES-CHIP	100	5%	1/16W
R8055	1-218-941-81	RES-CHIP	100	5%	1/16W
R8056	1-218-989-11	RES-CHIP	1M	5%	1/16W
R8057	1-218-989-11	RES-CHIP	1M	5%	1/16W
R8059	1-218-953-11	RES-CHIP	1K	5%	1/16W
R8060	1-218-953-11	RES-CHIP	1K	5%	1/16W
R8061	1-218-990-11	SHORT CHIP	0		
R8065	1-218-974-11	METAL CHIP	56K	0.5%	1/16W
R8066	1-218-990-11	SHORT CHIP	0		

Ref. No.	Part No.	Description			
R8067	1-218-974-11	METAL CHIP	56K	0.5%	1/16W
R8068	1-218-977-11	RES-CHIP	100K	5%	1/16W
R8069	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R8070	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R8071	1-208-713-11	METAL CHIP	18K	0.5%	1/16W
R8072	1-218-970-11	METAL CHIP	27K	0.5%	1/16W
R8073	1-218-977-11	RES-CHIP	100K	5%	1/16W
R8074	1-218-952-11	RES-CHIP	820	5%	1/16W
R8075	1-208-697-11	METAL CHIP	3.9K	0.5%	1/16W
R8076	1-218-878-11	METAL CHIP	20K	0.5%	1/16W
R8077	1-208-711-11	METAL CHIP	15K	0.5%	1/16W
R8078	1-216-864-11	METAL CHIP	0	5%	1/16W
R8079	1-216-864-11	METAL CHIP	0	5%	1/16W
R8080	1-216-864-11	METAL CHIP	0	5%	1/16W
R8081	1-216-864-11	METAL CHIP	0	5%	1/16W
R8082	1-216-864-11	METAL CHIP	0	5%	1/16W
R8083	1-216-864-11	METAL CHIP	0	5%	1/16W
R8084	1-216-864-11	METAL CHIP	0	5%	1/16W
R8085	1-216-864-11	METAL CHIP	0	5%	1/16W
R8086	1-216-864-11	METAL CHIP	0	5%	1/16W
R8087	1-216-864-11	METAL CHIP	0	5%	1/16W
R8088	1-216-864-11	METAL CHIP	0	5%	1/16W
R8089	1-216-864-11	METAL CHIP	0	5%	1/16W
		< VIBRATOR >			
X7001	1-781-641-21	VIBRATOR, CRYSTAL (13.5MHz)			
	A-7078-342-A	FP-495 BOARD, COMPLETE			
		**********			
		< SWITCH >			
S001	1-786-179-31	SWITCH, PUSH (1KEY) (PANEL OPEN)			
S002	1-771-039-31	SWITCH, PUSH (PANEL REVERSE)			
	A-7078-343-A	FP-496 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN001	1-784-938-21	CONNECTOR, BOARD TO BOARD 60P			
CN002	1-784-939-11	CONNECTOR, BOARD TO BOARD 60P			
	A-7078-344-A	FP-497 BOARD, COMPLETE			
		**********			
		< DIODE >			
D001	8-719-080-62	DIODE CL-190HBF-X-T			
		< SWITCH >			
S001	1-771-138-82	SWITCH, KEY BOARD			

Ref. No.	Part No.	Description			
	A-7078-345-A	FP-498 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN001	1-785-969-21	CONNECTOR, BOARD TO BOARD 100P			
CN002	1-785-967-21	CONNECTOR, BOARD TO BOARD 100P			
	A-7078-346-A	FP-499 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN001	1-815-854-11	CONNECTOR, BOARD TO BOARD 80P			
CN002	1-815-855-31	CONNECTOR, BOARD TO BOARD 80P			
	A-7078-341-A	FP-504 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C601	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
		< DIODE >			
D601	8-719-070-92	DIODE TLOU1008(T05,SOY) (TALLY)			
D602	8-719-052-25	DIODE CL-200IR-X-TU-BC (IR)			
D603	8-719-061-82	DIODE TLSU1002(TPX1,SONY) (CAMERA RECORDING)			
D605	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D606	8-719-056-23	DIODE MA2S111-(K8).SO			
D607	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D608	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D609	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D610	8-719-062-16	DIODE 01ZA8.2(TPL3)			
		< FUSE >			
⚠F601	1-533-874-11	FUSE, MICRO (0.2A/24V)			
		< IC >			
IC601	8-742-221-00	HYB IC SBX3055-01			
		< PHOTO INTERRUPTER >			
PH601	8-759-014-54	HIC CNA1312K01S0			
PH602	8-759-014-54	HIC CNA1312K01S0			
		< TRANSISTOR >			
Q601	8-729-037-72	TRANSISTOR	UN9211J-(K8).SO		
		< RESISTOR >			
R601	1-216-838-11	METAL CHIP	27K	5%	1/16W
R602	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R603	1-216-813-11	METAL CHIP	220	5%	1/16W
R604	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R605	1-216-805-11	METAL CHIP	47	5%	1/16W
R606	1-216-815-11	METAL CHIP	330	5%	1/16W
R607	1-216-821-11	METAL CHIP	1K	5%	1/16W

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			
		< SWITCH >			
S601	1-771-487-21	SWITCH, SLIDE (FOCUS AUTO/MAN/INFINITY)			
S602	1-771-138-82	SWITCH, KEY BOARD (PUSH AUTO)			
S603	1-771-138-82	SWITCH, KEY BOARD (INDEX)			
S604	1-771-138-82	SWITCH, KEY BOARD (FADER)			
	A-7078-332-A	JK-222 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN401	1-785-828-11	CONNECTOR, SQUARE TYPE 4P (DV)			
CN402	1-794-962-11	CONNECTOR, SQUARE TYPE(USB 5P) (USB)			
		< DIODE >			
D401	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D402	8-719-062-16	DIODE 01ZA8.2(TPL3)			
		< FERRITE BEAD >			
FB401	1-500-444-11	FERRITE	0uH		
FB402	1-500-444-11	FERRITE	0uH		
FB403	1-469-667-21	FERRITE	0uH		
FB404	1-469-667-21	FERRITE	0uH		
FB405	1-500-444-11	FERRITE	0uH		
FB406	1-469-667-21	FERRITE	0uH		
FB407	1-469-667-21	FERRITE	0uH		
		< JACK >			
J401	1-778-518-11	CONNECTOR, EXTERNAL (S VIDEO)			
J402	1-793-995-11	JACK, SUPER SMALL TYPE (LANC)			
J403	1-569-950-41	JACK (SMALL TYPE) (HEADPHONES)			
J404	1-778-040-11	JACK, SMALL TYPE (AUDIO/VIDEO)			
		< LINE FILTER >			
LF401	1-419-100-21	INDUCTOR	0uH		
LF402	1-419-100-21	INDUCTOR	0uH		
		< RESISTOR >			
R401	1-469-667-21	FERRITE	0uH (Note)		
R402	1-216-864-11	METAL CHIP	0	5%	1/16W
R403	1-469-667-21	FERRITE	0uH (Note)		
R404	1-218-965-11	RES-CHIP	10K	5%	1/16W
R406	1-469-667-21	FERRITE	0uH (Note)		
R407	1-218-965-11	RES-CHIP	10K	5%	1/16W
R408	1-469-667-21	FERRITE	0uH (Note)		
R410	1-216-864-11	METAL CHIP	0	5%	1/16W
R411	1-216-864-11	METAL CHIP	0	5%	1/16W
		< VARISTOR >			
VDR401	1-801-862-11	VARISTOR, CHIP			
VDR402	1-803-742-21	VARISTOR, CHIP			
VDR403	1-803-742-21	VARISTOR, CHIP			
VDR404	1-801-862-11	VARISTOR, CHIP			
VDR405	1-803-742-21	VARISTOR, CHIP			
VDR406	1-801-862-11	VARISTOR, CHIP			
VDR407	1-801-862-11	VARISTOR, CHIP			
VDR408	1-801-862-11	VARISTOR, CHIP			
VDR409	1-803-742-21	VARISTOR, CHIP			

Ref. No.	Part No.	Description			
	A-7078-399-A	LB-089 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C6101	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C6102	1-164-505-11	CERAMIC CHIP	2.2uF		16V
		< CONNECTOR >			
CN6101	1-573-360-21	CONNECTOR, FFC/FPC 20P			
CN6102	1-573-356-21	CONNECTOR, FFC/FPC 16P			
		< DIODE >			
D6101	8-719-018-51	DIODE CL-170R-CD-T (TALLY)			
D6102	8-719-082-33	DIODE NSCW100-T38 (BACKLIGHT)			
		< IC >			
IC6101	8-759-581-11	IC NJM2125F(TE2)			
		< TRANSISTOR >			
Q6101	8-729-054-48	TRANSISTOR	RN4983FE(TPLR3)		
Q6102	8-729-054-48	TRANSISTOR	N1B04FE-Y/GR(TPLR3)		
		< RESISTOR >			
R6101	1-218-948-11	RES-CHIP	390	5%	1/16W
R6102	1-208-941-11	METAL CHIP	180K	0.5%	1/16W
R6103	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R6104	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R6105	1-216-839-11	METAL CHIP	33K	5%	1/16W
R6106	1-211-983-11	METAL CHIP	39	0.5%	1/10W
R6107	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
	A-7078-515-A	MA-425 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C5901	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C5905	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C5906	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C5907	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C5908	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5909	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C5910	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C5912	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C5913	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C5914	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C5917	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C5918	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C5920	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5921	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5922	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5923	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C5924	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5925	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C5926	1-164-174-11	CERAMIC CHIP	0.0082uF	10%	25V
C5927	1-164-174-11	CERAMIC CHIP	0.0082uF	10%	25V

Note : Ferrite are mounted to the location where R401, R403, R406 and R408 are printed.

Ref. No.	Part No.	Description			
C5928	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C5929	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C5930	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5931	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C5932	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C5933	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5934	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C5935	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C5936	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C5937	1-125-841-91	TANTAL. CHIP	22uF	20%	4V
C5938	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5939	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5940	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5941	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5944	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C5945	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
* CN5901	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
* CN5902	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
CN5903	1-779-327-11	CONNECTOR, FFC/FPC 6P			
CN5904	1-816-684-11	CONNECTOR, FFC/FPC (ZIF) 8P			
CN5905	1-816-177-11	CONNECTOR, FFC/FPC (ZIF) 16P			
CN5906	1-784-422-11	CONNECTOR, FFC/FPC (ZIF) 33P			
		< FERRITE BEAD >			
FB5901	1-500-444-11	FERRITE	0uH		
FB5902	1-500-444-11	FERRITE	0uH		
		< IC >			
IC5901	8-759-638-50	IC AN2901FHQ-EB			
IC5902	8-759-581-11	IC NJM2125F(TE2)			
		< JACK >			
J5901	1-691-737-41	JACK (SMALL TYPE) (MIC (PLUG IN POWER))			
		< COIL >			
L5901	1-469-528-91	INDUCTOR	100uH		
		< TRANSISTOR >			
Q5901	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO		
Q5902	8-729-048-77	TRANSISTOR	XP4313-(TX).SO		
Q5903	8-729-048-77	TRANSISTOR	XP4313-(TX).SO		
Q5904	8-729-402-42	TRANSISTOR	UN5213-TX		
Q5905	8-729-403-35	TRANSISTOR	UN5113-TX		
Q5906	8-729-140-75	TRANSISTOR	2SD999-T1-CLCK		
		< RESISTOR >			
R5901	1-216-864-11	METAL CHIP	0	5%	1/16W
R5903	1-218-968-11	RES-CHIP	18K	5%	1/16W
R5904	1-218-971-11	RES-CHIP	33K	5%	1/16W
R5905	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R5906	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5907	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5908	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5909	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R5910	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R5911	1-218-953-11	RES-CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			
R5912	1-218-953-11	RES-CHIP	1K	5%	1/16W
R5914	1-216-803-11	METAL CHIP	33	5%	1/16W
R5915	1-216-803-11	METAL CHIP	33	5%	1/16W
R5916	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5917	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R5918	1-218-967-11	RES-CHIP	15K	5%	1/16W
R5919	1-208-910-11	RES-CHIP	9.1K	5%	1/16W
R5920	1-218-967-11	RES-CHIP	15K	5%	1/16W
R5921	1-208-910-11	RES-CHIP	9.1K	5%	1/16W
R5922	1-218-949-11	RES-CHIP	470	5%	1/16W
R5923	1-218-990-11	SHORT CHIP	0		
R5924	1-218-990-11	SHORT CHIP	0		
R5925	1-218-949-11	RES-CHIP	470	5%	1/16W
R5926	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R5927	1-220-191-81	RES-CHIP	5.1K	5%	1/16W
R5928	1-220-191-81	RES-CHIP	5.1K	5%	1/16W
R5929	1-216-817-11	METAL CHIP	470	5%	1/16W
R5930	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R5931	1-218-971-11	RES-CHIP	33K	5%	1/16W
R5933	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R5934	1-218-968-11	RES-CHIP	18K	5%	1/16W
R5935	1-218-971-11	RES-CHIP	33K	5%	1/16W
R5936	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R5937	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5938	1-208-912-11	METAL CHIP	11K	0.5%	1/16W
R5939	1-216-820-11	METAL CHIP	820	5%	1/16W
R5940	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5941	1-208-701-11	METAL CHIP	5.6K	0.5%	1/16W
R5943	1-208-912-11	METAL CHIP	11K	0.5%	1/16W
R5944	1-218-943-11	RES-CHIP	150	5%	1/16W
R5946	1-216-864-11	METAL CHIP	0	5%	1/16W
R5947	1-218-952-11	RES-CHIP	820	5%	1/16W
R5948	1-218-941-81	RES-CHIP	100	5%	1/16W
R5949	1-218-973-11	RES-CHIP	47K	5%	1/16W
R5951	1-218-949-11	RES-CHIP	470	5%	1/16W
R5952	1-218-947-11	RES-CHIP	330	5%	1/16W
R5953	1-216-313-00	METAL CHIP	8.2	5%	1/10W
		< VARISTOR >			
VDR591	1-801-862-11	VARISTOR, CHIP			
VDR592	1-801-862-11	VARISTOR, CHIP			

	A-7078-516-A	PD-191 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C5701	1-113-988-11	TANTAL. CHIP	68uF	20%	4V
C5702	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5703	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5704	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5705	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5706	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5707	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C5708	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5709	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5710	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

Ref. No.	Part No.	Description			
C5711	1-100-502-11	TANTAL. CHIP	3.3uF	20%	25V
C5712	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5713	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C5714	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5715	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5716	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C5717	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C5718	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C5719	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5720	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5721	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5722	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C5723	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5724	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5726	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C5727	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C5801	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5802	1-127-985-91	TANTAL. CHIP	47uF	20%	16V
C5803	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5805	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C5807	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C5808	1-165-897-11	TANTAL. CHIP	22uF	20%	10V
		< CONNECTOR >			
CN5701	1-573-364-11	CONNECTOR, FFC/FPC 24P			
CN5802	1-794-997-11	PIN, CONNECTOR 20P			
* CN5803	1-778-155-11	CONNECTOR, FFC/FPC (ZIF) 7P			
CN5804	1-784-420-11	CONNECTOR, FFC/FPC (ZIF) 21P			
CN5805	1-785-554-21	CONNECTOR (5P), CARD EDGE			
CN5806	1-816-463-11	PIN, CONNECTOR (PC BOARD) 10P			
		< DIODE >			
D5701	8-719-404-50	DIODE MA111-TX			
D5702	8-719-084-46	DIODE 1SV288(TPH3)			
		< IC >			
IC5701	6-702-491-01	IC AN12580A-BB			
IC5702	8-759-833-18	IC CM7021L3-E2			
IC5801	8-759-573-02	IC BU9735K-E2			
		< COIL >			
L5701	1-469-525-91	INDUCTOR	10uH		
L5702	1-414-771-91	INDUCTOR	10uH		
L5703	1-414-771-91	INDUCTOR	10uH		
L5704	1-414-771-91	INDUCTOR	10uH		
L5705	1-412-943-11	INDUCTOR	2.2uH		
L5801	1-412-056-11	INDUCTOR	4.7uH		
L5802	1-414-757-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q5701	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q5702	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q5801	8-729-042-72	TRANSISTOR	UN9214J-(K8).SO		
Q5802	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO		

Ref. No.	Part No.	Description			
		< RESISTOR >			
R5701	1-218-985-11	RES-CHIP	470K	5%	1/16W
R5702	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R5703	1-218-970-11	METAL CHIP	27K	0.5%	1/16W
R5705	1-218-985-11	RES-CHIP	470K	5%	1/16W
R5706	1-218-977-11	RES-CHIP	100K	5%	1/16W
R5707	1-216-835-11	METAL CHIP	15K	5%	1/16W
R5708	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R5709	1-218-973-11	RES-CHIP	47K	5%	1/16W
R5710	1-218-975-11	RES-CHIP	68K	5%	1/16W
R5711	1-218-969-11	RES-CHIP	22K	5%	1/16W
R5712	1-218-975-11	RES-CHIP	68K	5%	1/16W
R5713	1-218-989-11	RES-CHIP	1M	5%	1/16W
R5714	1-218-977-11	RES-CHIP	100K	5%	1/16W
R5717	1-216-864-11	METAL CHIP	0	5%	1/16W
R5719	1-218-942-11	RES-CHIP	120	5%	1/16W
R5721	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5722	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5727	1-218-974-11	RES-CHIP	56K	5%	1/16W
R5732	1-218-941-81	RES-CHIP	100	5%	1/16W
R5736	1-218-941-81	RES-CHIP	100	5%	1/16W
R5737	1-218-941-81	RES-CHIP	100	5%	1/16W
R5801	1-218-941-81	RES-CHIP	100	5%	1/16W
R5802	1-216-855-11	METAL CHIP	680K	5%	1/16W
R5803	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R5804	1-218-953-11	RES-CHIP	1K	5%	1/16W
R5805	1-216-864-11	METAL CHIP	0	5%	1/16W

	A-7078-339-A	SE-132 BOARD, COMPLETE **********			
		< CAPACITOR >			
C4001	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C4002	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C4003	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4004	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C4005	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C4006	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C4007	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C4008	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C4009	1-127-692-11	CERAMIC CHIP	10uF	10%	6.3V
C4010	1-127-692-11	CERAMIC CHIP	10uF	10%	6.3V
C4011	1-127-692-11	CERAMIC CHIP	10uF	10%	6.3V
C4012	1-127-692-11	CERAMIC CHIP	10uF	10%	6.3V
C4014	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C4015	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN4005	1-764-680-21	CONNECTOR, FFC/FPC (ZIF) 8P			
		< IC >			
IC4001	8-759-489-19	IC NJM3230V(TE2)			
		< COIL >			
L4001	1-414-771-91	INDUCTOR	10uH		

Ref. No.	Part No.	Description			
		< TRANSISTOR >			
Q4001	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO		
Q4002	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
		< RESISTOR >			
R4001	1-218-969-11	RES-CHIP	22K	5%	1/16W
R4002	1-218-969-11	RES-CHIP	22K	5%	1/16W
R4003	1-218-969-11	RES-CHIP	22K	5%	1/16W
R4004	1-218-969-11	RES-CHIP	22K	5%	1/16W
R4005	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4006	1-218-965-11	RES-CHIP	10K	5%	1/16W
R4007	1-218-989-11	RES-CHIP	1M	5%	1/16W
R4009	1-218-989-11	RES-CHIP	1M	5%	1/16W
R4010	1-218-953-11	RES-CHIP	1K	5%	1/16W
R4011	1-218-973-11	RES-CHIP	47K	5%	1/16W
		< SENSOR >			
SE4001	1-476-807-31	SENSOR, ANGULAR VELOCITY (PITCH)			
SE4002	1-476-807-41	SENSOR, ANGULAR VELOCITY (YAW)			
	A-7078-397-A	VC-318 (UDN) BOARD, COMPLETE (SERVICE) (PDX10)			
		**********			
	A-7078-400-A	VC-318 (UDP) BOARD, COMPLETE (SERVICE) (PDX10P)			
		**********			
		< CAPACITOR >			
C1201	1-107-689-21	TANTAL. CHIP	1uF	20%	35V
C1202	1-107-689-21	TANTAL. CHIP	1uF	20%	35V
C1203	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1204	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1205	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C1206	1-128-964-91	TANTAL. CHIP	100uF	20%	6.3V
C1207	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1208	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C1209	1-117-748-81	CERAMIC CHIP	10PF		16V
C1210	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C1211	1-127-573-11	CERAMIC CHIP	1uF	10%	16V
C1212	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1213	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1214	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1215	1-128-964-91	TANTAL. CHIP	100uF	20%	6.3V
C1216	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1217	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1218	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1219	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C1220	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C1221	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1222	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1223	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1224	1-107-689-21	TANTAL. CHIP	1uF	20%	35V
C1225	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C1226	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1227	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1228	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1229	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1230	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

Ref. No.	Part No.	Description			
C1231	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1232	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1233	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1234	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1235	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1236	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1237	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1238	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1239	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1240	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1241	1-128-964-91	TANTAL. CHIP	100uF	20%	6.3V
C1242	1-128-964-91	TANTAL. CHIP	100uF	20%	6.3V
C1243	1-128-964-91	TANTAL. CHIP	100uF	20%	6.3V
C1244	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1245	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1246	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1247	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1248	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1249	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1253	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C1254	1-113-987-11	TANTAL. CHIP	4.7uF	20%	25V
C1255	1-113-987-11	TANTAL. CHIP	4.7uF	20%	25V
C1256	1-113-987-11	TANTAL. CHIP	4.7uF	20%	25V
C1257	1-104-919-11	TANTAL. CHIP	10uF	20%	25V
C1258	1-113-987-11	TANTAL. CHIP	4.7uF	20%	25V
C1259	1-113-987-11	TANTAL. CHIP	4.7uF	20%	25V
C1260	1-113-987-11	TANTAL. CHIP	4.7uF	20%	25V
C1261	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1262	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1263	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1265	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1266	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1267	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1301	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1302	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1303	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1304	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1305	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1306	1-128-964-91	TANTAL. CHIP	100uF	20%	6.3V
C1307	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1308	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1309	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1310	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1311	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1312	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1314	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1315	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1316	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1317	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1318	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1319	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1320	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1321	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1322	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1323	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1324	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1326	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C1327	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1351	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1352	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V

VC-318

Ref. No.	Part No.	Description			
C1353	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1354	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1601	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1602	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1603	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1604	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1605	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1606	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1607	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1608	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1609	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1610	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1612	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1613	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1614	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1615	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1616	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1617	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1618	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1619	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1620	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1621	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1622	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1623	1-128-964-91	TANTAL. CHIP	100uF	20%	6.3V
C1624	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C1701	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1703	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1705	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1706	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C1707	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1708	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1709	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1710	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1711	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1712	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1713	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1714	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C1716	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C1717	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C1718	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C1801	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C1802	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1901	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1902	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1903	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1904	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C1905	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1906	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C1907	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1908	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C1909	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1910	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C1911	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1912	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C1913	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1914	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1915	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C1916	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C1917	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C1918	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

Ref. No.	Part No.	Description			
C1919	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1920	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1921	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1922	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1923	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1924	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C1926	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C1927	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2001	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2002	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2003	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C2004	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2005	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2006	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2007	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2008	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2009	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2010	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2011	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2012	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2013	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2014	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2015	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2016	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2017	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2018	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2019	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2020	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2022	1-164-862-11	CERAMIC CHIP	33PF	5%	50V
C2023	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2024	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2025	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2027	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2102	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2103	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2104	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2106	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	50V
C2107	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	50V
C2109	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2110	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2111	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2112	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2113	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2114	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C2115	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C2116	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2117	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C2118	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C2121	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2122	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2123	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2124	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C2125	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2126	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2127	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C2128	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2129	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2130	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C2131	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C2132	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V

Ref. No.	Part No.	Description			
C2133	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C2134	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2135	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2136	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2137	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2138	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2139	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2140	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2141	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C2143	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2144	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2145	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2146	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C2302	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2303	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2304	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2305	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2306	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2307	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C2308	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2309	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C2310	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2311	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C2312	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2313	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2317	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2401	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C2402	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C2403	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2404	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C2405	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C2406	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C2407	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C2408	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C2409	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2410	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2411	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2412	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2414	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2415	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C2416	1-115-156-11	CERAMIC CHIP	1uF		10V
C2417	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2418	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2422	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2423	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C2424	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C2425	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2426	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2427	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2428	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C2429	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C2430	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C2431	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2432	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2433	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C2434	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C2435	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C2436	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C2437	1-164-947-11	CERAMIC CHIP	0.01uF		50V
C2501	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

Ref. No.	Part No.	Description			
C2502	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2503	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	50V
C2504	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	50V
C2505	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2506	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2507	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2508	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2509	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2510	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2511	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2512	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2513	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2514	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2515	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2516	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2518	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2519	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2520	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2521	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2522	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2523	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2524	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2525	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2526	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2715	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2716	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2717	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2718	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2719	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C2720	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C2721	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C2725	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C2901	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2903	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2907	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2908	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2909	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2910	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2912	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2913	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2914	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2915	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2916	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2918	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2919	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2920	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2921	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2922	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2923	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2924	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2925	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2926	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	50V
C2927	1-164-935-11	CERAMIC CHIP	470PF	10%	50V
C2928	1-164-858-11	CERAMIC CHIP	22PF	5%	50V
C3001	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3002	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3003	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C3004	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3101	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	50V
C3102	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	50V

Ref. No.	Part No.	Description			
C3103	1-119-749-11	TANTAL. CHIP	33uF	20%	4V
C3104	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3105	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3106	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3107	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3113	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3115	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C3118	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C3121	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C3122	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	50V
C4301	1-127-760-11	CERAMIC CHIP	4.7uF	10%	6.3V
C4302	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C4303	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
		< CONNECTOR >			
CN1001	1-785-967-21	CONNECTOR, BOARD TO BOARD 100P			
CN1002	1-815-855-31	CONNECTOR, BOARD TO BOARD 80P			
CN1003	1-784-939-11	CONNECTOR, BOARD TO BOARD 60P			
CN1005	1-784-421-11	CONNECTOR, FFC/FPC (ZIF) 27P			
CN1006	1-784-421-11	CONNECTOR, FFC/FPC (ZIF) 27P			
CN1007	1-784-421-11	CONNECTOR, FFC/FPC (ZIF) 27P			
CN1008	1-750-303-41	CONNECTOR, BOARD TO BOARD 20P			
CN1009	1-779-329-11	CONNECTOR, FFC/FPC 10P			
CN1021	1-784-422-11	CONNECTOR, FFC/FPC (ZIF) 33P			
CN1022	1-691-374-11	CONNECTOR, FFC/FPC 10P			
CN1024	1-794-766-21	CONNECTOR, FFC/FPC (LIF) 6P			
CN1201	1-784-939-11	CONNECTOR, BOARD TO BOARD 60P			
CN1901	1-691-374-11	CONNECTOR, FFC/FPC 10P			
		< DIODE >			
D1001	8-719-056-61	DIODE MAZS082008SO			
D1201	8-719-988-61	DIODE 1SS355TE-17			
D1202	8-719-988-61	DIODE 1SS355TE-17			
D1203	8-719-082-63	DIODE 1SV329(TPL3)			
D1204	8-719-988-61	DIODE 1SS355TE-17			
D2101	8-719-992-02	DIODE RB705D-T146			
D2102	8-719-081-96	DIODE KV1870STL			
D2103	8-719-992-02	DIODE RB705D-T146			
D2104	8-719-081-96	DIODE KV1870STL			
D2701	8-719-421-67	DIODE MA132WK-(K8).SO			
D2702	8-719-077-48	DIODE MA4L72800AS0			
D2703	8-719-077-54	DIODE MA4L11100AS0			
D2901	8-719-077-54	DIODE MA4L11100AS0			
D2903	8-719-077-48	DIODE MA4L72800AS0			
D2904	8-719-077-48	DIODE MA4L72800AS0			
D2906	8-719-077-57	DIODE DF3A8.2C(TPL3)			
D2907	8-719-077-57	DIODE DF3A8.2C(TPL3)			
D2909	8-719-077-57	DIODE DF3A8.2C(TPL3)			
D3101	8-719-056-23	DIODE MA2S111-(K8).SO			
D4301	8-719-056-23	DIODE MA2S111-(K8).SO			
		< FERRITE BEAD >			
FB1201	1-414-760-21	FERRITE	0uH		
FB1207	1-414-760-21	FERRITE	0uH		
FB1210	1-414-760-21	FERRITE	0uH		
FB1211	1-414-760-21	FERRITE	0uH		
FB1212	1-414-760-21	FERRITE	0uH		

Ref. No.	Part No.	Description	
FB1213	1-414-760-21	FERRITE	0uH
FB1214	1-414-760-21	FERRITE	0uH
FB1215	1-414-760-21	FERRITE	0uH
FB1216	1-400-047-21	FERRITE	0uH
FB1217	1-400-047-21	FERRITE	0uH
FB1218	1-400-047-21	FERRITE	0uH
FB1219	1-400-047-21	FERRITE	0uH
FB1220	1-400-047-21	FERRITE	0uH
FB1221	1-400-047-21	FERRITE	0uH
FB1301	1-414-760-21	FERRITE	0uH
FB1302	1-414-760-21	FERRITE	0uH
FB1303	1-414-760-21	FERRITE	0uH
FB1351	1-414-760-21	FERRITE	0uH
FB1601	1-469-676-22	FERRITE	0uH
FB1602	1-469-350-21	FERRITE	0uH
FB1701	1-469-676-22	FERRITE	0uH
FB1702	1-469-676-22	FERRITE	0uH
FB1901	1-469-676-22	FERRITE	0uH
FB2001	1-414-760-21	FERRITE	0uH
FB2101	1-414-760-21	FERRITE	0uH
FB2102	1-414-760-21	FERRITE	0uH
FB2103	1-414-760-21	FERRITE	0uH
FB2104	1-414-760-21	FERRITE	0uH
FB2105	1-414-760-21	FERRITE	0uH
FB2301	1-469-676-22	FERRITE	0uH
FB2302	1-469-676-22	FERRITE	0uH
FB2303	1-469-676-22	FERRITE	0uH
FB2501	1-469-676-22	FERRITE	0uH
FB2502	1-469-676-22	FERRITE	0uH
FB2503	1-469-676-22	FERRITE	0uH
FB2902	1-469-676-22	FERRITE	0uH
FB2903	1-469-676-22	FERRITE	0uH
FB2904	1-469-676-22	FERRITE	0uH
FB2905	1-469-676-22	FERRITE	0uH
* FB2906	1-500-282-11	FERRITE	0uH
FB3001	1-469-676-22	FERRITE	0uH
FB3101	1-469-676-22	FERRITE	0uH
		< IC >	
IC1201	8-759-075-66	IC TA75S01F(TE85R)	
IC1202	8-752-420-63	IC CXD3613R-T6	
IC1203	6-701-756-01	IC AD80054JSTRL	
IC1204	6-701-756-01	IC AD80054JSTRL	
IC1205	6-701-756-01	IC AD80054JSTRL	
IC1301	6-702-583-01	IC T8F85XB-0001(EO)	
IC1302	8-759-664-14	IC NJU7241F25(TE2)	
IC1351	6-702-227-01	IC K4S283233F-EE1LT	
IC1601	8-752-417-39	IC M65515WG-DF0Z	
IC1701	8-759-829-96	IC MB81F641642J-15PB-ER	
IC1704	6-701-986-01	IC HG76C020BPTLV	
IC1801	8-759-831-77	IC BH2221FV-E2	
IC1901	8-752-086-52	IC CXA2071R-T4	
IC1902	8-752-086-53	IC CXA2072R-T4	
IC2001	6-701-740-01	IC MB87L4261LGA-G-ER	
IC2101	8-759-650-63	IC CAIN-CSP	
IC2102	6-700-553-01	IC SN104266BGGM-TEB	
IC2301	8-752-415-97	IC CXD3155GA-T6	
IC2302	6-701-691-01	IC AK5355VT-E2	
IC2401	6-701-927-01	IC TB6550XBG(EB)	

Ref. No.	Part No.	Description
IC2501	6-802-335-01	IC MB91194LGA-G-120-ER
IC2502	6-700-770-01	IC BR9016ARFVM-WTR
IC2702	6-702-096-01	IC BD4201FV-E2
IC2703	8-759-642-45	IC TL1596CPWR
IC2901	6-700-600-01	IC M95640-WDL6T
IC2903	8-759-082-58	IC TC7W08FU(TE12R)
IC2904	8-759-271-88	IC TC7SHU04FU-TE85R
IC2905	6-702-307-01	IC HD6417190BPZ110BHV
IC3001	6-701-838-01	IC HY5V16CF-SDR-E1
IC3002	6-802-293-01	IC MBM29LV160BE-90PBT-58-ER-E1
IC3101	6-802-336-01	IC MB89097LGA-G-142-ER
IC4301	8-759-586-19	IC TC7WH123FU(TE12R)

< COIL >

L1006	1-414-770-91	INDUCTOR	4.7uH
L1201	1-469-058-11	INDUCTOR	22uH
L1202	1-469-058-11	INDUCTOR	22uH
L1203	1-469-058-11	INDUCTOR	22uH
L1204	1-469-058-11	INDUCTOR	22uH
L1205	1-469-058-11	INDUCTOR	22uH
L1206	1-469-058-11	INDUCTOR	22uH
L1207	1-414-757-11	INDUCTOR	100uH
L1208	1-414-757-11	INDUCTOR	100uH
L1209	1-414-757-11	INDUCTOR	100uH
L1210	1-469-058-11	INDUCTOR	22uH
L1211	1-469-058-11	INDUCTOR	22uH
L1212	1-469-058-11	INDUCTOR	22uH
L1301	1-414-771-91	INDUCTOR	10uH
L1302	1-414-771-91	INDUCTOR	10uH
L1303	1-414-771-91	INDUCTOR	10uH
L1304	1-469-058-11	INDUCTOR	22uH
L1601	1-414-754-11	INDUCTOR	10uH
L1602	1-414-771-91	INDUCTOR	10uH
L1701	1-469-525-91	INDUCTOR	10uH
L1801	1-469-525-91	INDUCTOR	10uH
L1901	1-469-525-91	INDUCTOR	10uH
L1902	1-469-525-91	INDUCTOR	10uH
L1903	1-469-525-91	INDUCTOR	10uH
L2001	1-469-525-91	INDUCTOR	10uH
L2002	1-469-525-91	INDUCTOR	10uH
L2101	1-412-936-11	INDUCTOR	0.56uH
L2102	1-414-246-11	INDUCTOR	1.8uH
L2103	1-469-525-91	INDUCTOR	10uH
L2104	1-469-525-91	INDUCTOR	10uH
L2105	1-469-525-91	INDUCTOR	10uH
L2401	1-414-771-91	INDUCTOR	10uH
L2901	1-469-525-91	INDUCTOR	10uH
L4301	1-414-771-91	INDUCTOR	10uH

< TRANSISTOR >

Q1001	8-729-054-44	TRANSISTOR	RN2902FE(TPLR3)
Q1002	8-729-053-57	TRANSISTOR	RN1902FE(TPLR3)
Q1003	8-729-050-79	TRANSISTOR	UNRL11100AS0
Q1201	8-729-041-23	TRANSISTOR	NDS356AP
Q1202	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO
Q1901	8-729-050-74	TRANSISTOR	EC3101C-PM-TL
Q2001	8-759-054-48	TRANSISTOR	UP04601008S0
Q2002	8-729-050-91	TRANSISTOR	UNRL21300AS0
Q2003	8-729-049-91	TRANSISTOR	2SA2018H-T2L
Q2004	8-729-050-74	TRANSISTOR	EC3101C-PM-TL

Ref. No.	Part No.	Description	
Q2101	8-729-054-49	TRANSISTOR	UP04401008S0
Q2102	8-729-050-74	TRANSISTOR	EC3101C-PM-TL
Q2103	8-729-050-74	TRANSISTOR	EC3101C-PM-TL
Q2104	8-729-054-49	TRANSISTOR	UP04401008S0
Q2401	8-729-049-91	TRANSISTOR	2SA2018H-T2L
Q2402	8-729-050-76	TRANSISTOR	EC3201C-PM-TL
Q2501	8-729-050-89	TRANSISTOR	UNRL21100AS0
Q2701	8-729-050-79	TRANSISTOR	UNRL11100AS0
Q2703	8-729-050-91	TRANSISTOR	UNRL21300AS0
Q2704	8-729-050-76	TRANSISTOR	EC3201C-PM-TL
Q2903	8-729-050-91	TRANSISTOR	UNRL21300AS0
Q2904	8-729-050-81	TRANSISTOR	UNRL11300AS0
Q2905	8-729-050-74	TRANSISTOR	EC3101C-PM-TL
Q2906	8-729-050-89	TRANSISTOR	UNRL21100AS0
Q2909	8-729-050-91	TRANSISTOR	UNRL21300AS0
Q2910	8-729-050-81	TRANSISTOR	UNRL11300AS0
Q2911	8-729-054-49	TRANSISTOR	UP04401008S0
Q2912	8-729-049-91	TRANSISTOR	2SA2018H-T2L
Q3101	8-729-041-43	TRANSISTOR	HN1L02FU(TE85R)
Q4301	8-729-050-91	TRANSISTOR	UNRL21300AS0
Q4302	8-729-050-74	TRANSISTOR	EC3101C-PM-TL
Q4303	8-729-050-91	TRANSISTOR	UNRL21300AS0

< RESISTOR >

R1002	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R1003	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R1004	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R1021	1-218-935-11	RES-CHIP	33	5%	1/16W
R1022	1-218-935-11	RES-CHIP	33	5%	1/16W
R1023	1-218-953-11	RES-CHIP	1K	5%	1/16W
R1202	1-218-977-11	RES-CHIP	100K	5%	1/16W
R1203	1-218-977-11	RES-CHIP	100K	5%	1/16W
R1204	1-218-962-11	RES-CHIP	5.6K	5%	1/16W
R1205	1-218-966-11	RES-CHIP	12K	5%	1/16W
R1206	1-218-985-11	RES-CHIP	470K	5%	1/16W
R1207	1-218-990-11	SHORT CHIP	0		
R1208	1-218-990-11	SHORT CHIP	0		
R1209	1-208-635-11	RES-CHIP	10	5%	1/16W
R1210	1-218-932-11	RES-CHIP	18	5%	1/16W
R1211	1-218-965-11	RES-CHIP	10K	5%	1/16W
R1212	1-218-932-11	RES-CHIP	18	5%	1/16W
R1213	1-220-160-11	RES-CHIP	13	5%	1/16W
R1214	1-208-455-11	RES-CHIP	5.6	5%	1/16W
R1215	1-220-160-11	RES-CHIP	13	5%	1/16W
R1216	1-208-455-11	RES-CHIP	5.6	5%	1/16W
R1220	1-220-160-11	RES-CHIP	13	5%	1/16W
R1221	1-208-455-11	RES-CHIP	5.6	5%	1/16W
R1222	1-218-977-11	RES-CHIP	100K	5%	1/16W
R1229	1-218-981-11	RES-CHIP	220K	5%	1/16W
R1230	1-218-989-11	RES-CHIP	1M	5%	1/16W
R1301	1-218-977-11	RES-CHIP	100K	5%	1/16W
R1302	1-216-864-11	METAL CHIP	0	5%	1/16W
R1303	1-218-945-11	RES-CHIP	220	5%	1/16W
R1304	1-218-945-11	RES-CHIP	220	5%	1/16W
R1305	1-218-945-11	RES-CHIP	220	5%	1/16W
R1306	1-218-945-11	RES-CHIP	220	5%	1/16W
R1307	1-218-945-11	RES-CHIP	220	5%	1/16W
R1308	1-218-945-11	RES-CHIP	220	5%	1/16W
R1309	1-218-945-11	RES-CHIP	220	5%	1/16W

VC-318

Ref. No.	Part No.	Description			
R1310	1-218-945-11	RES-CHIP	220	5%	1/16W
R1311	1-218-945-11	RES-CHIP	220	5%	1/16W
R1312	1-218-945-11	RES-CHIP	220	5%	1/16W
R1313	1-218-945-11	RES-CHIP	220	5%	1/16W
R1314	1-218-945-11	RES-CHIP	220	5%	1/16W
R1315	1-218-945-11	RES-CHIP	220	5%	1/16W
R1316	1-218-945-11	RES-CHIP	220	5%	1/16W
R1317	1-218-945-11	RES-CHIP	220	5%	1/16W
R1318	1-218-945-11	RES-CHIP	220	5%	1/16W
R1325	1-218-990-11	SHORT CHIP	0		
R1326	1-218-990-11	SHORT CHIP	0		
R1327	1-218-990-11	SHORT CHIP	0		
R1328	1-218-990-11	SHORT CHIP	0		
R1351	1-218-990-11	SHORT CHIP	0		
R1601	1-216-821-11	METAL CHIP	1K	5%	1/16W
R1602	1-216-864-11	METAL CHIP	0	5%	1/16W
R1603	1-218-990-11	SHORT CHIP	0 (PDX10)		
R1604	1-218-990-11	SHORT CHIP	0 (PDX10P)		
R1605	1-218-990-11	SHORT CHIP	0 (PDX10P)		
R1606	1-218-990-11	SHORT CHIP	0 (PDX10)		
R1607	1-218-990-11	SHORT CHIP	0		
R1707	1-218-990-11	SHORT CHIP	0		
R1709	1-216-864-11	METAL CHIP	0	5%	1/16W
R1710	1-218-990-11	SHORT CHIP	0		
R1712	1-216-864-11	METAL CHIP	0	5%	1/16W
R1713	1-218-990-11	SHORT CHIP	0		
R1714	1-218-965-11	RES-CHIP	10K	5%	1/16W
R1715	1-218-953-11	RES-CHIP	1K	5%	1/16W
R1901	1-218-965-11	RES-CHIP	10K	5%	1/16W
R1902	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R1903	1-218-989-11	RES-CHIP	1M	5%	1/16W
R1904	1-218-979-11	RES-CHIP	150K	5%	1/16W
R1905	1-218-939-11	RES-CHIP	68	5%	1/16W
R1906	1-208-920-81	METAL CHIP	24K	0.5%	1/16W
R1907	1-218-965-11	RES-CHIP	10K	5%	1/16W
R1908	1-218-949-11	RES-CHIP	470	5%	1/16W
R1910	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R1911	1-218-965-11	RES-CHIP	10K	5%	1/16W
R1912	1-218-969-11	RES-CHIP	22K	5%	1/16W
R1913	1-208-910-11	METAL CHIP	9.1K	0.5%	1/16W
R1914	1-208-910-11	METAL CHIP	9.1K	0.5%	1/16W
R1915	1-218-969-11	RES-CHIP	22K	5%	1/16W
R1916	1-218-945-11	METAL CHIP	220	0.5%	1/16W
R1917	1-218-945-11	METAL CHIP	220	0.5%	1/16W
R1918	1-218-945-11	METAL CHIP	220	0.5%	1/16W
R1919	1-218-945-11	METAL CHIP	220	0.5%	1/16W
R1922	1-218-990-11	SHORT CHIP	0		
R2001	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2002	1-218-951-11	RES-CHIP	680	5%	1/16W
R2003	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2004	1-218-949-11	RES-CHIP	470	5%	1/16W
R2005	1-218-990-11	SHORT CHIP	0		
R2006	1-218-973-11	RES-CHIP	47K	5%	1/16W
R2007	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2008	1-218-960-11	RES-CHIP	3.9K	5%	1/16W
R2009	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2010	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R2101	1-218-990-11	SHORT CHIP	0		
R2103	1-218-990-11	SHORT CHIP	0		
R2104	1-218-965-11	RES-CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			
R2105	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2106	1-218-946-11	RES-CHIP	270	5%	1/16W
R2107	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R2108	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R2109	1-218-990-11	SHORT CHIP	0		
R2110	1-218-990-11	SHORT CHIP	0		
R2111	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2112	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2113	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R2114	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R2115	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R2116	1-218-941-81	RES-CHIP	100	5%	1/16W
R2117	1-218-947-11	RES-CHIP	330	5%	1/16W
R2118	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2119	1-218-937-11	RES-CHIP	47	5%	1/16W
R2120	1-208-683-11	METAL CHIP	1K	0.5%	1/16W
R2121	1-208-683-11	METAL CHIP	1K	0.5%	1/16W
R2122	1-218-849-11	METAL CHIP	1.2K	0.5%	1/16W
R2123	1-208-683-11	METAL CHIP	1K	0.5%	1/16W
R2124	1-218-849-11	METAL CHIP	1.2K	0.5%	1/16W
R2125	1-218-849-11	METAL CHIP	1.2K	0.5%	1/16W
R2127	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2129	1-218-946-11	RES-CHIP	270	5%	1/16W
R2130	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R2131	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R2132	1-218-943-11	RES-CHIP	150	5%	1/16W
R2134	1-208-709-11	METAL CHIP	12K	0.5%	1/16W
R2135	1-208-709-11	METAL CHIP	12K	0.5%	1/16W
R2136	1-218-938-11	METAL CHIP	56	0.5%	1/16W
R2137	1-218-938-11	METAL CHIP	56	0.5%	1/16W
R2138	1-218-864-11	METAL CHIP	5.1K	0.5%	1/16W
R2139	1-218-938-11	METAL CHIP	56	0.5%	1/16W
R2141	1-218-938-11	METAL CHIP	56	0.5%	1/16W
R2142	1-218-990-11	SHORT CHIP	0		
R2143	1-218-990-11	SHORT CHIP	0		
R2301	1-218-990-11	SHORT CHIP	0		
R2302	1-218-990-11	SHORT CHIP	0		
R2304	1-218-934-11	RES-CHIP	27	5%	1/16W
R2305	1-218-934-11	RES-CHIP	27	5%	1/16W
R2306	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2307	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2308	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R2309	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R2310	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2311	1-216-295-91	SHORT CHIP	0		
R2315	1-218-990-11	SHORT CHIP	0		
R2403	1-218-990-11	SHORT CHIP	0		
R2404	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2405	1-218-990-11	SHORT CHIP	0		
R2407	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2411	1-218-990-11	SHORT CHIP	0		
R2412	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2413	1-218-990-11	SHORT CHIP	0		
R2415	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2416	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R2417	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R2418	1-218-967-11	RES-CHIP	15K	5%	1/16W
R2419	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R2420	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R2423	1-218-990-11	SHORT CHIP	0		

Ref. No.	Part No.	Description			
R2424	1-218-968-11	RES-CHIP	18K	5%	1/16W
R2429	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2431	1-218-946-11	RES-CHIP	270	5%	1/16W
R2434	1-218-990-11	SHORT CHIP	0		
R2436	1-218-969-11	RES-CHIP	22K	5%	1/16W
R2437	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2438	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2501	1-218-941-81	RES-CHIP	100	5%	1/16W
R2502	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2503	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2504	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2505	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2506	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2507	1-218-968-11	RES-CHIP	18K	5%	1/16W
R2508	1-218-968-11	RES-CHIP	18K	5%	1/16W
R2509	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2510	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2511	1-218-985-11	RES-CHIP	470K	5%	1/16W
R2512	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2513	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2514	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2515	1-218-985-11	RES-CHIP	470K	5%	1/16W
R2516	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2517	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2518	1-218-973-11	RES-CHIP	47K	5%	1/16W
R2519	1-218-981-11	RES-CHIP	220K	5%	1/16W
R2520	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2521	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2522	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2523	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2524	1-218-975-11	RES-CHIP	68K	5%	1/16W
R2525	1-218-964-11	RES-CHIP	8.2K	5%	1/16W (PDX10)
R2525	1-218-968-11	RES-CHIP	18K	5%	1/16W (PDX10P)
R2526	1-218-973-11	RES-CHIP	47K	5%	1/16W
R2527	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2528	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2529	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2530	1-218-990-11	SHORT CHIP	0		
R2531	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2532	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2533	1-218-975-11	RES-CHIP	68K	5%	1/16W
R2534	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2535	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2537	1-218-973-11	RES-CHIP	47K	5%	1/16W
R2538	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2717	1-218-935-11	RES-CHIP	33	5%	1/16W
R2718	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2719	1-218-990-11	SHORT CHIP	0		
R2720	1-218-949-11	RES-CHIP	470	5%	1/16W
R2721	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R2722	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2723	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2724	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2727	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2735	1-218-973-11	RES-CHIP	47K	5%	1/16W

Ref. No.	Part No.	Description			
R2902	1-218-990-11	SHORT CHIP	0		
R2904	1-218-990-11	SHORT CHIP	0		
R2905	1-218-985-11	RES-CHIP	470K	5%	1/16W
R2906	1-218-985-11	RES-CHIP	470K	5%	1/16W
R2907	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2910	1-218-990-11	SHORT CHIP	0		
R2911	1-218-990-11	SHORT CHIP	0		
R2912	1-218-990-11	SHORT CHIP	0		
R2913	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2914	1-208-645-11	METAL CHIP	27	0.5%	1/16W
R2915	1-208-645-11	METAL CHIP	27	0.5%	1/16W
R2916	1-218-985-11	RES-CHIP	470K	5%	1/16W
R2917	1-218-990-11	SHORT CHIP	0		
R2920	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2921	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2923	1-218-990-11	SHORT CHIP	0		
R2924	1-218-990-11	SHORT CHIP	0		
R2925	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2926	1-218-990-11	SHORT CHIP	0		
R2927	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2929	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2930	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2931	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2932	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2933	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2935	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R2936	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2937	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2938	1-218-949-11	RES-CHIP	470	5%	1/16W
R2939	1-218-937-11	RES-CHIP	47	5%	1/16W
R2945	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R2946	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R2948	1-218-962-11	RES-CHIP	5.6K	5%	1/16W
R2949	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R2950	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R2951	1-216-791-11	METAL CHIP	3.3	5%	1/16W
R2952	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2953	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R2954	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2955	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2956	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2964	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2965	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2966	1-218-990-11	SHORT CHIP	0		
R3001	1-218-990-11	SHORT CHIP	0		
R3008	1-218-990-11	SHORT CHIP	0		
R3101	1-218-989-11	RES-CHIP	1M	5%	1/16W
R3102	1-218-977-11	RES-CHIP	100K	5%	1/16W
R3103	1-218-977-11	RES-CHIP	100K	5%	1/16W
R3104	1-218-973-11	RES-CHIP	47K	5%	1/16W
R3105	1-218-990-11	SHORT CHIP	0		
R3106	1-219-570-11	METAL CHIP	10M	5%	1/10W
R3107	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3108	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3109	1-218-973-11	RES-CHIP	47K	5%	1/16W

VC-318 **XD-002**

Ref. No.	Part No.	Description			
R3110	1-218-977-11	RES-CHIP	100K	5%	1/16W
R3111	1-218-989-11	RES-CHIP	1M	5%	1/16W
R3112	1-218-953-11	RES-CHIP	1K	5%	1/16W
R3113	1-218-989-11	METAL CHIP	1M	0.5%	1/16W
R3114	1-218-977-11	RES-CHIP	100K	5%	1/16W
R3115	1-218-977-11	RES-CHIP	100K	5%	1/16W
R3116	1-218-985-11	METAL CHIP	470K	0.5%	1/16W
R3117	1-218-977-11	RES-CHIP	100K	5%	1/16W
R3120	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R3121	1-208-927-11	METAL CHIP	47K	0.5%	1/16W
R3123	1-218-989-11	RES-CHIP	1M	5%	1/16W
R3124	1-218-977-11	RES-CHIP	100K	5%	1/16W
R3128	1-218-990-11	SHORT CHIP	0		
R4301	1-218-973-11	RES-CHIP	47K	5%	1/16W
R4302	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R4303	1-218-966-11	RES-CHIP	12K	5%	1/16W
R4304	1-218-967-11	RES-CHIP	15K	5%	1/16W
R4305	1-218-981-11	RES-CHIP	220K	5%	1/16W
R4306	1-218-969-11	RES-CHIP	22K	5%	1/16W
R5104	1-218-990-11	SHORT CHIP	0		
R5105	1-218-990-11	SHORT CHIP	0		
R5106	1-218-990-11	SHORT CHIP	0		
R5107	1-218-977-11	RES-CHIP	100K	5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
RB2101	1-234-377-21	RES, NETWORK 4.7KX4	(1005)		
RB2501	1-234-381-21	RES, NETWORK 100KX4	(1005)		
RB2502	1-234-381-21	RES, NETWORK 100KX4	(1005)		
RB2503	1-234-381-21	RES, NETWORK 100KX4	(1005)		
RB2901	1-234-381-21	RES, NETWORK 100KX4	(1005)		
RB3101	1-234-378-21	RES, NETWORK 10KX4	(1005)		
RB3102	1-234-378-21	RES, NETWORK 10KX4	(1005)		
RB3103	1-234-375-21	RES, NETWORK 1KX4	(1005)		
RB3104	1-234-375-21	RES, NETWORK 1KX4	(1005)		
RB3106	1-234-375-21	RES, NETWORK 1KX4	(1005)		
RB3107	1-234-375-21	RES, NETWORK 1KX4	(1005)		
RB3110	1-234-375-21	RES, NETWORK 1KX4	(1005)		
RB3111	1-234-375-21	RES, NETWORK 1KX4	(1005)		
		< VARISTOR >			
VD2901	1-801-862-11	VARISTOR, CHIP			
VD2902	1-801-862-11	VARISTOR, CHIP			
		< VIBRATOR >			
X1201	1-781-632-21	VIBRATOR, CRYSTAL (66MHz) (PDX10)			
X1201	1-781-633-21	VIBRATOR, CRYSTAL (54MHz) (PDX10P)			
X2101	1-781-045-21	VIBRATOR, CRYSTAL (24.576MHz)			
X2501	1-781-044-21	VIBRATOR, CRYSTAL (20MHz)			
X2901	1-781-620-21	VIBRATOR, CERAMIC (48MHz)			
X3101	1-795-244-11	VIBRATOR, CERAMIC (10MHz)			
X3102	1-767-994-42	VIBRATOR, CRYSTAL (32.768kHz)			

Ref. No.	Part No.	Description			
	A-7078-395-A	XD-002 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C401	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C402	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C403	1-109-935-11	TANTAL. CHIP	4.7uF	20%	6.3V
C404	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C405	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C407	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C408	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C410	1-104-919-11	TANTAL. CHIP	10uF	20%	25V
C413	1-110-618-11	ELECT	12uF	20%	63V
C414	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C415	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C416	1-110-618-11	ELECT	12uF	20%	63V
C417	1-104-920-11	TANTAL. CHIP	4.7uF	20%	35V
C418	1-104-920-11	TANTAL. CHIP	4.7uF	20%	35V
C419	1-104-920-11	TANTAL. CHIP	4.7uF	20%	35V
C420	1-104-920-11	TANTAL. CHIP	4.7uF	20%	35V
C421	1-113-981-11	TANTAL. CHIP	22uF	20%	20V
C422	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C423	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
		< CONNECTOR >			
CN401	1-766-343-21	CONNECTOR, FFC/FPC 13P			
		< DIODE >			
D402	8-719-987-21	DIODE SB02-09CP-TB			
D403	8-719-158-49	DIODE MA8120-TX			
D404	8-719-158-49	DIODE MA8120-TX			
		< IC >			
IC401	8-759-521-35	IC TL5001CDR			
IC402	8-759-478-03	IC RN5RL50AA-TL			
		< COIL >			
L400	1-412-058-11	INDUCTOR CHIP	10uH		
L401	1-416-906-11	INDUCTOR	33uH		
L402	1-414-405-11	INDUCTOR	150uH		
L403	1-414-854-11	INDUCTOR	1MH		
		< TRANSISTOR >			
Q402	8-729-117-32	TRANSISTOR	2SC4177-T1L5L6		
Q403	8-729-117-32	TRANSISTOR	2SC4177-T1L5L6		
Q404	8-729-033-65	TRANSISTOR	2SJ204-T1B		
Q405	8-729-117-32	TRANSISTOR	2SC4177-T1L5L6		
Q406	8-729-117-32	TRANSISTOR	2SC4177-T1L5L6		
Q407	8-729-117-32	TRANSISTOR	2SC4177-T1L5L6		
Q408	8-729-041-23	TRANSISTOR	NDS356AP		
Q409	8-729-117-32	TRANSISTOR	2SC4177-T1L5L6		
Q410	8-729-140-63	TRANSISTOR	2SA1611T1-M5M6		
Q411	8-729-042-92	TRANSISTOR	2SK1470-TD		

Ref. No.	Part No.	Description			
		< RESISTOR >			
R402	1-218-970-11	RES-CHIP	27K	5%	1/16W
R403	1-218-970-11	RES-CHIP	27K	5%	1/16W
R404	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R405	1-218-978-11	METAL CHIP	120K	0.5%	1/16W
R406	1-218-978-11	RES-CHIP	120K	5%	1/16W
R407	1-218-981-11	RES-CHIP	220K	5%	1/16W
R409	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R410	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R411	1-218-985-11	RES-CHIP	470K	5%	1/16W
R412	1-218-965-11	RES-CHIP	10K	5%	1/16W
R413	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R414	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R415	1-218-977-11	RES-CHIP	100K	5%	1/16W
R416	1-218-973-11	RES-CHIP	47K	5%	1/16W
R417	1-218-941-81	RES-CHIP	100	5%	1/16W
R418	1-218-990-11	SHORT CHIP	0		
R420	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R421	1-208-713-11	METAL CHIP	18K	0.5%	1/16W
R422	1-208-701-11	METAL CHIP	5.6K	0.5%	1/16W
R423	1-208-683-11	METAL CHIP	1K	0.5%	1/16W
	A-7078-396-A	XK-001 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN001	1-785-946-21	CONNECTOR 3P			
		< SWITCH >			
S001	1-762-650-21	SWITCH, SLIDE (LOW CUT INPUT1 ON/OFF)			
S002	1-762-650-21	SWITCH, SLIDE (LOW CUT INPUT2 ON/OFF)			
	A-7078-393-A	XM-002 BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C200	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C201	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C202	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C203	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C204	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C205	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C206	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C207	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C208	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C209	1-128-996-11	ELECT CHIP	4.7uF	20%	50V
C210	1-128-996-11	ELECT CHIP	4.7uF	20%	50V
C211	1-128-996-11	ELECT CHIP	4.7uF	20%	50V
C212	1-128-996-11	ELECT CHIP	4.7uF	20%	50V
C213	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C214	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C215	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C216	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C217	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C218	1-125-926-91	TANTAL. CHIP	4.7uF	20%	6.3V
C219	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C220	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C221	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C222	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C223	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C224	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C226	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C228	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C231	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C232	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C233	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C234	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C235	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C236	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C237	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C238	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C241	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C300	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C301	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C302	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C303	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C304	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C305	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C306	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C307	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C308	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C309	1-128-996-11	ELECT CHIP	4.7uF	20%	50V
C310	1-128-996-11	ELECT CHIP	4.7uF	20%	50V
C311	1-128-996-11	ELECT CHIP	4.7uF	20%	50V
C312	1-128-996-11	ELECT CHIP	4.7uF	20%	50V
C313	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C314	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C315	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C316	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C317	1-135-337-11	TANTAL. CHIP	1uF	20%	6.3V
C318	1-125-926-91	TANTAL. CHIP	4.7uF	20%	6.3V
C319	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C320	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C321	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C322	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C323	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C326	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C328	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C331	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C334	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN200	1-568-006-11	CONNECTOR, XLR TYPE 3P (INPUT 1)			
CN201	1-779-332-11	CONNECTOR, FFC/FPC 16P			
CN202	1-785-946-21	CONNECTOR 3P			
CN300	1-568-006-11	CONNECTOR, XLR TYPE 3P (INPUT 2)			
CN301	1-779-332-11	CONNECTOR, FFC/FPC 16P			
		< DIODE >			
D001	8-719-073-01	DIODE MA111-(K8).S0			
D002	8-719-073-01	DIODE MA111-(K8).S0			
D003	8-719-073-01	DIODE MA111-(K8).S0			
D004	8-719-073-01	DIODE MA111-(K8).S0			
D200	8-719-073-01	DIODE MA111-(K8).S0			

XM-002 **XS-002**

Ref. No.	Part No.	Description			
D201	8-719-073-01	DIODE MA111-(K8).S0			
D202	8-719-073-01	DIODE MA111-(K8).S0			
D203	8-719-073-01	DIODE MA111-(K8).S0			
		< IC >			
IC200	8-759-111-56	IC uPC4572G2-E2			
IC201	8-759-111-56	IC uPC4572G2-E2			
IC203	8-759-075-66	IC TA75S01F(TE85R)			
IC204	6-702-589-01	IC M52065FP-70BD			
IC205	8-759-111-56	IC uPC4572G2-E2			
IC300	8-759-111-56	IC uPC4572G2-E2			
IC301	8-759-111-56	IC uPC4572G2-E2			
IC303	8-759-075-66	IC TA75S01F(TE85R)			
		< COIL >			
L200	1-414-398-11	INDUCTOR	10uH		
L201	1-414-398-11	INDUCTOR	10uH		
L202	1-414-398-11	INDUCTOR	10uH		
L203	1-414-854-11	INDUCTOR	1MH		
L300	1-414-398-11	INDUCTOR	10uH		
L301	1-414-398-11	INDUCTOR	10uH		
L302	1-414-398-11	INDUCTOR	10uH		
L303	1-414-854-11	INDUCTOR	1MH		
		< RESISTOR >			
R200	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R201	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R202	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R203	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R204	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R205	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R206	1-216-019-00	METAL CHIP	56	5%	1/10W
R207	1-216-009-91	RES-CHIP	22	5%	1/10W
R208	1-216-295-91	SHORT CHIP	0		
R209	1-216-047-91	RES-CHIP	820	5%	1/10W
R210	1-216-047-91	RES-CHIP	820	5%	1/10W
R211	1-220-222-11	RES-CHIP	4.7K	5%	1/2W
R212	1-218-977-11	RES-CHIP	100K	5%	1/16W
R213	1-218-977-11	RES-CHIP	100K	5%	1/16W
R214	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R215	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R216	1-208-720-11	METAL CHIP	36K	0.5%	1/16W
R219	1-208-884-81	METAL CHIP	750	0.5%	1/16W
R220	1-208-647-11	METAL CHIP	33	0.5%	1/16W
R221	1-218-887-11	METAL CHIP	47K	0.5%	1/10W
R222	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R223	1-208-721-11	METAL CHIP	39K	0.5%	1/16W
R224	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R225	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R226	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R227	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R232	1-218-965-11	RES-CHIP	10K	5%	1/16W
R233	1-218-971-11	RES-CHIP	33K	5%	1/16W
R234	1-218-965-11	RES-CHIP	10K	5%	1/16W
R235	1-216-295-91	SHORT CHIP	0		
R236	1-216-295-91	SHORT CHIP	0		
R237	1-218-971-11	RES-CHIP	33K	5%	1/16W
R239	1-218-977-11	RES-CHIP	100K	5%	1/16W
R240	1-218-977-11	RES-CHIP	100K	5%	1/16W
R241	1-218-973-11	RES-CHIP	47K	5%	1/16W

Ref. No.	Part No.	Description			
R242	1-218-975-11	RES-CHIP	68K	5%	1/16W
R243	1-218-965-11	RES-CHIP	10K	5%	1/16W
R244	1-218-973-11	RES-CHIP	47K	5%	1/16W
R245	1-218-973-11	RES-CHIP	47K	5%	1/16W
R300	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R301	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R302	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R303	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R304	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R305	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R306	1-216-019-00	METAL CHIP	56	5%	1/10W
R307	1-216-009-91	RES-CHIP	22	5%	1/10W
R308	1-216-295-91	SHORT CHIP	0		
R309	1-216-047-91	RES-CHIP	820	5%	1/10W
R310	1-216-047-91	RES-CHIP	820	5%	1/10W
R311	1-220-222-11	RES-CHIP	4.7K	5%	1/2W
R312	1-218-977-11	RES-CHIP	100K	5%	1/16W
R313	1-218-977-11	RES-CHIP	100K	5%	1/16W
R314	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R315	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R316	1-208-720-11	METAL CHIP	36K	0.5%	1/16W
R319	1-208-884-81	METAL CHIP	750	0.5%	1/16W
R320	1-208-647-11	METAL CHIP	33	0.5%	1/16W
R321	1-218-887-11	METAL CHIP	47K	0.5%	1/10W
R322	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R323	1-208-721-11	METAL CHIP	39K	0.5%	1/16W
R324	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R325	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R326	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R327	1-208-699-11	METAL CHIP	4.7K	0.5%	1/16W
R330	1-218-973-11	RES-CHIP	47K	5%	1/16W
R331	1-218-975-11	RES-CHIP	68K	5%	1/16W
R332	1-218-965-11	RES-CHIP	10K	5%	1/16W
R333	1-216-295-91	SHORT CHIP	0		
R338	1-216-295-91	SHORT CHIP	0		
R339	1-218-977-11	RES-CHIP	100K	5%	1/16W
R340	1-218-977-11	RES-CHIP	100K	5%	1/16W
	A-7078-394-A	XS-002 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
CN100	1-766-343-21	CONNECTOR, FFC/FPC 13P			
CN101	1-779-332-11	CONNECTOR, FFC/FPC 16P			
CN102	1-779-332-11	CONNECTOR, FFC/FPC 16P			
CN103	1-779-806-21	CONNECTOR 8P			
		< RESISTOR >			
R101	1-218-990-11	SHORT CHIP	0		
R102	1-218-969-11	RES-CHIP	22K	5%	1/16W
		< SWITCH >			
S100	1-571-640-11	SWITCH, SLIDE (INPUT1 +48V ON/OFF)			
S102	1-762-824-11	SWITCH, SLIDE (INPUT1 REC CH SELECT CH1, CH2/CH1)			
S103	1-762-825-11	SWITCH, SLIDE (INPUT1 INPUT LEVEL LINE/MIC/MIC ATT)			
S104	1-762-825-11	SWITCH, SLIDE (INPUT2 INPUT LEVEL LINE/MIC/MIC ATT)			
S105	1-571-640-11	SWITCH, SLIDE (INPUT2 +48V ON/OFF)			

Ref. No.	Part No.	Description
		ACCESSORIES
		**********
⚠	1-475-599-14	ADAPTOR, AC (AC-L10A) (PDX10P)
⚠	1-475-599-45	ADAPTOR, AC (AC-L10A) (PDX10)
	1-475-950-53	REMOTE COMMANDER (RMT-811)
	1-543-798-11	FILTER, CLAMP (FERRITE CORE)
*⚠	1-575-131-11	CORD, POWER (PDX10P)
⚠	1-790-107-22	CORD, POWER (PDX10)
	1-757-294-11	CORD, CONNECTION (USB 5P)
	1-824-097-11	CORD, CONNECTION (AV MULCH) (1.5m)
	3-053-056-01	LID, BATTERY CASE (FOR RMT-811)
	3-072-414-01	SPVD-008 (USB DRIVER CD-ROM) (PDX10P)
	3-072-654-01	SPVD-008 (I) (USB DRIVER CD-ROM) (PDX10)
	3-073-861-01	CLOTH (TL), CLEANING
	3-077-115-11	MANUAL, INSTRUCTION (ENGLISH) (PDX10)
	3-077-115-21	MANUAL, INSTRUCTION (FRENCH) (PDX10:Canadian)
	3-077-115-31	MANUAL, INSTRUCTION (ENGLISH) (PDX10P)
	3-077-115-41	MANUAL, INSTRUCTION (FRENCH) (PDX10P)
	3-077-115-51	MANUAL, INSTRUCTION (GERMAN) (PDX10P)
	3-077-115-61	MANUAL, INSTRUCTION (ITALIAN) (PDX10P)
	3-077-115-71	MANUAL, INSTRUCTION (SPANISH) (PDX10P)
	3-987-015-01	BELT (S), SHOULDER
	8-814-298-90	MICROPHONE ECM-NV1
	A-7013-029-A	XLR BLOCK ASSY
	A-7024-735-A	MEMORY STICK (MSA-8A)
	X-3952-595-1	CAP ASSY, LENS
	X-3952-789-1	HOOD (WIDE) ASSY
		NP-FM50 BATTERY PACK (NOT SUPPLIED)

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

COVER

SECTION 6
ADJUSTMENTS

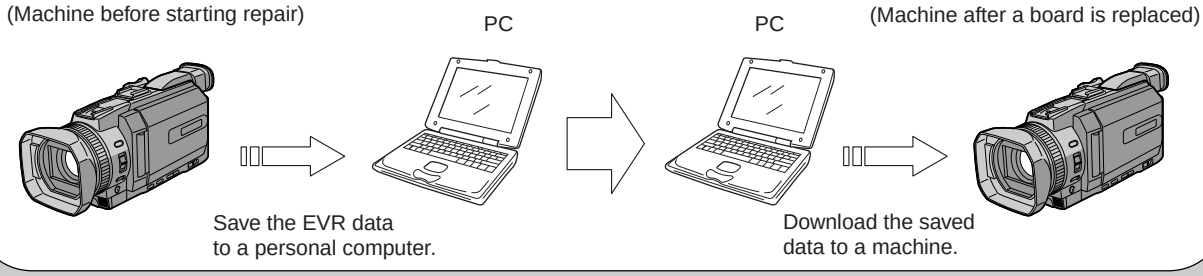
1. Before starting adjustment

EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

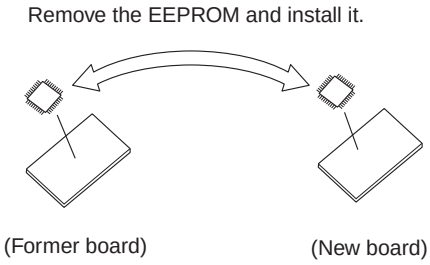
Procedure 1

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.



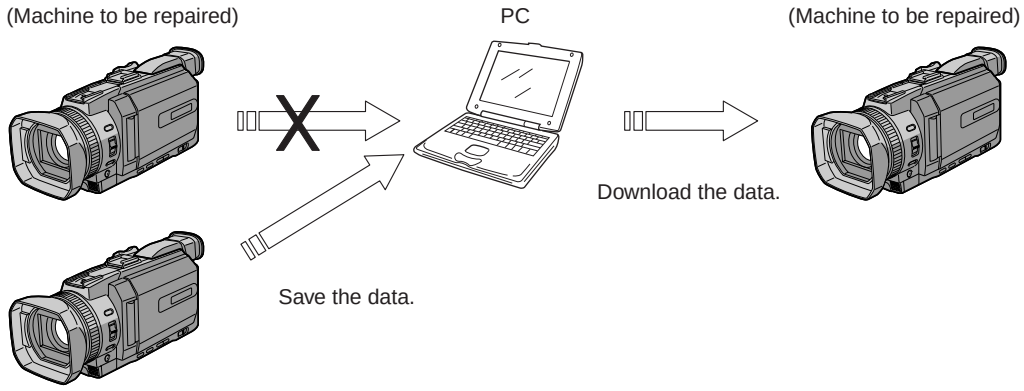
Procedure 2

Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.



Procedure 3

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.



After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 6-3 for the items to be checked.)

1-1. Adjusting items when replacing main parts and boards.

• Adjusting items when replacing main parts

When replacing main parts, adjust the items indicated by ● in the following table.

Note: When replacing the drum assembly or the mechanism deck, initialize the data of the drum r rotation counted time. (Refer to "Record of Use check" of "6-4. SERVICE MODE")

Adjustment Section	Adjustment	Replaced parts: Block replacement: Lens device	Laser unit	Mechanism deck **Note**	LCD block	LCD block	LCD block	Mechanism deck **Note**	Mechanism deck	Parts replacement: CD-389 board IC100,101,105 (prism block (CCD imager))	CD-389 board IC102,103,104 (S/H)	VC-318 board IC1202, X1201 (Timing generator)	VC-318 board IC1203,1204,1205 (A/D conv.)	VC-318 board IC1801 (EVR)	VC-318 board IC2101 (DV signal process)	VC-318 board IC1901 (EQ, A/D CONV., PLL)	VC-318 board IC1902 (REC/PB AMP)	DB-016 board IC7001 (VIDEO IN/OUT)	DB-016 board IC4201 (LCD driver (EVF))	DB-016 board IC4202 (Timing generator (EVF))	SE-132 board SE4001/4002 (PITCH/YAW sensor)	PD-191 board IC5701 (LCD driver (LCD))	PD-191 board IC5702 (Timing generator (LCD))
		Lens device	Laser unit	Mechanism deck **Note**	LCD901 (LCD panel (LCD))	ND901 Fluorescent tube (LCD))	TA901 (Touch panel)	M901 (Drum assy) **Note**	M902 (Capstan motor)	CD-389 board IC100,101,105 (prism block (CCD imager))	CD-389 board IC102,103,104 (S/H)	VC-318 board IC1202, X1201 (Timing generator)	VC-318 board IC1203,1204,1205 (A/D conv.)	VC-318 board IC1801 (EVR)	VC-318 board IC2101 (DV signal process)	VC-318 board IC1901 (EQ, A/D CONV., PLL)	VC-318 board IC1902 (REC/PB AMP)	DB-016 board IC7001 (VIDEO IN/OUT)	DB-016 board IC4201 (LCD driver (EVF))	DB-016 board IC4202 (Timing generator (EVF))	SE-132 board SE4001/4002 (PITCH/YAW sensor)	PD-191 board IC5701 (LCD driver (LCD))	PD-191 board IC5702 (Timing generator (LCD))
Initialization of 8, A, B, C, D, E, F, 1B, 1E, 1F page data	Initialization of A, D page data																							
	Initialization of 8, C page data																							
	Initialization of E, F, 1E, 1F page data																							
	Initialization of B, 1B page data																							
Camera	66MHz/54MHz origin oscillation adj.											●		●										
	HALL adj.	●																						
	MR adj.	●																						
	Flange back adj.	●								●														
	AWB standard data input									●	●		●											
	MAX GAIN adj.									●	●		●											
	F No. & ND light quantity standard data input	●																						
	LV standard data input									●	●		●											
	Auto white balance adj.									●	●		●											
	Color reproduction adj.									●	●		●											
	PSD sensor gain adj.	●																						
	Angular velocity sensor sensitivity adj.	●																				●		
	Mechanical shutter adj	●																						
	AF laser output adj.		●																					
	AF laser axis adj.		●																					
EVF	VCO adj.																		●	●				
	RGB AMP adj.																		●					
	Contrast adj.														●				●					
	Backlight adj.																		●					
LCD	VCO adj.																						●	●
	RGB AMP adj.																						●	
	Contrast adj.														●								●	
	COM AMP adj.																						●	
	V COM adj.				●																		●	
	White balance adj.				●	●																	●	
Mechanism	Tape path adj.			●				●	●															
System control	Touch panel adj.						●																	
	Serial No. input																							
Servo, RF	CAP FG duty adj.			●					●															
	Switching position adj.			●				●																
	AGC center level adj.			●				●								●	●							
	APC & AEQ adj.			●				●								●	●							
	PLL f_0 & LPF f_0 Fine adj.			●				●								●	●							
Video	Chroma BPF f_0 adj.																	●						
	S VIDEO OUT Y level adj.														●			●						
	S VIDEO OUT Chroma level adj.														●			●						

Table. 6-1-1 (1).

• Adjusting items when replacing a board or EEPROM

When replacing a board or EFPROM, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts: Board replacement: CD-389 board (COMPLETE)	SE-132 board (COMPLETE)	DB-016 board (COMPLETE)	PD-191 board (COMPLETE)	VC-318 board (COMPLETE)	EEPROM replacement: VC-318 board IC2502 (EEPROM)	VC-318 board IC2901 (EEPROM)	Supporting RadarW
Initialization of 8, A, B, C, D, E, F, 1B, 1E, 1F page data	Initialization of A, D page data					●		●	
	Initialization of 8, C page data					●	●		
	Initialization of E, F, 1E, 1F page data					●	●		
	Initialization of B, 1B page data					●		●	
Camera	66MHz/54MHz origin oscillation adj.					●	●		
	HALL adj.					●	●		●
	MR adj.					●	●		●
	Flange back adj.					●	●		●
	AWB standard data input	●				●	●		●
	MAX GAIN adj.	●				●	●		●
	F No. & ND light quantity standard data input					●	●		●
	LV standard data input	●				●	●		●
	Auto white balance adj.	●				●	●		●
	Color reproduction adj.	●				●	●		
	PSD sensor gain adj.					●	●		
	Angular velocity sensor sensitivity adj.		●			●	●		
	Mechanical shutter adj					●	●		●
	AF laser output adj.					●	●		●
	AF laser axis adj.								●
EVF	VCO adj.			●		●	●		
	RGB AMP adj.			●		●	●		
	Contrast adj.			●		●	●		
	Backlight adj.			●		●	●		
LCD	VCO adj.				●	●	●		
	RGB AMP adj.				●	●	●		
	Contrast adj.				●	●	●		
	COM AMP adj.				●	●	●		
	V COM adj.				●	●	●		
	White balance adj.				●	●	●		
Mechanism	Tape path adj.								
System control	Touch panel adj.					●		●	
	Serial No. input					●	●		
Servo, RF	CAP FG duty adj.					●	●		●
	Switching position adj.					●	●		●
	AGC center level adj.					●	●		●
	APC & AEQ adj.					●	●		●
	PLL f_0 & LPF f_0 Fine adj.					●	●		●
Video	Chroma BPF f_0 adj.			●		●	●		
	S VIDEO OUT Y level adj.			●		●	●		
	S VIDEO OUT Chroma level adj.			●		●	●		

Table. 6-1-1 (2).

6-1. CAMERA SECTION ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

• Oscilloscope • Color monitor • Vectorscope
• Regulated power supply • Digital voltmeter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.4	J-6080-806-A	White balance check
	ND filter 0.1	J-6080-807-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 upgraded) (Note1)	J-6082-053-B	
J-6	Siemens star chart	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	CPC-8jig	J-6082-388-A	For adjusting the video section For adjusting the viewfinder system
J-9	Extension cable (60P 0.5mm)	J-6082-446-A	For extension between the CD-386 board (CN100) – VC-318 board (CN1201)
J-10	Mini pattern box	J-6082-353-B	For adjusting the flange back
J-11	Camera table	J-6082-384-A	For adjusting the flange back
J-12	CPC jig for LCD panel	J-6082-529-A	For adjusting the LCD system
J-13	Background paper	J-2501-130-A	For AF laser output adjustment
J-14	Cleaning fluid	Y-2031-001-0	
J-15	Wiping cloth	7-741-900-53	
J-16	Super-fine applicator (made by Nippon Applicator (P752D))	–	
J-17	Mirror (small oval type)	J-6080-840-A	Tape path adjustment
J-18	Tracking tape (XH2-1A1) (NTSC/PAL)	8-967-999-03	Tape path adjustment
J-19	Mini DV torque cassette	J -6082-360-A	
J-20	TG1 adjustment jig (FWD position adjustment)	J -6082-492-A	
J-21	TG1 FWD adjustment screwdriver	J -6082-364-A	For TG1 FWD position adjustment
J-22	Dummy drum (for TG36) (J mechanism)	J -6082-490-A	
J-23	TG36 gauge	J -6082-491-A	
J-24	Torque screwdriver	J -9049-330-A	
J-25	Tape path screwdriver	J -6082-026-A	For tape path adjustment
J-26	Mode Selector II	J -6082-282-B	General adjustment (ROM version 1.7)
J-27	Mode Selector II conversion board (J)	J -6082-493-A	
J-28	Mode Selector II ROM (supporting J mechanism) (Note 2)	J -6082-314-E	ROM for Mode Selector II

Note1: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

Note2: This is the ROM used for upgrading the version of Mode Selector II to enable it to be used for the J mechanism.

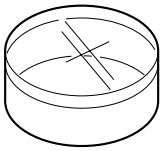
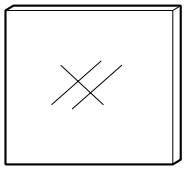
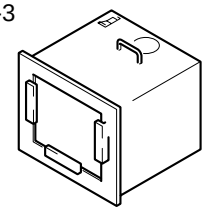
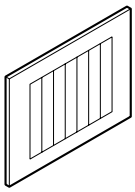
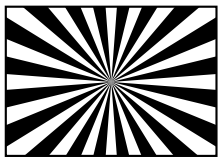
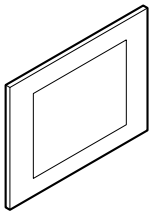
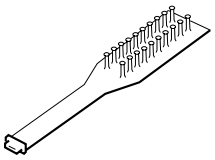
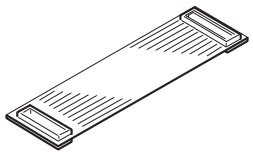
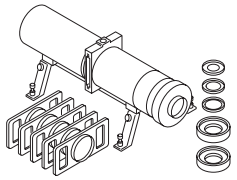
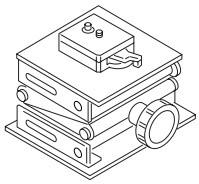
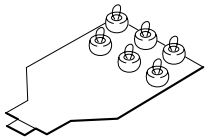
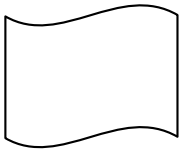
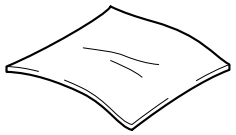
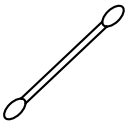
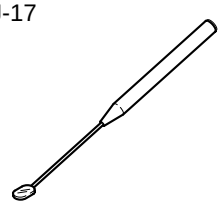
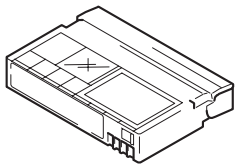
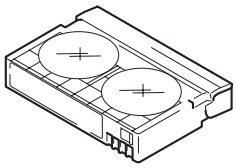
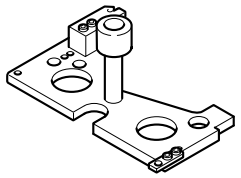
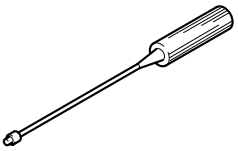
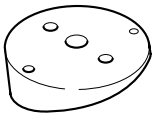
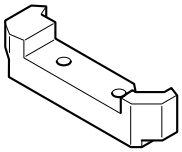
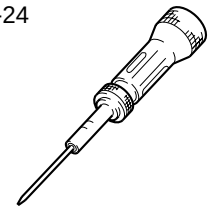
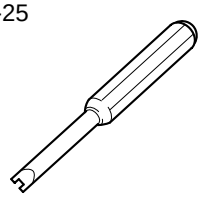
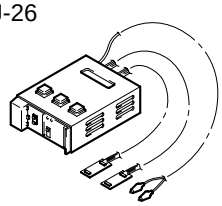
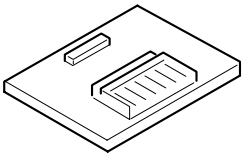
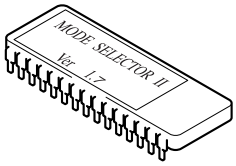
J-1 	J-2 	J-3 	J-4 	J-5
J-6 	J-7 	J-8 	J-9 	J-10 
J-11 	J-12 	J-13 	J-14	J-15 
J-16 	J-17 	J-18 	J-19 	J-20 
J-21 	J-22 	J-23 	J-24 	J-25 
J-26 	J-27 	J-28 		

Fig. 6-1-1.

1-1-2. Preparations

Note1: For details of how remove the cabinet and boards, refer to “2. DISASSEMBLY”.

Note2: When performing only the adjustments, the lens block and boards need not be disassembled.

Note3: Before performing the adjustments, check the data of page: 0, address: 10 is “00”. If not, set data: 00 to this address.

1) Connect the equipment for adjustments according to Fig. 6-1-3.

Note4: As removing the cabinet (R) assembly (removing CN5203 of the CK-134 board) means removing the lithium 3V power supply (BT5201 on the CK-134 board), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. But the self-diagnosis data and the data on history of use (total drum rotation time etc.) will be kept even if the lithium 3V power supply is removed. (Refer to “6-4.Service Mode” for the self-diagnosis data and the data on history of use.)

Note5: Setting the “Forced Camera Power ON” Mode

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button.

The above procedure will enable the camera power to be turned on with the control switch block (PS-1870) removed. After completing adjustments, be sure to exit the “Forced Camera Power ON Mode”.

Note6: Exiting the “Forced Camera Power ON” Mode

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

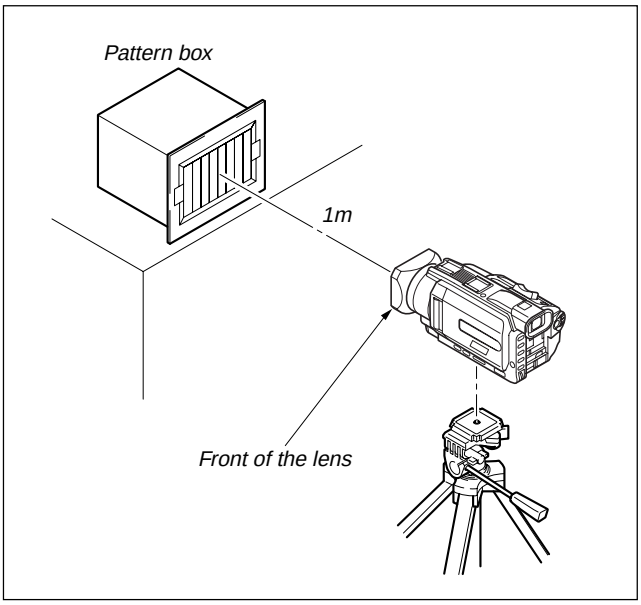


Fig. 6-1-2.

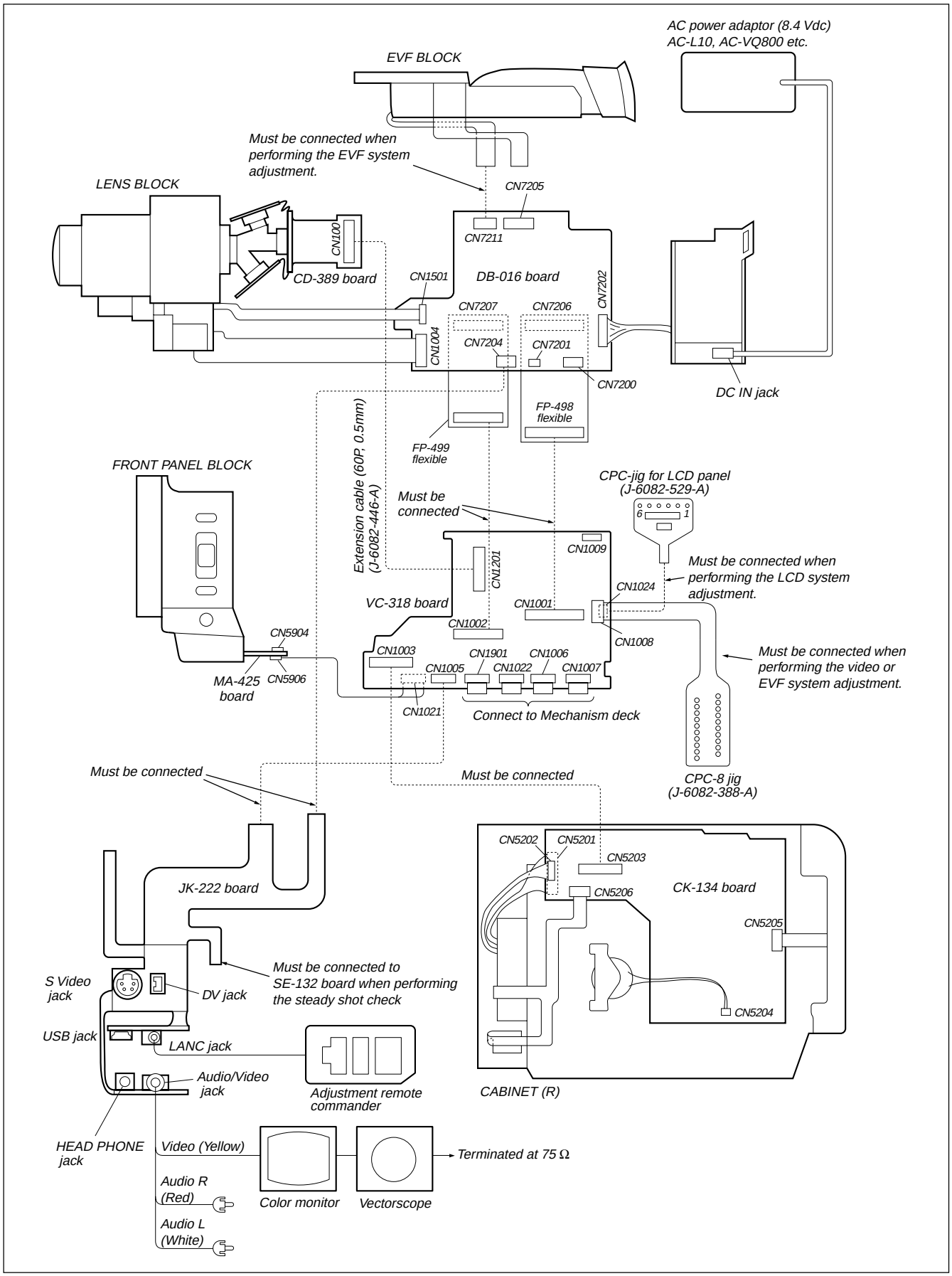

AC power adaptor (8.4 Vdc)
AC-L10, AC-VQ800 etc.
EVF BLOCK
Must be connected when performing the EVF system adjustment.
LENS BLOCK
CN7205
CN7211
CN100
CD-389 board
CN1501
DB-016 board
CN7202
CN7207
CN7206
CN1004
CN7204
CN7201
CN7200
DC IN jack
FP-499 flexible
FP-498 flexible
Extension cable (60P, 0.5mm) (J-6082-446-A)
FRONT PANEL BLOCK
Must be connected
CPC-jig for LCD panel (J-6082-529-A)
6
1
CN1009
CN1201
Must be connected when performing the LCD system adjustment.
CN1024
VC-318 board
CN1001
CN1002
CN1008
CN5904
CN1003
CN1901
CN1006
CN1005
CN1022
CN1007
MA-425 board
CN5906
Must be connected when performing the video or EVF system adjustment.
CN1021
Connect to Mechanism deck
CPC-8 jig (J-6082-388-A)
Must be connected
Must be connected
CN5202
CN5201
CN5203
JK-222 board
CN5206
CK-134 board
CN5205
S Video jack
DV jack
Must be connected to SE-132 board when performing the steady shot check
CN5204
USB jack
LANC jack
Audio/Video jack
Adjustment remote commander
CABINET (R)
HEAD PHONE jack
Video (Yellow)
Terminated at 75 Ω
Audio R (Red)
Color monitor
Vectorscope
Audio L (White)

Fig. 6-1-3.

1-1-3. Precaution

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments without loading cassette.

1. POWER (PS-1870 block) ..... CAMERA
2. FOCUS (FP-504 flexible) ..... MANUAL
3. AUTO LOCK (CK-134 board) ..... AUTO LOCK
4. BACK LIGHT (CK-134 board) ..... OFF
5. SPOT LIGHT (CK-134 board) ..... OFF
6. ZEBRA (CK-134 board) ..... OFF
7. AUTO SHUTTER (Menu setting) ..... OFF
8. SETUP (Menu setting) 0%
9. DIGITAL ZOOM (Menu setting) ..... OFF
10. 16:9 WIDE (Menu setting) ..... OFF
11. STEADY SHOT (Menu setting) ..... OFF
12. DEMO MODE(Menu setting) ..... OFF
13. DIGITAL EFFECT (Touch panel setting) ..... OFF

2. Order of Adjustments

Basically carry out adjustments in the order given.

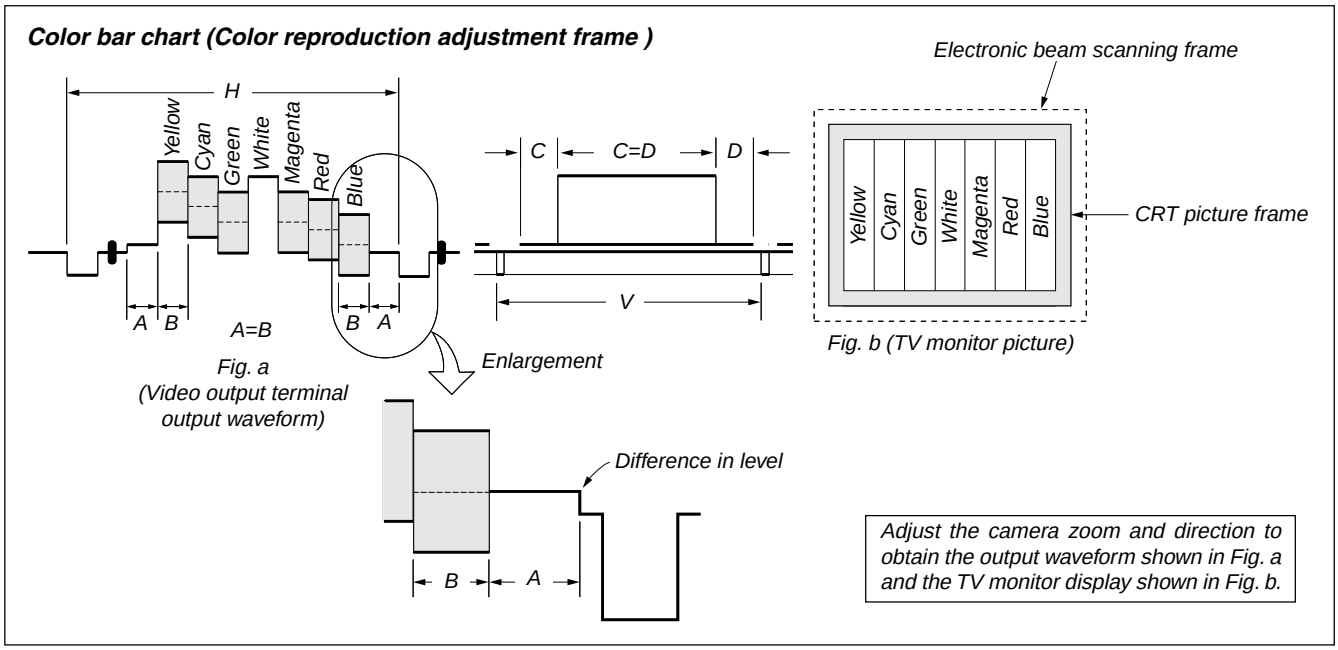


Fig. 6-1-4.

3. Subjects

1) Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 6-1-4. (Color reproduction adjustment frame)
2) Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)
3) Flange back adjustment chart
   Make the chart shown in Fig. 6-1-5 using A0 size (1189mm × 841mm) black and white vellum paper.

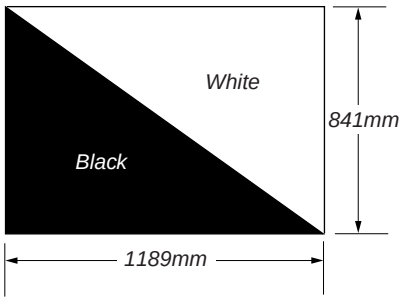


Fig. 6-1-5.

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

4. Preparing the Flash Adjustment Box

A dark room is required to provide an accurate AF laser adjustment.
If it is not available, prepare the flash adjustment box as given below;

1) Provide woody board A, B and C of 15 mm thickness.

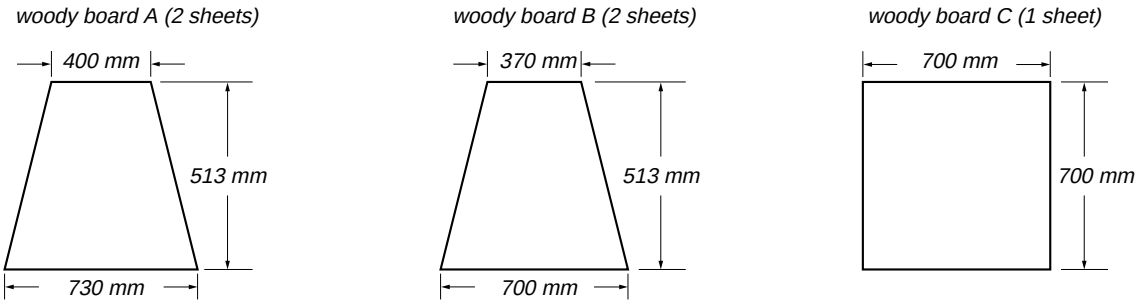


Fig. 6-1-6

2) Apply black mat paint to one side of woody board A and B.
3) Attach background paper (J-2501-130-A) to woody board C.
4) Assemble so that the black sides and the background paper side of woody board A, B and C are internal. (Fig. 6-1-7)

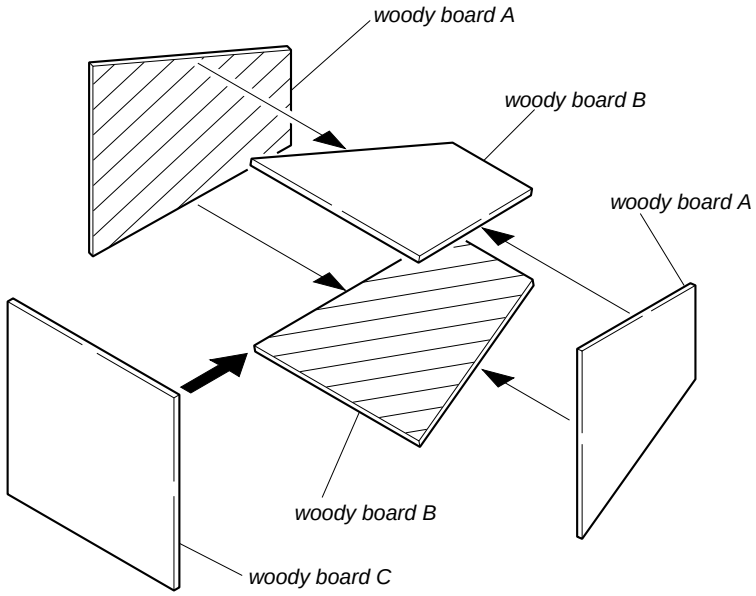


Fig. 6-1-7

1-2. INITIALIZATION OF 8, A, B, C, D, E, F, 1B, 1E, 1F PAGE DATA

Note: When reading or writing the 1B, 1E or 1F page data, select page: 0, address: 10, and set data: 01, then select B, E or F page. The 1B, 1E or 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

[Connection of the power supply during the initialization of the data.]

1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 6-1-8.
2) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 6.0 ± 0.1Vdc.
3) Turn off the power supply.
4) Turn on the HOLD switch of the adjusting remote commander.
5) Turn on the power supply.
6) Perform the initialization of the data.

Note: This is normal though the following message is indicated on the LCD screen.
"FOR InfoLITHIUM BATTERY ONLY"

[Initialization Procedure]

1. Initialization of A, D page data
2. Initialization of 8, C page data
3. Initialization of E, F, 1E, 1F page data
4. Initialization of B, 1B page data

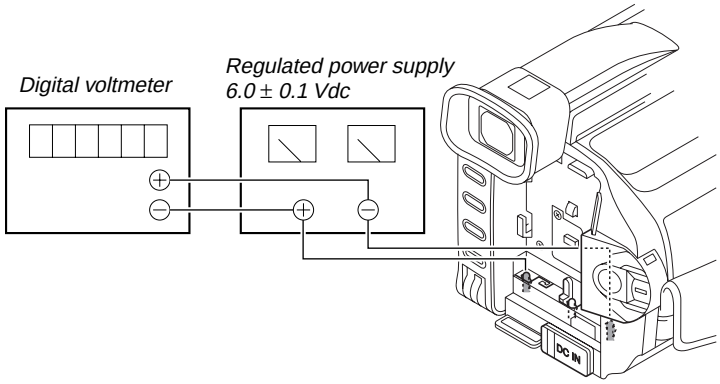


Fig. 6-1-8.

1-2-1. INITIALIZATION OF A, D PAGE DATA

Note: The data of page: 0, address: 10 must be "00".

1. Initializing the A, D Page Data

Note1: If "Initializing the A, D Page Data" is performed, all data of the A page and D page will be initialized. (It is impossible to initialize a single page.)
Note2: If the A, D page data has been initialized, the following adjustments need to be performed again.
1) Modification of A, D page data
2) Touch panel adjustment
Note3: The power supply voltage must be 6.0 ± 0.1Vdc.
Note4: NTSC model: DSR-PDX10
PAL model: DSR-PDX10P

Adjusting page	A
Adjusting Address	10 to FF
Adjusting page	D
Adjusting Address	10 to 7F

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	7	03		Set the following data. 08 (NTSC), 88 (PAL)
4	7	00	28	Set the data.
5	7	01	28	Set the data, and press PAUSE button.
6	7	02		Check that the data changes to "01"
7	2	00	29	Set the data.
8	2	01	29	Set the data, and press PAUSE button.
9				Perform "Modification of A, D Page Data".

2. Modification of A, D Page Data

If the A, D page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

Processing after Completing Modification of A, D Page data

Order	Page	Address	Data	Procedure
1	2	00	29	Set the data.
2	2	01	29	Set the data, and press PAUSE button.

Note: If the following symptoms occur after completing of the "Modification of A, D page data", check that the data of the "Fixed data-2" addresses of A and D page are same as those of the same model of the same destination.
1) The self-diagnosis code "E:20:00" on the LCD screen is displayed.
2) The power is shut off so that unit cannot operate.

3. A Page Table

Note1: The data of page: 0, address: 10 must be “00”.
Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the A, D Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of A, D Page Data”).

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10 to 8F	Fixed data-1		
90	CF	DB	Touch panel adj.
91	21	25	
92	D2	DA	
93	19	23	
94 to FF	Fixed data-1		

Table. 6-1-2.

4. D Page Table

Note1: The data of page: 0, address: 10 must be “00”.
Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the A, D Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of A, D Page Data”).

Address	Initial value	Remark
00 to 0F		
10	00	Test mode
11		Fixed data-1
12		Fixed data-2
13		
14 to 15		Fixed data-1
16		Fixed data-2
17 to 21		Fixed data-1
22		Fixed data-2 (Modified data. Copy the data built in the same model.)
23		
24		
25		
26		
27 to 29		Fixed data-1
2A		Fixed data-2
2B		
2C to 36		Fixed data-1
37		Fixed data-2
38 to 39		Fixed data-1
3A		Fixed data-2
3B to 50		Fixed data-1
51		Fixed data-2 (Modified data. Copy the data built in the same model.)
52		
53		
54		
55 to 56		
57		Fixed data-2
58		Fixed data-1
59		Fixed data-2 (Modified data. Copy the data built in the same model.)
5A		
5B		
5C		
5D		
5E		
5F		
60 to 7F		Fixed data-1

Table. 6-1-3.

1-2-2. INITIALIZATION OF 8, C PAGE DATA

Note: The data of page: 0, address: 10 must be “00”.

1. Initializing the 8, C Page Data

Note1: If “Initializing the 8, C Page Data” is performed, all data of the 8 page and C page will be initialized. (It is impossible to initialize a single page.)

Note2: If the 8, C page data has been initialized, following adjustments need to be performed again.
1) Modification of 8, C page data
2) Viewfinder system adjustments
3) LCD system adjustments
4) Servo and RF system adjustments
5) Serial No. input
6) Video system adjustments

Note3: The power supply voltage must be 6.0 ± 0.1Vdc.

Adjusting page	8
Adjusting Address	00 to A3
Adjusting page	C
Adjusting Address	10 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	3	81		Check that the data is “00”.
4	3	80	0C	Set the data, and press PAUSE button.
5	3	80		Check that the data changes to “1C”.
6				Perform “Modification of 8, C Page Data”.

2. Modification of 8, C Page Data

If the 8, C page data has been initialized, change the data of the “Fixed data-2” address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of 8, C Page data

Order	Page	Address	Data	Procedure
1	2	00	29	Set the data.
2	2	01	29	Set the data, and press PAUSE button.

3. 8 Page Table

Note1: The data of page: 0, address: 10 must be “00”.

Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the 8, C Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of 8, C Page Data”).

Address	Initial value	Remark
00 to 21		Fixed data-1
22		Fixed data-2
23 to 2E		Fixed data-1
2F		Fixed data-2
30 to 3A		Fixed data-1
3B		Fixed data-2
3C to 49		Fixed data-1
4A		Fixed data-2
4B to 51		Fixed data-1
52		Fixed data-2
53 to 79		Fixed data-1
7A		Fixed data-2 (Modified data. Copy the data built in the same model.)
7B		
7C		
7D		
7E		
7F		
80		
81		
82		
83		
84 to 89		Fixed data-1
8A		Fixed data-2
8B		Fixed data-1
8C	08	Serial No. input
8D	00	
8E	46	
8F	01	
90	02	
91	00	
92	00	
93	00	
94 to A3		Fixed data-1

Table. 6-1-4.

4. C Page Table

Note1: The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the 8, C Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of 8, C Page Data").

Address	Initial value	Remark
00 to 0F		
10	EE	Switching position adj.
11	00	
12	00	
13	00	
14 to 15		Fixed data-1
16	E0	CAP FG duty adj.
17		Fixed data-1
18	2A	AEQ adj.
19	2A	
1A		Fixed data-1
1B	32	AEQ adj.
1C	32	
1D		Fixed data-1
1E	25	AGC center level adj.a
1F	3E	PLL f_0 adj.
20	3E	
21	DC	APC adj.
22	99	LPF f_0 adj.
23 to 24		Fixed data-1
25	88	S VIDEO out Y level adj.
26	E3	S VIDEO out Cr level adj.
27	A1	S VIDEO out Cb level adj.
28	04	Chroma BPF f_0 adj.
29	20	PLL f_0 adj.
2A		Fixed data-1
2B		Fixed data-2
2C	03	APC adj.
2D to 4E		Fixed data-1
4F	65	Back light adj. (EVF)
50	CB	
51	87	VCO adj. (EVF)
52	6F	
53		Fixed data-1
54	97	RGB AMP adj. (EVF)
55 to 57		Fixed data-1
58	37	Contrast adj. (EVF)
59 to 60		Fixed data-1
61	80	VCO adj. (LCD)
62	70	
63	80	V COM adj. (LCD)
64	2B	RGB AMP adj. (LCD)
65		Fixed data-1
66	B5	COM AMP adj. (LCD)
67	80	White balance adj. (LCD)
68	80	
69	3E	Contrast adj. (LCD)
6A to 71		Fixed data-1
72		Fixed data-2
73 to 75		Fixed data-1
76		Fixed data-2
77 to 79		Fixed data-1
7A		Fixed data-2
7B to 80		Fixed data-1
81		Fixed data-2
82		
83 to 84		Fixed data-1
85		Fixed data-2
86 to 87		Fixed data-1
88		Fixed data-2 (Modified data. Copy the data built in the same model.)
89		
8A		
8B		Fixed data-1
8C		Fixed data-2
8D to A9		Fixed data-1
AA		Fixed data-2
AB		Fixed data-1
AC		Fixed data-2
AD to BF		Fixed data-1
C0		Fixed data-2
C1 to CC		Fixed data-1
CD		Fixed data-2
CE to E2		Fixed data-1
E2		Fixed data-2
E3		
E4 to F3		Fixed data-1
F4	00	Emergency memory address
F5	00	
F6	00	
F7	00	
F8	00	
F9	00	
FA	00	
FB	00	
FC	00	
FD	00	
FE	00	
FF	00	

Table. 6-1-5.

1-2-3. INITIALIZATION OF E, F, 1E, 1F PAGE DATA

Note: When reading or writing the E, F page data, select page: 0, address: 10, and set data: 00.
When reading or writing the 1E or 1F page data, select page: 0, address: 10, and set data: 01, then select E or F page. The 1E or 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

1. Initializing the E, F, 1E, 1FA Page Data

Note1: If "Initializing the E, F, 1E, 1F Page Data" is performed, all data of the E page, F page, 1E page and 1F page will be initialized. (It is impossible to initialize a single page.)
Note2: If the E, F, 1E, 1F page data has been initialized, following adjustments need to be performed again.
1) Modification of E, F, 1E, 1F page data
2) 66MHz/54MHz origin osc. adjustment
3) Camera system adjustments
Note3: The power supply voltage must be 6.0 ± 0.1Vdc.
Note4: NTSC model: DSR-PDX10
PAL model: DSR-PDX10P

Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	1E
Adjusting Address	00 to C3
Adjusting page	1F
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	6	01		Set the following data, and press PAUSE button. 2D (NTSC), 2F (PAL)
4	6	03	01	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01".
6				Perform "Modification of E, F, 1E, 1F Page Data".

2. Modification of E, F, 1E, 1F Page Data

If the E, F, 1E, 1F page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) When changing the E, F page data, select page: 0, address: 10, and set data: 00.
3) When changing the 1E, 1F page data, select page: 0, address: 10, and set data: 01.
After completing the modification of 1E, 1F page data, reset the data of this address to "00".
4) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
Note: If copy the data built in the different model, the camcorder may not operate.
5) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
6) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of E, F, 1E, 1F Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.
4				Perform "66MHz/54MHz Origin Osc. Adjustment" of the camera system adjustment.

3. E Page Table

Note1: The data of page: 0, address: 10 must be “00”.
Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the E, F, 1E, 1F Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of E, F, 1E, 1F Page Data”).

Address	Remark
00 to 10	Fixed data-1
11	Fixed data-2 (Modified data. Copy the data built in the same model.)
12	
13	
14	
15 to 19	Fixed data-1
1A	Fixed data-2
1B to 1C	Fixed data-1
1D	Fixed data-2 (Modified data. Copy the data built in the same model.)
1E	
1F	
20	Fixed data-1
21	Fixed data-2 (Modified data. Copy the data built in the same model.)
22	
23	
24 to 2A	Fixed data-1
2B	Fixed data-2
2C	
2D to 33	Fixed data-1
34	Fixed data-2
35 to 38	Fixed data-1
39	Fixed data-2
3A	
3B to 3C	Fixed data-1
3D	Fixed data-2
3E	
3F to 57	Fixed data-1
58	Fixed data-2
59	
5A to 5D	Fixed data-1
5E	Fixed data-2
5F to 60	Fixed data-1
61	Fixed data-2 (Modified data. Copy the data built in the same model.)
62	
63	
64	
65	
66	
67 to 68	Fixed data-1
69	Fixed data-2
6A	Fixed data-1
6B	Fixed data-2
6C to 6F	Fixed data-1
6F	Fixed data-2
70	
71	Fixed data-1
72	Fixed data-2
73	Fixed data-1
74	Fixed data-2
75	Fixed data-1
76	Fixed data-2
77 to 78	Fixed data-1
79	Fixed data-2 (Modified data. Copy the data built in the same model.)
7A	
7B	
7C	
7D to 94	Fixed data-1
95	Fixed data-2
96	
97 to B2	Fixed data-1
B3	Fixed data-2
B4 to C6	Fixed data-1
C7	Fixed data-2 (Modified data. Copy the data built in the same model.)
C8	
C9	
CA to CC	Fixed data-1
CD	Fixed data-2
CE	
CF to D7	Fixed data-1
D8	Fixed data-2
D9 to E2	Fixed data-1
E3	Fixed data-2
E4	
E5 to FE	Fixed data-1
FF	Fixed data-2

Table. 6-1-6.

4. F Page Table

Note1: The data of page: 0, address: 10 must be "00".
Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 1E, 1F Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 1E, 1F Page Data").

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	40	40	66MHz/54MHz origin osc. adj.
11 to 12			Fixed data-1
13	80	80	HALL adj.
14	90	90	
15	18	18	
16	75	75	
17	4A	4A	
18	89	89	
19	80	80	MAX GAIN adj.
1A	80	80	LV standard data input
1B	7A	7A	
1C	80	80	F No. & ND light quantity
1D	80	80	standard data input
1E	80	80	
1F	80	80	
20	80	80	
21	80	80	
22	80	80	
23	80	80	
24 to 29			Fixed data-1
2A	14	14	AWB standard data input
2B	17	17	
2C	04	04	
2D	79	79	
2E to 37			Fixed data-1
38	00	01	Color reproduction adj.
39	EF	E8	
3A	1E	1B	
3B	2F	24	
3C			Fixed data-2
3D			
3E			
3F			
40	0A	0A	Auto white balance adj.
41	19	19	
42	07	07	
43	DD	DD	
44 to 5F			Fixed data-1
60	11	11	Flange back adj.
61	EB	EB	
62	53	53	
63	0A	0A	
64	1E	1E	
65	AC	AC	
66	00	00	
67	00	00	
68	00	00	
69	00	00	Flange back adj.
6A	86	86	
6B	19	19	
6C	19	19	
6D	38	38	
6E	00	00	
6F	00	00	
70	00	00	
71	80	80	MR adj.
72	80	80	
73	80	80	
74	80	80	
75	40	40	
76	C0	C0	
77	40	40	
78	C0	C0	
79	40	40	
7A	C0	C0	
7B	40	40	
7C	C0	C0	
7D	20	20	AF laser output adj.
7E	00	00	
7F	00	00	
80	00	00	
81	00	00	
82	00	00	
83	00	00	
84	80	80	PSD sensor gain adj.
85	80	80	
86	50	50	Angular velocity sensor sensitivity adj.
87	50	50	
88 to 8F			Fixed data-1
90	00	00	Mechanical shutter adj
91	00	00	
92	00	00	
93	00	00	
94	00	00	
95	00	00	
96	00	00	
97	00	00	
98	00	00	
99	00	00	
9A	00	00	
9B	00	00	
9C	00	00	
9D	00	00	
9E	00	00	
9F	00	00	
A0	00	00	
A1	00	00	
A2	00	00	
A3	00	00	
A4	00	00	
A5	00	00	

F page

Address	Initial value		Remark
	NTSC	PAL	
A6 to B3	Fixed data-1		
B4	Fixed data-2		
B5	Fixed data-1		
B6	Fixed data-2		
B7			
B8 to C4	Fixed data-1		
C5	Fixed data-2		
C6 to FF	Fixed data-1		

Table. 6-1-7.

5. 1E Page Table

Note1: When reading or writing the 1E page data, select page: 0, address: 10, and set data: 01, then select E page. The 1E page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 1E, 1F Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 1E, 1F Page Data").

Address	Remark
00	Fixed data-2
01 to 07	Fixed data-1
08	Fixed data-2
09	
0A to 14	Fixed data-1
15	Fixed data-2
16 to 1F	Fixed data-1
20	Fixed data-2
21	Fixed data-1
22	Fixed data-2 (Modified data. Copy the data built in the same model.)
23	
24	
25	
26	
27 to 2B	Fixed data-1
2C	Fixed data-2 (Modified data. Copy the data built in the same model.)
2D	
2E	
2F to 33	Fixed data-1
34	Fixed data-2
35 to 48	Fixed data-1
49	Fixed data-2
4A to 4B	Fixed data-1
4C	Fixed data-2
4D	
4E	Fixed data-1
4F	Fixed data-2
50 to 53	Fixed data-1
54	Fixed data-2
55	
56 to 5B	Fixed data-1
5C	Fixed data-2
5D	Fixed data-1
5E	Fixed data-2
5F	
60 to 63	Fixed data-1
64	Fixed data-2
65	
66 to 69	Fixed data-1
6A	Fixed data-2 (Modified data. Copy the data built in the same model.)
6B	
6C	
6D	
6E	
6F to 71	Fixed data-1

1E page

Address	Remark
72	Fixed data-2
73	
74	Fixed data-1
75	Fixed data-2
76	(Modified data. Copy the data
77	built in the same model.)
78	
79	
7A to B0	Fixed data-1
B1	Fixed data-2
B2	(Modified data. Copy the data
B3	built in the same model.)
B4	Fixed data-1
B5	Fixed data-2
B6 to C0	Fixed data-1
C1	Fixed data-2
C2	(Modified data. Copy the data
C3	built in the same model.)

Table. 6-1-8

6. 1F Page Table

Note1: When reading or writing the 1F page data, select page: 0, address: 10, and set data: 01, then select F page. The 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 1E, 1F Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 1E, 1F Page Data").

Address	Remark
00 to 0A	Fixed data-1
0B	Fixed data-2
0C	(Modified data. Copy the data
0D	built in the same model.)
0E	
0F	
10	
11	
12 to 16	Fixed data-1
17	Fixed data-2
18 to 61	Fixed data-1
62	Fixed data-2
63	
64 to 67	Fixed data-1
68	Fixed data-2
69 to 6C	Fixed data-1
6D	Fixed data-2
6E to AB	Fixed data-1
AC	Fixed data-2
AD	
AE to B8	Fixed data-1
B9	Fixed data-2
BA to BB	Fixed data-1
BC	Fixed data-2
BD	
BE to C5	Fixed data-1
C6	Fixed data-2
C7 to CF	Fixed data-1
D0	Fixed data-2
D1 to D9	Fixed data-1
DA	Fixed data-2
DB	
DC	Fixed data-1
DD	Fixed data-2
DE	
DF to E7	Fixed data-1
E8	Fixed data-2
E9	
EA to EC	Fixed data-1
ED	Fixed data-2
EE	
EF to F4	Fixed data-1
F5	Fixed data-2
F6 to FF	Fixed data-1

Table. 6-1-9.

1-2-4. INITIALIZATION OF B, 1B PAGE DATA

Note: When reading or writing the B page data, select page: 0, address: 10, and set data: 00.
When reading or writing the 1B page data, select page: 0, address: 10, and set data: 01, then select B page. The 1B page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

1. Initializing the B, 1B Page Data

Note1: If "Initializing the B, 1B Page Data" is performed, all data of the B page and 1B page will be initialized. (It is impossible to initialize a single page.)

Note2: The power supply voltage must be 6.0 ± 0.1Vdc.

Adjusting page	B
Adjusting Address	00 to FF
Adjusting page	1B
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	5	0E	00	Set the data, and press PAUSE button
4	5	01	F3	Set the data, and press PAUSE button.
5	5	00	01	Set the data, and press PAUSE button.
6	5	0E		Check that the data changes to "01".
7	5	0E	00	Set the data, and press PAUSE button
8	5	03	20	Set the data, and press PAUSE button.
9	5	01	FA	Set the data, and press PAUSE button.
10	5	00	01	Set the data, and press PAUSE button.
11	5	0E		Check that the data changes to "01".
12				Turn off the power and turn on again

2. Modification of B, 1B Page Data

When changing the B, 1B page data, change the data by the following procedure.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) When changing the B page data, select page: 0, address: 10, and set data: 00.
3) When changing the 1B page data, select page: 0, address: 10, and set data: 01.
   After completing the modification of 1B page data, reset the data of this address to "00".
4) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

Processing after Completing Modification of B, 1B Page data:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

3. B Page Table

Note1: The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, 1B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, 1B Page Data").

Address	Remark
00 to FF	Fixed data-1

Table. 6-1-10.

4. 1B Page Table

Note1: When reading or writing the 1B page data, select page: 0, address: 10, and set data: 01, then select B page. The 1B page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, 1B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, 1B Page Data").

Address	Remark
00 to FF	Fixed data-1

Table. 6-1-11.

1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments (except for "66MHz/54MHz Origin Oscillation Adjustment"), check that the specified values of "VIDEO SYSTEM ADJUSTMENTS" are satisfied.
And check that the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Note: NTSC model: DSR-PDX10
PAL model: DSR-PDX10P

1. 66MHz/54MHz Origin Oscillation Adjustment (VC-318 board)

Set the frequency of the clock for synchronization.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

Subject	Not required
Measurement Point	Pin ⑥ of IC1202 (R1209) or Pin ㉓ of IC3404 on DB-016 board
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	10
Specified Value	Pin ⑥ of IC1202 : f=33000000 ± 165Hz (NTSC) f=27000000 ± 135Hz (PAL)

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	10		Change the data and set the frequency (f) to the specified value.
3	F	10		Press PAUSE button.
4	0	01	00	Set the data.

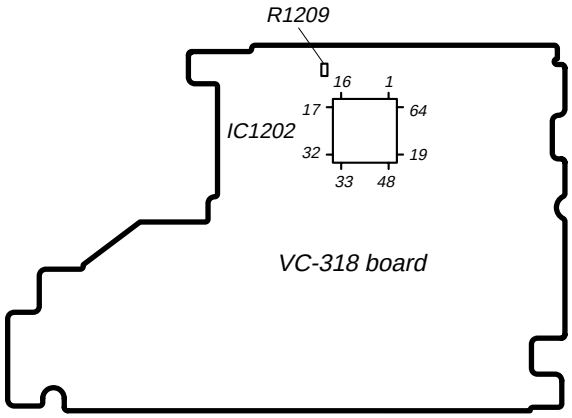


Fig. 6-1-9.

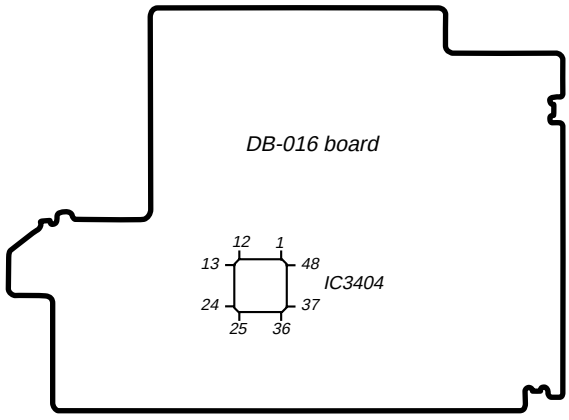


Fig. 6-1-10.

2. HALL Adjustment RadarW

For detecting the position of the lens iris and ND filter, adjust AMP gain and offset.

Subject	Not required
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	13 to 18
Specified Value 1	14 to 18
Specified Value 2	84 to 88
Specified Value 3	84 to 88
Specified Value 4	14 to 18

Note1: Displayed data of page 1 of the adjustment remote commander.
1 : XX : XX
IRIS display data
ND display data

Note2: The data of page: 0, address: 10 must be "00".

Note3: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

POWER ..... CAMERA

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	94	16	Set the data.
3	6	95	86	Set the data.
4	6	01	6D	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note3)
6	6	01	00	Set the data, and press PAUSE button.

Note4: The adjustment data will be automatically input to page: F, address: 13 to 18.

Checking method:

Order	Page	Address	Data	Procedure
1	0	03	03	Set the data.
2	6	01	01	Set the data, and press PAUSE button.
3	1			Check that the IRIS display data (Note1) satisfies the specified value 1.
4	6	01	03	Set the data, and press PAUSE button.
5	1			Check that the IRIS display data (Note1) satisfies the specified value.2.
6	6	01	69	Set the data, and press PAUSE button.
7	1			Check that the ND display data (Note1) satisfies the specified value 3.
8	6	01	6B	Set the data, and press PAUSE button.
9	1			Check that the ND display data (Note1) satisfies the specified value.4.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	94	00	Set the data.
3	6	95	00	Set the data.
4	0	03	00	Set the data.
5	0	01	00	Set the data.

3. MR Adjustment RadarW

The MR (Magnet resistor) adjustment of the inner focus lens is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Subject	Not required
Measurement Point	Adjustment remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	70 to 7C
Specified Value1	40 to C0
Specified Value2	03 to 78
Specified Value3	88 to F8

Note1: Make the lens horizontal and perform this adjustment.
Note2: Perform this adjustment before "Flange Back Adjustment".
Note3: The data of page: 0, address: 10 must be "00".
Note4: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	BD	Set the data, and press PAUSE button.
3	6	02		Check that the data changes to "01".(Note5)
4	F	71		Check that the data satisfies the specified value 1.
5	F	72		Check that the data satisfies the specified value 1.
6	F	73		Check that the data satisfies the specified value 1.
7	F	74		Check that the data satisfies the specified value 1.
8	F	75		Check that the data satisfies the specified value 2.
9	F	76		Check that the data satisfies the specified value 3.
10	F	77		Check that the data satisfies the specified value 2.
11	F	78		Check that the data satisfies the specified value 3.
12	F	79		Check that the data satisfies the specified value 2.
13	F	7A		Check that the data satisfies the specified value 3.
14	F	7B		Check that the data satisfies the specified value 2.
15	F	7C		Check that the data satisfies the specified value 3.

Note5: The adjustment data will be automatically input to page: F, address: 70 to 7C.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.
3				Turn off the power and turn on again

4. Flange Back Adjustment (Using Minipattern Box)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Subject	Siemens star chart with ND filter for the minipattern box (Note1)
Measurement Point	Adjustment remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	60 to 70
Specified Value	Data of page: F, address: 6F is “00” to “0E”.

Note1: Dark Siemens star chart.
Note2: This adjustment should be carried out upon completion of the following adjustments.
“HALL Adjustment”, “MR Adjustment”
Note3: Make the lens horizontal and perform this adjustment.
Note4: The data of page: 0, address: 10 must be “00”.
Note5: Check that the data of page: 6, address: 02 is “00”. If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:
POWER ..... CAMERA

Preparations:
1) The minipattern box is installed as shown in the following figure.
Note: The attachment lenses are not used.
2) Install the minipattern box so that the distance between it and the front of the lens of the camcorder is less than 3cm. (Remove the lens hood.)
3) Make the height of the minipattern box and the camcorder equal.
4) Check that the output voltage of the regulated power supply is the specified voltage.
5) Check that at both the zoom lens TELE end and WIDE end, the center of the Siemens star chart and center of the exposure screen coincide.

Specified voltage: The specified voltage varies according to the minipattern box, so adjust the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

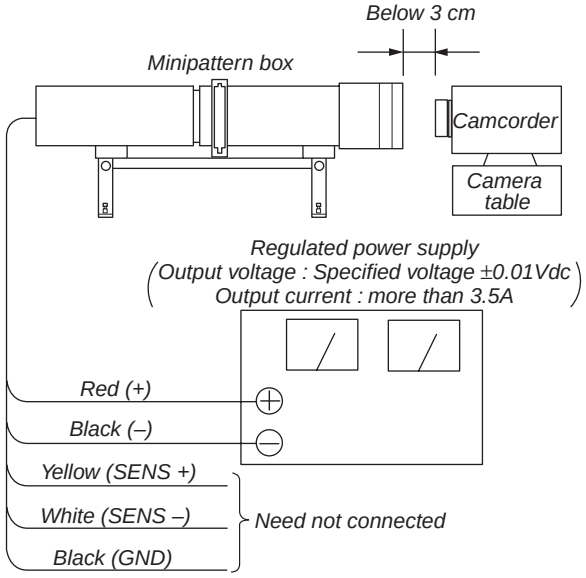


Fig. 6-1-11.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button. (Note3)
3	6	01	27	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to “01”. (Note6)
5	F	6F		Check the data is “00” to “0E”.

Note6: The adjustment data will be automatically input to page: F, address: 60 to 70.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.
3				Turn off the power and turn on again.
4				Perform “Flange Back Check”.

5. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500m Away)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

5-1. Flange Back Adjustment (1) RadarW

Subject	Flange back adjustment chart (2.0 m from the front of the lens) (Luminance: 350 ± 50 lux)
Measurement Point	Adjustment remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	60 to 70
Specified Value	Data of page: F, address: 6F is “00” to “0E”.

Note1: This adjustment should be carried out upon completion of the following adjustments.
“HALL Adjustment”, “MR Adjustment”
Note2: Make the lens horizontal and perform this adjustment.
Note3: The data of page: 0, address: 10 must be “00”.
Note4: Check that the data of page: 6, address: 02 is “00”. If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA

Preparations:

1) Check that at both the zoom lens TELE end and WIDE end, the center of the chart for the flange back adjustment and center of the exposure screen coincide.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button. (Note2)
3	6	01	15	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to “01”. (Note5)
5	F	6F		Check the data is “00” to “0E”.

Note5: The adjustment data will be automatically input to page: F, address: 60 to 70.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.
3				Turn off the power and turn on again
4				Perform “Flange Back Adjustment (2)”

5-2. Flange Back Adjustment (2) RadarW

Perform this adjustment after performing “Flange Back Adjustment (1)”.

Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	60 to 70

Note1: Make the lens horizontal and perform this adjustment.
Note2: The data of page: 0, address: 10 must be “00”.
Note3: Check that the data of page: 6, address: 02 is “00”. If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA

Preparations:

1) Set the zoom lens to the TELE end and expose a subject that is more than 500m away (subject with clear contrast such as building, etc.). (Nearby subjects less than 500m away should not be in the screen.)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button. (Note2)
3				Place a ND filter on the lens so that the optimum image is obtain.
4	6	01	29	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to “01”. (Note4)

Note4: The adjustment data will be automatically input to page: F, address: 60 to 70.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.
3				Turn off the power and turn on again
4				Perform “Flange Back Check”

6. Flange Back Check

Subject	Siemens star (2.0m from the front of the lens) (Luminance : 350 ± 50 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Note1: The data of page: 0, address: 10 must be "00".

Switch setting:
POWER ..... CAMERA

Note2: When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on the page 1 of the adjustment remote commander.
1) Select page: 0, address: 03, and set data: 0F.
2) Page 1 shows the state of the focus.
1 : 00 : XX
Odd: Focused
Even: Unfocused

Checking method:
1) Select page: 6, address: 40, and set data: 01.
2) Select page: 6, address: 41, and set data: 01.
3) Place the Siemens star 2.0m from the front of the lens.
4) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
5) Shoot the Siemens star with the zoom TELE end.
6) Turn on the auto focus.
7) Check that the lens is focused (Note2).
8) Select page: 6, address: 21, and set data: 10.
9) Shoot the Siemens star with the zoom WIDE end.
10) Observe the TV monitor and check that the lens is focused.

Processing after Completing Adjustments:
1) Select page: 6, address: 21, and set data: 00.
2) Select page: 6, address: 40, and set data: 00.
3) Select page: 6, address: 41, and set data: 00.
4) Select page: 0, address: 03, and set data: 00.

7. Picture Frame Setting

Subject	Color bar chart (Color reproduction adjustment frame) (1.0m from the front of the lens)
Measurement Point	Video terminal of AUDIO/VIDEO jack
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Note1: The following adjustments should be carried out upon completion of "Flange Back Adjustment".
Note2: The data of page: 0, address: 10 must be "00".

Switch setting:
1) POWER ..... CAMERA
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF
4) FOCUS ..... MANUAL

Setting method:
1) Adjust the zoom and the camera direction, and set to the specified position.
2) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using "Color reproduction adjustment frame".

Check on the oscilloscope

1. Horizontal period

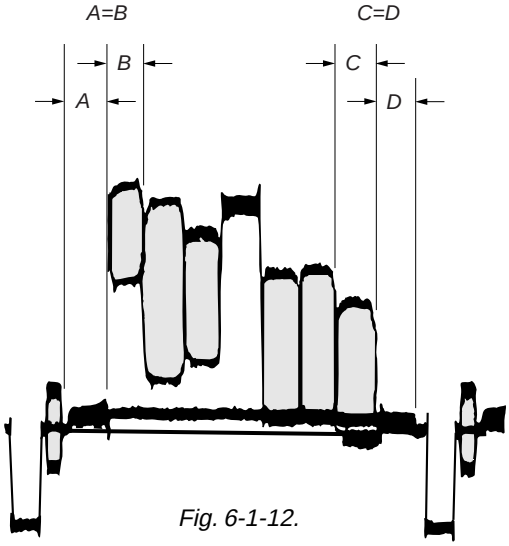


Fig. 6-1-12.

2. Vertical period

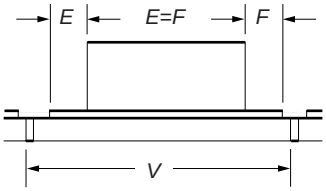


Fig. 6-1-13.

Check on the monitor TV (Underscanned mode)

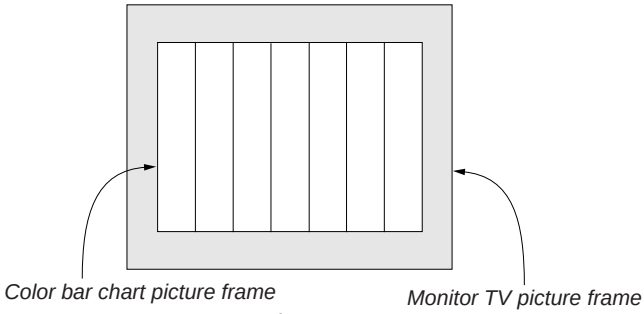


Fig. 6-1-14.

8. Auto White Balance Standard Data Input RadarW

Adjust the white balance reference at 3200K.

Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	2A to 2D

Note1: After the power is turned on, this adjustment can be done only once.
Note2: The data of page: 0, address: 10 must be “00”.
Note3: Check that the data of page: 6, address: 02 is “00”. If not, turn off the power and turn on again.

Switch setting:

1) POWER ..... CAMERA
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	11	Set the data, and press PAUSE button.
3	6	01	0B	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to “01”. (Note4)

Note4: The adjustment data will be automatically input to page: F, address: 2A to 2D.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.

9. MAX GAIN Adjustment RadarW

Setting the minimum illumination.
If it is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	19

Note1: This adjustment should be carried out upon completion of “Auto White Balance Standard Data Input”.
Note2: The data of page: 0, address: 10 must be “00”.
Note3: Check that the data of page: 6, address: 02 is “00”. If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.
Note4: NTSC model: DSR-PDX10
PAL model: DSR-PDX10P

Switch setting:

1) POWER ..... CAMERA
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	96		Set the following data. 32 (NTSC), 19 (PAL)
3	6	97	00	Set the data.
4	6	01	6F	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to “01”. (Note5)

Note5: The adjustment data will be automatically input to page: F, address: 19.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	96	00	Set the data.
3	6	97	00	Set the data.
4	0	01	00	Set the data.

10. F No. & ND Light Quantity Standard Data Input RadarW

Compensate the unevenness of the light quantity of the iris meter and ND filter.

Subject	Clear chart (All white) (Note1) (Approx. 33cm from the front of the lens)
Adjustment Page	F
Adjustment Address	1C to 23

Note1: Shoot the clear chart with the zoom WIDE end. And adjust the camera direction so that the whole screen is white.
Note2: Perform "Mechanical Shutter Adjustment" after this adjustment.
Note3: The data of page: 0, address: 10 must be "00".
Note4: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA
2) ZOOM ..... WIDE end
3) DIGITAL ZOOM (Menu display) ..... OFF
4) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	30	01	Set the data.
3	6	01	BB	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note5)

Note5: The adjustment data will be automatically input to page: F, address: 1C to 23.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	30	00	Set the data.
3	0	01	00	Set the data.

11. LV Standard Data Input RadarW

Adjust the normal coefficient of the light value.

Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Display data of page 1 (Note4)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	1A, 1B
Specified Value	0FE0 to 1020

Note1: This adjustment should be carried out upon completion of "Auto White Balance Standard Data Input".
Note2: The data of page: 0, address: 10 must be "00".
Note3: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.
Note4: Displayed data of page 1 of the adjustment remote commander.
1 : XX : XX
└── Display data

Switch setting:

1) POWER ..... CAMERA
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	30	01	Set the data.
3	6	01	0D	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note5)
5	6	04	1E	Set the data.
6	1			Check that the display data (Note4) satisfies the specified value. (Note6)

Note5: The adjustment data will be automatically input to page: F, address: 1A, 1B.
Note6: If it isn't satisfied, repeat the adjustment again.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	04	00	Set the data.
3	6	30	00	Set the data.
4	0	01	00	Set the data.

12. Auto White Balance Adjustment RadarW

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction
Adjustment Page	F
Adjustment Address	40 to 43

Note1: After the power is turned on, this adjustment can be done only once.
Note2: The data of page: 0, address: 10 must be “00”.
Note3: Check that the data of page: 6, address: 02 is “00”. If not, turn off the power and turn on again.

Switch setting:

1) POWER ..... CAMERA
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter for color temperature correction on the lens.
2	0	01	01	Set the data.
3	6	01	83	Set the data, and press PAUSE button.
4	6	01	81	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to “01”. (Note4)

Note4: The adjustment data will be automatically input to page: F, address: 40 to 43.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.
3				Remove the C14 filter.

13. Color Reproduction Adjustment RadarW

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Subject	Color bar chart (Color reproduction adjustment frame)
Measurement Point	Video terminal of AUDIO/VIDEO jack (75Ω terminated.)
Measuring Instrument	Vectorscope, oscilloscope
Adjustment Page	F
Adjustment Address	38 to 3B
Specified Value	All color luminance points should settle within each color reproduction frame.

Note1: After the power is turned on, this adjustment can be done only once.
Note2: The data of page: 0, address: 10 must be "00".
Note3: Check that the data of page: 6, address: 02 is "00". If not, turn off the power and turn on again.
Note4: NTSC model: DSR-PDX10
PAL model: DSR-PDX10P

Switch setting:

1) POWER ..... CAMERA
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that the picture frame is set to the specified position. (Refer to "7. Picture Frame Setting".)
2	0	01	01	Set the data.
3	6	01	3D	Set the data, and press PAUSE button.
4	6	9D		Change the data and set the Y signal level (A) to 90IRE. (Fig. 6-1-15) Note: 90IRE = 642.6mV (NTSC) 90IRE = 630mV (PAL)
5	6	01	61	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01". (Note5)
7				Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame. (Fig. 6-1-16)
8				Check that all color luminance points settle within each color reproduction frame. (Fig. 6-1-16)

Note5: The adjustment data will be automatically input to page: F, address: 38 to 3B.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	9D	00	Set the data.
3	0	01	00	Set the data.

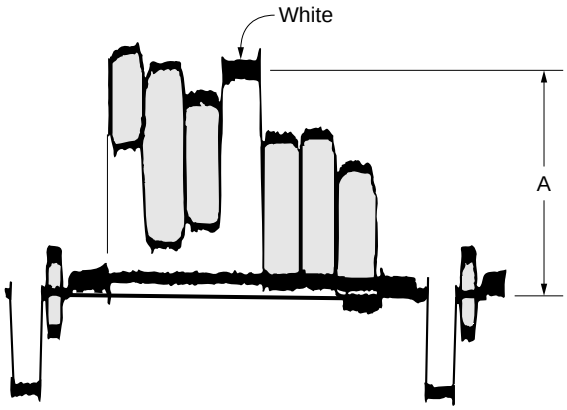
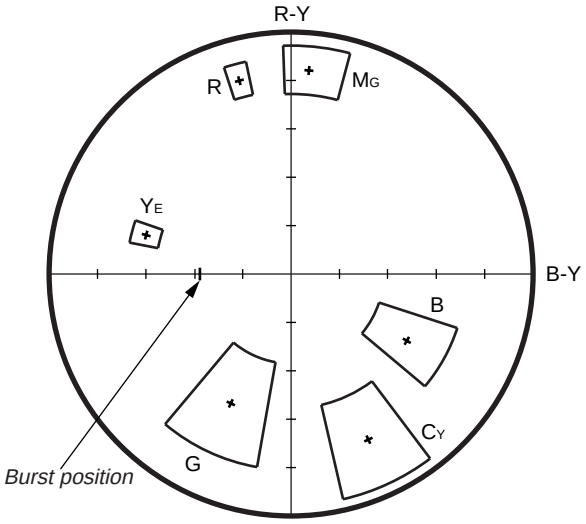


Fig. 6-1-15.

NTSC model



PAL model

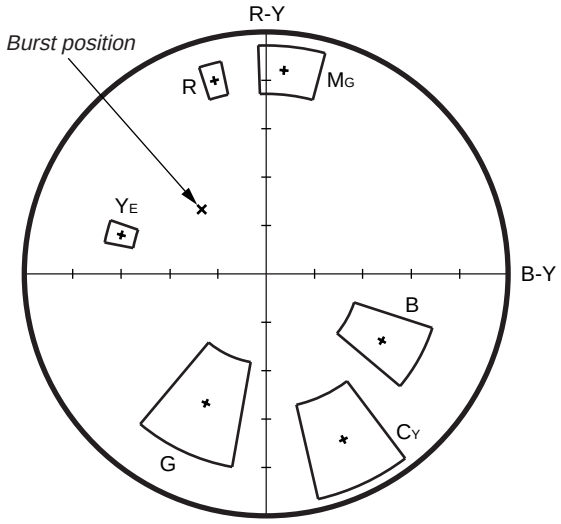


Fig. 6-1-16.

14. White Balance Check RadarW

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.4 and 0.1
Measurement Point	Video terminal of AUDIO/VIDEO jack (75Ω terminated.)
Measuring Instrument	Vectorscope
Specified Value	Fig. 6-1-17. A to B

Note1: The data of page: 0, address: 10 must be "00".

Switch setting:

1) POWER ..... CAMERA
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF

Checking method:

Order	Page	Address	Data	Procedure
				Indoor white balance check
1				Check that the lens is not covered with either filter.
2	6	01	0F	Set the data, and press PAUSE button.
3				Check that the center of the white luminance point is within the circle shown Fig. 6-1-17. A.
4	6	01	00	Set the data, and press PAUSE button.
				Outdoor white balance check
5				Place the C14 filter on the lens.
6	6	01	3F	Set the data, and press PAUSE button.
7				Check that the center of the white luminance point is within the circle shown Fig. 6-1-17. B.
8				Remove the C14 filter.
9	6	01	00	Set the data, and press PAUSE button.
				LV data check
10				Place the ND filter 1.5 (1.0+0.1+0.4) on the lens.
11	0	03	06	Set the data.
12	1			Check that the display data (Note2) satisfies the specified value. Specified value: 8000 to 8BC0

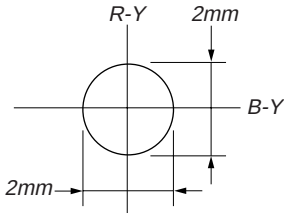


Fig. 6-1-17 (A).

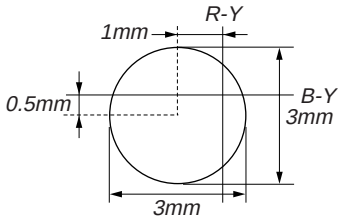


Fig. 6-1-17 (B).

Note2: Displayed data of the adjustment remote commander.

1 : XX : XX
└── Display data

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	03	00	Set the data.
3				Remove the ND filter 1.5.

15. PSD Sensor Gain Adjustment

Adjust the gain of the PSD sensor for the steady shot operation. Perform this adjustment only when replacing the lens block. When the microprocessor, circuit etc. is damaged, don't perform this adjustment but check the operations only.

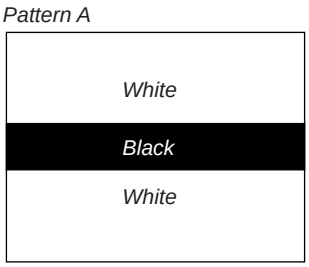
Note: NTSC model: DSR-PDX10
PAL model: DSR-PDX10P

1) POWER ..... CAMERA
2) ZOOM ..... TELE end
3) DIGITAL ZOOM (Menu display) ..... OFF
4) STEADY SHOT (Menu display) ..... OFF

15-1. PSD Sensor Gain Adjustment (1)

Subject	Pattern A (1.5m from the front of the lens)
Measurement Point	Video terminal of AUDIO/VIDEO jack
Measuring Instrument	Oscilloscope (V period)
Adjustment Page	F
Adjustment Address	84

Note: The data of page: 0, address: 10 must be "00".



A4 size (297mm × 210mm)

Fig. 6-1-18.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 84, set data: 80, and press the pause button.
3) Select page: 6, address: 01, set data: 8F, and press the pause button.
4) Shoot the pattern A with the zoom TELE end.
5) Adjust the focus.
6) Measure the vertical position SV1 (msec) of the falling edge of the waveform. (Oscilloscope is V period)
7) Select page: 6, address: 01, set data: 91, and press the pause button.
8) Measure the vertical position SV2 (msec) of the falling edge of the waveform. (Oscilloscope is V period)
9) Obtain D_{84}' using the following equation (decimal calculation).
   NTSC model:
   $D_{84}' = 128 \times (2.751/(SV2-SV1))$
   $= 352.1/(SV2-SV1)$
   PAL model:
   $D_{84}' = 128 \times (3.298/(SV2-SV1))$
   $= 422.1/(SV2-SV1)$
10) Convert D_{84}' to hexadecimal notation, and obtain D_{84}. (Round off to one decimal place)
    (Refer to Table 6-4-1. "Hexadecimal-Decimal conversion table" of "6-4. Service Mode".)
11) Select page: F, address: 84, set data: D_{84}, and press the pause button.

Processing after Completing Adjustments

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, and set data: 00.
3) Perform "PSD Sensor Gain Adjustment (2)".

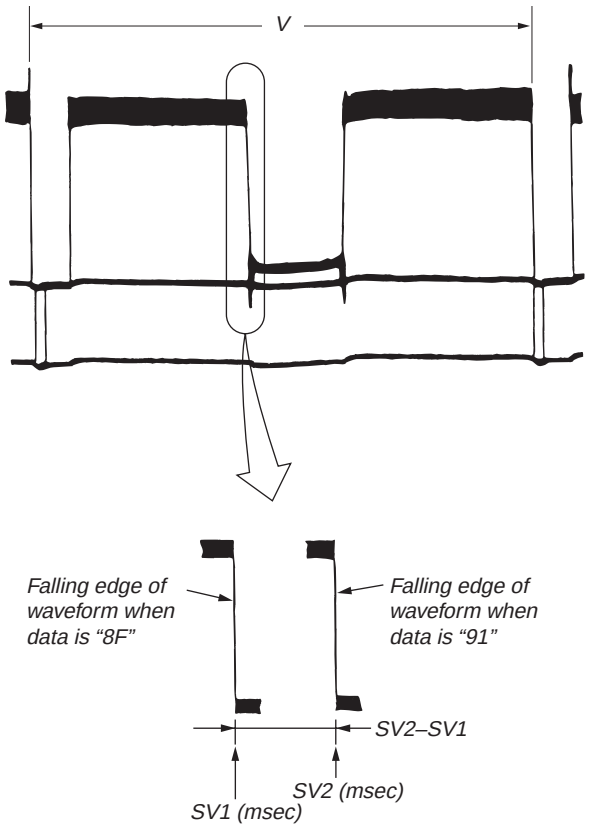


Fig. 6-1-19.

15-2. PSD Sensor Gain Adjustment (2)

Subject	Pattern B (1.5m from the front of the lens)
Measurement Point	Video terminal of AUDIO/VIDEO jack
Measuring Instrument	Oscilloscope (H period)
Adjustment Page	F
Adjustment Address	85

Note: The data of page: 0, address: 10 must be “00”.

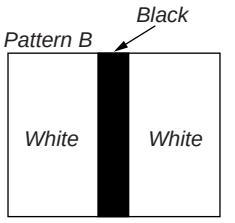


Fig. 6-1-20.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 85, set data: 80, and press the pause button of the adjustment remote commander.
3) Select page: 6, address: 01, set data: 8F, and press the pause button of the adjustment remote commander.
4) Shoot the pattern B with the zoom TELE end.
5) Adjust the focus.
6) Measure the horizontal position SH1 (μ sec) of the falling edge of the waveform. (Oscilloscope is H period)
7) Select page: 6, address: 01, set data: 91, and press the pause button.
8) Measure the horizontal position SH2 (μ sec) of the falling edge of the waveform. (Oscilloscope is H period)
9) Obtain D_{85}’ using the following equation (decimal calculation).
   NTSC model:
   $D_{85}' = 128 \times (7.821/(SH1\text{-}SH2))$
   $= 1001/(SH1\text{-}SH2)$
   PAL model:
   $D_{85}' = 128 \times (7.876/(SH1\text{-}SH2))$
   $= 1008/(SH1\text{-}SH2)$
10) Convert D_{85}’ to hexadecimal notation, and obtain D_{85}. (Round off to one decimal place)
    (Refer to Table 6-4-1. “Hexadecimal-Decimal conversion table” of “6-4. Service Mode”.)
11) Select page: F, address: 85, set data: D_{85}, and press the pause button.

Processing after Completing Adjustments

1) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, and set data: 00.
3) Perform “Angular Velocity Sensor Sensitivity Adjustment”.

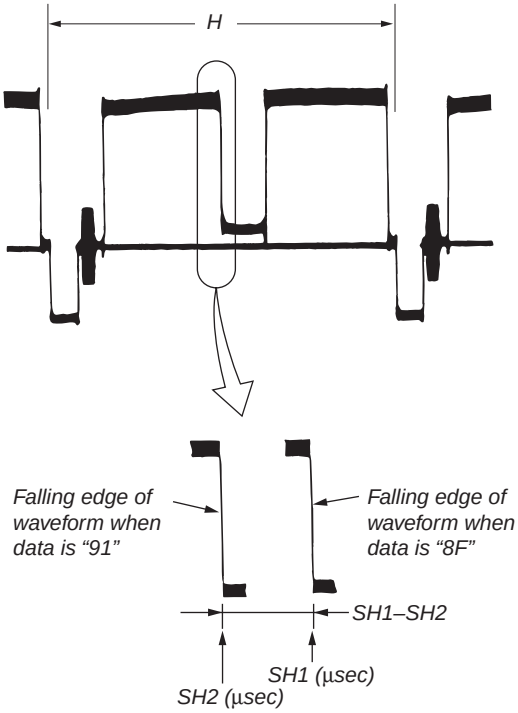


Fig. 6-1-21.

16. Angular Velocity Sensor Sensitivity Adjustment

- Perform this adjustment only when replacing the angular velocity sensor. When the microprocessor, circuit etc. is damaged, don't perform this adjustment but check the operations only.
- Note down the sensitivity displayed on the angular velocity sensor of the repair parts. At this time, note down also to which board it was attached to.
  Be sure to check because if attached incorrectly, the screen will vibrate up and down or left and right during the steady shot operations.

Precautions on the Parts Replacement

There are two types of repair parts.

Type A: ENC03MA
Type B: ENC03MB

Replace the broken sensor with a same type sensor. If replace with other type parts, the image will vibrate up and down or left and right during steady shot operations. After replacing, re-adjust according to the adjusting method after replacement.

Precautions on Angular Velocity Sensor

The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of the oscillator will be disrupted and operations will not be performed properly.

Switch setting:

1) POWER ..... CAMERA
2) ZOOM ..... TELE end
3) STEADY SHOT (Menu display) ..... OFF

Adjustment Page	F
Adjustment Address	86, 87

Note: The sensor sensitivity of SE4001 and SE4002 of the SE-132 board is written only on the repair parts.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Read the sensor sensitivity written on SE4001 (PITCH sensor) of the SE-132 board, and name this as S_{4001}.
3) Read the sensor sensitivity written on SE4002 (YAW sensor) of the SE-132 board, and name this as S_{4002}.
4) Read the data of page: F, address: 84, and name this data as D_{84}.
5) Read the data of page: F, address: 85, and name this data as D_{85}.
6) Convert D_{84} and D_{85} into decimal digits, to obtain D_{84}' and D_{85}' (Refer to Table 6-4-1. "Hexadecimal-Decimal conversion table" of "6-4. Service Mode".)
7) Calculate D_{86}' and D_{87}' using the following equation (decimal calculation).
   $D_{86}' = (D_{84}'/128) \times (0.60 / S_{4001}) \times 88$
   $= D_{84}' \times 0.4125 / S_{4001}$
   $D_{87}' = (D_{85}' / 128) \times (0.60 / S_{4002}) \times 88$
   $= D_{85}' \times 0.4125 / S_{4002}$
8) Convert D_{86}'and D_{87}' into hexadecimal digits, to obtain D_{86} and D_{87}. (Round off decimal points.)
   (Refer to Table 6-4-1. "Hexadecimal-Decimal conversion table" of "6-4. Service Mode".)
9) Select page: F, address: 86, set data: D_{86}, and press the PAUSE button.
10) Select page: F, address: 87, set data: D_{87}, and press the PAUSE button.

Processing after Completing Adjustments

1) Select page: 0, address: 01, and set data: 00.
2) Check that the steady shot operations have been performed normally.

17. Mechanical Shutter Adjustment RadarW

Adjust the close time and loss time every F number of the mechanical shutter and high-speed shutter correction value to correct the luminous exposure.

Subject	Clear chart (All white) (Note1) (Approx. 33cm from the front of the lens)
Measurement Point	Adjustment remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	90 to A5
Specified Value	Data of page: 6, address: A8 is "00".

Note1: Shoot the clear chart with the zoom WIDE end. And adjust the camera direction so that the whole screen is white.

Note2: This adjustment should be carried out upon completion of the following adjustments.
"HALL Adjustment", "Flange Back Adjustment", "F No. & ND Light Quantity Standard Data Input"

Note3: The data of page: 0, address: 10 must be "00".

Switch setting:

1) POWER ..... CAMERA
2) ZOOM ..... WIDE end
3) DIGITAL ZOOM (Menu display) ..... OFF
4) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	30	01	Set the data.
3	6	9C	01	Set the data.
4				Wait for 1sec.
5	6	01	AD	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01". (Note4)
7	6	A8		Check that the data is "00".

Note4: The adjustment data will be automatically input to page: F, address: 90 to A5.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	30	00	Set the data.
3	6	9C	00	Set the data.
4	0	01	00	Set the data.

18. AF Laser Output Adjustment RadarW

Set the AF laser output to an appropriate level.

Subject	Paper which reflection rate is 18% (50cm from the front of the lens)(Note1)
Measurement Point	Adjustment remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	7D to 83
Specified Value	Data of address: 70 is “10” to “FF”. Data of address: 7E is “00” to “F0”. Data of address: 7F is “0A” to “FF”. Data of address: 82 is “33” to “4D”.

Note1: Use the background paper (J-250-130-A) and the flash adjustment box. (Refer to “1-1-3.Precaution”.)
Note2: Any light other than the laser light should not light up the subject
Note3: Remove the lens hood.
Note4: This adjustment should be carried out upon completion of the following adjustments.
“HALL Adjustment”, “Flange Back Adjustment”, “Auto White Balance Standard Data Input”, “F No. & ND Light Quantity Standard Data Input”.
Note5: The data of page: 0, address: 10 must be “00”.
Note6: Check that the data of page: 6, address: 02 is “00”. If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA
2) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	30	02	Set the data.
3	6	01	AF	Set the data, and press PAUSE button.
4				Check the laser light is output.
5	6	02		Check that the data is “01”. (Note7)
6	F	7D		Check that the data is “10” to “FF”.
7	F	7E		Check that the data is “00” to “F0”.
8	F	7F		Check that the data is “0A” to “FF”.
9	F	82		Check that the data is “33” to “4D”.

Note7: The adjustment data will be automatically input to page: F, address: 7D to 83.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	30	00	Set the data.
3	0	01	00	Set the data.

19. AF Laser Axis Check RadarW

Subject	Dark homogeneous subject (1m from the front of the lens)(Note1)
Measurement Point	Monitor TV screen
Measuring Instrument	
Specified Value	The total length of the hologram lines, which are seen inside the inspection frame, should be more than twice the length of one hologram line. The hologram lines can be seen at every outside of the inspection frame.

Note1: Background paper (J-2501-130-A) etc.. Perform this adjustment in the dark place.

Note2: This adjustment should be carried out upon completion of "Auto White Balance Standard Data Input".

Switch setting:

1) POWER ..... MEMORY
2) FOCUS ..... MANUAL
3) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	01	Set the data.
3	E	47	0A	Set the data.
4	0	10	00	Set the data.
5	6	23	04	Set the data.
6	6	5B	B6	Set the data.
7	6	5C	A5	Set the data.
8	6	90	A9	Set the data.
9	6	91	02	Set the data.
10	6	92	67	Set the data.
11	6	93	46	Set the data.
12	6	01	79	Set the data, and press PAUSE button.
13	6	01	78	Set the data, and press PAUSE button.
14				Check that the total length of the hologram lines (the whole or a part), that are seen inside the inspection frame, is more than twice the length of one hologram line. (Note3)
15				Check that the hologram lines can be seen at every outside of the inspection frame (the top, the bottom, the left and the right). (Note3)

Note3: When the specified value is not satisfied, rotate the screw as shown in Fig. 6-1-23 and adjust the AF laser axis. (Horizontal direction only)

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	0	10	01	Set the data.
2	E	47	00	Set the data.
3	0	10	00	Set the data.
4	6	01	00	Set the data, and press PAUSE button.
5	6	23	00	Set the data.
6	6	5B	00	Set the data.
7	6	5C	00	Set the data.
8	6	90	00	Set the data.
9	6	91	00	Set the data.
10	6	92	00	Set the data.
11	6	93	00	Set the data.
12	0	01	00	Set the data.

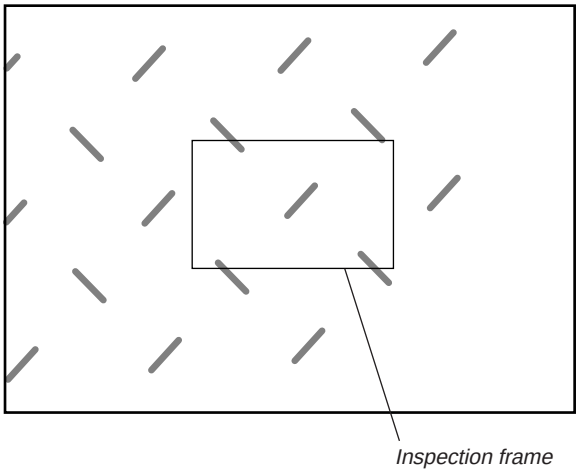


Fig. 6-1-22.

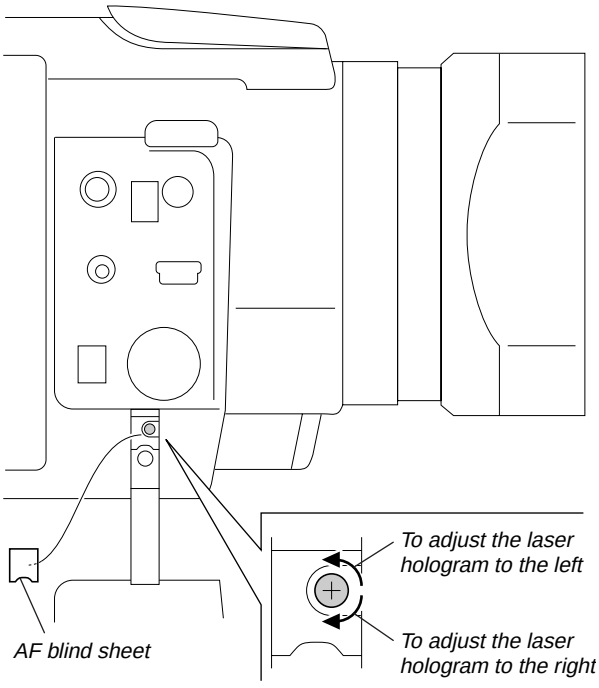


Fig. 6-1-23.

1-4. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.
Note2: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.
Note3: As the PANEL CLOSE switch is attached to the cabinet (R), this cabinet must be attached when performing adjustments.
If you perform the adjustments with cabinet (R) removed, set the following data.
1) Select page: 3, address: C4, and set data: 67.
2) Select page: 3, address: C5, and set data: 01.
Reset the data after completing adjustment.
1) Select page: 3, address: C4, and set data: 00.
2) Select page: 3, address: C5, and set data: 00.
Note4: NTSC model: DSR-PDX10
PAL model: DSR-PDX10P

[Adjusting connector]
Most of the measuring points for adjusting the viewfinder system are concentrated in CN1008 of VC-318 board.
Connect the Measuring Instruments via the CPC-8 jig (J-6082-388-A).
The following table shows the Pin No. and signal name of CN1008.

Pin No.	Signal Name	Pin No.	Signal Name
1	EVF VB	2	D 2.8V
3	EVF LED DA	4	EVF VG
5	EVF VCO	6	EVF VR
7	MD2	8	XCS MC FLASH
9	XINIT	10	XCS ST IMAGE IC
11	DRUM ON	12	FRRP
13	REC CRRT1	14	REC CRRT0
15	REG GND	16	HI XRESET
17	SWP	18	RF IN
19	GND	20	RF MON

Table. 6-1-12.

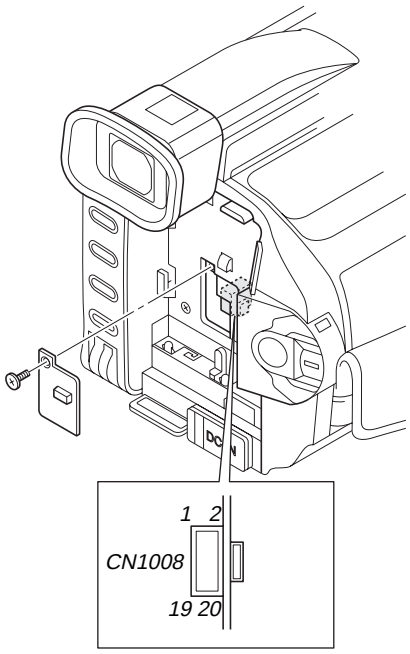


Fig. 6-1-24.

1. VCO Adjustment (DB-016 board)

Set the VCO free-run frequency. If deviated, the EVF screen will be blurred.

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑤ of CN1008 of VC-318 board (EVF VCO)
Measuring Instrument	Frequency counter
Adjustment Page	C
Adjustment Address	51, 52
Specified Value	f = 15734 ± 30Hz (NTSC) f = 15625 ± 30Hz (PAL)

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	51		Change the data and set the VCO frequency (f) to the specified value.
3	C	51		Press PAUSE button.
4	C	51		Read the data, and this data is named D_{51}.
5				Convert D_{51} to decimal notation, and obtain D_{51}'. (Note2)
6				Calculate D_{52}' using following equations (Decimal calculation) [NTSC model] When $D_{51}' \leqq 231$ $D_{52}' = D_{51}' + 24$ When $D_{51}' > 231$ $D_{52}' = 255$ [PAL model] When $D_{51}' \geqq 24$ $D_{52}' = D_{51}' - 24$ When $D_{51}' < 24$ $D_{52}' = 0$
7				Convert D_{52}' to a hexadecimal number, and obtain D_{52}. (Note2)
8	C	52	D_{52}	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note2: Refer to "Table 6-4-1. Hexadecimal-decimal Conversion Table".

2. RGB AMP Adjustment (DB-016 board)

Set the D range of the RGB driver used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ④ of CN1008 of VC-318 board (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	54
Specified Value	A = 7.00 ± 0.05V

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	54		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3	C	54		Press PAUSE button.
4	0	01	00	Set the data.

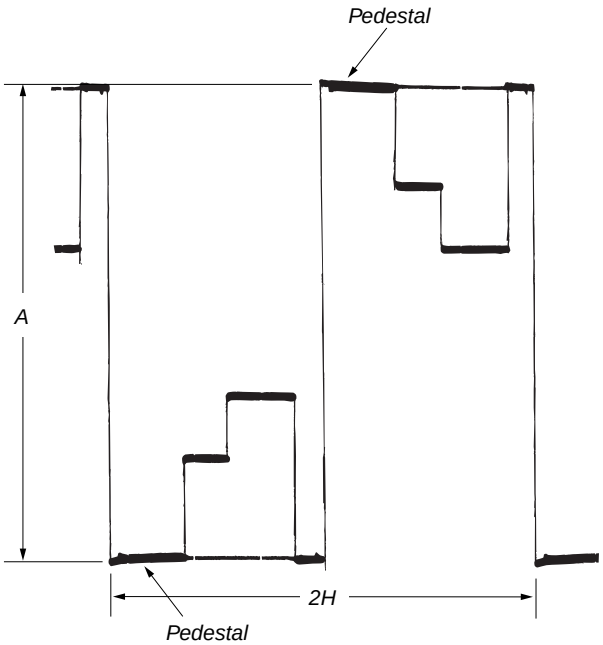


Fig. 6-1-25.

3. Contrast Adjustment (DB-016 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ④ of CN1008 of VC-318 board (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	58
Specified Value	A = 2.40 ± 0.05V

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	58		Change the data and set the voltage (A) between the 3 steps peak and 0 IRE (pedestal) to the specified value. (The data should be “00” to “7F”.)
3	C	58		Press PAUSE button.
4	0	01	00	Set the data.

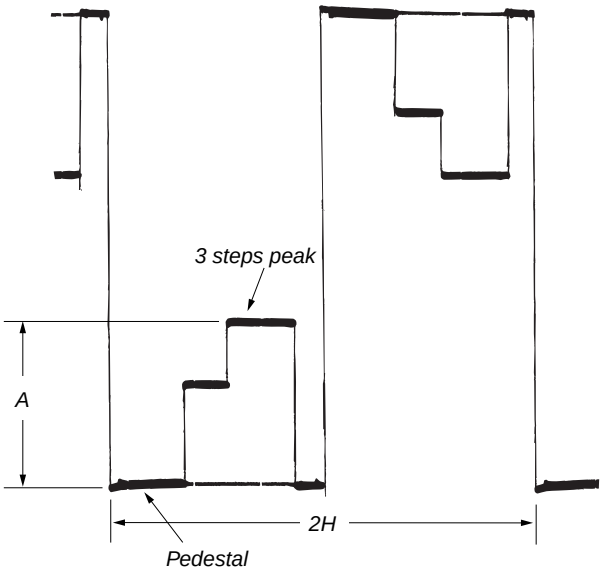


Fig. 6-1-26.

4. Backlight Adjustment (DB-016 board)

Set the backlight luminance.
If deviated, the image may become dark or bright.

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ③ of CN1008 of VC-318 board (EVF LED DA)
Measuring Instrument	Digital voltmeter
Adjustment Page	C
Adjustment Address	4F, 50
Specified Value	NORMAL mode : A=1.12 ± 0.05Vdc BRIGHT mode : B=2.10 ± 0.05Vdc

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	4F		Change the data and set the EVF LED DA voltage (A) to the specified value of NORMAL mode.
3	C	4F		Press PAUSE button.
4	C	50		Change the data and set the EVF LED DA voltage (B) to the specified value of BRIGHT mode.
5	C	50		Press PAUSE button.
6	0	01	00	Set the data.

1-5. LCD SYSTEM ADJUSTMENT

Note1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.
Note2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.
Note3: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.
Note4: NTSC model: DSR-PDX10
PAL model: DSR-PDX10P

Switch setting:
LCD BRIGHT(Touch panel setting) ..... Center.

[Adjusting connector]
Most of the measuring points for adjusting the LCD system are concentrated in CN1024 of the VC-318 board. Connect the measuring instruments via the CPC jig for LCD panel (J-6082-529-A). The following table shows the Pin No. and signal name of CN1024.

Pin No.	Signal Name
1	PANEL VG
2	PANEL COM
3	GND
4	XHD OUT
5	N.C
6	N.C

Table. 6-1-13.

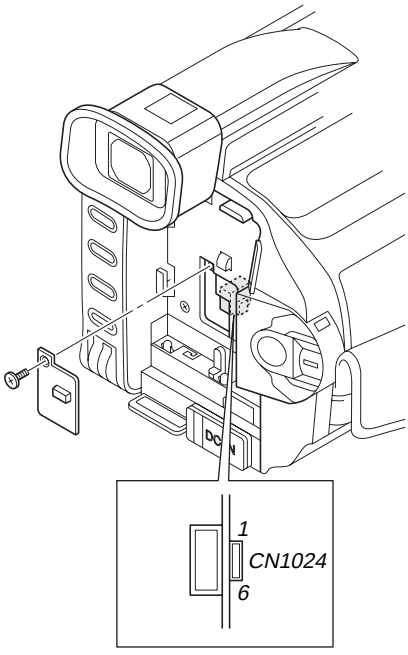


Fig. 6-1-27.

1. VCO Adjustment (PD-191 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN1024 of VC-318 board (XHD OUT)
Measuring Instrument	Frequency counter
Adjustment Page	C
Adjustment Address	61, 62
Specified Value	f = 15734 ± 30Hz (NTSC) f = 15625 ± 30Hz (PAL)

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	61		Change the data and set the VCO frequency (f) to the specified value.
3	C	61		Press PAUSE button.
4	C	61		Read the data, and this data is named D_{61}.
5	C	62	D_{61}	Set the data, and press PAUSE button.
6	0	01	00	Set the data.

2. RGB AMP Adjustment (PD-191 board)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ① of CN1024 of VC-318 board (PANEL VG) Ext. trigger: Pin ② of CN1024 of VC-318 board (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	64
Specified Value	A = 3.50 ± 0.05V

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	64		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value. (The data should be "00" to "3F".)
3	C	64		Press PAUSE button.
4	0	01	00	Set the data.
5				Perform "Contrast Adjustment", "COM AMP Adjustment" and "V COM Adjustment".

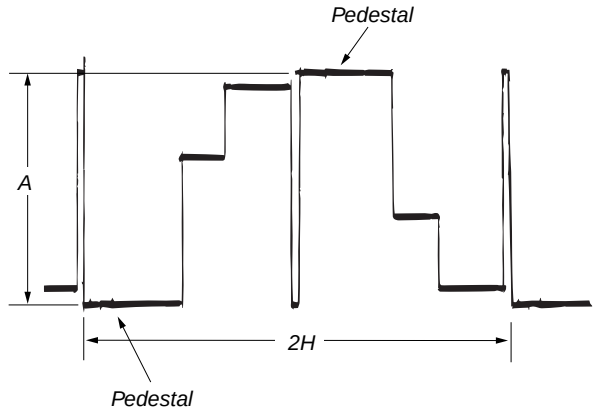


Fig. 6-1-28.

3. Contrast Adjustment (PD-191 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ① of CN1024 of VC-318 board (PANEL VG) Ext. trigger: Pin ② of CN1024 of VC-318 board (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	69
Specified Value	A = 3.45 ± 0.05V

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	69		Change the data and set the voltage (A) between the 100 IRE and 0 IRE (pedestal) to the specified value. (The data should be "00" to "7F".)
3	C	69		Press PAUSE button.
4	0	01	00	Set the data.
5				Perform "COM AMP Adjustment" and "V COM Adjustment".

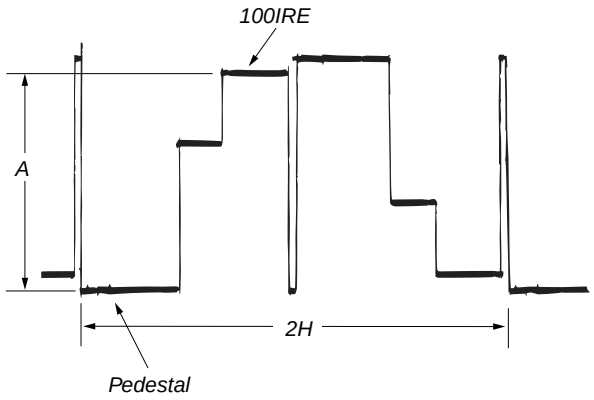


Fig. 6-1-29.

4. COM AMP Adjustment (PD-191 board)

Set the common electrode drive signal level of LCD to the specified value.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ② of CN1024 of VC-318 board (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	66
Specified Value	A = 5.40 ± 0.05V

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	66		Change the data and set the PANEL COM signal level (A) to the specified value.
3	C	66		Press PAUSE button.
4	0	01	00	Set the data.
5				Perform "V COM Adjustment".

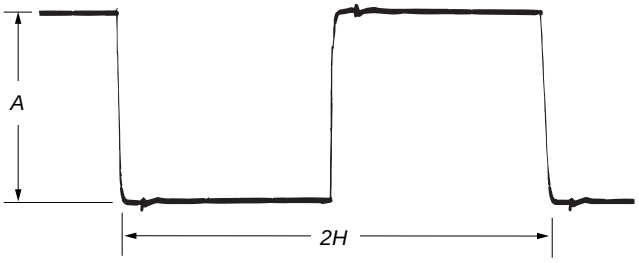


Fig. 6-1-30.

5. V COM Adjustment (PD-191 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.

If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	VTR stop
Signal	No signal
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	C
Adjustment Address	63
Specified Value	The brightness difference between the section A and section B is minimum.

Note1: This adjustment should be carried out upon completion of the following adjustments.
RGB AMP Adjustment
Contrast Adjustment
COM AMP Adjustment

Note2: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	63		Change the data so that the brightness of the section A and that of the section B is equal.
3	C	63		Subtract 8 from the data.
4	C	63		Press PAUSE button.
5	0	01	00	Set the data.

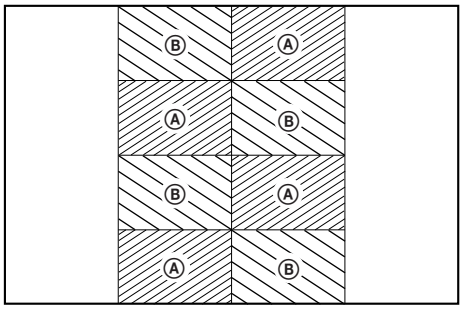


Fig. 6-1-31.

6. White Balance Adjustment (PD-191 board)

Correct the white balance.
If deviated, the reproduction of the LCD screen may degenerate.

Mode	VTR stop
Signal	No signal
Measurement Point	Check on LCD screen
Measuring Instrument	
Adjustment Page	C
Adjustment Address	67, 68
Specified Value	The LCD screen should not be colored.

Note1: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC5701

Note2: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	67	80	Set the data, and press PAUSE button.
3	C	68	80	Set the data, and press PAUSE button.
4	C	68		Check that the LCD screen is not colored. If not colored, proceed to step 10.
5	C	67		Change the data so that the LCD screen is not colored.
6	C	67		Press PAUSE button.
7	C	68		Change the data so that the LCD screen is not colored.
8	C	68		Press PAUSE button.
9	C	68		If the LCD screen is colored, repeat steps 5 to 9.
10	0	01	00	Set the data.

6-2. MECHANICAL SECTION ADJUSTMENT

2-1. Preparations for Check, Adjustment and Replacement of Mechanism Block

- Refer to the "SECTION 2 DISASSEMBLY" section for details of removing cabinets and printed wiring boards.
- When making any adjustment to a mechanism or replacing mechanical parts, be sure to use the Mode Selector II and select the appropriate status of the mechanical deck such that the mechanical status is suitable for the desired work. Refer to section "2-5. Mode Selector II" for details on how to enter the mode shown in a rectangle [____] mode in subsequent paragraphs of this manual.

2-1-1. Cassette Compartment Assy, Damper Assy

1. Removal Procedure

1) Set the [EJ] mode.
2) When the cassette compartment moves up in the direction of the arrow Ⓑ, establish the [ULE] mode.
3 Release the two claws ① and dowel of the damper assy and remove the damper assy.
4) Remove the shaft of the holder arm from the damper arm.
5) Remove the two screws (M1.4 × 2) ②.
6) Lift up the LS frame in the direction of the arrow Ⓒ.
7) Lift up the cassette compartment block assy in the direction of the arrow Ⓐ. While pushing the holder arm in the direction of the inside arrow Ⓔ, remove the cassette compartment block assy.

2. Attachment procedure

1) Set the [ULE] mode.
2) Attach the holder arm of the cassette compartment block assy to the cassette compartment slide shaft on both sides of the LS chassis block assy from inside.
3) Install the LS frame pivot into the groove Ⓓ of the LS chassis. Drop down the LS frame in the direction opposite to Ⓒ.
4) Hook the LS frame T-side bent portion on the LS chassis notch Ⓕ.
5) Attach the LS frame with two screws (M1.4 × 2) ②. Tightening torque: 0.054 ± 0.01 N•m (0.6 kg•cm).
6) While inserting the damper shaft of the cassette compartment block assy into slot of the damper arm, engage the two claws ① with the notch of the LS chassis block assy, and fix the dowel to the corresponding hole of the LS chassis block assy respectively.

Note: Check that the two claws ① and dowel do not come off.

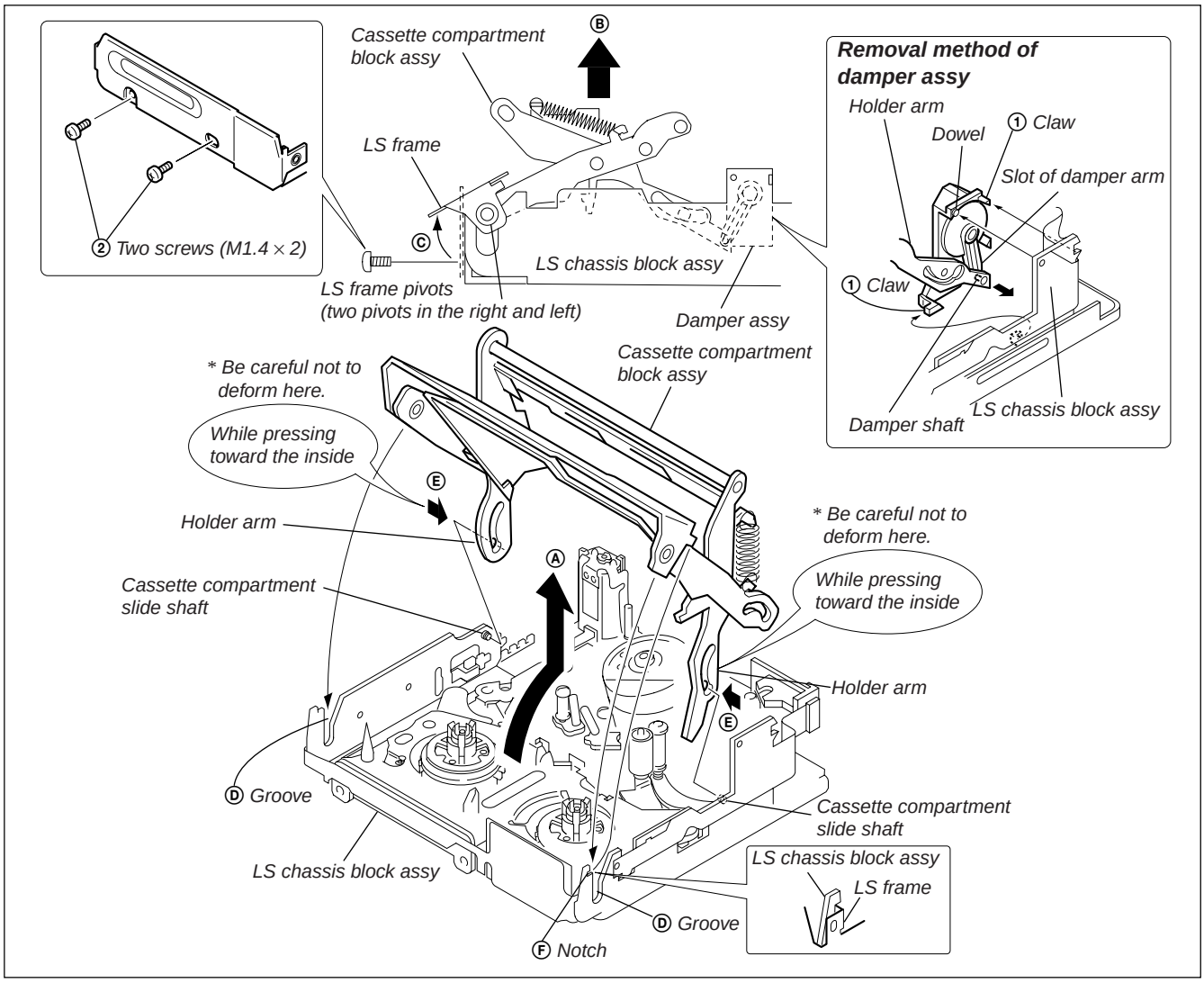


Fig. 6-2-1.

2-2. Periodic Inspection and Maintenance

• Be sure to perform the following maintenance and inspection so that the machine delivers its full performance and functions, and to protect the machine and tape. Also, perform the following maintenance items after completing the repair work, regardless of the number of hours the machine has been operated by the user.

2-2-1. Rotary Drum Cleaning

1) Press a wiping cloth (Ref. No. J-15) moistened with cleaning fluid (Ref. No. J-14) lightly against the rotary drum. Rotate the upper drum with a super-fine applicator slowly in the counter-clockwise direction to clean the rotary drum.

Caution: Never rotate the rotary drum by turning on the main power of the motor or rotate it in the clockwise direction. Never move the cloth vertically against the head tip, as this will surely damage the video head; the video head must not be cleaned by any other different methods.

2-2-2. Tape Path System Cleaning (Refer to Fig. 6-2-2.)

1) Set the EJECT state. Clean the tape running path (TG-1, -2, -3, -4, -5, -6 and -7, pinch roller and capstan shaft) and lower drum with a super-fine applicator (Ref. J-16) moistened with cleaning fluid.

Note 1: Be careful not to allow oil or grease of the various link mechanisms to get on the super-fine applicator (Ref. J-16).
Note 2: Once the super-fine applicator has been moistened with alcohol, do not use it to clean other mechanical parts such as the tape guide. However, the pinch roller is cleaned with alcohol.
Note 3: When cleaning the capstan shaft, be carefull not to move the oil seal. If the oil seal is moved, oil will leak.

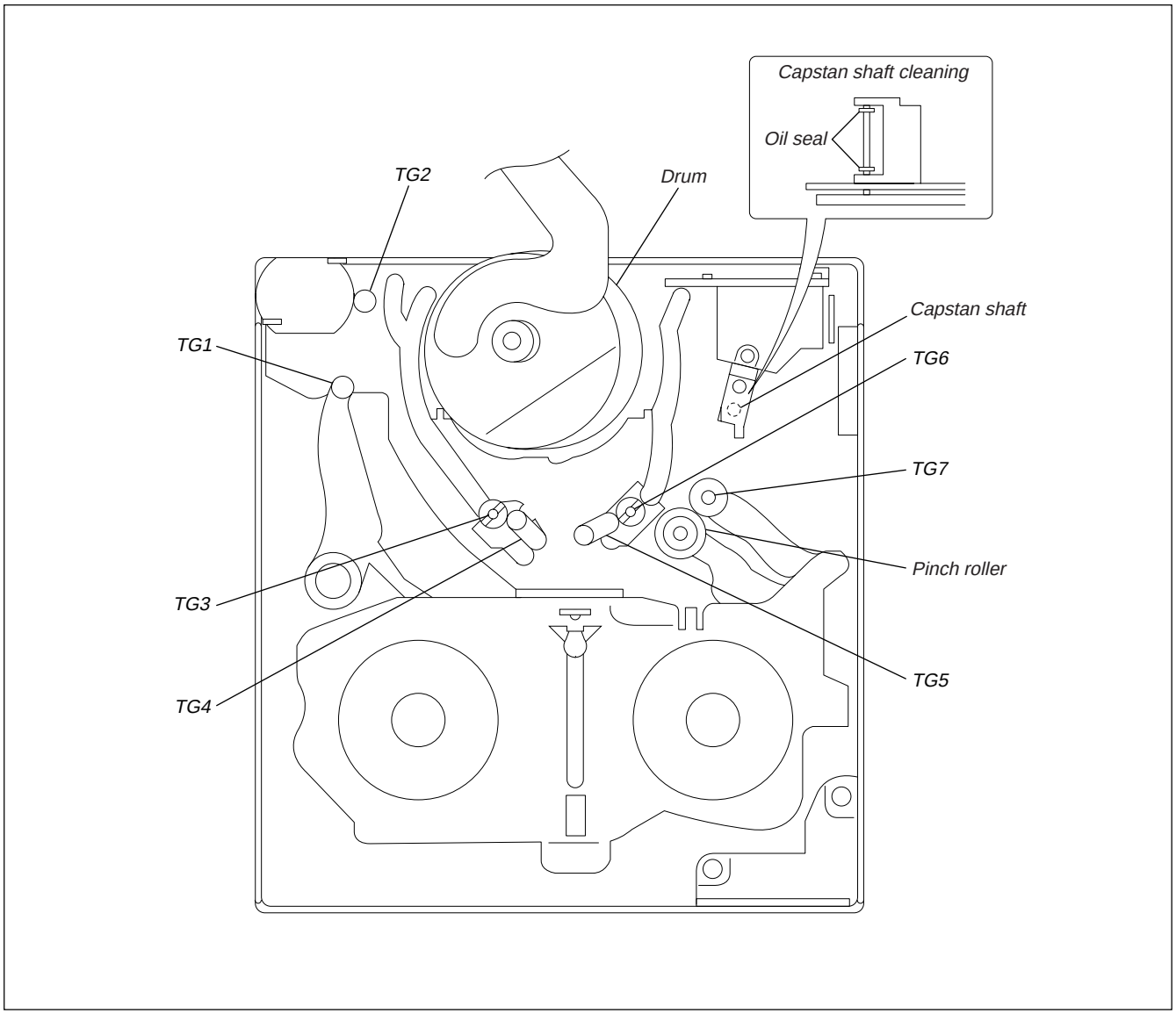


Fig. 6-2-2.

2-2-3. Periodic Inspection List

Maintenance and inspection item		Operating hours (H)										Remarks
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
	Tape running surface cleaning	○	○	○	○	○	○	○	○	○	○	Be careful not to attach oil
	Rotary drum cleaning and degaussing	○	○	○	○	○	○	○	○	○	○	Be careful not to attach oil
Drive mechanism	Capstan bearing	—	☆	—	☆	—	☆	—	☆	—	☆	
Drive mechanism	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
Performance check	Back-tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
Performance check	FWD/RVS torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

○: Cleaning, ☆: Check

Note 1: When the machine is overhauled, replace the parts referring to the above list.

Note 2: Grease

- Be sure to use the specified grease only. (If grease of different viscosity is used, it can cause various troubles.)
- The grease used for bearings must not contain any dust or other matter, otherwise excessive abrasion and seizure of the bearing could occur.
- A drop of grease means the amount of grease as shown in the illustration, which is the amount that is attracted to the tip of a rod of 2 mm diameter.
- FLOIL grease (SG-941): Part No. 7-662-001-39

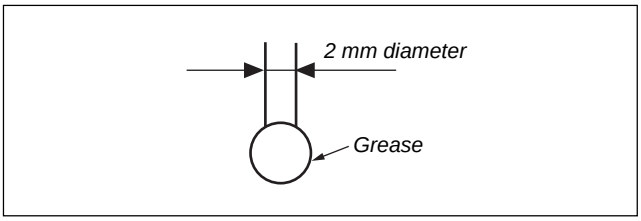


Fig. 6-2-3.

2-2-4. Mode Selector II Operating Procedure

2-4-1. Introduction

The Mode Selector II is a mechanism drive tool that assists maintenance work of the various mechanism decks. It has the following functions.

1. Manual Test

In this mode, the motor of the mechanism deck is powered only during the period while the switch is turned on manually. Using the Manual Test, the operator can freely control the motor of the mechanism deck.

2. Step Test

In this mode, the motor of the mechanism deck is kept turned on until the mechanical status is changed from the present mechanical status that is obtained from the sensor information. The Step Test is used to confirm a series of movements of the mechanism deck.

3. Auto Test

The Mode Selector II stores the status transition table in its memory as data indicating the respective modes of the mechanism deck. The status transition table can be used to confirm whether a mechanism deck is operating normally or has abnormality from a series of movements of a mechanism deck. If an abnormal status transition is detected during operation, the "NG" indication appears and the mechanism stops moving.

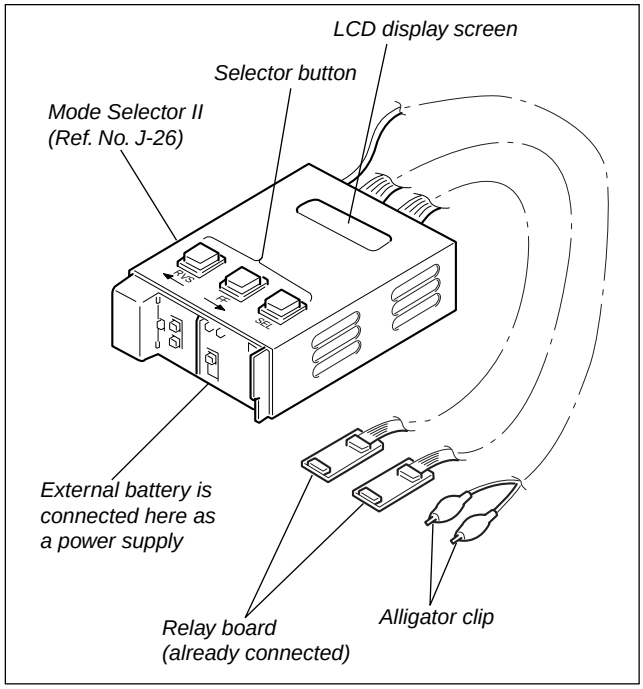


Fig. 6-2-4.

Mode Selector II (J-6082-282-B) connection diagram

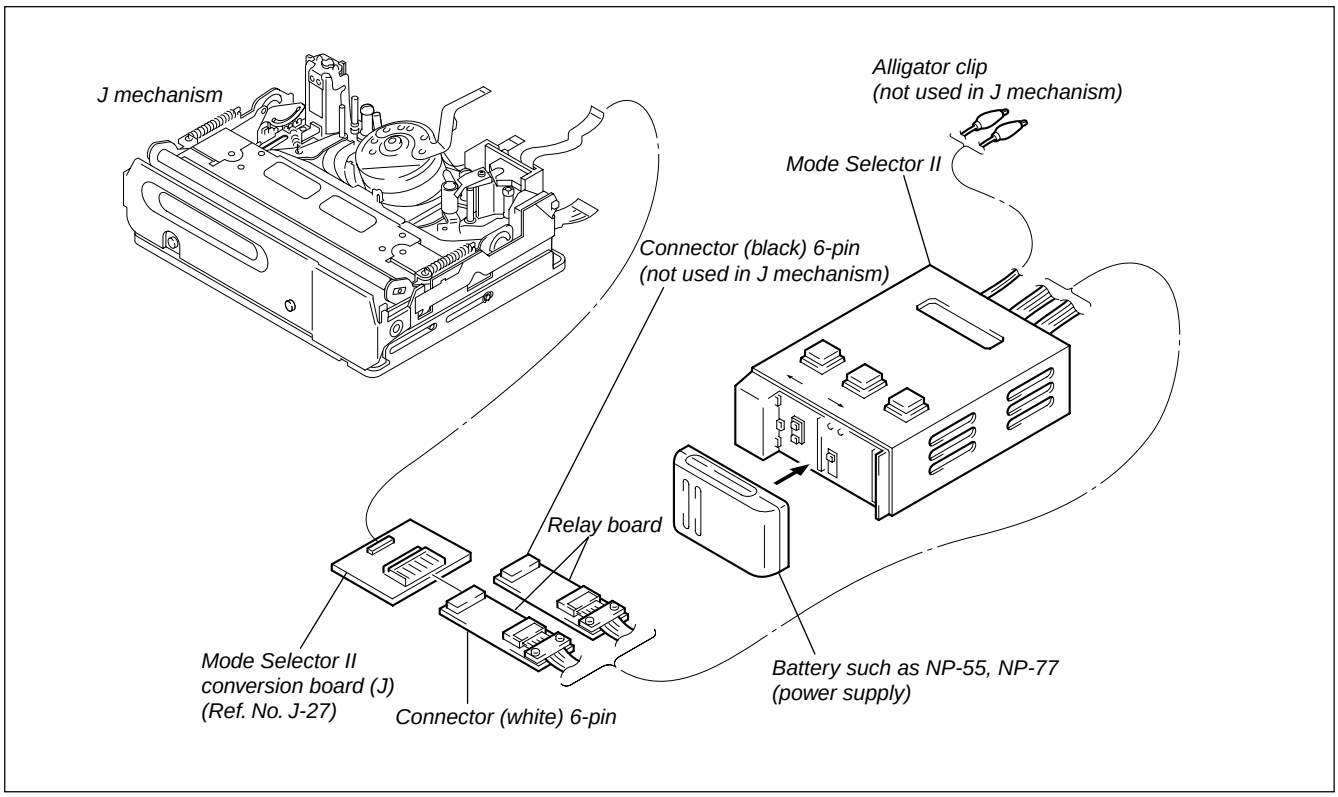


Fig. 6-2-5.

2-4-2. Mechanism Status (Position) Transition Table Using Mode Selector II

After selecting a mechanism deck, select either the MANUAL or STEP test (not AUTO) using the Mode Selector II. The desired mechanism status (position) can be specified by pressing the RVS or FF button. (The selected status appears on STATUS.)
EJ⟷ULE⟷SR⟷GL⟷STOP⟷RP

Code / MD name				J Mechanism
A	B	C		
0	0	1	1	EJ
1	0	1	2	ULE
1	0	0	3	SR
1	1	0	4	GL
0	1	0	5	STOP
0	1	1	6	RP

2-3. Check, Adjustment and Replacement of Mechanical Parts

2-3-1. Drum

1. Removal procedure

1) Loosen the three screws (M1.4 × 2) ① fixing the drum and remove the drum.

2. Attachment procedure

1) Align the two reference holes A and B on the rear of the drum with the position setting reference pins A and B of the drum base assy.
2) Install the drum with the three screws (M1.4 × 2) ① and tighten the screws in order from Ⓐ, then Ⓑ and finally Ⓒ.
   Tightening torque: 0.059 ± 0.01 N•m (0.6 kg•cm)
3) Clean the drum referring to section 2-2.
4) Perform the tape path adjustment. (Refer to section 2-4, "Tape Path Adjustment".)

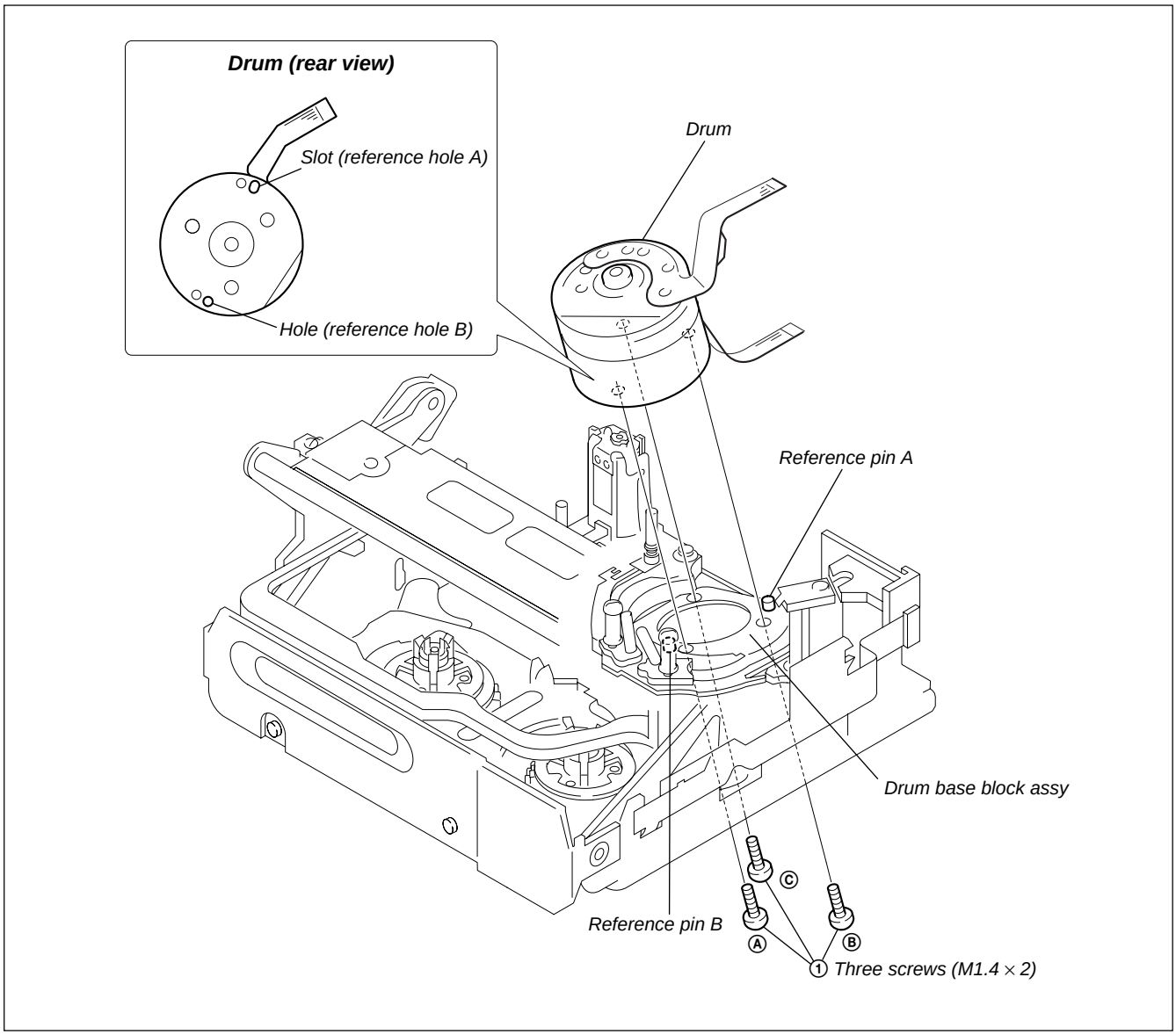


Fig. 6-2-6.

2-3-2. L. Motor Holder Block Assy (Loading) and FP-228 Flexible Wiring Board (DEW Sensor)

1. Removal procedure

1) Remove soldering ② from the L motor holder block assy (loading). Remove the FP-100 flexible wiring board.
2) Remove soldering ③ from the flexible wiring board FP-100. Remove the FP-228 flexible wiring board (DEW sensor).

Note: Since the FP-228 flexible wiring board (DEW sensor) is attached to the motor shield by adhesive agent, be careful not to break the flexible board when removing soldering.

3) Remove the screw (M1.4 × 2.5) ①.
4) Remove the L motor holder block assy.
5) Unlock the claw Ⓔ and remove the worm shaft.
6) Remove the motor shield.
7) Unlock the two claws Ⓐ of the motor holder. Remove the L motor block assy (loading) in the direction of Ⓑ.

Note: Be careful not to touch the DEW sensor.

2. Attachment procedure

1) Check the direction of the polarity marking Ⓒ of the L motor block assy (loading). Attach the L motor block assy (loading) to the motor holder so that the L motor block assy (loading) faces the worm shaft side.
2) While aligning the slot and dowel with the motor shield, attach the motor holder to the motor holder.
3) Apply grease (1/2 drop) between the worm shaft gear and gear tooth.
4) While the worm gear is engaged with the worm shaft gear, insert the worm shaft tip into the groove Ⓑ and fix the worm shaft under the claw Ⓔ.
5) While aligning the chassis's two square holes with the two round holes, attach the motor holder block assy with the screw (M1.4 × 2.5) ①.
   Tightening torque: 0.059 ± 0.01 N•m (0.6 kg•cm)
6) Connect FP-228 (DEW sensor) to the FP-100 flexible wiring board by soldering. Attach the DEW sensor to the motor shield.
7) Connect the FP-100 flexible wiring board to the motor holder block assy (loading) by soldering.

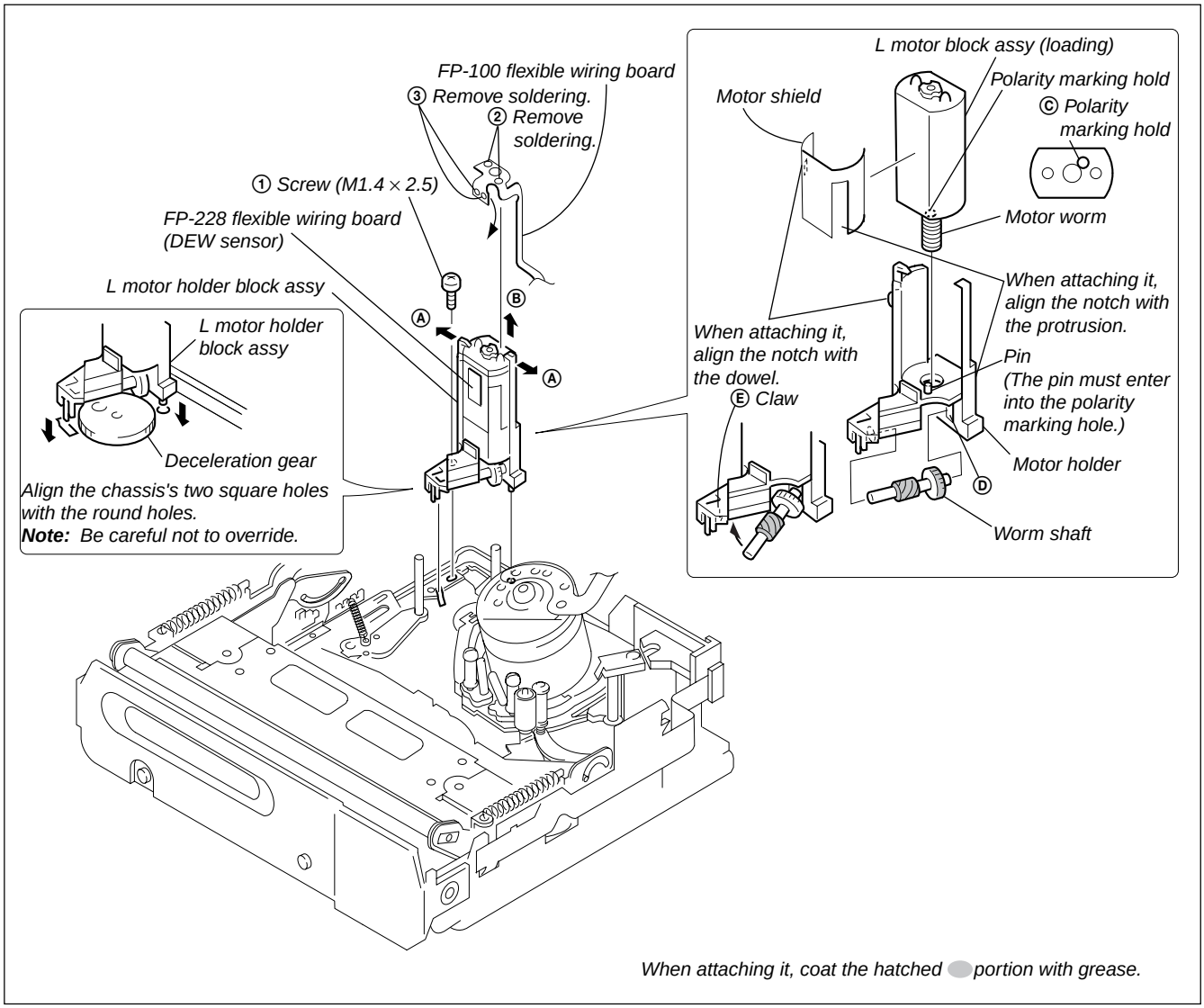


Fig. 6-2-7.

2-3-3. Retainer Plate Assy, LED Retainer

1. Removal procedure

1) While pressing the claw of the LED retainer in the direction of the arrow Ⓐ, remove the LED retainer.
2) Remove the LED portion ② of the FP-102 flexible wiring board.
3) Remove the two screws (M1.4 × 1.4) ①.
4) In order to remove the retainer plate assy, because it is hooked with shaft A, shaft B and shaft C, remove the retainer plate assy while moving it in the direction of the arrow Ⓑ.

2. Attachment procedure

1) Hook shaft A, shaft B and shaft C on notch A, notch B and notch C of the retainer plate assy in this order.
2) Attach the retainer plate assy with two screws (M1.4 × 1.4) ①. Tightening torque: 0.059 ± 0.01 N•m (0.6 kg•cm)
3) Route the FP-102 flexible wiring board as shown and install the LED into the prism as shown.
4) Hook the LED retainer on Ⓓ, attach it to Ⓔ and fix them.

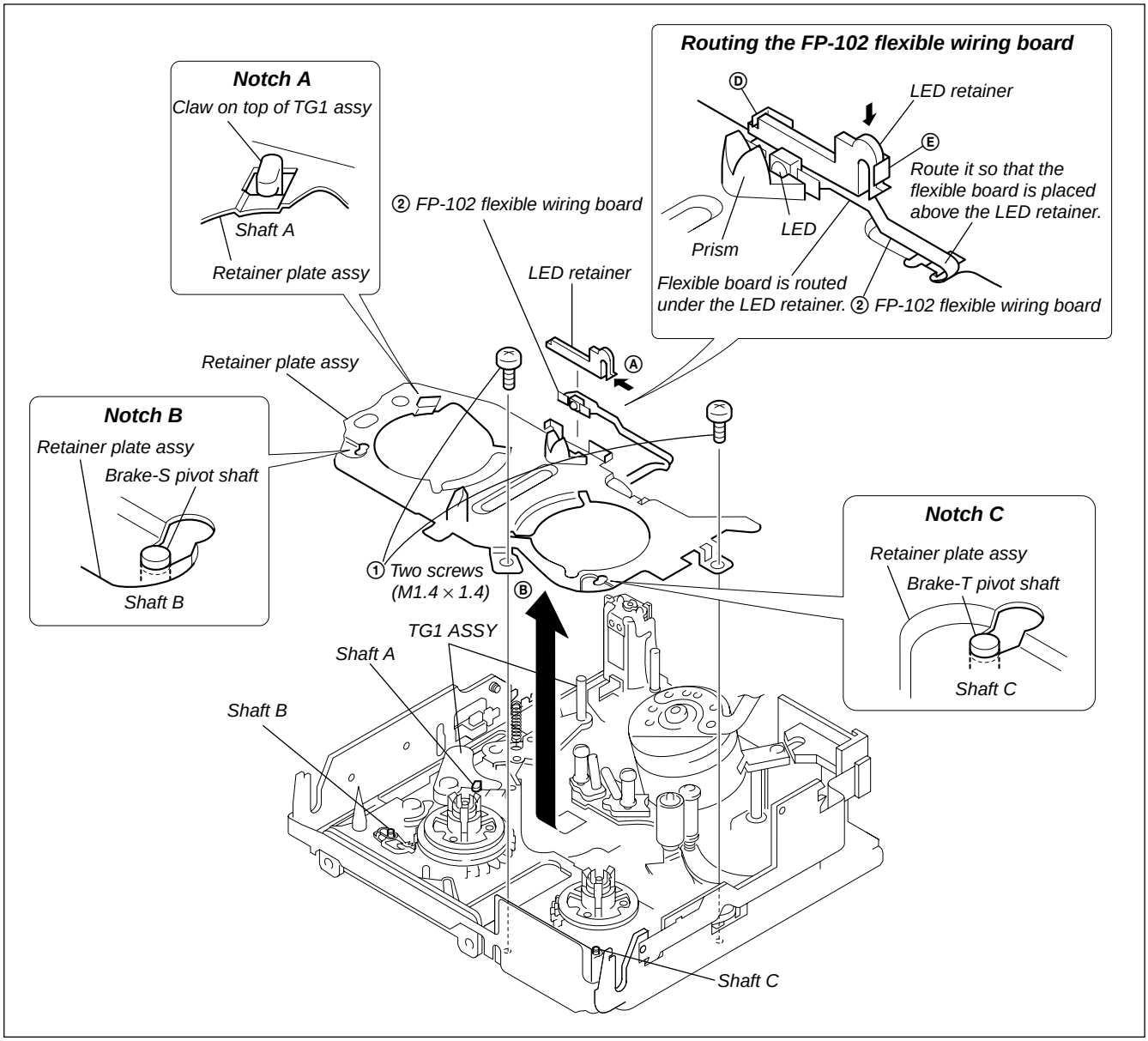


Fig. 6-2-8.

2-3-4. Brake-T Block Assy, T-reel Table Assy, Gooseneck Gear Assy

1. Removal procedure

1) Remove the brake-T block assy from the brake-T pivot shaft.
2) While pressing the reel claw retainer Ⓐ of the T-reel table assy down in the direction of Ⓑ, remove the reel claw Ⓒ.
3) Remove the gooseneck assy from the relay gear shaft.

Note: Be careful not to break the reel claw.

2. Attachment procedure

1) Insert the gooseneck gear assy into the center hole of the relay gear shaft. Bend the gooseneck gear assy to the S-reel table assy side.
2) Attach the brake-T block assy to the brake-T pivot shaft Ⓓ.
3) Move the brake-T counter-clockwise so that T-brake is freed. While pressing down the reel claw of the T-reel assy, fix the T-reel to the reel shaft-T by rotating the reel.
4) Check that the brake spring-T works correctly by rotating the T-reel table assy 30 degrees in the clockwise and counter-clockwise directions.

Note: The retainer on top of the brake spring-T must be hooked on the brake-T pivot shaft Ⓓ and moved down to the groove.

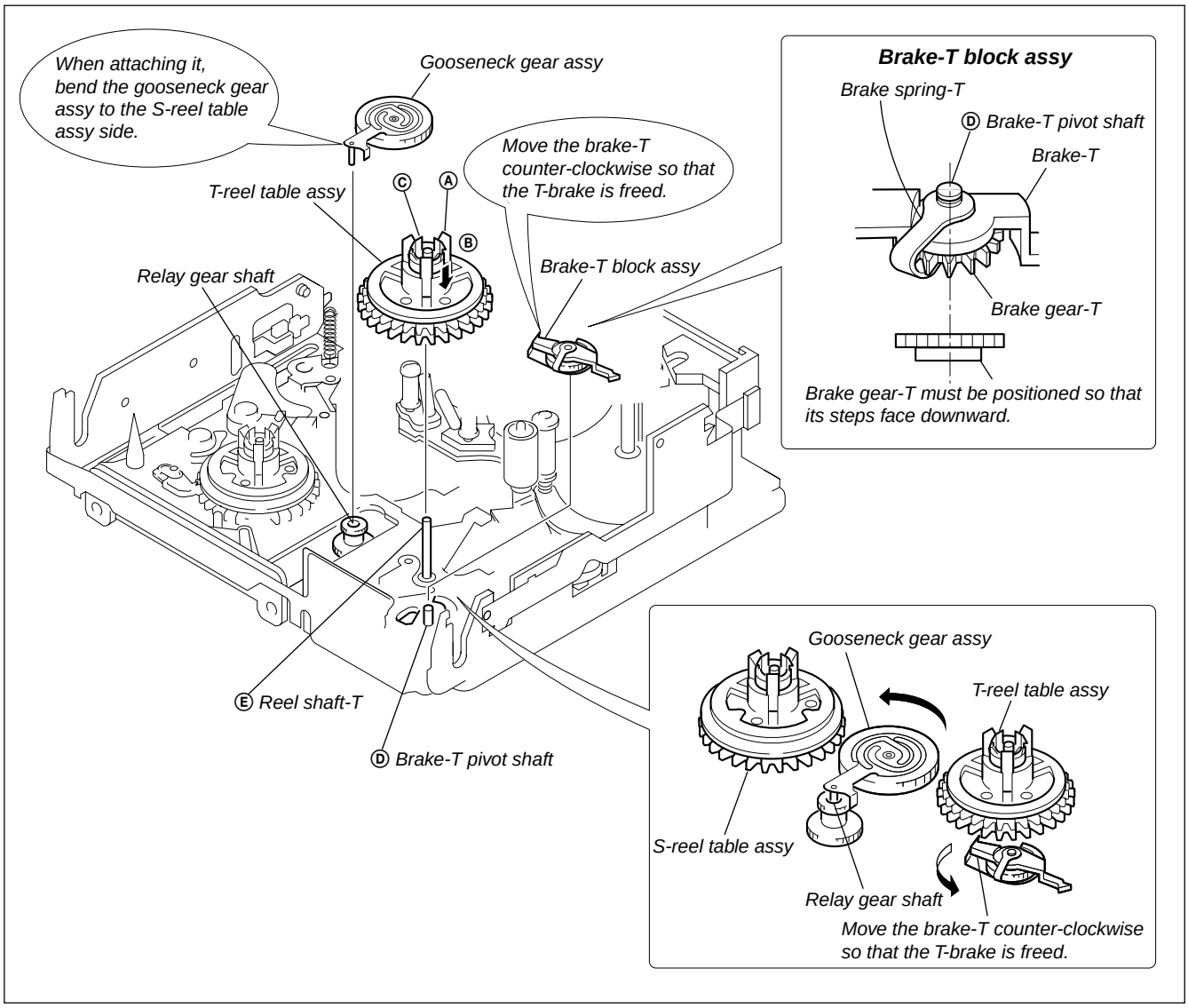


Fig. 6-2-9.

2-3-5. TG1 Assy, Tension Coil Spring (Tension Regulator)

1. Removal procedure

1) Remove the screw (M1.4 × 2.5) ①.
2) Remove the tension coil spring.
3) Remove the TG1 assy tension regulator band.
4) Remove the (FWD) adjustment plate from the S-reel table. Place it between the T-reel table assy and pinch arm assy.
5) While pressing down the reel claw retainer Ⓐ of the S-reel table assy in the direction of Ⓑ, remove the reel claw Ⓒ.

Note 1: Be careful not to deform the tension regulator band.
Note 2: Be careful that grease does not attach to the tension regulator band.

2. Attachment procedure

1) Coat the root and its surroundings on TG1 pivot shaft Ⓐ with grease (1/4 drop). (Strictly observe the coating position and specified amount of grease.)
2) Attach the S-reel table assy to the reel shaft-S.
3) Attach the TG1 assy to the TG1 pivot shaft Ⓐ. Note that the TG1 drive shaft has entered the groove of the LS block assy at this moment.
4) Wrap the tension regulator band around the S-reel table assy. Fix it with the screw (M1.4 × 2.5) ① while ensuring that direction of the (FWD) adjustment plate is correct as shown.
5) Hook the tension coil spring ② on the TG1 assy and on the LS chassis block assy.
6) Clean the tip of the TG1 pivot shaft with a super-fine applicator (Ref. J-3) moistened with cleaning fluid.
7) Perform the (FWD) position adjustment referring to section 2-3-6.
8) Perform the FWD back-tension adjustment referring to section 2-3-7.
9) Perform the reel torque check referring to section 2-3-8.

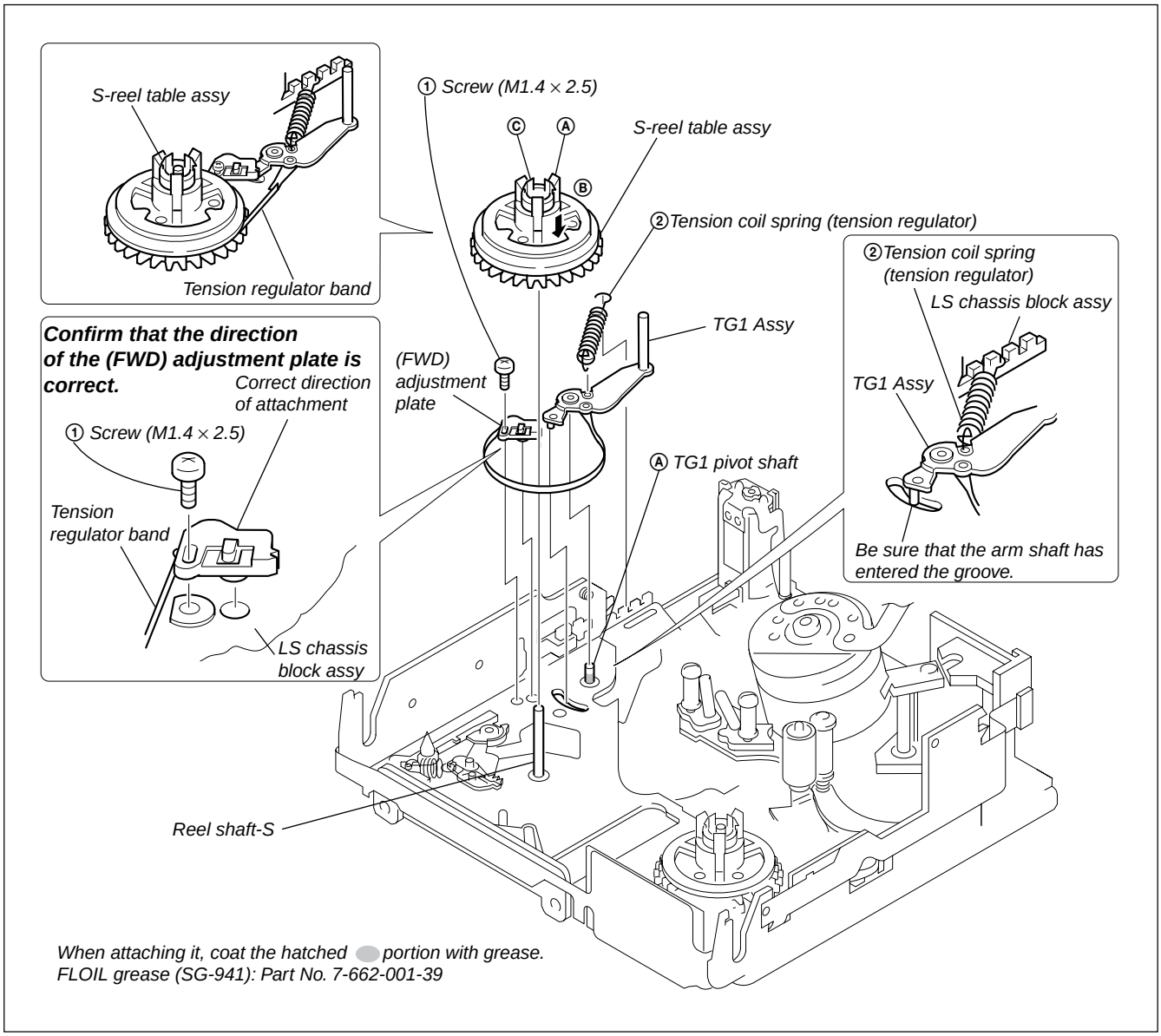


Fig. 6-2-10.

2-3-6. TG1 FWD Position Adjustment

When the TG1 assy or S-reel table is replaced, or when a part constituting these parts is replaced, perform the following adjustment.

• TG1 FWD Position Adjustment
• FWD Back-tension Adjustment (Refer to section 2-3-7.)
• Reel table (RVS) torque check (Refer to section 2-3-8.)

1. Adjustment procedure

1) Establish the RP mode.
2) Install the TG1 adjustment jig (Ref. No. J-20) as specified by the S/T position setting.
   Note: Be careful not to damage the flexible wiring board.
3) Attach the torque screwdriver (Ref. No. J-24) and the TG1 FWD adjustment screwdriver (Ref. No. J-21) to the adjustment screw block.
4) While rotating the adjustment screwdriver a little, press it down lightly so that it is aligned with the gear of the (FWD) adjustment plate.
5) Loosen the adjustment screw that is tentatively tightened by the torque screwdriver. Perform adjustment so that TG1 comes to the center of the gauge's groove when viewed from directly above the TG1 adjustment jig (Ref. No. J-20). Then tighten the adjustment screw.
   Tightening torque: 0.0588 N•m (0.6 kg•cm).
6) Check again that the TG1 position remains in the correct position, then remove the jig.

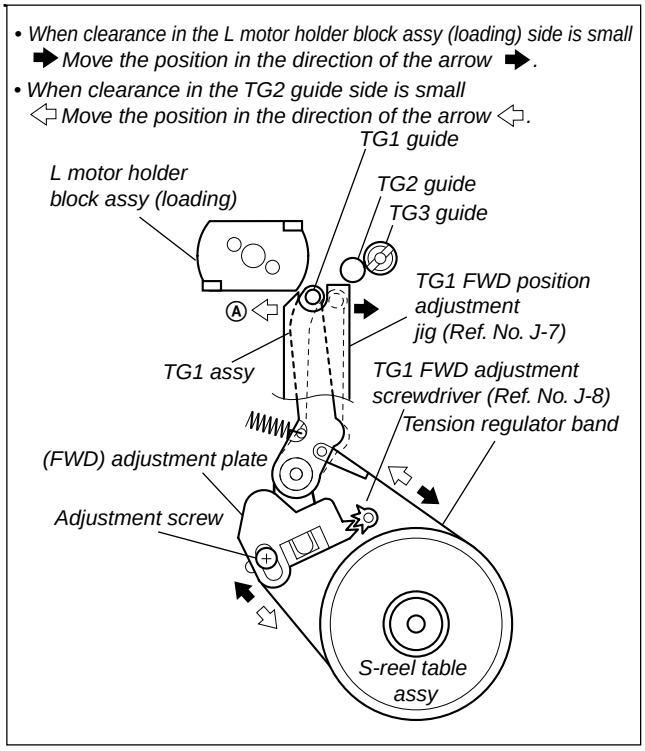


Fig. 6-2-11.

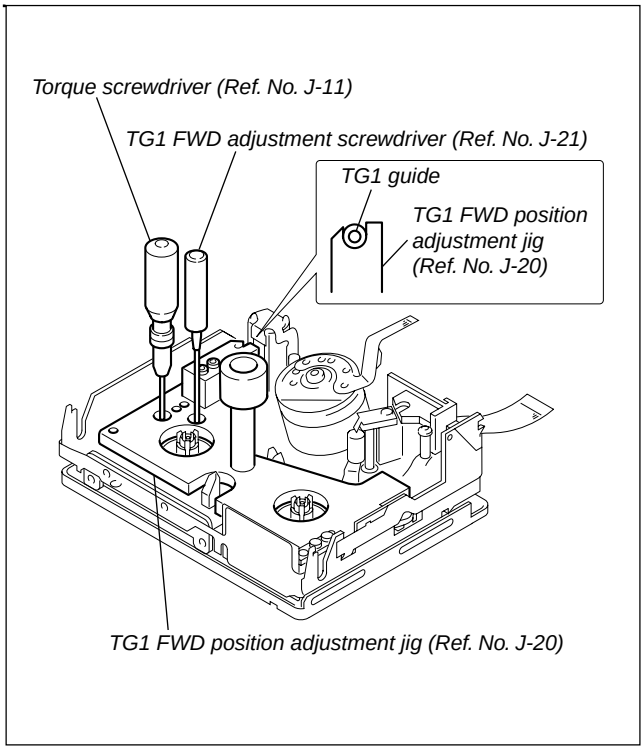


Fig. 6-2-12.

2-3-7. FWD Back-tension Adjustment

1. Adjustment procedure

1) Install the Mini DV torque cassette (Ref. No. J-19).
2) Set the RP mode. Confirm that the torque reading of the supply side is in the range of 0.45 to 0.55 mN•m (4.5 to 5.6 g•cm) including fluctuation. If the torque reading is outside the specified range, perform the following adjustment.

- If the torque reading value is higher than the specification: (Reduce the spring tension as follows.)
  Shift the hook position of the tension coil spring in the direction of Ⓐ.
- If the torque reading value is lower than the specification: (Increase the spring tension as follows.)
  Shift the hook position of the tension coil spring in the direction of Ⓑ.

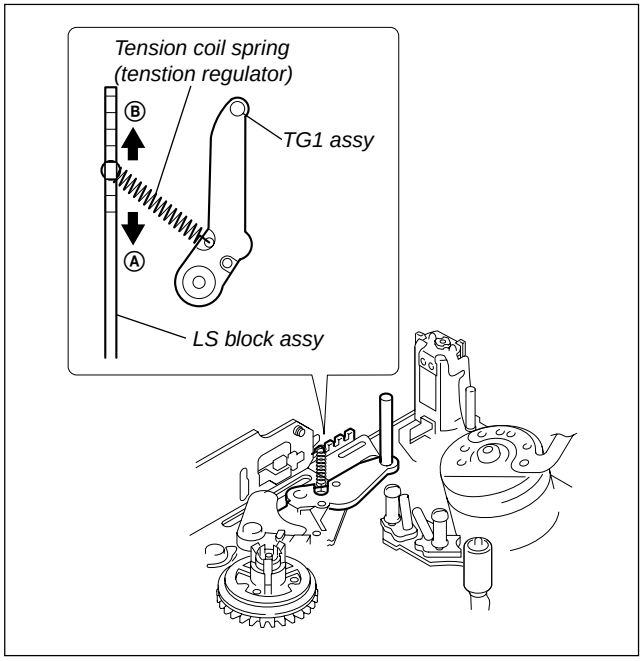


Fig. 6-2-13.

2-3-8. Reel Torque Check

1. Check procedure

[FWD torque]

1) Install the Mini DV torque cassette (Ref. No. J-19).
2) Set the FWD mode. Confirm that the center of the T-reel table torque reading value is 0.54 to 1.32 (mN•m) (5.5 to 13.5 g•cm) and the fluctuation value is 0.39 to 0.40 (mN•m) (3.9 to 4.0 g•cm).

[RVS torque]

1) Install the Mini DV torque cassette (Ref. No. J-19).
2) Set the RVS mode (by using the EDIT SEARCH (–) button of the machine). Confirm that the center of the S-reel table torque reading value is 1.37 to 2.11 (mN•m) (14 to 21.5 g•cm) and the fluctuation value is 0.39 to 0.40 (mN•m) (3.9 to 4.0 g•cm).

If either of the above specifications is not satisfied, check whether the tension regulator band has any abnormality. If it has no abnormality, replace the corresponding reel table.

2-3-9. TG3 Guide Zenith Adjustment

1) Remove the drum referring to section 2-3-1. Install the dummy drum (Ref. No. J-22).
2) Install the TG36 gauge (Ref. No. J-23) on top of the dummy drum. Rotate the slant adjustment zenith screw until the TG3 guide and TG36 gauge (Ref. No. J-23) become parallel.
3) Remove all the jigs. Attach the original drum back in its original position referring to section 3-1.
4) Clean the TG3 and TG4 guides referring to section 2-2-2.
5) Perform the tape path adjustment. (Refer to section 6-2-4, "Tape Path Adjustment".)

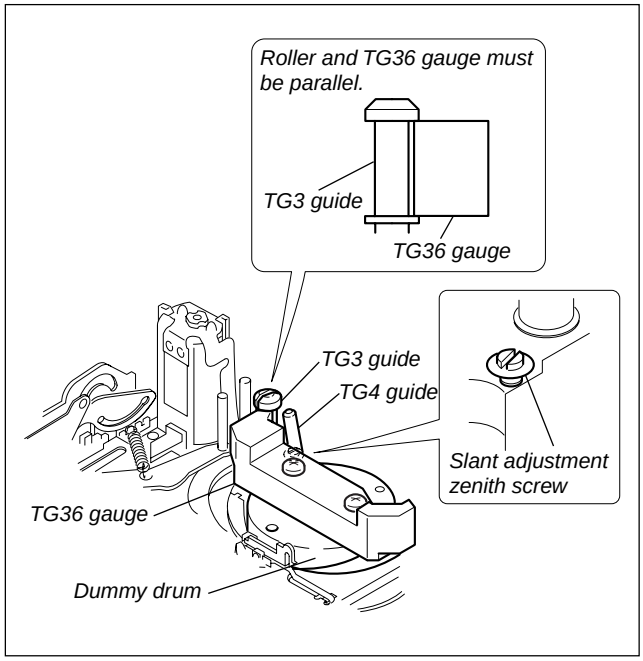


Fig. 6-2-14.

2-3-10. TG6 Guide Zenith Adjustment

1. Adjustment procedure

1) Remove the drum referring to section 2-3-1. Install the dummy drum (Ref. No. J-22).
2) Install the TG36 gauge (Ref. No. J-23) on top of the dummy drum. Adjust the slant of the TG6 guide.
3) Rotate the slant adjustment zenith screw until the TG6 guide and TG36 gauge (Ref. No. J-23) become parallel.
4) Remove all the jigs. Attach the original drum back in its original position referring to section 2-3-1.
5) Clean the TG5 and TG6 guides referring to section 2-2-2.
6) Perform tape path adjustment. (Refer to section 2-4, "Tape Path Adjustment".)

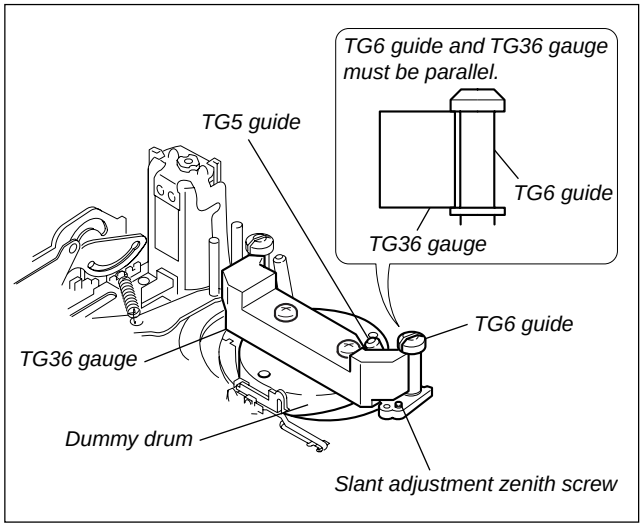


Fig. 6-2-15.

2-3-11. LS Cam Plate Position Adjustment

1. Adjustment procedure

1) Loosen the LS cam fixing screw (M1.4 × 4) ① by 180 degrees.
2) Establish the STOP mode.
3) While pressing down the center of the LS chassis block assy with force of 100 to 200 gf (0.98 to 1.96 N), move the LS cam plate toward the S-reel side and tighten the LS cam plate fixing screw (M1.4 × 4) ① with force of 500 to 1000 gf (4.9 to 9.8 N).
   Tightening torque: 0.059 to 0.01 N•m (0.6 kg•cm).

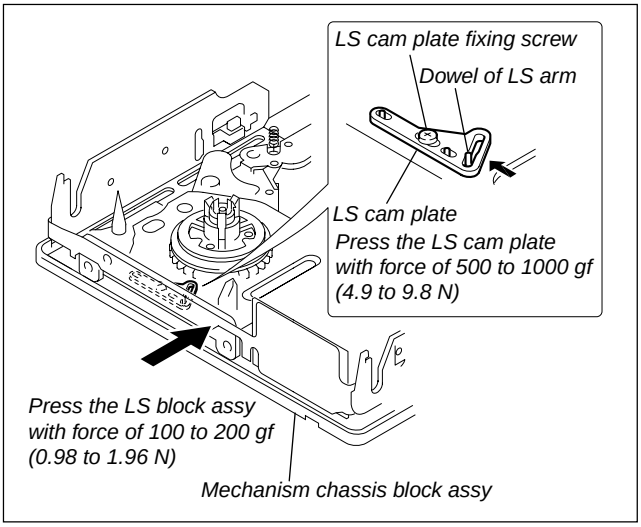


Fig. 6-2-16.

2-3-12. LS Chassis Block Assy, LS Guide Retainer

1. Removal procedure

1) Remove the FP-100 flexible wiring board from the FPC connector on the FP-102 flexible wiring board.
2) Remove the screw (M1.4 × 2.5) ②. Remove the FPC holder from DC motor (capstan).
3) Remove the two screws (M1.4 × 2) ①.
4) Remove the LS retainer in the direction of the arrow Ⓐ on the top.
5) Remove the E-type stop ring 1.5 ③.
6) Remove the LS chassis block assy in the direction of the arrow Ⓑ.

2. Attachment procedure

1) Confirm that the brake-T block assy has been moved in the counter-clockwise direction Ⓒ. While pressing the TG7 block in the direction of the arrow Ⓓ, insert the LS guide shafts T1 and T2 of the LS chassis block assy into the slots of the mechanism chassis with slanted angle.
2) While inserting the LS arm dowel into the LS cam plate groove, insert the LS guide shafts S1 and S2 into the slots of the LS chassis block assy as shown.
3) Insert the LS guide retainer from the top, align it with the LS guide shafts S1 and S2 and fix it with the screw (M1.4 × 2) ①. Tightening torque: 0.059 to 0.01 N•m (0.6 kg•cm).
4) Confirm that the LS guide retainer has play, is not lifted up, is not installed in opposite direction and has not been deformed.
5) Attach the E-type stop ring 1.5 ③ into the LS guide shaft T1.
6) Insert the FPC holder into DC motor (capstan) in the direction of the arrow Ⓔ and fix it with the screw (M1.4 × 2.5) ②.
7) Connect the flexible wiring board coming from the FP-100 flexible wiring board into the FPC connector.

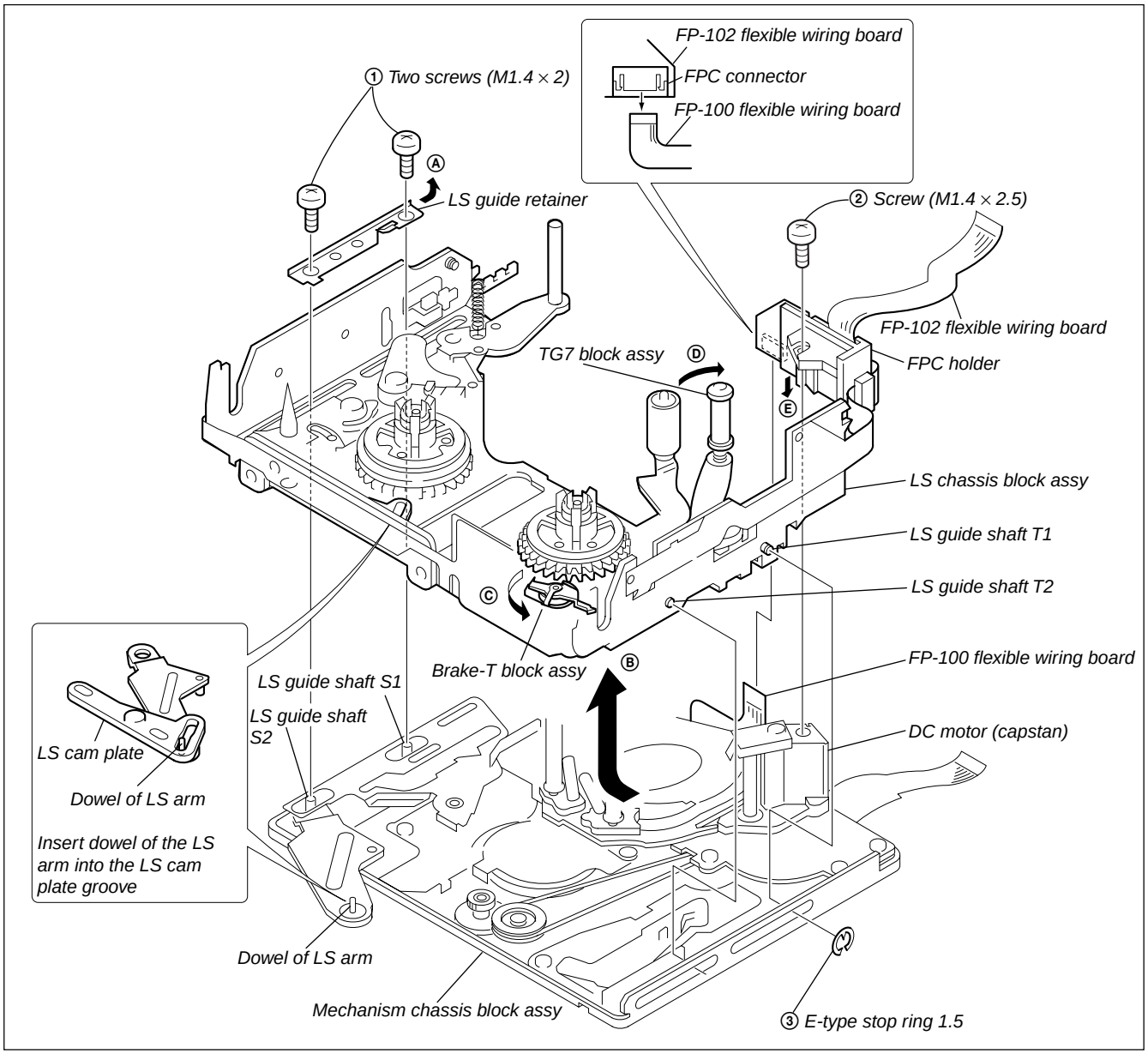


Fig. 6-2-17.

2-3-13. LS Cam Plate, Tension Coil Spring (Brake-S), Brake-S, Torsion Coil Spring (Brake Arm), Cassette Position Set-S, Brake-S Driving Arm Assy

1. Removal procedure

1) Remove the screw (M1.4 × 1.4) ①.
2) Remove the LS cam plate.
3) Remove the tension coil spring (brake-S).
4) Remove the brake-S.
5) Remove the screw (M1.4 × 2) ②.
6) Remove the torsion coil spring (brake arm).
7) Remove the cassette position set-S from groove of the LS block assy in the direction of the arrow Ⓐ.
8) Remove the brake-S drive arm assy from groove of the LS block assy in the direction of the arrow Ⓑ.

2. Attachment procedure

1) Insert the brake-S drive arm assy under groove of the LS chassis block assy. Attach the brake-S drive arm assy to the brake-S arm shaft and to the brake-S pivot shaft.
2) Insert the cassette position set-S under the groove of the LS chassis block assy. Attach the cassette position set-S to the brake-S arm shaft.
3) Attach the torsion coil spring (brake arm).
4) Attach the screw (M1.4 × 2) ② to the brake-S arm shaft.
5) Attach the brake-S to the brake-S arm bearing and to the brake-S pivot shaft.
6) Hook the tension coil spring (brake-S) to the spring stay of the cassette position set-S and the spring stay of the brake-S.
7) Align the slot of the LS cam plate with the dowel. Move then in the direction toward the arrow Ⓒ and attach the screw (M1.4 × 1.4) ①.
8) Perform the LS cam plate position adjustment referring to section 2-3-11.

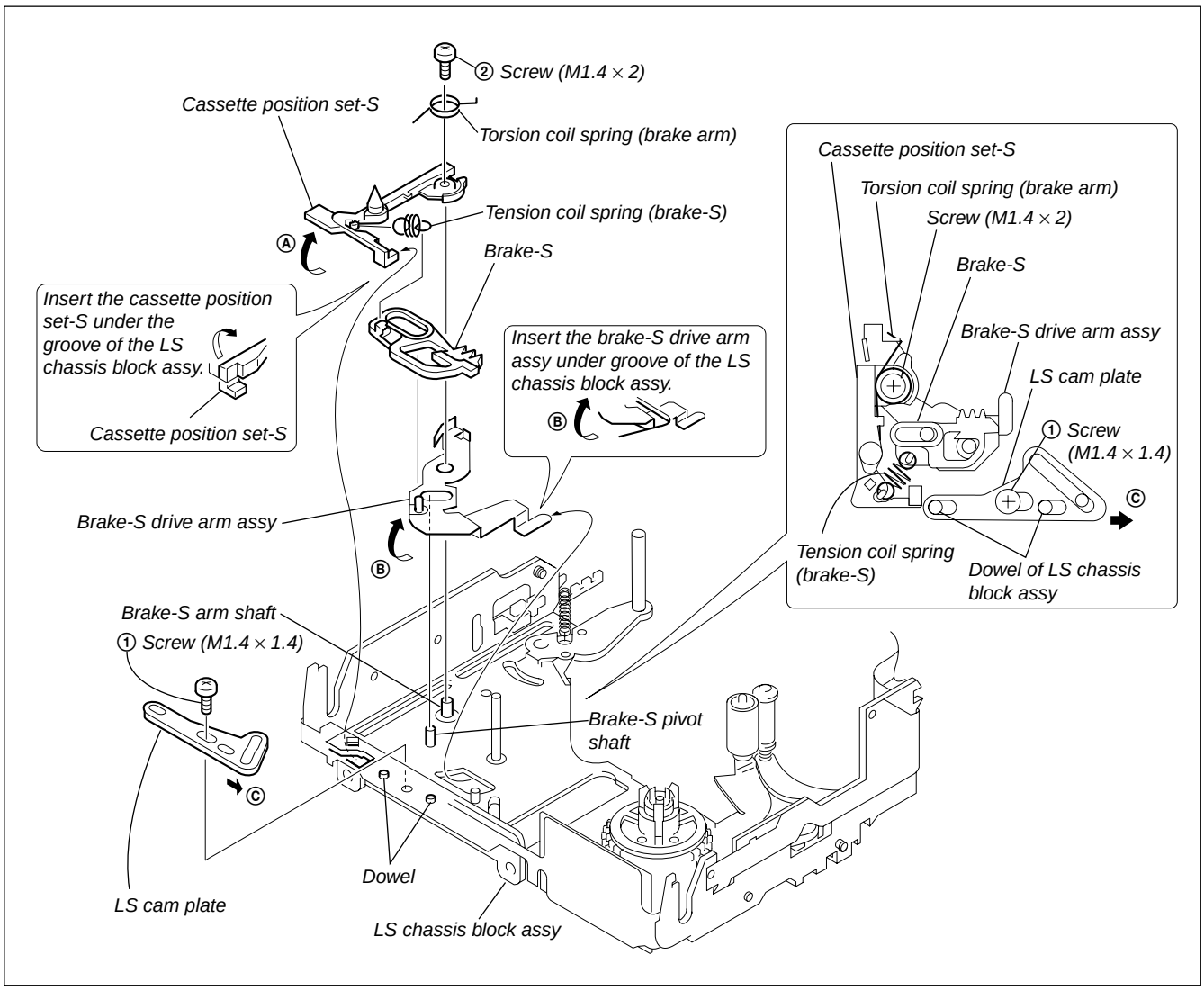


Fig. 6-2-18.

2-3-14. TG7 Block Assy, Torsion Coil Spring (TG7 Return, Pinch Return), Pinch Arm Assy

1. Removal procedure

1) Remove the TG7 block assy in the direction of the arrow Ⓐ.
2) Remove the torsion coil spring (TG7 return) ①.
3) Remove the pinch arm assy in the direction of the arrow Ⓑ.
4) Remove the torsion coil spring (pinch roller return) ②.

2. Attachment procedure

1) Install the torsion coil spring (pinch roller return) ①. (Insert the 90-degree-bent portion of the torsion spring into the square hole of the LS chassis block assy.)
2) Attach the pinch arm assy to the pinch arm bearing.
3) Attach the torsion coil spring (TG7 return) ①.
4) While aligning the TG7 block assy with the groove of the LS chassis block assy, install the TG7 block assy into the TG7 block assy bearing.

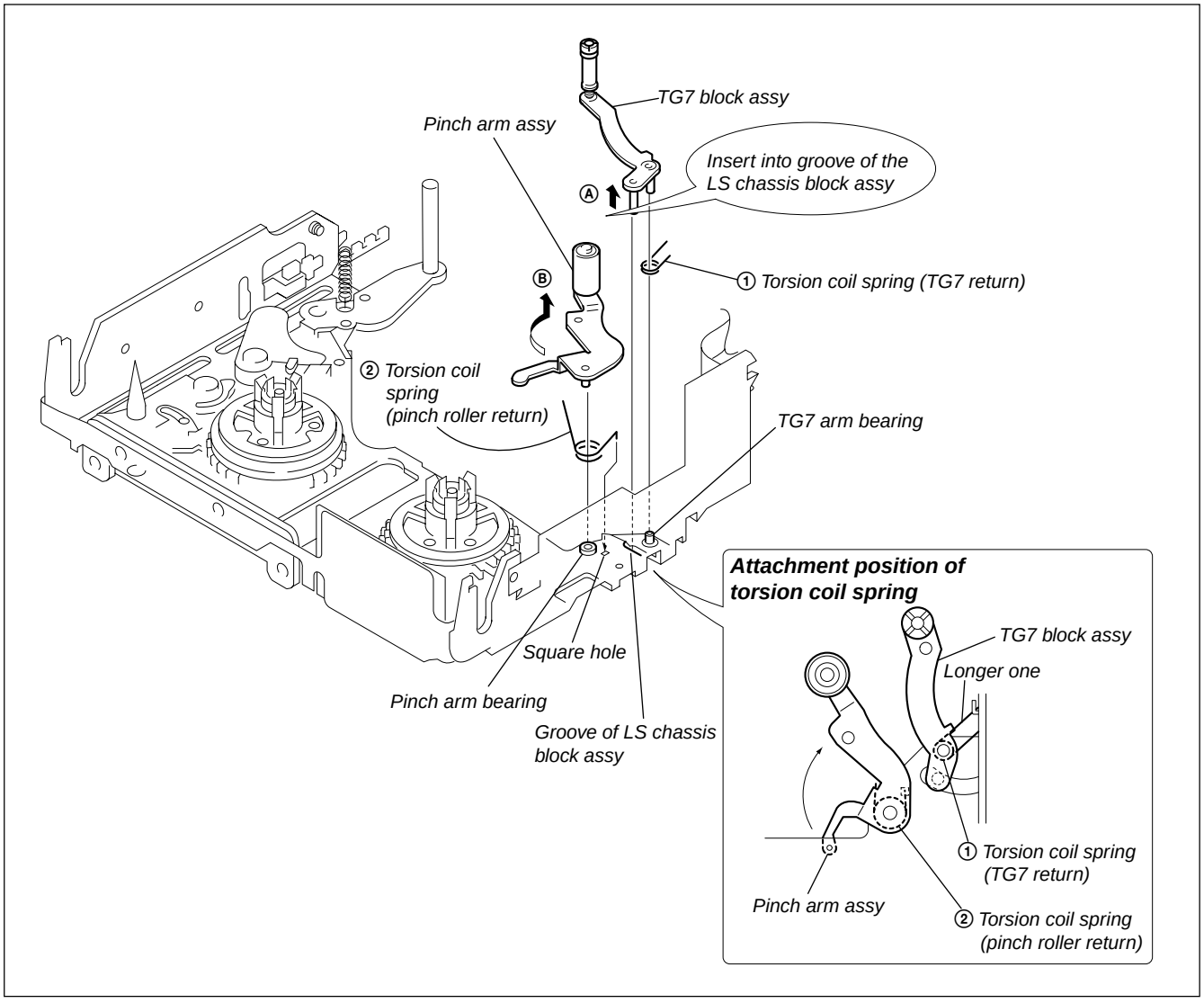


Fig. 6-2-19.

2-3-15. Layout Diagram of FP-102 Flexible Wiring Board

1. Removal procedure

1) Remove the sensor holder-T from groove of the LS chassis block assy in the direction of the arrow Ⓐ.
2) Remove the cassette holder-S by pushing out the hook under the LS chassis block assy towards the direction of the arrow Ⓑ.

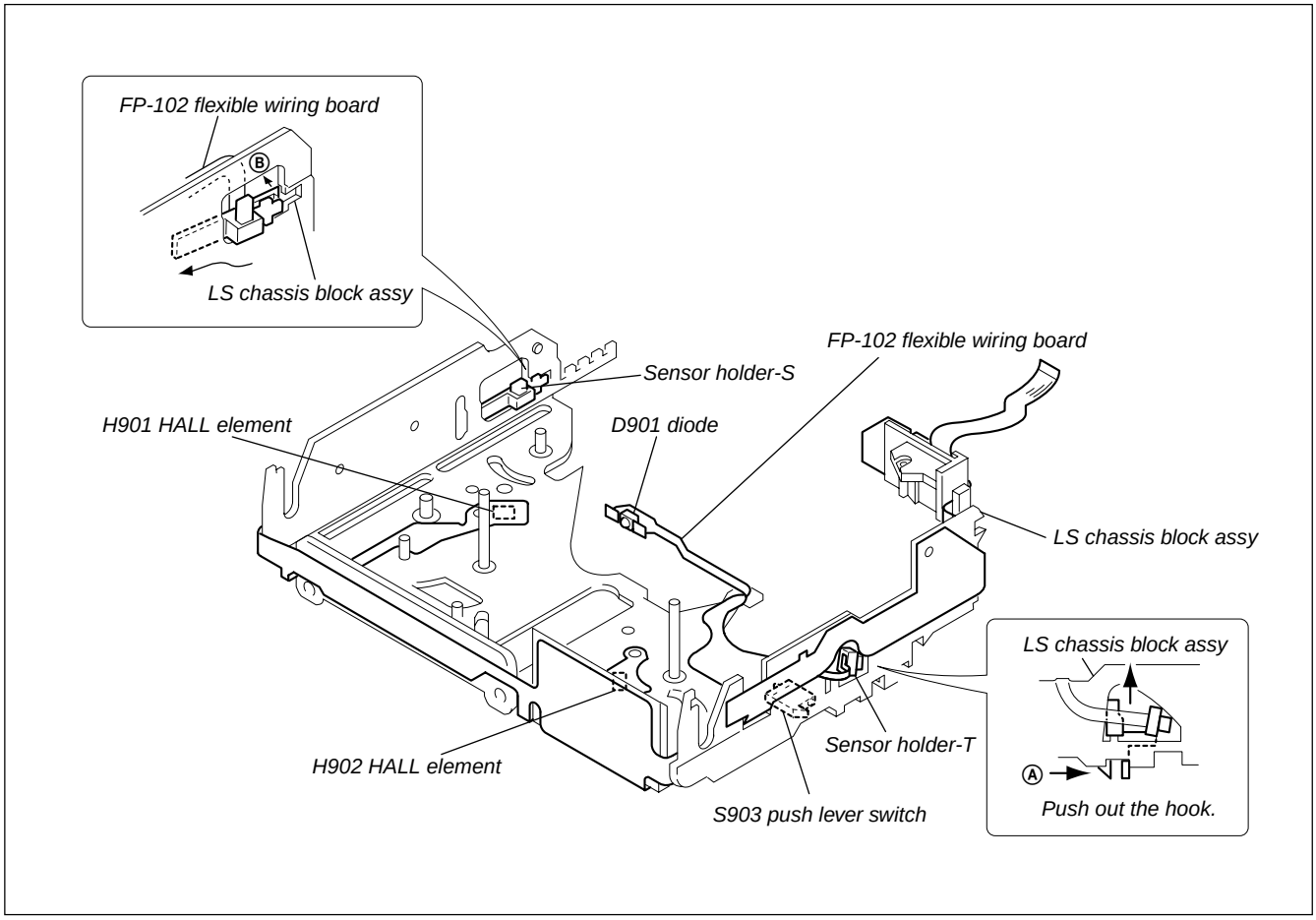


Fig. 6-2-20.

2-3-16. TG1 Cam Slider, LS Arm, LS Roller, Mode Gear Assy, LS Guide Roller

1. Removal procedure

1) Remove the TG1 cam slider.
2) Remove the LS arm. (At this moment, be careful that the LS roller can come out of cam gear A groove.)
3) Remove the LS roller from the LS arm.
4) Remove the LS guide roller.

2. Attachment procedure

1) Coat inside the LS guide roller with grease (1/4 drop of grease) and insert it into the LS guide shafts S1 and S2.
2) Coat outside the LS guide roller with grease (1/2 drop of grease) at the two points as shown.
3) While aligning dowel of the TG1 drive arm with groove of the mode gear assy, insert the TG1 drive arm into the LS guide shaft S1.
4) Coat the portion Ⓐ of the LS arm with grease (1/4 drop of grease) and insert the LS guide roller.
5) Coat both sides of the groove of the cam gear A with grease (1/2 drop of grease). Insert the LS guide roller into groove of the cam gear A and insert the LS arm into the LS guide shaft S2.
6) Insert the TG1 cam slider into the three positions of the LS guide shaft S1, S2 and slider guide shaft. Insert dowel of the TG1 cam slider into groove of the cam gear A.
7) Be careful that greasing points are correct, amount of grease is correct and the LS arm and the TG1 drive arm are not floating.

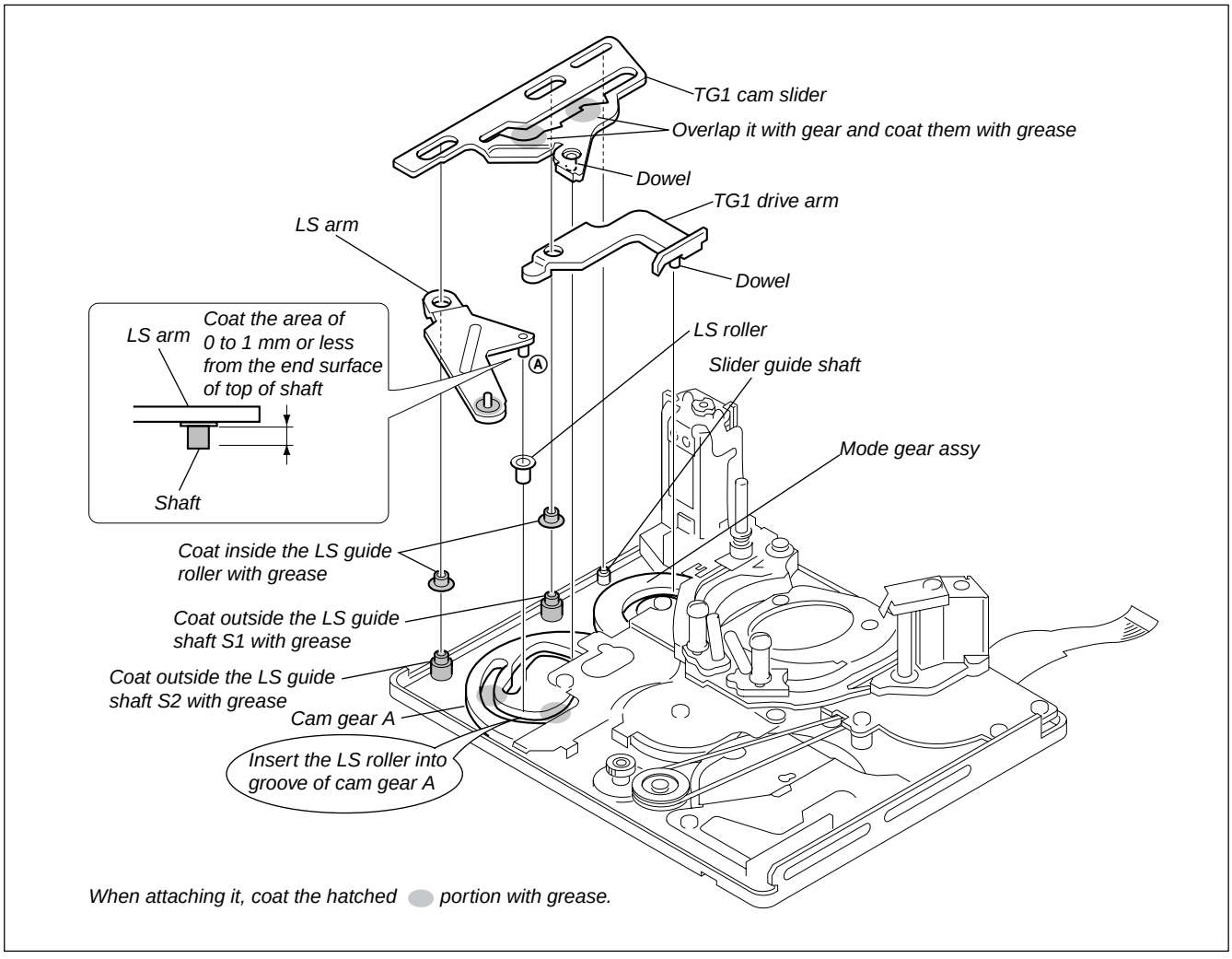


Fig. 6-2-21.

2-3-17. Guide Rail

1. Removal procedure

1) Remove the screw (M1.4 × 2) ①.
2) When removing the guide rail, be careful that claws of the drum base block assy are fully released. Remove the S-side rail, T-side rail and rail of DC motor side in this order.

2. Attachment procedure

1) Engage the claws of the guide rails with the claws of the drum base block assy starting engaging the claw from the T-side rail and S-side rail.
   Note: There must no deformation of guide rail, claws must not be broken, claws must not override, claws must not become white, not be stained or have no play.
2) Fix the guide rail with the screw (M1.4 × 2) ①.
   Tightening torque: 0.059 ± 0.01 N•m (0.6 kg•cm)

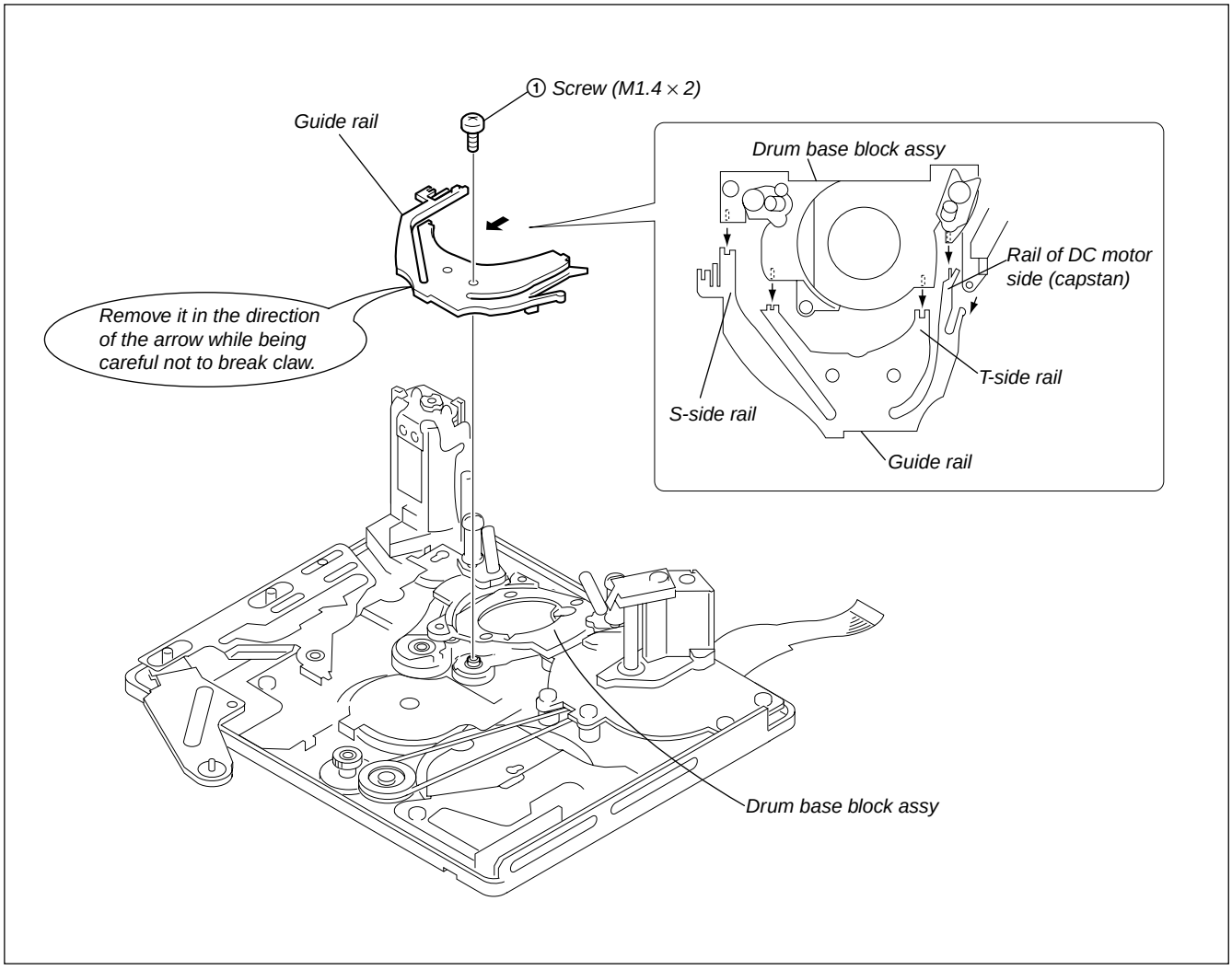


Fig. 6-2-22.

2-3-18. Gear Cover B, GL Driving Gear

1. Removal procedure

1) Remove the screw (M1.4 × 2) ①.
2) Remove the gear cover B in the direction of the arrow Ⓐ.
3) Remove the GL drive gear.

2. Attachment procedure

1) Coat the cam gear A and the GL drive gear with grease (1/2 drop). (Refer to Fig. 2.)
2) Refer to Fig. 1. While adjusting phase of the GL drive gear as shown, insert the GL drive gear into the GL drive shaft. (Insert it while moving the GL drive gear in the clockwise direction.)
3) Insert the two claws of the gear cover B into the square holes of mechanism chassis.
4) Fix the GL drive shaft with the screw (M1.4 × 2) ①. Be sure that the gear cover B must not have any play.
   Tightening torque: 0.059 ± 0.01 N•m (0.6 kg•cm)

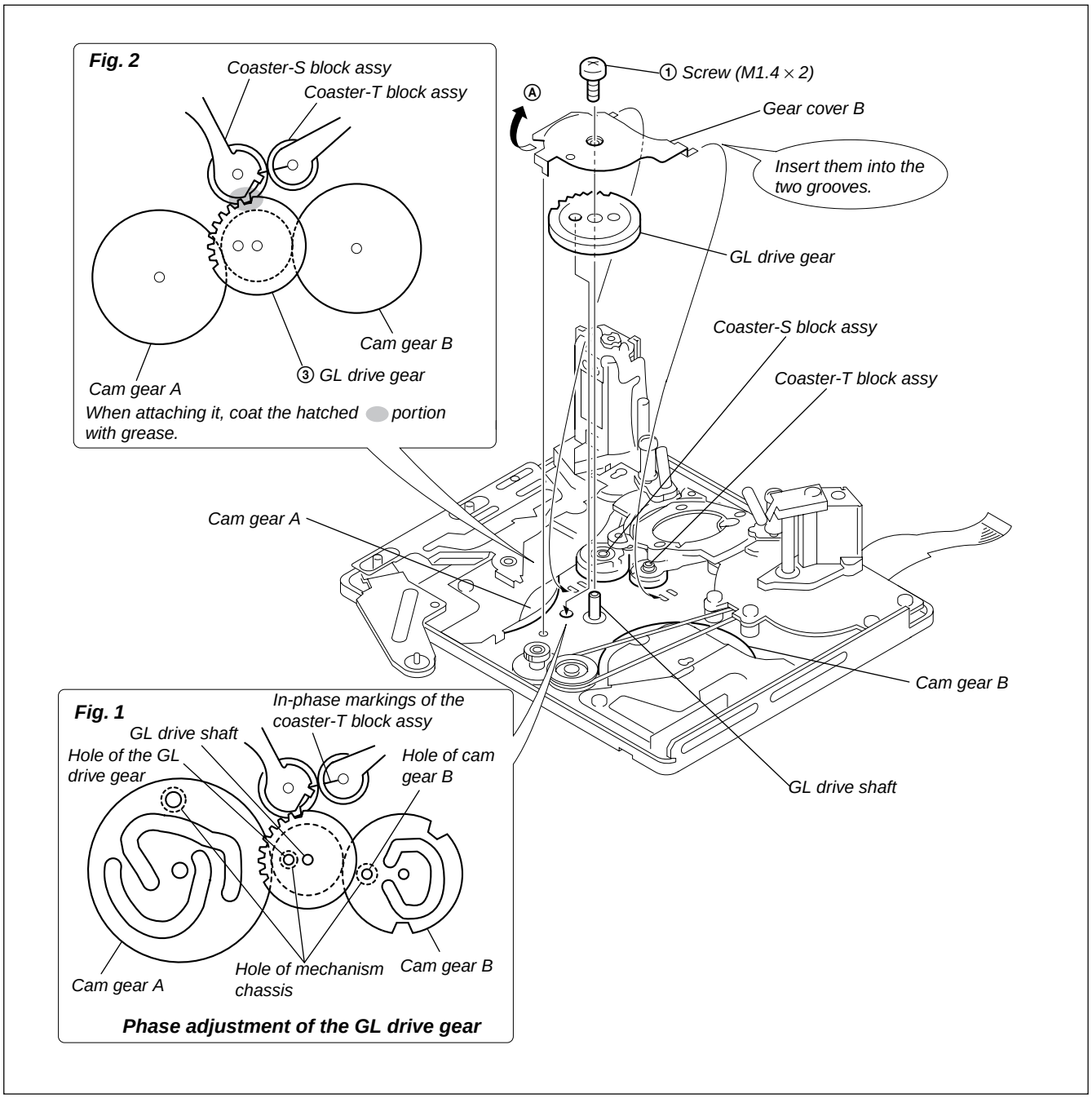


Fig. 6-2-23.

2-3-19. Drum Base Block Assy, Coaster-S Block Assy, Coaster-T Block Assy

1. Removal procedure

1) Remove three screws (M1.4 × 2.5).
2) Move the coaster-S block assy and coaster-T block assy out from the drum base groove in the direction of the arrow Ⓐ.
3) Remove the drum base block assy.
4) Remove the coaster-S block assy from the GL gear shaft-S.
5) Remove the coaster-T block assy from the GL gear shaft-T.

2. Attachment procedure

1) Insert a coaster-S block assy and coaster-T block assy into the drum base groove.
2) Place a drum base block assy on top of the mechanism chassis assy. Insert a coaster-T block assy into the GL gear shaft-T.
3) Insert a coaster-S block assy in the oblique direction. While adjusting phase so that the spring of coaster-S block assy agrees with the GL gear lever marking of the coaster-T block assy, insert a coaster-S block assy into the GL gear shaft-S.
   Note: • There must be no phase difference.
   • Do not remove coaster-S block assy and coaster-T block assy from the drum base block assy.
4) Determine the exact position of the drum base block assy that has been tentatively placed, on the mechanism chassis assy. Tighten the screws at Ⓐ, Ⓑ and Ⓒ in this order.
   Tightening torque: 0.059 ± 0.01 N•m (0.6 kg•cm)

Note: Be careful that the position setting boss of drum base block assy does not override on the mechanism chassis.

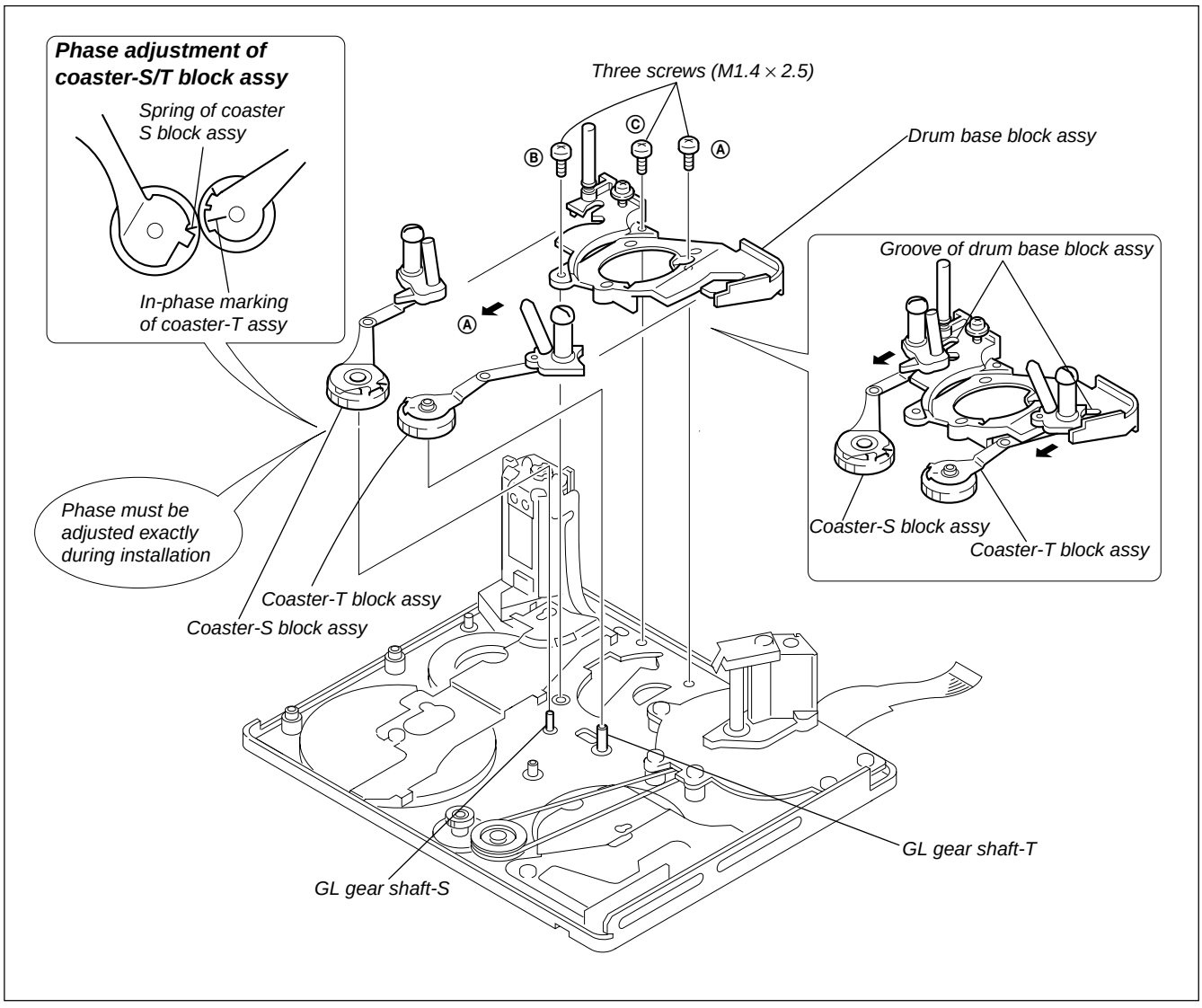


Fig. 6-2-24.

2-3-20. DC Motor (Capstan), Conversion Gear, Relay Gear

1. Removal procedure

1) Remove the three screws (M1.4 × 2) ①.
2) Remove DC motor (capstan). Remove belt from the pulley of conversion gear.
3) Remove conversion gear.
4) Remove relay gear.

2. Attachment procedure

1) Coat relay gear shaft and conversion gear shaft with grease (1/8 drop). (Amount of grease must be strictly controlled.)
2) With the larger gear of the relay gear positioned down, attach the relay gear to the relay gear shaft.
3) With the pulley side of the conversion gear positioned up, engage the conversion gear teeth with the relay gear teeth, and install them.
4) Before installing the DC motor (capstan (including belt)), check that belt is not twisted. Hook a belt on the pulley block of conversion gear. Align three shafts with corresponding holes. At this moment, confirm that belt does not override on the shaft.
5) Install DC motor (capstan) with three screws (M1.4 × 2) ① in the order of Ⓐ, Ⓑ and Ⓒ.
   Ⓐ, Ⓑ, Ⓒ tightening torque
   Ⓐ tightening torque: 0.059 ± 0.01 N•m (0.6 kg•cm)
   Ⓑ and Ⓒ tightening torque: 0.038 ± 0.01 N•m (0.4 kg•cm)

Note: Be careful that gears and belts are not damaged or dust is not attached. Be careful also not to splash grease.

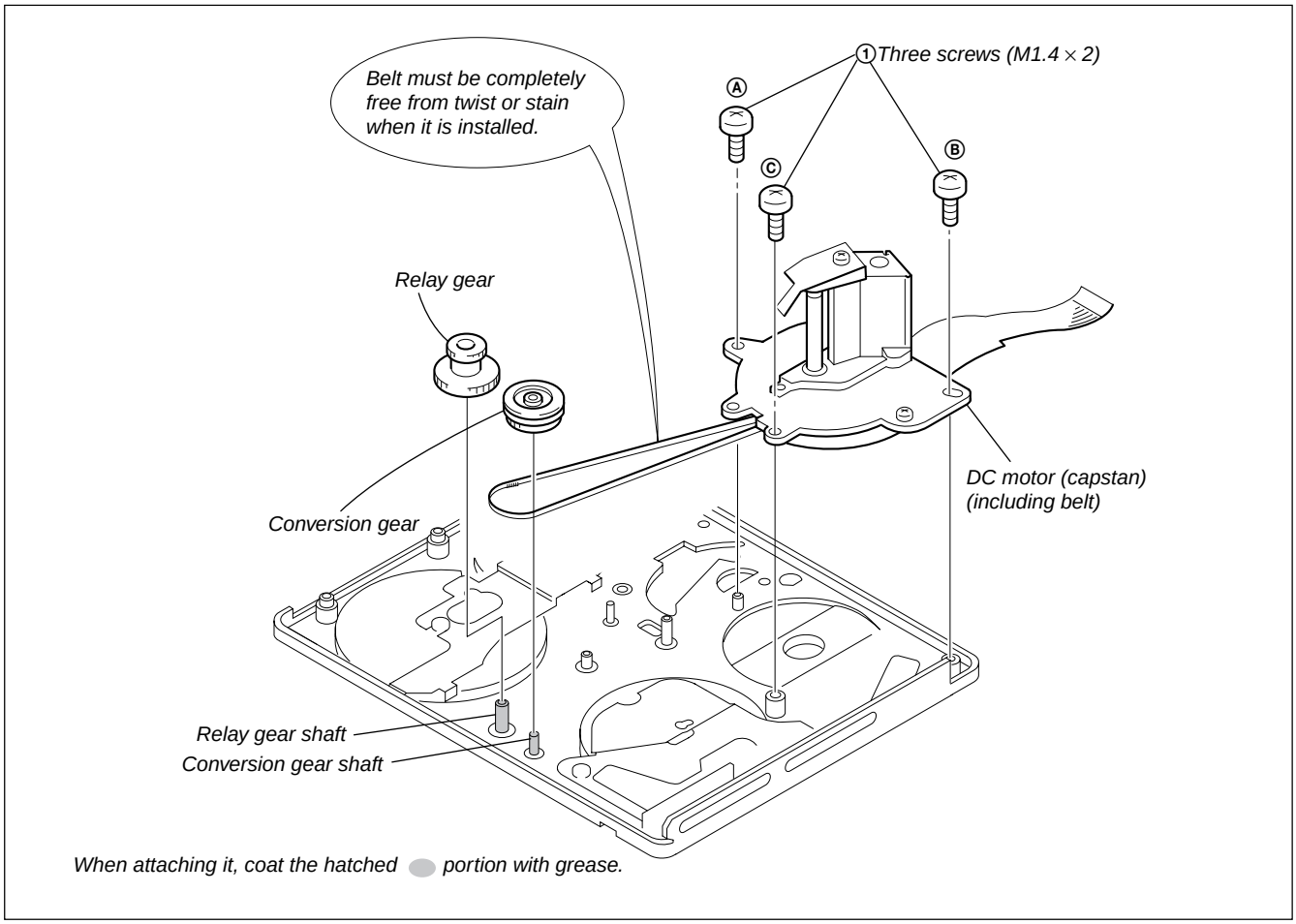


Fig. 6-2-25.

2-3-21. Gear Cover C, Pinch Driving Arm Assy, Cam Gear B

1. Removal procedure

1) Remove the screw (M1.4 × 2) ①.
2) Move the key slot of the gear cover C in the direction of the arrow Ⓐ and remove the gear cover C.
3) Remove the pinch drive arm assy.
4) Remove the cam gear B.

2. Attachment procedure

1) Identify the front side and the rear side of a cam gear B. Align the cam gear B shaft, the gear phasing hole and the LS chassis hole. Then attach the cam bear B. coat groove of a cam gear with grease (1/2 drop).
2) Align the pinch drive arm assy with the pinch drive pivot shaft. While aligning dowel with the cam groove of the cam gear B, insert the pinch drive arm assy.
3) Insert the "one-step bent portion" of gear cover C into notch of the chassis, insert the cam gear B shaft into the key hole of the gear cover. C.
4) Insert the gear cover C into the pinch drive pivot shaft and fix it with the screw (M1.4 × 2) ①. After tightening the screw (M1.4 × 2) ①, move the gear cover C in order to confirm that there is a little play.
   Tightening torque: 0.059 ± 0.01 N•m (0.6 kg•cm)

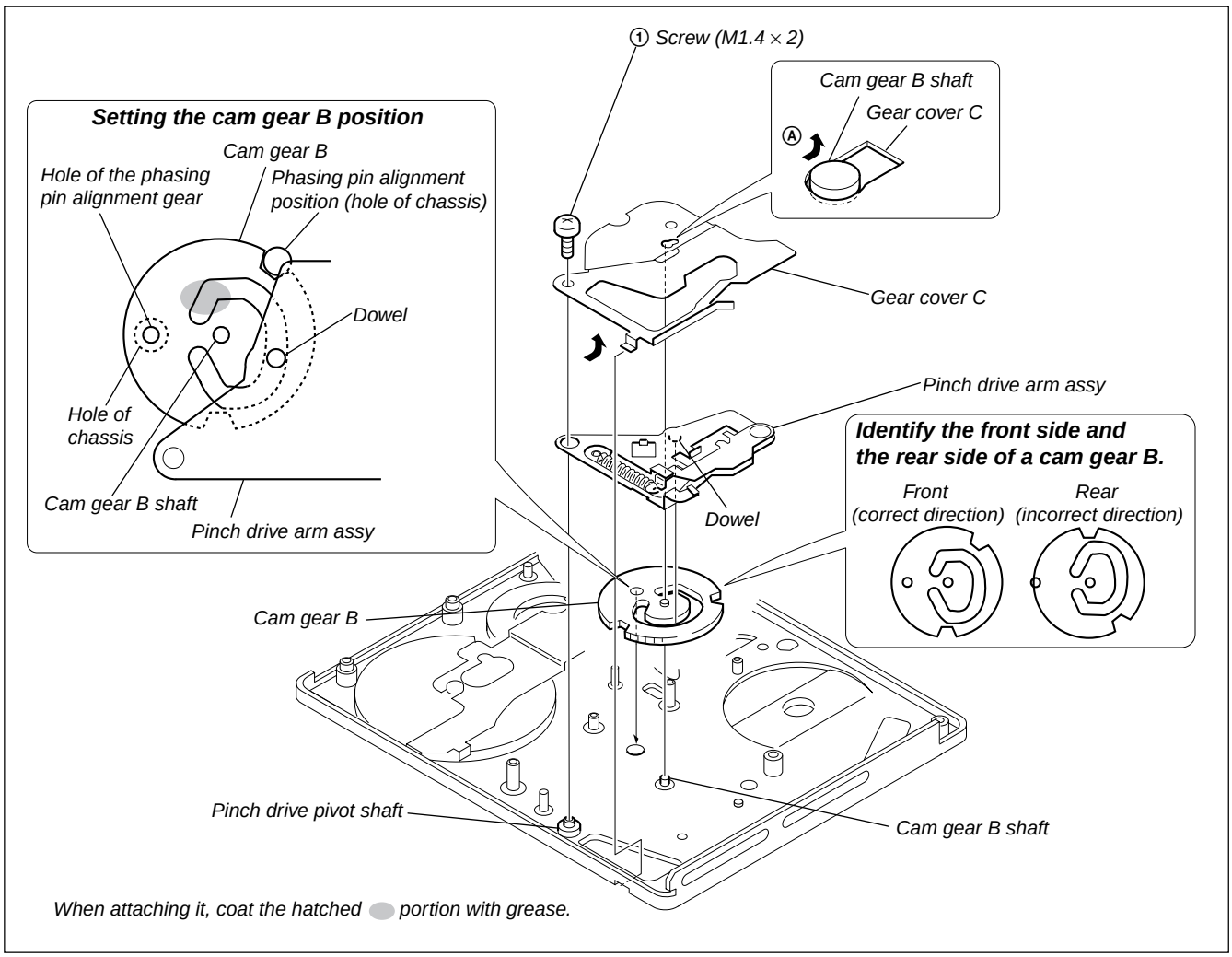


Fig. 6-2-26.

2-3-22. Gear Cover A, FP-100 Flexible Wiring Board

1. Removal procedure

1) Remove the screw (M1.4 × 2) ①.
2) Remove the gear cover A in the direction of the arrow Ⓐ.
3) Remove the screw (M1.4 × 2.5) ②.
4) Remove soldering from the motor terminal and FP-228 flexible wiring board (DEW sensor) that are used to connect the FP-100 flexible wiring board with the motor holder block assy.
5) Remove the motor holder block assy.

2. Attachment procedure

1) Align the motor holder block assy position with the chassis square hole and round hole. The press the motor holder block assy with finger.
   Note: Coat the worm shaft with grease (1/2 size of a rice gain).
2) Fix the motor holder block assy with the screw (M1.4 × 2.5) ②.
   Tightening torque: 0.059 ± 0.01 N•m (0.6 kg•cm)
3) Install the gear cover A as follows: Hook the shaft with the key slot and align the U-groove with the cam gear A shaft. Confirm at this time that there is a play.
4) Attach the gear cover A to the cam gear A shaft and fix them with the screw (M1.4 × 2) ①.
   Tightening torque: 0.059 ± 0.01 N•m (0.6 kg•cm)
5) Connect the FP-100 flexible wiring board with the motor holder block assy (motor terminal and FP-228 flexible wiring board (DEW sensor)) by soldering.
   Note: Do not touch the DEW sensor.

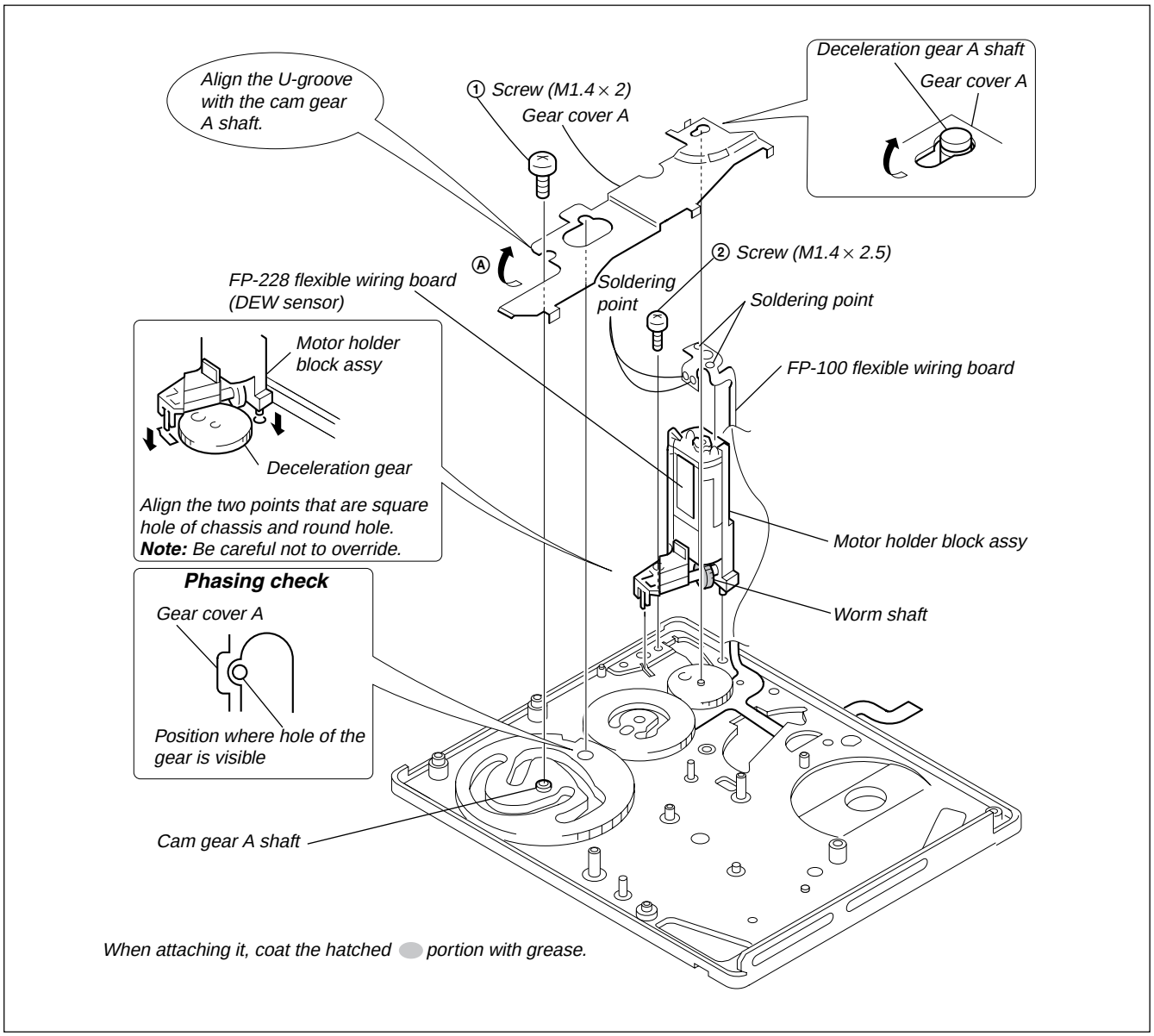


Fig. 6-2-27.

2-3-23. Deceleration Gear, Mode Gear Assy, FP-100 Flexible Wiring Board, Cam Gear A

1. Removal procedure

1) Remove the deceleration gear.
2) Remove the screw (M1.4 × 2) ①.
3) Remove the cam gear A.
4) Remove the mode gear assy.
5) Remove the FP-100 flexible wiring board.

Note 1: Do not touch the foil pattern area of the FP-100 flexible wiring board. Any foreign materials must not be adhered.
Note 2: Do not remove the mode gear assy unnecessarily.

2. Attachment procedure

1) Install the FP-100 flexible wiring board to the mechanism chassis. Confirm that flexible wring board is not stained, broken, bent or damaged.
2) Coat the entire contact points of the mode pattern area of the FP-100 flexible wiring board with the contact-point grease (equivalent to 1.5 drops). (Any foreign materials must not be mixed in the contact-point grease.)
3) Attach the mode gear assy to the mode gear shaft.
4) Install the deceleration gear as follows: Position the deceleration gear with its small gear down, and engage the small gear tooth with the mode gear tooth. Rotate the gear tooth until the phasing marking of the mode gear assy arrives at the phasing position of the cam gear A.
5) Identify the front and rear sides of the cam gear A. Confirm that the marking of the cam gear A and that of the mode gear assy agree.
6) Attach the screw (M1.4 × 2) ① of the mode gear assy. Tightening torque: 0.059 ± 0.01 N•m (0.6 kg•cm)
7) Connect the FP-100 flexible wiring board to the motor holder block assy by soldering in accordance with section 2-3-22 [2. Attachment procedure] step 7.

Note 1: If the FP-100 flexible wiring board is removed, replace it with a new FP-100 board, and do not use the removed FP-100 flexible wiring board.
Note 2: Cautions when attaching the FP-100 flexible wiring board:
① It must not override on the mode gear shaft.
② It must be aligned with the position setting hole.
③ It must no float, must not have stain or must not be broken.
④ Never touch the foil pattern area with hand.

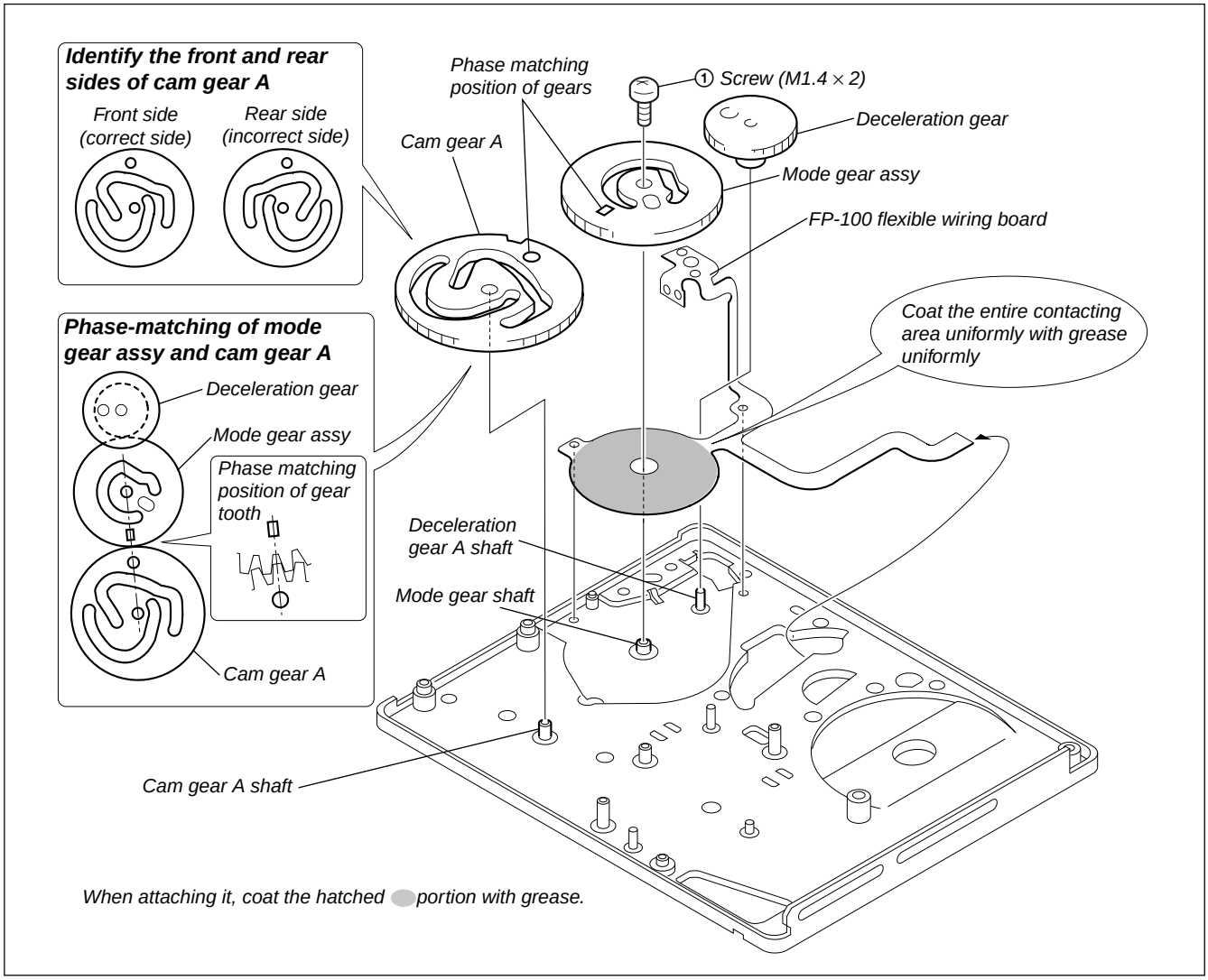


Fig. 6-2-28.

2-4. Tape Path Adjustment

2-4-1. Adjustment Preparation

1) Clean the tape running surface (tape guides, drum, capstan, pinch roller) referring to Service Manual.
2) Connect adjustment remote commander (Ref. No. J-5) to the LANC terminal of the machine. Set the HOLD switch to ON.
3) Connect an oscilloscope to the VC-318 board CN1008 via the CPC-8 jig (Ref. No. J-8).
   Scope channel 1: VC-318 board CN1008 pin ⑳ (Note)
   External trigger: VC-318 board CN1008 pin ⑰
   Note: Connect CN1008 pin ⑳ and pin ⑲ (GND) with 75 Ω resistor (1-247-804-11).
4) Play the tracking alignment tape (XH2-1A1)(Ref. No. J-18) back.
5) Select page: 0, address: 10 and set data: 00.
6) Select page: 3, address: 33 and set data: 08.
7) Select page: 3, address: 26 and set data: 31.
8) Confirm that RF waveform on scope is normal in both entrance side and exit side. (Refer to Fig. 6-2-30 Ⓐ).
   If RF waveform is not normal in entrance side and exit side, perform the adjustment of section 4-2. and later. (Refer to Fig. 6-2-30 Ⓑ and Ⓒ).
9) When the required conditions of step 8) are satisfied and adjustment/check are complete, perform [Required work upon completion of adjustment] as described below.

[Required work upon completion of adjustment]

1) Connect adjustment remote commander (Ref. No. J-5) to the LANC terminal of the machine. Set the HOLD switch to ON.
2) Select page: 0, address: 10 and set data: 00.
3) Select page: 3, address: 26 and set data: 00.
4) Select page: 3, address: 33 and set data: 00.

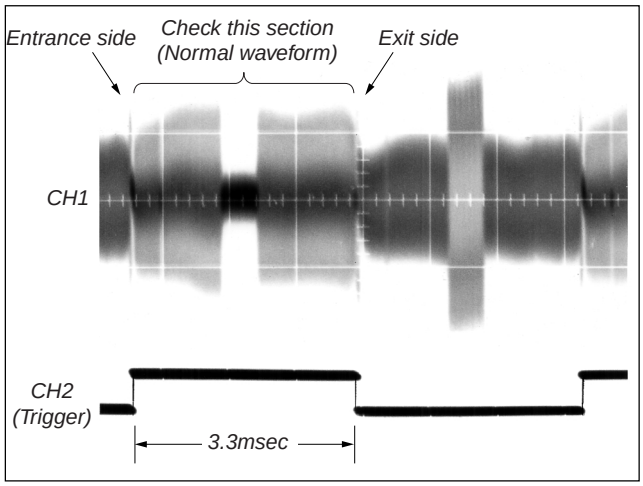


Fig. 6-2-29.

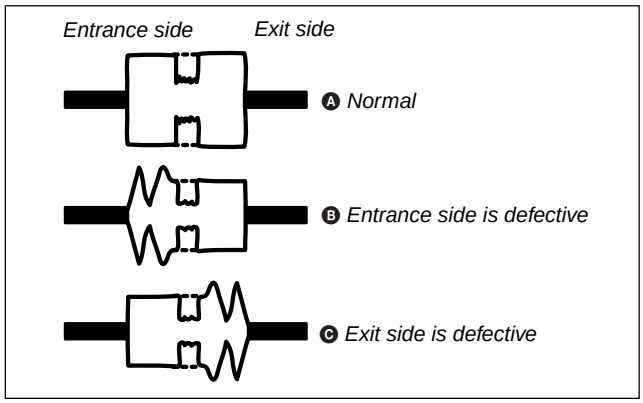


Fig. 6-2-30.

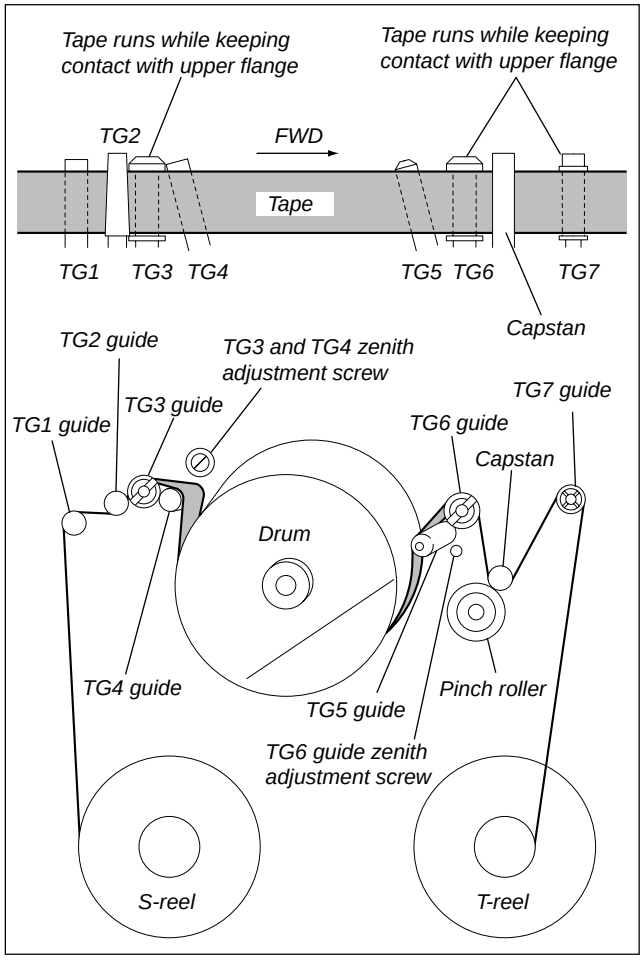


Fig. 6-2-31.

2-4-2. Tracking Adjustment

1) Play the tracking alignment tape (XH2-1A1) (Ref. No. J-18) back.
2) Adjust TG3 guide until the envelope of entrance side waveform becomes flat.
3) Adjust TG6 guide until the envelope of exit side waveform becomes flat.

Note: Do not touch or adjust TG3 and TG4 guide zenith adjustment screw.

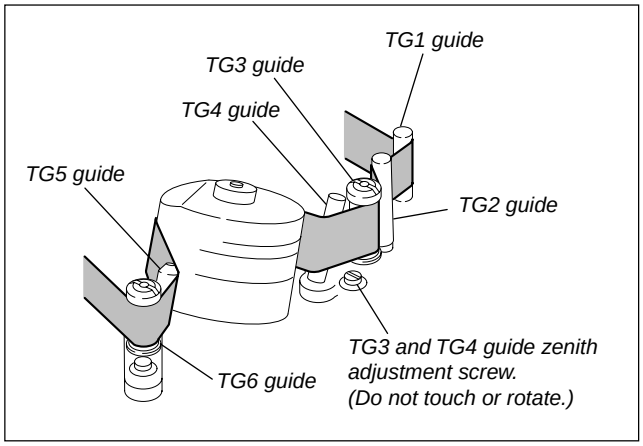


Fig. 6-2-32.

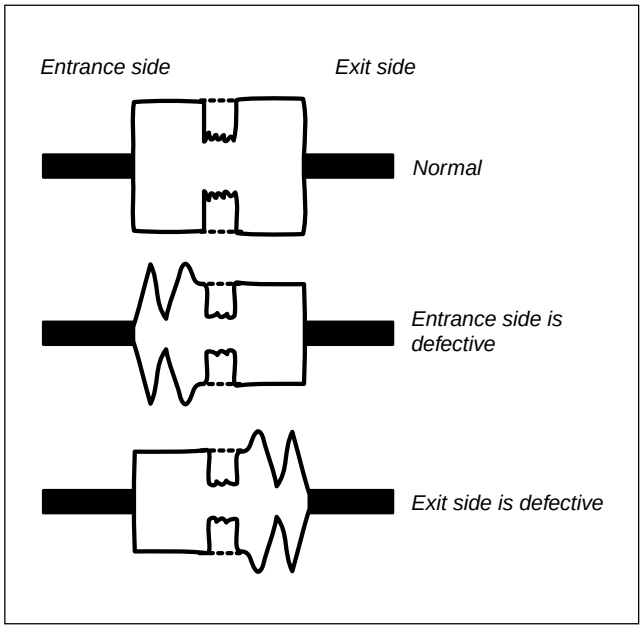


Fig. 6-2-33.

2-4-3. TG3 Guide Adjustment

1) Play the tracking alignment tape (XH2-1A1) (Ref. No. J-18) back.
2) Run the tape in FWD mode. Confirm that tape runs while keeping contact with upper flange of TG3. If any clearance is found between top flange and tape, rotate the adjustment nut in clockwise direction until tape runs while keeping contact with upper flange of TG3.

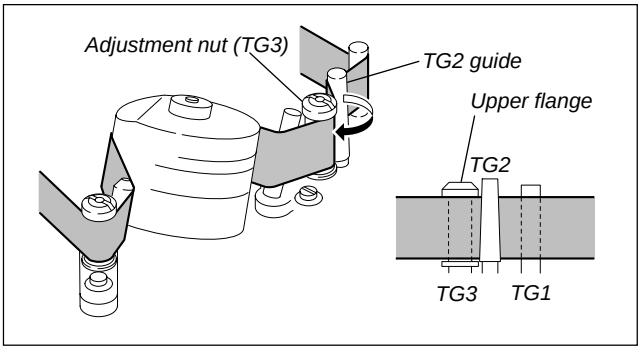


Fig. 6-2-34.

When tape runs while keeping contact with upper flange of TG3, confirm that the tracking waveform does not change. If the tracking waveform has poor amplitude at the entrance side as shown, perform tracking adjustment of entrance side.

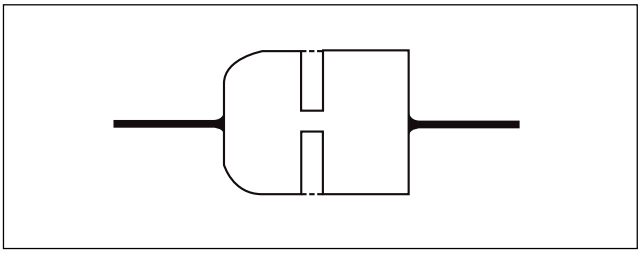


Fig. 6-2-35.

After entrance side is adjusted, establish the RVS mode. Make an attempt to rotate the TG3 adjustment nut by 180 degrees in the counter-clockwise direction in order to confirm that tape rises upward. Upon confirmation, return the TG3 adjustment nut to the original position.

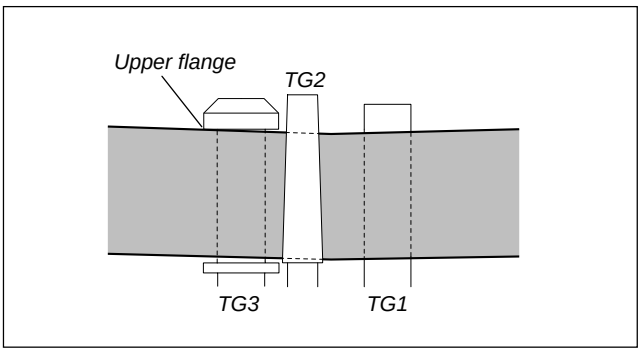


Fig. 6-2-36.

2-4-4. TG7 Guide Adjustment

1) Establish the FWD mode. Confirm that tape slack does not occur in between capstan and TG7 guide. (Specification value: 0.5 mm or less of tape slack) If any tape slack occurs, rotate the tG7 guide to remove the tape slack.
2) Establish the REV mode. Confirm that RF waveform at exit side is normal. (Refer to Fig. 6-2-38.)
3) If the RF waveform at exit side has abnormality, rotate the TG7 nut by 90 degrees in counter-clockwise direction. Then perform steps 1) and 2) again.

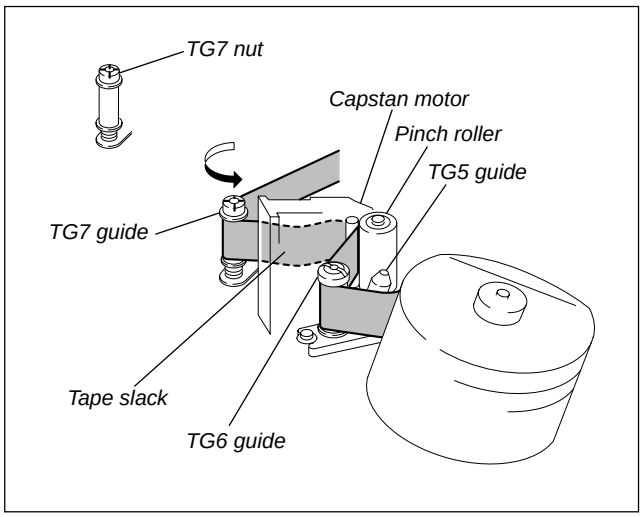


Fig. 6-2-37.

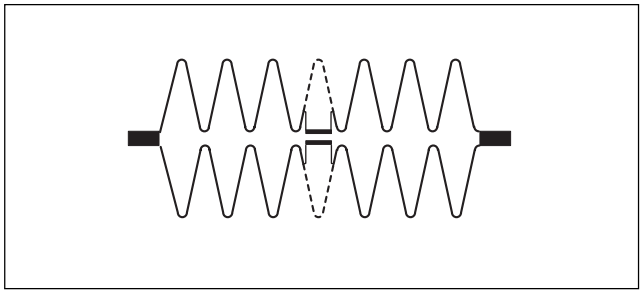


Fig. 6-2-38.

2-4-5. Check upon Completion of Adjustment

1. Tracking Check

1) Play the tracking alignment tape (XH2-1A1) (Ref. No. J-18) back.
2) Confirm that RF waveform has amplitude of about 0.65A (65%) in the FWD mode taking the waveform amplitude during CUE/REV mode as A (= 100%). (Refer to Fig. 6-2-39.)

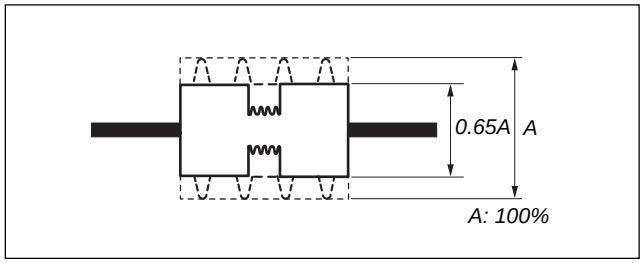


Fig. 6-2-39.

3) Confirm that difference between the minimum amplitude (E.min) and the maximum amplitude (E.max) of RF waveform in the FWD mode is 30% or more taking the waveform amplitude during CUE (or REV) mode as A (= 100%).

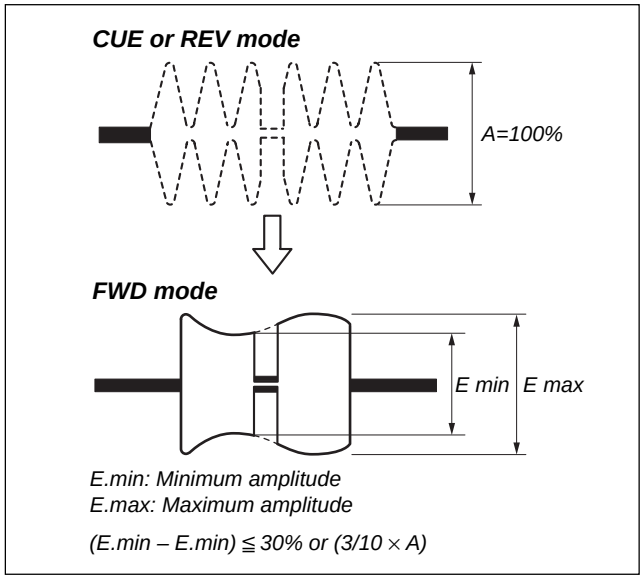


Fig. 6-2-40.

4) Confirm that the RF waveform does not have excessive fluctuation.

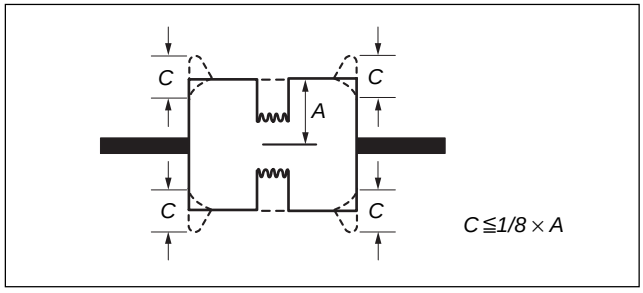


Fig. 6-2-41.

2. CUE/REV Check

1) Play the tracking alignment tape (XH2-1A1) (Ref. No. J-18) back and enter the REV mode. Confirm that pitches between peaks of RF waveform are equally spaced. (Refer to Fig. 6-2-42.)
   If pitches between peaks of RF waveform are not equal, perform sections “2-4-2. Tracking Adjustment” and “2-4-4. TG7 Guide Adjustment”.
2) Enter the CUE mode. Confirm that pitches between peaks of RF waveform are equally spaced. (Refer to Fig. 6-2-42.) If pitches between peaks of RF waveform are not equal, perform sections “2-4-2. Tracking Adjustment”.

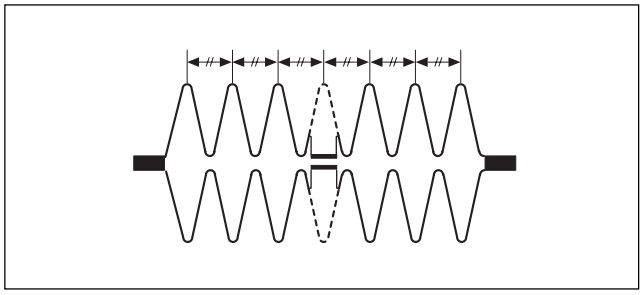


Fig. 6-2-42.

3. Rise-up Check

1) Play the tracking alignment tape (XH2-1A1) (Ref. No. J-18) back.
2) Establish the FWD playback mode. Confirm that RF waveform rises up in two seconds or less. Confirm also at this time that tape slack does not occur at around pinch roller.
3) Run a tape in CUE/REV mode and FF/REW mode. After that play the tape back and confirm that RF waveform rises up in two seconds or less.
4) Repeat steps 2) and 3) repeatedly.

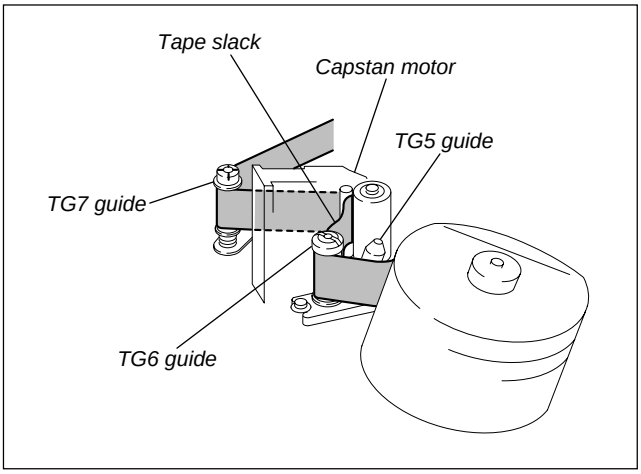


Fig. 6-2-43.

4. Tape Run Check

Run a tape in CUE/REV mode. Confirm to see that major tape curl does not occur at TG2 lower taper, TG3 upper flange, TG6 upper flange and TG7 upper flange during CUE/REV mode.

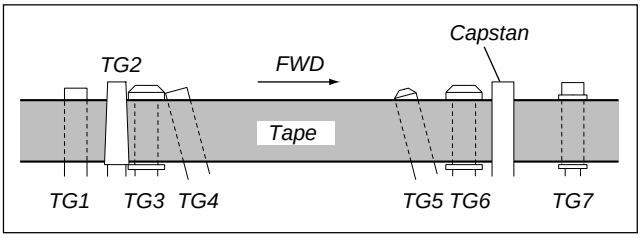


Fig. 6-2-44.

6-3. VIDEO SECTION ADJUSTMENT

NTSC model: DSR-PDX10
PAL model: DSR-PDX10P

3-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

3-1-1. Equipment to Required

1) TV monitor
2) Oscilloscope (dual-phenomenon, band width above 30 MHz with delay mode) (Unless specified otherwise, use a 10 : 1 probe.)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Regulated power supply
11) Alignment tapes
    - Tracking standard (XH2-1A1)
      Parts code: 8-967-999-03
    - SW/OL standard (XH2-3)
      Parts code: 8-967-997-11
    - Audio operation check for NTSC (XH5-3)
      Parts code: 8-967-997-51
    - System operation check for NTSC (XH5-5)
      Parts code: 8-967-997-61
    - Audio operation check for PAL (XH5-3P)
      Parts code: 8-967-997-55
    - System operation check for PAL (XH5-5P)
      Parts code: 8-967-997-66
12) Adjustment remote commander (J-6082-053-B)
13) CPC-8 jig (J-6082-388-A)

3-1-2. Precautions on Adjustment

Note1: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

1) The adjustments of this unit are performed in the VTR mode or camera mode.
   To set to the VTR mode, set the power switch to "VCR" (or "PLAYER") or set the "Forced VTR Power ON mode" using the adjustment remote commander (Note2).
   To set to the Camera mode, set the power switch to "CAMERA" or set the "Forced Camera Power ON mode" using the adjustment remote commander (Note3).
   After completing adjustments, be sure to exit the "Forced VTR Power ON Mode" or "Forced Camera Power ON Mode". (Note5)
2) Cabinet (R) (CK-134 board, LCD block) need not be connected. But removing the cabinet (R) (removing the CK-134 board CN5203) means removing the lithium 3V power supply (CK-134 board, BT5201) , data such as date, time, user-set menus will be lost. After completing adjustments, reset these data.
   But, the self-diagnosis data and the data on history of use (total drum rotation time etc.) will be kept even if the cabinet (R) has been removed. (Refer to "6-4.Service Mode" for the data on the history use and the self-diagnosis data.)
   To remove the cabinet (R), disconnect the following connector.
   CK-134 board CN5203 (60P, 0.5mm)
3) The front panel block (MA-425 board, focus ring, microphone unit)) need not be connected except for the audio system adjustments. To remove it, disconnect the following connectors.
   MA-425 board CN5906 (33P, 0.5mm)
   MA-425 board CN5904 (8P, 0.5mm)
4) The EVF block (LB-089 board) and the intelligent accessory shoe are need not be connected. To remove it, disconnect the following connectors.
   DB-016 board CN7211 (21P, 0.3mm)
   DB-016 board CN7205 (27P, 0.3mm)
5) The memory stick connector (FP-503 flexible) is need not be connected. To remove it, disconnect the following connector.
   VC-318 board CN1009 (10P, 0.5mm)
6) The control switch block (CF-1870) is need not be connected. To remove it, disconnect the following connector.
   DB-016 board CN7200 (8P, 0.5mm)
7) By setting the "Forced VTR Power ON mode", the video section can be operate even if the control switch block (PS-1870) has been removed. When removing it, disconnect the following connector.
   DB-016 board CN7201 (6P, 0.5mm)
9) The lens block (CD-389 board) is need not be connected. To remove it, disconnect the following connectors.
   VC-318 board CN1201 (60P, 0.5mm)
   DB-016 board CN1501 (10P, 0.5mm)
   DB-016 board CN1004 (39P, 0.3mm)

Note2: Setting the "Forced VTR Power ON" mode (VTR mode)

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
   The above procedure will enable the VTR power to be turned on with the control switch block (PS-1870 block) removed.
   After completing adjustments, be sure to exit the "Forced Power ON mode".

Note3: Setting the "Forced Camera Power ON" mode (Camera mode)

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.
   The above procedure will enable the camera power to be turned on with the control switch block (PS-1870 block) removed.
   After completing adjustments, be sure to exit the "Forced Power ON mode".

Note4: Setting the "Forced Memory Power ON" mode (Memory mode)

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 05, and press the PAUSE button of the adjustment remote commander.
   The above procedure will enable the memory power to be turned on with the control switch block (PS-1870 block) removed.
   After completing adjustments, be sure to exit the "Forced Power ON mode".

Note5: Exiting the "Forced Power ON" mode

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

3-1-3. HOW TO ENTER RECORD MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0C, and press the PAUSE button.
   (The mechanism enters the record mode automatically.)

Note: The function buttons becomes inoperable.

5) To quit the record mode, select page: 3, address: 01, set data: 00, and press the PAUSE button. (Whenever you want to quit the record mode, be sure to quit following this procedure.)

3-1-4. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, and set data: 0B, and press the PAUSE button.
   (The mechanism enters the playback mode automatically.)

Note: The function buttons becomes inoperable.

5) To quit the playback mode, select page: 3, address: 01, set data: 00, and press the PAUSE button. (Whenever you want to quit the playback mode, be sure to quit following this procedure.)

3-1-5. Adjustment Connectors

Some of the adjustment points of the video section are concentrated at VC-318 board CN1008. Connect the measuring instruments via the CPC-8 jig (J-6082-388-A). The following table lists the pin numbers and signal names of CN1008.

Pin No.	Signal Name	Pin No.	Signal Name
1	EVF VB	2	D 2.8V
3	EVF LED DA	4	EVF VG
5	EVF VCO	6	EVF VR
7	MD2	8	XCS MC FLASH
9	XINIT	10	XCS ST IMAGE IC
11	DRUM ON	12	FRRP
13	REC CRRT1	14	REC CRRT0
15	REG GND	16	HI XRESET
17	SWP	18	RF IN
19	GND	20	RF MON

Table 6-3-1.

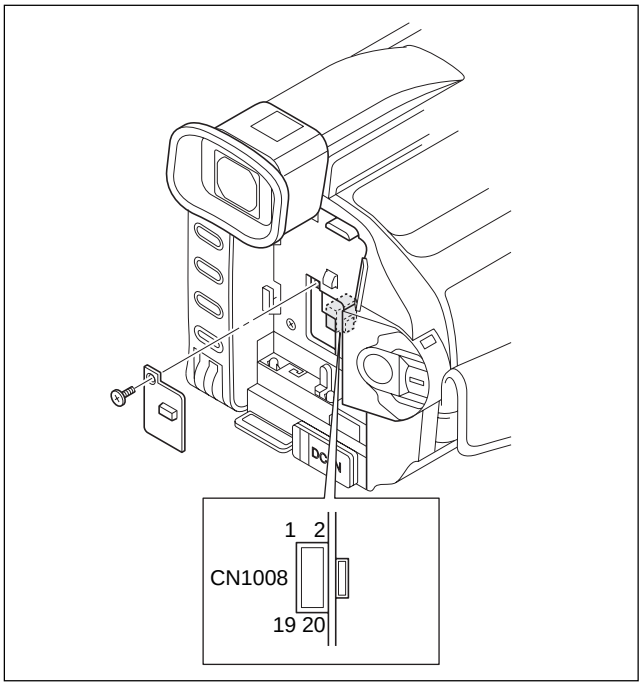


Fig. 6-3-1.

3-1-6. Connecting the Equipment

Connect the measuring instruments as shown in Fig. 6-3-2., and perform the adjustments.

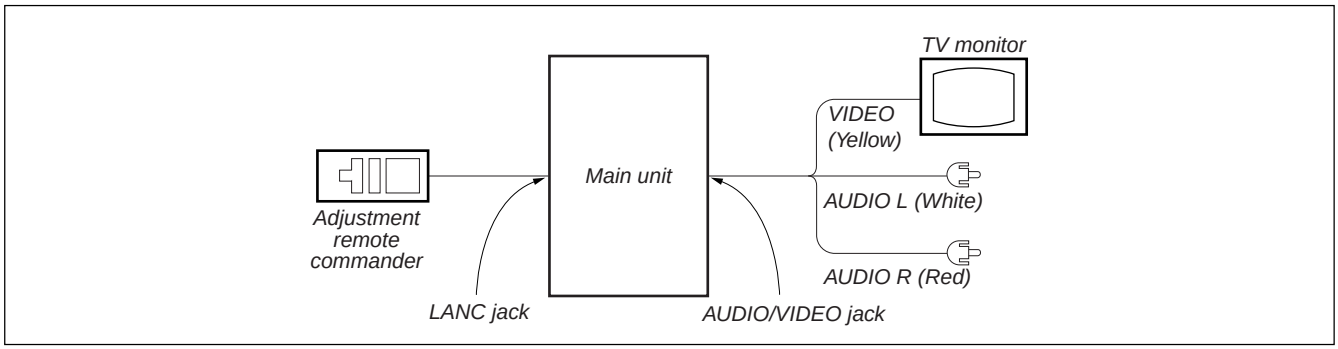


Fig. 6-3-2.

3-1-7. Alignment Tapes

Use the alignment tapes shown in the following table.
Use tapes specified in the signal column of each adjustment.

Name	Use
Tracking standard (XH2-1A1)	Tape path adjustment
SW/OL standard (XH2-3)	Switching position adjustment
Audio operation check (XH5-3 (NTSC), XH5-3P (PAL))	Audio system adjustment
System operation check (XH5-5 (NTSC), XH5-5P (PAL))	Operation check

Fig. 6-3-3. shows the 75% color bar signals recorded on the alignment tape for Audio Operation Check.

Note: Measure with video terminal (Terminated at 75Ω)

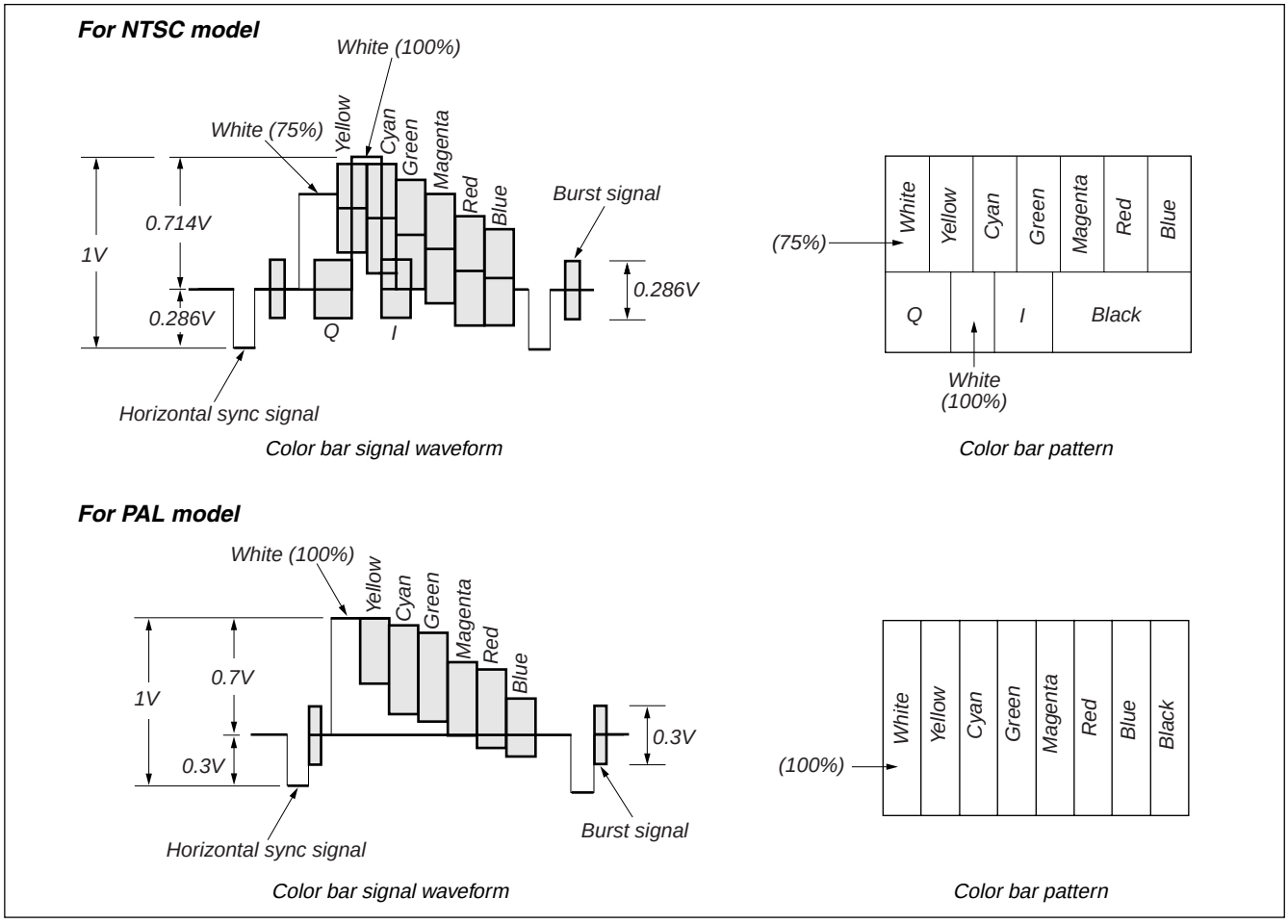


Fig. 6-3-3. Color bar signal of alignment tapes

3-1-8. Input/Output Level and Impedance

Video input/output
- Special stereo mini jack
- Video signal: 1 Vp-p, 75Ω unbalanced, sync negative

S video input/output
- 4-pin mini DIN
- Luminance signal: 1 Vp-p, 75Ω unbalanced, sync negative
- Chrominance signal: 0.286 Vp-p, 75Ω unbalanced (NTSC)
  : 0.300 Vp-p, 75Ω unbalanced (PAL)

Audio input/output
- Special stereo mini jack
- Input level: 327mV
- Input impedance: More than 47kΩ
- Output level: 327mV (at load impedance 47kΩ)
- Output impedance: Below 2.2kΩ

3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Initialization of 8, A, B, C, D, E, F, 1B, 1E, 1F Page Data

If the 8, A, B, C, D, E, F, 1B, 1E, 1F page data is erased due to some reason, perform "1-2. INITIALIZATION OF PAGE DATA" of "5-1. CAMERA SECTION ADJUSTMENT"

Note: When reading or writing the 1B, 1E, 1F page data, select page: 0, address: 10, and set data: 01, then select B, E or F page. The 1B. 1E or 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

2. Touch Panel Adjustment

Adjust the calibration of the touch panel.

Mode	VTR stop
Signal	Arbitrary
Adjustment Page	A
Adjustment Address	90 to 93

Note1: Perform this adjustment with observing the LCD screen from the front.

Note2: The data of page: 0, address: 10 must be "00".

Adjusting method:

1) Select page: 7, address: 05, and set data: 01.
2) Using a stylus etc., push the center of "X" indicated in the part A.
3) Using a stylus etc., push the center of "X" indicated in the part B.
4) Using a stylus etc., push the center of "X" indicated in the part C.
5) Check that the data of page:7, address:05 is "00".

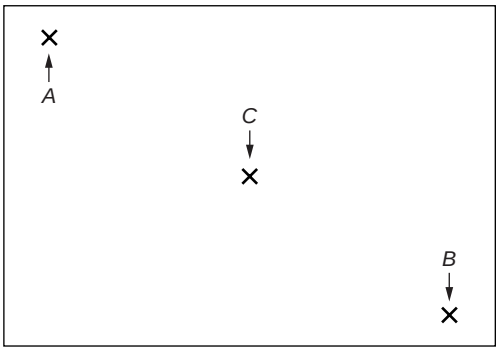


Fig. 6-3-4.

3. Serial No. Input

Note: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

3-1. Company ID Input

Write the company ID in the EEPROM (nonvolatile memory).

Page	8
Address	8C, 8D, 8E, 8F, 90

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data to page: 8, addresses: 8C to 90.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
8C	08
8D	00
8E	46
8F	01
90	02

3) Select page: 0, address: 01, and set data: 00.

3-2. Serial No. Input

Write the serial No. and model code in the EEPROM (nonvolatile memory). Convert the serial No. on the name plate from decimal to hexadecimal, and write in the EEPROM.

Page	8
Address	91, 92, 93

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Read the serial No. on the name plate, and take it as D_1.
   Example: If the serial No. is 77881.
   $D_1 = 77881$
   Note: Use six digits of the low rank when a serial No. is more than seven digits.
3) Obtain D_2 and H_1 corresponding to D_1 from Table 6-3-2.
   Example: If D_1 is "77881".
   $D_2 = D_1 - 65536 = 12345$
   $H_1 = FE$

D_1 (Decimal)	D_2 (Decimal)	H_1 (Hexadecimal) (Service model code)
000001 to 065535	D_1	FE
065536 to 131071	D_1–65536	FE
131072 to 196607	D_1–131072	FE

Table 6-3-2.

4) Input H_1 to page: 8, address: 91. (Model code input)
   Example: If H_1 is "FE".
   Select page: 8, address: 91, set data: FE, and press the PAUSE button.
5) Obtain the maximum decimal not exceeding D_2 from Table 6-3-3, and take this as D_3.
   Example: If D_2 is "12345".
   $D_3 = 12288$
6) Obtain the hexadecimal corresponding to D_3 from Table 6-3-3, and take this as H_3.
   Example: If D_3 is "12288".
   $H_3 = 3000$
7) Obtain the difference D_4 between D_2 and D_3. (Decimal calculation, $0 \leqq D_4 \leqq 255$)
   $D_4 = D_2 - D_3$
   Example: If D_2 is "12345" and D_3 is "12288".
   $D_4 = 12345 - 12288 = 57$
8) Convert D_4 to hexadecimal, and take this as H_4.
   (Refer to "Hexadecimal-decimal conversion table" in "6-4. Service Mode".)
   Example: If D_4 is "57".
   $H_4 = 39$
9) Input the upper 2 digits of H_3 to page: 8, address: 92.
   Example: If H_3 is "3000".
   Select page: 8, address: 92, set data: 30, and press the PAUSE button.
10) Input H_4 to page: 8, address: 93.
    Example: If H_4 is "39".
    Select page: 8, address: 93, set data: 39, and press the PAUSE button.
11) Select page: 0, address: 01, and set data: 00.

Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)
0	0000	8192	2000	16384	4000	24576	6000	32768	8000	40960	A000	49152	C000	57344	E000
256	0100	8448	2100	16640	4100	24832	6100	33024	8100	41216	A100	49408	C100	57600	E100
512	0200	8704	2200	16896	4200	25088	6200	33280	8200	41472	A200	49664	C200	57856	E200
768	0300	8960	2300	17152	4300	25344	6300	33536	8300	41728	A300	49920	C300	58112	E300
1024	0400	9216	2400	17408	4400	25600	6400	33792	8400	41984	A400	50176	C400	58368	E400
1280	0500	9472	2500	17664	4500	25856	6500	34048	8500	42240	A500	50432	C500	58624	E500
1536	0600	9728	2600	17920	4600	26112	6600	34304	8600	42496	A600	50688	C600	58880	E600
1792	0700	9984	2700	18176	4700	26368	6700	34560	8700	42752	A700	50944	C700	59136	E700
2048	0800	10240	2800	18432	4800	26624	6800	34816	8800	43008	A800	51200	C800	59392	E800
2304	0900	10496	2900	18688	4900	26880	6900	35072	8900	43264	A900	51456	C900	59648	E900
2560	0A00	10752	2A00	18944	4A00	27136	6A00	35328	8A00	43520	AA00	51712	CA00	59904	EA00
2816	0B00	11008	2B00	19200	4B00	27392	6B00	35584	8B00	43776	AB00	51968	CB00	60160	EB00
3072	0C00	11264	2C00	19456	4C00	27648	6C00	35840	8C00	44032	AC00	52224	CC00	60416	EC00
3328	0D00	11520	2D00	19712	4D00	27904	6D00	36096	8D00	44288	AD00	52480	CD00	60672	ED00
3584	0E00	11776	2E00	19968	4E00	28160	6E00	36352	8E00	44544	AE00	52736	CE00	60928	EE00
3840	0F00	12032	2F00	20224	4F00	28416	6F00	36608	8F00	44800	AF00	52992	CF00	61184	EF00
4096	1000	12288	3000	20480	5000	28672	7000	36864	9000	45056	B000	53248	D000	61440	F000
4352	1100	12544	3100	20736	5100	28928	7100	37120	9100	45312	B100	53504	D100	61696	F100
4608	1200	12800	3200	20992	5200	29184	7200	37376	9200	45568	B200	53760	D200	61952	F200
4864	1300	13056	3300	21248	5300	29440	7300	37632	9300	45824	B300	54016	D300	62208	F300
5120	1400	13312	3400	21504	5400	29696	7400	37888	9400	46080	B400	54272	D400	62464	F400
5376	1500	13568	3500	21760	5500	29952	7500	38144	9500	46336	B500	54528	D500	62720	F500
5632	1600	13824	3600	22016	5600	30208	7600	38400	9600	46592	B600	54784	D600	62976	F600
5888	1700	14080	3700	22272	5700	30464	7700	38656	9700	46848	B700	55040	D700	63232	F700
6144	1800	14336	3800	22528	5800	30720	7800	38912	9800	47104	B800	55296	D800	63488	F800
6400	1900	14592	3900	22784	5900	30976	7900	39168	9900	47360	B900	55552	D900	63744	F900
6656	1A00	14848	3A00	23040	5A00	31232	7A00	39424	9A00	47616	BA00	55808	DA00	64000	FA00
6912	1B00	15104	3B00	23296	5B00	31488	7B00	39680	9B00	47872	BB00	56064	DB00	64256	FB00
7168	1C00	15360	3C00	23552	5C00	31744	7C00	39936	9C00	48128	BC00	56320	DC00	64512	FC00
7424	1D00	15616	3D00	23808	5D00	32000	7D00	40192	9D00	48384	BD00	56576	DD00	64768	FD00
7680	1E00	15872	3E00	24064	5E00	32256	7E00	40448	9E00	48640	BE00	56832	DE00	65024	FE00
7936	1F00	16128	3F00	24320	5F00	32512	7F00	40704	9F00	48896	BF00	57088	DF00	65280	FF00

Table 6-3-3.

3-3. SERVO AND RF SYSTEM ADJUSTMENT

Before perform the servo and RF system adjustments, check that the specified value of "66MHz/54MHz Origin Oscillation Adjustment" of "CAMERA SYSTEM ADJUSTMENT" is satisfied. And check that the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Adjusting Procedure:

1. CAP FG duty adjustment
2. PLL f_0 & LPF f_0 pre-adjustment
3. Switching position adjustment
4. AGC center level and APC & AEQ adjustment
5. PLL f_0 & LPF f_0 fine adjustment

1. Cap FG Duty Adjustment (VC-318 Board) RadarW

Set the Cap FG signal duty cycle to 50% to establish an appropriate capstan servo. If deviated, the uneven rotation of capstan and noise can occur.

Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	16
Specified Value	Data of page: 3, address: 02 is "00". Data of page: 3, address: 03 is "00".

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1				Close the cassette compartment without inserting a cassette.
2	0	01	01	Set the data.
3	3	01	1B	Set the data, and press PAUSE button.
4	3	02		Check that the data changes in the following order. "1B" → "2B" → "00"
5	3	03		Check that the data is "00". (Note2)
6	0	01	00	Set the data.

Note2: If the data is "01", adjustment has errors or the mechanism deck is defective.

2. PLL f_0 & LPF f_0 Pre-Adjustment (VC-318 Board) RadarW

Mode	VTR stop
Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 29
Specified Value	Data of page: 3, address: 02 is "00". Data of page: 3, address: 03 is "00".

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	21	DC	Set the data, and press PAUSE button.
3	3	01	30	Set the data, and press PAUSE button.
4	3	02		Check that the data changes to "00" with in 5 sec. (Note2)
5	3	03		Check that the data is "00". (Note2)
6	0	01	00	Set the data.

Note2: If it isn't satisfied, select page: C, address: 21, set the following data, and press the PAUSE button, and repeat steps 3 to 5.

	Setting data
When the data of page: C, address: 21 is "DC".	E0
When the data of page: C, address: 21 is "E0".	D8
When the data of page: C, address: 21 is "D8".	E4
When the data of page: C, address: 21 is "E4"	D4

There are errors when it isn't satisfied even if the above treatment is done.
If bit2, bit3, bit4, bit5 or bit 6 of the data of page: 3, address: 03 is "1", there are errors. For the error contents, see the following table. (For the bit values, refer to "6-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)

Bit value of page: 3, address: 03 data	Error contents
bit 2 = 1 or bit 3 = 1	PLL f_0 fine adjustment is defective
bit 4 = 1 or bit 5 = 1	PLL f_0 adjustment is defective
bit 6 = 1	LPF f_0 adjustment is defective

3. Switching Position Adjustment (VC-318 Board) RadarW

To obtain normal playback waveform output during the playback mode, adjust the switching position.

Mode	VTR playback
Signal	SW/OL reference tape (XH2-3)
Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	10, 11, 12, 13
Specified Value	Data of page: 3, address: 02 is “00”. Data of page: 3, address: 03 is “00”.

Note1: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Insert the SW/OL reference tape and enter the VTR STOP mode.
2	0	01	01	Set the data.
3	C	10	EE	Set the data, and press PAUSE button.
4	3	21		Check that the data is “02”. (Note2)
5	3	01	0D	Set the data, and press PAUSE button.
6	3	02		Check that the data changes to “00”.
7	3	03		Check that the data is “00”. (Note3)
8	0	01	00	Set the data.

Note2: If the data of page: 3, address: 21 is “72”, the tape top being played. After playing the tape for 1 to 2 seconds, stop it, perform step 5 and higher.
If the data of page: 3, address: 21 is “62”, the tape end being played. After rewinding the tape, perform step 5 and higher.

Note3: If bit 0 of the data is “1”, the EVEN channel is defective. If bit 1 is “1”, the ODD channel is defective. Contents of the defect is written into page: C, addresses: 10 and 12. See the following table. (For the bit values, refer to “6-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.) If bit 3 of the data is “1”, the tape end being played, so rewind the tape and perform the adjustment again.

When the EVEN channel is defective

Data of page: C, address: 10	Contents of defect
EE	Writing into EEPROM (IC2502) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC2101

When the ODD channel is defective

Data of page: C, address: 12	Contents of defect
EE	Writing into EEPROM (IC2502) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC2101

4. AGC Center Level and APC & AEQ Adjustment

Note: The data of page: 0, address: 10 must be “00”.

4-1. Preparations before adjustments

Mode	Camera recording
Subject	Arbitrary

Adjusting method:

Order	Page	Address	Data	Procedure
1	7	30	80	Set the data.
2				Record the camera signal for three minutes.

4-2. AGC Center Level Adjustment (VC-318 Board) RadarW

Mode	Playback
Signal	Recorded signal at “Preparations before adjustments”
Measurement Point	Pin ⑳ of CN1008 (RF MON) (Note1) Ext. trigger: Pin ⑰ of CN1008 (SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	1E
Specified Value	Data of page: 3, address: 02 is “00”. Data of page: 3, address: 03 is “00”.

Note1: Connect a 75Ω resistor between Pin ⑳ and Pin ⑲ (GND) of CN1008.
75Ω resistor (Parts code: 1-247-804-11)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Playback the recorded signal at “Preparations before adjustments”
2	0	01	01	Set the data.
3	3	33	08	Set the data.
4				Confirm that the playback RF signal is stable. (Fig. 6-3-5.)
5	3	01	23	Set the data, and press PAUSE button.
6	3	02		Check that the data is “00”.
7	3	03		Check that the data is “00”. (Note2)
8				Perform “APC & AEQ Adjustment”.

Note2: If the data of page: 3, address: 03 is other than “00”, adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table.)

Data	Contents of defect
20	Perform re-adjustment. (Note 3)
30	The machine is defective
40	Perform re-adjustment. (Note 3)
50	The machine is defective

Note3: If this data is displayed twice successively, the machine is defective.

4-3. APC & AEQ Adjustment (VC-318 Board) RadarW

Mode	Playback
Signal	Recorded signal at “Preparations before adjustments”
Measurement Point	Pin ⑳ of CN1008 (RF MON) (Note1) Ext. trigger: Pin ⑰ of CN1008 (SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	18, 19, 1B, 1C, 21, 2C
Specified Value	Data of page: 3, address: 02 is “00”. Data of page: 3, address: 03 is “00”.

Note1: Connect a 75Ω resistor between Pin ⑳ and Pin ⑲ (GND) of CN1008.
75Ω resistor (Parts code: 1-247-804-11)

Note2: The “AGC Center Level Adjustment” must have already been completed before starting this adjustment.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Playback the recorded signal at “Preparations before adjustments”
2	0	01	01	Set the data.
3	3	33	08	Set the data.
4				Confirm that the playback RF signal is stable. (Fig. 6-3-5.)
5	3	01	07	Set the data, and press PAUSE button.
6	3	02		Check that the data changes from “07” to “00” in about 30 seconds after pressing PAUSE button.
7	3	03		Check that the data is “00”. (Note3)
8				Perform “Processing after Completing Adjustments”.

Note3: If the data is other than “00”, adjustment has errors. Take an appropriate remedial measures according to the errors referring to the following table.

Data	Contents of defect
20	Perform re-adjustment. (Note 4)
30	The machine is defective
50	Perform re-adjustment. (Note 4)
60	The machine is defective
80	The machine is defective

Note4: If this data is displayed twice successively, the machine is defective.

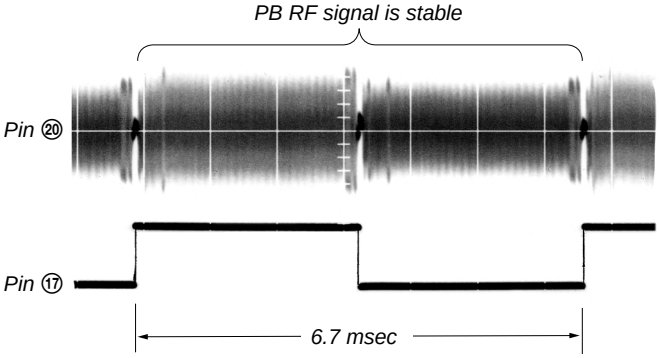


Fig. 6-3-5.

4-4. Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	7	30	00	Set the data.
2	3	33	00	Set the data.
3	0	01	00	Set the data.

5. PLL f_0 & LPF f_0 Fine Adjustment (VC-318 Board) RadarW

Mode	VTR stop
Signal	Arbitrary
Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 29
Specified Value	Data of page: 3, address: 02 is “00”. Data of page: 3, address: 03 is “00”.

Note1: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	01	30	Set the data, and press PAUSE button.
3	3	02		Check that the data changes to “00” with in 5 sec. (Note2)
4	3	03		Check that the data is “00”. (Note3)
5	0	01	00	Set the data.

Note2: If it isn’t satisfied, there are errors.

Note3: If the data of page: 3, address: 03 is other than “00”, there are errors. For the error contents, see the following table. (For the bit values, refer to “6-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)

Bit value of page: 3, address: 03	Error contents
bit 2 = 1 or bit 3 = 1	PLL f_0 fine adjustment is defective
bit 4 = 1 or bit 5 = 1	PLL f_0 adjustment is defective
bit 6 = 1	LPF f_0 adjustment is defective

3-4. VIDEO SYSTEM ADJUSTMENTS

Note1: Before perform the servo and RF system adjustments, check that the specified value of "66MHz/54MHz Origin Oscillation Adjustment" of "CAMERA SYSTEM ADJUSTMENT" is satisfied.
And check that the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Note2: NTSC model: DSR-PDX10
PAL model: DSR-PDX10P

1. Chroma BPF f_0 Adjustment (DB-016 Board)

Set the center frequency of IC7001 chroma band-pass filter.

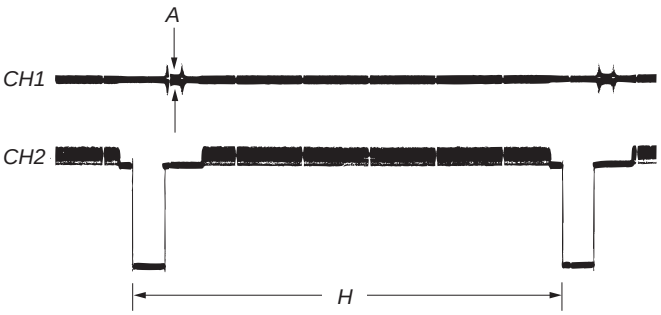
Mode	Camera
Subject	Arbitrary
Measurement Point	CH1: Chroma signal terminal of S VIDEO jack (75Ω terminated) CH2: Y signal terminal of S VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	28
Specified Value	A = 100mVp-p or less B = 200mVp-p or more

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2				Check that the burst signal (B) is output to the chroma signal terminal of S VIDEO jack.
3	3	0C	04	Set the data, and press PAUSE button.
4	C	28		Change the data for minimum amplitude of the burst signal level (A). (The data should be "00" to "0F".)
5	C	28		Press PAUSE button.
6	3	0C	00	Set the data, and press PAUSE button.
7				Check that the burst signal level (B) satisfies the specified value.
8	0	01	00	Set the data.

When the data of page: 3, address: 0C, is 04:



When the data of page: 3, address: 0C, is 00:

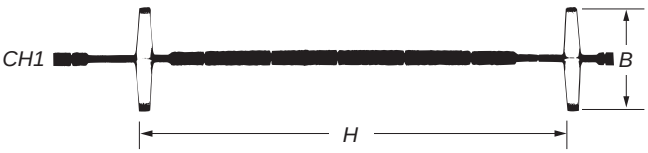


Fig. 6-3-6.

2. S VIDEO OUT Y Level Adjustment (VC-318 Board)

Mode	Camera
Subject	Arbitrary
Measurement Point	Y signal terminal of S VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	25
Specified Value	A = 1000 ± 14mV

Note: The data of page: 0, address: 10 must be "00".

Switch setting:

DEMO MODE (Menu setting) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	0C	02	Set the data, and press PAUSE button.
3	C	25		Change the data and set the Y signal level (A) to the specified value.
4	C	25		Press PAUSE button.
5	3	0C	00	Set the data, and press PAUSE button.
6	0	01	00	Set the data.

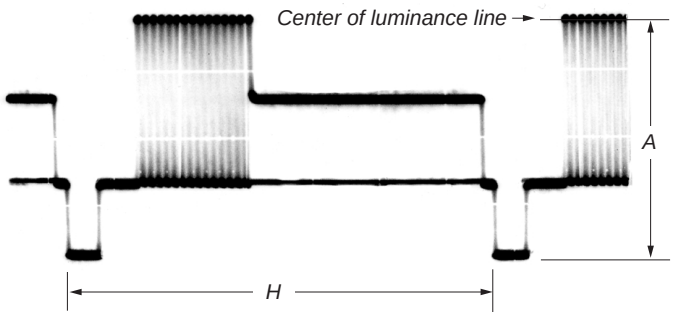


Fig. 6-3-7.

3. S VIDEO OUT Chroma Level Adjustment (VC-318 Board)

Mode	Camera
Subject	Arbitrary
Measurement Point	Chroma signal terminal of S VIDEO jack (75Ω terminated) External trigger: Y signal terminal of S VIDEO jack
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	26, 27
Specified Value	Cr level: A = 714 ± 14mV (NTSC) A = 700 ± 14mV (PAL) Cb level: B = 714 ± 14mV (NTSC) B = 700 ± 14mV (PAL) Burst level: C = 286 ± 6mV (NTSC) C = 300 ± 6mV (PAL)

Note: The data of page: 0, address: 10 must be “00”.

Switch setting:

DEMO MODE (Menu setting) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	0C	02	Set the data, and press PAUSE button.
3	C	26		Change the data and set the Cr signal level (A) to the specified value.
4	C	26		Press PAUSE button.
5	C	27		Change the data and set the Cb signal level (B) to the specified value.
6	C	27		Press PAUSE button.
7				Check that the burst signal level (C) is satisfied the specified value.
8	3	0C	00	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

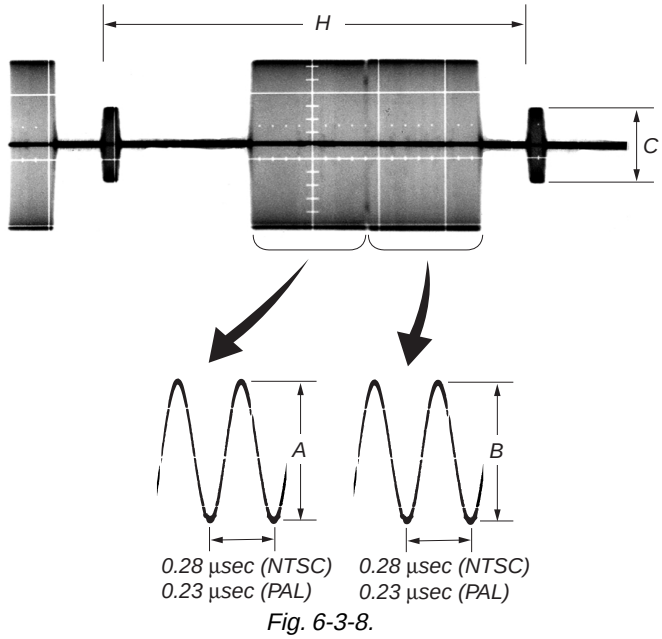


Fig. 6-3-8.

4. VIDEO OUT Y, Chroma Level Check (VC-318 Board)

Mode	Camera
Subject	Arbitrary
Measurement Point	Video terminal of AUDIO VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level: A = 286 ± 18mV (NTSC) A = 300 ± 18mV (PAL) Burst level: B = 286 ± 18(mV (NTSC) B = 300 ± 18mV (PAL)

Note: The data of page: 0, address: 10 must be “00”.

Switch setting:

DEMO MODE (Menu setting) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	3	0C	02	Set the data, and press PAUSE button.
2				Check that the sync signal level (A) satisfies the specified value.
3				Check that the burst signal level (B) satisfies the specified value.
4	3	0C	00	Set the data, and press PAUSE button.

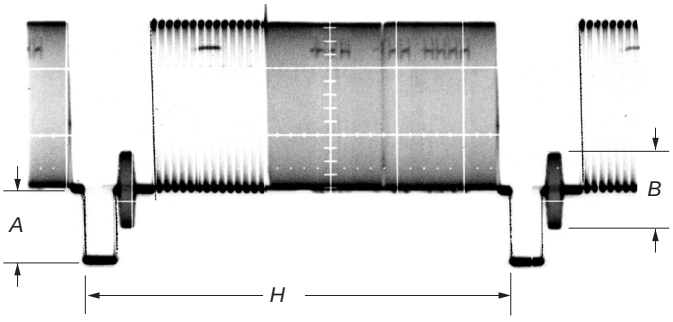


Fig. 6-3-9.

3-5. AUDIO SYSTEM ADJUSTMENTS

Switch setting:

MIC LEVEL (Menu setting) ..... AUTO

[Connection of Audio System Measuring Devices]

Connect the audio system measuring devices as shown in Fig. 6-3-10.

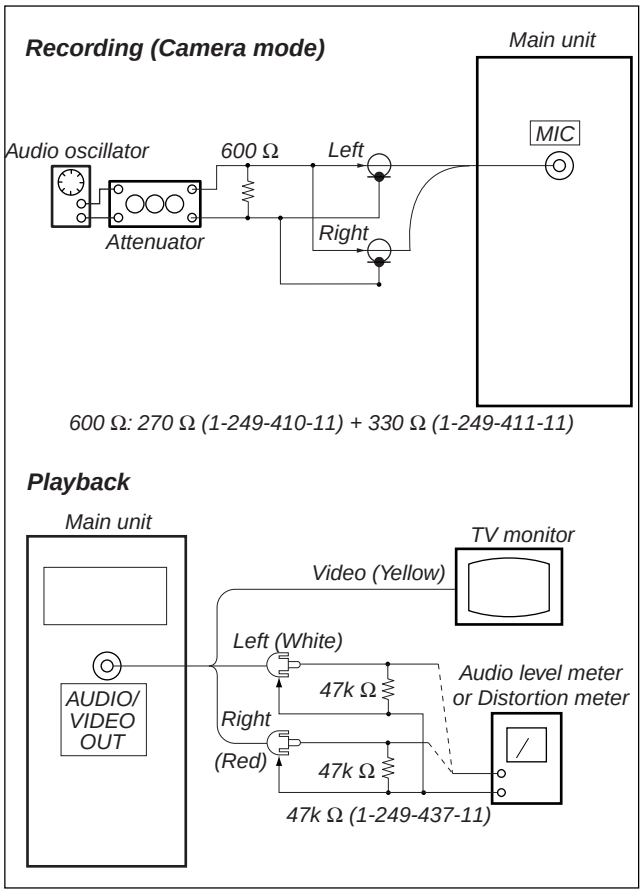


Fig. 6-3-10.

1. Playback Level Check

Mode	VTR playback
Signal	Alignment tape: For audio operation check (XH5-3 (NTSC)) (XH5-3P (PAL))
Measurement Point	Audio left or right terminal of AUDIO/ VIDEO jack
Measuring Instrument	Audio level meter and frequency counter
Specified Value	32 kHz mode: 1 kHz, +3.0 ± 2.0dBs 48 kHz mode: 1 kHz, +3.0 ± 2.0dBs 44.1 kHz mode: The 7.35kHz signal level during EMP OFF is +2.0 ± 2.0dBs. The 7.35kHz signal level during EMP ON is –6 ± 2 dB from the signal level during EMP OFF.

Checking Method:

1) Check that the playback signal level is the specified value.

2. Overall Level Characteristics Check

Mode	Camera recording and playback
Signal	400Hz, –66 dBs signal: MIC jack left and right
Measurement Point	Audio left or right terminal of AUDIO /VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	–7.5 ± 3.0dBs

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the 400Hz signal level is the specified value.

3. Overall Distortion Check

Mode	Camera recording and playback
Signal	400Hz, –66dBs signal: MIC jack left and right
Measurement Point	Audio left or right terminal of AUDIO/VIDEO jack
Measuring Instrument	Audio distortion meter
Specified Value	Below 0.4% (200Hz to 6kHz BPF ON)

Checking Method:

1) Input the 400Hz, –66dBs signal in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the distortion is the specified value.

4. Overall Noise Level Check

Mode	Camera recording and playback
Signal	No signal: Insert a shorting plug in the MIC jack
Measurement Point	Audio left or right terminal of AUDIO/VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	Below –45dBs (IHF-A filter ON, 20kHz LPF ON)

Checking Method:

1) Insert a shorting plug in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the noise level is the specified value.

5. Overall Separation Check

Mode	Camera recording and playback
Signal	400Hz, –66dBs signal: MIC jack <right> [left] (Connect the MIC jack <left> [right] to GND)
Measurement Point	Audio <left> [right] terminal of AUDIO/VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	Below –40dBs

< > : Left channel check
[ ] : Right channel check

Checking Method:

1) Input the 400Hz, –66dBs signal in the <right> [left] terminal of the MIC jack only.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the signal level of the audio <left> [right] terminal is the specified value.

3-6. XLR ADAPTER ADJUSTMENT

Connected athe XLR adapter with the main unit, and perform the adjustments.
Don't insert any plug in the MIC jack of the main unit.

[Connection of Audio System Measuring Devices]

Connect the audio system measuring devices as shown in Fig. 6-3-11.

Switch setting of the XLR adapter

INPUT1 REC CH1 SELECT CH1
INPUT1 LEVEL ..... LINE
INPUT1 +48V ..... OFF
INPUT2 LEVEL ..... LINE
INPUT2 +48 ..... OFF

Menu setting of the main unit

XLR SET:
CH1 LEVEL ..... AUTO
CH2 LEVEL ..... AUTO

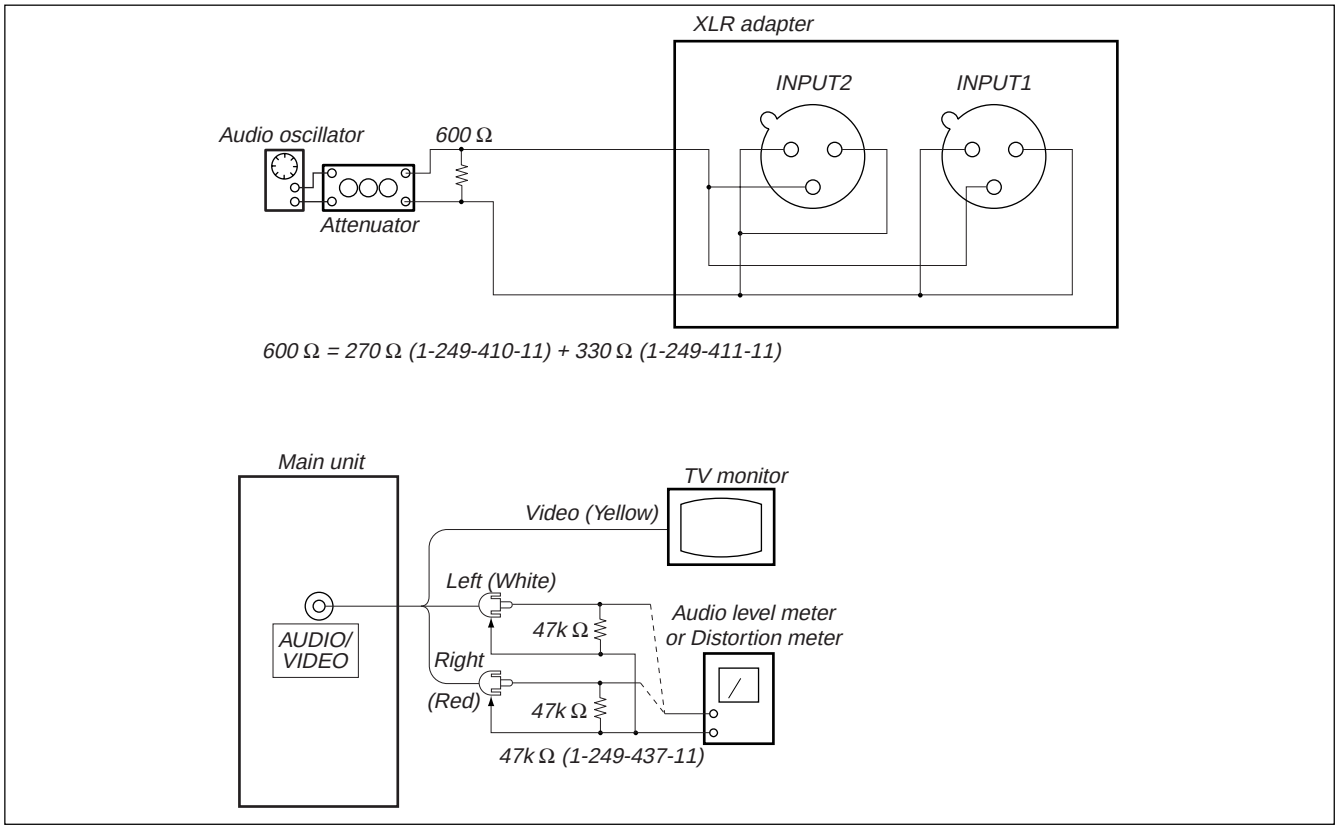


Fig. 6-3-11.

1. Audio Level Check

Mode	Camera
Signal	1kHz, +4dBs signal: XLR jack INPUT1 and INPUT2
Measurement Point	Left or right terminal of AUDIO/VIDEO jack of the main unit
Measuring Instrument	Audio lebel meter
Specified Value	-10 ± 2dBs

Checking Method:

1) Input the 1kHz, -4Bs signal in the XLR jack.
2) Check that the 1kHz signal level is the specified value.

Note: The signal-input method shown in the above figure is a simplified method. Therefore a little waveform distortion occurs in the output signal. But, there is no hindrance in the audio level check.

6-4. SERVICE MODE

4-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the adjustment remote commander

1) Connect the adjustment remote commander to the LANC terminal.
2) Set the HOLD switch of the adjustment remote commander to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 6-4-1.

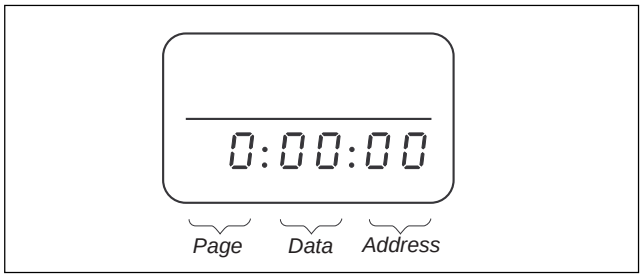


Fig. 6-4-1.

3) Operate the adjustment remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 19 pages, from 0 to F, 1B, 1E, 1F. (Note)

Hexadecimal notation	0 1 2 3 4 5 6 7 8 9 A B C D E F
LCD Display	0 1 2 3 4 5 6 7 8 9 A b c d E F
Decimal notation conversion value	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

   - Changing the address
     The address increases when the FF (►►) button is pressed, and decreases when the REW (◄◄) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (►) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (8, A, B, C, D, E, F, 1B, 1E, 1F page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)
4) After completing all adjustments, turn off the main power supply once.

Note: When reading or writing the 1B, 1E, 1F page data, select page: 0, address: 10, and set data: 01, then select B, E or F page. The 1B, 1E or 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

2. Precautions upon using the adjustment remote commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

4-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table

	Lower digit of hexadecimal / Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	D (d)	E (E)	F (F)
	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
	3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
	4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
	5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
	6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
	7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
	8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
	9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
	A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
①	B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
	C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
	D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
	E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
	F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

② (above the table)

Note : The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 6-4-1.

4-3. SERVICE MODE

Note: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

1. Setting the Test Mode

Page D	Address 10

Data	Function
00	Normal
01	Forced camera power ON
02	Forced VTR power ON
03	Forced camera + VTR power ON
05	Forced memory power ON

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, be sure to return the data of this address to 00, and press the PAUSE button of the adjustment remote commander.
  Select page: 0, address: 01, and set data: 00.

2. Emergence Memory Address

Page C	Address F4 to FF

Address	Contents
F4	EMG code when first error occurs
F6	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
F7	Lower: MSW code to be moved when first error occurs
F8	EMG code when second error occurs
FA	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
FB	Lower: MSW code to be moved when second error occurs
FC	EMG code when last error occurs
FE	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
FF	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data "00" is written in the above addresses (F4 to FF). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (F4 to F7). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (F8 to FB). Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (FC to FF).

Note: After completing adjustments, be sure to initialize the data of addresses F4 to FF to "00".

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 37, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

2-1. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in addresses F4, F8 and FC. The type of error indicated by the code are shown in the following table.

Code	Emergency Type
00	No error
10	Loading motor emergency during loading
11	Loading motor emergency during unloading
22	T reel emergency during normal rotation
23	S reel emergency during normal rotation
24	T reel emergency (Short circuit between S reel terminal and T reel terminal)
30	FG emergency at the start up of the capstan
40	FG emergency at the start up of the drum
42	FG emergency during normal rotation of the drum

2-2. MSW Code

MSW when errors occur:

Information on MSW (mode SW) when errors occur

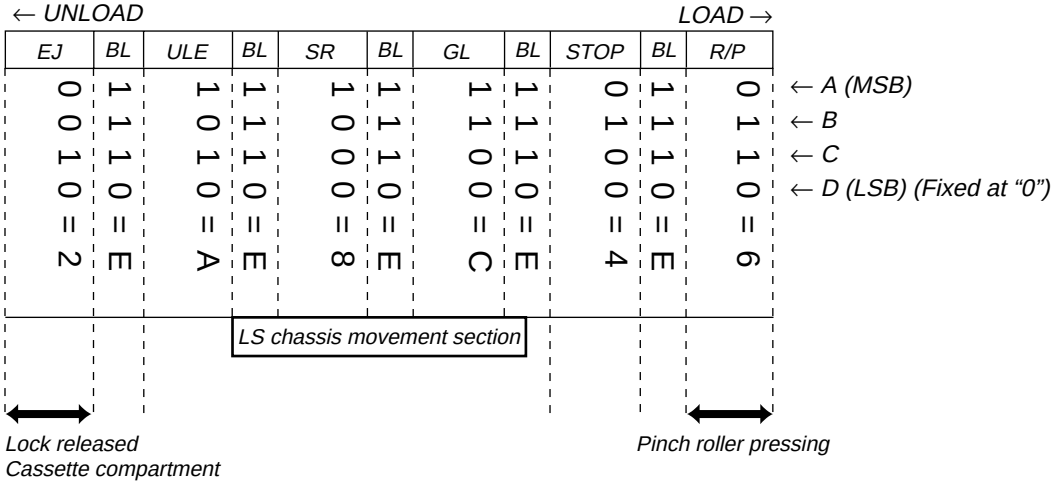
MSW when movement starts:

Information on MSW when movements starts when the mechanism position is moved (When the L motor is moved)

MSW of target of movement:

Information on target MSW of movement when the mechanism position is moved

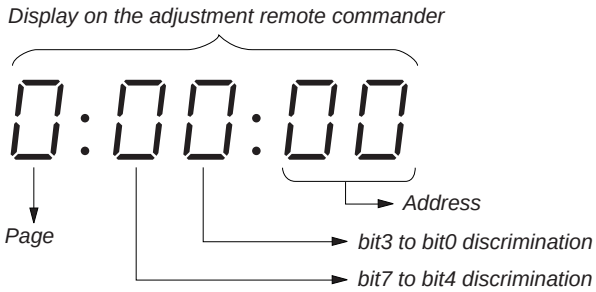
Mechanical Position



Position	Code	Contents
EJ	2	Position at which the cassette component lock is released, at the farthest unload side mechanically at which the mechanism can move no further in the UNLOAD direction.
BL	E	BLANK code, at the boundary between codes.
ULE	A	EJECT completion position. when the cassette is ejected, the mechanism will stop at this position. Cassette IN standby. The guide will start protruding out as the mechanism moves towards the LOAD position.
SR	8	Position at which it is possible to release the S ratchet.
GL	C	Guide loading are performed here.
STOP	4	Stop position in the loading state. The pinch roller separates, the tension regulator returns, and the brake is imposed on both reels.
R/P	6	PB, REC, CUE, REVIEW, PAUSE positions. When pinch roller is pressed, and the tension regulator is ON, the mechanism is operating at this position in modes in which normal images are shown.
NULL	0	Code not existing in the MD. Default value.
	F	Status before finding any mechanism position.

3. Bit value discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for following items. Use the table below to discriminate if the bit value is “1” or “0”.



	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (R)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

Example: If “8E” is displayed on the adjustment remote commander, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

4. Switch check (1)

Page 7	Address 0C

Note: The data of page: 0, address: 10 must be “00”.

Bit	Function	When bit value=1	When bit value=0
1	MIC jack (MA-425 board J5901)	Used	Not used
2	AUDIO/VIDEO jack (JK-222 board J404)	Used	Not used
3	S VIDEO jack (JK-222 board J401)	Used	Not used

Using method:

1) Select page: 7, address: 0C.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

5. Switch check (2)

Page 3	Address 61

Note: The data of page: 0, address: 10 must be “00”.

Bit	Function	When bit value=1	When bit value=0
6	HEADPHONES jack (JK-222 board J403)	Used	Not used

Using method:

1) Select page: 3, address: 61.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

6. Switch check (3)

Page 2	Address 61 to 66

Note: The data of page: 0, address: 10 must be “00”.

Using method:

1) Select page: 2, address: 61 to 66.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data							
	00 (00 to 0C)	19 (0D to 24)	32 (25 to 3F)	4E (40 to 5D)	6F (5E to 81)	96 (82 to AA)	C1 (AB to D7)	EB (D8 to FF)
61 (KEY AD1) (IC3101 ⑥⓪)		PHOTO (PHOTO REC) (CF-1870) (S001)		FADER (FP-504) (S604)	INDEX (FP-504) (S603)	FOCUS INFINITY (FP-504) (S601)	FOCUS AUTO /PUSH AUTO (FP-504) (S601, 602)	FOCUS MANUAL (FP-504) (S601)
62 (KEY AD2) (IC3101 ⑥①)		SEL/PUSH/EXEC (EXECUTE) (KP-1870) (S007)	TC/U-BIT (CK-134) (S5203)	EDIT SEARCH – (CK-134) (S5204)	EDIT SEARCH + (CK-134) (S5205)	ZEBRA 100 (CK-134) (S5202)	ZEBRA OFF (CK-134) (S5202)	ZEBRA 70 (CK-134) (S5202)
63 (KEY AD3) (IC3101 ⑥⑤)	STOP (CK-134) (S5206)	REW (CK-134) (S5207)	PLAY (CK-134) (S5208)	FF (CK-134) (S5209)		REC (CK-134) (S5211, 5212)	PANEL CLOSE (FP-495) (S001)	PANEL OPEN (FP-495) (S001)
64 (KEY AD4) (IC3101 ⑥⑥)	COLOR BAR (CK-134) (S5213)	VOLUME + (CK-134) (S5214)	VOLUME – (CK-134) (S5215)	DISPLAY/ TOUCH PANEL (CK-134) (S5216)	MENU (KP-1870) (S001)	AUDIO DUB (CK-134) (S5217)	PANEL REVERSE (FP-495) (S002)	PANEL NORMAL (FP-495) (S002)
65 (KEY AD5) (IC3101 ⑥⑦)	AUDIO LEVEL (KP-1870) (S002)	EXPOSURE (KP-1870) (S003)	WHITE BALANCE (KP-1870) (S004)	SHUTTER SPEED (KP-1870) (S005)	PROGRAM AE (KP-1870) (S006)	AUTO LOCK (AUTO LOCK) (CK-134) (S5201)	AUTO LOCK (HOLD) (CK-134) (S5201)	AUTO LOCK (RELEASE) (CK-134) (S5201)
66 (KEY AD6) (IC3101 ⑥⑧)				PAUSE (CK-134) (S5210)	BACK LIGHT (CK-134) (S5218)	SPOT LIGHT (CK-134) (S5219)	CUSTOM PRESET (CK-134) (S5220)	No key input

7. LED, LCD (display window) check

Page 7	Address 07	Bit4, Bit5

Using method:

1) Select page: 7, address: 07, and set the bit value of Bit4 and Bit5 to “1”.
2) Check that LED (Recording lamp) are lit and all segments of LCD (display window) are lit.
3) Select page: 7, address: 07, and set the bit value of Bit4 and Bit5 to “0”.

8. Record of Use check (1)

Page 7	Address A7 to A9

Note1: When replacing the drum assembly or the mechanism deck, initialize the data of address: A7 to A9.
Note2: This data will be kept even if the lithium battery (CK-134 board BT5201 of the cabinet (R) assembly) is removed.
Note3: The data of page: 0, address: 10 must be “00”.

Address	Function		Remarks
A7	Drum rotation counted time (BCD code)	Hour (H)	100000th place digit and 10000th place digit of counted time
A8		Hour (M)	1000th place digit and 100th place digit of counted time
A9		Hour (L)	10th place digit and 1st place digit of counted time

Using method:

1) The record of use data is displayed at addresses: A7 to A9.

Initializing method:

1) Select page: 7, address: 00, and set data: 71.
2) Select page: 7, address: 01, set data: 71 and press the PAUSE button.
3) Check that the data of page: 7, address: 02 is “01”.

9. Record of Use check (2)

Page 7	Address C8 to CD

Note1: This data will be kept even if the lithium battery (CK-134 board BT5201 of the cabinet (R) assembly) is removed.
Note2: The data of page: 0, address: 10 must be "00".

Address	Function		Remarks
C8	User initial power on date (BCD code)	Year	After setting the clock, set the date of power on next.
C9		Month	
CA		Day	
CB	Final condensation occurrence date (BCD code)	Year	
CC		Month	
CD		Day	

Using method:
1) The record of use data is displayed at addresses: C8 to CD.

10. Record of Self-diagnosis check

Page 7	Address B0 to C6

Note1: This data will be kept even if the lithium battery (CK-134 board BT5201 of the cabinet (R) assembly) is removed.
Note2: The data of page: 0, address: 10 must be "00".

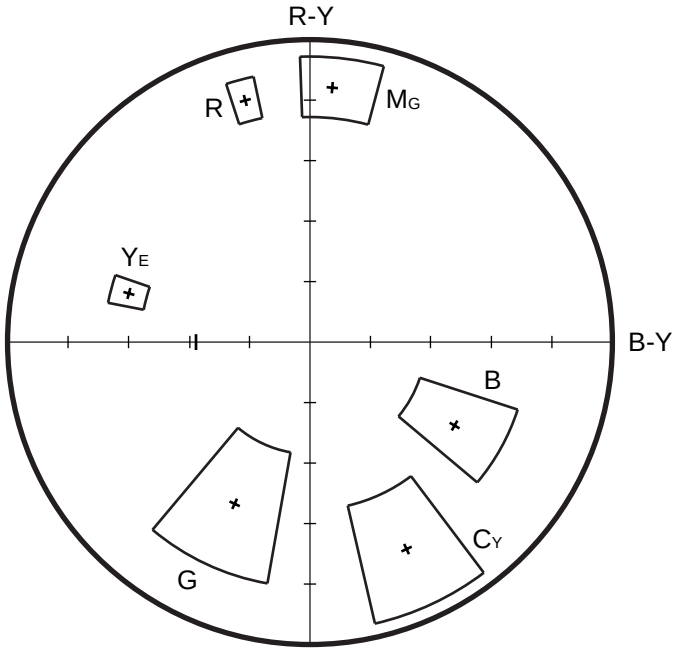
Address	Self-diagnosis code
B0	"Repaired by" code (Occurred 1st time) *1
B1	"Block function" code (Occurred 1st time)
B2	"Detailed" code (Occurred 1st time)
B4	"Repaired by" code (Occurred 2nd time) *1
B5	"Block function" code (Occurred 2nd time)
B6	"Detailed" code (Occurred 2nd time)
B8	"Repaired by" code (Occurred 3rd time) *1
B9	"Block function" code (Occurred 3rd time)
BA	"Detailed" code (Occurred 3rd time)
BC	"Repaired by" code (Occurred 4th time) *1
BD	"Block function" code (Occurred 4th time)
BE	"Detailed" code (Occurred 4th time)
C0	"Repaired by" code (Occurred 5th time) *1
C1	"Block function" code (Occurred 5th time)
C2	"Detailed" code (Occurred 5th time)
C4	"Repaired by" code (Occurred the last time) *1
C5	"Block function" code (Occurred the last time)
C6	"Detailed" code (Occurred the last time)

*1 : "01" → "C", "03" → "E"

Using method:
1) The past self-diagnosis codes are displayed at addresses: BC to C6. Refer to "SELF-DIAGNOSIS FUNCTION" for detail of the self-diagnosis code.

〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

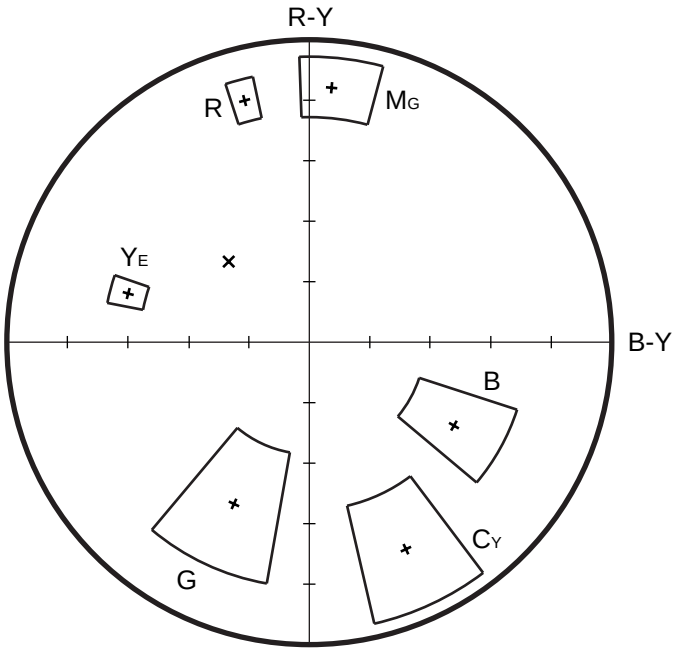
For NTSC model



DSR-PDX10

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

For PAL model



DSR-PDX10P

9-929-990-11

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SONY

DSR-PDX10P

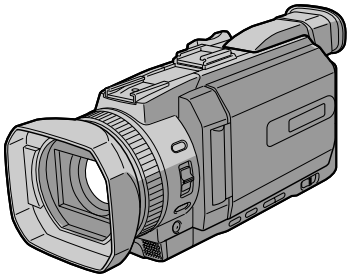
SONY

3-077-115-**31** (1)

Digital Camcorder

Operating Instructions

Before operating the unit, please read this manual thoroughly, and retain it for future reference.



DSR-PDX10P

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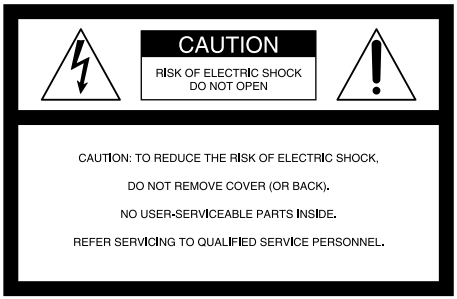
Welcome!

Congratulations on your purchase of this Sony Digital camcorder. With your Digital camcorder you can capture life's precious moments with superior picture and sound quality.
Your Digital camcorder is loaded with advanced features, but at the same time it is very easy to use. You will soon be producing home video that you can enjoy for years to come.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet.
Refer servicing to qualified personnel only.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

The use of optical instruments with this product will increase eye hazard. As the laser beam used in this Handycam is harmful to eyes, do not attempt to disassemble the cabinet.
Refer to servicing to qualified personnel only.

Memory Stick

N50

Notice

If static electricity or electromagnetism causes data transfer to discontinue midway (fail), restart the application or disconnect and connect the USB cable again.

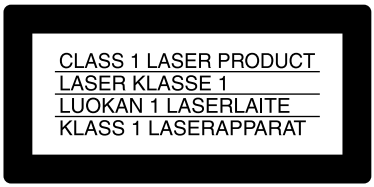
NOTICE ON THE SUPPLIED AC POWER ADAPTOR FOR CUSTOMERS IN THE UNITED KINGDOM

A moulded plug complying with BS1363 is fitted to this equipment for your safety and convenience.

Should the fuse in the plug supplied need to be replaced, a 5 AMP fuse approved by ASTA or BSI to BS1362 (i.e., marked with ◈ or ♡ mark) must be used.

If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

For the customers in Europe



This product with the CE marking complies with both the EMC Directive (89/336/EEC) and Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.
Compliance with these directives implies conformity to the following European standards:

- EN60065:Product Safety (supplied AC Adaptor only)
- EN55103-1:Electromagnetic Interference (Emission)
- EN55103-2:Electromagnetic Susceptibility (Immunity)

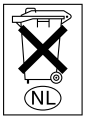
This product is intended for use in the following Electromagnetic Environment(s): E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors) and E4 (controlled EMC environment ex. TV studio)

ATTENTION

The electromagnetic fields at the specific frequencies may influence the picture and sound of this digital camcorder.

The supplied interface cable and recommended accessories must be used with the equipment in order to comply with the limits for the EMC Directive.

Voor de klanten in Nederland



Gooi de batterij niet weg maar lever deze in als klein chemisch afval (KCA).

For customers in the U.S.A. and CANADA

CAUTION

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

RECYCLING LITHIUM-ION BATTERIES

Lithium-Ion batteries are recyclable.
You can help preserve our environment by returning your used rechargeable batteries to the collection and recycling location nearest you.

For more information regarding recycling of rechargeable batteries, call toll free 1-800-822-8837, or visit http://www.rbrc.org/.

Caution: Do not handle damaged or leaking Lithium-Ion batteries.

For customers in the U.S.A.

If you have any questions about this product, you may call:
Sony Customer Information Center 1-800-222-SONY (7669)
The number below is for the FCC related matters only.

Regulatory Information

Declaration of Conformity

Trade Name:	SONY
Model No.:	DSR-PDX10P
Responsible Party:	Sony Electronics Inc.
Address:	680 Kinderkamack Road, Oradell, NJ07649 U.S.A.
Telephone No.:	201-930-6972

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2)this device must accept any interference received, including interference that may cause undesired operation.

"Memory Stick"

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient or relocate the receiving antenna.
— Increase the separation between the equipment and receiver.
— Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
— Consult the dealer or an experienced radio/TV technician for help.

The supplied interface cable must be used with the equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For customers in CANADA

"Memory Stick"

This Class B digital apparatus complies with Canadian ICES-003.

Main Features

- Recording moving pictures on a tape (p. 25)
- Recording still images on a tape (p. 51)
- Playing back a tape (p. 41)
- Recording still images on a "Memory Stick" (p. 48, 144)
- Recording moving pictures on a "Memory Stick" (p. 160)
- Viewing still images recorded on a "Memory Stick" (p. 172)
- Viewing moving pictures on a "Memory Stick" (p. 175)

- Viewing images recorded on a "Memory Stick" using the USB cable (p. 206, 210)
- Viewing moving pictures recorded on tapes using the USB cable (p. 201)
- Capturing images on your computer from your camcorder using the USB cable (p. 203)
- Converting an analog signal to digital to capture images onto your computer (p. 211)

Other uses

Functions for adjusting the exposure in the recording mode

- BACK LIGHT (p. 36)
- SPOT LIGHT (p. 37)
- PROGRAM AE (p. 66)
- Adjusting the exposure manually (p. 73)
- Flexible Spot Meter (p. 74)

Functions for giving images more impact

- Digital zoom (p. 33)
  The default setting is **OFF**. (To zoom greater than 12×, select the digital zoom power in **D ZOOM** in the menu settings.)
- Fader (p. 55)
- Digital effect (p. 58)
- Titles (p. 126)
- MEMORY MIX (p. 155)

Functions for giving a natural appearance to your recordings

- Sports lesson (p. 66)
- Landscape (p. 66)
- Manual focus (p. 75)
- Spot Focus (p. 77)

Functions for use with recorded tapes

- END SEARCH/EDITSEARCH/Rec Review (p. 39)
- DATA CODE (p. 43)
- Tape PB ZOOM (p. 96)
- TITLE SEARCH (p. 89)
- Digital program editing (p. 101, 167)

Table of contents

Main Features 4

Quick Start Guide

– Recording on a tape 8
– Recording on a "Memory Stick" 10

Getting Started

Using this manual 12
Checking supplied accessories 14
Step 1 Preparing the power supply ... 15
Installing the battery pack 15
Charging the battery pack 16
Connecting to a wall socket 19
Step 2 Setting the date and time 20
Step 3 Inserting a cassette 22
Step 4 Using the touch panel 23

Recording – Basics

Recording a picture 25
Shooting backlit subjects – BACK LIGHT 36
Shooting subjects lit by strong light – SPOT LIGHT 37
Self-timer recording 38
Checking recordings – END SEARCH / EDITSEARCH / Rec Review 39

Playback – Basics

Playing back a tape 41
To display the screen indicators – Display function 43
Viewing the recording on TV 47

Advanced Recording Operations

Recording still images on a "Memory Stick" during tape recording 48
Recording still images on a tape – Tape Photo recording 51
Using the wide mode 53
Using the fader 55
Using special effects – Digital effect 58
Presetting the adjustment for picture quality – Custom preset 61
Using the guide frame 63
Shooting with the zebra pattern 64
Using the colour bar 65
Shooting with manual adjustment 66
Using the PROGRAM AE 66
Adjusting the shutter speed 69
Adjusting the white balance 71
Adjusting the exposure 73
Using the spot light-metering – Flexible Spot Meter 74
Focusing manually 75
Using the spot focus – Spot Focus 77
Adjusting recording level manually – Sound recording level 78
Interval recording 82
Frame by frame recording – Frame recording 84
Superimposing the date and time on a picture 85
Marking an Index 86

Advanced Playback Operations

Searching for a recording by index – INDEX SEARCH 87
Searching the boundaries of a recorded tape by title – TITLE SEARCH 89
Searching a recording by date – DATE SEARCH 90
Searching for a photo – PHOTO SEARCH/PHOTO SCAN 92
Playing back tapes with digital effect 95
Enlarging images recorded on tapes – Tape PB ZOOM 96

Editing

Dubbing a tape 98
Dubbing only desired scenes – Digital program editing (on tapes) 101
Recording video or TV programmes 112
Audio dubbing 116
Setting time values 121
Superimposing a title 126
Making your own titles 129
Labelling a cassette 131
Erasing the cassette memory data 133

"Memory Stick" Operations

Using a "Memory Stick" – Introduction 135
Recording still images on a "Memory Stick" – Memory Photo recording 144
Recording images from a tape as still images 151
Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX 155
Recording moving pictures on a "Memory Stick" – MPEG movie recording 160
Recording pictures from a tape as a moving picture 163
Recording edited pictures from a tape as a moving picture – Digital program editing (on a "Memory Stick") ... 167
Copying still images from a tape – PHOTO SAVE 170
Viewing still images – Memory photo playback 172
Viewing moving pictures – MPEG movie playback 175
Copying images recorded on a "Memory Stick" to a tape 178
Enlarging still images recorded on a "Memory Stick" – Memory PB ZOOM 180
Playing back images in a continuous loop – SLIDE SHOW 182
Preventing accidental erasure – Image protection 183
Deleting images – DELETE 184
Writing a print mark – PRINT MARK 187
Using the optional printer 188

Viewing Images Using your Computer

Viewing images on your computer – Introduction 190
Connecting your camcorder to your computer using the USB cable – For Windows users 193
Viewing images recorded on a tape on your computer – For Windows users 201
Viewing images recorded on a "Memory Stick" on your computer – For Windows users 206
Connecting your camcorder to your computer using the USB cable – For Macintosh users 208
Viewing images recorded on a "Memory Stick" on your computer – For Macintosh users 210
Capturing images from an analog video unit on your computer – Signal convert function 211

Customising Your Camcorder

Changing the default settings with the menu 212

Troubleshooting

Types of trouble and how to correct trouble 224
Self-diagnosis display 231
Warning indicators and messages 232

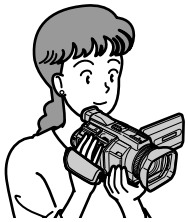
Additional Information

Compatibility of DVCAM and DV formats 234
Usable cassettes 236
About the "InfoLITHIUM" battery pack 239
About i.LINK 241
Using your camcorder abroad 243
Maintenance information and precautions 244
Specifications 250

Quick Reference

Identifying parts and controls 252
Index 262

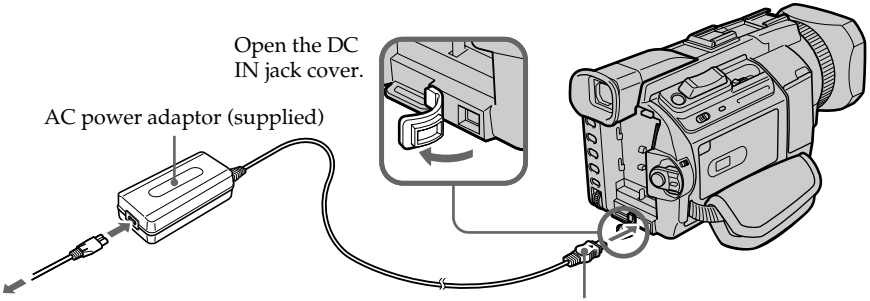
Quick Start Guide – Recording on a tape



This chapter introduces you to the basic features to recorded pictures on tapes of your camcorder. See the page in parentheses "( )" for more information.

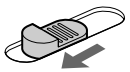
1 Connecting the mains lead (p. 19)

Use the battery pack when using your camcorder outdoors (p. 15).



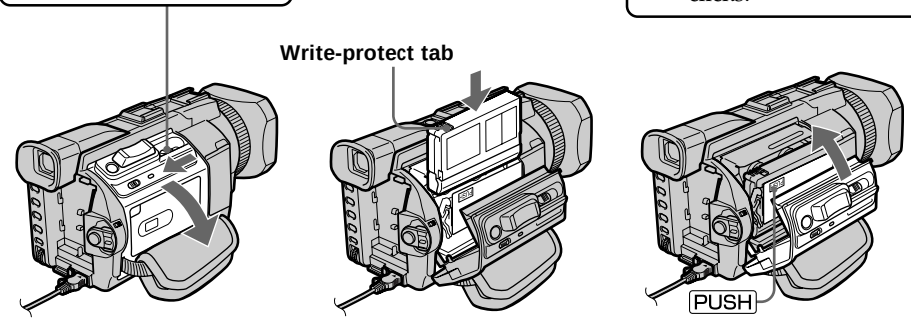
2 Inserting a cassette (p. 22)

❶ Slide ⌐OPEN/⏏ EJECT in the direction of the arrow to open the lid.



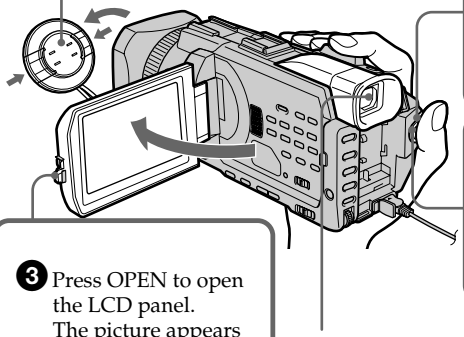
❷ Insert the cassette straight as far as possible into the cassette compartment with the window facing out and the write-protect tab facing upward.

❸ Close the cassette compartment by pressing PUSH on the cassette compartment. After the cassette compartment goes down completely, close the lid until it clicks.

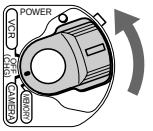


3 Recording a picture (p. 25)

❶ Remove the lens cap.



❷ Set the POWER switch to CAMERA while pressing the small green button.



❸ Press OPEN to open the LCD panel. The picture appears on the screen.

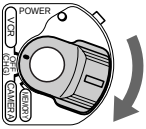
❹ Press START/STOP. Your camcorder starts recording. To stop recording, press START/STOP again.

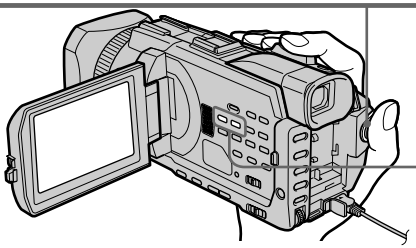
Viewfinder
When the LCD panel is closed, use the viewfinder with your eye against the eyecup.
Adjust the viewfinder lens to your eyesight (p. 29).

When you purchase your camcorder, the clock setting is set to off. If you want to record the date and time for a picture, set the clock setting before recording (p. 20).

4 Monitoring the playback picture on the LCD screen (p. 41)

❶ Set the POWER switch to VCR while pressing the small green button.





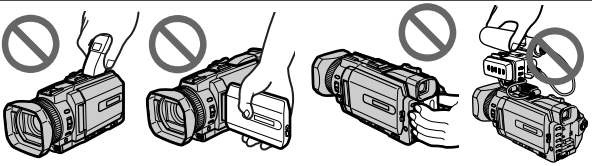
❷ Press ◄◄ to rewind the tape.

REW◄◄

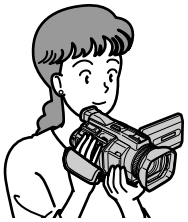
❸ Press ► to start playback.

PLAY

NOTE
Do not pick up your camcorder by holding the viewfinder, the LCD panel, the battery pack or the microphone.



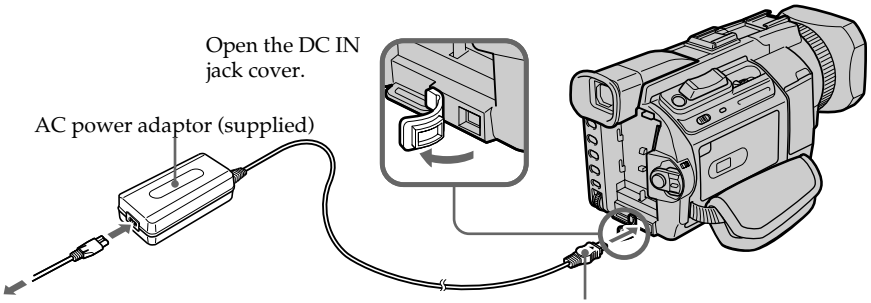
Quick Start Guide – Recording on a "Memory Stick"



This chapter introduces you to the basic features to record on a "Memory Stick" of your camcorder. See the page in parentheses "( )" for more information.

1 Connecting the mains lead (p. 19)

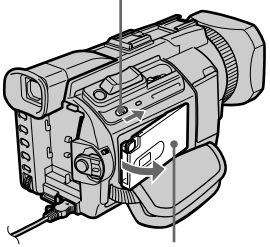
Use the battery pack when using your camcorder outdoors (p. 15).

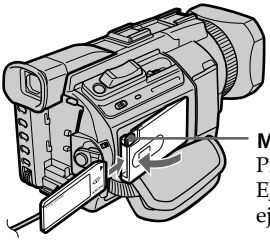


2 Inserting a "Memory Stick" (p. 137)

❶ Slide MEMORY OPEN in the direction of the arrow to open the "Memory Stick" slot.

❷ Insert a "Memory Stick" in the "Memory Stick" slot as far as it can go with the ▶ mark facing up as illustrated.

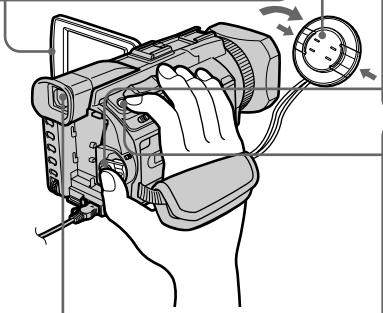




MEMORY EJECT
Press the MEMORY EJECT once lightly to eject it.

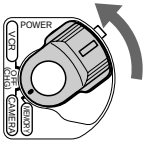
3 Recording a still image on a "Memory Stick" (p. 144)

❸ Press OPEN to open the LCD panel.
The picture appears on the screen.



❶ Remove the lens cap.

❷ Set the POWER switch to MEMORY while pressing the small green button.



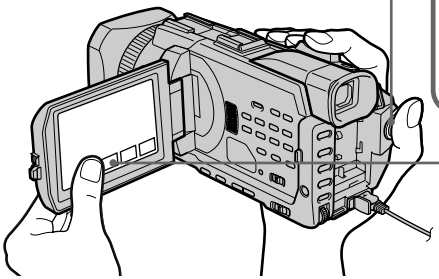
❹ Press PHOTO lightly.
You can start recording when the small green button on the screen stops flashing, and lights up.

❺ Press PHOTO deeper.
The image while pressing the button deeply is recorded on the "Memory Stick."

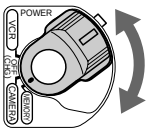
Viewfinder
When the LCD panel is closed, use the viewfinder with your eye against the eyecup.
Adjust the viewfinder lens to your eyesight (p. 29).

When you purchase your camcorder, the clock setting is set to off. If you want to record the date and time for a picture, set the clock setting before recording (p. 20).

4 Monitoring the playback still images on the LCD screen (p. 172)



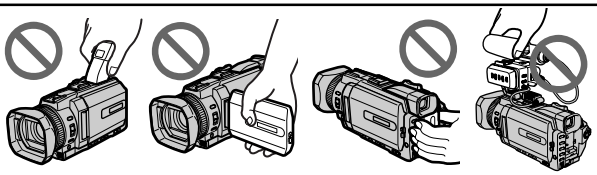
❶ Set the POWER switch to MEMORY or VCR while pressing the small green button.



❷ Press PLAY or ⮌ PB. The last recorded image is displayed.

PLAY or ⮌ PB

NOTE
Do not pick up your camcorder by holding the viewfinder, the LCD panel, the battery pack or the microphone.



Using this manual

As you read through this manual, buttons and settings on your camcorder are shown in capital letters.

e.g. Set the POWER switch to CAMERA.

When you carry out an operation, you can hear a beep to indicate that the operation is being carried out.

Note on Cassette Memory

Your camcorder is based on the DVCAM/DV format. We recommend that you use a tape with cassette memory .

Functions that require different operations depending on whether or not the tape has a cassette memory are:
– END SEARCH (p. 39)
– INDEX SEARCH (p. 87)
– DATE SEARCH (p. 90)
– PHOTO SEARCH (p. 92)

Functions you can operate only with the cassette memory are:
– TITLE SEARCH (p. 89)
– Superimposing a title (p. 126)
– Labelling a cassette (p. 131)

For details of cassette types, see page 236.

CM only You see this mark in the introduction of features that are operated only with cassette memory.

Cassettes with cassette memory are marked by (Cassette Memory).

Note on TV colour systems

TV colour systems differ depending on the country or region. To view your recordings on a TV, you need a PAL system-based TV.

Copyright precautions

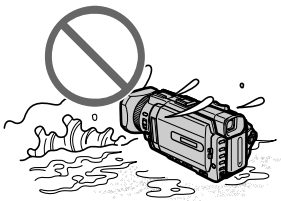
Television programmes, films, video tapes, and other materials may be copyrighted. Unauthorised recording of such materials may be contrary to the copyright laws.

Precautions on camcorder care

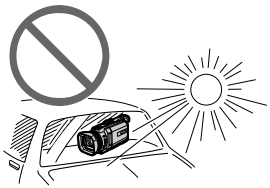
Lens and LCD screen/finder (on mounted models only)

- **The LCD screen and the finder are manufactured using extremely high-precision technology, so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue or green in colour) that constantly appear on the LCD screen and the finder. These points are normal in the manufacturing process and do not affect the recording in any way.**
- Do not let your camcorder get wet. Keep your camcorder away from rain and sea water. Letting your camcorder get wet may cause your camcorder to malfunction. Sometimes this malfunction cannot be repaired **[a]**.
- Never leave your camcorder exposed to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight **[b]**.
- Be careful when placing the camera near a window or outdoors. Exposing the LCD screen, the finder or the lens to direct sunlight for long periods may cause malfunctions **[c]**.
- Do not directly shoot the sun. Doing so might cause your camcorder to malfunction. Take pictures of the sun in low light conditions such as dusk **[d]**.

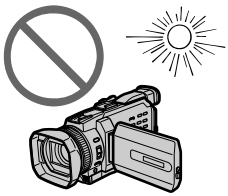
[a]



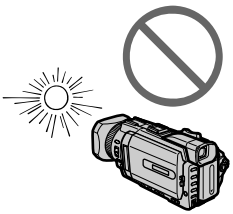
[b]



[c]

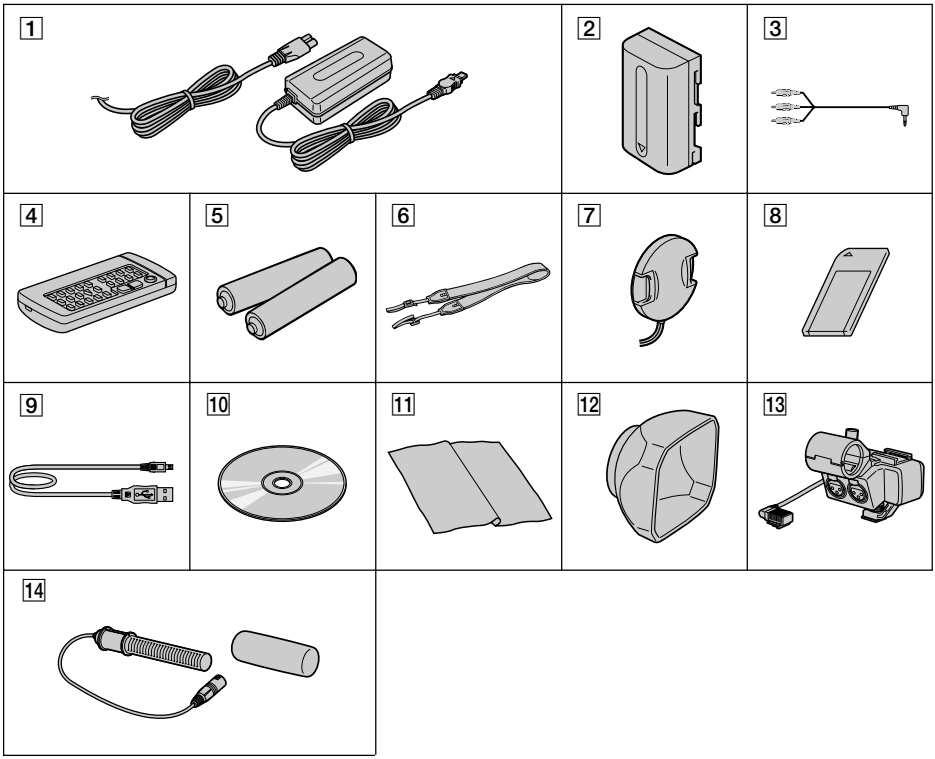


[d]



Checking supplied accessories

Make sure that the following accessories are supplied with your camcorder.



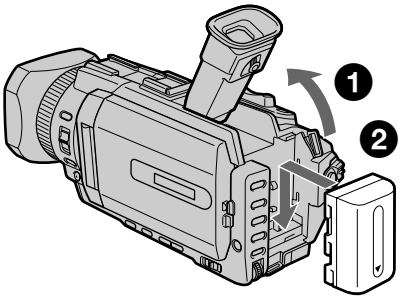
1 **AC-L10A/L10B/L10C AC power adaptor** (1), **mains lead** (1) (p. 16)
2 **NP-FM50 battery pack** (1) (p. 15, 16)
3 **A/V connecting cable** (1) (p. 47)
4 **Wireless Remote Commander** (1) (p. 258)
5 **R6 (Size AA) battery for Remote Commander** (2) (p. 259)
6 **Shoulder strap** (1)
7 **Lens cap** (1) (p. 25)
8 **"Memory Stick"** (1) (p. 135)
9 **USB cable** (1) (p. 190)
10 **CD-ROM (SPVD-008 USB Driver)** (1) (p. 195)
11 **Cleaning cloth** (1) (p. 245)
12 **Wide lens hood** (1) (p. 32)
13 **XLR adaptor (with a Microphone holder)** (1) (p. 29)
14 **Microphone** (1)**, Wind screen** (1) (p. 29)

Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, storage media, etc.

Step 1 Preparing the power supply

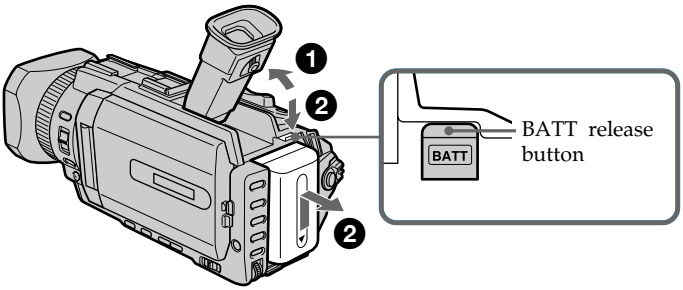
Installing the battery pack

(1) Lift up the viewfinder.
(2) Slide the battery pack down until it clicks.



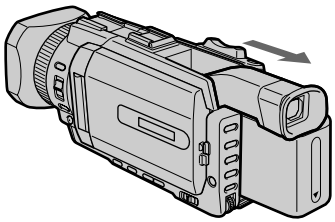
To remove the battery pack

(1) Lift up the viewfinder.
(2) Slide the battery pack out in the direction of the arrow while pressing BATT down.



If you use the large capacity battery pack

If you install the NP-FM70/QM71/FM90/FM91/QM91 battery pack on your camcorder, extend its viewfinder.

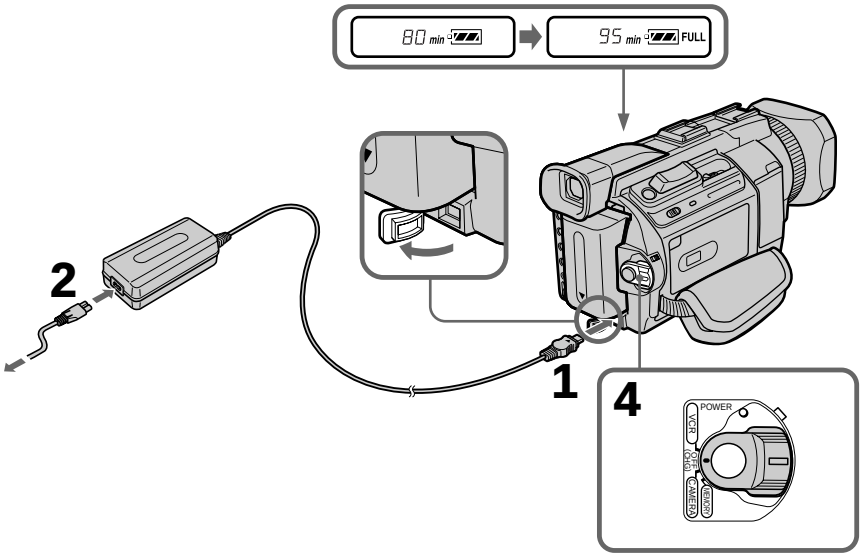


Charging the battery pack

Use the battery pack after charging it for your camcorder.
Your camcorder operates only with the **"InfoLITHIUM" battery pack (M series)**.
See page 239 for details of "InfoLITHIUM" battery pack.

(1) Open the DC IN jack cover and connect the AC power adaptor supplied with your camcorder to the DC IN jack with the plug's ▲ mark facing up.
(2) Connect the mains lead to the AC power adaptor.
(3) Connect the mains lead to the wall socket.
(4) Set the POWER switch to OFF (CHG). Charging begins. The remaining battery time is indicated in minutes on the display window.

When the remaining battery indicator changes to , **normal charge** is completed. To fully charge the battery **(full charge)**, leave the battery pack attached for about one hour after normal charge is completed until FULL appears in the display window. Fully charging the battery allows you to use the battery longer than usual.



After charging the battery pack

Disconnect the AC power adaptor from the DC IN jack on your camcorder.

Note

Prevent metallic objects from coming into contact with the metal parts of the DC plug of the AC power adaptor. This may cause a short-circuit, damaging the AC power adaptor.

Remaining battery time indicator

The remaining battery time indicator in the display window indicates the approximate recording time with the viewfinder.

Until your camcorder calculates the actual remaining battery time

"---- min" appears in the display window.

When you use the AC power adaptor

Place the AC power adaptor near a wall socket. If any trouble occurs with this unit, disconnect the plug from a wall socket as soon as possible to cut off the power.

Charging time

Battery pack	Full charge (Normal charge)
NP-FM50 (supplied)	150 (90)
NP-FM70	240 (180)
NP-QM71	260 (200)
NP-FM90	330 (270)
NP-FM91/QM91	360 (300)

Approximate minutes at 25°C (77°F) to charge an empty battery pack
The charging time may increase if the battery's temperature is extremely high or low because of the ambient temperature.

Recording time

Battery pack	Recording with the viewfinder		Recording with the LCD screen	
	Continuous	Typical*	Continuous	Typical*
NP-FM50 (supplied)	95	55	75	45
NP-FM70	205	120	160	95
NP-QM71	235	140	185	110
NP-FM90	310	185	245	145
NP-FM91/QM91	360	215	285	170

Approximate minutes when you use a fully charged battery and the XLR adaptor is not installed

* Approximate number of minutes when recording while you repeat recording start/stop, zooming and turning the power on/off. The actual battery life may be shorter.

Playing time

Battery pack	Playing time with LCD closed	Playing time on LCD screen
NP-FM50 (supplied)	165	110
NP-FM70	345	230
NP-QM71	400	270
NP-FM90	520	355
NP-FM91/QM91	605	410

Approximate minutes when you use a fully charged battery

Note

Approximate recording time and playing time at 25°C (77°F). The battery life will be shorter if you use your camcorder in a cold environment.

If the power goes off although remaining battery time indicator indicates that the battery pack has enough power to operate

Charge the battery pack fully again so that the indication on the battery remaining indicator is correct.

Recommended charging temperature

We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F).

What is "InfoLITHIUM"?

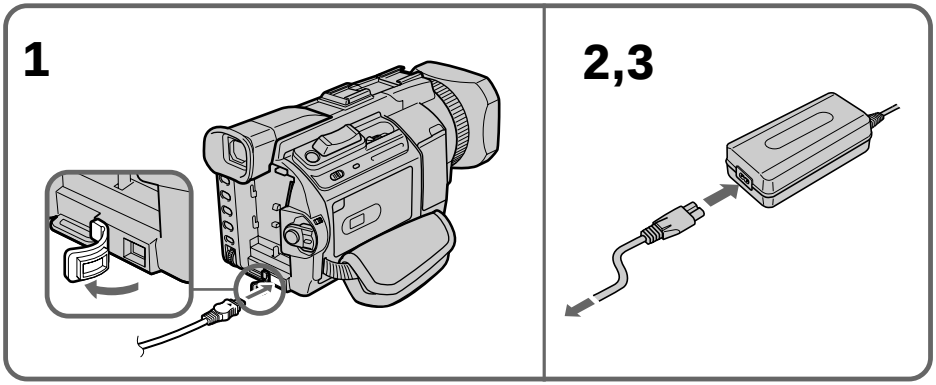
The "InfoLITHIUM" is a lithium ion battery pack that can exchange data such as battery consumption with compatible electronic equipment. This unit is compatible with the "InfoLITHIUM" battery pack (M series). Your camcorder operates only with the "InfoLITHIUM" battery. "InfoLITHIUM" M series battery packs have the InfoLITHIUM M SERIES mark.

"InfoLITHIUM" is a trademark of Sony Corporation.

Connecting to a wall socket

When you use your camcorder for a long time, we recommend that you power it from a wall socket using the AC power adaptor.

(1) Open the DC IN jack cover. Connect the AC power adaptor supplied with your camcorder to the DC IN jack on your camcorder with the plug's ▲ mark facing up.
(2) Connect the mains lead to the AC power adaptor.
(3) Connect the mains lead to a wall socket.



PRECAUTION

The set is not disconnected from the AC power supply (the mains) as long as it is connected to the wall socket, even if the set itself has been turned off.

Notes

- The AC power adaptor can supply power even if the battery pack is attached to your camcorder.
- The DC IN jack has "source priority." This means that the battery pack cannot supply any power if the mains lead is connected to the DC IN jack, even when the mains lead is not plugged into a wall socket.

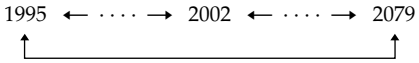
Using a car battery

Use Sony Car Battery Adaptor (optional).
Refer to the operating instructions of the Car Battery Adaptor for further information.

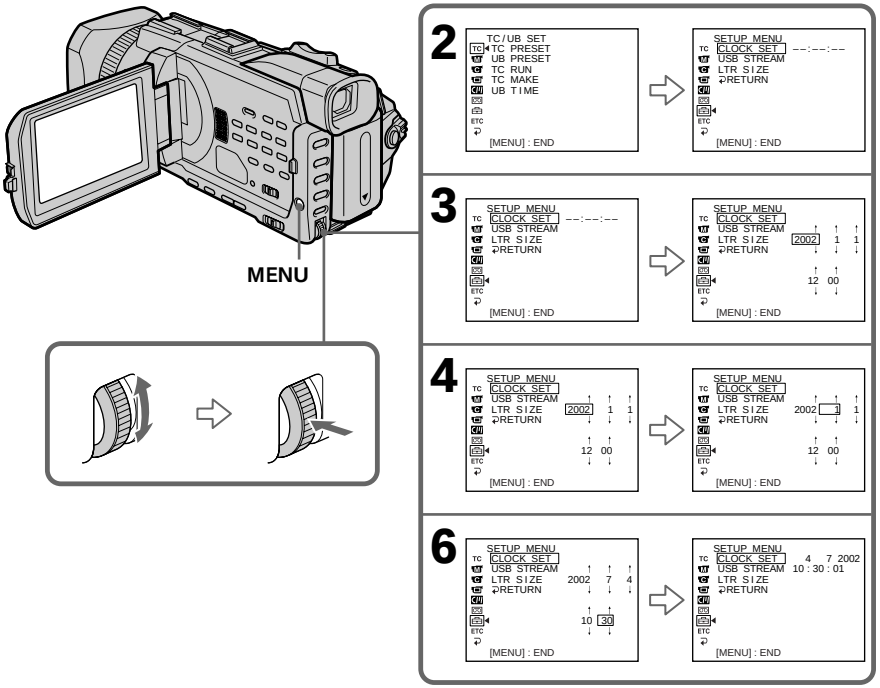
Step 2 Setting the date and time

Set the date and time when you use your camcorder for the first time. "CLOCK SET" will be displayed each time that you set the POWER switch to CAMERA or MEMORY unless you set the date and time settings.
If you do not use your camcorder for **about four months**, the date and time may be cleared from memory (bars may appear) because the built-in rechargeable battery installed in your camcorder will have been discharged (p. 247).
Set the year, month, day, hour and then the minute, in that order.

(1) Press MENU to display the menu settings while the POWER switch is set to CAMERA or MEMORY.
(2) Turn the SEL/PUSH EXEC dial to select 🧰, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select CLOCK SET, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select the desired year, then press the dial. The year changes as follows:



(5) Set the month, day and hour by turning the SEL/PUSH EXEC dial and pressing the dial.
(6) Set the minute by turning the SEL/PUSH EXEC dial and pressing the dial by the time signal. The clock starts to move.
(7) Press MENU to make the menu settings disappear.



If you do not set the date and time

"--:--:--" and "-- -- ----" are recorded on the data code of the tape and the "Memory Stick."

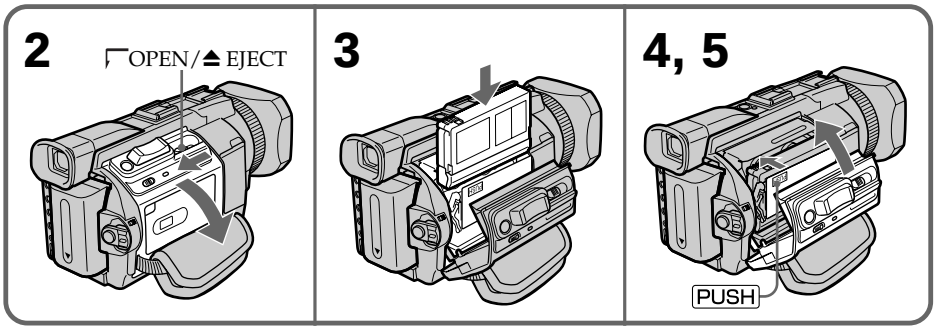
Note on the time indicator

The internal clock of your camcorder operates on a 24-hour cycle.

Step 3 Inserting a cassette

You can use the mini DVCAM cassette and mini DV cassette in this camcorder.

(1) Prepare the power supply.
(2) Slide ⌐OPEN/⏏ EJECT in the direction of the arrow and open the lid. The cassette compartment automatically lifts up and opens.
(3) Insert the cassette straight as far as possible into the cassette compartment with the window facing out and the write-protect tab facing upward.
(4) Close the cassette compartment by pressing PUSH on the cassette compartment. The cassette compartment automatically goes down.
(5) After the cassette compartment goes down completely, close the lid until it clicks.



To eject a cassette

Follow the procedure above, and take out the cassette in step 3.

Notes

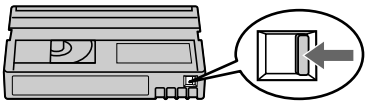
- Do not press the cassette compartment down forcibly. Doing so may cause a malfunction.
- The cassette compartment may not be closed when you press any part of the cassette compartment other than the PUSH mark.

When you use a cassette with cassette memory

Read the instruction about cassette memory to use this function properly (p. 236).

To prevent accidental erasure

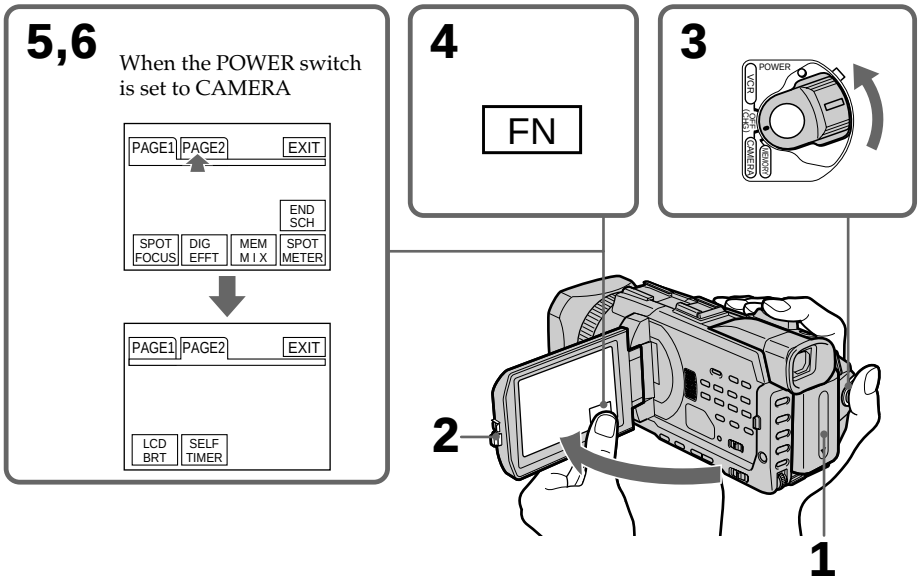
Slide the write-protect tab on the cassette to expose the red mark.



Step 4 Using the touch panel

Your camcorder has operation buttons on the LCD screen. Touch the LCD screen directly with your finger to operate each function. This section describes how to operate the touch panel during recording or playing back images on a tape.

(1) Prepare the power supply. (p. 15 to 19)
(2) Press OPEN to open the LCD panel.
(3) Set the POWER switch to CAMERA or VCR while pressing the small green button.
(4) Press FN. Operation buttons appear on the LCD screen.
(5) Press PAGE2 to go to PAGE2. Operation buttons appear on the LCD screen.
(6) Press a desired operation item. Refer to relevant pages of this manual for each function.



To return to FN
Press EXIT.

To execute settings
Press ↵ OK. The display returns to PAGE1/PAGE2.

To cancel settings
Press ↵ OFF. The display returns to PAGE1/PAGE2.

Notes

- When using the touch panel, press operation buttons with your thumb supporting the LCD panel from the back side of it or press those buttons lightly with your index finger.
- Do not press the LCD screen with sharp-pointed objects such as a pen.
- Do not press the LCD screen too hard.
- Do not touch the LCD screen with wet hands.
- If FN is not on the LCD screen, touch the LCD screen lightly to make it appear. You can control the display with DISPLAY/TOUCH PANEL on your camcorder.
- When operation buttons do not work even if you press them, an adjustment is required (CALIBRATION) (p. 246).
- When the LCD screen gets dirty, clean it with the supplied cleaning cloth.

When executing each item

The green bar appears above the item.

If the items are not available

The colour of the items changes to gray.

Press FN to display the following buttons:

When the POWER switch is set to CAMERA

PAGE1	END SCH, SPOT FOCUS, DIG EFFT, MEM MIX, SPOT METER
PAGE2	LCD BRT, SELFTIMER

When the POWER switch is set to VCR

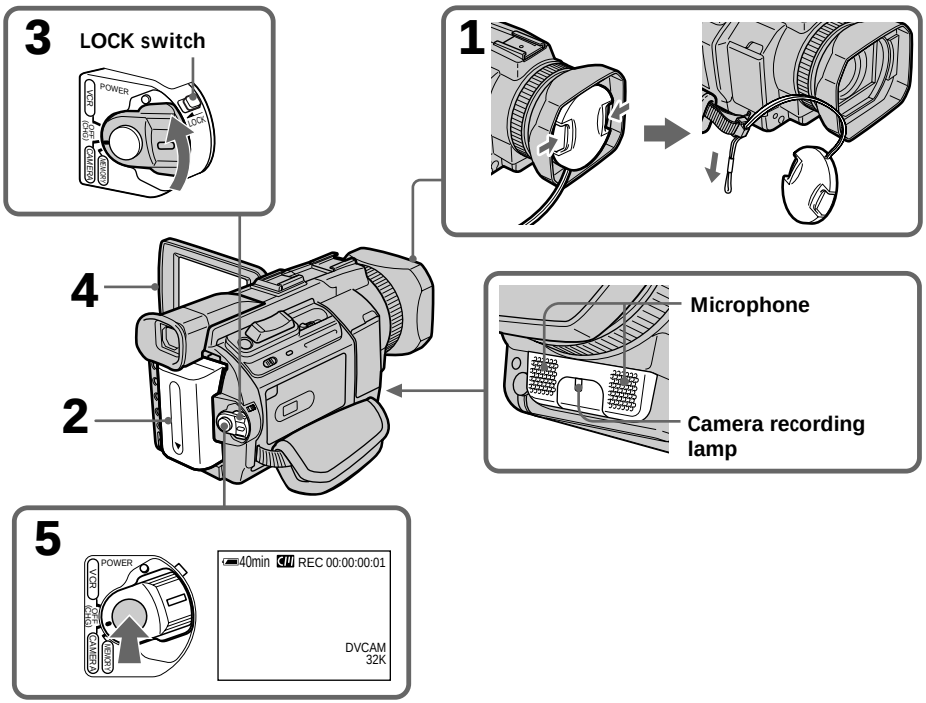
PAGE1	LCD BRT, ⮌ PB, INDEX, END SCH
PAGE2	DIG EFFT, PB ZOOM, ⮌ PB, INDEX, DATA CODE

See page 138 when the POWER switch is set to MEMORY.

Recording a picture

Your camcorder automatically focuses for you.

(1) Remove the lens cap by pressing both knobs on its sides and pull the lens cap string to fix it.
(2) Prepare the power supply and insert a cassette. See “Step 1” to “Step 3” for more information. (p. 15 to 22)
(3) Set the POWER switch to CAMERA while pressing the small green button. This sets your camcorder to the standby.
(4) Press OPEN to open the LCD panel. The viewfinder automatically turns off.
(5) Press START/STOP. Your camcorder starts recording. The REC indicator appears. The camera recording lamp located on the front of your camcorder lights up. To stop recording, press START/STOP again.



Notes

- Fasten the grip strap firmly.
- The recording data (date/time or various settings when recorded) are not displayed while recording. However, they are recorded automatically on the tape. To display the recording data, press DATA CODE on PAGE2 during playback. You can also use the Remote Commander for this operation (p. 43).

Note on the LOCK switch

When you slide the LOCK switch in the direction of the arrow, the POWER switch can no longer be set to MEMORY accidentally. The LOCK switch is set to the further side (unlock position) as the default setting.

To enable smooth transition

Transition between the last scene you recorded and the next scene is smooth as long as you do not eject the cassette even if you turn off your camcorder.
However, check the following:

– Do not mix recordings in the DVCAM format and the DV format on one tape.
– When you change the battery pack, set the POWER switch to OFF (CHG).
– When you use a cassette with cassette memory, however, you can make the transition smooth even after ejecting the cassette if you use the END SEARCH (p. 39).

If you leave your camcorder in the standby for five minutes

The head drum of the camcorder automatically stops rotating. This is to prevent the tape wear and save the battery power. To re-start recording, press START/STOP. It may take more time to start recording. This is not a malfunction.

Note on the recording format

The playback picture may be distorted or the time code may not be written properly between scenes when you change the recording format.

The battery use time when you record using the LCD screen

The battery time is slightly shorter than the shooting time using the viewfinder.

After recording

(1) Set the POWER switch to OFF (CHG).
(2) Close the LCD panel.
(3) Eject the cassette.
(4) Remove the battery pack.

Usable cassettes

You can record both on mini DVCAM cassettes and on mini DV cassettes using your camcorder. When you use a mini DV cassette, set REC MODE to DV SP in the menu settings. You can record on a tape 1.5 times longer than the DVCAM format. When you want to record in the DV format or to make longer recording, use the mini DV cassette.

Notes

- If you record in the DV format, the transition of a tape may not be smooth. We recommend that you use mini DVCAM cassettes and set REC MODE to DVCAM in the menu settings to obtain reliable clear pictures.
- You cannot record on a tape in LP mode in the DV format.

If you use a mini DV cassette without setting REC MODE to DV SP

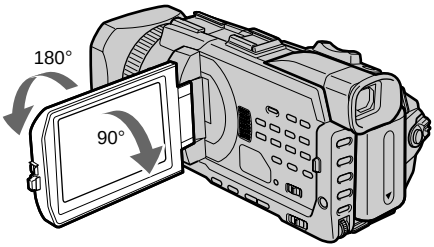
The recordable time is 2/3 time that indicated on the cassette.

Cassettes that can be played back with your camcorder

You can play back both cassettes recorded in the DVCAM format or in the DV format, however, you cannot play back cassettes that recorded in LP mode in the DV format.

Adjusting the LCD screen

The LCD panel can be opened up to 90 degrees.
The LCD panel moves about 90 degrees to the viewfinder side and about 180 degrees to the lens side.



When closing the LCD panel, set it vertically, and swing it into the camcorder body.

Note

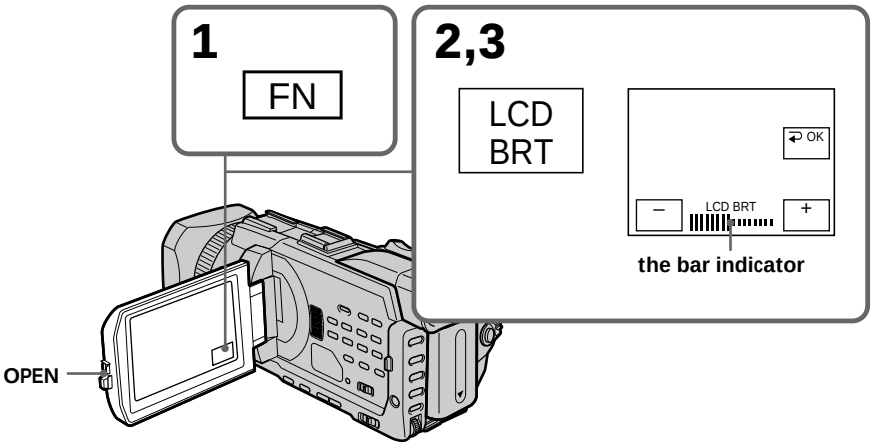
When the LCD panel is opened, the viewfinder automatically turns off and no image is displayed in the viewfinder. However, in the Mirror Mode, images are displayed in the viewfinder as well (p. 34).

LCD screen

- When you use the LCD screen outdoors in direct sunlight, the LCD screen may be difficult to see. If this happens, we recommend that you use the viewfinder.
- When you adjust the angle of the LCD panel, make sure if the LCD panel is opened up to 90 degrees.

Adjusting the brightness of the LCD screen

(1) Press FN and select PAGE2 while the POWER switch is set to CAMERA or MEMORY.
When you set the POWER switch to VCR, press FN to display PAGE1.
(2) Press LCD BRT. The screen to adjust the brightness of the LCD screen appears.
(3) Adjust the brightness of the LCD screen using –/+.
– : to dim
+ : to brighten
(4) Press ↩ OK to return to PAGE1/PAGE2.



To return to FN

Press EXIT.

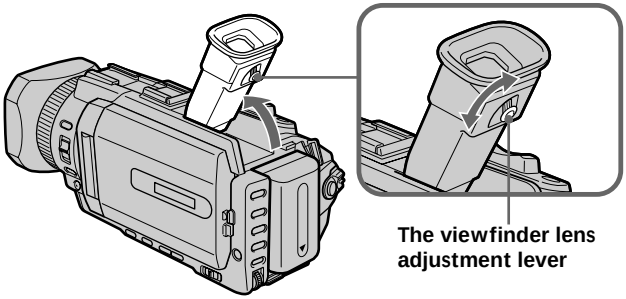
Even if you adjust LCD BRT

The recorded picture will not be affected.

Adjusting the viewfinder

If you record pictures with the LCD panel closed, check the picture with the viewfinder. Adjust the viewfinder lens to your eyesight so that the images in the viewfinder come into sharp focus.

Lift up the viewfinder and move the viewfinder lens adjustment lever.



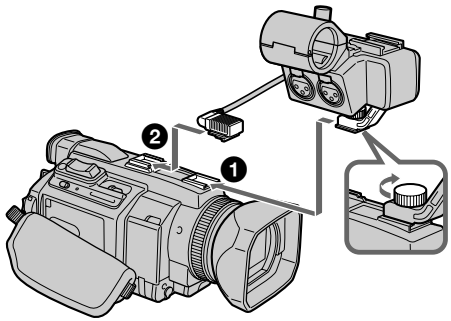
Viewfinder backlight

You can change the brightness of the backlight. Select VF B.L. in the menu settings when using the battery pack (p. 216).

Installing the supplied microphone

Install the supplied XLR adaptor and microphone. You can get the desired audio quality.

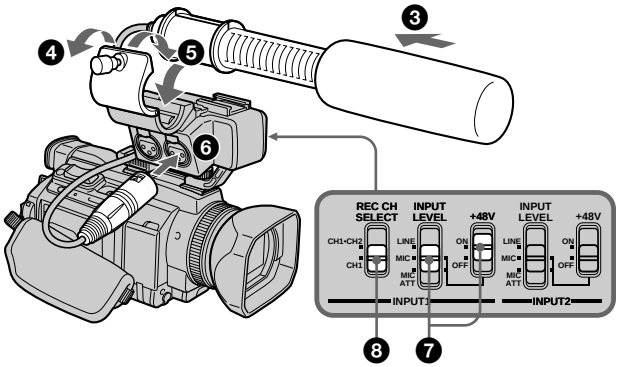
(1) Attach the XLR adaptor to the accessory shoe on the camcorder and tighten the screw of the XLR adaptor.
(2) Connect the hot shoe plug of the XLR adaptor to the intelligent accessory shoe of the camcorder.



(Continued on the following page)

(3) Attach the wind screen to the microphone.
(4) Loosen the microphone holder screw and open the cover.
(5) Place the microphone into the holder with the model name (ECM-NV1) facing upward, close the cover, and tighten the screw.
(6) Connect the plug of the microphone to the INPUT1 connector.
(7) Set the INPUT LEVEL selector to MIC or MIC ATT.
When the selector is set to MIC ATT, you can reduce the volume by about 20 dB. And set the +48V switch to ON.
(8) Select the channel to be used, using the REC CH SELECT switch. Used channels according to the position of the REC CH SELECT switch are as follows:

The position of the REC CH SELECT switch	Audio input through	The audio is recorded on
CH1•CH2	INPUT1	Channel 1/2
	INPUT2	—
CH1	INPUT1	Channel 1
	INPUT2	Channel 2



Note

If you use equipment other than a 48-V microphone with the +48V switch set to ON, a malfunction of the equipment may occur. When you connect equipment other than a 48-V microphone, set it to OFF.

When the wind is blowing hard

Set INPUT1 of the LOW CUT switch to ON when the audio is input via the INPUT1 connector. Set INPUT2 to ON when the audio is input via the INPUT2 connector. The sound of wind is reduced.

We recommend that you set MIC NR to OFF in the menu settings in the following cases:

– When you use the external microphone at a distance from the camcorder.
– When the REC CH SELECT switch is set to CH1 and you will not record any audio via the INPUT2 connector.
– When you set the INPUT LEVEL selector to LINE.

When you use an external microphone

Make sure that the wind screen does not appear on the screen, using an underscan monitor.

When you unplug the microphone plug

Unplug it while holding the PUSH button down.

When you connect equipment other than a microphone

Set the +48V switch to OFF and the INPUT LEVEL selector to LINE.

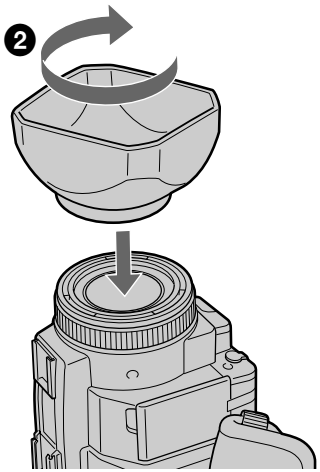
When detaching the XLR adaptor

Unplug the hot shoe plug of the XLR adaptor from the intelligent accessory shoe beforehand. Detach the XLR adaptor after having loosened the screw of the XLR adaptor.

Attaching the supplied wide lens hood

(1) To remove the lens hood mounted on the camcorder, screw the lens hood counterclockwise.

(2) We recommend you place the unit with the lens side up and attach the wide lens hood from above. The wide lens hood has three protrusions on it. Align the protrusions on the wide lens hood with the groove on the lens and screw the wide lens hood clockwise.



Note

You cannot attach filters or other objects onto the wide lens hood.
If you forcibly attach these objects onto the lens hood, you will no longer be able to remove filters or other objects from the hood.

When attaching the optional conversion lens

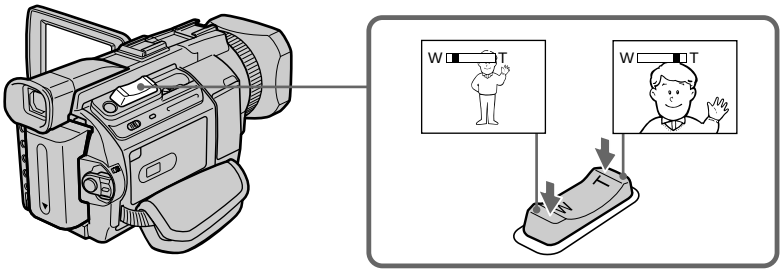
Attach the conversion lens after having attached the wide lens hood.

When using the optional flash

Attaching the wide lens hood may block the light from the flash. We recommend removing the wide lens hood while shooting with the optional flash.

Using the zoom feature

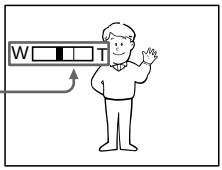
Move the power zoom lever a little for a slower zoom. Move it further for a faster zoom. Using the zoom sparingly results in better-looking recordings.
W : Wide-angle (subject appears farther away)
T : Telephoto (subject appears closer)



To use zoom greater than 12×

Zoom greater than 12× is performed digitally. Digital zoom can be set to 24× or 48×. To activate digital zoom, select the digital zoom power in D ZOOM in the menu settings (p. 215). The digital zoom is set to OFF as a default setting.

The right side of the bar shows the digital zooming zone.
The digital zooming zone appears when you select the digital zoom power in the menu settings.



When you shoot close to a subject

If you cannot get a sharp focus, move the power zoom lever to the "W" side until the focus is sharp. You can shoot a subject that is at least about 80 cm (about 2 feet 5/8 inch) away from the lens surface in the telephoto position, or about 1 cm (about 1/2 inch) away in the wide-angle position.

Note on digital zoom

The picture quality deteriorates as you move the power zoom lever towards the "T" side.

When the POWER switch is set to MEMORY

You cannot use the digital zoom.

Shooting with the Mirror Mode

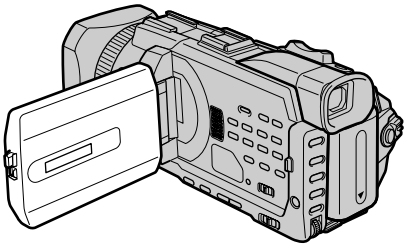
This feature allows the camera subject to view him-or herself on the LCD screen. The subject uses this feature to check his or her own image on the LCD screen while you look at the subject in the viewfinder.

Set the POWER switch to CAMERA or MEMORY.

Rotate the LCD screen 180 degrees.

The ☺ indicator appears in the viewfinder and on the LCD screen.

❚❚● appears in the standby, and ● appears in the recording while the POWER switch is set to CAMERA. Some of other indicators appear mirror-reversed and others are not displayed.



Picture in the mirror mode

The picture on the LCD screen is a mirror-image. However, the picture will be normal when recorded.

During recording in the mirror mode

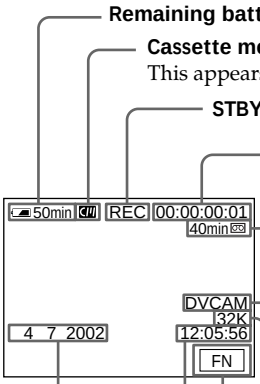
FN appears mirror-reversed in the viewfinder.

When you press FN

The ☺ does not appear on the screen.

Indicators displayed in the recording

Indicators are not recorded on tapes.



Remaining battery time

Cassette memory
This appears when using a cassette with cassette memory.

STBY/REC

Time code/User bits

Remaining tape
This appears after you insert a cassette and record or play back for a while.

DVCAM format/DV format in SP mode

Audio mode

FN button
Press this button to display operation buttons on the LCD screen.

Time
The time is displayed about five seconds after the power is turned on.

Date
The date is displayed about five seconds after the power is turned on.

Remaining battery time indicator during recording

The remaining battery time indicator roughly indicates the continuous recording time. The indicator may not be correct, depending on the conditions in which you are recording. When you close the LCD panel and open it again, it takes about one minute for the correct remaining battery time in minutes to be displayed.

Time code

The time code indicates the recording or playback time, “00:00:00:00” (hours : minutes : seconds : frames). You cannot rewrite only the time code. You can preset the time code. The time code can be preset or be reset during recording (p. 121).

On user bits display

You can display the user bits, pressing TC/U-BIT (p. 125).

Remaining tape indicator

The indicator may not be displayed accurately depending on the tape.

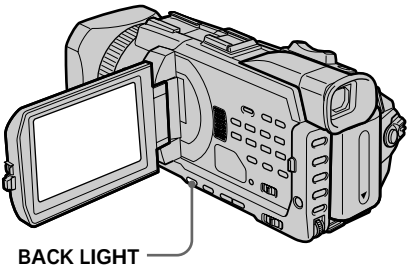
Recording data

The recording data (date/time or various settings when recorded) are not displayed while recording. However, they are recorded automatically on the tape. To display the recording data, press DATA CODE on PAGE2 during playback. You can also use the Remote Commander for this operation (p. 43). When you want to display the date and time during shooting, set DATE REC to ON in the menu settings (p. 223). However, once you record with the date and time, you cannot erase them.

Shooting backlit subjects – BACK LIGHT

When you shoot a subject with the light source behind the subject or a subject with a light background, use the backlight function.

Press BACK LIGHT while the POWER switch is set to CAMERA or MEMORY.
The ◪ indicator appears on the screen. To cancel, press BACK LIGHT again.



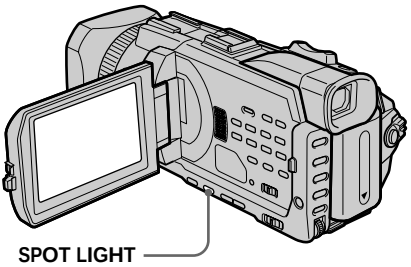
When shooting backlit subjects
If you press SPOT LIGHT, EXPOSURE or SPOT METER, the backlight function will be cancelled.

When you manually adjust the exposure
You cannot use the backlight function.

Shooting subjects lit by strong light – SPOT LIGHT

This function prevents people's faces, for example, from appearing excessively white when shooting subjects lit by strong light, such as in the theatre.

Press SPOT LIGHT while the POWER switch is set to CAMERA or MEMORY.
The indicator appears on the screen. To cancel, press SPOT LIGHT again.



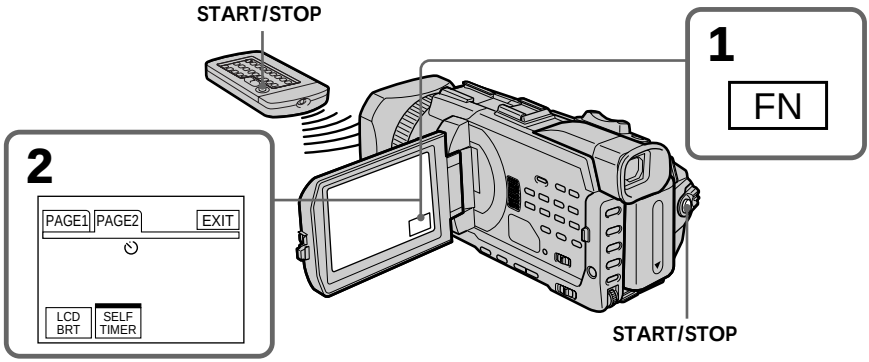
When shooting spotlighted subjects
If you press BACK LIGHT, EXPOSURE or SPOT METER, the spot light function will be cancelled.

When you manually adjust the exposure
You cannot use the spot light function.

Self-timer recording

Recording with the self-timer starts in 10 seconds automatically. You can also use the Remote Commander for this operation.

(1) In the standby, press FN and select PAGE2.
(2) Press SELFTIMER.
The ⏲ (self-timer) indicator appears on the screen.
(3) Press START/STOP.
The self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.



To stop the count down

Press START/STOP.
To restart the countdown, press START/STOP again.

To cancel the self-timer

Press SELFTIMER so that the ⏲ (self-timer) indicator disappears from the screen while your camcorder is in the standby.

Note

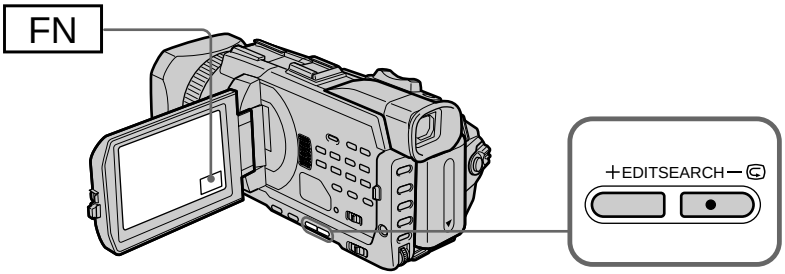
The self-timer is automatically cancelled when:
– The self-timer recording is finished.
– The POWER switch is set to OFF (CHG) or VCR.

When the POWER switch is set to MEMORY

You can also record still images on a "Memory Stick" with the self-timer (p. 150).

Checking recordings – END SEARCH / EDITSEARCH / Rec Review

You can use these buttons to check the recorded picture or shoot so that the transition between the last recorded scene and the next scene you record is smooth.



END SEARCH

You can go to the end of the recorded section after you record.

(1) In the standby, press FN to display PAGE1.
(2) Press END SCH.
The last five seconds of the recorded section are played back and your camcorder returns to the standby. You can monitor the sound from the speaker or headphones.

To return to FN

Press EXIT.

To stop searching

Press END SCH again.

End search

When you use a cassette without cassette memory, the end search function does not work once you eject the cassette after you have recorded on the tape. If you use a cassette with cassette memory, the end search works even once you eject the cassette.

If a tape has a blank portion between recorded portions

The end search may not work correctly.

EDITSEARCH

You can search for the next recording start point.

Hold down the EDITSEARCH in the standby. The recorded portion is played back.

– : To go backward
+ : To go forward

Release EDITSEARCH to stop playback. If you press START/STOP, recording begins from the point you released EDITSEARCH. You cannot monitor the sound.

Rec Review

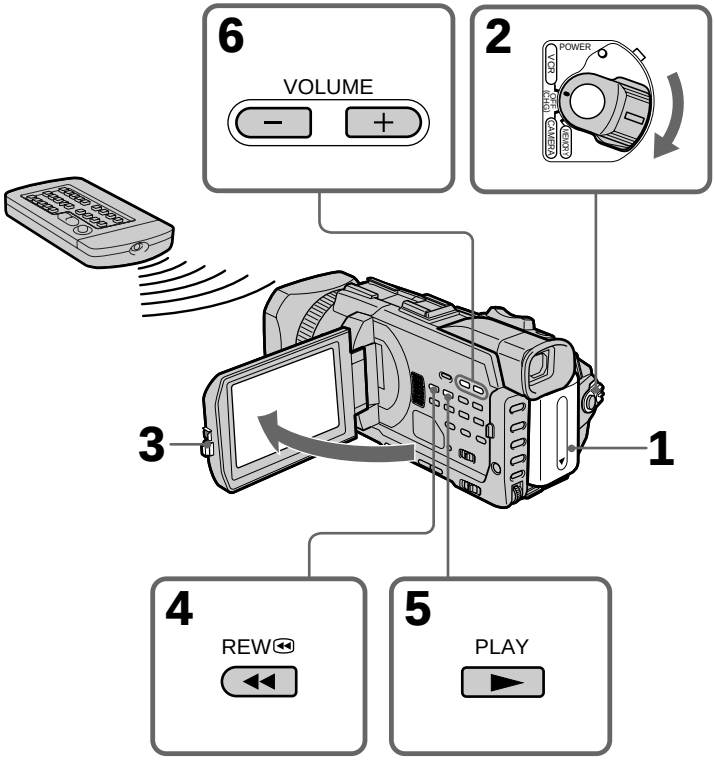
You can check the last recorded section.

Press the – ⏪ side of EDITSEARCH momentarily in the standby.
The section you have stopped most recently will be played back for a few seconds, and then your camcorder will return to the standby. You can monitor the sound from the speaker or headphones.

Playing back a tape

You can monitor the playback picture on the screen. If you close the LCD panel, you can monitor the playback picture in the viewfinder. You can control playback using the Remote Commander supplied with your camcorder.

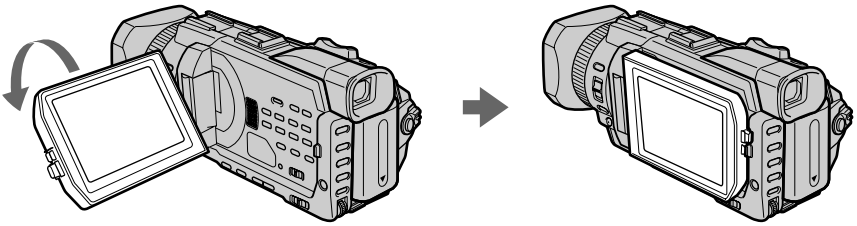
(1) Prepare the power supply and insert the recorded tape.
(2) Set the POWER switch to VCR while pressing the small green button.
(3) Open the LCD panel while pressing OPEN.
(4) Press ◄◄ to rewind the tape.
(5) Press ► to start playback.
(6) To adjust the volume, press either of the two buttons on VOLUME.
– : To turn down
+ : To turn up
When you close the LCD panel, sound is muted.



To stop playback

Press ■.

When monitoring on the LCD screen
You can turn the LCD panel over and move it back to the camcorder body with the LCD screen facing out.

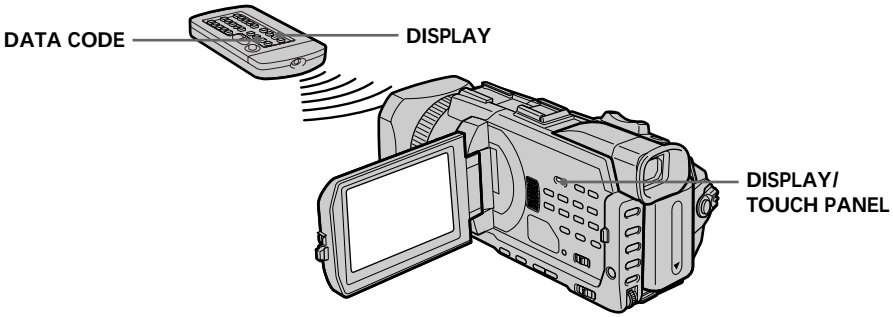


If you leave the power on for a long time
Your camcorder gets warm. This is not a malfunction.

When you open or close the LCD panel
Make sure that the LCD panel is set vertically.

To display the screen indicators – Display function

Press DISPLAY/TOUCH PANEL on your camcorder or DISPLAY on the Remote Commander supplied with your camcorder. The indicators disappear on the screen. To make the indicators appear, press DISPLAY/TOUCH PANEL or DISPLAY again.

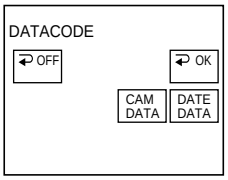


About date/time and various settings

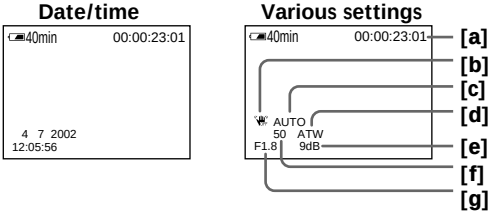
Your camcorder automatically records not only images on the tape but also the recording data (date/time or various settings when recorded) **(data code)**.
Follow the steps below to display the data code using the touch panel or the Remote Commander.

Using the touch panel

(1) Set the POWER switch to VCR, then play back a tape.
(2) Press FN and select PAGE2.
(3) Press DATA CODE.



(4) Select CAM DATA or DATE DATA, then press ↵ OK.
(5) Press EXIT.



[a] Time code
[b] SteadyShot OFF
[c] Exposure mode
[d] White balance
[e] Gain
[f] Shutter speed
[g] Aperture value

Using the Remote Commander

Press DATA CODE on the Remote Commander in the playback.
The display changes as follows when you press the DATA CODE on the Remote Commander:
date/time → various settings (SteadyShot, exposure, white balance, gain, shutter speed, aperture value) → no indicator

To not display various settings

Set DATA CODE to DATE in the menu settings (p. 222).
The display changes as follows when you press DATA CODE :
date/time ↔ no indicator

Various settings

Various settings are your camcorder's information when you have recorded. In the recording, the various settings will not be displayed.

When you use the data code, bars (-- -- --) appear if:

– A blank portion of the tape is being played back.
– The tape is unreadable due to tape damage or noise.
– The tape was recorded by a camcorder without the date and time set.

Data code

When you connect your camcorder to the TV, the data code appears on the TV screen.

Remaining battery time indicator during playback

The indicator indicates the approximate continuous playback time. The indicator may not be correct, depending on the conditions in which you are playing back. When you close the LCD panel and open it again, it takes about one minute for the correct remaining battery time to be displayed.

Various playback modes

To operate video control buttons, set the POWER switch to VCR.

To play back pause (viewing a still picture)

Press ❚❚ during playback. To resume normal playback, press ► or ❚❚.

To advance the tape

Press ►► in the stop mode. To resume normal playback, press ►.

To rewind the tape

Press ◄◄ in the stop mode. To resume normal playback, press ►.

To change the playback direction

Press < on the Remote Commander during playback to reverse the playback direction. To resume normal playback, press ►.

To locate a scene monitoring the picture (picture search)

Keep pressing ◄◄ or ►► during playback. To resume normal playback, release the button.

To monitor high-speed pictures while advancing or rewinding the tape (skip scan)

Keep pressing ◄◄ while rewinding or ►► while advancing the tape. To resume rewinding or advancing, release the button.

To view the picture at slow speed (slow playback)

Press ❚► on the Remote Commander during playback. For slow playback in the reverse direction, press < , then press ❚► on the Remote Commander. To resume normal playback, press ►.

To view pictures at double speed

Press ×2 on the Remote Commander during playback. For double speed playback in the reverse direction, press < , then press ×2 on the Remote Commander. To resume normal playback, press ►.

To view pictures frame-by-frame

Press ❚❚► on the Remote Commander in the playback pause. For frame-by-frame playback in the reverse direction, press ◄❚❚. To resume normal playback, press ►.

To search the last scene recorded (END SEARCH)

Press FN, then press END SCH in the stop mode. The last five-second recorded portion is played back and then stopped.

In the various playback modes

- Sound is muted.
- The previous picture may remain as a mosaic image during playback.

When the playback pause lasts for five minutes

Your camcorder automatically enters the stop mode. To resume playback, press ►.

Slow playback

The slow playback can be performed smoothly on your camcorder. However, this function does not work for an output signal through the i.LINK DV Interface.

When you play back a tape in reverse

Horizontal noise may appear at the centre, or the top and bottom of the screen. This is not a malfunction.

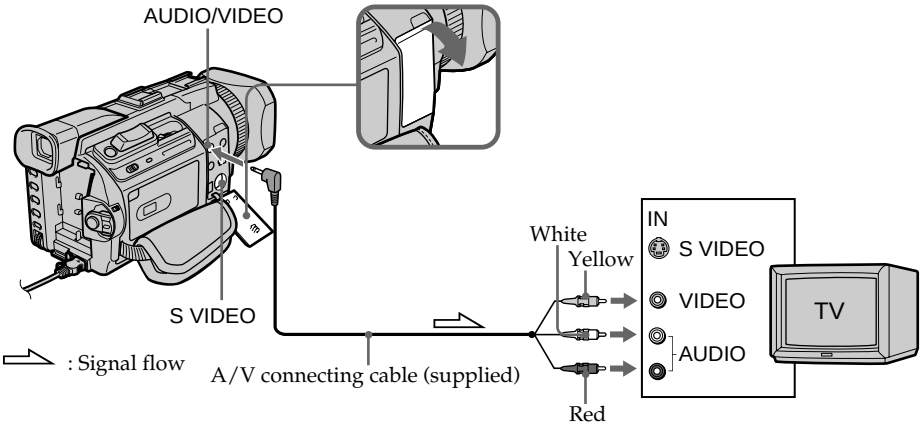
Note on DV-formatted tapes

You can play back DV-formatted tapes on this camcorder if the tape is recorded in SP mode. "DV SP" appears on the screen during playback.
You cannot play back DV-formatted tapes recorded in LP mode.

Viewing the recording on TV

Connect your camcorder to your TV with the A/V connecting cable supplied with your camcorder to watch playback picture on the TV screen. You can operate the video control buttons in the same way as when you monitor playback pictures on the screen. When monitoring playback pictures on the TV screen, we recommend that you power your camcorder from a wall socket using the AC power adaptor (p. 19). Refer to the operating instructions of your TV.

Open the jack cover. Connect your camcorder to the TV with the A/V connecting cable supplied with your camcorder. Then, set the TV/VCR selector on the TV to VCR.



If your TV is already connected to a VCR

Connect your camcorder to the LINE IN input on the VCR by using the A/V connecting cable supplied with your camcorder. Set the input selector on the VCR to LINE.

If your TV or VCR is a monaural type

Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. If you connect the white plug, the sound is L (left) signal. If you connect the red plug, the sound is R (right) signal.

If your TV has an S video jack

Pictures can be reproduced more faithfully by using an S video cable (optional). With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable. Connect the S video cable (optional) to the S VIDEO jacks on both your camcorder and the TV.
This connection produces higher quality DVCAM/DV format pictures.

To display the screen indicators on TV

Set DISPLAY to V-OUT/LCD in the menu settings (p. 223).
Then, press DISPLAY/TOUCH PANEL on your camcorder. To turn the screen indicators off, press DISPLAY/TOUCH PANEL on your camcorder again.

Recording still images on a "Memory Stick" during tape recording

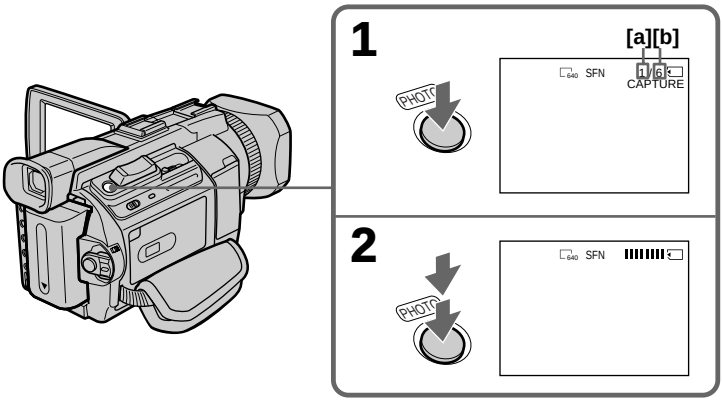
You can record still images on a "Memory Stick" in the tape recording or tape recording standby. You can also record still images on a tape (p. 51).

Before operation

- Insert a "Memory Stick" into your camcorder.
- Set PHOTO REC in to MEMORY in the menu settings (The default setting is MEMORY).

(1) In the standby, keep pressing PHOTO lightly until a still image appears. The CAPTURE indicator appears. Recording does not start yet. To change from the selected still image to another image, release PHOTO once and press it lightly again.

(2) Press PHOTO deeper.
Recording is complete when the bar scroll indicator disappears.
The image while pressing the button deeply is recorded on the "Memory Stick."



[a] : Number of the recorded images
[b] : Approximate number of the images that can be recorded on the "Memory Stick"

Notes

- When recording a still image, do not shake your camcorder. If you do so, the image may flutter.
- You cannot record still images on a "Memory Stick" during following operations (The indicator flashes on the screen.):
  – Wide mode
  – Fader
  – Digital effect
  – MEMORY MIX

"Memory Stick"

For details, see page 135 for more information.

Image size of still images
Image size is automatically set to 640 × 480.
When you want to record still images in different size, use the Memory Photo recording (p. 144).

When the POWER switch is set to CAMERA
You cannot select image quality.
The image quality when you set the POWER switch to MEMORY is used. (The default setting is SUPER FINE).

During and after recording still images on a "Memory Stick"
Your camcorder continues recording on tape.

When you press PHOTO on the Remote Commander
Your camcorder immediately records the image that is on the screen when you press the button.

To record still images on a "Memory Stick" during tape recording
You cannot check an image on the screen by pressing PHOTO lightly. The image when you press PHOTO will be recorded on the "Memory Stick."

To record images with higher quality
We recommend that you use the Memory Photo recording (p. 144).

Title
The title cannot be recorded.

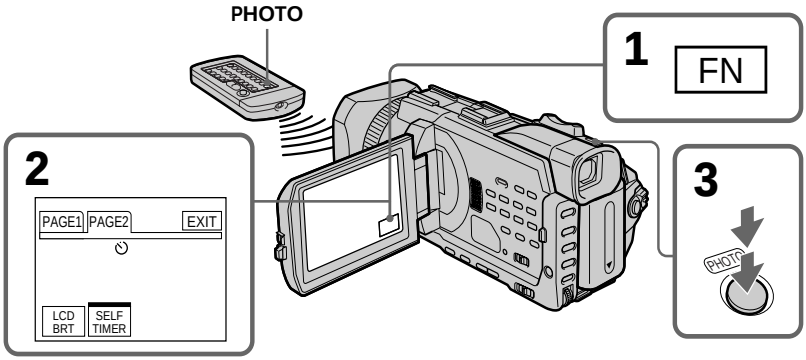
Self-timer recording

You can record still images on a "Memory Stick" with the self-timer. You can also use the Remote Commander for this operation.

Before operation

- Insert a "Memory Stick" into your camcorder.
- Set PHOTO REC in to MEMORY in the menu settings. (The default setting is MEMORY.)

(1) In the standby, press FN and select PAGE2.
(2) Press SELFTIMER.
The (self-timer) indicator appears on the screen.
(3) Press PHOTO deeper.
The self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then the recording starts automatically.



To cancel the self-timer

Press SELFTIMER so that the (self-timer) indicator disappears from the screen while your camcorder is in the standby. You cannot stop the count down.

Note

The self-timer is automatically cancelled when:
– The self-timer is finished.
– The POWER switch is set to OFF (CHG) or VCR.

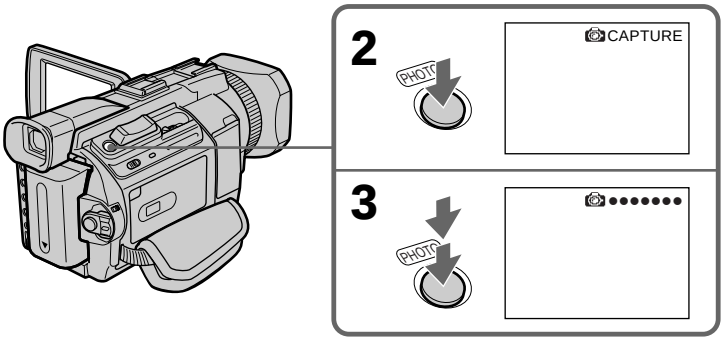
Self-timer recording

You can operate the self-timer recording only during the recording standby.

Recording still images on a tape – Tape Photo recording

You can record about 340 images in the DVCAM format on a 40-minute DVCAM cassette and about 510 images in the DV format on a 60-minute DV cassette.

(1) In the standby, set PHOTO REC in to TAPE in the menu settings.
(2) Keep pressing PHOTO lightly until a still image appears.
The CAPTURE indicator appears. Recording does not start yet.
To change from the selected still image to another image, release PHOTO once and press it lightly again.
(3) Press PHOTO deeper.
The still image on the screen is recorded for about seven seconds. The sound during those seven seconds is also recorded.
The still image is displayed on the screen until recording is completed.



Recording images with self-timer

(1) Set PHOTO REC in to TAPE in the menu settings (p. 215).
(2) Follow steps 1 and 3 on page 50.

Notes

- During tape photo recording, you cannot change the mode or setting.
- When recording a still image, do not shake your camcorder. If you do so, the image may flutter.
- You cannot use PHOTO during the following operations: (The indicator flashes on the screen.)
  – Fader
  – Digital effect

If you record a moving subject with the tape photo recording

When you play back the still image on other equipment, the image may flutter. This is not a malfunction.

When you press PHOTO on the Remote Commander

Your camcorder immediately records the image that is on the screen when you press the button.

To use the tape photo recording during the tape recording

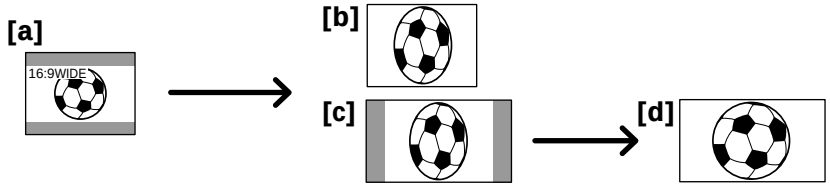
You cannot check an image on the screen by pressing PHOTO lightly. Press PHOTO deeper. The still image is then recorded for about seven seconds, and your camcorder returns to the standby.

To record clear still images with little unsteadiness

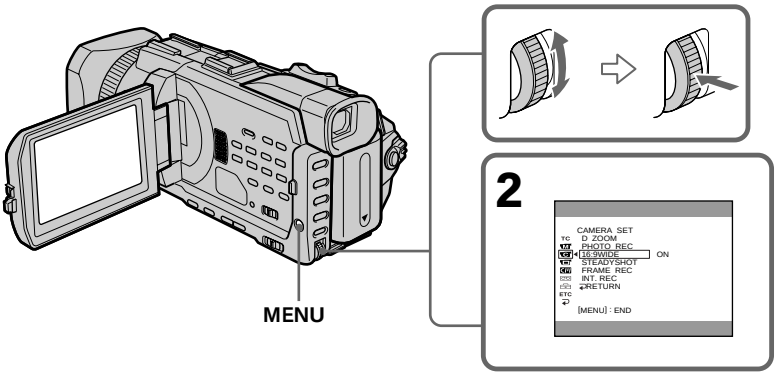
We recommend that you record on a "Memory Stick" using the Memory Photo recording.

Using the wide mode

You can record a 16:9 wide picture to watch on a 16:9 wide-screen TV (16:9WIDE). Black bands appear on the screen during recording in 16:9WIDE mode **[a]**. The picture during playback on a normal TV **[b]** or on a wide-screen TV **[c]** is compressed in the longwise direction. If you set the screen mode of the wide-screen TV to the full mode, you can watch pictures of normal images **[d]**.



(1) In the standby, press MENU, then turn the SEL/PUSH EXEC dial to select 16:9WIDE in , then press the dial. (p. 215)
(2) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.



To cancel the wide mode

Set 16:9WIDE to OFF in the menu settings.

In the wide mode

You cannot select the following functions:

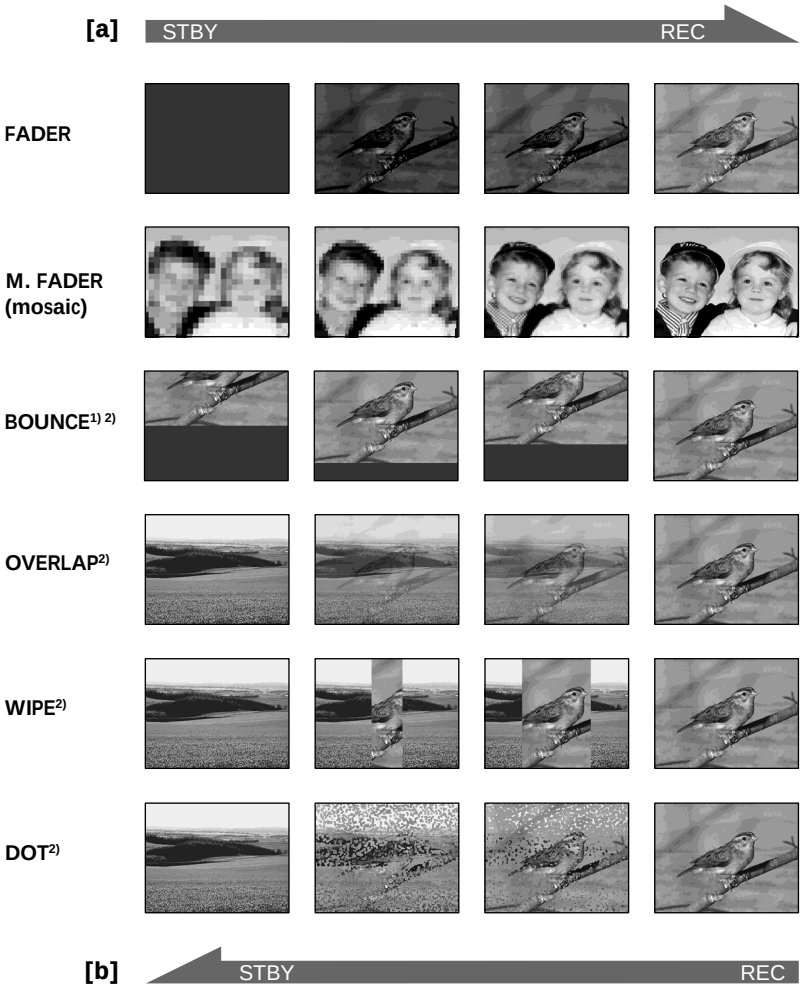
– Recording still images on a “Memory Stick” in the tape recording or recording standby
– BOUNCE
– OLD MOVIE

During recording

You cannot select or cancel the wide mode. When you cancel the wide mode, set your camcorder to the standby and then set 16:9WIDE to OFF in the menu settings.

Using the fader

You can fade in or out to give your recording a more professional appearance.



MONOTONE
When fading in, the picture gradually changes from black-and-white to colour.
When fading out, the picture gradually changes from colour to black-and-white.

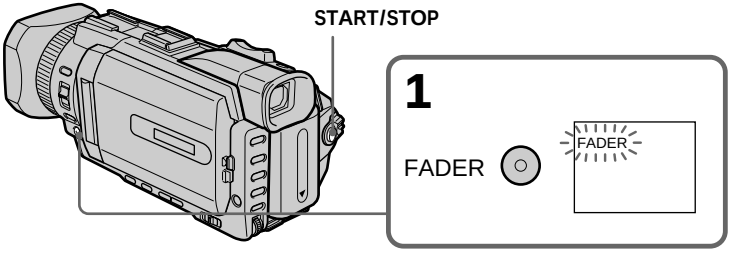
1) You can use the bounce when D ZOOM is set to OFF in the menu settings.
2) Fade in only.

(1) When fading in [a]
In the standby, press FADER until the desired fader indicator flashes.
When fading out [b]
In the recording, press FADER until the desired fader indicator flashes.
The indicator changes as follows:

FADER → M. FADER → BOUNCE → MONOTONE
(no indicator) ← DOT ← WIPE ← OVERLAP

The last selected fader is indicated first of all.

(2) Press START/STOP. The fader indicator stops flashing.
After fade in/out ends, your camcorder automatically returns to the normal mode.



To cancel the fader

Before pressing START/STOP, press FADER until the indicator disappears.

Note

You cannot use the following functions while using the fader. Also, you cannot use the fader while using the following functions:
– Recording still images on a "Memory Stick" in the tape recording or recording standby
– Tape photo recording
– Digital effect
– Interval recording
– Frame recording

When you select OVERLAP, WIPE, or DOT

Your camcorder automatically stores the image recorded on a tape. While the image is being stored, the indicators flash fast, and the playback picture disappears. At this stage, the picture may not be recorded clearly, depending on the tape condition.

When you set the POWER switch to MEMORY
You cannot use the fader.

While using BOUNCE, you cannot use the following functions:
– Zoom
– Shutter speed adjustment
– Exposure
– Flexible Spot meter
– Focus manually
– Spot Focus

Note on BOUNCE
The BOUNCE indicator does not appear in the following mode or functions:
– When D ZOOM is activated in the menu settings
– Wide mode
– PROGRAM AE

Using special effects – Digital effect

You can add special effects to recorded pictures using the various digital functions. Sound is recorded normally.

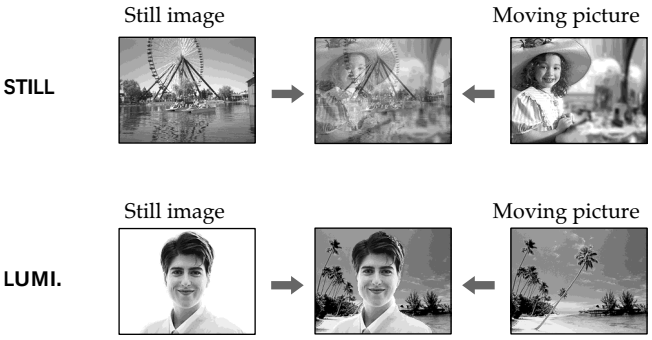
STILL
You can record a still image so that it is superimposed on a moving picture.

FLASH (FLASH MOTION)
You can record still images successively at constant intervals.

LUMI. (LUMINANCEKEY)
You can swap a brighter area in a still image with a moving picture.

TRAIL
You can record the picture so that an incidental image like a trail is left.

OLD MOVIE
You can add an old movie type atmosphere to pictures. Your camcorder automatically sets the wide mode to ON and picture effect to SEPIA, and sets the appropriate shutter speed.

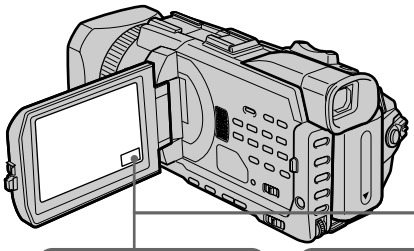


(1) Press FN to display PAGE1 while the POWER switch is set to CAMERA.
(2) Press DIG EFFT. The screen to select a desired digital effect appears.
(3) Press a desired mode. In the STILL and LUMI. modes, the still image is stored in memory.
(4) Press –/+ to adjust the effect.
–: To reduce the effect
+: To increase the effect

Items to be adjusted

STILL	The rate of the still image you want to superimpose on the moving picture
FLASH	The interval of frame by frame playback
LUMI.	The colour scheme of the area in the still image which is to be swapped with a moving picture
TRAIL	The vanishing time of the incidental image
OLD MOVIE	No adjustment necessary

(5) Press ↩ OK to return to PAGE1.



The bar appears when setting following digital effects modes : STILL, FLASH, LUMI., TRAIL.

To return to FN
Press EXIT.

To cancel the digital effect
Press ↩ OFF to return to PAGE1.

Notes

- The following functions do not work during digital effect:
  - Recording still images on a "Memory Stick" in the tape recording or recording standby
  - Tape photo recording
  - Fader
  - Shutter speed (1/25 or slower) adjustment
- The following functions do not work in the old movie:
  - Wide mode
  - PROGRAM AE
  - Shutter speed adjustment

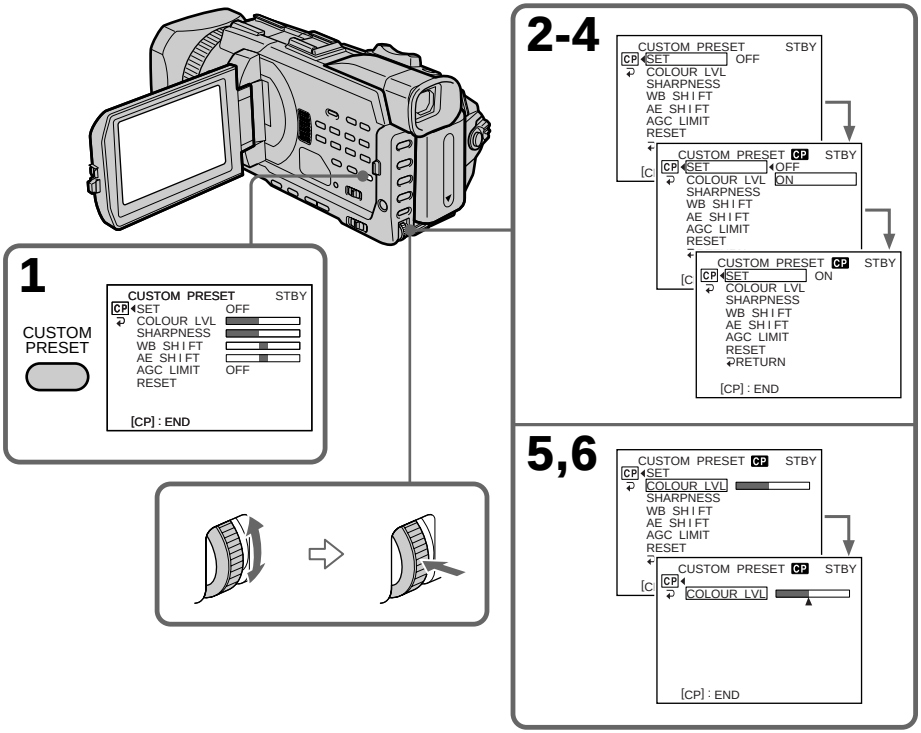
When you set the POWER switch to OFF (CHG)

Digital effect is automatically cancelled.

Presetting the adjustment for picture quality – Custom preset

You can preset the camcorder to record the picture with the desired picture quality. When presetting, adjust the picture by shooting a subject and checking the picture displayed on a TV (p. 47).

(1) Press CUSTOM PRESET to display the CUSTOM PRESET menu while the POWER switch is set to CAMERA or MEMORY.
(2) Press the SEL/PUSH EXEC dial.
(3) Turn the SEL/PUSH EXEC dial to select SET, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to adjust the selected item, then press the dial.
(7) Press CUSTOM PRESET.
The CUSTOM PRESET menu disappears and the indicator CP appears on the screen.



Items to be adjusted

Item	Meaning	Adjustment value
COLOUR LVL	Colour intensity	Decreases colour intensity ↔ Increases colour intensity
SHARPNESS	Sharpness	Softer ↔ Sharper
WB SHIFT	White balance	Bluish ↔ Reddish
AE SHIFT	Brightness	Dim ↔ Brighten
AGC LIMIT	Auto Gain-limit	6 dB/12 dB/OFF
RESET	Sets items above to the default settings.	

To cancel using the custom preset

Select OFF in step 4. The setting is still maintained at this moment. To return to the standard setting, select RESET in step 6.

To check the custom preset setting

Press CUSTOM PRESET while the POWER switch is set to CAMERA or MEMORY. The custom preset setting appears on the screen.

When you preset the desired picture quality in CAMERA or MEMORY

The preset is only available in each mode you preset. If you want to use a preset both in CAMERA and MEMORY, you have to preset in each mode.

When adjusting the exposure manually

AE SHIFT cannot be selected.

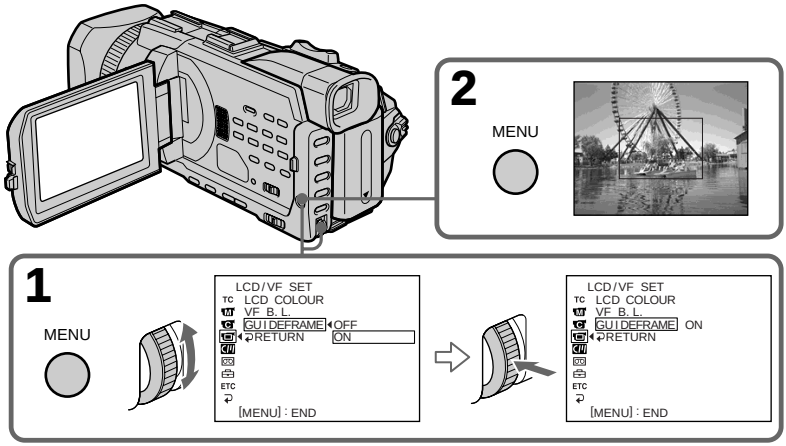
About the AGC Limit

When adjusting the exposure manually, the level of the gain is up to 18 dB (OFF).

Using the guide frame

You can easily make the picture be on a horizontal line using the guide frame. The guide frame is not recorded in the tape or the "Memory Stick."

(1) Set GUIDE FRAME in to ON in the menu setting while the POWER switch is set to CAMERA or MEMORY. (p216)
(2) Press MENU to erase the menu display. The guide frame is displayed on the screen.



To clear the guide frame

Set GUIDE FRAME to OFF in the menu setting or simply press DISPLAY/TOUCH PANEL.

Note

The guide frame indicates only a rough level. The size and position of the guide frame do not affect the setting of the camcorder.

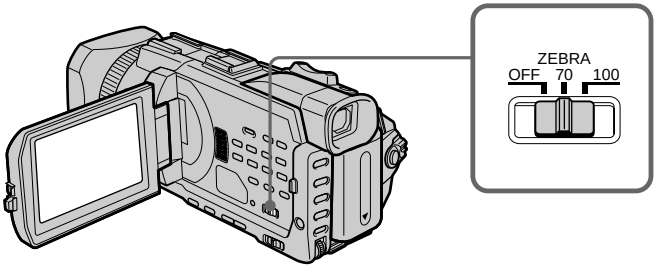
If you set GUIDEFRAME to ON

The other indicators are also displayed on the screen.

Shooting with the zebra pattern

You can set the camcorder to display a zebra pattern (diagonal stripes) in the portion of the picture on the screen with a subject whose brightness exceeds a certain level. You can check the picture level of a subject by displaying the zebra pattern. Use the zebra pattern as a guide for adjusting the exposure so that you can get the desired picture. The zebra pattern is not recorded in the tape or the "Memory Stick."

Set the ZEBRA selector to 70 or 100 while the POWER switch is set to CAMERA or MEMORY.



Setting	Meaning
70	The zebra pattern appears in the portion of the picture on the screen with a subject whose brightness is about 70 IRE.
100	The zebra pattern appears in the portion of the picture on the screen with a subject whose brightness exceeds more than 100 IRE.
OFF	The zebra pattern does not appear on the screen.

To erase the zebra pattern

Set the ZEBRA selector to OFF.

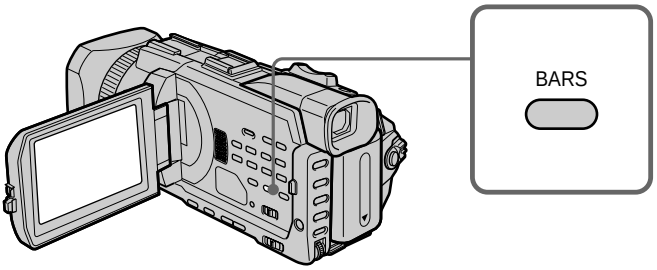
When the ZEBRA selector is set to 100

The portion of the picture where zebra pattern appears is an area of high brightness and overexposure.

Using the colour bar

If you press BARS, the colour bar is displayed on the screen.
Use the colour bar in the following cases:
– At the beginning of the recording, the recorded images may be unstable. To avoid this, record the colour bar first and start recording the desired images when the captured images become clear.
– To adjust screen colour.

Press BARS while the POWER switch is set to CAMERA.
If you press BARS again the colour bar disappears.



When you adjust colour on the screen
Connect your camcorder to the TV (p. 47) and adjust image colour on the TV screen.

While the colour bar is displayed
The following functions do not work. However, the settings before the colour bar is displayed are retained.
– Backlight
– Spot light
– Digital effect
– PROGRAM AE
– Shutter speed adjustment
– White balance adjustment
– Exposure
– MEMORY MIX

While the colour bar is displayed during Digital effect or MEMORY MIX
These effects cannot be added on the colour bar.

While using the fader
The colour bar cannot be displayed.

AUTO LOCK selector

Set the selector as shown below to maintain or release the settings of the functions. Manually adjusted functions are retained even if you set the AUTO LOCK selector to AUTO LOCK.

AUTO LOCK [a]

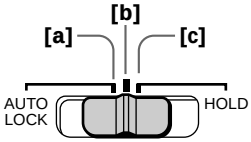
Select this position to lock the PROGRAM AE, Shutter speed, White balance, Exposure and Flexible spot meter functions in order to make these function automatically adjusted. We recommend that you set the AUTO LOCK selector to AUTO LOCK if you use the video flash light (optional).

AUTO LOCK release [b]

Select this position for setting the functions manually.

HOLD [c]

Select AUTO LOCK release [b], and set the functions manually. Select this position [c] to maintain the settings.



Using the PROGRAM AE

You can select the PROGRAM AE (Auto Exposure) to suit your specific shooting requirements.

Soft portrait

This mode brings out the subject while creating a soft background for subjects such as people or flowers.

Sports lesson

This mode minimises camera-shake on fast-moving subjects such as in tennis or golf.

Beach & ski

This mode prevents people's faces from appearing dark in strong light or reflected light, such as at a beach in midsummer or on a ski slope.

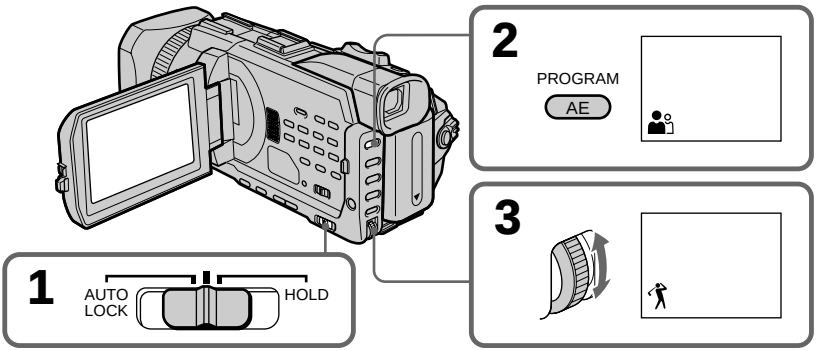
Sunset & moon

This mode allows you to maintain atmosphere when you are recording sunsets, general night views, fireworks displays and neon signs.

Landscape

This mode is for when you are recording distant subjects such as mountains, and prevents your camcorder from focusing on glass or metal mesh in windows when you are recording a subject behind glass or a screen.

(1) Set the AUTO LOCK selector to the centre (auto lock release) position while the POWER switch is set to CAMERA or MEMORY. (p. 66)
(2) Press PROGRAM AE.
(3) Turn the SEL/PUSH EXEC dial to select the desired mode.
The indicator changes as follows:



To cancel the PROGRAM AE

Set the AUTO LOCK selector to the AUTO LOCK or press PROGRAM AE.
The PROGRAM AE indicator disappears.

Notes

- Because your camcorder is set to focus only on subjects in the middle to far distance, you cannot take close-ups in the following modes:
  – Sports lesson
  – Beach & ski
- Your camcorder is set to focus only on distant subjects in the following modes:
  – Sunset & moon
  – Landscape
- The following functions do not work in the PROGRAM AE:
  – BOUNCE
  – OLD MOVIE
  – Shutter speed adjustment
  – Spot focus
- When you set the POWER switch to MEMORY, Sports lesson does not work. (The indicator flashes.)

The PROGRAM AE does not work

When you are recording images on a "Memory Stick" using the MEMORY MIX. (The indicator flashes.)

While WHT BAL is set to automatic adjustment

The white balance is adjusted even if the PROGRAM AE is selected.

You can adjust the following functions while using the PROGRAM AE

– Backlight
– Spot light
– Exposure
– Flexible Spot Meter

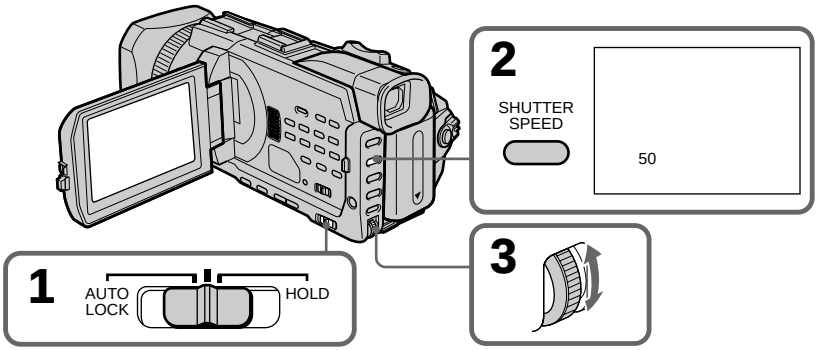
When recording under a discharge tube such as a fluorescent lamp, sodium lamp or mercury lamp

Flickering phenomenon which lights up or dims the screen, or the colour change may occur in the following modes. If this happens, turn the PROGRAM AE off.
– Soft portrait
– Sports lesson

Adjusting the shutter speed

You can adjust the shutter speed manually to suit your preference and with its shutter speed fixed.

(1) Set the AUTO LOCK selector to the centre (auto lock release) position while the POWER switch is set to CAMERA or MEMORY. (p. 66)
(2) Press SHUTTER SPEED. The shutter speed indicator appears on the screen.
(3) Turn the SEL/PUSH EXEC dial to select the desired speed. The available shutter speed ranges from 1/3 to 1/10000. As you turn the dial, the shutter speed changes as follows:
[CAMERA] 1/3 ⟷ 1/6 ⟷ 1/12 ⟷ 1/25 ⟷ ... ⟷ 1/3500 ⟷ 1/6000 ⟷ 1/10000
[MEMORY] 1/50 ⟷ 1/60 ⟷ 1/100 ⟷ 1/120 ⟷ 1/150 ⟷ 1/215 ⟷ 1/300 ⟷ 1/425
The shutter speed increases when a smaller number is selected. The size of the picture displayed on the screen also increases. Conversely, the shutter speed is slower when a larger number is selected. The picture displayed on the screen will thus decrease in size.



To return to automatic shutter speed mode

Set the AUTO LOCK selector to AUTO LOCK or press SHUTTER SPEED. The shutter speed indicator disappears.

Notes

- If you set the shutter speed value to 1/25 or slower, You cannot use the digital effect.
- The Shutter speed cannot be adjusted while you are using the following functions.
  – PROGRAM AE
  – Exposure
  – Flexible spot meter

If you press PROGRAM AE

Shutter speed adjusted manually returns to the automatic shutter speed.

When the shutter speed is fast

When shooting a bright subject, vertical lines may appear on the image, but this is not a malfunction. In such cases, set the shutter speed a little slower.

When shooting at slow shutter speed

At slow shutter speed, automatic focus may be lost. Use a tripod and adjust the focus manually.

When recording under a discharge tube such as a fluorescent lamp, sodium lamp or mercury lamp

Flickering phenomenon which lights up or dims the screen, or the colour change may occur depending on the shutter speed.

When the POWER switch is set to MEMORY

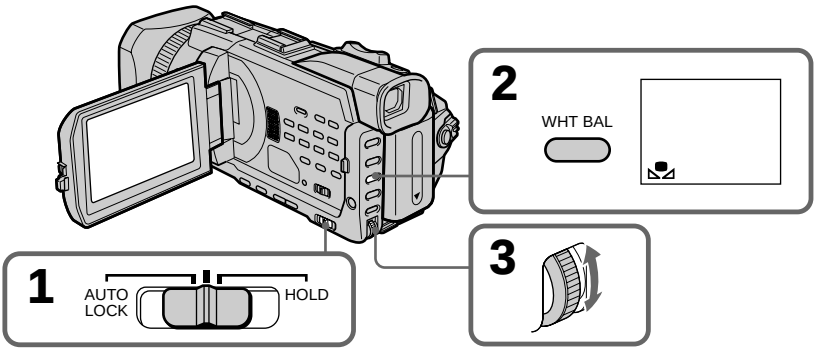
Shutter speeds available in the MEMORY mode are different from those in the CAMERA mode.

Even if you set the shutter speed faster than 1/425 or slower than 1/50 while the POWER switch is set to CAMERA, the shutter speed setting is automatically reset to 1/425 or 1/50 respectively if you set the POWER switch to MEMORY. Once you have set the POWER switch to MEMORY as the operation above, the shutter speed remains at 1/425 or 1/50 even if you set the POWER switch to CAMERA again.

Adjusting the white balance

White balance adjustment makes white subjects look white and allows more natural colour balance for camera recording. You can obtain better results by adjusting the white balance manually when lighting conditions change quickly or when recording outdoors: e.g., neon signs, fireworks.

(1) Set the AUTO LOCK selector to the centre (auto lock release) position while the POWER switch is set to CAMERA or MEMORY. (p. 66)
(2) Press WHT BAL.
(3) Turn the SEL/PUSH EXEC dial to select the appropriate white balance mode under the following conditions. As you turn the dial, the display changes as follows:
(One-push white balance) ↔ (Outdoor) ↔ (Indoor)



Indicator	Shooting conditions
(One-push white balance)	• Adjusting the white balance according to the light source. Follow the procedure described on the next page to adjust the setting again.
(Outdoor)	• Recording a sunset/sunrise, just after sunset, just before sunrise, neon signs, or fireworks • Under a colour matching fluorescent lamp
(Indoor)	• Lighting condition changes quickly • Too bright a place such as a photography studio • Under sodium lamps or mercury lamps

If you have selected in step 3

When you set the white balance to one-push white balance mode, the setting is locked and maintained even if lighting conditions change. You can achieve recording with natural colours without the image being affected by ambient light.

(1) Shoot a white object such as paper fully with displayed on the screen in the recording standby.
(2) Press the SEL/PUSH EXEC dial.
The indicator flashes quickly. When the white balance has been adjusted and stored in the memory, the indicator stops flashing. The setting will be maintained even after removing the power supply.

To return to automatic adjustment

Set the AUTO LOCK selector to AUTO LOCK or press WHT BAL. The white balance indicator disappears.

If the picture is being taken in a studio lit by TV lighting

We recommend that you record in the (indoor) mode.

When you record under fluorescent lamp

Use the automatic white balance mode or the (one-push white balance) mode. Your camcorder may not adjust the white balance correctly if you use the (indoor) mode.

Shooting when lighting conditions have changed

Readjust the white balance while the camcorder is in standby mode. White balance cannot be adjusted in the (One-push white balance) mode during recording.

If the indicator does not stop flashing after you press the SEL/PUSH EXEC dial

The white balance cannot be set. Use the automatic mode for recording.

In automatic white balance mode

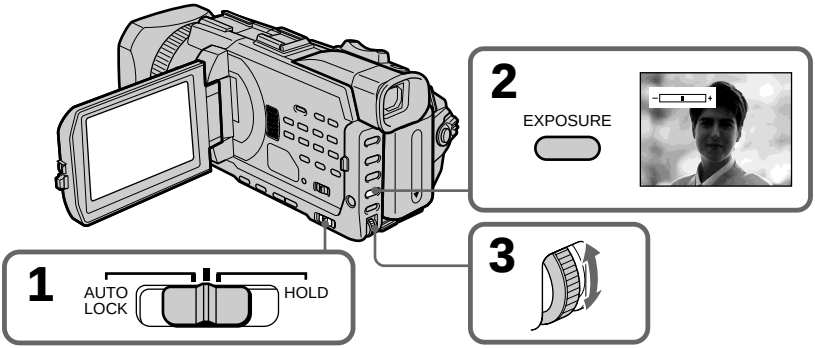
Point your camcorder at a white subject for about 10 seconds after setting the POWER switch to CAMERA to get a better adjustment when:

– You detach the battery for replacement.
– You bring your camcorder outdoors from the interior of a house, or vice versa.

Adjusting the exposure

You can manually adjust and set the exposure. Adjust the exposure manually in the following cases:
– When you need a fine adjustment for the backlit subjects.
– When shooting subjects and dark backgrounds.
– When recording dark pictures (e.g. night scenes) faithfully.

(1) Set the AUTO LOCK selector to the centre (auto lock release) position while the POWER switch is set to CAMERA or MEMORY. (p. 66)
(2) Press EXPOSURE. The exposure indicator appears.
(3) Turn the SEL/PUSH EXEC dial to adjust the brightness.



To return to automatic exposure

Set the AUTO LOCK selector to AUTO LOCK or press EXPOSURE. The exposure indicator disappears.

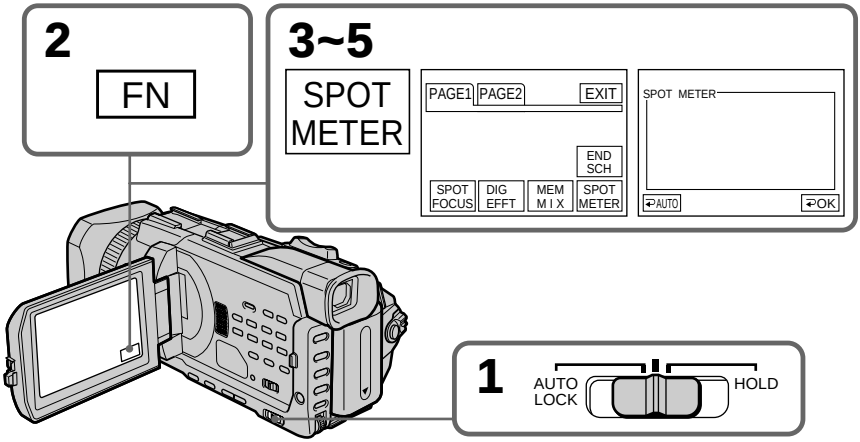
When you adjust the exposure manually, the following functions do not work:
– Backlight
– Spot light
– Shutter speed adjustment

If you press PROGRAM AE
Your camcorder also returns to automatic exposure.

Using the spot light-metering – Flexible Spot Meter

You can take a picture with the appropriate exposure automatically for just the point you want to focus on and with its exposure fixed. Use the Flexible Spot Meter in the following cases:
– When adjusting the exposure manually to shoot the backlit subjects.
– When there is strong contrast between the subject and background such as with a subject that is on stage and lighted by a spotlight.

(1) Set the AUTO LOCK selector to the centre (auto lock release) position while the POWER switch is set to CAMERA or MEMORY. (p. 66)
(2) Press FN to display PAGE1.
(3) Press SPOT METER. The SPOT METER screen appears.
(4) Press the desired area in the frame on the LCD screen.
The SPOT METER indicator flashes on the LCD screen. The exposure of the point you selected is adjusted.
(5) Press ⮌ OK to return to PAGE1.



To return to FN
Press EXIT.

To return to automatic exposure
Set the AUTO LOCK selector to AUTO LOCK or press ⮌ AUTO to return to PAGE1.

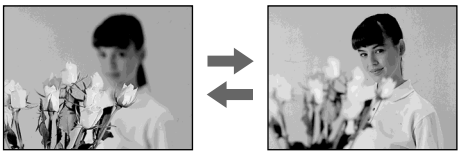
The following functions do not work during Flexible Spot Meter
– Backlight
– Spot light
– Shutter speed adjustment

If you press PROGRAM AE
Your camcorder also returns to automatic exposure.

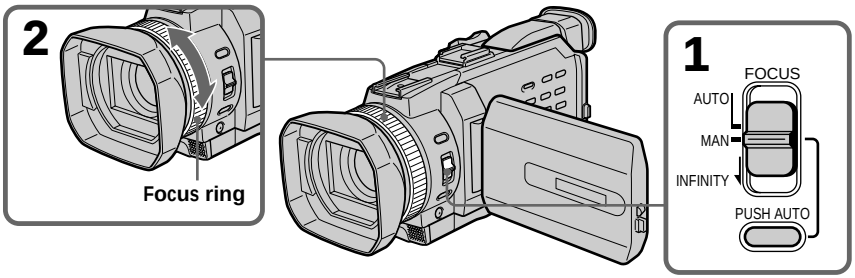
Focusing manually

You can gain better results by manually adjusting the focus in the following cases. Normally, focus is automatically adjusted.

- The autofocus is not effective when shooting:
  - Subjects through glass coated with water droplets
  - Horizontal stripes
  - Subjects with little contrast with backgrounds such as walls and sky
- When you want to change the focus from a subject in the foreground to a subject in the background.
- Shooting a stationary subject when using a tripod.



(1) Set FOCUS to MAN while the POWER switch is set to CAMERA or MEMORY. The ☞ indicator appears.
(2) Turn the focus ring to sharpen focus.



To return to the autofocus

Set FOCUS to AUTO.

To record distant subjects

When you set FOCUS to INFINITY, the focus changes to a setting appropriate for an object in the far distance, and the ▲ indicator appears. When you release FOCUS, your camcorder returns to the manual focus. Use this mode when your camcorder focuses on near objects even though you are trying to shoot a distant object.

To shoot with auto focusing momentarily

Press PUSH AUTO.
The auto focus functions while you are pressing PUSH AUTO.
Use this button to focus on one subject and then another with smooth focusing.
When you release PUSH AUTO, manual focusing resumes.

To focus precisely

It is easier to focus on subjects if you adjust the zoom to shoot at the "W" (wide-angle) after focusing at the "T" (telephoto) position.

When you shoot close to the subject

Focus at the end of the "W" (wide-angle) position.

☞ changes as follows:

▲ when recording a distant subject
▲ when the subject is too close to focus on

Focal distance information is displayed for about three seconds on the screen in the following cases:

– When switching the focus adjustment mode from autofocus to manual.
– When turning the focus ring.

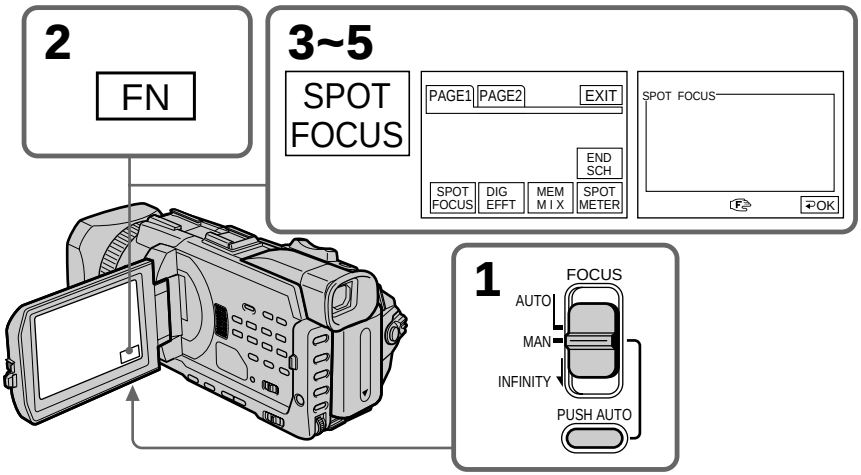
Focal distance information

– This information aids focusing if it is not easy to focus on the subject, for example, when recording in the dark. Use this information as a rough guide to get a sharp focus.
– You cannot get correct information if you have attached a conversion lens (optional) to your camcorder.

Using the spot focus – Spot Focus

You can take a picture with the appropriate focus automatically for just the point you want to focus on and with its focus fixed.

(1) Set FOCUS to MAN while the POWER switch is set to CAMERA or MEMORY.
(2) Press FN to display PAGE1.
(3) Press SPOT FOCUS. The SPOT FOCUS screen appears.
(4) Press the desired area in the frame on the LCD screen.
The SPOT FOCUS indicator flashes on the LCD screen. The spot focus of the point you selected is adjusted.
(5) Press ↩ OK to return to PAGE1.



To return to FN
Press EXIT.

To return to the autofocus
Set FOCUS to AUTO.

When Using PROGRAM AE
Spot focus do not work.

Focal distance information
It is not displayed on the screen.

Adjusting recording level manually – Sound recording level

You can adjust the recording sound level. Items to be set differ depending on whether you use the XLR adaptor or the built-in microphone. We recommend using headphones to monitor the sound when you adjust it.

Adjusting the recording level of the XLR adaptor

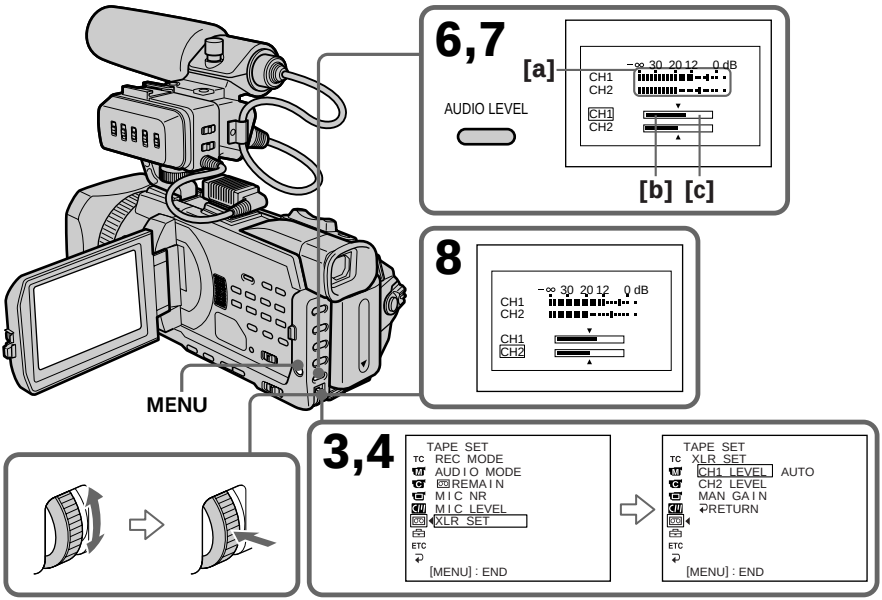
(1) Install the supplied XLR adaptor. Follow steps 1 and 2 on page 29.
(2) Connect the plug of the supplied or the optional microphone to the INPUT1 or INPUT2 connector.
(3) Select XLR SET in in the menu setting while the POWER switch is set to CAMERA or VCR. (p. 220)
(4) Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select the setting of the item, then press the dial.

Items to be adjusted

Item	Setting	Meaning
CH1 LEVEL	AUTO MANUAL	Switches the recording level adjustment of the channel 1 from automatic (AUTO) and manual (MANUAL).
CH2 LEVEL	AUTO MANUAL	Switches the recording level adjustment of the channel 2 from automatic (AUTO) and manual (MANUAL).
MAN GAIN*	SEPARATE LINKED	Sets the recording levels of channel 1 and channel 2 linked (LINKED) or separated (SEPARATE).

* LINKED is only available when both CH1 LEVEL and CH2 LEVEL are set to MANUAL.

(6) Press AUDIO LEVEL to display the recording level adjustment display in the standby or recording mode.
(7) Turn the SEL/PUSH EXEC dial to adjust the recording level of the channel 1, then press the dial. The cursor moves to "CH2."
(8) Turn the SEL/PUSH EXEC dial to adjust the recording level of the channel 2.



[a] Recording level meter
[b] Decreases the recording level
[c] Increases the recording level

To clear the recording level adjustment display

Press AUDIO LEVEL. The recording level adjustment disappears.

To return to automatic recording sound level

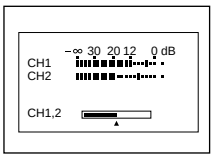
Set CH1 LEVEL to AUTO when you automatically adjust the recording level of the channel 1. And set CH2 LEVEL to AUTO when you automatically adjust the recording level of the channel 2.

When the XLR adaptor is not installed

XLR SET cannot be selected.

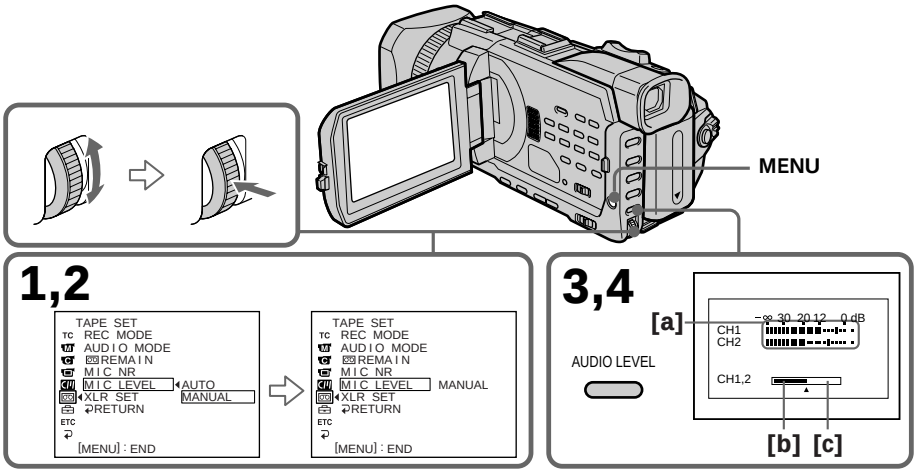
When MAN GAIN is set to LINKED

The recording level adjustment display is changed as follows.



Adjusting the recording level of the built-in microphone

(1) Select MIC LEVEL in [VCR] in the menu setting while the POWER switch is set to CAMERA or VCR.
(2) Turn the SEL/PUSH EXEC dial to select MANUAL, then press the dial.
(3) Press AUDIO LEVEL to display the recording level adjustment display in standby or recording mode.
(4) Turn the SEL/PUSH EXEC dial to adjust the recording level.



[a] Recording level meter
[b] Decreases the recording level
[c] Increases the recording level

To clear the recording level adjustment display

Press AUDIO LEVEL. The recording level adjustment disappears.

To return to automatic recording sound level

Set MIC LEVEL to AUTO in the menu setting.

The sound input through the AUDIO/VIDEO jack or the i.LINK DV Interface
You cannot adjust the recording level.

When recording level is set to AUTO
You cannot adjust the recording level, however, the recording level adjustment display is displayed.

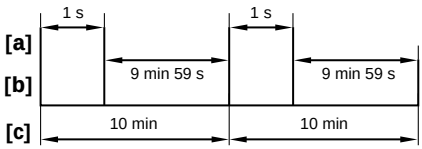
When recording level is set to MANUAL
The recording level indicator appears at the lower-right on the screen.

When MAN GAIN is set to LINKED or the built-in microphone is used
The recording level for the channel 1 and for the channel 2 cannot be adjusted separately.

Interval recording

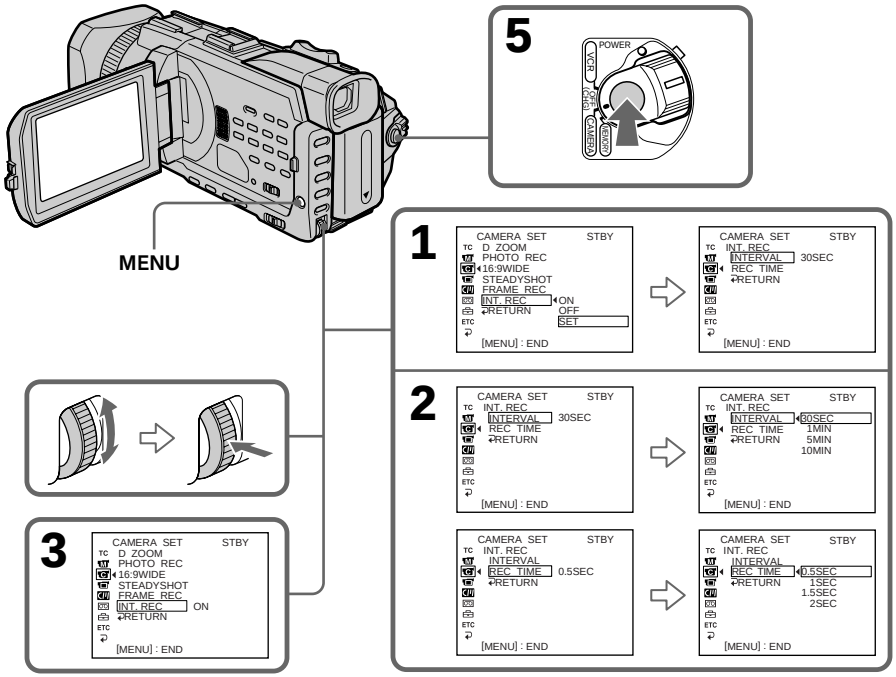
You can make a time-lapse recording by setting the camcorder to automatically record and standby sequentially. You can achieve an excellent recording for flowering, gradual appearances, etc., with this function.

Example



[a] REC TIME
[b] Waiting time
[c] INTERVAL

(1) In the standby, set INT. REC in to SET in the menu setting. (p. 215)
(2) Turn the SEL/PUSH EXEC dial to set INTERVAL and REC TIME.
① Turn the SEL/PUSH EXEC dial to select INTERVAL, then press the dial.
② Turn the SEL/PUSH EXEC dial to select the desired interval time, then press the dial.
The time: 30SEC ↔ 1MIN ↔ 5MIN ↔ 10MIN
③ Turn the SEL/PUSH EXEC dial to select REC TIME, then press the dial.
④ Turn the SEL/PUSH EXEC dial to select the desired recording time, then press the dial.
The time: 0.5SEC ↔ 1SEC ↔ 1.5SEC ↔ 2SEC
⑤ Turn the SEL/PUSH EXEC dial to select RETURN, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.
(4) Press MENU to erase the menu display. The INTERVAL indicator flashes.
(5) Press START/STOP to start interval recording. The INTERVAL indicator lights up.



To cancel the interval recording

Perform either of the following:
– Set INT. REC to OFF in the menu settings.
– Set the POWER switch to other than CAMERA.

To perform normal recording during the interval recording

Press START/STOP.
The INTERVAL indicator flashes. During the waiting time you can perform normal recording only once.
To stop normal recording, press START/STOP again. Step4 is displayed on the screen.

During the interval recording
You cannot mark an index.

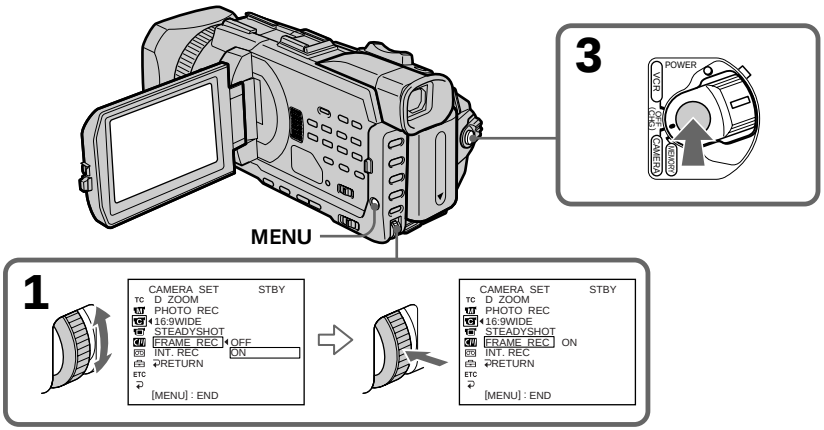
On recording time
There may be a discrepancy in the recording time of up to +/– six frames from the selected time.

When pressing START/STOP during recording time
Interval recording stops. To restart it, press START/STOP again.

Frame by frame recording – Frame recording

You can make a recording with a stop-motion animated effect using frame recording. To create this effect, alternately move the subject a little and make a frame recording. We recommend that you use a tripod, and operate your camcorder using the Remote Commander after step 3.

(1) In the standby, set FRAME REC in to ON in the menu setting. (p.215)
(2) Press MENU to erase the menu display.
The FRAME REC indicator lights up.
(3) Press START/STOP to start frame recording. Your camcorder makes a recording for about six frames, and returns to recording standby.
(4) Move the subject, and repeat step 3.



To cancel the frame recording

Perform either of the following:
– Set FRAME REC to OFF in the menu settings.
– Set the POWER switch to other than CAMERA.

Note

The remaining tape time is not indicated correctly if you use this function continuously.

When using the frame recording

The last recorded frame is longer than other frames.

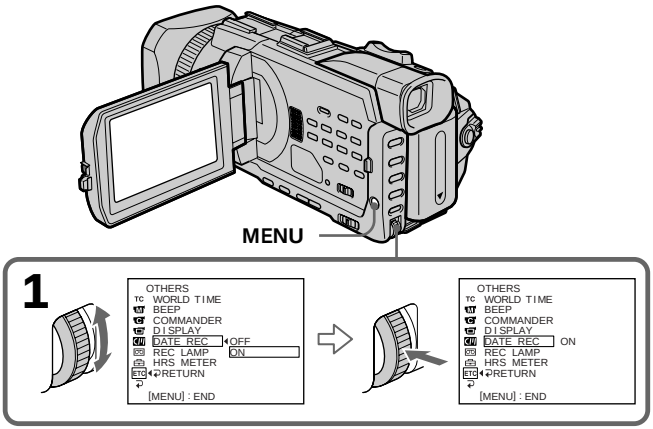
During the frame recording

You cannot mark an index.

Superimposing the date and time on a picture

You can superimpose the date/time indication directly on the picture, besides the date/time display as data code.

(1) In the standby, set DATE REC in ETC to ON in the menu setting. (p. 223)
(2) Press MENU to erase the menu display.
The date/time indicator is displayed on the screen.



To cancel superimposing the date/time indication

Set DATE REC to OFF in the menu settings.

Notes

- You cannot erase the recorded date/time data on the picture. Before using this function, make sure that you set the date and time correctly.
- You cannot add recording date or time while recording on the "Memory Stick" in the tape recording or recording standby.

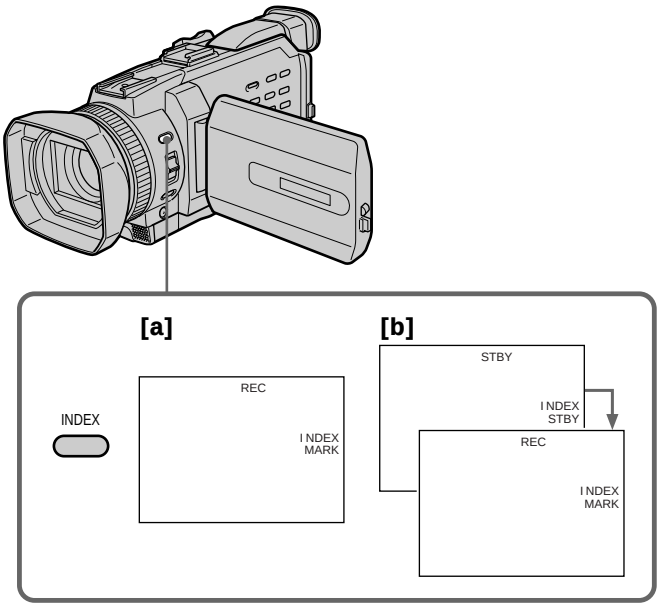
Marking an Index

If you mark an index at the scene you want to search for, you can easily search for the scene later (p. 87).

(1) Set the POWER switch to CAMERA.
(2) Press INDEX.

In recording mode [a]:
The "INDEX MARK" indicator appears for seven seconds and the index is marked after the indicator disappears.

In standby mode [b]:
The "INDEX STBY" indicator appears. And when you press START/STOP to start recording, the "INDEX STBY" indicator changes to "INDEX MARK" and after the indicator disappears, the index marking is complete.



To cancel index marking

Press INDEX so that the "INDEX STBY" indicator disappears from the screen while your camcorder is in the standby.

Notes

- Index marks are recorded during recording, you cannot mark an index after recording.
- Index signals will be recorded both on the tape and on cassette memory. If you use cassettes without cassette memory or the cassette memory is full, the signals will be recorded only on the tape. An index signal is recorded about 0.3 second after you start the recording. It is recorded on the 11th frame from the recording start point on cassette memory, and for about five seconds from the 11th frame on a tape.

When you record over the recorded tape and mark an index on the tape

We recommend that you clear all data in the cassette memory before marking an index.

Searching for a recording by index – INDEX SEARCH

You can automatically search for the point where an index is marked and start playback from that point **(INDEX SEARCH)**. Use a tape with cassette memory for convenience. Use the Remote Commander for this operation.
Use this function to check where indexes are marked or to edit the tape at each sequence where the index is marked.

Searching for the index point using cassette memory

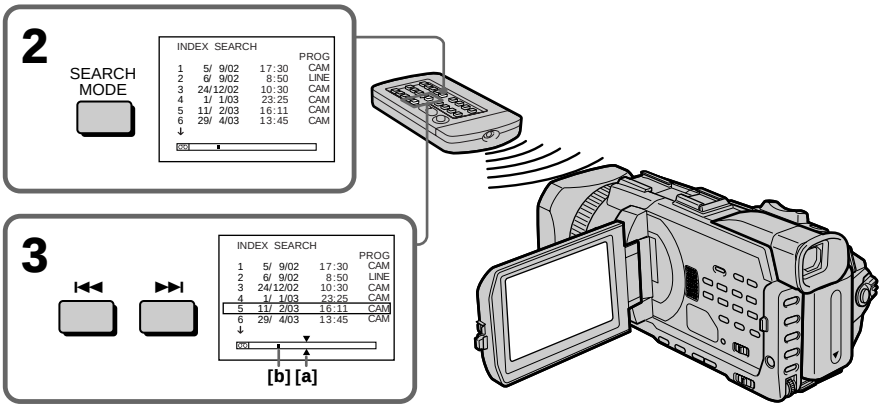
Before operation

- You can use this function only when playing back a tape with cassette memory.
- Set CM SEARCH in CM to ON in the menu settings. The default setting is ON.

(1) Set the POWER switch to VCR.
(2) Press SEARCH MODE on the Remote Commander repeatedly until the INDEX SEARCH indicator appears. The indicator changes as follows:

INDEX SEARCH → TITLE SEARCH → DATE SEARCH
(no indicator) ← PHOTO SCAN ← PHOTO SEARCH

(3) Press ⏮ or ⏭ on the Remote Commander to select the index point for playback. Your camcorder automatically starts playing back at the selected index point.



[a] Actual point you are trying to search for
[b] Present point on the tape

To stop searching

Press ■.

If a tape has a blank portion between recorded portions
INDEX SEARCH may not work correctly.

If you mark an index onto an external input signal
"LINE" appears in the PROG column.

The index of the recording start point when recorded from external audio equipment
The index mark is not recorded in cassette memory. If you want to search for the index point, see "Searching for the index point without using cassette memory" below.

Cassette memory
The tape with cassette memory can hold 135 index data. If you search among 136 or more index data, see "Searching for the index point without using cassette memory" below.

Searching for the index point without using cassette memory

(1) Set the POWER switch to VCR.
(2) Press MENU, then turn the SEL/PUSH EXEC dial to set CM SEARCH in CM to OFF, then press the dial.
(3) Press SEARCH MODE on the Remote Commander repeatedly until the INDEX SEARCH indicator appears.
The indicator changes as follows:

(4) Press ⏮ on the Remote Commander to search for the previous index point or press ⏭ on the Remote Commander to search for the next index point. Your camcorder automatically starts playback at the selected index point. Each time you press ⏮ or ⏭, your camcorder searches for the previous or next index point.

To stop searching
Press ■.

Searching the boundaries of a recorded tape by title – TITLE SEARCH

CM only

If you use a cassette with cassette memory, you can search for the boundaries of a recorded tape by title **(TITLE SEARCH)**. Use the Remote Commander for this operation.

Before operation

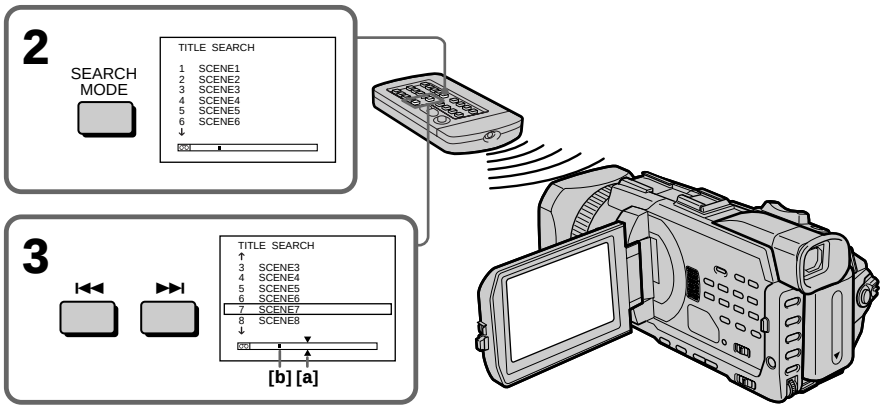
Set CM SEARCH in CM to ON in the menu settings. (The default setting is ON.)

(1) Set the POWER switch to VCR.

(2) Press SEARCH MODE on the Remote Commander repeatedly until the TITLE SEARCH indicator appears. The indicator changes as follows:

INDEX SEARCH → TITLE SEARCH → DATE SEARCH
(no indicator) ← PHOTO SCAN ← PHOTO SEARCH

(3) Press ⏮ or ⏭ on the Remote Commander to select the title for playback. Your camcorder automatically starts playback of the scene having the title that you selected.



[a] Actual point you are trying to search for
[b] Present point on the tape

To stop searching

Press ■.

If you use a cassette without cassette memory

You cannot superimpose or search a title.

If a tape has a blank portion between recorded portions

The title search may not work correctly.

To superimpose a title

See page 126.

Searching a recording by date – DATE SEARCH

You can automatically search for the point where the recording date changes and start playback from that point **(DATE SEARCH)**. Use a cassette with cassette memory for convenience. Use the Remote Commander for this operation.
Use this function to check where recording dates change or to edit the tape at each recording date.

Searching for the date by using cassette memory

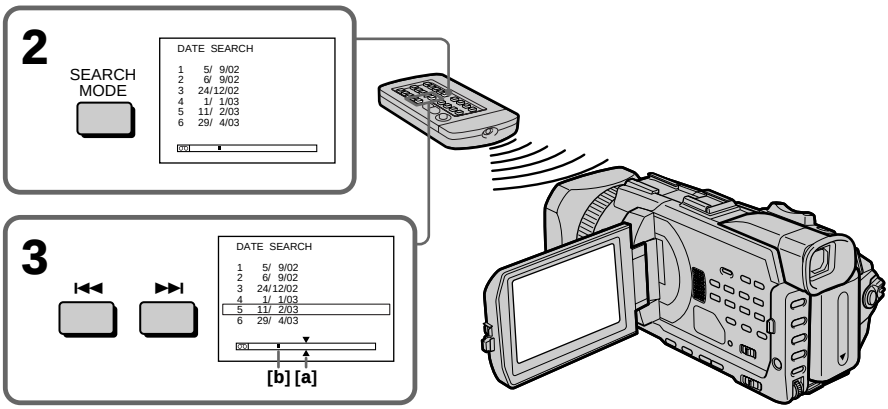
Before operation

- You can use this function only when playing back a cassette with cassette memory.
- Set CM SEARCH in CM to ON in the menu settings. (The default setting is ON.)

(1) Set the POWER switch to VCR.
(2) Press SEARCH MODE on the Remote Commander repeatedly until the DATE SEARCH indicator appears. The indicator changes as follows:

INDEX SEARCH → TITLE SEARCH → DATE SEARCH
(no indicator) ← PHOTO SCAN ← PHOTO SEARCH

(3) Press ⏮ or ⏭ on the Remote Commander to select the date for playback. Your camcorder automatically starts playback at the beginning of the selected date.



[a] Actual point you are trying to search for
[b] Present point on the tape

To stop searching

Press ■.

Note

If one day's recording is less than two minutes, your camcorder may not accurately find the point where the recording date changes.

If a tape has a blank portion between recorded portions

DATE SEARCH may not work correctly.

Cassette memory

The tape with cassette memory can hold 24 recording dates. If you search among 25 or more dates, see "Searching for the date without using cassette memory" below.

Searching for the date without using cassette memory

(1) Set the POWER switch to VCR.

(2) Press MENU, then turn the SEL/PUSH EXEC dial to set CM SEARCH in CM to OFF, then press the dial.

(3) Press SEARCH MODE on the Remote Commander repeatedly until the DATE SEARCH indicator appears. The indicator changes as follows:

(4) Press ⏮ on the Remote Commander to search for the previous date or press ⏭ on the Remote Commander to search for the next date. Your camcorder automatically starts playback at the point where the date changes. Each time you press ⏮ or ⏭ your camcorder searches for the previous or next date.

To stop searching

Press ■.

Searching for a photo – PHOTO SEARCH/PHOTO SCAN

You can search for a still image you have recorded on a tape **(PHOTO SEARCH)**. You can also search for still images one after another and display each image for five seconds automatically regardless of cassette memory **(PHOTO SCAN)**. Use the Remote Commander for these operations.
Use this function to check or edit still images.

Searching for a photo by using cassette memory

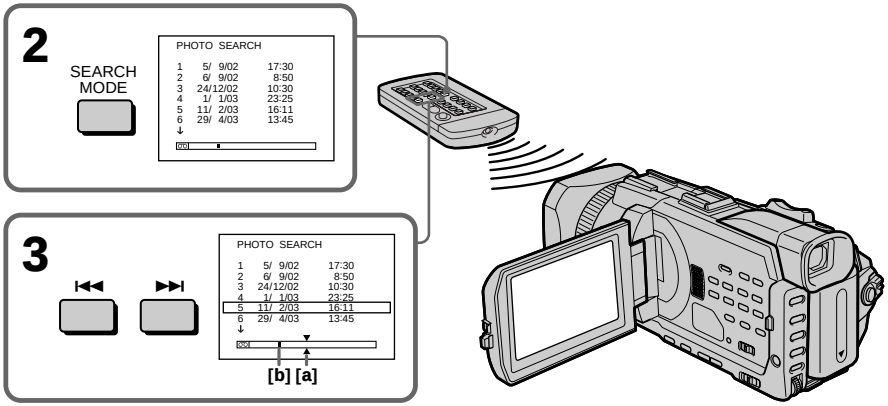
Before operation

- You can use this function only when playing back a cassette with cassette memory.
- Set CM SEARCH in CM to ON in the menu settings. (The default setting is ON.)

(1) Set the POWER switch to VCR.
(2) Press SEARCH MODE on the Remote Commander repeatedly until the PHOTO SEARCH indicator appears. The indicator changes as follows:

INDEX SEARCH → TITLE SEARCH → DATE SEARCH
(no indicator) ← PHOTO SCAN ← PHOTO SEARCH

(3) Press ⏮ or ⏭ on the Remote Commander to select the date for playback. Your camcorder automatically starts playback of the photo having the date that you selected.



[a] : Actual point you are trying to search for
[b] : Present point on the tape

To stop searching

Press ■.

Searching for a photo without using cassette memory

(1) Set the POWER switch to VCR.

(2) Press MENU, then turn the SEL/PUSH EXEC dial to set CM SEARCH in CM to OFF, then press the dial. (p. 219)

(3) Press SEARCH MODE on the Remote Commander repeatedly until the PHOTO SEARCH indicator appears. The indicator changes as follows:

INDEX SEARCH → DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → (no indicator) → INDEX SEARCH

(4) Press ⏮ or ⏭ on the Remote Commander to select the photo for playback. Each time you press ⏮ or ⏭ your camcorder searches for the previous or next photo.
Your camcorder automatically starts playback of the photo.

To stop searching

Press ■.

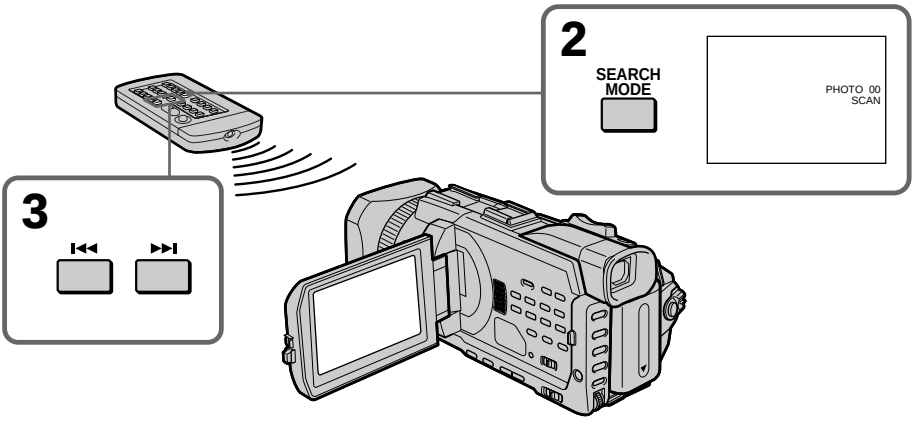
Scanning photos

(1) Set the POWER switch to VCR.
(2) Press SEARCH MODE on the Remote Commander repeatedly until the PHOTO SCAN indicator appears. The indicator changes as follows:

INDEX SEARCH → TITLE SEARCH *→ DATE SEARCH
(no indicator) ← PHOTO SCAN ← PHOTO SEARCH

* Displayed only when CM SEARCH is set to ON in the menu settings.

(3) Press ⏮ or ⏭ on the Remote Commander.
Each photo is played back for about five seconds automatically.



To stop scanning

Press ■.

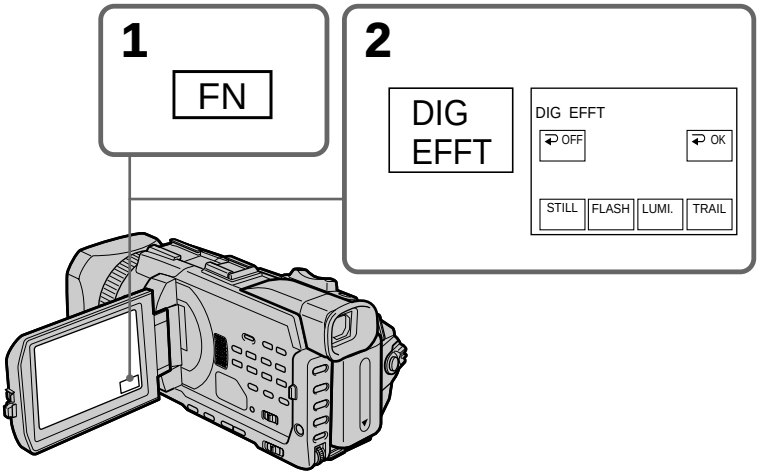
If a tape has a blank portion between recorded portions
PHOTO SEARCH/PHOTO SCAN may not work correctly.

The available number of photos that can be searched using the cassette memory
The available number is up to 48 photos. However, you can search 49 photos or more using the PHOTO SCAN.

Playing back tapes with digital effect

During playback, you can process a scene using the following digital effect: STILL, FLASH, LUMI. and TRAIL.

(1) In the playback or playback pause, press FN and select PAGE2.
(2) Press DIG EFFT. The screen to select a desired digital effect appears.
(3) Press a desired mode. In the STILL or LUMI., the picture where you select the mode is stored in memory as a still image.
(4) Press –/+ to adjust the effect. Refer to page 59 for details.
(5) Press ↩ OK to return to PAGE2.



To return to FN

Press EXIT.

To cancel the digital effect

Press ↩ OFF to return to PAGE2.

Notes

- You cannot process externally input scenes using digital effect.
- You cannot record images on a tape on your camcorder when you have processed the image using digital effect. However, you can record images on a "Memory Stick" (p. 151, 163), or on a VCR using your camcorder as a player.

Pictures processed by digital effect

Pictures processed by digital effect are not output through the i.LINK DV Interface.

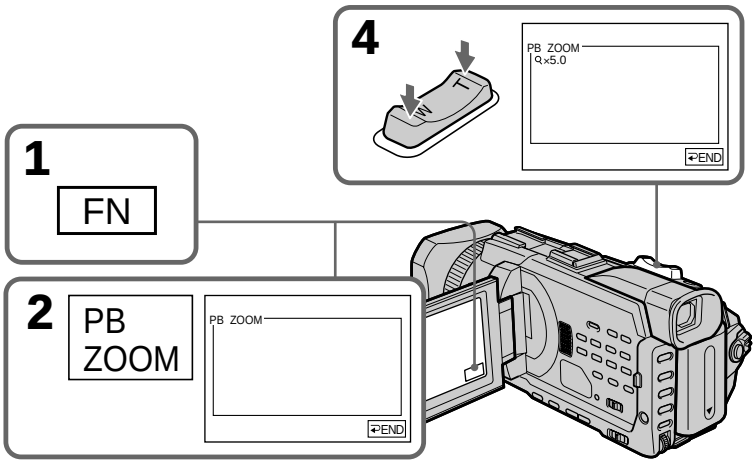
When you set the POWER switch to OFF (CHG) or stop playing back

Digital effect is automatically cancelled.

Enlarging images recorded on tapes – Tape PB ZOOM

You can enlarge playback images recorded on tapes. Besides the operation described here, your camcorder can enlarge still images recorded on the "Memory Stick" (p. 180).

(1) In the playback or playback pause, press FN and select PAGE2.
(2) Press PB ZOOM. The PB ZOOM screen appears.
(3) Press the area you want to enlarge in the frame on the PB ZOOM screen.
The area you pressed moves to the centre of the screen, and the playback image is enlarged approximately at twice the size. If you press the other area again, the area moves to the centre of the screen.
(4) Adjust the zoom ratio by the power zoom lever.
You can enlarge the image from approximately 1.1 times up to five times its size.
W: Decreases the zoom ratio.
T: Increases the zoom ratio.



To cancel the PB ZOOM

Press ↩ END.

Notes

- You cannot process externally input scenes using the PB ZOOM.
- You cannot record images on a tape on your camcorder when you have processed the image using the tape PB ZOOM. However, you can record images on a VCR using your camcorder as a player.
- You cannot record moving pictures on a "Memory Stick" on your camcorder when you have processed the picture using the tape PB ZOOM.

The PB ZOOM is automatically cancelled when you activate the following:

– Set the POWER switch to OFF (CHG).
– Stop playback.
– Press MENU.
– Insert a "Memory Stick."

Pictures in the PB ZOOM

Pictures in the PB ZOOM are not output through the i.LINK DV Interface and the (USB) jack.

In the PB ZOOM

If you press DISPLAY/TOUCH PANEL button, the frame on the PB ZOOM screen disappears. You cannot move the part you pressed to the centre of the screen.

Edge of the enlarged image

The edge of the enlarged image cannot be displayed at the centre of the screen.

Dubbing a tape

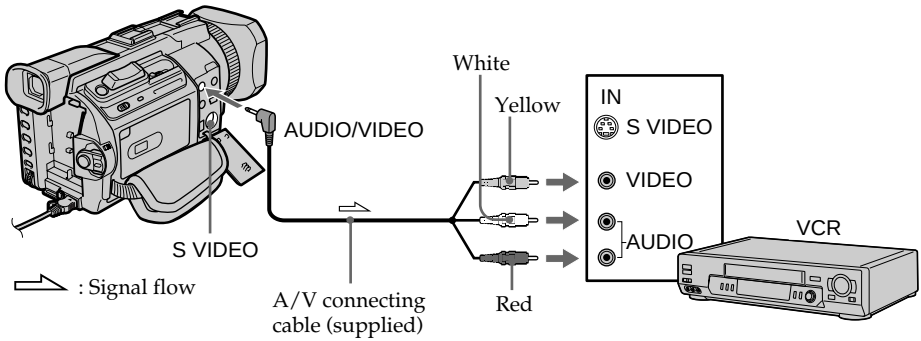
Using the A/V connecting cable

You can dub or edit on the VCR connected to your camcorder using your camcorder as a player.
Connect your camcorder to the VCR using the A/V connecting cable supplied with your camcorder.

Before operation

- Set DISPLAY in ETC to LCD in the menu settings. (The default setting is LCD.)
- Press the following buttons to make the indicator disappear so that they will not be superimposed on the edited tape:
  On your camcorder:
  DISPLAY/TOUCH PANEL, DATA CODE
  On the Remote Commander:
  DISPLAY, DATA CODE, SEARCH MODE

(1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
(2) Prepare the VCR for recording, then set the input selector to LINE.
Connect the A/V connecting cable to the AUDIO/VIDEO jack.
Refer to the operating instructions of the VCR.
(3) Set the POWER switch to VCR on your camcorder.
(4) Play back the recorded tape on your camcorder.
(5) Start recording on the VCR. Refer to the operating instructions of your VCR.



When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

You can edit on VCRs that support the following systems:
8 mm, Hi8 Hi8, VHS, S-VHS, VHSC, S-VHSC, Betamax, DVCAM DVCAM, mini DV, DV, Digital8, MICRO MV MICRO MV

If your VCR is a monaural type

Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and when the red plug is connected, the right channel audio is output.

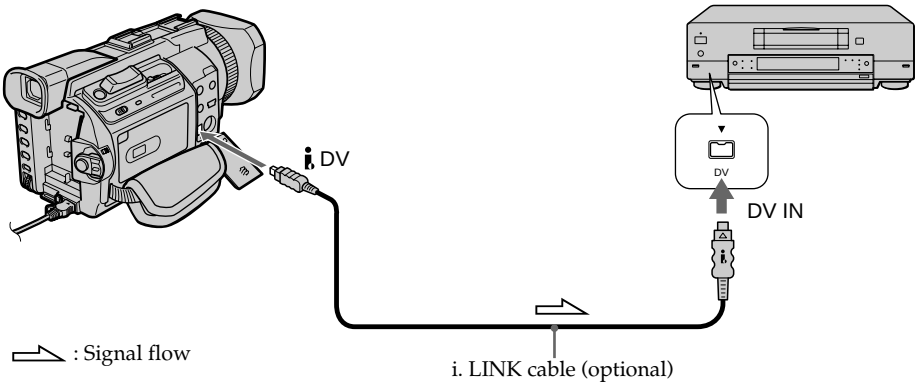
If your VCR has an S video jack

Pictures can be reproduced more faithfully by using an S video cable (optional).
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (optional) to the S VIDEO jacks of both your camcorder and the VCR.
This connection produces higher quality DVCAM/DV format pictures.

Using the i.LINK cable

Simply connect the i.LINK cable (optional) to the i DV Interface on your camcorder and to DV IN on the DV products. With a digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing. You cannot dub the titles, display indicators or the contents of cassette memory or letters on the "Memory Stick" index screen.

(1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
(2) Prepare the VCR for recording, then set the input selector to LINE. Refer to the operating instructions of the VCR.
(3) Set the POWER switch to VCR on your camcorder.
(4) Play back the recorded tape on your camcorder.
(5) Start recording on the VCR. Refer to the operating instructions of the VCR.



When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

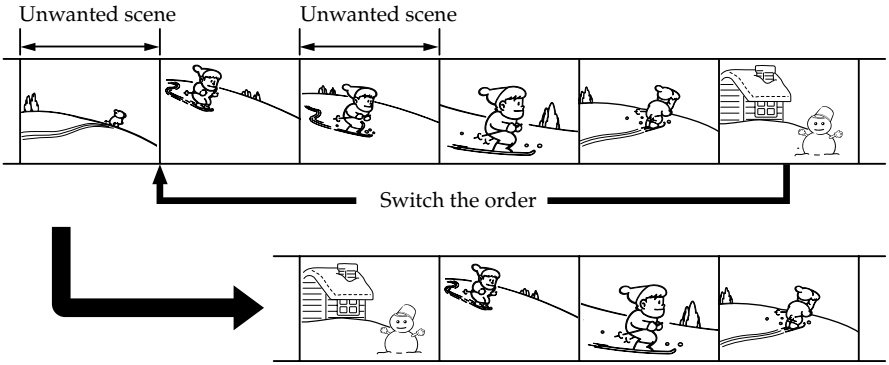
You can connect one VCR only using the i.LINK cable
See page 241 for more information about i.LINK.

Pictures processed by the digital effect or PB ZOOM
These pictures are not output through the i DV Interface.

If you record a playback pause picture with the i DV Interface
The recorded picture becomes rough. Also, when you play back the picture using other video equipment, the picture may jitter.

Dubbing only desired scenes – Digital program editing (on tapes)

You can duplicate selected scenes (programmes) for editing onto a tape without operating the VCR.
Scenes can be selected by frame. You can set up to 20 programmes.
Your camcorder can dub on a "Memory Stick." See p. 167 for more information.



Before operating the Digital program editing on tapes recorded on other equipment

Step 1 Connecting the VCR.
Step 2 Setting the VCR for operation (p. 102, 106).
Step 3 Adjusting the synchronization of the VCR (p. 107).
When you dub using the same VCR again, you can skip steps 2 and 3.

Using the Digital program editing on tapes recorded on other equipment

Operation 1 Making a programme (p. 109).
Operation 2 Performing the programme (dubbing a tape) (p. 111).

Note
When editing digital video on tapes, the operation signals cannot be sent with the LANC.

Step 1: Connecting the VCR

You can connect both an A/V connecting cable and an i.LINK cable.
When you use the A/V connecting cable, connect the devices as illustrated on page 98.
When you use the i.LINK cable, connect the devices as illustrated on page 100.

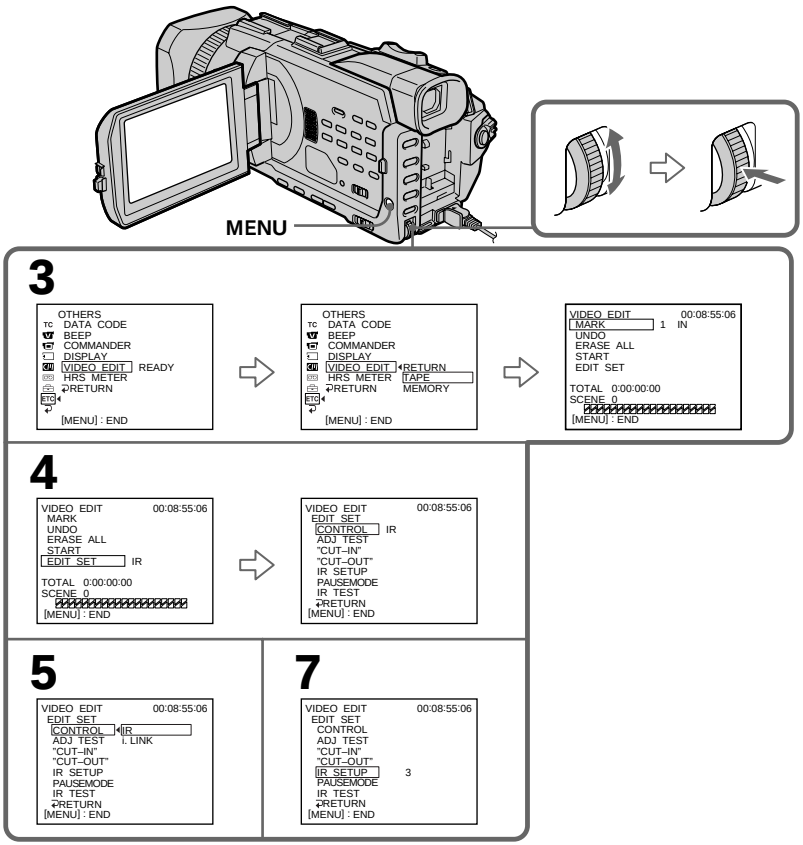
If you connect using the i.LINK cable
With a digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing.

Step 2: Setting the VCR to operate with the A/V connecting cable

To edit using the VCR, send the control signal by infrared rays to the remote sensor on the VCR.
When you connect using the A/V connecting cable, follow the procedure below, steps **(1)** to **(4)**, to send the control signal correctly.

(1) Set the IR SETUP code

① Set the POWER switch to VCR on your camcorder.
② Turn the power of the connected VCR on, then set the input selector to LINE.
When you connect a video camera recorder, set its power switch to VCR/VTR.
③ Press MENU, then turn the SEL/PUSH EXEC dial to set VIDEO EDIT in ETC to TAPE, then press the dial. (p. 223)
④ Turn the SEL/PUSH EXEC dial to select EDIT SET, then press the dial.
⑤ Turn the SEL/PUSH EXEC dial to select CONTROL, then press the dial.
⑥ Turn the SEL/PUSH EXEC dial to select IR, then press the dial.
⑦ Turn the SEL/PUSH EXEC dial to select IR SETUP and turn the dial to select IR SETUP code number of your VCR, then press the dial.
Check the code in "About IR SETUP codes." (p. 103)



About IR SETUP codes

The IR SETUP code is stored in the memory of your camcorder. Be sure to set the correct code to match your VCR. The default setting is code number 3.

Brand	IR SETUP code
Sony	1, 2, 3, 4, 5, 6
Aiwa	47, 53, 54
Akai	50, 62, 74
Alba	73
Amstrad	73
Baird	30, 36
Blaupunkt	11, 83
Bush	74
CGM	36, 47, 83
Clatronic	73
Daewoo	26
Ferguson	76, 83
Fisher	73
Funai	80
Goldstar	47
Goodmans	26, 84
Grundig	9, 83
Hitachi	42, 56
ITT/Nokia Instant	36
JVC	11, 12, 15, 21
Kendo	47
Loewe	16, 47, 84
Luxor	89
Mark	26*
Matsui	47, 58*, 60
Mitsubishi	28, 29

Brand	IR SETUP code
Nokia	36, 89
Nokia Oceanic	89
Nordmende	76
Okano	60, 62, 63
Orion	58*, 70
Panasonic	16, 78
Philips	83, 84, 86
Phonola	83, 84
Roadstar	47
SABA	21, 76, 91
Salora	89
Samsung	22, 32, 52, 93, 94
Sanyo	36
Schneider	10, 83, 84
SEG	73
Seleco	47, 74
Sharp	89
Siemens	10, 36
Tandberg	26
Telefunken	91, 92
Thomson	76, 100
Thorn	36, 47
Toshiba	40, 93
Universum	47, 70, 84, 92
W.W. House	47
Watoson	58, 83

* TV/VCR component

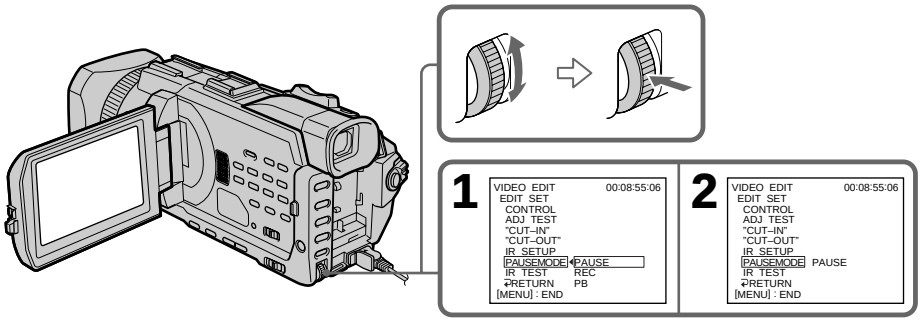
Note on IR SETUP codes

Digital program editing is not possible if the VCR does not support IR SETUP codes.

(2) Setting the modes to cancel the recording pause on the VCR

① Turn the SEL/PUSH EXEC dial to select PAUSEMODE, then press the dial.
② Turn the SEL/PUSH EXEC dial to select the mode to cancel recording pause on the VCR, then press the dial.

Refer to the operating instructions of your VCR.

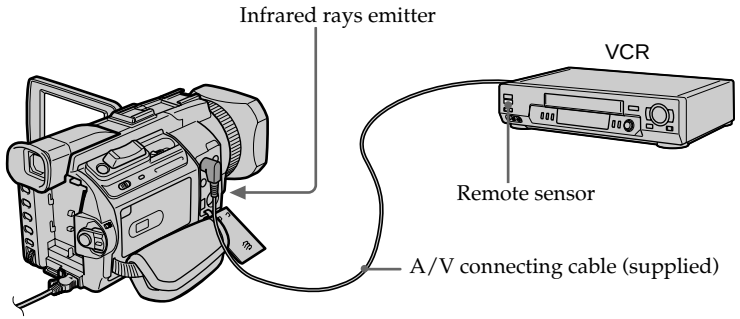


Buttons to cancel recording pause on the VCR

The buttons vary depending on your VCR. To cancel recording pause:
– Select PAUSE if the button to cancel recording pause is ❚❚.
– Select REC if the button to cancel recording pause is ●.
– Select PB if the button to cancel recording pause is ►.

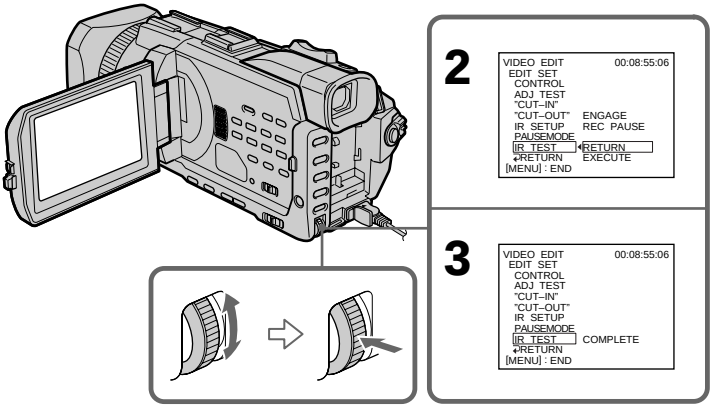
(3) Setting your camcorder and the VCR to face each other

Locate the infrared rays emitter of your camcorder and face it towards the remote sensor of the VCR.
Set the devices about 30 cm (12 in.) apart, and remove any obstacles between the devices.



(4) Confirming VCR operation

① Insert a recordable tape into the VCR, then set to recording pause.
② Turn the SEL/PUSH EXEC dial to select IR TEST, then press the dial.
③ Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
If the VCR starts recording, the setting is correct.
When recording is finished, the indicator changes to COMPLETE.



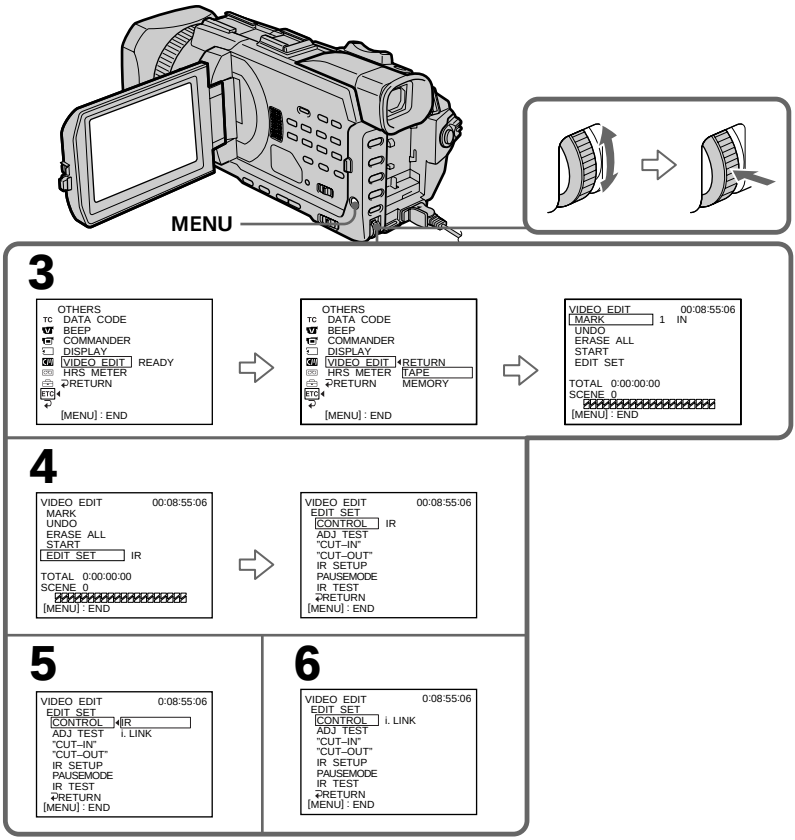
When the VCR does not operate correctly

- After checking the code in "About IR SETUP codes," set the IR SETUP or the PAUSEMODE again.
- Place your camcorder at least 30 cm (12 in.) away from the VCR.
- Refer to the operating instructions of your VCR.

Step 2: Setting the VCR to operate with the i.LINK cable

When you connect using the i.LINK cable (optional), follow the procedure below.

(1) Set the POWER switch to VCR on your camcorder.
(2) Turn the power of the connected VCR on, then set the input selector to DV input. When you connect a digital video camera recorder, set its power switch to VCR/VTR.
(3) Press MENU, then turn the SEL/PUSH EXEC dial to set VIDEO EDIT in ETC to TAPE, then press the dial. (p. 223)
(4) Turn the SEL/PUSH EXEC dial to select EDIT SET, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select CONTROL, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to select i.LINK, then press the dial.

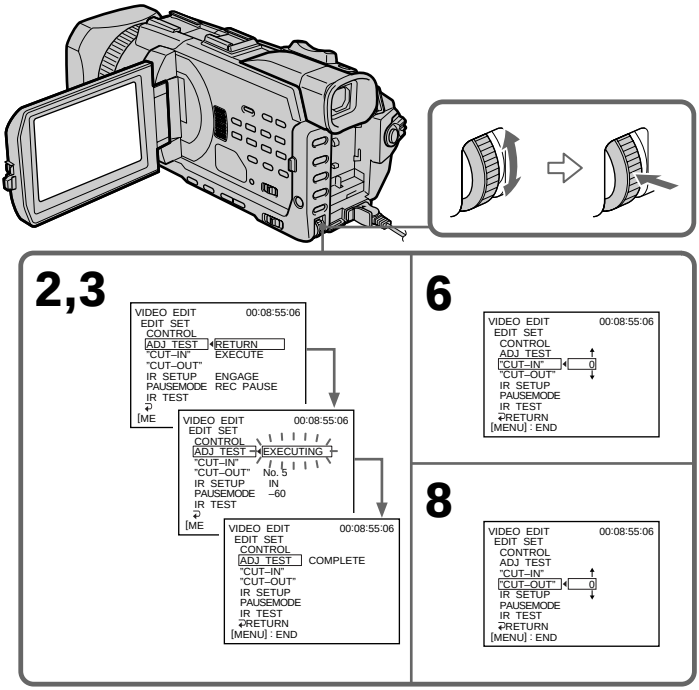


When you connect using an i.LINK cable
You cannot dub the titles, display indicators.

Step 3: Adjusting the synchronization of the VCR

You can adjust the synchronization of your camcorder and the VCR. Have a pen and paper ready for notes. Before operation, eject a cassette from your camcorder.

(1) Insert a blank tape (or a tape you want to record over) into the VCR, then set to recording pause.
When you select i.LINK in CONTROL, you do not need to set to recording pause.
(2) Turn the SEL/PUSH EXEC dial to select ADJ TEST, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
IN and OUT are recorded on an image for five times each to calculate the number values for adjusting the synchronization.
The EXECUTING indicator flashes on the screen.
When finished, the indicator changes to COMPLETE.
(4) Rewind the tape in the VCR, then start slow playback.
Take a note of the first number value of each IN and the closing number value of each OUT.
(5) Calculate the average of all the first number values of each IN, and the average of all the last number values of each OUT.
(6) Turn the SEL/PUSH EXEC dial to select "CUT-IN", then press the dial.
(7) Turn the SEL/PUSH EXEC dial to select the average number value of IN, then press the dial.
The calculated start position for recording is set.
(8) Turn the SEL/PUSH EXEC dial to select "CUT-OUT", then press the dial.
(9) Turn the SEL/PUSH EXEC dial to select the average number value of OUT, then press the dial.
The calculated stop position for recording is set.
(10) Turn the SEL/PUSH EXEC dial to select ↩ RETURN, then press the dial.



Notes

- When you complete step 3, the image used to adjust the synchronization is recorded for about 50 seconds.
- If you start recording from the very beginning of the tape, the first few seconds of the tape may not record properly. Be sure to allow about 10 seconds' lead before starting recording.
- When the recording unit cannot be operated properly by the i.LINK cable, leave the connection as it is, and make the A/V connecting cable settings (p. 102). Video and audio are sent by digital signals.

Operation 1: Making a programme

(1) Insert the tape for playback into your camcorder, and insert a tape for recording into the VCR.

(2) Press MENU, then turn the SEL/PUSH EXEC dial to set VIDEO EDIT in ETC to TAPE, then press the dial. (p. 223)

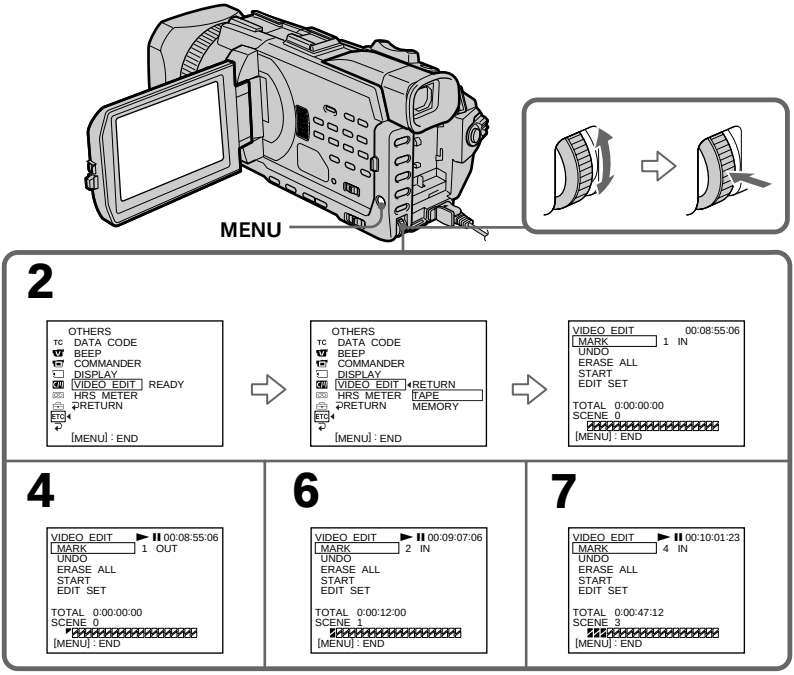
(3) Search for the beginning of the first scene you want to insert using the video operation buttons, then pause playback.
You can fine-adjust one frame at a time with EDITSEARCH.

(4) Press MARK on the Remote Commander, or turn the SEL/PUSH EXEC dial to select MARK, then press the dial.
The IN point of the first programme is set, and the top part of the programme mark changes to light blue.

(5) Search for the end of the first scene you want to insert using the video operation buttons, then pause playback. You can fine-adjust one frame at a time with EDITSEARCH.

(6) Press MARK on the Remote Commander, or the SEL/PUSH EXEC dial.
The OUT point of the first programme is set, then the bottom part of the programme mark changes to light blue.

(7) Repeat steps 3 to 6, then set the programme.
When the programme is set, the programme mark changes to light blue.
You can set up to 20 programmes in maximum.



Erasing the programme you have set

Erase OUT first and then IN from of the last programme.

(1) Turn the SEL/PUSH EXEC dial to select UNDO, then press the dial.

(2) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
The last set programme mark flashes, then the setting is cancelled.

To cancel erasing

Select RETURN with the SEL/PUSH EXEC dial in step 2.

Erasing all programmes

(1) Turn the SEL/PUSH EXEC dial to select ERASE ALL.

(2) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
All the programme marks flash, then the settings are cancelled.

To cancel erasing all programmes

Select RETURN with the SEL/PUSH EXEC dial in step 2.

To cancel a programme you have set

Press MENU.
The programme is stored in memory until the tape is ejected.

Note

You cannot operate recording during Digital program editing.

If the tape has a blank portion

You cannot set IN and OUT on the portion.

The total time may not be displayed correctly in the following cases

– When there is a blank portion between IN and OUT on the tape.
– When you mix recordings in the DVCAM format and DV format on one tape.

Operation 2: Performing the programme (Dubbing a tape)

Make sure that your camcorder and the VCR are connected, and that the VCR is set to recording pause. When you use an i.LINK cable, the following procedure is not necessary.
When you use a digital video camera recorder, set its power switch to VCR/VTR.

(1) Turn the SEL/PUSH EXEC dial to select START.
(2) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
Search for the beginning of the first programme, then start dubbing.
The programme mark flashes.
The SEARCH indicator appears during search, and the EDITING indicator appears during edit on the screen.
The PROGRAM indicator changes to light blue after dubbing ends.
When dubbing ends, your camcorder and the VCR automatically stop.

To stop dubbing during editing

Press ■ using the video operation buttons.

To end the Digital program editing

Your camcorder stops when the dubbing ends. Then the display returns to VIDEO EDIT in the menu settings.
Press MENU to erase the menu display.

You cannot record on the VCR when:
– The tape has run out.
– The write-protect tab on the cassette is set to lock.
– The IR SETUP code is not correct. (when IR is selected)
– The button to cancel recording pause is not correct. (when IR is selected)

NOT READY appears on the LCD screen when:
– The programme to operate the Digital program editing has not been made.
– i.LINK is selected but an i.LINK cable is not connected.
– The power of the connected VCR is not turned on. (when you set i.LINK)

Recording video or TV programmes

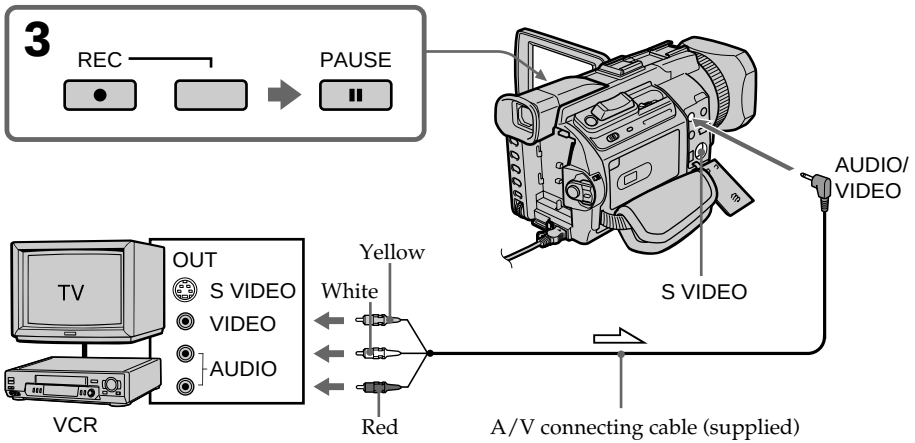
Using the A/V connecting cable

You can record a tape from another VCR or a TV programme from a TV that has video/audio outputs. Use your camcorder as a recorder.

Before operation

Set DISPLAY in ETC to LCD in the menu settings. (The default setting is LCD.)

(1) Insert a blank tape (or a tape you want to record over) into your camcorder. If you are recording a tape from the VCR, insert a recorded tape into the VCR.
(2) Set the POWER switch to VCR on your camcorder.
(3) Press ● REC and the button on its right simultaneously on your camcorder, then immediately press ❚❚ on your camcorder.
(4) Press ► on the VCR to start playback if you record a tape from a VCR. Select a TV programme if you are recording from a TV. The picture from a TV or VCR appears on the screen.
(5) Press ❚❚ on your camcorder at the scene where you want to start recording from.



: Signal flow

When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

Using the Remote Commander

In step 3, press ● REC and MARK simultaneously, then immediately press ❚❚. In step 5, press ❚❚ at the scene where you want to start recording from.

Note

Your camcorder only records pictures for viewing on a PAL system based TV and VCR. See “Using your camcorder abroad” on page 243 for the TV colour systems used in each country and area.

If your TV or VCR is a monaural type

Connect the yellow plug of the A/V connecting cable to the video output jack and the white or the red plug to the audio output jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and when the red plug is connected, the right channel audio is output.

If your TV or VCR has an S video jack

Pictures can be reproduced more faithfully by using an S video cable (optional).
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (optional) to the S VIDEO jacks of both your camcorder and the TV or VCR.
This connection produces higher quality DVCAM/DV format pictures.

On index signal

The index is automatically marked on a tape when you start recording. If you mark the index using the INDEX button during recording, “LINE” appears in the PROG column on the INDEX SEARCH screen, and the index is recorded on cassette memory.

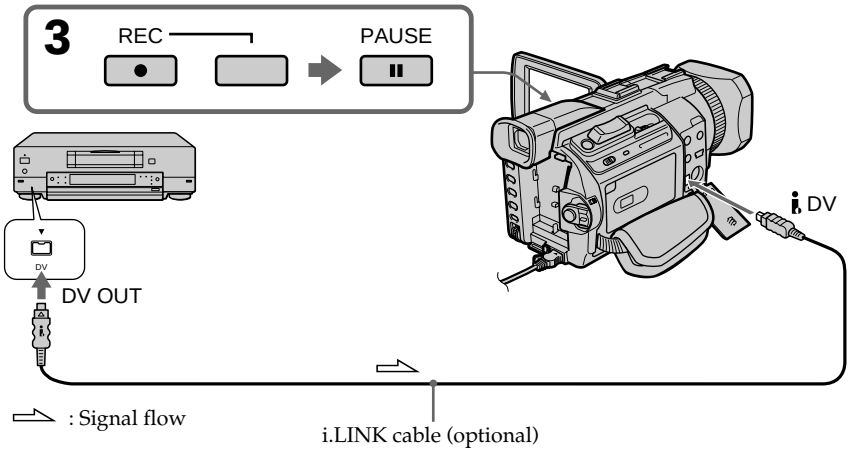
Note on the Remote Commander

Your camcorder works in the commander mode VTR 2. Commander modes 1, 2 and 3 are used to distinguish your camcorder from other Sony VCRs to avoid erroneous remote control operation. If you use another Sony VCR in the commander mode VTR 2, we recommend changing the commander mode or covering the sensor of the VCR with black paper.

Using the i.LINK cable

Simply connect the i.LINK cable (optional) to the i DV Interface on your camcorder and to DV OUT on the DV products. With a digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing.

(1) Insert a blank tape (or a tape you want to record over) into your camcorder, and insert the recorded tape into the VCR.
(2) Set the POWER switch to VCR on your camcorder.
(3) Press ● REC and the button on its right simultaneously on your camcorder, then immediately press ❚❚ on your camcorder.
(4) Press ► on the VCR to start playback. The picture to be recorded appears on the screen.
(5) Press ❚❚ on your camcorder at the scene where you want to start recording from.



When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

Using the Remote Commander

In step 3, press ● REC and MARK simultaneously, then immediately press ❚❚. In step 5, press ❚❚ at the scene where you want to start recording from.

You can connect one VCR only using the i.LINK cable

During digital editing
The colour of the display may be uneven. However, this does not affect the dubbed picture.

If you record playback pause picture with the i, DV Interface
The recorded picture becomes rough. When you play back the picture using your camcorder, the picture may jitter.

Before recording
Make sure that the DV IN indicator appears on the LCD screen or in the viewfinder. The DV IN indicator may appear on both equipment.

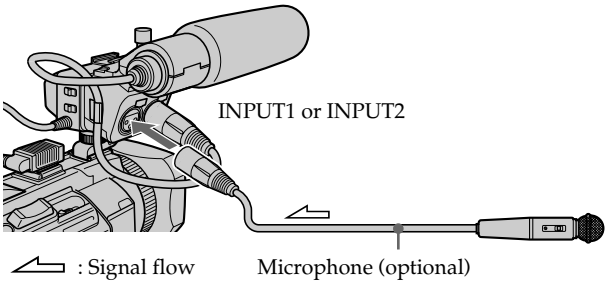
Note on the Remote Commander
Your camcorder works in the commander mode VTR 2. Commander modes 1, 2 and 3 are used to distinguish your camcorder from other Sony VCRs to avoid erroneous remote control operation. If you use another Sony VCR in the commander mode VTR 2, we recommend changing the commander mode or covering the sensor of the VCR with black paper.

Audio dubbing

You can record audio to add to the original sound on a tape by connecting audio equipment or a microphone. If you connect audio equipment, you can add sound to your recorded tape already recorded in the Fs32K mode of the DVCAM format by specifying the start and end points. The original sound will not be erased.
You can also use the Remote Commander for this operation.
Select one of the following connections to add audio.

Connecting the microphone to the INPUT1/INPUT2 connectors

For details on setup of the INPUT1/INPUT2 connectors, see "Installing the supplied microphone" on page 29.

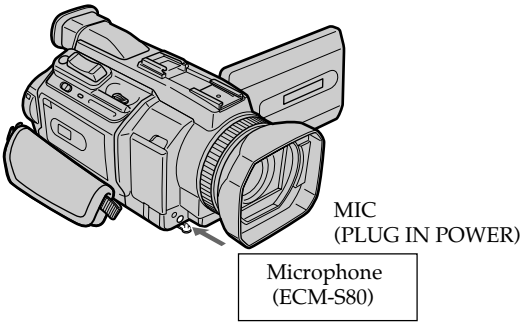


The relationship between audio input and channels on which a dubbed sound will be recorded is as follows:

Audio input through	The position of the REC CH SELECT switch	Which audio input will be recorded on	
		Channel 3	Channel 4
INPUT1/2	CH1	INPUT1	INPUT2
	CH1•CH2	INPUT1	INPUT1
INPUT1	CH1	INPUT1	–
	CH1•CH2	INPUT1	INPUT1
INPUT2	CH1	–	INPUT2
	CH1•CH2	–	–

You can check the picture on TV by connecting with the AUDIO/VIDEO jack. You cannot monitor the additional sound by the speaker. Use the headphones jack.

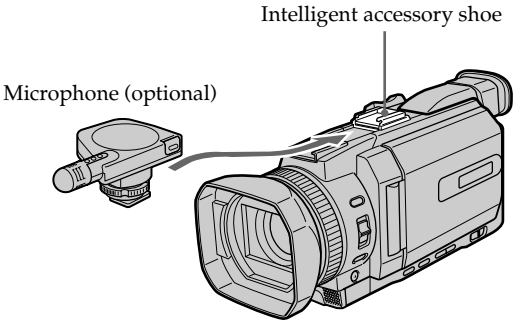
Connecting the microphone with the MIC jack



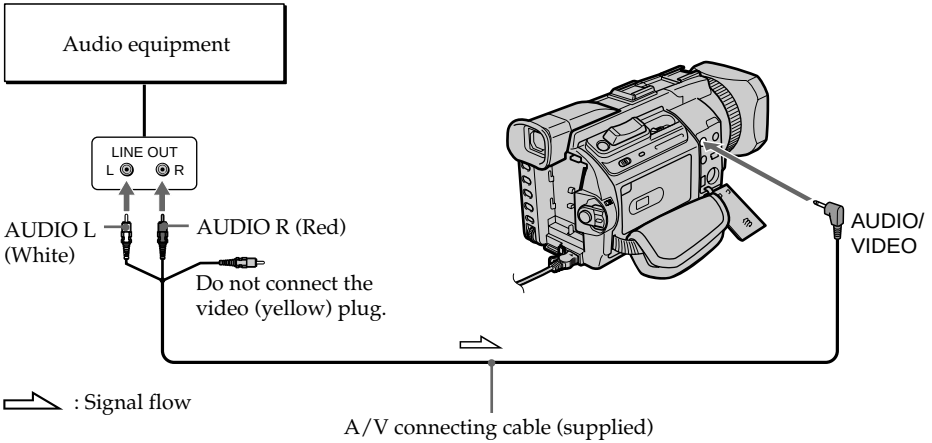
You can check recorded picture and sound by connecting your camcorder to a TV with the A/V connecting cable.
Recorded sound is not output from a speaker. Check the sound by using a TV or headphones.

Note
Be sure to use the ECM-S80 for the external microphone connected to the MIC jack.

Connecting the microphone to the intelligent accessory shoe



Connecting the A/V connecting cable to the AUDIO/VIDEO jack



Dubbing with the built-in microphone

No connection is necessary.

Notes

- When dubbing with the AUDIO/VIDEO jack or the built-in microphone, pictures are not output through the S VIDEO jack or the AUDIO/VIDEO jack. Check the recorded picture on the screen. You can check the recorded sound by using headphones.
- You cannot add audio with the i.LINK DV Interface.

If you make all the connections

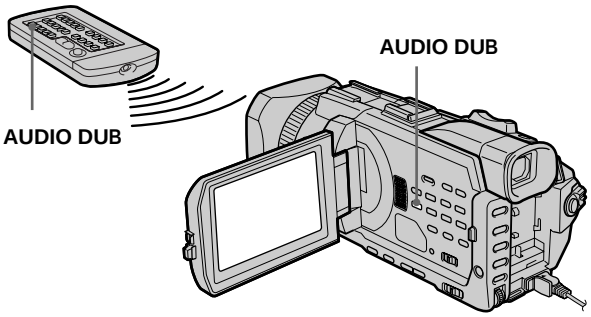
The audio input to be recorded will take precedence over others in the following order:

- MIC (PLUG IN POWER) jack
- Intelligent accessory shoe
- AUDIO/VIDEO jack
- INPUT1/INPUT2 connectors
- Built-in microphone

Adding audio on a recorded tape

Choose a connection described on the previous pages, and connect audio equipment or microphone to your camcorder. Then follow the procedure below.

(1) Insert the recorded tape into your camcorder.
(2) Set the POWER switch to VCR on your camcorder.
(3) Locate the recording start point by pressing ►. Then press II at the point where you want to start recording to set your camcorder to the playback pause.
(4) Press AUDIO DUB . The green ⊖II indicator appears on the screen.
(5) Press II and start playing back the audio you want to record at the same time. The new sound is recorded in channel3/channel4 during playback. While audio is being recorded, the red ⊖ appears on the screen.
(6) Press ■ at the point where you want to stop recording.



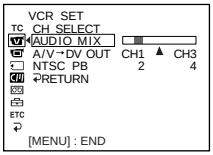
When you dub the recorded sound
You can adjust the recorded sound by using MIC LEVEL (p. 80). However, when the camcorder is connected to the AUDIO/VIDEO jack, sound cannot be adjusted.

If you set the audio balance beforehand
You can monitor both the original sound and dubbed sound during the dubbing.

Monitoring the new recorded sound

(1) Play back the tape on which you added audio.

(2) Turn the SEL/PUSH EXEC dial to select AUDIO MIX in [V] in the menu settings, then press the dial.



(3) Turn the SEL/PUSH EXEC dial to adjust the balance between the original sound (channel1/channel2) and the new sound (channel3/channel4), then press the dial.
The default setting is original sound (channel1/channel2) only.

Notes

- New sound cannot be recorded on a tape already recorded in the Fs48K mode.
- New audio cannot be recorded on a tape already recorded in the DV SP mode.
- You cannot add audio on the blank portion of the tape.

If an i.LINK cable (optional) is connected to your camcorder

You cannot add audio to a recorded tape.

We recommend that you add audio on a tape recorded with your camcorder

If you add audio on a tape recorded with another camcorder (including another DSR-PDX10P), the sound quality may become worse.

If you set the write-protect tab of the cassette to lock

You cannot record on a tape. Slide the write-protect tab to release the write protection.

Setting time values

You can use time code or user bits for time data.
The time value is displayed on the LCD screen, in the viewfinder, or on the display window. The time code and user bits can be set only in DVCAM mode.
The user bits are convenient when using multiple cameras at the same event.
When you record the picture, time code data will be recorded automatically.

Setting the time code value

(1) Set the POWER switch to CAMERA or VCR.

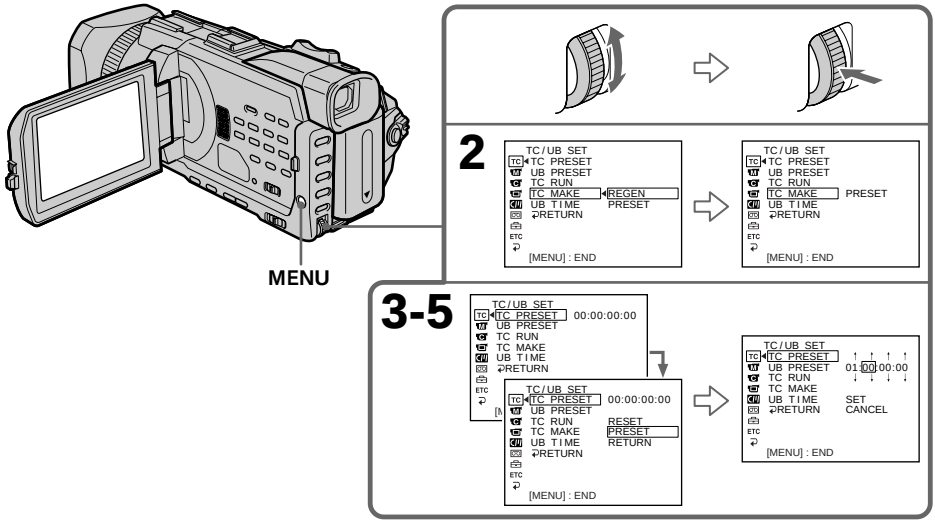
(2) Press MENU, then turn the SEL/PUSH EXEC dial to set TC MAKE in TC to PRESET, then press the dial.

(3) Turn the SEL/PUSH EXEC dial to select TC PRESET, then press the dial.

(4) Turn the SEL/PUSH EXEC dial to select PRESET, then press the dial.

(5) Set up the first two digits. Turn the SEL/PUSH EXEC dial to select the number, then press the dial. The time code is set between 00:00:00:00 and 23:59:59:29.

(6) Repeat step 5 to set up the other digits.

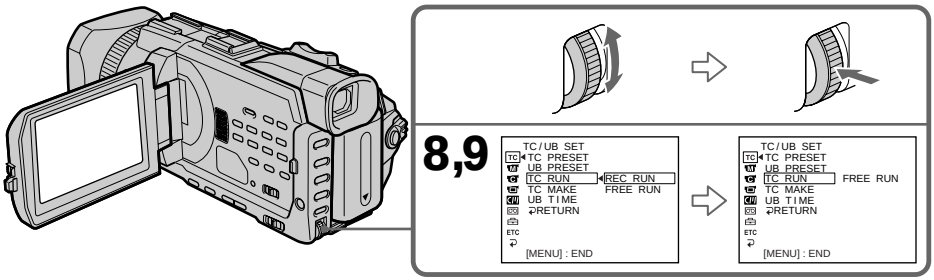


(continued on the following page)

(7) Turn the SEL/PUSH EXEC dial to select SET, then press the dial.
(8) Turn the SEL/PUSH EXEC dial to select TC RUN, then press the dial.
(9) Turn the SEL/PUSH EXEC dial to select the desired running mode, then press the dial.

REC RUN: Time code value advances only while recording. When making the time code continuous at back space editing, select this setting.
FREE RUN: Time code advances freely regardless of the camcorder's current operation mode.

For more information on the running mode, see "Making the time code continuous at back space editing" on page 123.



To cancel the time code setting

Select CANCEL with the SEL/PUSH EXEC dial in step 7.

To reset the time code

Select RESET with the SEL/PUSH EXEC dial in step 4.

Making the time code continuous at back space editing

Set TC MAKE to REGEN in the menu settings to make the time code continuous when the recording has been interrupted or when the cassette tape has been removed from the camcorder between shootings.
When the camcorder is in recording pause mode, the recorded time code is read from the tape and synchronized to the internal time code generator.

Once you set TC MAKE to REGEN in the menu settings
Even if TC RUN is set to FREE RUN in the menu settings, the running mode is automatically set to REC RUN.

Setting the user bits value

You can set the user bits as eight-digit hexadecimal values (base 16) to have the date, time, scene number, and other information inserted into the time code.

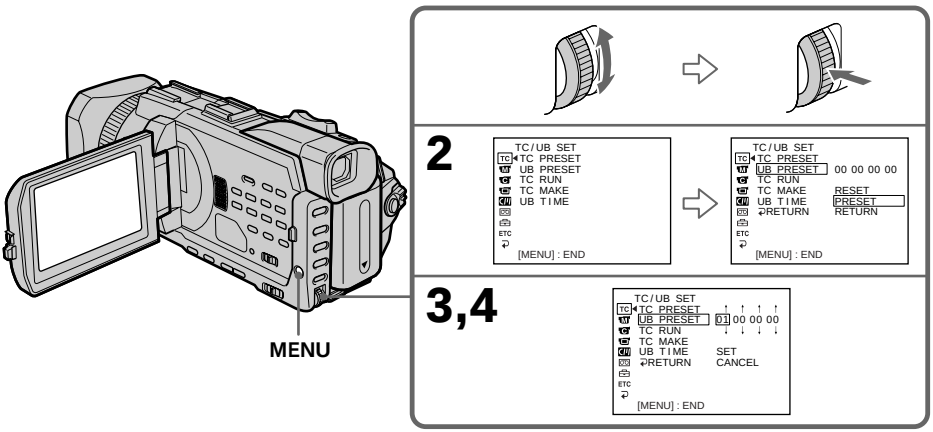
(1) Set the POWER switch to CAMERA or VCR.

(2) Press MENU, then turn the SEL/PUSH EXEC dial to set UB PRESET in TC to PRESET, then press the dial.

(3) Set up the first two digits. Turn the SEL/PUSH EXEC dial to select the number, then press the dial.

(4) Repeat step 3 to set up the other digits.

(5) Turn the SEL/PUSH EXEC dial to select SET, then press the dial.



To cancel the user bits setting

Select CANCEL with the SEL/PUSH EXEC dial in step 5.

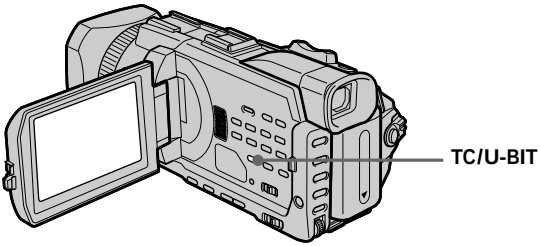
To reset the user bits

Select RESET with the SEL/PUSH EXEC dial in step 2.

When UB TIME is set to ON in the menu setting

You can set the user bits to the real time clock. We recommend that you set the time beforehand.

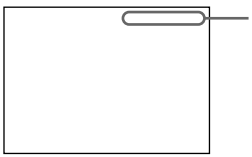
Switching the time value



Press TC/U-BIT. Each time you press TC/U-BIT, the time value changes between the time code and user bits.

TC: Displays the time code. This is indicated as “00:00:00:00”.

U-BIT: Displays user bits. This is indicated as “00 00 00 00”.



Note

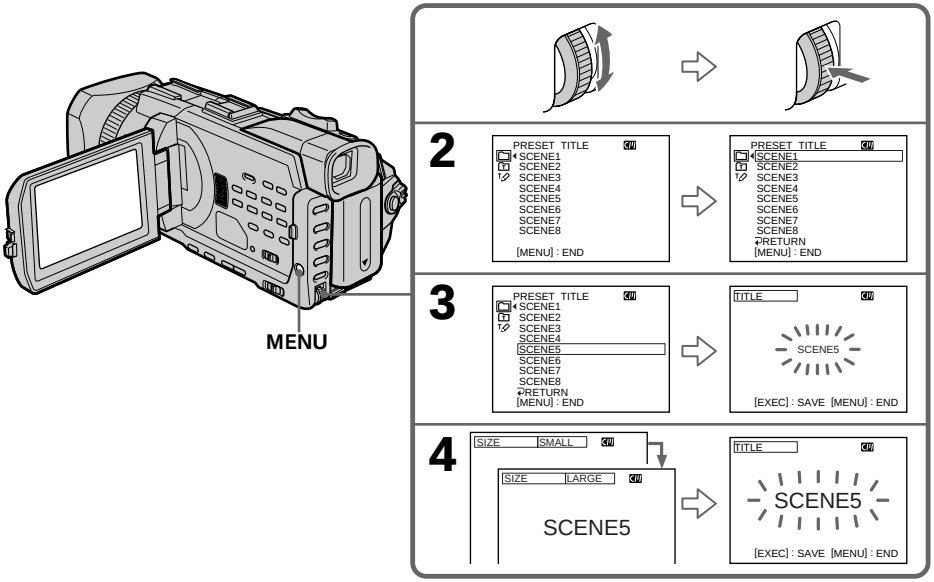
The time code and user bits cannot be displayed properly if the tape does not have time code and/or user bits recordings or if the time code was recorded using a non-compatible method.

Superimposing a title

CM only

If you use a tape with cassette memory, you can superimpose the title. When you play back the tape, the title is displayed for five seconds from the point where you superimposed it.

(1) In the recording , recording standby, playback or playback pause, press MENU, then select TITLE in CM with the SEL/PUSH EXEC dial (p. 219).
(2) Turn the SEL/PUSH EXEC dial to select 🗀, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select the desired title, then press the dial. The title flashes.
(4) Change the colour, size, or position, if necessary.
① Turn the SEL/PUSH EXEC dial to select COLOUR, SIZE or POSITION, then press the dial. The selected item appears.
② Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial.
③ Repeat steps ① and ② until the title is laid out as desired.
(5) Press the SEL/PUSH EXEC dial again to complete the setting.
In the recording, playback or playback pause:
The TITLE SAVE indicator appears on the screen for five seconds and the title is set.
In the standby:
The TITLE indicator appears. When you press START/STOP to start recording, TITLE SAVE appears on the screen for five seconds, and the title is set.



If you set the write-protect tab of the tape to lock
You cannot superimpose or erase the title. Slide the write-protect tab to release the write protection.

To use a custom title
If you want to use a custom title, select [custom] in step 2.

If the tape has a blank portion
You cannot superimpose a title on the portion.

If the tape has a blank portion between recorded portions
Titles may not be displayed correctly.

Titles superimposed with your camcorder
The point you superimposed the title may be detected as an index signal when searching a recording with other video equipment.

If the tape has too many number of data
You may not be able to superimpose a title because memory becomes full. In this case, delete data you do not need.

To not display titles
Set TITLE DSPL to OFF in the menu settings (p. 219).

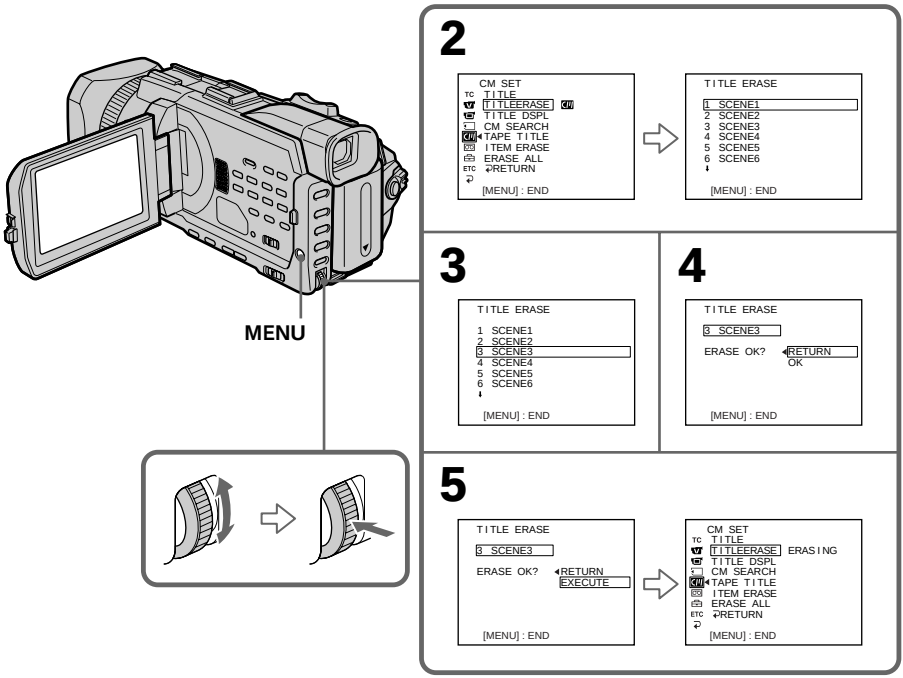
Title setting
- The title colour changes as follows:
  WHITE ↔ YELLOW ↔ VIOLET ↔ RED ↔ CYAN ↔ GREEN ↔ BLUE
- The title size changes as follows:
  SMALL ↔ LARGE
  You cannot input 13 characters or more in LARGE size. If you input more than 12 characters, the title size returns to SMALL even if you select LARGE.
- If you select SMALL, you have nine choices for the title position.
  If you select LARGE, you have eight choices for the title position.

Cassette memory
The tape with cassette memory can hold 106 title data.

If the "[memory] FULL" mark appears
The cassette memory is full. Erase unwanted titles.

Erasing a title

(1) Set the POWER switch to CAMERA or VCR.
(2) Press MENU, then turn the SEL/PUSH EXEC dial to select TITLEERASE in CM, then press the dial (p. 219).
(3) Turn the SEL/PUSH EXEC dial to select the title you want to erase, then press the dial. ERASE OK ? indicator appears.
(4) Make sure that the title is the one you want to erase, and turn the SEL/PUSH EXEC dial to select OK, then press the dial. OK changes to EXECUTE.
(5) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial. The ERASING flashes on the screen. When the title is erased, the COMPLETE is displayed.



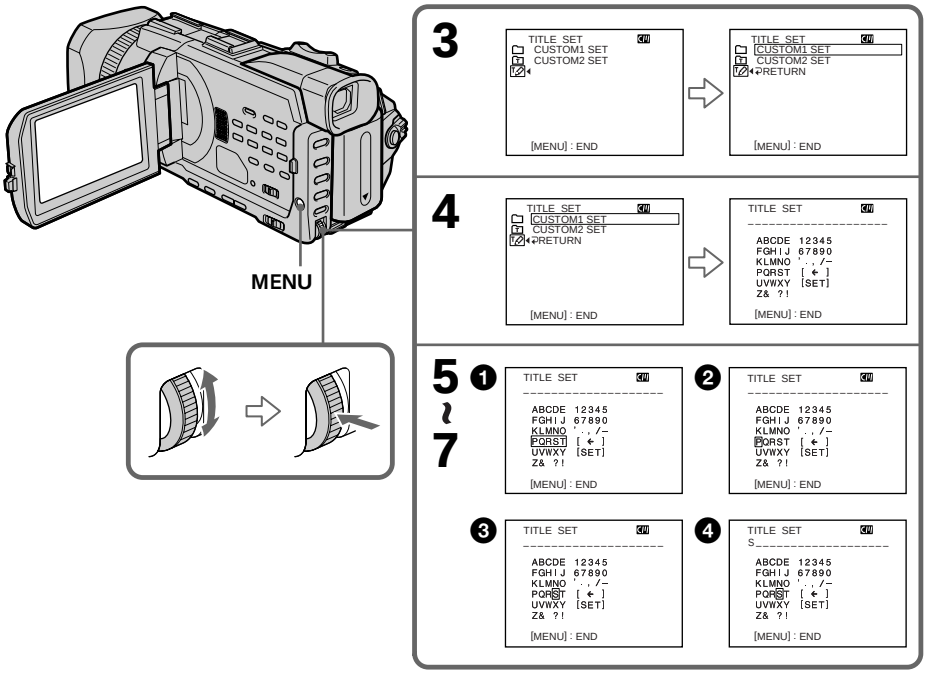
To cancel erasing a title

Select RETURN with the SEL/PUSH EXEC dial in step 4 or 5.

Making your own titles

You can make up to two titles and store them in the memory of your camcorder. Each title can have up to 20 characters.

(1) Set the POWER switch to CAMERA or VCR.
(2) Press MENU, then turn the SEL/PUSH EXEC dial to select TITLE in , then press the dial (p. 219).
(3) Turn the SEL/PUSH EXEC dial to select , then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select CUSTOM1 SET or CUSTOM2 SET, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select the column of the desired character, then press the dial.
(6) Turn the SEL/PUSH EXEC dial to select the desired character, then press the dial.
(7) Repeat steps 5 and 6 until you have selected all characters and completed the title.
(8) To finish making your own titles, turn the SEL/PUSH EXEC dial to select [SET], then press the dial.



To change a title you have stored

In step 4, select CUSTOM1 SET or CUSTOM2 SET, depending on which title you want to change, then press the SEL/PUSH EXEC dial. Turn the SEL/PUSH EXEC dial to select [←], then press the dial to delete the title. The last character is erased. Enter the new title as desired.

To delete the title

Select [←]. The last character is erased.

To enter a space

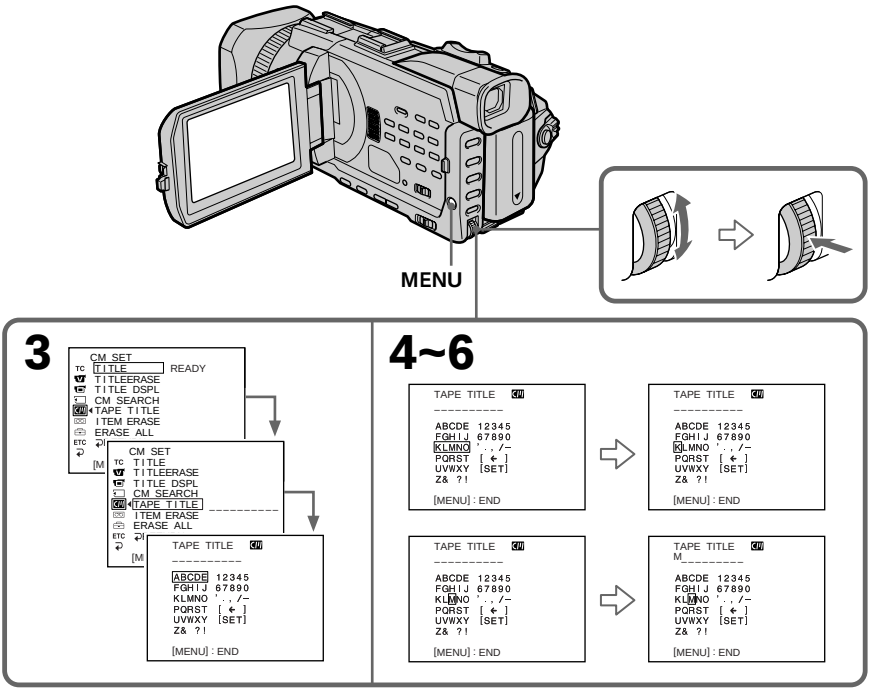
Select [Z& ? !], then select the blank part.

Labelling a cassette

CM only

If you use a cassette with cassette memory, you can label a cassette. Labels can consist of up to 10 characters and is stored in cassette memory. When you insert the labelled cassette and when the POWER switch is set to CAMERA or VCR, the label is displayed for about five seconds.

(1) Insert the cassette you want to label.
(2) Set the POWER switch to CAMERA or VCR.
(3) Press MENU, then turn the SEL/PUSH EXEC dial to select TAPE TITLE in CM, then press the dial (p. 219). Tape title display appears.
(4) Turn the SEL/PUSH EXEC dial to select the column of the desired character, then press the dial.
(5) Turn the SEL/PUSH EXEC dial to select the desired character, then press the dial.
(6) Repeat steps 4 and 5 until you finish the label.
(7) Turn the SEL/PUSH EXEC dial to select [SET], then press the dial.
The label is stored in the memory.



To erase the label you have made

In step 4 turn the SEL/PUSH EXEC dial to select [←], then press the dial. The last character is erased.

To change the label you have made

Insert the cassette to change the label, and operate in the same way to make a new label.

If you set the write-protect tab of the cassette to lock

You cannot label the tape. Slide the write-protect tab to release the write protection.

If the tape has too many index signals

You may not be able to label a cassette because the cassette memory becomes full. In this case, delete data you do not need.

If you have superimposed titles in the cassette

When the label is displayed, up to four titles also appear.

When the "-----" indicator has fewer than 10 spaces

The cassette memory is full.
The "-----" indicates the number of characters you can select for the label.

To delete the title

Select [←]. The last character is erased.

To enter a space

Select [Z& ? !], then select the blank part.

Erasing the cassette memory data

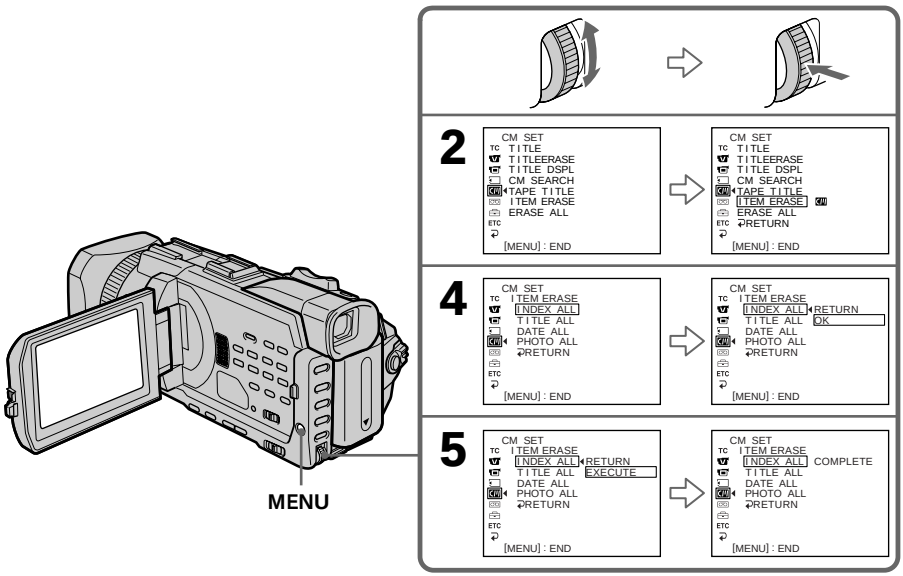
You can erase data stored in cassette memory, each item's data can be erased separately. You can also erase all items' data once.

Erasing each item's data separately

(1) Set the POWER switch to CAMERA or VCR.
(2) Press MENU, then turn the SEL/PUSH EXEC dial to select ITEM ERASE in CM, then press the dial.
(3) Turn the SEL/PUSH EXEC dial to select the item that you want to erase its data, then press the dial.

Item	Meaning
INDEX ALL	Erases all the index data.
TITLE ALL	Erases all the title data.
DATE ALL	Erases all the date data.
PHOTO ALL	Erases all the photo data.

(4) Make sure that the item is the one you want to erase, and turn the SEL/PUSH EXEC dial to select OK, then press the dial.
OK changes to EXECUTE.
(5) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
The ERASING flashes on the screen. When the item is erased, the COMPLETE is displayed.



To cancel erasing

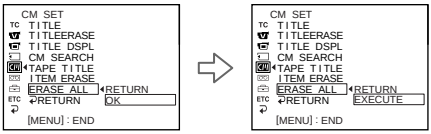
Select RETURN with the SEL/PUSH EXEC dial in step 4 or 5.

Erasing all the data in cassette memory

(1) Set the POWER switch to CAMERA or VCR.

(2) Press MENU, then turn the SEL/PUSH EXEC dial to select ERASE ALL in CM, then press the dial.

(3) Turn the SEL/PUSH EXEC dial to select OK, then press the dial.
OK changes to EXECUTE.



(4) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
The ERASING flashes on the screen. When the data are erased, the COMPLETE is displayed.

To cancel erasing

Select RETURN with the SEL/PUSH EXEC dial in step 3 or 4.

Using a "Memory Stick" – Introduction

You can record and play back images on the "Memory Stick" supplied with your camcorder. You can easily play back, record or delete images. You can exchange image data with other equipment such as your computer etc., using the USB cable for the "Memory Stick" supplied with your camcorder.

On file format

Still image (JPEG)

Your camcorder compresses image data in JPEG format (extension .jpg).

Moving picture (MPEG)

Your camcorder compresses picture data in MPEG format (extension .mpg).

Typical image data file name

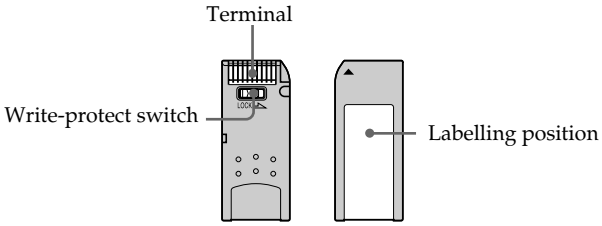
Still image

100-0001: This file name appears on the screen of your camcorder.
Dsc00001.jpg: This file name appears on the display of your computer.

Moving picture

MOV00001: This file name appears on the screen of your camcorder.
Mov00001.mpg: This file name appears on the display of your computer.

Using a "Memory Stick"



- You cannot record or erase images when the write-protect switch on the "Memory Stick" is set to LOCK.
- The position and shape of the write-protect switch may be different depending on the model.
- We recommend backing up important data on the hard disk of your computer.
- Image data may be damaged in the following cases:
  – If you eject the "Memory Stick" or turn the power off during reading or writing.
  – If you use a "Memory Stick" near static electricity or magnetic fields.
- Prevent metallic objects or your finger from coming into contact with the metal parts of the terminal.
- Stick the label at the labelling position.
- Do not bend, drop or apply strong shock to a "Memory Stick."
- Do not disassemble or modify a "Memory Stick."
- Do not let a "Memory Stick" get wet.
- Do not use or keep a "Memory Stick" in locations that are:
  – Extremely hot such as in a car parked in the sun or under the scorching sun.
  – Under direct sunlight
  – Very humid or subject to corrosive gases
- When you carry or store a "Memory Stick," put it in its case.

"Memory Stick" formatted on computer

The "Memory Stick" formatted on Windows OS or Macintosh computers is not guaranteed compatible with your camcorder.

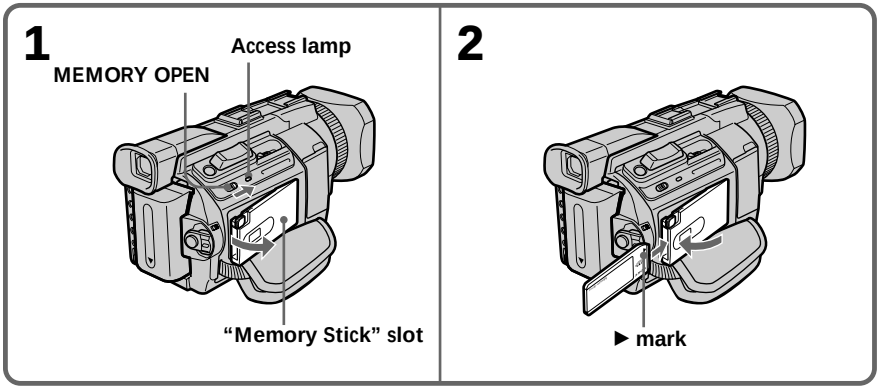
Notes on image data compatibility

- Image data files recorded on the "Memory Stick" by your camcorder conform with the Design Rules for Camera File Systems universal standard established by the JEITA (Japan Electronics and Information Technology Industries Association). You cannot play back on your camcorder still images recorded on other equipment (DSR-PD100P/PD100AP, DCR-TRV890E/TRV900/TRV900E, DKC-FP3 or DSC-D700/D770) that does not conform with this universal standard. (These models are not sold in some areas.)
- If you cannot use the "Memory Stick" that is used with other equipment, format it with this camcorder (p. 218). However, formatting erases all information on the "Memory Stick."

- "Memory Stick" and MEMORY STICK TM are trademarks of Sony Corporation.
- All other product names mentioned here may be the trademarks or registered trademarks of their respective companies.
  "TM" and "®" are not mentioned in each case in this manual.

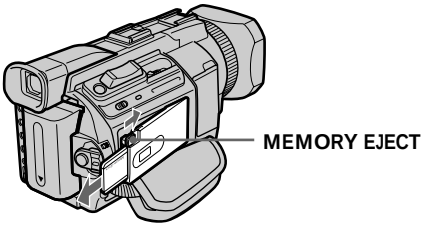
Inserting a "Memory Stick"

(1) Slide the MEMORY OPEN in the direction of the arrow to open the "Memory Stick" slot.
(2) Insert a "Memory Stick" in the "Memory Stick" slot as far as it can go with the ► mark facing up as illustrated. Close the "Memory Stick" slot.



Ejecting a "Memory Stick"

Open the "Memory Stick" slot following step 1 described above. Press MEMORY EJECT once lightly to eject it.



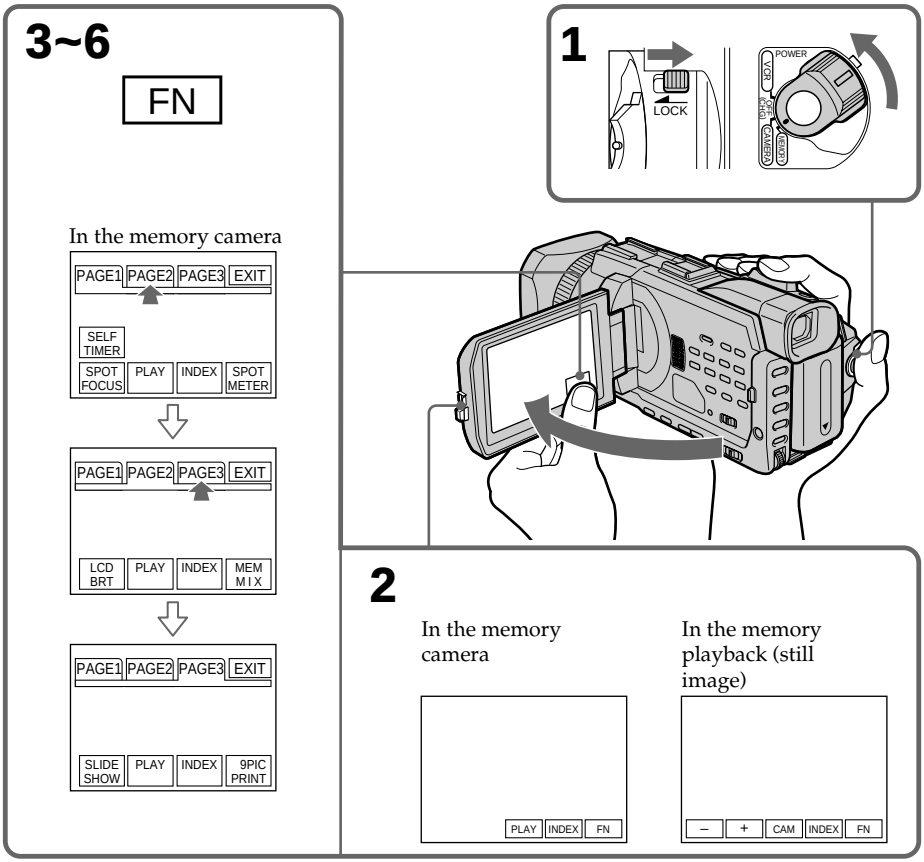
While the access lamp is lit or flashing
Do not shake or knock your camcorder because your camcorder is reading the data from the "Memory Stick" or recording the data on the "Memory Stick." Do not turn the power off, eject the "Memory Stick." Otherwise, image data may become damaged.

If "⚠ MEMORYSTICK ERROR" is displayed
Reinsert the "Memory Stick" a few times. The "Memory Stick" may be damaged if the indicator is still displayed. If this occurs, use another "Memory Stick."

Using a touch panel

Most operation buttons for use of a "Memory Stick" are displayed on the LCD screen. Touch the LCD screen directly with your finger to operate each function.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press OPEN to open the LCD panel. Operation buttons appear on the LCD screen. You can switch the memory playback/memory camera by pressing PLAY/CAM.
(3) Press FN. Operation buttons appear on the LCD screen.
(4) Press PAGE2 to go to PAGE2. Operation buttons appear on the LCD screen.
(5) Press PAGE3 to go to PAGE3. Operation buttons appear on the LCD screen.
(6) Press a desired operation item.
Refer to relevant pages for each function.



To return to FN
Press EXIT.

To execute settings
Press ↩ OK.

To cancel settings
Press ↩ OFF to return to PAGE1/PAGE2/PAGE3.

Notes

- When using the touch panel, press operation buttons with your thumb supporting the LCD screen from the back side of it or press those buttons lightly with your index finger.
- Do not press the LCD screen with sharp-pointed objects such as a pen.
- Do not press the LCD screen too hard.
- Do not touch the LCD screen with wet hands.
- If FN is not on the LCD screen, touch the LCD screen lightly to make it appear. You can control the display with DISPLAY/TOUCH PANEL on your camcorder.
- When operation buttons do not work even if you press them, an adjustment is required (CALIBRATION) (p. 246).
- When the LCD screen gets dirty, clean it with the supplied cleaning cloth.

When executing each item
The green bar appears above the item.

If the items are not available
The colour of the items changes to gray.

Press FN to display the following buttons:
In the memory camera

PAGE1	SELFTIMER, SPOT FOCUS, PLAY, INDEX, SPOT METER
PAGE2	LCD BRT, PLAY, INDEX, MEM MIX
PAGE3	SLIDE SHOW, PLAY, INDEX, 9PIC PRINT

In the memory playback

PAGE1	PB ZOOM, CAM, INDEX, DELETE, [+], [–]
PAGE2	LCD BRT, CAM, INDEX, DATA CODE, [+], [–]
PAGE3	SLIDE SHOW, CAM, INDEX, 9PIC PRINT, [+], [–]

Selecting the still image quality

You can select the image quality in still image recording. The default setting is SUPER FINE.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press MENU, then turn the SEL/PUSH EXEC dial to select STILL SET in , then press the dial. (p. 217)
(3) Turn the SEL/PUSH EXEC dial to select QUALITY , then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select the desired image quality , then press the dial.

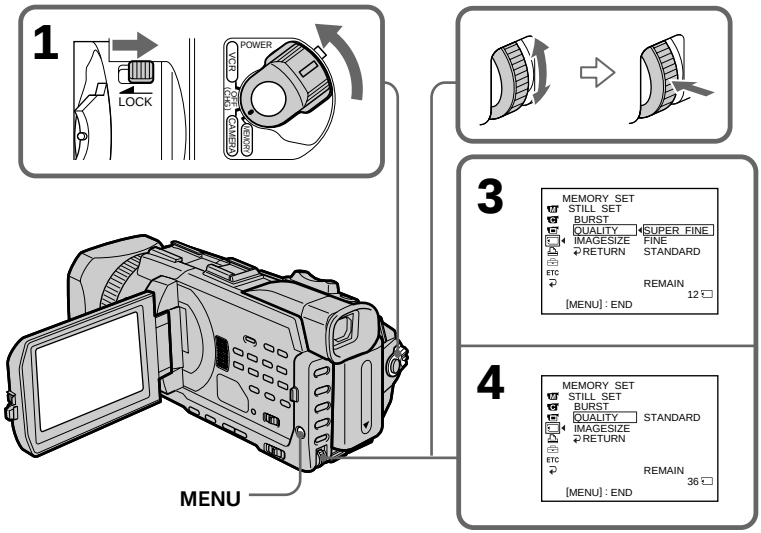


Image quality settings

Setting	Meaning
SUPER FINE (SFN)	This is the highest image quality in your camcorder. The number of still images you can record is less than in FINE mode. Super fine images are compressed to about 1/3.
FINE (FINE)	Use this mode when you want to record high quality images. Fine images are compressed to about 1/6.
STANDARD (STD)	This is the standard image quality in your camcorder. Standard images are compressed to about 1/10.

Note

In some cases, changing the image quality may not affect the image quality, depending on the type of images you are shooting.

Differences in image quality

Recorded images are compressed in JPEG format before being stored in memory. The memory capacity allotted to each image varies depending on the selected image quality and image size. Details are shown in the table below. (You can select 1152 × 864 or 640 × 480 image size in the menu settings.)

1152 × 864 image size

Image quality	Memory capacity
SUPER FINE	About 600 KB
FINE	About 300 KB
STANDARD	About 200 KB

640 × 480 image size

Image quality	Memory capacity
SUPER FINE	About 190 KB
FINE	About 100 KB
STANDARD	About 60 KB

Image quality indicator

The image quality indicator is not displayed during playback.

When you select QUALITY

The number of images you can shoot in the currently selected image quality appears on the screen.

Selecting the image size

You can select either of two image sizes

Still images: 1152 × 864 or 640 × 480. (When the POWER switch is set to CAMERA or VCR, the image size is automatically set to 640 × 480.)
The default setting is 1152 × 864.

Moving pictures: 320 × 240 or 160 × 112
The default setting is 320 × 240.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press MENU, then turn the SEL/PUSH EXEC dial to select STILL SET (still image) or MOVIE SET (moving picture) in , then press the dial (p. 217).
(3) Turn the SEL/PUSH EXEC dial to select IMAGESIZE, then press the dial.
(4) Turn the SEL/PUSH EXEC dial to select the desired image size, then press the dial.
The indicator changes as follows:

Still images: 1152 ↔ 640
Moving pictures: 320 ↔ 160

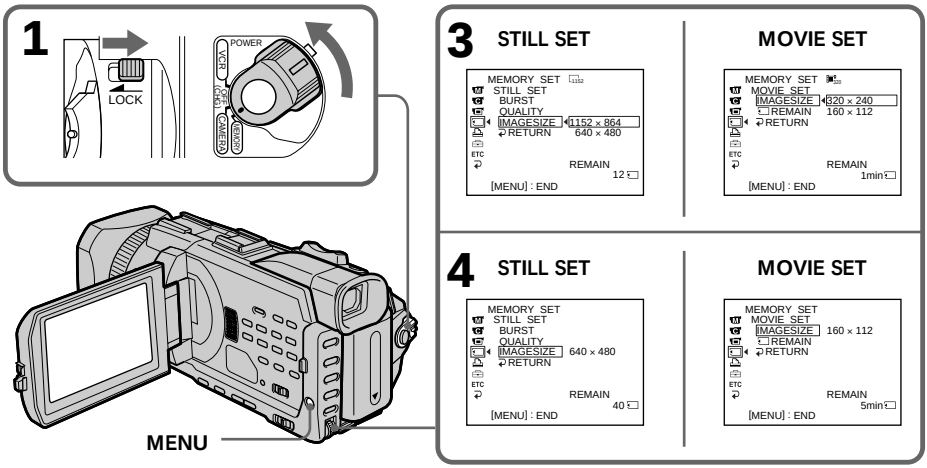


Image size settings

Setting	Meaning	Indicator
1152 × 864	Records 1152 × 864 still images.	1152
640 × 480	Records 640 × 480 still images.	640
320 × 240	Records 320 × 240 moving pictures.	320
160 × 112	Records 160 × 112 moving pictures.	160

Approximate number of still images you can record on a "Memory Stick"

The number of images you can record varies depending on which image quality and image size you select and the complexity of the subject.

Image quality	Image size	Type of the "Memory Stick"				
		8MB (supplied)	16MB (optional)	32MB (optional)	64MB (optional)	128MB (optional)
SUPER FINE	1152 × 864	12 images	25 images	51 images	100 images	205 images
	640 × 480	40 images	80 images	160 images	325 images	650 images
FINE	1152 × 864	25 images	50 images	100 images	205 images	415 images
	640 × 480	80 images	160 images	325 images	650 images	1310 images
STANDARD	1152 × 864	37 images	74 images	150 images	300 images	600 images
	640 × 480	120 images	240 images	485 images	980 images	1970 images

Approximate time of moving pictures you can record on a "Memory Stick"

The time of moving pictures you can record varies depending on which image size you select and the complexity of the subject.

Image size	Type of the "Memory Stick"				
	8MB (supplied)	16MB (optional)	32MB (optional)	64MB (optional)	128MB (optional)
320 × 240	1 min. 20 sec.	2 min. 40 sec.	5 min. 20 sec.	10 min. 40 sec.	21 min. 20 sec.
160 × 112	5 min. 20 sec.	10 min. 40 sec.	21 min. 20 sec.	42 min. 40 sec.	85 min. 20 sec.

The table above shows approximate number and times of still images and moving pictures you can record on a "Memory Stick" formatted by your camcorder.

Note

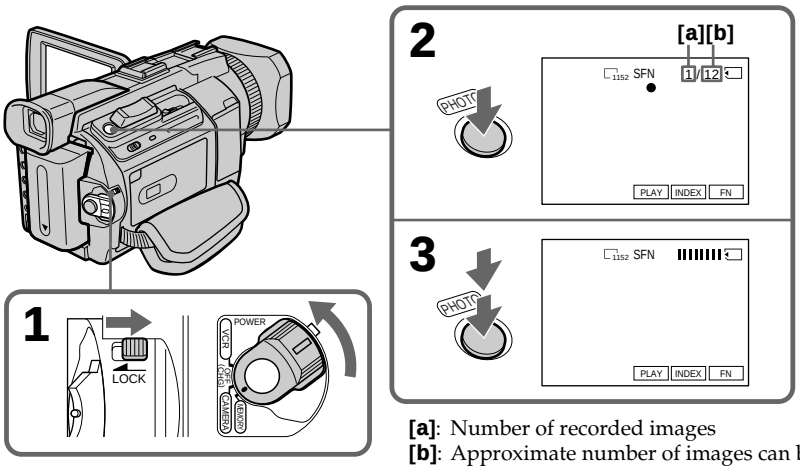
When still images recorded on your camcorder in 1152 × 864 size are played back on other equipment that does not support 1152 × 864 size, the full image may not appear, or images in the reduced size may appear in the centre of the screen.

Recording still images on a “Memory Stick” – Memory Photo recording

You can record still images on a “Memory Stick.”

Before operation
Insert a “Memory Stick” into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press PHOTO lightly. The green ● mark stops flashing, then lights up. The brightness of the image and focus are adjusted, being targeted for the middle of the image and are fixed. Recording does not start yet.
(3) Press PHOTO deeper.
The still image will be displayed after the shutter sounds.
Recording is complete when the bar scroll indicator disappears.
The image when you pressed PHOTO deeper will be recorded on the “Memory Stick.”



[a]: Number of recorded images
[b]: Approximate number of images can be recorded on the “Memory Stick”

You can record still images on a “Memory Stick” in the tape recording or recording standby

For the details, see p. 48.

When the POWER switch is set to MEMORY

The following functions do not work:
– Digital zoom
– Wide mode
– Fader
– Digital effect
– Sports lesson of PROGRAM AE (The indicator flashes.)
– Title

While you are recording a still image

You can neither turn off the power nor press PHOTO.

When you press PHOTO on the Remote Commander

Your camcorder immediately records the image that is on the screen when you press the button.

When you press PHOTO lightly in step 2

The image momentarily flickers. This is not a malfunction.

Recording data

The recording data (date/time or various settings when recorded) are not displayed while recording. However, they are recorded automatically onto the “Memory Stick.” To display the recording data, press DATA CODE on PAGE2 during playback. You can also use the Remote Commander for this operation (p. 43).

When the POWER switch is set to MEMORY

The angle of view is slightly larger compared with the angle of view when the POWER switch is set to CAMERA.

Recording images continuously

You can record still images continuously. Before recording, select one of the four modes described below in the menu settings.

NORMAL [a]
Your camcorder shoots up to four still images in 1152 × 864 size or 13 still images in 640 × 480 size at about 0.5 sec intervals. ( )

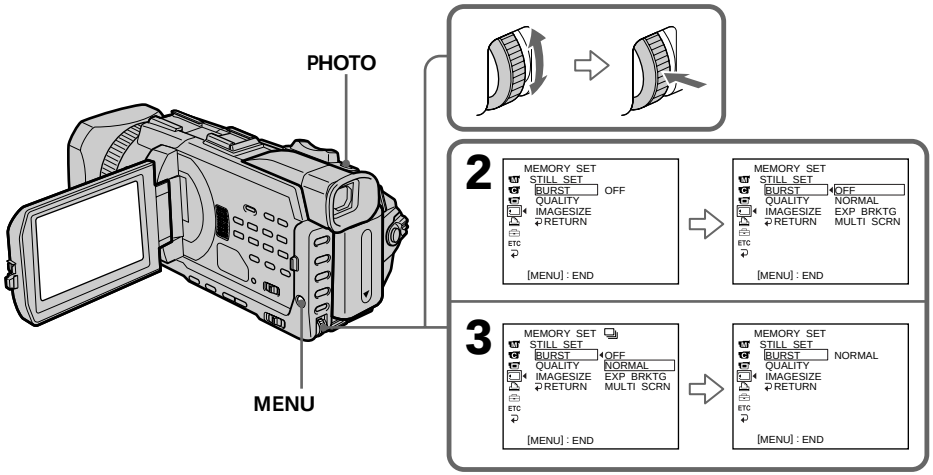
EXP BRKTG (Exposure Bracketing)
Your camcorder automatically shoots three images at about 0.5 sec intervals at different exposures. (BRK)

MULTI SCRN (Multi Screen) [b]
Your camcorder shoots nine still images at about 0.4 sec intervals and displays the images on a single page divided into nine boxes. Still images are recorded in 640 × 480 size. ( )

[a]

[b]

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press MENU, then select BURST while STILL SET is selected in , then press the dial (p. 217).
(3) Turn the SEL/PUSH EXEC dial to select the desired setting, then press the dial.
(4) Press MENU to make the menu setting disappear.
(5) Press PHOTO deeper.



If the capacity of the "Memory Stick" becomes full

"FULL" appears on the screen, and you cannot record a still image on this "Memory Stick."

The number of still images in continuous shooting
The number of still images you can shoot continuously varies depending on the image size and the capacity of the "Memory Stick."

During recording still images continuously
The flash (optional) does not work.

The effect of exposure bracketing (EXP BRKTG)
The effect may not appear clearly on the LCD screen.
Checking images on a TV monitor or computer display for the expected effect is recommended.

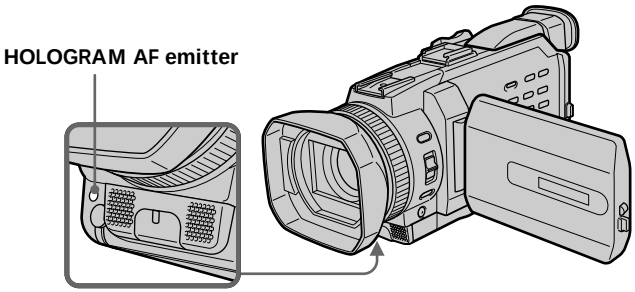
When selecting NORMAL
Recording continues up to the maximum number of still images during pressing PHOTO deeper. Release PHOTO to stop recording.

When shooting with the self-timer or the Remote Commander
Your camcorder automatically records up to the maximum recordable number of still images.

If there is space remaining on the "Memory Stick" for less than three photos
You cannot carry out the exposure bracketing (EXP BRKTG). "FULL" is displayed when you press PHOTO.

Shooting with an auxiliary light – HOLOGRAM AF

The HOLOGRAM AF is an auxiliary light source used for focusing on subjects in dark places when you attach the optional flash.
Set HOLOGRAM F in [C] to AUTO in the menu settings. (The default setting is AUTO.)
When ⚡ON appears on the screen in a dark place, press PHOTO lightly. Then the auxiliary light will automatically emit until the subject is focused.



About HOLOGRAM AF

"HOLOGRAM AF (Auto-Focus)," an application of laser holograms, is a new AF optical system that enables still image shooting in dark places. Having gentler radiation than conventional high-brightness LEDs or lamps, the system satisfies Laser Class 1 (*) specification and thus maintains higher safety for human eyes.
No safety problems will be caused by directly looking into the HOLOGRAM AF emitter at a close range. However, it is not recommended to do so, because you may experience such effects like several minutes of image residual and dazzling, that you encounter after looking into a flashlight.

* HOLOGRAM AF satisfies Class 1(time base 30 000 seconds), specified in all of JIS (Japan), IEC(EU), and FDA(US) industry standards.
Complying with these standards identifies the laser product to be safe, under a condition that a human looks at the laser light either directly or even through a lens for 30 000 seconds.

Notes

- You can use HOLOGRAM AF only when the optional flash is attached.
- Attaching the lens hood or a conversion lens (optional) may obstruct the HOLOGRAM AF light and make focusing difficult. We recommend removing the lens hood or a conversion lens while shooting with the HOLOGRAM AF.
- If enough light does not reach the subject even if the HOLOGRAM AF emitter is emitted, the subject will not be focused.
- Focusing may be hampered if the light emitted from the HOLOGRAM AF is blocked by an obstruction.
- Focus is achieved as long as HOLOGRAM AF light reaches to the subject even if its light is slightly out of the middle position of the subject.
- If HOLOGRAM AF light is dim, it sometimes becomes difficult to focus. If this happens, wipe the HOLOGRAM AF emitter with a soft, dry cloth.

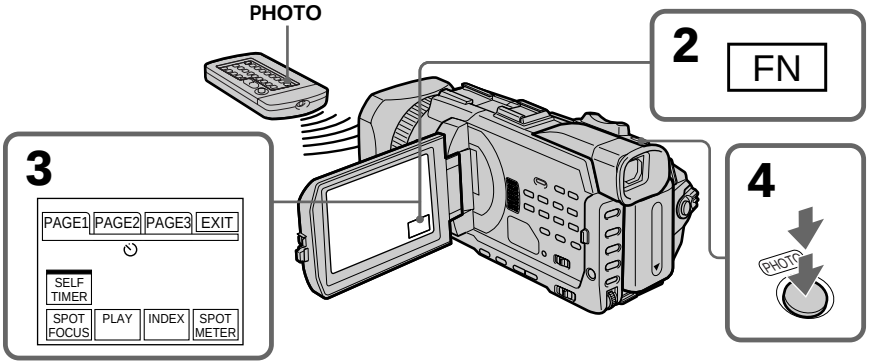
The HOLOGRAM AF does not emit when:

– Focus manually
– Spot Focus
– Sunset & moon of PROGRAM AE
– Landscape of PROGRAM AE
– Continuous photo recording

Self-timer memory photo recording

You can record images on a "Memory Stick" with the self-timer. You can also use the Remote Commander for this operation.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press FN to display PAGE1.
(3) Press SELFTIMER.
The ⏲ (self-timer) indicator appears on the screen.
(4) Press PHOTO deeper.
Self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.



To cancel the self-timer

Press SELFTIMER so that the ⏲ (self-timer) indicator disappears on the screen. You cannot stop the countdown.

Note

The self-timer is automatically cancelled when:
– Self-timer recording is finished.
– The POWER switch is set to OFF (CHG) or VCR.

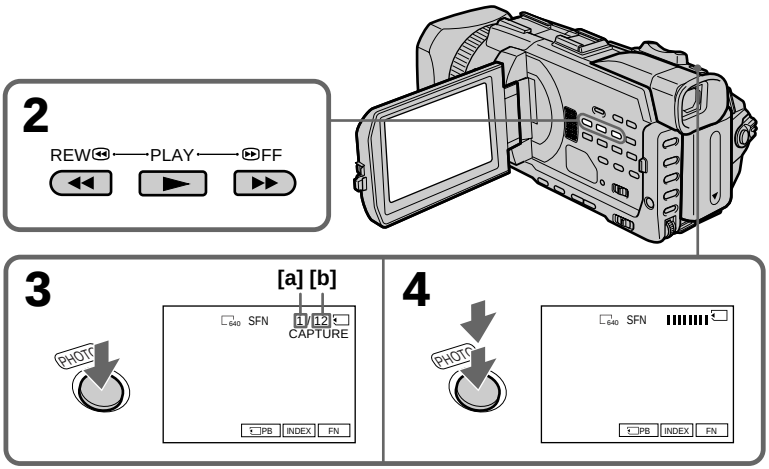
Recording images from a tape as still images

Your camcorder can read moving picture data recorded on a tape and record it as a still image on a "Memory Stick." Your camcorder can also capture moving picture data through the input connector and record it as a still image on a "Memory Stick."

Before operation

Insert a "Memory Stick" and the recorded tape into your camcorder.

(1) Set the POWER switch to VCR.
(2) Press ►. Moving pictures recorded on the tape are played back.
(3) Press PHOTO lightly until the picture you want to capture from the tape freezes and CAPTURE appears on the screen. Recording does not start yet. To change from the selected image to another image, release PHOTO once and press it lightly again.
(4) Press PHOTO deeper. The image displayed on the screen will be recorded on the "Memory Stick." Recording is complete when the bar scroll indicator disappears.



[a] : Number of the recorded images
[b] : Approximate number of the images that can be recorded on the "Memory Stick"

Image size of still images
Image size is automatically set to 640 × 480.

When the access lamp is lit or flashing
Do not shake or strike the unit. Also, do not turn the power off , eject the "Memory Stick." Otherwise, image data may become damaged.

If "FORMAT ERROR" appears on the screen
The inserted "Memory Stick" is incompatible with your camcorder because its format does not conform with your camcorder. Check the format of the "Memory Stick."

If you press PHOTO lightly in the playback
Your camcorder stops momentarily.

Sound recorded on a tape
You cannot record audio from a tape.

Titles already recorded on cassettes
You cannot record titles on a "Memory Stick." Titles do not appear while you are recording a still image with PHOTO.

Recording date/time
The recording data (date/time) when it is recorded on a "Memory Stick" is recorded. Various settings are not recorded.
Data codes recorded on a tape cannot be recorded on a "Memory Stick."

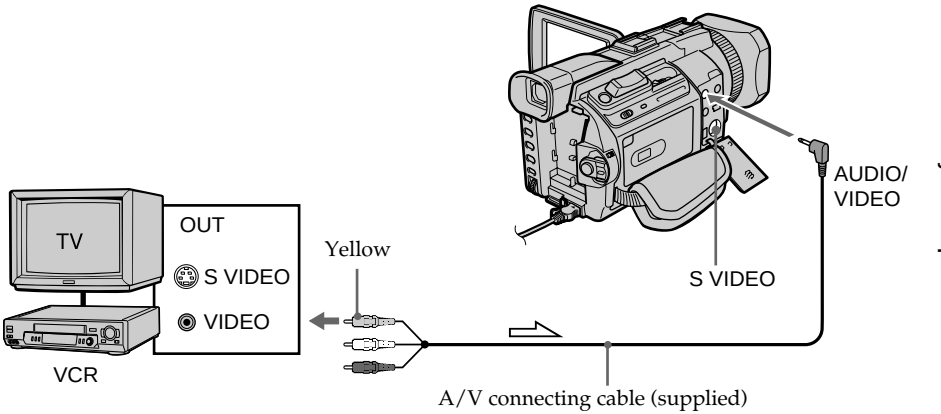
When you press PHOTO on the Remote Commander
Your camcorder immediately records the image that is on the screen when you press the button.

Recording a still image from external equipment

Before operation
Set DISPLAY in ETC to LCD in the menu settings. (The default setting is LCD.)

(1) Set the POWER switch to VCR.
(2) Play back the recorded tape on the VCR, or turn the TV on to see the desired programme.
The image of the external equipment is displayed on the screen.
(3) Follow steps 3 and 4 on page 151.

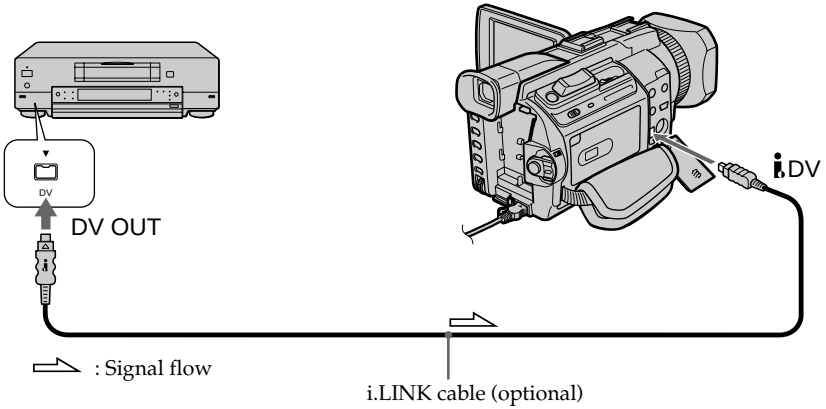
Using the A/V connecting cable



Connect the yellow plug of the A/V connecting cable to the video jack on the VCR or the TV.

If your TV or VCR has an S video jack
Pictures can be reproduced more faithfully by using an S video cable (optional).
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (optional) to the S VIDEO jacks of both your camcorder and the TV or VCR.

Using the i.LINK cable



Note

In the following instances, recording is interrupted or "REC ERROR" is displayed, and recording is not possible. Reinsert the "Memory Stick" to record distortion-free images.

– When recording on a tape in a poor recording state, for example, on a tape that has been repeatedly used for dubbing.
– When attempting to input images that are distorted due to poor radio wave reception when a TV tuner unit is in use.

Superimposing a still image in the “Memory Stick” on an image – MEMORY MIX

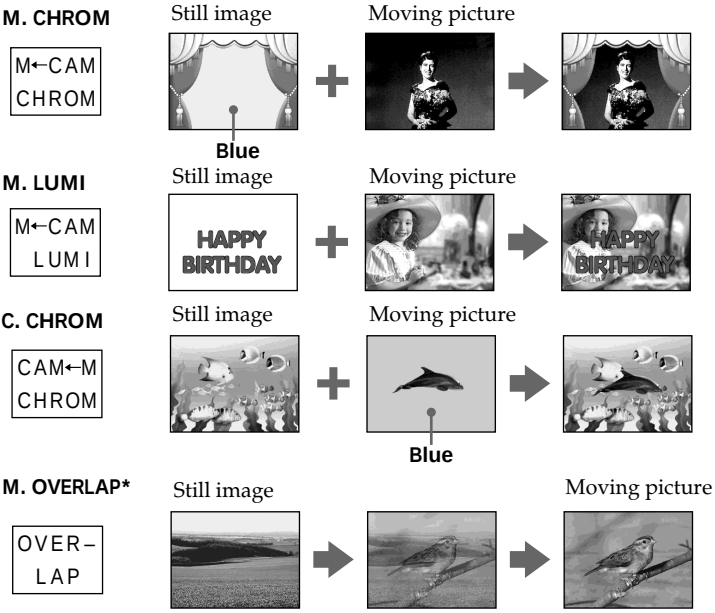
You can superimpose a still image you have recorded on the “Memory Stick” on the moving picture you are recording. You can record the superimposed images on a tape or a “Memory Stick.” (However, you can record only superimposed still images on the “Memory Stick.”)

M. CHROM (memory chroma key)
You can swap a blue area of a still image such as an illustration or a frame with a moving picture.

M. LUMI (memory luminance key)
You can swap a brighter area of a still image such as a handwritten illustration or title with a moving picture. Record a title on the “Memory Stick” before a trip or event for convenience.

C. CHROM (camera chroma key)
You can superimpose a moving picture on a still image such as an image can be used as background. Shoot the subject against a blue background. The blue area of the moving picture will be swapped with a still image.

M. OVERLAP* (memory overlap)
You can make a moving picture fade in on top of a still image recorded on the “Memory Stick.”



* The superimposed image using Memory overlap can be recorded on tapes only.

Recording superimposed images on a tape

Before operation

- Insert a tape for recording into your camcorder.
- Insert a "Memory Stick" recorded still images into your camcorder.

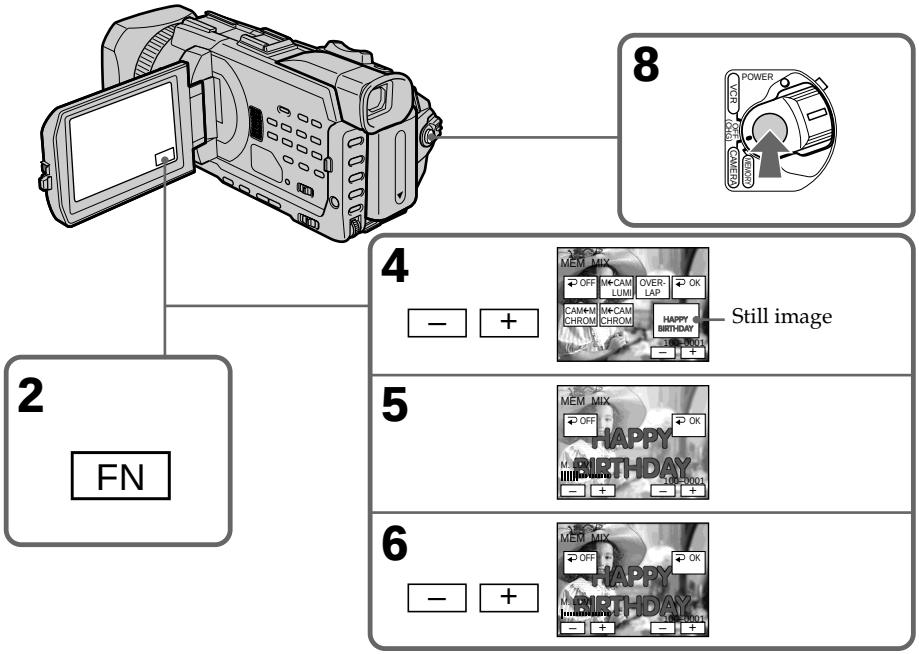
(1) Set the POWER switch to CAMERA.
(2) Press FN to display PAGE1.
(3) Press MEM MIX. The last recorded or last composed image appears on the lower part of the screen as a thumbnail image.
(4) Press –/+ on the right lower corner of the screen to select the still image which you want to superimpose.
–: To see the previous image
+: To see the next image
(5) Press a desired mode. The still image is superimposed on the moving picture.
(6) Press –/+ on the left lower corner of the screen to adjust the effect, then press ↩ OK to return to PAGE1.

M. CHROM:	Blue chroma key (only blue background portion) to extract a still image and superimpose it on a moving image
M. LUMI:	Brightness level used when extracting a still image and superimposing it on a moving image
C. CHROM:	Blue chroma key (only blue background portion) to extract a moving picture and superimpose it on a still image
M. OVERLAP:	No adjustment necessary

The fewer bars there are on the screen, the stronger the effect.

(7) Press EXIT to return to FN.
(8) Press START/STOP to start recording.

Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX



To change the still image to be superimposed

Press –/+ on the right lower corner before step 6.

To cancel MEMORY MIX

Press ↩ OFF to return to PAGE1.

Notes

- You cannot use the MEMORY MIX for moving pictures recorded on a "Memory Stick."
- When the overlapping still image has a large amount of white, the thumbnail image of the picture may not be clear.
- You cannot change the mode setting. Press ↩ OFF to return to PAGE1.

Image data modified on your computer or shot with other equipment

You may not be able to play back modified images with your camcorder.

When you record the still image without superimposing

Select M. LUMI. mode. Press <–/+ mark> until all bars are displayed. Only the still image will be displayed on the screen.

When you select M. OVERLAP

You cannot change the still image or the mode setting.

To record the superimposed image as a still image

Press PHOTO deeper in step 8 (You should set PHOTO REC in [C] to TAPE in the menu settings beforehand).

Recording superimposed images on a "Memory Stick" as a still image

Before operation

Insert a "Memory Stick" recorded still images into your camcorder.

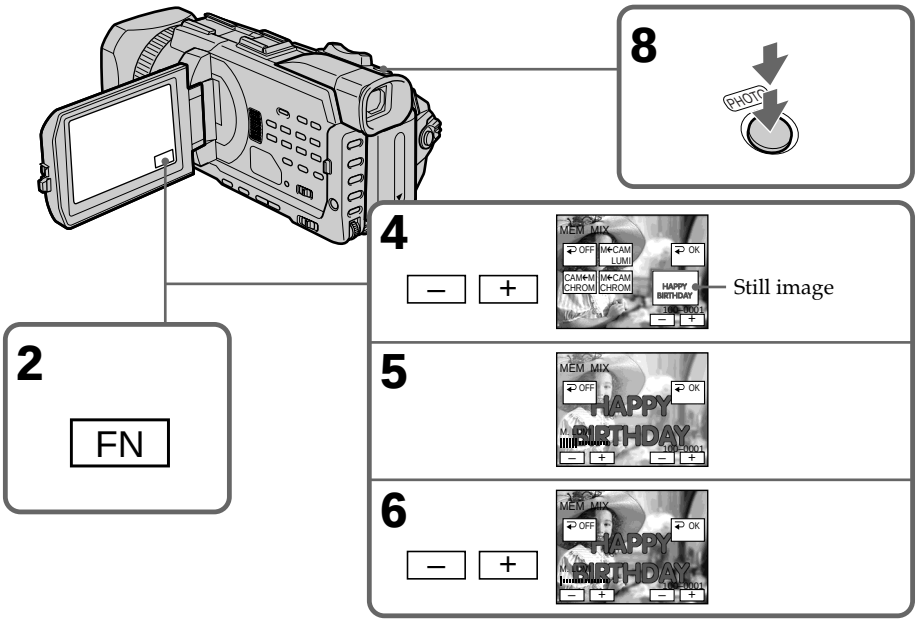
(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press FN and select PAGE2.
(3) Press MEM MIX. The last recorded or last composed image appears on the lower part of the screen as a thumbnail image.
(4) Press –/+ on the right lower corner of the screen to select the still image which you want to superimpose.
–: To see the previous image
+: To see the next image
(5) Press a desired mode. The still image is superimposed on the moving picture.
(6) Press –/+ on the left lower corner of the screen to adjust the effect, then press ↩ OK to return to PAGE2.

M. CHROM:	Blue chroma key (only blue background portion) to extract a still image and superimpose it on a moving image
M. LUMI:	Brightness level used when extracting a still image and superimposing it on a moving image
C. CHROM:	Blue chroma key (only blue background portion) to extract a moving picture and superimpose it on a still image

The fewer bars there are on the screen, the stronger the effect.

(7) Press EXIT to return to FN.
(8) Press PHOTO deeper to start recording.
The image displayed on the screen will be recorded on the "Memory Stick." Recording is complete when the bar scroll indicator disappears.

Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX



To change the still image to be superimposed

Press –/+ on the right lower corner before step 6.

To cancel MEMORY MIX

Press ↩ OFF to return to PAGE2.

Notes

- You cannot use MEMORY MIX for moving pictures recorded on a "Memory Stick."
- When the overlapping still image has a large amount of white, the thumbnail image of the picture may not be clear.
- You cannot change the mode setting. Press ↩ OFF to return to PAGE2.

Image size of still pictures

Image size is automatically set to 640 × 480.

Image data modified with your computers or shot with other equipment

You may not be able to play back modified images with your camcorder.

When recording images on a "Memory Stick" using the MEMORY MIX

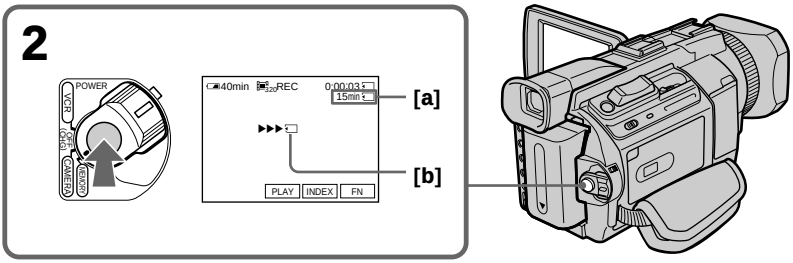
The PROGRAM AE does not work. (The indicator flashes.)

Recording moving pictures on a “Memory Stick” – MPEG movie recording

You can record moving pictures with sound on a “Memory Stick.”
You can record picture and sound continuously up to the capacity of a “Memory Stick”(MPEG MOVIE EX).

Before operation
Insert a “Memory Stick” into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press START/STOP. Your camcorder starts recording. The camera recording lamp located on the front of your camcorder lights up. The picture and sound are recorded up to the remaining capacity of the “Memory Stick.” For more information about recording time, see page 143.



[a]: Recording time can be recorded on the “Memory Stick”.
[b]: This indicator is displayed for five seconds after pressing START/STOP. This indicator is not recorded.

To stop recording
Press START/STOP.

Note

Sound is recorded in monaural.

When the POWER switch is set to MEMORY

The following functions do not work:
– Digital zoom
– Wide mode
– Fader
– Digital effect
– Sports lesson of PROGRAM AE (The indicator flashes.)
– Title

When using an external flash (optional)

Turn the power of the external flash off when recording moving pictures on a "Memory Stick." Otherwise, the charging sound for the flash may be recorded.

Recording date/time

The date/time are not displayed while recording. However, they are automatically recorded onto the "Memory Stick."
To display the recording date/time, press DATA CODE on PAGE2 during playback. You can also use the Remote Commander for this operation (p. 43). Various settings cannot be recorded.

During recording on a "Memory Stick"

Do not eject the cassette tape from your camcorder. During ejecting the tape, sound is recorded on the "Memory Stick."

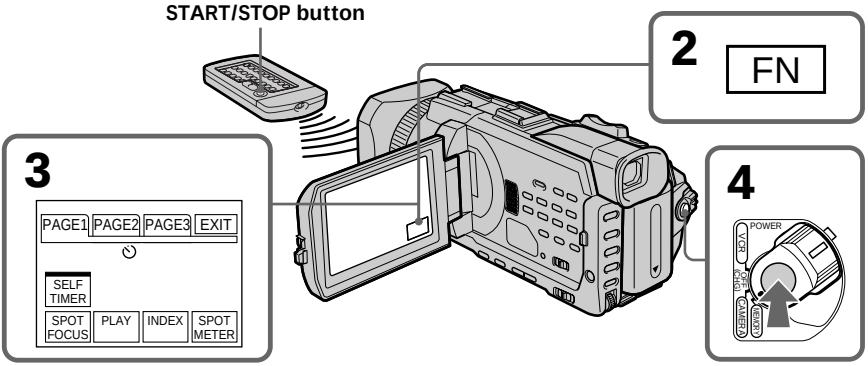
When the POWER switch is set to MEMORY

The angle of view is slightly larger compared with the angle of view when the POWER switch is set to CAMERA.

Self-timer MPEG movie recording

You can record images on a "Memory Stick" with the self-timer. You can also use the Remote Commander for this operation.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press FN to display PAGE1.
(3) Press SELFTIMER.
The ⏲ (self-timer) indicator appears on the screen.
(4) Press START/STOP.
Self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.



To stop the self-timer

Press START/STOP. To restart the self-timer, press START/STOP again.

To cancel the self-timer

Press SELFTIMER so that the ⏲ (self-timer) indicator disappears on the screen.

Note

The self-timer is automatically cancelled when:
– Self-timer recording is finished.
– The POWER switch is set to OFF (CHG) or VCR.

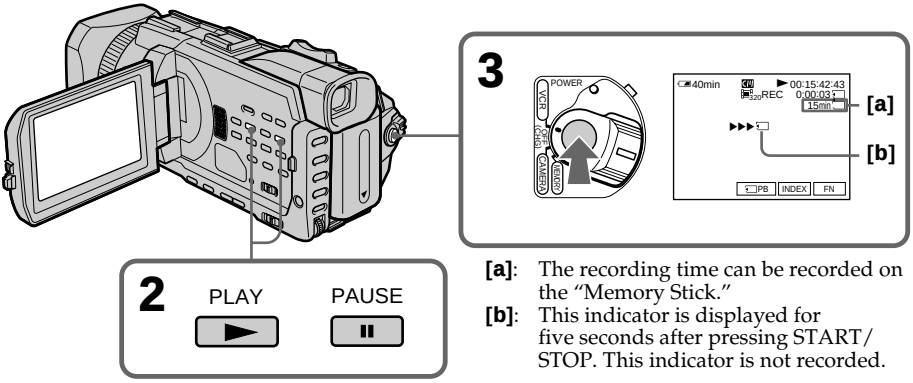
Recording pictures from a tape as a moving picture

Your camcorder can read moving picture data recorded on a tape and record it as a moving picture on a "Memory Stick." Your camcorder can also capture moving picture data through the input connector and record it as a moving picture on a "Memory Stick."

Before operation

Insert a "Memory Stick" and the recorded tape into your camcorder.

(1) Set the POWER switch to VCR.
(2) Press ►. The picture recorded on the tape is played back.
And press ❚❚ at the scene where you want to start recording from.
(3) Press START/STOP on your camcorder. The picture and sound are recorded up to the remaining capacity of the "Memory Stick." For more information about recording time, see page 143.



[a]: The recording time can be recorded on the "Memory Stick."
[b]: This indicator is displayed for five seconds after pressing START/STOP. This indicator is not recorded.

To stop recording

Press START/STOP.

Notes

- Sound recorded in 48 kHz is converted to 32 kHz sound when recording images from a tape to a "Memory Stick."
- Sound recorded in stereo is converted to monaural sound when recording from a tape.

When the access lamp is lit or flashing

Do not shake or knock the unit. Also, do not turn the power off, eject the "Memory Stick." Otherwise, image data may become damaged.

Titles already recorded on cassettes

You cannot record titles on a "Memory Stick." Titles do not appear while you are recording moving picture with START/STOP.

If "⚠ AUDIO ERROR" is displayed

Sound that cannot be recorded by your camcorder has been recorded. Connect the A/V connecting cable to input images from external equipment used to play back the image (p. 165).

Recording date/time

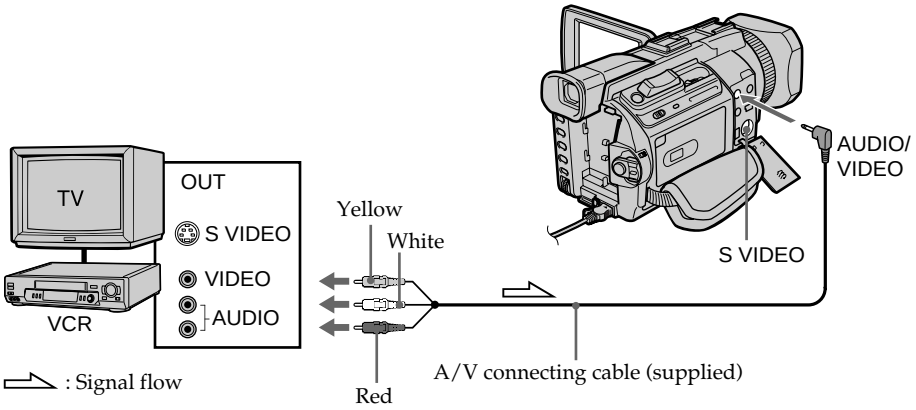
The recording data (date/time) when it is recorded on a "Memory Stick" is recorded. Various settings are not recorded.
Data codes recorded on a tape cannot be recorded on a "Memory Stick."

Recording a moving picture from external equipment

Before operation
Set DISPLAY in ETC to LCD in the menu settings. (The default setting is LCD.)

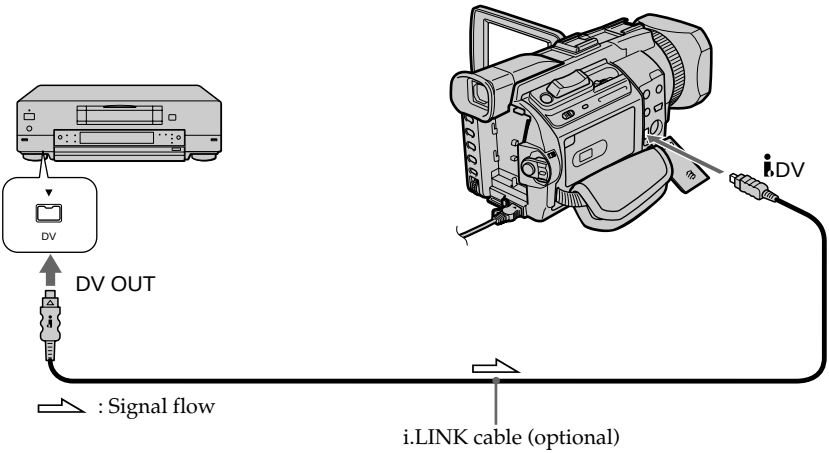
(1) Set the POWER switch to VCR.
(2) Play back the recorded tape, or turn the TV on to see the desired programme. The image of the other equipment is displayed on the screen.
(3) Follow the procedure on page 163 from the step 3 onwards at the point where you want to start recording from.

Using the A/V connecting cable



If your TV or VCR has an S video jack
Pictures can be reproduced more faithfully by using an S video cable (optional).
With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (optional) to the S VIDEO jacks of both your camcorder and the TV or VCR.

Using the i.LINK cable



Note

In the following instances, "⮌ REC ERROR" is displayed and you cannot record pictures.

– When recording on a tape in a poor recording state, for example, on a tape that has been repeatedly used for dubbing.
– When attempting to input images that are distorted due to poor radio wave reception when a TV tuner unit is in use.
– When the input signal is cut off.

Recording edited pictures from a tape as a moving picture – Digital program editing (on a "Memory Stick")

You can duplicate selected scenes (programmes) for editing onto a "Memory Stick."

Making the programme

Before operation

Insert a "Memory Stick" and a recorded tape into your camcorder.

(1) Set the POWER switch to VCR.

(2) Press MENU, then turn the SEL/PUSH EXEC dial to set VIDEO EDIT in ETC to MEMORY, then press the dial (p.223).

(3) Turn the SEL/PUSH EXEC dial to select IMAGESIZE and select the desired image size, then press the dial.

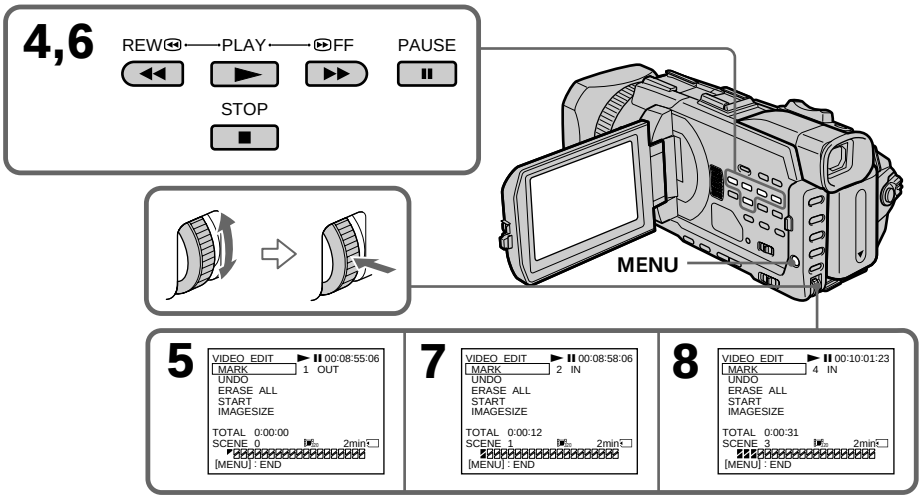
(4) Search for the beginning of the first scene you want to insert using the video operation buttons, then pause playback.
You can fine-adjust one frame at a time with EDITSEARCH.

(5) Press MARK on the Remote Commander, or turn the SEL/PUSH EXEC dial to select MARK, then press the dial.
The IN point of the first programme is set, and the top part of the programme mark changes to light blue.

(6) Search for the end of the first scene you want to insert using the video operation buttons, then pause playback.
You can fine-adjust one frame at a time with EDITSEARCH.

(7) Press MARK on the Remote Commander, or the SEL/PUSH EXEC dial.
The OUT point of the first programme is set, then the bottom part of the programme mark changes to light blue.

(8) Repeat steps 4 to 7, then set the programme.
When one programme is set, the programme mark changes to light blue.
You can set 20 programmes in maximum.



Erasing the programme you have set

Erase OUT first and then IN of the last programme.

(1) Turn the SEL/PUSH EXEC dial to select UNDO, then press the dial.
(2) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
The last set programme mark flashes, then the setting is cancelled.

To cancel erasing

Select RETURN with the SEL/PUSH EXEC dial in step 2.

Erasing all programmes

(1) Turn the SEL/PUSH EXEC dial to select ERASE ALL, then press the dial.
(2) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
All the programme marks flash, then the settings are cancelled.

To cancel erasing all programmes

Select RETURN with the SEL/PUSH EXEC dial in step 2.

To cancel a programme you have set

Press MENU.
The programme is stored in memory until the tape is ejected.

Notes

- You cannot dub the titles, display indicators, or the contents of cassette memory.
- You cannot operate recording during the digital program editing on a "Memory Stick."

If the tape has a blank portion

You cannot set IN or OUT on the portion

If there is a blank portion between IN and OUT on the tape

The total time may not be displayed correctly.

During making a programme

If you eject the cassette, the programme will be erased.

Performing the programme (Dubbing on a "Memory Stick")

(1) Turn the SEL/PUSH EXEC dial to select START, then press the dial.
(2) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
Search for the beginning of the first programme, then start dubbing.
The programme mark flashes.
The SEARCH indicator appears during search and the EDITING indicator appears during writing of data on your camcorder, and REC appears during dubbing on the screen.
The programme mark changes to light blue after dubbing is complete.
When the dubbing ends, your camcorder automatically stops.

To stop dubbing during editing

Press ■ using the video operation buttons.
The programme you made is recorded on a "Memory Stick" up to the place where you pressed ■.

To end the Digital program editing

Your camcorder stops when the dubbing ends. Then the display returns to VIDEO EDIT in the menu settings.
Press MENU to erase the menu display.

When the programme to operate the Digital program editing has not been made.
You cannot press START.

When the "Memory Stick" does not have enough space to record
"LOW MEMORY " appears on the screen. However, you can record pictures up to the time indicated.

When the "Memory Stick" has no space to record
"MEMORY FULL" appears on the screen.

When a "Memory Stick" is not set
"NO MEMORY STICK" appears on the screen.

When the write-protect switch on the "Memory Stick" is set to LOCK
"MEMORY STICK LOCKED" appears on the screen.

Copying still images from a tape – PHOTO SAVE

Using the search function, you can automatically capture only still images from tapes and record them on a "Memory Stick" in sequence.

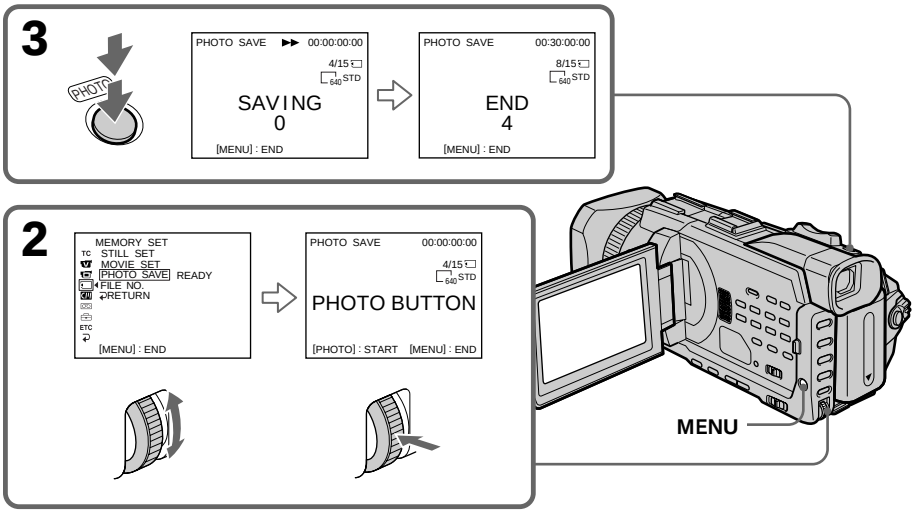
Before operation

- Insert a recorded tape into your camcorder and rewind the tape.
- Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to VCR.

(2) Press MENU, then turn the SEL/PUSH EXEC dial to select PHOTO SAVE in , then press the dial (p. 218).
PHOTO BUTTON appears on the screen.

(3) Press PHOTO deeper. The still image from the tape is recorded on the "Memory Stick." The number of still images copied is displayed. END is displayed when copying ends.



To stop copying

Press ■ using the video operation buttons or press MENU.

When the "Memory Stick" becomes full

"MEMORY FULL" appears on the screen, and copying stops. Insert another "Memory Stick" and repeat the procedure from step 2.

Image size of still images
Image size is automatically set to 640 × 480.

When the access lamp is lit or flashing
Do not shake or knock your camcorder. As well do not turn the power off, eject the "Memory Stick." Otherwise, image data may become damaged.

If the write-protect switch on the "Memory Stick" is set to LOCK
"NOT READY" appears when you select the item in the menu settings.

When you change the "Memory Stick" during copying
Your camcorder resumes copying from the last image recorded on the previous "Memory Stick."

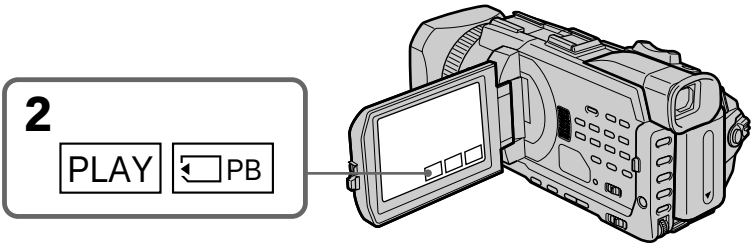
Viewing still images – Memory photo playback

You can play back still images recorded on a "Memory Stick." You can also play back six images including moving pictures in order at a time by selecting the index screen. You can also use the Remote Commander for this operation.

Before operation

Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press PLAY or PB. The last recorded image is displayed.
(3) Press –/+ on your camcorder to select the desired still image.
–: To see the previous image
+: To see the next image



To stop memory photo playback

Press CAM, VCR on your camcorder or MEMORY PLAY button on the Remote Commander.

You may not be able to play back images with your camcorder:
– when playing back image data modified on your computer.
– when playing back image data shot with other equipment.

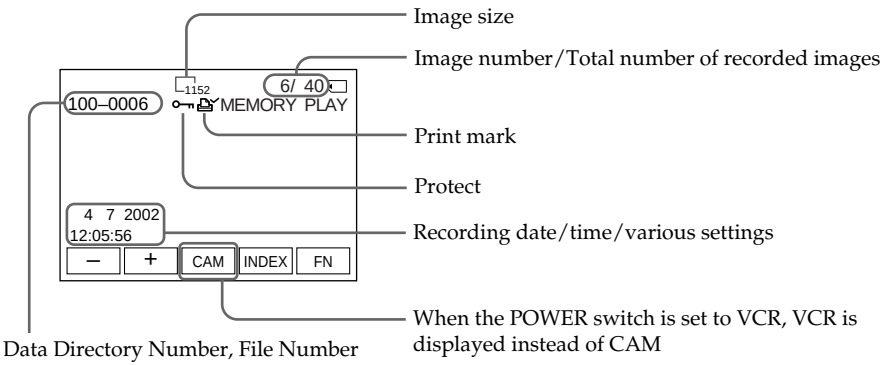
Notes on the file name
- The directory number may not be displayed and only the file name may be displayed if the structure of the directory does not conform to the DCF standard.
- "DIRECTORY ERROR" may appear on screen if the structure of the directory does not conform to the DCF standard. While this message appears, you can play back images but cannot record them on the "Memory Stick."
- The file name flashes on the screen if the file is corrupted or the file is unreadable.

To play back recorded images on a TV screen
- Before operation, connect your camcorder to the TV with the A/V connecting cable supplied with your camcorder.
- When operating memory photo playback on a TV or on the LCD screen, image quality may appear to have deteriorated. This is not a malfunction. The image data is as good as ever.
- Turn the audio volume of the TV down before operation, or noise (howling) may be output from the TV speakers.

Still images
You can select still images also with –/+ on PAGE1/PAGE2/PAGE3.

When no still image is recorded on the "Memory Stick"
When you press MEMORY PLAY on the Remote Commander, "NO FILE" appears.

Screen indicators during still image playback



Recording data
You can view recording data (date/time or various settings when recorded) when you press DATA CODE on PAGE2. You can also use the Remote Commander for this operation (p. 43).

To make screen indicators disappear
Press DISPLAY/TOUCH PANEL.

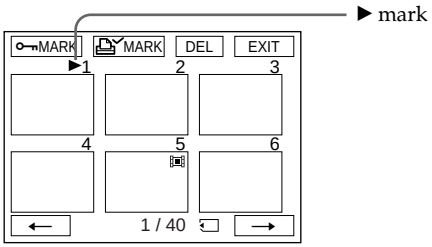
Playing back six recorded images at a time (index screen)

You can play back six recorded images at a time. This function is especially useful when searching for a particular image.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press INDEX to display the index screen.

A red ▶ mark appears above the image that is displayed before changing to the index screen mode.
← : To display the previous six images
→ : To display the following six images



To return to FN
Press EXIT.

To return to the normal playback screen (single screen)
Press the image you want to display.

Note
When displaying the index screen, the number appears above each image. This indicates the order in which images are recorded on the "Memory Stick." These numbers are different from the data file names.

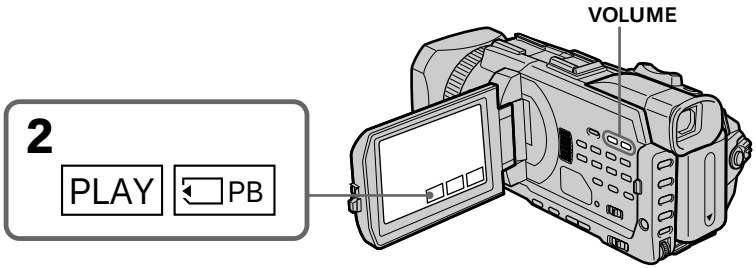
Image data modified on your computer or shot with other equipment
These files are sometimes not displayed on the index screen.

Viewing moving pictures – MPEG movie playback

You can play back moving pictures recorded on a "Memory Stick." You can also play back six images including still images in order at a time by selecting the index screen.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press PLAY or PB. The last recorded image is displayed.
(3) Press +/– to select the desired moving pictures.
– : To see the previous picture
+ : To see the next picture
(4) Press MPEG ► II to start playback.
(5) To adjust the volume, press either of the two buttons on VOLUME.
– : To turn down
+ : To turn up
When you close the LCD panel, sound is muted.



To stop MPEG movie playback

Press MPEG ► II.

Note

You may not be able to play back images with your camcorder:
– When playing back image data modified on your computer.
– When playing back image data shot with other equipment.

To play back recorded images on a TV screen

- Before operation connect your camcorder to the TV with the A/V connecting cable supplied with your camcorder.
- Turn the audio volume of the TV down before operation, or noise (howling) may be output from the TV speakers.

Moving pictures

You can select moving pictures also with –/+ on PAGE1/PAGE2/PAGE3.

When no image is recorded on the "Memory Stick"

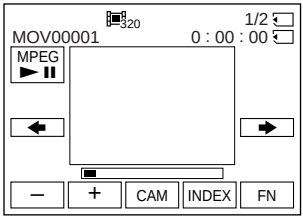
When you press MEMORY PLAY on the Remote Commander, the message "NO FILE" appears.

Playing back a moving picture from the desired part

The moving picture recorded on a "Memory Stick" is divided into 23 parts.
You can select every each one point and play back pictures.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press PLAY or PB. The last recorded image is displayed.
(3) Press –/+ to select the desired moving pictures.
– : To see the previous picture
+ : To see the next picture
(4) Press ⬅/➡ to select the point where you want to play back.
⬅ :To see previous part
➡ :To see next part



(5) Press MPEG ► II to start playback.

To stop MPEG movie playback

Press MPEG ► II

When recording time is too short
The moving picture may not be divided into 23 parts.

Screen indicators during moving picture playback

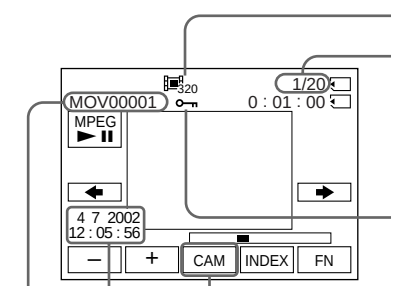


Image size

Picture number/Total number of recorded pictures

Protect

When the POWER switch is set to VCR, VCR is displayed instead of CAM.

Recording date/time. (Various settings are displayed as "– – –".)

Data directory number/File number

Recording date/time

To display the recording date/time, press DATA CODE on PAGE2. You can also use the Remote Commander for this operation. (p. 43)

To make screen indicator disappear

Press DISPLAY/TOUCH PANEL.

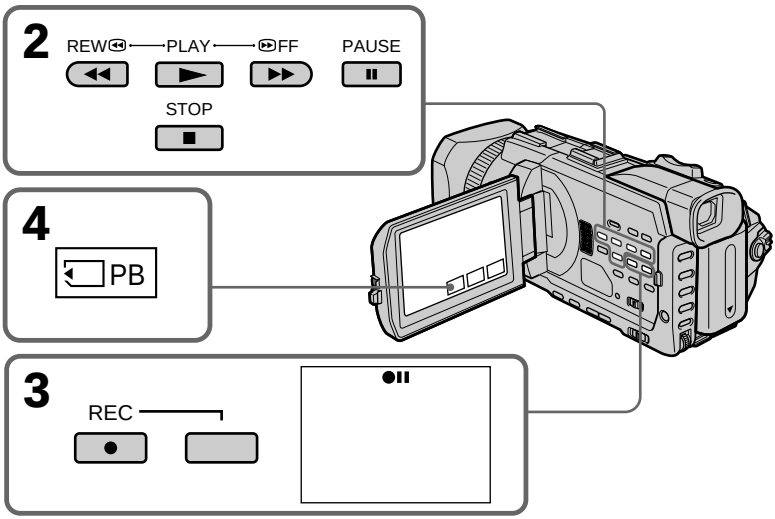
Copying images recorded on a “Memory Stick” to a tape

You can copy images recorded on a “Memory Stick” and record them to a tape.

Before operation

Insert a “Memory Stick” and a tape for recording into your camcorder.

(1) Set the POWER switch to VCR.
(2) Using the video control buttons, search a point where you want to record the desired images. Set the tape to playback pause.
(3) Press ● REC and the button on its right simultaneously on your camcorder. The tape is set to the recording pause.
(4) Press PB. The last recorded image is displayed.
(5) Press –/+ to select the desired image.
– : To see the previous image
+ : To see the next image
(6) Press ❚❚ to start recording and press ❚❚ again to stop.
● appears on the screen during recording.
(7) If you have more to copy, repeat steps 5 and 6.



To stop copying in the middle

Press ■.

During copying
You cannot operate the following functions:
– MEMORY PLAY
– MEMORY INDEX
– MEMORY DELETE
– MEMORY +/–

Note on the index screen
You cannot record the index screen.

If you press EDITSEARCH during pause
Memory playback stops.

Image data modified on your computers or shot with other equipment
You may not be able to copy modified images with your camcorder.

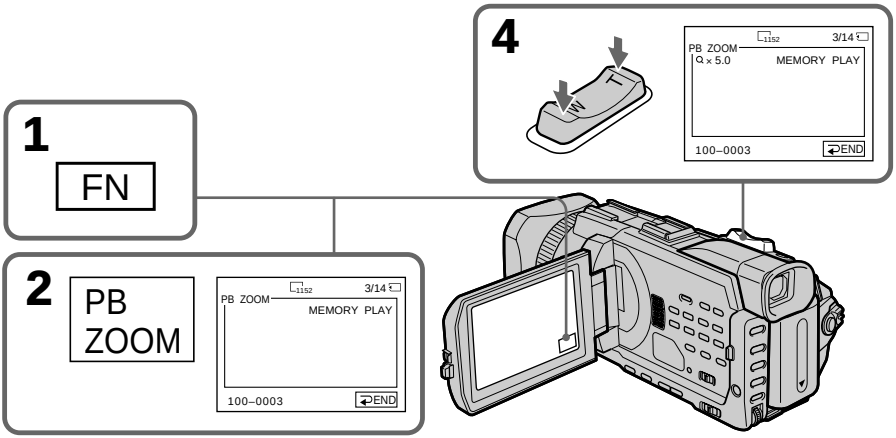
When copying movies
After step 6, press MPEG ▶II and play back the image.

Enlarging still images recorded on a "Memory Stick" – Memory PB ZOOM

You can enlarge still images recorded on a "Memory Stick." You can select and view a desired part from the enlarged still image. Also, you can copy the desired part of the enlarged still image to tapes or a "Memory Stick".

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY. Press FN to display PAGE1 during the memory playback. When you set the POWER switch to VCR, press FN and select PAGE2 during the memory playback.
(2) Press PB ZOOM. PB ZOOM screen appears.
(3) Press the area that you want to enlarge in the frame on the PB ZOOM screen. The area you pressed moves to the centre of the screen, and the playback image is enlarged approximately at twice the size. If you press the other area, the area moves to the centre of the screen.
(4) Adjust the zoom ratio by the power zoom lever.
You can enlarge the image from approximately 1.1 times up to five times its size.
W : Decreases the zoom ratio.
T : Increases the zoom ratio.



To cancel PB ZOOM
Press ⮌ END.

The PB ZOOM is cancelled when executing the following operations:
– MENU
– MEMORY PLAY*
– MEMORY INDEX*
– MEMORY +/–*
* When these functions are selected by the Remote Commander.

Moving pictures recorded on a "Memory Stick"
The PB ZOOM does not work.

To record the still image processed by Memory PB ZOOM on a "Memory Stick"
Press PHOTO to record the still image processed by PB ZOOM. (Images are recorded at 640 × 480 size.)

In the PB ZOOM mode
If you press DISPLAY/TOUCH PANEL button, the frame on the PB ZOOM screen disappears. You cannot move the part you pressed to the centre of the screen.

Edge of the enlarged image
The edge of the enlarged image cannot be displayed at the centre of the screen.

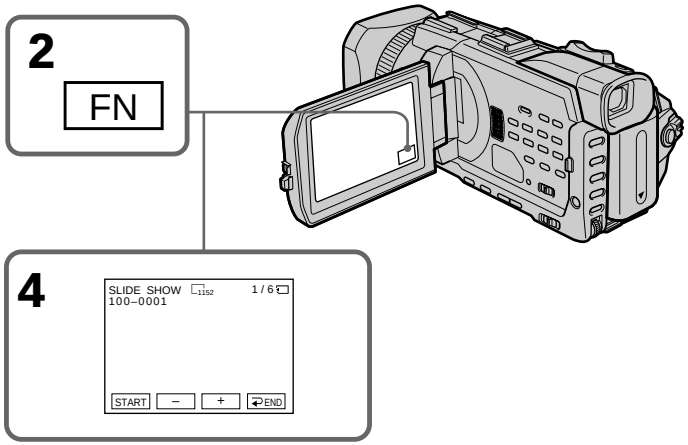
To record an image processed on PB ZOOM on tapes
Follow the procedure on page 178 and execute the PB ZOOM after step 5.

Playing back images in a continuous loop – SLIDE SHOW

You can automatically play back images in sequence. This function is useful especially when checking recorded images or during a presentation.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press FN and select PAGE3.
(3) Press SLIDE SHOW.
(4) Press START. Your camcorder plays back the images recorded on the "Memory Stick" in sequence.



To stop the slide show
Press ⮌ END.

To pause during a slide show
Press PAUSE.

To return to FN
Press ⮌ END to return to PAGE3, then press EXIT.

To start the slide show from a particular image
Select the desired image using –/+ buttons before step 4.

To view recorded images on TV
Before operation connect your camcorder to a TV with the A/V connecting cable supplied with your camcorder.

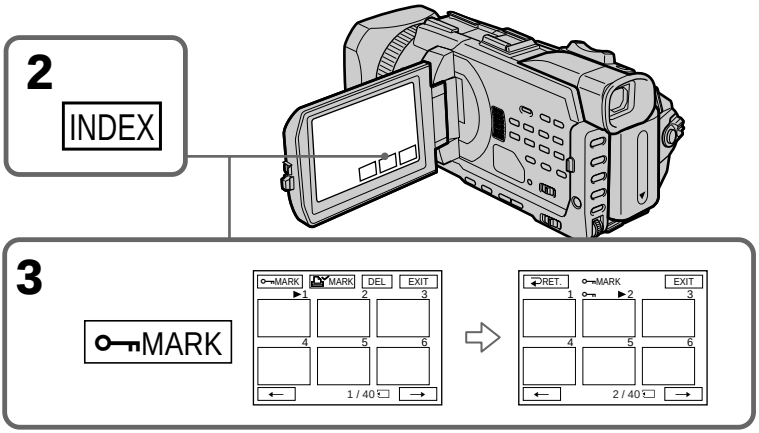
If you change the "Memory Stick" during operation
The slide show does not operate. If you change the "Memory Stick," be sure to follow the steps again from the beginning.

Preventing accidental erasure – Image protection

You can protect selected images to prevent accidental erasure of important images.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press INDEX on your camcorder to display the index.
(3) Press MARK, then press the image you want to protect. A "🔑" appears on the protected image.



To return to FN

Press EXIT.

To cancel image protection

Press the image you want to cancel image protection in step 3 again. The "🔑" disappears.

Note

Formatting erases all information on the "Memory Stick," including the protected image data. Before formatting a "Memory Stick," check its contents.

If the write-protect switch on the "Memory Stick" is set to LOCK

You cannot protect images.

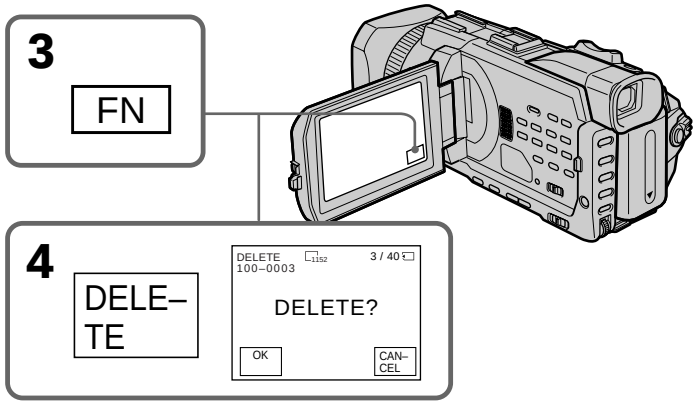
Deleting images – DELETE

You can delete images stored in a "Memory Stick." You can delete all images or only selected images.

Deleting selected images

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Play back the image you want to delete.
(3) Press FN to display PAGE1.
(4) Press DELETE. "DELETE?" appears on the LCD screen.
(5) Press OK. The selected image is deleted.



To return to FN
Press EXIT.

To cancel deleting an image
Press CANCEL in step 5.

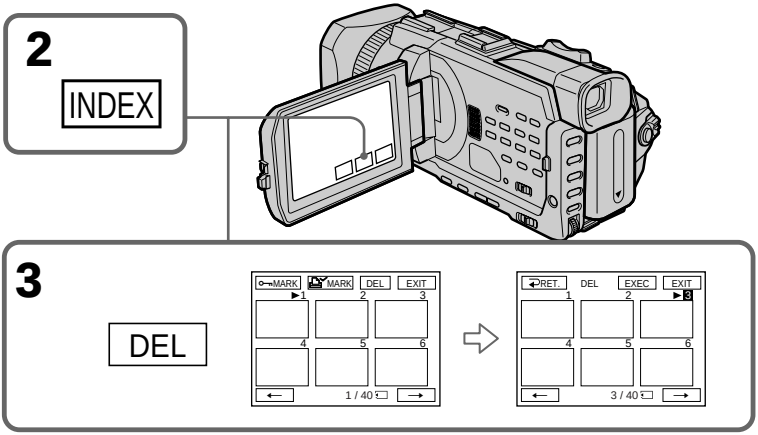
Notes
- To delete a protected image, first cancel image protection.
- Once you delete an image, you cannot restore it. Before deleting an image, carefully check the image.

If the write-protect switch on the "Memory Stick" is set to LOCK
You cannot delete images.

Deleting selected images on the index screen

Before operation
Insert a “Memory Stick” into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press INDEX to display the index screen.
(3) Press DEL. Then press the images you want to delete. The number of the selected image is highlighted.
(4) Press EXEC. “DELETE?” appears on the LCD screen.
(5) Press OK. The selected images are deleted.



To return to FN
Press EXIT.

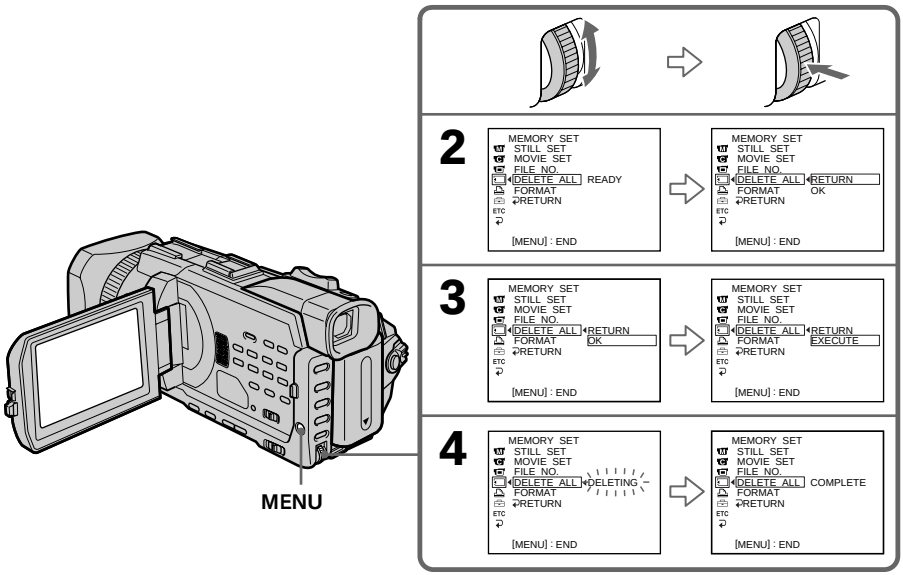
To cancel deleting an image
Press CANCEL in step 5.

Deleting all images

You can delete all unprotected images in the "Memory Stick."

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press MENU, then turn the SEL/PUSH EXEC dial to select DELETE ALL in , then press the dial. (p. 218)
(3) Turn the SEL/PUSH EXEC dial to select OK, then press the dial. OK changes to EXECUTE.
(4) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial. DELETING flashes on the screen. When all unprotected images are deleted, COMPLETE is displayed.



To cancel deleting all the images in the "Memory Stick"

Select RETURN with the SEL/PUSH EXEC dial in step 3 or 4.

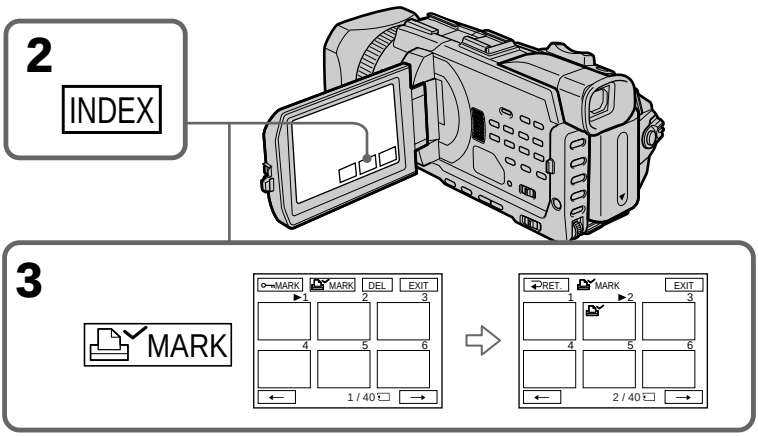
While DELETING appears
Do not turn the POWER switch or press any buttons.

Writing a print mark – PRINT MARK

You can specify a recorded still image to print out by writing a print mark. This function is useful for printing out still images later.
Your camcorder conforms to the DPOF (Digital Print Order Format) standard for specifying still images to print out.

Before operation
Insert a "Memory Stick" into your camcorder.

(1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press INDEX to display the index screen.
(3) Press MARK, then press the image for which you want to write a print mark. A " " appears on the selected image.



To return to FN

Press EXIT.

To cancel writing print marks

Press the image for which you want to cancel the print mark set in step 3 again. The disappears.

If the write-protect switch on the "Memory Stick" is set to LOCK
You cannot write print marks on still images.

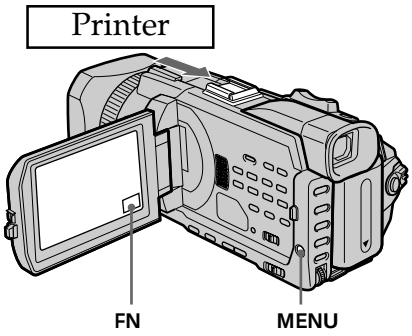
Moving pictures
You cannot write print marks on moving pictures.

Using the optional printer

You can use the optional printer on your camcorder to print images on print paper. For details, refer to the operating instructions of the printer.
There are various ways of printing still images. The following describes the setup for printing with the DATE/DAY & TIME information superimposed and the print setup required to select 9PIC PRINT.

Before operation

- Insert a recorded "Memory Stick" into your camcorder.
- Attach the optional printer to your camcorder as illustrated.



Inserting DATE/DAY & TIME

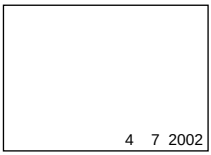
You can print the recorded DATE/DAY & TIME data on the print paper.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).

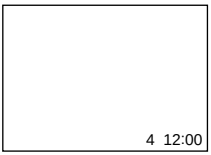
(2) Press MENU, then turn the SEL/PUSH EXEC dial to select DATE/TIME in 🖶, then press the dial. (p. 219)

(3) Turn the SEL/PUSH EXEC dial to select the desired mode.

DATE



DAY & TIME

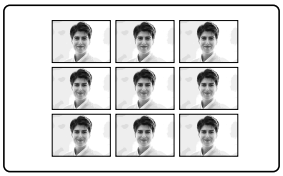


Selecting 9PIC PRINT

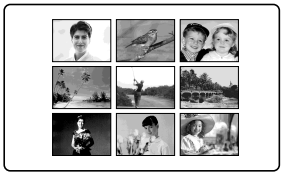
You can make 9 stickers on a single sheet when you print images recorded on a "Memory Stick" in 9PIC PRINT.

(1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the further side (unlock position).
(2) Press FN and select PAGE3.
(3) Press 9PIC PRINT.
(4) Press the desired mode.

SAME PICS



MULTI PICS or MARKED PICS*



* Nine still images with print marks are printed together.

Moving pictures recorded on a "Memory Stick"
You cannot print moving pictures. When there are no files other than moving pictures, "NO STILL IMAGE FILE" appears on the screen.

When the "Memory Stick" has no files
"NO FILE" appears on the screen.

When there are no files with a PRINT MARK
"NO PRINT MARK" appears on the screen.

Images processed by 9PIC PRINT
You cannot insert a DATE/TIME indicator.

Images recorded in the MULTI SCRN
You can print images recorded in the multi screen mode on sticker type print paper. However, each frame cannot be properly adjusted to the frames on the print paper.

Viewing images on your computer – Introduction

There are the following ways of connecting the camcorder to a computer in order to view images saved on the "Memory Stick" or recorded on the tape on your computer.

To view images on a computer which has a "Memory Stick" slot, first remove the "Memory Stick" from the camcorder and then insert it into the computer's "Memory Stick" slot.

	Camcorder Connection jack	Connection cable	Computer environment requirements
Tape stills and movies	USB jack	USB cable (supplied)	USB connector, editing software
	i.LINK (DV Interface)	i.LINK cable (optional)	DV connector, editing software
"Memory Stick" stills and movies	USB jack	USB cable (supplied)	USB connector, editing software

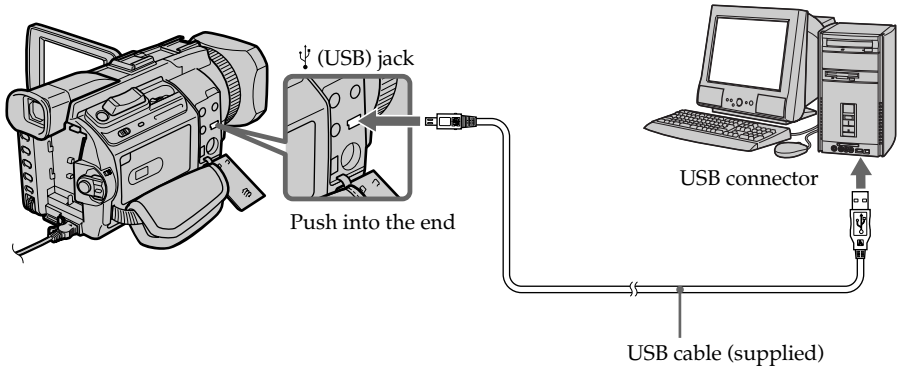
When connecting to a computer via the USB jack, complete installation of the USB driver before connecting the camcorder to the computer. If you connect the camcorder to the computer first, you will not be able to install the USB driver correctly.

For details about your computer's connectors and editing software, contact the computer manufacturer.

Viewing images recorded on a tape

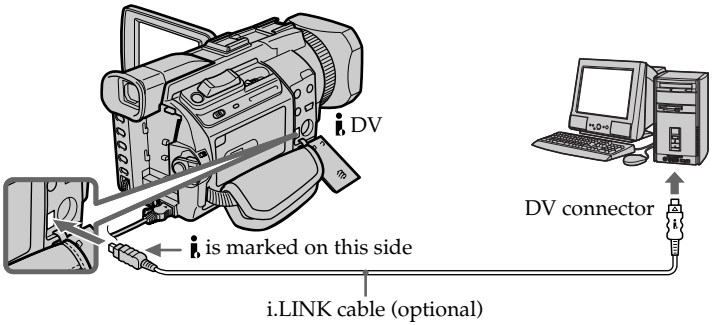
When connecting to a computer using the USB jack

For more information, see page 193.



When connecting to a computer using the i.LINK (DV interface)

Your computer must have a DV connector and editing software installed that can read video signals.

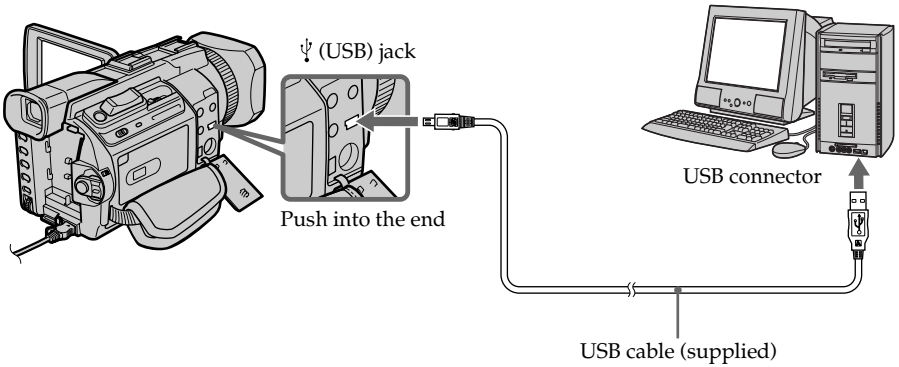


Viewing images recorded on a "Memory Stick"

When connecting to a computer using the USB jack

There are two methods of USB connection, NORMAL and PTP. The default setting is NORMAL. Here we explain how to use the camcorder with a standard USB connection (NORMAL).

See page 193 when using Windows and page 208 when using Macintosh.



You can also use a Memory Stick Reader/Writer (optional).

When connecting to a computer without a USB jack

Use an optional floppy disk adaptor for a Memory Stick or a PC card adaptor for a Memory Stick.

When purchasing an accessory, check its catalog beforehand for the recommended operating environment.

Notes on using your computer

"Memory Stick"

- "Memory Stick" operations on your camcorder cannot be assured if a "Memory Stick" formatted on your computer is used on your camcorder, or if the "Memory Stick" in your camcorder was formatted from your computer when the USB cable was connected.
- Do not compress the data on the "Memory Stick." Compressed files cannot be played back on your camcorder.

Software

- Depending on your application software, the file size may increase when you open a still image file.
- When you load an image modified using retouching software from your computer to your camcorder or when you directly modify the image on your camcorder, the image format will differ so a file error indicator may appear and you may be unable to open the file.

Communications with your computer

Communications between your camcorder and your computer may not recover after recovering from Suspend, Resume, or Sleep.

Connecting your camcorder to your computer using the USB cable – For Windows users

Complete installation of the USB driver before connecting the camcorder to the computer. If you connect the camcorder to the computer first, you will not be able to install the USB driver correctly.

When connecting to a computer using the USB cable

You must **install a USB driver** onto your computer in order to connect the camcorder to the computer's USB connector. The USB driver can be found on the CD-ROM supplied, along with the application software required for viewing images.
If you connect your camcorder and your computer using the USB cable, you can view pictures live from your camcorder and pictures recorded on a tape on your computer (USB Streaming function).
Furthermore, if you download pictures from your camcorder to your computer, you can process or edit them in image processing software and append them to e-mail.
You can view images recorded on the "Memory Stick" on your computer.

Recommended computer usage environment when connecting via USB cable and viewing tape images on the computer

OS:
Microsoft Windows 98SE, Windows Me, Windows 2000 Professional, Windows XP Home Edition or Windows XP Professional
Standard installation is required.
However, operation is not assured if the above environment is an upgraded OS.
You cannot hear sound if your computer is running Windows 98, but you can read still images.
CPU:
Pentium III 500 MHz or faster (800 MHz or faster recommended)
Application:
DirectX 8.0a or later
Sound system:
16 bit stereo sound card and speakers
Memory:
64 MB or more
Hard disk:
Available memory required for installation:
at least 200MB
Available hard disc memory recommended:
at least 1GB (depending on the size of the image files edited)
Display:
4 MB VRAM video card, Minimum 800 × 600 dot High colour (16 bit colour, 65,000 colours), Direct Draw display driver capability (At 800 × 600 dot or less, 256 colours and less, this product will not operate correctly.)
Others:
This product is compatible with DirectX technology, so it is necessary to install DirectX.

The USB connector must be provided as standard.

You cannot use this function in the Macintosh environment.

Recommended computer usage environment when connecting via USB cable and viewing "Memory Stick" images on the computer

OS:
Microsoft Windows 98, Windows 98SE, Windows Me, Windows 2000 Professional, Windows XP Home Edition or Windows XP Professional
Standard installation is required.
However, operation is not assured if the above environment is an upgraded OS.
CPU:
MMX Pentium 200 MHz or faster

The USB connector must be provided as standard.

Windows Media Player must be installed (to play back moving pictures).

Notes

- Operations are not guaranteed for the Windows environment if you connect two or more USB equipment to a single computer at the same time, or when using a hub.
- Some equipment may not operate depending on the type of USB equipment that is used simultaneously.
- Operations are not guaranteed for all the recommended computer environments mentioned above.
- Windows and Windows Media are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries.
- Pentium is trademark or registered trademark of Intel Corporation.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, "TM" and "®" are not mentioned in each case in this manual.

Installing the USB driver

Start the following operation without connecting the USB cable to your computer.
Connect the USB cable according to "Making the computer recognise the camcorder."

If you are using Windows 2000 Professional or Windows XP Home Edition/ Professional, log in with permission of Administrators.

(1) Turn on your computer and allow Windows to load.
(2) Insert the supplied CD-ROM into the CD-ROM drive of your computer. The application software starts up and the title screen appears.
(3) Move the cursor to "USB Driver" and click. This starts USB driver installation.

(4) Follow the on-screen messages to install the USB driver.
(5) Remove the CD-ROM and then restart the computer, in accordance with the instructions on the screen.

Note

If you connect the USB cable before USB driver installation is complete, the USB driver will not be properly registered. Carry out installation again in accordance with the steps on page 198.

Windows XP Home Edition/Professional users

If you go to "USBCONNECT" in the menu settings and select "PTP," you can copy "Memory Stick" images from the camcorder onto your computer without installing the USB driver. This is ideal for simply copying images from a camcorder onto a computer. Refer to page 221 for details.

Making the computer recognise the camcorder

Make sure that the USB driver has been installed.

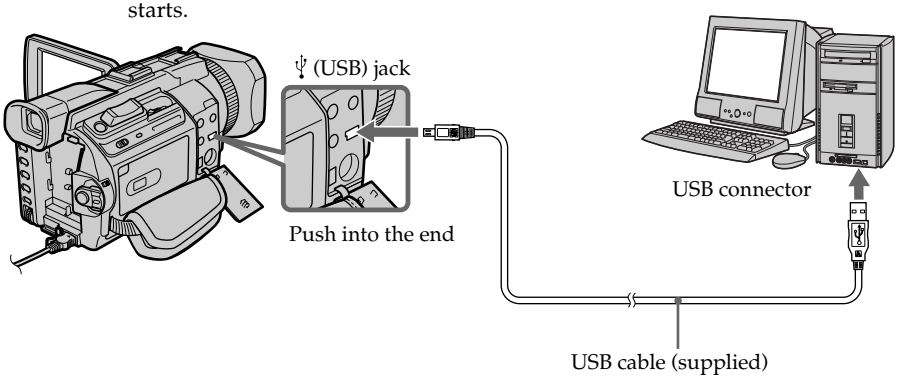
Viewing images recorded on a tape

Refer to page 197 for details on viewing “Memory Stick” images on your computer.

You need to install “PIXELA ImageMixer ” to view images recorded on a tape on your computer. Install it from the CD-ROM supplied with your camcorder.

To install and use this software in Windows 2000 Professional. You must be authorised as Power Users or Administrators. For Windows XP Home Edition/Professional, you must be authorised as Administrators.

(1) Turn on your computer and allow Windows to load.
If you are using your computer, close all running applications.
(2) Insert the supplied CD-ROM into the CD-ROM drive of your computer.
The application software starts up and the title screen appears. If the title screen does not appear, double-click “My Computer” and then “ImageMixer” (CD-ROM Drive). The application software screen appears after a while.
(3) Move the cursor to “PIXELA ImageMixer” and click.
The Install Wizard programme starts up and the “Select Settings Language” screen appears.
(4) Select the language for installation.
(5) Follow the on-screen messages.
The installation screen disappears when installation is complete.
(6) Click DirectX
Follow the on-screen messages to install DirectX.
Restart your computer when the installation is completed.
(7) Connect the AC power adaptor to your camcorder.
(8) Set the POWER switch to VCR.
(9) Select USB STREAM in to ON in the menu settings. (p. 221)
(10) With the CD-ROM inserted, connect the USB jacks of the camcorder and computer using the USB cable supplied with your camcorder.
Your computer recognises the camcorder, and the Add Hardware Wizard starts.



(11) Follow the on-screen messages so that the Add Hardware Wizard recognises that the USB drivers have been installed. The Add Hardware Wizard starts three times because three different USB drivers are installed. Be sure to allow the installation to complete without interrupting it.

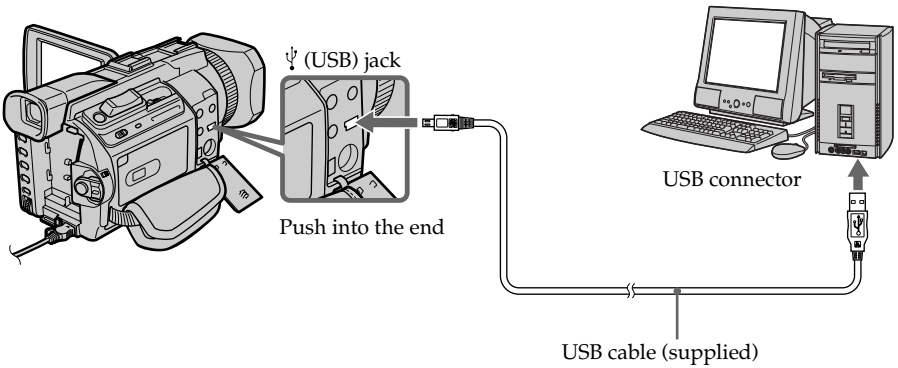
For Windows 2000 Professional, Windows XP Home Edition/Professional users

(12) After the "File Needed" screen appears.
Open "Browse..." → "My Computer" → "ImageMixer" → "Sonyhcb.sys", and click "OK."

Viewing images recorded on a "Memory Stick"

Set USBCONNECT in to NORMAL in the menu settings. (The default setting is set to NORMAL.)

(1) Insert a "Memory Stick" into your camcorder.
(2) Connect the AC power adaptor and set the POWER switch to MEMORY.
(3) Connect the ψ (USB) jack on your camcorder to the USB connector on your computer using the supplied USB cable.
USB MODE appears on the LCD screen of your camcorder. Your computer recognises the camcorder, and the Add Hardware Wizard starts.



(4) Follow the on-screen messages to make the Add Hardware Wizard recognise that the USB drivers have been installed. The Add Hardware Wizard starts two times because two different USB drivers are installed. Be sure to allow each installation to complete without interrupting it.

You cannot install the USB driver if a "Memory Stick" is not in your camcorder.
Be sure to insert a "Memory Stick" into your camcorder before installing the USB driver.

If you cannot install the USB driver

The USB driver has been registered incorrectly as your computer was connected to your camcorder before installation of the USB driver was completed. Perform the following procedure to correctly install the USB driver.

Viewing images recorded on a tape

Step 1: Uninstall the incorrect USB driver

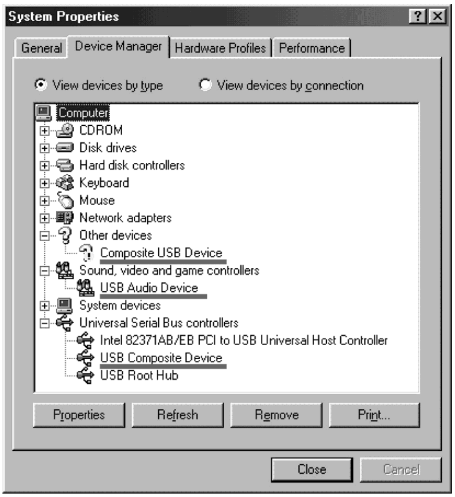
① Turn on your computer and allow Windows to load.
② Connect the AC power adaptor, and set the POWER switch to VCR.
③ Connect the USB connector on your computer to the ψ (USB) jack on your camcorder using the USB cable supplied with your camcorder.
④ Open your computer's "Device Manager."

Windows XP Home Edition/Professional:
Select "Start" → "Control Panel" → "System" → "Hardware," and click the "Device manager" button.
If there is no "System" inside "Pick a category" after clicking "Control Panel," click "Switch to classic view" instead.

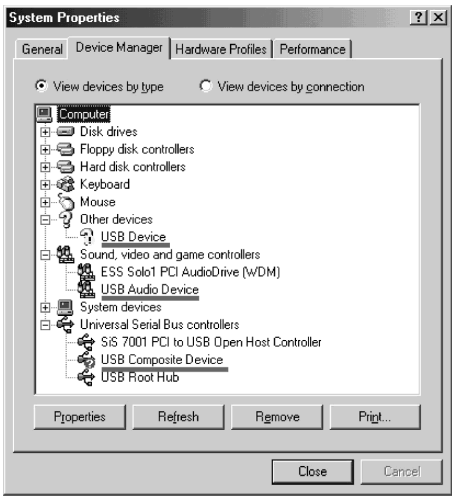
Windows 2000 Professional:
Select "My Computer" → "Control Panel" → "System" → "Hardware" tab, and click the "Device Manager" button.

Windows 98 SE/Windows Me:
Select "My Computer" → "Control Panel" → "System," and click "Device Manager."

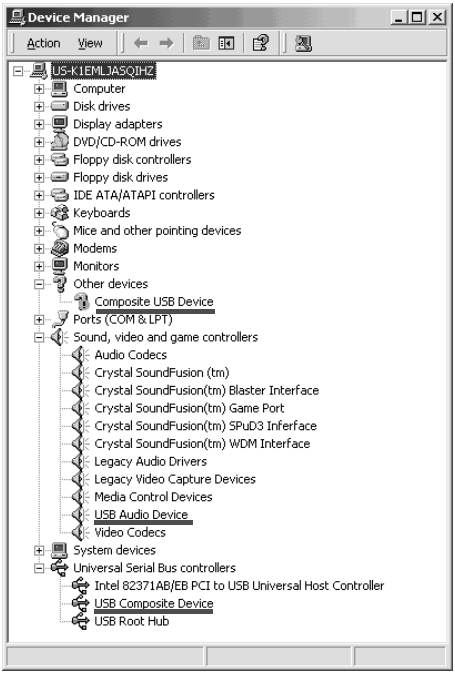
⑤ Select and delete the underlined devices below.



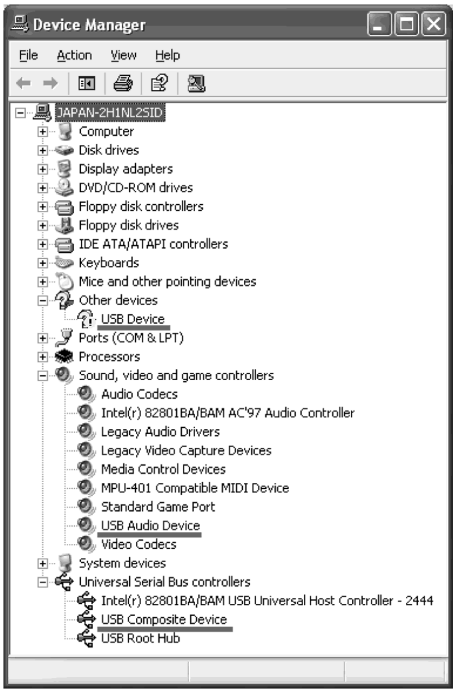
Windows 98SE



Windows Me



Windows 2000 Professional



Windows XP Home Edition/Professional

⑥ Turn the POWER switch to OFF (CHG) on your camcorder, and then disconnect the USB cable.
⑦ Restart your computer.

Step 2: Install the USB driver on the supplied CD-ROM
Perform the entire procedure described in "Installing the USB driver" on page 195.

Viewing images recorded on a "Memory Stick"

Step1: Uninstall the incorrect USB driver

① Turn on your computer and allow Windows to load.
② Insert a "Memory Stick" into your camcorder.
③ Connect the AC power adaptor, and set the POWER switch to MEMORY.
④ Connect the USB connector on your computer to the ψ (USB) jack on your camcorder using the USB cable supplied with your camcorder.
⑤ Open your computer's "Device Manager."
Windows 2000 Professional:
Select "My Computer" → "Control Panel" → "System" → "Hardware," and click the "Device Manager" button.
Other OS:
Select "My Computer" → "Control Panel" → "System," and click "Device Manager."
⑥ Select "Other devices."
Select the device prefixed with the "?" mark and delete.
Ex: (?)Sony Handycam
⑦ Turn the POWER switch to OFF (CHG) on your camcorder, and then disconnect the USB cable.
⑧ Restart your computer.

Step2: Install the USB driver on the supplied CD-ROM

Perform the entire procedure described in "Installing the USB driver" on page 195.

Viewing images recorded on a tape on your computer – For Windows users

Capturing images with “PIXELA ImageMixer Ver.1.0 for Sony”

You need to install the USB driver and “PIXELA ImageMixer” to view taped images on your computer (p. 195).

To install and use the software in Windows 2000 Professional, you must be authorised as Power Users or Administrators. For Windows XP Home Edition/Professional, you must be authorised as Administrators.

Viewing images recorded on a tape

(1) Turn on your computer and allow Windows to load.

(2) Connect the AC power adaptor, and insert a tape into your camcorder.

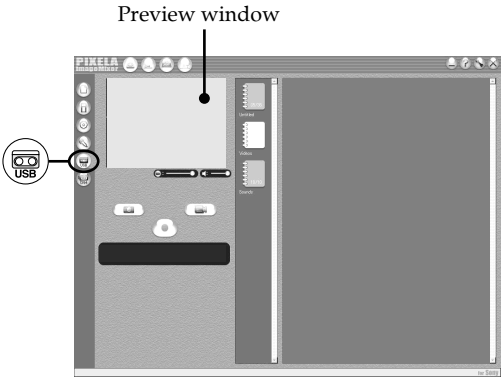
(3) Set the POWER switch to VCR.
Select USB STREAM in to ON in the menu settings. (p. 221)

(4) Select “Start” → “Programs” → “PIXELA” → “ImageMixer” → “PIXELA ImageMixer Ver.1.0 for Sony.”
The “PIXELA ImageMixer Ver.1.0 for Sony” startup screen appears on your computer. The title screen appears.

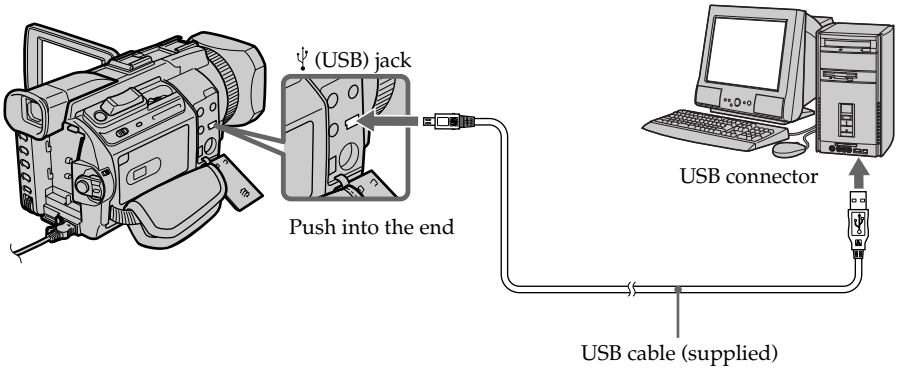
(5) Click on the screen.

(continued on the following page)

(6) Select (USB).



(7) Connect the ψ (USB) jack on your camcorder to the USB connector on your computer using the supplied USB cable.



(8) Press ► to start playback.
The picture from the tape appears on your computer.

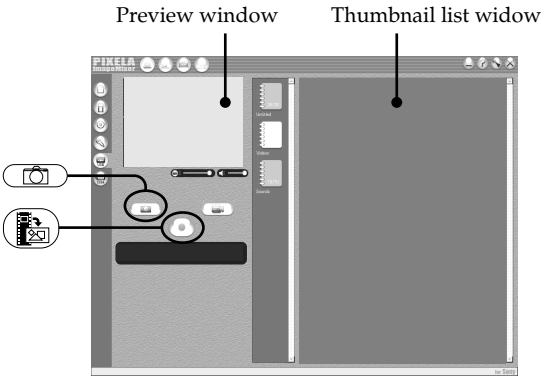
Viewing pictures live from your camcorder

(1) Follow the steps 1, 2 on page 201.

(2) Set the POWER switch to CAMERA.
Select USB STREAM in to ON in the menu settings. (p. 221)

(3) Follow the steps 4 to 7 on page 201, 202.
The picture from your camcorder appears on the preview window on your computer.

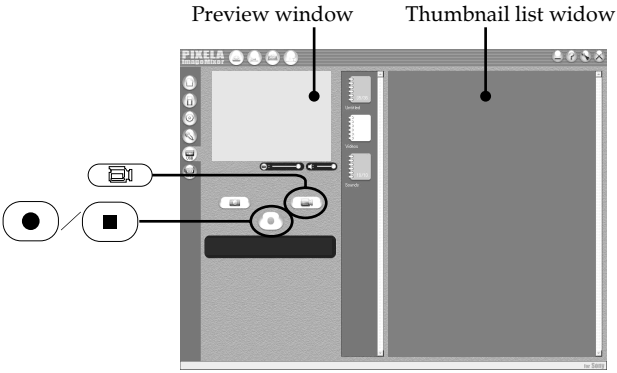
Capturing still images



(1) Select .

(2) Looking at the preview window, move the cursor to and press it at the point you want to capture.
The still image on the screen is captured.
Captured images are displayed in the thumbnail list window.

Capturing moving pictures



(1) Select .

(2) Look at the preview window and click on ● at the first scene of the movie you want to capture. ● changes to ■ .

(3) Look at the preview window and click on ■ at the last scene you want to capture. The captured images appear in the thumbnail list window.

Notes

- The following may occur while using your camcorder, and are not due to any malfunction.
  – The image shakes up and down.
  – Some images are not displayed correctly due to noise, etc.
  – Images of different colour systems to that of the camcorder are not displayed correctly.
- When your camcorder is in the standby mode with a cassette inserted, it turns off automatically after five minutes.
- Indicators in the camcorder LCD screen do not appear on images that are captured into your computer.

If image data cannot be transferred by the USB connection
The USB driver has been registered incorrectly as your computer was connected to your camcorder before installation of the USB driver was completed. Reinstall the USB driver following the procedure on page 198.

If any trouble occurs
Close all running applications, then restart your computer.

Carry out the following operations after quitting the application:
– Disconnect the USB cable.
– Change the POWER switch to the other position or set the POWER switch to OFF (CHG) on your camcorder.

Seeing the on-line help (operating instructions) of "PIXELA ImageMixer Ver.1.0 for Sony"

A "PIXELA ImageMixer Ver.1.0 for Sony" on-line help site is available where you can find the detailed operating method of "PIXELA ImageMixer Ver.1.0 for Sony."

(1) Click ⓘ located in the upper-right corner of the screen.
The ImageMixer's Manual screen appears.
(2) You can find the information you need from the list of contents.

To close on-line help
Click ☒ at the top right of the screen.

If you have any questions about "PIXELA ImageMixer Ver.1.0 for Sony"
"PIXELA ImageMixer Ver.1.0 for Sony" is a software product produced by PIXELA corporation. For more information, refer to the instruction manual of the CD-ROM supplied with your camcorder.

Notes on using your computer

Communications with your computer

Communications between your camcorder and your computer may not recover after recovering from Suspend, Resume, or Sleep.

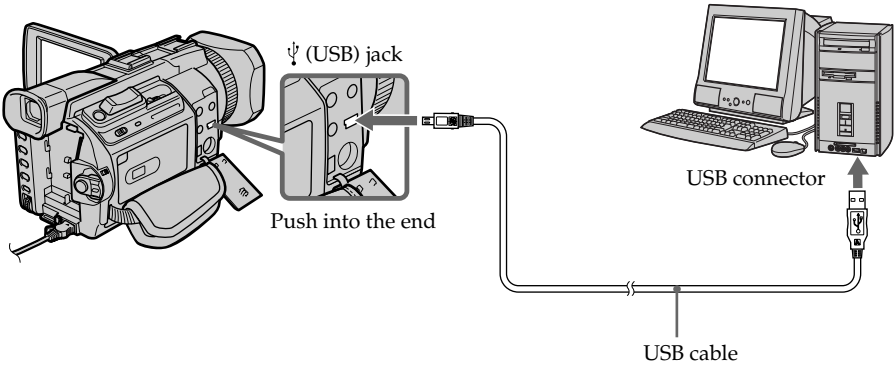
Viewing images recorded on a "Memory Stick" on your computer – For Windows users

Viewing images

Before operation

- You need to install the USB driver to view "Memory Stick" images on your computer (p. 195).
  An application such as Windows Media Player must be installed to play back moving pictures in Windows environment.
- Set USBCONNECT in [menu] to NORMAL in the menu settings. (The default setting is set to NORMAL.)

(1) Turn on your computer and allow Windows to load.
(2) Insert a "Memory Stick" into your camcorder, and connect the AC power adaptor to your camcorder.
(3) Set the POWER switch to MEMORY.
(4) Connect the ψ (USB) jack on your camcorder to the USB connector on your computer using the supplied USB cable.
USB MODE appears on the LCD screen of your camcorder.



(5) Open "My Computer" on Windows and double-click the newly recognised drive (Example: "Removable Disk (E:)").
The folders inside the "Memory Stick" are displayed.
(6) Select and double-click the desired image file from the folder.
For the detailed folder and file name, see "Image file storage destinations and image files." (p. 207)

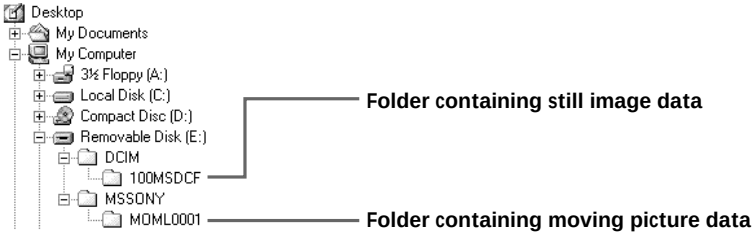
Desired file type	Double-click in this order
Still image	"Dcim" folder → "100msdcf" folder → Image file
Moving picture*	"Mssony" folder → "Moml0001" folder → Image file*

* Copying a file to the hard disk of your computer before viewing it is recommended. If you play back the file directly from the "Memory Stick," the image and sound may break off.

Image file storage destinations and image files

Image files recorded with your camcorder are grouped in folders by recording mode. The meanings of the file names are as follows. □□□□ stands for any number within the range from 0001 to 9999.

For Windows Me users (When your camcorder is recognised as the drive [E:])



Folder	File	Meaning
100MSDCF	DSC0□□□□.JPG	Still image file
MOML0001	MOV0□□□□.MPG	Moving picture file

Disconnect the USB cable and eject the "Memory Stick" or set the POWER switch to OFF (CHG)

– For Windows 2000 Professional/Me, Windows XP Home Edition/Professional users

To disconnect the USB cable, eject the "Memory Stick" or set the POWER switch to OFF (CHG) following the procedure below.

(1) Move the cursor to the "Unplug or Eject Hardware" icon on the Task Tray and click to cancel the applicable drive.
(2) After the "Safe to remove" message appears, disconnect the USB cable and eject the "Memory Stick" or set the POWER switch to OFF(CHG).

Connecting your camcorder to your computer using the USB cable – For Macintosh users

When connecting to a computer using the USB jack

Before connecting your camcorder to your computer, **install the USB driver** on the computer. The USB driver is packaged together with application software for viewing images on the CD-ROM supplied with your camcorder.

Recommended computer usage environment when connecting via USB cable and viewing "Memory Stick" images on your computer

Mac OS 8.5.1/8.6/9.0/9.1/9.2 or Mac OS X (v10.0/v10.1)
Standard installation is required.
However, note that the update to Mac OS 9.0/9.1 should be used for the following models.

- iMac with the Mac OS 8.6 standard installation and a slot loading type CD-ROM drive
- iBook or Power Mac G4 with the Mac OS 8.6 standard installation

The USB connector must be provided as standard.

QuickTime 3.0 or newer must be installed (to play back moving pictures).

Notes

- Operations are not guaranteed for the Macintosh environment if you connect two or more USB equipment to a single computer at the same time, or when using a hub.
- Some equipment may not operate depending on the type of USB equipment that is used simultaneously.
- Operations are not guaranteed for all the recommended computer environments mentioned above.
- Macintosh and Mac OS, QuickTime are trademarks of Apple Computer Inc.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, "TM" and "®" are not mentioned in each case in this manual.

Installing the USB driver

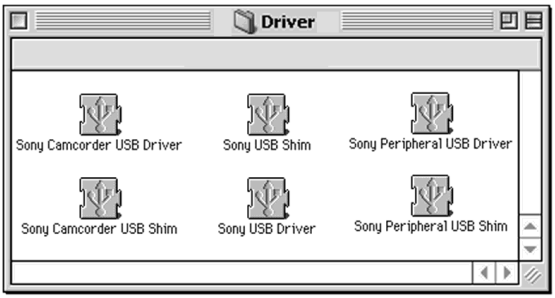
Do not connect the USB cable to your computer before installation of the USB driver is completed.

For Mac OS 8.5.1/8.6/9.0 users

(1) Turn on your computer and allow the Mac OS to load.

(2) Insert the supplied CD-ROM into the CD-ROM drive of your computer.
The application software screen appears.

(3) Click the "USB Driver" to open the folder containing the six files related to "Driver."



(4) Select the following two files, and drag and drop them into the System Folder.
- Sony Camcorder USB Driver
- Sony Camcorder USB Shim

(5) When the message appears, click "OK."
The USB driver is installed on your computer.

(6) Remove the CD-ROM from the computer.

(7) Restart your computer.

For Mac OS 9.1/9.2/Mac OS X (v10.0/v10.1)
The USB driver need not be installed. Your Mac automatically recognises the "Memory Stick" as a drive just by connecting your Mac using the USB cable.

Viewing images recorded on a "Memory Stick" on your computer – For Macintosh users

Viewing images

Before operation

You need to install the USB driver to view "Memory Stick" images on your computer (p. 209).
QuickTime 3.0 or newer must be installed to play back moving pictures.

(1) Turn on your computer and allow Mac OS to load.
(2) Insert a "Memory Stick" into your camcorder, and connect the AC power adaptor to your camcorder.
(3) Set the POWER switch to MEMORY.
(4) Connect the ψ (USB) jack on the camcorder to the USB connector on your computer using the supplied USB cable.
USB MODE appears on the LCD screen of your camcorder.
(5) Double-click the "Memory Stick" icon on the desktop.
The folders inside the "Memory Stick" are displayed.
(6) Select and double-click the desired image file from the folder.

Desired file type	Double-click in this order
Still image	"Dcim" folder → "100msdcf" folder → Image file
Moving picture*	"Mssony" folder → "Moml0001" folder → Image file*

* Copying a file to the hard disk of your computer before viewing it is recommended. If you play back the file directly from the "Memory Stick," the image and sound may break off.

Disconnect the USB cable and eject the "Memory Stick" or set the POWER switch to OFF(CHG)

Follow the procedure below.

(1) Close all running applications.
Make sure that the access lamp of your camcorder is not lit.
(2) Drag the "Memory Stick" icon into the "Trash." Alternatively, select the "Memory Stick" icon by clicking on it, and then select "Eject disk" from the "Special" menu at the top left of the screen.
(3) Disconnect the USB cable or eject the "Memory Stick" or set the POWER switch of your camcorder to OFF (CHG).

For Mac OS X (v10.0) users

Shutting down your computer, then disconnect the USB cable and eject the "Memory Stick" or set the POWER switch to OFF (CHG).

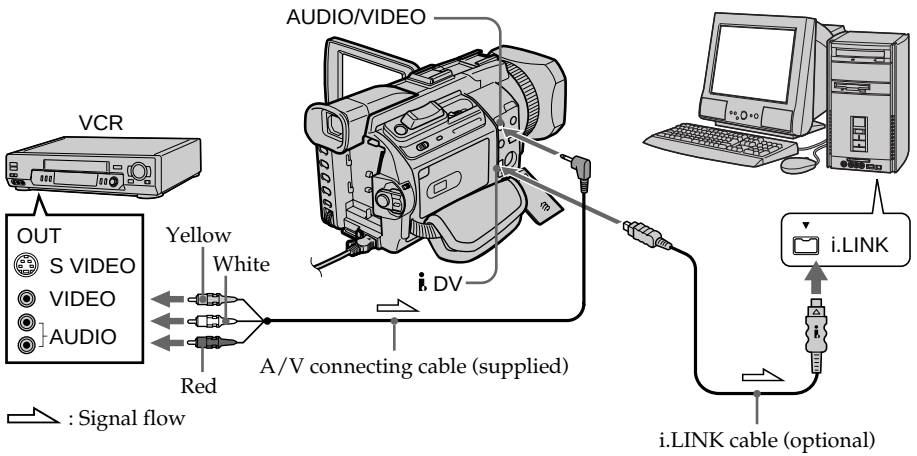
Capturing images from an analog video unit on your computer – Signal convert function

You can capture images and sound from an analog video unit connected to your computer which has the i.LINK jack connected to your camcorder.

Before operation

Set DISPLAY in ETC to LCD in the menu settings. (The default setting is LCD.)

(1) Set the POWER switch to VCR.
(2) Press MENU, then turn the SEL/PUSH EXEC dial to set A/V → DV OUT in to ON, then press the dial. (p. 216)
(3) Start playback on the analog video unit.
(4) Start procedures for capturing images and sound on your computer. The operation procedures depend on your computer and the software you are using.
For details on how to capture images, refer to the instruction manual of your computer and software you are using.



After capturing images and sound

Stop capturing procedures on your computer , and stop the playback on the analog video unit.

Notes

- You need to install software that supports the video signal exchange.
- Depending on the state of the video signals, the computer may not be able to output the images correctly when you convert video signals into digital video signals via your camcorder.
- You can capture images and sound with an S video cable (optional) instead of the A/V connecting cable (supplied).

If your computer has a USB connector

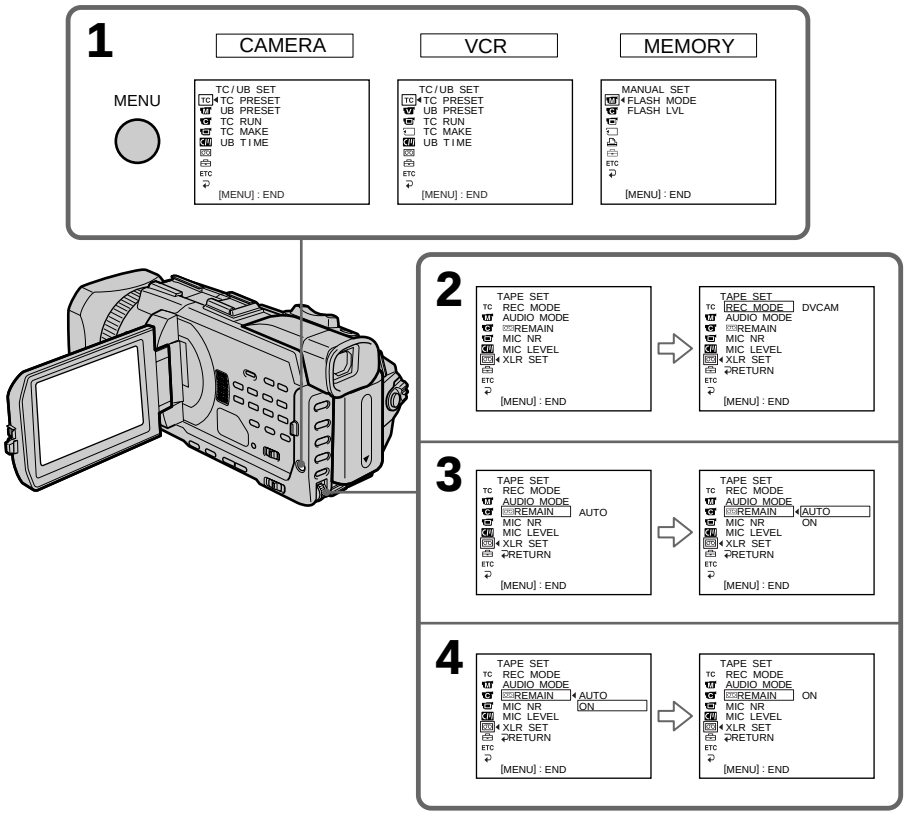
You can connect using a USB cable, but images may not be transferred smoothly.

Changing the default settings with the menu

To change the mode settings in the menu settings, select the menu items with the SEL/PUSH EXEC dial. The default settings can be partially changed. First, select the icon, then the menu item and then the mode.

(1) Set the POWER switch to CAMERA, VCR or MEMORY, then press MENU.
(2) Turn the SEL/PUSH EXEC dial to select the desired icon, then press the dial to set.
(3) Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial to set.
(4) Turn the SEL/PUSH EXEC dial to select the desired mode, then press the dial to set.
(5) If you want to change other items, select ↩ RETURN and press the dial, then repeat steps 2 to 4.

For details, see "Selecting the mode setting of each item" (p. 213).



To make the menu display disappear

Press MENU.

Menu items are displayed as the following icons:

- TC TC/UB SET
- M MANUAL SET
- C CAMERA SET
- V VCR SET
- LCD/VF SET
- MEMORY SET
- PRINT SET
- CM CM SET
- TAPE SET
- SETUP MENU
- ETC OTHERS

Selecting the mode setting of each item

● is the default setting.

Menu items differ depending on the position of the POWER switch. The screen shows only the items you can operate at the moment.

Icon/item	Mode	Meaning	POWER switch
TC TC/UB SET			
TC PRESET	–	Presets/resets the time code (p. 121).	VCR CAMERA
UB PRESET	–	Presets/resets user bits (p. 124).	VCR CAMERA
TC RUN	●REC RUN	Time code value advances only while recording. When making the time code continuous at back space editing, select this setting.	VCR CAMERA
	FREE RUN	Time code advances freely regardless of the camcorder's current operation mode. When adjusting the discrepancy between time code value and real time.	
TC MAKE	●REGEN	Makes the time code continuous at back space editing. Regardless of the TC RUN setting, the running mode is automatically set to REC RUN.	VCR CAMERA
	PRESET	Does not make the time code continuous at back space editing.	
UB TIME	●OFF	Does not set user bits to the real time clock.	VCR CAMERA
	ON	Sets user bits to the real time clock.	

(continued on the following page)

Icon/item	Mode	Meaning	POWER switch
M MANUAL SET			
FLASH MODE	● ON	Makes the flash (optional) fire regardless of the surrounding brightness.	CAMERA MEMORY
	AUTO	Makes the flash (optional) fire automatically depending on the surrounding brightness.	
	AUTO 👁	Makes the flash (optional) fire before recording to reduce red-eye.	
FLASH LVL	HIGH	Makes the flash (optional) level higher than normal.	CAMERA MEMORY
	● NORMAL	Normal setting	
	LOW	Makes the flash (optional) level lower than normal.	
AUTO SHTR	● ON	To automatically activate the electronic shutter when shooting in bright conditions	CAMERA
	OFF	To not automatically activate the electronic shutter even when shooting in bright conditions	

Note on FLASH MODE and FLASH LVL
These items can be set only when the optional flash is attached.

Note on FLASH LVL
You cannot adjust FLASH LVL if the external flash (optional) is not compatible with the flash level.

Icon/item	Mode	Meaning	POWER switch
CAMERA SET			
D ZOOM	● OFF	To deactivate the digital zoom. Up to 12× zoom is performed.	CAMERA
	24×	To activate the digital zoom. More than 12× to 24× zoom is performed digitally (p. 33)	
	48×	To activate the digital zoom. More than 12× to 48× zoom is performed digitally	
PHOTO REC	● MEMORY	To record still images on a "Memory Stick" when you press PHOTO in the tape recording or recording standby (p. 48)	CAMERA
	TAPE	To record still images on a tape when you press PHOTO in the tape recording or recording standby (p. 51)	
16:9WIDE	● OFF	——	CAMERA
	ON	To record a 16:9 wide picture (p. 53)	
STEADYSHOT	● ON	To compensate for camera-shake	CAMERA MEMORY
	OFF	To cancel the SteadyShot. Natural pictures are produced when shooting a stationary object with a tripod.	
FRAME REC	● OFF	To deactivate Frame recording	CAMERA
	ON	To activate Frame recording (p. 84)	
INT. REC	ON	To activate interval recording (p. 82)	CAMERA
	● OFF	To deactivate interval recording	
	SET	To set the INTERVAL and REC TIME for interval recording	
HOLOGRAM F	● AUTO	The HOLOGRAM AF emits when focusing on subjects is difficult in dark places (p. 148)	MEMORY
	OFF	The HOLOGRAM AF does not emit.	

Notes on the SteadyShot

- The SteadyShot will not correct excessive camera-shake.
- Attachment of a conversion lens (optional) may influence the SteadyShot.

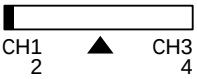
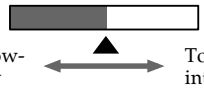
If you cancel the SteadyShot

The SteadyShot off indicator appears. Your camcorder prevents excessive compensation for camera-shake.

Note on HOLOGRAM F

HOLOGRAM F can be set only when the optional flash is attached.

(continued on the following page)

Icon/item	Mode	Meaning	POWER switch
VCR SET			
CH SELECT	● CH1, CH2	To play back the CHs 1/2 audios from each channel. However, if you play back the audios via the camcorder's speaker, the audios are mixed.	VCR
	CH1	To play back the CH1 audio from both channels 1/2	
	CH2	To play back the CH2 audio from both channels 1/2	
AUDIO MIX	——	To adjust the balance between the channels 1/2 (CH1/2) and channel 3/4 (CH3/4) (p. 120) 	VCR
A/V→DV OUT	● OFF	To output digital images and sound in analog format using your camcorder	VCR
	ON	To output analog images and sound in digital format using your camcorder (p. 211)	
NTSC PB	● ON PAL TV	To play back a tape recorded in the NTSC colour system on a PAL system TV	VCR
	NTSC 4.43	To play back a tape recorded in the NTSC colour system on a TV with the NTSC 4.43 mode	
LCD/VF SET			
LCD COLOUR	——	To adjust the colour on the LCD screen, turn the SEL/PUSH EXEC dial 	VCR CAMERA MEMORY
VF B.L.	● BRT NORMAL	To set the brightness on the viewfinder screen to normal	VCR CAMERA MEMORY
	BRIGHT	To brighten the viewfinder screen	
GUIDEFRAME	● OFF	Does not display the guide frame.	CAMERA MEMORY
	ON	Displays the guide frame (p. 63).	

Note on NTSC PB

When you play back a tape on a Multi System TV, select the best mode while viewing the picture on the TV.

Notes on VF B.L.

- When you select BRIGHT, battery life is reduced by about 10 percent during recording.
- When you use power supplies other than the battery pack, BRIGHT is automatically selected.

Even if you adjust LCD COLOUR and/or VF B.L.

The recorded picture will not be affected.

Icon/item	Mode	Meaning	POWER switch
MEMORY SET			
STILL SET			
BURST	● OFF	To not record continuously	MEMORY
	NORMAL	To record from four to 13 images continuously (p. 146)	
	EXP BRKTG	To record three images continuously with different exposure	
	MULTI SCRN	To record nine images continuously, display the images on a single page divided into nine boxes	
QUALITY	● SUPER FINE	To record still images in the finest image quality mode (p. 140)	VCR MEMORY
	FINE	To record still images in the fine image quality mode	
	STANDARD	To record still images in the standard image quality mode	
IMAGESIZE	● 1152 × 864	To record still images at 1152 × 864 size (p. 142)	MEMORY
	640 × 480	To record still images at 640 × 480 size	
MOVIE SET			
IMAGESIZE	● 320 × 240	To record moving pictures at 320 × 240 size (p. 142)	VCR MEMORY
	160 × 112	To record moving pictures at 160 × 112 size	
REMAIN	● AUTO	To display the remaining capacity of the "Memory Stick" in the following cases: • For five seconds after setting the POWER switch to MEMORY or VCR • For five seconds after setting the POWER switch to MEMORY or VCR and inserting a "Memory Stick" • When the remaining capacity of the "Memory Stick" is less than two minutes after setting the POWER switch to MEMORY • For five seconds from the start of moving picture recording • For five seconds after completing a moving picture recording	VCR MEMORY
	ON	To always display the remaining capacity of the "Memory Stick"	

When you select QUALITY

The number of the recording pictures is displayed.

(continued on the following page)

Icon/item	Mode	Meaning	POWER switch
MEMORY SET			
PHOTO SAVE	——	To copy still images on the tape onto the "Memory Stick" (p. 170)	VCR
FILE NO.	● SERIES	To assign numbers to file in sequence even if the "Memory Stick" is changed	VCR MEMORY
	RESET	To reset the file numbering each time the "Memory Stick" is changed	
DELETE ALL	——	To delete all unprotected images (p. 186)	MEMORY
FORMAT	● RETURN	To cancel formatting	MEMORY
	OK	To format an inserted "Memory Stick" Formatting erases all information on the "Memory Stick" Check the contents of the "Memory Stick" before formatting. 1. Select FORMAT. 2. Select OK with the SEL/PUSH EXEC dial, then press the dial. 3. After EXECUTE appears, press SEL/PUSH EXEC dial. FORMATTING flashes during formatting. COMPLETE appears when formatting is finished.	

Notes on formatting

- Do not do any of the following while FORMATTING is displayed:
  – Switch the POWER switch.
  – Operate buttons.
  – Eject the "Memory Stick."
- The supplied or optional "Memory Stick" has been formatted at factory. Formatting the "Memory Stick" on your camcorder is not required.
- You cannot format the "Memory Stick" if the write-protect switch on the "Memory Stick" is set to LOCK.
- Format the "Memory Stick" when "FORMAT ERROR" is displayed.
- Formatting erases protected image data on the "Memory Stick."

Icon/item	Mode	Meaning	POWER switch
PRINT SET			
DATE/TIME	● OFF	To make prints without the recording date and time	MEMORY
	DATE	To make prints with the recording date (p. 188)	
	DAY&TIME	To make prints with the recording date and time	
CM SET			
TITLE	——	To superimpose a title or make your own title (p. 126, 129)	VCR CAMERA
TITLEERASE	——	To erase the title you have superimposed (p. 128)	VCR CAMERA
TITLE DSPL	● ON	To display the title you have superimposed	VCR
	OFF	To not display the title	
CM SEARCH	● ON	To search using cassette memory (p. 87, 89, 90, 92)	VCR
	OFF	To search without using cassette memory	
TAPE TITLE	——	To label a cassette (p. 131)	VCR CAMERA
ITEM ERASE	——	To erase each item's data in cassette memory (p. 133)	VCR CAMERA
ERASE ALL	——	To erase all the data in cassette memory (p. 134)	VCR CAMERA

Note on PRINT SET

DATE/TIME is displayed only when an external printer (optional) is connected to the intelligent accessory shoe.

(continued on the following page)

Icon/item	Mode	Meaning	POWER switch
TAPE SET			
REC MODE	● DVCAM	To record in the DVCAM format	VCR CAMERA
	DV SP	To record in the DV format (SP mode)	
AUDIO MODE	● FS32K	To record in Fs32K (12-bit) mode (4-channel sounds)	VCR CAMERA
	FS48K	To record in Fs48K (16-bit) mode (2-channel sounds with high quality)	
REMAIN	● AUTO	To display the remaining tape indicator: • For about eight seconds after a cassette is inserted and your camcorder calculates the remaining amount of tape • For about eight seconds after ► or DISPLAY/TOUCH PANEL is pressed	VCR CAMERA
	ON	To always display the remaining tape indicator	
MIC NR	● ON	To reduce the drum noise via the microphone	VCR
	OFF	To deactivate the function above (p. 31)	CAMERA
MIC LEVEL	● AUTO	Adjusts audio recording level of the built-in microphone automatically.	VCR CAMERA
	MANUAL	Adjusts audio recording level of the built-in microphone manually (p. 80).	
XLR SET	——	Adjusts the audio recording level of the XLR adaptor manually (p. 78).	VCR CAMERA

Note on REC MODE

You cannot dub any audio sound on a tape recorded in the DV format (SP mode), even if you recorded it in Fs32K (12-bit) mode.

Notes on AUDIO MODE

- You cannot dub audio sound on a tape recorded in the Fs48K (16-bit) mode.
- When playing back a tape recorded in the Fs48K (16-bit) mode, you cannot adjust the balance in AUDIO MIX.

Note on MIC NR

You cannot set MIC NR when audio sound is input via the MIC jack.

Note on XLR SET

XLR SET can be set only when the supplied XLR adaptor is installed.

Icon/item	Mode	Meaning	POWER switch
SETUP MENU			
CLOCK SET	——	To set the date or time (p. 20)	CAMERA MEMORY
USB STREAM	● OFF	To deactivate the USB Streaming	VCR CAMERA
	ON	To activate the USB Streaming	
USBCONNECT	● NORMAL	To connect and recognise the “Memory Stick” drive	MEMORY
	PTP	To connect and only copy a “Memory Stick” image from your camcorder to a computer (only with Windows XP or Mac OS X) 1. Turn the SEL/PUSH EXEC dial to select “USBCONNECT” followed by “PTP”, then press the dial to set. 2. Insert the “Memory Stick” into the camcorder, and connect the camcorder to the computer using a USB cable. Copy Wizard will automatically start up.	
LTR SIZE	● NORMAL	To display selected menu items in normal size	VCR CAMERA MEMORY
	2×	To display selected menu items at twice the normal size	

(continued on the following page)

Icon/item	Mode	Meaning	POWER switch
ETC OTHERS			
DATA CODE*	● DATE/CAM	To display date, time and various settings during playback when pressing DATA CODE on the Remote Commander (p. 43)	VCR MEMORY
	DATE	To display date and time during playback when pressing DATA CODE on the Remote Commander	
WORLD TIME	——	To set the clock to the local time. Turn the SEL/PUSH EXEC dial to set a time difference. The clock changes by the time difference you set here. If you set the time difference to 0, the clock returns to the originally set time.	CAMERA MEMORY
BEEP	MELODY	To output the melody when you start/stop recording or when an unusual condition occurs on your camcorder	VCR CAMERA MEMORY
	● NORMAL	To output the beep instead of the melody	
	OFF	To cancel all sound including shutter sound	
COMMANDER	● ON	To activate the Remote Commander supplied with your camcorder	VCR CAMERA MEMORY
	OFF	To deactivate the Remote Commander to avoid remote control operation caused by other VCR's remote control	

* When using the Remote Commander

Icon/item	Mode	Meaning	POWER switch
ETC OTHERS			
DISPLAY	● LCD	To show the display on the LCD screen and in the viewfinder	VCR CAMERA MEMORY
	V-OUT/LCD	To show the display on a TV screen, LCD screen and in the viewfinder	
DATE REC	● OFF	To not superimpose the date and time on the picture	CAMERA
	ON	To superimpose the date and time on the picture (p. 85)	
REC LAMP	● ON	To light up the camera recording lamp at the front of your camcorder	CAMERA MEMORY
	OFF	To turn the camera recording lamp off so that the person is not aware of the recording	
VIDEO EDIT	● RETURN	To cancel video editing	VCR
	TAPE	To make programme and dub on the tape in the other VCR (p. 101)	
	MEMORY	To make programme and dub on a "Memory Stick" (p. 167)	
HRS METER	OPERATION	The cumulative total hours of operation is displayed in 10-operation increments	VCR CAMERA
	DRUM RUN	The cumulative total hours of drum rotation with tape threaded is displayed in 10-operation increments	
	TAPE RUN	The cumulative total hours of tape running is displayed in 10-operation increments	
	THREADING	The cumulative number of tape unthreading operation is displayed in 10-operation increments	

Note

If you press DISPLAY/TOUCH PANEL with DISPLAY set to V-OUT/LCD in the menu settings, the picture from a TV or VCR will not appear on the LCD screen even when your camcorder is connected to outputs on the TV or VCR.

When recording a close subject

When REC LAMP is set to ON, the red camera recording lamp on the front of the camcorder may reflect on the subject if it is close. In this case, we recommend that you set REC LAMP to OFF.

Types of trouble and how to correct trouble

If you run into any problem using your camcorder, use the following table to troubleshoot the problem. If the problem persists, remove the power supply and contact your Sony dealer or local authorised Sony service facility. If "C:□□:□□" appears on the screen, the self-diagnosis display function has worked. See page 231.

In the recording

Symptom	Cause and/or Corrective Actions
START/STOP does not operate.	• The POWER switch is not set to CAMERA. → Set it to CAMERA (p. 25). • The tape has run out. → Rewind the cassette or insert a new one (p. 22, 45). • The write-protect tab is set to expose the red mark. → Use a new tape or slide the tab (p. 22). • The tape is stuck to the drum (moisture condensation). → Remove the cassette and leave your camcorder for at least one hour to acclimatise (p. 244).
The power goes off.	• The battery pack is dead or nearly dead. → Install a charged battery pack.
You cannot record still images on a "Memory Stick" in the recording or recording standby.	• PHOTO REC is set to TAPE in menu settings. → Set it to MEMORY (p. 215).
You cannot record still images on a tape.	• PHOTO REC is set to MEMORY in menu settings. → Set it to TAPE (p. 215).
The image on the viewfinder screen is not clear.	• The viewfinder lens is not adjusted. → Adjust the viewfinder lens (p. 29).
The SteadyShot does not work.	• STEADYSHOT is set to OFF in the menu settings. → Set it to ON (p. 215).
The autofocusing does not work.	• The setting is the manual focus. → Set FOCUS to AUTO (p. 75). • Shooting conditions are not suitable for autofocus. → Adjust for manual focusing (p. 75).

Types of trouble and how to correct trouble

Symptom	Cause and/or Corrective Actions
The picture does not appear in the viewfinder.	• The LCD panel is open. → Close the LCD panel (p. 27).
A vertical band appears when you shoot a subject such as lights or a candle flame against a dark background.	• The contrast between the subject and background is too high. This is not a malfunction.
A vertical band appears when you shoot a very bright subject.	• This is not a malfunction.
Some tiny white, red, blue or green spots appear on the screen.	• The shutter speed is reduced. This is not a malfunction.
The picture appears too bright, and the subject does not appear on the screen.	• The backlight is active. → Set it off (p. 36). • Adjust the exposure manually. → Cancel the manual adjustment or re-adjust the exposure (p. 73).
The click of the shutter does not sound.	• BEEP is set to OFF in the menu settings. → Set it to MELODY or NORMAL (p. 222).
Black bands appear when you record TV or computer screen.	• Set the STEADYSHOT in the menu settings to OFF (p. 215).
Audio cannot be input via the built-in microphone.	• The XLR adaptor is installed. → Remove the XLR adaptor or input audio via the INPUT1 or INPUT2 connector (p. 29).
An external flash (optional) does not work.	• The power of the external flash is off or the power supply is not installed. → Turn on the external flash or install the power supply. • Two or more external flashes (optional) are attached. → Only one external flash (optional) can be attached.
The image is not bright with video flash light (optional).	• The manual adjustment is not suitable for the situations (The ϟ indicator flashes). → Set the AUTO LOCK selector to AUTO LOCK, or cancel the manual adjustment (p. 66).

(continued on the following page)

In the playback

Symptom	Cause and/or Corrective Actions
The tape does not move when a video control button is pressed.	• The POWER switch is not set to VCR. → Set it to VCR (p. 41).
The playback button does not work.	• The cassette has run out of the tape. → Rewind the tape (p. 41).
There are horizontal lines on the picture, or the playback picture is not clear or does not appear.	• The video heads may be dirty. → Clean the heads using the cleaning cassette (optional) (p. 245).
No sound or only a low sound is heard when playing back a tape.	• The volume is turned to minimum. → Turn up the volume (p. 41). • AUDIO MIX is set to CH3/4 in the menu settings. → Adjust AUDIO MIX (p. 216).
Displaying the recorded date, DATE SEARCH does not work.	• The cassette has no cassette memory. → Use a cassette with cassette memory (p. 90). • CM SEARCH is set to OFF in the menu settings. → Set it to ON (p. 219). • The tape has a blank portion between recorded portions (p. 91).
TITLE SEARCH does not work.	• The cassette has no cassette memory. → Use a cassette with cassette memory (p. 89). • CM SEARCH is set to OFF in the menu settings. → Set it to ON (p. 219). • There is no title in the tape. → Superimpose the titles (p. 126). • The tape has a blank portion between recorded portions (p. 89).
The new sound added to the recorded tape is not heard.	• AUDIO MIX is set to the CH1/2 side in the menu settings. → Adjust AUDIO MIX (p. 120).
The title is not displayed.	• TITLE DSPL is set to OFF in the menu settings. → Set it to ON (p. 219).

In the recording and playback

Symptom	Cause and/or Corrective Actions
The power does not turn on when you set the POWER switch to VCR, CAMERA or MEMORY	• The battery pack is not installed, or is dead or nearly dead. → Install a charged battery pack (p. 15, 16). • The AC power adaptor is not connected to a wall socket. → Connect the AC power adaptor to a wall socket (p. 19).
The end search does not work.	• The tape was ejected after recording when using a cassette without cassette memory (p. 39). • You have not recorded on the new cassette yet (p. 39).
The end search does not work correctly.	• The tape has a blank portion at the beginning or midway (p. 39).
The battery pack is quickly discharged.	• The operating temperature is too low. • The battery pack is not fully charged. → Charge the battery pack fully again (p. 16). • The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack (p. 15).
The battery remaining time indicator does not indicate the correct time.	• You have used the battery pack in an extremely hot or cold environment for a long time. • The battery pack is completely dead, and cannot be recharged. → Replace with a new battery pack (p. 15). • The battery is not fully charged. → Install a charged battery pack (p. 15, 16). • A deviation has occurred in the remaining battery time. → Charge the battery pack fully again so that the indication on the battery remaining indicator is correct (p. 16).
The power goes off although the battery remaining time indicator indicates that the battery pack has enough power to operate.	• A deviation has occurred in the remaining battery time. → Charge the battery pack fully again so that the indication on the battery remaining battery time indicator is correct (p. 16).
The cassette cannot be removed from the holder.	• The power supply is disconnected. → Connect it firmly (p. 15, 19). • The battery is dead. → Use a charged battery pack (p. 15, 16).
The ⏏ and ⏏ indicators flash and no functions except for cassette ejection work.	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatise (p. 244).
C:11:00 indicator does not appear when using a cassette with cassette memory.	• The gold-plated connector of the tape is dirty or dusty. → Clean the gold-plated connector (p. 238).
Remaining tape indicator is not displayed.	• The REMAIN is set to AUTO in the menu settings. → Set it to ON to always display the remaining tape indicator (p. 220).

(continued on the following page)

When operating using the "Memory Stick"

Symptom	Cause and/or Corrective Actions
The "Memory Stick" does not function.	• The POWER switch is not set to MEMORY. → Set it to MEMORY (p. 138). • The "Memory Stick" is not inserted. → Insert a "Memory Stick" (p. 137).
Recording does not function.	• The "Memory Stick" has already been full. → Delete unnecessary images and record again (p. 184). • The "Memory Stick" formatted incorrectly is inserted. → Format the "Memory Stick" or use another "Memory Stick" (p. 137, 218). • The write-protect switch on the "Memory Stick" is set to LOCK. → Release the lock (p. 135).
The image cannot be deleted.	• The image is protected. → Cancel image protection (p. 183). • The write-protect switch on the "Memory Stick" is set to LOCK. → Release the lock (p. 135).
You cannot format the "Memory Stick."	• The write-protect switch on the "Memory Stick" is set to LOCK. → Release the lock (p. 135).
Deleting all the images cannot be carried out.	• The write-protect switch on the "Memory Stick" is set to LOCK. → Release the lock (p. 135).
You cannot protect the image.	• The write-protect switch on the "Memory Stick" is set to LOCK. → Release the lock (p. 135). • INDEX screen is not displayed. → Press INDEX to display the INDEX screen and protect the image (p. 183).
You cannot write a print mark on the still image.	• The write-protect switch on the "Memory Stick" is set to LOCK. → Release the lock (p. 135). • INDEX screen is not displayed. → Press INDEX to display the INDEX screen and write the print marks on the screen (p. 187). • You are trying to write a print mark on a moving picture. → Print marks cannot be written on a moving picture (p. 187).
PHOTO SAVE does not work.	• The write-protect switch on the "Memory Stick" is set to LOCK. → Release the lock (p. 135).
You cannot play back images in actual size.	• You may not be able to play back images in actual size when you try to play back images recorded by other equipment. This is not a malfunction.
You cannot play back image data.	• Your camcorder cannot play back some images processed with a computer (The file name will blink). • If you record images with any other equipment, the images may not play back normally on your camcorder.

Others

Symptom	Cause and/or Corrective Actions
The title is not recorded.	• The cassette has no cassette memory. → Use a cassette with cassette memory (p. 126). • The cassette memory is full. → Erase unwanted titles (p. 128). • The cassette is set to prevent accidental erasure. → Slide the write-protect tab so that red portion is not visible (p. 22). • The tape has a blank portion between recorded portions. → Superimpose the title to recorded positions (p. 127).
The cassette label is not recorded.	• The cassette has no cassette memory. → Use a cassette with cassette memory (p. 131). • The cassette memory is full. → Erase unwanted data (p. 128, 133). • The tape is set to prevent accidental erasure. → Slide the write-protect tab so that red mark is not visible (p. 22).
Digital program editing to a tape does not function.	• The input selector on the VCR is not set correctly. → Check the connection and set the input selector on the VCR again (p. 101) • The camcorder is connected to DV equipment of other than Sony using the i.LINK cable. → Set it to IR (p. 102). • You have attempted to set a programme on a blank portion of the tape. → Set the programme again on a recorded portion (p. 109). • The camcorder and the VCR are not synchronized. → Adjust the synchronization (p. 107). • The IR SETUP code is incorrect. → Set the correct code (p. 103).
Digital program editing to a "Memory Stick" does not function.	• Setting programme on a blank portion of the tape is attempted. → Set the programme again on a recorded portion (p. 167).
The Remote Commander supplied with your camcorder does not work.	• COMMANDER is set to OFF in the menu settings. → Set it to ON (p. 222). • Something is blocking the infrared rays. → Remove the obstacle. • The batteries are inserted with + and – incorrectly matching + and – inside the battery compartment. → Insert the batteries correctly (p. 259). • The batteries are dead. → Insert new ones (p. 259).
The picture from a TV or VCR does not appear even when your camcorder is connected to output on the TV or VCR.	• DISPLAY is set to V-OUT/LCD in the menu settings. → Set it to LCD (p. 223).

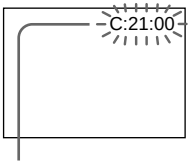
(continued on the following page)

Symptom	Cause and/or Corrective Actions
The cassette cannot be removed even if the cassette lid is open.	• Moisture has started to condense in your camcorder (p. 244).
The melody or beep sounds for five seconds.	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatise (p. 244). • Some troubles have occurred in your camcorder. → Remove the cassette and insert it again, then operate your camcorder.
When you set the POWER switch to VCR or OFF (CHG), if you move your camcorder, you may hear a clattering sound from inside your camcorder.	• This is because some functions use a linear mechanism. Your camcorder is not malfunctioning.
You cannot charge the battery pack.	• The POWER switch is not set to OFF (CHG). → Set it to OFF (CHG) (p. 16).
While charging the battery pack, no indicator appears, the indicator flashes in the display window.	• The battery pack is not properly installed. → Install it properly (p. 15). • Something is wrong with the battery pack. → Please contact your Sony dealer or local authorised Sony service facility.
No function works though the power is on.	• Disconnect the mains lead of the AC power adaptor or remove the battery, then reconnect it in about one minute. Turn the power on. If the functions still do not work, press the RESET button using a sharp-pointed object (If you press the RESET button, all the settings including the date and time return to their defaults.) (p. 15, 19, 253).
The buttons do not appear on the touch panel.	• The DISPLAY/TOUCH PANEL button is pressed. → Press the LCD screen lightly. → Press the DISPLAY/TOUCH PANEL button on your camcorder or the DISPLAY button on the Remote Commander (p. 43).
The buttons on the LCD screen do not work.	• Adjust the screen (CALIBRATION) (p. 246).
The indicators appear mirror-reversed in the viewfinder.	• The mirror mode is activated. This is not a malfunction (p. 34).
The indicators displayed on the TV screen appear mirror-reversed.	• When you set DISPLAY to V-OUT/LCD in the menu settings in the mirror mode, the indicators displayed on the TV screen also appear mirror-reversed. This is not a malfunction (p. 34).
Image data cannot be transferred by the USB connection.	• The USB cable was connected before installation of the USB driver was completed. → Uninstall the incorrect USB driver and re-install the USB driver (p. 195, 198, 209). • USBCONNECT is set to PTP in the menu settings when the POWER switch is set to MEMORY. → Set it to NORMAL (p. 221).

Self-diagnosis display

Your camcorder has a self-diagnosis display function.
This function displays the current state of your camcorder as a 5-digit code (a combination of a letter and figures) on the screen. If a 5-digit code is displayed, check the following list of codes. The last two digits (indicated by ☐☐) differ depending on the state of your camcorder.

LCD screen, Viewfinder or Display window



Self-diagnosis display

- C:☐☐:☐☐
  You can service your camcorder yourself.
- E:☐☐:☐☐
  Contact your Sony dealer or local authorised Sony service facility.

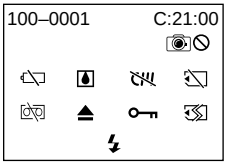
Five-digit display	Cause and/or Corrective Actions
C:04:☐☐	• You are using a battery pack that is not an "InfoLITHIUM" battery pack. ➔ Use an "InfoLITHIUM" battery pack (p. 18, 239).
C:21:☐☐	• Moisture condensation has occurred. ➔ Remove the cassette and leave your camcorder for at least one hour to acclimatise (p. 244).
C:22:☐☐	• The video heads are dirty. ➔ Clean the heads using the cleaning cassette (optional) (p. 245).
C:31:☐☐ C:32:☐☐	• A malfunction other than the above that you can service has occurred. ➔ Remove the cassette and insert it again, then operate your camcorder. ➔ Disconnect the mains lead of the AC power adaptor or remove the battery pack. After reconnecting the power supply, operate your camcorder.
E:20:☐☐ E:61:☐☐ E:62:☐☐	• A malfunction that you cannot service has occurred. ➔ Contact your Sony dealer or local authorised Sony service facility and inform them of the 5-digit code (example: E:61:10).

If you are unable to rectify the problem even if you try corrective actions a few times, contact your Sony dealer or local authorised Sony service facility.

Warning indicators and messages

If indicators and messages appear on the screen or in the display window, check the following:
See the page in parentheses "( )" for more information.

Warning indicators



100-0001 **Warning indicator pertaining to files**
Slow flashing:
- The file is corrupted.
- The file is unreadable.
- You are trying to use the MEMORY MIX on a moving picture (p. 155).

C:21:00 **Self-diagnosis display** (p. 231).

The battery is dead or nearly dead
Slow flashing:
- The battery is nearly dead.
  Depending on the operating conditions, environment and battery condition, the indicator may flash even if there are approximately five to 10 minutes remaining.

Fast flashing:
- The battery is dead (p. 16).

Moisture condensation has occurred*
Fast flashing:
- Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette compartment open (p. 244).

Warning indicator pertaining to cassette memory*
Slow flashing:
- No cassette with cassette memory is inserted (p. 236).

Warning indicator pertaining to the "Memory Stick"
Slow flashing:
- No "Memory Stick" is inserted.

Fast flashing*:
- The "Memory Stick" is not readable on your camcorder (p. 135).
- The image cannot be recorded on the "Memory Stick."

Warning indicator pertaining to "Memory Stick" formatting*
Fast flashing:
- The "Memory Stick" is not formatted correctly (p. 218).
- The "Memory Stick" data is corrupted (p. 135).

Warning indicator pertaining to the tape
Slow flashing:
- The tape is near the end.
- No cassette is inserted.*
- The write-protect tab on the cassette is exposed (red) (p. 22).*

Fast flashing:
- The cassette has run out of the tape.*

You need to eject the cassette*
Slow flashing:
- The write-protect tab on the cassette is exposed (red) (p. 22).

Fast flashing:
- Moisture condensation has occurred (p. 244).
- The cassette has run out of the tape.
- The self-diagnosis display function is activated (p. 231).

The image is protected*
Slow flashing:
- The image is protected (p. 183).

Warning indicator pertaining to the flash
Slow flashing:
- During charging

Fast flashing:
- There is something wrong with the external flash (optional).

Warning indicator pertaining to recording
Slow flashing:
- The still image cannot be recorded on a tape or the "Memory Stick" (p. 48, 52)

* You hear the melody or beep.

Warning messages

• CLOCK SET	Set the date and time (p. 20).
• FOR "InfoLITHIUM" BATTERY ONLY	Use an "InfoLITHIUM" battery pack (p. 18).
• CLEANING CASSETTE**	The video heads are dirty (p. 245).
• FULL	The cassette memory is full.*
• 48K	AUDIO MODE is set to 48K (p. 220).* You cannot dub new audio.
• REC MODE	REC MODE is set to DV SP (p. 220).* You cannot dub new audio.
• TAPE	There is no recorded portion on the tape.* You cannot dub new audio.
• "i.LINK" CABLE	The i.LINK cable is connected (p. 120).* You cannot dub new audio.
• FULL	The "Memory Stick" is full (p. 147).*
•	The write-protect switch on the "Memory Stick" is set to LOCK (p. 135).*
• NO FILE	No still image is recorded on the "Memory Stick" (p. 173, 189).*
• NO MEMORY STICK	No "Memory Stick" is inserted.*
• AUDIO ERROR	You are trying to record an image with sound that cannot be recorded by your camcorder on the "Memory Stick" (p. 164).*
• MEMORY STICK ERROR	The "Memory Stick" data is corrupted (p. 137).*
• FORMAT ERROR	The "Memory Stick" is not recognised. Check the format (p. 152, 218).*
• DIRECTORY ERROR	There are more than two of the same directories (p. 173).*
• PLAY ERROR	The image cannot be played back. Reinsert the "Memory Stick," then play back the image again.
• REC ERROR	Check the input signals before retrying recording.
• COPY INHIBIT	The tape contains copyright control signals for copyright protection of software (p. 237).*
• TAPE END	The tape has reached its end.*
• NO TAPE	Insert a cassette.*
• NO PRINT MARK	You selected MARKED in 9PIC PRINT on the touch panel using a "Memory Stick" containing no image with a print mark. (p. 189)*
• NO STILL IMAGE FILE	You selected MULTI in 9PIC PRINT on the touch panel using a "Memory Stick" containing no still image. (p. 189)*
• DELETING	You have pressed PHOTO during deleting all images on the "Memory Stick."*
• FORMATTING	You have pressed PHOTO during formatting a "Memory Stick."*
• NOW CHARGING	Charging an external flash (optional) does not work correctly.*

* You hear the melody or beep.
** The ⊗ indicator and " CLEANING CASSETTE" message appear one after another on the screen.

Compatibility of DVCAM and DV formats

DVCAM format is developed as a more reliable and higher end format than consumer DV format. Here explained are the differences, compatibility, and limitations on editing about DVCAM and DV formats.

Differences between DVCAM and DV formats

Item	DVCAM	DV
Track pitch	15 μm	10 μm
Audio sampling frequency	12 bit: 32 kHz 16 bit: 48 kHz	12 bit: 32 kHz 16 bit: 32 kHz, 44.1 kHz, 48 kHz
Audio recording mode [1)]	Lock mode	Unlock mode

[1)] There are two modes for audio recording, lock mode and unlock mode. In lock mode, the sampling frequencies of audio and video are synchronized. In unlock mode, which consumer DV format adopts, the two sampling frequencies are independent. Therefore, lock mode is more effective than unlock mode in digital processing and smooth transition during audio editing.

Mini DVCAM and mini DV cassettes

Both mini DVCAM and mini DV cassettes can be used on mini DVCAM or mini DV video equipment. The recording format of picture is defined according to recorder's format as described below.

Recorder's format	Cassette's format	Recording format
DVCAM	DVCAM	DVCAM
	DV	DVCAM
DV	DVCAM	DV
	DV	DV

This digital camcorder complies with DVCAM format. Though mini DV cassettes can be used for recording, we recommend you to use mini DVCAM cassettes to get the most out of high reliability of DVCAM format. The recording time of mini DV cassettes is 2/3 shorter than that indicated on the mini DV cassettes.

Compatibility on playback

Some tapes cannot be played back on mini DVCAM or mini DV video equipment.

Tape	On DV video equipment	On DVCAM video equipment
DV-formatted	Can be played back	Can be played back (only when recorded in SP mode)
DVCAM-formatted	Some equipment may be able to play back	Can be played back

Compatibility on editing using DV connectors

When this digital camcorder is connected to other DVCAM or DV video equipment using DV connectors, the recording format of edited tapes is defined according to recorder's format as described below.

Source tape	Player's format	Recorder's format	Recording format
DVCAM-formatted [2) 3)]	DVCAM	DVCAM	DVCAM
DVCAM-formatted	DVCAM	DV	DV [4)]
DVCAM-formatted [2)]	DV [5)]	DVCAM	DVCAM [7)]
DVCAM-formatted	DV [5)]	DV	DV [4)]
DV-formatted [6)]	DVCAM	DVCAM	DVCAM [1)]
DV-formatted [6)]	DVCAM	DV	DV
DV-formatted	DV	DVCAM	DVCAM [1)]
DV-formatted	DV	DV	DV

[1)] When using the mini DVCAM video equipment to carry out DV dubbing of a tape recorded in DV format, the tape produced will be in DVCAM format as follows:
– Audio recording mode will be unlock mode.
– The time code format will be partly maladjusted. (There will be no effect on the recorded picture except in certain case.)

[2)] If the tape is to be dubbed is DVCAM formatted tape as in 1), the tape produced will be in DVCAM format as follows:
– Audio recording mode will be unlock mode.
– The time code format will be partly maladjusted.

[3)] Depending on signal conditions of the source tape, you may not be able to edit the tape using the DV connectors.

[4)] Audio recording mode of the edited tape is lock mode.

[5)] Some mini DV video equipment may be able to play back a DVCAM-formatted tape. Even if the tape is played back, contents of the playback cannot be guaranteed.

[6)] DV-formatted tapes recorded in SP mode only can be used as source tapes.

[7)] Depending on model of video equipment, you may not be able to edit.

Limitations on editing

You will find the following limitations when editing.

- Due to the difference of a track pitch, you cannot record or edit on DV-formatted tapes using mini DVCAM video equipment.
- Depending on signal conditions, you may not be able to record or edit on DVCAM-formatted tapes.

In these cases, do the following:

- Edit using audio/video jacks.
- Dub a DV-formatted tape using audio/video jacks, then use the dubbed tape as a source tape.

Usable cassettes

Selecting cassette types

You can use DVCAM mini DVCAM cassette* and Mini DV mini DV cassette* in this camcorder. You cannot use any other 8 mm, Hi8 Hi8, Digital8, VHS, VHSC VHSC, S-VHS S-VHS, S-VHSC S-VHSC, Betamax, DV or MICRO MV MICRO MV cassette.

* There are two types of mini DVCAM/mini DV cassettes: with cassette memory and without cassette memory. Cassettes with cassette memory have the C-II (Cassette Memory) mark.
We recommend that you use cassette with cassette memory.

IC memory is mounted on this type of cassette. Your camcorder can read and write data such as dates of recording or titles, etc. to this memory.
The functions using the cassette memory require successive signals recorded on the tape. If the tape has a blank portion at the beginning or between recorded portions, titles may not be displayed properly or the search functions may not work properly. Perform the following to prevent a blank portion from being made on the tape.
Press END SCH to go to the end of the recorded portion before you begin the next recording if you operate the following:
– You have ejected the cassette while recording.
– You have played back the tape.
– You have used the edit search.

If there is a blank portion or discontinuous signal on your tape, re-record from the beginning to the end of the tape as described above.
The same result may occur when you record using a digital video camera recorder without a cassette memory on a tape recorded by one with the cassette memory.

C-II16K mark on the cassette

The memory capacity of cassettes marked with C-II16K is 16Kbit. Your camcorder can accommodate tapes having a memory capacity of up to 16Kbit. 16Kbit cassettes are marked with C-II16K.

The maximum number of data recordable on cassette memory (when using 16 Kbit cassette memory)

Data	Numbers
INDEX	135 (15 bytes/One item of the data)
TITLE	106
DATE	24 (10 bytes/One item of the data)
PHOTO	48 (10 bytes/One item of the data)
CASSETTE LABEL	1

The numbers above are as a guide.

DVCAM This is the mini DVCAM mark.

Mini DV Digital Video Cassette This is the mini DV mark.

C-II Cassette Memory This is the Cassette Memory mark.

These are trademarks.

Copyright signal

When you play back

Using any other video camera recorder, you cannot record on tape that has recorded copyright control signals for copyright protection of software which is played back on your camcorder.

When you record

You cannot record software on your camcorder that contains copyright control signals for copyright protection of software.
"COPY INHIBIT" appears on the screen or on the TV screen if you try to record such software.
Your camcorder does not record copyright control signals on the tape when it records.

Audio mode

Fs32K (12-bit) mode: The original sound can be recorded in channels 1 and 2, and the new sound in channels 3 and 4 in 32 kHz. The balance between channels 1/2 and channels 3/4 can be adjusted by selecting AUDIO MIX in the menu settings during playback and audio dubbing. Both sounds can be played back. You can monitor the sound during audio dubbing.
Fs48K (16-bit) mode: A new sound cannot be recorded but the original sound can be recorded in high quality using two channels. The audio mode can be indicated on the screen.
You may not add a sound on a DVCAM-formatted tape which does not comply with the condition of the DVCAM format as described on page 234 or when you recorded on a DV-formatted tape. In this case, "NS" appears on the screen.

Notes on the cassette

When affixing a label on the cassette

Be sure to affix a label only at the locations illustrated below **[a]** to prevent malfunction of your camcorder.

After using the cassette

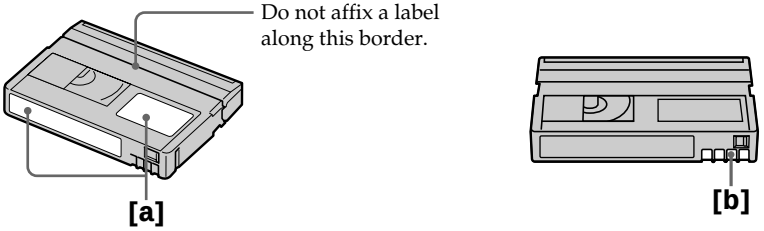
Rewind the tape to the beginning, put the cassette in its case, and store it upright.

When the cassette memory does not work

Reinsert a cassette. The gold-plated connector of the cassette may be dirty or dusty.

Cleaning the gold-plated connector

If the gold-plated connector on the cassette is dirty or dusty, the remaining tape indicator is sometimes not displayed correctly, and you may not be able to operate functions using cassette memory. Clean the gold-plated connector with a cotton-wool swab, about every 10 times that the cassette is ejected. **[b]**



About the “InfoLITHIUM” battery pack

What is the “InfoLITHIUM” battery pack?

The “InfoLITHIUM” battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between the battery pack and an optional AC adaptor/charger.
The “InfoLITHIUM” battery pack calculates the power consumption according to the operating conditions of your camcorder, and displays the remaining battery time in minutes.
With an AC adaptor/charger (optional), the remaining battery time and charging time are displayed.

Charging the battery pack

- Be sure to charge the battery pack before you start using your camcorder.
- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F) until FULL appears in the display window, indicating that the battery pack is fully charged. If you charge the battery outside of this temperature range, you may not be able to efficiently charge the battery pack.
- After charging is completed, either disconnect the cable from the DC IN jack on your camcorder or remove the battery pack.

Effective use of the battery pack

- Battery pack performance decreases in low-temperature surroundings. So, the time that the battery pack can be used becomes shorter. We recommend the following to ensure longer battery pack use:
  – Put the battery pack in a pocket to warm it up, and insert it in your camcorder immediately before you start taking shots.
  – Use the large-capacity battery pack (NP-FM70/QM71/FM90/FM91/QM91, optional).
- Frequently using the LCD panel or frequently operating playback, fast forward or rewind wears out the battery pack faster. We recommend using the large-capacity battery pack (NP-FM70/QM71/FM90/FM91/QM91, optional).
- Be sure to turn the POWER switch to OFF (CHG) when not taking shots or playing back on your camcorder. The battery pack is also consumed when your camcorder is in the standby or playback pause.
- Have spare battery packs handy for two or three times the expected recording time, and make trial recordings before taking the actual recording.
- Do not expose the battery pack to water. The battery pack is not water-resistant.

Remaining battery time indicator

- If the power goes off although the remaining battery time indicator indicates that the battery pack has enough power to operate, fully charge the battery pack again so that the indication on the remaining battery time indicator is correct. Note, however, that the correct battery indication sometimes will not be restored if it is used in high temperatures for a long time or left in a fully charged state, or the battery pack is frequently used. Regard the remaining battery time indication as the approximate recording time.
- The mark indicating that there is little remaining battery time sometimes flashes depending on the operating conditions or ambient temperature and environment even if the remaining battery time is about five to ten minutes.

How to store the battery pack

- If the battery pack is not used for a long time, do the following procedure once per year to maintain proper function.
  1. Fully charge the battery.
  2. Discharge on your electronic equipment.
  3. Remove the battery from the equipment and store it in a dry, cool place.
- To use the battery pack up on your camcorder, leave your camcorder in the recording standby until the power goes off without a cassette inserted.

Battery life

- The battery life is limited. Battery capacity drops little by little as you use it more and more, and as time passes. When the available battery time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Buy a new battery pack.
- The battery life varies according to how it is stored and operating conditions and environment for each battery pack.

About i.LINK

The DV Interface on this unit is an i.LINK-compliant DV Interface. This section describes the i.LINK standard and its features.

What is i.LINK?

i.LINK is a digital serial interface for handling digital video, digital audio and other data in two directions between equipment having the i.LINK jack, and for controlling other equipment.
i.LINK-compatible equipment can be connected by a single i.LINK cable. Possible applications are operations and data transactions with various digital AV equipment.
When two or more i.LINK-compatible equipment are connected to this unit in a daisy chain, operations and data transactions are possible with not only the equipment that this unit is connected to but also with other devices via the directly connected equipment.
Note, however, that the method of operation sometimes varies according to the characteristics and specifications of the equipment to be connected, and that operations and data transactions are sometimes not possible on some connected equipment.

Note

Normally, only one piece of equipment can be connected to this unit by the i.LINK cable. When connecting this unit to i.LINK-compatible equipment having two or more i.LINK jacks (DV jacks), refer to the operating instructions of the equipment to be connected.

About the name “i.LINK”

i.LINK is a more familiar term for IEEE 1394 data transport bus proposed by SONY, and is a trademark approved by many corporations.
IEEE 1394 is an international standard standardised by the Institute of Electrical and Electronic Engineers.

i.LINK baud rate

i.LINK’s maximum baud rate varies according to the equipment. Three maximum baud rates are defined:

S100 (approx. 100Mbps*)
S200 (approx. 200Mbps)
S400 (approx. 400Mbps)

The baud rate is listed under “Specifications” in the operating instructions of each equipment. It is also indicated near the i.LINK jack on some equipment.
The maximum baud rate of equipment on which it is not indicated such as this unit is “S100”.
When units are connected to equipment having a different maximum baud rate, the baud rate sometimes differs from the indicated baud rate.

***What is Mbps?**

Mbps stands for megabits per second, or the amount of data that can be sent or received in one second. For example, a baud rate of 100Mbps means that 100 megabits of data can be sent in one second.

i.LINK functions on this unit

For details on how to dub when this unit is connected to other video equipment having DV Interface, see page 100 and 114.
This unit can also be connected to other i.LINK (DV Interface) compatible equipment made by SONY other than video equipment.
For details on connection with i.LINK cable and necessary software, refer to the operating instructions supplied with the connected device.

Required i.LINK cable

Use the Sony i.LINK 4-pin-to-4-pin cable (during DV dubbing).

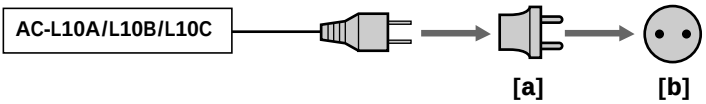
i.LINK and i, are trademarks.

Using your camcorder abroad

Using your camcorder abroad

You can use your camcorder in any country or area with the AC power adaptor supplied with your camcorder within 100 V to 240 V AC, 50/60 Hz.

When charging the battery pack, use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet **[b]**.



Your camcorder is a PAL system based camcorder. If you want to view the playback picture on a TV, it must be a PAL system based TV with the AUDIO/VIDEO input jack. The following shows TV colour systems used overseas.

PAL system
Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Holland, Hong Kong, Hungary, Italy, Kuwait, Malaysia, New Zealand, Norway, Poland, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, United Kingdom etc.

PAL-M system
Brazil

PAL-N system
Argentina, Paraguay, Uruguay

NTSC system
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Guyana, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

SECAM system
Bulgaria, France, Guiana, Iran, Iraq, Monaco, Russia, Ukraine, etc.

Simple setting of clock by time difference

You can easily set the clock to the local time by setting a time difference. Select WORLD TIME in the menu settings. See page 222 for more information.

Maintenance information and precautions

Moisture condensation

If your camcorder is brought directly from a cold place to a warm place, moisture may condense inside your camcorder, on the surface of the tape, or on the lens. In this state, the tape may stick to the head drum and be damaged or your camcorder may not operate correctly. If there is moisture inside your camcorder, the beep and the 💧 indicator flashes. When the ⏏ indicator flashes at the same time, the cassette is inserted in your camcorder. If moisture condenses on the lens, the indicator will not appear.

If moisture condensation has occurred

None of the functions except cassette ejection will work. Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette lid open. Your camcorder can be used again if the 💧 indicator does not appear when the power is turned on again.
If moisture starts to condense, your camcorder sometimes cannot detect condensation. If this happens, the cassette is sometimes not ejected for 10 seconds after the cassette lid is opened. This is not a malfunction. Do not close the cassette lid until the cassette is ejected.

Note on moisture condensation

Moisture may condense when you bring your camcorder from a cold place into a warm place (or vice versa) or when you use your camcorder in a hot place as follows:

- You bring your camcorder from a ski slope into a place warmed up by heating device.
- You bring your camcorder from an air-conditioned car or room into a hot place outside.
- You use your camcorder after a squall or a shower.
- You use your camcorder in a high temperature and humidity place.

How to prevent moisture condensation

When you bring your camcorder from a cold place into a warm place, put your camcorder in a plastic bag and tightly seal it. Remove the bag when the air temperature inside the plastic bag has reached the surrounding temperature (after about one hour).

Maintenance information

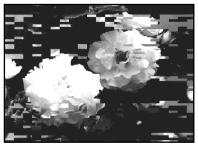
Cleaning the video heads

To ensure normal recording and clear pictures, clean the video heads. The video heads may be dirty when:

- Mosaic-pattern noise appears on the playback picture.
- Playback pictures do not move.
- Playback pictures do not appear.
- The ⊗ indicator and "CLEANING CASSETTE" message appear one after another, or the ⊗ indicator flashes on the screen during recording.

If the above problem **[a]**, **[b]** or **[c]** occurs, clean the video heads for 10 seconds with the Sony DVM-12CLD cleaning cassette (optional). Check the picture and if the above problem persists, repeat cleaning.

[a]



[b]

[c]

If the video heads get dirtier, the entire screen becomes blue **[c]**.

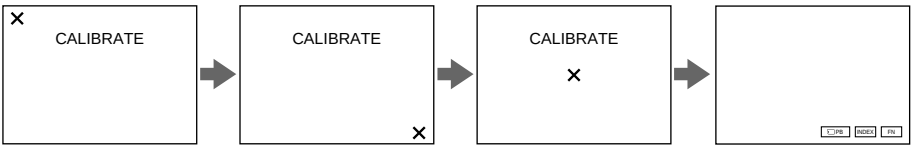
Cleaning the LCD screen

If fingerprints or dust make the LCD screen dirty, we recommend using the Cleaning cloth (supplied) to clean the LCD screen. When you use the LCD Cleaning Kit (optional), do not apply the cleaning liquid directly to the LCD screen. Clean the LCD screen with cleaning paper moistened with the liquid.

Adjusting the LCD screen (CALIBRATION)

The buttons on the touch panel may not work correctly. If this happens, follow the procedure below. You cannot adjust the LCD screen when the LCD screen is rotated 180 degrees.

(1) Set the POWER switch to OFF (CHG).
(2) Eject the cassette from your camcorder, then disconnect any connecting cable from your camcorder.
(3) Set the POWER switch to VCR while pressing DISPLAY/TOUCH PANEL on your camcorder, then keep pressing DISPLAY/TOUCH PANEL for about five seconds.
(4) Follow the procedure below using an object such as the corner of a "Memory Stick" supplied with your camcorder.
① Touch ✕ at the upper left corner.
② Touch ✕ at the lower right corner.
③ Touch ✕ in the middle of the screen.



Note

If you do not press the right spot, ✕ always returns to the position at the upper left corner. In this case, start from step 4 again.

Charging the built-in rechargeable battery

Your camcorder has a built-in rechargeable battery so that the date, time and other settings are retained even when the POWER switch is turned off. The built-in rechargeable battery is always charged as long as you are using your camcorder. The battery, however, will become discharged gradually if you do not use your camcorder. It will be completely discharged in **about four months** if you do not use your camcorder at all. Even if the built-in rechargeable battery is not charged, it will not affect camcorder operation. To retain the date, time, and other information, charge the battery if the battery is discharged.

Charging the built-in rechargeable battery:

- Connect your camcorder to mains using the AC power adaptor supplied with your camcorder, and leave your camcorder with the POWER switch turned off for more than 24 hours.
- Or, install a charged battery pack in your camcorder, and leave your camcorder with the POWER switch set to OFF (CHG) for more than 24 hours.

Precautions

Camcorder operation

- Operate your camcorder on 7.2 V (battery pack) or 8.4 V (AC power adaptor).
- For DC or AC operation, use the accessories recommended in these operating instructions.
- If any solid object or liquid gets inside the casing, unplug your camcorder and have it checked by a Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF (CHG) when you are not using your camcorder.
- Do not wrap your camcorder with a towel, for example, and operate it. Doing so might cause heat to build up inside.
- Keep your camcorder away from strong magnetic fields or mechanical vibration.
- Do not press the LCD screen with a sharp-pointed object.
- If your camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a malfunction.
- While using your camcorder, the back of the LCD screen may heat up. This is not a malfunction.

On handling tapes

- Do not insert anything into the small holes on the rear of the cassette. These holes are used to sense the type and thickness of the tape and if the recording tab is in or out.
- Do not open the cassette protect cover or touch the tape.
- Avoid touching or damaging the terminals. To remove dust, clean the terminals with a soft cloth.

Camcorder care

- Remove the cassette, and periodically turn on the power, operate the CAMERA and VCR sections and play back a tape for about three minutes when your camcorder is not to be used for a long time.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Do not let sand get into your camcorder. When you use your camcorder on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause your camcorder to malfunction, and sometimes this malfunction cannot be repaired.

AC power adaptor

- Unplug the unit from the wall socket when you are not using it for a long time. To disconnect the mains lead, pull it out by the plug. Never pull the mains lead itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the mains lead forcibly, or place a heavy object on it. This will damage the cord and may cause fire or electric shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.
- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM receivers and video equipment disturb AM reception and video operation.
- The unit becomes warm during use. This is not a malfunction.
- Do not place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

About care and storage of the lens

- Wipe the surface of the lens clean with a soft cloth in the following instances:
  - When there are fingerprints on the lens surface.
  - In hot or humid locations.
  - When the lens is used in environments such as the seaside.
- Store the lens in a well-ventilated location subject to little dirt or dust.

To prevent mold from growing, periodically perform the above.
We recommend turning on and operating the video camera recorder about once per month to keep the video camera recorder in an optimum state for a long time.

Battery pack

- Use only the specified charger or video equipment with the charging function.
- To prevent accident from a short circuit, do not allow metal objects to come into contact with the battery terminals.
- Keep the battery pack away from fire.
- Never expose the battery pack to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.
- Keep the battery pack dry.
- Do not expose the battery pack to any mechanical shock.
- Do not disassemble nor modify the battery pack.
- Attach the battery pack to the video equipment securely.
- Charging while some capacity remains does not affect the original battery capacity.

Notes on dry batteries

To avoid possible damage from battery leakage or corrosion, observe the following:

– Be sure to insert the batteries with the + and – correctly matching the + and – inside the battery compartment.
– Dry batteries are not rechargeable.
– Do not use a combination of new and old batteries.
– Do not use different types of batteries.
– Current flows from batteries when you are not using them for a long time.
– Do not use leaking batteries.

If batteries are leaking

- Wipe off the liquid in the battery compartment carefully before replacing the batteries.
- If you touch the liquid, wash it off with water.
- If the liquid gets into your eyes, wash your eyes with a lot of water and then consult a doctor.

If any problem occurs, unplug your camcorder and contact your nearest Sony dealer.

Specifications

Video camera recorder

System

Video recording system
2 rotary heads
Helical scanning system
Audio recording system
Rotary heads, PCM system
Quantization: Fs 32 kHz (12 bits, channels 1/2, channels 3/4), Fs 48 kHz (16 bits, channels 1/2)
Video signal
PAL colour, CCIR standards
Usable cassette
Mini DVCAM cassette with the DVCAM mark printed
Mini DV cassette with the Mini DV mark printed
Tape speed
DVCAM format:
Approx. 28.218 mm/s
DV format SP mode:
Approx. 18.812 mm/s
Recording/playback time (using cassette PDVM-40ME)
DVCAM format: 40 min.
DV format SP mode: 1 hour
Fastforward/rewind time (using cassette PDVM-40ME)
When using the battery pack:
Approx. 2 min. and 30 seconds
When using the AC power adaptor:
Approx. 1 min. and 45 seconds
Viewfinder
Electric viewfinder (B&W)
Image device
3.8 mm (1/4.7 type) 3 CCD (Charge Coupled Device)
Gross: Approx. 1 070 000 pixels
Effective (still):
Approx. 1 000 000 pixels
Effective (moving):
Approx. 690 000 pixels
Lens
Combined power zoom lens
Filter diameter: 37 mm (1 1/2 in)
12× (Optical), 48× (Digital)
F 1.6 – 2.8
Focal length
3.6 – 43.2 mm (5/32 – 1 3/4 in.)
When converted to a 35 mm still camera
In CAMERA
4:3 mode :
49 – 588 mm (1 15/16 – 23 1/4 in.)
16:9 mode :
41 – 492 mm (1 5/8 – 19 3/8 in.)
In MEMORY
41 – 492 mm (1 5/8 – 19 3/8 in.)
Colour temperature
Auto, Indoor (3 200 K), Outdoor (5 800 K),
Minimum illumination
7 lx (lux) (F 1.6)

Input/Output connectors

S video input/output
4-pin mini DIN
Luminance signal: 1 Vp-p, 75 Ω (ohms), unbalanced
Chrominance signal: 0.3 Vp-p, 75 Ω (ohms), unbalanced
Audio/Video input/output
AV MINI JACK, 1 Vp-p, 75 Ω (ohms), unbalanced, sync negative
327 mV, (at output impedance more than 47 kΩ (kilohms))
Output impedance with less than 2.2 kΩ (kilohms)/Stereo minijack (ø 3.5 mm)
Input impedance more than 47 kΩ (kilohms)
DV input/output
4-pin connector
Headphone jack
Stereo minijack (ø 3.5 mm)
LANC jack
Stereo mini-minijack (ø 2.5 mm)
USB jack
mini-B
MIC jack
Minijack, 0.388 mV low impedance with 2.5 to 3.0 V DC, output impedance 6.8 kΩ (kilohms) (ø 3.5 mm)
Stereo type
INPUT1/INPUT2 connectors
XLR 3-pin, female, –60 dBu:
3 kilohms, +4 dBu: 10 kilohms
(0 dBu = 0.775 Vrms)

LCD screen

Picture
8.8 cm (3.5 type)
72.2 × 50.4 mm (2 7/8 × 2 in.)
Total dot number
246 400 (1 120 × 220)

General

Peak inrush current
Hot switching inrush current, measured in accordance with European standard EN55103-1:
6.3 A (230 V)
Power requirements
7.2 V (battery pack)
8.4 V (AC power adaptor)
Average power consumption (when using the battery pack)
During camera recording using LCD
6.3 W
Viewfinder
5.0 W
Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to + 60°C
(–4°F to + 140°F)
Dimensions (Approx.)
93 × 99 × 202 mm
(3 3/4 × 4 × 8 in.) (w/h/d)
Mass (Approx.)
950 g (2 lb 1 oz)
main unit only
1.4 kg (3 lb)
including the battery pack NP-FM50, the XLR adaptor, the Microphone, cassette PDVM-40ME, the lens cap and shoulder strap
Supplied accessories
See page 14.

AC power adaptor

Power requirements
100 – 240 V AC, 50/60 Hz
Power consumption
23 W
Output voltage
DC OUT: 8.4 V, 1.5 A in the operating mode
Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to + 60°C
(–4°F to + 140°F)
Dimensions (approx.)
125 × 39 × 62 mm
(5 × 1 9/16 × 2 1/2 in.) (w/h/d)
excluding projecting parts
Mass (approx.)
280 g (9.8 oz)
excluding mains lead

Battery pack

Maximum output voltage
DC 8.4 V
Output voltage
DC 7.2 V
Capacity
8.5 Wh (1 180 mAh)
Dimensions (approx.)
38.2 × 20.5 × 55.6 mm
(1 9/16 × 13/16 × 2 1/4 in.)
(w/h/d)
Mass (approx.)
76 g (2.7 oz)
Type
Lithium ion

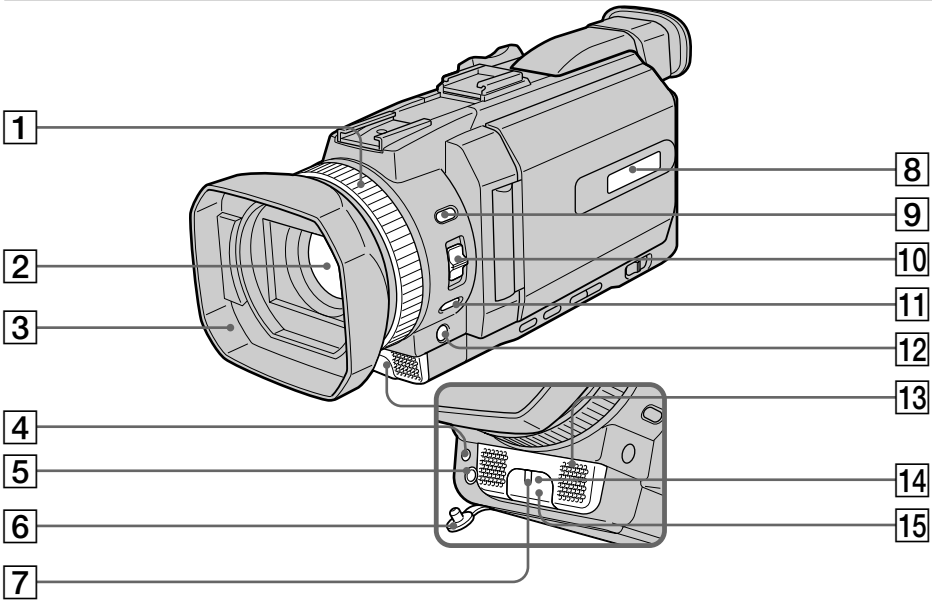
"Memory Stick"

Memory
Flash memory
8MB: MSA-8A
Operating voltage
2.7 – 3.6 V
Power consumption
Approx. 45 mA in the operating mode
Approx. 130 μA in the standby mode
Dimensions (approx.)
50 × 2.8 × 21.5 mm
(2 × 1/8 × 7/8 in.) (w/h/d)
Mass (approx.)
4 g (0.14 oz)

Design and specifications are subject to change without notice.

Identifying parts and controls

Camcorder



1 **Focus ring** (p. 75)

2 **Lens**

3 **Lens hood**

4 **HOLOGRAM AF emitter** (p. 148)

5 **MIC jack (PLUG IN POWER) (red)**

Connect an external microphone (optional). This jack also accepts a "plug-in-power" microphone. Be sure to use the ECM-S80 for the external microphone.

6 **MIC jack cover**

7 **Camera recording lamp** (p. 25)

8 **Display window** (p. 16)

9 **INDEX button** (p. 86)

10 **FOCUS switch** (p. 75)

11 **PUSH AUTO button** (p. 75)

12 **FADER button *** (p. 56)

13 **Microphone**

14 **Infrared rays emitter** (p. 104)

15 **Remote sensor**

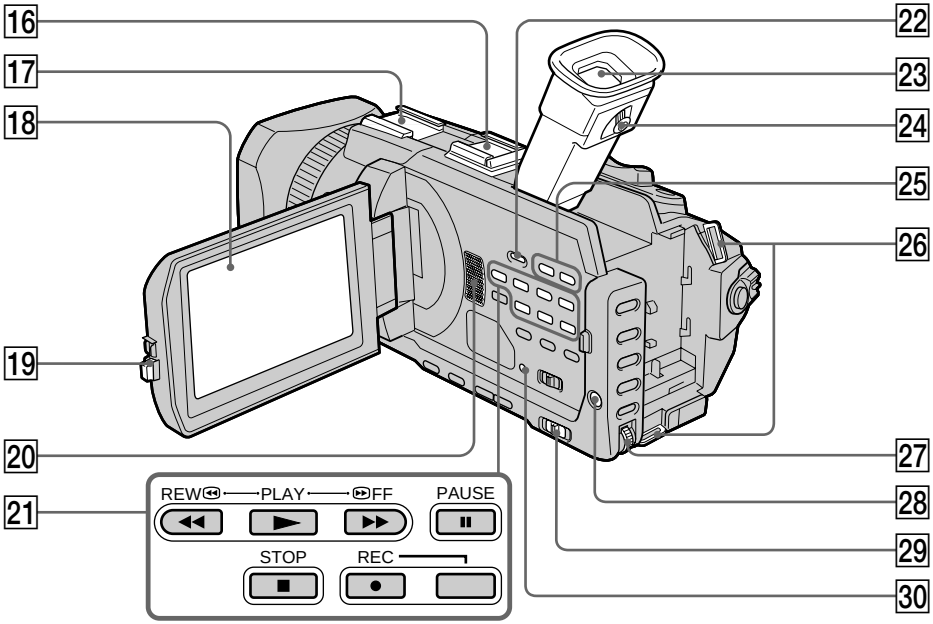
* The FADER button has a tactile dot for easy operation.

Removing the lens hood

To remove the lens hood to attach the optional wide teleconversion lens filter, etc., unscrew the lens hood counterclockwise. To attach the lens hood again, align the protrusions on the lens hood with the groove on the lens and screw the lens hood clockwise.

When using additional filters

Shading may occur on the recorded image due to the lens hood.



16 **Intelligent accessory shoe** (p. 29, 117, 188)

17 **Accessory shoe** (p. 29)

18 **LCD/Touch panel screen** (p. 23, 138)

19 **OPEN button**

20 **Speaker**

21 **Video control buttons ***

22 **DISPLAY/TOUCH PANEL button** (p. 43)

23 **Viewfinder** (p. 29)

24 **Viewfinder lens adjustment lever** (p. 29)

25 **VOLUME buttons **** (p. 41)

26 **Hooks for shoulder strap**

27 **SEL/PUSH EXEC dial**

28 **MENU button** (p. 212)

29 **AUTO LOCK selector** (p. 66)

30 **RESET button** (p. 230)

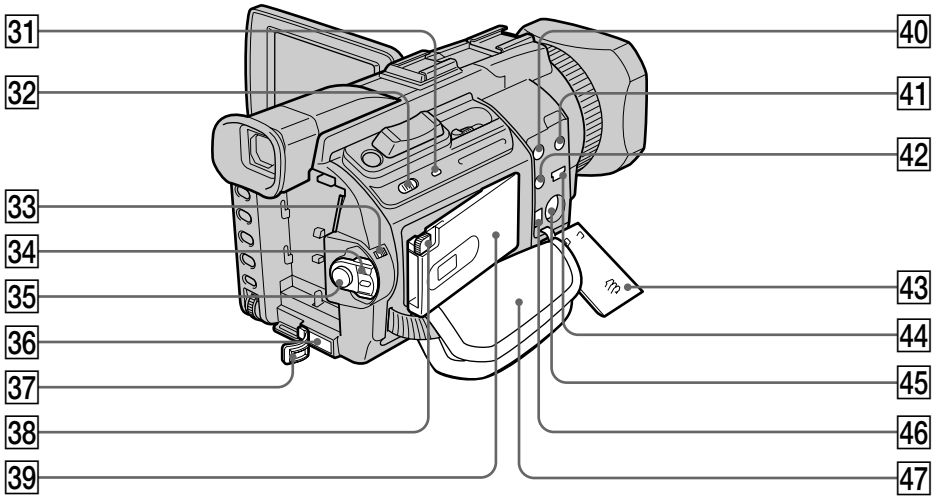
* The PLAY button of the Video control buttons has a raised tactile dot for easy operation.

** The + side of VOLUME buttons has a raised tactile dot for easy operation.

Intelligent Accessory Shoe

Notes on the intelligent accessory shoe

- The intelligent accessory shoe supplies power to optional accessories such as a video light or microphone.
- The intelligent accessory shoe is linked to the POWER switch, allowing you to turn the power supplied by the shoe on and off. Refer to the operating instructions of the accessory for further information.
- The intelligent accessory shoe has a safety device for fixing the installed accessory securely. To connect an accessory, press down and push it to the end, and then tighten the screw.
- To remove an accessory, loosen the screw, and then press down and pull out the accessory.



31 **Access lamp**

32 **MEMORY OPEN button** (p. 137)

33 **LOCK switch** (p. 25)

34 **POWER switch**

35 **START/STOP button** (p. 25)

36 **DC IN jack** (p. 19)

37 **DC IN jack cover**

38 **MEMORY EJECT button** (p. 137)

39 **"Memory Stick" slot** (p. 137)

40 **AUDIO/VIDEO jack (yellow)** (p. 47, 98, 112, 153, 165, 211)

41 **(headphones) jack (green)**

When you use headphones, the speaker on your camcorder is silent.

42 **(LANC) jack (blue)**

43 **Jack cover** (p. 47)

44 **(USB) jack** (p. 190)

45 **S VIDEO jack** (p. 47, 98, 112, 153, 165, 211)

46 **DV Interface** (p. 100, 114, 154, 166, 211)

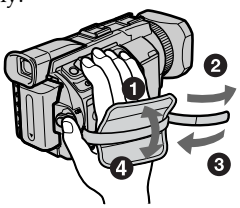
47 **Grip strap**

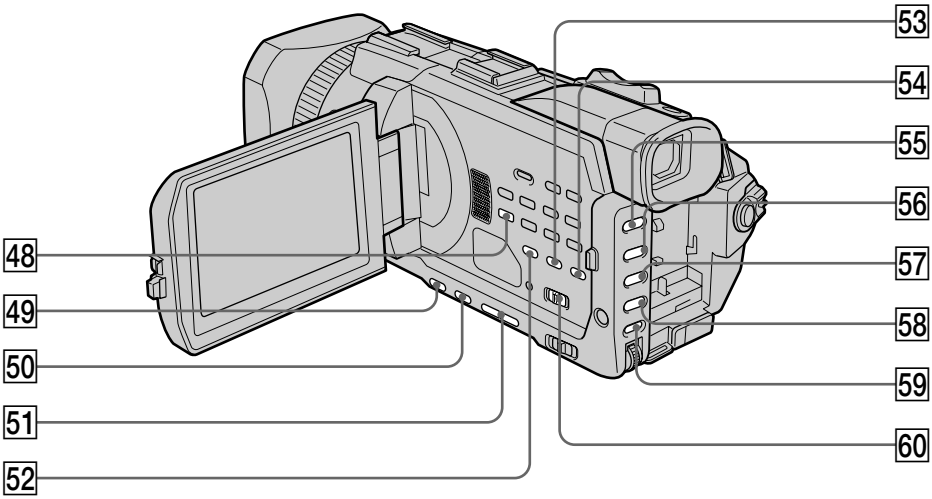
LANC

The LANC stands for Local Application Control Bus System. The LANC control jack is used for controlling the tape transport of video equipment and peripherals connected to it. This jack has the same function as the jack indicated as CONTROL L or REMOTE.

Fastening the grip strap

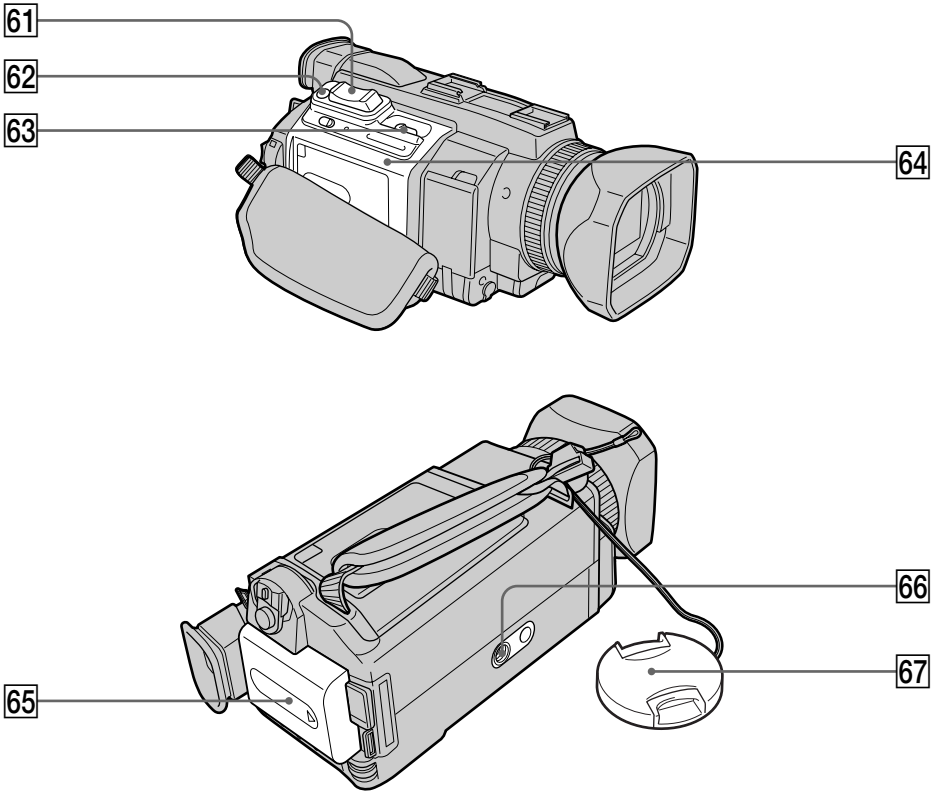
Fasten the grip strap firmly.





48 **AUDIO DUB button** (p. 119)
49 **BACK LIGHT button** (p. 36)
50 **SPOT LIGHT button *** (p. 37)
51 **EDITSEARCH button *** (p. 39)
52 **TC/U-BIT button** (p. 125)
53 **BARS button** (p. 65)
54 **CUSTOM PRESET button** (p. 61)
55 **PROGRAM AE button** (p. 67)
56 **SHUTTER SPEED button *** (p. 69)
57 **WHT BAL button** (p. 71)
58 **EXPOSURE button** (p. 73)
59 **AUDIO LEVEL button** (p. 78)
60 **ZEBRA selector** (p. 64)

* Each of the buttons has a raised tactile dot. (The EDIT SEARCH button has it on the – ⊜ side.) Use it for easy operation.



61 **Power zoom lever** (p. 33, 96, 180)

62 **PHOTO button** (p. 48, 51, 144)

63 **⌐ OPEN/ ⏏ EJECT lever** (p. 22)

64 **Cassette lid**

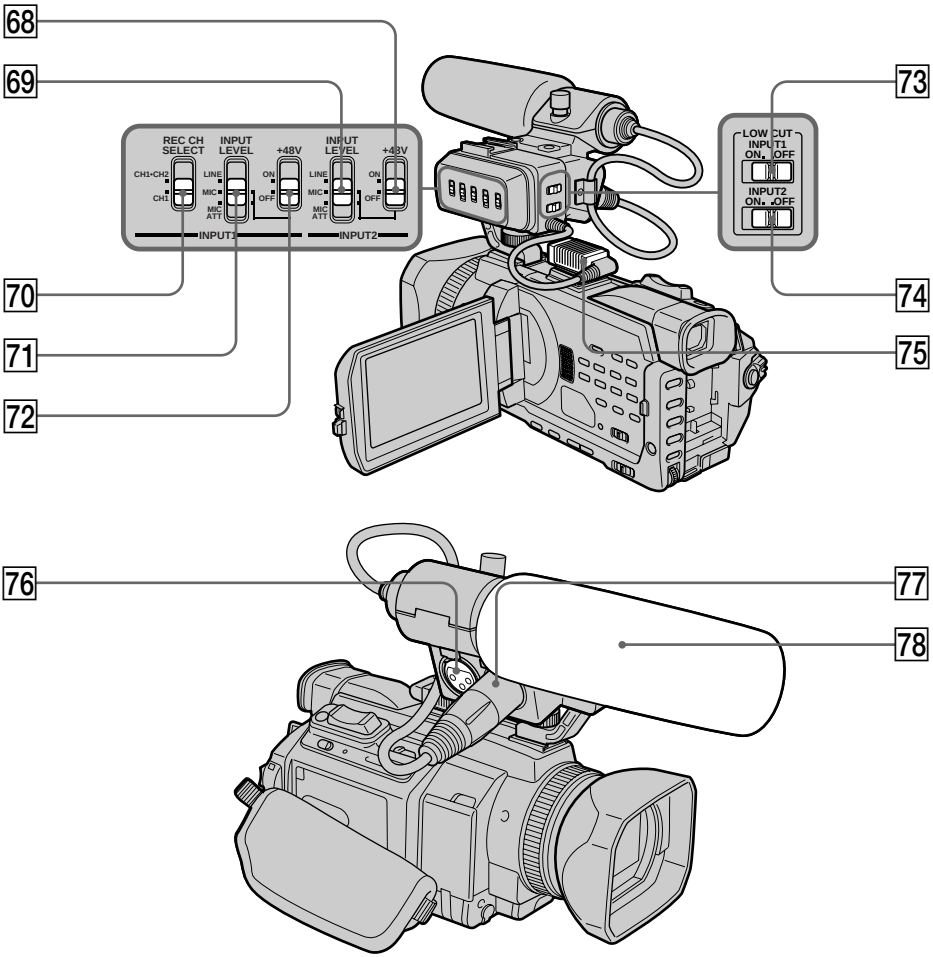
65 **Battery Pack** (p. 15)

66 **Tripod receptacle**

Make sure that the length of the tripod screw is less than 5.5 mm (7/32 inch). Otherwise, you cannot attach the tripod securely, and the screw may damage your camcorder.

67 **Lens cap** (p. 25)

XLR adaptor / Microphone



68 **INPUT2 +48 V switch** (p. 30)

69 **INPUT2 INPUT LEVEL selector** (p. 30)

70 **INPUT1 REC CH SELECT switch** (p. 30)

71 **INPUT1 INPUT LEVEL selector** (p.30)

72 **INPUT1 +48 V switch** (p. 30)

73 **INPUT1 LOW CUT switch** (p. 31)

74 **INPUT2 LOW CUT switch** (p. 31)

75 **HOT SHOE plug**

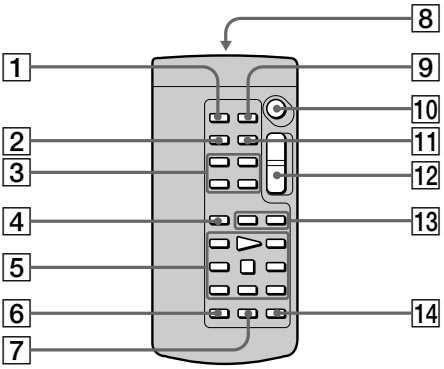
76 **INPUT2 connector** (p. 30, 78, 116)

77 **INPUT1 connector** (p. 30, 78, 116)

78 **Microphone** (p. 30)

Remote Commander

The buttons that have the same name on the Remote Commander as on your camcorder function identically to the buttons on your camcorder.



1 **PHOTO button** (p. 48, 51, 144)

2 **DISPLAY button** (p. 43)

3 **Memory control buttons**

4 **SEARCH MODE button** (p. 87, 89, 90, 92)

5 **Video control buttons** (p. 45)

6 **REC button**

7 **MARK button** (p. 109, 167)

8 **Transmitter**
Point toward the remote sensor to control your camcorder after turning on your camcorder.

9 **ZERO SET MEMORY button**
This button does not function.

10 **START/STOP button** (p. 25)

11 **DATA CODE button** (p. 43)

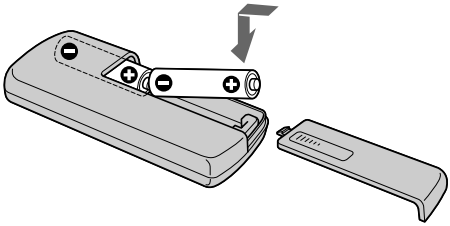
12 **Power zoom button** (p. 33)

13 **I◄◄ /►►I buttons** (p. 87, 89, 90, 92)

14 **AUDIO DUB button** (p. 119)

To prepare the Remote Commander

Insert two R6 (size AA) batteries by matching the + and – on the batteries to the + and – in the battery compartment.

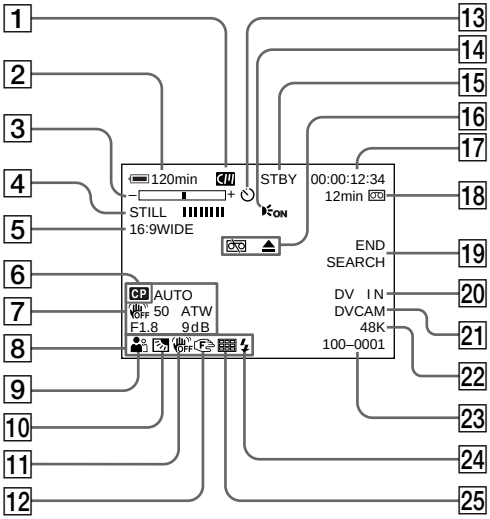


Notes on the Remote Commander

- Point the remote sensor away from strong light sources such as direct sunlight or overhead lighting. Otherwise, the Remote Commander may not function properly.
- Your camcorder works in the commander mode VTR 2. Commander modes 1, 2 and 3 are used to distinguish your camcorder from other Sony VCRs to avoid erroneous remote control operation. If you use another Sony VCR in the commander mode VTR 2, we recommend changing the commander mode or covering the sensor of the VCR with black paper.

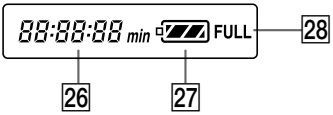
Operation indicators

LCD screen and Viewfinder



1 **Cassette memory** (p. 12, 236)
2 **Remaining battery time** (p. 35)
3 **Zoom** (p. 33)/
Exposure (p. 73)/
Data file name (p. 135)
4 **Digital effect** (p. 58, 95)/
MEMORY MIX (p. 155)/
FADER (p. 55)
5 **16:9WIDE** (p. 53)
6 **Custom preset** (p. 61)
7 **Data code** (p. 43)
8 **Volume** (p. 41)/
Date (p. 35)
9 **PROGRAM AE** (p. 66)
10 **Backlight** (p. 36)/
Spot light (p. 37)
11 **SteadyShot off** (p. 215)
12 **Manual focus/Infinity** (p. 75)
13 **Self-timer** (p. 38, 50, 150, 162)
14 **HOLOGRAM AF** (p. 148)
15 **STBY/REC** (p. 35)/
Video control mode (p. 45)/
Image size (p. 142)/
Image quality (p. 140)
16 **Warning** (p. 232)
17 **Time code** (p. 121)/
User bits (p. 124)/
Self-diagnosis (p. 231)/
Tape photo (p. 51)/
Memory photo (p. 48, 144)/
Image number (p. 173)
18 **Remaining tape** (p. 35)/
Memory playback (p. 173)
19 **END SEARCH** (p. 39)
20 **A/V → DV** (p. 211)/
DV IN (p. 115)
21 **DVCAM format/DV format SP mode** (p. 234)
22 **Audio mode** (p. 220)
23 **Data file name** (p. 135)/
Time (p. 35)/
Audio input level (p. 78)
24 **Flash** (p. 214)
This indicator appears when you use the video flash light (optional).
25 **Continuous photo recording** (p. 146)

Display window



26 **Remaining battery time indicator** (p. 16)**/**
Time code indicator* (p. 121)**/**
Image number (p. 173)**/**
Self-diagnosis indicator (p. 231)

27 **Remaining battery time** (p. 16)

28 **FULL charge indicator** (p. 16)

* The time code is displayed even if you switch the time code to user bits.

Index

A, B

Accessory shoe 29, 253
AC power adaptor 16
Adjusting viewfinder 29
Audio dubbing 116
AUDIO LEVEL 78
AUDIO MIX 120, 216
Audio mode 220
AUTO LOCK selector 66
AUTO SHTR 214
A/V connecting cable 47, 98, 112, 153, 165, 211
BACK LIGHT 36
Battery pack 15
BEEP 222
BOUNCE 55

C, D

CALIBRATION 246
Camera chromakey 155
Cassette memory 12, 236
Charging battery 16
Charging built-in rechargeable battery 247
Clock set 20
Colour bar 65
Continuous photo recording 146
Custom preset 61
Data code 43
DATE SEARCH 90
Delete 184
DIGITAL EFFECT 58, 95
Digital program editing 101, 167
Digital zoom 33
DISPLAY 43
DOT 55
DVCAM cassette 236

E

EDITSEARCH 39
END SEARCH 39, 45
Exposure 73

F, G, H

FADER 55
Fade in/out 55
FLASH MOTION 58
Flexible Spot Meter 74
FOCUS 75
Format 135, 218
Frame recording 84
Full charge 16
Grip strap 254
Guide frame 63
🎧 (Headphone) jack 254
Heads 245
HOLOGRAM AF 148

I, J, K, L

i.LINK 241
i.LINK cable 100, 114, 154, 166, 211
Image protection 183
Image quality 140
Image size 142
Index screen 174
INDEX SEARCH 87
"InfoLITHIUM" battery 239
Infrared rays emitter 104
Intelligent accessory shoe 253
Interval recording 82
JPEG 135
Labelling a cassette 131
LANC jack 254
LUMINANCEKEY 58

M, N

Manual focus 75
Memory chromakey 155
Memory luminancekey 155
MEMORY MIX 155
Memory overlap 155
Memory PB ZOOM 180
Memory photo recording 144
"Memory Stick" 135
Menu settings 212
M. FADER 55
Mirror mode 34
Moisture condensation 244
MONOTONE 55
MPEG 135
MPEG movie recording 160

O, P, Q

OLD MOVIE 58
Operation indicators 260
OVERLAP 55
PAL system 243
Photo save 170
PHOTO SCAN 94
PHOTO SEARCH 92
Picture search 45
Playback pause 45
Playing time 18
Power zoom 33
Print mark 187
PROGRAM AE 66

R

Recording level 78
Recording time 17
Rec Review 40
Remaining battery time indicator 35
Remaining tape indicator 35
Remote Commander 258
Remote sensor 252
RESET 230

S

Self-diagnosis display 231
Self-timer recording 38, 50, 150, 162
Shutter speed 69
Signal convert function 211
Skip scan 45
Slide show 182
Slow playback 45
SPOT FOCUS 77
Spot light 37
STEADYSHOT 215
STILL 58
S VIDEO jack 47, 98, 112, 153, 165, 211

T, U, V

Tape PB ZOOM 96
Tape photo recording 51
Telephoto 33
Time code 35
Title 126, 129
TITLE SEARCH 89
Touch panel 23, 138
TRAIL 58
Transition 26
TV colour systems 243
USB jack 190
USB Streaming 193
User bits 124
Volume 41

W, X, Y, Z

Warning indicators 232
White balance 71
Wide-angle 33
Wide lens hood 32
Wide mode 53
WIPE 55
Write-protect switch 135
Write-protect tab 22
XLR adaptor 29, 79, 116, 257
Zebra pattern 64
Zoom 33

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DSR-PDX10/PDX10P

RMT-811

SONY

SERVICE MANUAL

Ver 1.1 2003. 01

US Model
Canadian Model
DSR-PDX10
AEP Model
UK Model
E Model
Chinese Model
DSR-PDX10P

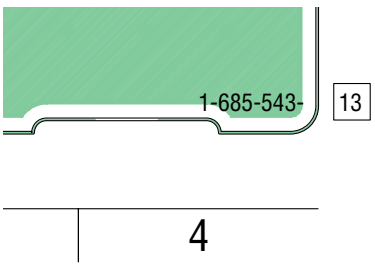
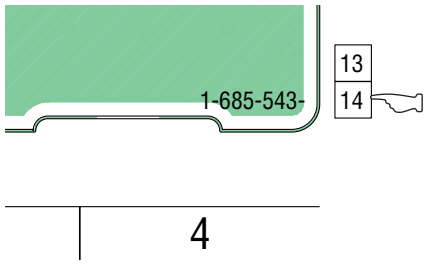
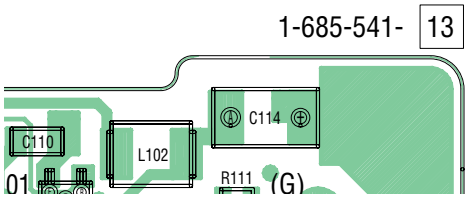
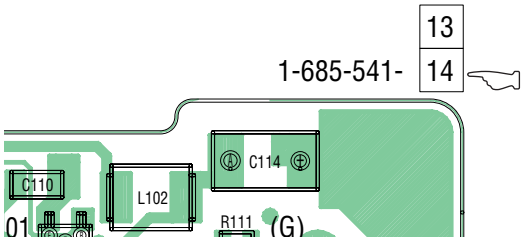
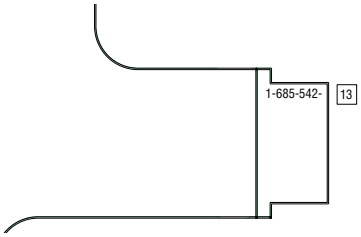
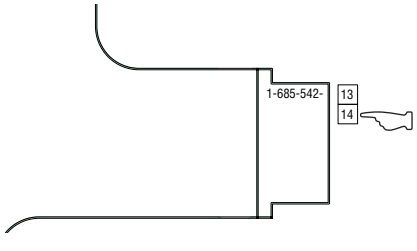
SUPPLEMENT-1

File this supplement-1 with the Service Manual.
(PV02-009)

Subject: • Addtion of Chinese Model
• Addtion of Supplied parts
• Change of Repair parts number
(SE-132 BOARD, CD-389 BOARD, JK-222 BOARD)

4-3. PRINTED WIRING BOARDS

☞ : Added portion.

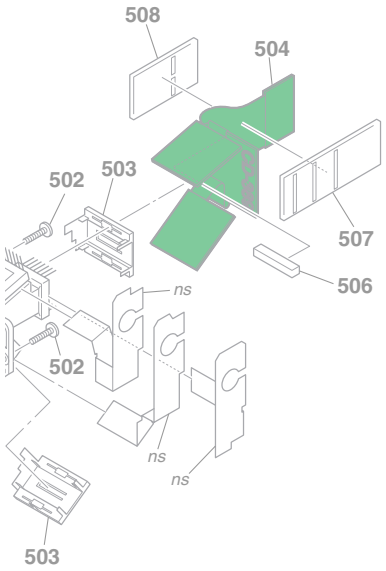
Page	Before change	After change
Original 4-89	**SE-132 BOARD** 	
Original 4-91	**CD-389 BOARD** 	
Original 4-99	**JK-222 BOARD** 	

SECTION 6. REPAIR PARTS LIST

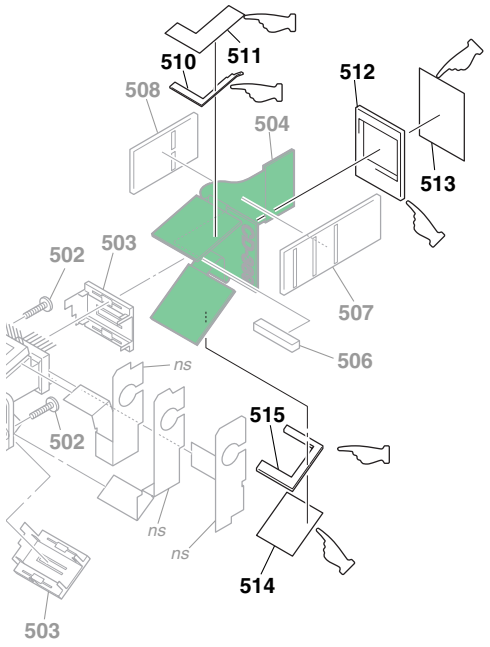
5-1. EXPLODED VIEWS

: Added portion.

Page	Before change	After change
Original 5-11	**5-1-11. LENS BLOCK**	



Ref. No.	Part No.	Description	Remarks
509	3-709-679-01	MOTOR, ZOOM	



Ref. No.	Part No.	Description	Remarks
509	3-709-679-01	MOTOR, ZOOM	
510	3-078-735-02	ANTI RADIATION SHEET 1S	☞
511	3-078-391-02	ANTI RADIATION SHEET 1	☞
512	3-078-737-02	ANTI RADIATION SHEET 3S	☞
513	3-078-393-02	ANTI RADIATION SHEET 3	☞
514	3-078-392-02	ANTI RADIATION SHEET 2	☞
515	3-078-736-01	ANTI RADIATION SHEET 2S	☞

6-2. ELECTRICAL PARTS LIST

☞ : Added portion.

Page	Before change				After change			
	Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
			ACCESSORIES				ACCESSORIES	
			**********				**********	
	⚠	1-475-599-14	ADAPTOR, AC (AC-L10A) (PDX10P)		⚠	1-475-599-14	ADAPTOR, AC (AC-L10A) (PDX10P:AEP/UK/E)	
	⚠	1-475-599-45	ADAPTOR, AC (AC-L10A) (PDX10)		⚠	1-475-599-45	ADAPTOR, AC (AC-L10A) (PDX10)	
		1-475-950-53	REMOTE COMMANDER (RMT-811)		⚠	1-475-599-82	ADAPTOR, AC (AC-L10A) (PDX10P:CH)	
		1-543-798-11	FILTER, CLAMP (FERRITE CORE)			1-475-950-53	REMOTE COMMANDER (RMT-811)	
	*⚠	1-575-131-11	CORD, POWER (PDX10P)			1-543-798-11	FILTER, CLAMP (FERRITE CORE)	
	⚠	1-790-107-22	CORD, POWER (PDX10)		*⚠	1-575-131-11	CORD, POWER (PDX10P:AEP/UK/E)	
		1-757-294-11	CORD, CONNECTION (USB 5P)		⚠	1-782-476-11	CORD, POWER (PDX10P:CH)	
		1-824-097-11	CORD, CONNECTION (AV MULCH) (1.5m)		⚠	1-790-107-22	CORD, POWER (PDX10)	
		3-053-056-01	LID, BATTERY CASE (FOR RMT-811)			1-757-294-11	CORD, CONNECTION (USB 5P)	
		3-072-414-01	SPVD-008 (USB DRIVER CD-ROM) (PDX10P)			1-824-097-11	CORD, CONNECTION (AV MULCH) (1.5m)	
		3-072-654-01	SPVD-008 (I) (USB DRIVER CD-ROM) (PDX10)			3-053-056-01	LID, BATTERY CASE (FOR RMT-811)	
		3-073-861-01	CLOTH (TL), CLEANING			3-072-414-01	SPVD-008 (USB DRIVER CD-ROM) (PDX10P)	
		3-077-115-11	MANUAL, INSTRUCTION (ENGLISH) (PDX10)			3-072-654-01	SPVD-008 (I) (USB DRIVER CD-ROM) (PDX10)	
		3-077-115-21	MANUAL, INSTRUCTION (FRENCH) (PDX10:Canadian)			3-073-861-01	CLOTH (TL), CLEANING	
		3-077-115-31	MANUAL, INSTRUCTION (ENGLISH) (PDX10P)			3-077-115-11	MANUAL, INSTRUCTION (ENGLISH) (PDX10)	
Original 5-37						3-077-115-21	MANUAL, INSTRUCTION (FRENCH) (PDX10:Canadian)	
		3-077-115-41	MANUAL, INSTRUCTION (FRENCH) (PDX10P)			3-077-115-31	MANUAL, INSTRUCTION (ENGLISH) (PDX10P)	
		3-077-115-51	MANUAL, INSTRUCTION (GERMAN) (PDX10P)			3-077-115-41	MANUAL, INSTRUCTION (FRENCH) (PDX10P)	
		3-077-115-61	MANUAL, INSTRUCTION (ITALIAN) (PDX10P)			3-077-115-51	MANUAL, INSTRUCTION (GERMAN) (PDX10P)	
		3-077-115-71	MANUAL, INSTRUCTION (SPANISH) (PDX10P)			3-077-115-61	MANUAL, INSTRUCTION (ITALIAN) (PDX10P)	
		3-987-015-01	BELT (S), SHOULDER			3-077-115-71	MANUAL, INSTRUCTION (SPANISH) (PDX10P)	
		8-814-298-90	MICROPHONE ECM-NV1			3-082-345-01	MANUAL, INSTRUCTION (CHINESE) (PDX10P)	
		A-7013-029-A	XLR BLOCK ASSY			3-987-015-01	BELT (S), SHOULDER	
		A-7024-735-A	MEMORY STICK (MSA-8A)			8-814-298-90	MICROPHONE ECM-NV1	
		X-3952-595-1	CAP ASSY, LENS			A-7013-029-A	XLR BLOCK ASSY	
		X-3952-789-1	HOOD (WIDE) ASSY			A-7024-735-A	MEMORY STICK (MSA-8A)	
			NP-FM50 BATTERY PACK (NOT SUPPLIED)			X-3952-595-1	CAP ASSY, LENS	
						X-3952-789-1	HOOD (WIDE) ASSY	
							NP-FM50 BATTERY PACK (NOT SUPPLIED)	

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Sony EMCS Co.

DSR-PDX10/PDX10P

RMT-811

SONY

SERVICE MANUAL

Ver 1.5 2004.07

US Model

Canadian Model

DSR-PDX10

AEP Model

UK Model

E Model

DSR-PDX10P

SUPPLEMENT-2

File this supplement-2 with the service manual.
(PV04-010)

- Correction of Self-diagnosis code table
- Addition of Service part

SECTION 1 SERVICE NOTE

1-5. SELF-DIAGNOSIS FUNCTION

1-5-4. Self-diagnosis Code Table

: Changed portion

Page 1-5

Before change

Self-diagnosis Code					Symptom/State
Repaired by:	Block Function		Detailed Code		
C	3	1	1	0	LOAD direction loading motor time-out.
C	3	1	1	1	UNLOAD direction loading motor time-out.

After change

Self-diagnosis Code					Symptom/State
Repaired by:	Block Function		Detailed Code		
C	3	2	1	0	LOAD direction loading motor time-out.
C	3	2	1	1	UNLOAD direction loading motor time-out.

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2004G1600-1
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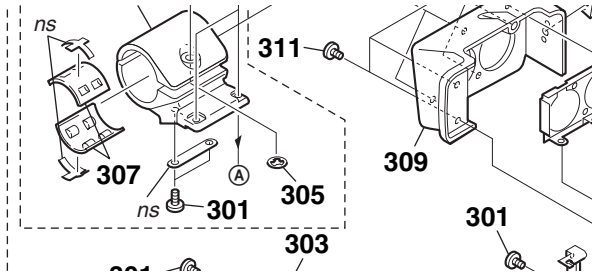
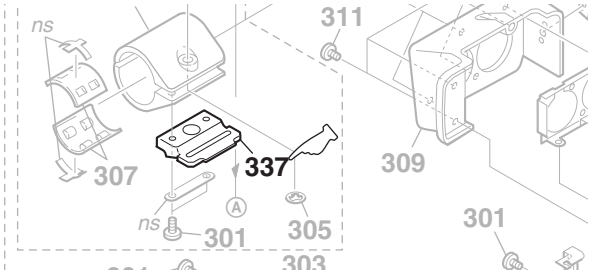
SECTION 5 REPAIR PARTS LIST

5-1. EXPLODED VIEWS

: Added portion

Page	Before change	After change
5-7	**5-1-7. XLR BLOCK**  Ref. No. Part No. Description —	 Ref. No. Part No. Description 337 3-060-810-01 BASE, MICROPHONE HOLDER

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2002.08	Official Release	—	—
1.1	2003.01	Supplement-1	• Addtion of Chinese Model. • Addtion of Supplied parts. • Change of Repair parts number. • Addtion of Supplied parts. (SE-132 BOARD, CD-389 BOARD, JK-222 BOARD)	No
1.2	2003.05	Correction-1	Change of the parts S.M. correction: Page 4-22, 4-76, 4-78, 5-17, 5-18, 5-26	Yes
1.3	2003.06	Correction-2	Correction of Parts No. S.M. correction: Page 5-30	Yes
1.4	2003.07	Correction-3	Correction of Service Tool S.M. correction: Page 6-4, 6-7	Yes
1.5	2004.07	Supplement-2	• Correction of Self-diagnosis code table • Addition of Service part S.M. correction: Page 1-5	Yes