# 3.1 Preparation

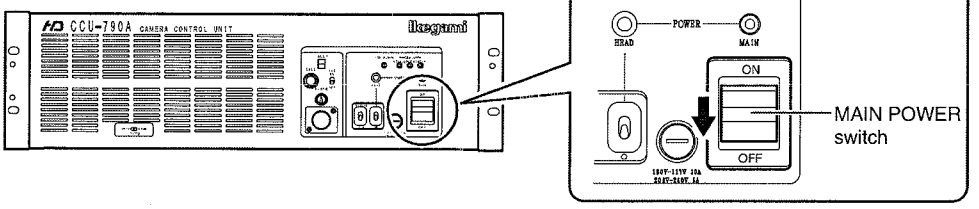
## Product Use Environment

Please make sure that the power switch is "OFF" before connecting this product and peripheral equipment such as the camera

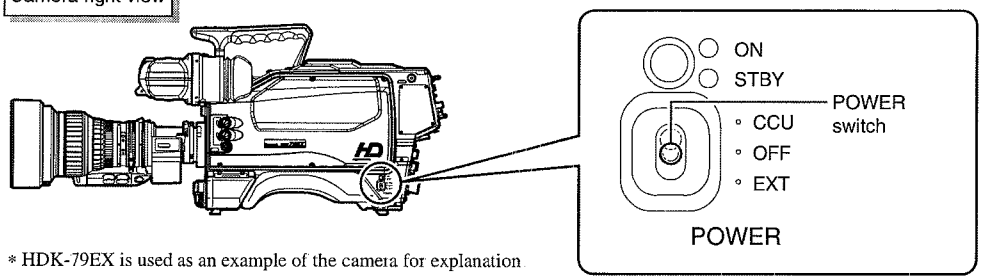
## Make sure the Power Switch is OFF

Please make sure that the power switch is "OFF" before connecting the HDK-79EX and peripheral equipment such as the CCU

CCU front view



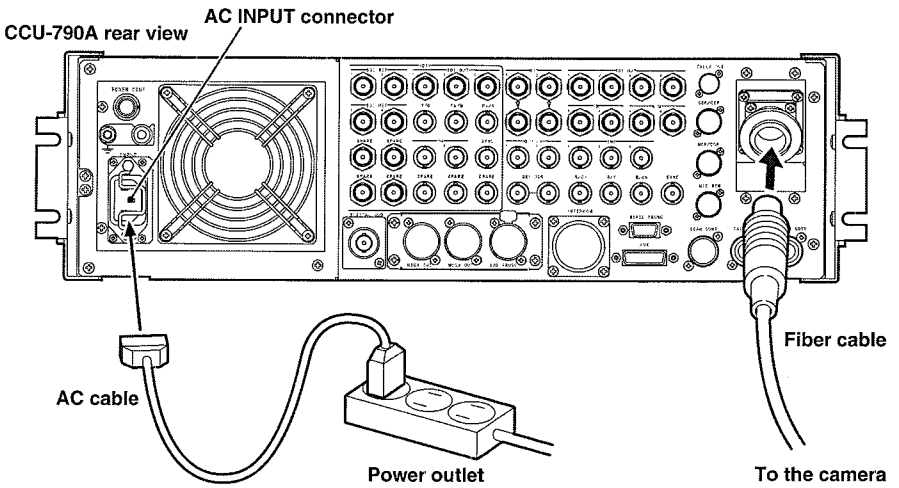

Camera right view




* HDK-79EX is used as an example of the camera for explanation

# 3.2 Power Supply

This section explains how to supply power from the CCU-790A to the camera.




1 Make sure the CCU-790A MAIN POWER switch is OFF.

2 Connect the AC cable to the AC INPUT connector on the rear of CCU-790A.

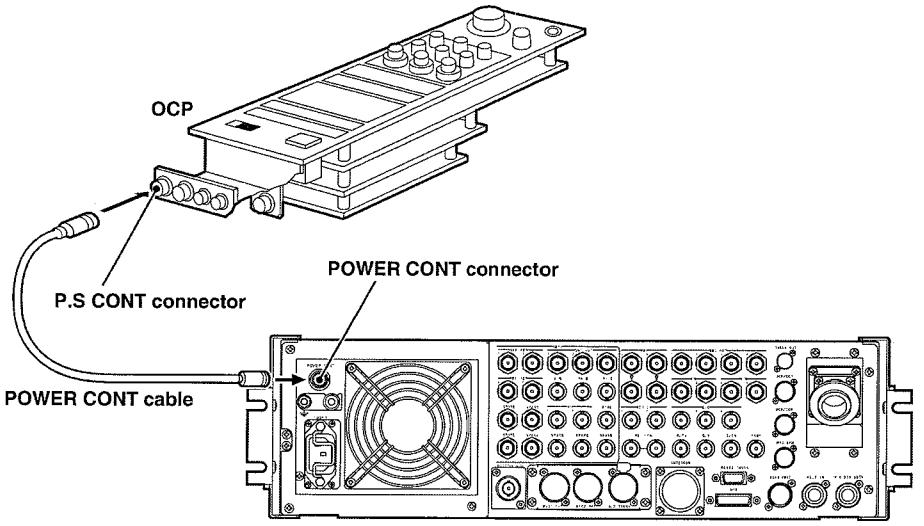
3 Insert the AC plug into the power outlet.

4 Connect the CCU-790A and the camera via a fiber cable.

This completes the procedure for connecting power from the CCU-790A to the camera. Proceed to the next step if you want to control the power ON/OFF from the OCP.

## ■ *To Control Power ON/OFF from OCP*

You can control the power ON/OFF of the camera and CCU-790A from the OCP.




CCU-790A rear view

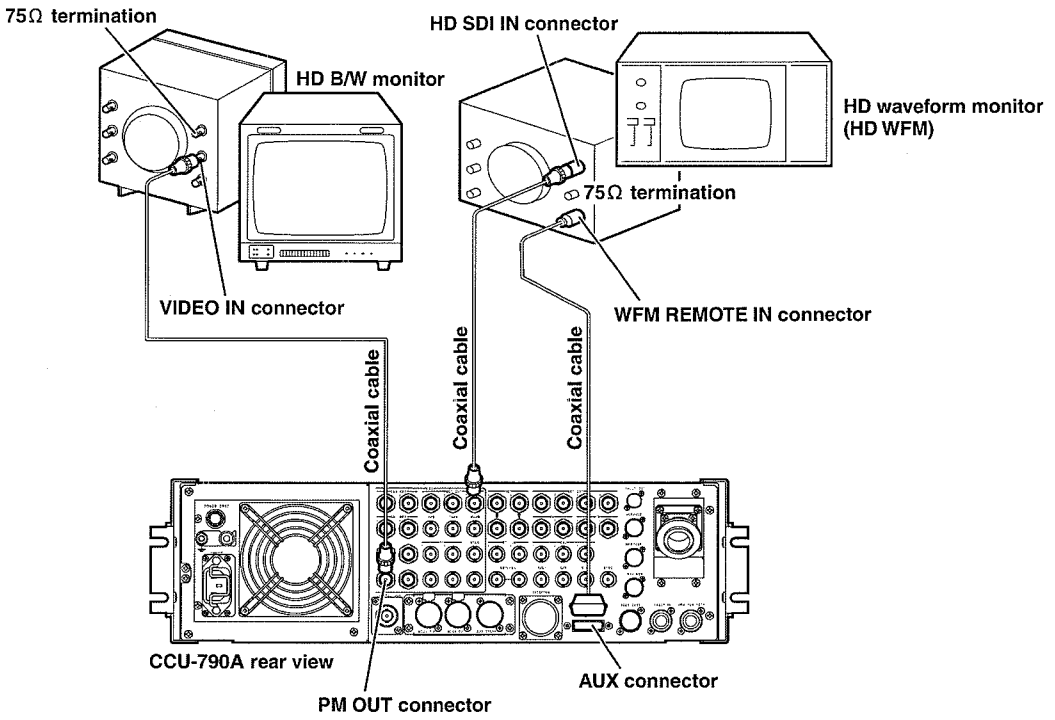
**5** Connect the POWER CONT connector on the rear of CCU-790A and the P.S CONT connector on the OCP via the POWER CONT cable.

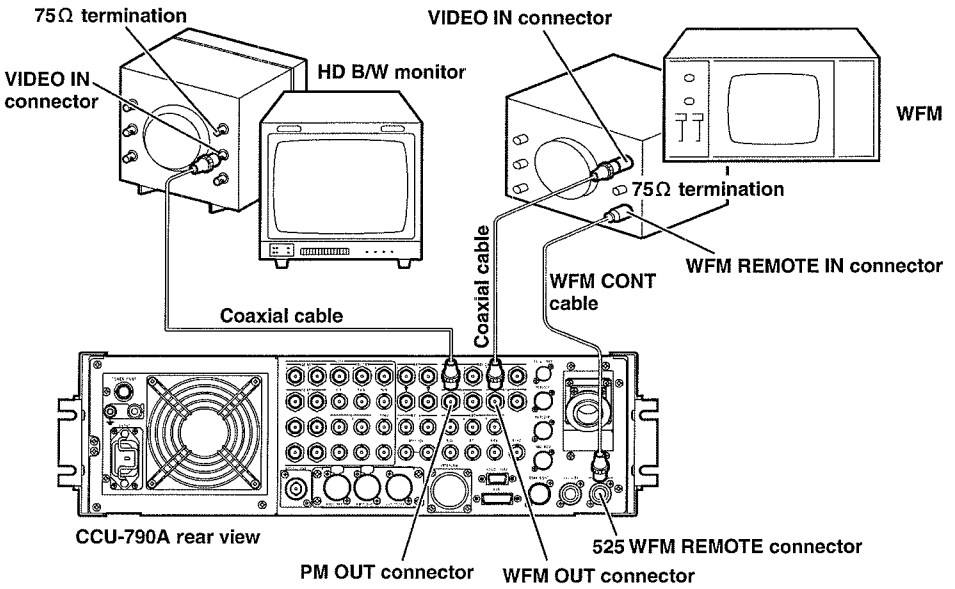
**6** Set the POWER REMOTE/LOCAL switch on the front of CCU-790A to REMOTE.

After completing the above procedures, set the camera POWER switch to CCU-790A MAIN POWER switch to ON to enable the OCP to turn the camera and CCU power ON/OFF.

# 3.3 CCU and Monitor Connection

The CCU-790A can be connected to the ND monitor or NTSC monitor.

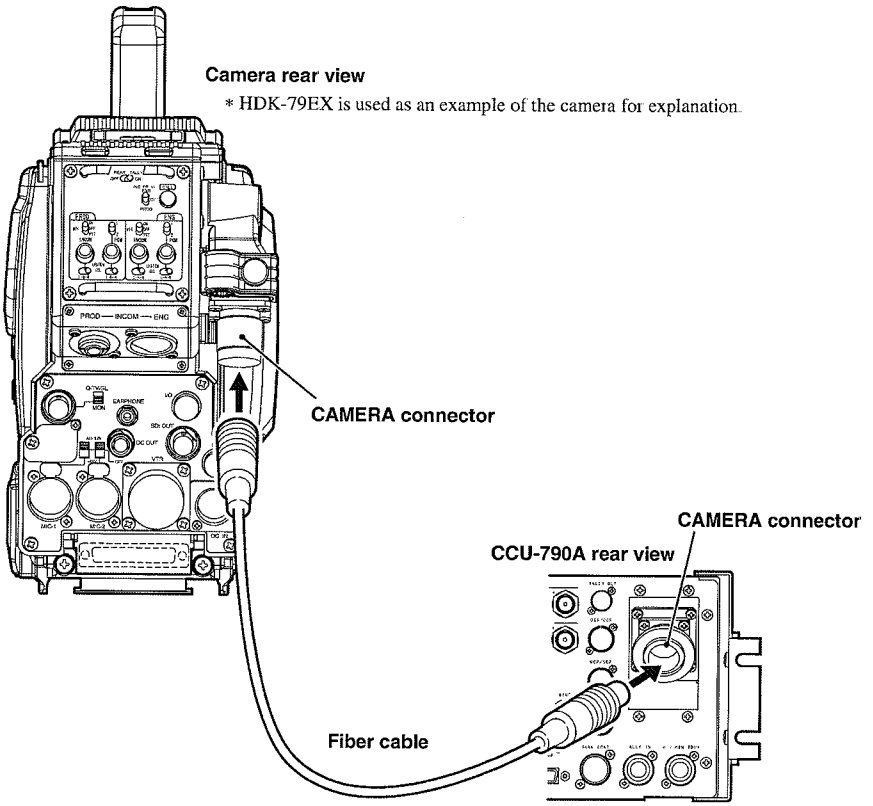


# 3.4 CCU and Camera Connection

This section explains how to connect the CCU-790A to the camera.
Two types of fiber cables are available in different shapes

- Fiber cable (2-core single mode) : Diameter 9.2mm or 16mm, Maximum length 3000m (when CCU-790 or CCU-790A is used)




**1** Connect the CAMERA connector on the rear of the CCU-790A to the CAMERA connector on the rear of the camera via a fiber cable.

***CAUTION:***

- The fiber cable has a male plug connector on one end and a female plug connector on the other end. Be sure to connect the female plug connector to the camera and the male plug connector to the CCU.

- Secure the fiber cable with the CAMERA CABLE clamp attached to the camera to remove any slack. Refer to the instructions accompanying the cable or camera to be used for how to secure the cable with the cable clamp and how to handle the fiber cable.

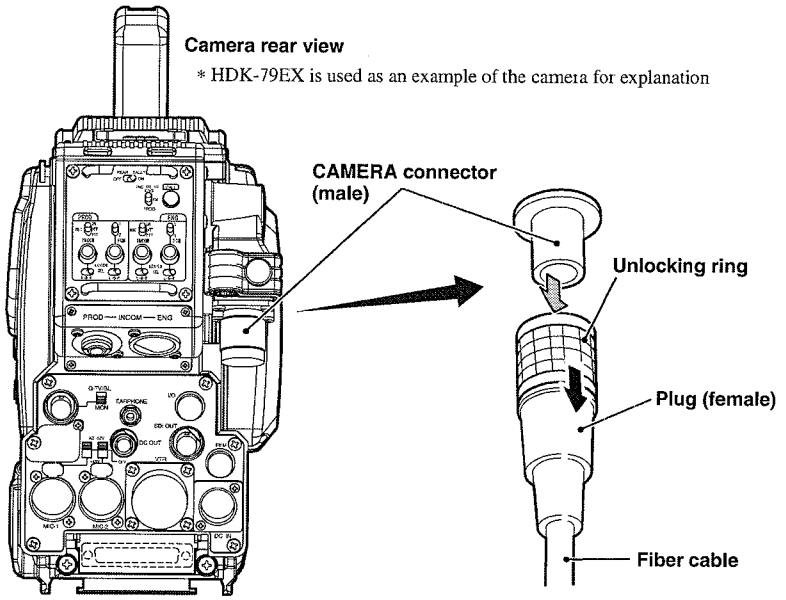
## ■ *Removing the Fiber Cable*

This section explains how to remove the fiber cable.

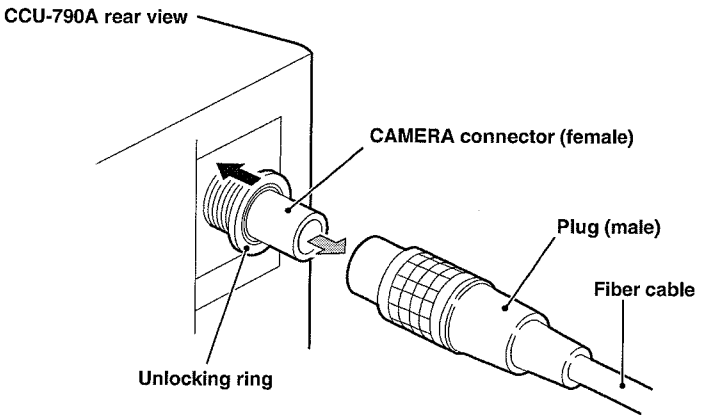
***CAUTION:***

When you remove the cable, be sure to hold the plug and pull. Failure to do so may damage the fiber in the cable.

### ● *Camera*




### ● *CCU*



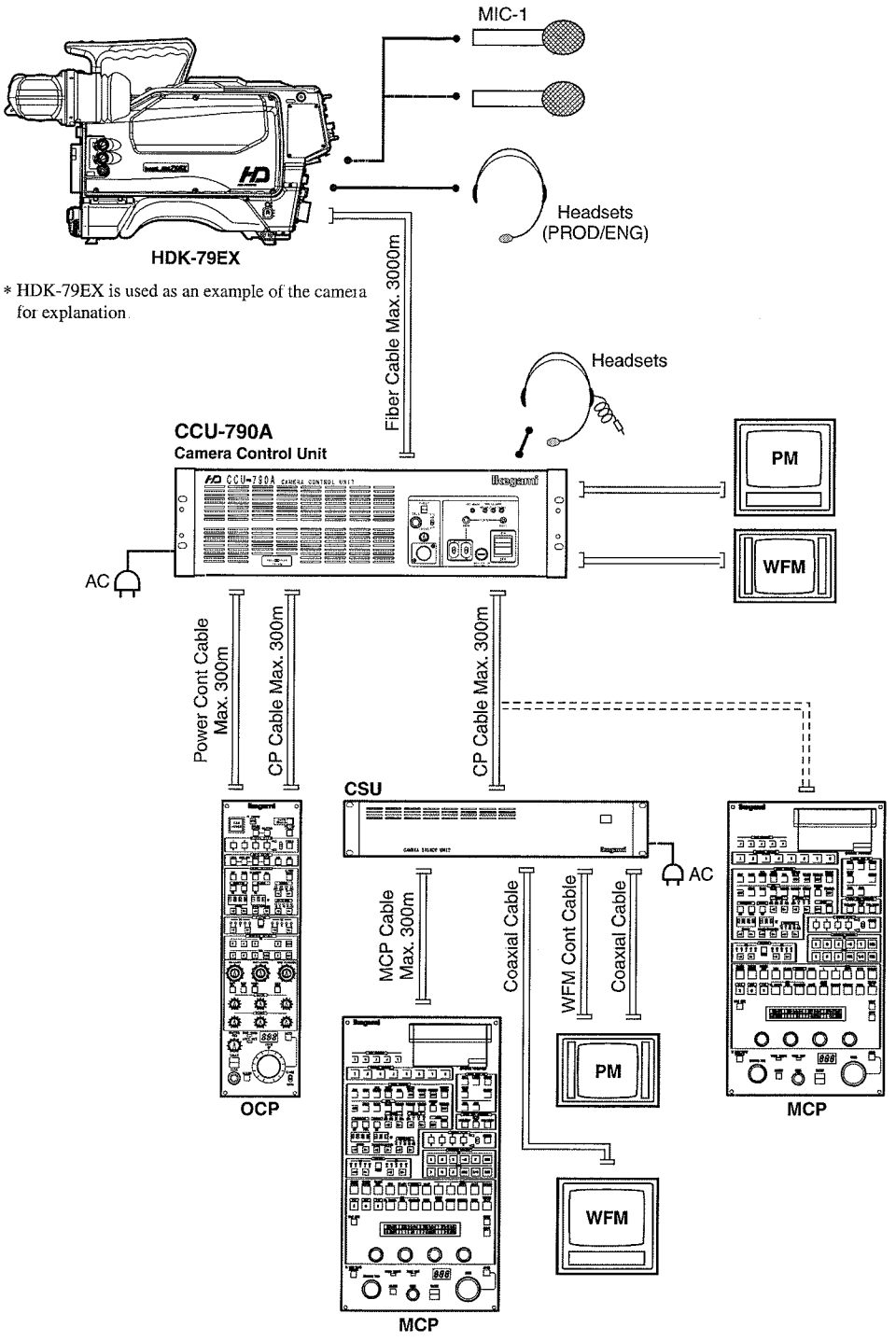

**1** Remove the cable from the camera while pulling the unlocking ring on the fiber cable plug (female) toward you.

If the connector tip is locked, the fiber cable will not be removed. If it is locked, push the fiber cable toward the CAMERA connector, and then remove as described above.

**2** Remove the cable from the CCU-790A while pushing the unlocking ring of the CAMERA connector on the rear of CCU-790A.

If the connector tip is locked, the fiber cable will not be removed. If it is locked, push the fiber cable toward the CAMERA connector, and then remove as described above.

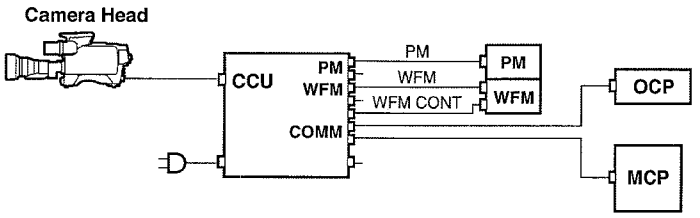
# 3.5 Connection Diagram



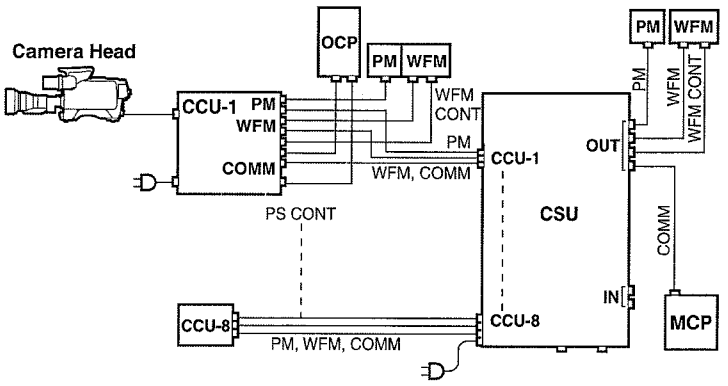
# 3.6 Operating Systems

You can choose and operate each control panel to be connected to the CCU-790A, for your purpose.

### ■ *Example of Minimum Configuration of System Camera (1 camera, 1 OCP, 1 MCP)*




### ■ *Example of System Camera Configuration (Up to 8 cameras, 1 MCP)*




***Term:***

OCP Operation Control Panel

This control panel is used for normal operation. Typically one OCP is dedicated to one camera chain.

***Term:***

MCP Maintenance Control Panel

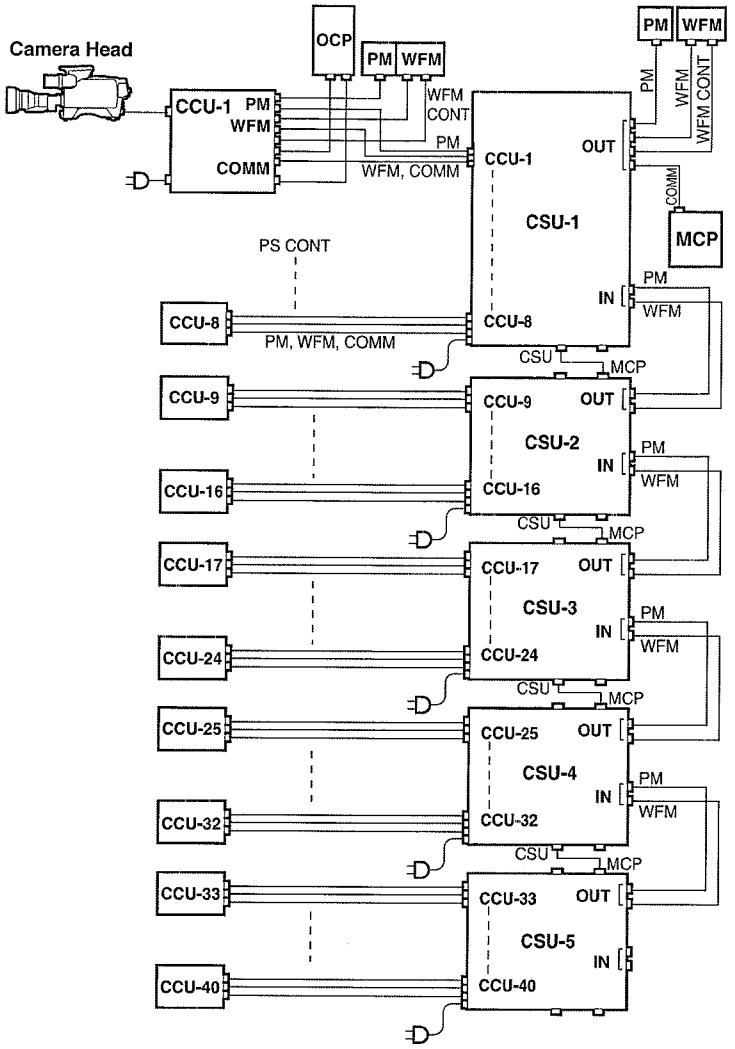
This control panel is used for the maintenance and precise adjustment of the camera in studio shooting. By using a memory card, you can save the shooting condition on memory and make setup easily. By using a CSU together with an MCP, you can maintain up to 40 cameras.

***Term:***

CSU Camera Select Unit

Used when controlling multiple cameras. With using a MCP, one CSU can control up to 8 cameras, and contains terminals through which video is output on the monitor from the selected camera.

■ ***Example of Minimum Configuration of System Camera (Up to 40 cameras and 1 MCP)***

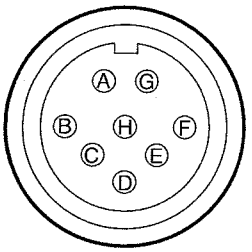


# 3.7 External Connections

## ■ *POWER CONT Connector*

Used to control ON and OFF of HEAD power and CCU power from the OCP.

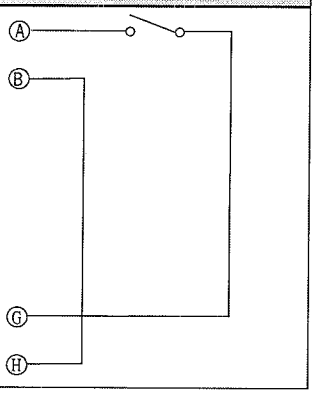
Receptacle




Insertion Side

**Camera head side : R05-R8F**

**Cable side : R05-PB8M (8-pin male plug)**

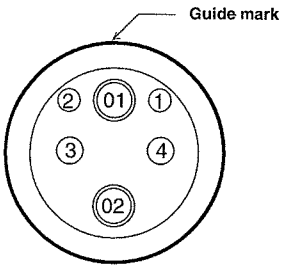
| Pin No. | Name | Function | I/O | External Interface |
|---|---|---|---|---|
| Ⓐ | PWR CONT (H) | CCU power ON/OFF control signal input (H) | IN |  |
| Ⓑ | HP ON / OFF | HEAD power ON/OFF control signal input | IN | |
| Ⓒ | N . C | (Spare) | — | |
| Ⓓ | N . C | (Spare) | — | |
| Ⓔ | N . C | (Spare) | — | |
| Ⓕ | N . C | (Spare) | — | |
| Ⓖ | PWR CONT (C) | CCU power ON/OFF control signal input (C) | IN | |
| Ⓗ | GND | Ground for CCU power ON/OFF control signal | GND | |

## ■ *CAMERA Connector*

Used to connect the camera to its CCU.
You can choose either of the following two types of camera connectors.

### [3K Series]

Receptacle



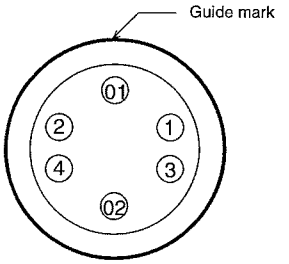

Insertion Side

**Camera head side : FXW. 3K.**
**Cable side : PUW. 3K.**

| Pin No | Name | Function | I/O | External Interface |
|---|---|---|---|---|
| 01 | OPT H - B | Optical contact Camera -> CCU | IN | |
| 02 | OPT B - H | Optical contact CCU -> Camera | OUT | |
| 1 | MTL B - H | Control signal (H) CCU -> Camera | OUT | |
| 2 | MTL H - B | Control signal (C) Camera -> CCU | IN | |
| 3 | AC (H) | AC input power (H) supplied from CCU | OUT | |
| 4 | AC (C) | AC input power (C) supplied from CCU | OUT | |

### [OPS Series]

Receptacle



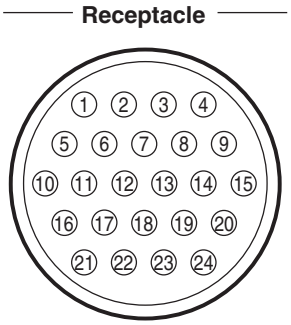

Insertion Side

**Camera head side : OPS-PR**
**Cable side : OPS-J**

| Pin No. | Name | Function | I/O | External Interface |
|---|---|---|---|---|
| 01 | OPT H - B | Optical contact Camera -> CCU | IN | |
| 02 | OPT B - H | Optical contact CCU -> Camera | OUT | |
| 1 | AC (C) | AC input power (C) supplied from CCU | OUT | |
| 2 | AC (H) | AC input power (H) supplied from CCU | OUT | |
| 3 | MTL H - B | Control signal Camera -> CCU | IN | |
| 4 | MTL B - H | Control signal CCU -> Camera | OUT | |

## ■ *INTERCOM Connector*

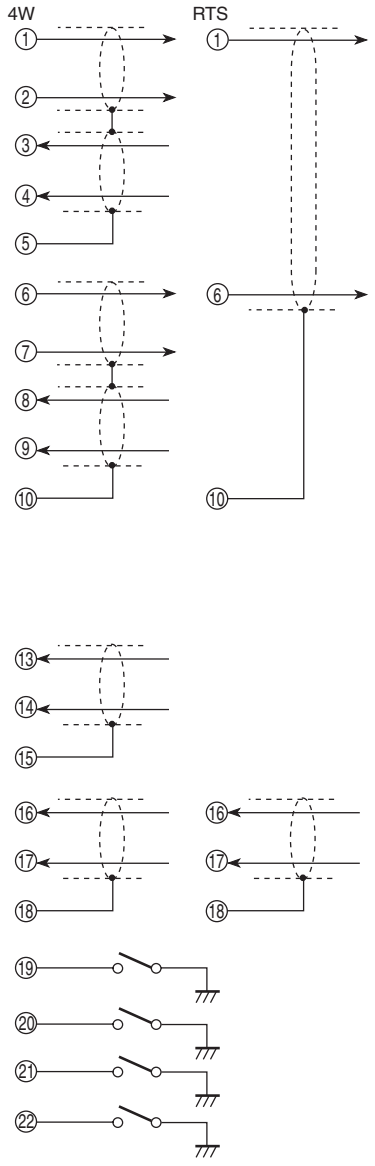
Used to connect an external intercom system.




**CCU side : TRCO1-A25R24MA (Tajimi)**

**Cable side : TRCO1-25P24FA (24-pin female plug) or equivalent**

| Pin No. | Name | Function | I/O | External Interface |
|---|---|---|---|---|
| ① | PROD BS - L (H) | PROD BS -> LINE (+) / PROD RTS | OUT | |
| ② | PROD BS - L (C) | PROD BS -> LINE (-) | OUT | |
| ③ | PROD L - BS (H) | PROD BS <- LINE (+) | IN | |
| ④ | PROD L - BS (C) | PROD BS <- LINE (-) | IN | |
| ⑤ | SHIELD | Shield for PROD line (1 pin to 4 pin) | GND | |
| ⑥ | ENGR BS - L (H) | ENGR BS -> LINE (+) / ENG RTS | OUT | |
| ⑦ | ENGR BS - L (C) | ENGR BS -> LINE (-) | OUT | |
| ⑧ | ENGR L - BS (H) | ENGR BS <- LINE (+) | IN | |
| ⑨ | ENGR L - BS (C) | ENGR BS <- LINE (-) | IN | |
| ⑩ | SHIELD | Shield for ENGR line (6 pin to 9 pin) | GND | |
| ⑪ | N . C | ——— | — | |
| ⑫ | N . C | ——— | — | |
| ⑬ | PGM - 1 IN (H) | PGM-1 line (H) | IN | |
| ⑭ | PGM - 1 IN (C) | PGM-1 line (C) | IN | |
| ⑮ | SHIELD | Shield for PGM-1 line (13 pin, 14 pin) | GND | |
| ⑯ | PGM - 2 IN (H) | PGM-2 line (H) | IN | |
| ⑰ | PGM - 2 IN (C) | PGM-2 line (C) | IN | |
| ⑱ | SHIELD | Shield for PGM-2 line (16 pin, 17 pin) | GND | |
| ⑲ | REMOTE ISOLATE OFF | REMOTE ISOLATE ON/OFF<br>OFF : OPEN, ON : GND | IN | |
| ⑳ | EXT MIC OFF | HEAD INCOM MIC OFF | IN | |
| ㉑ | SWITCHABLE ENABLE | Permission of aspect ratio selection function<br>Enable : GND, Disable : OPEN | IN | |
| ㉒ | 16 : 9 ON | Aspect ratio selection control (valid only when pin 21 is GND)<br>16:9 : GND, 4:3 : OPEN | IN | |
| ㉓ | EXT +12V IN (+) | +12V input (+) | IN | |
| ㉔ | EXT +12V IN (-) | +12V input (-) | IN | |



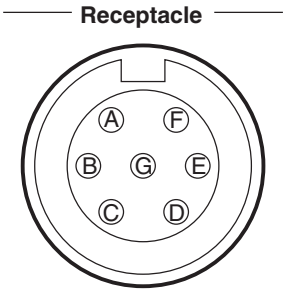
- When only one external line is provided, the ENG line is used.
- Set switches on the INCOM module as follows according to the intercom system to be used.

| | S2, 3, 5, 6<br>(4W ←→ RTS) | S1, 4<br>(DUMMY ON ←→ OFF) |
|---|---|---|
| 4W | 4W side | ON side |
| RTS | RTS side | OFF side |

## ■ *WFM REMOTE Connector*

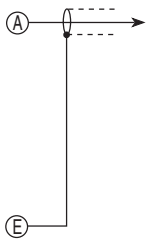
Used to send STAIR waveform signal which monitors a signal waveform.
The camera equipped with two types of connectors depending on the type of monitor used: for NTSC waveform monitor and HDTV waveform monitor.

### [NTSC Waveform Monitoring]




**Insertion Side**

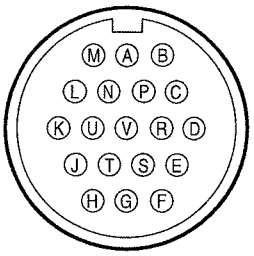
**CCU side : PRC 03-23A10-7F**
**Cable side : PRC 03-12A10-7M10.5 (7-pin male plug) or equivalent**

| Pin No. | Name | Function | I/O | External Interface |
|---|---|---|---|---|
| Ⓐ | STAIR OUT | STAIR signal output | OUT |  |
| Ⓑ | SEQ ON | Output of control signal which selects SEQ | OUT | |
| Ⓒ | NC | ——————— | — | |
| Ⓓ | -15 V (-) IN | -15 V RET | RET | |
| Ⓔ | GND | Ground for WFM control signal | GND | |
| Ⓕ | NC | ——————— | — | |
| Ⓖ | -15 V (+) IN | -15V input | IN | |

## ■ *INTERCOM Connector* BTA type 19pin

Used to connect an external intercom system, and complies with BTA S-1005B.

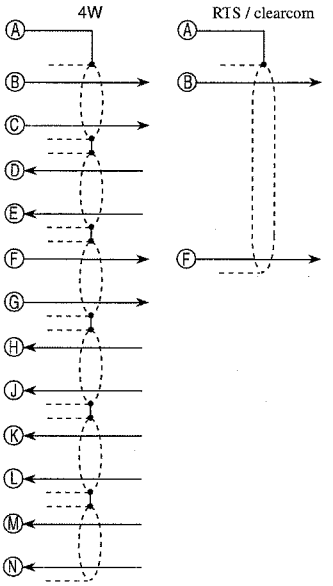
Receptacle




Insertion Side

**Camera head side : KPT 02E14-19P**

**Cable side : KPT 06F14-19S (19-pin female plug) or equivalent**

| Pin No. | Name | Function | I/O | External Interface |
|---|---|---|---|---|
| Ⓐ | SHIELD | Shield for each intercom signal | GND |  |
| Ⓑ | PROD BS - L (H) | PROD intercom output (H) from CCU to external system | OUT | |
| Ⓒ | PROD BS - L (C) | PROD intercom output (C) from CCU to external system | OUT | |
| Ⓓ | PROD L - BS (H) | PROD intercom input (H) from external system to CCU | IN | |
| Ⓔ | PROD L - BS (C) | PROD intercom input (C) from external system to CCU | IN | |
| Ⓕ | ENG BS - L (H) | ENG intercom output (H) from CCU to external system | OUT | |
| Ⓖ | ENG BS - L (C) | ENG intercom output (C) from CCU to external system | OUT | |
| Ⓗ | ENG L - BS (H) | ENG intercom input (H) from external system to CCU | IN | |
| Ⓙ | ENG L - BS (C) | ENG intercom input (C) from external system to CCU | IN | |
| Ⓚ | PGM - 1 (H) | PGM-1 audio input (H) from external system to CCU | IN | |
| Ⓛ | PGM - 1 (C) | PGM-1 audio input (C) from external system to CCU | IN | |
| Ⓜ | PGM - 2 (H) | PGM-2 audio input (H) from external system to CCU | IN | |
| Ⓝ | PGM - 2 (C) | PGM-2 audio input (C) from external system to CCU | IN | |
| Ⓟ | N . C | (Spare) | — | |
| Ⓡ | R TALLY (+) | R TALLY signal input (+) from external system to CCU | IN | |
| Ⓢ | G TALLY (+) | G TALLY signal input (+) from external system to CCU | IN | |
| Ⓣ | N . C | (Spare) | — | |
| Ⓤ | N . C | (Spare) | — | |
| Ⓥ | TALLY COM | Ground for R TALLY signal input or G TALLY signal input | GND | |

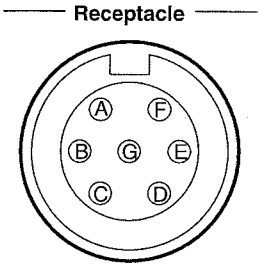


When only one external line is provided, the ENG line is used.

## ■ *WFM REMOTE Connector*

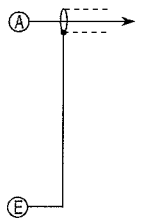
Used to send STAIR waveform signal which monitors a signal waveform.
The camera equipped with two types of connectors depending on the type of monitor used: for NTSC waveform monitor and HDTV waveform monitor.

### [NTSC Waveform Monitoring]




Insertion Side

**Camera head side : PRC 03-23A10-7F**
**Cable side : PRC 03-12A10-7M10.5 (7-pin male plug) or equivalent**

| Pin No. | Name | Function | I/O | External Interface |
|---|---|---|---|---|
| Ⓐ | STAIR OUT | STAIR signal output | OUT |  |
| Ⓑ | SEQ ON | Output of control signal which selects SEQ | OUT | |
| Ⓒ | N. C | ——— | — | |
| Ⓓ | -15 V (-) IN | -15 V RET | RET | |
| Ⓔ | GND | Ground for WFM control signal | GND | |
| Ⓕ | N. C | ——— | — | |
| Ⓖ | -15 V (+) IN | -15V input | IN | |