Truck Link

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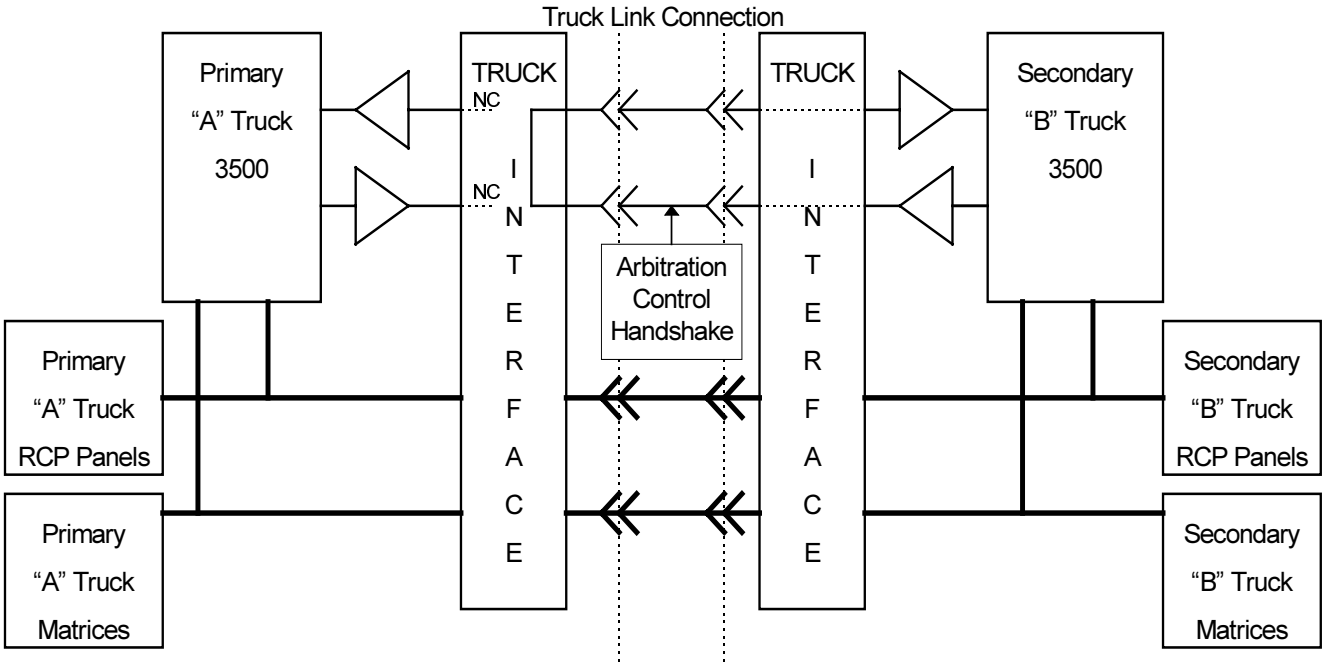
Truck Link utilizes a DC signal handshake scheme to create a control system where two independent truck systems can be linked together to work as one integrated system. Whenever a Primary "A" truck is connected to a Secondary "B" truck, Truck Link automatically indicates to the secondary controller that the primary controller is present. The secondary controller reacts to this signal by staying in a standby state and refraining from control of any matrices and RCP control panels.



Truck link is enabled by a software configuration that sets one of the configurable CPU link ports (Serial4 - Com4) on the Secondary "B" truck System Controller to the Truck Link protocol. This indicates to the Secondary "B" truck that it may be required to go into a *Standby Mode* state depending upon the state of the Truck Link feedback. Truck Link feedback on the Secondary "B" truck is made by an internal connection on the Primary "A" Truck, whenever the two trucks are physically interconnected. (Note: Since the Primary "A" truck will always have control over its matrices and panels, regardless of whether they are stand alone or connected with the Secondary "B" truck, the Primary "A" truck controller MUST NOT specify the Truck Link configuration.)

When configured for Truck Link, the CPU link (Serial 4, Com4) is no longer used for asynchronous communications. Instead, it's port control signals function as feedback controls and are used in the *Active Mode* and *Standby Mode* state arbitration. The System Controller in the Secondary "B" truck drives a DC signal out of it's Truck Link port (Serial 4, Com4) and whenever a Primary "A" truck is physically connected, automatically detects the presence of the Primary "A" truck.

If the Truck Link configured Secondary "B" truck" System Controller is in the *Active Mode* (currently controlling the locally connected matrices and control panels), it continues to monitor the Truck Link feedback signals. If the Secondary "B" Truck Link feedback detects the presence of a Primary "A" truck for a period of at least ½ second, the Secondary "B" truck System Controller initiates a System Controller Reset and assumes an Inactive or *Standby Mode* state (NOT controlling the locally connected matrices and control panels). While the Secondary "B" truck" System Controller is in the Standby Mode, it is not responsible for any action except for monitoring the feedback signal through the Truck Link.

If the Secondary "B" truck" System Controller is in the *Standby Mode* (currently NOT controlling the locally connected matrices and control panels, but monitoring the feedback controls), and detects the absence of a Primary "A" truck for a period of at least two seconds, the Secondary System Controller assumes that the Primary System Controller is not present and initiates a System Controller Reset, then reevaluates its *Active Mode* state. If upon evaluation a Primary System Controller is still not detected, it enters the *Active Mode* state (re-establishes control of it's own locally connected matrix and RCP panels).

If a System Controller loses its configuration, it could cause some sort of conflict when connected with another Primary "A" truck System Controller under this scheme. To prevent conflict, the following safeguards have been introduced to the System Controller operating conditions:

- If no System5 matrix components are defined, the System 5 bus port is not accessed.
- If no PRC matrix components are defined, the PRC port may be placed into a tri-state mode.
- If no RCP panels are defined, all RCP port drivers are set to a tri-state mode.

CPU Link Configuration for the Secondary "B" Truck

- Truck Link should be configured for Port 4.
- Select "TRK" as the Protocol Type.
- The user must define a name for the Truck Link.
- Baud rate, stop bits, Checksum, Terminator, and other settings do not apply to a Truck Link configured CPU Link Port. Those settings will have no effect on a CPU Link configured for Truck Link operation.

There is a four position DIP Switch located on each TRUCK LINK UNIT which must be set as described below for proper operation:

TRUCK LINK UNIT DIP SWITCH CONFIGURATION for the SECONDARY "B" Truck

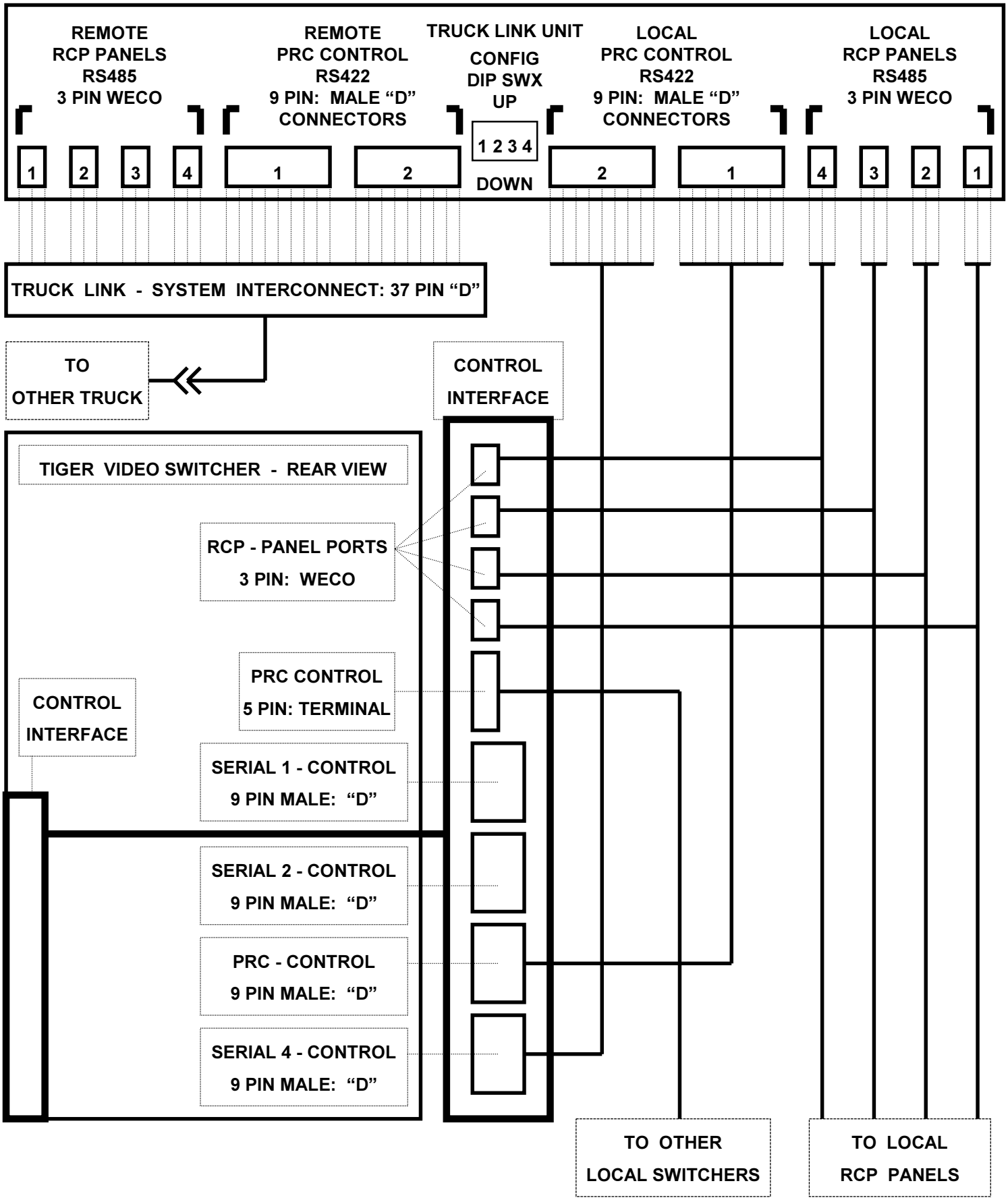
- DIP Switch 1 should be set to the UP position for SECONDARY operation.
- DIP Switches 2,3 and 4 are currently reserved for the future.

TRUCK LINK UNIT DIP SWITCH CONFIGURATION for the PRIMARY "A" Truck

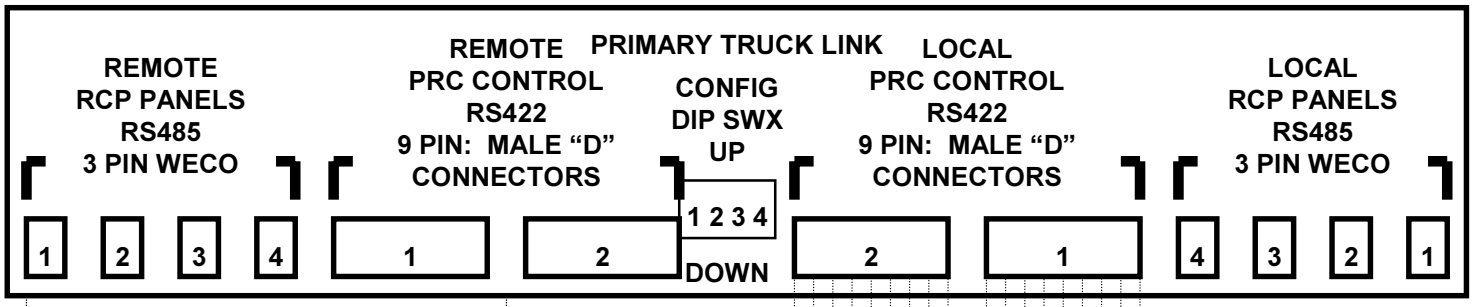
- DIP Switch 1 should be set to the DOWN position for PRIMARY operation.
- DIP Switches 2,3 and 4 are currently reserved for the future.

SYSTEM DRAWINGS ON THE FOLLOWING PAGES INDICATE PROPER SYSTEM INTERCONNECTION AMONG THE VARIOUS SYSTEM COMPONENTS

TRUCK LINK - LOCAL SYSTEM INTERCONNECTIONS



PRIMARY TRUCK LINK - LOCAL INTERCONNECTIONS



TRUCK LINK ARBITRATION CONTROL PORT 4

CTS + IN 1	
RX + IN 2	
TX - OUT 3	
RTS - OUT 4	
GND 5	
CTS - IN 6	
RX - IN 7	
TX + OUT 8	
RTS + OUT 9	

PRC SWITCHER CONTROL

CTS + IN 1	
RX + IN 2	
TX - OUT 3	
RTS - OUT 4	
GND 5	
CTS - IN 6	
RX - IN 7	
TX + OUT 8	
RTS + OUT 9	

THE LOCAL RCP PANEL CONNECTORS ARE PIN FOR PIN TO THE CONNECTORS ON THE PANELS

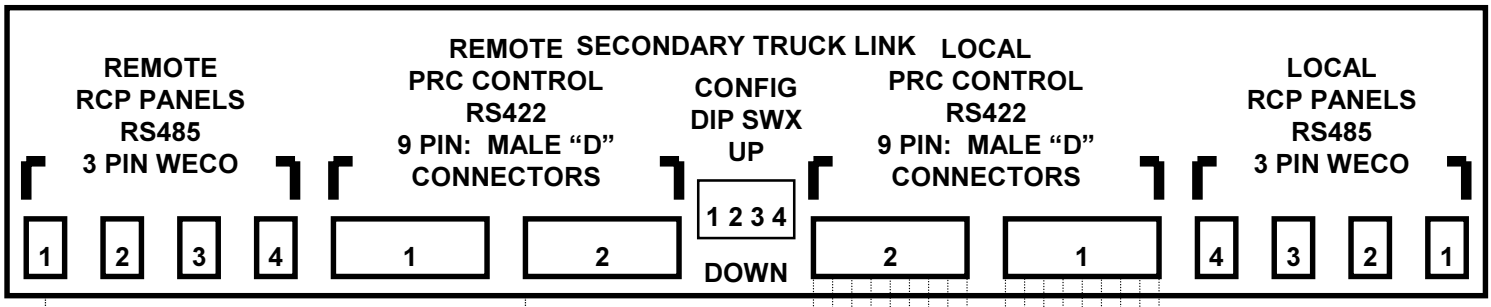
THE LOCAL PRC CONTROL CONNECTOR # 1 IS PIN FOR PIN TO THE CONNECTOR ON THE FRAMES. CONN. # 2 IS NOT!

TRUCK LINK ARBITRATION LOCAL PRC CONTROL CONNECTOR #2

CTS + IN 1			8 TX + OUT
RX + IN 2	NC	NC	9 RTS + OUT
TX - OUT 3	NC	NC	6 CTS - IN
RTS - OUT 4			7 RX - IN
GND 5			5 GND
CTS - IN 6			3 TX - OUT
RX - IN 7	NC	NC	4 RTS - OUT
TX + OUT 8	NC	NC	1 CTS + IN
RTS + OUT 9			2 RX + IN

LOCAL SWITCHER CONTROL PORT 4

SECONDARY TRUCK LINK - LOCAL INTERCONNECTIONS



TRUCK LINK ARBITRATION CONTROL PORT 4

CTS + IN 1
RX + IN 2
TX - OUT 3
RTS - OUT 4
GND 5
CTS - IN 6
RX - IN 7
TX + OUT 8
RTS + OUT 9

PRC SWITCHER CONTROL PORT

CTS + IN 1
RX + IN 2
TX - OUT 3
RTS - OUT 4
GND 5
CTS - IN 6
RX - IN 7
TX + OUT 8
RTS + OUT 9

THE LOCAL RCP PANEL CONNECTORS ARE PIN FOR PIN TO THE CONNECTORS ON THE PANELS

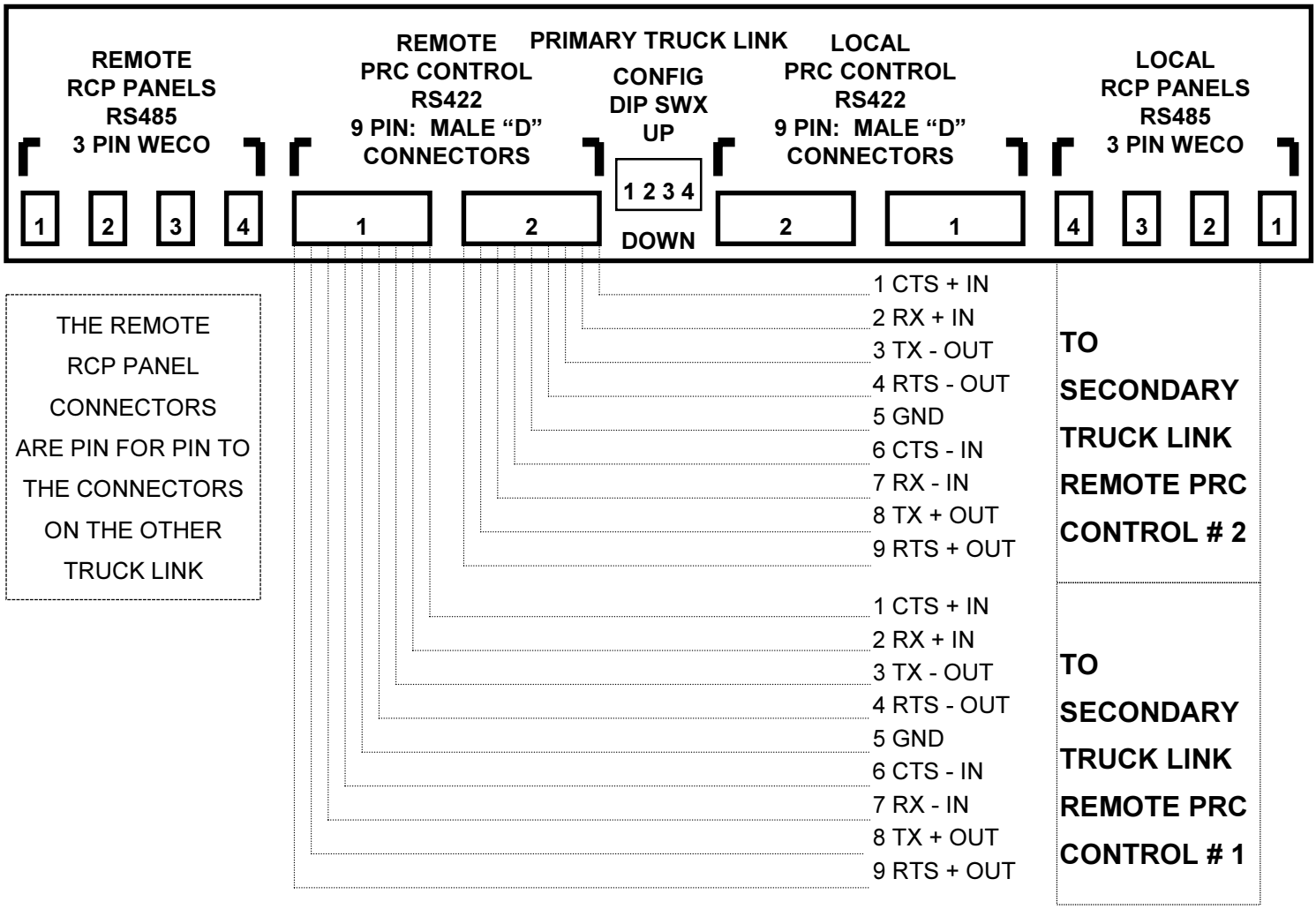
THE LOCAL PRC CONTROL CONNECTOR # 1 IS PIN FOR PIN TO THE CONNECTOR ON THE FRAMES. CONN. # 2 IS NOT!

TRUCK LINK ARBITRATION LOCAL PRC CONTROL CONNECTOR #2

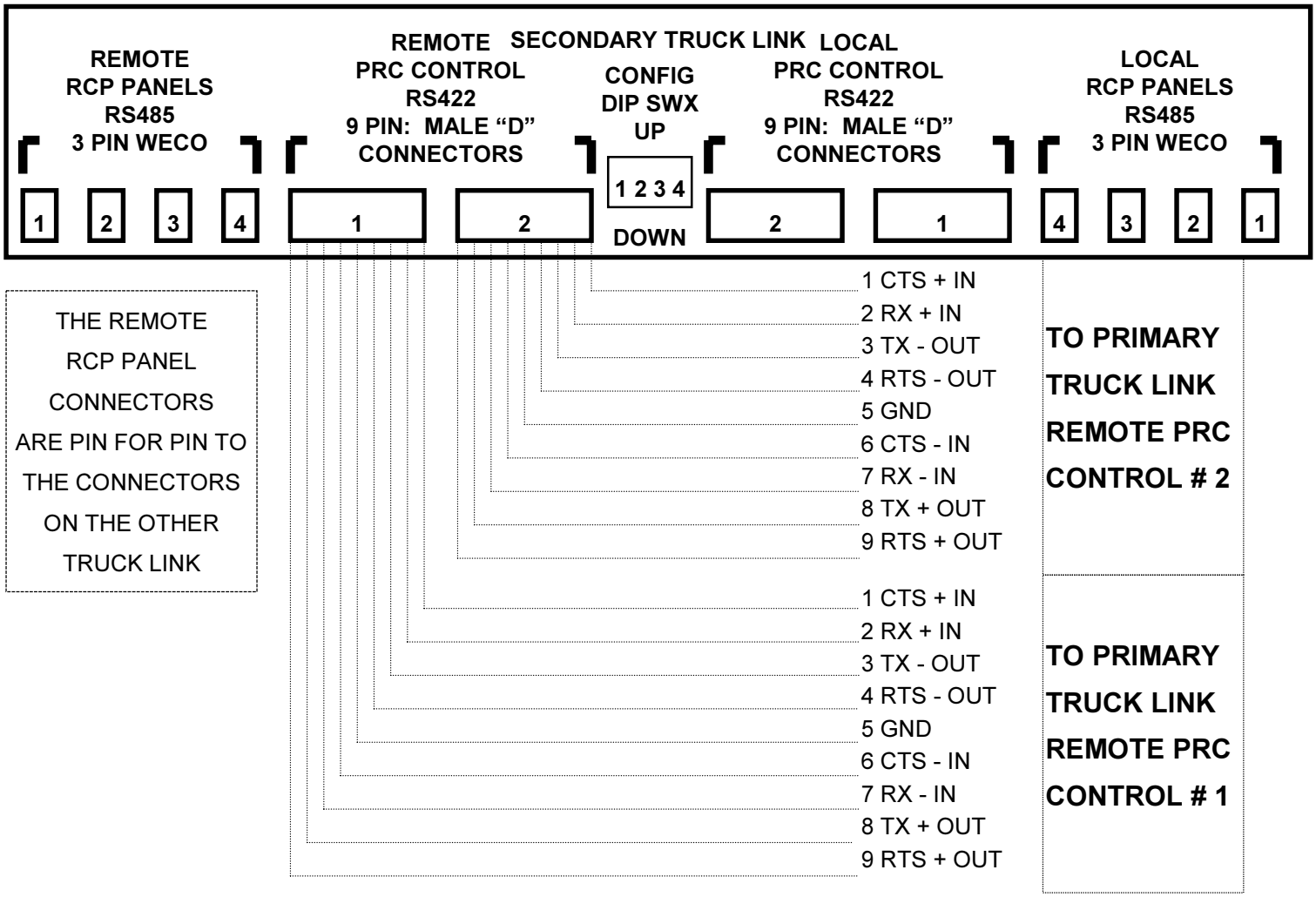
CTS + IN 1			8 TX + OUT
RX + IN 2	NC	NC	9 RTS + OUT
TX - OUT 3	NC	NC	6 CTS - IN
RTS - OUT 4			7 RX - IN
GND 5			5 GND
CTS - IN 6			3 TX - OUT
RX - IN 7	NC	NC	4 RTS - OUT
TX + OUT 8	NC	NC	1 CTS + IN
RTS + OUT 9			2 RX + IN

LOCAL SWITCHER CONTROL PORT 4

PRIMARY TRUCK LINK - REMOTE INTERCONNECTIONS

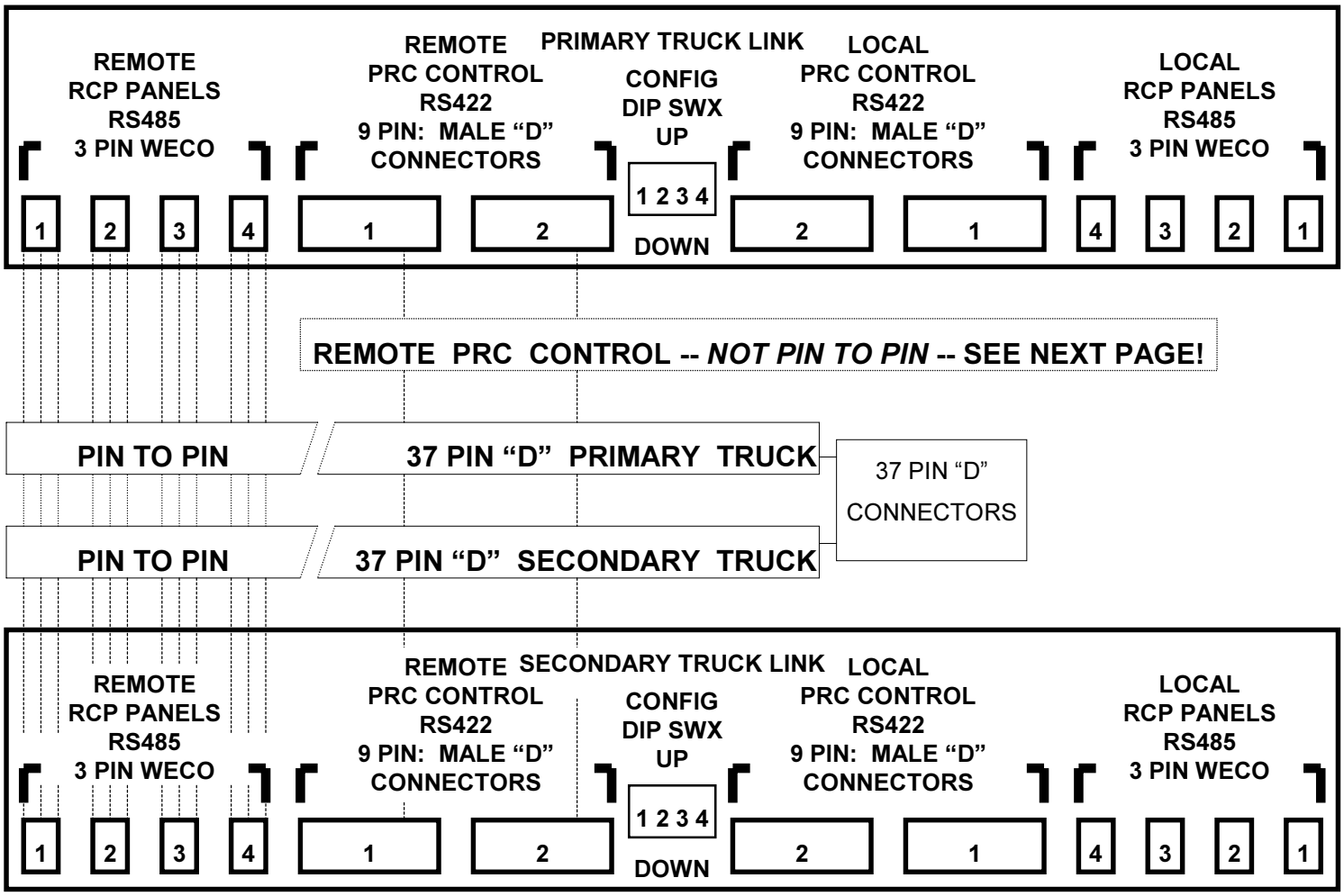


SECONDARY TRUCK LINK - REMOTE INTERCONNECTIONS

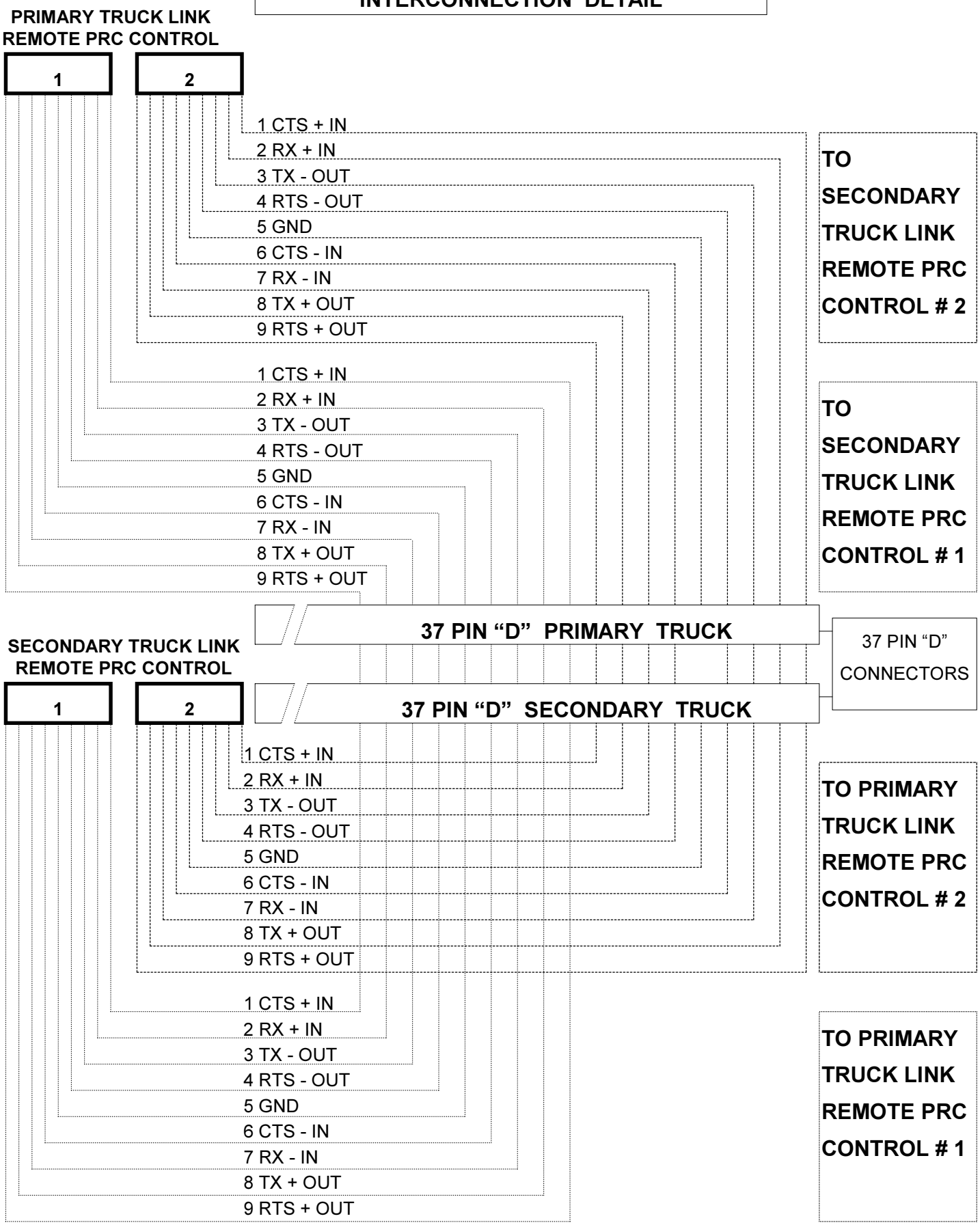


THE REMOTE RCP PANEL CONNECTORS ARE PIN FOR PIN TO THE CONNECTORS ON THE OTHER TRUCK LINK

PRIMARY TO SECONDARY - TRUCK LINK - REMOTE INTERCONNECTIONS

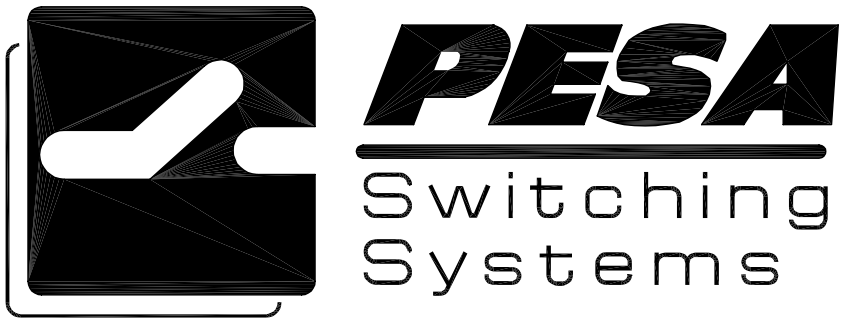


PRIMARY TO SECONDARY TRUCK LINK INTERCONNECTION DETAIL



Revision History

Rev.	Date	Description	By
A	09-09-99	Initial Release	S. Clause
B	03-06-01	Deleted Printing Specification per ECO CE00113.	G. Tarlton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