MAGNET CABLE WIRING INSTALLATION

TABLE OF CONTENTS

WARNING!

FERROUS MATERIAL HAZARD! THE CRIMP TOOL, AND OTHER TOOLS AND PARTS REQUIRED FOR THIS INSTALLATION CONTAIN FERROUS MATERIAL AND WILL BE STRONGLY ATTRACTED TO MAGNET AND MAY BECOME DANGEROUS PROJECTILES. IF MAGNET IS AT FULL FIELD – KEEP ALL FERROUS TOOLS AT LEAST 10 FEET AWAY FROM THE MAG-NET.

NOTE:
The Magnet heater and sensor cables must be routed around the outside of the magnet Insulator. Do not bury the magnet heater and sensor cables into the insulator.

1. Preparation

1. Verify that the following parts are shipped before starting the cable wiring.

Ground Cable Wiring (Page 8)

Run No.	Parts No.	From	To	Check
40	2103427	Magnet	Penetration Panel	
1010	2280056	SRI or Magnet I/F Unit	Magnet	
1027	2284838	SRI	Magnet I/F Unit	

Gradient Cable Wiring (Page 9 and 10)

Parts No.	Parts Name	Qty	Check
2286960	Gradient Cable Clamp Plate (Fixing Screw: U0438AA x4)	2	
2145791	Terminal (Fixing Screw: N9510 x2)	1	
2179100,2179101,2179102	Loop Cable	3	

Run No.	Parts No.	From	To	Check
1004	2283338	PP(Gradient Filter Box) 1/2	Gradient Coil Terminal 1/3	
1005	2283339	PP(Gradient Filter Box) 3/4	Gradient Coil Terminal 5/7	
1006	2283340	PP(Gradient Filter Box) 5/6	Gradient Coil Terminal 9/11	

Magnet I/F Unit Cable Wiring (Page 11)

Run No.	Parts No.	From	To	Check
414	-	PatientCommunicationBox J9	MIC(P-Light Cover)	
843	2260535	Magnet Interface Board J6	Penetration Panel J20	
866	2263200-12	Magnet Interface Board J3	Patient Table J12	
869	46-317252G4	PatientCommunicationBox J9	PCM Speaker	
870	46-317157G6	PatientCommunicationBox J7	PCM Microphone	
871	2261329	Magnet Interface Board J8	Laser Diodes	
873	2263200-13	Magnet Interface Board J1	PatientCommunicationBox J6	
920	2263200-17	Magnet Interface Board J2	Penetration Panel J12	
943	2275301	Pivot Sensor(with table rail)	Run 944	
944	2263200-34	Magnet Interface Board J4	Run 943	
1017	2280058	Magnet Interface Board J7	SRI Splitter J8	
1018	2280057	Magnet Interface Board J5	Pinch Switches A1,A2 and A3 A1:L Pinch Switch A2:R Pinch Switch A3:Front Pinch Switch	

Continued

PAC Cable Wiring (Page 12)

Run No.	Parts No.	From	To	Check
-	2284775	PAC J2	Filter Box 2	
-	2284776	PAC J4	Filter Box 3	
716	46-317359G931	Filter Box 2	Penetration Panel J89	
848	2221945	Filter Box 3	Operator Display J5	

Parts No.	Parts Name	Qty	Check
2225039	Filter Box 2	1	
2228335	Filter Box 3	1	

SRI / SRI Splitter Cable Wiring (Page 13)

Run No.	Parts No.	From	To	Check
842	2263200-4	SRI Splitter J7	Penetration Panel J15	
849	2263200-5	SRI J4	SRI Splitter J1	
850	2263200-6	SRI J7	SRI Splitter J3	
858	2263200-9	SRI Splitter J4	Patient Table J15	
859	2263200-10	SRI J3	Patient Table J14	
860	2263200-11	SRI J2	Patient Table J13	
861	2221947	SRI J5,J6&J9 SRI Splitter J10&J11	Operator Display J4	
864	2261328	SRI Splitter J6	PCM Bore Light (Left)	
865	2261328	SRI Splitter J5	PCM Bore Light (Right)	
897	2221948	SRI Splitter J9	Operator Display J3	
1016	2279863	SRI J1	Penetration Panel J14	
1023	2288234	SRI J8	SRI Splitter J2 Gradient Coil Temp Sensor 3P	

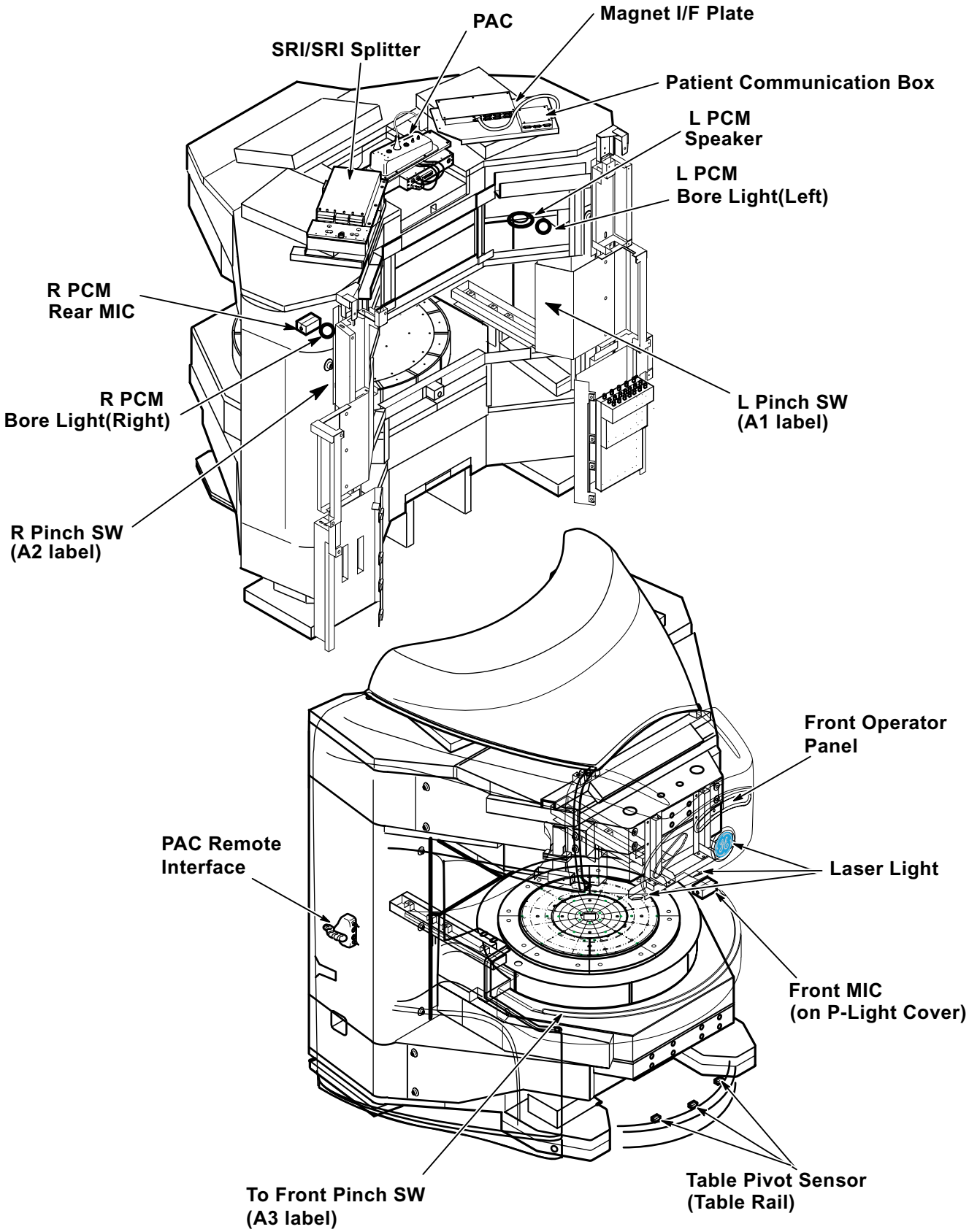
Heater/Temperature Sensor/Thermostat Cable Wiring (Page 14)

Run No.	Parts No.	From	To	Check
1011	2282839	Magnet J13	Penetration Panel TCU J3	
1012	2282838	Magnet J14	Penetration Panel TCU J4	
1013	2282840	Magnet J15	Penetration Panel TCU J5	

Optical Cable Wiring (Page 15)

Run No.	Parts No.	From	To	Check
711/712	46-328079G9	SRI J11,J12&J13 PAC J1	Penetration Panel F/O Repeater Panel J91	

2. Electrical Component Location

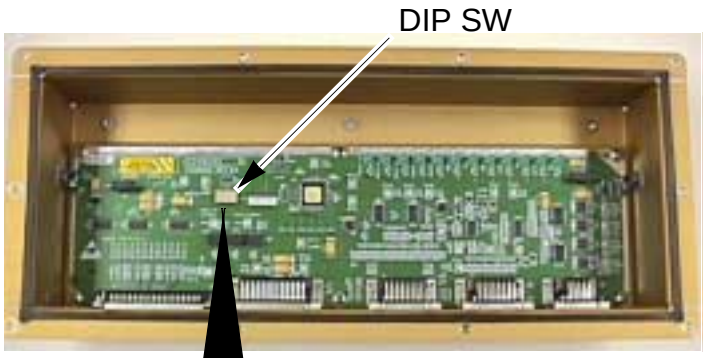


ELECTRICAL COMPONENT LOCATION
ILLUSTRATION 1

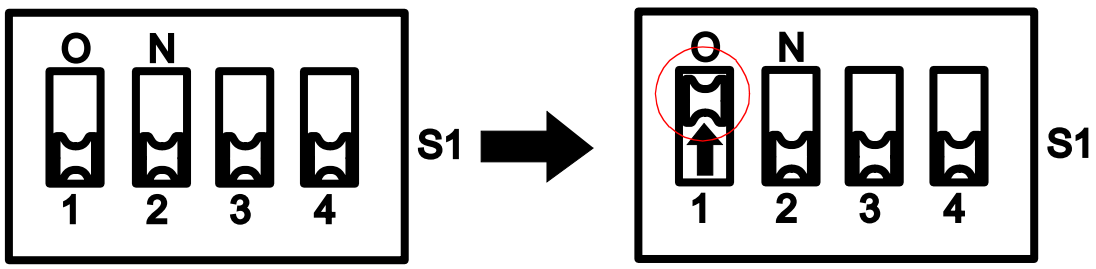
3. Magnet Unit Installation

NOTE:
For new magnet interface unit (2254366-2), provide a bank of 4 dip switches including a function to select logic of OpenSpeed and Ovation, and this unit is keeping compatibility of OpenSpeed and Ovation by dip switch setting. Differential of logic is a signal condition for collision only.

1. Before installing the magnet I/F unit, open the top cover of the Magnet I/F unit by removing 10 screws.
2. Inspect DIP Switch position.If all SW is OFF position, slide the switch 1 to ON position. The switch 2, 3 and 4 are OFF position.
3. Restore top cover of the magnet I/F unit with 10 screws.



Magnet Interface Unit (Removed top cover)



Factory (Default) Setting

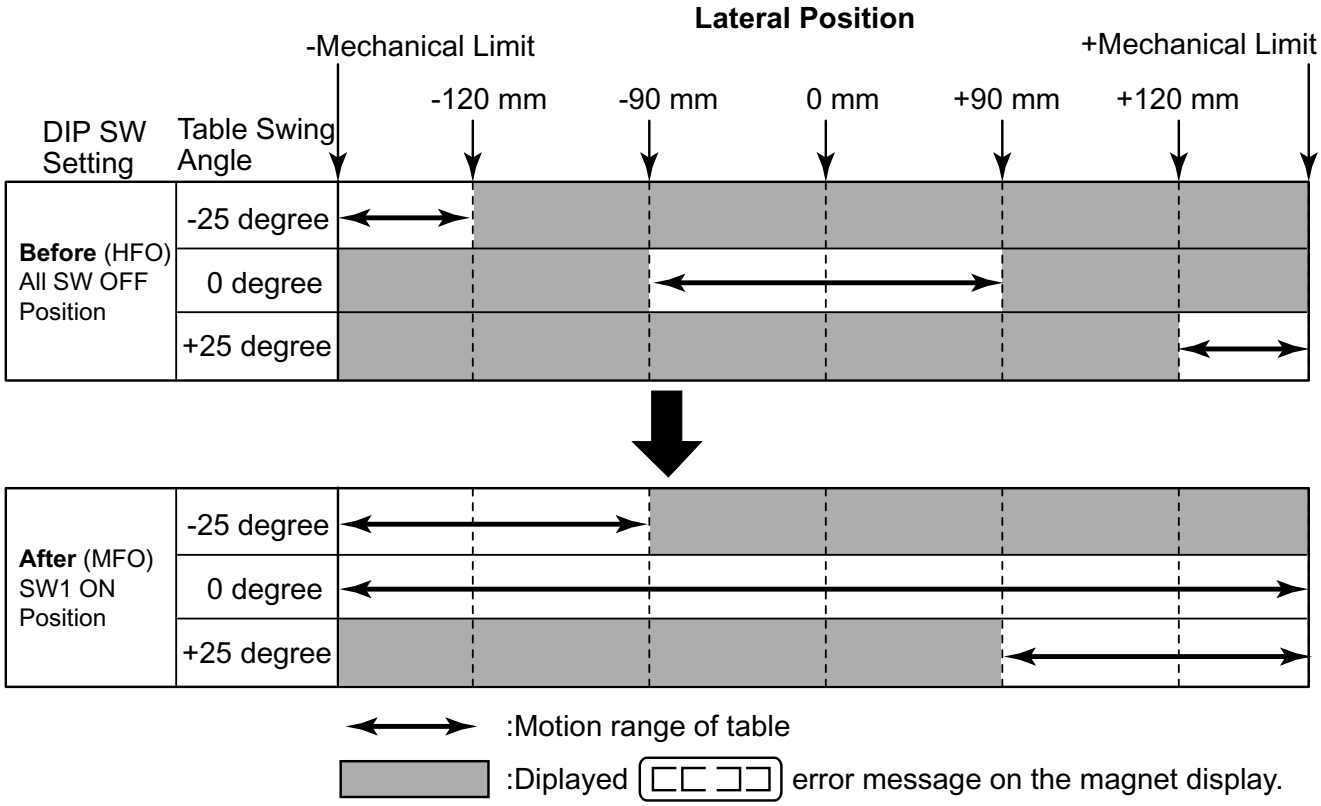
Switch 1 should be in the ON position, 2,3,4 are in the OFF position.

DIP SW SETTING OF NEW MAGNET INTERFACE UNIT
ILLUSTRATION 2

3. Magnet Unit Installation(Continued)

4. After setting DIP SW, table motion range of lateral direction is changed to following specifications.

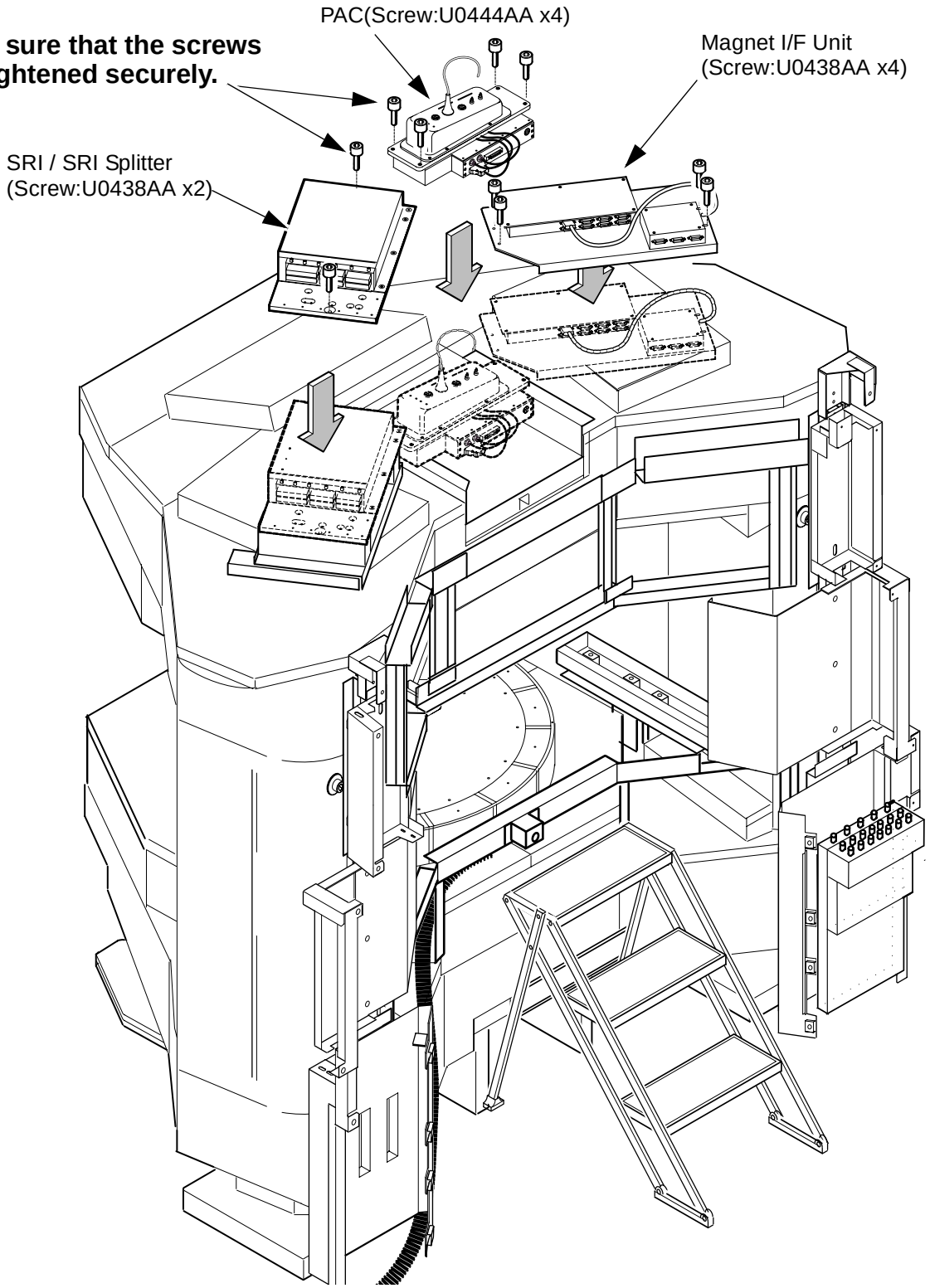
Table Motion Range of Lateral Direction



3. Magnet Unit Installation(Continued)

5. Install PAC onto the magnet with 4 screws.Make sure that screws are tightened securely.
6. Install Magnet I/F Unit Assy onto the magnet with 4 screws.
7. Install SRI/SRI Splitter onto the magnet with 2 screws.Make sure that screws are tightened securely.

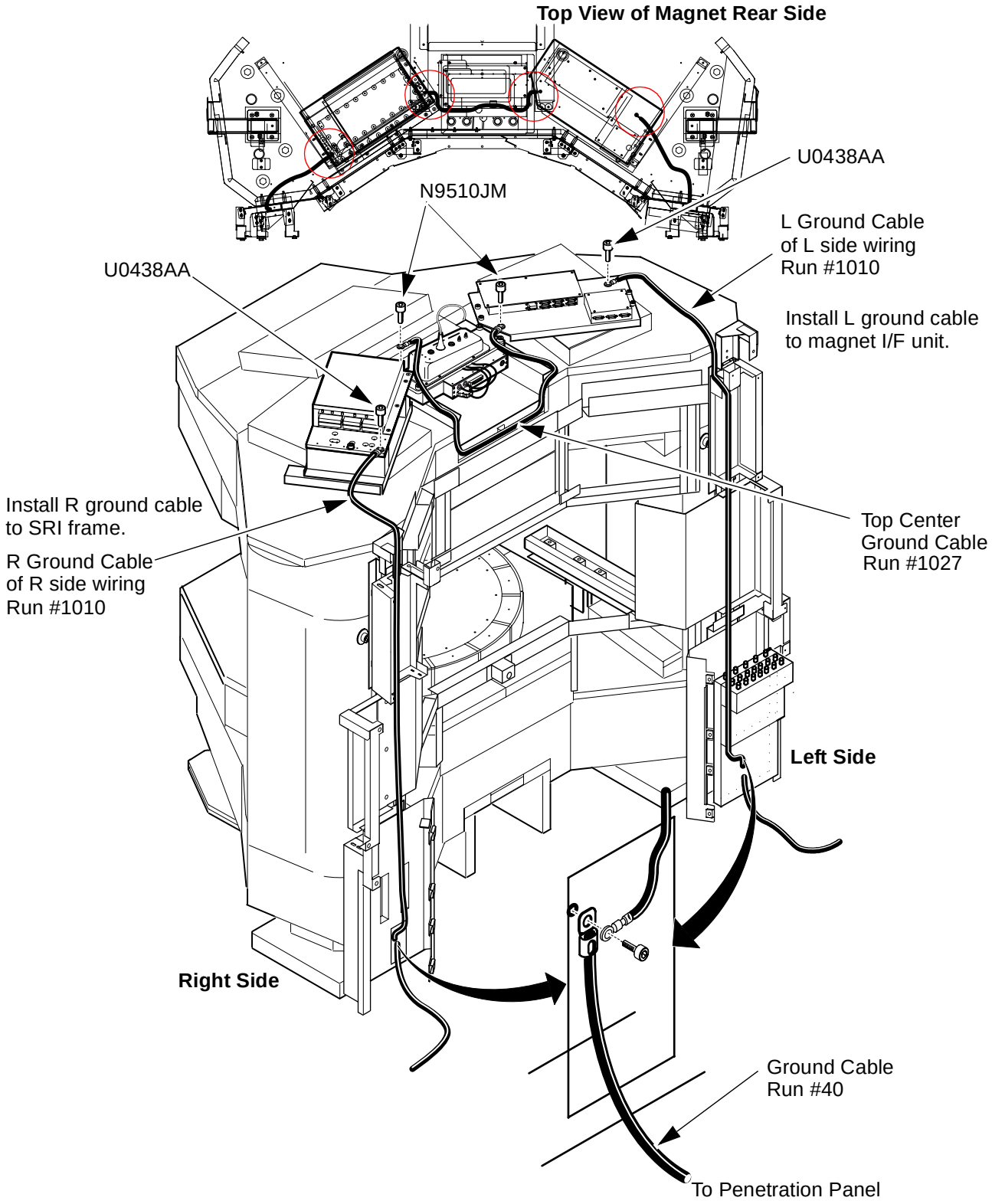
NOTE:
Make sure that the screws are tightened securely.



MAGNET UNIT INSTALLATION
ILLUSTRATION 3

4. Ground Cable Wiring

1. Install R or L Ground Cable according to site layout.
2. Install top center ground cable between Magnet I/F Unit and SRI frame.
3. Install ground cable and R or L ground cable to magnet R or L bottom side with screw.

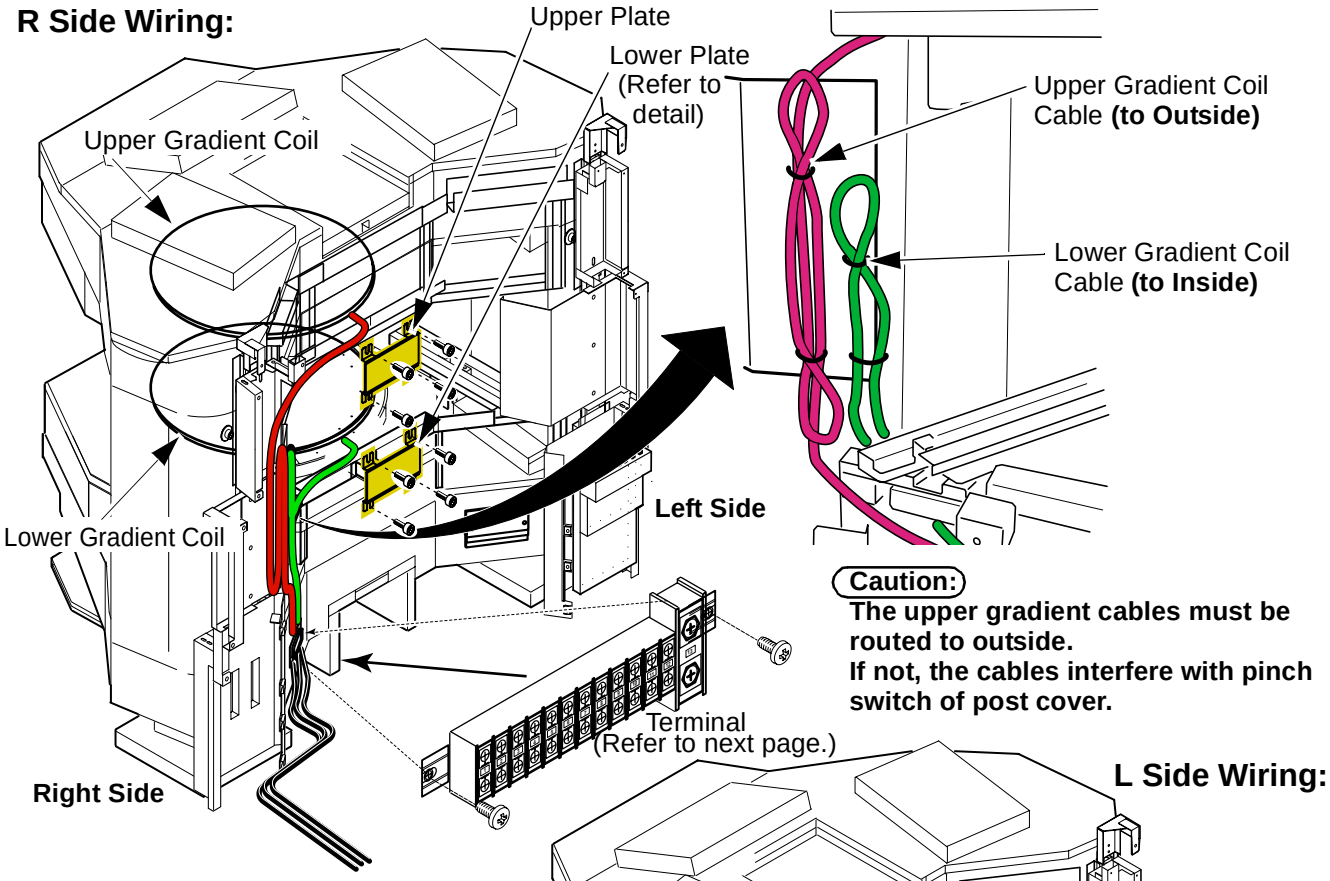


GROUND CABLE WIRING
ILLUSTRATION 4

5. Gradient Cable Wiring (Cables)

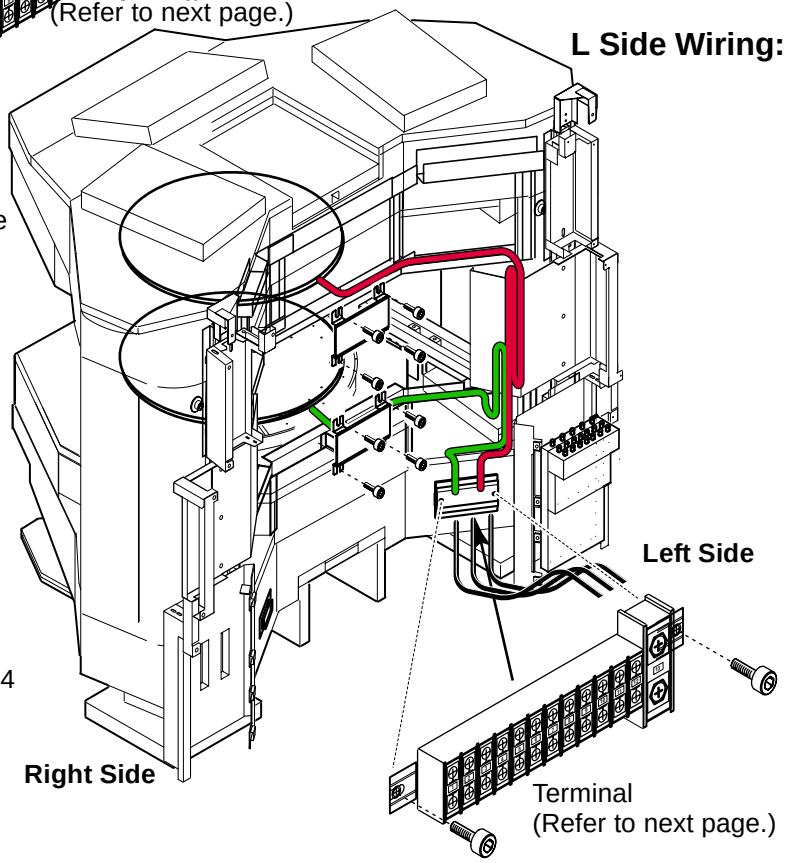
1. Install upper and lower plates to cable outlet of pole piece with U0438AA x4 for each side.
2. Install the terminal with 2 screws to R or L side according to site layout.
3. Route the upper and lower gradient cables to R or L side according to site layout.

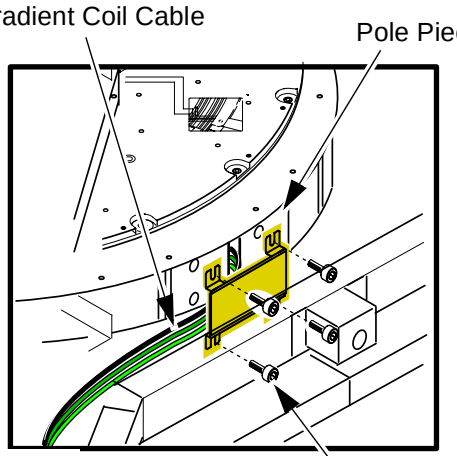
R Side Wiring:



Caution:
The upper gradient cables must be routed to outside.
If not, the cables interfere with pinch switch of post cover.

L Side Wiring:





Detail of Lower Plate (R Side Wiring)

If site is L side wiring, route gradient cable to L side.
Upper plate is similar.

GRADIENT CABLE WIRING (CABLES)
ILLUSTRATION 5

6. Gradient Cable Wiring (Terminals)

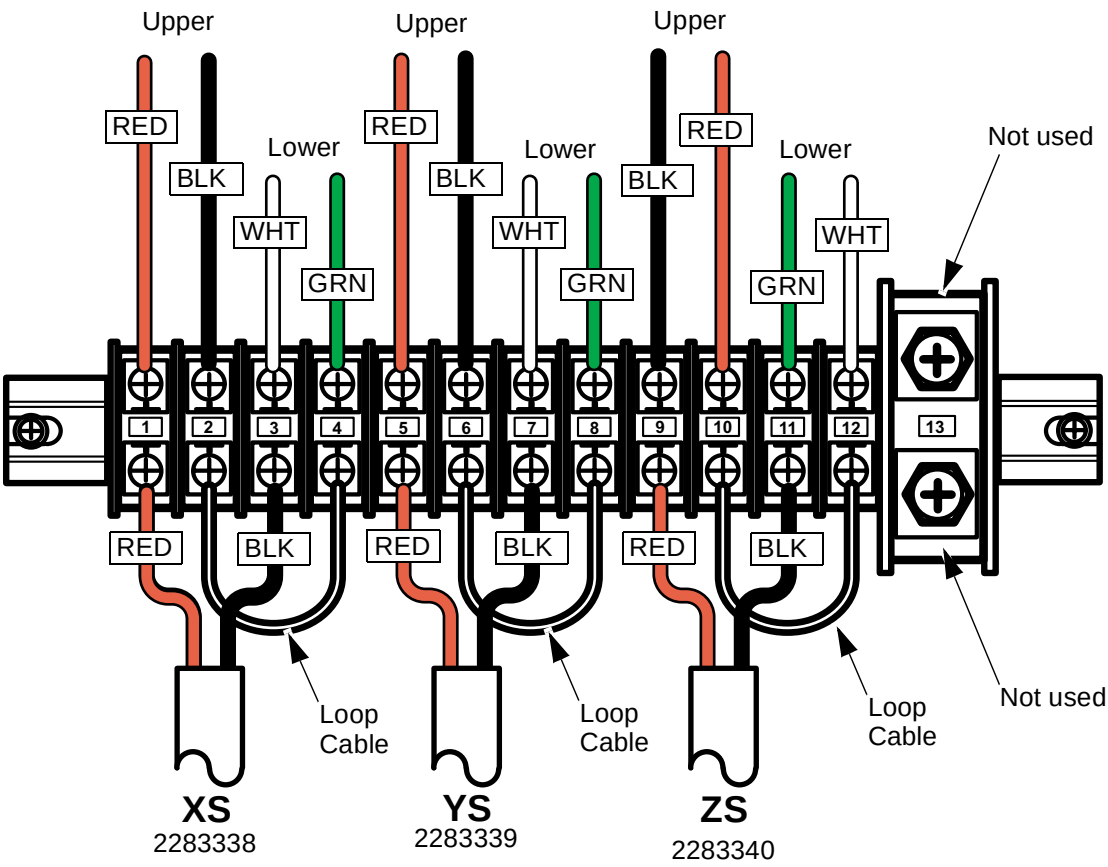
DANGER!!

BE CAREFUL TO ELECTRICAL SHOCK HAZARD.WHEN CONNECTING THE TERMINAL,CHECK THAT THE SYSTEM POWER OFF.

1. Connect 6 upper / 6 lower gradient cables,3 loop cables and XS/YS/ZS cables to terminal.

R/L Terminal Setting:

1,2,5,6,9 and 10 Terminals : Upper Gradient Cables
3,4,7,8,11 and 12 Terminals : Lower Gradient Cables



GRADIENT CABLE WIRING (TERMINALS)
ILLUSTRATION 6

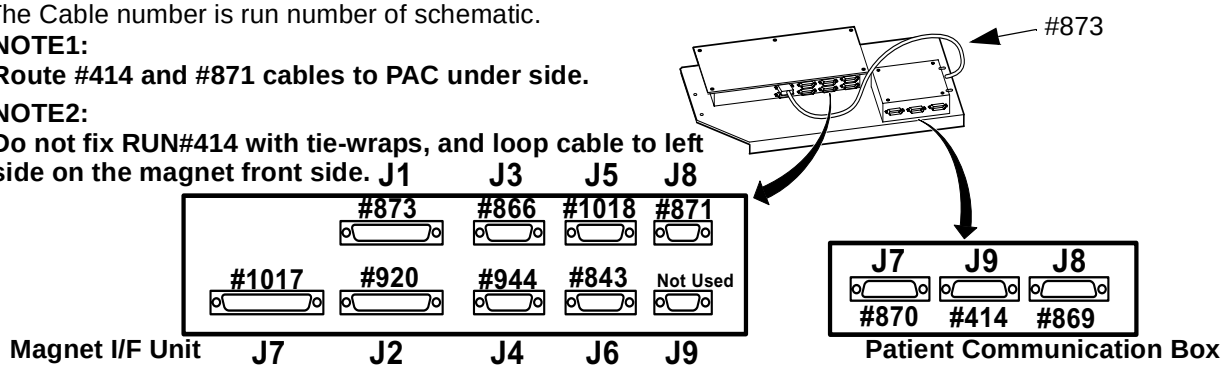
7. Magnet I/F Unit Cable Wiring

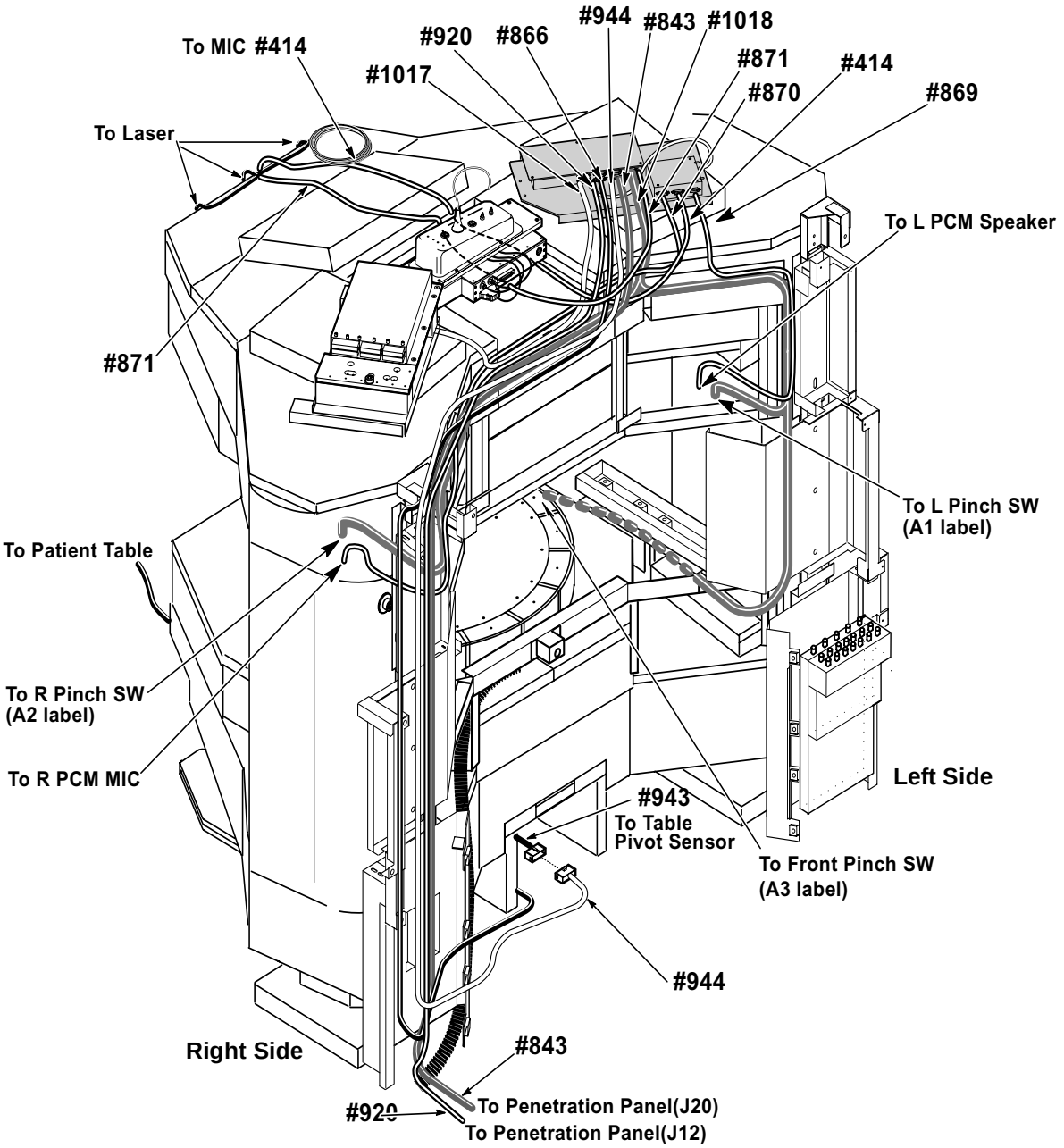
1. The run number 869,870,871,1017 and 1018 cables are common to R or L side wiring.

The Cable number is run number of schematic.

NOTE1:
Route #414 and #871 cables to PAC under side.

NOTE2:
Do not fix RUN#414 with tie-wraps, and loop cable to left side on the magnet front side.

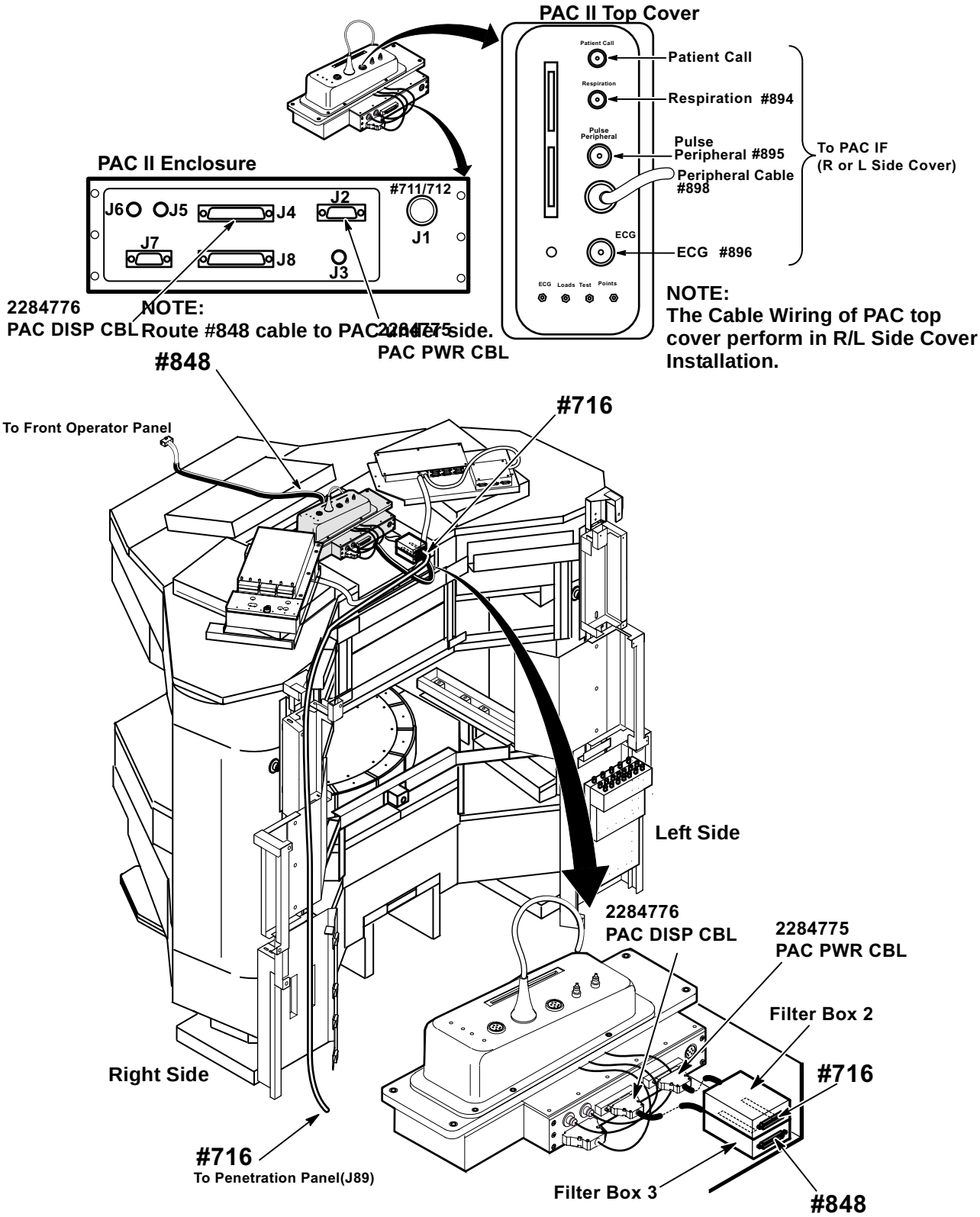




MAGNET I/F UNIT CABLE WIRING
ILLUSTRATION 7

8. PAC Cable Wiring

1. The Illustration is R side wiring.The L side wiring is symmetry for illustraiton.

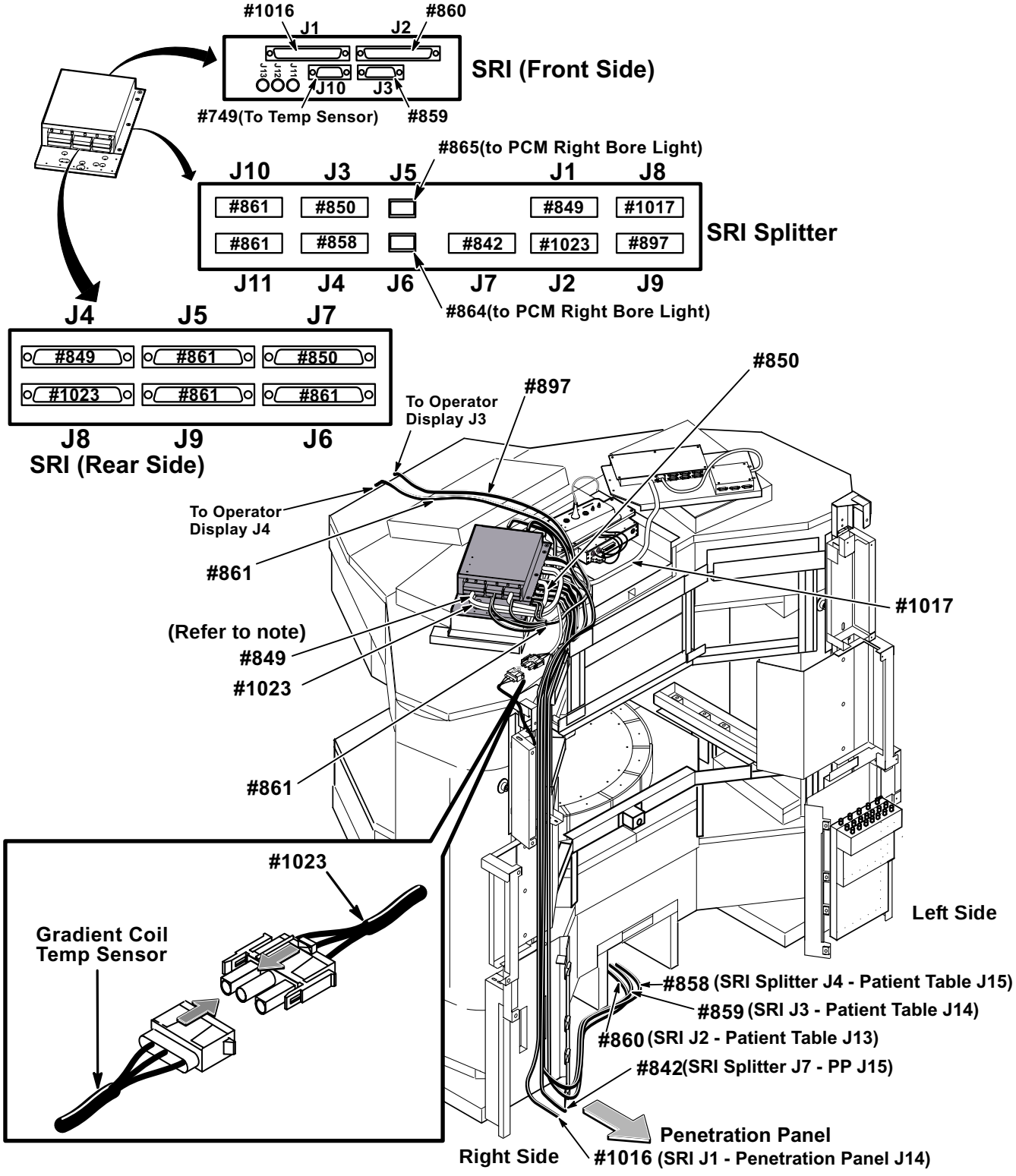


PAC CABLE WIRING
ILLUSTRATION 8

9. SRI / SRI Splitter Cable Wiring

1. The Illustration is R side wiring.The L side wiring is symmetry for illustraiton.

NOTE: #861 cable causes noise in the images. Do not loop this cable.
If there is noise in the images, change routing of #861 cable.

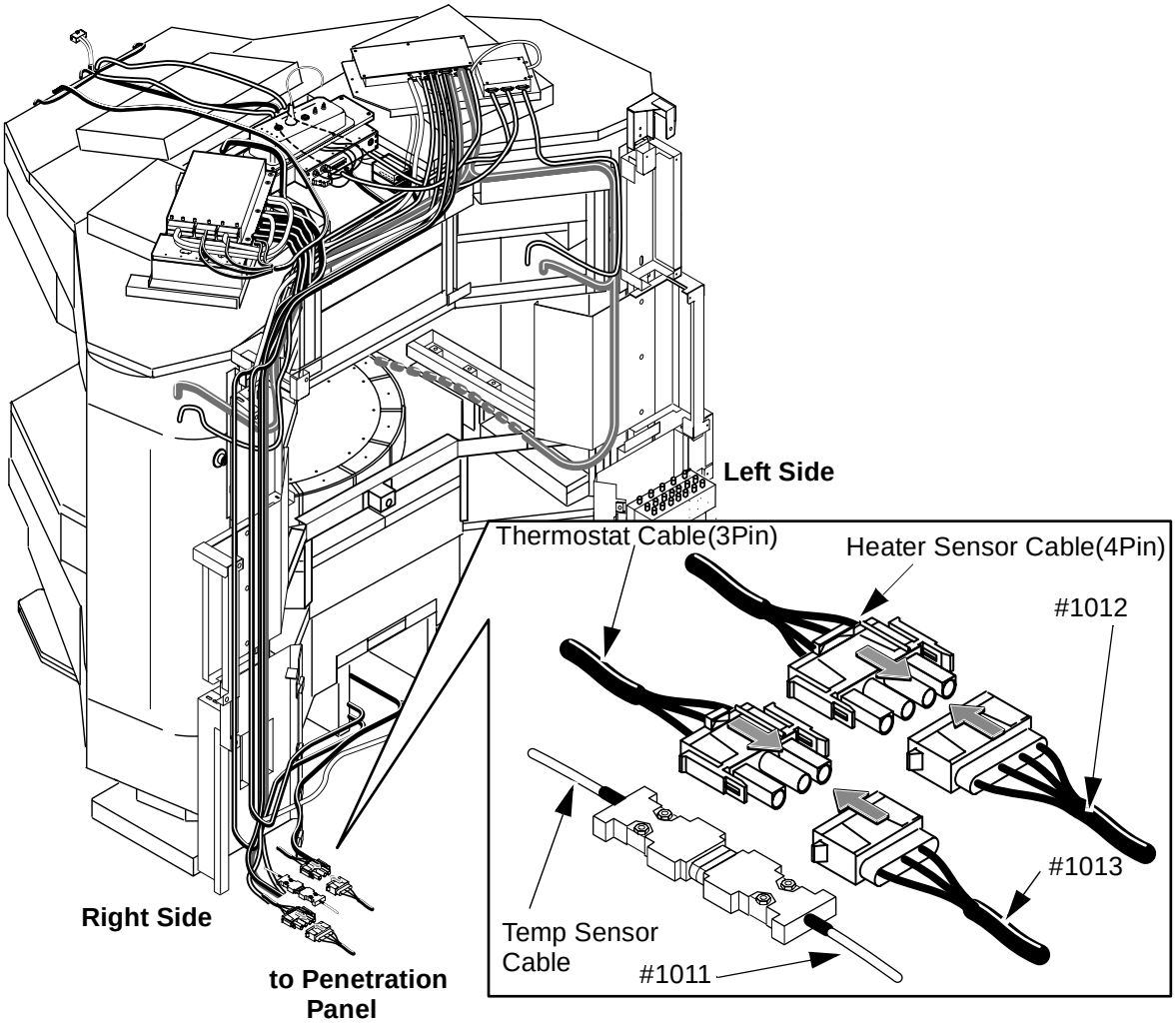


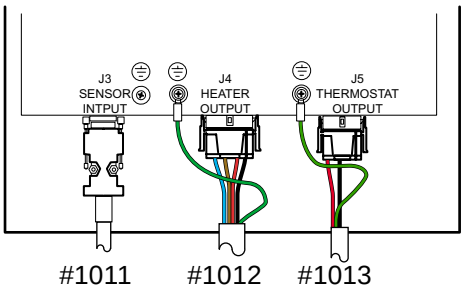
SRI / SRI SPLITTER CABLE WIRING
ILLUSTRATION 9

10.Heater/Temperature Sensor/Thermostat Cable Wiring

1. The Illustration is R side wiring.The L side wiring is symmetry for illustraiton.

NOTE:
The Magnet heater and sensor cables must be routed around the outside of the magnet Insulator. Do not bury the magnet heater and sensor cables into the insulator.





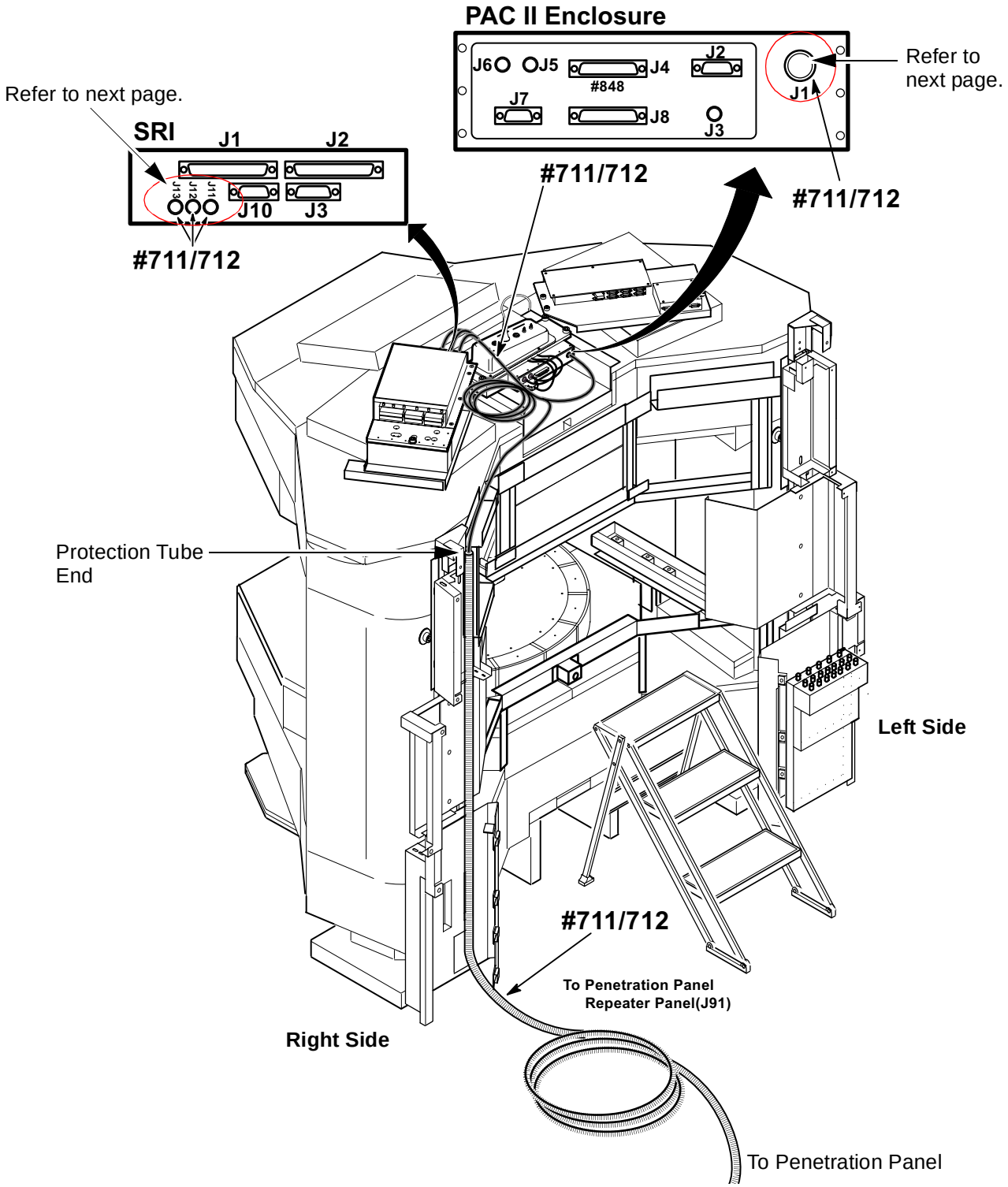
Penetration Panel TCU

HEATER/TEMPERATURE SENSOR/THERMOSTAT CABLE WIRING
ILLUSTRATION 10

11.OPT Cable(Run#711/712) Wiring

CAUTION

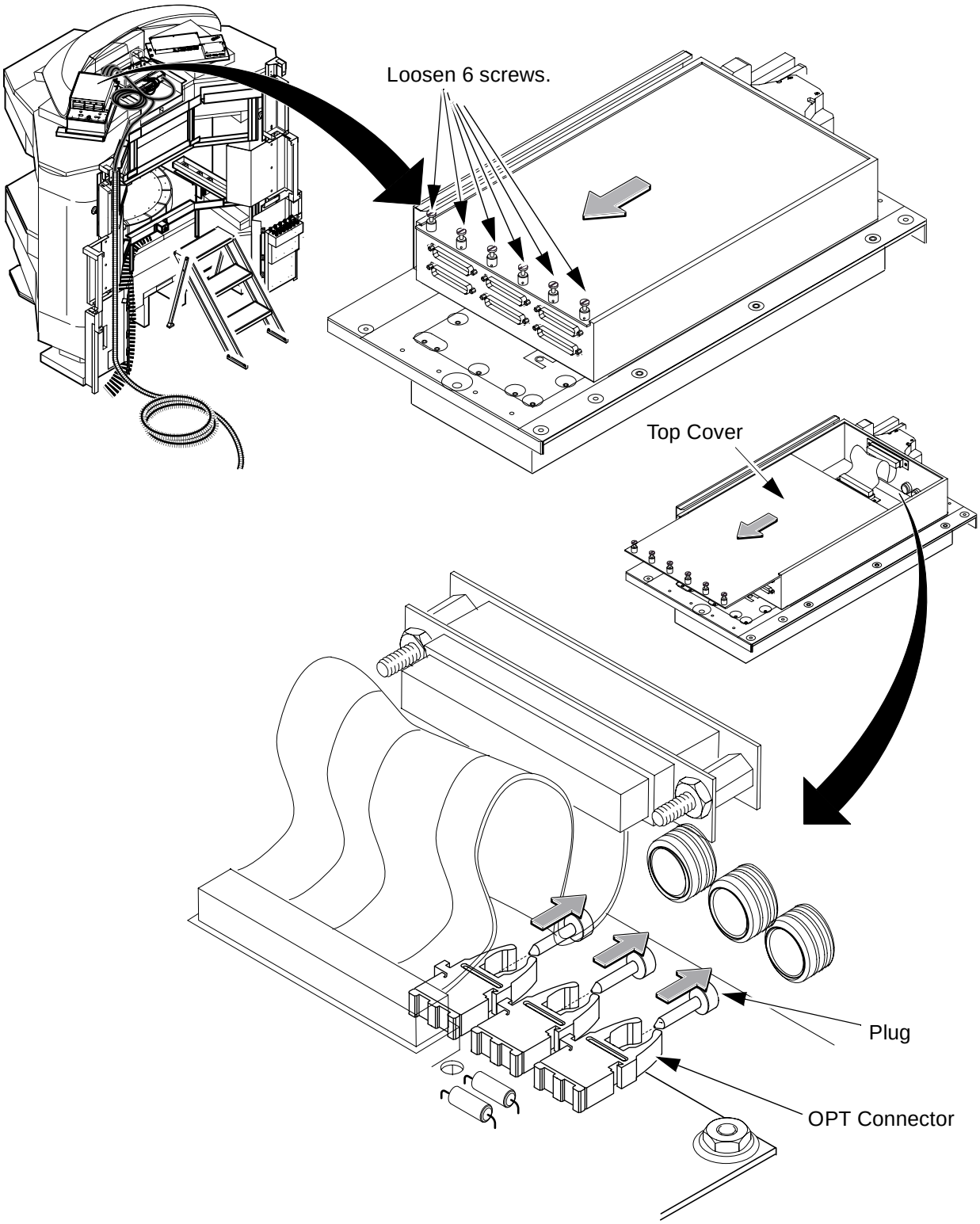
Fiber optic cables are easily damaged. Handle fiber optic cables very carefully.Failure to do so may cause intermittent problems difficult to isolate.Do not bend fiber optic cables to radius smaller than two inches.



OPT CABLE(RUN#711/712) WIRING
ILLUSTRATION 11

11.OPT Cable(Run#711/712) Wiring(Continued)

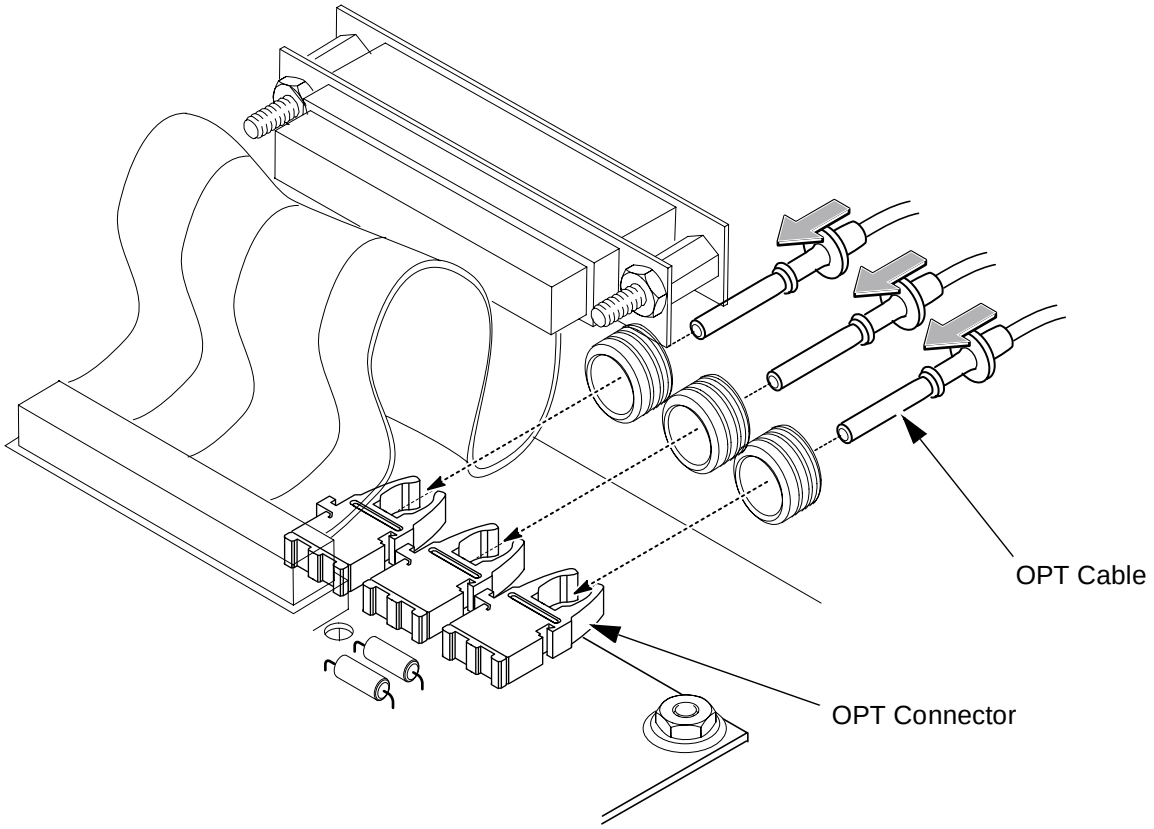
1. Loosen 6 screws on SRI top cover.
2. Slide and open SRI top cover.
3. Remove 3 plugs from OPT connector on the board.



OPT CABLE(RUN#711/712) WIRING(CONTINUED)
ILLUSTRATION 12

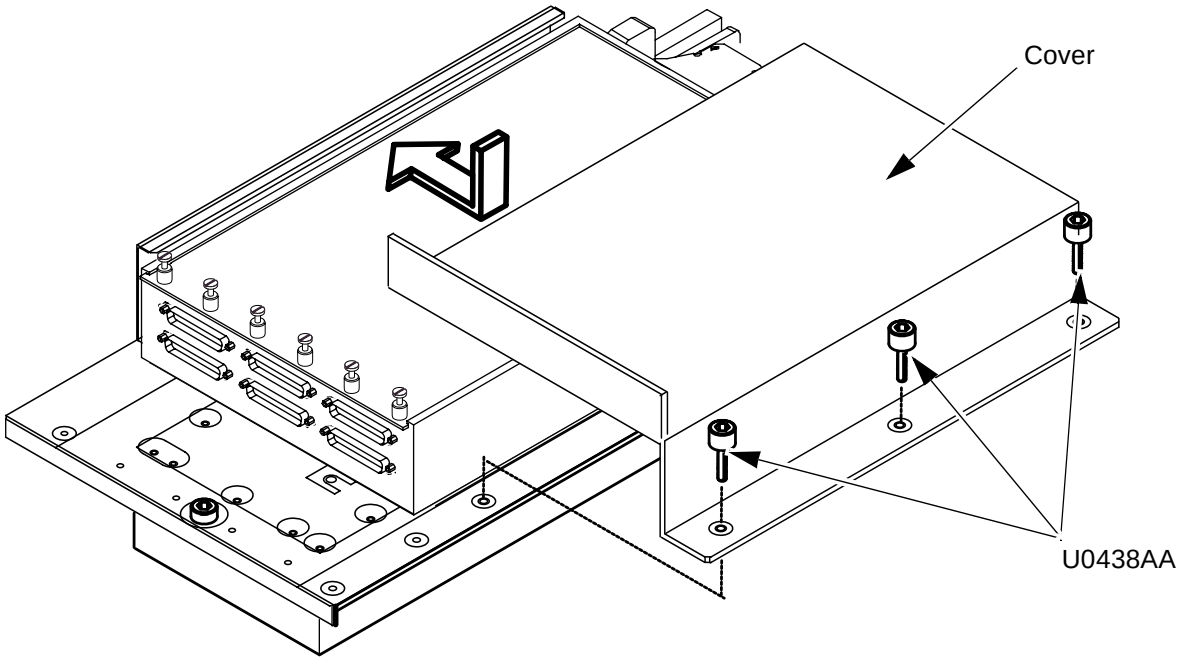
11.OPT Cable(Run#711/712) Wiring(Continued)

4. Connect 3 OPT cables to OPT connector securely.



OPT CABLE(RUN#711/712) WIRING(CONTINUED)
ILLUSTRATION 13

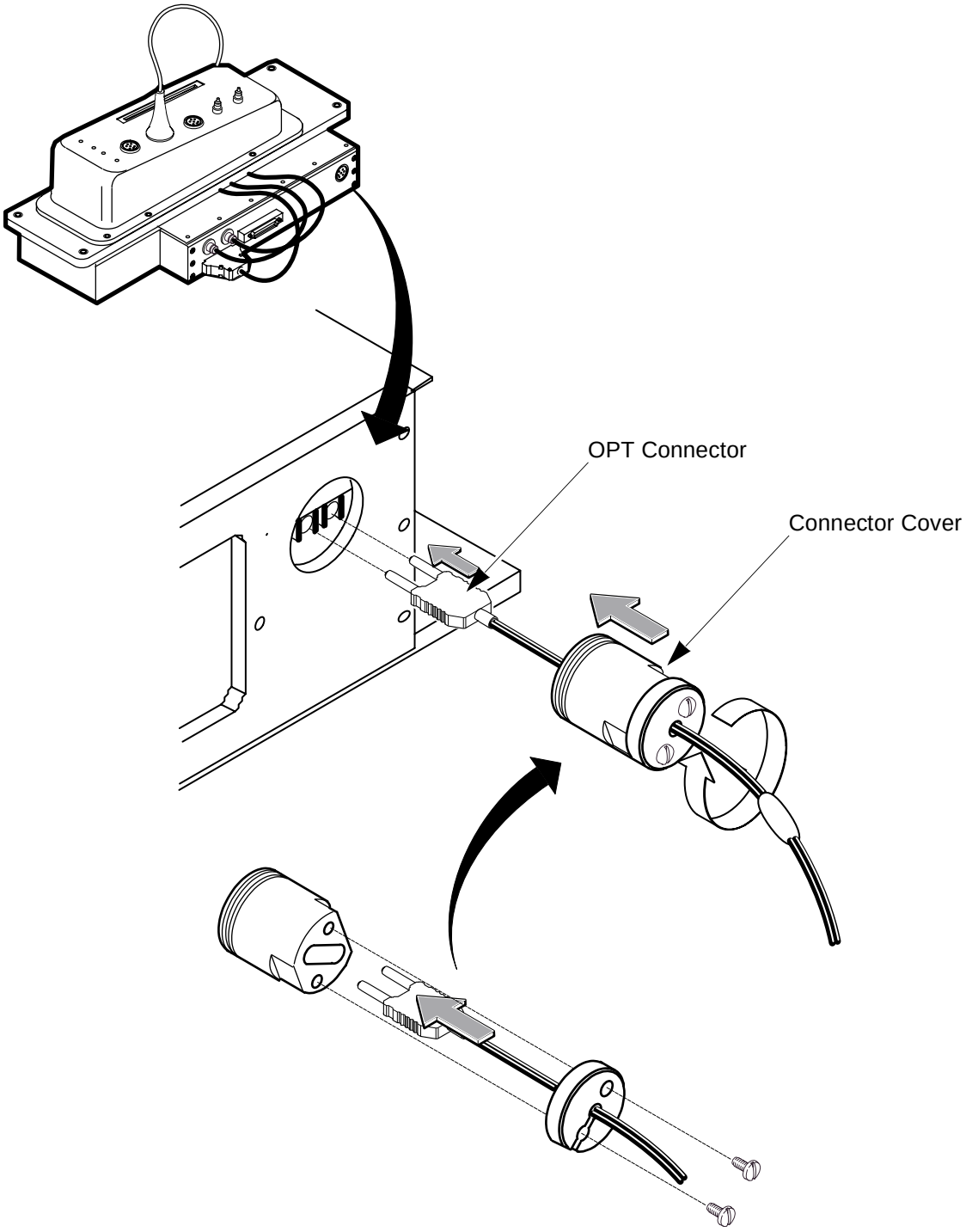
5. Install SRI cover with 3 screws(U0438AA) securely.



OPT CABLE(RUN#711/712) WIRING(CONTINUED)
ILLUSTRATION 14

11.OPT Cable(Run#711/712) Wiring(Continued)

6. Connect OPT connector to PAC.
7. Install connector cover to PAC.



OPT CABLE(RUN#711/712) WIRING(CONTINUED)
ILLUSTRATION 15

12.OPT Cable Repair

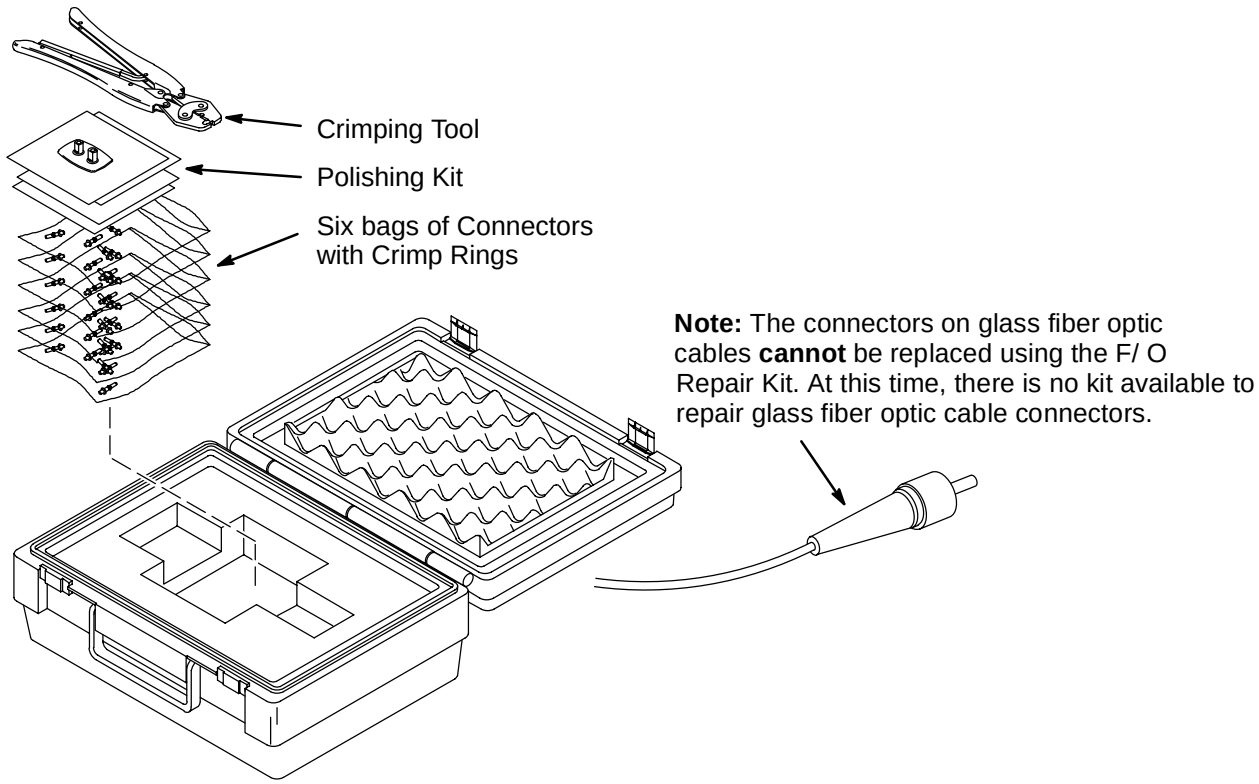
WARNING!

FERROUS MATERIAL HAZARD! CRIMP TOOL AND OTHER TOOLS REQUIRED FOR THIS PROCEDURE CONTAIN FERROUS MATERIAL AND WILL BE STRONGLY ATTRACTED TO MAGNET AND MAY BECOME DANGEROUS PROJECTILES. KEEP ALL FERROUS TOOLS AT LEAST 10 FEET AWAY FROM THE MAGNET.

12-1 Fiber Optic Cable Termination Kit

NOTE:The connectors on plastic fiber optic cables can be replaced if damaged or cut off to shorten.

1. The Fiber Optic Repair Kit, 46– 301450G1, contains all the necessary materials to replace a damaged connector.
2. The “Spares Kit”, delivered with the Shipping Collector, contains a 46– 320119P1 Termination Kit for Fiber Optic Cables. This kit consists of consumables such as terminals and polishing sheets used to terminate cables during installation.
3. Remove the end of fiber optic cable to be re– terminated from magnet room if possible.
4. If it is not possible to remove the end to be repaired from the magnet room, the cable must be at least 10 feet away from the magnet before it can be worked on.
5. Cut cable to desired length.

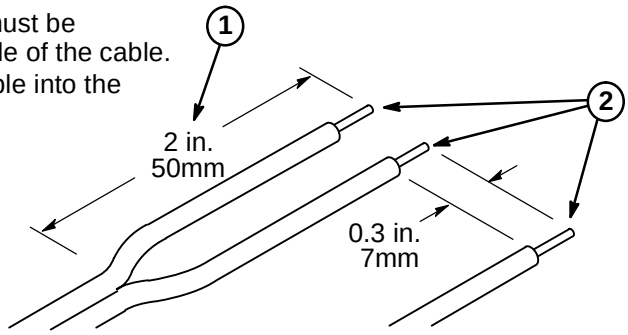


OPT CABLE REPAIR
ILLUSTRATION 16

12-2 Stripping Fiber Optic Outer Jacket

1. For Duplex Cables, seperate the two fibers approximately 2 in. (50mm) back from the ends.
2. Strip off approximately 0.3 in. (7 mm) of the outer jacket with the 16 gauge wire strippers.Excess webbing on duplex cable may have to be trimmed to allow the connector to slide over the cable.

Note: The separated duplex cable must be stripped to equal lengths on each side of the cable. This allows proper seating of the cable into the connector.

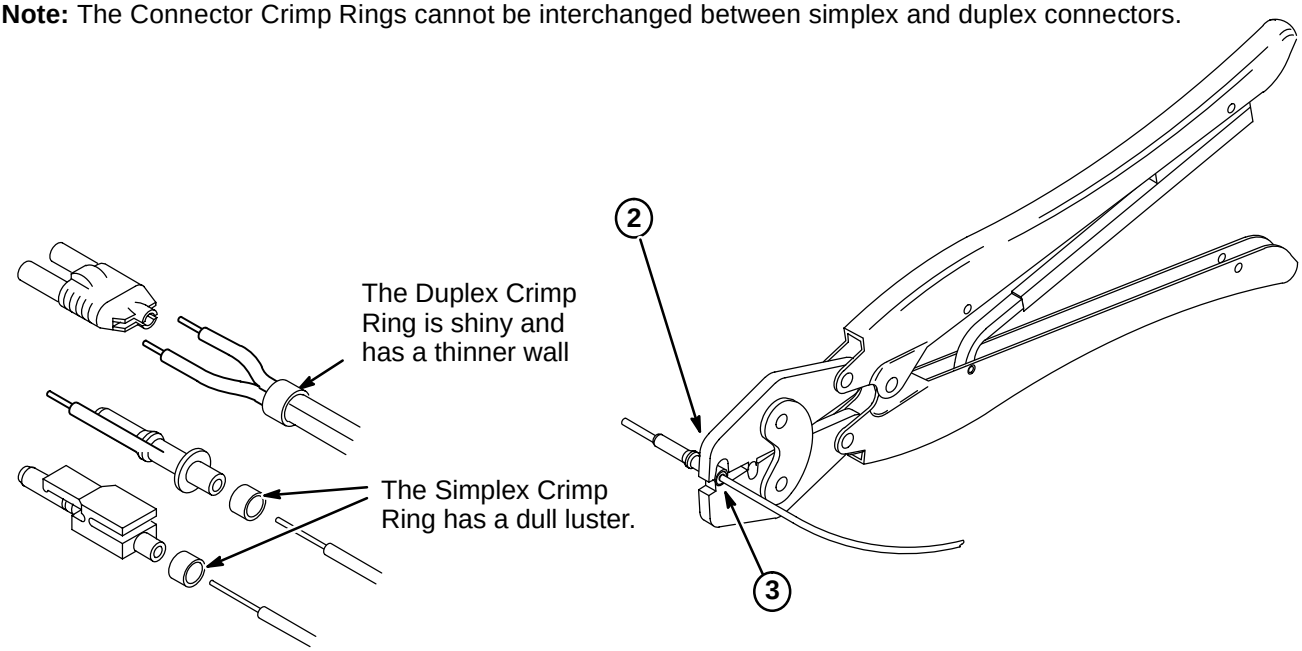


STRIPPING FIBER OPTIC OUTER JACKET
ILLUSTRATION 17

12-3 Crimping Connector To Fiber Optic Cable

1. Place the Crimp Ring and Connector over the end of the cable.
2. The fiber should extend approximately 0.12 in. (3mm) through the end of the connector.
3. Carefully position the ring so that it is entirely on the connector and then crimp the ring in place with the crimping tool.

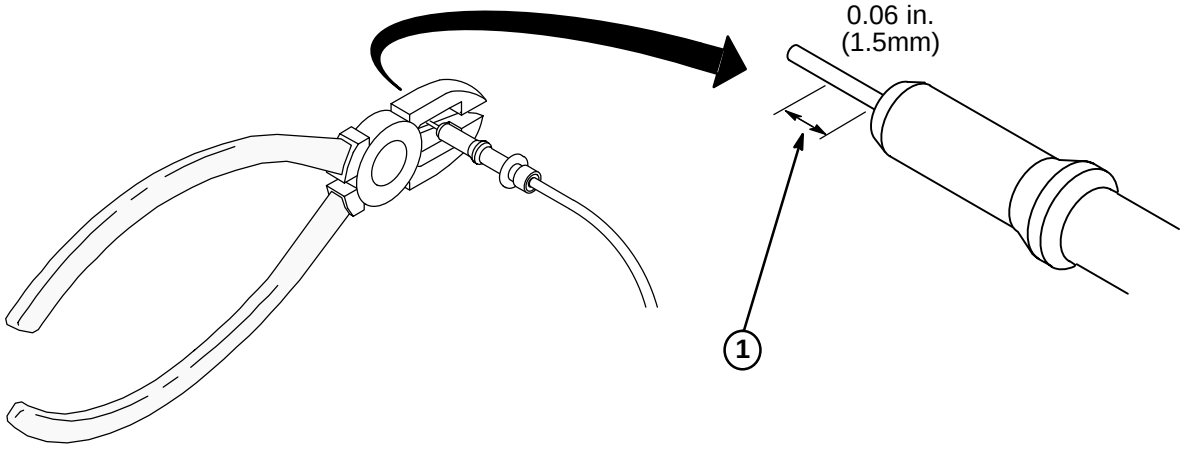
Note: The Connector Crimp Rings cannot be interchanged between simplex and duplex connectors.



CRIMPING CONNECTOR TO FIBER OPTIC CABLE
ILLUSTRATION 18

12-4 Trimming Excess Fiber From Connector

1. Cut off excess fiber protruding from the connector. The trimmed fiber should extend approximately 0.06 in. (1– 1/ 2mm).

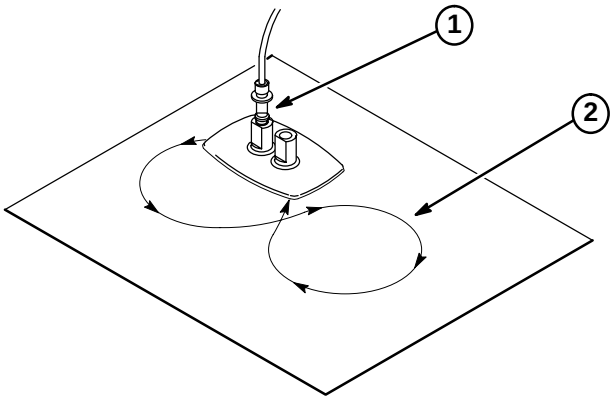


TRIMMING EXCESS FIBER FROM CONNECTOR
ILLUSTRATION 19

12-5 Polishing Fiber Optic End

1. Insert the connector fully into the polishing fixture with the trimmed fiber end protruding from the bottom of the fixture.
2. Place the 600 grit abrasive paper on a flat smooth surface. Pressing down on the indicator, polish the fiber and the connector using a figure eight motion until the connector is flush with the end of the polishing fixture.
3. Wipe the connector and fixture with a clean cloth or tissue.
4. Place the flush connector and polishing fixture on the dull side of the 3 micron pink lapping film and continue to polish the fiber and connector for approximately 25 strokes.
5. The fiber end should be flat, smooth and clean. The cable end can now be connected.

Note: The four dots on the bottom of the polishing fixture are wear indicators. Replace the polishing fixture when any dot is no longer visible.



POLISHING FIBER OPTIC END
ILLUSTRATION 20

Revision History

Rev	Date	Auther	Primary Reasons For Change
0	Mar 07, 2001	K.Tsumagari	Initial Release
1	Feb 01, 2002	K.Tsumagari	Page 5 and 6: Added DIP SW setting of the magnet I/F unit. Page 9: Added detail of upper and lower plates installation. Page 13: Added note of #861 cable wiring. Page 1 and 14: Added note of heater and sensor cables.