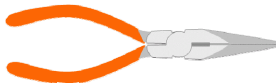

4.3.6 Power Supply Unit: PSU NBD-913

4.3.6.1 Replacing the Fuses of the Power Supply Unit: PSU NBD-913

[Required Tools]

The tools shown in the following table are required for replacement work.

Table Required Tools

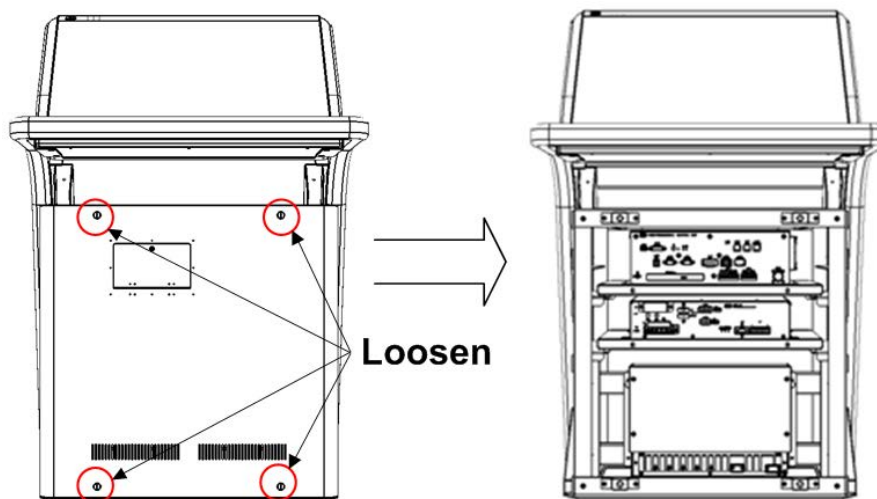
No.	Name	Size	Appearance
1	Needle-nose pliers	6 inch	



Before conducting replacement work, turn OFF the circuit breaker for the power supply of the display unit.

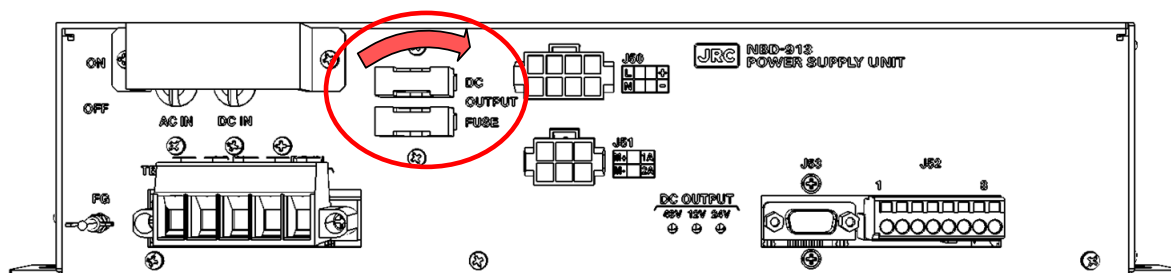
Step 1 Remove the front cover of the display unit mount kit.

Loosen the screws that fasten the front cover of the display unit mount kit with a flat head screwdriver and then take out the front cover.



Step 2 Open the fuse covers.

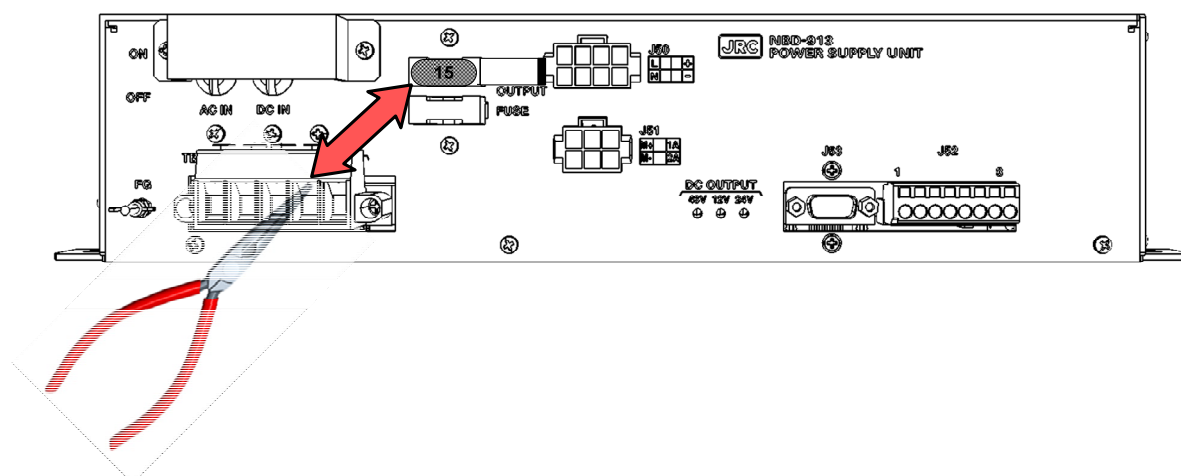
Open the fuse covers on the front of the PSU. The fuse covers open from left to right when viewed from the front.



Step 3 Change the fuses.

Using a pair of 6 inch needle-nose pliers, change the fuses. The fuses are blade fuses. After replacing the fuses, assemble to the original condition by repeating the same procedure in the reverse order. Please make sure to tighten all the screws and set all the switches back in place.

Name	Unit Name	Location of Use	Q'ty	Use	Model Name (Code)
Blade Fuse (Auto Fuse)	NBD-913	NBD-913	2	DC32V 15A	1015 (5ZFCK00008)



Step 4 Check operation.

After the replacement of the PSU fuses is completed, turn ON the circuit breaker for the power supply of the display unit and check the operation as follows.

- (1) Start [RADAR] on the Task menu and check that 24VDC is output to the scanner unit.
- (2) Perform transmission after the completion of scanner unit preheating and check that normal radar images are displayed.

This completes PSU fuse replacement.

4.3.6.2 Replacing the Power Supply Unit: PSU NBD-913

WARNING

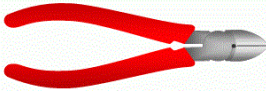


AC and DC power supplies have been fed to PSU. Before replacement work, be sure to turn OFF the applicable power circuit breaker. Not following this instruction will cause electric shock and/or malfunction.

[Required Tools]

The tools shown in the following table are required for replacement work.

Table Required Tools

No.	Name	Size	Appearance
1	Flat head screwdriver	6 mm	
2	Phillips screwdriver	Size #2	
3	Diagonal pliers	—	
4	Cable-tie *1	—	

*1 A number of cable-ties may be required.



Before conducting replacement work, turn OFF the circuit breaker for the power supply of the display unit.



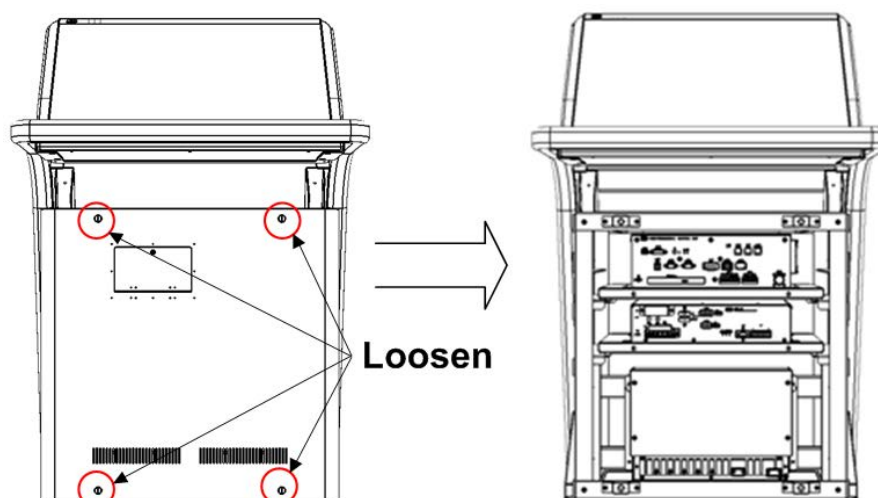
Do not lose the screws as they will be needed again.



To prevent damage to the Unit during the replacement work, cut off cable-ties that fasten the cable of the unit beforehand.

Step 1 Remove the front cover of the display unit mount kit.

Loosen the screws that fasten the front cover of the display unit mount kit with a flat head screwdriver and then take out the front cover.



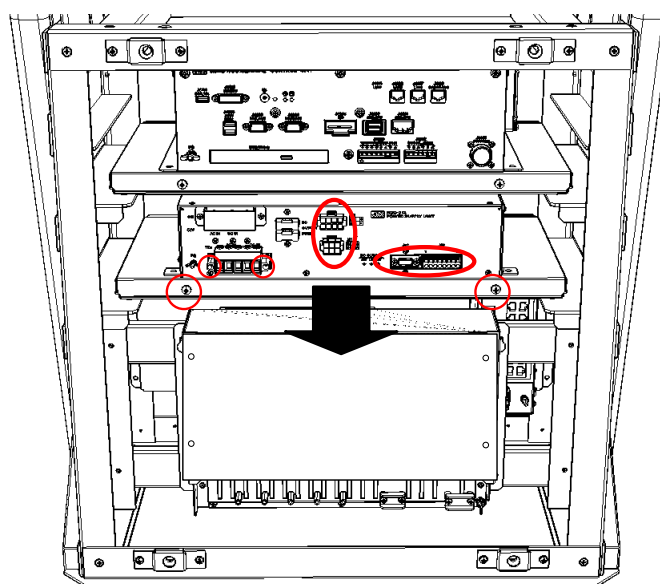
Step 2 Remove the PSU from the display unit mount kit.

Remove all the connectors being connected to the front of the PSU. Loosen the two screws of the TB1 on the right and left of the front and remove it together with the wires. The J50 and the J51 can be removed by pulling them out while holding down the tabs at the top center.

Remove the screws (M5: 2 locations) of the mounting plate that fasten the PSU, pull out the CCU together with the mounting plate, and then remove it from the display unit mount kit.



To secure safety, turn OFF the main power circuit breakers of AC and DC power supplies before replacement work.



CAUTION



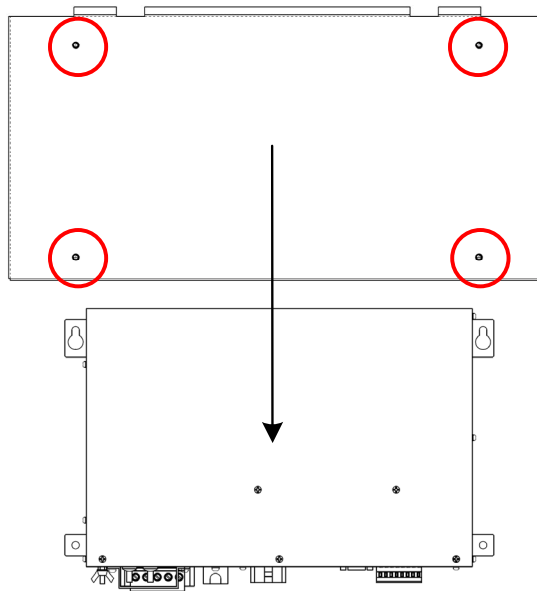
Before conducting Unit replacement work, always be sure that every cable-tie that fastens the cable has been removed.

Replacement work without the above may lead Unit/cable breakage.

Step 3 **Change the PSU.**

Remove the screws (M4: 4 locations) of the mounting plate and pull out the PSU from the mounting plate.

After replacing the PSU, assemble to the original condition by repeating the same procedure in the reverse order. Please make sure to tighten all the screws and set all the switches back in place.



Step 4 **Check operation.**

After PSU replacement is completed, turn ON the circuit breaker for the power supply of the display unit and check the operation as follows.

- (1) Turn ON the power to the display unit, make sure that screen display is normal, and there are no abnormalities in operation and processing.
- (2) If a scanner unit is being connected, start [RADAR] on the Task menu, perform transmission, and check that normal radar images are displayed.

This completes PSU replacement.

4.3.6.3 Replacing the PSU Replacement FAN Kit: 7ZYNA4007

WARNING



AC and DC power supplies have been fed to PSU. Before replacement work, be sure to turn OFF the applicable power circuit breaker. Not following this instruction will cause electric shock and/or malfunction.

[Required Tools]

The tools shown in the following table are required for replacement work.

Table Required Tools

No.	Name	Size	Appearance
1	Flat head screwdriver	6 mm	
2	Phillips screwdriver	Size #2	
3	Diagonal pliers	—	
4	Cable-tie *1	—	

*1 A number of cable-ties may be required.



Before conducting replacement work, turn OFF the circuit breaker for the power supply of the display unit.



Do not lose the screws as they will be needed again.



To prevent damage to the Unit during the replacement work, cut off cable-ties that fasten the cable of the unit beforehand.

Step 1 Remove the PSU.

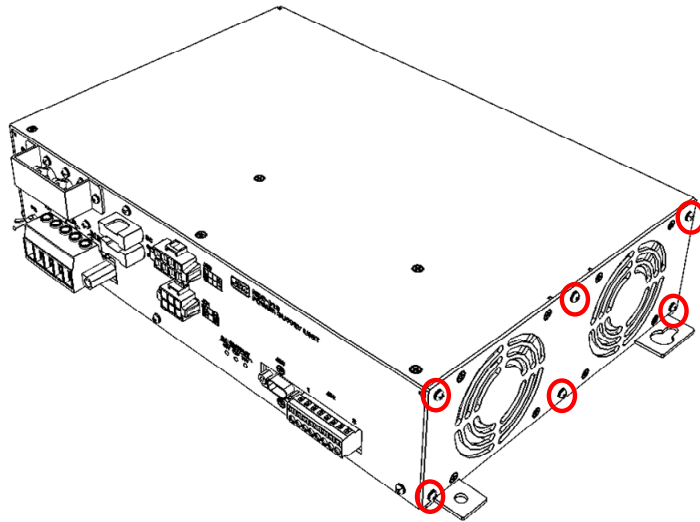
Remove the front cover of the display unit mount kit and the mounting plate of the PSU, and then pull out the PSU. For more information about the removal procedure, refer to "4.3.6.2 Replacing the Power Supply Unit: PSU NBD-913."

Step 2 Remove the PSU from the mounting plate.

Remove the screws (M4: 4 locations) of the mounting plate and pull out the PSU from the mounting plate. For more information about the removal procedure, refer to "4.3.6.2 Replacing the Power Supply Unit: PSU NBD-913."

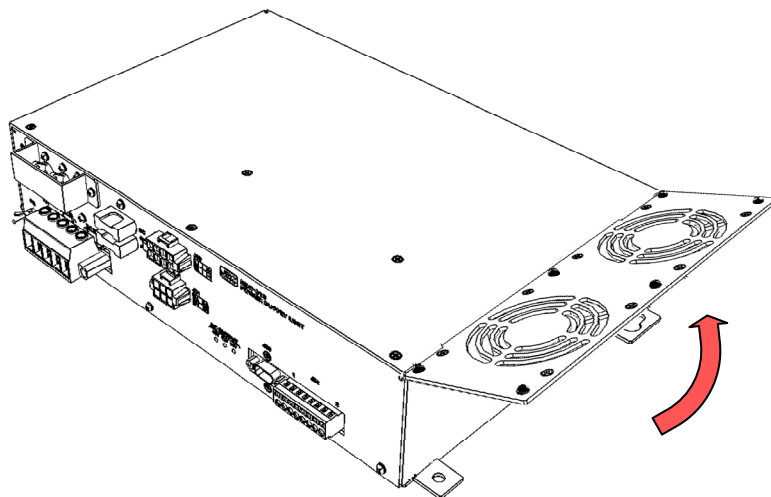
Step 3 Remove the PSU side plates.

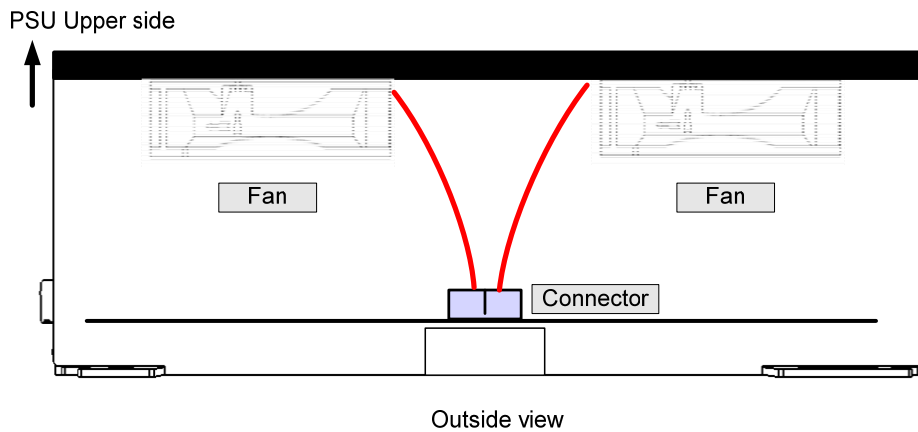
Remove the side plate covering the fans of the PSU (M3: 6 locations).



Step 4 Disconnect the connector of the fans.

Lift the side plate covering the fans of the PSU. Disconnect the connector of the fans inside the PSU.





Step 5 Change the fans.

Remove the screws (M4: 8 locations) that fasten the fans. Change the fans. Install the fans in order to satisfy the following directions:

Fan cables: Upper center

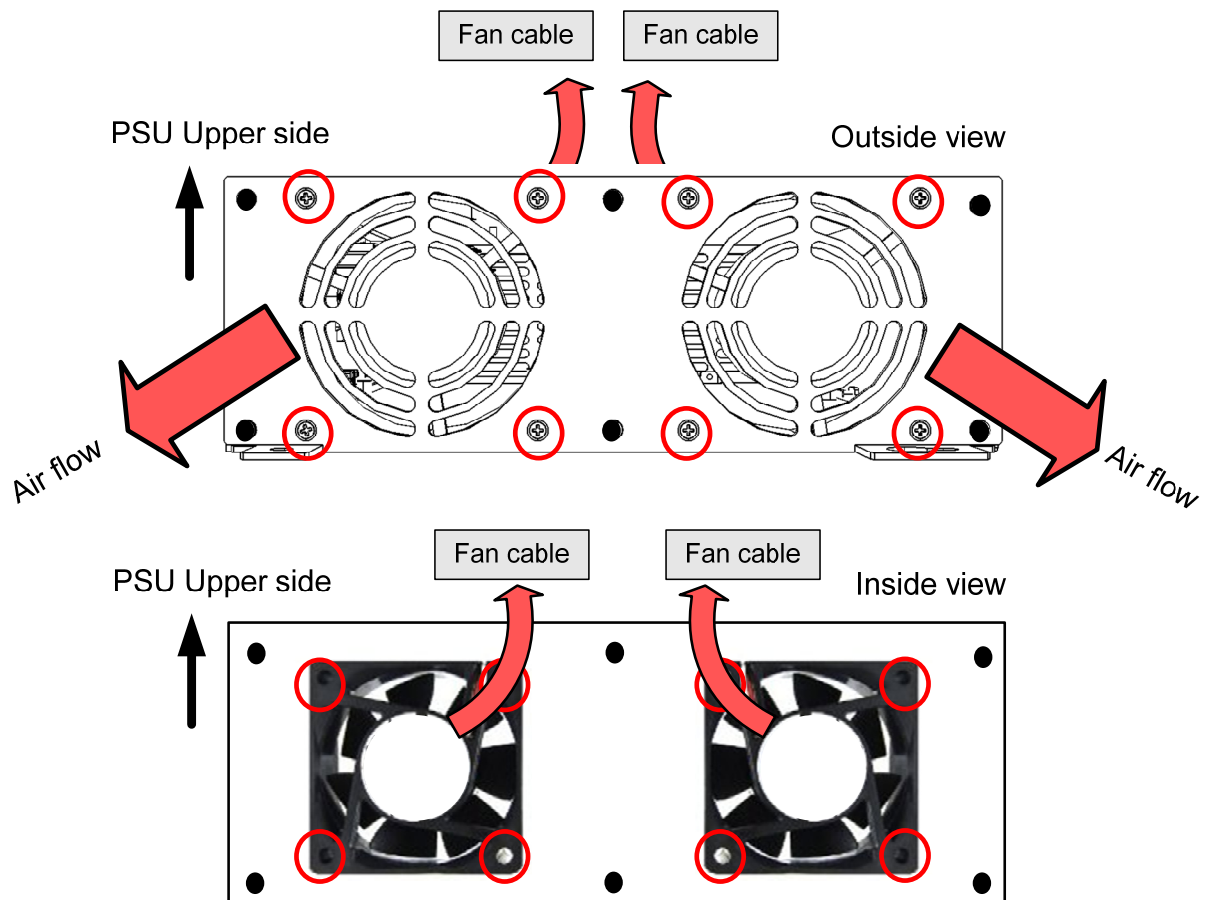
Wind flow: Outward



Be careful with the fan mounting direction.



Have enough clearance to prevent the cables from being caught in the blades of the fans.



After replacing the fans, assemble to the original condition by repeating the same procedure in the reverse order. Please make sure to tighten all the screws and connect all the cables back in place.

Step 6 Check operation.

After PSU fan replacement is completed, turn ON the circuit breaker for the main power supply and the circuit breaker for the power supply of the display unit, and check the operation as follows.

- (1) Turn ON the power to the display unit, make sure that screen display is normal, and there are no abnormalities in operation and processing.
- (2) Check that the fan alarm "POWER (Fan)" does not occur.

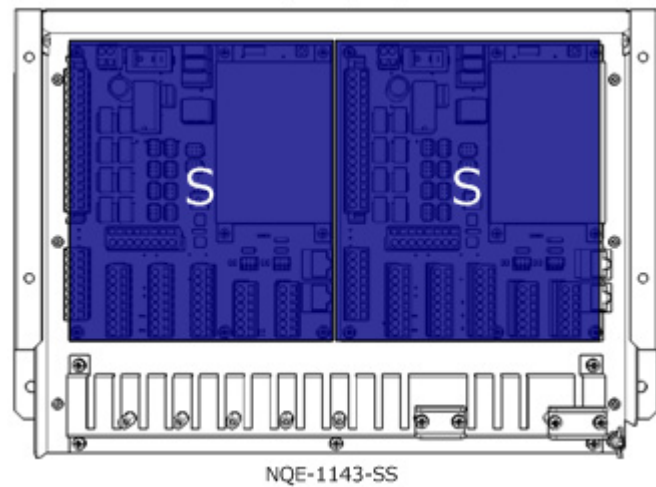
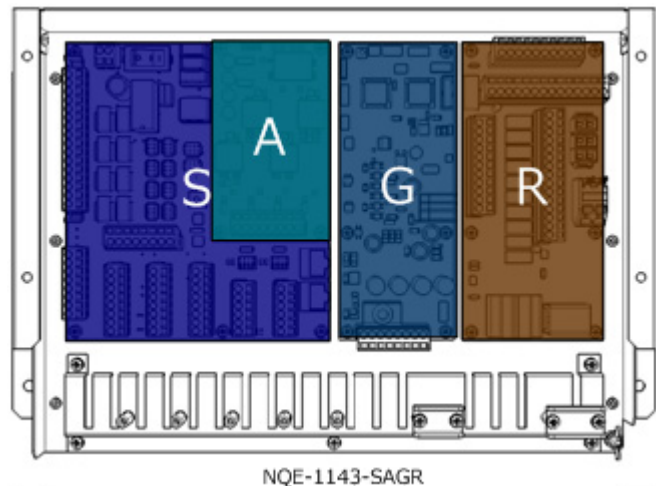
This completes PSU fan replacement.

4.3.7 Junction Box: JB NQE-1143

4.3.7.1 Checking the Installation State

There are the following combinations of the circuits incorporated into the NQE-1143 junction box (JB). Before starting replacement work, check the installation state inside the JB.

Suffix	SLC	AOC	GIF	RIF	SLC#2
-R				✓	
-S	✓				
-SR	✓			✓	
-SS	✓				✓
-GR			✓	✓	
-SAR	✓	✓		✓	
-SA	✓	✓			
-SGR	✓		✓	✓	
-SAGR	✓	✓	✓	✓	
-SG	✓		✓		
-SAG	✓	✓	✓		
-SAS	✓	✓			✓

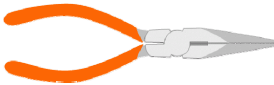


4.3.7.2 Replacing the Fuses of the Serial LAN Interface Circuit: SLC CMH-2370

[Required Tools]

The tools shown in the following table are required for replacement work.

Table Required Tools

No.	Name	Size	Appearance
1	Flat head screwdriver	6 mm	
2	Phillips screwdriver	Size #2	
3	Needle-nose pliers	6 inch	



Before conducting replacement work, turn OFF the circuit breaker for the power supply of the display unit.



Do not lose the screws as they will be needed again.

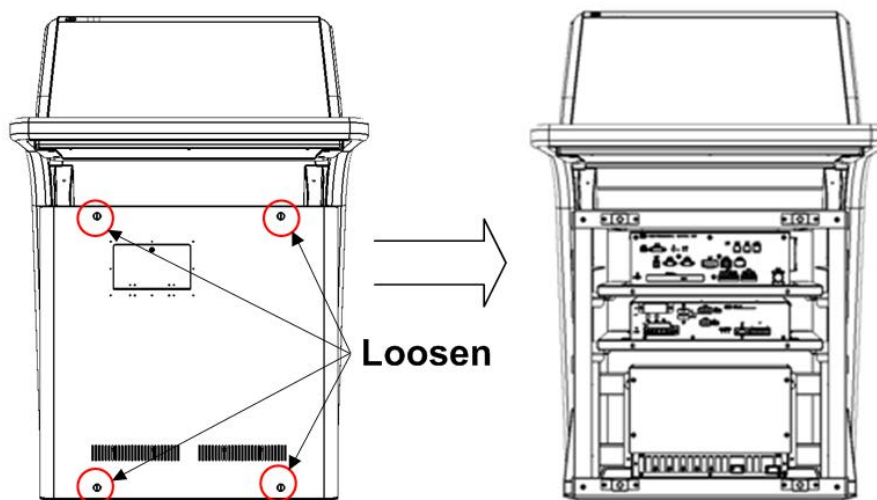


A DC power supply has fed to SLC.

Before replacement work, be sure to turn OFF the DC power circuit breaker.

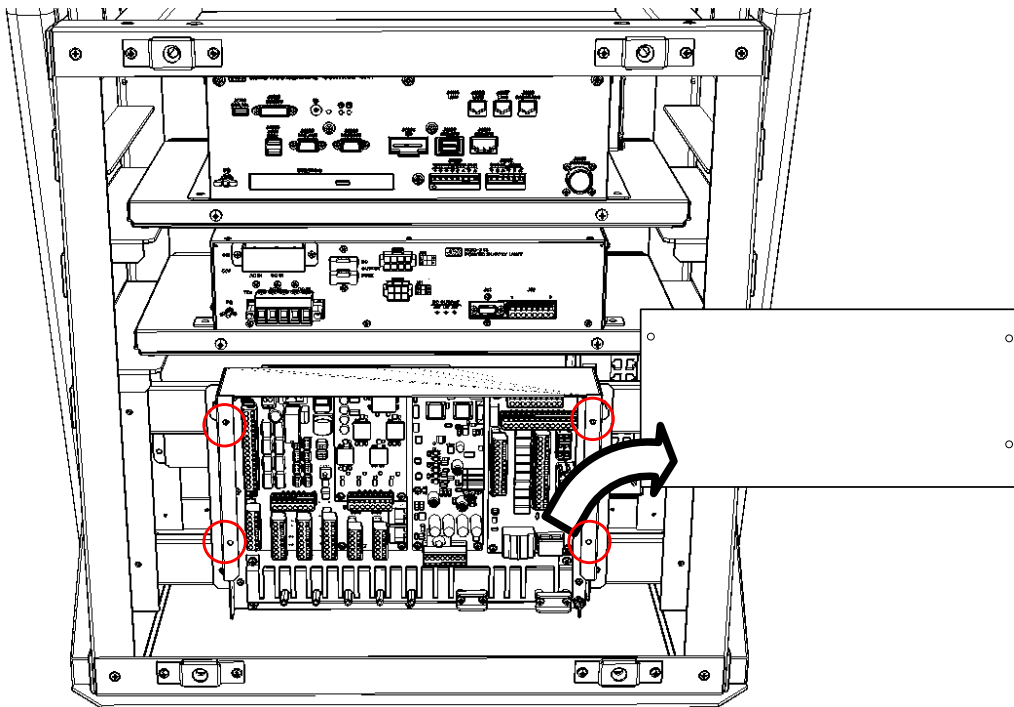
Step 1 Remove the front cover of the display unit mount kit.

Loosen the screws that fasten the front cover of the display unit mount kit with a flat head screwdriver and then take out the front cover.



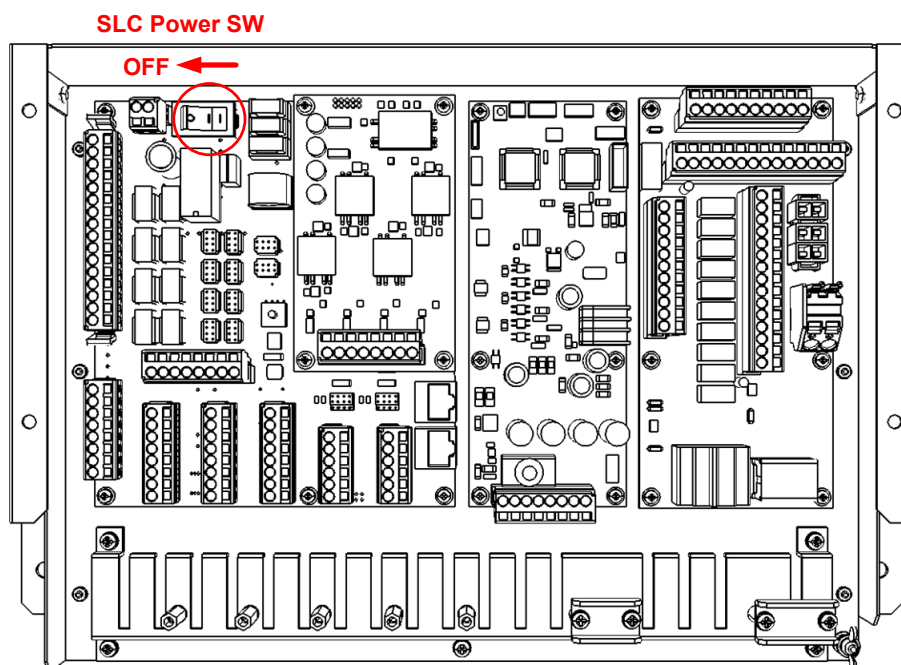
Step 2 Remove the lid of the JB.

Remove the screws (M4: 4 locations) that fasten the lid of the JB and then take it out.



Step 3 Turn OFF the power switch of the SLC.

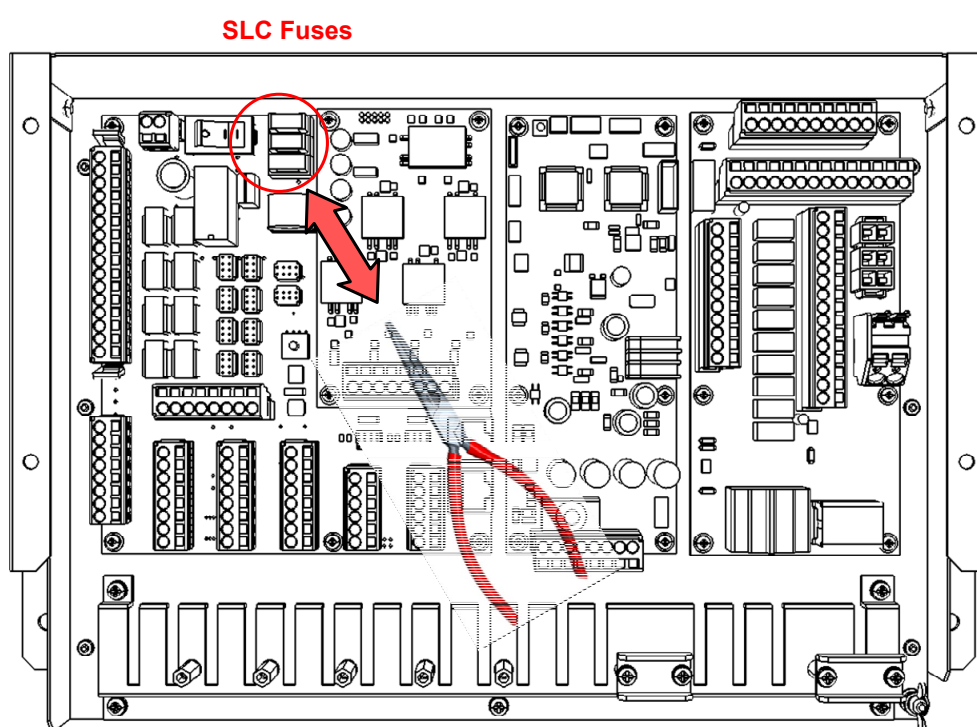
Turn OFF the power S1 switch of the SLC.



Step 4 **Change the fuses.**

Using a pair of 6 inch needle-nose pliers, change the fuses. The fuses are blade fuses. After replacing the fuses, assemble to the original condition by repeating the same procedure in the reverse order. Please make sure to tighten all the screws and set all the switches back in place.

Name	Unit Name	Location of Use	Q'ty	Use	Model Name (Code)
Blade (mini) Fuse (Auto Fuse)	NQE-1143	CMH-2370	1	DC32V 15A	1215(5ZFCK00017)
Blade (mini) Fuse (Auto Fuse)			2	DC32V 3A	1203(5ZFCK00016)



Step 5 **Check operation.**

After the replacement of the SLC fuses is completed, turn ON the circuit breaker for the power supply of the display unit and check the operation as follows.

- (1) Check that the 24V buzzer being connected to the SLC functions.

This completes SLC fuse replacement.

4.3.7.3 Replacing the Serial LAN Interface Circuit: SLC CMH-2370

[Required Tools]

The tools shown in the following table are required for replacement work.

Table Required Tools

No.	Name	Size	Appearance
1	Flat head screwdriver	2 mm, 6 mm	
2	Phillips screwdriver	Size #1, Size #2	
3	Nut driver ^{*1}	5.5 mm	

*1 Required when an Analog Option Circuit (AOC) is installed.



Before conducting replacement work, turn OFF the circuit breaker for the power supply of the display unit.



Do not lose the screws as they will be needed again.



A DC power supply has fed to SLC.

Before replacement work, be sure to turn OFF the DC power circuit breaker.

Step 1 Remove the front cover of the display unit mount kit and the lid of the JB.

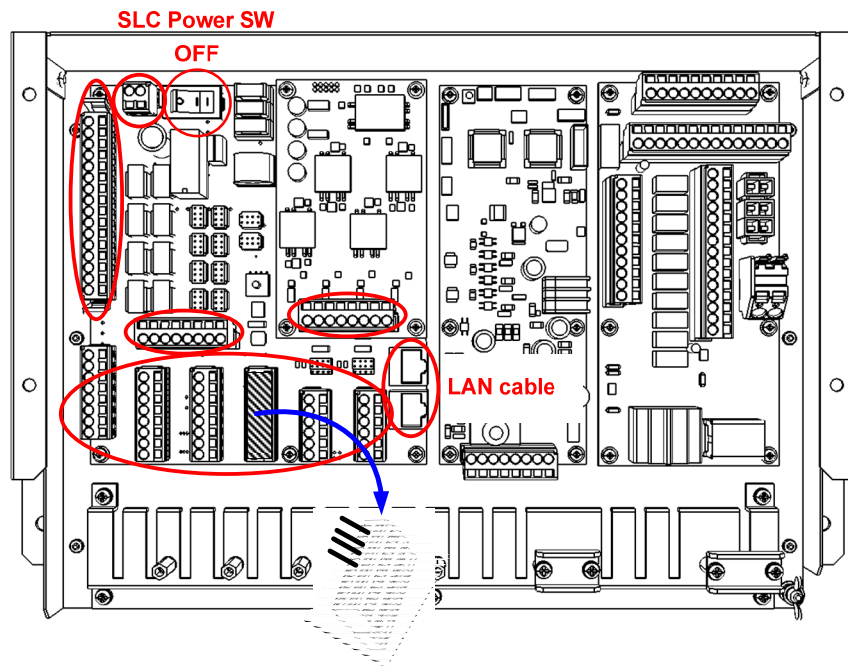
Remove the front cover of the display unit mount kit and the lid of the JB. For more information about the removal procedure, refer to "Replacing the Fuses of the Serial LAN Interface Circuit: SLC CMH-2370."

Step 2 Turn OFF the power switch of the SLC and remove the wires together with the two-piece terminal block.

Turn OFF the power S1 switch of the SLC.

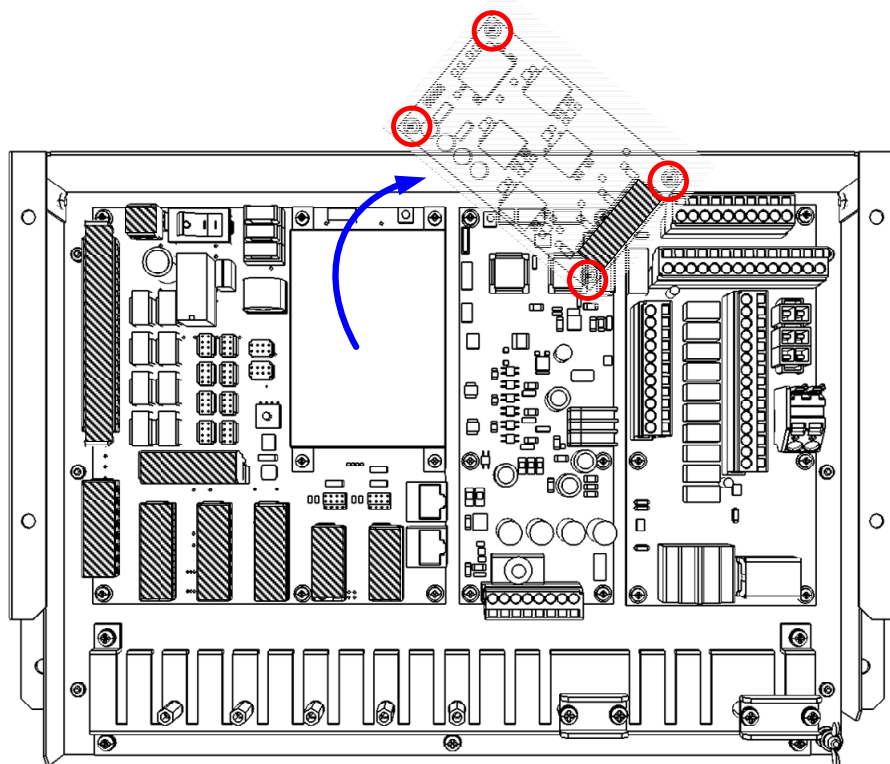
Disconnect the Ethernet cables.

Remove the two-piece terminal block together with wires if wires are connected to it. They can be removed by pulling them out.



Step 3 Remove the AOC (if installed)

If an AOC is installed, remove the screws at four corners (M3: 4 locations) that fasten the AOC and then take out it.



Step 4 Remove the FFC on the GIF side and then remove the SLC.

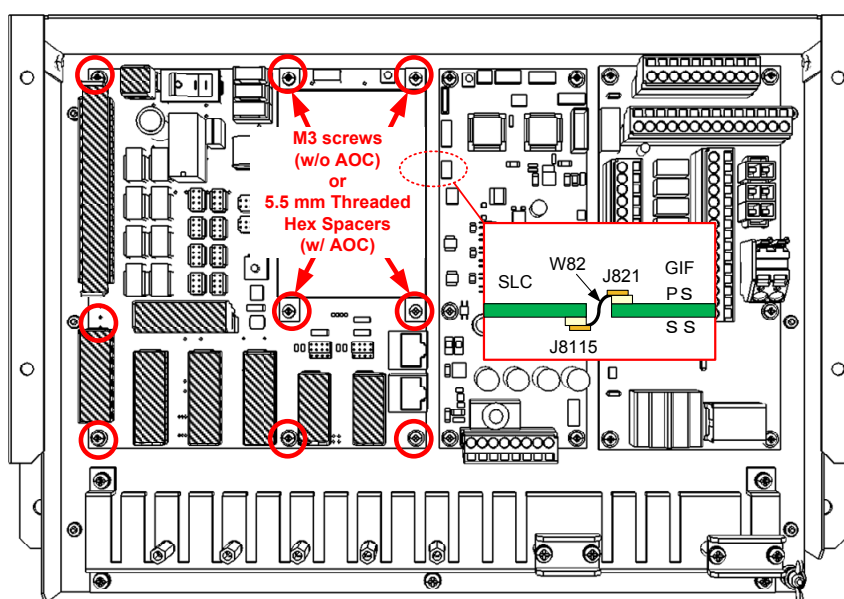
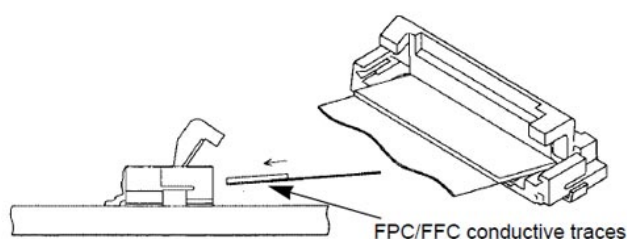
If a GIF is installed, turn OFF the S1 switch of the GIF, open the J821 of the GIF, and then remove the FFC (W82). For more information about the S1 switch of the GIF, refer to "Replacing the Fuses of the Gyro Interface Circuit: GIF CMJ-554."

Remove the screws that fasten the SLC and take it out.

- If an AOC is not installed : M3 × 9 locations
- If an AOC is installed : M3 × 5 locations
: 5.5 mm threaded hex spacer x 4 locations



Exercise caution when handling the FFCs as they are very fragile.



Step 5 Set up the switches/jumper pins of new SLC and replace.

Set up the switches and jumper pins of the new SLC by referring following informations.

- Ship's List
- Chapter 2.5 "DIP-SW and Jumper Pin Settings"
- SLC you just removed.

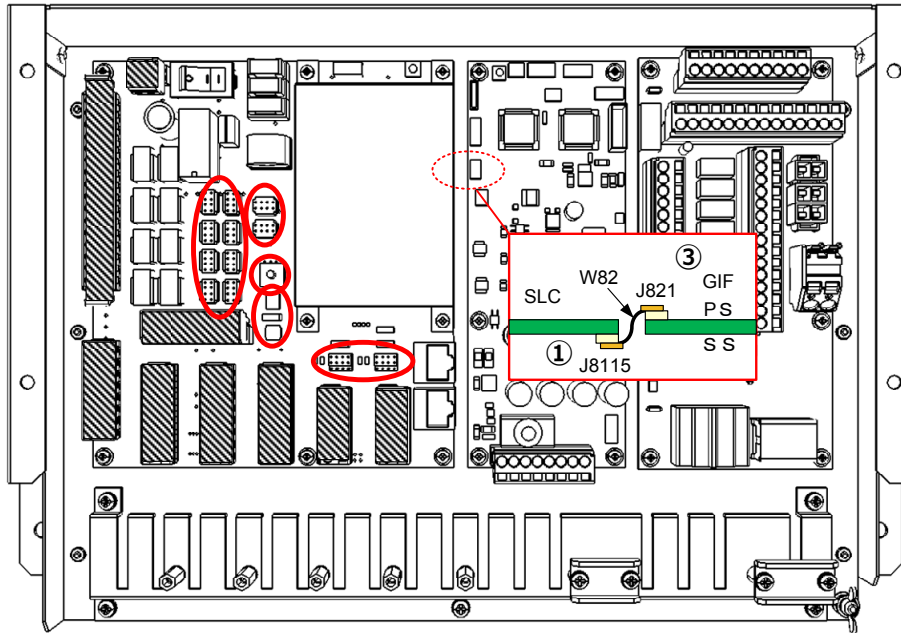
Next, connect the FFC W82 to the J8115 on the back of the SLC first, and then assemble the new SLC according to the SLC replacement procedure in the reverse order. Please make sure to tighten all the screws and connect all the cables back in place.



Exercise caution when handling the FFCs as they are very fragile.



When installing the FFCs, be careful not to insert them slanted or bend them.



To reconnect the cables and the two-piece terminal blocks, connect them to the same locations as before removing them.

Step 6 Teke over SLC serial port settings

After the replacement of the SLC is completed, turn ON the power switch of the SLC and the circuit breaker for the power supply of the display unit. Setting information of the SLC which is to be replaced have been stored at the CCU. Take over those information to the new SLC from the CCU by conducting the following steps.

- 6-1. Click [Menu] -> [Service] -> [Installation] to open the Installation window.
- 6-2. Select [System Configuration] in the 1st Classification pane and [Subsystem Installation] in the 2nd Classification pane.
- 6-3. On left below of Edit/Result pane, click to unmark the check box of the Junction box that has the replaced SLC once, then mark it again. The setting information will be loaded into the new SLC from the CCU.

For further information, see “**Installation Manual 4.4 Subsystem Installation**”.

Step 7 Check operation.

Check the operation as follows.

- (1) Check that a cable open error has not occurred.
- (2) Check that the values of the sensor being connected to the SLC are displayed on the screen.
- (3) Check that the 24V buzzer functions correctly if it is being connected to the SLC.
- (4) Check that the contact input can be read correctly if contact signal input is being connected to the SLC.
- (5) Check that the contact output functions correctly if contact signal output is being connected to the SLC.

This completes SLC replacement.

4.3.7.4 Replacing the Analog Option Circuit: AOC CMJ-560

[Required Tools]

The tools shown in the following table are required for replacement work.

Table Required Tools

No.	Name	Size	Appearance
1	Flat head screwdriver	6 mm	
2	Phillips screwdriver	Size #2	



Before conducting replacement work, turn OFF the circuit breaker for the power supply of the display unit.



Do not lose the screws as they will be needed again.



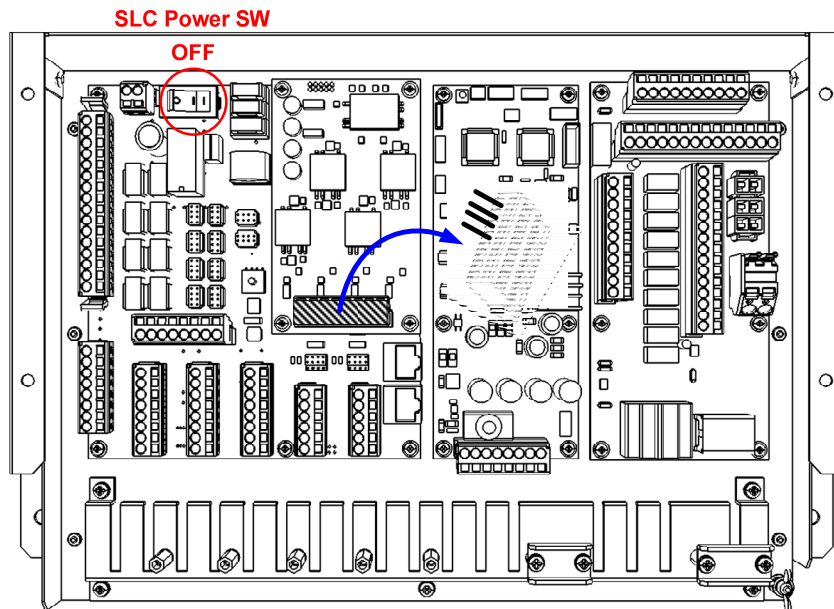
The power to the AOC is supplied from the SLC. A DC power supply has fed to SLC.
Before replacement work, be sure to turn OFF the DC power circuit breaker.

Step 1 Remove the front cover of the display unit mount kit and the lid of the JB.

Remove the front cover of the display unit mount kit and the lid of the JB. For more information about the removal procedure, refer to "Replacing the Fuses of the Serial LAN Interface Circuit: SLC CMH-2370."

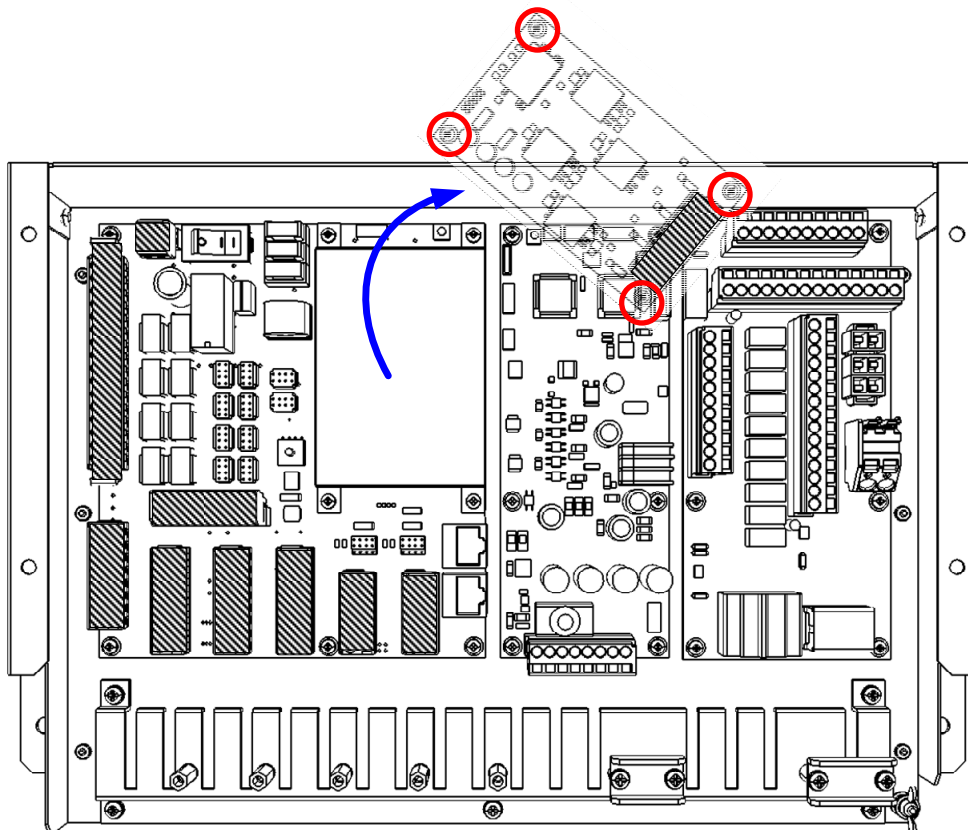
Step 2 Turn OFF the power switch of the SLC and remove the wires together with the two-piece terminal block.

Turn OFF the power S1 switch of the SLC. Remove the wires of the AOC together with the two-piece terminal block. The terminal block can be removed by pulling it out.



Step 3 Remove the AOC.

Remove the screws at four corners (M3: 4 locations) that fasten the AOC and then take out the AOC.

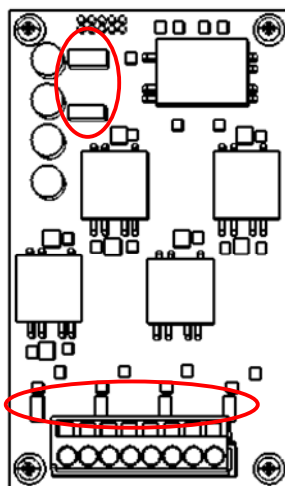


Step 4 Set up the new AOC and replace.

Set up the switches and jumper pins of the new AOC by referring following informations.

- Ship's List
- Chapter 2.5 "DIP-SW and Jumper Pin Settings"
- AOC you just removed.

Next, assemble the new AOC by repeating the same procedure in the reverse order. Please make sure to tighten all the screws and connect all the cables back in place.



When mounting the new AOC, be sure to insert the TB841 in the correct position as it is easy to be displaced.

Step 5 Check operation.

After the replacement of the AOC is completed, turn ON the power switch of the SLC and the circuit breaker for the power supply of the display unit, and check the operation as follows.

- (1) Check that the values of the sensor being connected to the AOC are displayed on the screen.



- The sensor values may deviate due to circuit board replacement; in such a case, please adjust the values by referring to "4.8 A/D (Analog/Digital Settings)" in the Installation Manuals.
- Also, to change the sensor wiring (connection channel change) from the time before the replacement of the AOC, reset by referring to "4.8 A/D (Analog/Digital Settings)" in the "JMR-7200/9200 series, Installation Manuals."

This completes AOC replacement.

4.3.7.5 Replacing the Fuses of the Gyro Interface Circuit: GIF CMJ-554

[Required Tools]

The tools shown in the following table are required for replacement work.

Table Required Tools

No.	Name	Size	Appearance
1	Flat head screwdriver	4 mm, 6 mm	
2	Phillips screwdriver	Size #2	



Before conducting replacement work, turn OFF the circuit breaker for the power supply of the display unit.



Do not lose the screws as they will be needed again.



The GIF uses the gyro compass signal as its power source.

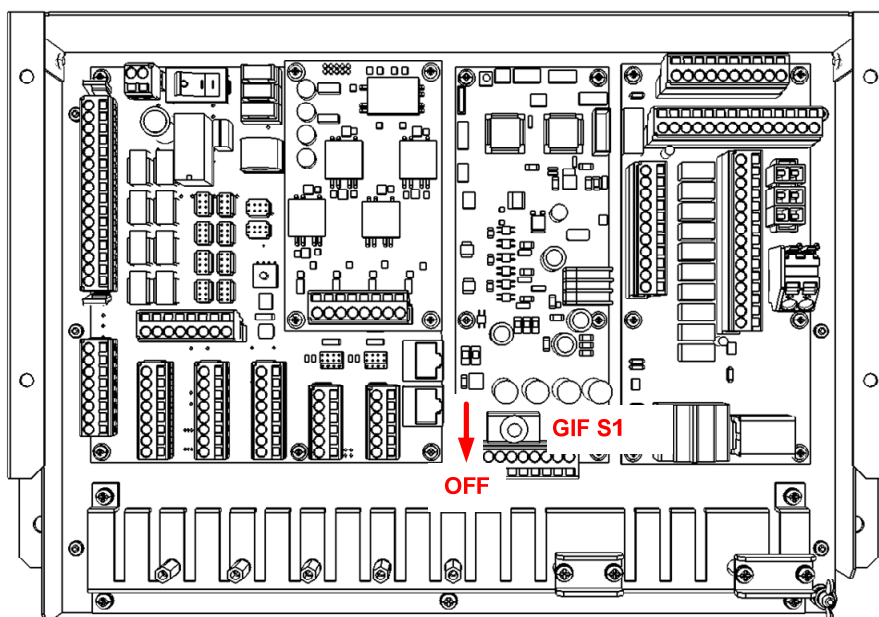
Before changing the fuses of the GIF, be sure to turn OFF the S1 switch of the GIF.

Step 1 Remove the front cover of the display unit mount kit and the lid of the JB.

Remove the front cover of the display unit mount kit and the lid of the JB. For more information about the removal procedure, refer to "Replacing the Fuses of the Serial LAN Interface Circuit: SLC CMH-2370."

Step 2 Turn OFF the S1 switch of the GIF.

Turn OFF the S1 switch in the lower part of the GIF. Signals from the gyro compass are blocked.



Step 3 Change the fuses.

Open the fuse holders and change the fuses. Each of the fuse holders can be opened by slowly turning the holder head counterclockwise while pushing it down. The fuses are glass tube fuses. After replacing the fuses, assemble to the original condition by repeating the same procedure in the reverse order. Please make sure to tighten all the screws and set all the switches back in place.



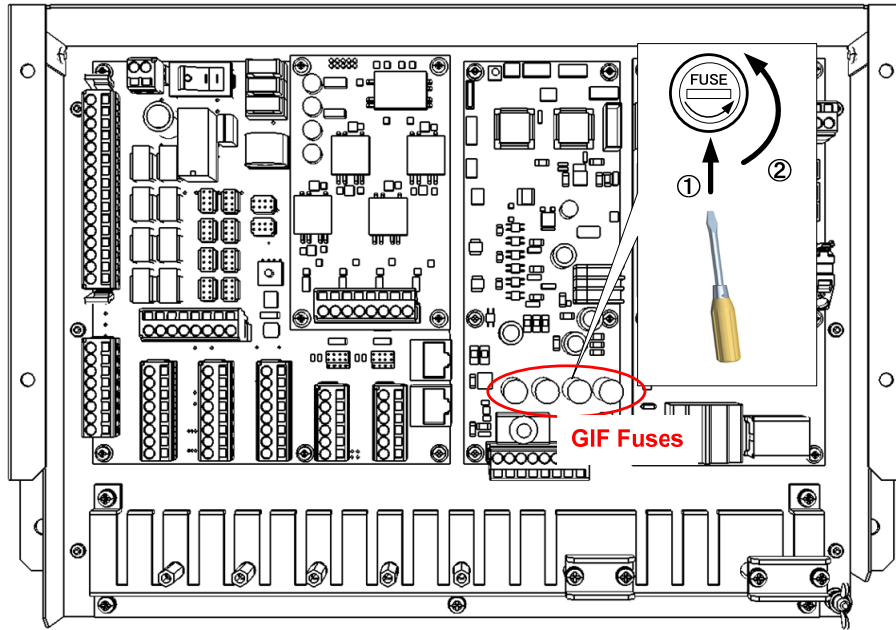
If any of the fuse holders cannot be opened because it is too tight, push a 6 mm tip width flat head screwdriver against the groove on the fuse holder head and rotate it slowly counterclockwise.



When closing the fuse holders, do not use a flat head screwdriver, however.

Using a flat head screwdriver may lead to damage to the fuse holders.

Name	Unit Name	Location of Use	Q'ty	Use	Model Name (Code)
Glass Fuse	NQE-1143	CMJ-554	4	250V 0.5A	MF51NR250V0.5A (5ZFGD00019)



Step 4 Check operation.

After the replacement of the GIF fuses is completed, turn ON the S1 switch of the GIF and the circuit breaker for the power supply of the display unit, and check the operation as follows.

- (1) Check that true bearing values are displayed on the screen.

This completes GIF fuse replacement.

4.3.7.6 Replacing the Gyro Interface Circuit: GIF CMJ-554

[Required Tools]

The tools shown in the following table are required for replacement work.

Table Required Tools

No.	Name	Size	Appearance
1	Flat head screwdriver	2 mm, 6 mm	
2	Phillips screwdriver	Size #2	



Before conducting replacement work, turn OFF the circuit breaker for the power supply of the display unit.



Do not lose the screws as they will be needed again.



The GIF uses the gyro compass signal as its power source.

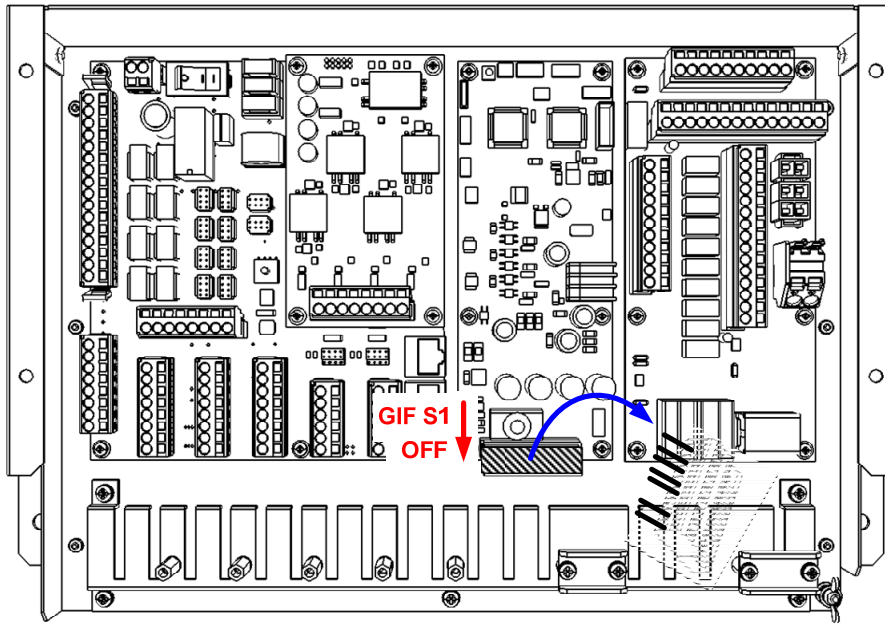
Before changing the GIF, be sure to turn OFF the S1 switch of the GIF.

Step 1 Remove the front cover of the display unit mount kit and the lid of the JB.

Remove the front cover of the display unit mount kit and the lid of the JB. For more information about the removal procedure, refer to "Replacing the Fuses of the Serial LAN Interface Circuit: SLC CMH-2370."

Step 2 Turn OFF the S1 switch of the GIF and remove the wires together with the two-piece terminal block.

Turn OFF the S1 switch in the lower part of the GIF. Signals from the gyro compass are blocked. Remove the wired two-piece terminal block J823.



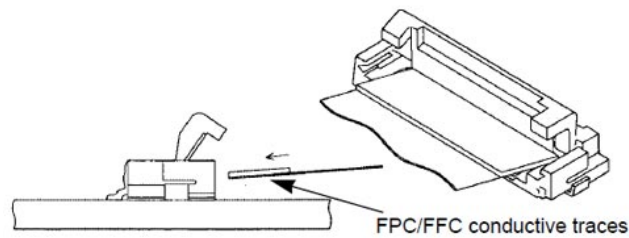
Step 3 Remove the GIF.

If an SLC is installed, disconnect the FFC (W82: J821) that connects with the SLC.

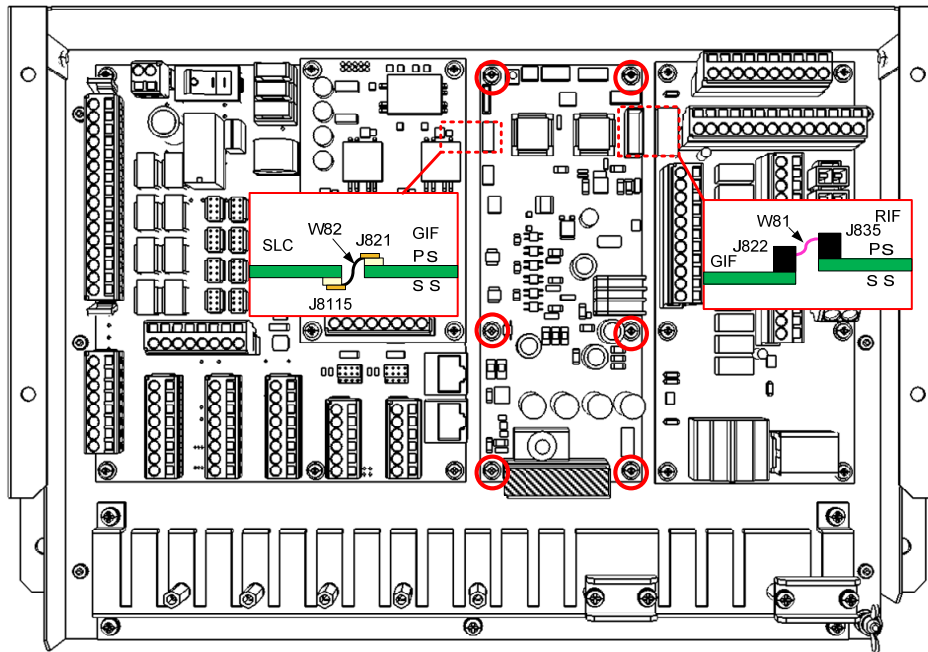
If an RIF is installed, disconnect the cable (W81: J822) that connects with the RIF.



Exercise caution when handling the FFCs as they are very fragile.



Remove the screws (M3: 6 locations) that fasten the GIF and then take out the GIF from the JB.



Step 4 Set up the new GIF and replace..

Set up the switches and jumper pins of the new GIF by referring following informations.

- Ship's List
- Chapter 2.5 "DIP-SW and Jumper Pin Settings"
- GIF you just removed.

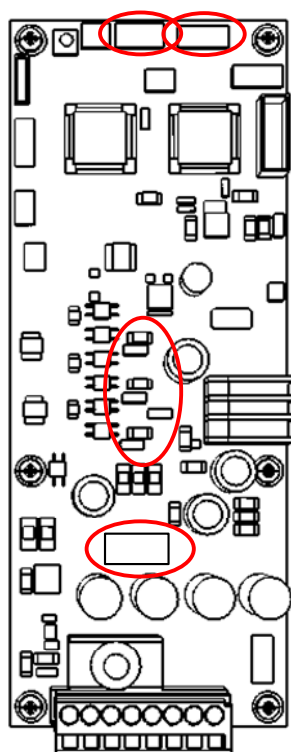
Next, assemble the new GIF by repeating the removal work in the reverse order. Please make sure to tighten all the screws and connect all the cables back in place.



Exercise caution when handling the FFCs as they are very fragile.



When installing the FFCs, be careful not to insert them slanted or bend them.



Step 5 Check operation.

After the replacement of the GIF is completed, turn ON the S1 switch of the GIF and the circuit breaker for the power supply of the display unit, and check the operation as follows.

- (1) Check that a cable open error has not occurred.
- (2) Check that true bearing values are displayed on the screen.

This completes GIF replacement.