4.1.8 NKE-2632, NKE-2632-H Scanner Unit

4.1.8.1 TRX Module (CMN-797) Replacement/NKE-2632, NKE-2632-H

[Required Tools]

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

Table Required Tools

No	Name	Size	Appearance
1	Phillips screwdriver	Size #2	
2	Open-end wrench*1	Width across flats 8 mm (for M5 screws), 13 mm (for M8 screws), 17 mm (for M10 screws)	
3	Socket wrench*1	Width across flats 8 mm (for M5 screws), 13 mm (for M8 screws), 17 mm (for M10 screws)	

*1 Either the wrench (adjustable wrench) or socket wrench is mandatory. (mounting/removing the cover, etc.)

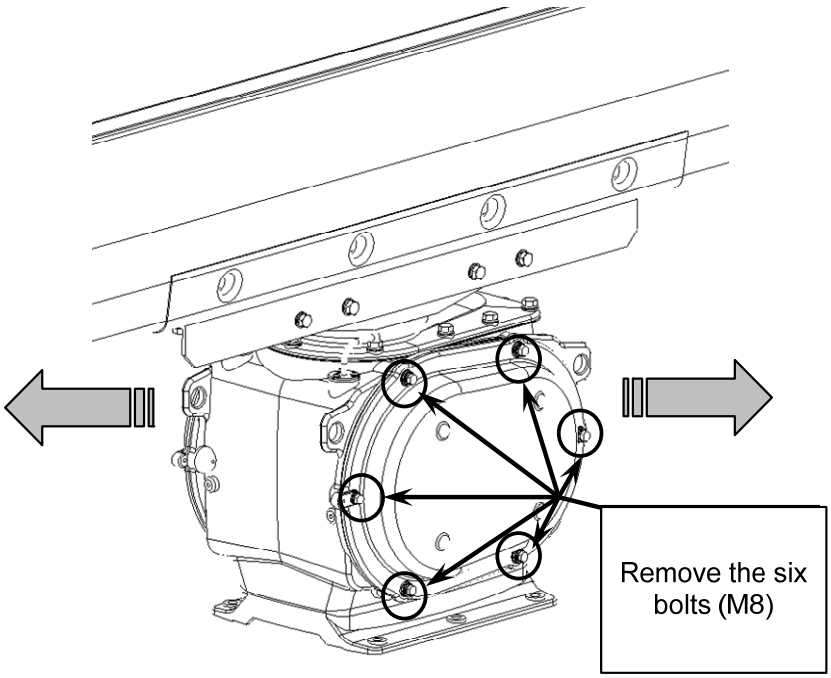
⚠ Before beginning work, turn Off the safety switch of the radar antenna.

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

⚠ Exercise care not to lose bolts, screws and other parts removed from the radar antenna, as they will be used again in later steps.

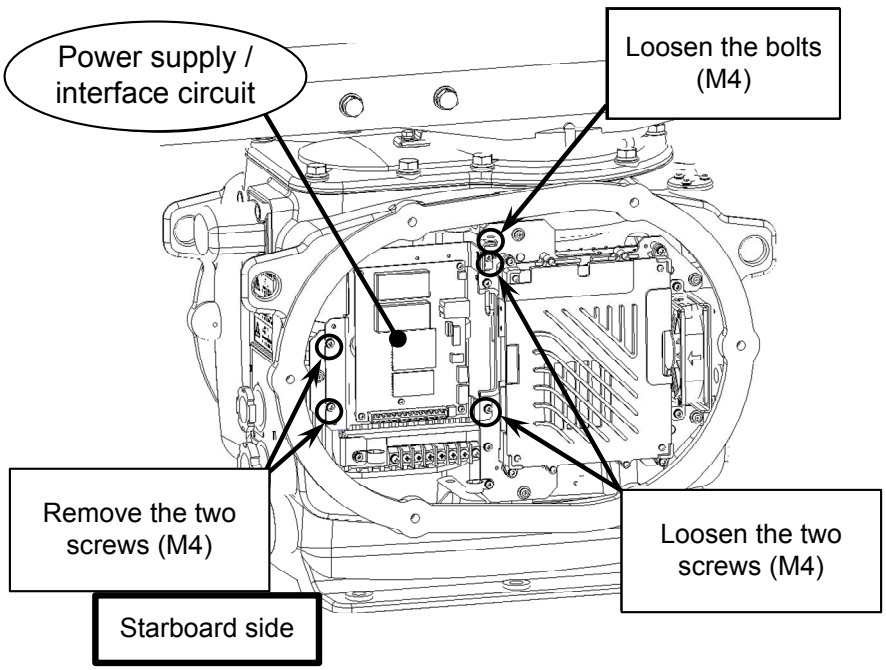
Step 1 Remove the cover.

Remove the six fall prevention bolts (M8) and remove the cover.

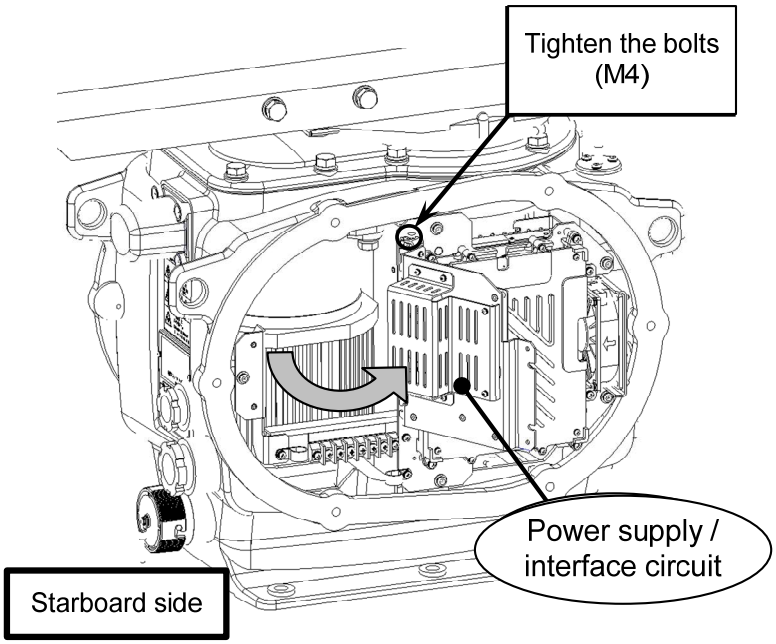


Step 2 (Starboard side) Open the power supply/interface circuit unit.

[Starboard side] By loosening the bolt (M4) and the two screws (M4) and removing the two screws (M4), the power supply/interface circuit unit can be opened towards the front.

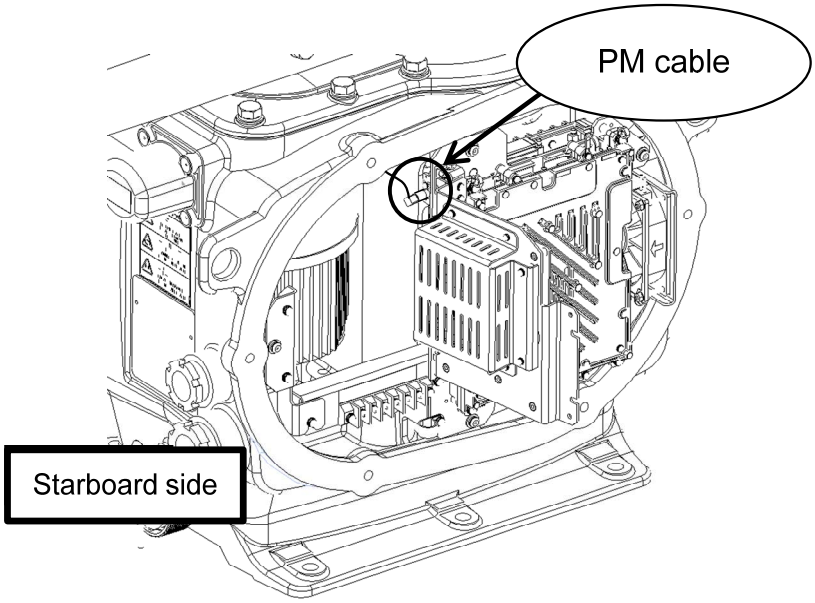


Tighten the bolt (M4) and hold the unit while the power supply/interface circuit is opened.



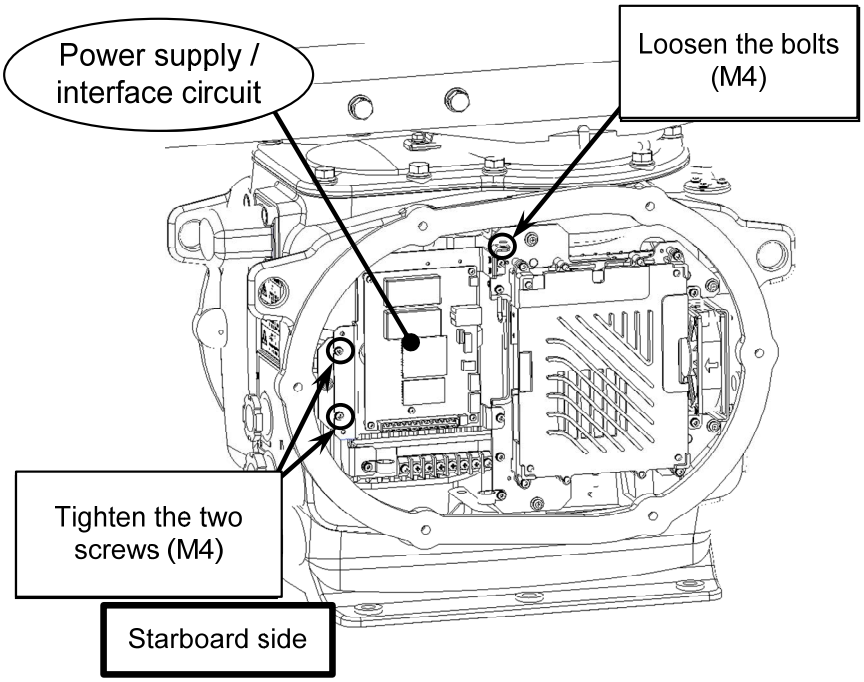
Step 3 Remove the PM cable.

Remove the PM cable.



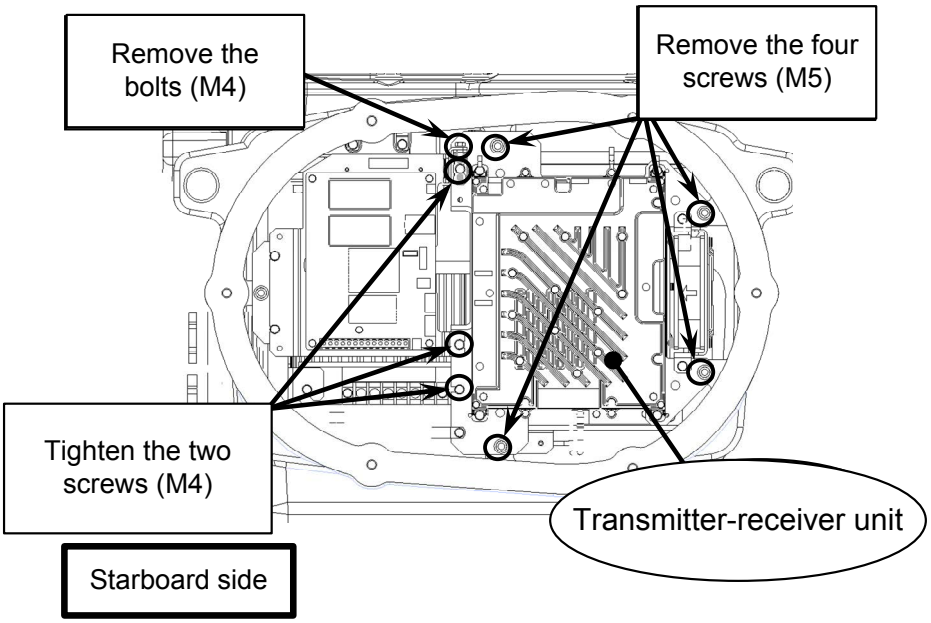
Step 4 Close the power supply/interface circuit.

Loosen the bolt (M4) and close the power supply/interface circuit. Fasten only the two screws (M4) on the stern side.

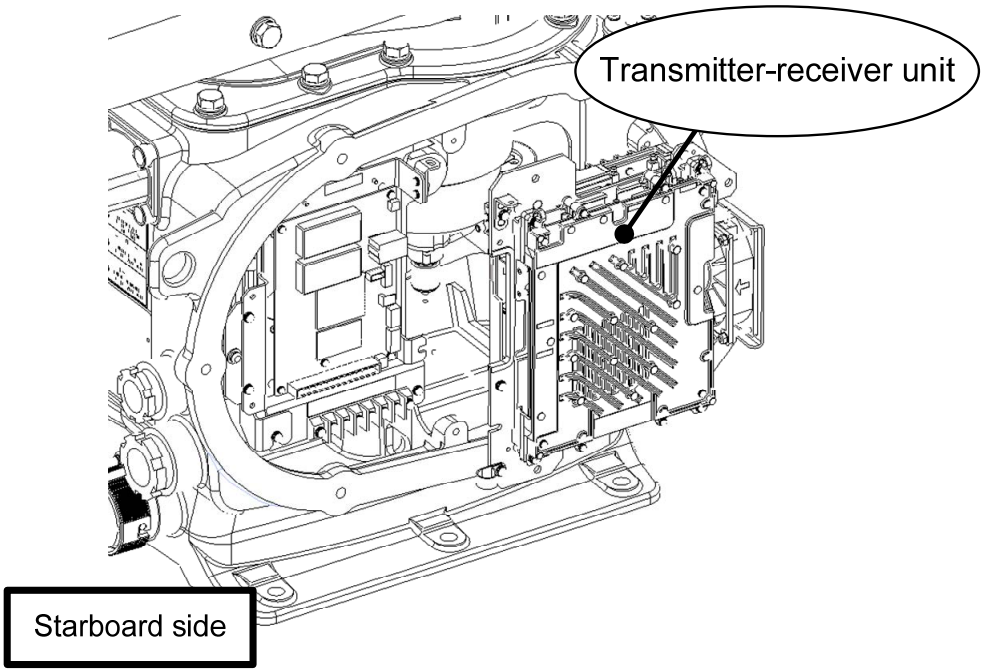


Step 5 Remove the transmitter-receiver unit.

Remove the four screws (M5). Remove the M4 bolt. Remove the three screws (M4).

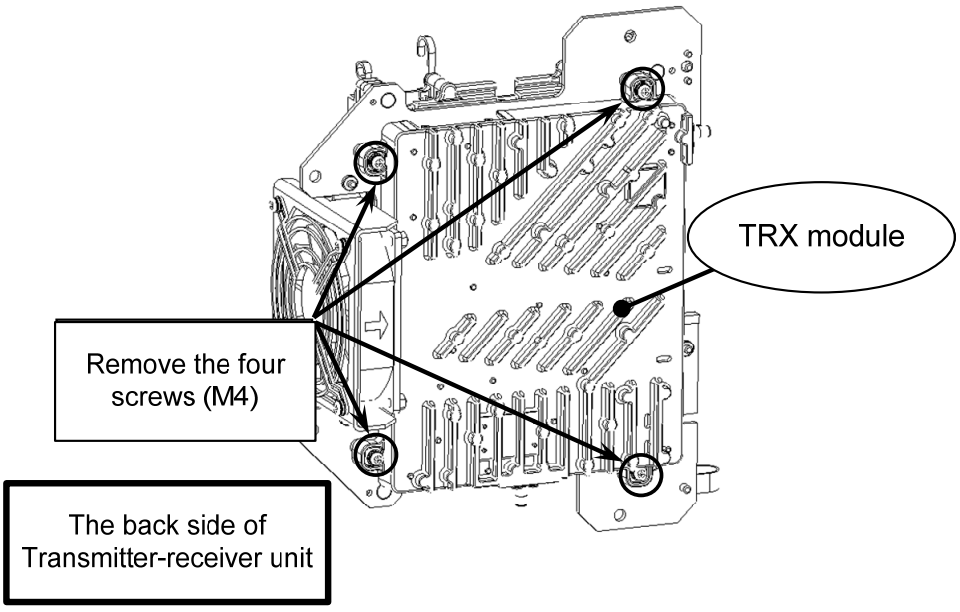


Remove the cable that is connected to the transmitter-receiver unit and remove the unit towards the front.



Step 6 Replace the TRX module.

The TRX module is installed at the rear of the transmitter-receiver unit. Remove the four screws (M4) and replace the TRX module. After replacing the module, close the cover following the disassembly procedure in the reverse order. Finally, set the safety switch to On and check the operation.



Step 7 Operation check

After completing the replacement work, turn On the safety switch and check operation by following the procedure below.

(1) Turn On the Display unit. After the countdown is completed, start transmission and check that the radar image appears without error.

This completes TRX module replacement.

4.1.8.2 Encoder (CHT-85) Replacement/NKE-2632, NKE-2632-H

[Required Tools]

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

Table Required Tools

No	Name	Size	Appearance
1	Phillips screwdriver	Size #2	
2	Open-end wrench*1	Width across flats 13 mm (for M8 screws)	
3	Socket wrench*1	Width across flats 13 mm (for M8 screws)	

*1 Either the wrench (adjustable wrench) or socket wrench is mandatory. (mounting/removing the cover, etc.)

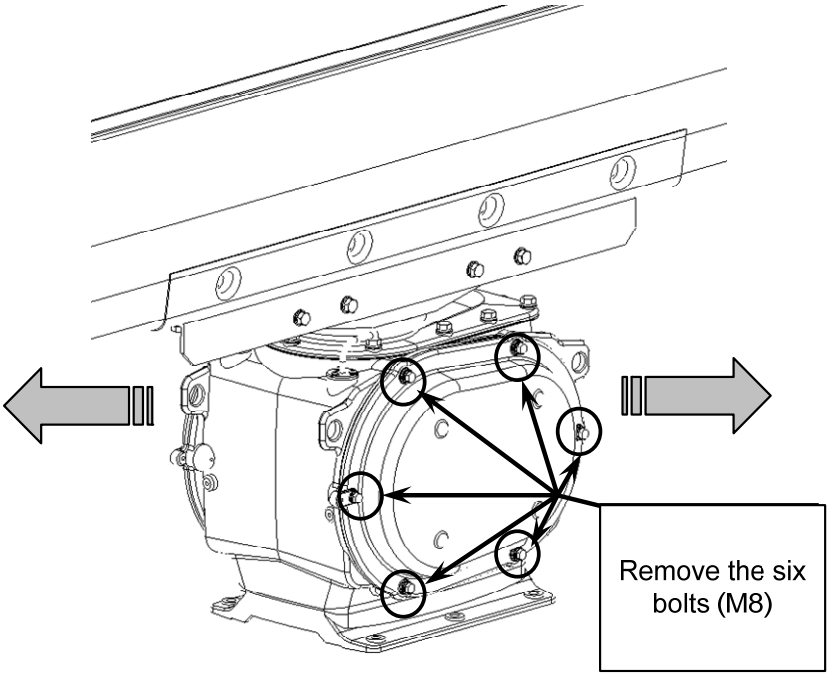
⚠ Before beginning work, turn Off the safety switch of the radar antenna.

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

⚠ Exercise care not to lose bolts, screws and other parts removed from the radar antenna, as they will be used again in later steps.

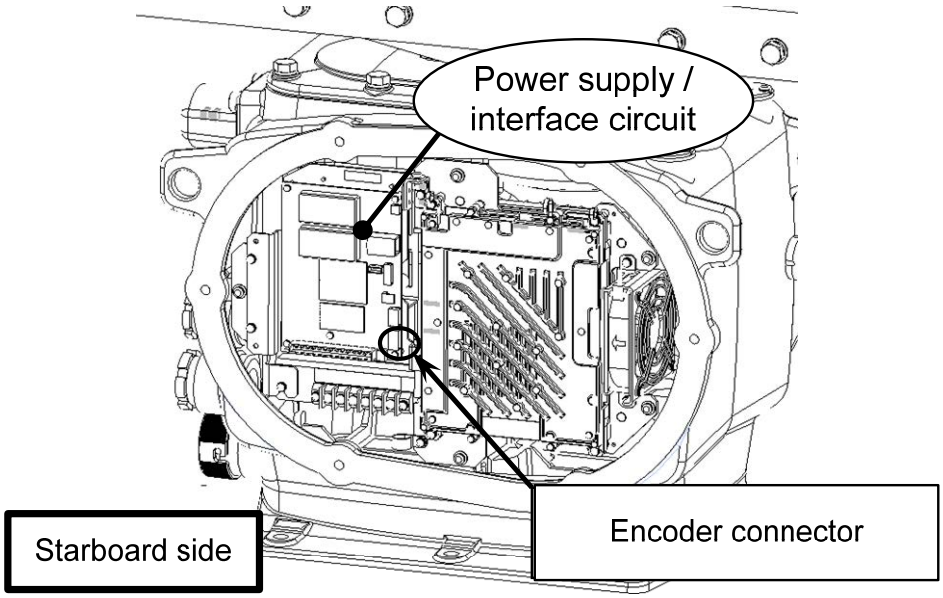
Step 1 Remove the cover.

Remove the six fall prevention bolts (M8) and remove the cover.



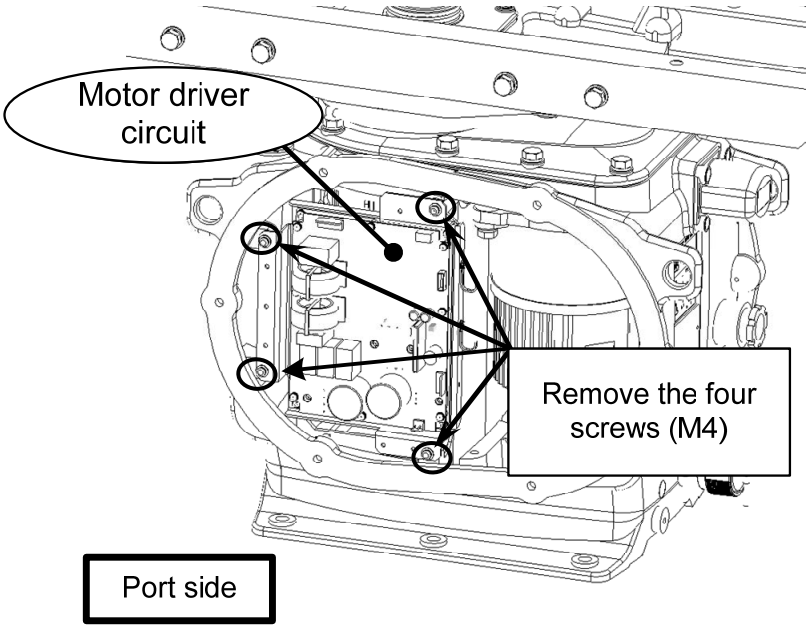
Step 2 Remove the connector of the encoder.

The connector of the encoder is connected to the power supply/interface circuit on the starboard side. Remove the connector of the encoder that is connected to the power supply/interface circuit.



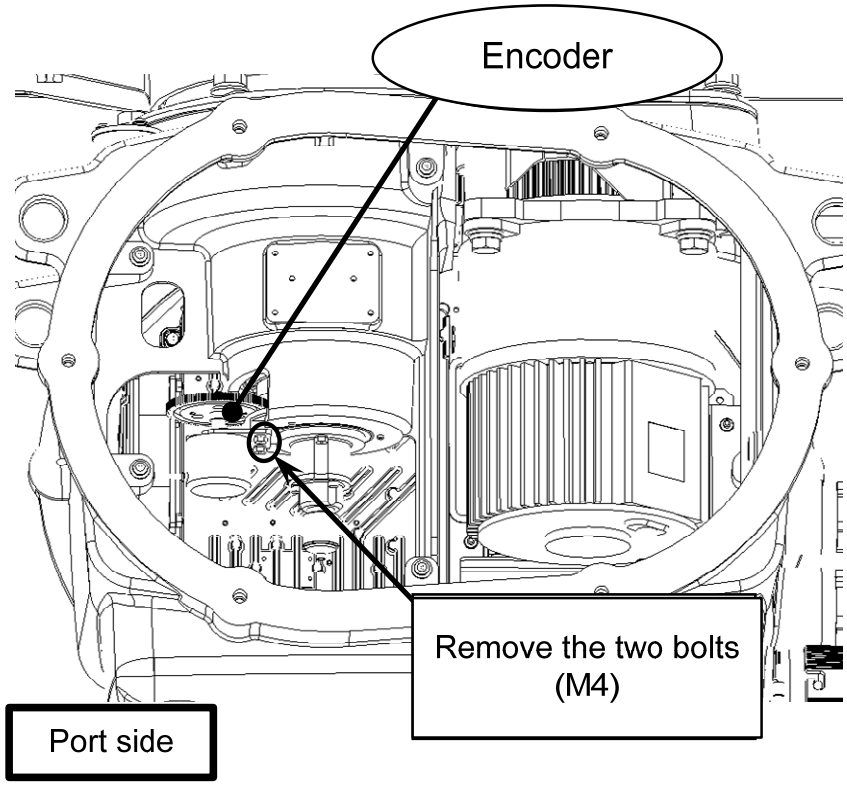
Step 3 Remove the motor driver circuit unit.

The encoder is installed at the rear of the motor driver circuit on the port side. Remove the four screws (M4) that hold the driver circuit unit and remove it.



Step 4 Replace the encoder.

Remove the two bolts (M4) that hold the encoder and replace it. Hold the gear of the encoder by lightly pressing it to the gear of the main shaft. After replacing the encoder, close the cover following the disassembly procedure in the reverse order. Finally, set the safety switch to On and check the operation. This completes encoder replacement.



Step 5 Operation check

After completing the replacement work, turn on the safety switch and check operation by following the procedure below.

(1) Turn on the Display unit. Start transmission and check that the radar image appears without error. Open the service engineer menu to perform azimuth adjustment.

This completes encoder replacement.

4.1.8.3 Power Supply/Interface Circuit (CMP-493) Replacement/NKE-2632, NKE-2632-H

[Required Tools]

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

Table Required Tools

No	Name	Size	Appearance
1	Phillips screwdriver	Size #2	
2	Open-end wrench*1	Width across flats 13 mm (for M8 screws)	
3	Socket wrench*1	Width across flats 13 mm (for M8 screws)	

*1 Either the wrench (adjustable wrench) or socket wrench is mandatory. (mounting/removing the cover, etc.)

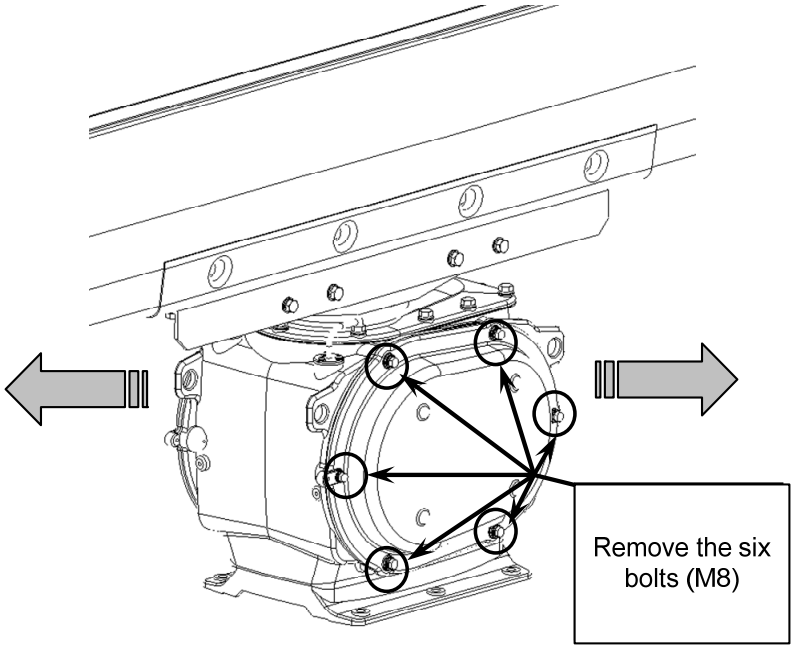
⚠ Before beginning work, turn Off the safety switch of the radar antenna.

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

⚠ Exercise care not to lose bolts, screws and other parts removed from the radar antenna, as they will be used again in later steps.

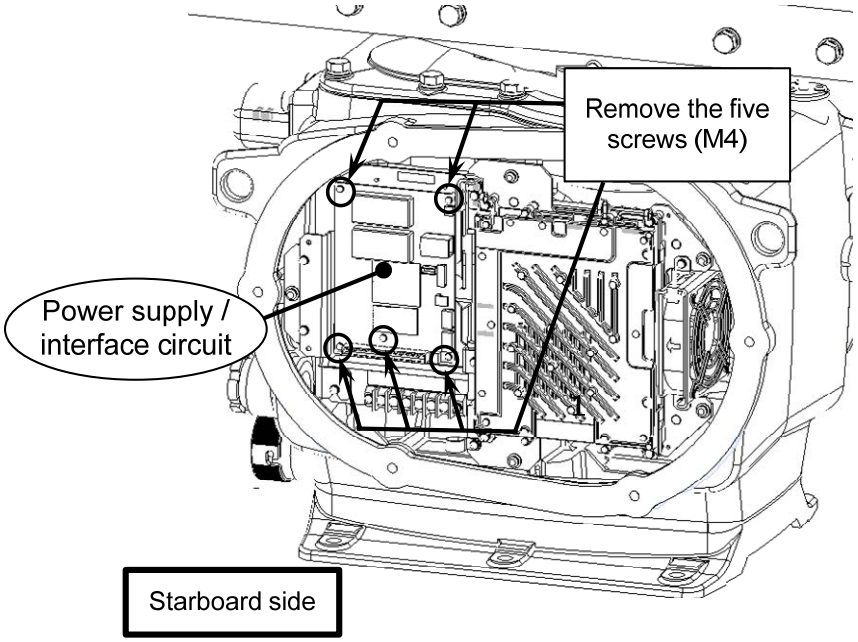
Step 1 Remove the cover.

Remove the eight fall prevention bolts (M8) and remove the cover.



Step 2 Replace the power supply/interface circuit.

[Starboard side] The power supply/interface circuit is installed on the starboard side. Remove all the connectors that are connected to the power supply/interface circuit. Remove the five screws that are holding the power supply/interface circuit and replace it. After replacing the power supply/interface circuit, connect the circuit following the disassembly procedure in the reverse order. Finally, set the safety switch to On and check the operation.



Step 3 Operation check

After completing the replacement work, turn On the safety switch and check operation by following the procedure below.

(1) Turn On the Display unit. After the countdown is completed, start transmission and check that the radar image appears without error.

This completes the power supply/interface circuit replacement.

4.1.8.4 Radar Processor Unit (NDC-4920) Replacement/NKE-2632, NKE-2632-H

[Required Tools]

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

Table Required Tools

No	Name	Size	Appearance
1	Phillips screwdriver	Size #2	
2	Open-end wrench*1	Width across flats 13 mm (for M8 screws)	
3	Socket wrench*1	Width across flats 13 mm (for M8 screws)	

*1 Either the wrench (adjustable wrench) or socket wrench is mandatory. (mounting/removing the cover, etc.)

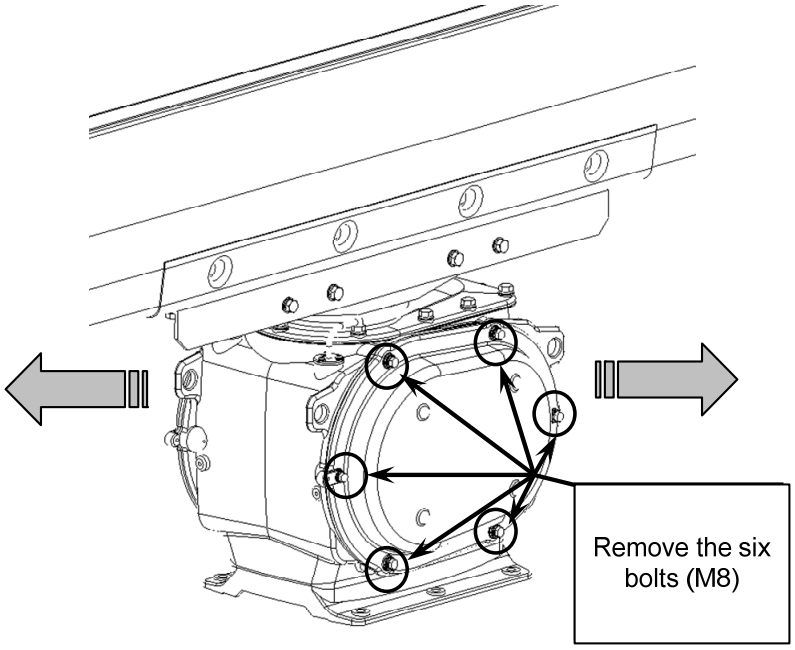
⚠ Before beginning work, turn Off the safety switch of the radar antenna.

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

⚠ Exercise care not to lose bolts, screws and other parts removed from the radar antenna, as they will be used again in later steps.

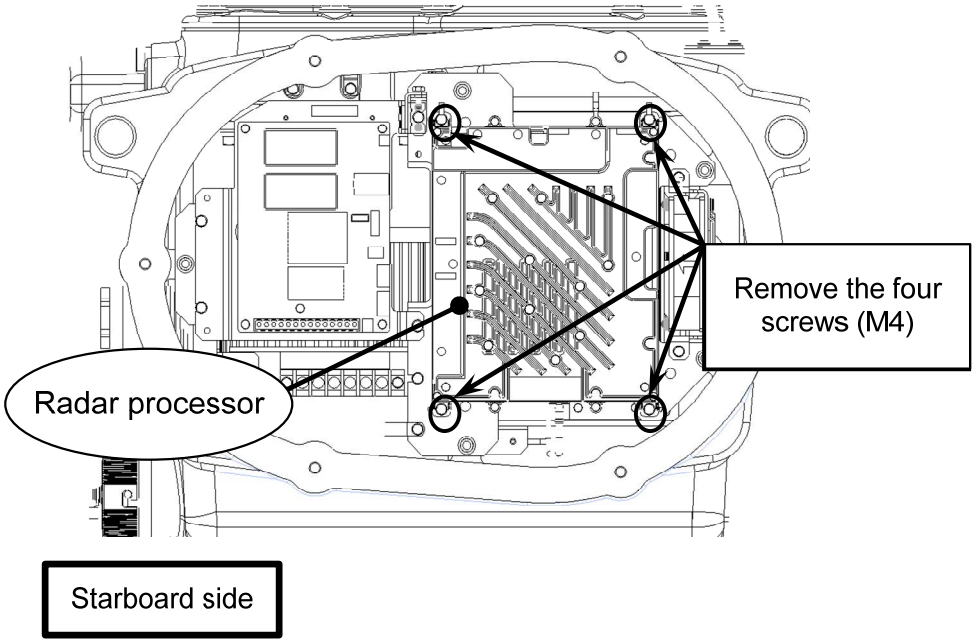
Step 1 Remove the cover.

Remove the eight fall prevention bolts (M8) and remove the cover.



Step 2 Replace the radar processor unit.

The radar processor unit is installed on the starboard side. Remove all the connectors that are connected to the radar processor unit. Remove the four screws that are holding the radar processor unit and replace it. After completing the replacement, connect the radar processor unit following the disassembly procedure in the reverse order and close the cover. Finally, set the safety switch to On and check the operation.



Step 3 Operation check

After completing the replacement work, turn On the safety switch and check operation by following the procedure below.

(1) Turn On the Display unit. Check that the radar image appears without error.

This completes radar processor unit replacement.

4.1.8.5 Motor Replacement/NKE-2632, NKE-2632-H

[Required Tools]

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

Table Required Tools

No	Name	Size	Appearance
1	Phillips screwdriver	Size #2	
2	Open-end wrench*1	Width across flats 8 mm (for M5 screws). 13 mm (for M8 screws). 17 mm (for M10 screws)	
3	Socket wrench*1	Width across flats 8 mm (for M5 screws). 13 mm (for M8 screws). 17 mm (for M10 screws)	

*1 Either the wrench (adjustable wrench) or socket wrench is mandatory. (mounting/removing the cover, etc.)

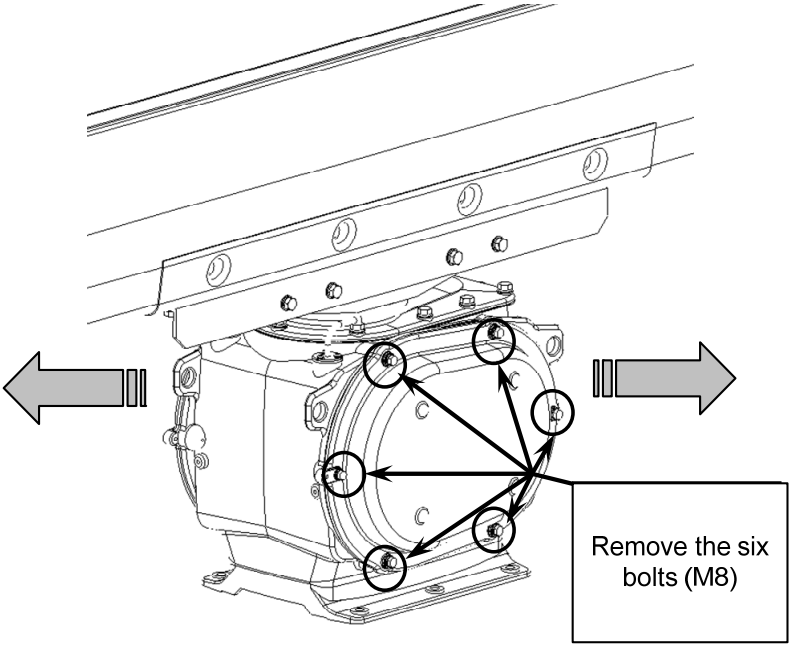
⚠ Before beginning work, turn Off the safety switch of the radar antenna.

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

⚠ Exercise care not to lose bolts, screws and other parts removed from the radar antenna, as they will be used again in later steps.

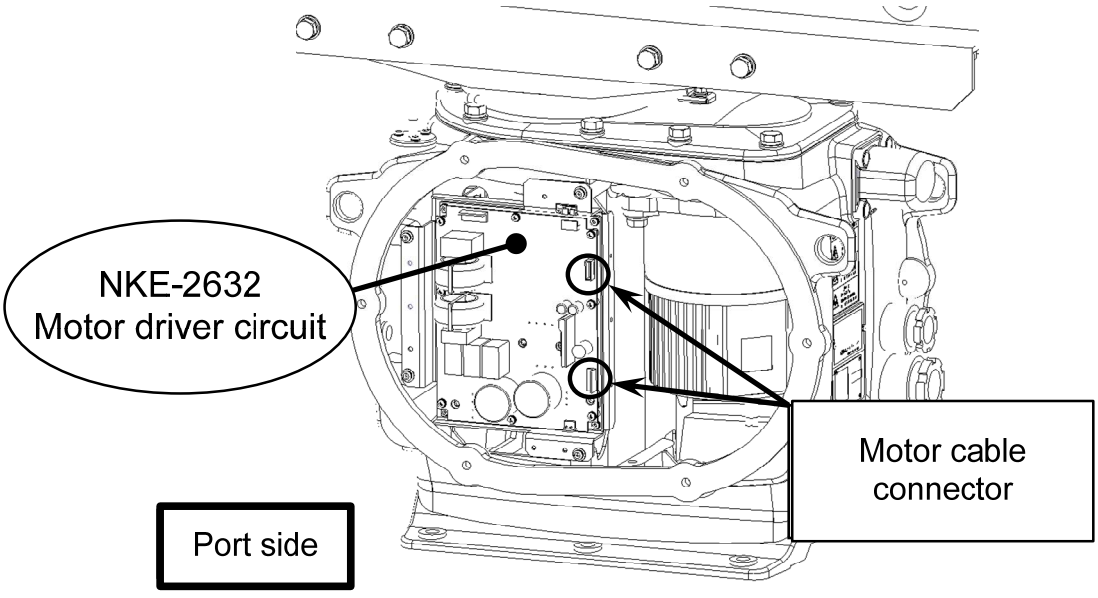
Step 1 Remove the cover.

Remove both the left and right covers before replacing the motor. Remove the covers by removing the fall prevention bolts (M8: 6 bolts on one side, 12 bolts on both sides).



Step 2 (Port side) Remove the motor cable.

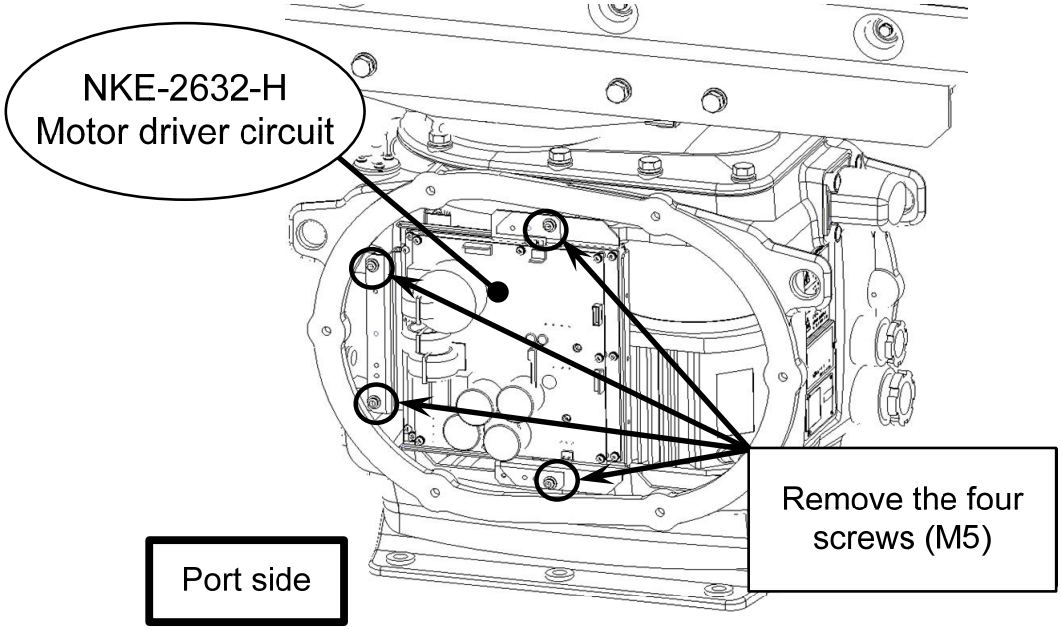
[Port side] Remove the motor cable that is connected to the motor driver unit.



Step 2-1 In the case of *NKE-2632-H (port side): Remove the motor cable.

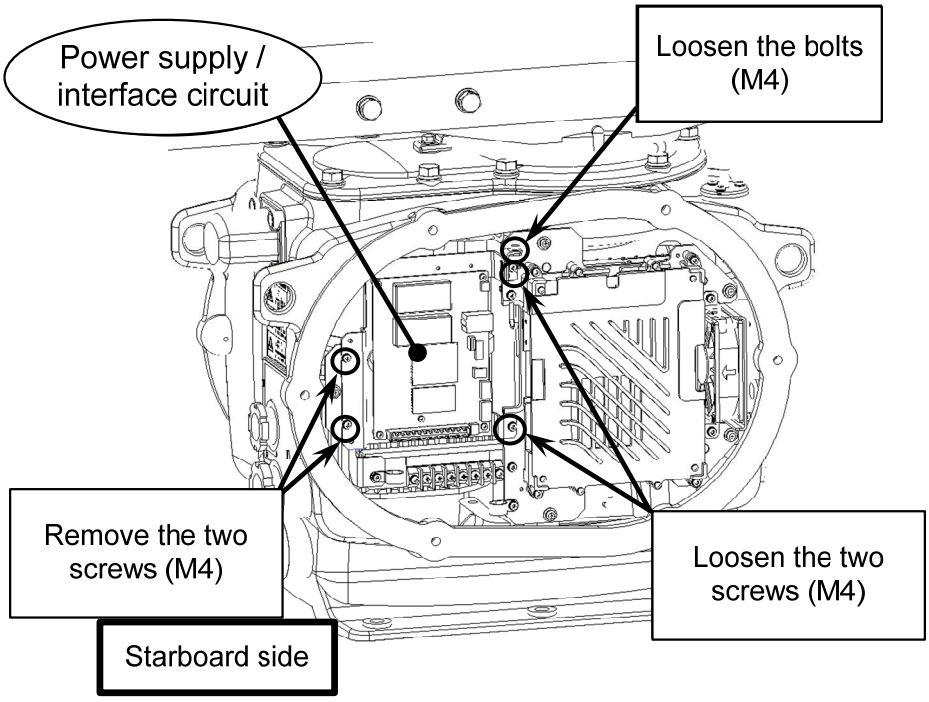
In the case of *NKE-2632-H, the HS motor driver unit must be removed.

[Port side] Remove the cable that is connected to the HS motor driver. Remove the four screws (M5) and remove the motor driver.

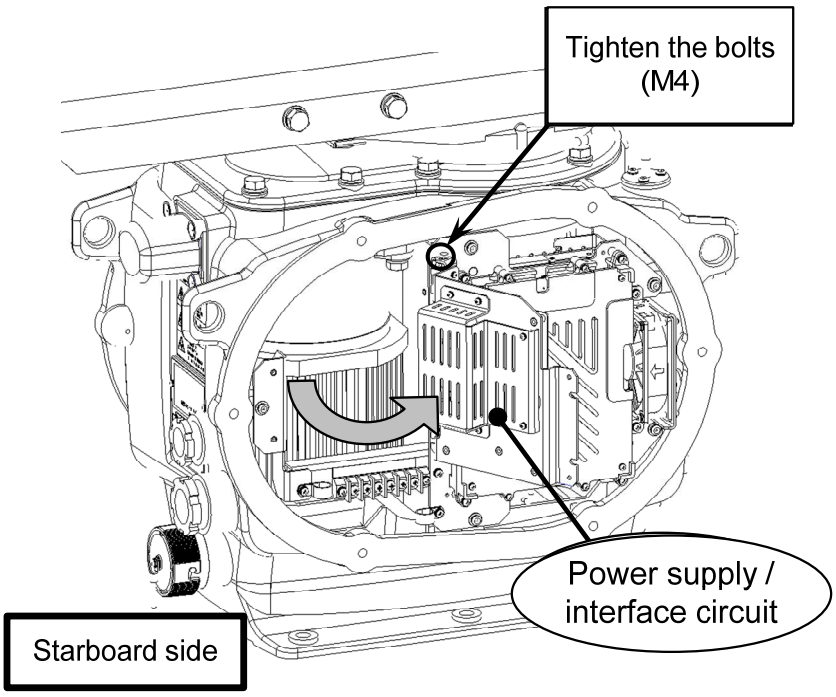


Step 3 (Starboard side) Open the power supply/interface circuit unit.

[Starboard side] By loosening the bolt (M4) and the two screws (M4) and removing the two screws (M4), the power supply/interface circuit unit can be opened towards the front.

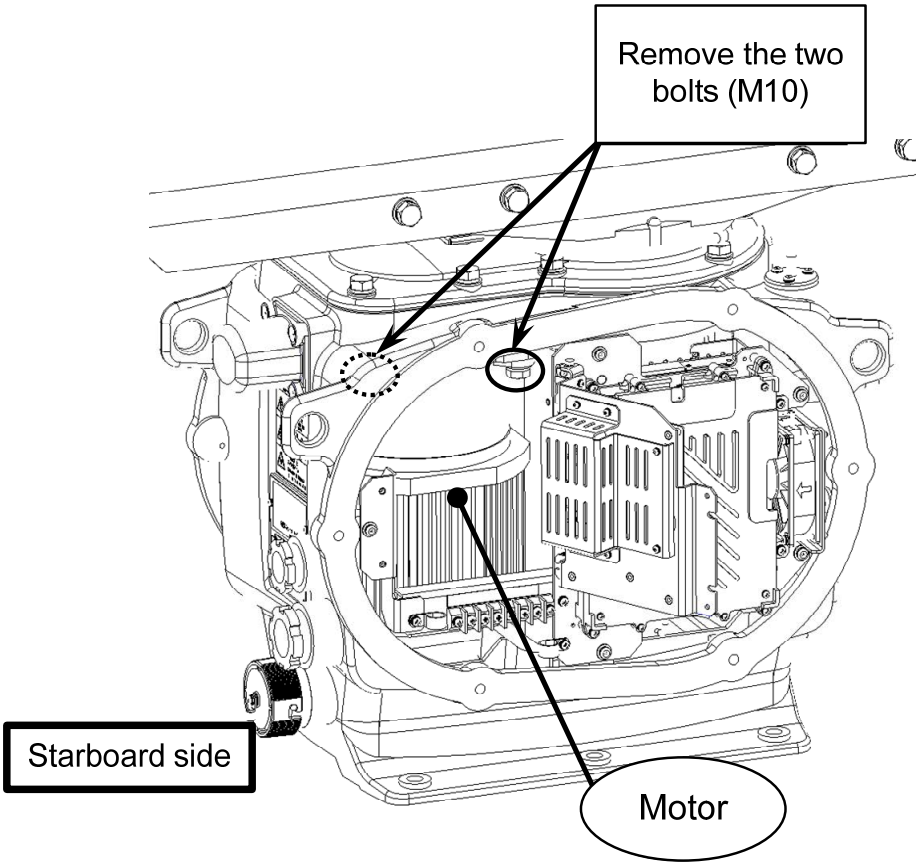


Tighten the bolt (M4) and hold the unit while the power supply/interface circuit is opened.

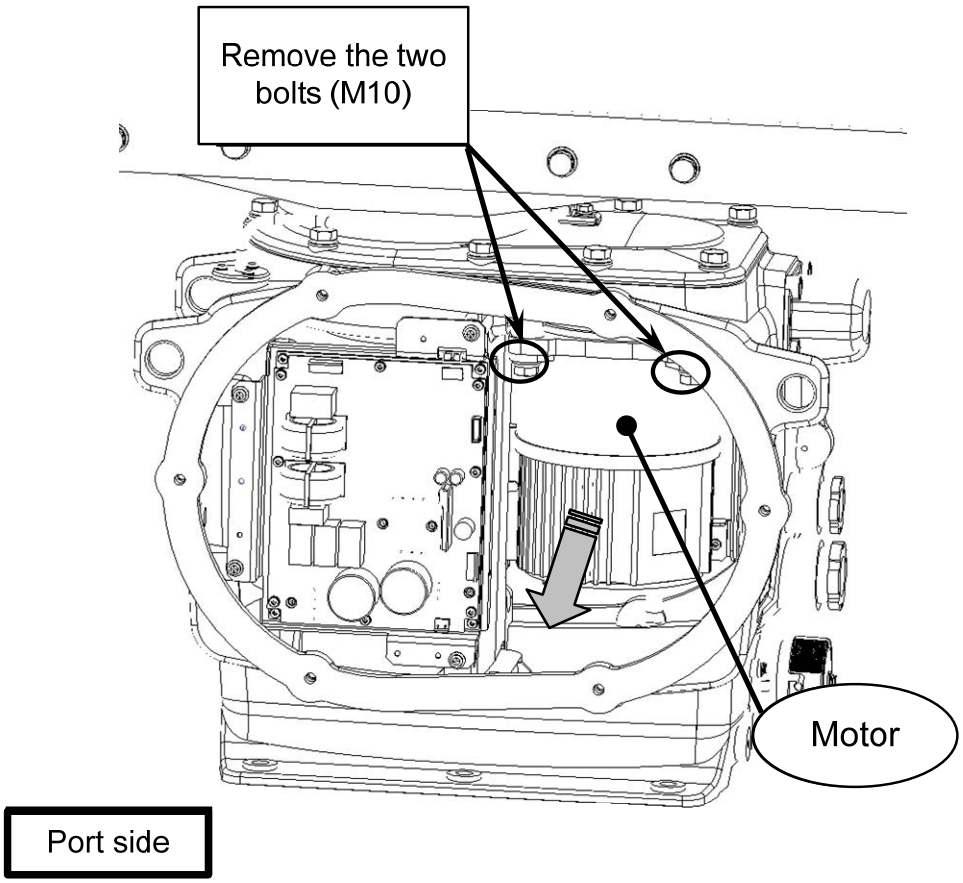


Step 4 Remove the motor.

[Starboard side] Remove the two bolts (M10).



[Starboard side] Remove the two bolts (M10) and remove the motor towards the front.



Apply grease, in advance, on the gear of the motor to be replaced.

Tighten the hexagon head bolts with the proper torque (380 kgf.cm) to guarantee tightening them and not leaving loose bolts. After replacing the motor, close the cover following the disassembly procedure in the reverse order. Finally, set the safety switch to ON and check the operation.

Step 5 Operation check

After completing the replacement work, turn On the safety switch and follow the steps below to check the operation.

1. Turn On the Display unit. Start transmission and check that the radar image appears without error. Check that the motor does not make any abnormal sound when it starts to rotate, while it is rotating, or when it stops.
2. Open the service engineer menu and initialize the motor rotation time.

This completes motor replacement.

4.1.8.6 Motor Driver Circuit (CBD-1949) Replacement/NKE-2632

[Required Tools]

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

Table Required Tools

No	Name	Size	Appearance
1	Phillips screwdriver	Size #2	
2	Open-end wrench*1	Width across flats 13 mm (for M8 screws)	
3	Socket wrench*1	Width across flats 13 mm (for M8 screws)	

*1 Either the wrench (adjustable wrench) or socket wrench is mandatory. (mounting/removing the cover, etc.)

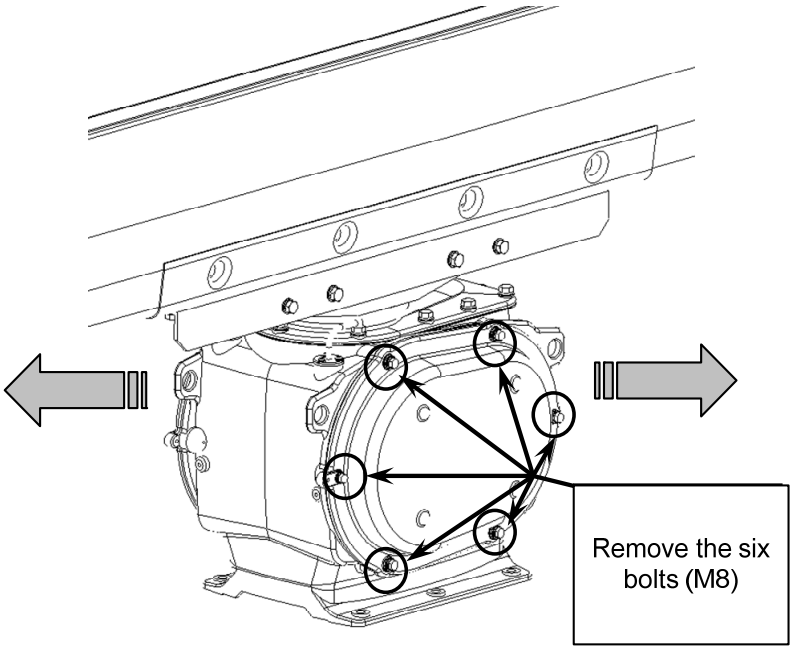
⚠ Before beginning work, turn Off the safety switch of the radar antenna.

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

⚠ Exercise care not to lose bolts, screws and other parts removed from the radar antenna, as they will be used again in later steps.

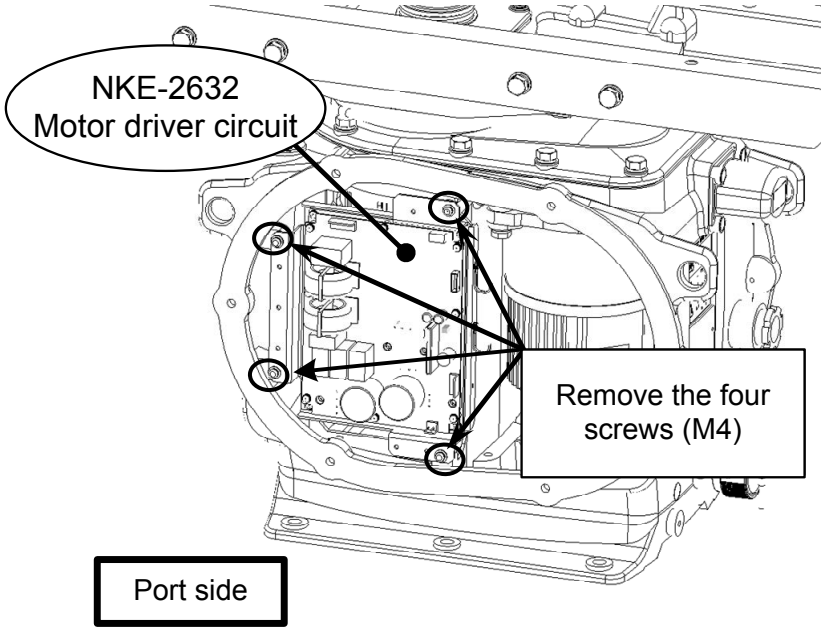
Step 1 Remove the cover.

Remove the six fall prevention bolts (M8) and remove the cover.



Step 2 Remove the motor driver circuit board.

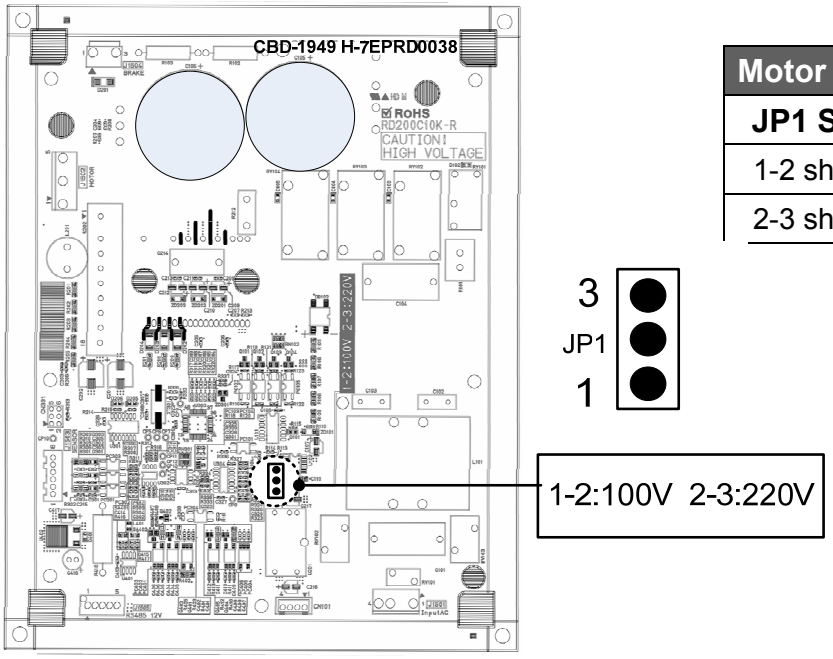
Remove all the connectors that are connected to the motor driver. Remove the four screws that hold the motor driver unit.



Step 3 Check the setting of the motor driver circuit.

The motor driver applies the 100 V/220 V common circuit. Before commencing replacement, set the power supply of the driver to be replaced according to the power supply specification.

Motor Driver Circuit CBD-1949



Motor Driver Circuit CBD-1949	
JP1 SETTING	**Description**
1-2 short-circuit	100 VAC
2-3 short-circuit	220 VAC

Step 4 Operation check

After replacing the motor driver circuit board, turn On the safety switch and follow the steps below to check the operation.

1. Turn On the Display unit. Start transmission and check that the radar image appears without error. Check that the motor does not make any abnormal sound when it starts to rotate, while it is rotating, or when it stops.

This completes motor driver circuit replacement.

4.1.8.7 Motor Driver Circuit Board (CBD-1950) Replacement/NKE-2632-H

[Required Tools]

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

Table Required Tools

No	Name	Size	Appearance
1	Phillips screwdriver	Size #2	
2	Open-end wrench*1	Width across flats 13 mm (for M8 screws)	
3	Socket wrench*1	Width across flats 13 mm (for M8 screws)	

*1 Either the wrench (adjustable wrench) or socket wrench is mandatory. (mounting/removing the cover, etc.)

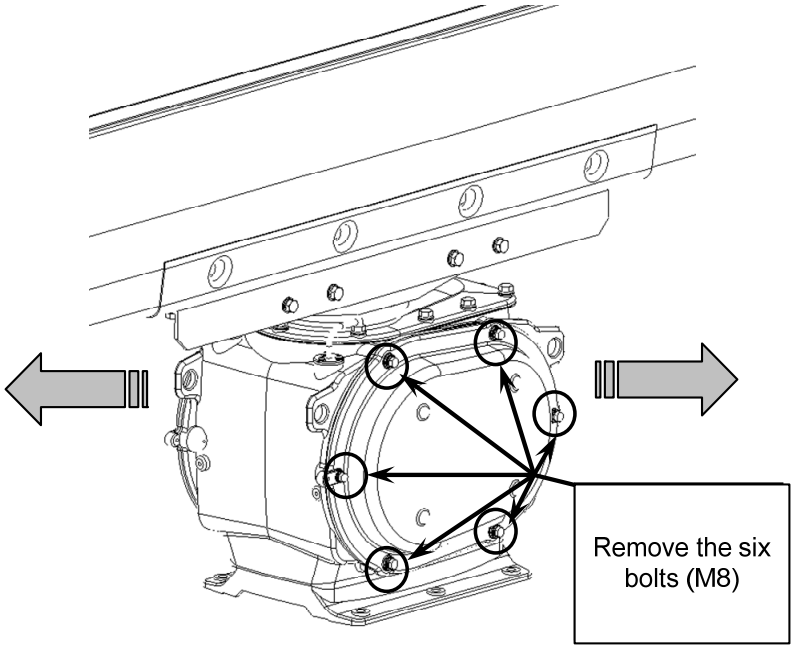
⚠ Before beginning work, turn Off the safety switch of the radar antenna.

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

⚠ Exercise care not to lose bolts, screws and other parts removed from the radar antenna, as they will be used again in later steps.

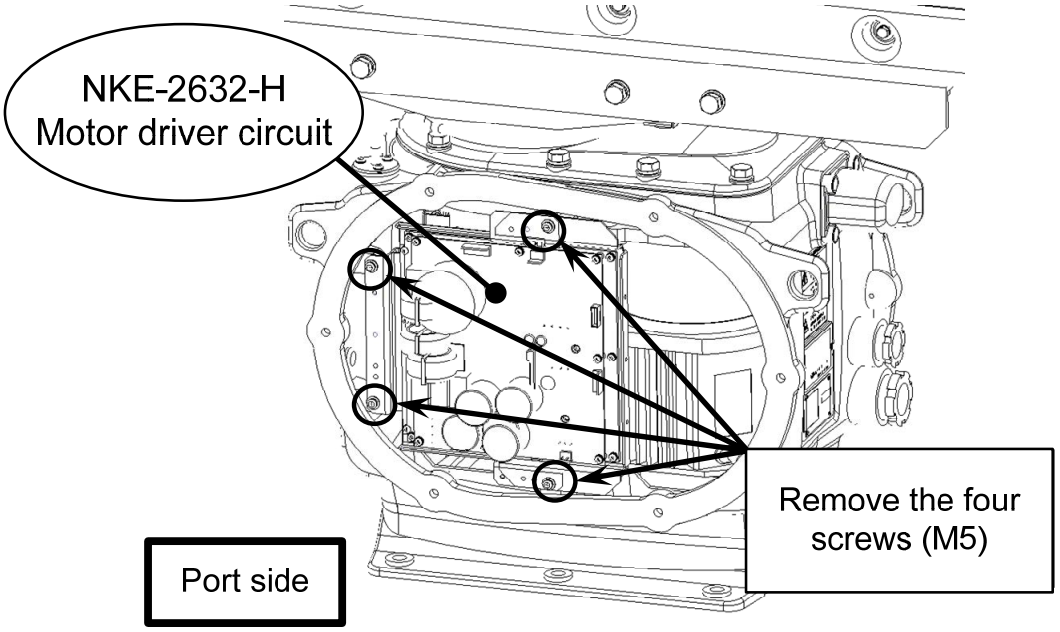
Step 1 Remove the cover.

Remove the six fall prevention bolts (M8) and remove the cover.



Step 2 Remove the motor driver circuit board.

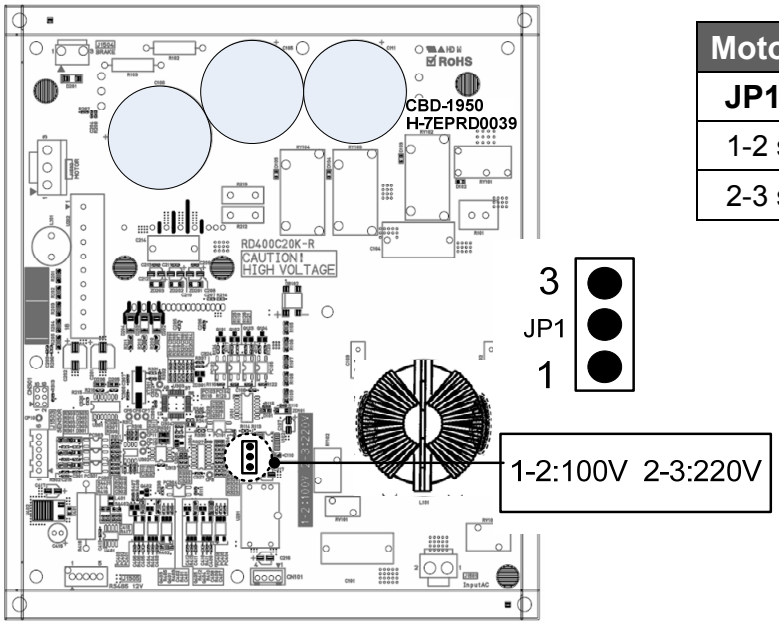
Remove all the connectors that are connected to the motor driver. Remove the four screws that hold the motor driver unit.



Step 3 Check the setting of the motor driver circuit.

The motor driver applies the 100 V/220 V common circuit. Before commencing replacement, set the power supply of the driver to be replaced according to the power supply specification.

Motor Driver Circuit CBD-1950



Motor Driver Circuit CBD-1950	
JP1 SETTING	**Description**
1-2 short-circuit	100 VAC
2-3 short-circuit	220 VAC

Step 4 Operation check

After replacing the motor driver circuit board, turn On the safety switch and follow the steps below to check the operation.

1. Turn On the Display unit. Start transmission and check that the radar image appears without error. Check that the motor does not make any abnormal sound when it starts to rotate, while it is rotating, or when it stops.

This completes motor driver circuit replacement.