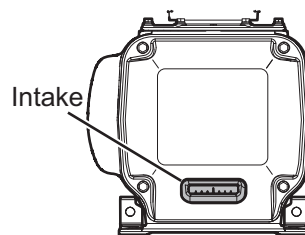


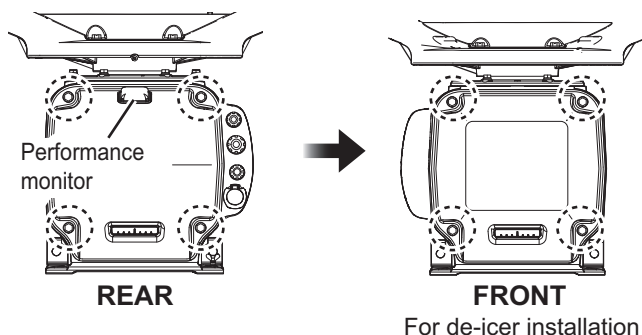
NOTICE

If there is a chance of inclement weather when the RF unit is removed, cover the intakes on both covers with packing tape for waterproofing. Be sure to remove the tape after completing the installation.



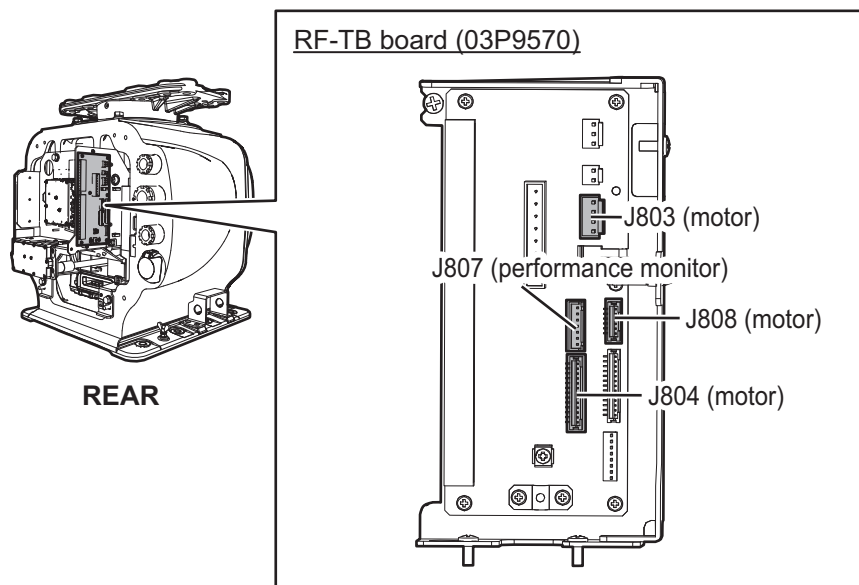
Some parts or wiring have been omitted from the illustrations for clarity.

1. Loosen four bolts on the rear cover to remove the rear cover. If the de-icer is already installed or will be installed, remove also four bolts on the front cover to remove the front cover.



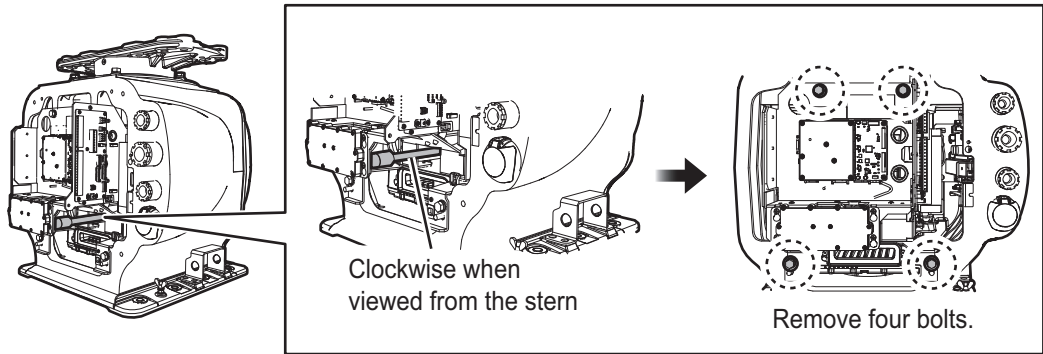
Note: The cable for the performance monitor is connected between the rear cover and the RF-TB Board in the Antenna Unit. Open the cover slowly to prevent damage to the cable and connector.

2. Disconnect the performance monitor connector (J807) and the motor drive connectors (J803, J804 and J808) from the RF-TB Board.

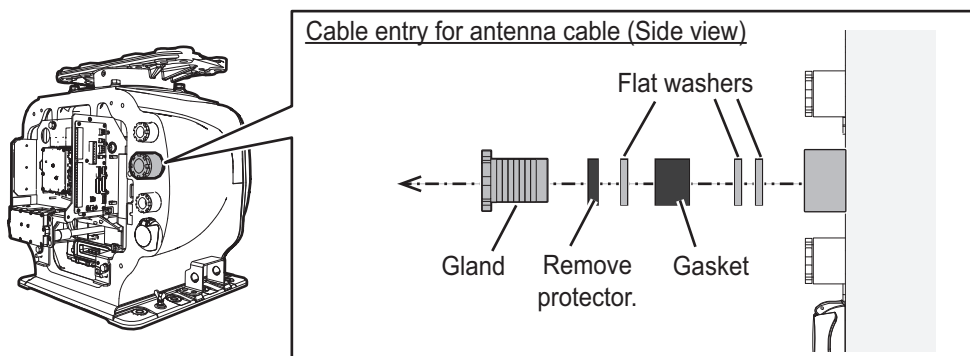


2. WIRING

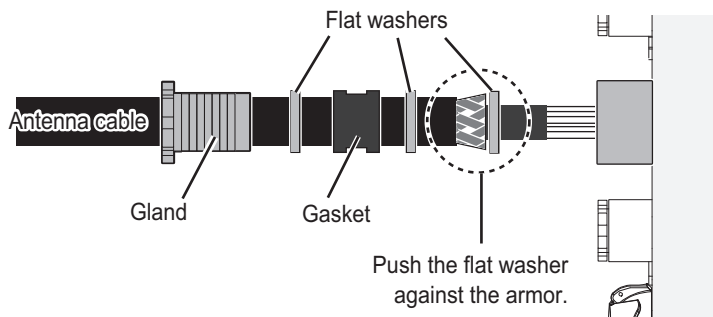
3. Disconnect the coaxial cable and unfasten four bolts to enable removal of the RF unit.



4. Remove the RF unit.
5. Unfasten the cable gland for the antenna cable (RW-00135) and remove the gasket and three flat washers and remove the protector.



6. Slide the cable gland, the gasket and three flat washers onto the cable.
7. Push the flat washer against the armor.
8. Trim the armor so that it does not extend past the flat washers.
9. Pass the antenna cable through the cable entrance.
If applicable, unfasten the appropriate cable glands and pass the sub monitor and de-icer power cables through the cable entrance. Pass the cables through their respective locking wire saddle.
10. All other cables are connected to the RF unit and should be pulled out of the chassis after passing them through their respective cable entrances. The de-icer power cable is connected to the de-icer board as shown in step 14.
11. Apply the supplied adhesive to the threads of the cable glands, and then fasten it tightly with the hook spanner.



Note: Use the wrench of the correct size referring to cable gland size below. If you do not have the hook spanner, contact your dealer.

- Gland for the antenna cable: $\phi 42$
- Gland for the sub monitor cable or de-icer cable: $\phi 34$

12. Re-mount the RF unit then reconnect the connectors for the motor (J803, J804 and J808), the four bolts and the coaxial cable (see step 3). The torque for fixing the coaxial cable must be 27.5 N•m.
13. Attach the appropriate WAGO connectors (pre-attached) to the appropriate cables, and then antenna and sub monitor cables to the RF-TB Board shown in the following figure. For how to connect the WAGO connector, see "WAGO connector" on page 2-6. For pin arrangement, see the interconnection diagram at the back of this manual.

Note 1: Make sure to pass the cable through the specified locking wire saddle.

Note 2: A terminal opener is provided on the RF-TB Board.

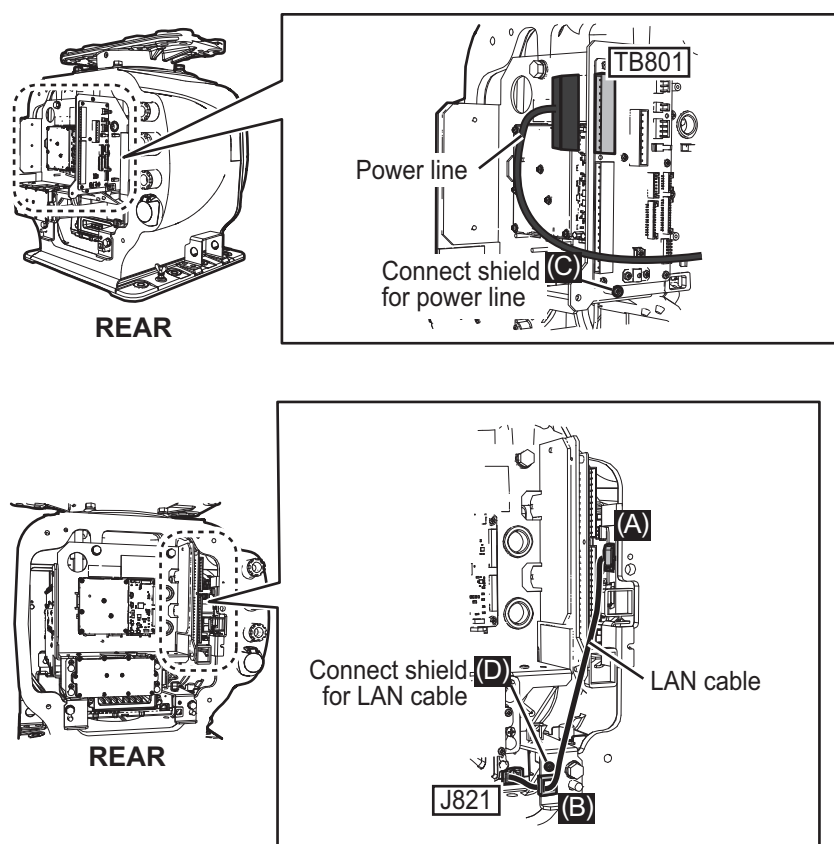
- Destination of Antenna cable:

Power line: TB801 through the locking wire saddle (A)

LAN cable: J821 through the locking wire saddles (A and B, two places)

Shield of power line: Screw (C)

Shield of LAN cable: Screw (D)



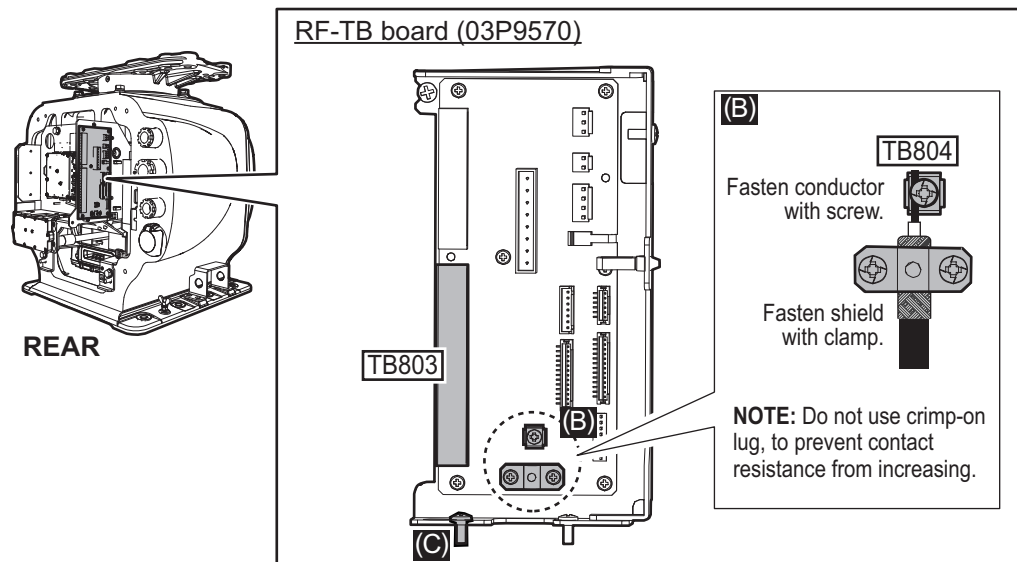
Note: For the antenna cable RW-9600/6895/4873, connect the crimp-on lug (that binds unused wires) together with the shield of the power line.

- Destination of sub monitor cable

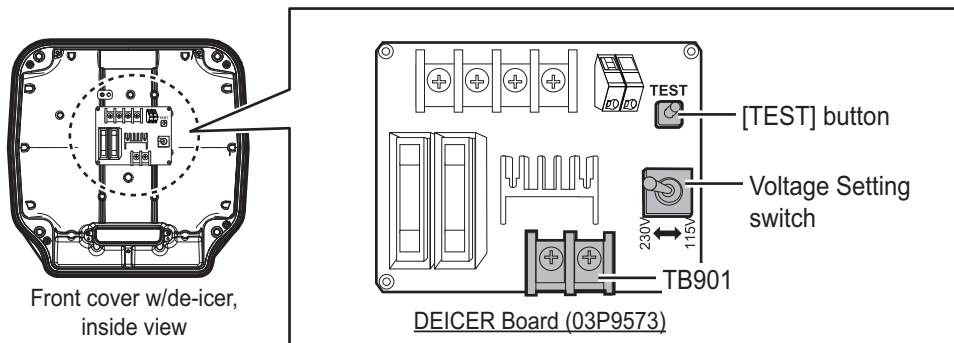
Signal line: TB803 through the locking wire saddle (A), see the figure for the "Destination of Antenna cable:"

Coaxial cable: TB804 (B)

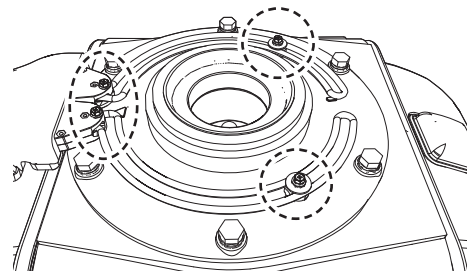
Shield of signal line: Screw (C)



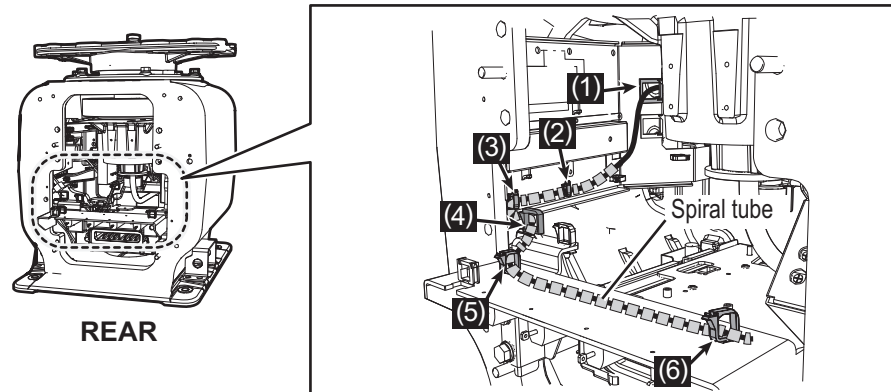
14. **DE-ICER INSTALLATION.** See "De-icer Kit Installation Instructions" (for TR-UP radar, C32-01313), issued separately, for the de-icer not fitted at the factory. If the de-icer is not provided, go to step 12.



- 1) Remove four bolts then spread open the right and left heater elements on the front cover.
Note: Lift the elements slightly when opening so as not hit the elements on the bolts on the chassis.
- 2) Unfasten four bolts to open the front cover. Remove the cover, being careful not to hit the elements on the chassis or radiator.
- 3) Pass the power cable from the cable entrance.
- 4) Wrap the supplied spiral tube around the de-icer power cable, starting from the crimp-on lugs. Set a locking wire saddle at location (6) shown in the fol-

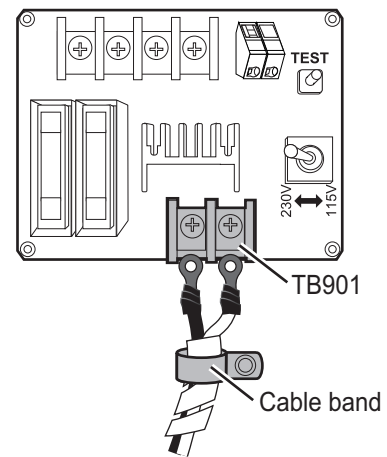


following figure. Pass the de-icer power cable through locking wire saddles (1) to (6).

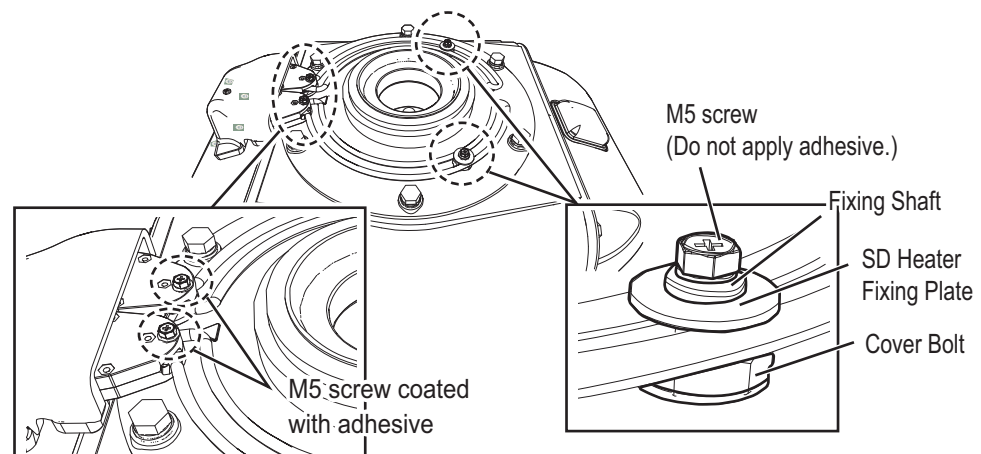


- 5) Unfasten the cable band* on the front cover. Pass the de-icer power cable through the band then fasten the band. Connect the cable to TB901 on the DE-ICER board (03P9573), using the supplied crimp-on lugs.

*: For the DE-ICER installation kit, unfasten the cable band on the cover supplied with the kit. (The original cover can be discarded.)

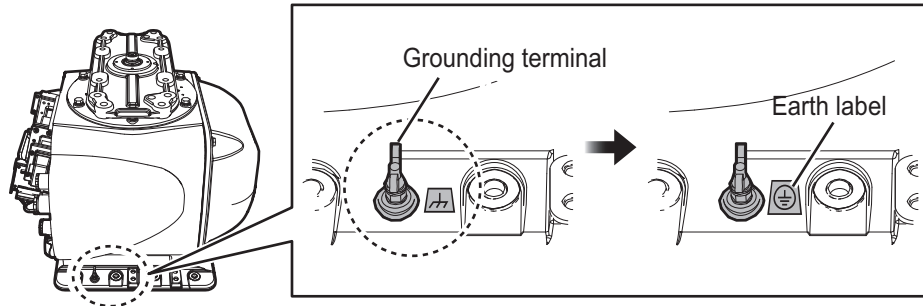


- 6) Set the Voltage Setting switch according to the power source for the de-icer; 115 V or 230 V. The default setting is 230 V.
- 7) Apply power to the de-icer then press and hold the **TEST** button for about ten seconds. Check that the heater gets hot and then release the **TEST** button.
- 8) Set the front cover with heater to the Antenna Unit. When fastening the front cover, spread open the heater elements, lifting the base of the heater. Take care not to hit the heater elements on the chassis or radiator.
- 9) Fasten the two heater elements to the chassis with removed four bolts at step1). Fasten the base of the heater with two bolts coated with the supplied adhesive. Fasten the installation materials to each of the cover bolts.

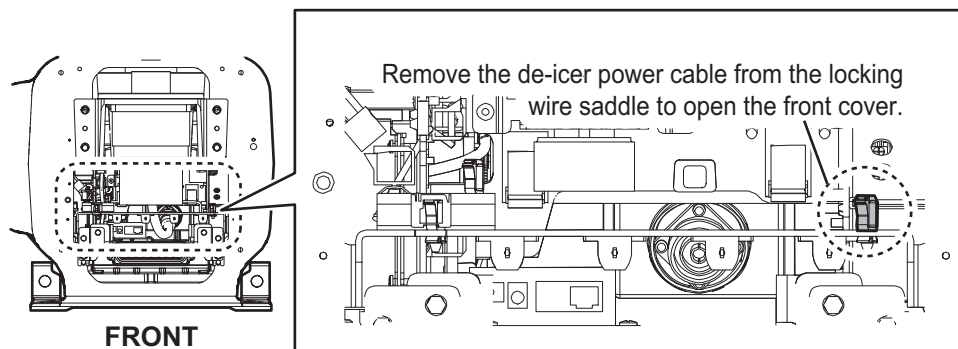


2. WIRING

- 10) Attach the supplied earth label over the earth label currently attached near the grounding terminal.



Note: If it is necessary to open the front cover after installing the DE-ICER kit, remove the de-icer power cable from the locking wire saddle shown in the following figure then detach the cover slowly to prevent damage to the heater.



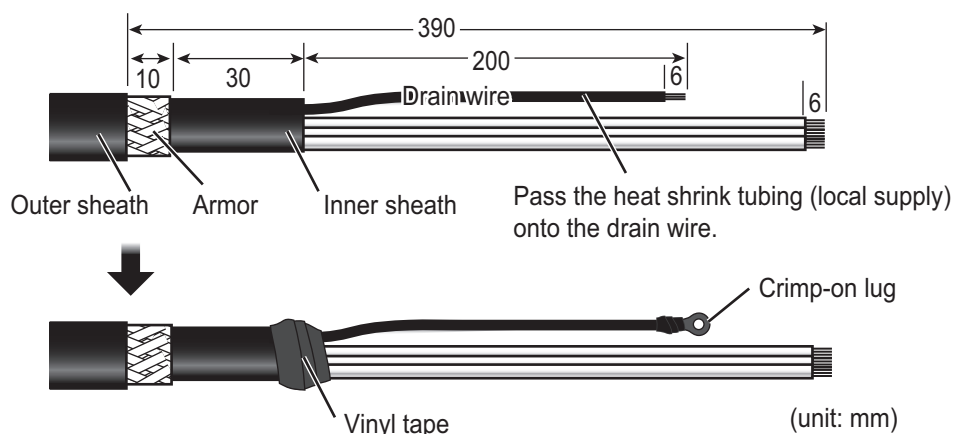
15. Reconnect the performance monitor connector (J807).
 16. Check that the gasket on the front and rear cover is seated properly, then close the covers. The torque for the fixing bolts must be 28.0 N•m.
- Note:** For the de-icer specifications, take care not to hit the heater elements on the chassis or radiator. If the heater hits something, unfasten the fixing screws for the heater to adjust the position of the heater. Then fix the heater again.

2.5 Antenna Unit for S-band, TR-DOWN Radar

2.5.1 How to fabricate the cables

For how to connect the WAGO connector, see "WAGO connector" on page 2-6.

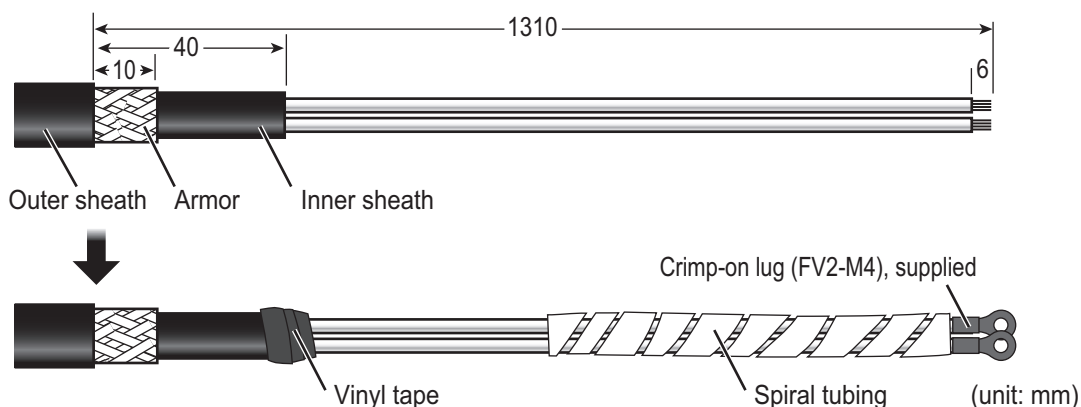
TTYCYSLA-10 (for serial cable)



DPYCY-1.5 (for the optional de-icer)

- Before beginning any work on the Antenna Unit, turn off the breaker for the de-icer at the mains switchboard. (Turning off the display unit has no effect.)
- The neck of the Antenna Unit becomes VERY HOT when the de-icer is working. (The de-icer turns on when ambient temperature goes down to 5°C and heats to 55°C.)

Wrap the spiral tubing near the crimp-on lugs.



Microwave coaxial cable

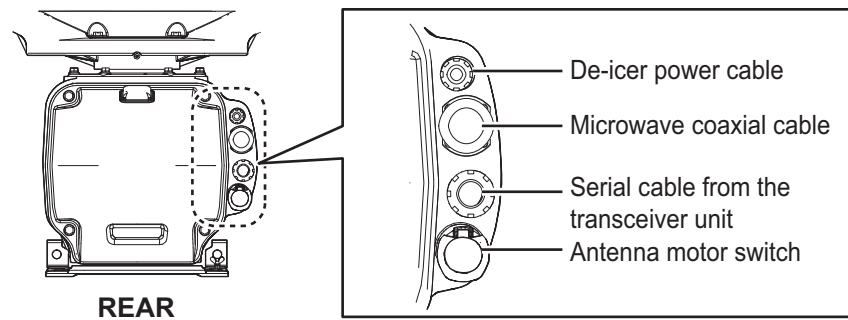
See the supplied instruction manual (C32-01904) in Antenna Unit for details.

2.5.2 How to connect the cables for S-band (TR-DOWN) radar

Three cables are connected to the Antenna Unit: serial cable from the transceiver unit, microwave coaxial cable and de-icer power cable (option). The procedure shows how to connect all cables. Disregard the descriptions for the optional equipment if not applicable.

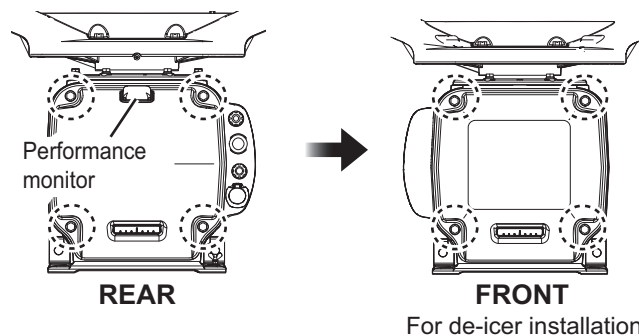
Note: Apply the supplied adhesive to the unused cable glands.

2. WIRING



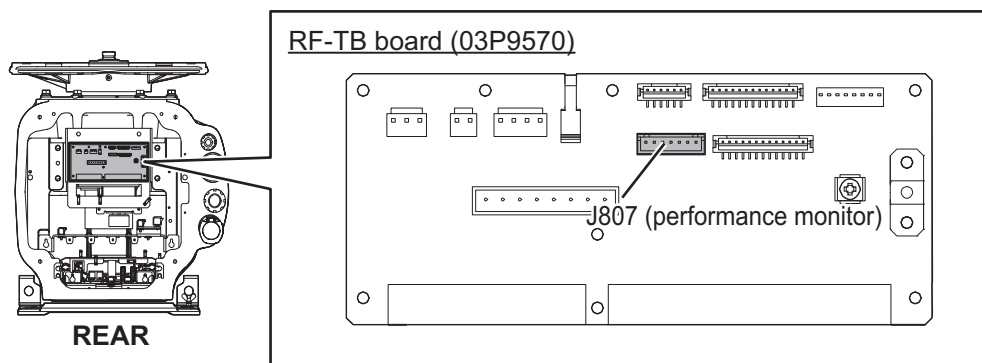
Some parts or wiring have been omitted from the illustrations for clarity.

1. Loosen four bolts on the rear cover to remove the rear cover. If the de-icer is already installed or will be installed, remove also four bolts on the front cover to remove the front cover.

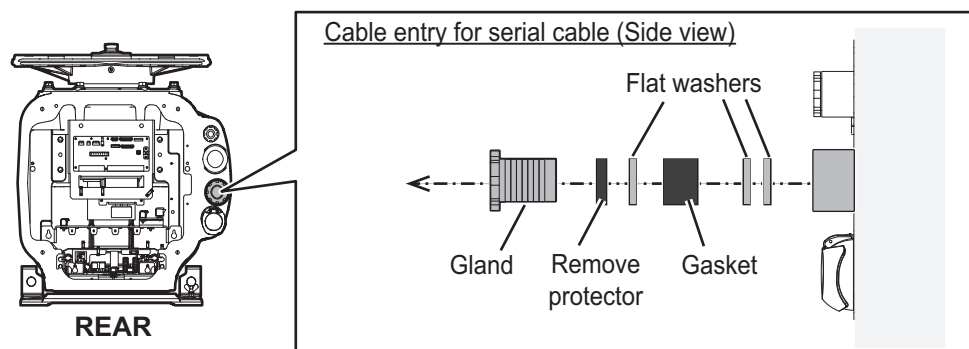


Note: The cable for the performance monitor is connected between the rear cover and the RF-TB Board in the Antenna Unit. Open the cover slowly to prevent damage to the cable and connector.

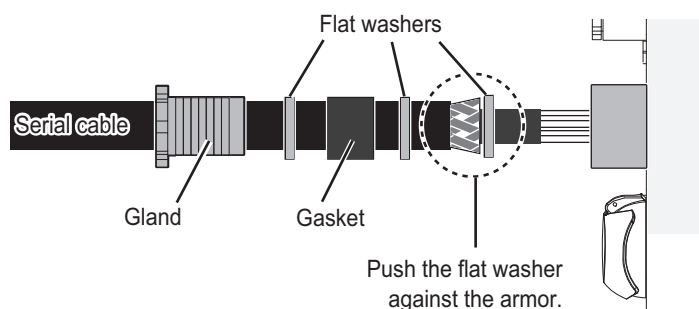
2. Disconnect the performance monitor connector (J807) from the RF-TB Board.



3. Unfasten the cable gland for the serial cable (TTYCSLA-10) and remove the gasket and three flat washers and remove the protector.



4. Slide the cable gland, the gasket and three flat washers onto the cable.
5. Push the flat washer against the armor.
6. Trim the armor so that it does not extend past the flat washers.



7. Pass the serial cable through the cable entrance. If applicable, unfasten the appropriate cable gland and pass the de-icer power cable through the cable entrance. Pass the cable through appropriate locking wire saddle.
8. Apply the supplied adhesive to the threads of the cable glands, and then fasten it tightly with the hook spanner.

Note: Use the wrench of the correct size referring to cable gland size below. If you do not have the hook spanner, contact your dealer.

- Gland for the antenna cable: $\phi 42$
- Gland for the sub monitor cable or de-icer cable: $\phi 34$

9. Attach the appropriate WAGO connectors to the serial cable, and then connect the serial cable to the RF-TB Board as shown in the following figure. For how to connect the WAGO connector, see "WAGO connector" on page 2-6. For pin arrangement, see the interconnection diagram at the back of this manual.

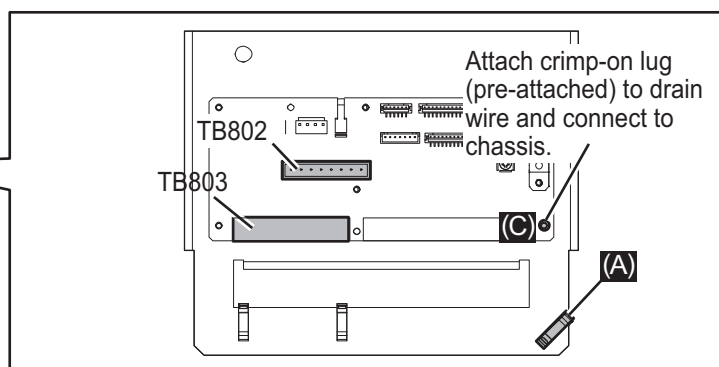
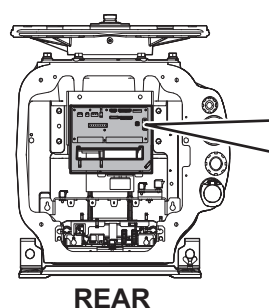
Note 1: Make sure to pass the cable through the specified locking wire saddle.

Note 2: A terminal opener is provided on the RF-TB Board.

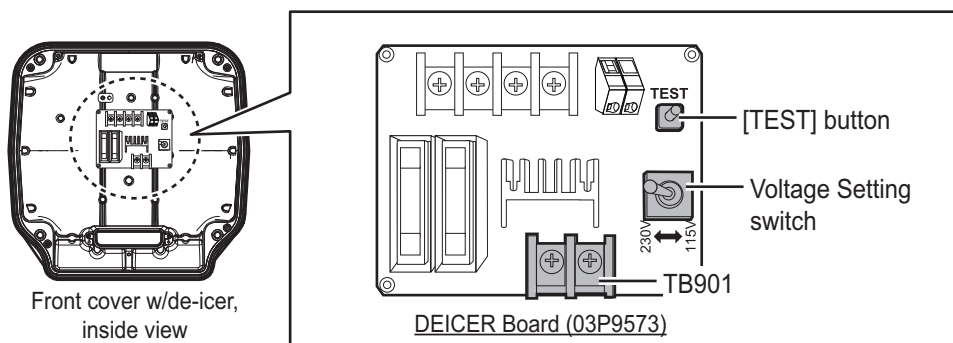
- Destination of serial cable:

Serial line: TB802 (8-pin) and TB803 (16-pin) through the locking wire saddle (A)

Shield of serial line: Screw (C)

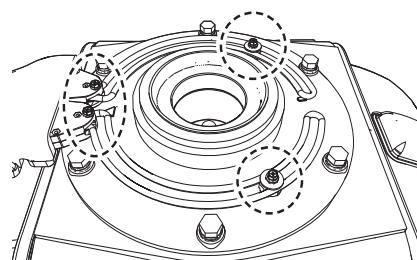


10. **DE-ICER INSTALLATION.** See “De-icer Kit Installation Instructions” (for TR-DOWN radar, C32-01406), issued separately, for the de-icer not fitted at the factory. If the de-icer is not provided, go to step 12.



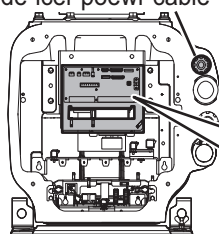
- 1) Remove four bolts then spread open the right and left heater elements on the front cover.

Note: Lift the elements slightly when opening so as not to hit the elements on the bolts on the chassis.

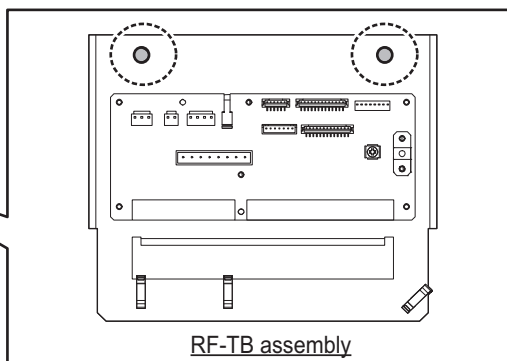


- 2) Unfasten four bolts to open the front cover. Remove the cover, being careful not to hit the elements on the chassis or radiator.
- 3) Unfasten two bolts to remove the RF-TB assembly, then pass the de-icer power cable through the cable entrance.

Cable entrance for de-icer power cable

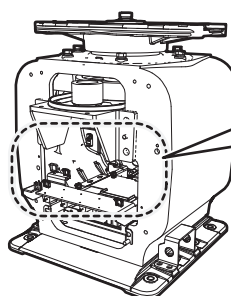


REAR

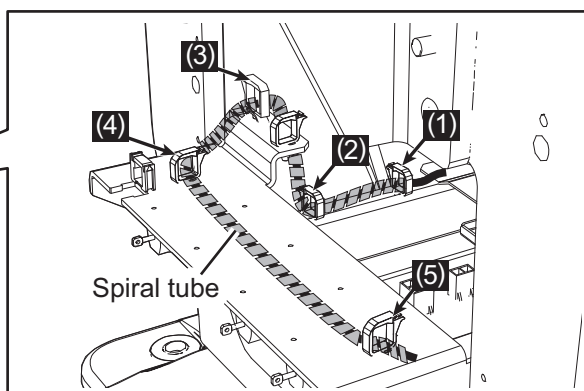


RF-TB assembly

- 4) Wrap the supplied spiral tube around the de-icer power cable, starting from the crimp-on lugs. Set a locking wire saddle (supplied) at location (5) shown in the following figure. Pass the de-icer power cable through the locking wire saddles (1) to (5) and it to the front side.

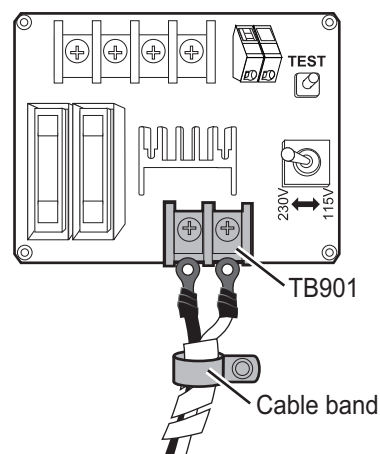


REAR

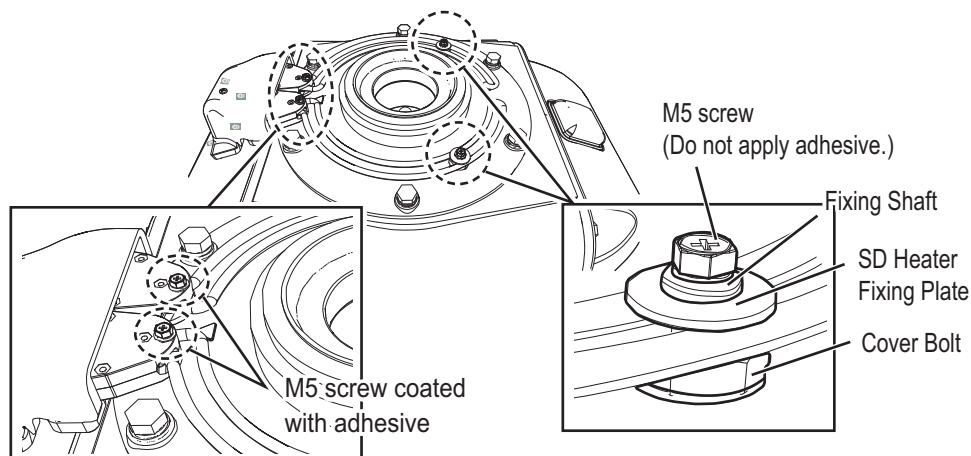


- 5) Unfasten the cable band* on the front cover. Pass the de-icer power cable through the band then fasten the band. Connect the cable to TB901 on the DE-ICER board (03P9573), using the supplied crimp-on lugs.

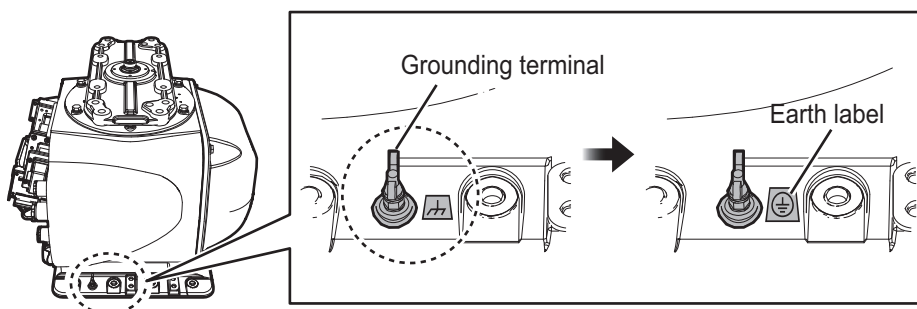
*: For the DE-ICER installation kit, unfasten the cable band on the cover supplied with the kit. (The original cover can be discarded.)



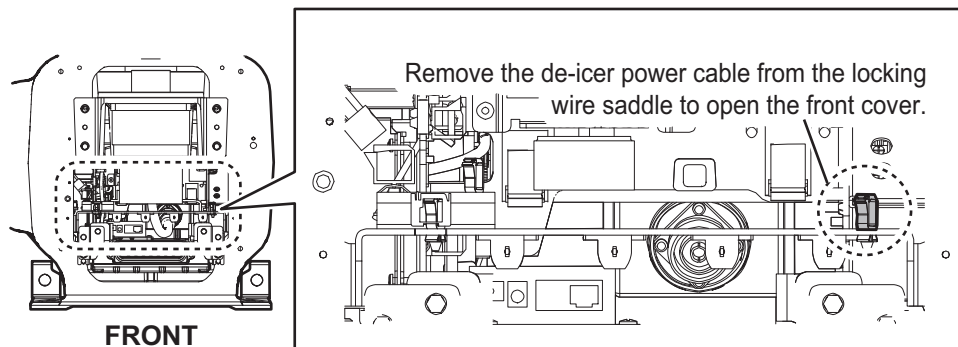
- 6) Set the Voltage Setting switch according to the power source for the de-icer; 115 V or 230 V. The default setting is 230 V.
- 7) Apply power to the de-icer then press and hold the **TEST** button for about ten seconds. Check that the heater gets hot and then release the **TEST** button.
- 8) Set the front cover with heater to the Antenna Unit. When fastening the front cover, spread open the heater elements, lifting the base of the heater. Take care not to hit the heater elements on the chassis or radiator.
- 9) Fasten the two heater elements to the chassis with removed four bolts at step 1). Fasten the base of the heater with two bolts coated with the supplied adhesive. Fasten the installation materials to each of the cover bolts.



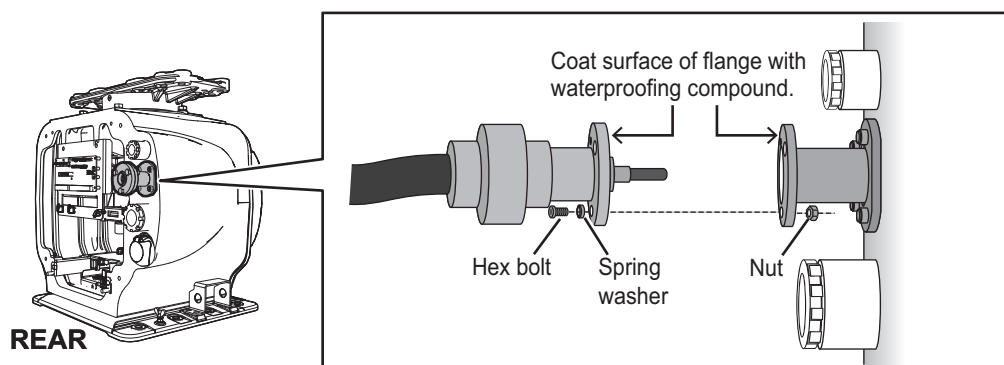
- 10) Attach the supplied earth label over the earth label currently attached near the grounding terminal.



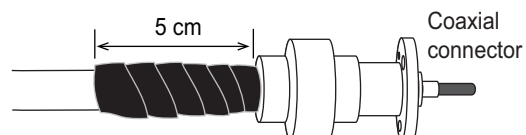
Note: If it is necessary to open the front cover after installing the DE-ICER kit, remove the de-icer power cable from the locking wire saddle shown in the following figure then detach the cover slowly to prevent damage to the heater.



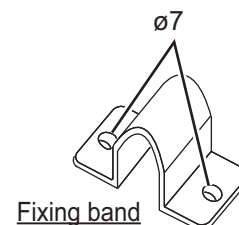
11. Coat the O-ring in the gland for the microwave coaxial cable with silicon grease.
12. Coat the mating surface between the coaxial connector of the cable and the waveguide flange on the Antenna Unit with the supplied waterproofing compound.
Note: Do not coat the O-ring with the waterproofing compound.
13. Fasten the coaxial connector to the waveguide flange with three sets of M6×20 hex bolts, M6 spring washers and M6 nuts.



14. Tape the cable with two or more turns of self-bonding tape then wrap with PVC tape.



15. Secure the cable with fixing bands (supplied) or the optional clamping metal (Type: 03-011-3228, Code no.: 100-049-620) to the mast and to the wheelhouse structure. For the optional through-deck cable gland, see the outline drawing at the back of this manual.



16. Reconnect the performance monitor connector (J807).
17. Check that the gasket on the front and rear cover is seated properly, then close the covers. The torque for the fixing bolts must be 28.0 N•m.

Note: For the de-icer specifications, take care not to hit the heater elements on the chassis or radiator. If the heater hits something, unfasten the fixing screws for the heater to adjust the position of the heater. Then fix the heater again.

2.6 Power Supply Unit

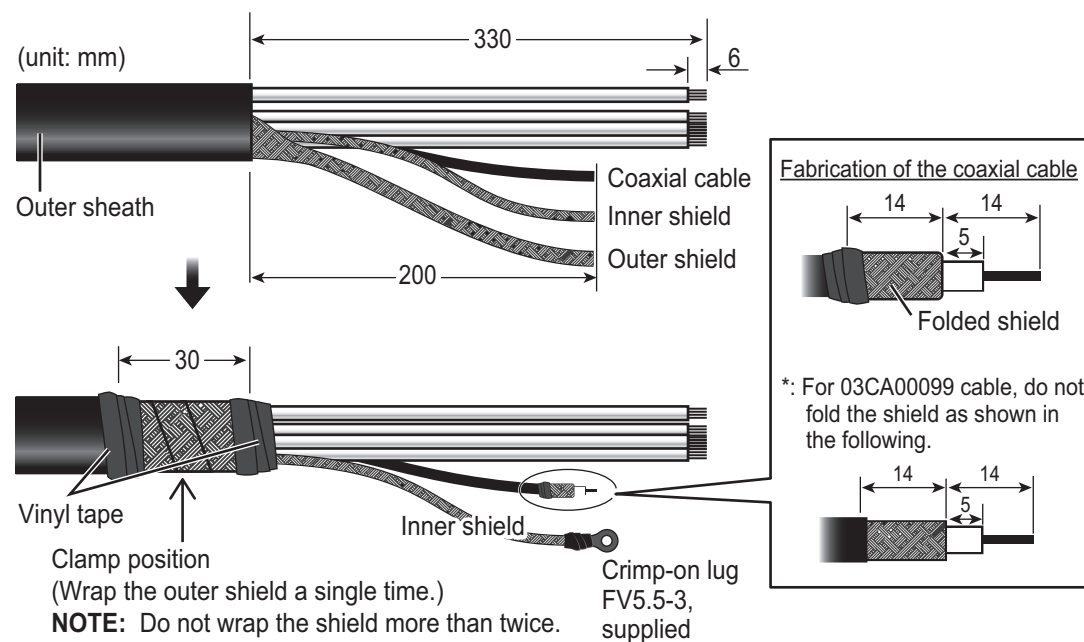
2.6.1 How to fabricate cables

For locations of cables and cores, see the sticker on the reverse side of the top cover.
(All dimensions in millimeters)

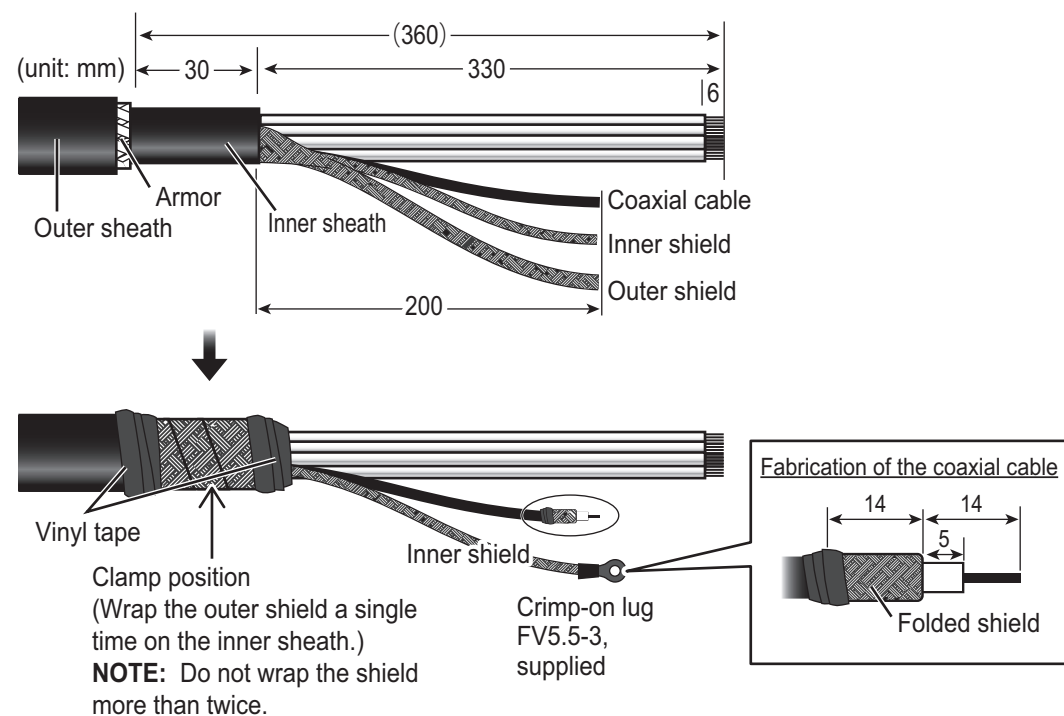
For how to connect the LAN modular plug, see "LAN cable" on page 2-5. For how to connect the WAGO connector, see "WAGO connector" on page 2-6.

RW-0013/RW-0030/03CA00099 (for Antenna cable)

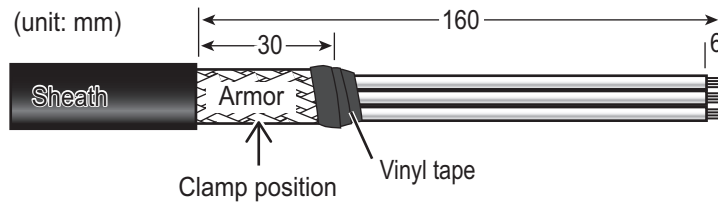
<RW-0013/03CA00099>



<RW-0030>

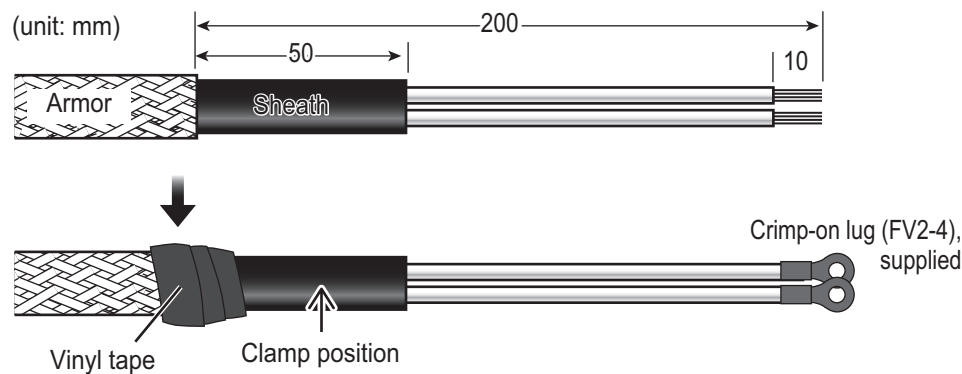


TPYCY-2.5 (for Motor power cable)



DPYC-2.5 cable (for Power)

Clamp the sheath with the cable clamp.



RW-00339 (for Processor Unit)

The end of the cable RW-00339 which connects to the Power Supply Unit is prefabricated. Clamp the cable at the outer shield which is wrapped on the outer sheath.

RW-4864/00136 (for sub monitor)

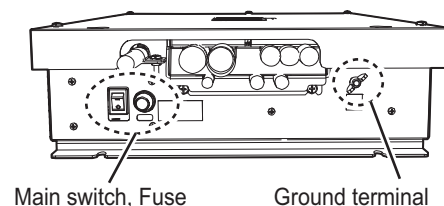
The ends of the sub monitor cable are prefabricated. Clamp the cable at the outer shield.

2.6.2 How to connect cables inside the Power Supply Unit

Connect the ground wire between the ground terminal on the chassis and the ship's earth.

Note 1: If the Processor Unit is turned on, turn it off before wiring of the Power Supply Unit.

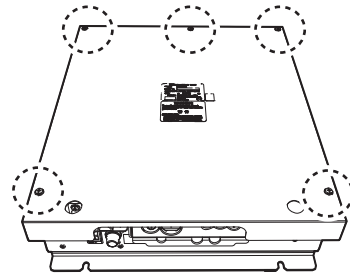
Note 2: Turn the main switch of the Processor Unit off before turning the Power Supply Unit off.



How to open/close the top cover

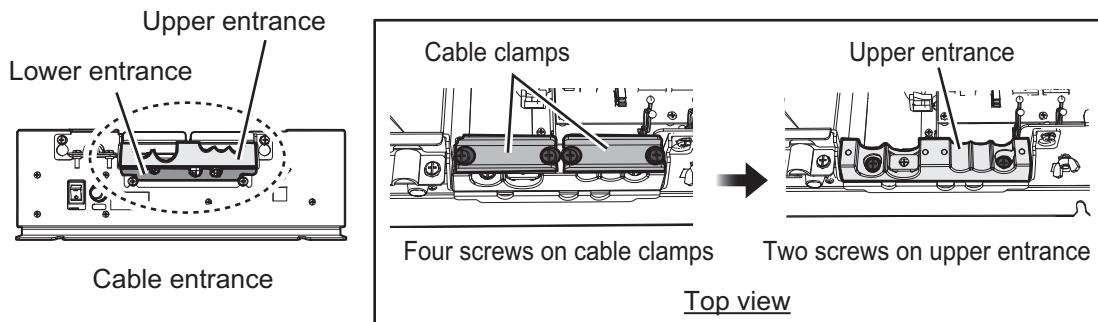
Unfasten five screws (M4×8) to open the top cover from the Processor Unit.

After the appropriate cable connections are completed, fasten five screws to close the top cover.

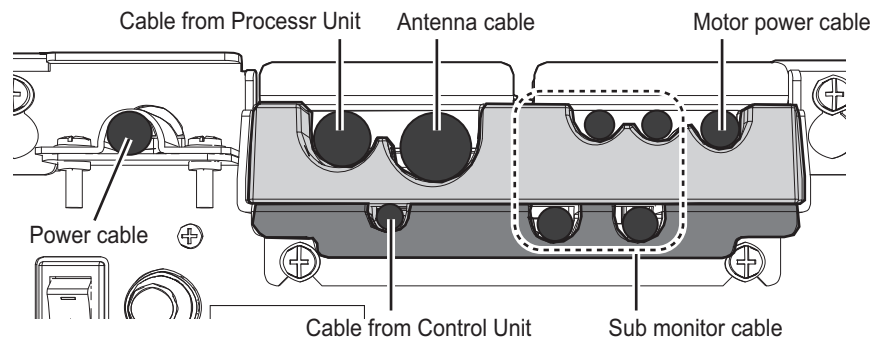


Cable entrance

There are two layers at the cable entrance on the front side of the Power Supply Unit, upper and lower entrances. Remove the six M4 screws of total to set the cables on the cable entrances.



The lane for each cable is as shown below, referring to the Wiring Label attached on the reverse side of the top cover.



Connection of Antenna cable

1. Connect the lines of the cable to the appropriate WAGO connectors (TB701, TB702 and TB703), referring to the interconnection diagram at the back of this manual.
2. Set the antenna cable on the upper cable entrance as follows, then fasten the shield part of the antenna cable with the cable clamp. For the clamp position, see