BTS3900C WCDMA V200R013
Installation Guide

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Prepare for the Installation

a Installation Procedure

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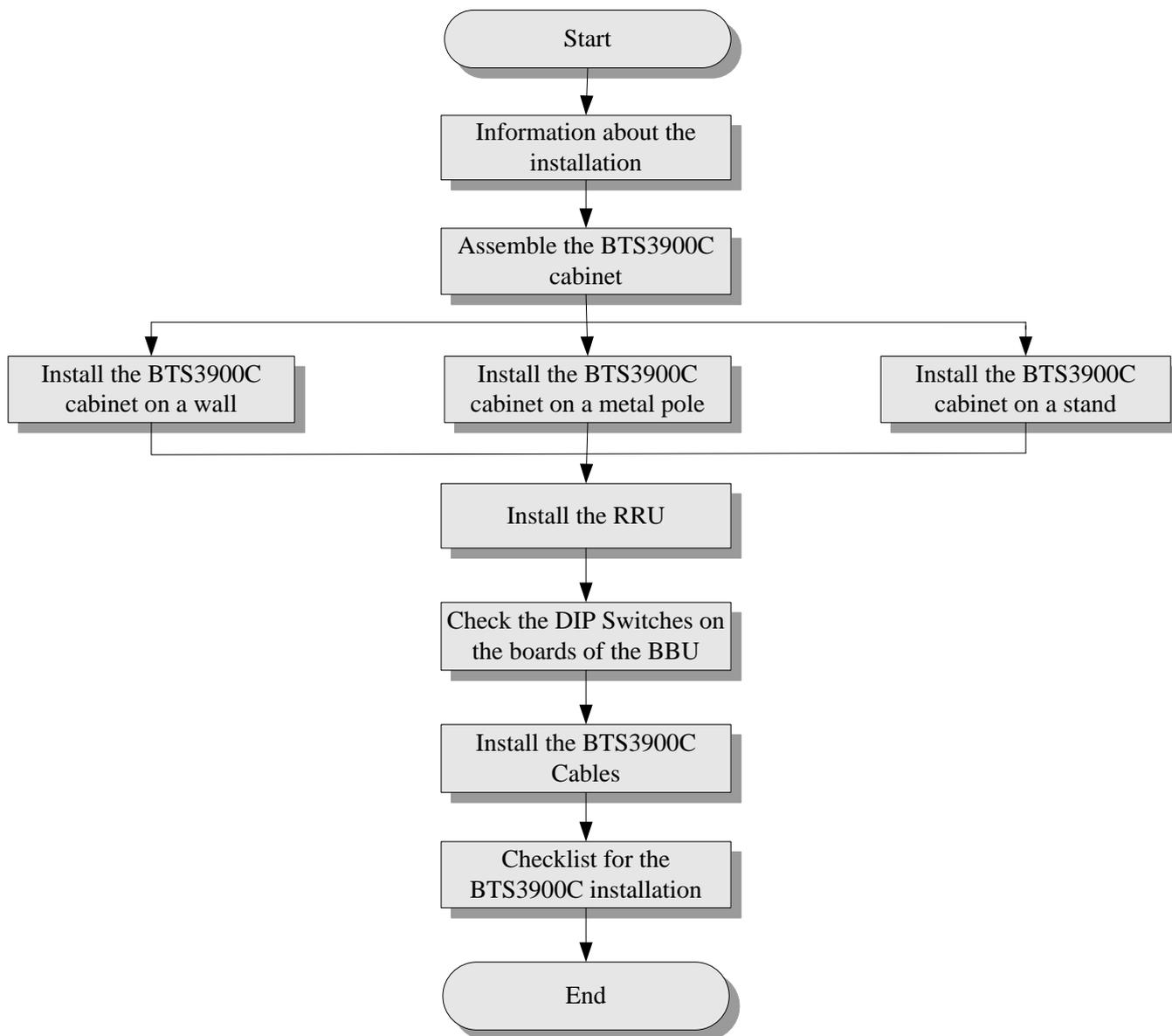
Prepare for the Installation

b Installation Tools

Hex key(8mm)	Crosshead screwdriver	Straight screwdriver
Adjustable wrench	Socket wrench	Torque wrench
Power cable crimping pliers	RJ-45 crimping pliers	Wire cutter
Rubber hammer	Electric soldering iron	Cable peeler
Percussion drill	Heat gun	Level bar
Multimeter	Long measuring tape	Vacuum cleaner

Prepare for the Installation

c Installation Scenarios

On a wall
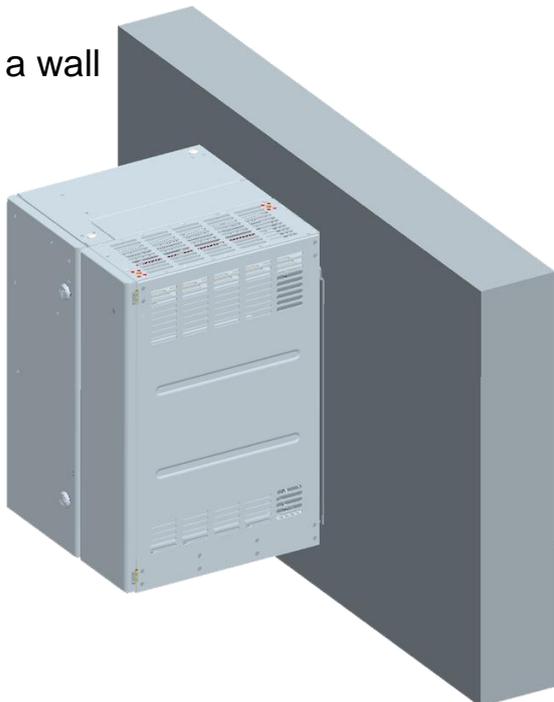
On a metal pole

On a stand

Structure and Clearance

a Structure of the BTS3900C

Structure of the BTS3900C AC cabinet
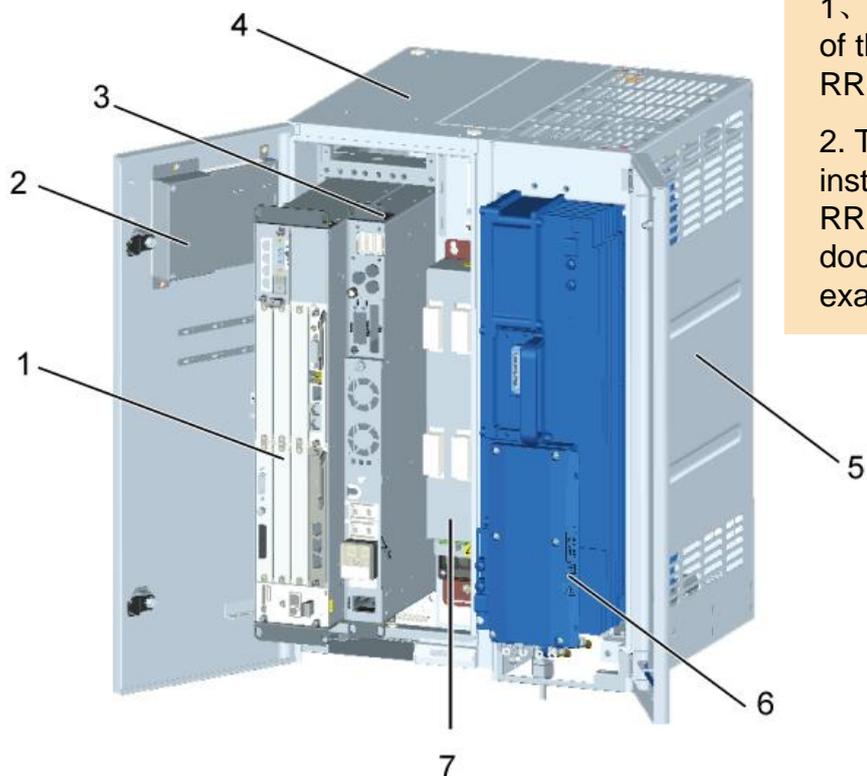
1. BBU3900
2. HEUA
3. AC/DC power equipment
4. OMB AC subrack
5. RRU subrack
6. RRU
7. AC surge protection box

Structure of the BTS3900C DC cabinet
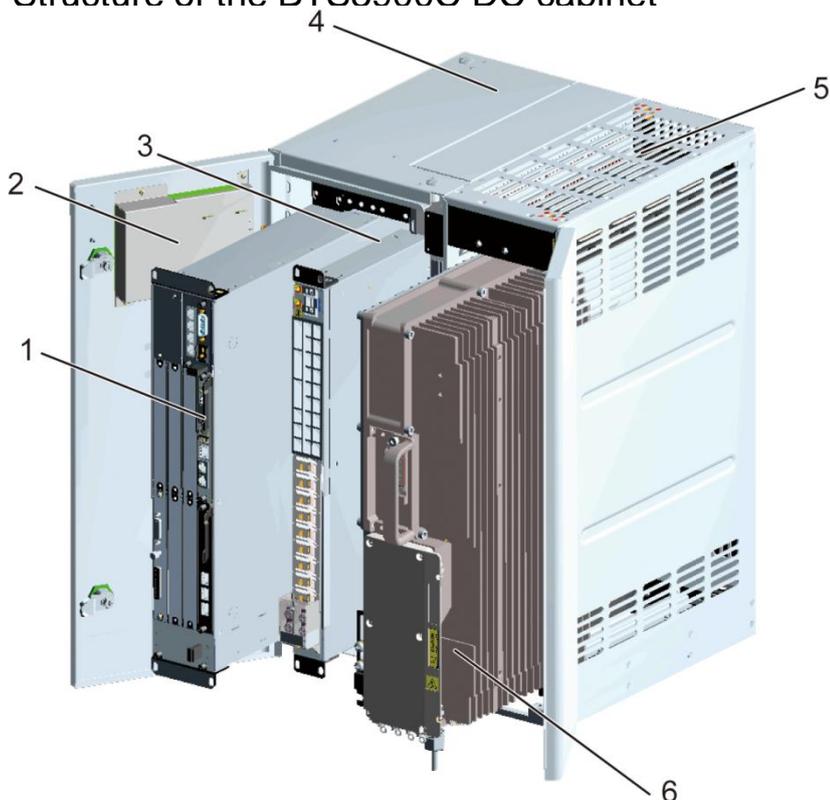
1. BBU3900
2. HEUA
3. DCDU-03B
4. OMB DC subrack
5. RRU subrack
6. RRU

Structure and Clearance

b Clearance for the BTS3900C

Dimensions of the BTS3900C cabinet
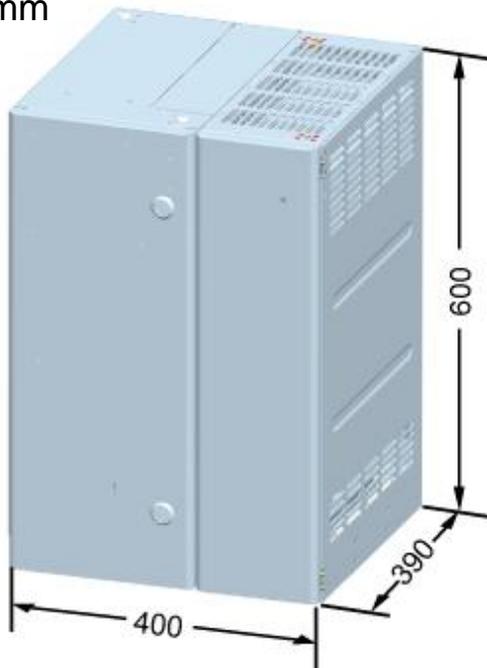
Unit: mm

Maximum clearance for the BTS3900C cabinet

Unit: mm
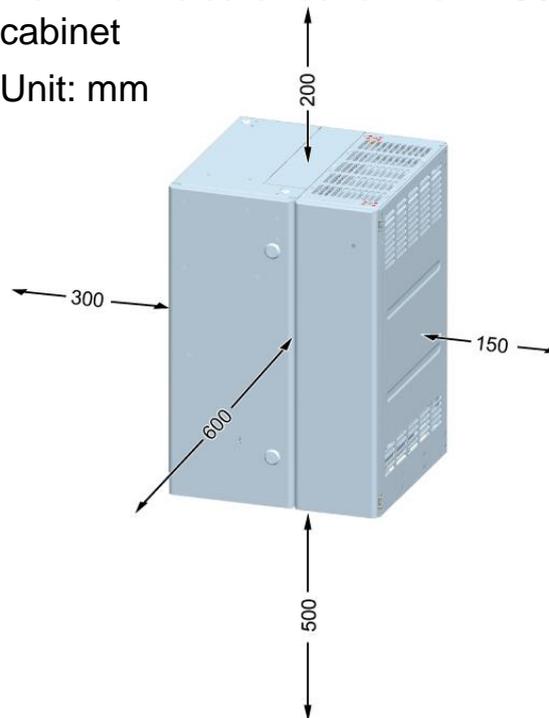
Obtaining the ESN

1. Record the ESN on the BBU.

   If there is not a label on the FAN unit of the BBU, you must record the ESN and site information that is printed on a mounting ear of the BBU.
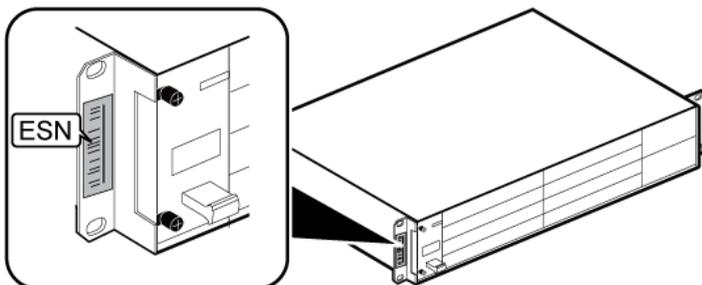
   If there is a label on the FAN unit of the BBU, the ESN is printed on the label and a mounting ear of the BBU. In this case, you must take the label and record the site information on the side labeled Site, as shown in.
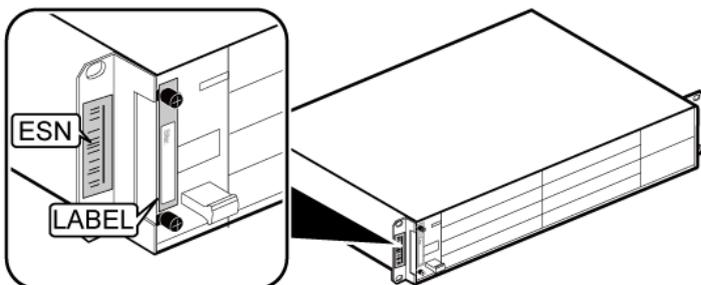
2. Report the ESN to the engineer for the commissioning of the base station.

Installing the BTS3900C Cabinet

a   Assembling the BTS3900C Cabinet

1. Use four bolts to combine the OMB subrack and the RRU subrack.
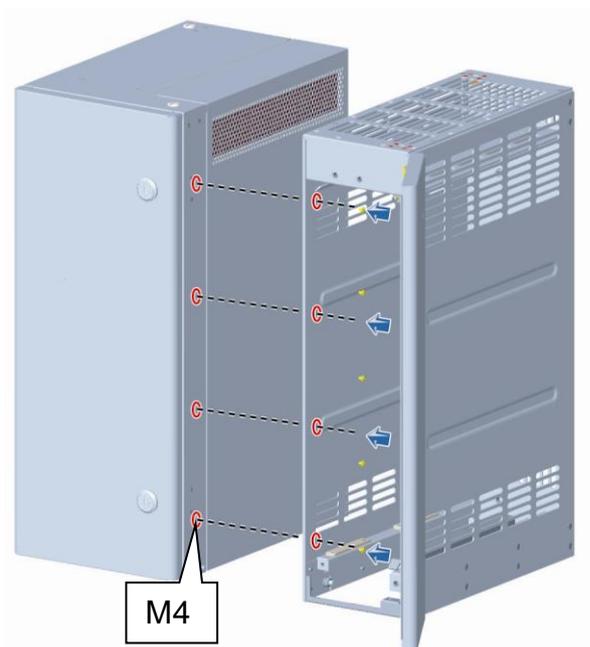
2. Remove the attachment plates on the side of the OMB subrack.

M4

3. Install the removed attachment plates onto the back of the cabinet, use retention screws to fix the attachment plates, and then tighten the four bolts to fasten the two subracks.
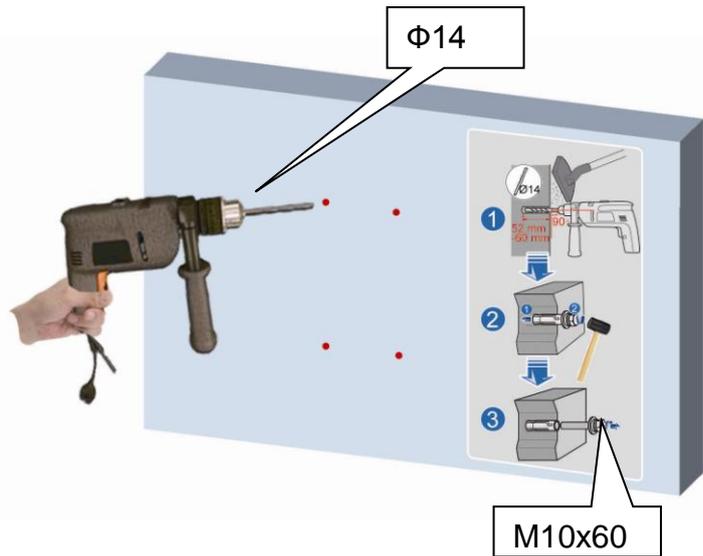
M6x12
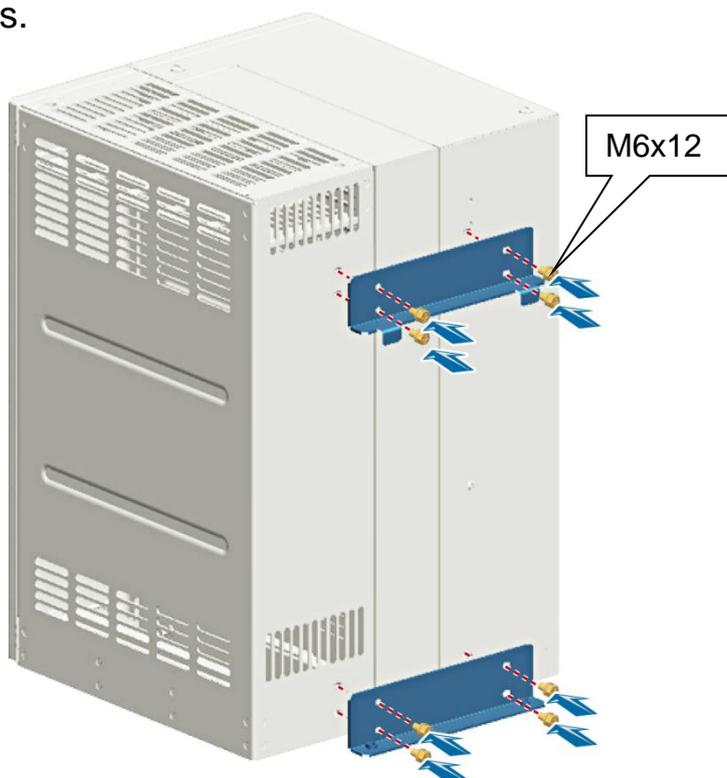
Installing the BTS3900C Cabinet

b Installing the BTS3900C Cabinet on a Wall

1. Mark off four fixing points according to the holes on the backplane.
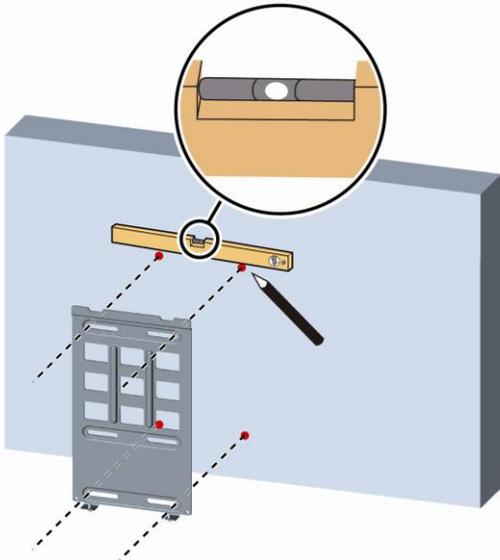
2. Use a percussion drill to drill holes at the fixing points, and then install expansion bolt assemblies.

Φ14

M10x60

📖 **NOTE**

Ensure that the depth of the holes is between 52 mm and 60 mm. If the depth of the holes is out of the range of 52 mm and 60 mm, the expansion bolt assemblies cannot be fastened. The requirements for the depth of the holes that are drilled on the stand and on the wall are the same. Use a cleaner to clear the dust inside and around the holes. Then, measure the inter-hole spacing. If the inter-hole spacing is too wide or too narrow, locate and drill holes again.

⚠️ **CAUTION**

Wear safety goggles or take other measures during the drilling to protect your eyes from dust.

3. Use expansion bolt assemblies to install the backplane onto the wall.
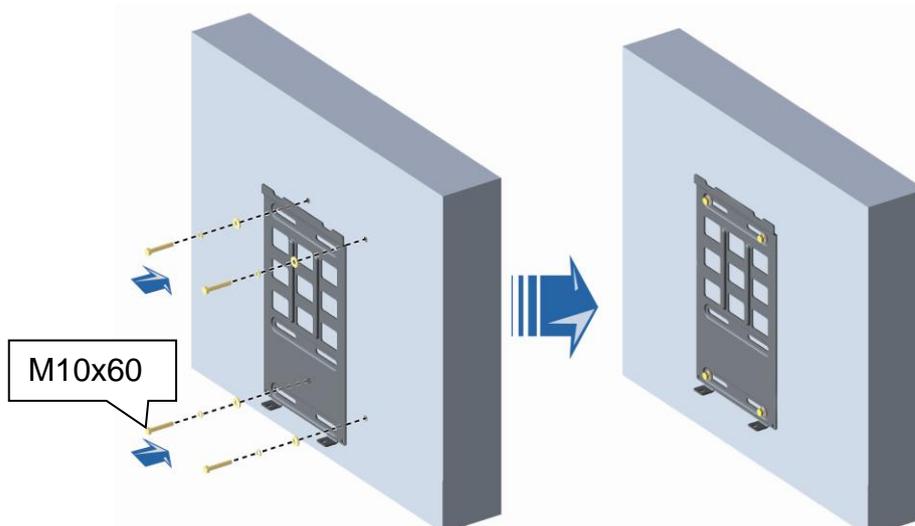
M10x60

Installing the BTS3900C Cabinet

4. Fit the tabs on the upper attachment plate of the BTS3900C cabinet to the slots on the backplane, and then use anti-theft screws to fasten the lower attachment plate at the bottom of the cabinet to the backplane.


M6x16
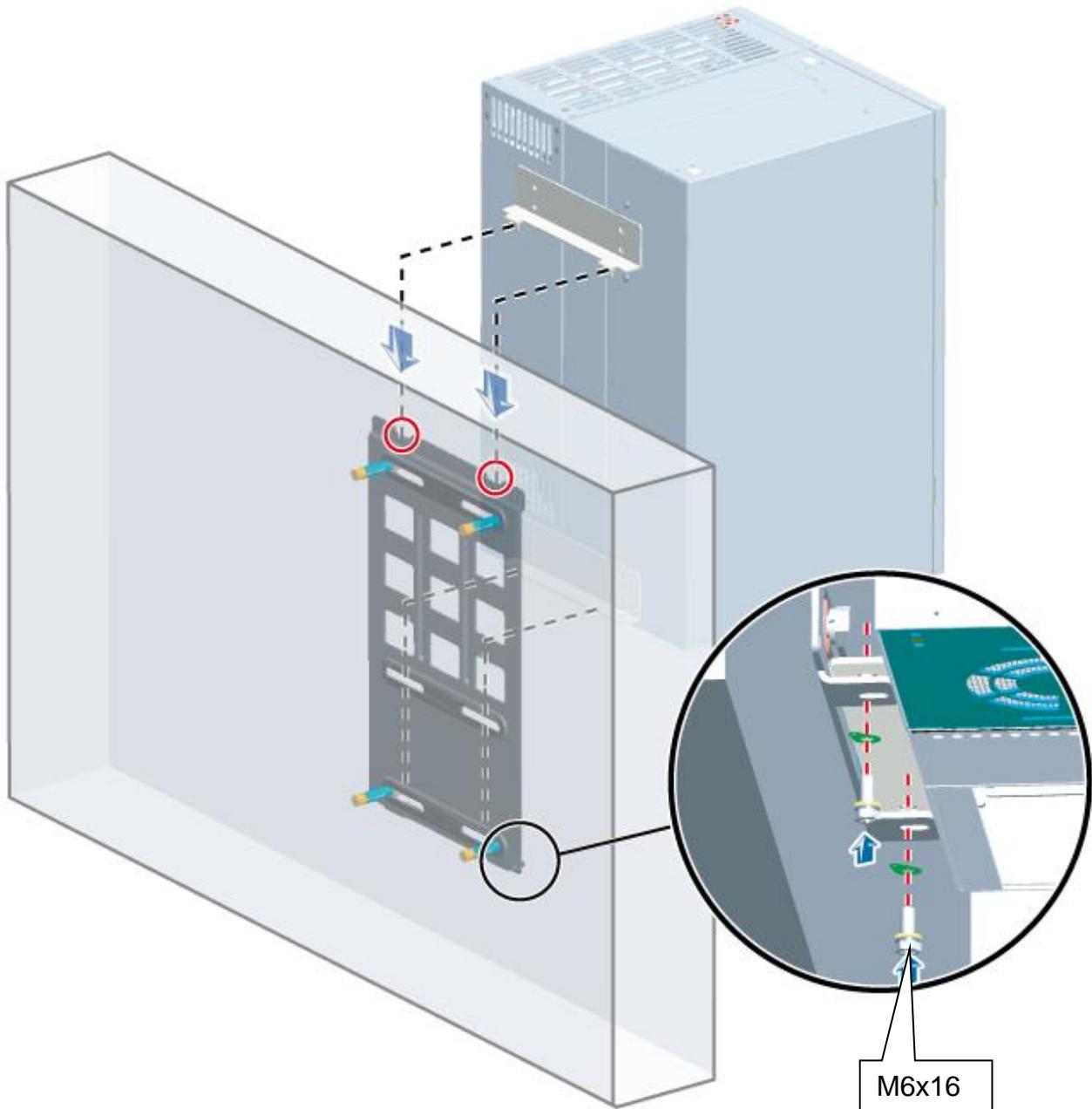
📖 **NOTE**

Install the RRU after the cabinet is installed on the wall. The procedure for installing the RRU on a wall is the same as that for installing the RRU on a metal pole or on a stand. For details, see page 14.
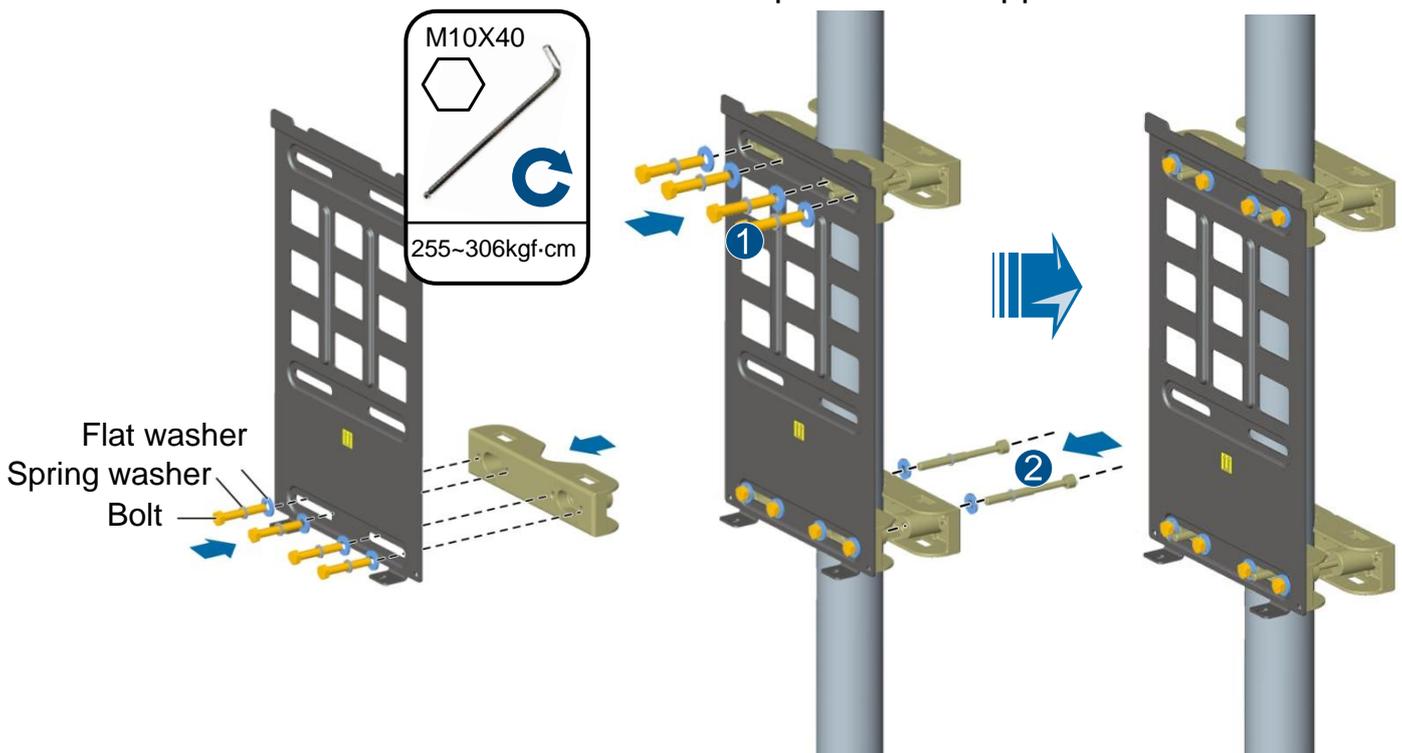
Installing the BTS3900C Cabinet

c **Installing the BTS3900C Cabinet on a metal pole**

1. Install the upper brackets on the metal pole, and then use a level bar to measure the level of the brackets.

Flat washer Spring washer Bolt M10x110
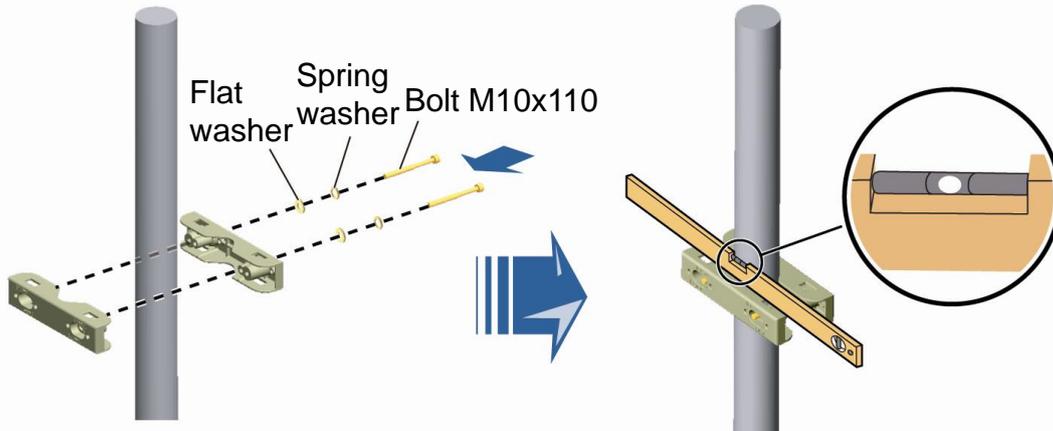
2. Use bolts to fix the backplane to one of the lower brackets.

3. Fix the lower brackets and backplane to the metal pole, and then use bolts to fix the backplane to the upper bracket.

M10X40

255~306kgf·cm

Flat washer
Spring washer
Bolt

① ②

> 📖 **NOTE**
>
> There is one outer hole and one inner hole for installing one tightening pole. The diameter of the metal pole determines which one of the two holes is to use.

Installing the BTS3900C Cabinet

4. Fit the tabs on the upper attachment plate of the BTS3900C cabinet to the slots on the backplane, and then use two anti-theft screws to fasten the lower attachment plate at the bottom of the cabinet to the backplane.
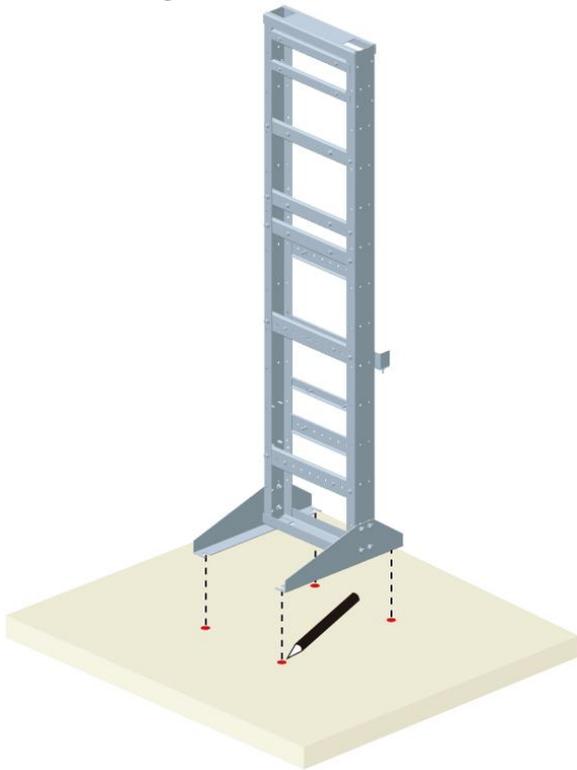

M10
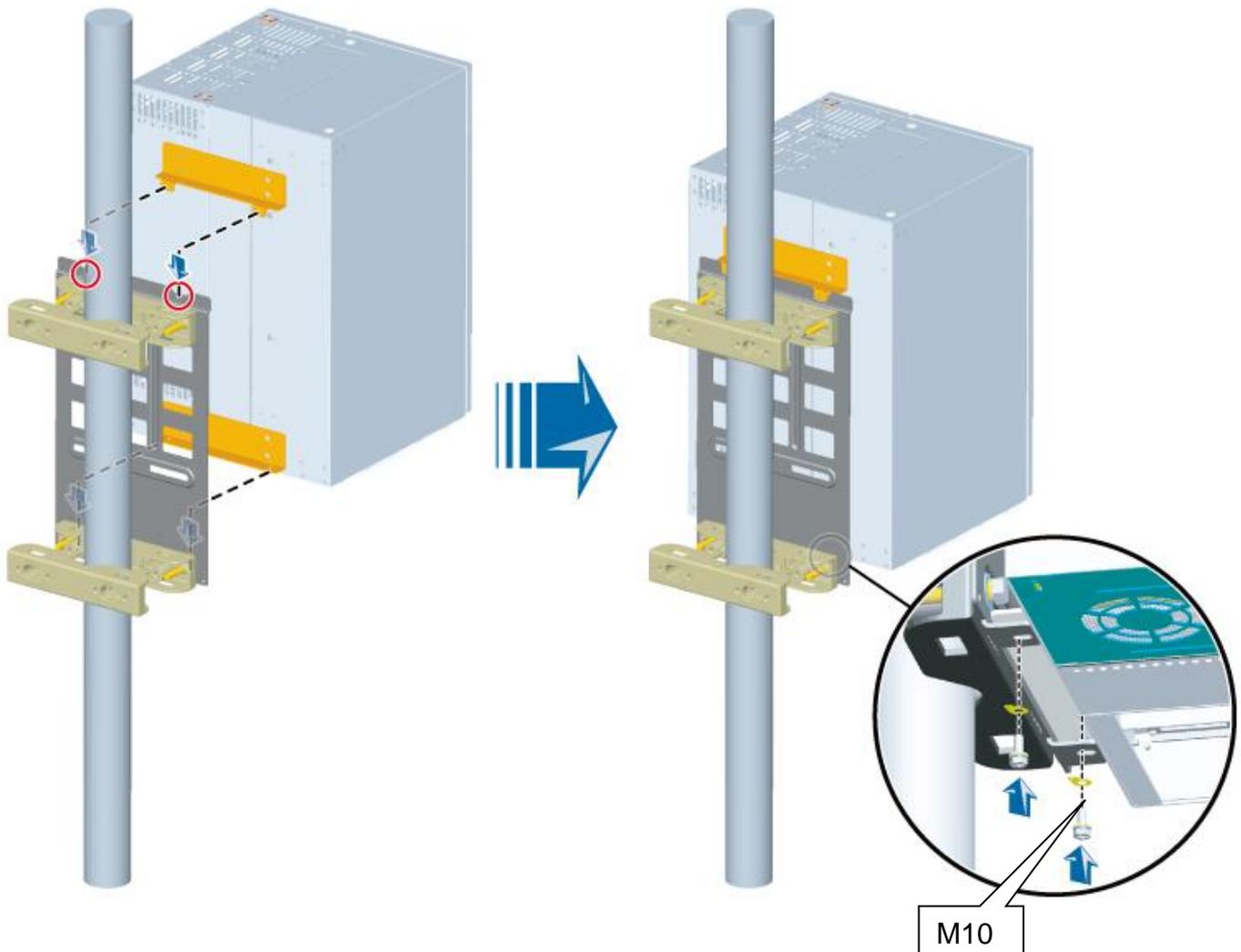
> 📖 **NOTE**
>
> The procedure for installing the RRU on a metal pole is the same as that for installing the RRU on a wall or on a stand. For details, see page 14.
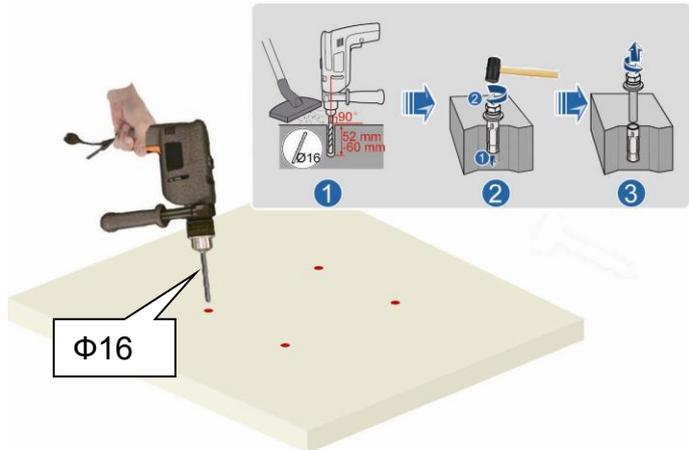
Installing the BTS3900C Cabinet

1. Mark off four fixing points according to the holes on the stand.


2. Use a percussion drill to drill holes at the fixing points, and then install expansion bolt assemblies.

Φ16

📖 **NOTE**

Use a cleaner to clear the dust inside and around the holes. Then, measure the inter-hole spacing. If the inter-hole spacing is too wide or too narrow, locate and drill holes again.

3. Place the stand on the holes, and then use expansion bolt assemblies to install the stand on the ground securely.
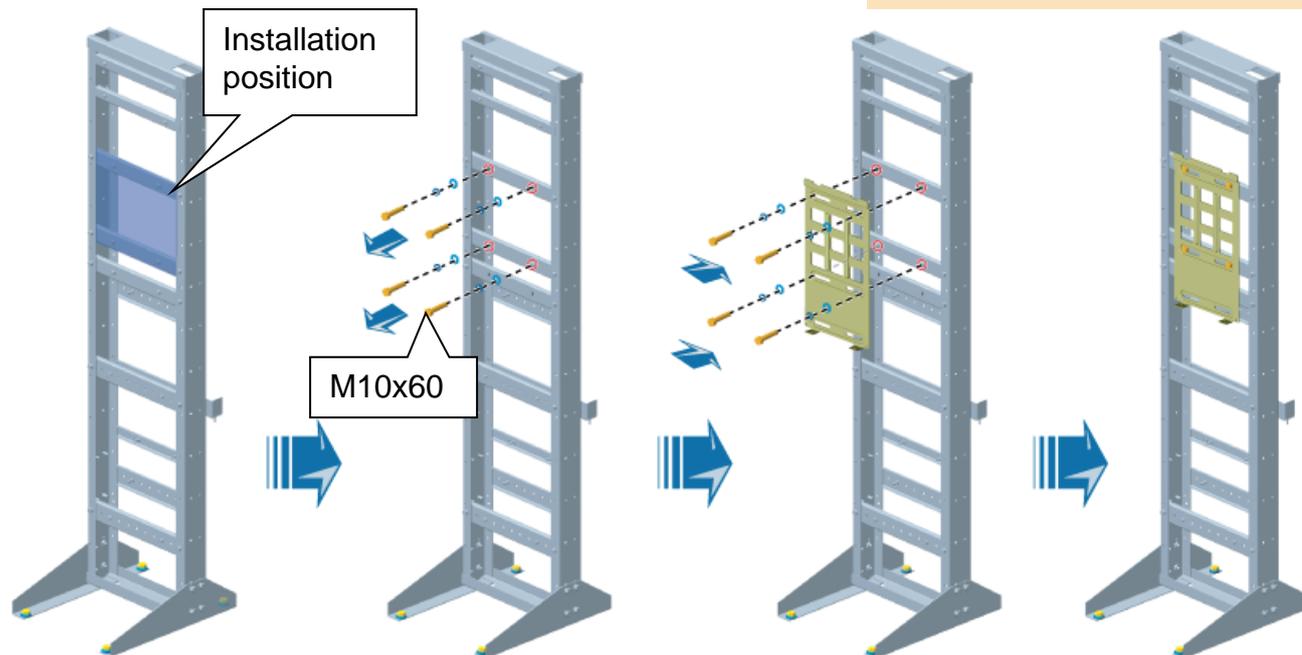

M12x60
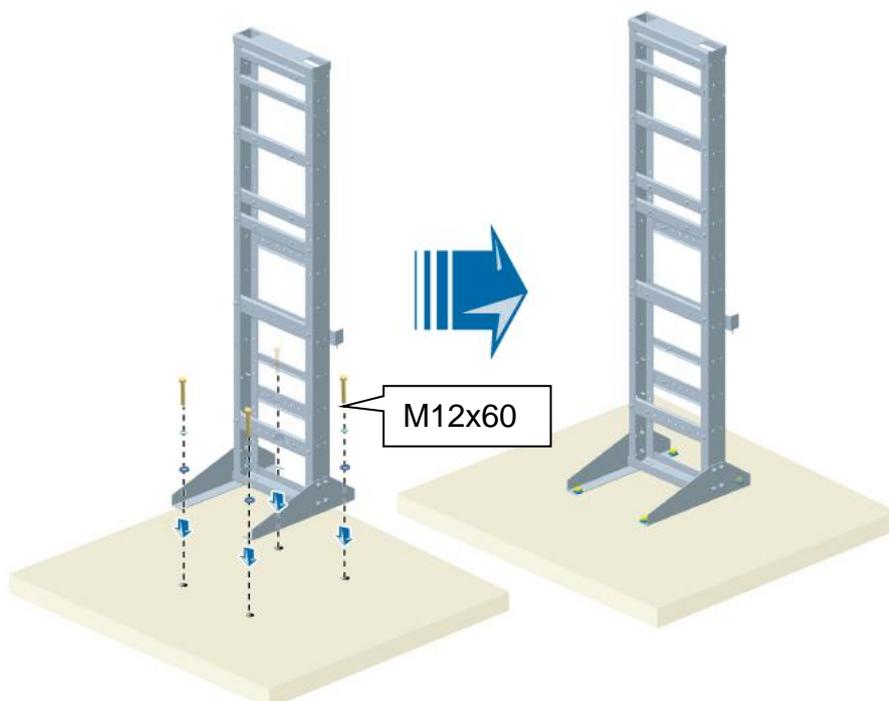
Installing the BTS3900C Cabinet

4. Install the backplane of the cabinet.

Installation position

M10x60

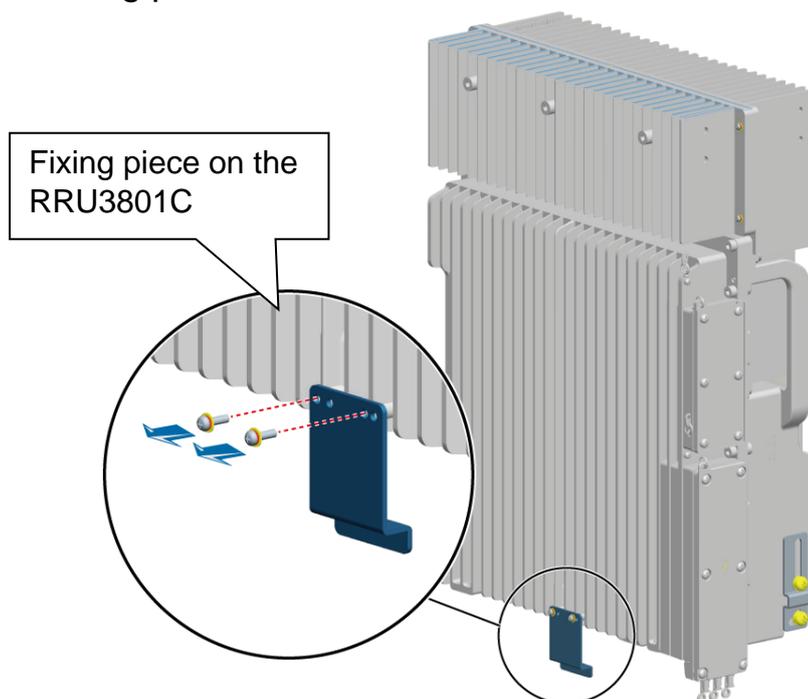5. Install the cabinet onto the backplane.

M6x16

Installing the RRU
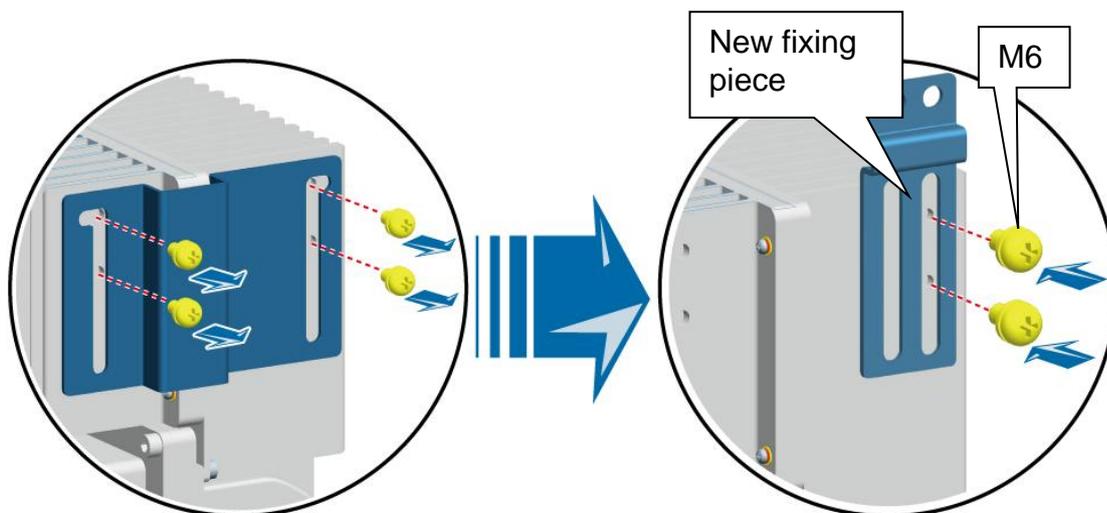
a Installing the RRU3801C

📖 **NOTE**

The procedures for installing the RRU on a wall, metal pole, and stand are the same.

1. Remove the fixing piece at the bottom of the RRU3801C.
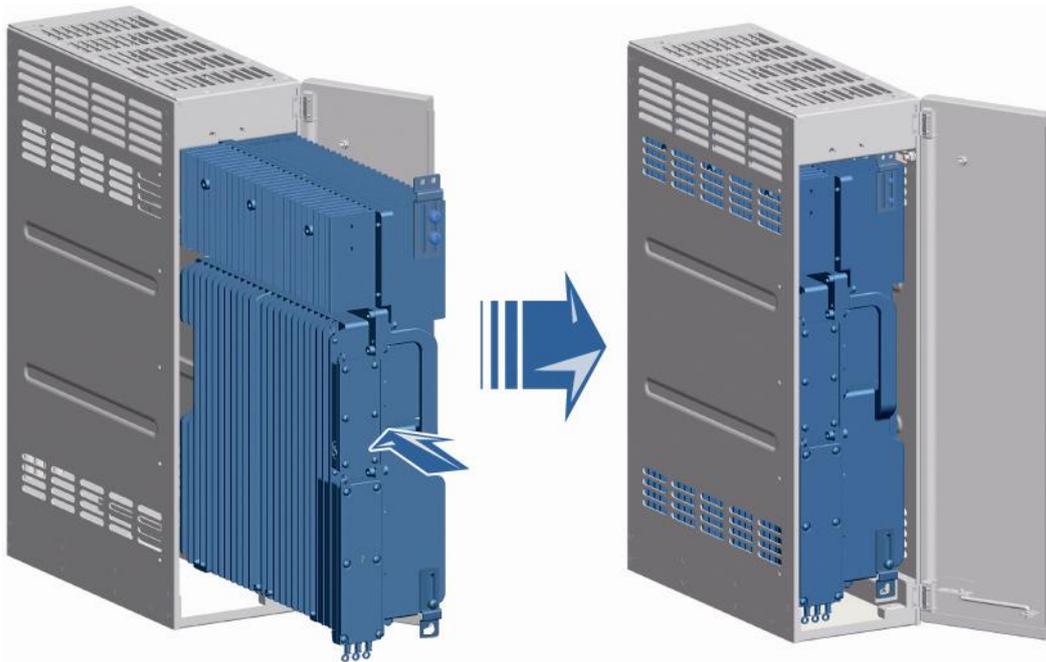
Fixing piece on the RRU3801C

2. Take out the new fixing pieces from the accessory package delivered with the RRU subrack, and then replace the fixing piece at the top of the RRU3801C.
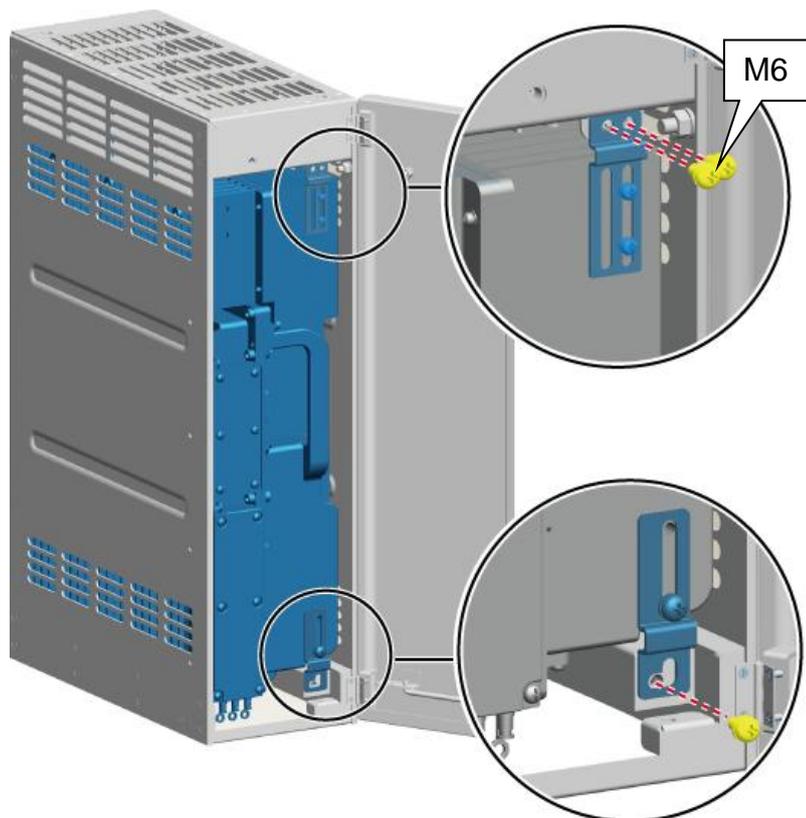
New fixing piece

M6

Installing the RRU

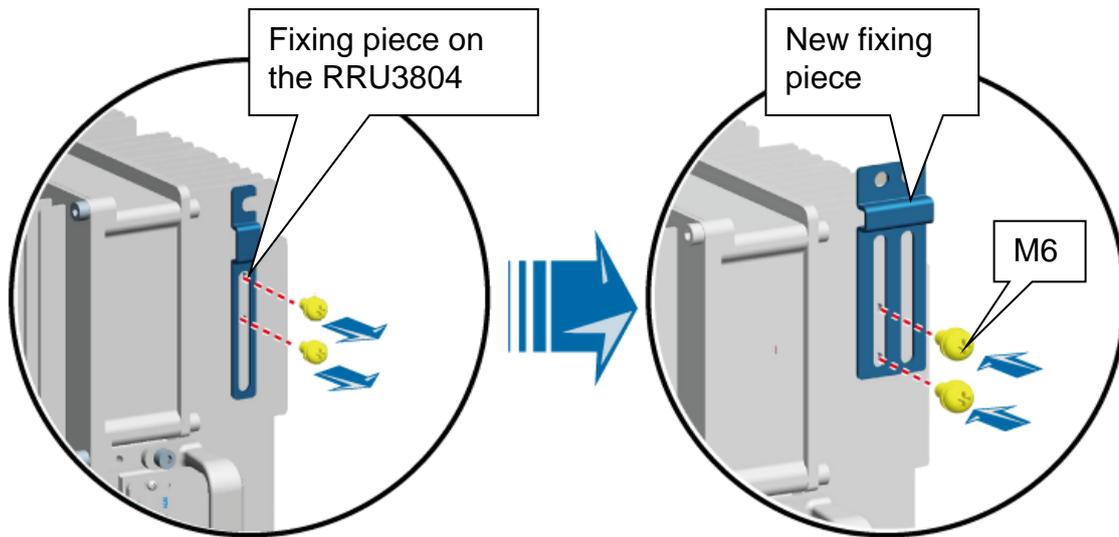3. Slide the RRU3801C into the RRU subrack.

4. Fix the fixing pieces on the RRU3801C to the RRU subrack.

M6

Installing the RRU

b Installing the RRU3804
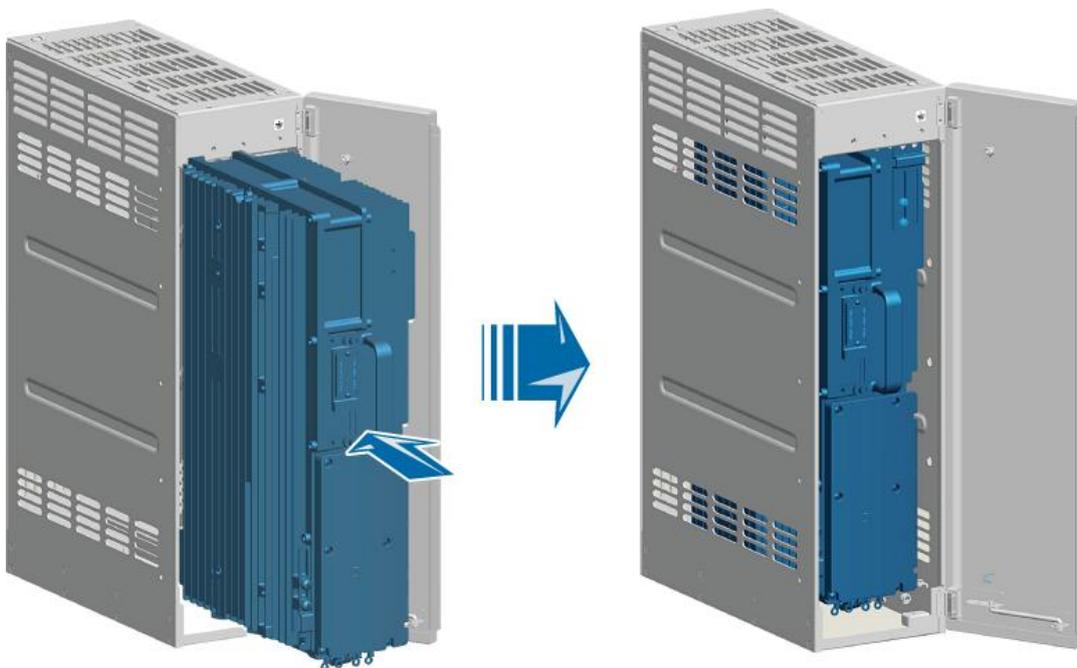
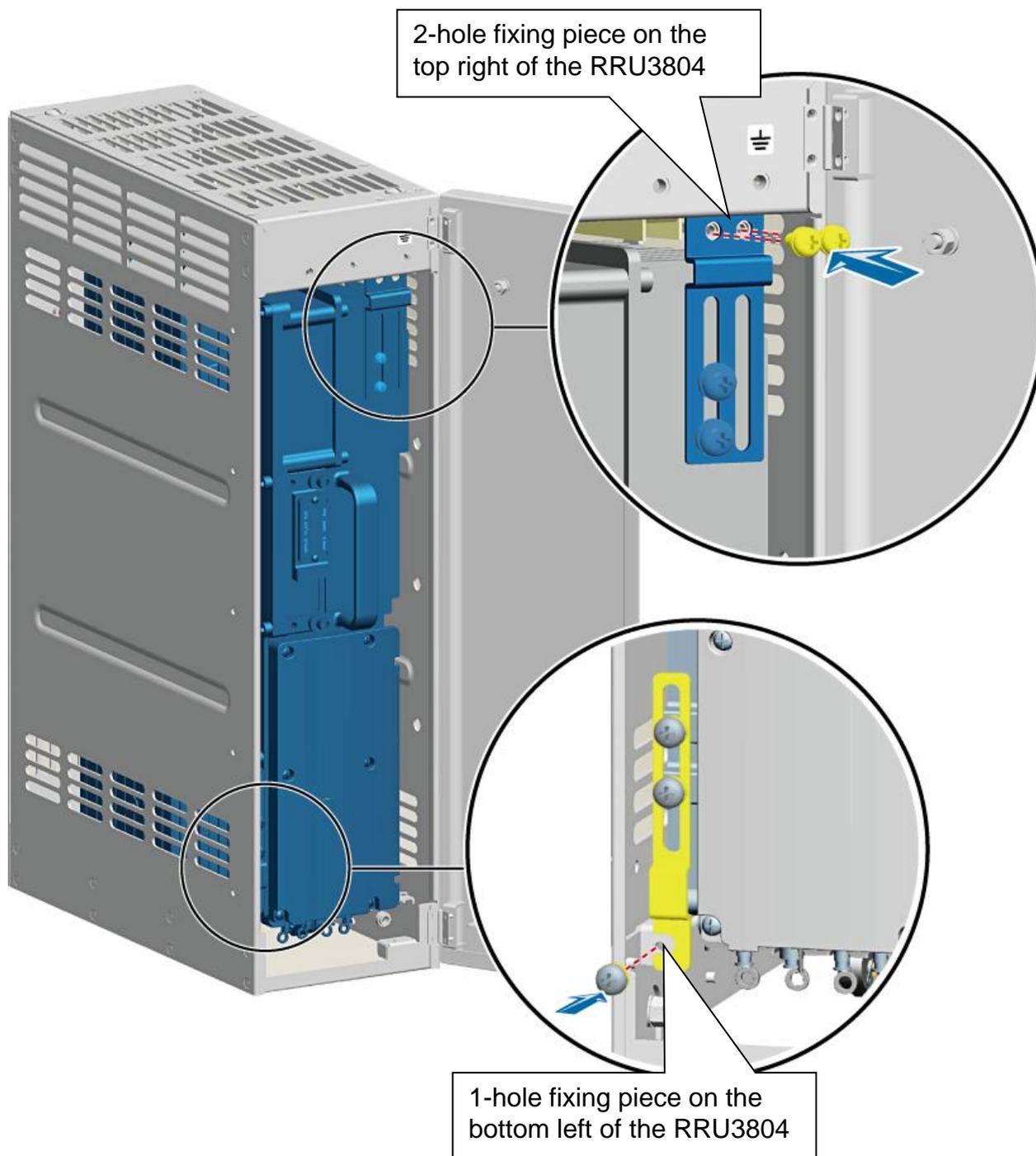1. Replace the fixing piece at the top of the RRU3804.

2. Slide the RRU3804 into the RRU subrack.

Installing the RRU

3. Fix the fixing pieces on the RRU3804 to the RRU subrack.

2-hole fixing piece on the top right of the RRU3804

1-hole fixing piece on the bottom left of the RRU3804

📖 **NOTE**

The procedures for installing the RRU on a wall, metal pole, and stand are the same.

Checking the DIP Switches

ON

OFF

Socket for the ESD wrist strap on the OMB

Check the DIP switch on the WMPT.

SW2

SW1

T1 mode

SW1   SW2

ON

ON   OFF

OFF

ON   OFF

75-ohm E1 Mode

SW1   SW2

ON   OFF   ON   OFF

120-ohm E1 Mode

SW1   SW2

ON   OFF   ON   OFF

Check the DIP switch on the UELP.

OFF

1 2 3 4   S1

ON

75-ohm E1
Unbalance mode

S1

ON   OFF

ON

ON   OFF

OFF

ON   OFF

Other mode

S1

ON   OFF
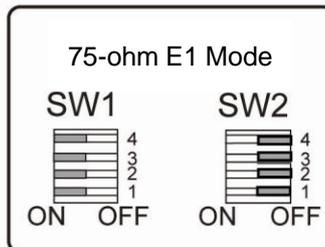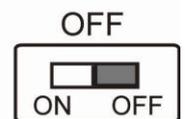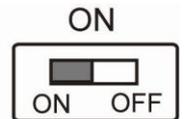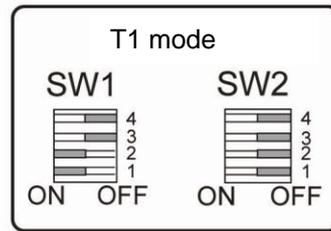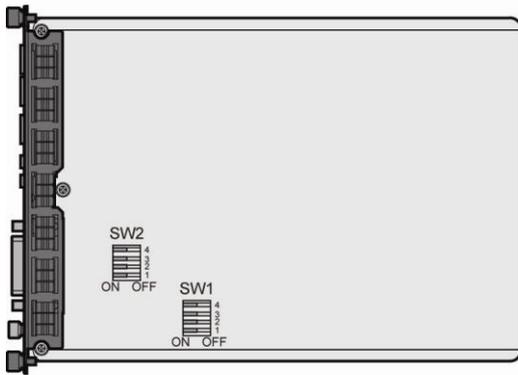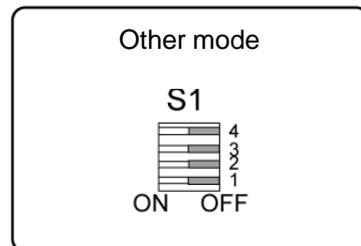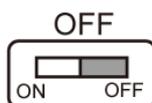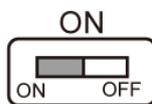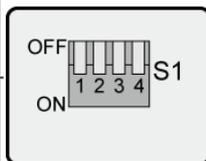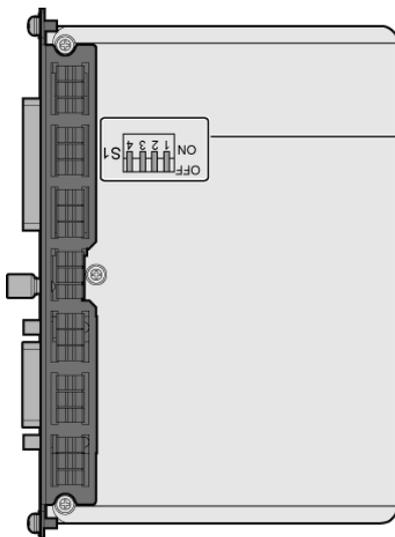
Installing the BTS3900C Cables

a Installing the Cables through the cable hole

1. Remove the outer screw from the waterproof unit.

2. Remove the waterproof unit from the cable trough.

3. Lead the cable to be installed from the bottom of the cable trough to the corresponding cable hole in the waterproof unit. Do not link the connector of the cable to any port.

4. Link the connectors of the cables to the ports on the corresponding devices after all the cables are lead through the cable holes of the waterproof unit.

> 📖 **NOTE**
>
> For details about the cable holes, cable routes, and installation methods, see the following installation procedures.

Installing the BTS3900C Cables

b Installing the PGND Cables

> 📖 **NOTE**
> The procedures for installing the PGND cables in the BTS3900C DC cabinet and in the BTS3900C AC cabinet are the same. The procedure is as follows:

Install the PGND cable of the BTS3900C.

Cable hole for the PGND cable of the BTS3900C
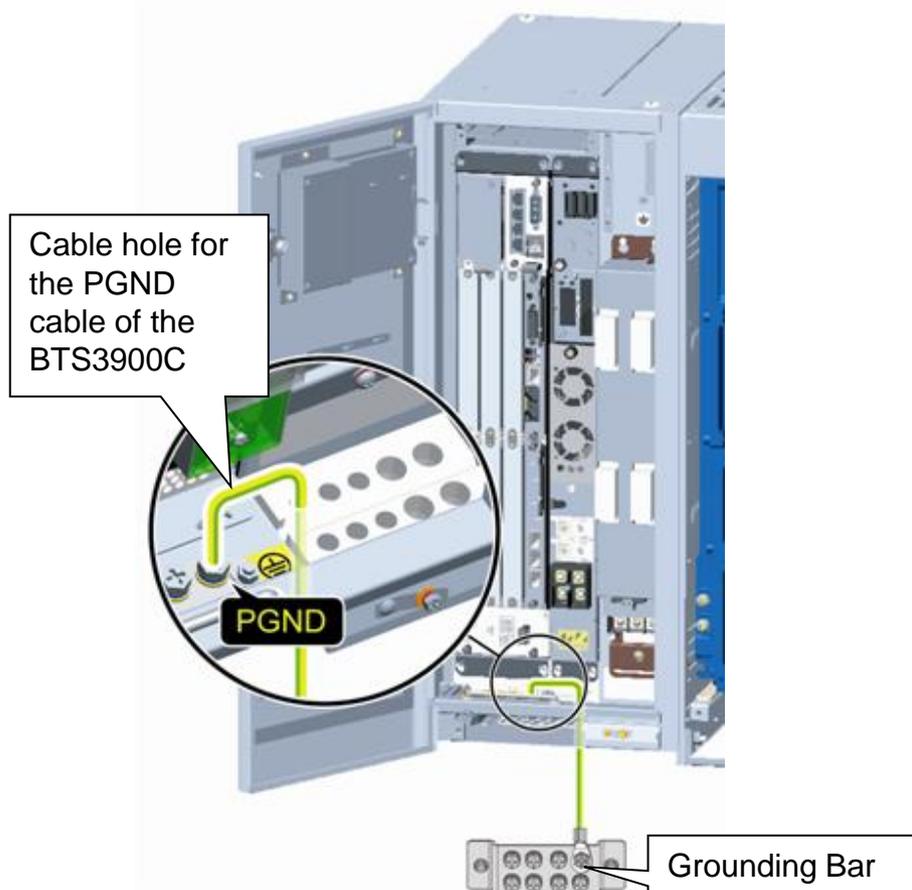
PGND

Grounding Bar

> 📖 **NOTE**
> ● The other end of the PGND cable is connected to the external grounding bar.
> ● For details about the positions of the cable holes, see "Appendix b"

The PGND cable is green and yellow. The cross-sectional area of the PGND cable of the BTS3900C is 16 mm^2. The cross-sectional area of the RRU PGND cable is 6 mm^2.

Installing the BTS3900C Cables

Install the RRU3804 PGND cable.

Cable hole for the RRU3804 PGND cable

PGND

Wiring terminal at the bottom of the RRU3804

PGND

Install the RRU3801C PGND cable.

Cable hole for the RRU3801C PGND cable

PGND

Wiring terminal at the bottom of the RRU3801C
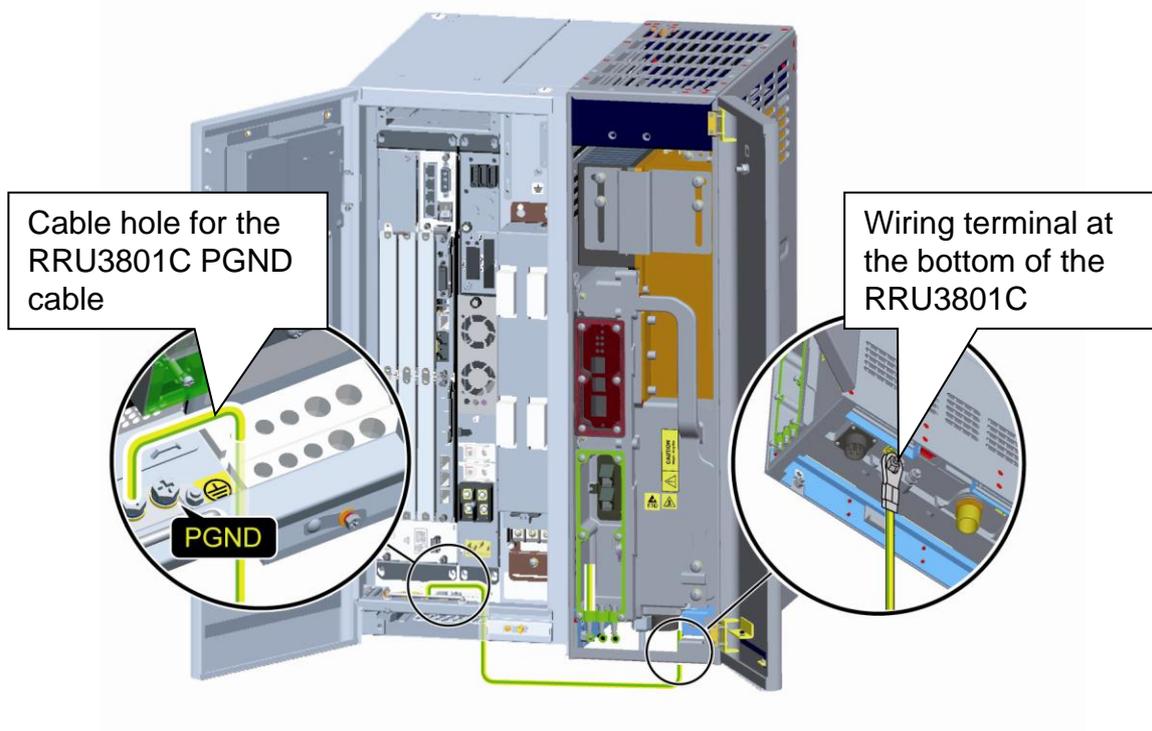
Installing the BTS3900C Cables

c Installing the Power Cables

Install the input power cable of the BTS3900C AC cabinet.
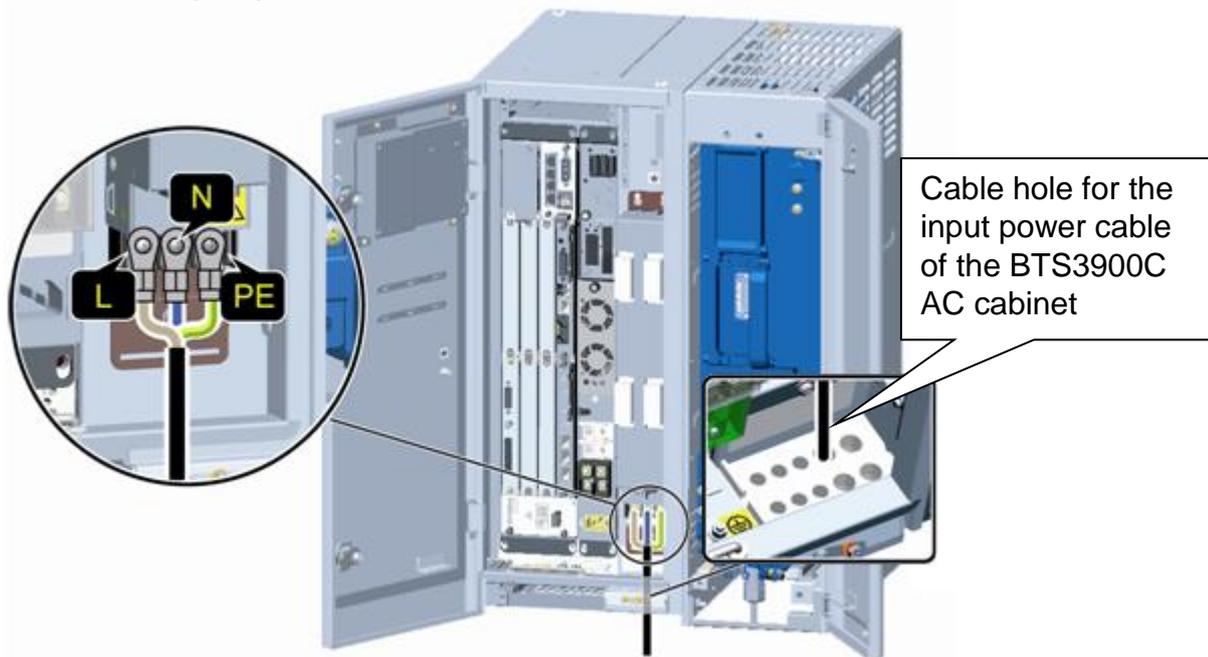
Cable hole for the input power cable of the BTS3900C AC cabinet

Install the RRU3804 power cable of the BTS3900C AC cabinet.

Cable hole for the RRU3804 power cable of the BTS3900C AC cabinet

Installing the BTS3900C Cables

Install the RRU3801C power cable of the BTS3900C AC cabinet

NEG(-)

RTN(+)

PWR

Cable hole for the
RRU3801C power cable of
the BTS3900C AC cabinet

Installing the BTS3900C Cables

Install the input power cable of the BTS3900C DC cabinet.

RTN(+)

NEG(-)

Cable hole for the input power cable of the BTS3900C DC cabinet

Install the RRU3804 power cable of the BTS3900C DC cabinet.

NEG(-)   RTN(+)

Cable hole for the RRU3804 power cable of the BTS3900C DC cabinet

Installing the BTS3900C Cables

Install the RRU3801C power cable of the BTS3900C DC cabinet.

Elbow OT terminal

NEG(-)   RTN(+)

PWR

Round waterproof connector
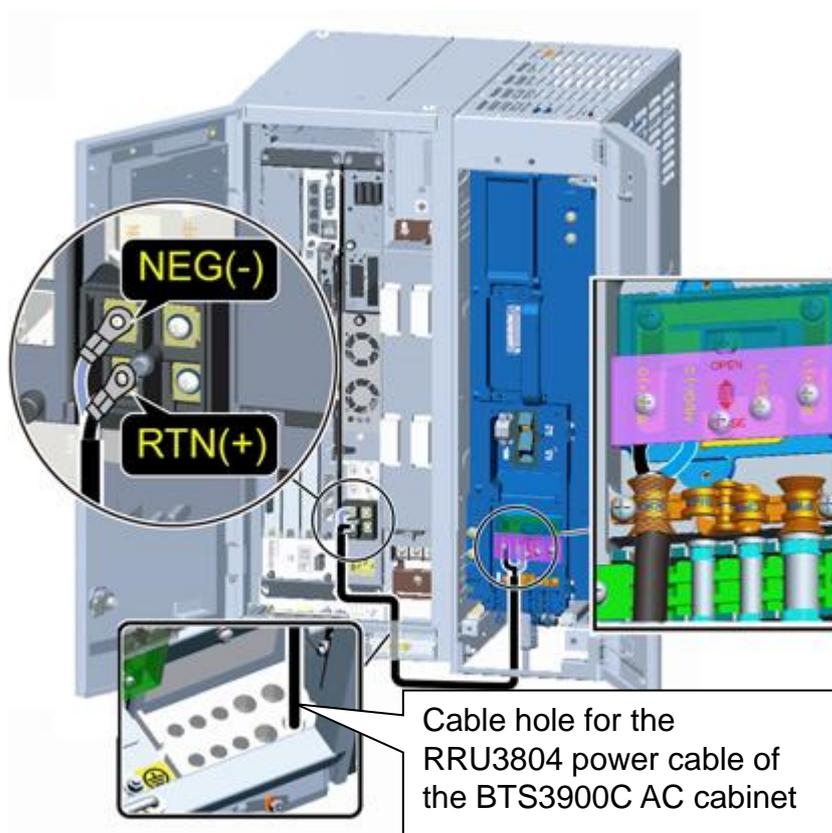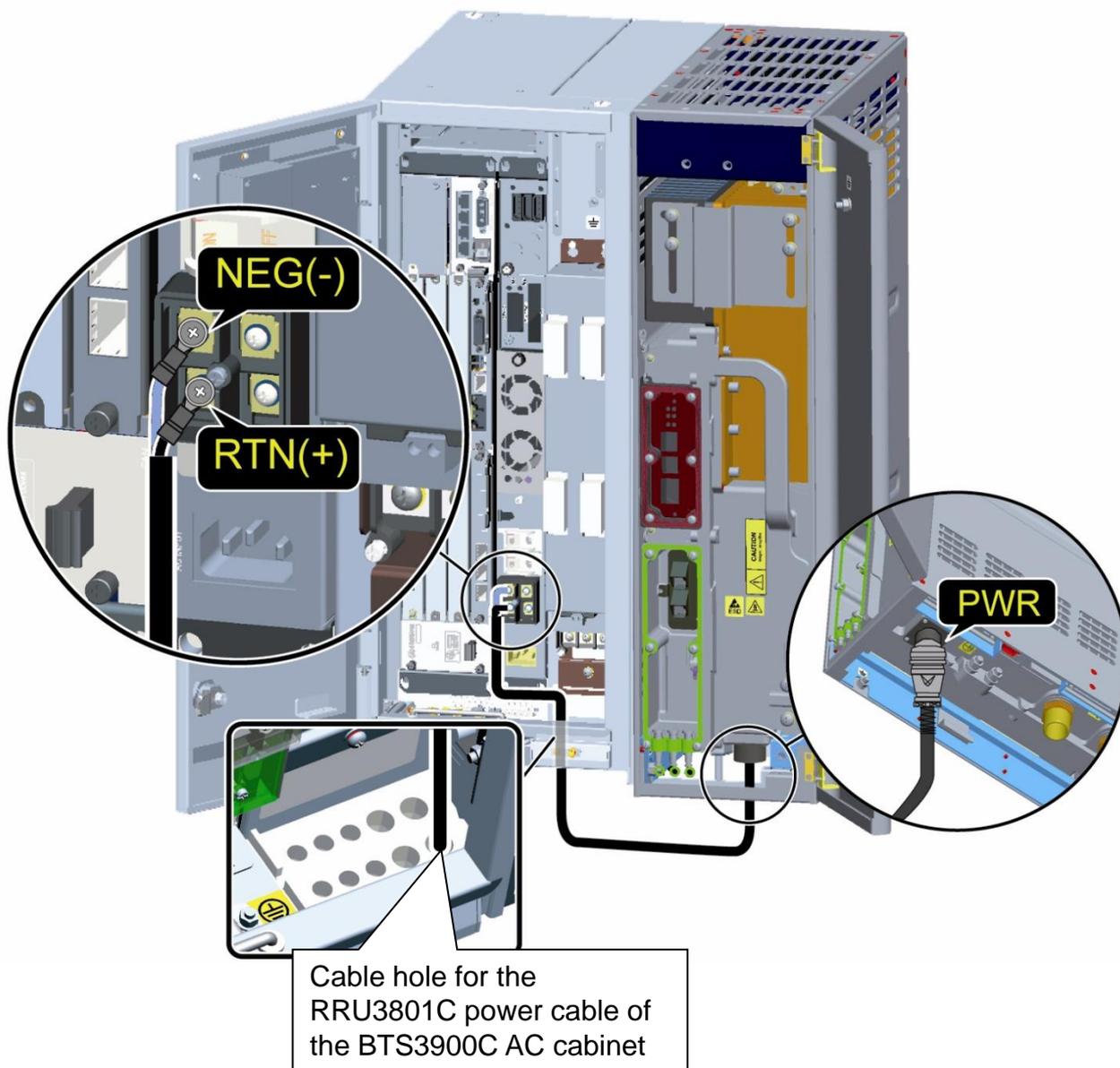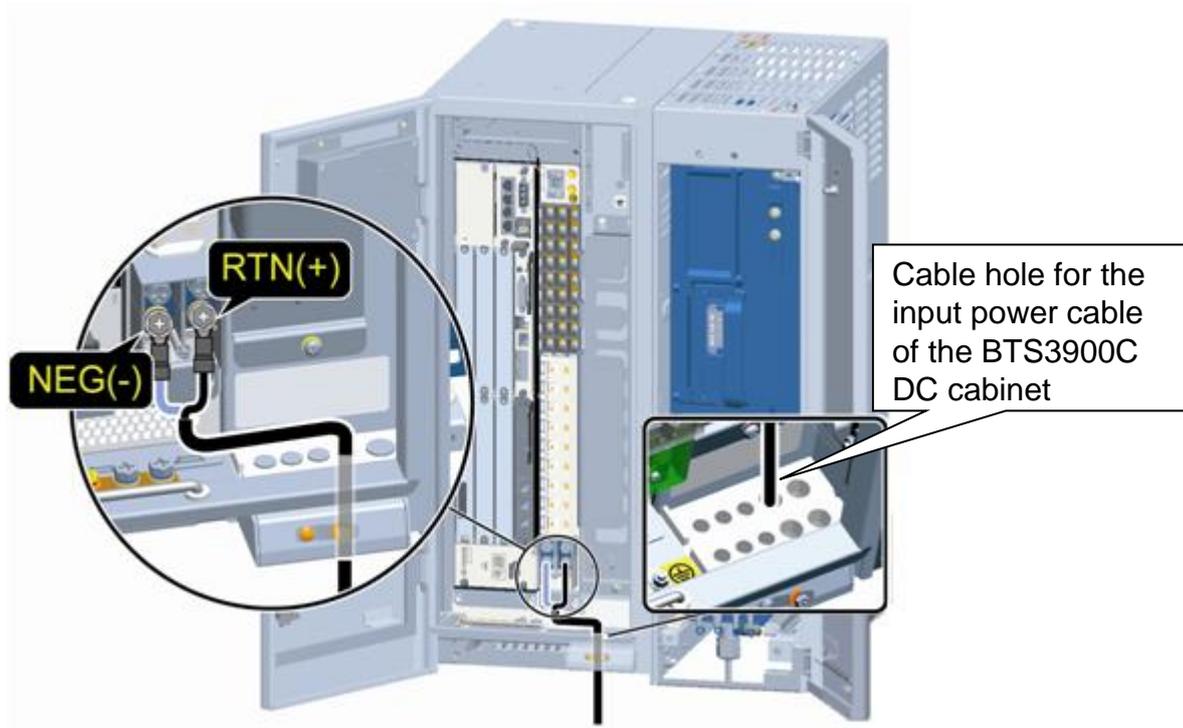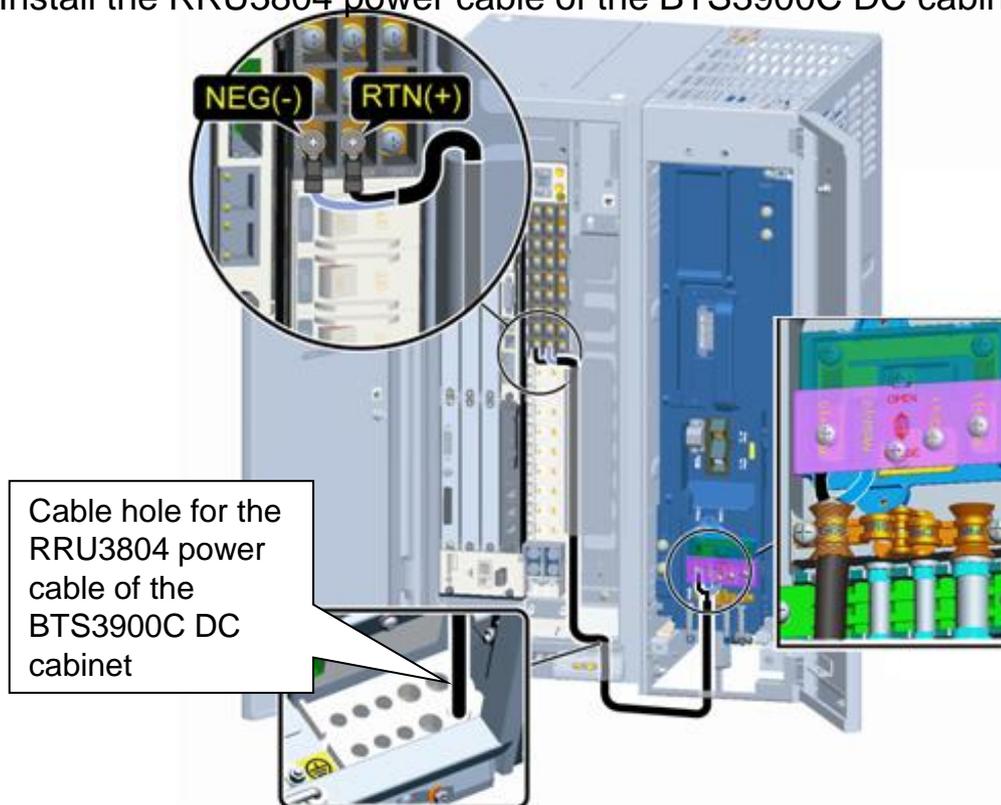
Cable hole for the RRU3801C power cable of the BTS3900C DC cabinet
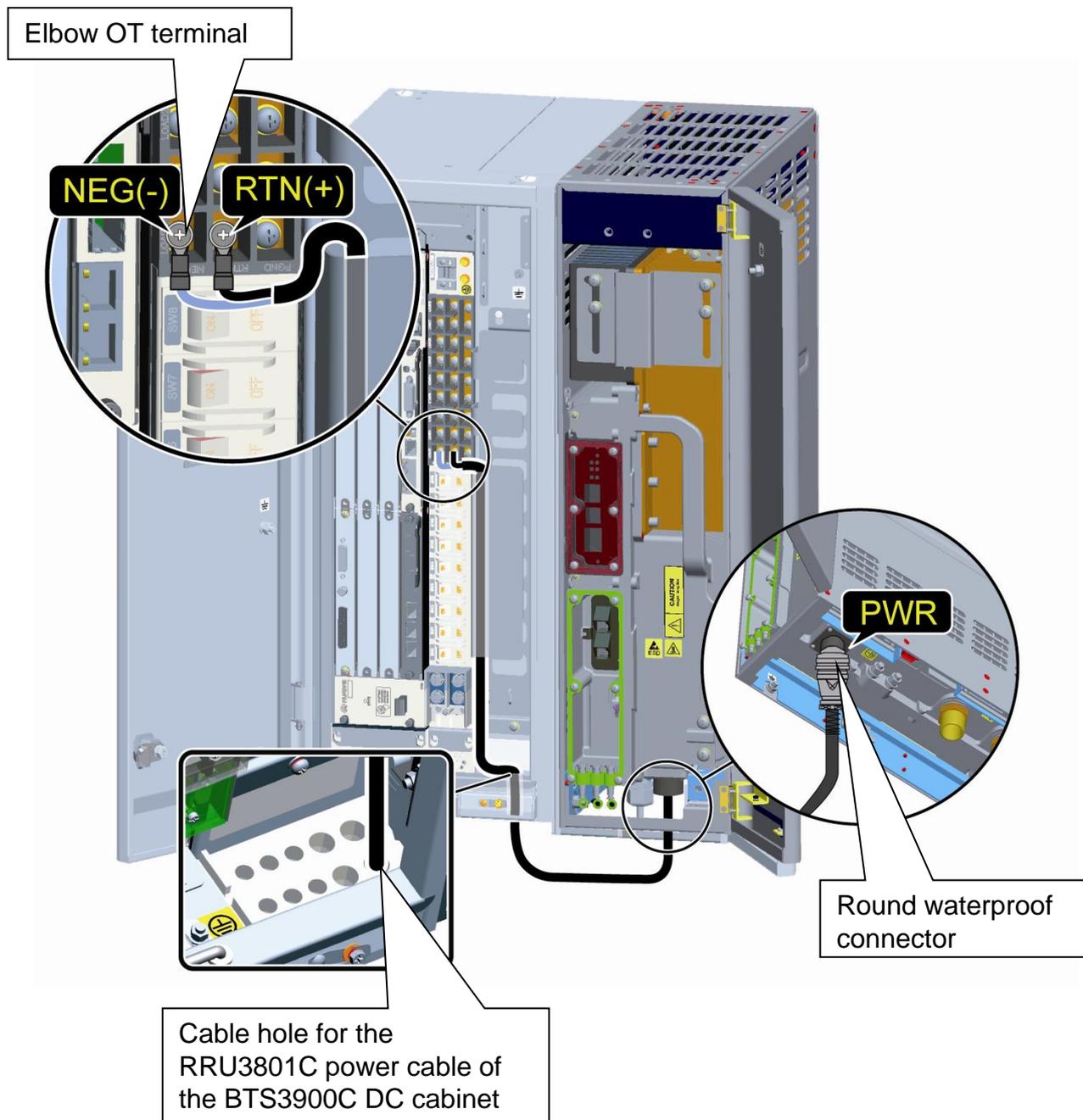
Installing the BTS3900C Cables

d Installing the Transmission Cables

> 📖 **NOTE**
>
> The procedures for installing the E1 cables in the BTS3900C DC cabinet and in the BTS3900C AC cabinet are the same. The procedure is as follows:
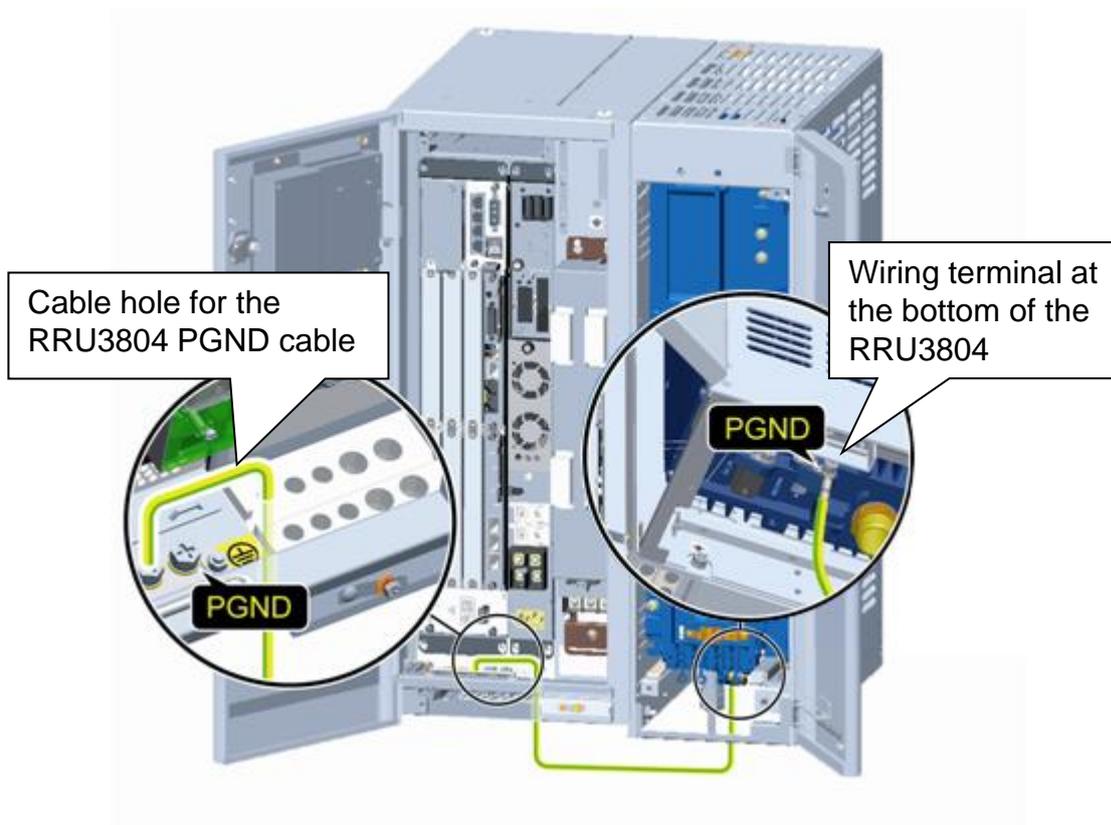
Install the E1 cable.
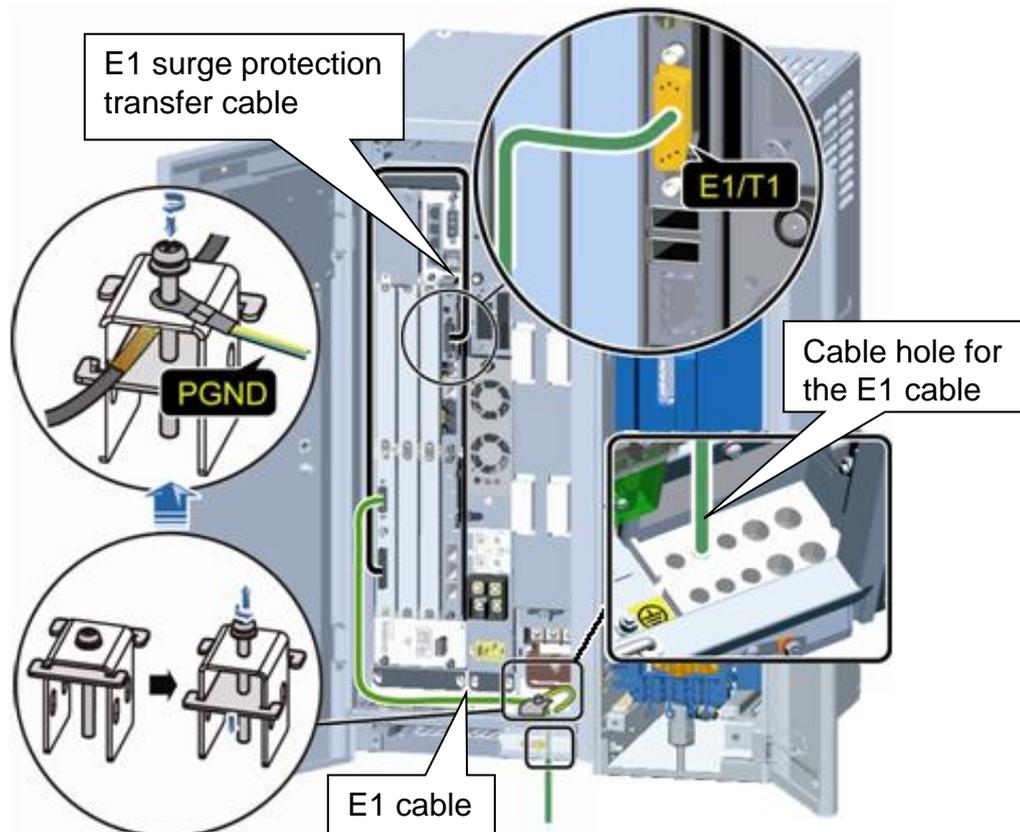
> ⚠ **CAUTION**
>
> Ensure that both ends of the E1 cable are disconnected. Then, weld connectors to the bare wires at one end of the E1 cable all at once.

> 📖 **NOTE**
>
> ● The grounding clamp lies in the neighborhood of cable holes at the bottom right of the OMB.
> ● The procedures for installing the E1 cables in the BTS3900C cabinet configured with the RRU3801C and in the BTS3900C configured with the RRU3804 are the same.
> ● The FE cable is optional. The procedure for installing the FE cable and that for installing the E1 cable are the same.

Installing the BTS3900C Cables

Install the CPRI optical cable (in the BTS3900C configured with the RRU3804).

> 📖 **NOTE**
>
> ● The CPRI optical cable connections in the BTS3900C configured with WBBPd are the same as that of WBBPb. The following takes the WBBPb as an example.
> ● WBBPd is supported in V200R012 and later versions.
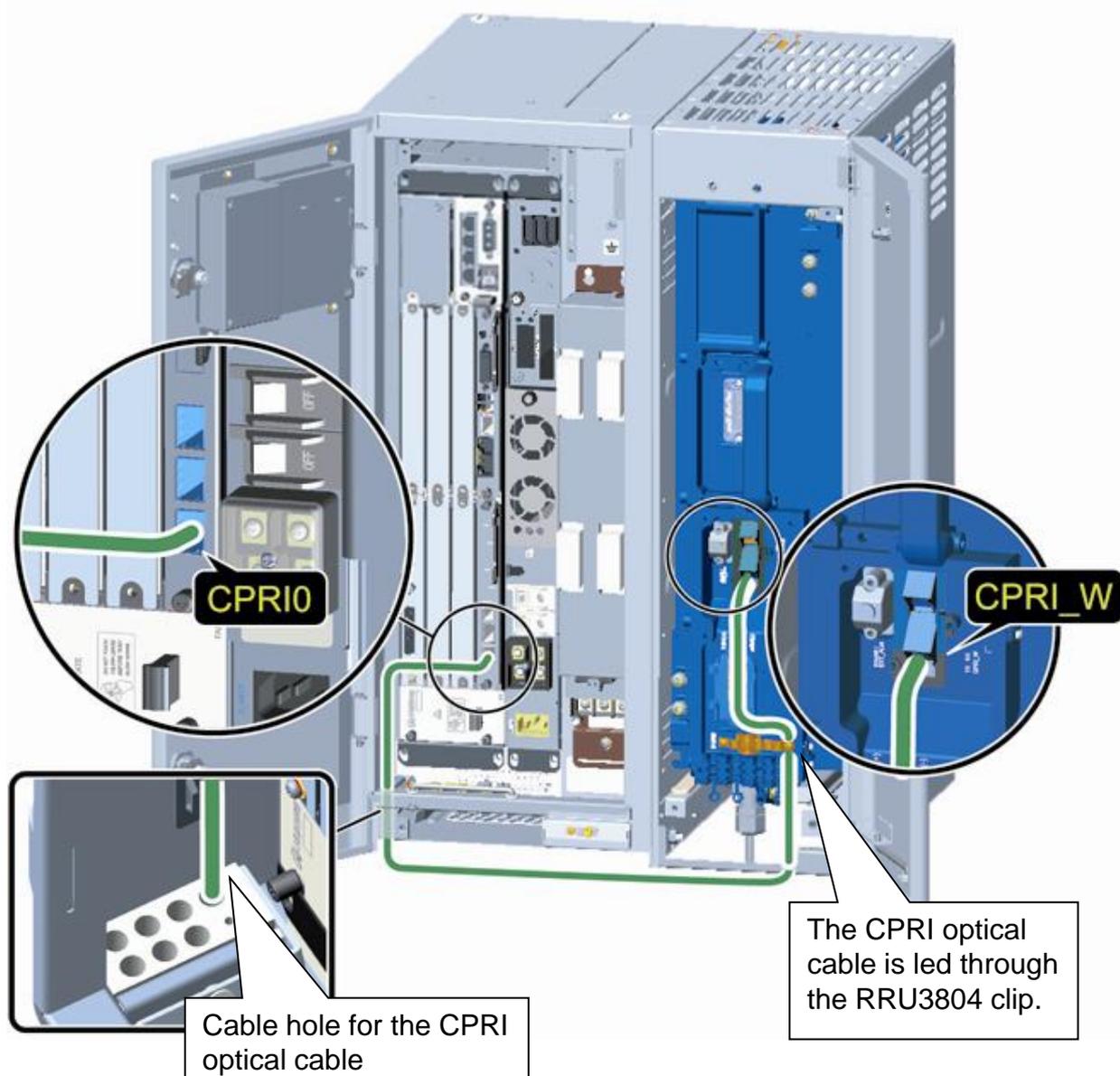
CPRI0

CPRI_W

The CPRI optical cable is led through the RRU3804 clip.

Cable hole for the CPRI optical cable

> 📖 **NOTE**
>
> The procedures for installing the CPRI optical cables in the BTS3900C DC cabinet configured with the RRU3804 and in the BTS3900C AC cabinet configured with the RRU3804 are the same.

Installing the BTS3900C Cables

Install the CPRI optical cable (in the BTS3900C configured with the RRU3801C).

CPRI0

CPRI_W

Cable hole for the
CPRI optical cable
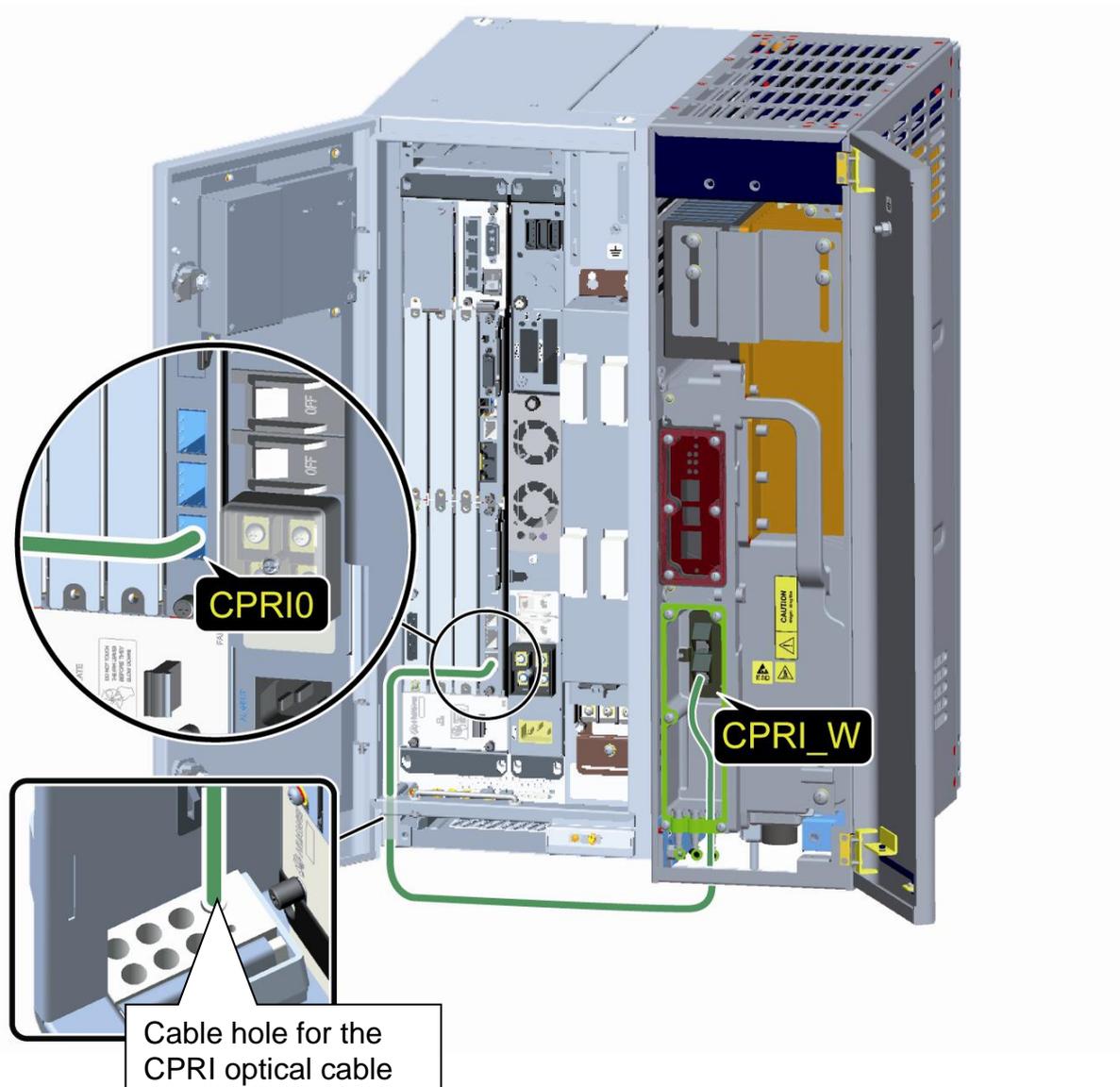
> 📖 **NOTE**
>
> The procedures for installing the CPRI optical cables in the BTS3900C DC cabinet configured with the RRU3801C and in the BTS3900C AC cabinet configured with the RRU3801C are the same.

Installing the BTS3900C Cables

e **Installing the Signal Cables**

Install the AISG multi-wire cable (in the BTS3900C configured with the RRU3804).

The AISG multi-wire cable is used when the RET antenna is required. The cable is lead from the RET/PWR_SRXU port at the bottom of the RRU to the RET port.

📖 **NOTE**

The procedures for installing the AISG multi-wire cables in the BTS3900C DC cabinet configured with the RRU3804 and in the BTS3900C AC cabinet configured with the RRU3804 are the same.

Installing the BTS3900C Cables

Install the AISG multi-wire cable (in the BTS3900C configured with the RRU3801C).

The port is located at the bottom of the RRU3801C.

RET

> 📖 **NOTE**
> The procedures for installing the AISG multi-wire cables in the BTS3900C DC cabinet configured with the RRU3801C and in the BTS3900C AC cabinet configured with the RRU3801C are the same.

Installing the BTS3900C Cables

f **Installing the RF Cables**

Install the RF jumper (in the BTS3900 configured with the RRU3804).

ANT-TX/RXA
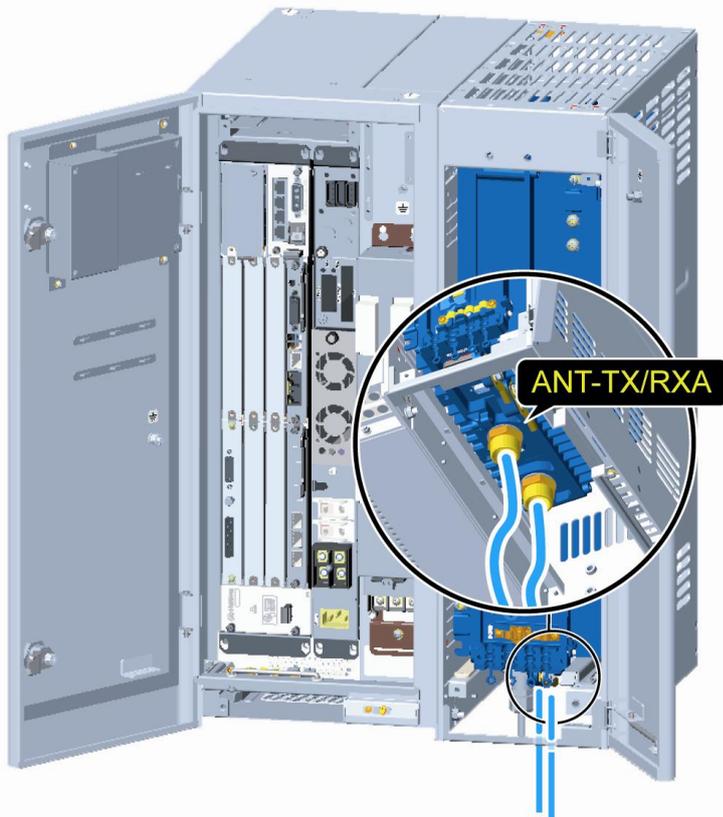
| 1. Wrap up three layers of the waterproof tape. | 2. Wrap up three layers of the insulation tape. | 3. Bind cable ties at two ends of the wrapped insulation tape to prevent ageing of the tape. |

📖 **NOTE**

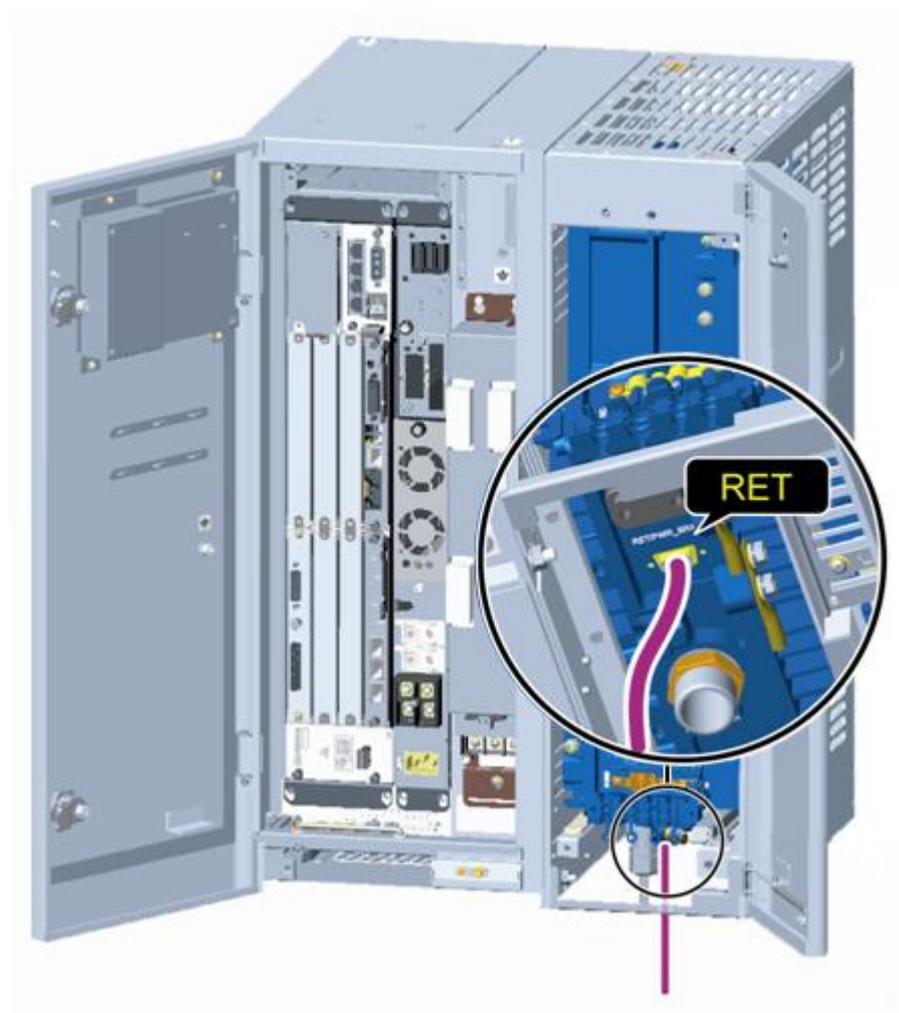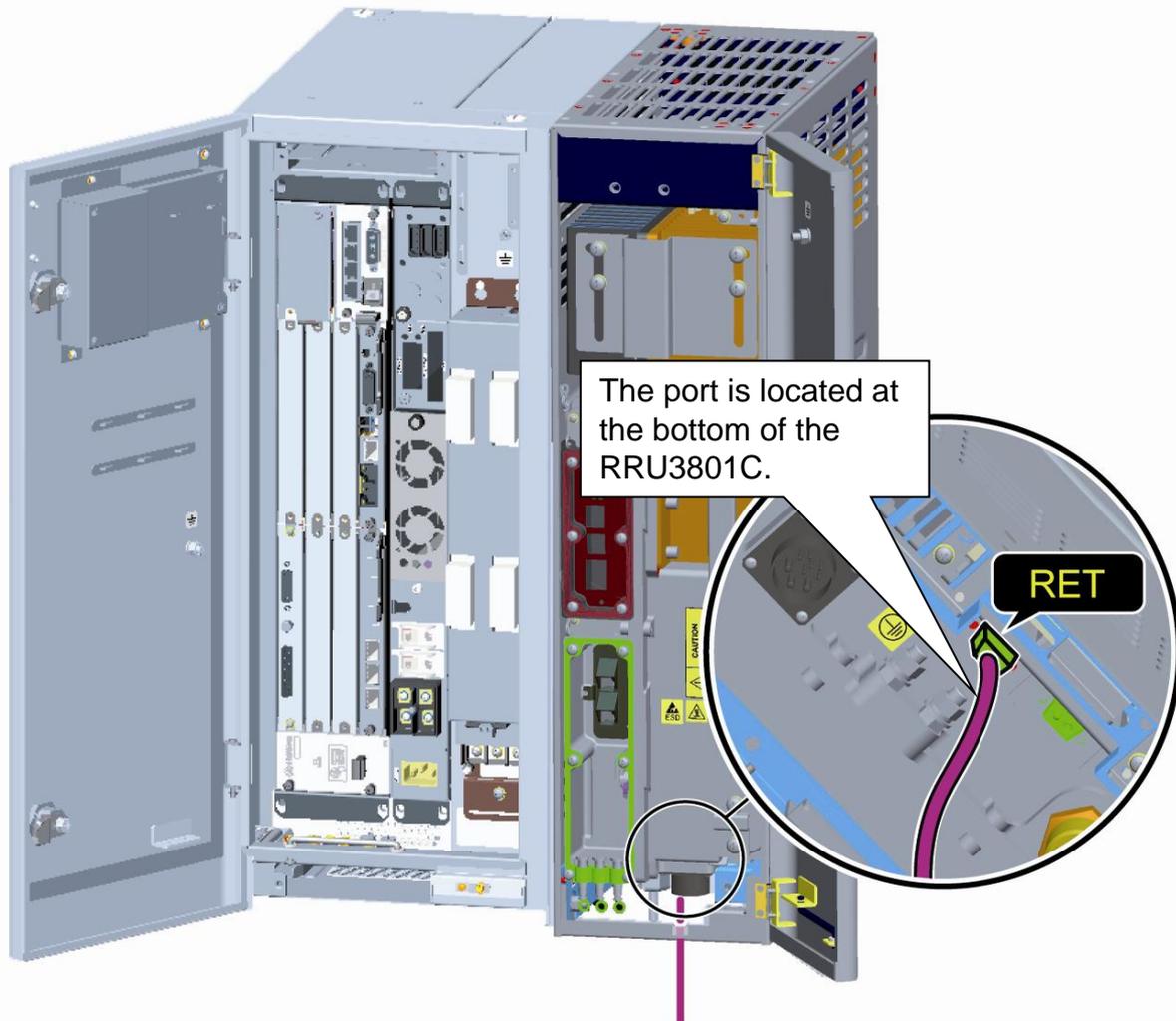● The procedures for installing the RF jumpers in the BTS3900C DC cabinet configured with the RRU3804 and in the BTS3900C AC cabinet configured with the RRU3804 are the same.
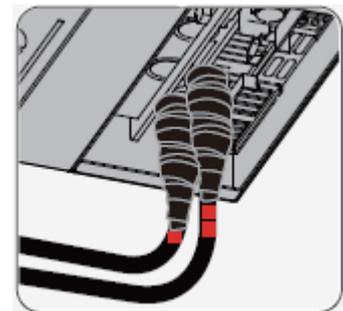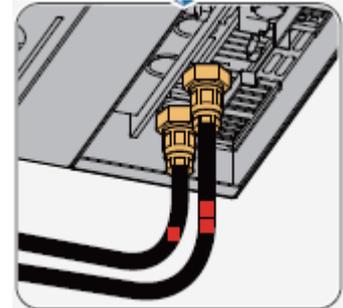
● The procedures for installing the RF jumpers in the BTS3900C cabinet configured with the RRU3801C and in the BTS3900C cabinet configured with the RRU3804 are the same.

Checklist for the BTS3900C Installation

a   Checklist for Installing the Cabinet

SN	Item
1	The cabinet is located in compliance with the engineering design.
2	When the BTS3900C cabinet is installed on a metal pole, the brackets are secure and reliable. The subracks are securely installed without any twist.
3	When the BTS3900C cabinet is installed on a wall, the holes in the cabinet well aligned with those for expansion bolt assemblies and the cabinet is placed against the wall securely and evenly.
4	When the BTS3900C cabinet is installed on a stand, the holes on the stand is well aligned with those for expansion bolt assemblies, and the stand is installed securely.
5	When the BTS3900C cabinet is installed on a wall or a stand, the BTS3900C cabinet is secure and steady.
6	The cover plate of the RRU is fastened to the maintenance cavity.
7	The cover plate of the RRU is fastened to the cabling cavity and the empty cable troughs are waterproofed.
8	The waterproof caps and chains at the bottom of the RRU are bound with the cables nearby.
9	The BTS3900C surface is clean and neat and the external paint is intact.

Checklist for the BTS3900C Installation

b Checklist for Installing the Power Cable and PGND Cable

SN	Item
1	All self-made PGND cables must be copper-based with proper wire diameters. No switch, fuse, or short circuit is allowed on the cable.
2	All cables are bound neatly with cable ties that are arranged at even intervals, to proper tightness, and in the same direction.
3	The power cable and PGND cable are routed separately from other cables.
4	All the labels at both ends of the cables are legible.
5	•In the indoor environment, extra cable ties are stripped off and all cuts are smooth without sharp projections. •In the outdoor environment, each cable tie has a reserved length ranging from 3 mm to 5 mm.
6	The power cables, signal cables, and antenna cables are not crossed. If these cables are parallel, the spacing between them is greater than 3 cm.
7	Labels, tags, and nameplates are correct, legible, and complete.
8	When the power cable and PGND cable are routed on the wall, fix them by using cable ties.
9	All cable connections are secure. Pay special attention to those at the bottom of the module.
10	The PGND cable must be connected to the grounding bar.
11	The cross-sectional area of the PGND cable is not less than 16 mm^2.

Checklist for the BTS3900C Installation

SN	Item
1	All self-made PGND cables must be copper-based with proper wire diameters. No switch, fuse, or short circuit is allowed on the cable.
2	If the RET antenna is installed, the RET signal cables are correctly connected.
3	All cables are bound neatly with cable ties that are arranged at even intervals, to proper tightness, and in the same direction.
4	The signal cables and transmission cables are routed separately from the power cables and PGND cables.
5	All the labels at both ends of the cables are legible.
6	•In the indoor environment, extra cable ties are stripped off and all cuts are smooth without sharp projections. •In the outdoor environment, each cable tie has a reserved length ranging from 3 mm to 5 mm.
7	The power cables, signal cables, and antenna cables are not crossed. If these cables are parallel, the spacing between them is greater than 3 cm.
8	Labels, tags, and nameplates are correct, legible, and complete.
9	When the signal cables and transmission cables are routed on the wall, fix them by using wall clips.
10	When the signal cables and transmission cables are routed on the cable rack or metal pole, fix them by using cable ties. Ensure that the transmission cable is fitted with a protection tube. In outdoor routing, waterproof the protection tube.
11	All cable connections are secure. Pay special attention to those at the bottom of the module.

Appendix

a Pin Assignment

E1 Cable

Pin assignment for the wires of the 75-ohm E1 cable

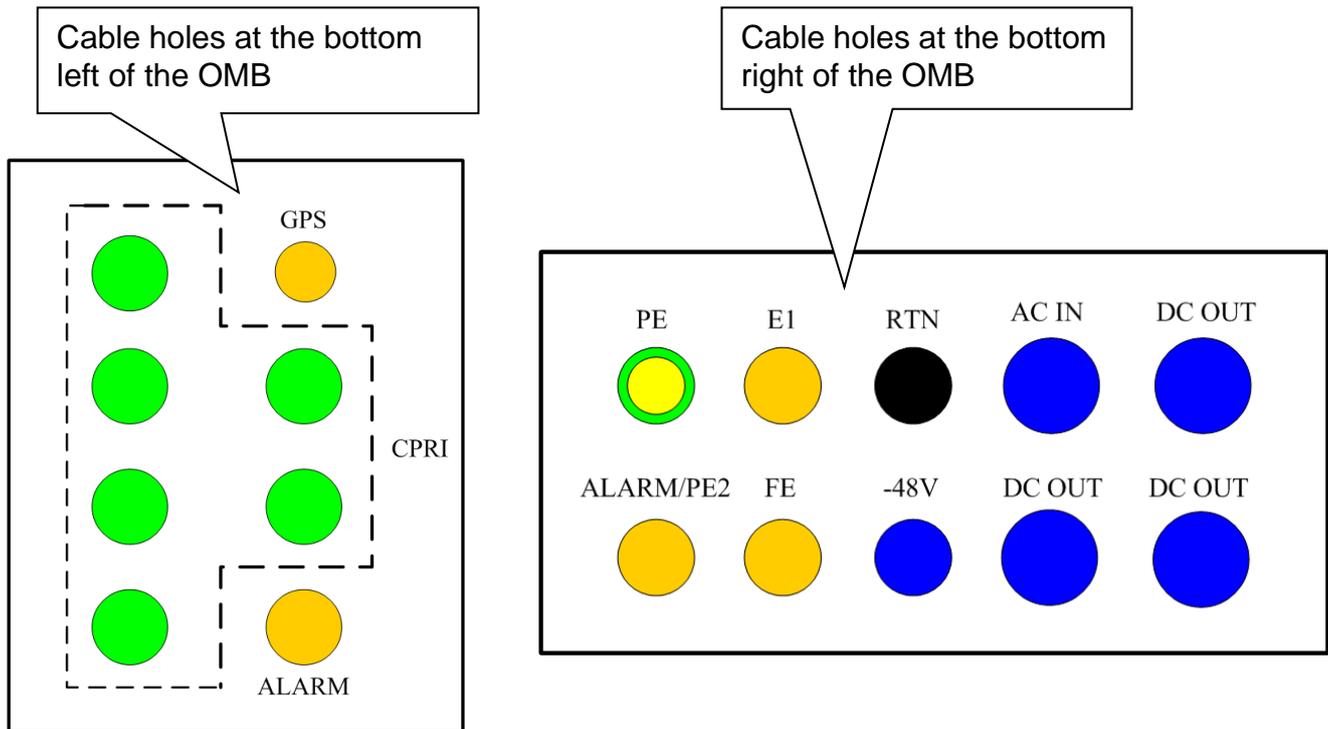| Pin on the DB26 Connector	Wire Type	Multi-Wire SN	Label
X1.1	Tip	1	R1
X1.2	Ring		
X1.3	Tip	2	R2
X1.4	Ring		
X1.5	Tip	3	R3
X1.6	Ring		
X1.7	Tip	4	R4
X1.8	Ring		
X1.19	Tip	5	T1
X1.20	Ring		
X1.21	Tip	6	T2
X1.22	Ring		
X1.23	Tip	7	T3
X1.24	Ring		
X1.25	Tip	8	T4
X1.26	Ring		

Appendix

Pin assignment for the wires of the 120-ohm E1 surge protection transfer cable

Pin on the DB26 Connector	Wire Color	Wire Type	Label
X.1	Blue	Twisted pair	R1
X.2	White		
X.3	Orange	Twisted pair	R2
X.4	White		
X.5	Green	Twisted pair	R3
X.6	White		
X.7	Brown	Twisted pair	R4
X.8	White		
X.19	Green	Twisted pair	T1
X.20	White		
X.21	Blue	Twisted pair	T2
X.22	Red		
X.23	Orange	Twisted pair	T3
X.24	Red		
X.25	Green	Twisted pair	T4
X.26	Red		

Appendix

b Positions of Cable Holes

Positions of cable holes

Cable holes at the bottom left of the OMB

Cable holes at the bottom right of the OMB

GPS

CPRI

ALARM

PE   E1   RTN   AC IN   DC OUT

ALARM/PE2   FE   -48V   DC OUT   DC OUT

Cable	Position of the Cable Hole	Label on the Cable Hole
Input power cable of the BTS3900C AC cabinet or BTS3900C DC cabinet	Right	AC IN
PGND cable of the BTS3900C AC cabinet or BTS3900C DC cabinet	Right	PGND1
RRU cable of the BTS3900C AC cabinet or BTS3900C DC cabinet	Right	DC OUT
FE cable	Right	E1/FE
E1 cable	Right	E1/FE
CPRI optical cable	Left	CPRI

Change History

This describes changes in the *BTS3900C WCDMA Installation Guide.*

02(2011-04-10)

This is the 02.
Compared 01 with 02, this issue updates the front cover and back cover.

01(2011-03-30)

This is the 01.

Compared Draft A with 01, add some pictures in the chapter of "Installing the BTS3900C Cables ".

Draft A(2011-01-30)

This is the draft.