HT-ST5000

SA-ST5000

SERVICE MANUAL

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Note:
Make sure that the your PC used for repair is not infected with a computer virus before using it.

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2024F33-1

Sony Corporation

SONY®

HT-ST5000
SA-ST5000

SERVICE MANUAL

US Model

- All of the units included in the HT-ST5000 (SA-ST5000/SA-WST5000/Remote control) are required to confirming operation of SA-ST5000. Check in advance that you have all of the units.

COMPONENT MODEL NAME (HT-ST5000)

Bar Speaker (Active Speaker System)	SA-ST5000
Subwoofer (Active Subwoofer)	SA-WST5000

- Please refer to service manual separately issued for Subwoofer.

SPECIFICATIONS

Amplifier section

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:
(FTC)
Front L + Front R:
With 6 ohms loads, both channels driven, from 200 - 6,000 Hz; rated 20 W per channel minimum RMS power, with no more than 1% total harmonic distortion from 250 mW to rated output.
Front tweeter L + Front tweeter R:
With 6 ohms loads, both channels driven, from 6,000 - 20,000 Hz; rated 20 W per channel minimum RMS power, with no more than 1% total harmonic distortion from 250 mW to rated output.
POWER OUTPUT (reference)
Front L/Front R speaker blocks: 50 W (per channel at 6 ohms, 1 kHz)
Front tweeter L/Front tweeter R speaker blocks: 50 W (per channel at 6 ohms, 10 kHz)
Center speaker block: 50 W (per channel at 6 ohms, 1 kHz)
Center tweeter speaker block: 50 W (per channel at 6 ohms, 10 kHz)
Top speaker block: 50 W (per channel at 6 ohms, 1 kHz)
Inputs
HDMI IN 1/2/3*
ANALOG IN
TV IN (OPT)
Outputs
HDMI OUT (TV (eARC/ARC))*

* HDMI IN 1/2/3 and HDMI OUT (TV (eARC/ARC)) jacks support HDCP 2.2 protocol. HDCP 2.2 is newly enhanced copyright protection technology that is used to protect content such as 4K movies.

HDMI Section

Connector
Type A (19pin)

USB section

(USB) port:
Type A (For connecting USB memory)

LAN section

LAN(100) terminal
100BASE-TX Terminal

Wireless LAN section

Communication system
IEEE 802.11 a/b/g/n
Frequency band
2.4 GHz, 5 GHz

BLUETOOTH section

Communication system
BLUETOOTH Specification version 4.1
Output
BLUETOOTH Specification Power Class 1
Maximum communication range
Line of sight approx. 30 m[1]
Maximum number of devices to be registered
9 devices
Frequency band
2.4 GHz band (2.4 GHz - 2.4835 GHz)
Modulation method
FHSS (Freq Hopping Spread Spectrum)
Compatible BLUETOOTH profiles[2]
A2DP 1.2 (Advanced Audio Distribution Profile)
AVRCP 1.5 (Audio Video Remote Control Profile)
Supported Codecs[3]
SBC[4], AAC[5], LDAC
Transmission range (A2DP)
20 Hz - 40,000 Hz (LDAC sampling frequency 96 kHz with 990 kbps transmission)
20 Hz - 20,000 Hz (Sampling frequency 44.1 kHz)

1) The actual range will vary depending on factors such as obstacles between devices, magnetic fields around a microwave oven, static electricity, cordless phone use, reception sensitivity, the operating system, software applications, etc.
2) BLUETOOTH standard profiles indicate the purpose of BLUETOOTH communication between devices.
3) Codec: Audio signal compression and conversion format
4) Abbreviation for Subband Codec
5) Abbreviation for Advanced Audio Coding

Front L/Front R speaker block section

Speaker system
2-way coaxial speaker system, Acoustic suspension
Speaker
Woofer: 65 mm (2 5/8 in.) cone type, Magnetic fluid speaker
Tweeter: 14 mm (9/16 in.) soft dome type

Center speaker block section

Speaker system
Center: 2-way coaxial speaker system, Acoustic suspension
Satellite: Full range speaker system, Acoustic suspension
Speaker (5 speakers)
Center woofer: 65 mm (2 5/8 in.) cone type, Magnetic fluid speaker
Tweeter: 14 mm (9/16 in.) soft dome type
Satellite: 65 mm (2 5/8 in.) cone type, Magnetic fluid speaker

Top speaker block section

Speaker system
Full range speaker system, Acoustic suspension
Speaker
65 mm (2 5/8 in.) cone type, Magnetic fluid speaker

General

Power requirements
120 V AC, 60 Hz
Power consumption
On: 90 W
For details about the power consumption during standby mode, see "Power Consumption by the Setting Value for Each Standby Mode".
Dimensions* (approx.) (w/h/d)
1,180 mm × 80 mm × 142 mm (46 1/2 in × 3 1/4 in × 5 5/8 in) (without grille frame)
1,180 mm × 80 mm × 145 mm (46 1/2 in × 3 1/4 in × 5 3/4 in) (with grille frame)
*Not including projection portion
Mass (approx.)
8.3 kg (18 lb 4 4/5 oz) (without grille frame)
8.8 kg (19 lb 6 2/5 oz) (with grille frame)

Compatible iPhone/iPod models

The compatible iPhone/iPod models are as follows. Update your iPhone/iPod with the latest software before using with the system.
Made for:
iPhone 7/iPhone 7 Plus/iPhone SE/iPhone 6s/iPhone 6s Plus/iPhone 6/iPhone 6 Plus/iPhone 5s/iPhone 5c/iPhone 5/iPhone 4s
iPod touch (6th generation)/iPod touch (5th generation)

Wireless transmitter section

Communication system
Wireless Sound Specification version 3.0
Frequency band
5.2 GHz (5.180 GHz - 5.240 GHz)
5.8 GHz (5.736 GHz - 5.814 GHz)
Modulation method
DSSS

What's in the Box

- Bar Speaker (1)
- Grille frame (1)
- Subwoofer (1)
- Remote control (1)
- R03 (size AAA) battery (2)
- HDMI cable (supports the specification equal to Premium High Speed HDMI cable with Ethernet) (1)
- WALL MOUNT TEMPLATE (1)
- Startup Guide
- Operating Instructions

Design and specifications are subject to change without notice.

HT-ST5000
SOUND BAR
SA-ST5000
ACTIVE SPEAKER SYSTEM

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* excluding DSD format contents

**in comparison with SBC (Subband Coding) when the bitrate of 990 kbps (96/48 kHz) or 909 kbps (88.2/44.1 kHz) is selected

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SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage.
Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes.). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

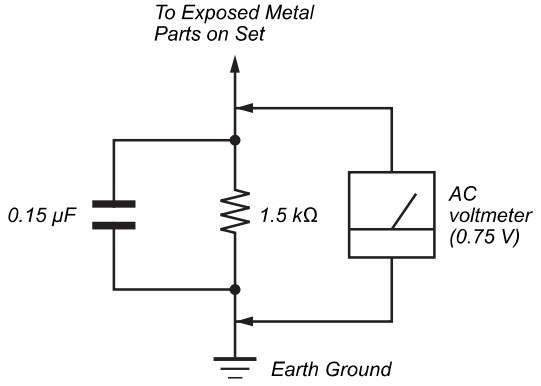

Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!

**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION.
REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

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SECTION 1
SERVICING NOTES

The SERVICING NOTES contains important information for servicing. Be sure to read this section before repairing the unit.

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(**Caution:** Some printed circuit boards may not come printed with the lead free mark due to their particular size)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350 °C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

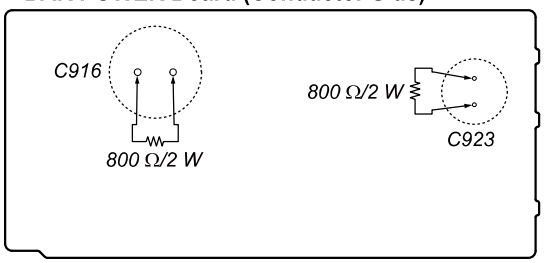
ADVANCE PREPARATION WHEN CONFIRMING OPERATION

All of the units included in the HT-ST5000 (SA-ST5000/SA-WST5000/Remote control) are required to confirming operation of SA-ST5000. Check in advance that you have all of the units.

DISCHARGE PROCESSING

Before checking the operation of the boards for the electric shock prevention, perform the discharge processing by connecting the resistor at both ends of the specified capacitor with referring to the figure below.
Note: Be sure to discharge using a resistor of 800 Ω or higher.

– BAR POWER Board (Conductor Side) –

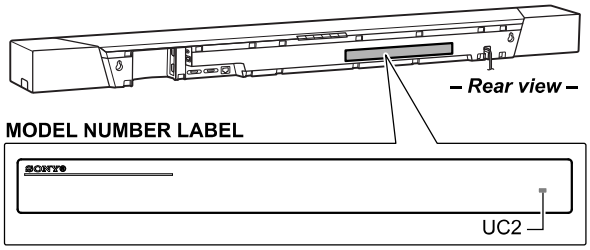


NOTE OF PERFORMING THE OPERATION CHECK IN THE STATE THAT HEAT SINK IS REMOVED

When performing the operation check in the state that this unit is disassembled, it is possible to perform the operation check in the state that heat sink is removed. However, don't perform the operation check in the long time, and perform the operation check in the volume state as low as possible.
In addition, notice that the board becomes heat just by the state of turn on electricity because the this unit has many channels.

MODEL IDENTIFICATION

When checking the destination, check that "UC2" is indicated at the right side of the model number label on the rear side.
When "UC2" is indicated, it is SA-ST5000 for US.
When "UC2" is not indicated, it is SA-ST5000 other than US.
Note: The contents of model number label might be changed in the midway of production.



NETWORK CONNECTION CHECKING METHOD

When checking the network connection, refer to the following.

1. Checking method of wireless LAN connection

Necessary equipment:

- TV monitor
- Access point supporting WPS

Procedure:

1. Connect this unit with TV monitor.
2. Press the [⏻] button to turn the power on.
3. Press the [HOME] button on the remote control, display the home screen.
4. Press the [↑]/[↓] buttons on the remote control to select the "🧰 Setup", and press the [⊕] button on the remote control.
5. Press the [↑]/[↓] buttons on the remote control to select the "Network Settings", and press the [⊕] button on the remote control.
6. Press the [↑]/[↓] buttons on the remote control to select the "Internet Settings", and press the [⊕] button on the remote control.
7. Press the [↑]/[↓] buttons on the remote control to select the "Wireless Setup", and press the [⊕] button on the remote control.
8. Press the [↑]/[↓] buttons on the remote control to select the "Wi-Fi Protected Setup™ (WPS)", and press the [⊕] button on the remote control.
9. The message "Start" is displayed.
10. Press the [⊕] button on the remote control, and press the [WPS] button on the access point.
11. When wireless LAN connection is completed, "Wireless Connection: OK" and "Internet Access: OK" is displayed.

Note: Refer to the Operating Instructions about details of the connection method.

2. Checking method of wired LAN connection

Necessary equipment:

- TV monitor
- Router
- Network LAN cable

Procedure:

1. Connect this unit with TV monitor.
2. Connect this unit to the router with the network LAN cable.
3. Press the [⏻] button to turn the power on.
4. Press the [HOME] button on the remote control, display the home screen.
5. Press the [↑]/[↓] buttons on the remote control to select the "🧰 Setup", and press the [⊕] button on the remote control.
6. Press the [↑]/[↓] buttons on the remote control to select the "Network Settings", and press the [⊕] button on the remote control.
7. Press the [↑]/[↓] buttons on the remote control to select the "Internet Settings", and press the [⊕] button on the remote control.
8. Press the [↑]/[↓] buttons on the remote control to select the "Wired Setup", and press the [⊕] button on the remote control.
9. Press the [↑]/[↓] buttons on the remote control to select the "Auto", and press the [⊕] button on the remote control.
10. The "The network will be configured with the following settings" screen is display, and press the [→] button on the remote control.
11. Press the [↑]/[↓] buttons on the remote control to select the "Save & Connect", and press the [⊕] button on the remote control.
12. When wired LAN connection is completed, "Physical Connection: OK" and "Internet Access: OK" is displayed.

Note: Refer to the Operating Instructions about details of the connection method.

NFC CONNECTION CHECKING METHOD

When checking the NFC connection, refer to the following.

Connecting to a Mobile Device by One-Touch Function (NFC)

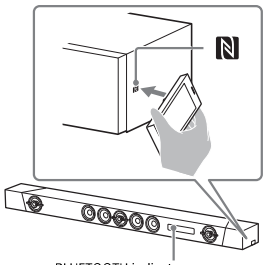
By holding an NFC-compatible mobile device such as a smartphone or tablet near the N mark on the main unit, the system is turned on automatically, then pairing and BLUETOOTH connection are performed automatically.

Compatible devices
Smartphones, tablets, and music players with the NFC function built-in (OS: Android™ 2.3.3 or later, excluding Android 3.x)

1 Turn on the NFC function of the mobile device.

2 Touch the N mark on the main unit with the mobile device.

Keep touching until the mobile device vibrates and message appears on the mobile device. Follow the on-screen instructions to complete pairing of the main unit and mobile device.



3 Make sure that the BLUETOOTH indicator lights in blue.

A connection between the system and mobile device has been established.

4 Start audio playback with the music app on the connected mobile device.

Sound is output from the system.

5 Adjust the volume.

- Adjust the volume by pressing 🔊 +/– on the remote control.
- Adjust the subwoofer volume by pressing SW 🔊 +/– on the remote control.
- You can play or pause the content by using the playback operation buttons on the remote control.

To stop playback by One-touch function

Touch the N mark on the main unit with the mobile device again.

Notes

- Depending on your device, you may need to perform the following items on your mobile device in advance.
  - Turn on the NFC function.
  - Install the "NFC Easy Connect" application from Google Play™ and start the application. (The application may not be available in some countries/regions.) For details, refer to the operating instructions of your device.
- This feature does not work with BLUETOOTH-compatible headphones. To listen to sound using a BLUETOOTH-compatible headphones, see "Listening to Sound of the Connected TV or Device from Headphones".
- [Bluetooth Mode] is changed to [Receiver] automatically when making BLUETOOTH connection with the One-touch function. Even if the One-touch function is canceled, the [Bluetooth Mode] setting remains as [Receiver]. For details about [Bluetooth Mode], see [Bluetooth Settings].
- If your mobile device is a type that goes into standby mode in response to magnetic force, it may not be able to be connected by NFC. When the One-touch function does not work, connect it by using the BLUETOOTH function.

Note: If the NFC connection does not operate normally, check the following connection status.

- The connection state between the NFC board and the USB-CHUKEI board (CN1805).
- The connection state between the USB-CHUKEI board (CN1803) and the CHUKEI-WIRE board (CN2304).
- The connection state between the CHUKEI-WIRE board (CN2301) and the DISPLAY board (CN1704).
- The connection state between the DISPLAY board (CN1705) and the MB-1611 board (CN3007).

WIRELESS CONNECTION (LINK) WORK OF BAR SPEAKER AND SUBWOOFER

By replacing the parts or performing the initialization, the wireless connection of the bar speaker and the subwoofer may be disconnected. If the wireless connection cannot be made automatically even it turn the power on, refer to the operating instructions of the HT-ST5000 and perform the secure link.

"PRTCT", "PUSH" AND "POWER" FLASH ALTERNATELY IN THE FRONT PANEL DISPLAY

→ Press ⏻ (power) to turn off the system. After the indicator disappears, disconnect the AC power cord (mains lead) and make sure nothing is obstructing the ventilation holes of the system.

RESETTING THE SYSTEM

It can return each settings to the initial state of factory shipment.

Note 1: To delete the Bluetooth pairing information, perform the "If You Cannot Perform Resetting Using the Home Menu" in the following.

1 **Press HOME.**
The home menu appears on the TV screen.

2 **Select [Setup] from the home menu.**
The setup display appears on the TV screen.

3 **Select [Resetting] - [Reset to Factory Default Settings].**

4 **Select the menu item you want to reset.**

5 **Select [Start].**

To cancel resetting

Select [Cancel] in step 5.

If You Cannot Perform Resetting Using the Home Menu

Press and hold ⏻ (power) and – on the main unit for more than 5 seconds.
The settings return to their initial status.

Note 2: By perform resetting, the link with the subwoofer may be lost. In this case, refer to "WIRELESS CONNECTION (LINK) WORK OF BAR SPEAKER AND SUBWOOFER" on page 6.

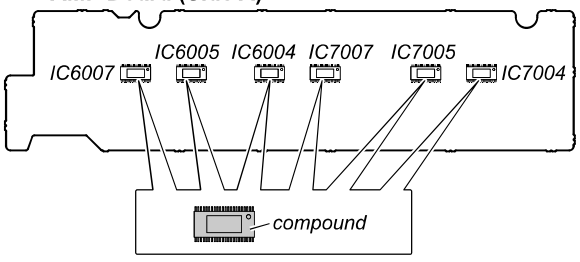
NOTE OF REPLACING THE NFC BOARD FOR REPAIRING

The mounted parts cannot be replaced with single for repairing.
Also, after replacing the NFC board please refer to "NFC CONNECTION CHECKING METHOD" on page 6.

ABOUT THE COMPOUND FOR HEAT RADIATION

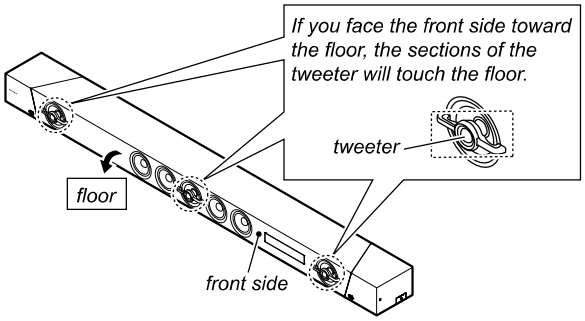
The compound for heat radiation is applied to the touching portion between the IC6004, IC6005, IC6007, IC7004, IC7005, IC7007 on the AMP board and the heat sink. When the heat sink is removed, be careful not to touch the compound for heat radiation.

– AMP Board (Side A) –

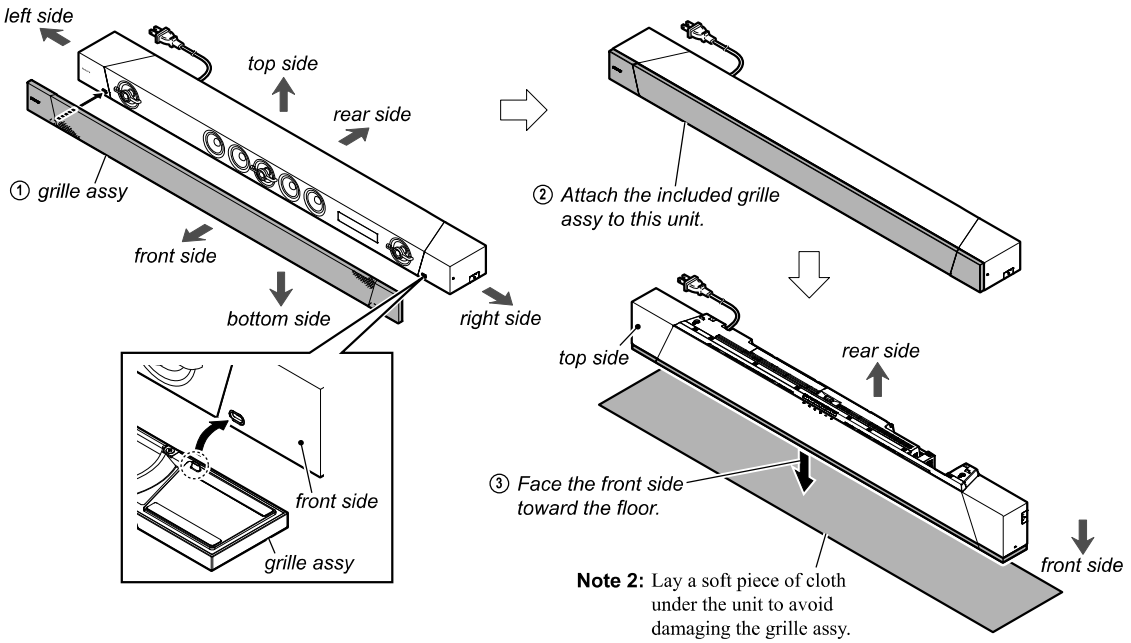


SECTION 2
DISASSEMBLY

Note 1: When disassembling this unit, facing the front side of the unit toward the floor will make the tweeter touch the floor and may result in damage.
Make sure to attach the included grille assy to this unit when facing the front side of the unit toward the floor.
If you cannot prepare the grille assy, prepare a stand high enough so that the tweeter does not touch the floor, and place the unit on top of the stand to perform work.

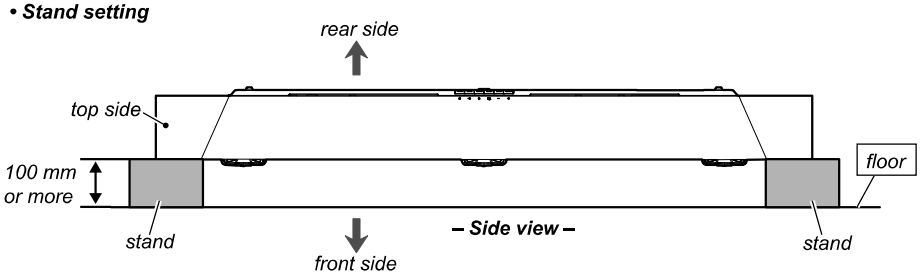


• Grille assy setting



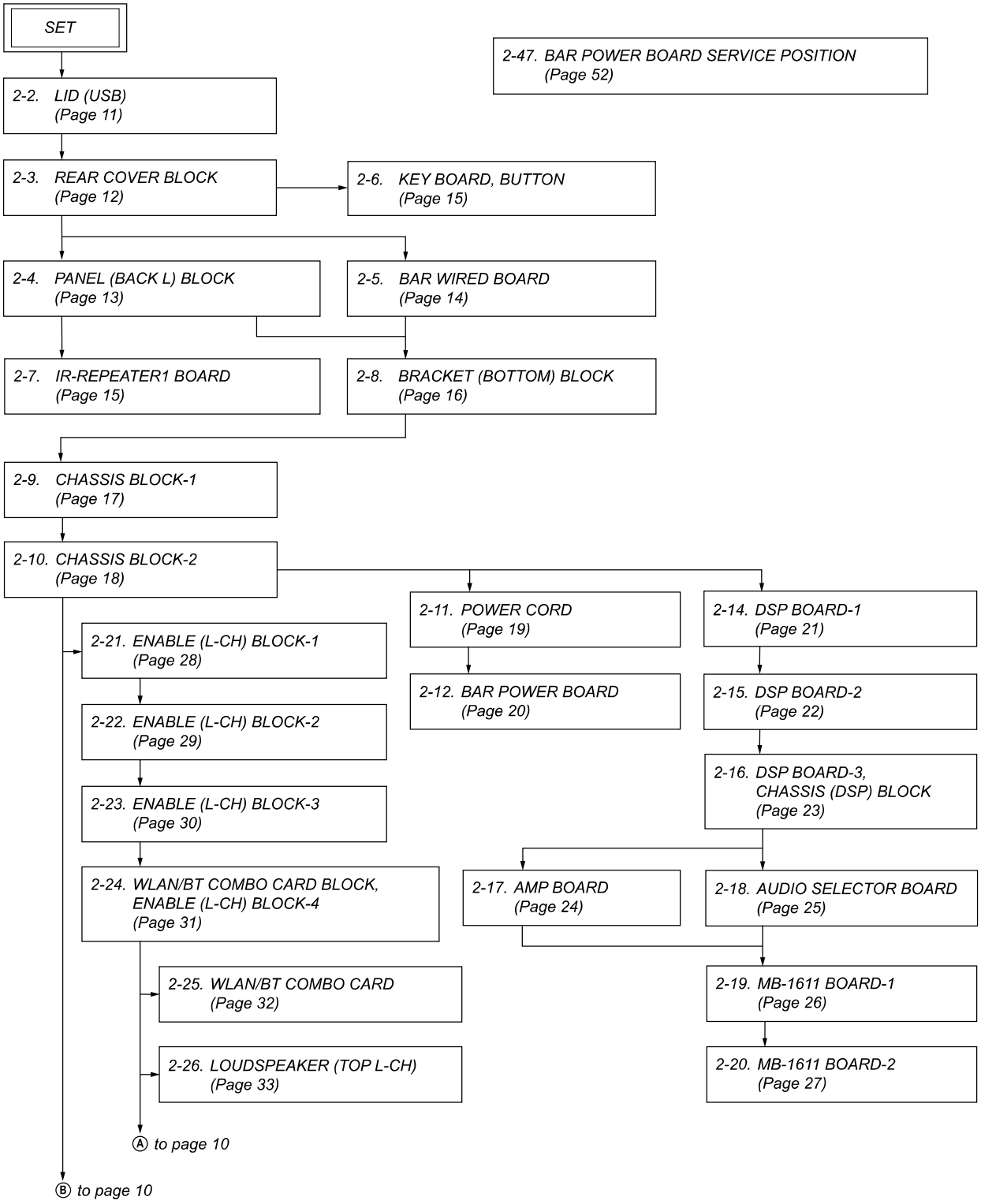
Note 2: Lay a soft piece of cloth under the unit to avoid damaging the grille assy.

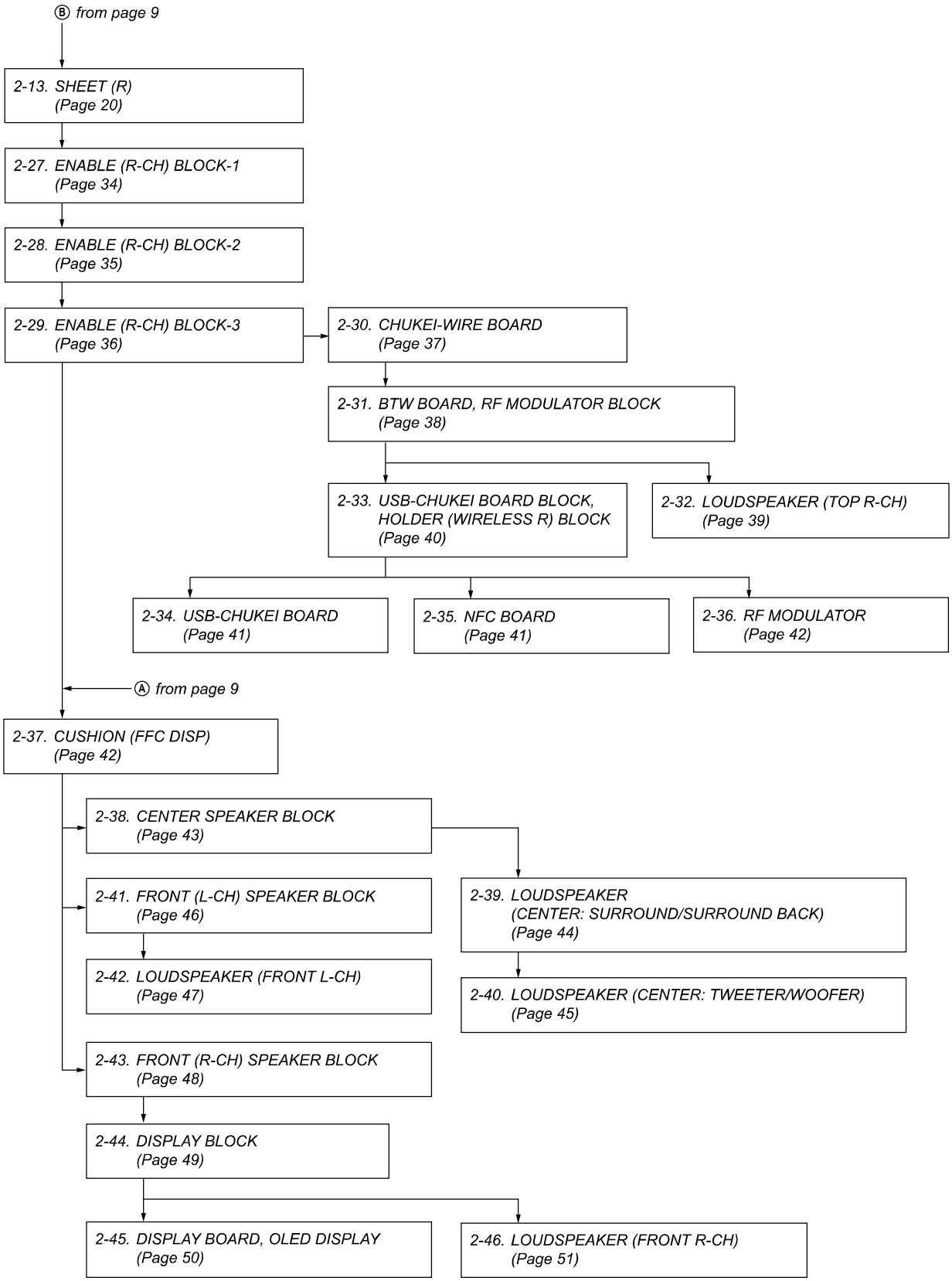
• Stand setting



- This set can be disassembled in the order shown below.

2-1. DISASSEMBLY FLOW

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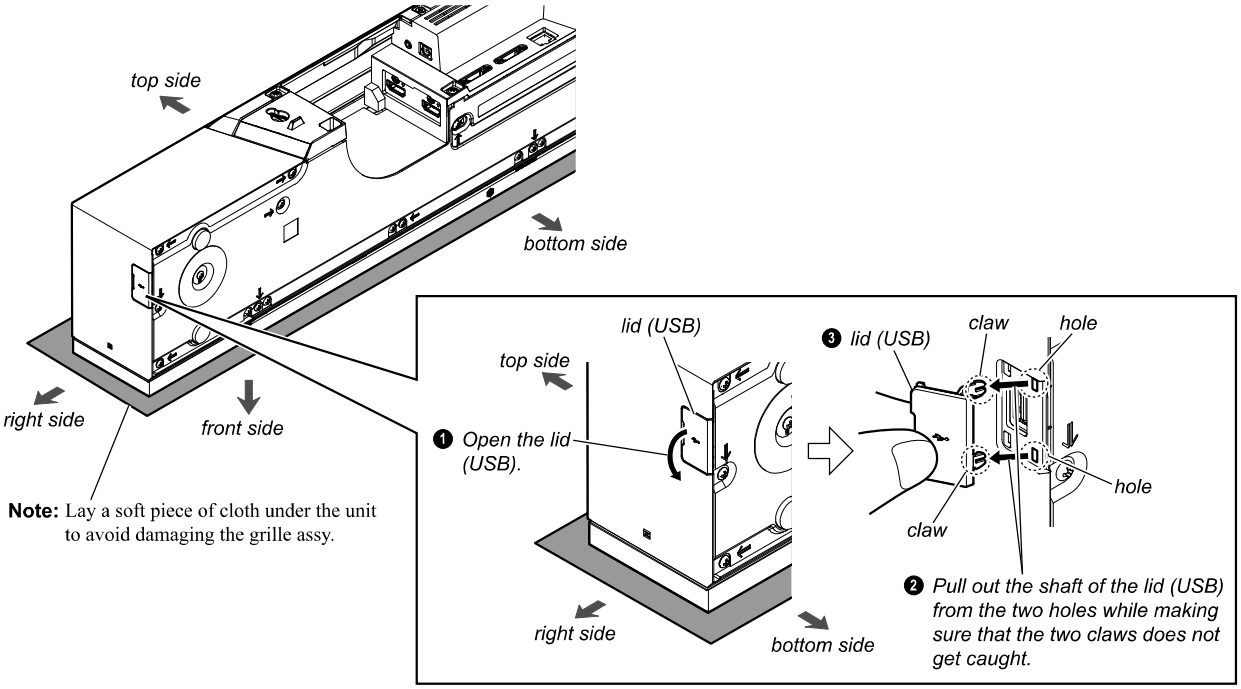
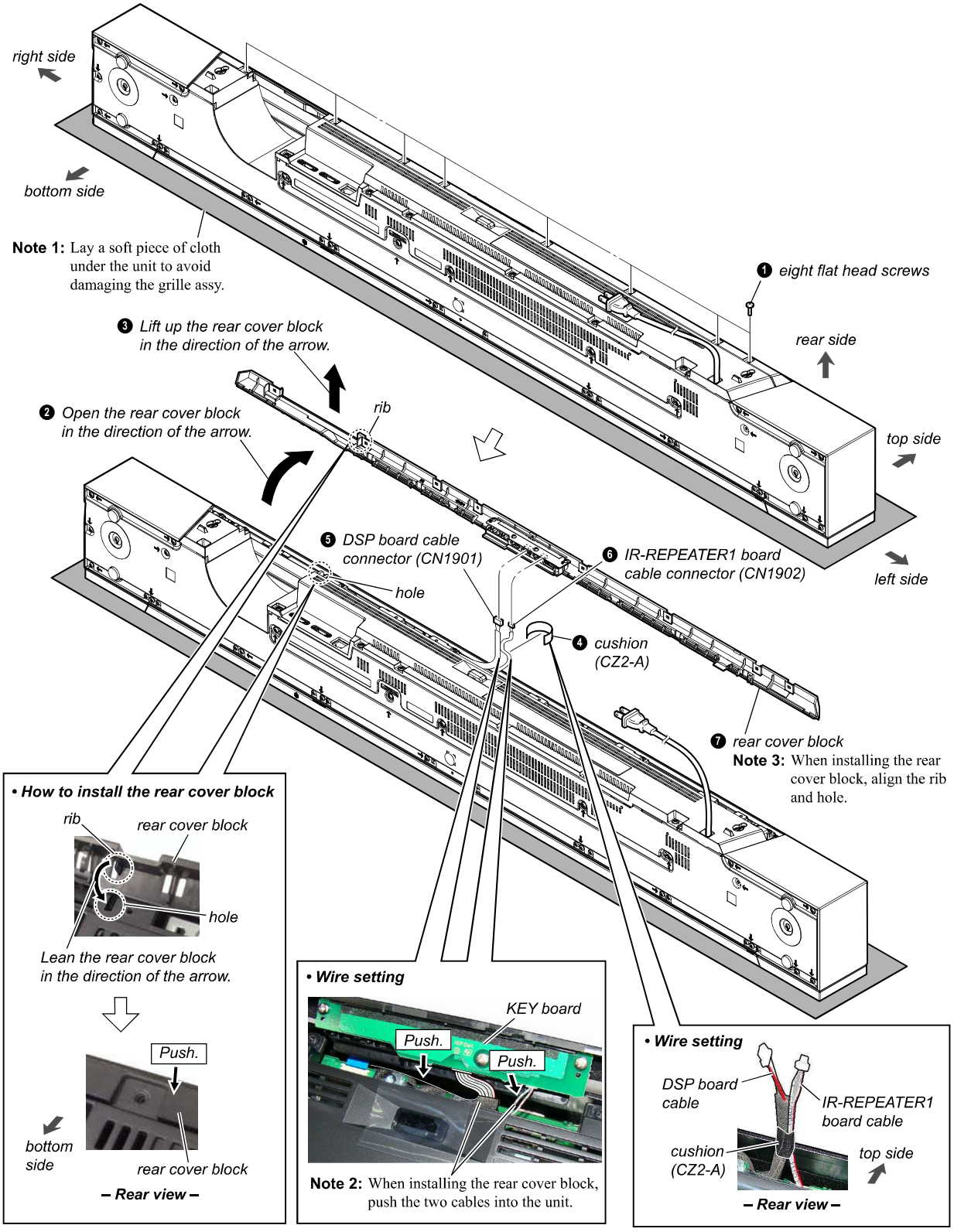
2-42. LOUDSPEAKER (FRONT L-CH)
(Page 47)
2-40. LOUDSPEAKER (CENTER: TWEETER/WOOFER)
(Page 45)
2-43. FRONT (R-CH) SPEAKER BLOCK
(Page 48)
2-44. DISPLAY BLOCK
(Page 49)
2-45. DISPLAY BOARD, OLED DISPLAY
(Page 50)
2-46. LOUDSPEAKER (FRONT R-CH)
(Page 51)

Note: Follow the disassembly procedure in the numerical order given.

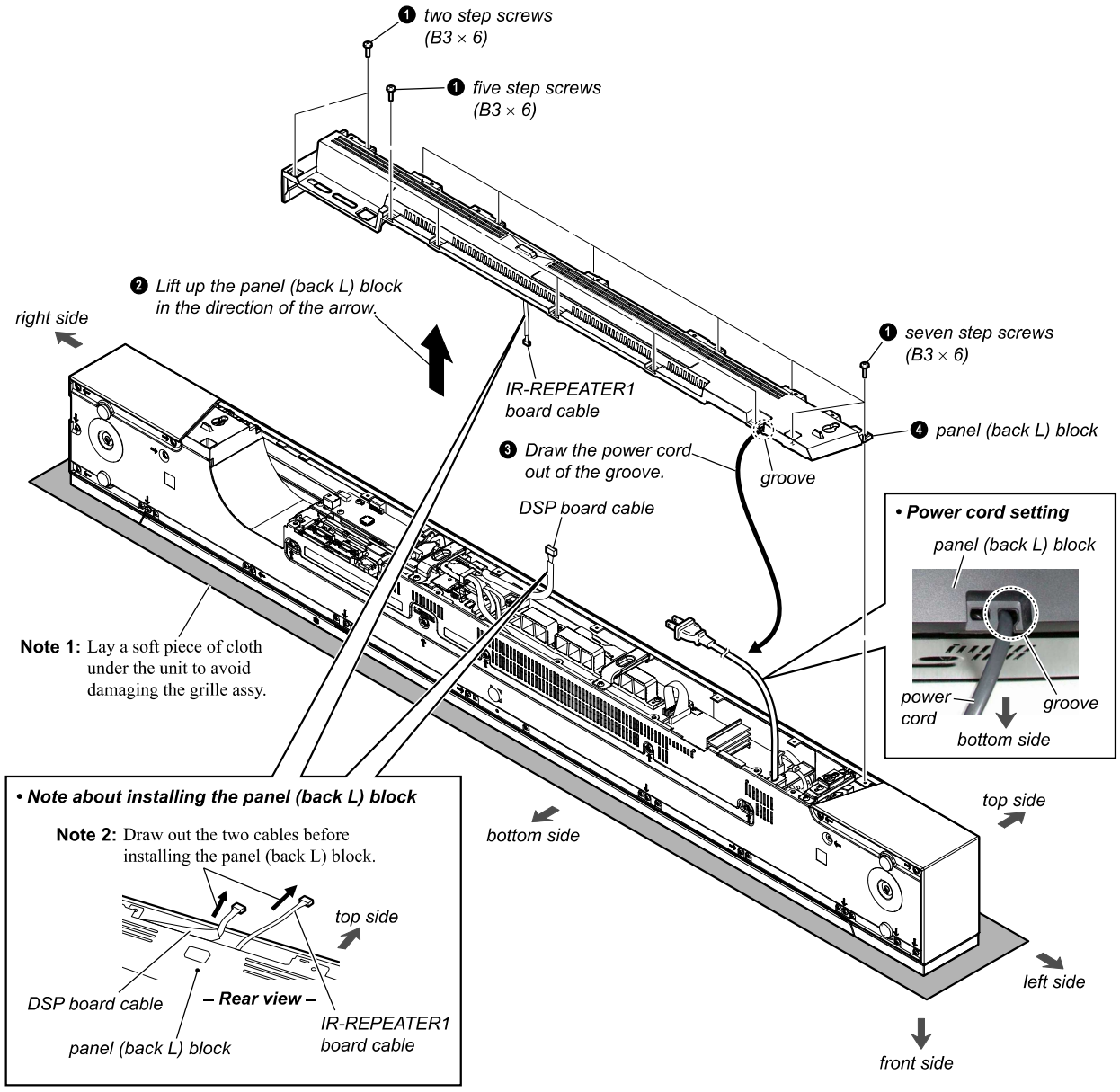
2-2. LID (USB)



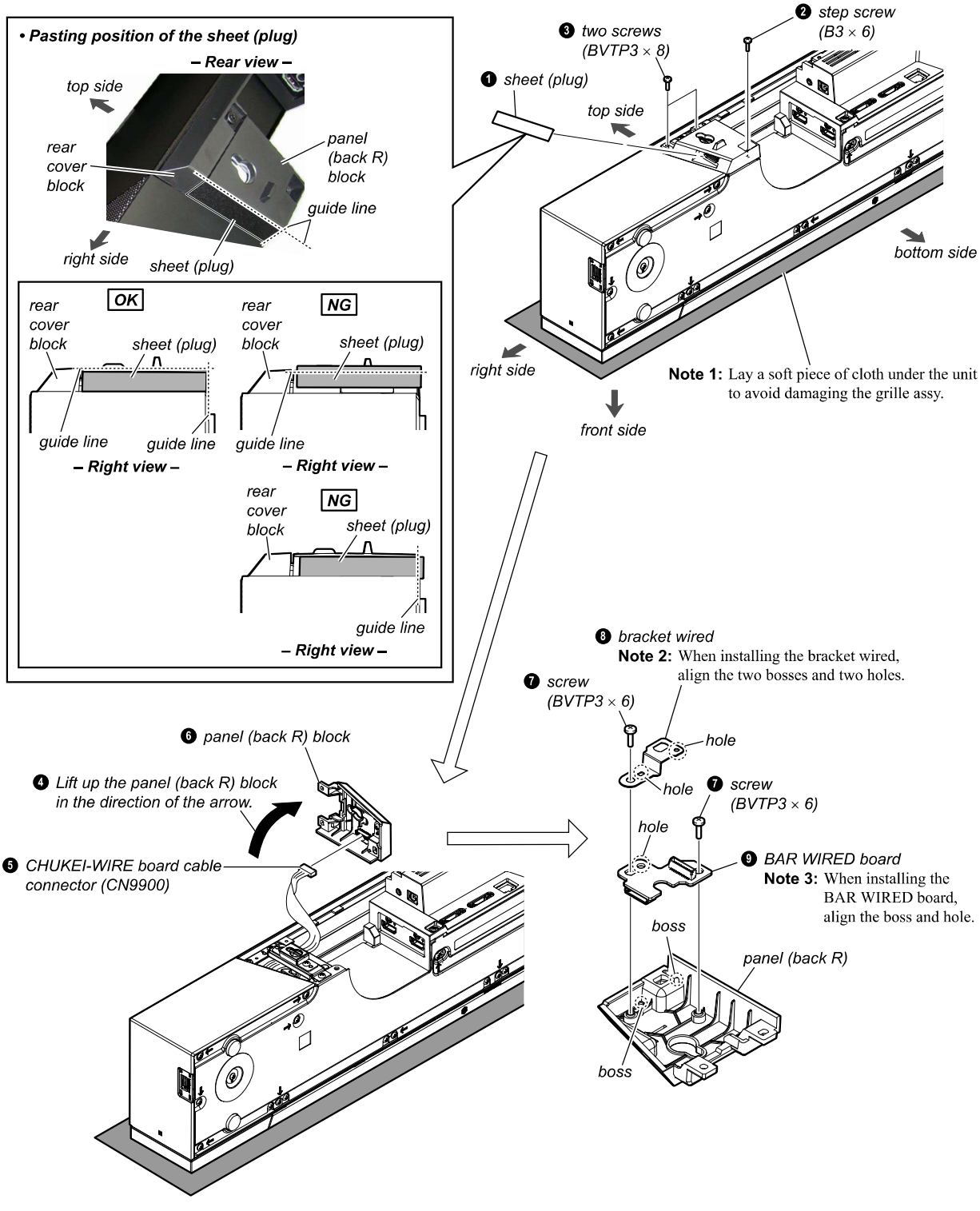
2-3. REAR COVER BLOCK



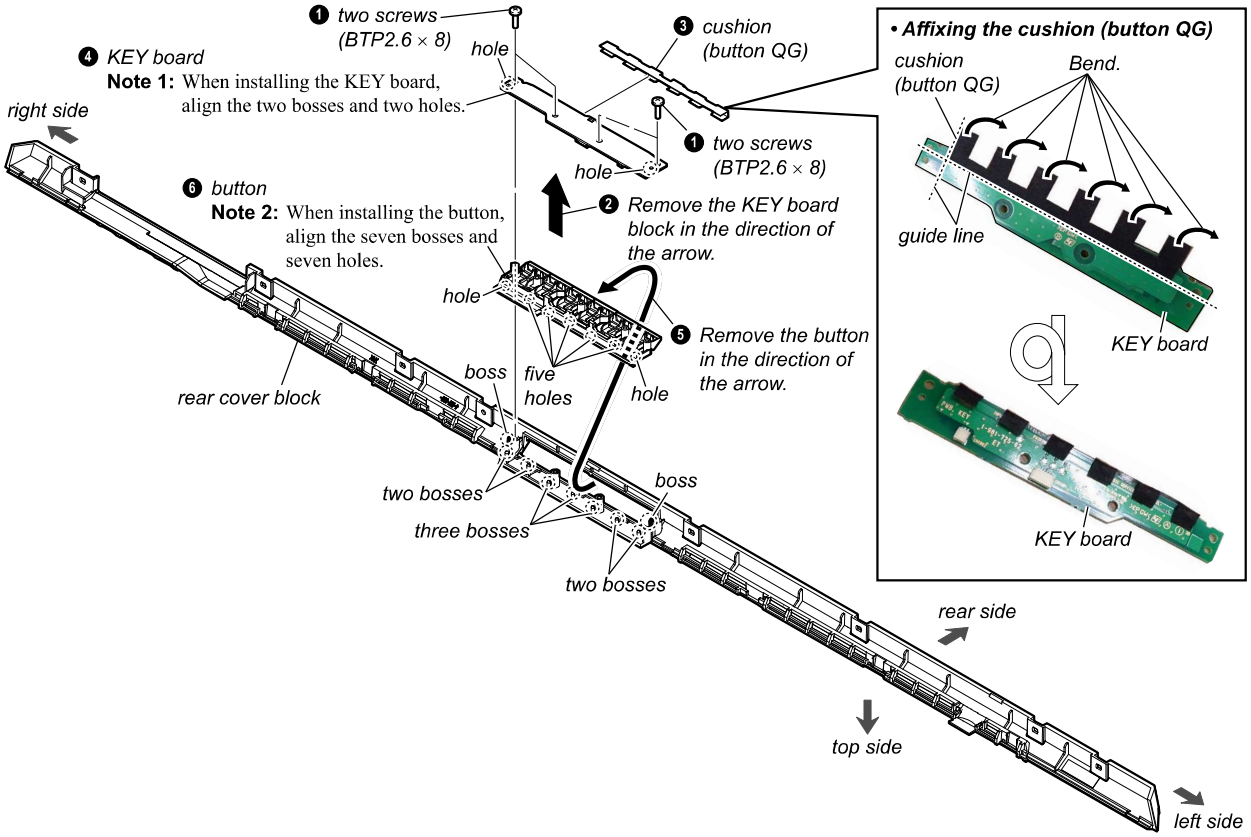
2-4. PANEL (BACK L) BLOCK



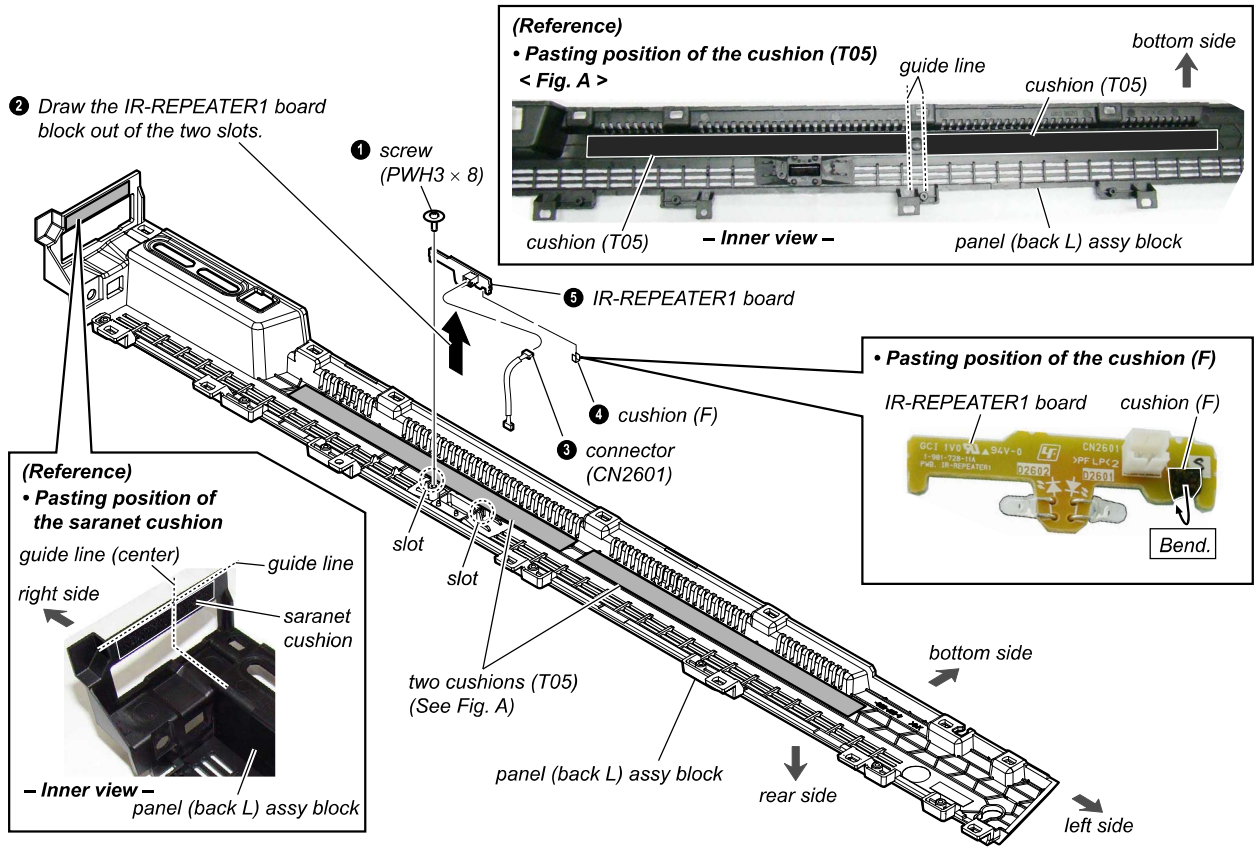
2-5. BAR WIRED BOARD



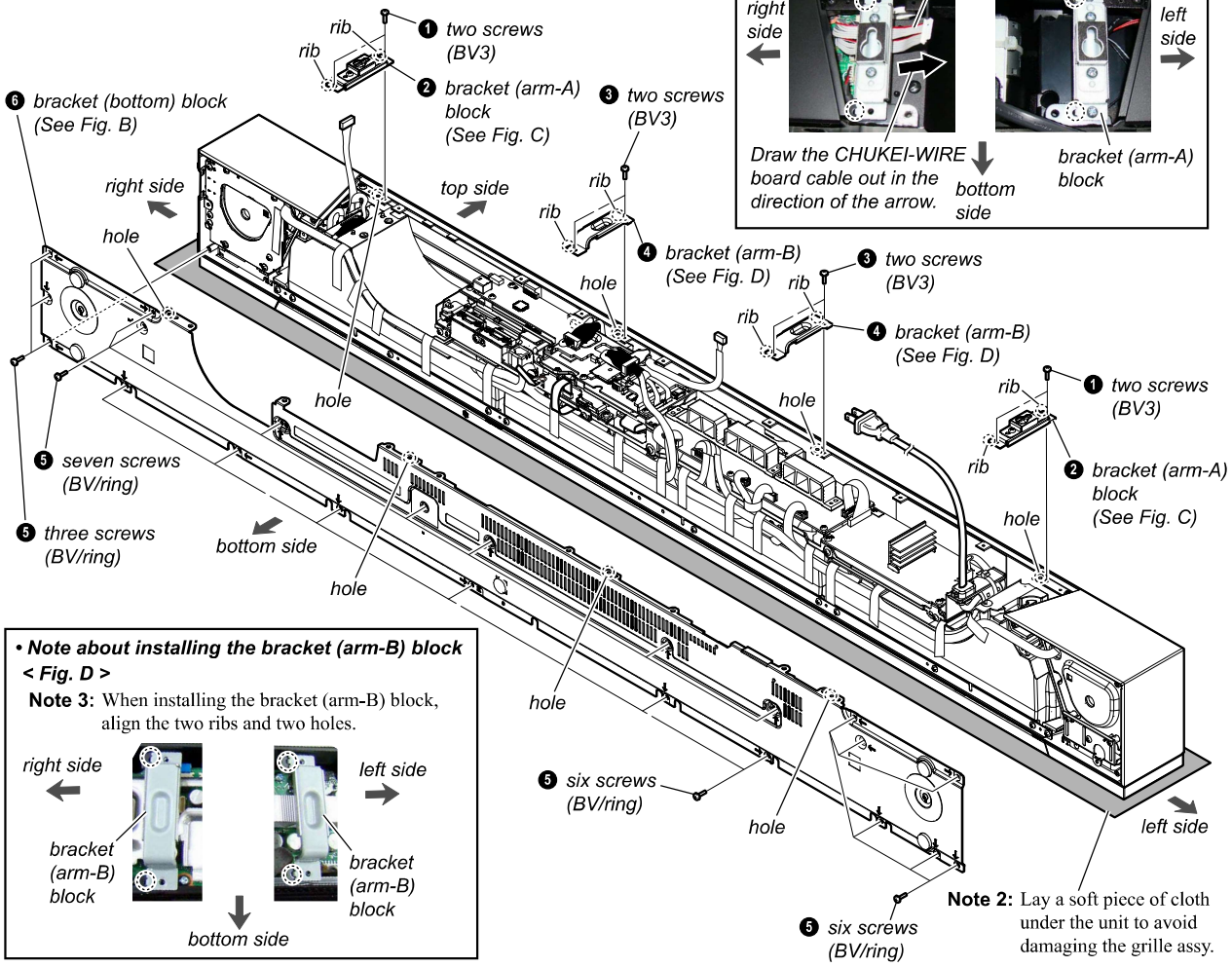
2-6. KEY BOARD, BUTTON



2-7. IR-REPEATER1 BOARD



2-8. BRACKET (BOTTOM) BLOCK



• *Note about installing the bracket (arm-A) block*
< Fig. C >

Note 1: When installing the bracket (arm-A) block, align the two ribs and two holes.
(Draw out the cable before installation)

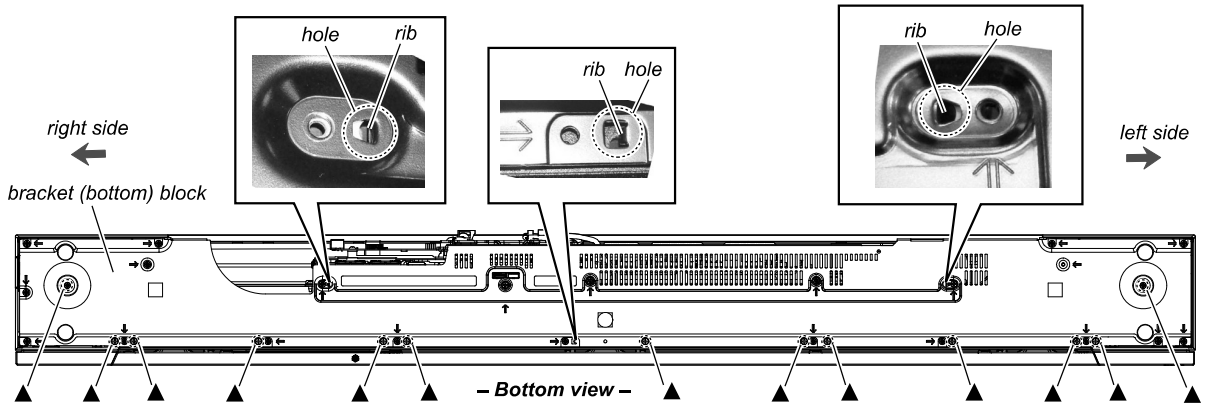
Note 2: Lay a soft piece of cloth under the unit to avoid damaging the grille assy.

• *Note about installing the bracket (arm-B) block*
< Fig. D >

Note 3: When installing the bracket (arm-B) block, align the two ribs and two holes.

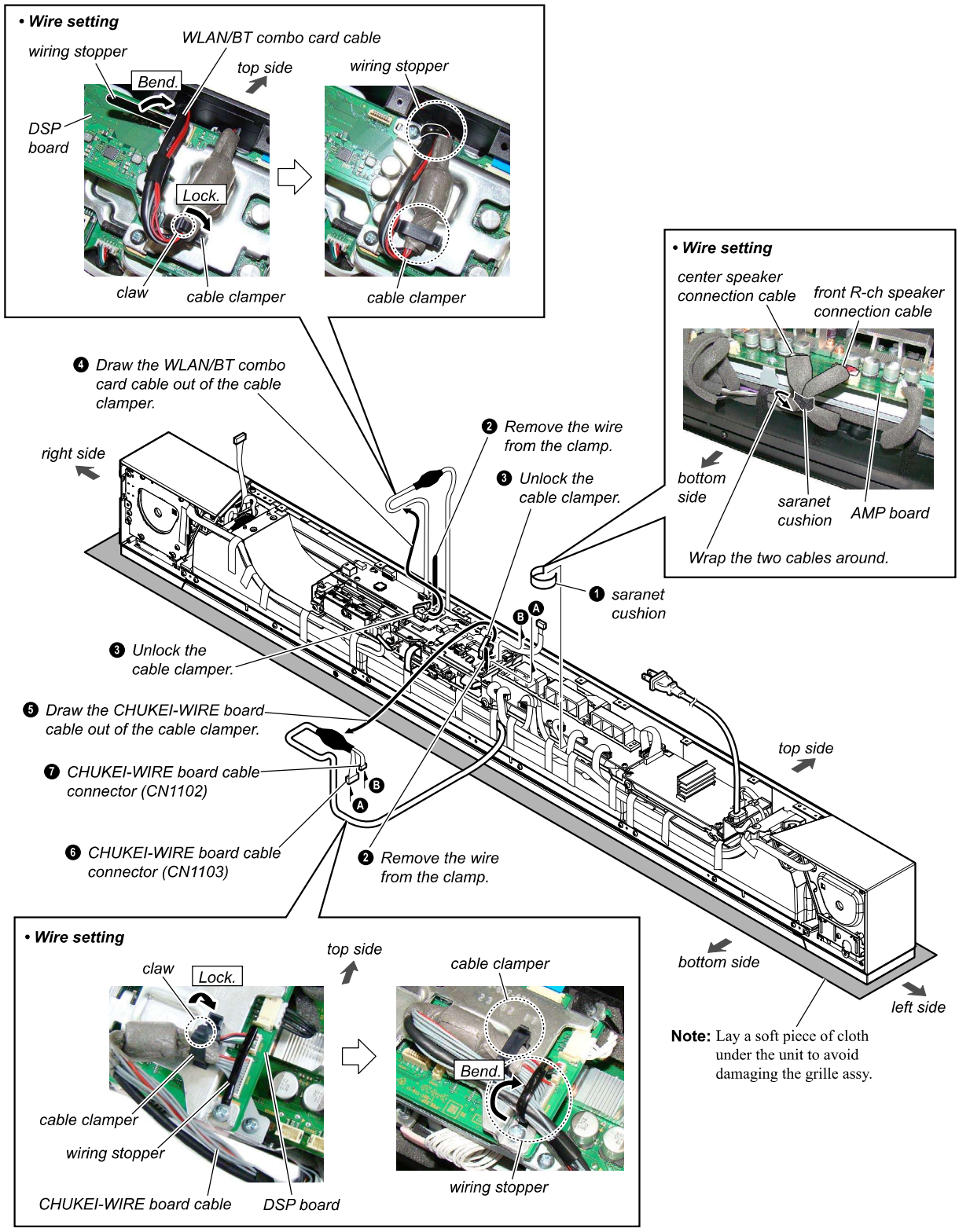
• *Notes when assembling or disassembling the bracket (bottom) block*
< Fig. B >

Disassembling: Removing the thirteen screws at the ▲ mark screws is not necessary.
Assembling: When installing the bracket (bottom) block, align the three ribs and three holes.

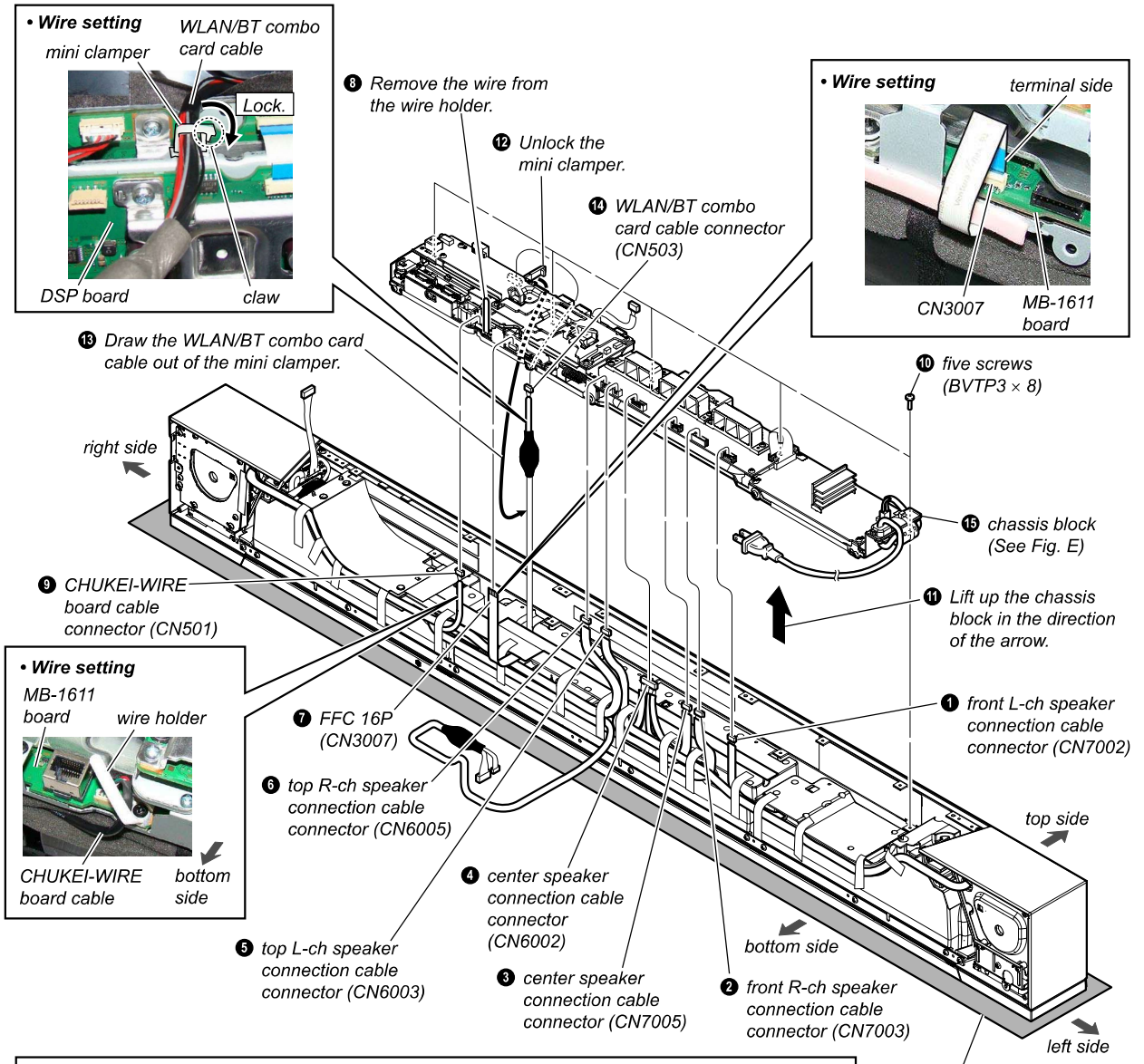


2-9. CHASSIS BLOCK-1

• Continued on 2-10 (page 18).



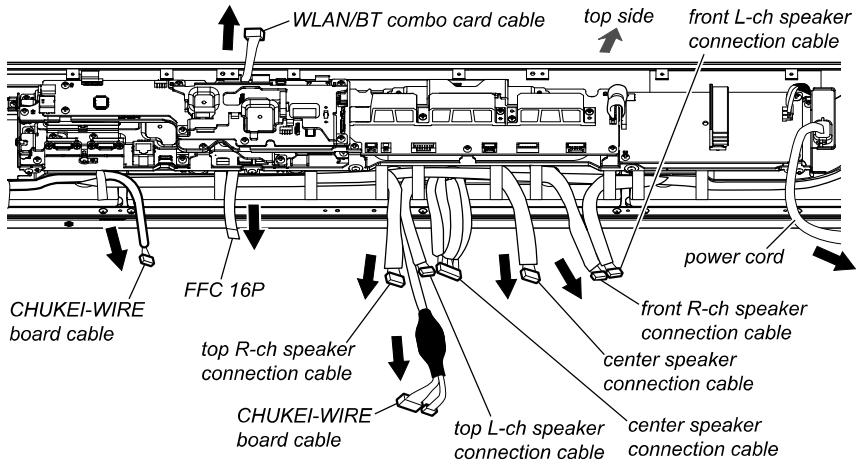
2-10. CHASSIS BLOCK-2



• ***Note about installing the chassis block***

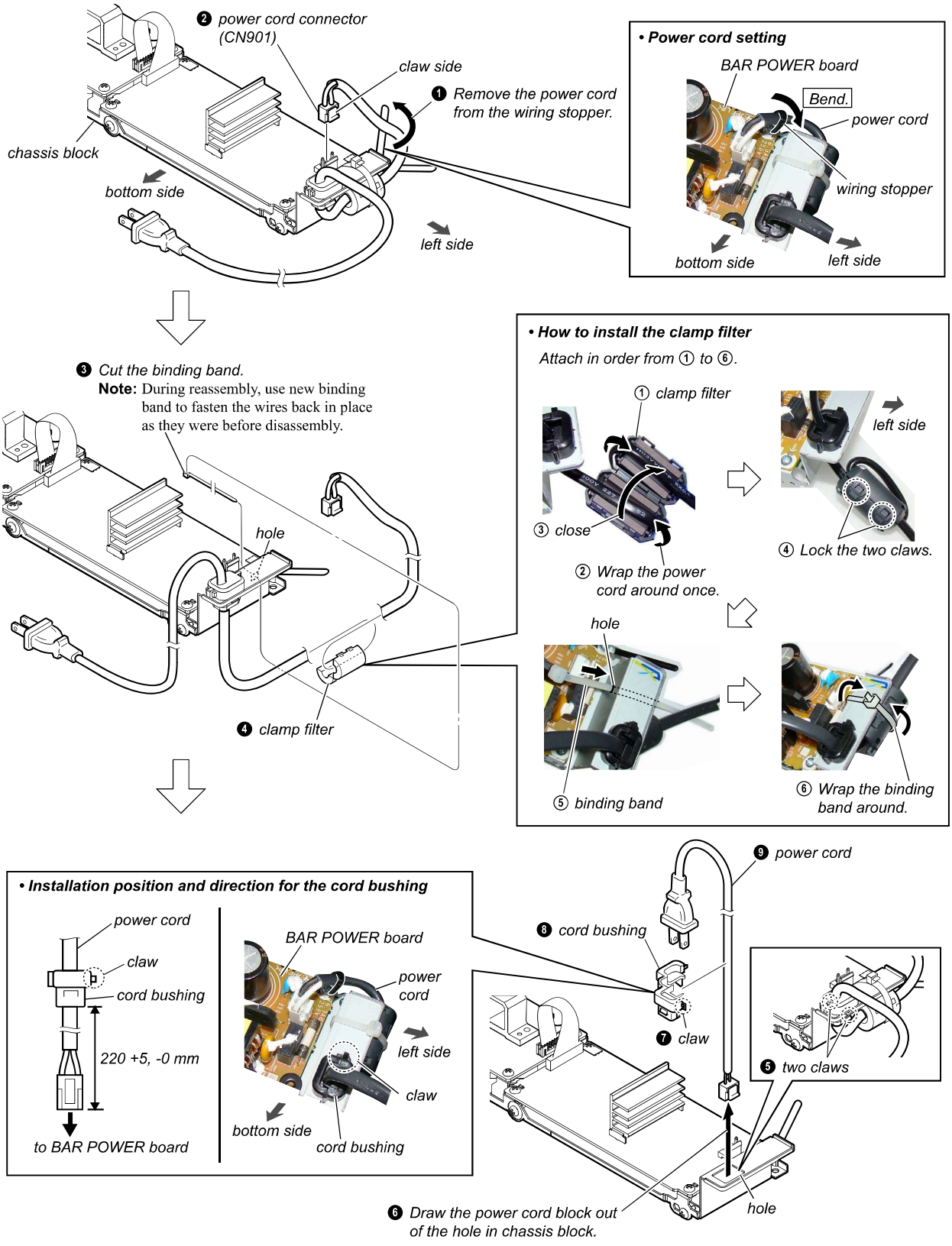
< Fig. E >

Note 2: Draw out the nine cables, FFC and power cord before installing the chassis block.

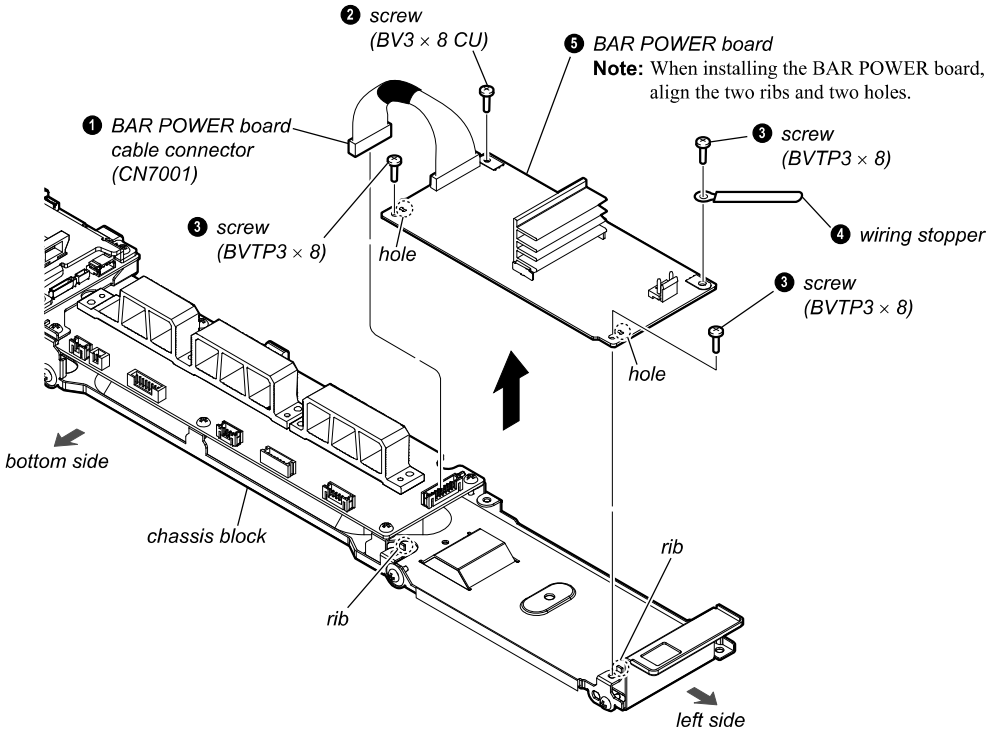


Note 1: Lay a soft piece of cloth under the unit to avoid damaging the grille assy.

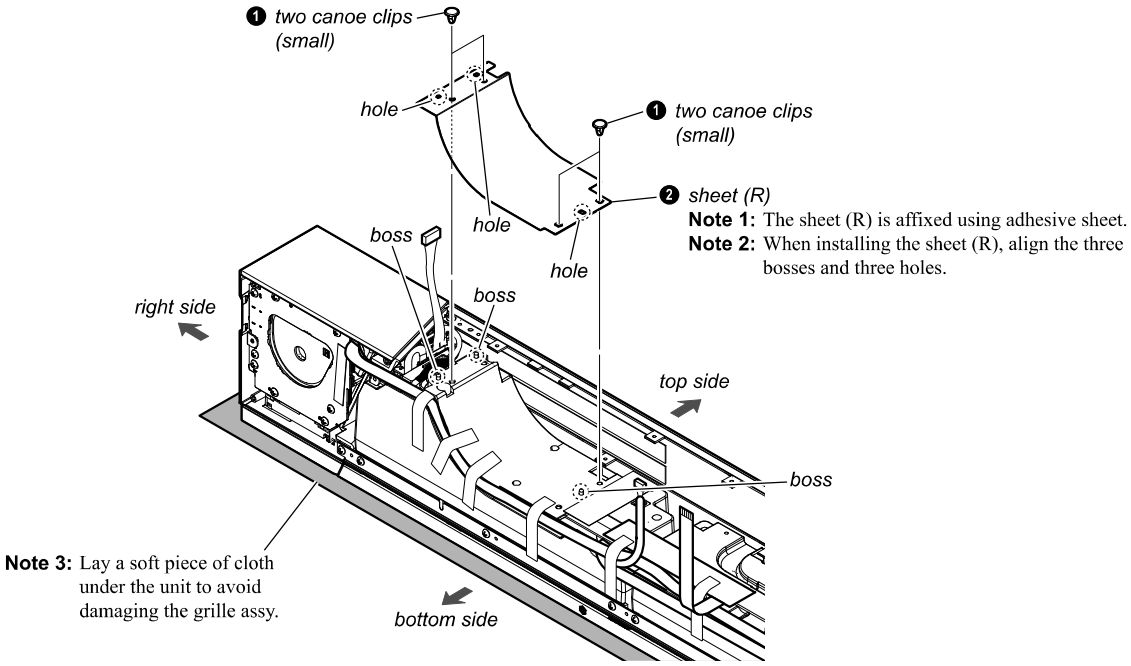
2-11. POWER CORD



2-12. BAR POWER BOARD

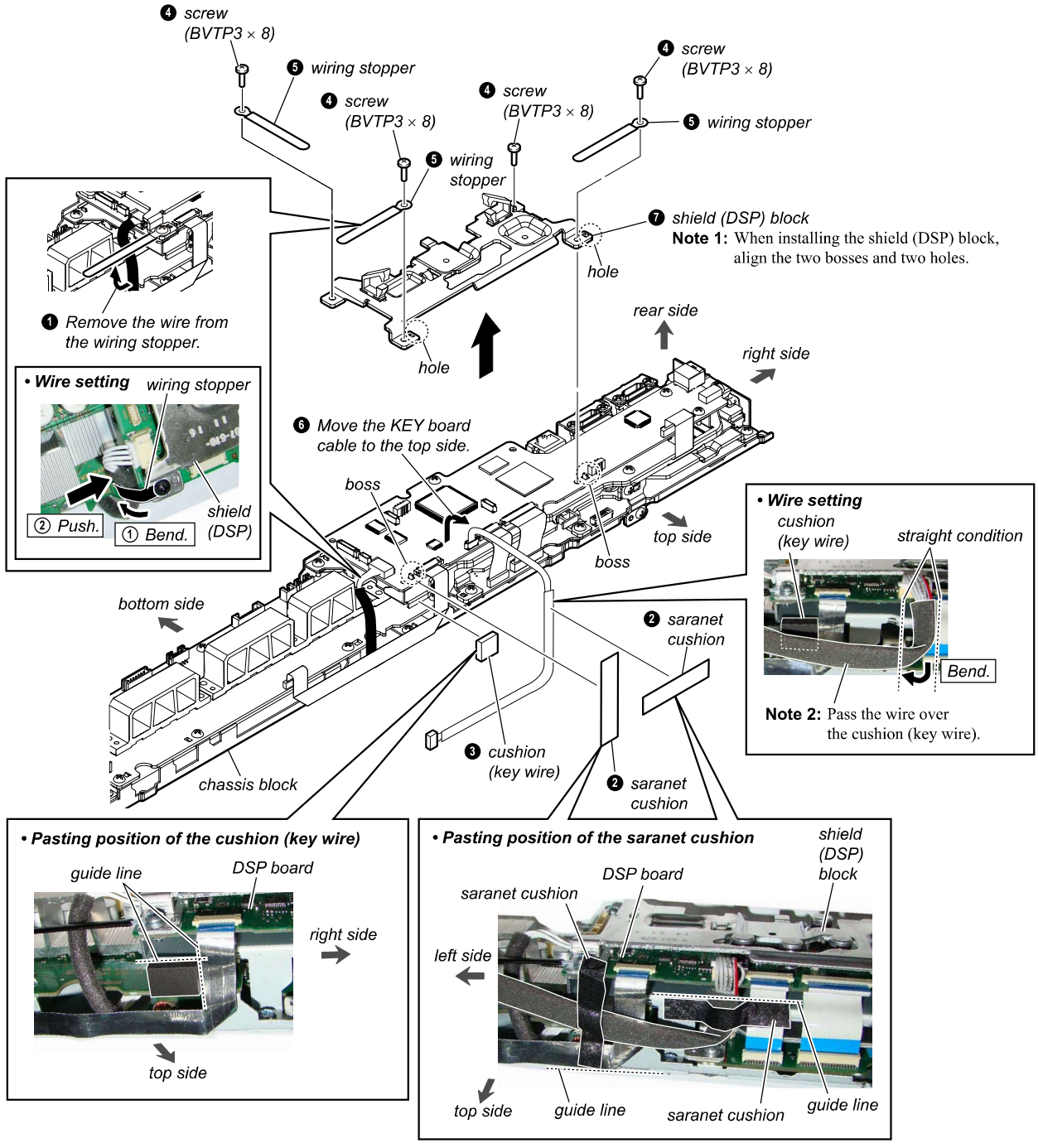


2-13. SHEET (R)



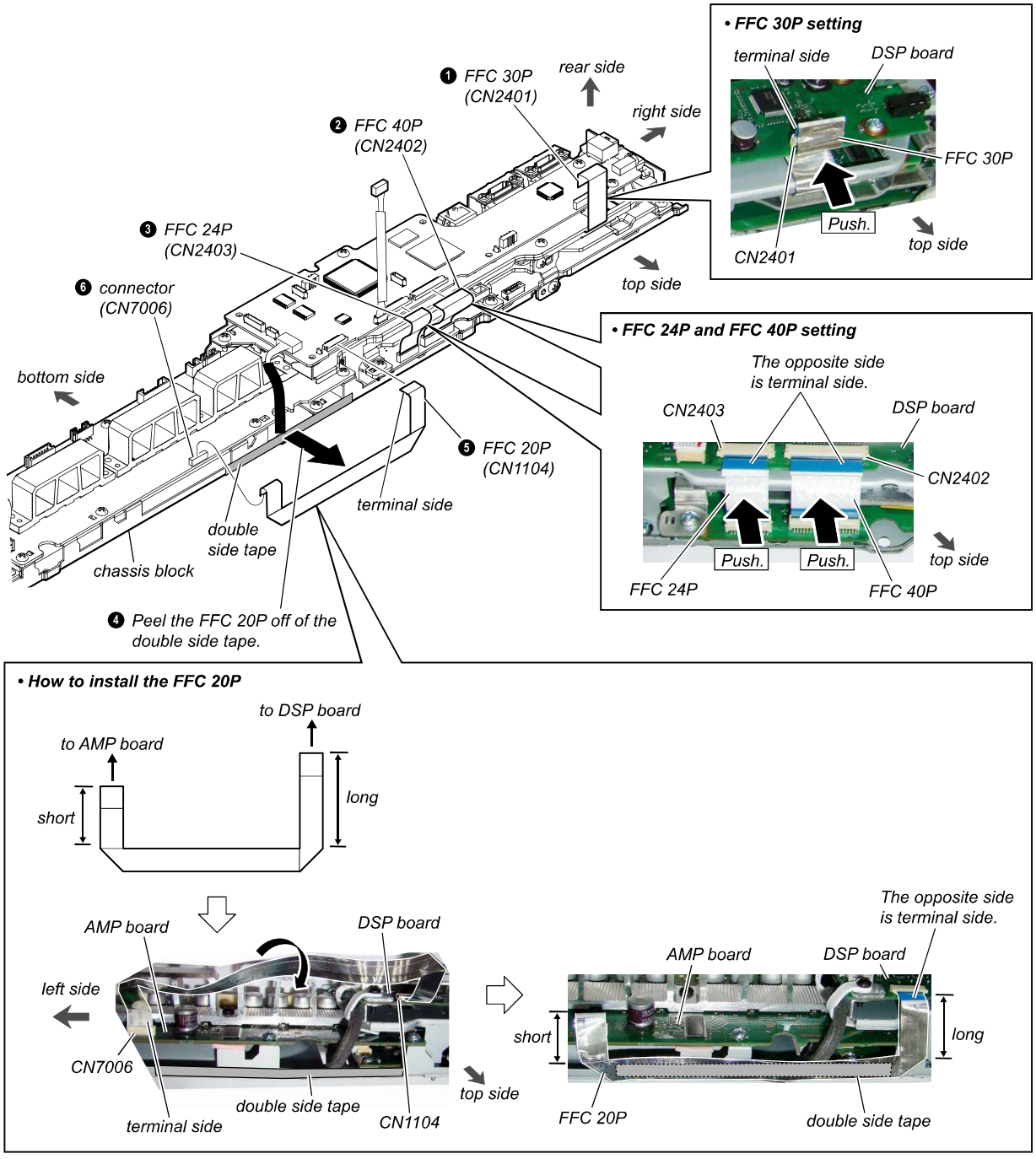
2-14. DSP BOARD-1

• Continued on 2-15 (page 22).

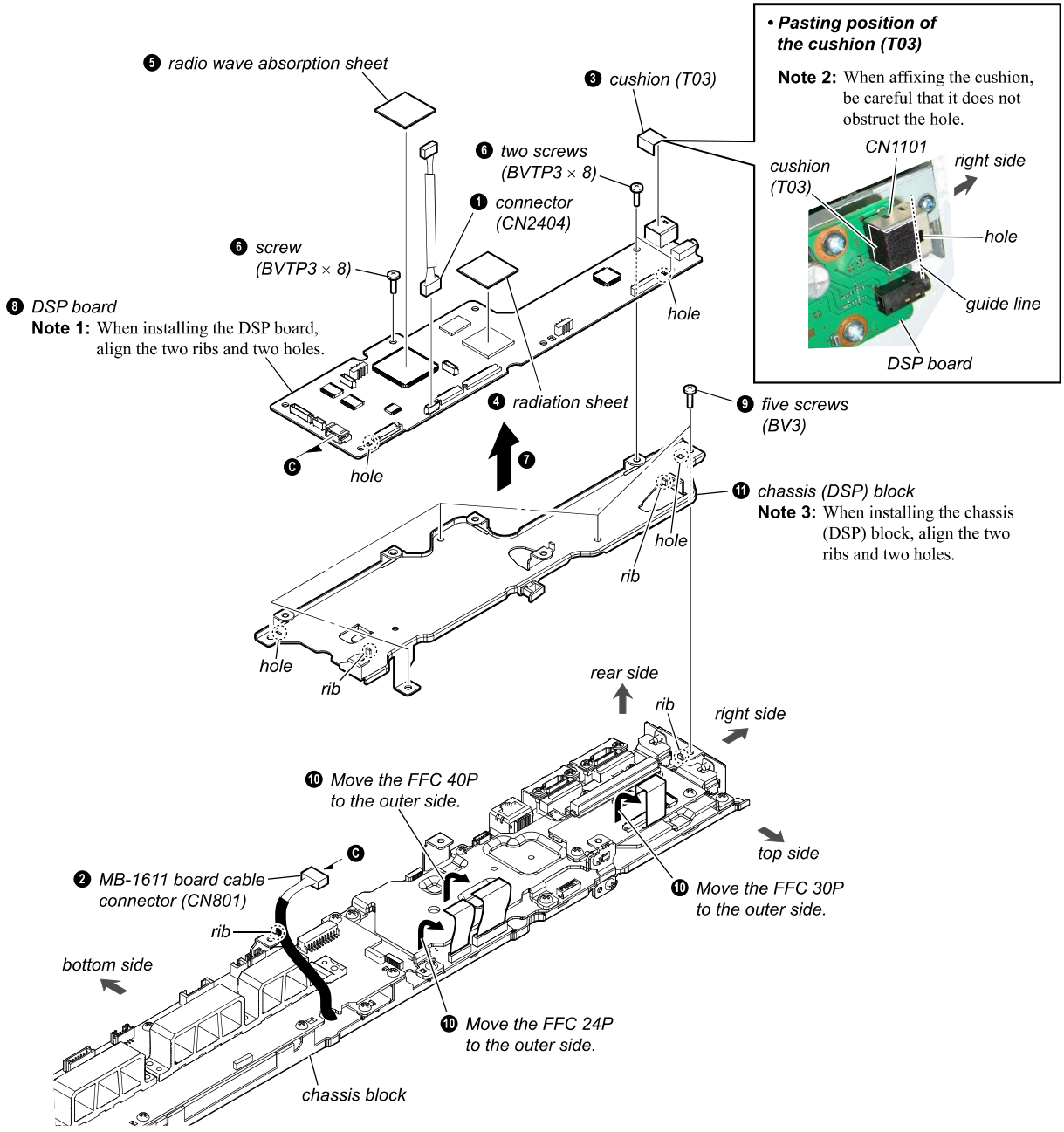


2-15. DSP BOARD-2

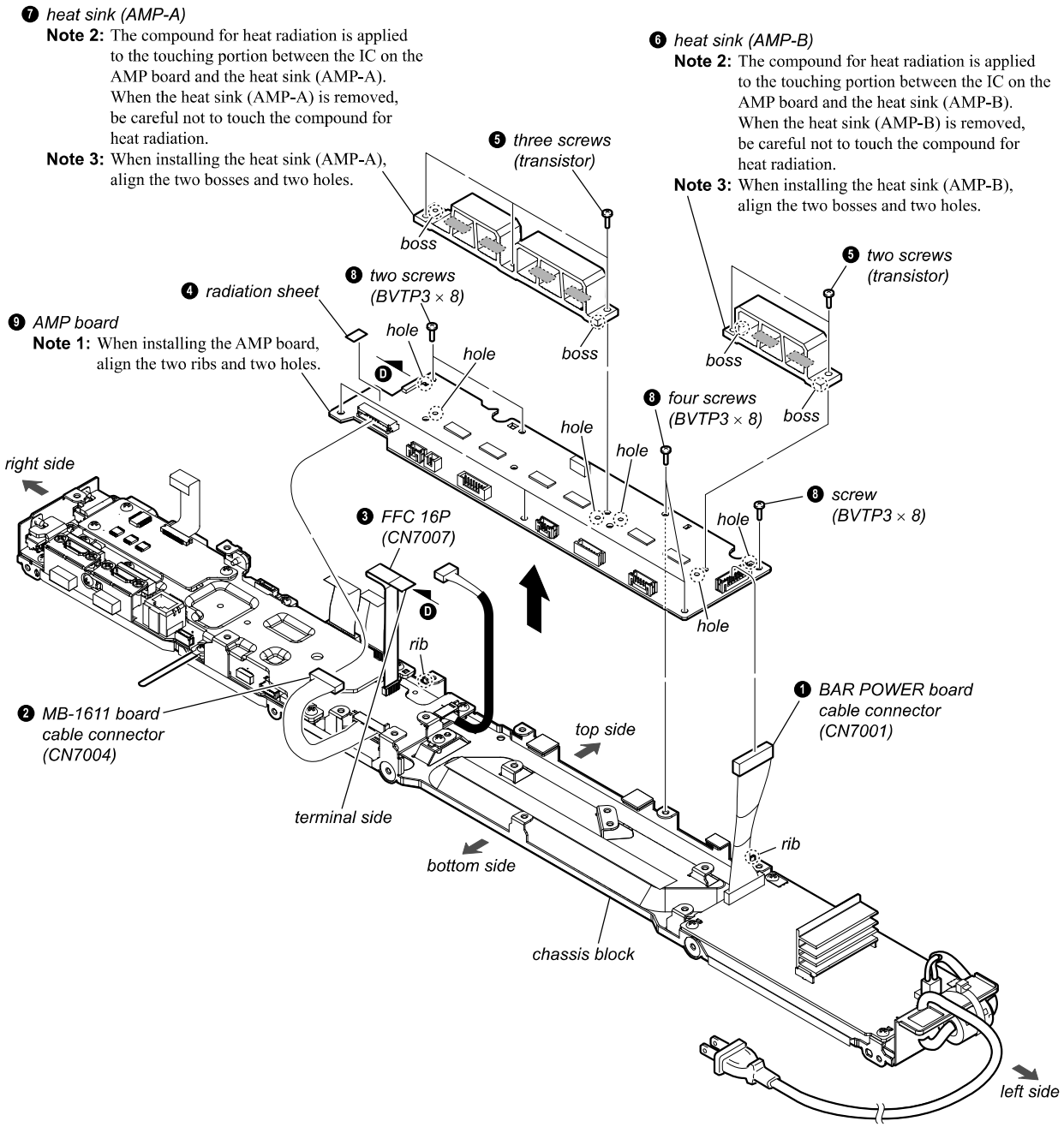
• Continued on 2-16 (page 23).



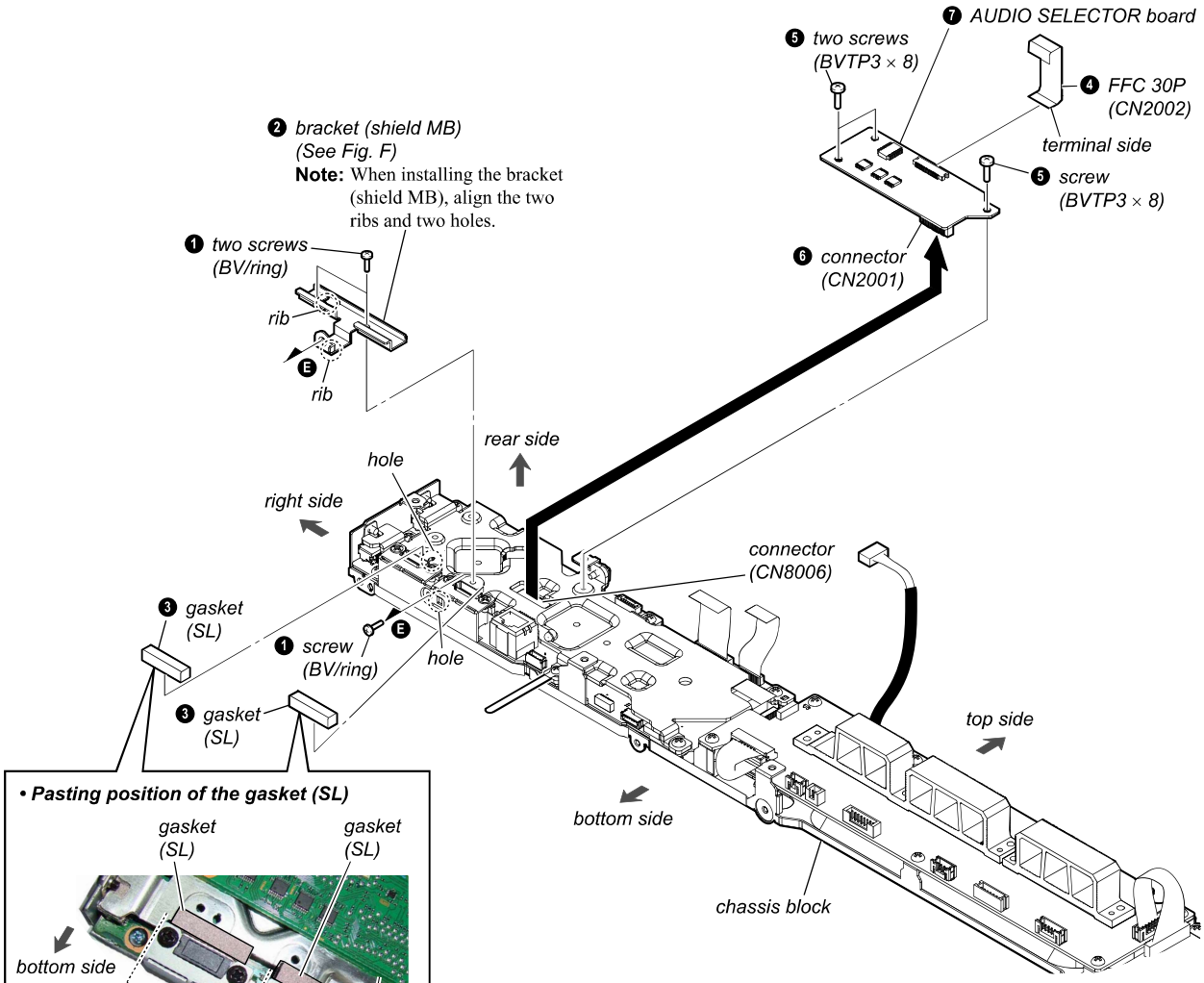
2-16. DSP BOARD-3, CHASSIS (DSP) BLOCK



2-17. AMP BOARD

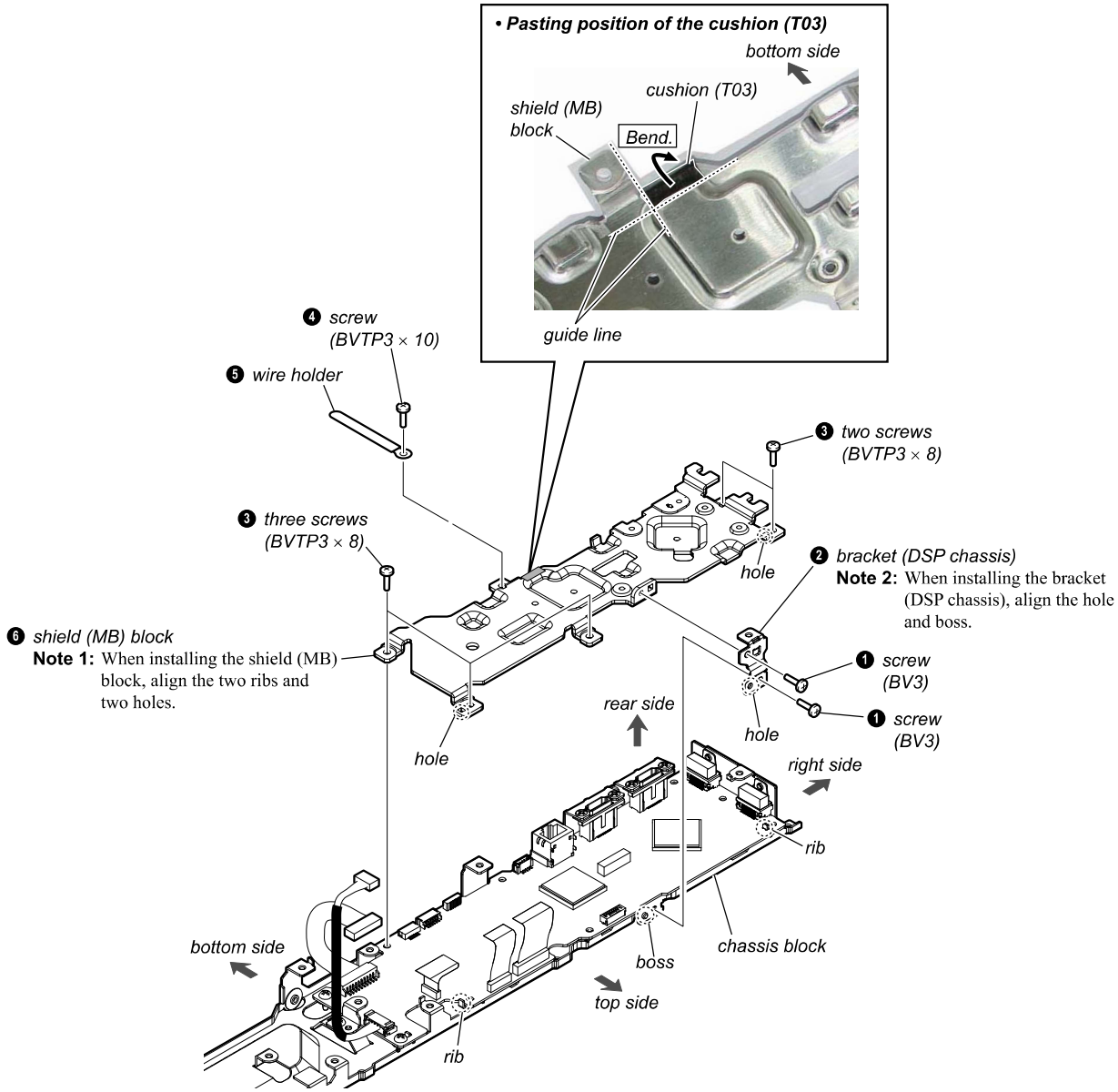


2-18. AUDIO SELECTOR BOARD

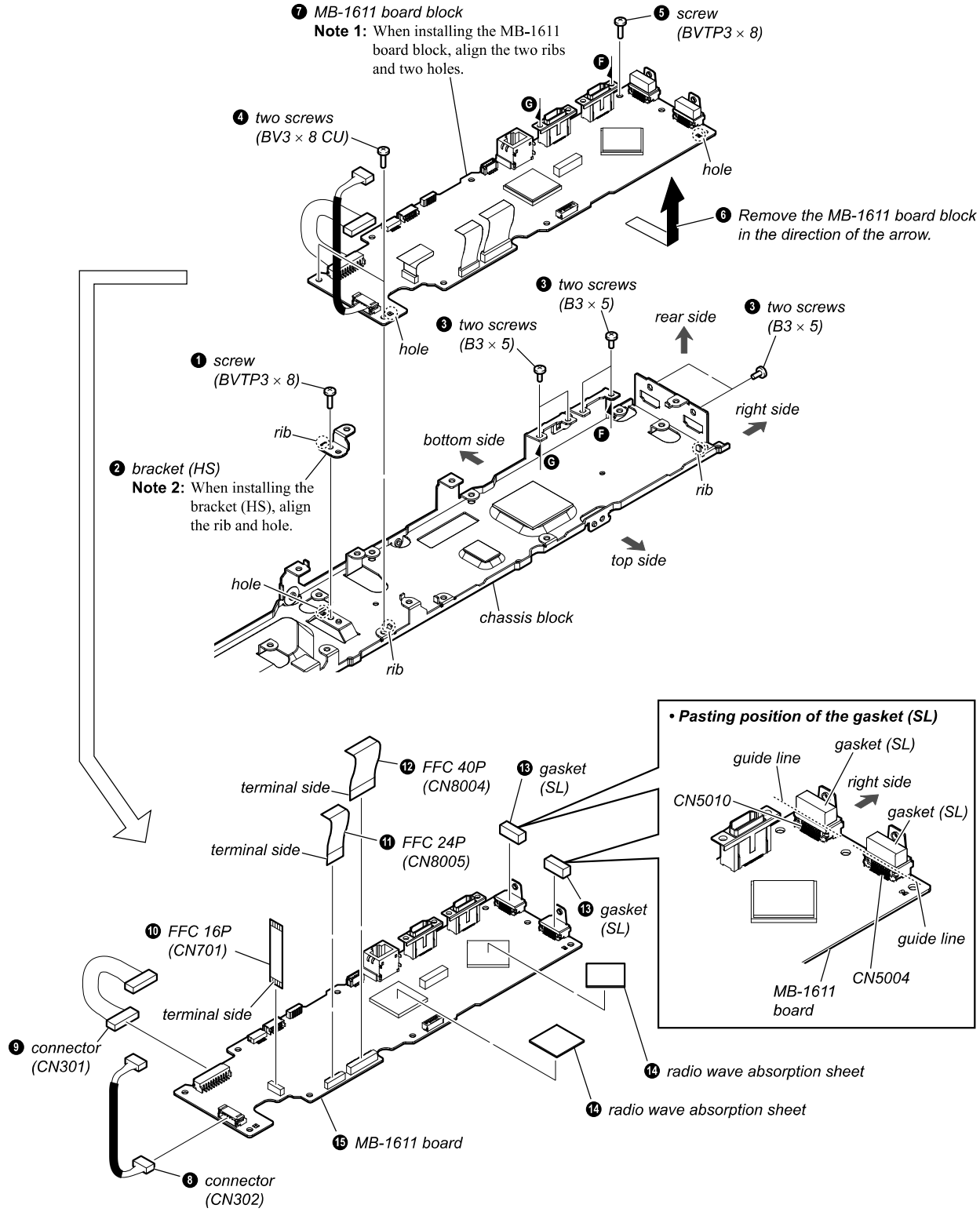


2-19. MB-1611 BOARD-1

• Continued on 2-20 (page 27).

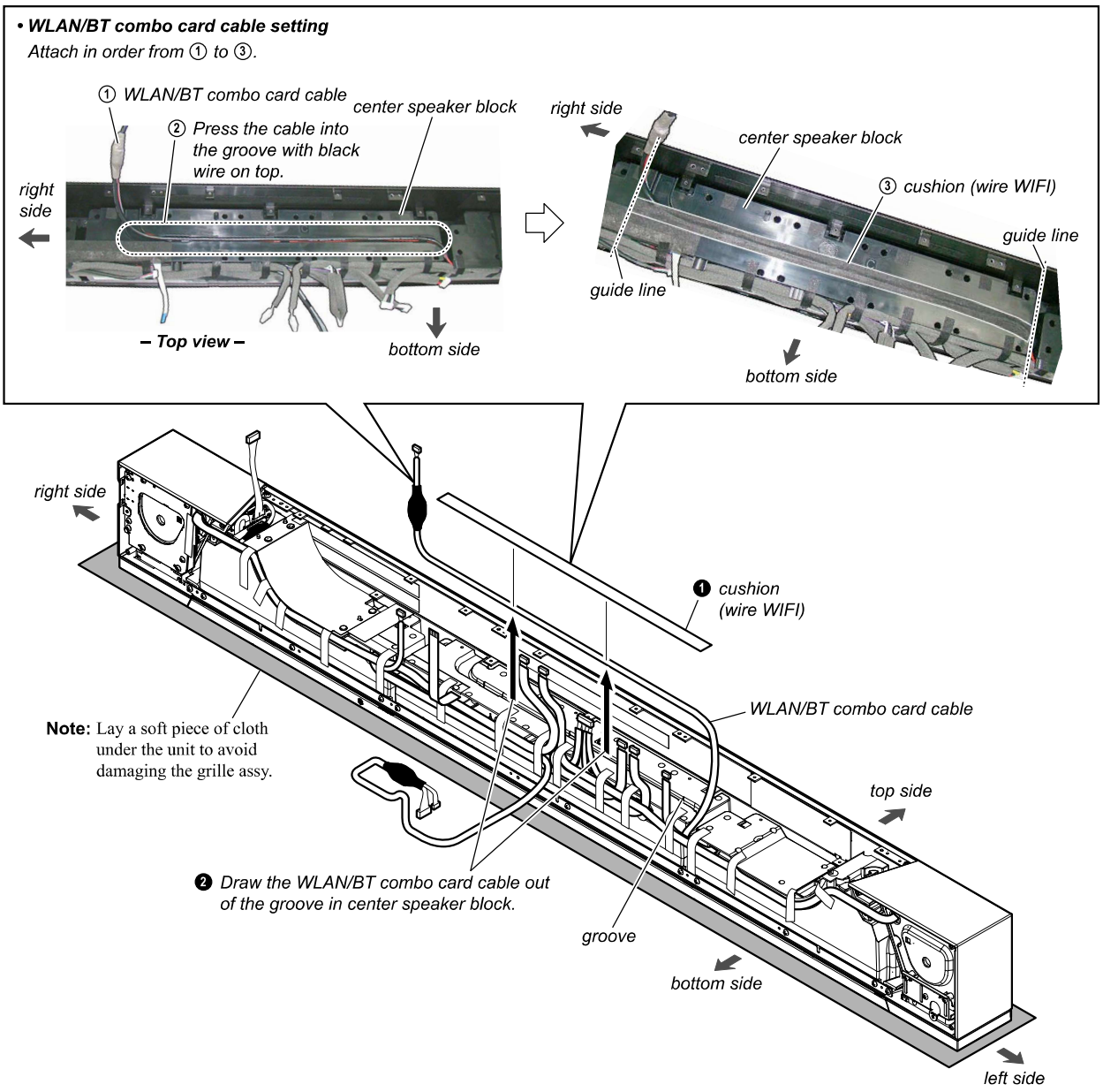


2-20. MB-1611 BOARD-2



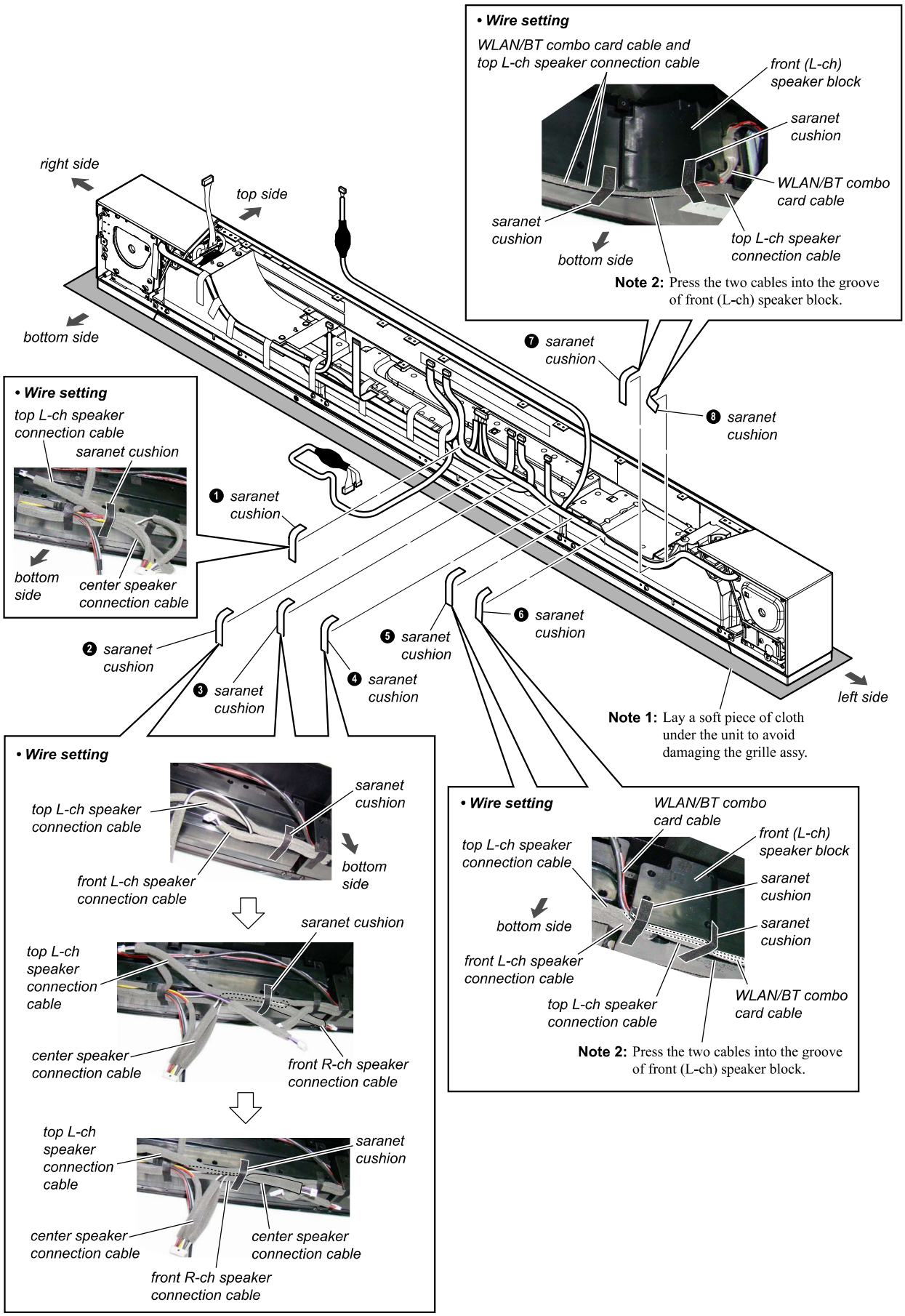
2-21. ENABLE (L-CH) BLOCK-1

• Continued on 2-22 (page 29).



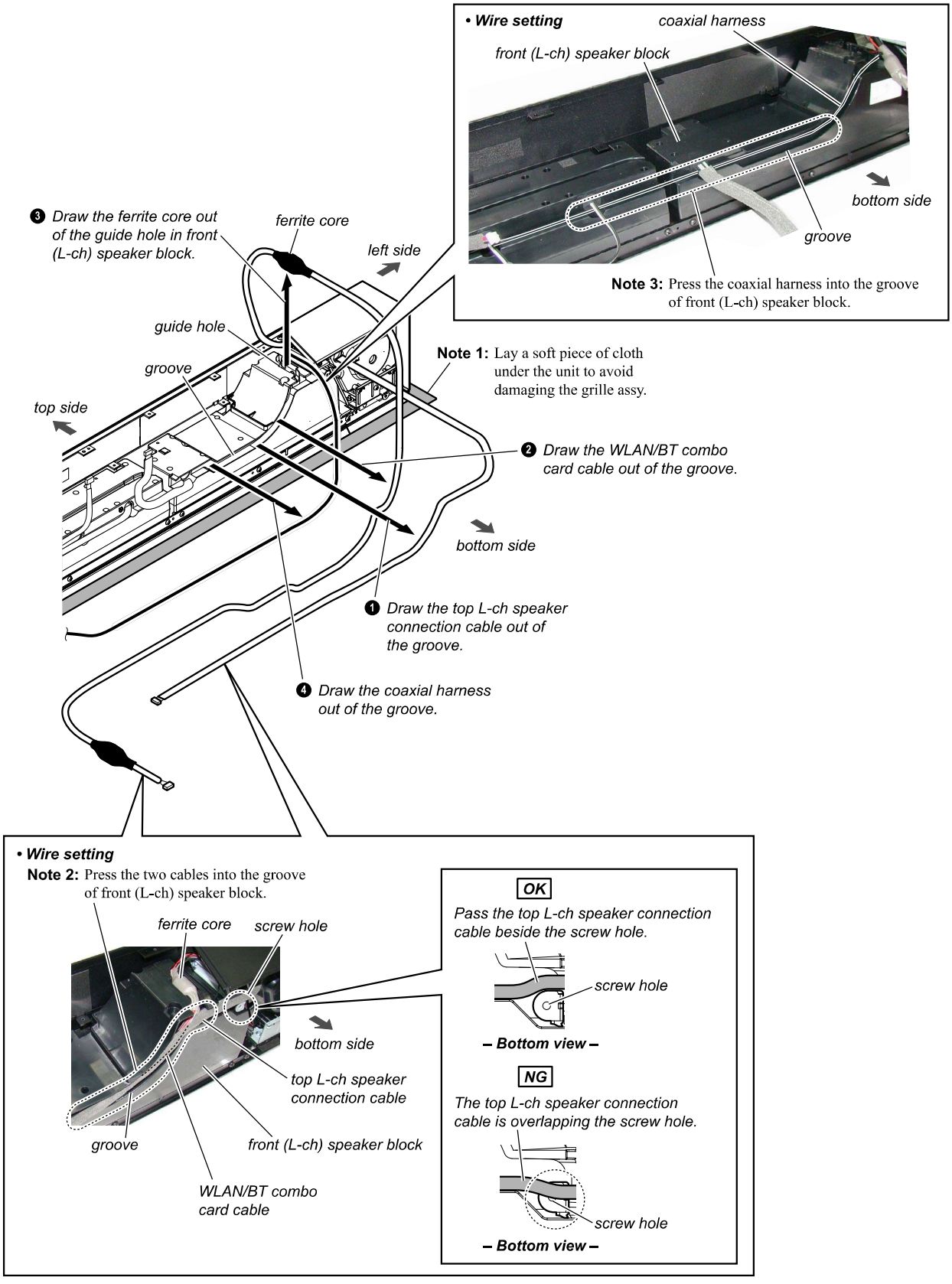
2-22. ENABLE (L-CH) BLOCK-2

• Continued on 2-23 (page 30).

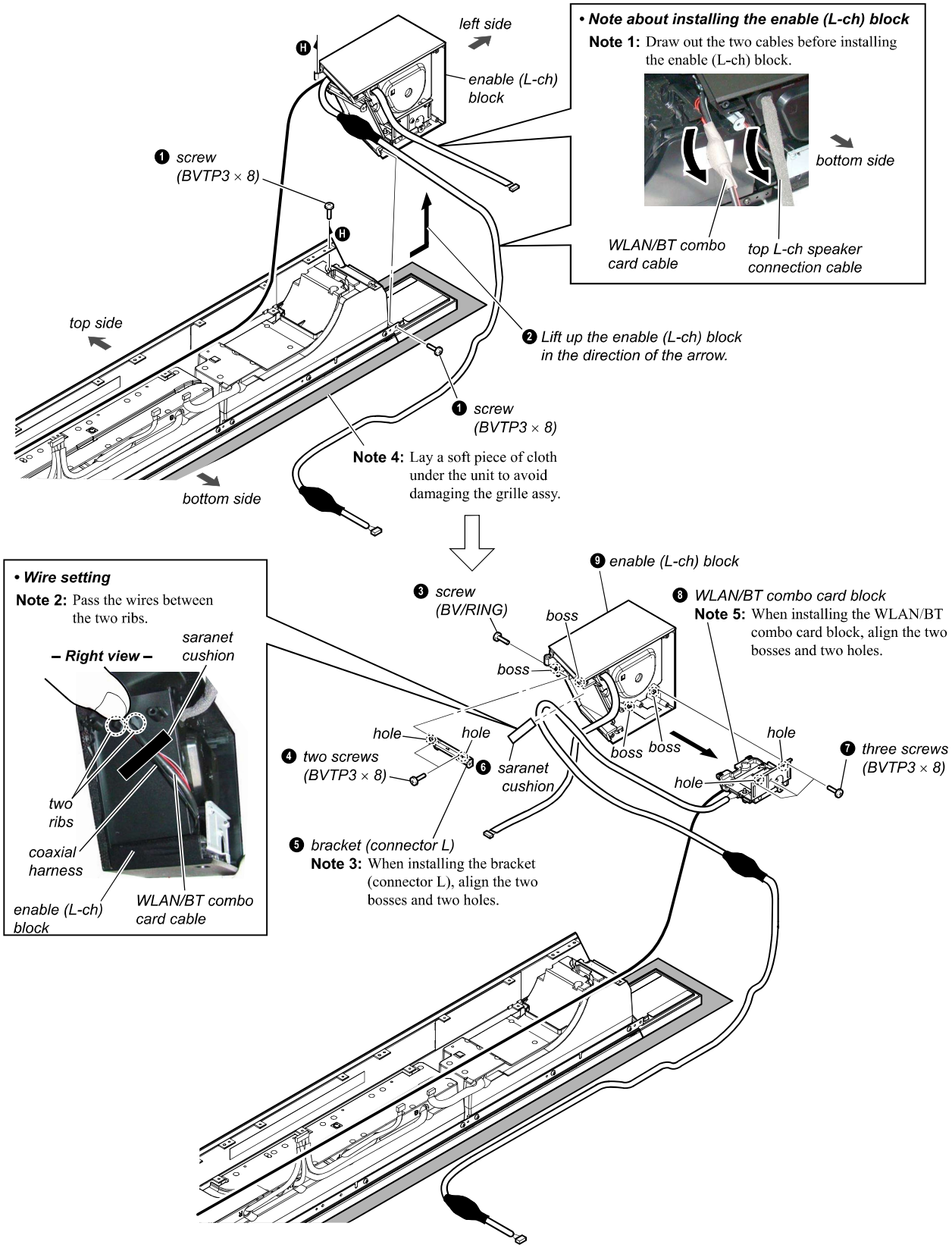


2-23. ENABLE (L-CH) BLOCK-3

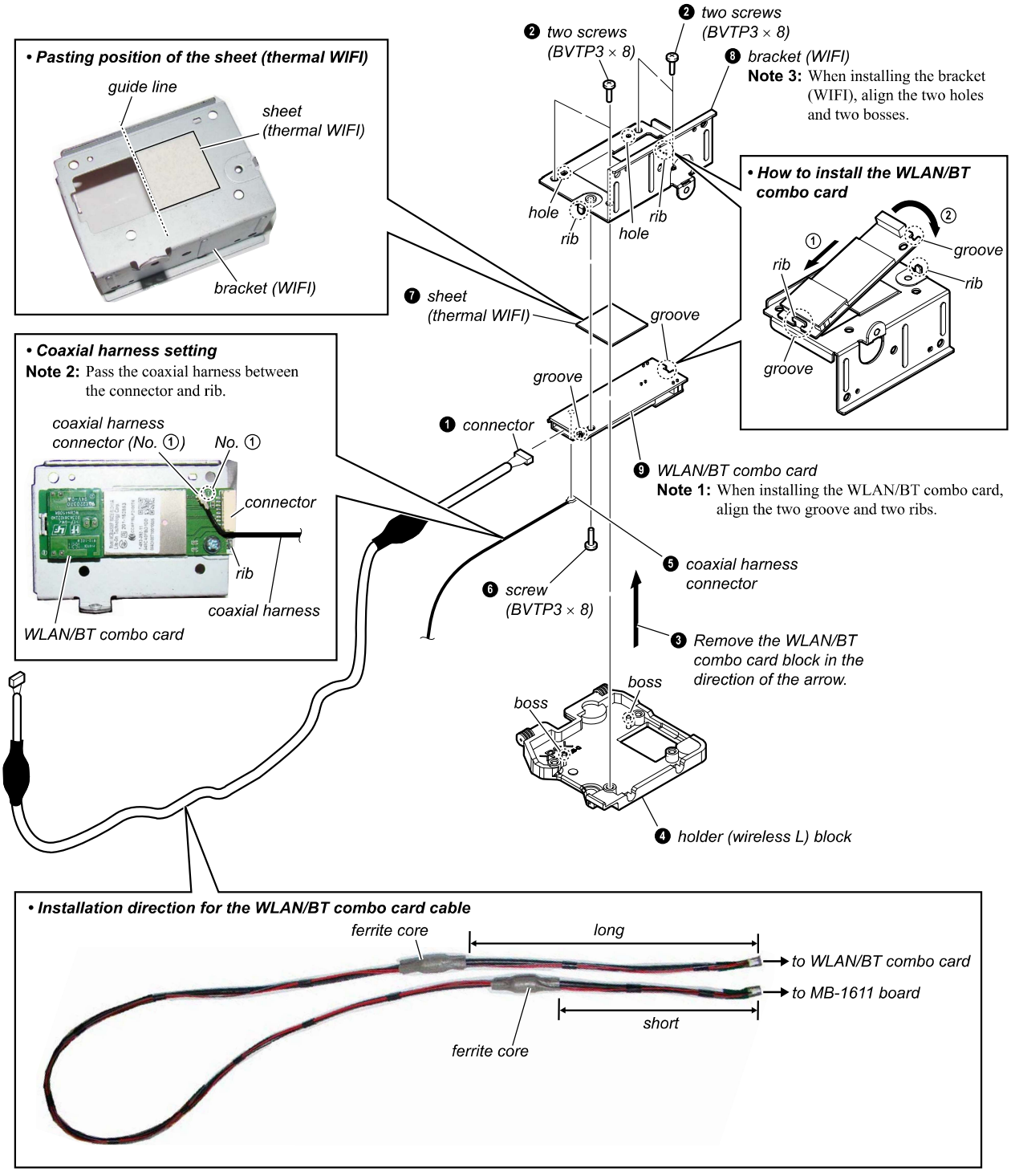
• Continued on 2-24 (page 31).



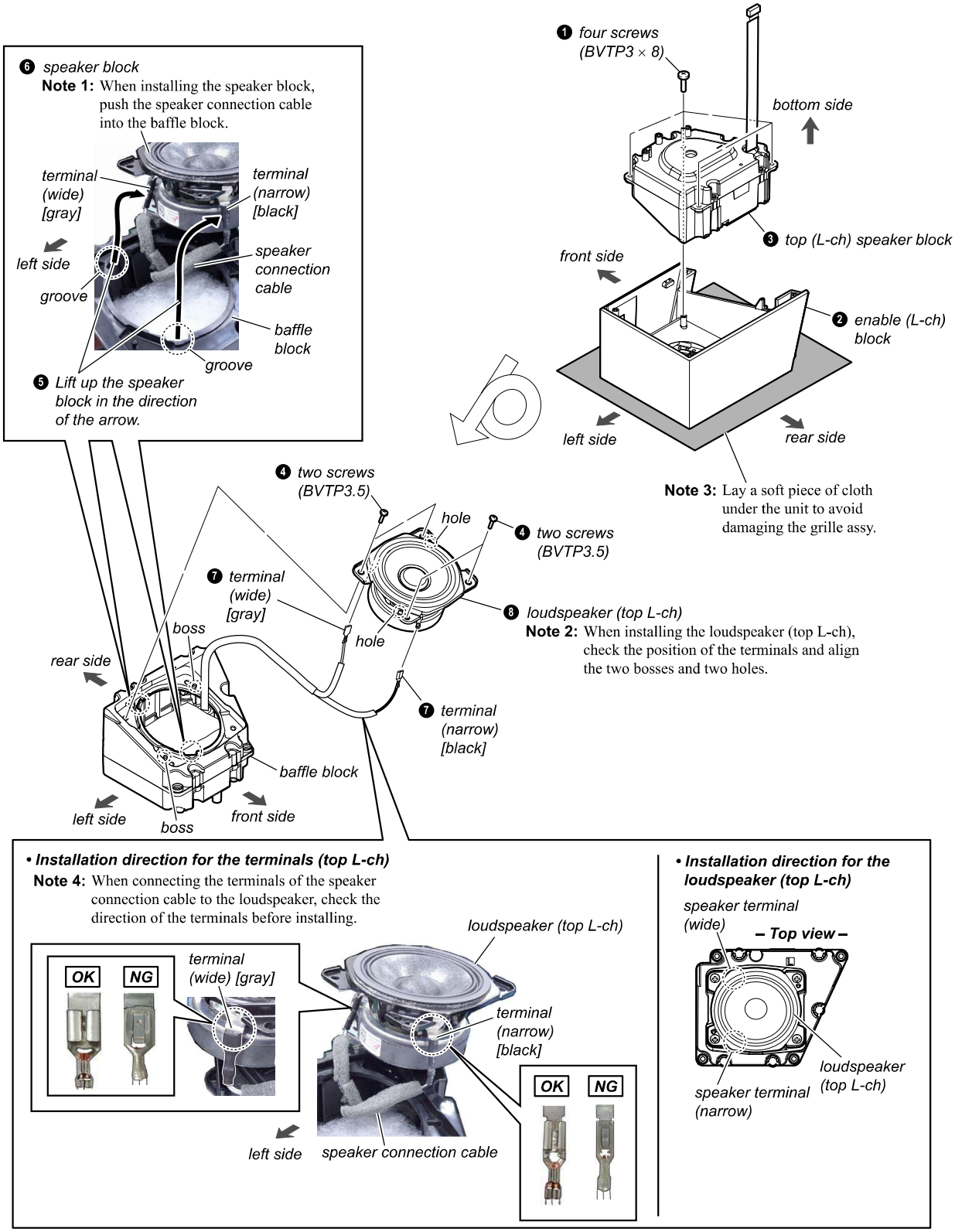
2-24. WLAN/BT COMBO CARD BLOCK, ENABLE (L-CH) BLOCK-4



2-25. WLAN/BT COMBO CARD

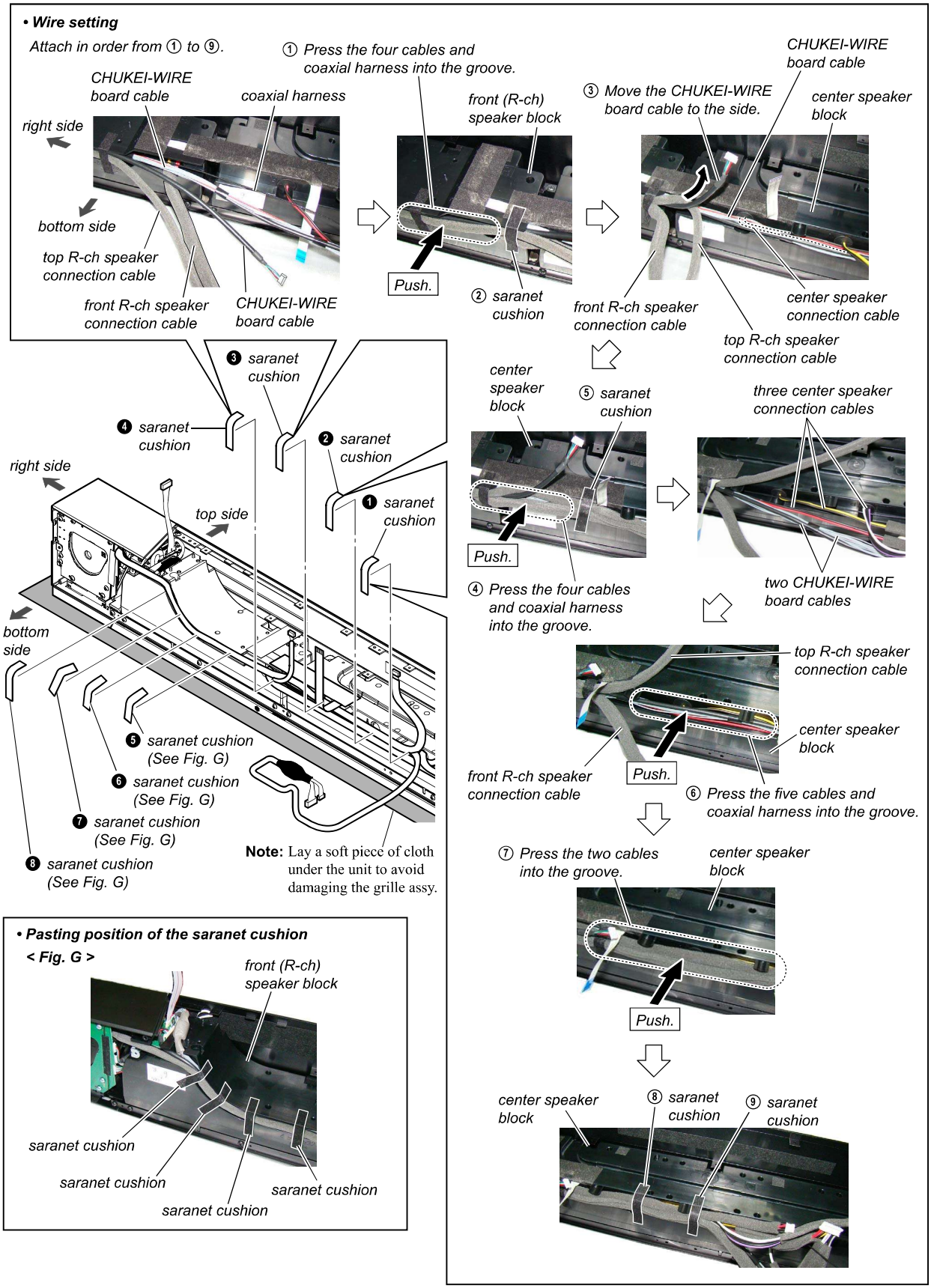


2-26. LOUDSPEAKER (TOP L-CH)



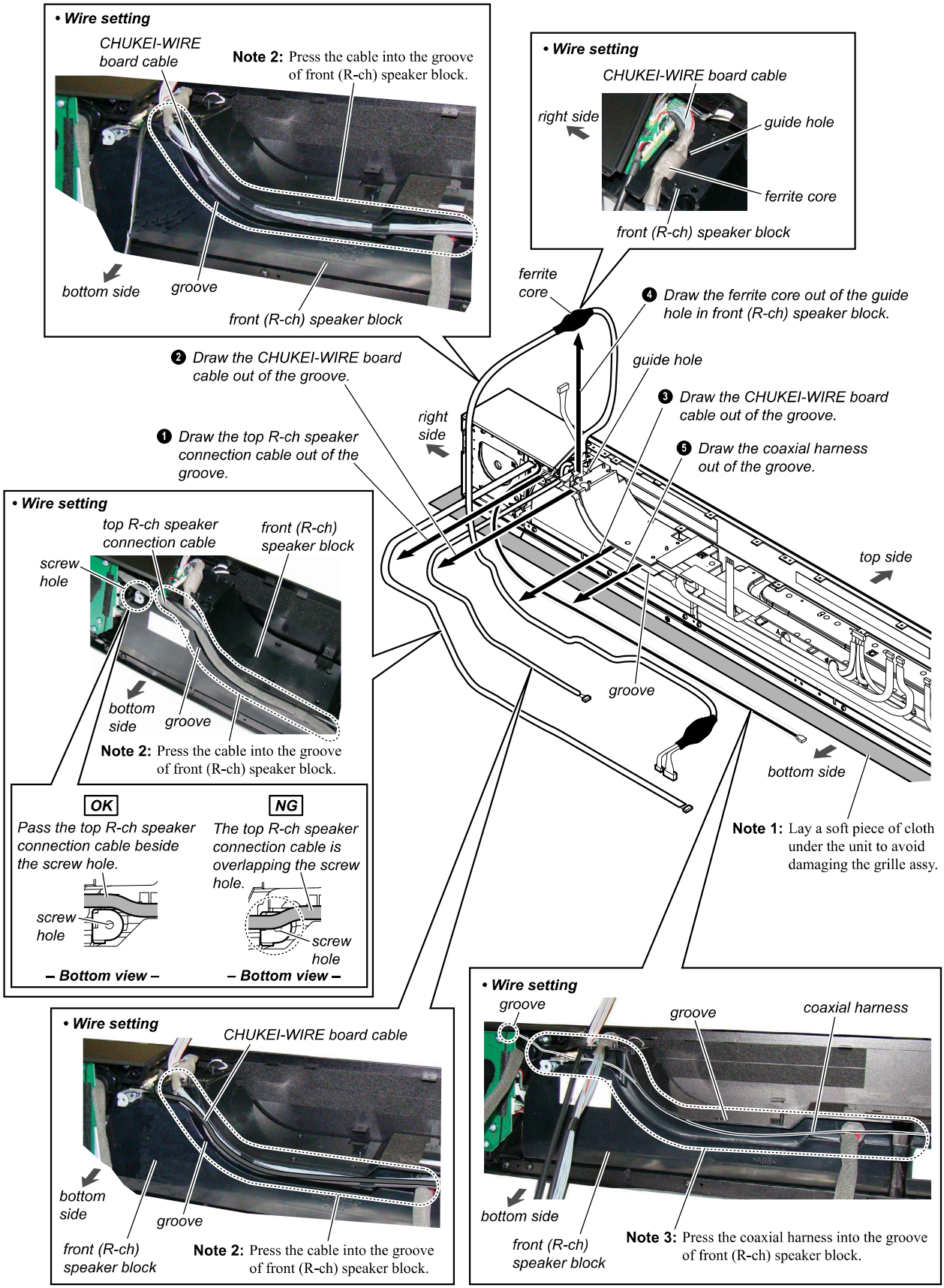
2-27. ENABLE (R-CH) BLOCK-1

• Continued on 2-28 (page 35).

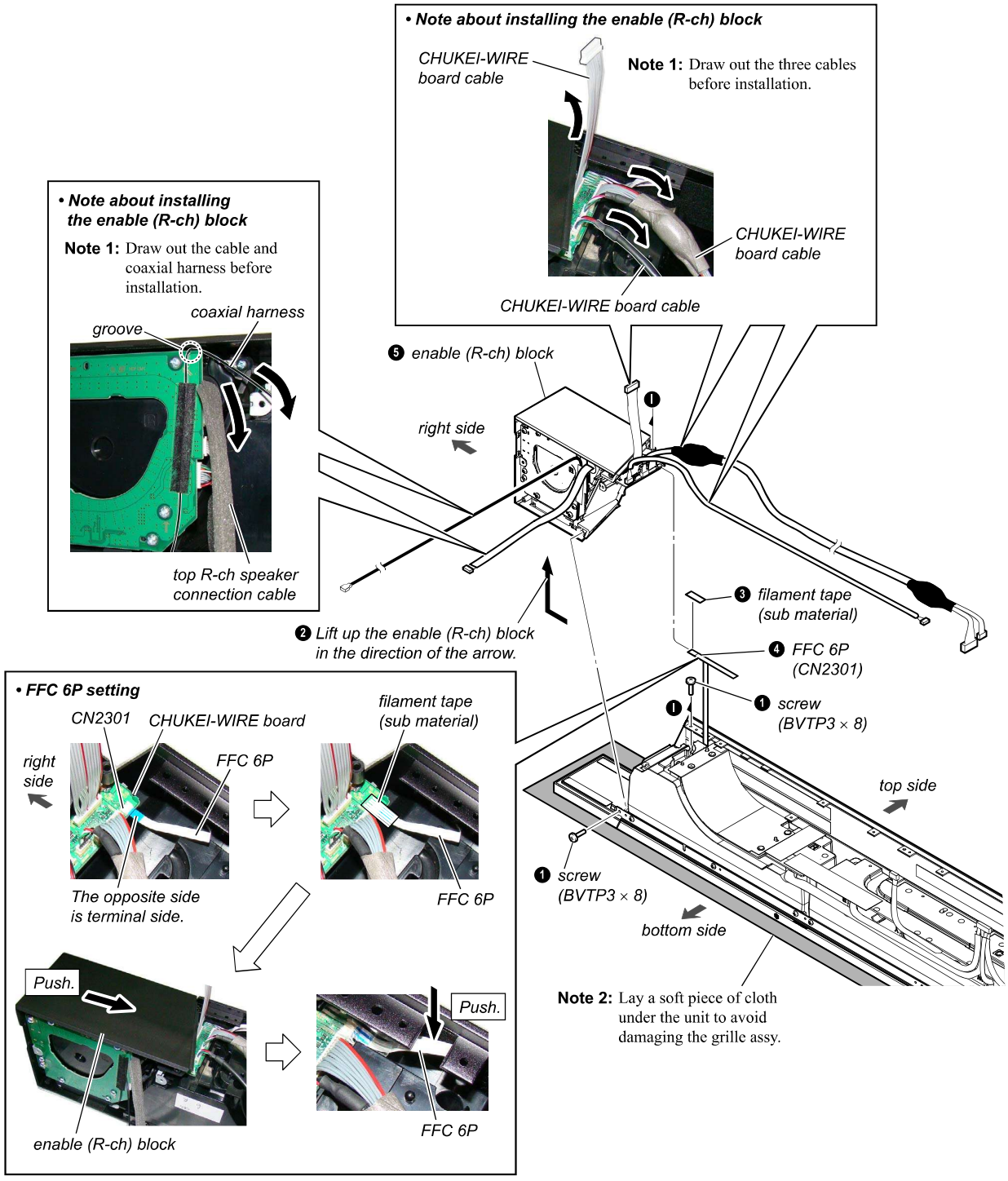


2-28. ENABLE (R-CH) BLOCK-2

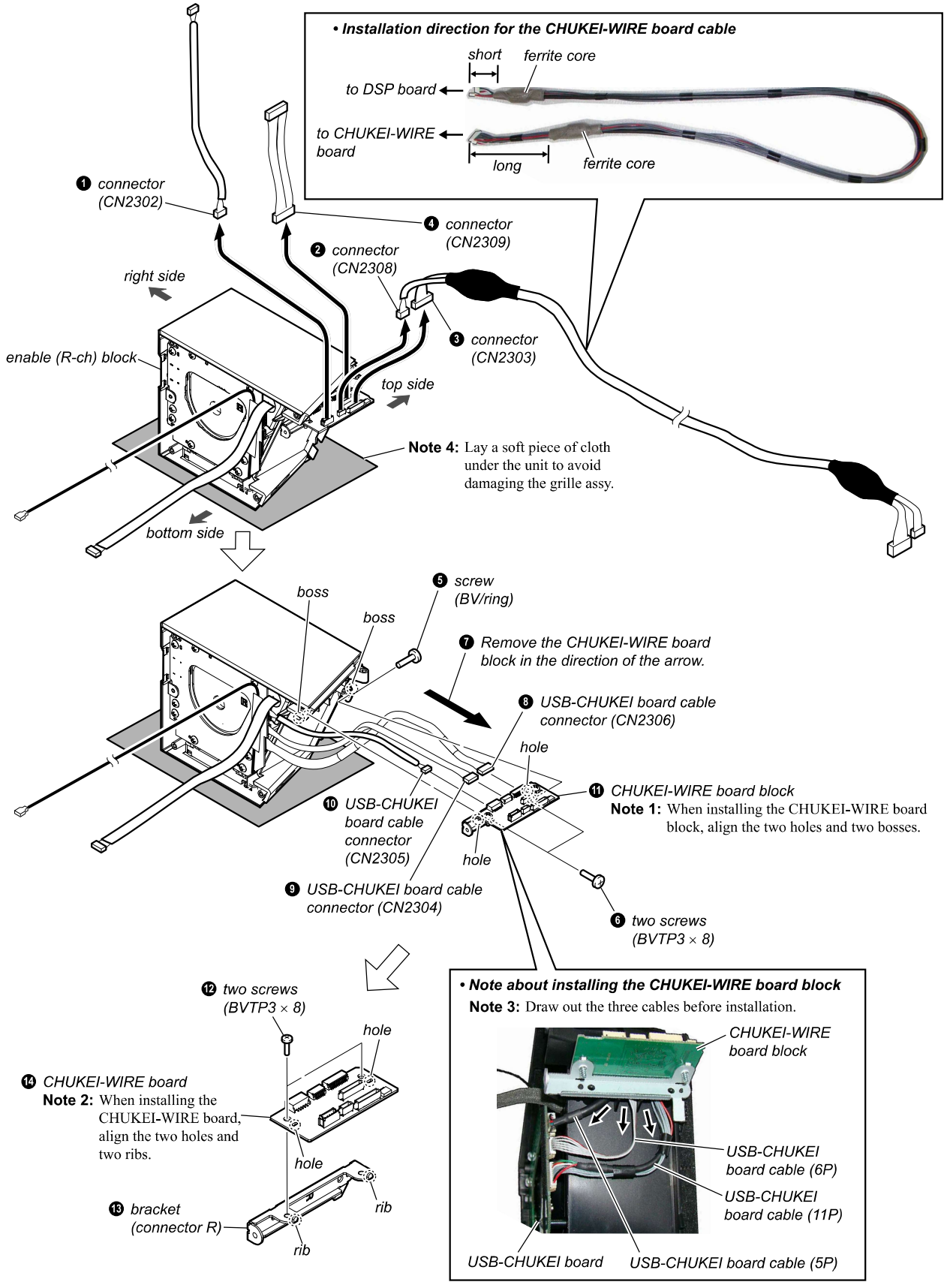
• Continued on 2-29 (page 36).



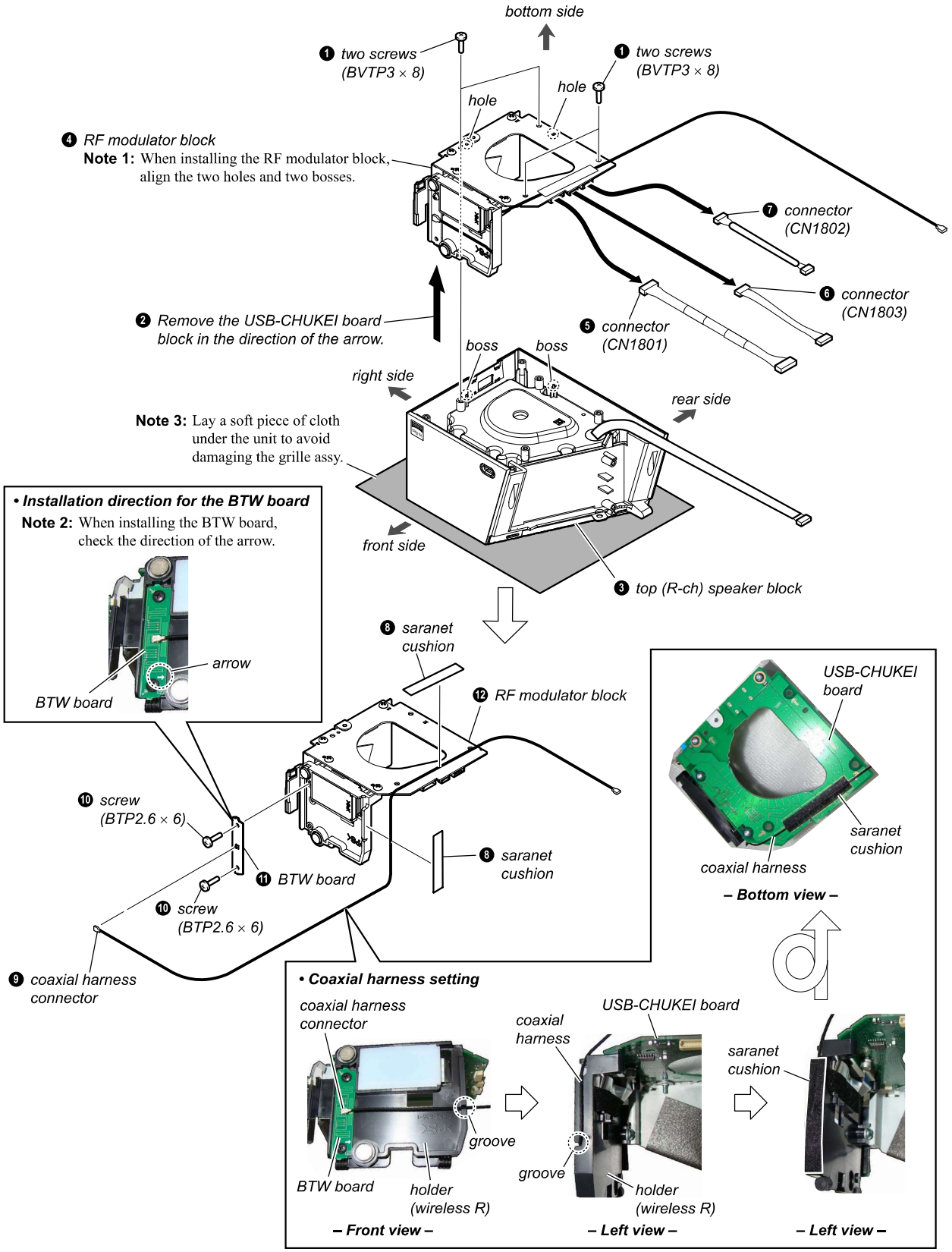
2-29. ENABLE (R-CH) BLOCK-3



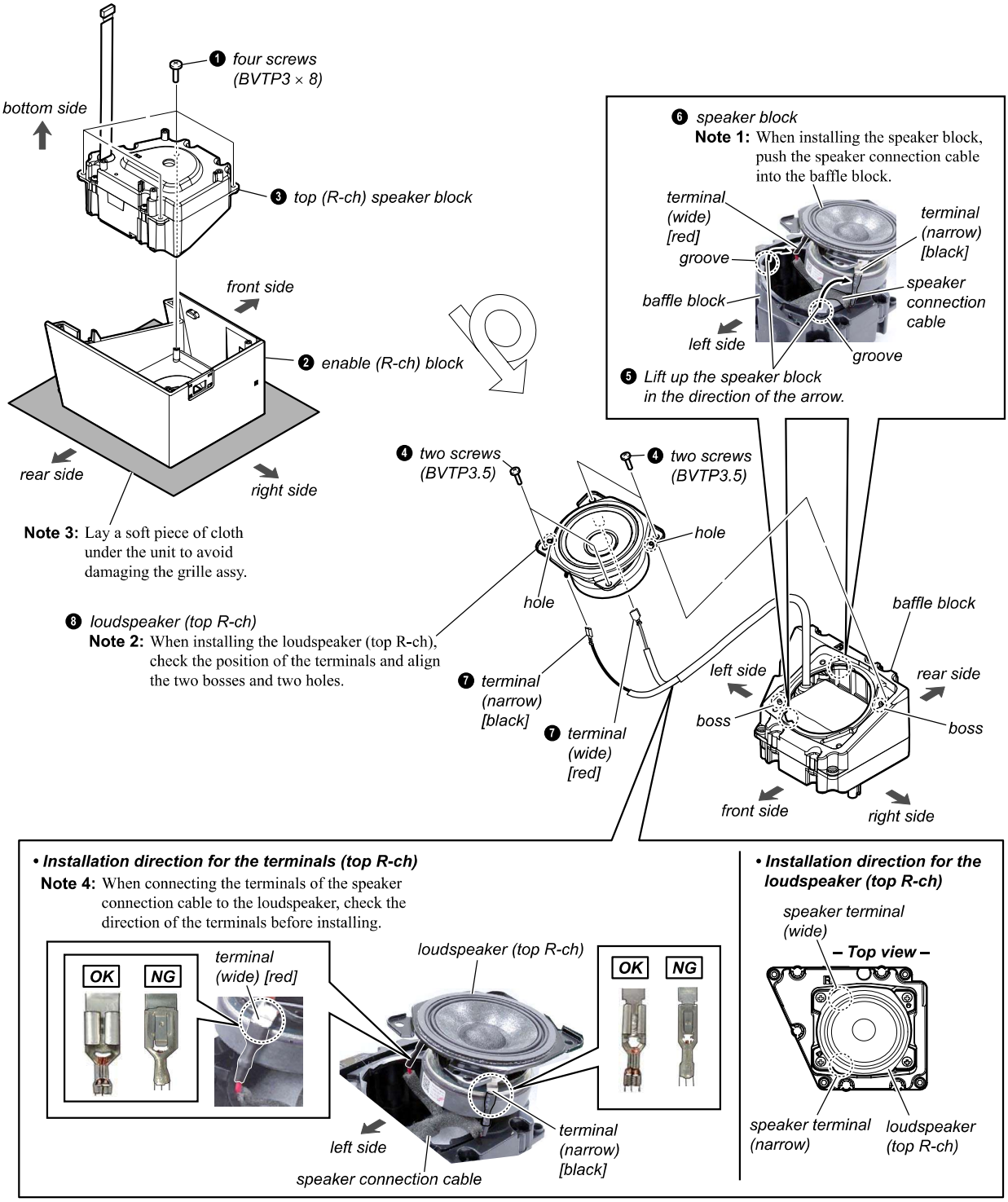
2-30. CHUKEI-WIRE BOARD



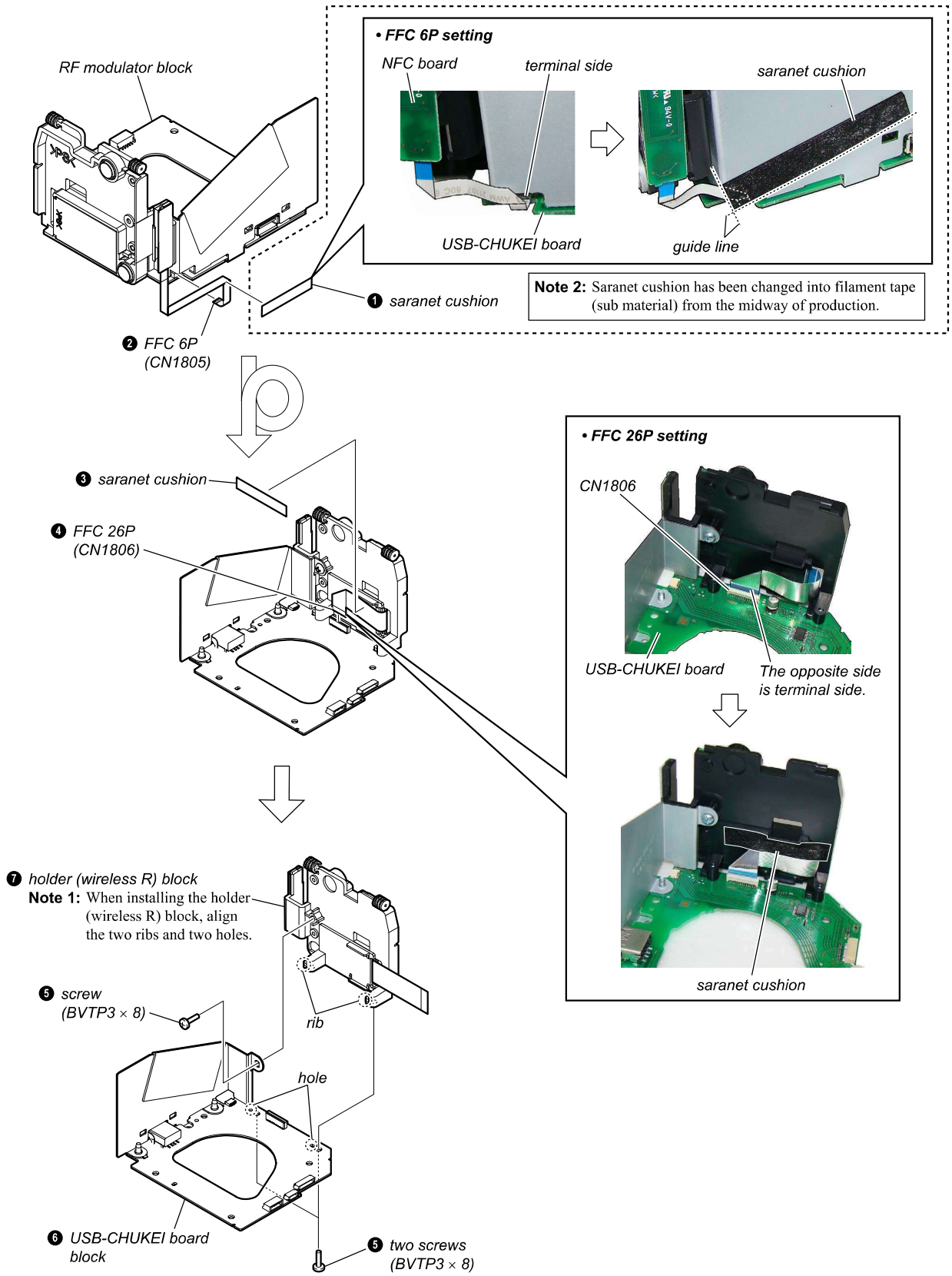
2-31. BTW BOARD, RF MODULATOR BLOCK



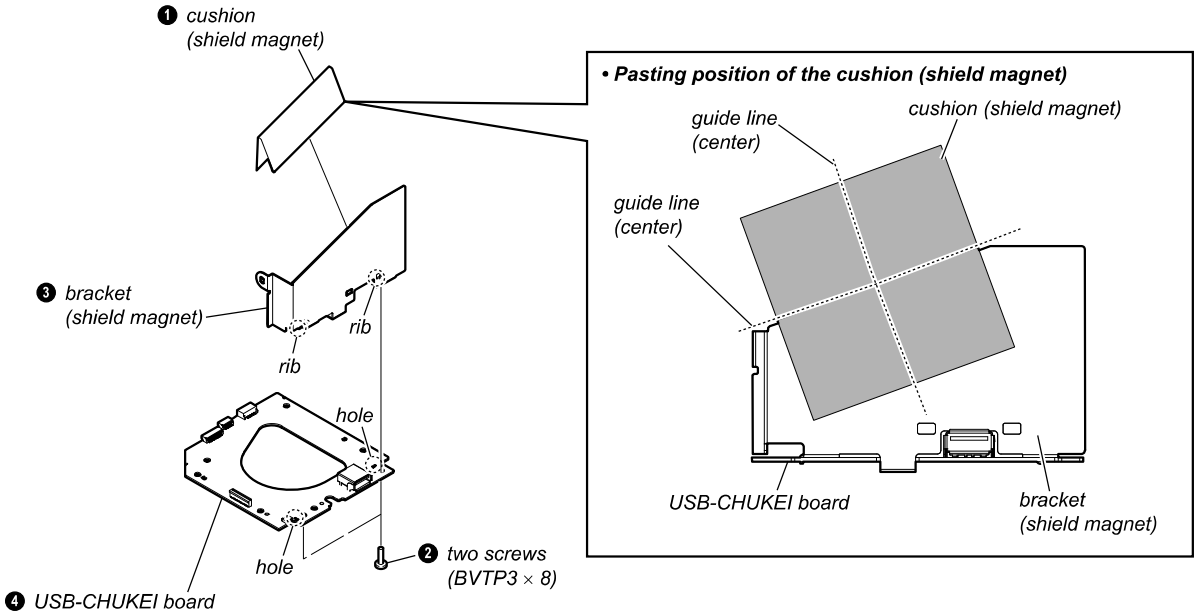
2-32. LOUDSPEAKER (TOP R-CH)



2-33. USB-CHUKEI BOARD BLOCK, HOLDER (WIRELESS R) BLOCK



2-34. USB-CHUKEI BOARD

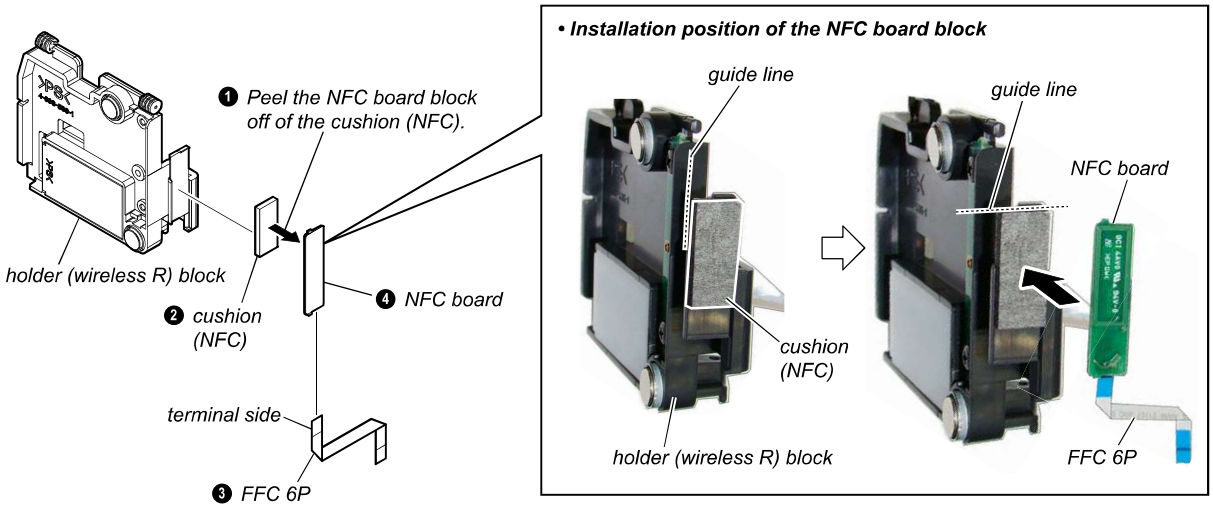


❹ *USB-CHUKEI board*

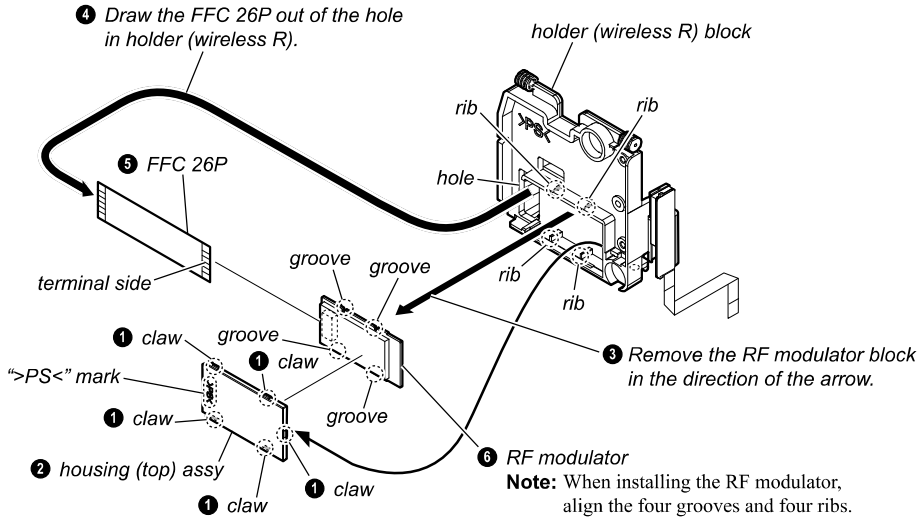
Note: When installing the USB-CHUKEI board, align the two ribs and two holes.

2-35. NFC BOARD

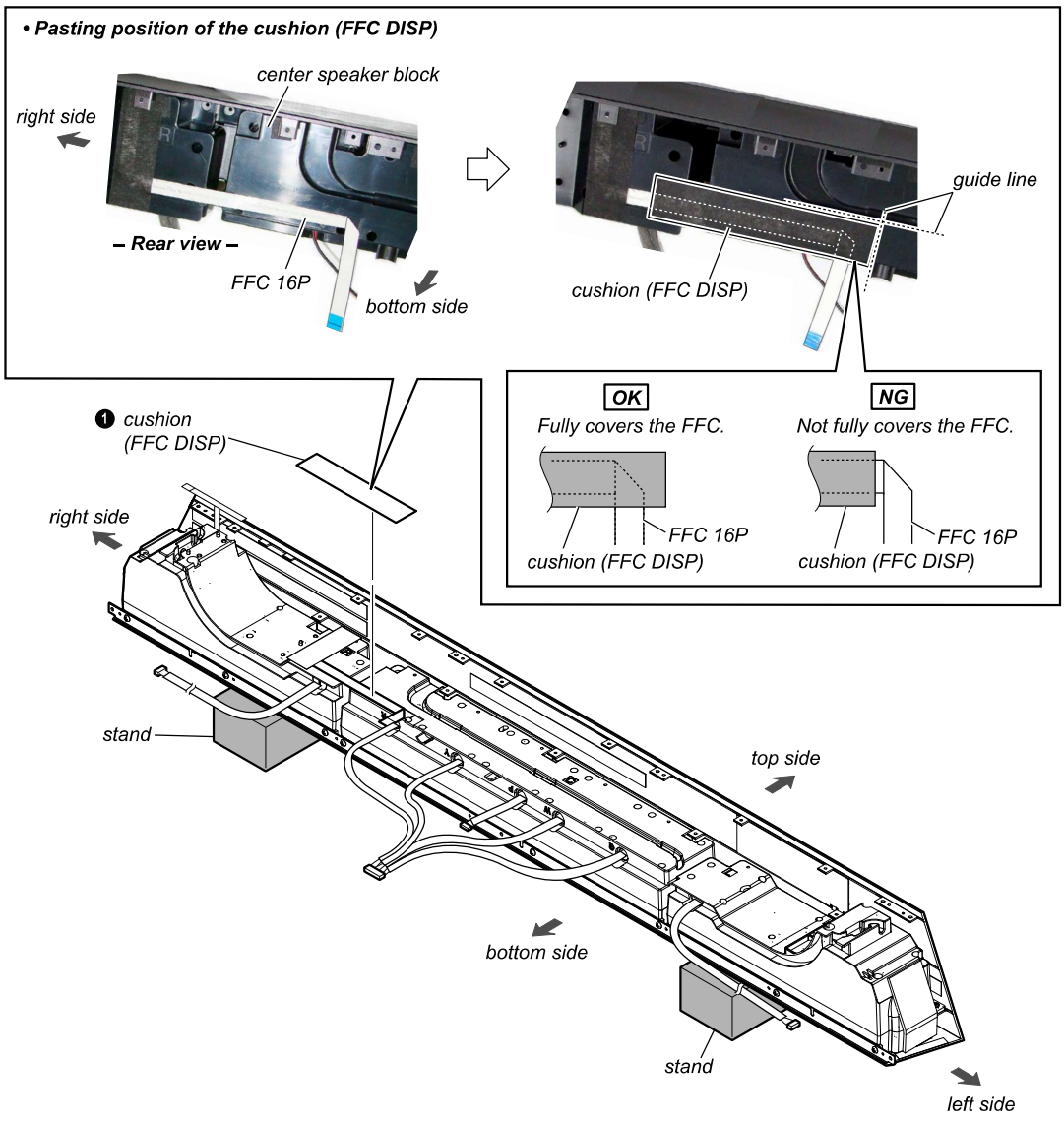
Note: When the NFC board is replaced, refer to "NFC CONNECTION CHECKING METHOD" on page 6.



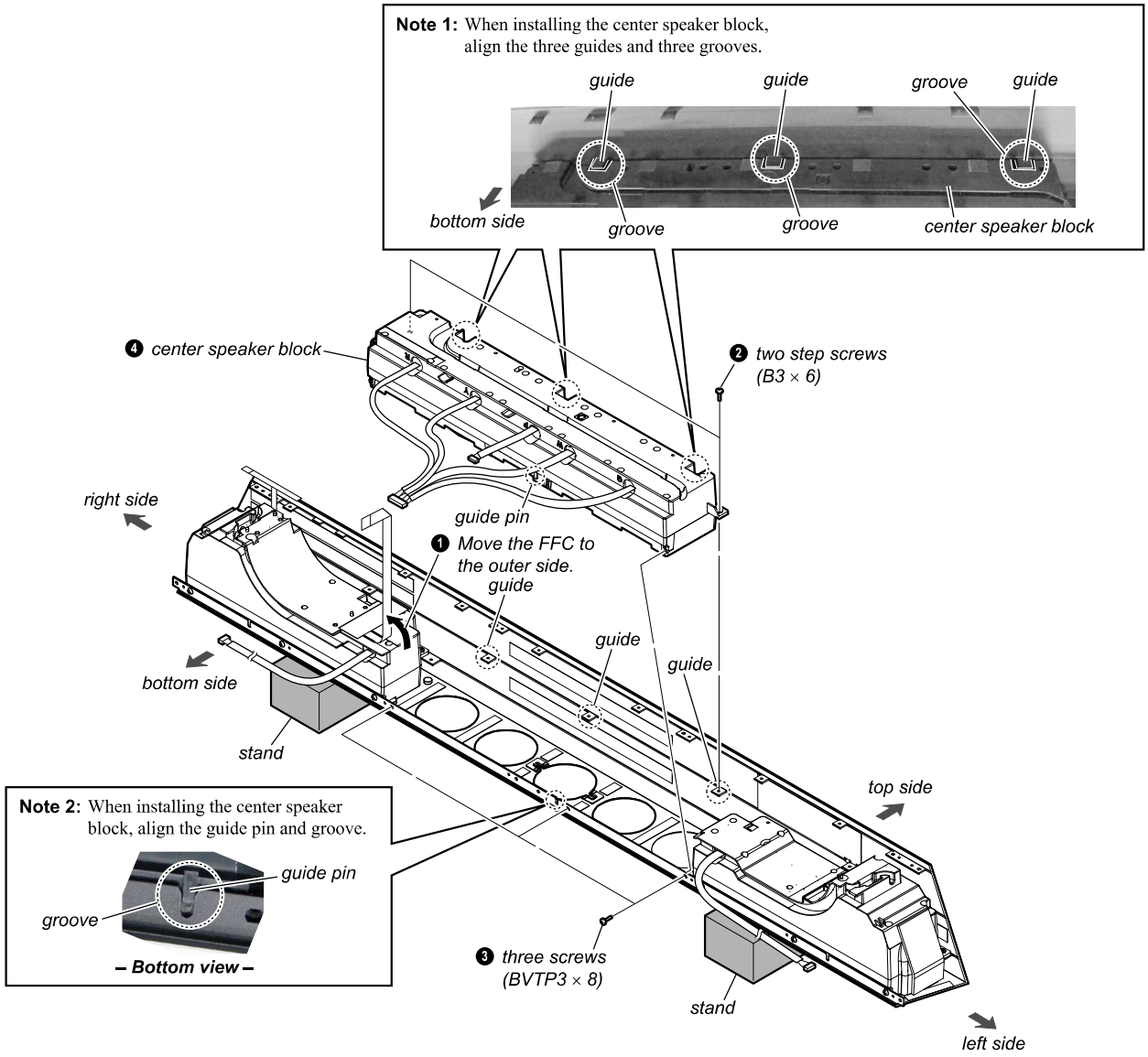
2-36. RF MODULATOR



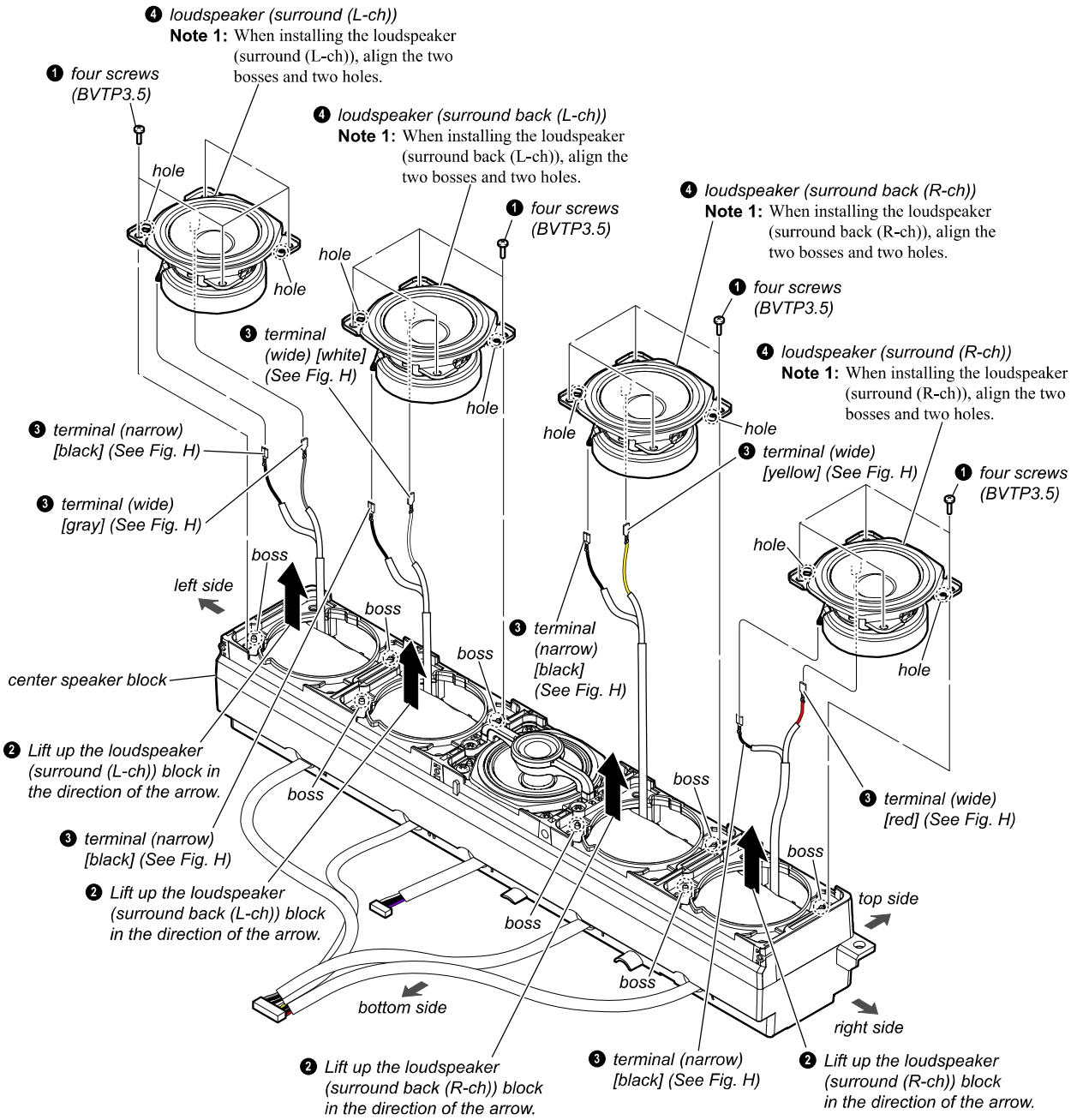
2-37. CUSHION (FFC DISP)



2-38. CENTER SPEAKER BLOCK

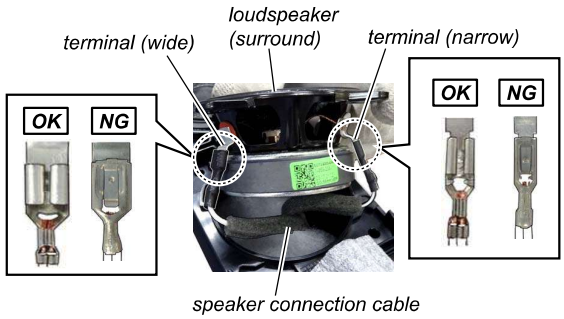


2-39. LOUDSPEAKER (CENTER: SURROUND/SURROUND BACK)

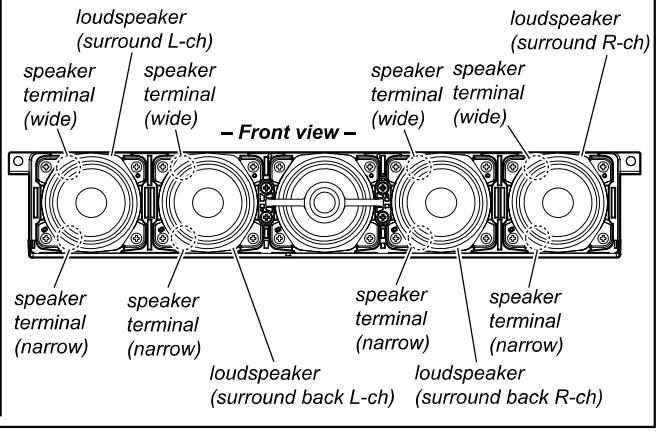


• Installation direction for the terminals (surround)
< Fig. H >

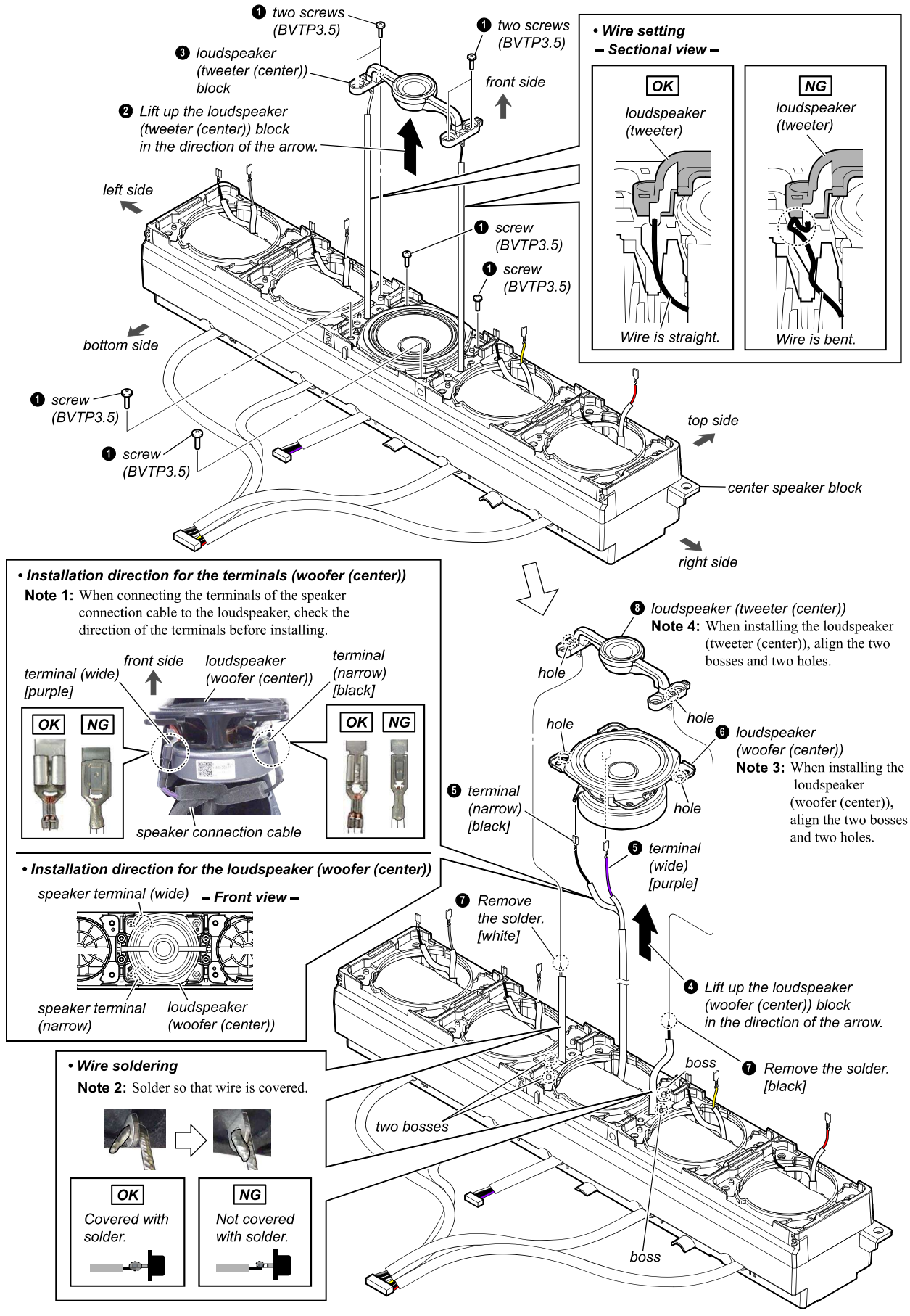
Note 2: When connecting the terminals of the speaker connection cable to the loudspeaker, check the direction of the terminals before installing.



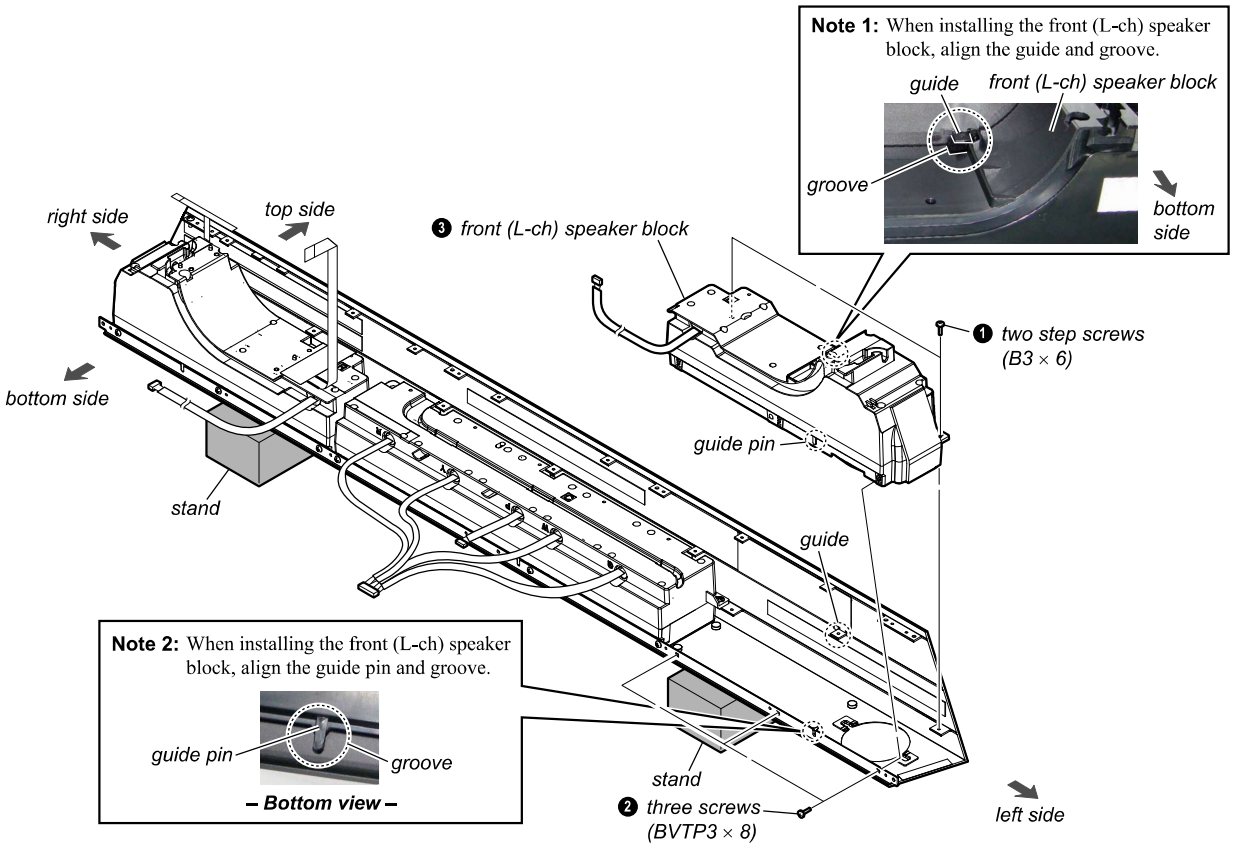
• Installation direction for the loudspeaker (surround)



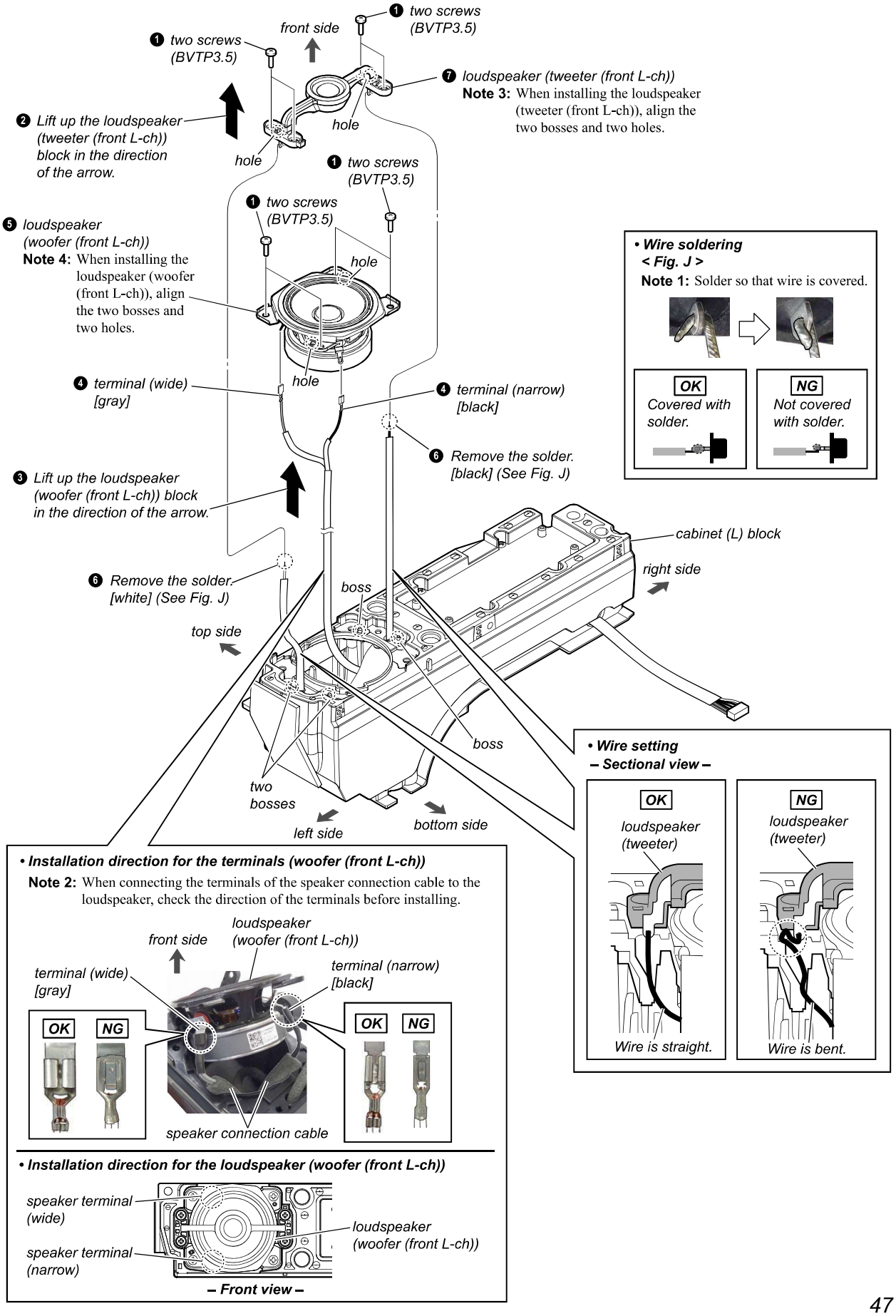
2-40. LOUDSPEAKER (CENTER: TWEETER/WOOFER)



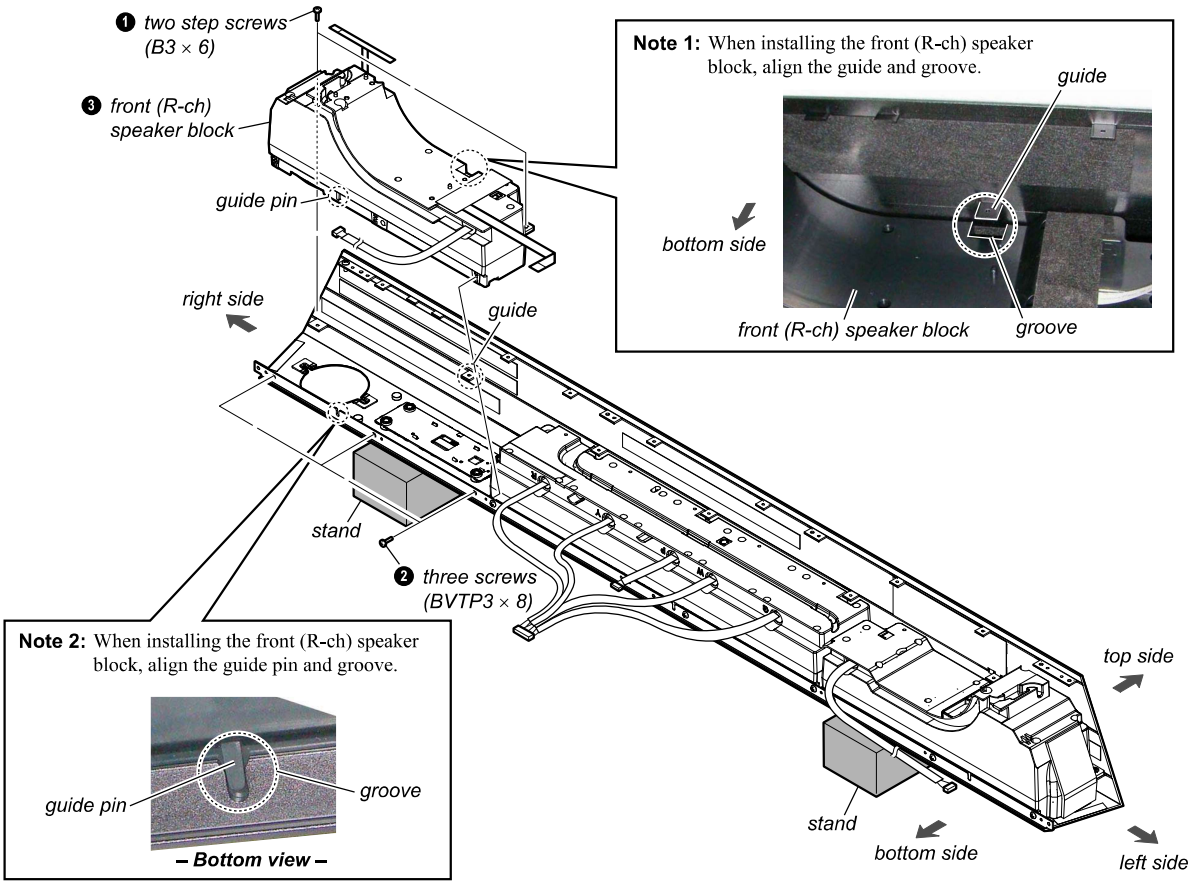
2-41. FRONT (L-CH) SPEAKER BLOCK



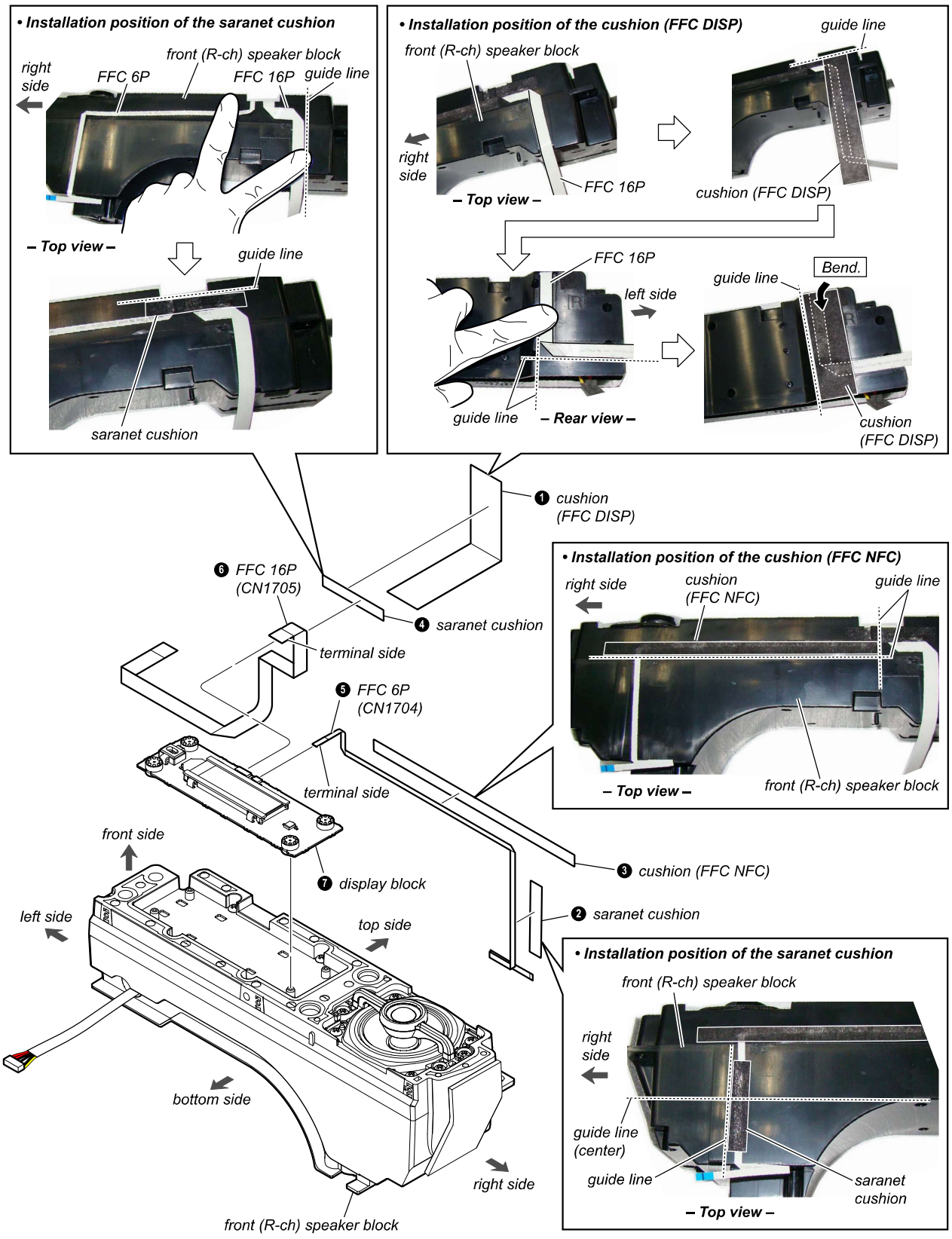
2-42. LOUDSPEAKER (FRONT L-CH)



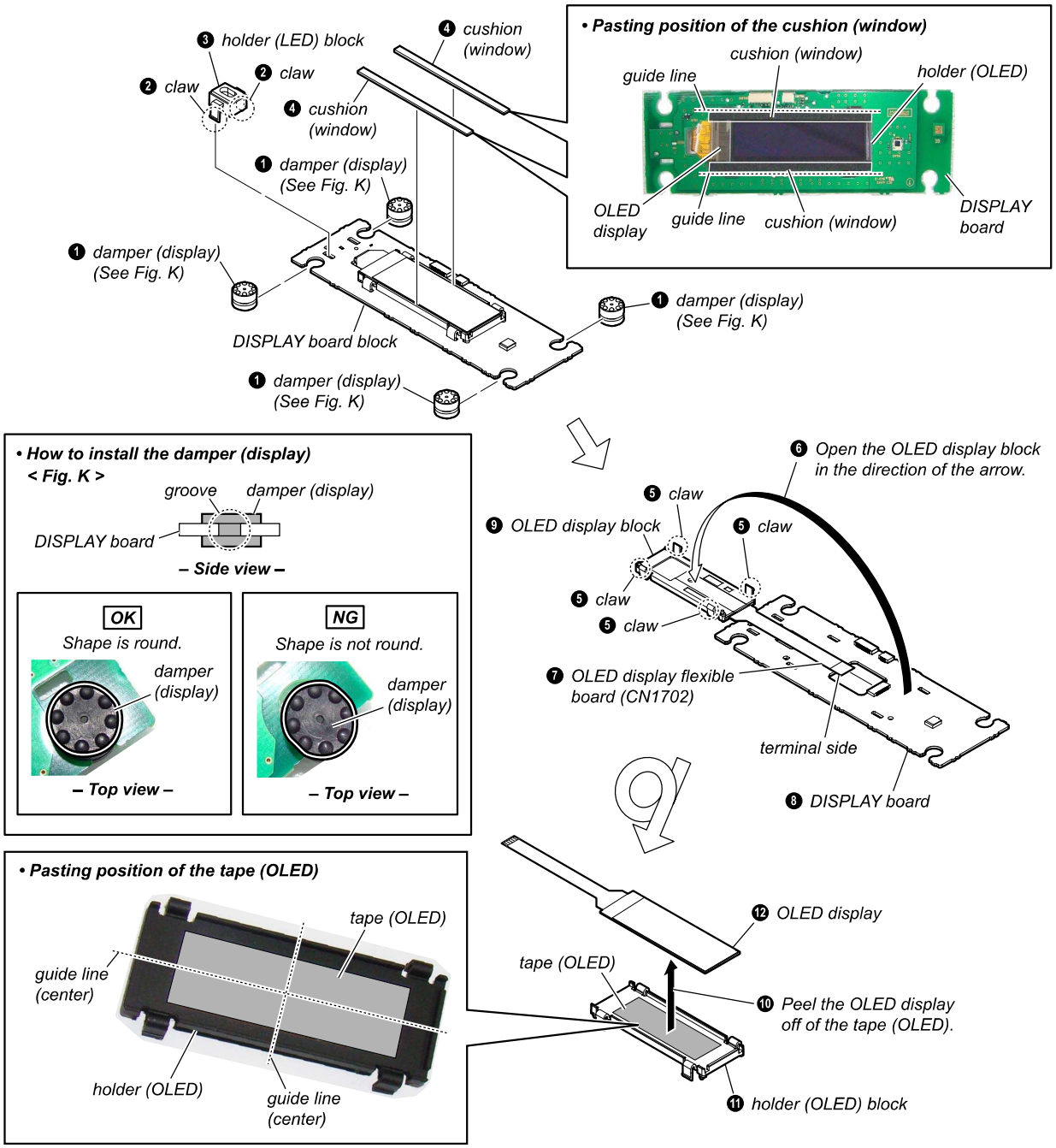
2-43. FRONT (R-CH) SPEAKER BLOCK



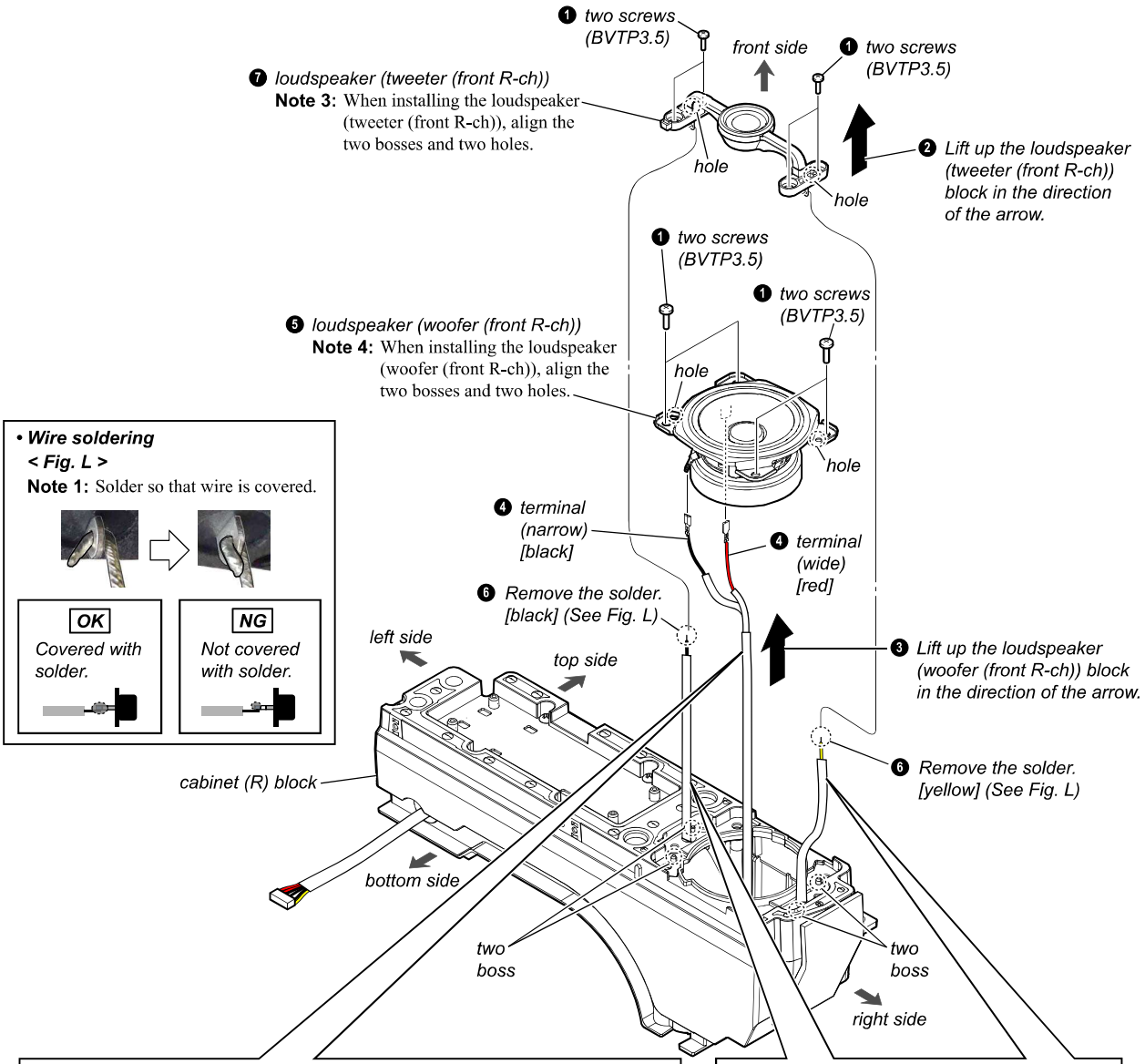
2-44. DISPLAY BLOCK



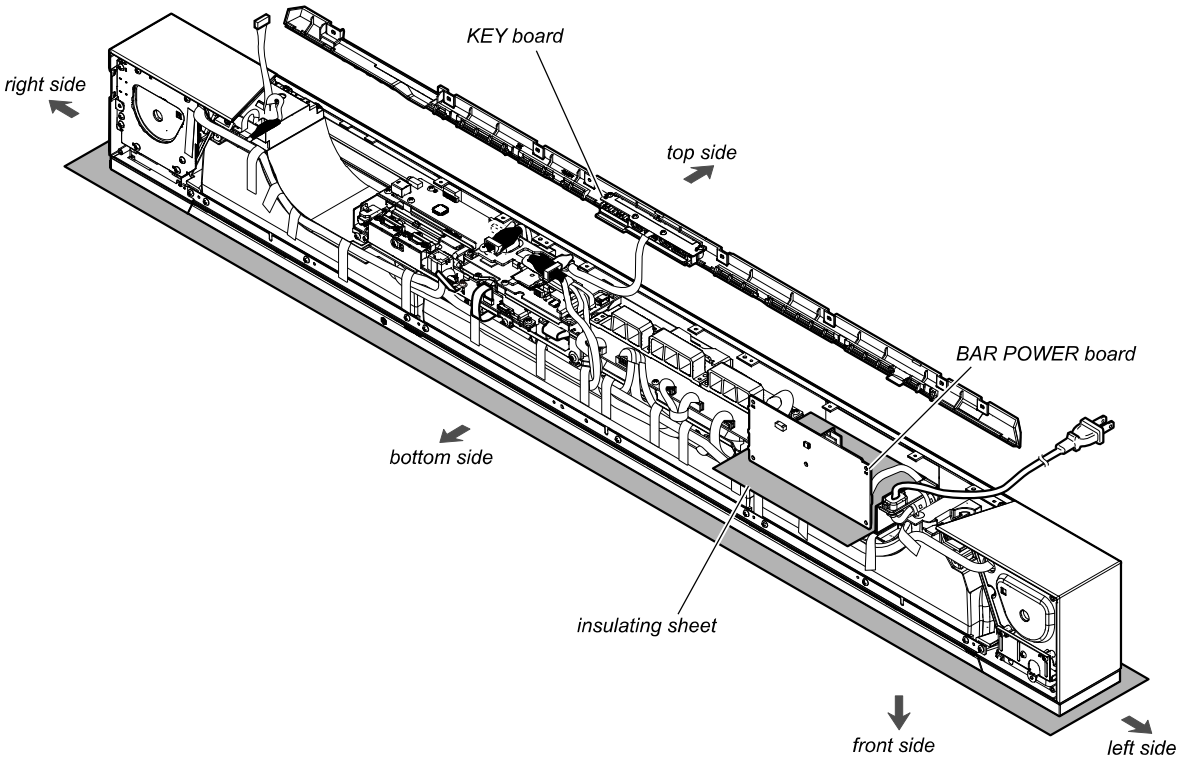
2-45. DISPLAY BOARD, OLED DISPLAY



2-46. LOUDSPEAKER (FRONT R-CH)

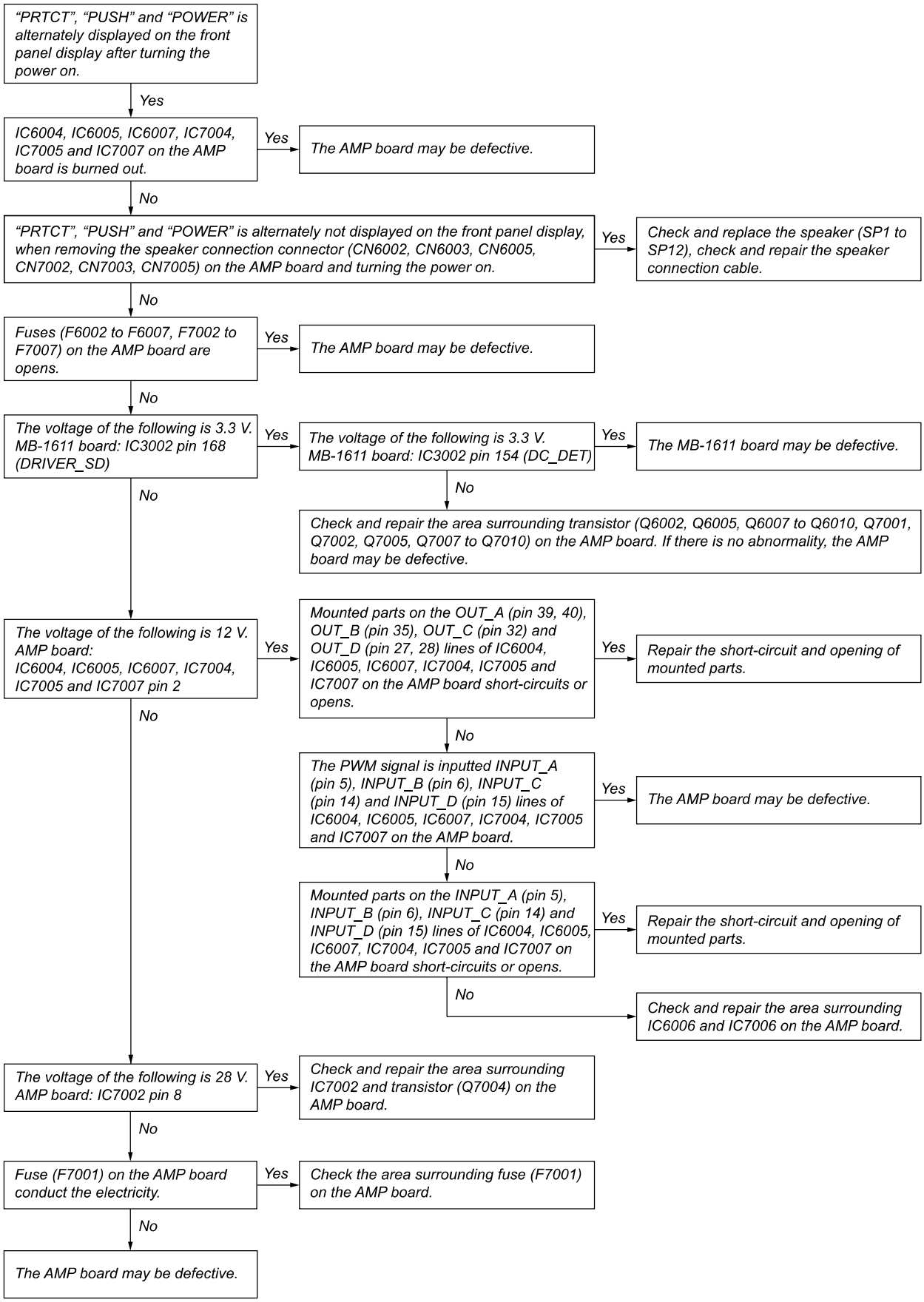


2-47. BAR POWER BOARD SERVICE POSITION

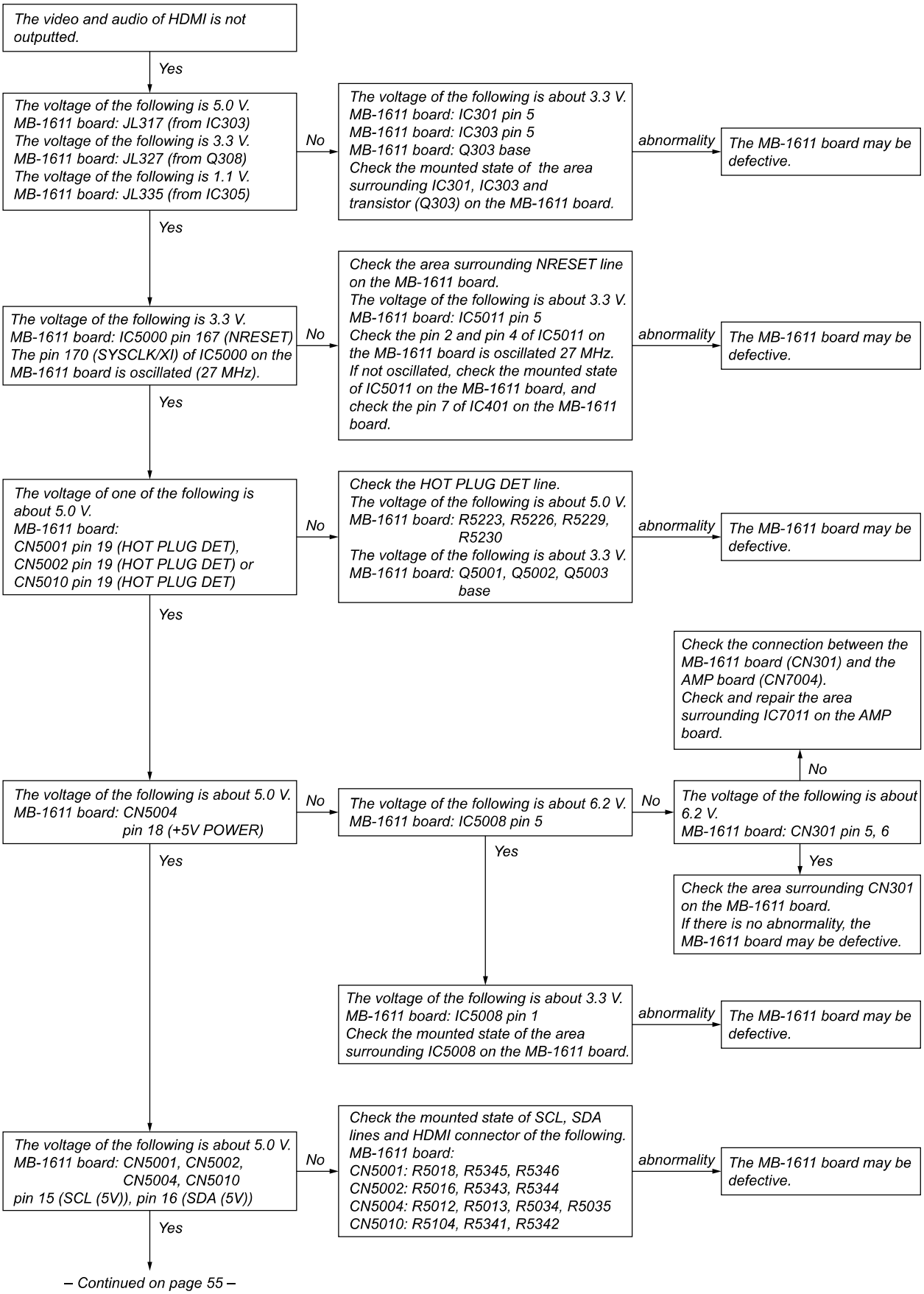


SECTION 3
TROUBLESHOOTING

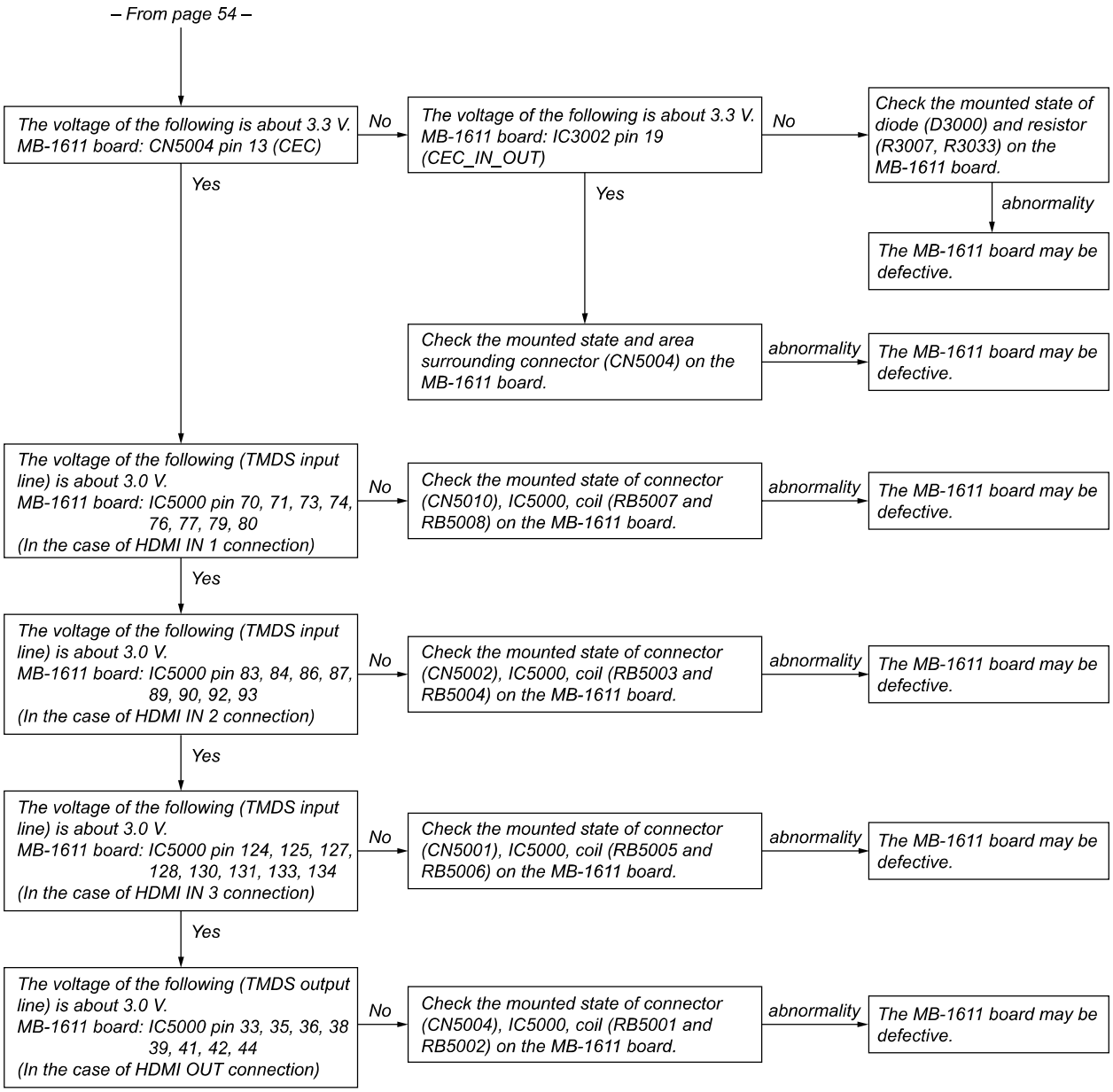
1. "PRTCT", "PUSH" and "POWER" is displayed on the front panel display after turning the power on



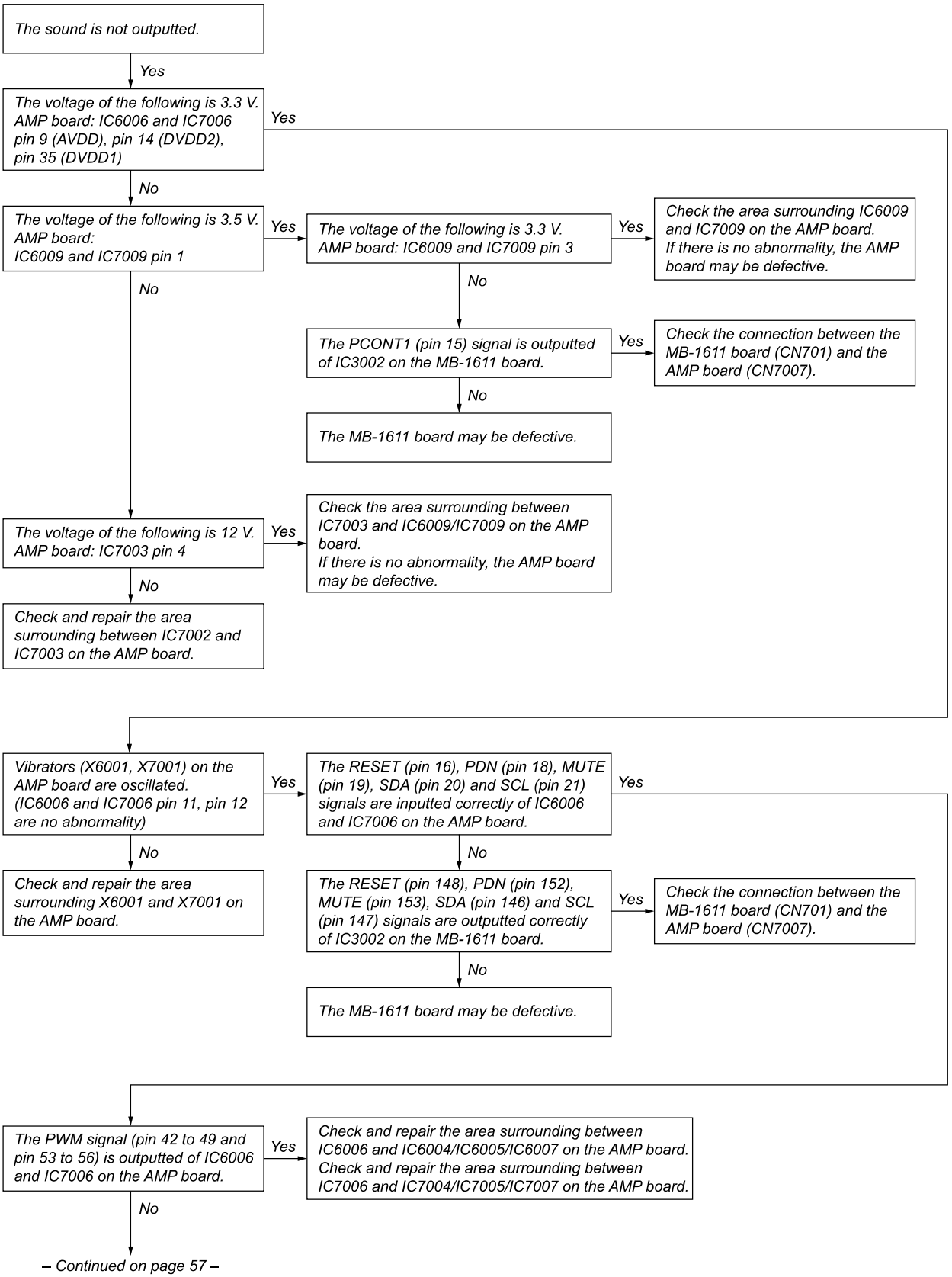
2. The video and audio of HDMI is not outputted



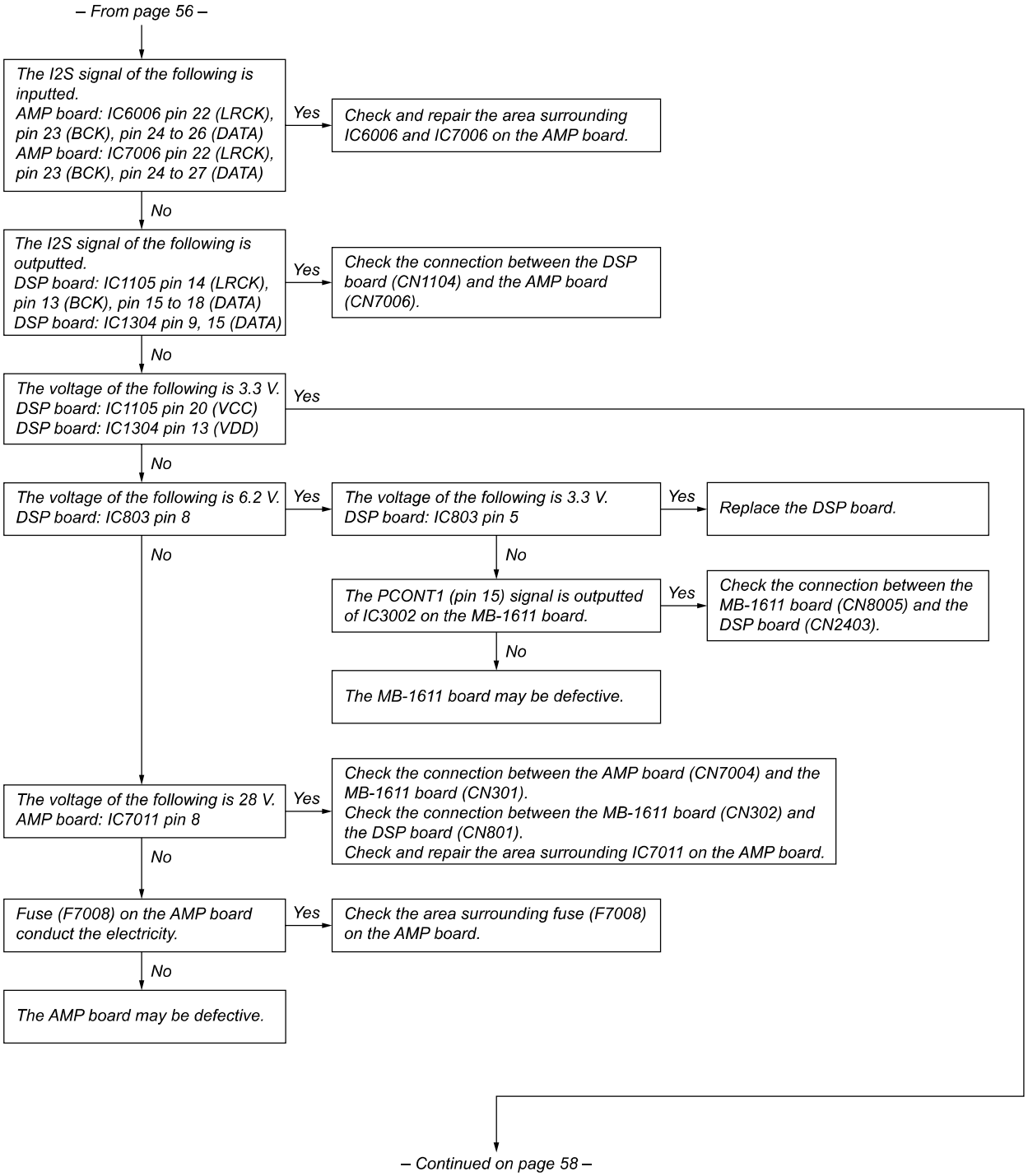
– Continued on page 55 –

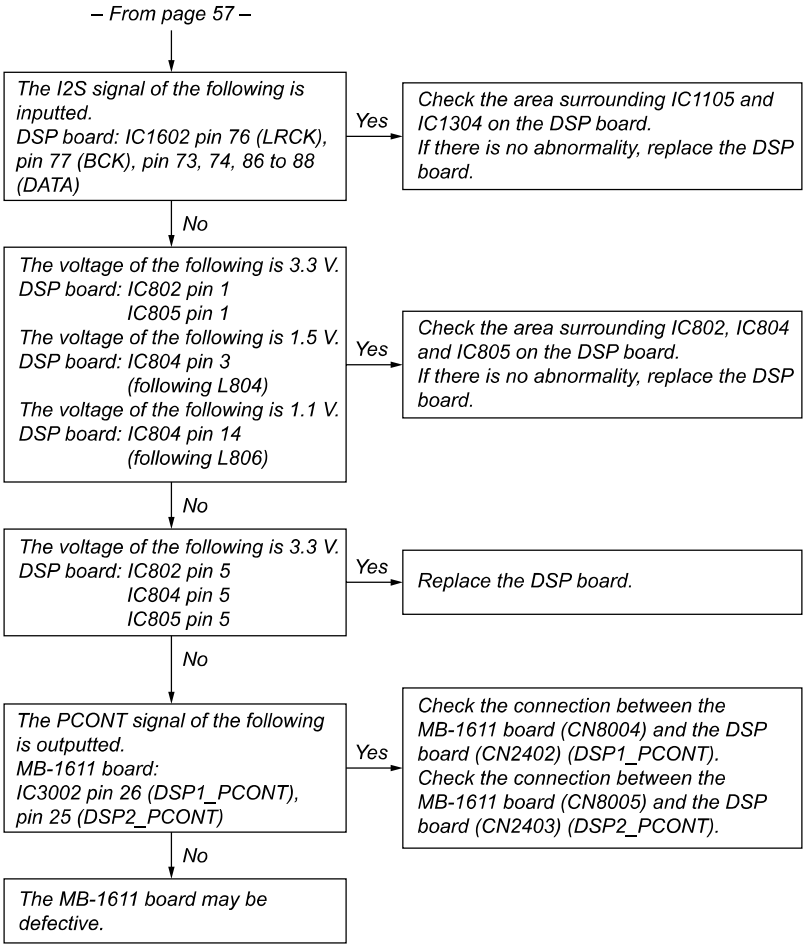

– From page 54 –
The voltage of the following is about 3.3 V.
MB-1611 board: CN5004 pin 13 (CEC)
No
The voltage of the following is about 3.3 V.
MB-1611 board: IC3002 pin 19
(CEC_IN_OUT)
No
Check the mounted state of diode (D3000) and resistor (R3007, R3033) on the MB-1611 board.
abnormality
The MB-1611 board may be defective.
Yes
Yes
Check the mounted state and area surrounding connector (CN5004) on the MB-1611 board.
abnormality
The MB-1611 board may be defective.
Yes
The voltage of the following (TMDS input line) is about 3.0 V.
MB-1611 board: IC5000 pin 70, 71, 73, 74, 76, 77, 79, 80
(In the case of HDMI IN 1 connection)
No
Check the mounted state of connector (CN5010), IC5000, coil (RB5007 and RB5008) on the MB-1611 board.
abnormality
The MB-1611 board may be defective.
Yes
The voltage of the following (TMDS input line) is about 3.0 V.
MB-1611 board: IC5000 pin 83, 84, 86, 87, 89, 90, 92, 93
(In the case of HDMI IN 2 connection)
No
Check the mounted state of connector (CN5002), IC5000, coil (RB5003 and RB5004) on the MB-1611 board.
abnormality
The MB-1611 board may be defective.
Yes
The voltage of the following (TMDS input line) is about 3.0 V.
MB-1611 board: IC5000 pin 124, 125, 127, 128, 130, 131, 133, 134
(In the case of HDMI IN 3 connection)
No
Check the mounted state of connector (CN5001), IC5000, coil (RB5005 and RB5006) on the MB-1611 board.
abnormality
The MB-1611 board may be defective.
Yes
The voltage of the following (TMDS output line) is about 3.0 V.
MB-1611 board: IC5000 pin 33, 35, 36, 38 39, 41, 42, 44
(In the case of HDMI OUT connection)
No
Check the mounted state of connector (CN5004), IC5000, coil (RB5001 and RB5002) on the MB-1611 board.
abnormality
The MB-1611 board may be defective.

3. The sound is not outputted

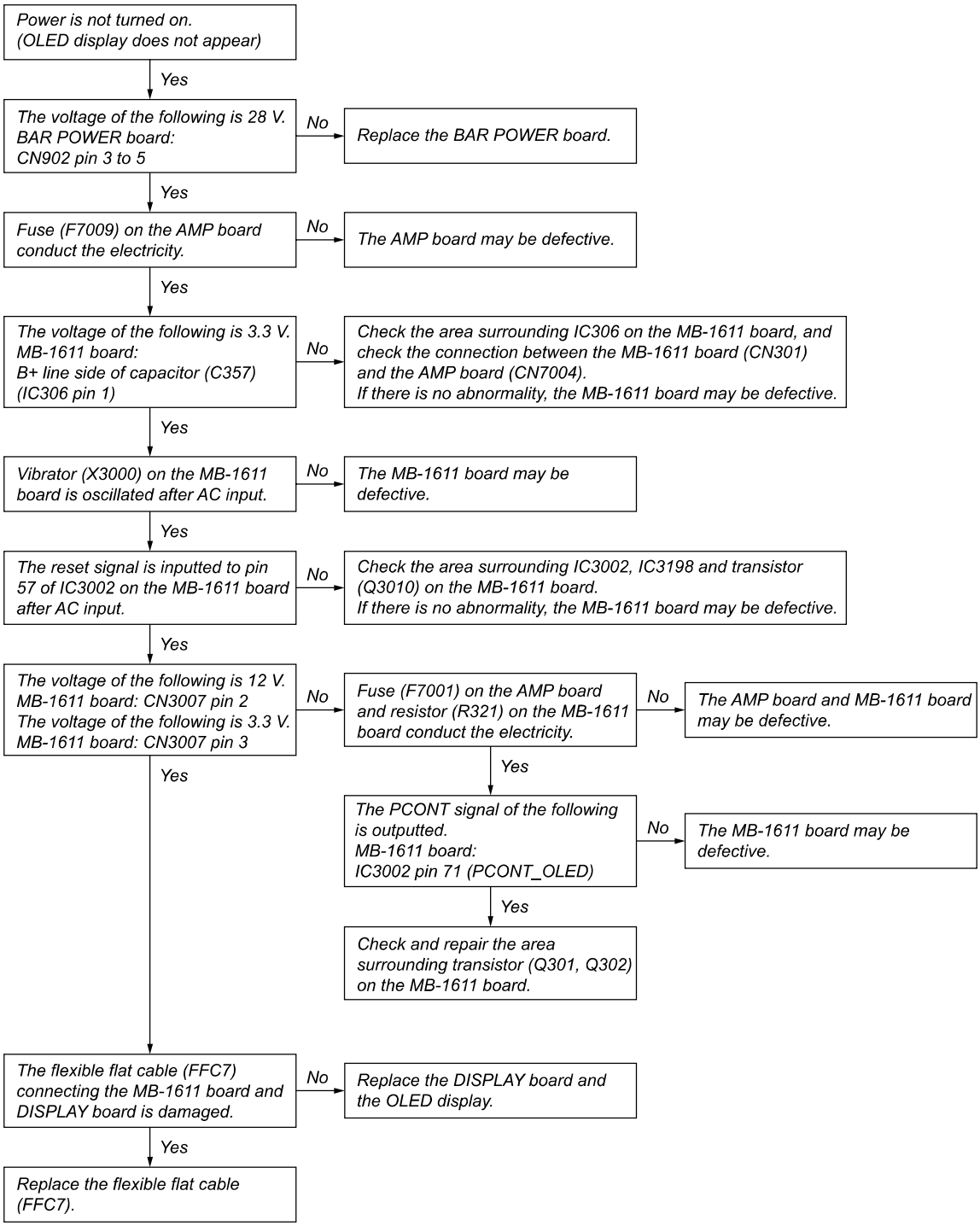


– Continued on page 57 –


– From page 56 –
The I2S signal of the following is inputted.
AMP board: IC6006 pin 22 (LRCK), pin 23 (BCK), pin 24 to 26 (DATA)
AMP board: IC7006 pin 22 (LRCK), pin 23 (BCK), pin 24 to 27 (DATA)
Yes
Check and repair the area surrounding IC6006 and IC7006 on the AMP board.
No
The I2S signal of the following is outputted.
DSP board: IC1105 pin 14 (LRCK), pin 13 (BCK), pin 15 to 18 (DATA)
DSP board: IC1304 pin 9, 15 (DATA)
Yes
Check the connection between the DSP board (CN1104) and the AMP board (CN7006).
No
The voltage of the following is 3.3 V.
DSP board: IC1105 pin 20 (VCC)
DSP board: IC1304 pin 13 (VDD)
Yes
No
The voltage of the following is 6.2 V.
DSP board: IC803 pin 8
Yes
The voltage of the following is 3.3 V.
DSP board: IC803 pin 5
Yes
Replace the DSP board.
No
No
The PCONT1 (pin 15) signal is outputted of IC3002 on the MB-1611 board.
Yes
Check the connection between the MB-1611 board (CN8005) and the DSP board (CN2403).
No
The MB-1611 board may be defective.
The voltage of the following is 28 V.
AMP board: IC7011 pin 8
Yes
Check the connection between the AMP board (CN7004) and the MB-1611 board (CN301).
Check the connection between the MB-1611 board (CN302) and the DSP board (CN801).
Check and repair the area surrounding IC7011 on the AMP board.
No
Fuse (F7008) on the AMP board conduct the electricity.
Yes
Check the area surrounding fuse (F7008) on the AMP board.
No
The AMP board may be defective.
– Continued on page 58 –


– From page 57 –
The I2S signal of the following is inputted.
DSP board: IC1602 pin 76 (LRCK), pin 77 (BCK), pin 73, 74, 86 to 88 (DATA)
Yes
Check the area surrounding IC1105 and IC1304 on the DSP board.
If there is no abnormality, replace the DSP board.
No
The voltage of the following is 3.3 V.
DSP board: IC802 pin 1
IC805 pin 1
The voltage of the following is 1.5 V.
DSP board: IC804 pin 3
(following L804)
The voltage of the following is 1.1 V.
DSP board: IC804 pin 14
(following L806)
Yes
Check the area surrounding IC802, IC804 and IC805 on the DSP board.
If there is no abnormality, replace the DSP board.
No
The voltage of the following is 3.3 V.
DSP board: IC802 pin 5
IC804 pin 5
IC805 pin 5
Yes
Replace the DSP board.
No
The PCONT signal of the following is outputted.
MB-1611 board:
IC3002 pin 26 (DSP1_PCONT), pin 25 (DSP2_PCONT)
Yes
Check the connection between the MB-1611 board (CN8004) and the DSP board (CN2402) (DSP1_PCONT).
Check the connection between the MB-1611 board (CN8005) and the DSP board (CN2403) (DSP2_PCONT).
No
The MB-1611 board may be defective.

4. Power is not turned on



HT-ST5000

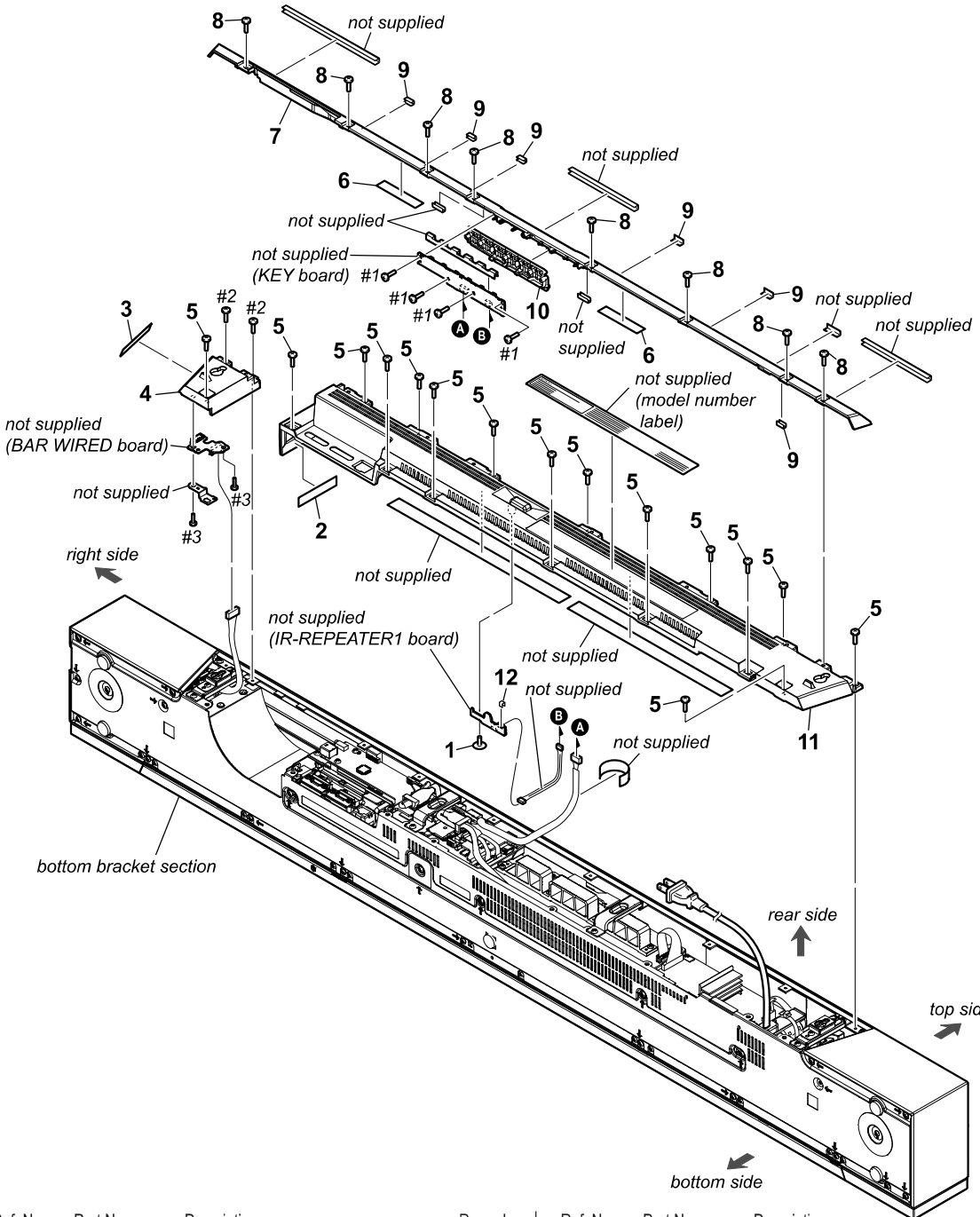
SECTION 4
EXPLODED VIEWS

Note:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color

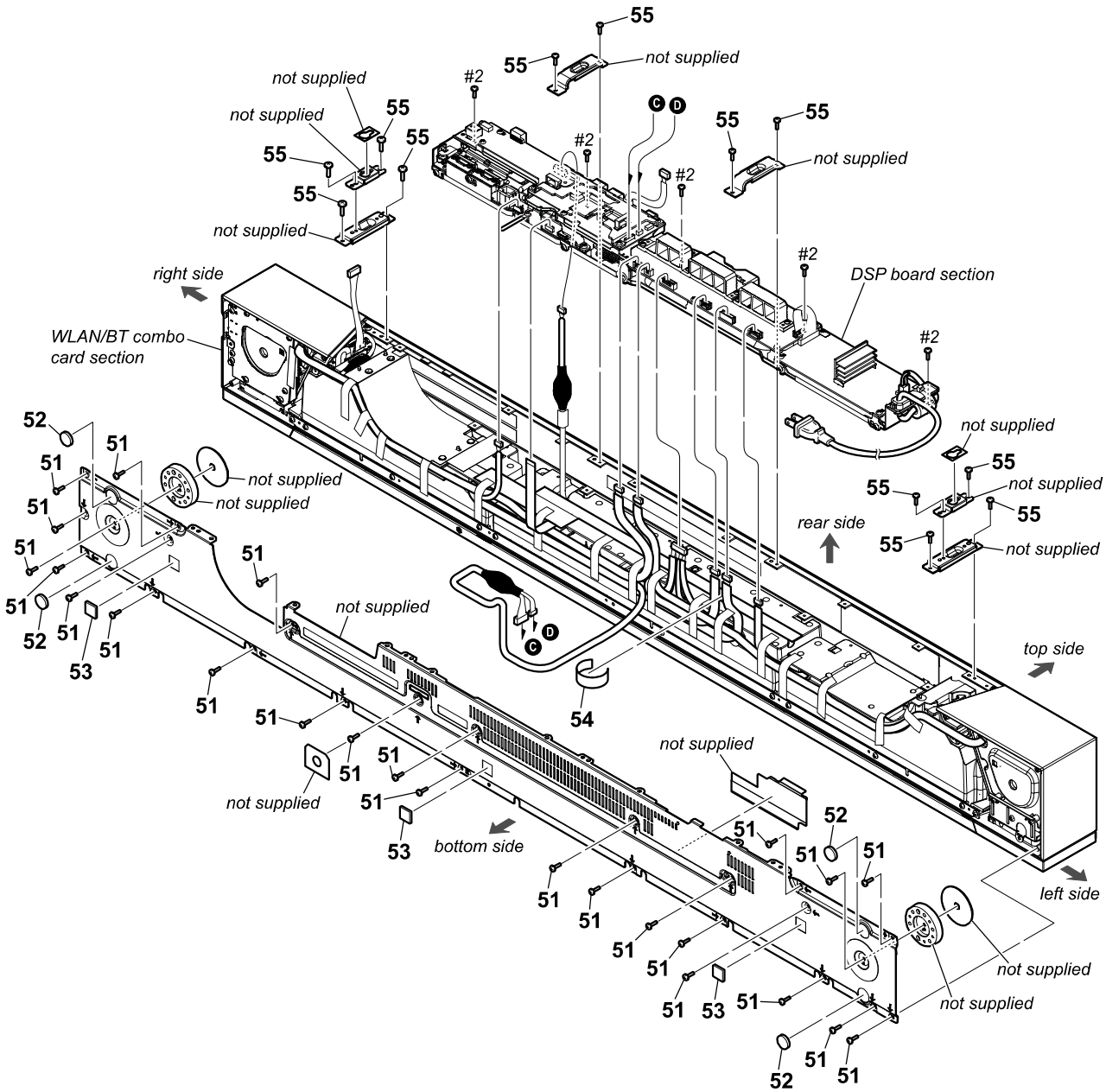
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

4-1. BACK PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	4-691-885-01	SCREW, +PWH 3X8	
* 2	3-378-109-01	CUSHION, SARANET	
3	4-692-070-01	SHEET (PLUG)	
4	4-687-659-01	PANEL (BACK R)	
5	4-537-542-01	STEP SCREW B3X6	
6	3-378-109-12	CUSHION, SARANET	
7	4-687-660-01	COVER (REAR)	
8	4-227-843-03	SCREW (TP), FLAT HEAD (3.6X8.0 mm)	
9	4-564-787-11	NON WOVEN FABRIC (T0.3)	
10	4-687-661-01	BUTTON	
11	X-2594-468-3	PANEL (BACK L) ASSY	
12	4-427-517-01	CUSHION (F)	
#1	7-685-534-14	SCREW +BTP 2.6X8 TYPE2 N-S	
#2	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	
#3	7-685-645-71	SCREW +BVTP 3X6 TYPE2 IT-3	

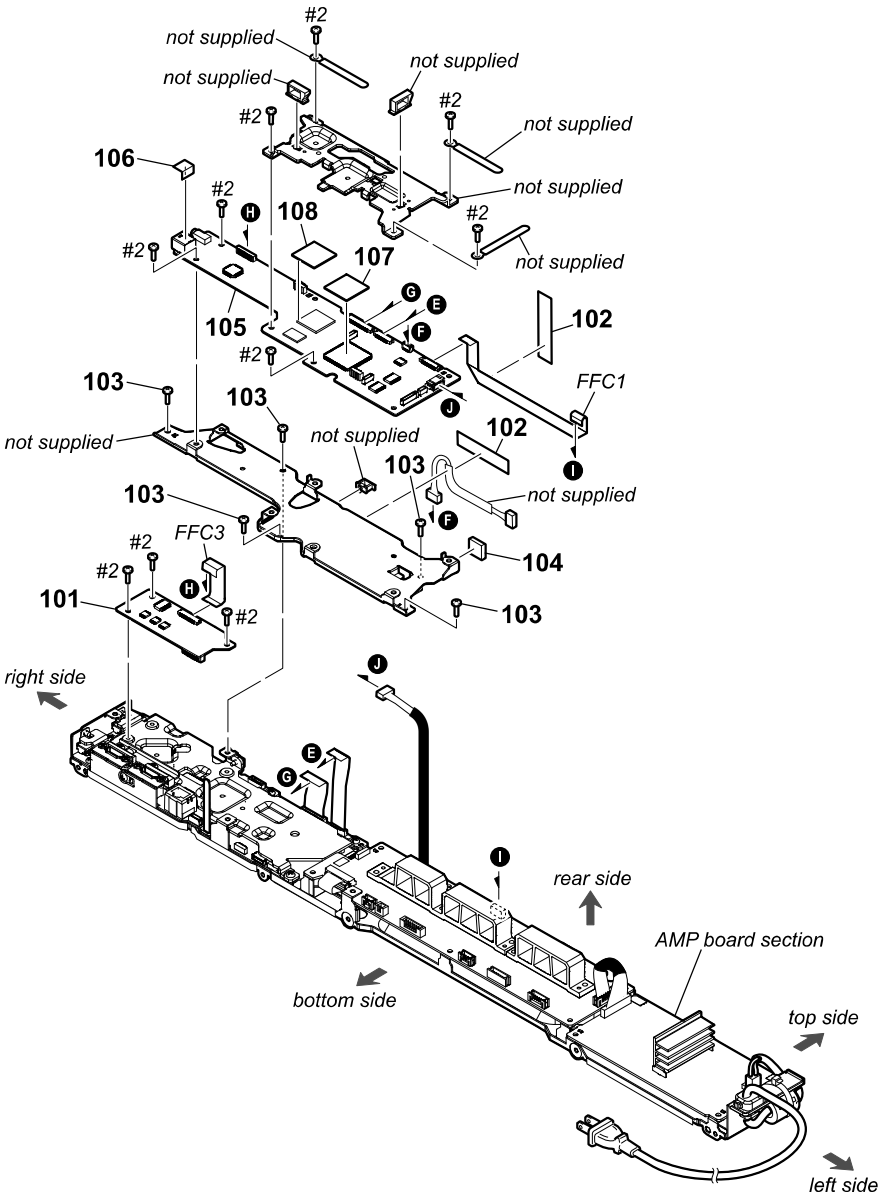
4-2. BOTTOM BRACKET SECTION



Ref. No.	Part No.	Description	Remark
51	3-704-515-22	SCREW (BV/RING) (3.7X8.0 mm)	
52	4-687-689-01	FOOT	
53	4-695-239-01	FOOT (CENTER)	
* 54	3-378-109-01	CUSHION, SARANET	

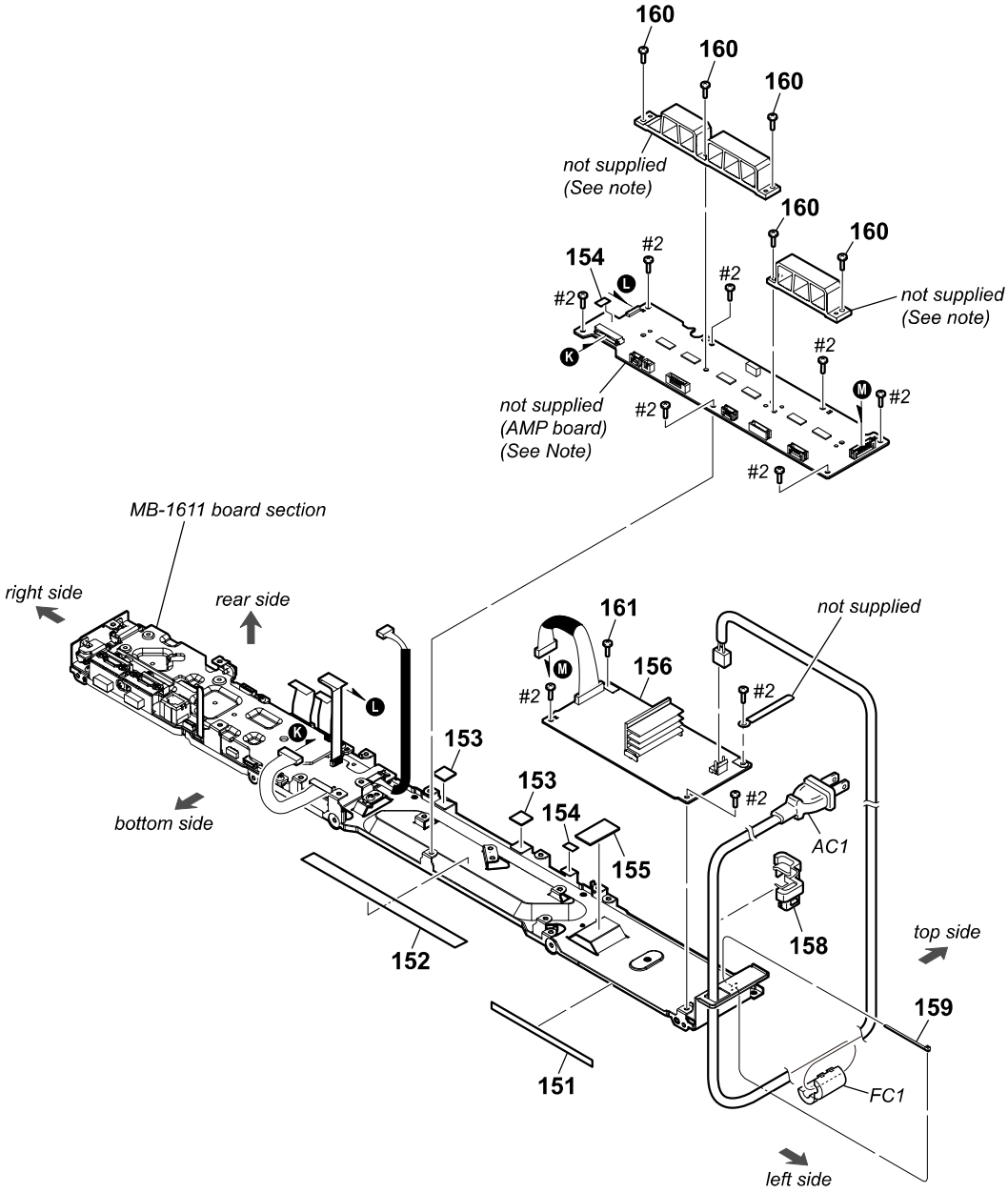
Ref. No.	Part No.	Description	Remark
55	3-077-331-21	+BV3 (3-CR) (L = 6.0 mm)	
#2	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	

4-3. DSP BOARD SECTION



Ref. No.	Part No.	Description	Remark
101	A-2167-155-A	AUDIO SELECTOR BOARD, COMPLETE	
* 102	3-378-109-01	CUSHION, SARANET	
103	3-077-331-21	+BV3 (3-CR) (L = 6.0 mm)	
104	4-697-168-01	CUSHION (KEY WIRE)	
105	A-2187-919-A	DSP BOARD, COMPLETE (SV)	
106	4-582-466-61	CUSHION (T03)	
107	4-589-900-01	SHEET, RADIO WAVE ABSORPTION	
108	4-562-041-51	SHEET, RADIATION (22.0X22.0X1.0 mm)	
FFC1	9-885-218-34	FFC 20P (DSP - AMP)	
FFC3	9-885-218-35	FFC 30P (DSP - AUDIO SELECTOR)	
#2	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	

4-4. AMP BOARD SECTION

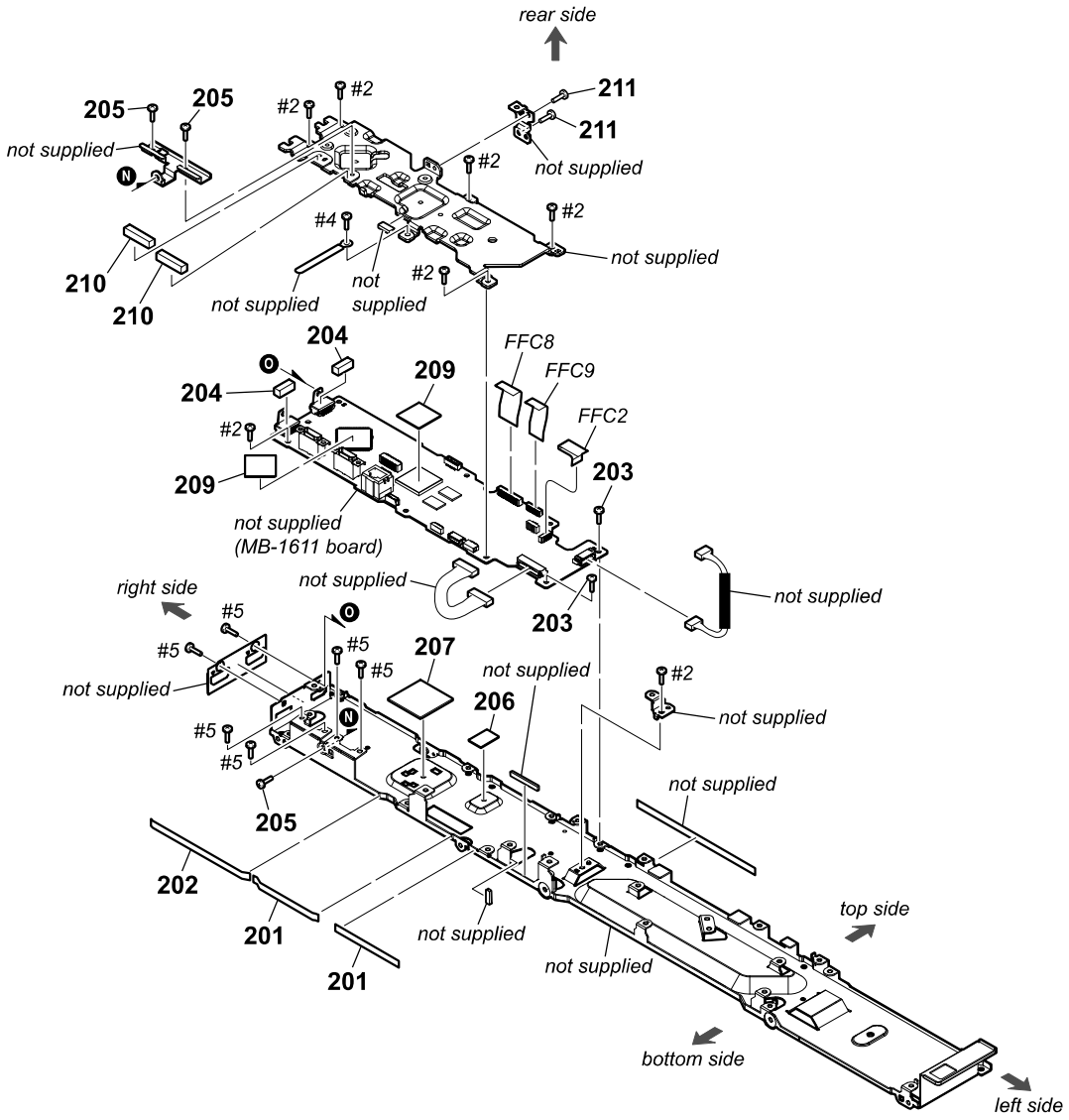


Note: The compound for heat radiation is applied to the touching portion between the IC on the AMP board and the heat sink. When the heat sink is removed, be careful not to touch the compound for heat radiation.

Ref. No.	Part No.	Description	Remark
151	4-691-336-31	SHEET, RADIATION (6.0X80.0X2.0 mm)	
152	4-691-336-41	SHEET, RADIATION (12.0X160.0X2.0 mm)	
153	4-691-336-01	SHEET, RADIATION (13.0X13.0X2.0 mm)	
154	4-562-041-21	SHEET, RADIATION (10.0X6.0X1.0 mm)	
155	4-691-336-51	SHEET, RADIATION (16.0X30.0X4.0 mm)	
156	A-2167-168-A	BAR POWER BOARD, COMPLETE	
⚠ 158	4-966-267-12	BUSHING (FBS001), CORD	

Ref. No.	Part No.	Description	Remark
159	3-655-653-11	BAND (TAITON), BINDING	
160	3-905-609-13	SCREW (TRANSISTOR) (3.7X14.0 mm)	
161	4-974-510-11	SCREW (+BV 3X8 CU)	
⚠ AC1	1-834-965-23	CORD, POWER	
FC1	1-500-386-11	FILTER, CLAMP (FERRITE CORE)	
#2	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	

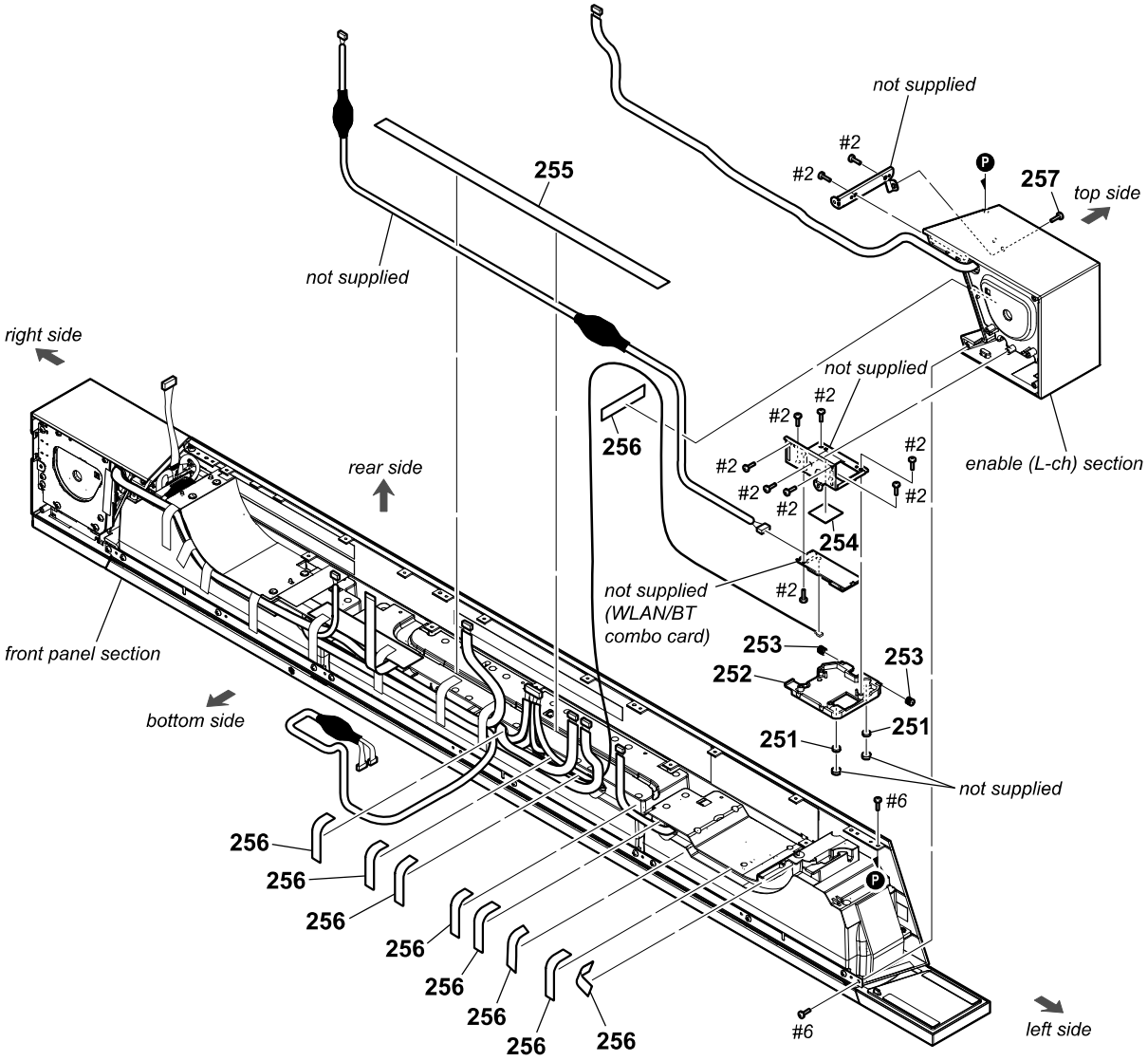
4-5. MB-1611 BOARD SECTION



Ref. No.	Part No.	Description	Remark
201	4-691-336-21	SHEET, RADIATION (6.0X40.0X2.0 mm)	
202	4-691-336-31	SHEET, RADIATION (6.0X80.0X2.0 mm)	
203	4-974-510-11	SCREW (+BV 3X8 CU)	
204	4-586-625-11	GASKET (SL)	
205	3-704-515-22	SCREW (BV/RING) (3.7X8.0 mm)	
206	4-562-041-01	SHEET, RADIATION (18.0X12.0X1.0 mm)	
207	4-691-336-11	SHEET, RADIATION (35.0X35.0X2.0 mm)	
209	4-589-900-01	SHEET, RADIO WAVE ABSORPTION	
210	4-586-625-31	GASKET (SL)	

Ref. No.	Part No.	Description	Remark
211	3-077-331-21	+BV3 (3-CR) (L = 6.0 mm)	
FFC2	9-885-218-33	FFC 16P (MB-1611 - AMP)	
FFC8	9-885-218-37	FFC 40P (MB-1611 - DSP)	
FFC9	9-885-218-36	FFC 24P (MB-1611 - DSP)	
#2	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	
#4	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
#5	7-682-546-09	SCREW +B 3X5	

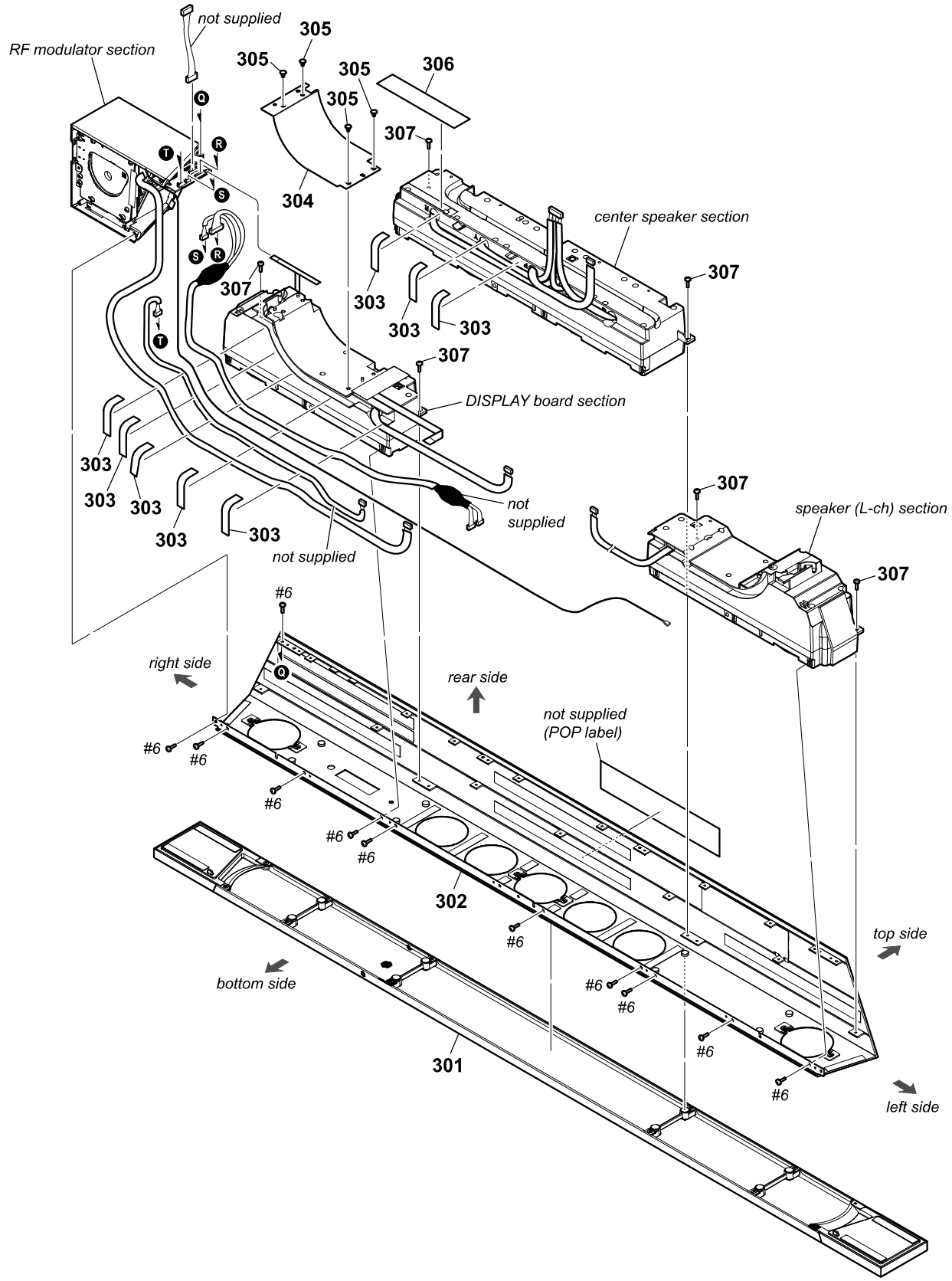
4-6. WLAN/BT COMBO CARD SECTION



Ref. No.	Part No.	Description	Remark
251	4-686-814-01	CUSHION (MAGNET S)	
252	4-598-536-01	HOLDER (WIRELESS L)	
253	4-686-804-01	BUSHING (ENABLE)	
254	4-686-810-01	SHEET (THERMAL WIFI)	
255	4-691-717-01	CUSHION (WIRE WIFI)	

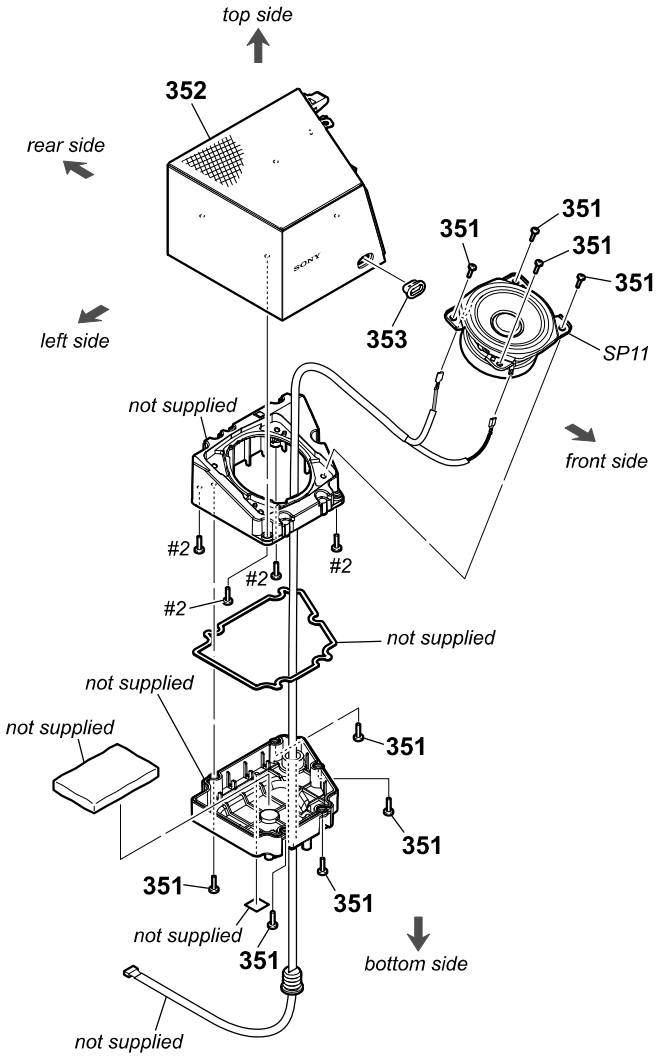
Ref. No.	Part No.	Description	Remark
* 256	3-378-109-01	CUSHION, SARANET	
257	3-704-515-22	SCREW (BV/RING) (3.7X8.0 mm)	
#2	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	
#6	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	

4-7. FRONT PANEL SECTION



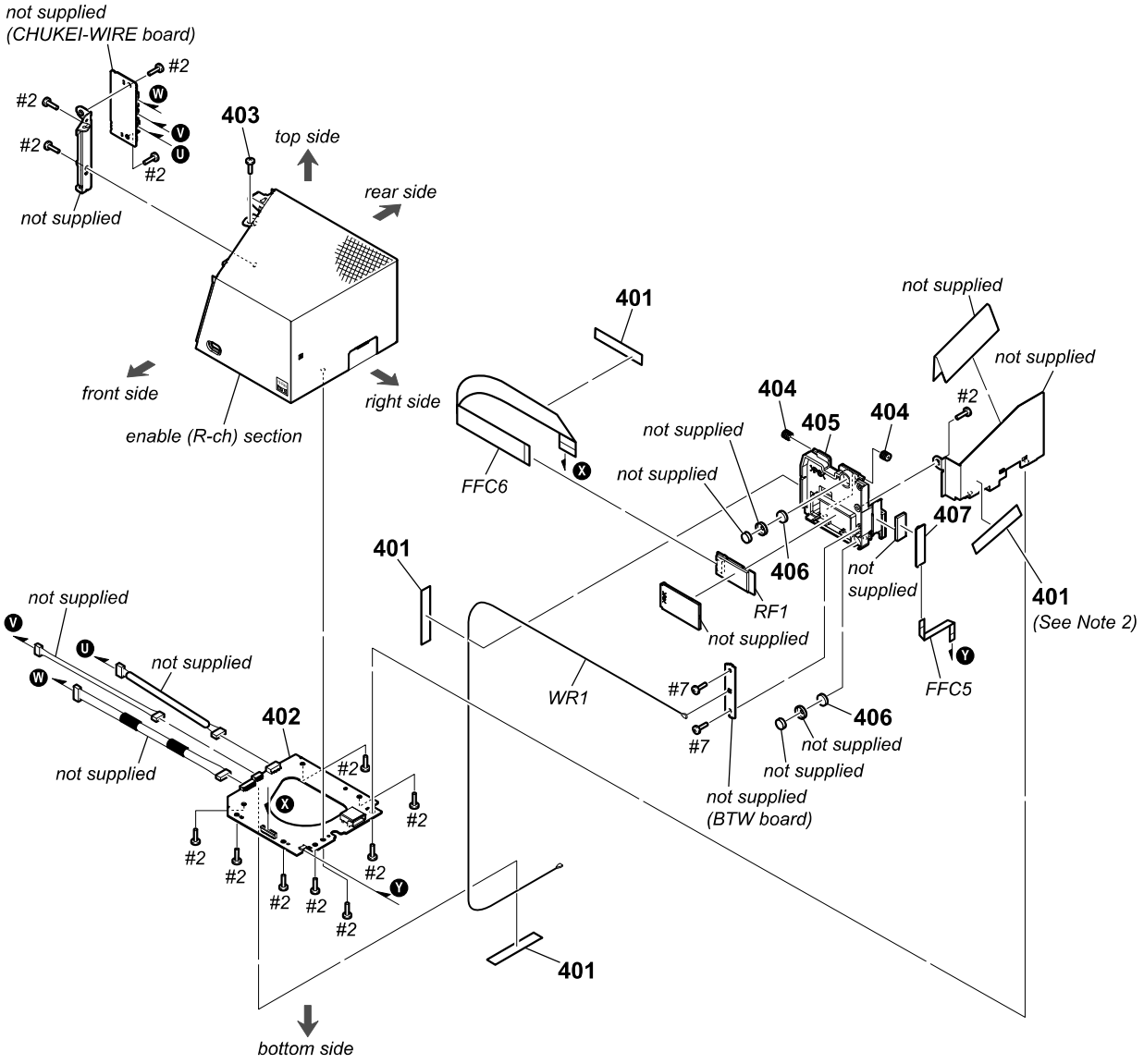
Ref. No.	Part No.	Description	Remark
301	A-2170-761-A	GRILLE ASSY (Grille frame) (Accessory)	
302	A-2189-906-A	PANEL (FRONT) ASSY (S) (SV) (Including Magnet, Window)	
* 303	3-378-109-01	CUSHION, SARANET	
304	4-686-942-01	SHEET (R)	
305	2-249-250-00	CLIP (SMALL), CANOE	
306	4-691-715-01	CUSHION (FFC DISP)	
307	4-537-542-01	STEP SCREW B3X6	
#6	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	

4-8. ENABLE (L-CH) SECTION



Ref. No.	Part No.	Description	Remark
351	4-986-971-02	+BV TAPPING SCREW TYPE-2 3.5 (L = 10.0 mm)	
352	A-2189-907-A	ENABLE (L) ASSY (S) (SV) (Including Housing, Punching, Base, Cushion) (for L-ch)	
353	4-689-603-01	CATCHER (FLEX-OV)	
SP11	1-859-207-11	LOUDSPEAKER (56 mm)-207-11 (Top L-ch)	
#2	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	

4-9. RF MODULATOR SECTION



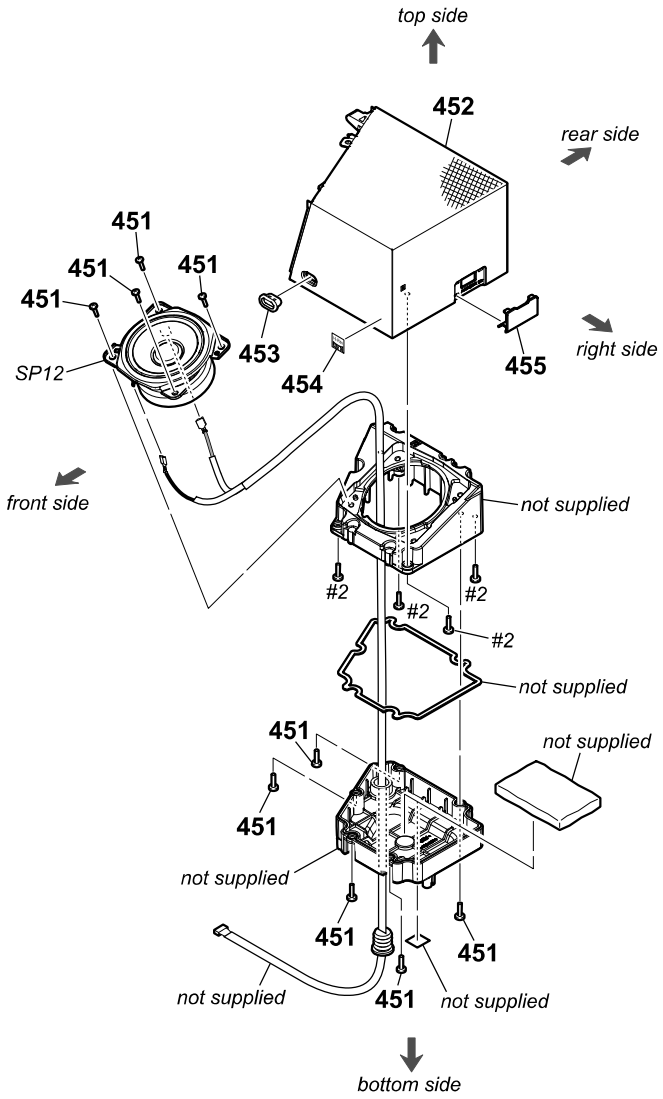
Note 1: When the complete NFC board (Ref. No. 407) is replaced, refer to "NFC CONNECTION CHECKING METHOD" on page 6.

Note 2: Saranet cushion has been changed into filament tape (sub material) from the midway of production.

	Ref. No.	Part No.	Description	Remark
*	401	3-378-109-01	CUSHION, SARANET	
	402	A-2167-163-A	USB-CHUKEI BOARD, COMPLETE	
	403	3-704-515-22	SCREW (BV/RING) (3.7X8.0 mm)	
	404	4-686-804-01	BUSHING (ENABLE)	
	405	4-598-536-11	HOLDER (WIRELESS R)	
	406	4-686-813-01	CUSHION (YOKE)	
	407	A-2092-220-A	NFC BOARD, COMPLETE (See Note 1)	

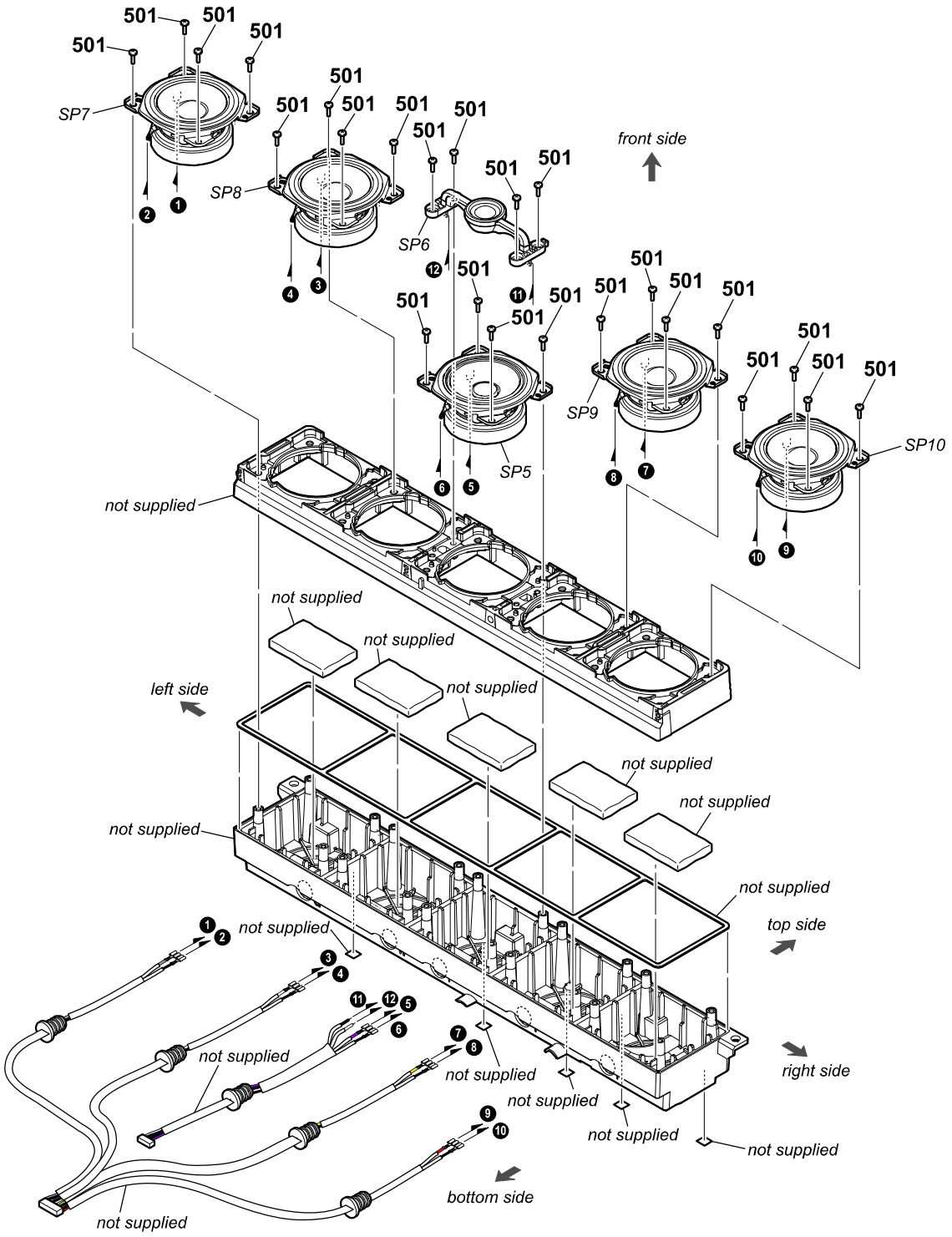
Ref. No.	Part No.	Description	Remark
FFC5	9-885-218-32	FFC 6P (USB-CHUKEI - NFC)	
FFC6	9-885-218-31	FFC 26P (USB-CHUKEI - RF Modulator)	
RF1	1-492-700-61	RF MODULATOR (WS001)	
WR1	1-971-430-11	HARNESS, COAXIAL (BLACK)	
#2	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	
#7	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	

4-10. ENABLE (R-CH) SECTION



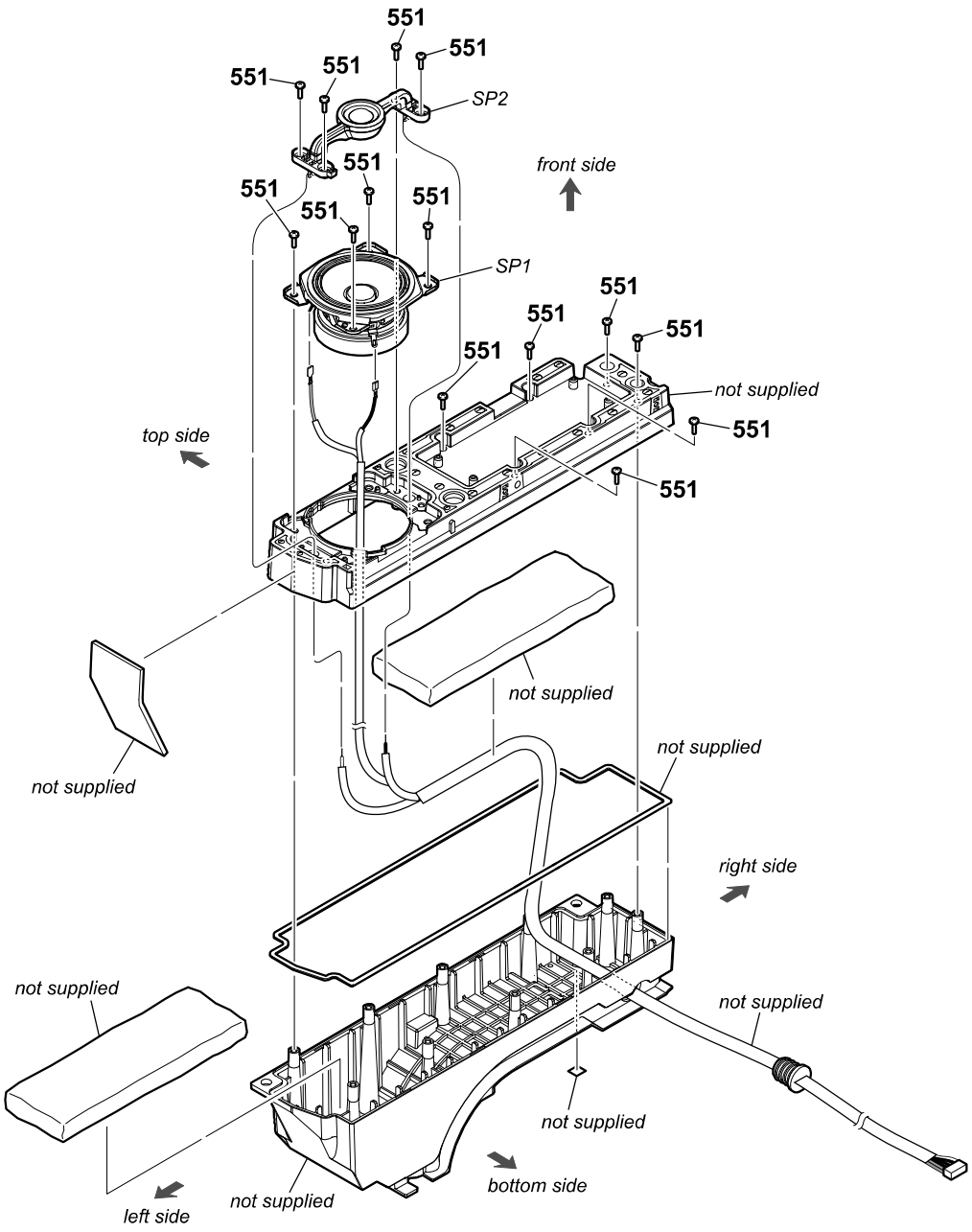
Ref. No.	Part No.	Description	Remark
451	4-986-971-02	+BV TAPPING SCREW TYPE-2 3.5 (L = 10.0 mm)	
452	A-2189-908-A	ENABLE (R) ASSY (S) (SV) (Including Housing, Punching, Base, Cushion) (for R-ch)	
453	4-689-603-01	CATCHER (FLEX-OV)	
454	4-477-465-21	HI-RES LABEL	
455	4-686-805-01	LID (USB)	
SP12	1-859-207-11	LOUDSPEAKER (56 mm)-207-11 (Top R-ch)	
#2	7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3	

4-11. CENTER SPEAKER SECTION



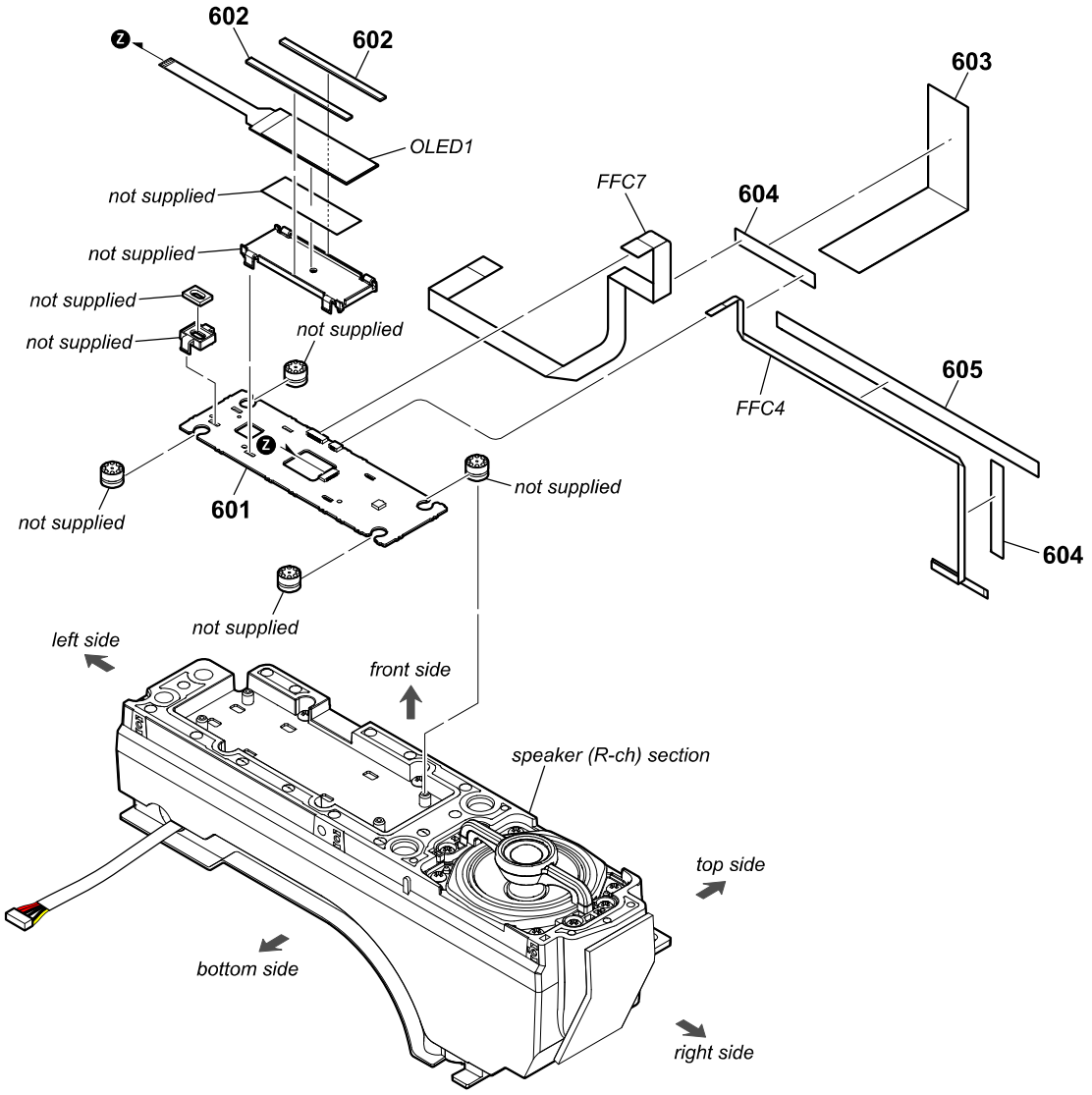
Ref. No.	Part No.	Description	Remark
501	4-986-971-02	+BV TAPPING SCREW TYPE-2 3.5 (L = 10.0 mm)	
SP5	1-859-205-11	LOUDSPEAKER (56 mm)-205-11 (Woofer (Center))	
SP6	1-859-217-21	LOUDSPEAKER14-20 mm, WITH BRIDGE (Tweeter (Center))	
SP7	1-859-206-11	LOUDSPEAKER (56 mm)-206-11 (Satellite (Surround L-ch))	
SP8	1-859-206-11	LOUDSPEAKER (56 mm)-206-11 (Satellite (Surround back L-ch))	
SP9	1-859-206-11	LOUDSPEAKER (56 mm)-206-11 (Satellite (Surround back R-ch))	
SP10	1-859-206-11	LOUDSPEAKER (56 mm)-206-11 (Satellite (Surround R-ch))	

4-12. SPEAKER (L-CH) SECTION



Ref. No.	Part No.	Description	Remark
551	4-986-971-02	+BV TAPPING SCREW TYPE-2 3.5 (L = 10.0 mm)	
SP1	1-859-205-11	LOUDSPEAKER (56 mm)-205-11	(Woofer (Front L-ch))
SP2	1-859-217-11	LOUDSPEAKER14-20 mm, WITH BRIDGE	(Tweeter (Front L-ch))

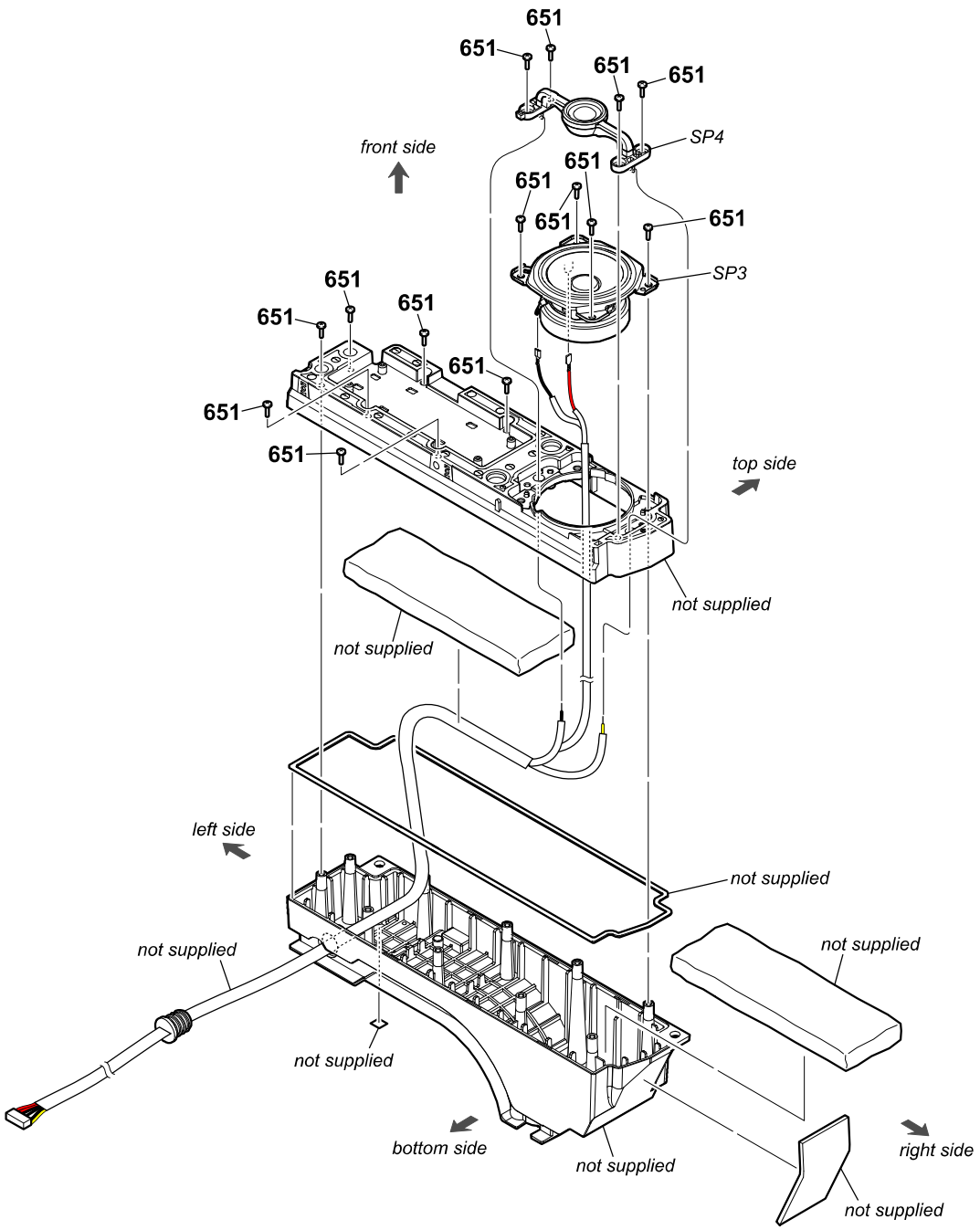
4-13. DISPLAY BOARD SECTION



Ref. No.	Part No.	Description	Remark
601	A-2167-161-A	DISPLAY BOARD, COMPLETE	
602	4-559-873-01	CUSHION (WINDOW)	
603	4-691-715-01	CUSHION (FFC DISP)	
* 604	3-378-109-01	CUSHION, SARANET	
605	4-691-716-01	CUSHION (FFC NFC)	

Ref. No.	Part No.	Description	Remark
FFC4	9-885-218-39	FFC 6P (DISPLAY - CHUKEI-WIRE)	
FFC7	9-885-218-38	FFC 16P (MB-1611 - DISPLAY)	
OLED1	1-812-047-11	OLED DISPLAY	

4-14. SPEAKER (R-CH) SECTION



Ref. No.	Part No.	Description	Remark
651	4-986-971-02	+BV TAPPING SCREW TYPE-2 3.5 (L = 10.0 mm)	
SP3	1-859-205-11	LOUDSPEAKER (56 mm)-205-11	(Woofer (Front R-ch))
SP4	1-859-217-11	LOUDSPEAKER14-20 mm, WITH BRIDGE	(Tweeter (Front R-ch))

SECTION 5
ACCESSORIES

Ref. No.	Part No.	Description	Remark
	4-687-836-11	STARTUP GUIDE (ENGLISH)	
	4-687-836-21	STARTUP GUIDE (SPANISH, FRENCH)	
	4-687-838-13	MANUAL, INSTRUCTION (Operating Instructions) (ENGLISH, SPANISH, FRENCH)	
901	A-2170-761-A	GRILLE ASSY (Grille frame)	
902	1-493-268-11	REMOTE COMMANDER (RMT-AH310U) (Remote control)	
904	1-849-300-11	CABLE WITH CONNECTOR (HDMI CABLE) (supports the specification equal to Premium High Speed HDMI cable with Ethernet)