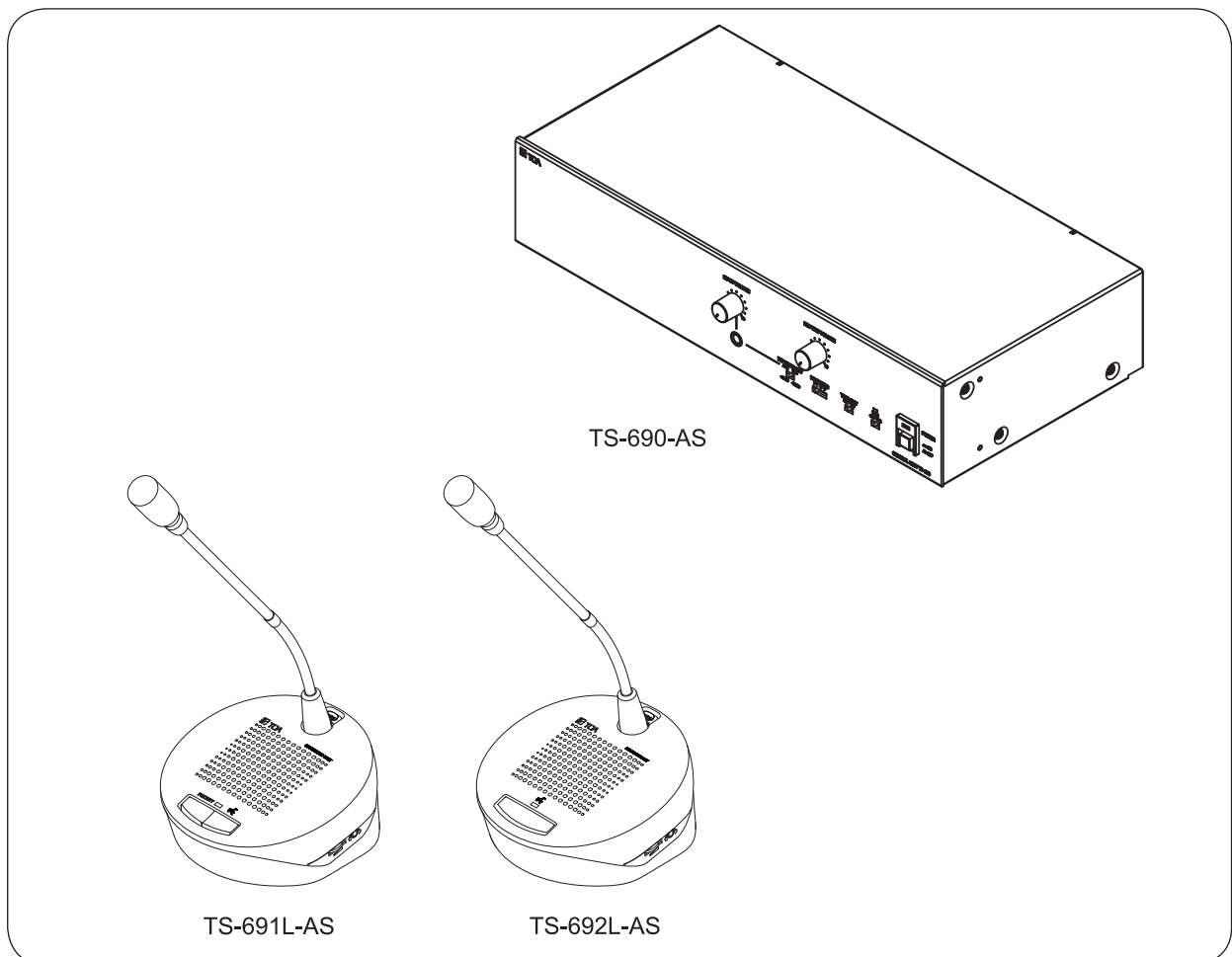# TOA

CONFERENCE SYSTEM   TS-690 SERIES

TS-690-AS (CENTRAL UNIT)

TS-691L-AS (CHAIRMAN UNIT WITH LONG MICROPHONE)

TS-692L-AS (DELEGATE UNIT WITH LONG MICROPHONE)

YR-780-2M (2m EXTENSION CORD)

YR-780-10M (10m EXTENSION CORD)

TS-690-AS

TS-691L-AS

TS-692L-AS

Thank you for purchasing TOA's Conference system.
Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

TOA Corporation

TABLE OF CONTENTS

1. SAFETY PRECAUTIONS

- Before installation or use, be sure to carefully read all the instructions in this section for correct and safe operation.
- Be sure to follow all the precautionary instructions in this section, which contain important warnings and cautions regarding safety.
- After reading, keep this manual for future reference.

Safety Symbol and Message Conventions

Safety symbols and messages described below are used in this manual to prevent bodily injury and property damage which could result from mishandling. Before operating your product, read this manual first and understand the safety symbols and messages so that you are thoroughly aware of the potential safety hazards.

⚠ **WARNING**   Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.

⚠ **CAUTION**   Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

⚠ WARNING

When Installing the Unit

- Do not expose the unit to rain or an environment where it may be splashed by water or other liquids, as doing so may result in fire or electric shock.

- Use the unit only with the voltage specified on the unit. Using a voltage higher than that which is specified may result in fire or electric shock. (TS-690-AS only)

- Do not cut, kink, otherwise damage nor modify the power supply cord. In addition, avoid using the power cord in close proximity to heaters, and never place heavy objects -- including the unit itself -- on the power cord, as doing so may result in fire or electric shock. (TS-690-AS only)

- Avoid installing or mounting the unit in unstable locations, such as on a rickety table or a slanted surface. Doing so may result in the unit falling down and causing personal injury and/or property damage. (TS-690-AS only)

- Since the unit is designed for in-door use, do not use it outdoors. When it gets wet with rain, there is a danger of electric shock.

When the Unit is in Use

- Should the following irregularity be found during use, immediately switch off the TS-690-AS's power, disconnect the power supply plug from the TS-690-AS's AC outlet and contact your nearest TOA dealer. Make no further attempt to operate the unit in this condition as this may cause fire or electric shock.

  · If you detect smoke or a strange smell coming from the unit.
  · If water or any metallic object gets into the unit
  · If the unit falls, or the unit case breaks
  · If the power supply cord is damaged (exposure of the core, disconnection, etc.) (TS-690-AS only)
  · If it is malfunctioning (no tone sounds.)

- To prevent a fire or electric shock, never open nor remove the unit case as there are high voltage components inside the unit. Refer all servicing to qualified service personnel.

- Do not place cups, bowls, or other containers of liquid or metallic objects on top of the unit. If they accidentally spill into the unit, this may cause a fire or electric shock.

- Do not touch a power supply plug during thunder and lightning, as this may result in electric shock. (TS-690-AS only)

- The apparatus shall be connected to a mains socket outlet with a protective earthing connection. (TS-690-AS only)

- The socket-outlet shall be installed near the equipment and the plug (disconnecting device) shall be easily accessible. (TS-690-AS only)

- Do not insert nor drop metallic objects or flammable materials into the speaker openings in the unit's cover as this may result in fire or electric shock. (TS-691L-AS/TS-692L-AS only)

⚠ CAUTION

When Installing the Unit

· Never plug in nor remove the power supply plug with wet hands, as doing so may cause electric shock. (TS-690-AS only)

· When unplugging the power supply cord, be sure to grasp the power supply plug; never pull on the cord itself. Operating the unit with a damaged power supply cord may cause a fire or electric shock. (TS-690-AS only)

· When moving the unit, be sure to remove its power supply cord from the wall outlet. Moving the unit with the power cord connected to the outlet may cause damage to the power cord, resulting in fire or electric shock. When removing the power cord, be sure to hold its plug to pull. (TS-690-AS only)

· Avoid installing the unit in humid or dusty locations, in locations exposed to the direct sunlight, near the heaters, or in locations generating sooty smoke or steam as doing otherwise may result in fire or electric shock.

When the Unit is in Use

· Contact your TOA dealer as to the cleaning. If dust is allowed to accumulate in the unit over a long period of time, a fire or damage to the unit may result. (TS-690-AS only)

· If dust accumulates on the power supply plug or in the wall AC outlet, a fire may result. Clean it periodically. In addition, insert the plug in the wall outlet securely. (TS-690-AS only)

· Switch off the power, and unplug the power supply plug from the AC outlet for safety purposes when cleaning or leaving the unit unused for 10 days or more. Doing otherwise may cause a fire or electric shock. (TS-690-AS only)

2. GENERAL DESCRIPTION

The TS-690 Series conference system is designed for quick and easy installation and storage.
The system can be installed by merely connecting conference units* to the TS-690-AS Central unit.

* Collective name of the following 2 models: TS-691L-AS Chairman unit with long microphone and
 TS-692L-AS Delegate unit with long microphone.

3. FEATURES

• Conference speech can be amplified by simply connecting the Chairman and Delegate units to the Central
  unit.

• Up to 24 conference units can be connected per Central unit.

• Optional 2-meter and 10-meter extension cables allow wiring suitable to local installation conditions.

• TS-691L-AS chairman unit and TS-692L-AS delegate unit come with long gooseneck microphone
  as standard accessory.

• Because the microphone for all the conference units are detachable, all units can be stored without taking up
  much space.

• Test function allows easy confirmation of connections between conference units.

• The number of simultaneously operable Delegate units can be limited using the delegate unit restriction
  function. (Can be set to 0 − 3 units.)

• Even if the speaker forgets to turn off his or her microphone after speech completion, the Automatic Mic-Off
  function automatically switches off the microphone after a preset duration. (settable to OFF or 30 seconds)

• Conference contents can be recorded using an external recording equipment.

4. NOMENCLATURE AND FUNCTIONS

4.1. TS-690-AS Central Unit

[Front]
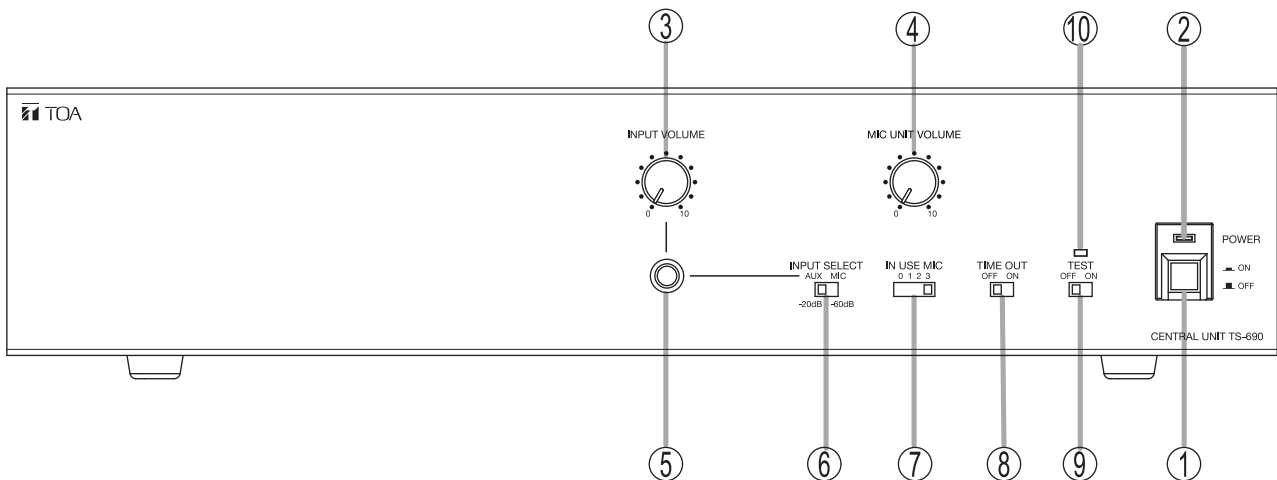
1. Power switch [POWER]
Power is switched on and off with each depression of this switch.

2. Power indicator [POWER]
Lights when the Power switch ① is set to the ON position.

3. Input volume control [INPUT VOLUME]
Adjusts the volume of the microphone or AUX input connecting to the input terminal ⑤.
Tip
Selects the sound source connecting to the input terminal ⑤ by input select switch ⑥.

4. Conference unit volume control [MIC UNIT VOLUME]
Adjusts the volume of the conference unit's built-in speaker.

5. Microphone or AUX input terminal
Connects to a microphone or AUX input.
(Microphone : 600 Ω, −60 dB*, unbalanced
AUX : 10 kΩ, −20 dB*, unbalanced)

6. Input select switch [INPUT SELECT]
Selects the sound source connecting to the input terminal ⑤
MIC: Microphone input selected
AUX: AUX input selected

7. In-use delegate unit number selector [IN USE MIC]
Sets the number of delegate units that can be used simultaneously.

8. Automatic mic-off setting switch [TIME OUT]
It is possible to set the conference unit's microphone to be automatically turned off after speech completion.

9. Test switch [TEST]
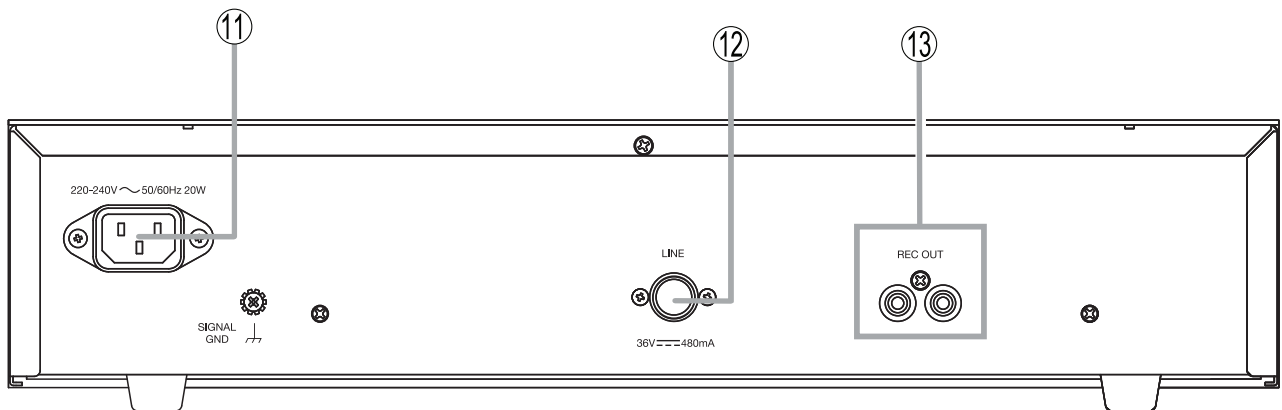This switch is intended for testing purposes during installation.
Setting this switch to the ON position turns on the microphones of all conference units.

10. Test indicator
Light when the Test switch is set to the ON position.

* 0 dB = 1 V

[Rear]


```
      ⑪                          ⑫        ⑬

  220-240V ～ 50/60Hz 20W

                                  LINE      REC OUT

  SIGNAL
  GND                         36V ═══ 480mA
```

11. AC inlet
Connects to the supplied power cord.

12. LINE connection terminal [LINE]
Connects to the conference unit.
Up to 24 conference units can be connected.

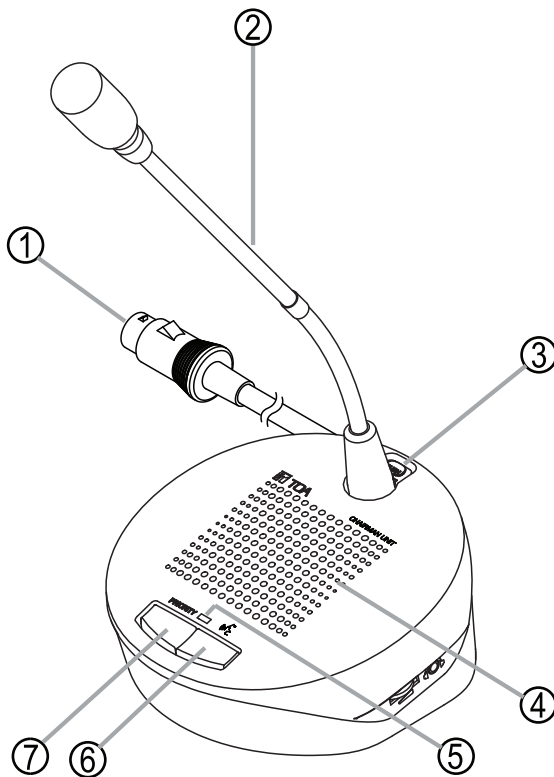**13. Recording output terminals [REC OUT]**
10 kΩ, −20 dB*, unbalanced, RCA jack.
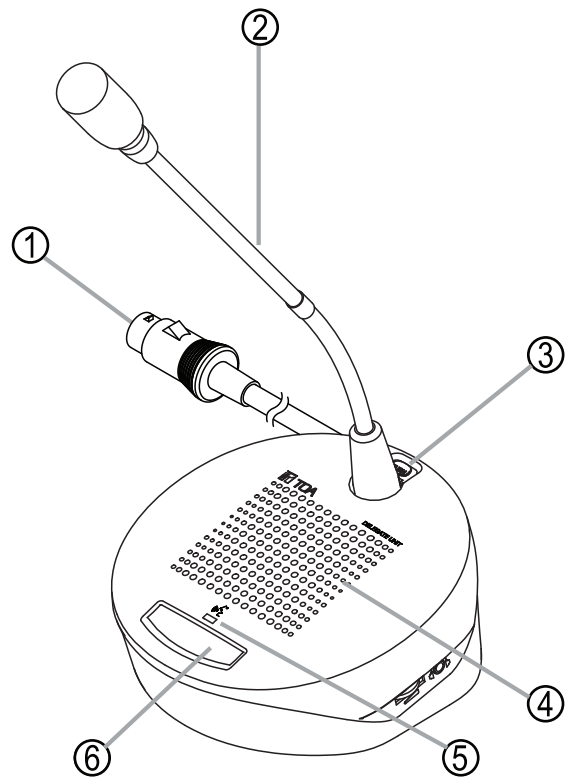Connects to a recording equipment.

* 0 dB = 1 V

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4.2. TS-691L-AS Chairman Unit with Long Microphone and TS-692L-AS Delegate Unit with Long Microphone

[TS-691L-AS Isometric]

[TS-692L-AS Isometric]

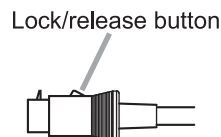**1. Line connection cord**
Connect this cord to the Line Connection terminal of the Central unit or the next preceding linked conference unit.

Tip
Press the plug's lock/release button when connecting or removing the cord.

Lock/release button

2. Long microphone unit
Standard accessory long microphone unit.
Tip:
Connects accessory microphone unit to the microphone connection connector ③.

3. Microphone connection connector
Connects to the accessory long microphone unit.

4. Speaker
Output other speaker's voices. Adjust the volume with the TS-690-AS Central unit's Conference Unit volume control. The built-in speaker is temporarily disabled while speech is made using this unit.

5. Microphone in-use indicator
Lights when the microphone is on.

6. Speech button [🎤]
Press this button to speak. The microphone in-use indicator lights. Press this button again to turn off the microphone. The microphone in-use indicator goes off.

7. Priority button [PRIORITY] (TS-691L-AS only)
While this button is pressed, the microphone in-use indicator remains lit, allowing priority speech to go through. In this case, no other delegate units can be used. Pressing this button causes a single tone chime to sound at the remaining conference units.

[TS-691L-AS/TS-692L-AS Right Side]

⑧ ⑨
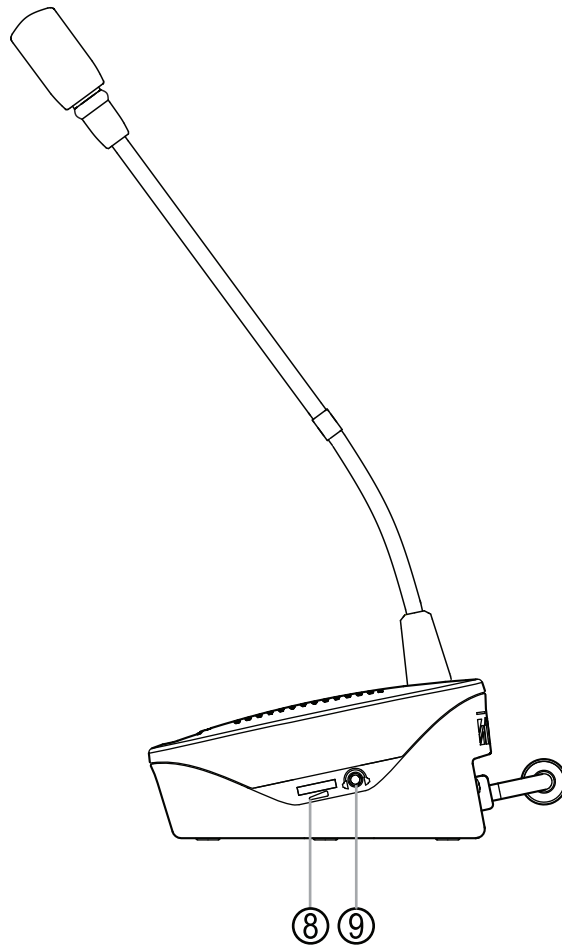
8. Speaker and headphone volume control
Simultaneously adjusts the sound output volume
of the built-in speaker and the headphone
connected to the adjacent
Recording/Headphone output terminal ⑨.

**9. Recording/Headphone output terminal
[HEADPHONES]**
Connect to recording equipment or headphone.
No sound is output from the internal Speaker④
while this terminal is in use.

[TS-691L-AS/TS-692L-AS Rear]
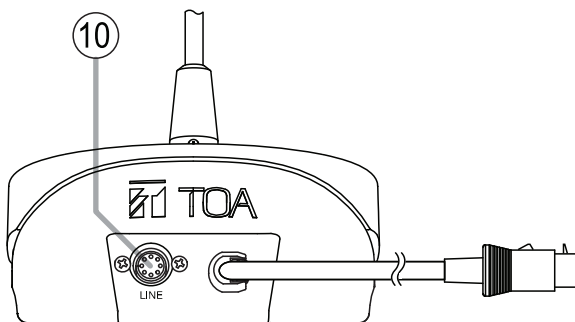
10. Line connection terminal [LINE]
Connect the next linked conference unit's line
connection cord to this terminal.

5. FUNCTION SETTINGS

5.1. Delegate Unit Restriction Function

Using the TS-690-AS Central unit's in-use delegate unit number selector (IN USE MIC), set the number of simultaneously-usable delegate units (TS-692L-AS).
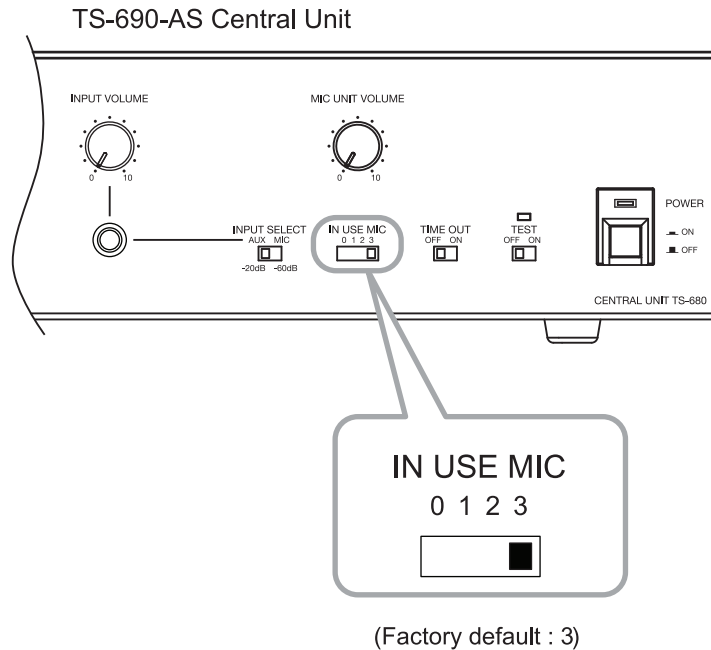
5.1.1. Setting procedure

TS-690-AS Central Unit

IN USE MIC
0 1 2 3

(Factory default : 3)

[When all delegate units are allowed to speak] (General conference style)

Select the number of simultaneously-usable delegate units using the In-use delegate unit number selector by setting the IN USE MIC switch to the 1, 2 ,3 position.

[When no delegate units are allowed to speak] (e.g. at the time of Voting)

Set the IN USE MIC switch to the 0 position.

5.1.2. Conference unit operation

[Chairman unit]

Chairman units can speak at any time regardless of the setting of the Delegate Unit Restriction function.

[Delegate unit]

Up to the set number of Delegate units can speak simultaneously.
When the full set number of Delegate units are in use (their microphones have been turned on), no microphones of other Delegate units can be turned on, even if their Speech buttons are pressed.

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5.2. Automatic Mic-Off Function

The automatic mic-off function automatically turns off the in-use microphone when a break in speech exceeds 30 seconds.
By using this function, the Delegate unit's microphone turns off after 30-second break even if a speaker forgets to turn it off after use.

[Setting]
Set the Automatic mic-off setting switch to the ON (30 seconds of time out) position.

Tip
Set this switch to OFF if this function is unnecessary.

TS-690-AS Central Unit

Automatic mic-off setting switch
(Factory default : OFF)

TIME OUT
OFF   ON
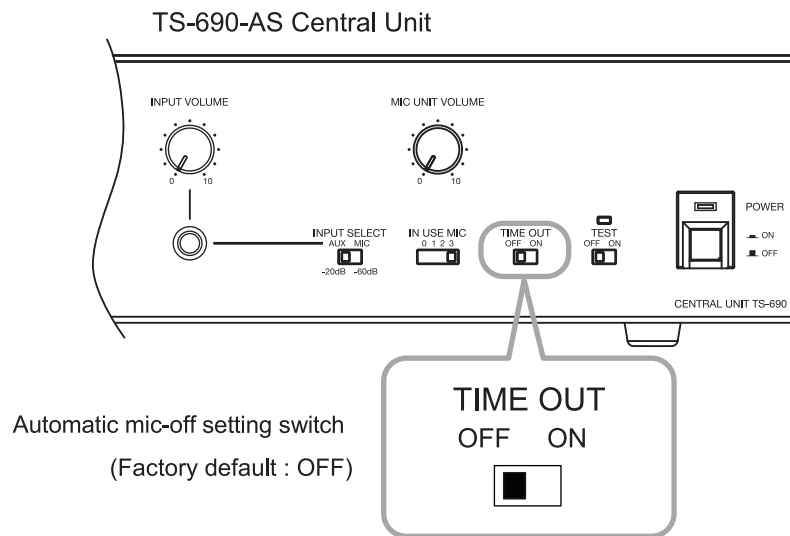
Notes
- For conferences in which long breaks in speech are expected, set the automatic mic-off setting switch to the OFF position.
- In areas with high levels of background noise, the Central unit may mistake the noise to be speech and the automatic mic-off function will not operate correctly. In such cases, this function should be disabled by placing the switch in the OFF position.

5.3. Test Function

The test function is especially useful to check operation of all connected conference units.
This function allows the microphones of all connected conference units to turn on. In this event, no sound is output from their internal speaker, but audio signal are output from their Recording/Headphone output terminal.
All conference units can speak without operating the Speech button regardless of the IN USE MIC switch setting.

[Setting]
Set the Test switch to the ON position.
Tip
After test completion, be sure to set this switch to OFF.

TS-690-AS Central Unit

Test indicator

TEST
OFF   ON

Test switch
(Factory default: OFF)
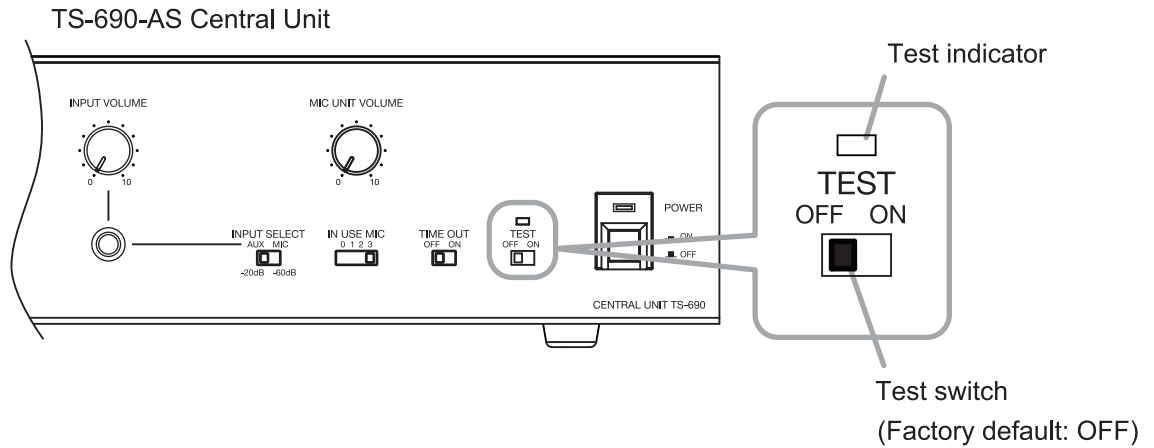
5.4. Input Select Function

The sound source connected to the input terminal can select input level either to AUX or MIC input by the INPUT SELECT switch on the front of this equipment.
Set the MIC / AUX input selection switch [INPUT SELECT] to match the signal level of equipment to be connected such as microphone, hourly chime, digital announcement machine, or an external mixer.

[Setting]
Set the INPUT SELECT switch to the MIC or AUX position.

TS-690-AS Central Unit

INPUT SELECT
AUX   MIC

-20dB   -60dB

Input select switch
(Factory default: AUX)

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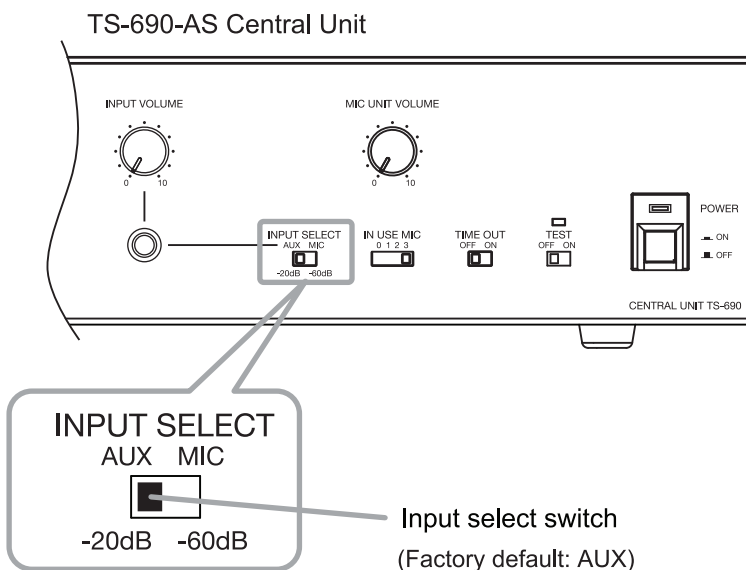
6. OPERATING CHAIRMAN AND DELEGATE UNITS

This section explains how to operate Conference units in a conference.
Be sure to set the TEST switch of the TS-690-AS Central Unit to OFF before use (see p.12).

6.1. Making Speech

Step 1. Press the Speech button once.
The microphone in-use indicator lights, and the microphone turns on.

Notes
[Example: TS-692L-AS Delegate unit]

· No sound is output from the internal speaker of the operated unit while the Microphone in-use indicator remains lit. However, audio signal is output from the Recording/ Headphone output terminal.
· While the Chairman unit is in priority speech mode (see p.14), other unit's microphones do not turn on even if their Speech buttons are pressed.
· The microphones of some Delegate units may not turn on even if their Speech buttons are pressed, depending on the setting of the Delegate Unit Restriction Function (see p.10).
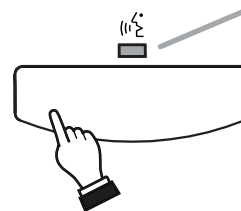
Microphone in-use indicator: Lights

Step 2. Speak into the microphone.

Step 3. Press the Speech button again after speech completion.
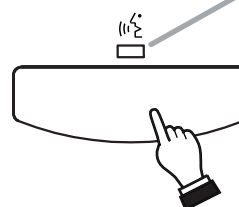The Microphone in-use indicator extinguishes
and sound is audible from the operated unit's speaker.

Microphone in-use indicator: Extinguishes

6.2. Making Priority Speech (Chairman Unit TS-691L-AS only)

Holding down the Priority button on the Chairman unit gives that unit speech priority and allows it to interrupt other conference units.
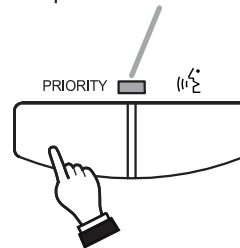
Step 1. Press the Priority button.
The microphone in-use indicator lights, and the microphone turns on. At the same time, a single tone chime sounds at the remaining conference units.

Microphone in-use indicator: Lights

Note
No sound is output from the internal speaker of the operated unit while the Microphone in-use indicator remains lit. However, audio signal is output from the Recording/Headphone output terminal.

Step 2. Speak while holding down the Priority button.
No delegate units can be used while the Priority button is pressed.
If 2 or more chairman units exist, when other chairman unit's Priority button is pressed during priority speech, this latest button-operated unit takes precedence over other conference units.

Step 3. The microphone in-use indicator goes off, turning on the built-in speaker.

Note
Any previous speech that has been interrupted by the priority speech is not restored even after priority speech completion. Press the Speech button again, and make a speech after microphone in-use indicator lights.

Note
In the system employing 2 or 3 chairman units, even while 1 unit is making priority speech, other chairman unit(s) can also make priority speech by pressing the Priority button although a single-tone chime is not sounded.

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7. RECORDING

The contents of the conference can be recorded by connecting recording equipment to the TS-690-AS Central Unit, TS-691L-AS Chairman Unit or TS-692L-AS Delegate unit.

7.1. Recording with the Central Unit

Step 1. Connect the recording output on the rear panel of the TS-690-AS Central Unit to the recording equipment's recording input.
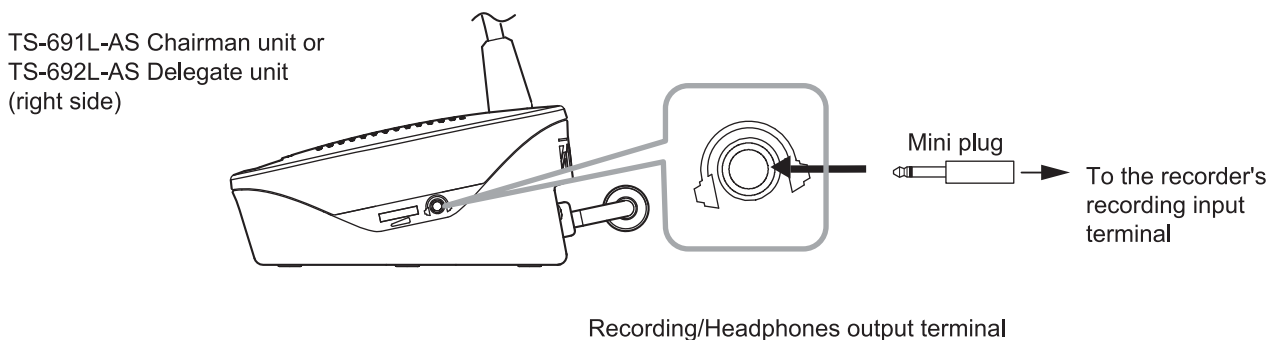The recording output terminal is RCA jacks type.

> **Note**
> Prepare the connection cables separately.

TS-690-AS Central Unit

REC OUT

Recording output terminals
(RCA jacks)

Pin plug

To the recording equipment's
recording input terminal
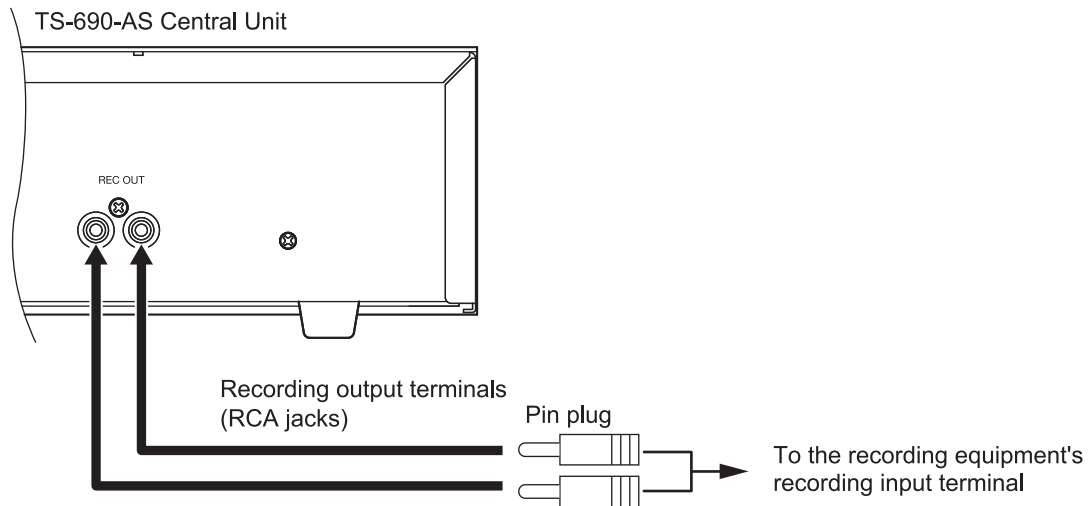
Step 2. Connect a set of head phone into the recording equipment's monitor output to confirm that the contents of the conference are being recorded correctly.
If the recording equipment is equipped with a recording level control, adjust it to an appropriate recording level.
For use of recording equipment, refer to the instruction manual supplied with the equipment.

7.2 Recording with the Chairman Unit or Delegate Unit

Using the Recording/Headphone Output terminal on the side panel, recordings can be made in the same manner as for the Central unit.

TS-691L-AS Chairman unit or
TS-692L-AS Delegate unit
(right side)

Mini plug

To the recorder's
recording input
terminal

Recording/Headphones output terminal

Notes
- If Recording/Headphone jack is used, no sound is output from the unit's speaker.
- Sound volume from the recording output of the Chairman and Delegate units can be adjusted using the Central unit's Line Volume control. Setting the line volume control to the minimum position makes it impossible to record from the recording output of the Chairman and Delegate units. When wishing to record conference contents without muting the sound output from the Chairman and Delegate unit speakers, use the Central unit's Recording Output terminals.

8. INSTALLATION AND CONNECTION

8.1. Installation Procedures

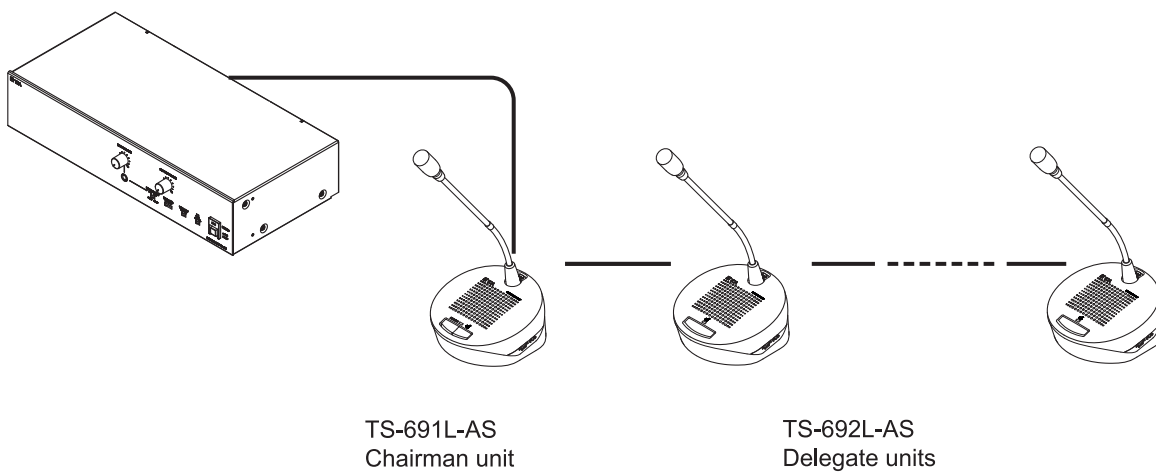> **1. Connect the Chairman/Delegate units to the Central unit** (see p. 16)**.**

(1 Central unit and up to 24 conference units)

> **2. Perform function settings for the Central unit, and volume adjustment, etc. for the Chairman/Delegate units** (see p. 19)**.**

8.2. Connection Example

TS-690-AS Central unit
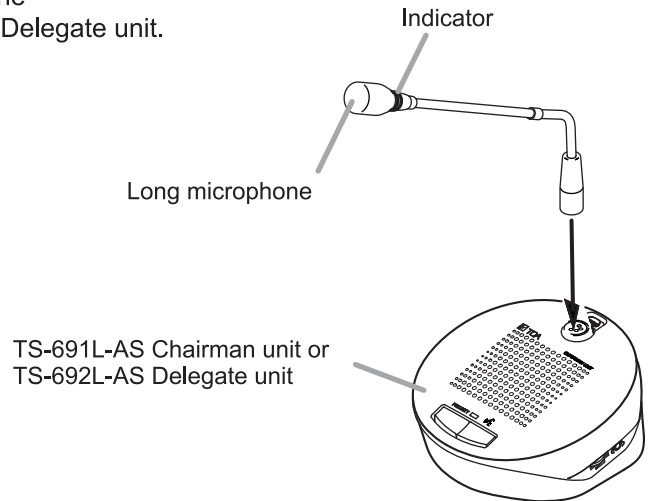

TS-691L-AS
Chairman unit

TS-692L-AS
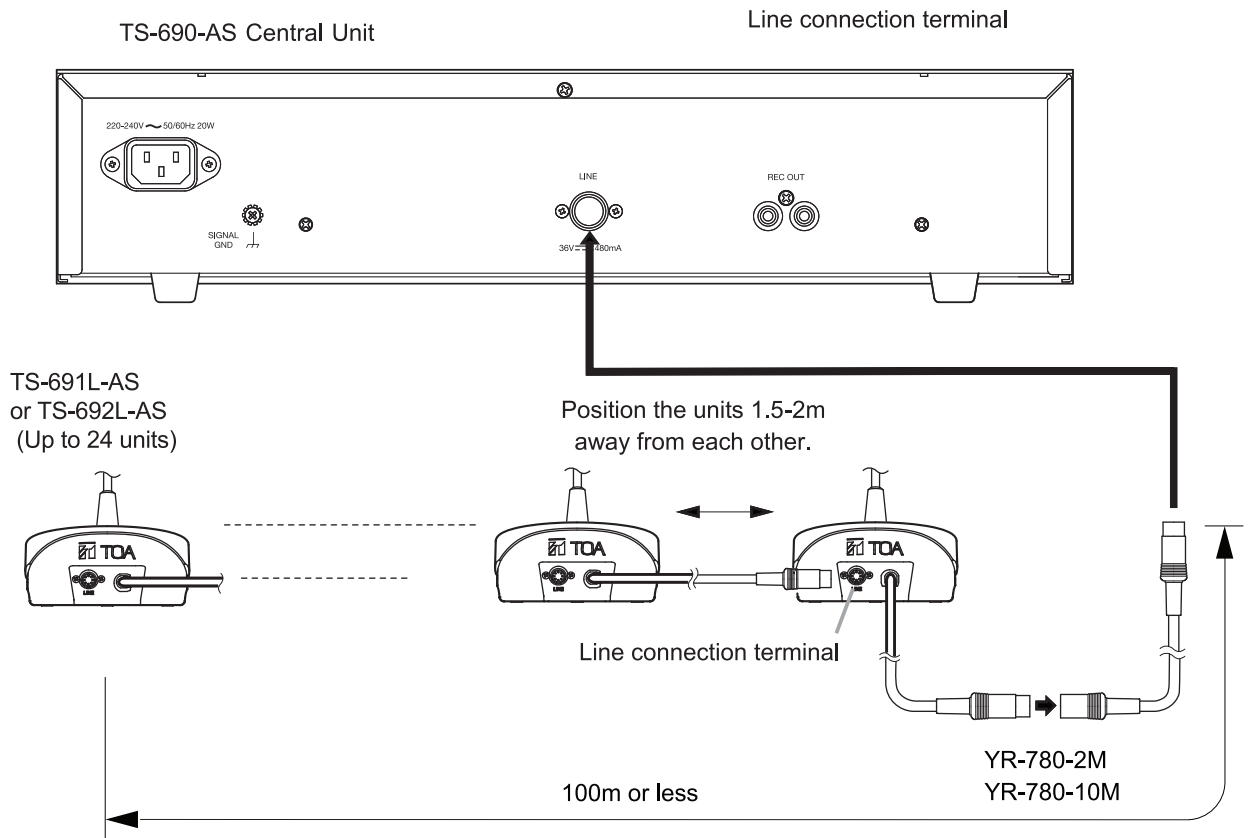Delegate units

8.3. Basic System Installation and Adjustment

This section explains how to install and adjust a basic system comprised of 1 Central Unit, Chairman and Delegate units.

8.3.1. Connecting the Chairman and Delegate units to the Central unit

Step 1. Connect the accessory Long Microphone to the TS-691L-AS Chairman unit and TS-692L-AS Delegate unit.

Indicator

Long microphone

TS-691L-AS Chairman unit or
TS-692L-AS Delegate unit

Step 2. Connect the TS-691L-AS Chairman unit and TS-692L-AS Delegate unit to the TS-690-AS Central unit.

When installing, keep conference units 1.5 – 2 m away from each other.
If distances exceed 2 m, use YR-780-2M (2 m) or YR-780-10M (10 m) extension cords.
Up to 24 conference units can be connected to the central unit.
Ensure that the total length of connection cables between the Central unit and the last conference unit is less than 100 m.

TS-690-AS Central Unit

Line connection terminal

220-240V ∼ 50/60Hz 20W

SIGNAL GND

LINE

36V ⎓ 480mA

REC OUT

TS-691L-AS
or TS-692L-AS
(Up to 24 units)

Position the units 1.5-2m
away from each other.

Line connection terminal

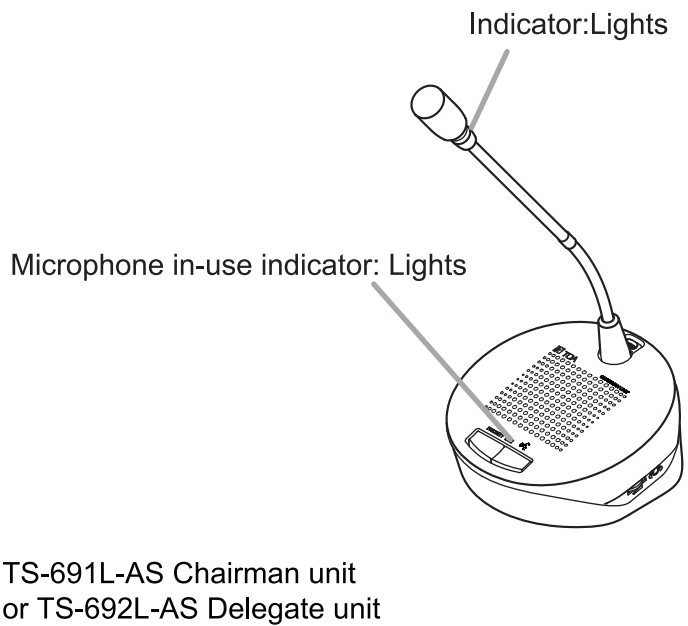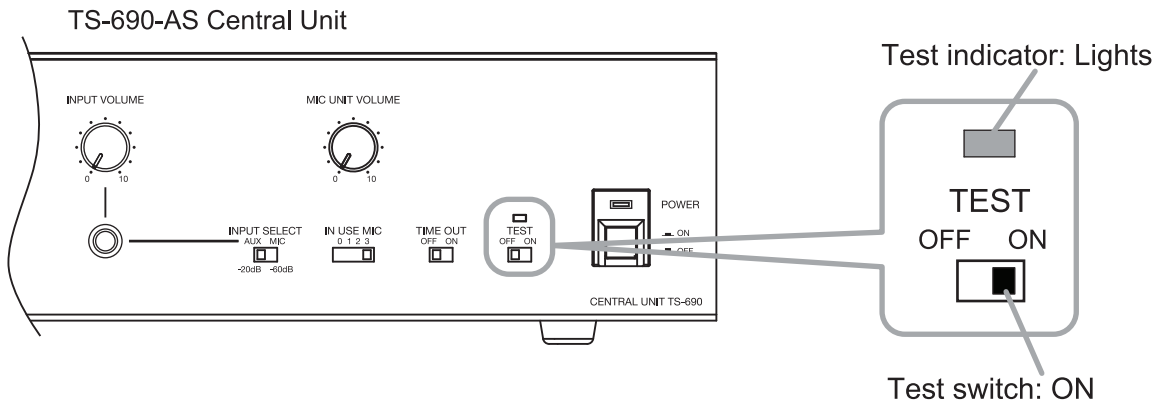100m or less

YR-780-2M
YR-780-10M

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Step 3. Set the Test switch on the front panel of the Central unit to ON. (Test mode)

The Test indicator lights together with the conference unit's Microphone in-use indicator and the indicator on the microphone.

Note that as the number of connected conference units increases, several seconds may elapse before the indicators light.

When all indicators for the installed conference units light, this completes connection confirmation. In this event, if the indicators of a certain conference unit do not light, check the connections of the microphone and those between the Central unit and conference units.

TS-690-AS Central Unit

Test indicator: Lights

TEST

OFF   ON

Test switch: ON

Indicator:Lights

Microphone in-use indicator: Lights

TS-691L-AS Chairman unit
or TS-692L-AS Delegate unit

Step 4. After completing the test, shift the Central unit's Test switch back to the OFF position. (Test mode off)
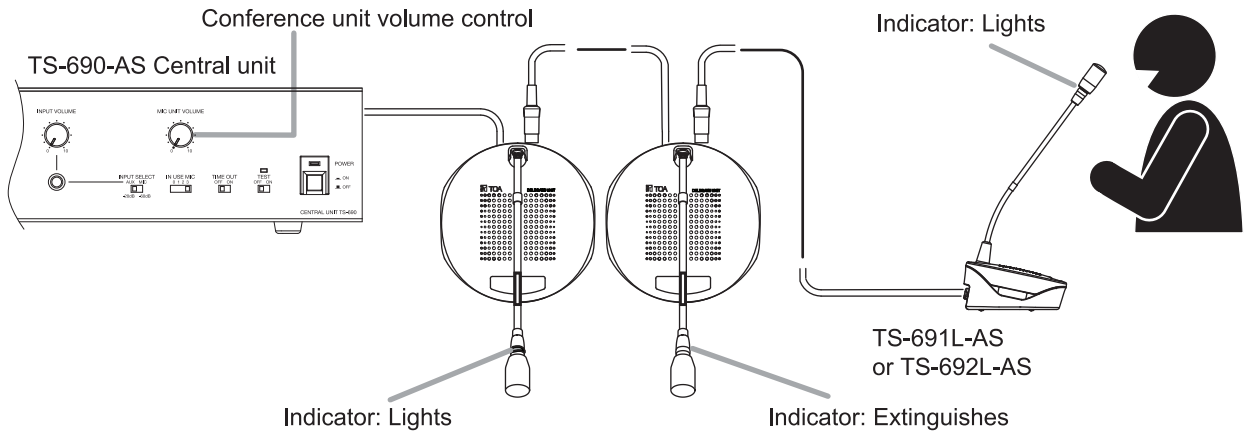
Note that as the number of connected conference units increases, several seconds may elapse before the indicators go off.

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8.3.2. Setting functions and adjusting Chairman/Delegate units sound output volume

Step 5. Set the number of simultaneously operable Delegate units using the In-use delegate unit number selector on the front panel of the Central unit. For details, refer to p.10.

TS-690-AS Central Unit

IN USE MIC
0 1 2 3

(Factory default : 3)
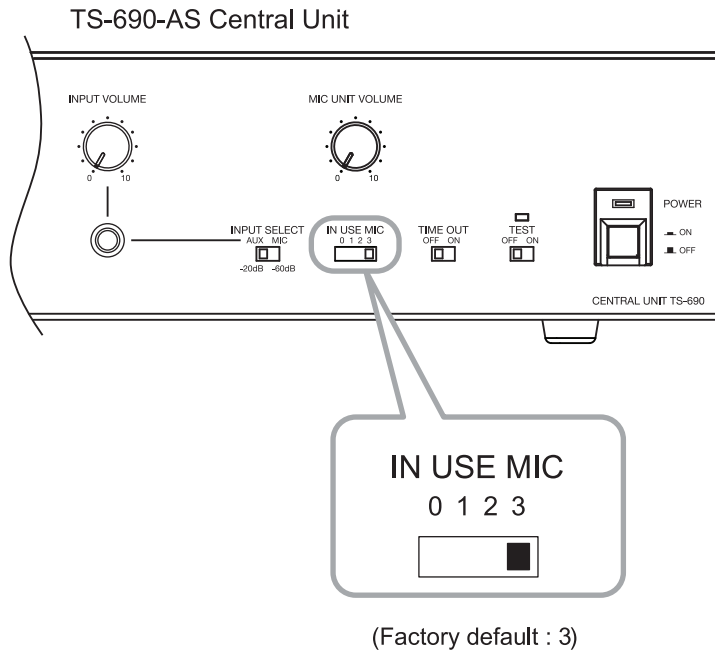
Step 6. Adjust the sound volume of the Chairman/Delegate units.
Press the Speech button on both the Delegate unit in the number set in Step 5 and the Chairman unit to turn on their microphone. Speaking into the microphone, adjust the volume to an appropriate level using the Central unit's Conference unit volume control.

Conference unit volume control

TS-690-AS Central unit

Indicator: Lights

TS-691L-AS
or TS-692L-AS

Indicator: Lights

Indicator: Extinguishes

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Step 7. Set the Automatic Mic-Off function* to ON, as required, using the Automatic Mic-Off setting switch on the front panel of the Central unit.
* This function automatically turns off the microphone if not used for 30 seconds (see p. 11).

Step 8. (When using a microphone or BGM player)
Connect it to the Central unit and adjust its sound volume.
Select input type by input select switch (see p.12).
Adjust the volume to an appropriate level using the corresponding input volume control.

TS-690-AS Central Unit

TIME OUT
OFF   ON

To a microphone or
BGM player

8

7

Automatic mic-off setting switch
(Factory default: OFF)
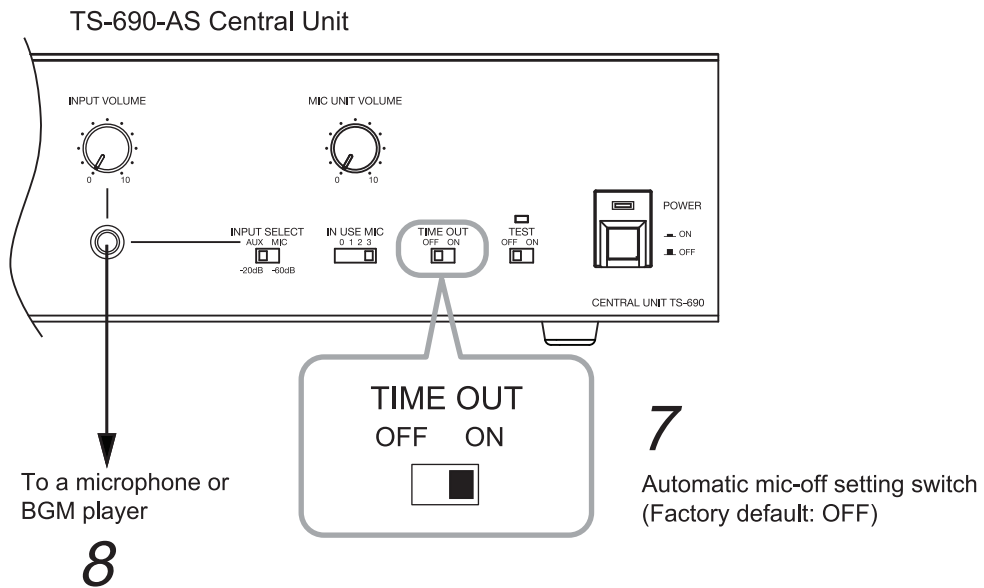
Step 9. (When recording conference contents)
Use an external recording equipment if necessary. To use the external recording equipment, connect its recording input terminal to the Central unit's Recording output terminal or the Chairman/Delegate unit's Recording/Headphone output terminal.
For details, refer to p. 15.

[When you use an external recording equipment]

TS-690-AS Central Unit

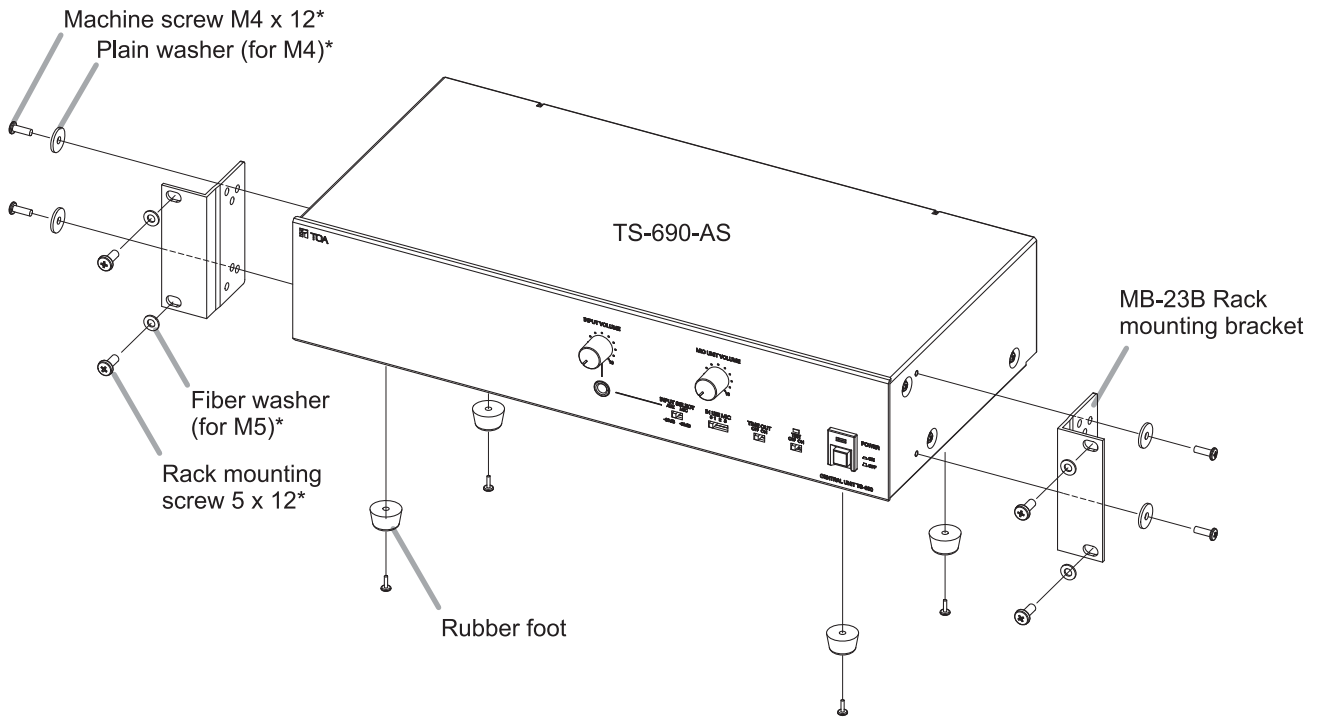To recording equipment
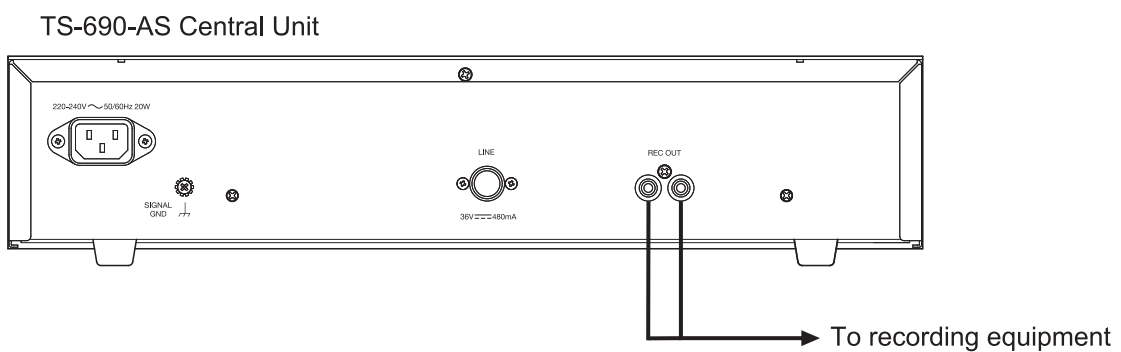
9. MOUNTING A CENTRAL UNIT IN A RACK

Step 1. Remove the rubber foot from the bottom of the unit.

Step 2. Mount the unit in a rack using the optional MB-23B Rack mounting bracket.

Machine screw M4 x 12*
Plain washer (for M4)*

TS-690-AS

MB-23B Rack
mounting bracket

Fiber washer
(for M5)*

Rack mounting
screw 5 x 12*

Rubber foot

* Supplied with the MB-23B

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10. SPECIFICATIONS

10.1. TS-690-AS Central Unit

Power Source	220 – 240 V AC, 50/60 Hz
Power Consumption	20 W
Rated Output	36 V DC, 480 mA
Input	MIC: −60 dB*, 600 Ω, unbalanced, phone jack AUX: −20 dB*, 10 kΩ, unbalanced, phone jack (selectable)
Output	Recording: −20 dB*, 10 kΩ, unbalanced, RCA jack
Number of Connectable Units	Max. 24 units
Control	Priority speech chime: Operation of TS-691L-AS's priority key activates a single-tone chime Speaker restriction: Number of simultaneously-usable TS-692L-AS can be set up to 0 – 3 Automatic Mic-off Function: OFF, 30 s (selectable)
Operating Temperature	0 to 40°C
Operating Humidity	90 % RH or less (no condensation)
Finish	Panel: Aluminum, black, 30% gloss, paint Case: Steel plate, black, 30% gloss, paint
Dimensions	420 (w) x 96.1 (h) x 222.5 (d) mm
Weight	2.7 kg

* 0 dB = 1 V

Note: The design and specifications are subject to change without notice for improvement.

• **Accessory**
Power cord (2 m) 1

• **Optional products**
Extension cord: YR-780-2M, YR-780-10M
Rack mounting bracket: MB-23B

10.2. TS-691L-AS Chairman Unit with Long Microphone and TS-692L-AS Delegate Unit with Long Microphone

Power Source	36 V DC, 30mA or less (supplied from the Central unit TS-690-AS)
Output	Headphone/Recording: Φ3.5 mm, mini jack (3P: monaural) Internal Speaker: 130 Ω, 200 mW
Control	Speech: Microphone, speaker on-off control by speech button Priority: Microphone, speaker on-off, other microphone cut off and single-tone chime acitivation by priority button Volume control: Headphone/Recording and internal speaker volume adjustable
Microphone unit (Accessory)	Electret condenser microphone Directivity: Unidirectional Impedance: 1.8 kΩ Sensitivity: -37 dB (1 kHz 0 dB = 1 V/Pa) Frequency response: 100 Hz - 13 kHz Length : 518 mm Weight: 105 g
Operation Temperature	0 to 40°C
Operation Humidity	90 % RH or less (no condensation)
Finish	Upper case: ABS resin, metallic grey, paint Lower case: ABS resin, black
Dimensions	145.3 (w) x 70.7 (h) x 150.5 (d) mm (Excluding microphone unit)
Weight	800 g (Excluding microphone unit)

* 0 dB = 1 V

Note: The design and specifications are subject to change without notice for improvement.

• Accessory
Long microphone unit..............1

• Optional products
Extension cord: YR-780-2M, YR-780-10M

10.3. YR-780-2M (2 m) Extension Cord and YR-780-10M (10 m) Extension Cord

Model No.	YR-780-2M	YR-780-10M
Cable Length	2 m	10 m
Connector	8 pins DIN socket (going to the unit's base) ....1 8 pins DIN plug (going to the cord) 1	

Note: The design and specifications are subject to change without notice for improvement.

TOA Corporation