

CONFERENCE SYSTEM

CENTER AMPLIFIER **TS-700**
CHAIRMAN UNIT **TS-701**
DELEGATE UNIT **TS-702**

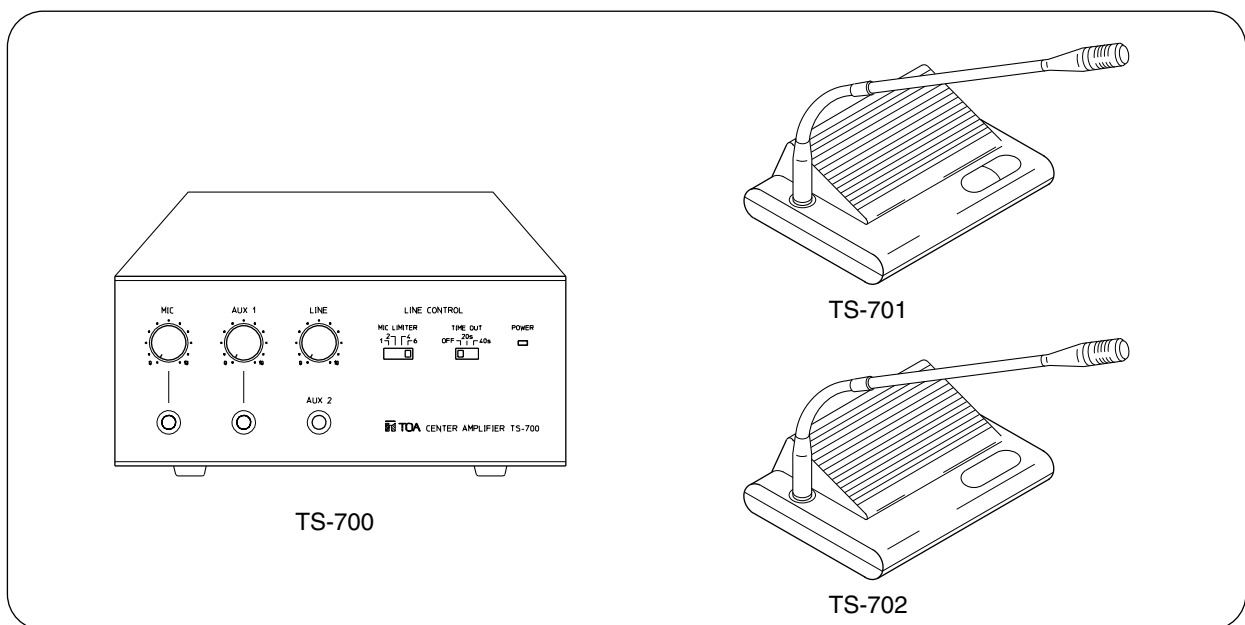


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Please follow the instructions in this manual to obtain the optimum results from this unit.
 We also recommend that you keep this manual handy for future reference.

1. SAFETY PRECAUTIONS

- Be sure to read the instructions in this section carefully before use.
- Make sure to observe the instructions in this manual as the conventions of safety symbols and messages regarded as very important precautions are included.
- We also recommend you keep this instruction manual handy 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 so you are thoroughly aware of the potential safety hazards as well as understand the safety symbols and messages.

 **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.
- 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.
- 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.

■ When the Unit is in Use

- Should the following irregularity be found during use, immediately switch off the power, disconnect the power supply plug from the 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.)
 - 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 your nearest TOA dealer.
- 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 insert nor drop metallic objects or flammable materials in the ventilation slots of the unit's cover, as this may result in fire or electric shock.
- Do not touch a plug during thunder and lightning, as this may result in electric shock.



CAUTION

■ When Installing the Unit

- Never plug in nor remove the power supply plug with wet hands, as doing so may cause electric shock.
- 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.
- 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.
- Do not block the upper panel ventilation slots in the unit's cover. Doing so may cause heat to build up inside the unit and result in fire.
- 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

- Do not place heavy objects on the unit as this may cause the unit to fall or break which may result in personal injury and/or property damage. In addition, the object itself may fall off and cause injury and/or damage.
- Do not stand or sit on, nor hang down from the unit as this may cause the unit to fall down or drop, resulting in personal injury and/or property damage.
- Make sure that the volume control is set to minimum position before power is switched on. Loud noise produced at high volume when power is switched on can impair hearing.
- Do not operate the unit for an extended period of time with the sound distorting. This is an indication of a malfunction, which in turn can cause heat to generate and result in a fire.
- 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.
- 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.
- 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. A fire or electric shock may result.

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		



The lightning flash with arrowhead within a triangle is intended to tell the user that parts inside the product are a risk of electric shock to persons.



The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are in the papers with the appliance.

2. GENERAL DESCRIPTION

The conference system can be easily installed by merely connecting the center amplifier (TS-700) to the conference units (TS-701 chairman unit and TS-702 delegate unit) using the supplied cable. It can be put away quickly after the conference is finished.

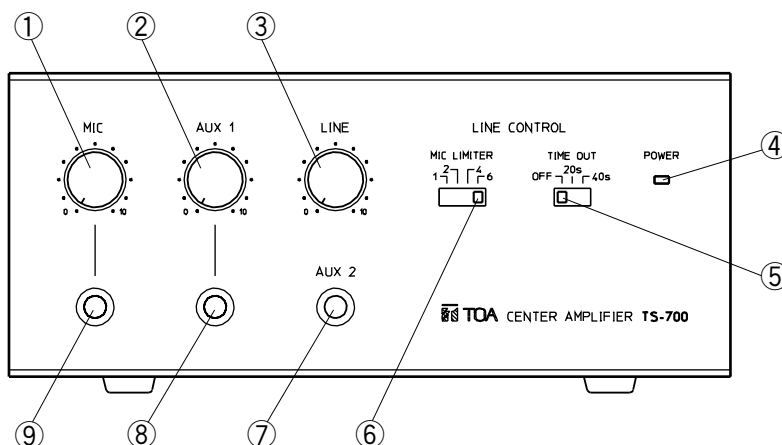
3. FEATURES

- Speech can be amplified by simply connecting the center amplifier to the conference units using the supplied cables.
- Up to 70 conference units can be connected. (35 units per line x 2 lines)
- The conference unit's microphone is detachable, and storage space can be saved.
- The number of simultaneously-usable delegate units can be limited to avoid unnecessary confusion.
- Wiring can be performed cleanly thanks to TOA's unique wiring method.
- Delegate unit microphones can be made to turn off automatically if a speaker forgets to turn off the microphone after use.
- The contents of the conference can be recorded using the AR-71B alternate recording machine (optional).
- The center amplifier functions as an expansion amplifier as well. Up to two expansion amplifiers can be connected per system, and up to 140 conference units connected.

4. NOMENCLATURE

4.1. Center Amplifier TS-700

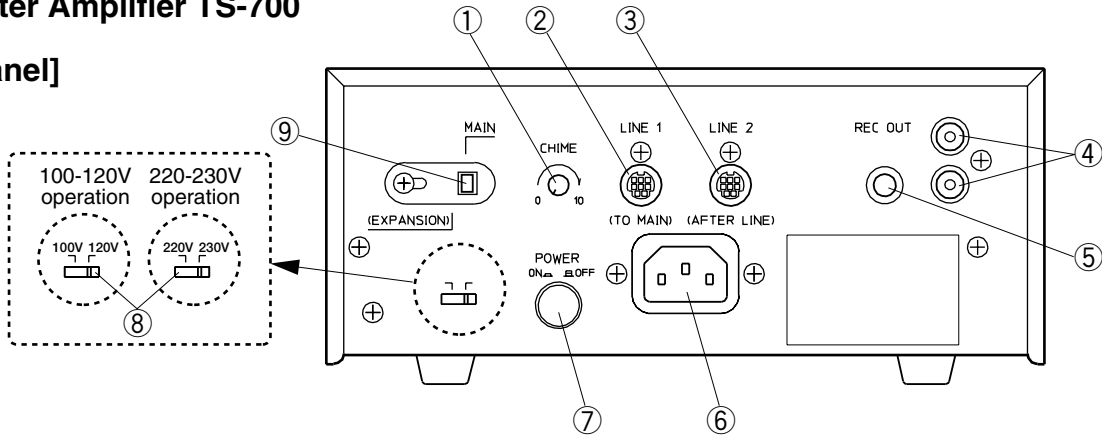
[Front panel]



- | | |
|--|---|
| <p>① Microphone volume control [MIC]
Adjusts the volume of the microphone connected to the microphone input jack.</p> <p>② AUX1 volume control [AUX1]
Adjusts the volume of equipment connected to AUX1 input jack.</p> <p>③ Line volume control [LINE]
Adjusts the volume of the conference unit's built-in speaker.</p> <p>④ Power indicator lamp
Lights when the power switch on the rear panel is set to ON.</p> | <p>⑤ Automatic mic-off setting switch [TIME OUT]
Automatically turns off the conference unit's microphone after speaking.</p> <p>⑥ Speaker restriction switch [MIC LIMITER]
Sets the number of delegate units that can be used simultaneously.</p> <p>⑦ AUX2 input jack [AUX2]
Connects to a CD or cassette deck. (Adjust the volume at the connected equipment.)</p> <p>⑧ AUX1 input jack [AUX1]
Connects to a CD or cassette deck.</p> <p>⑨ Mic input jack [MIC]
Connects to a microphone.</p> |
|--|---|

4.2. Center Amplifier TS-700

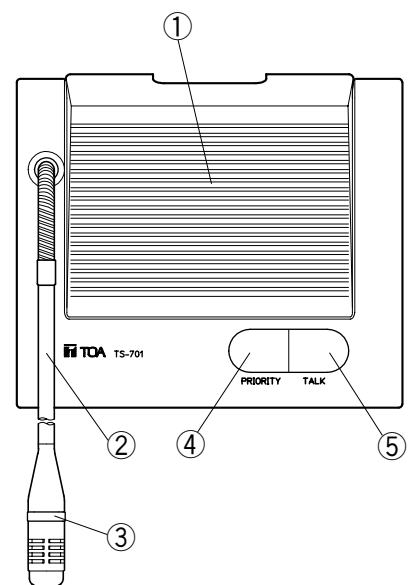
[Rear panel]



- ① **Chime volume control [CHIME]**
Adjusts the volume of the chime sounded when the chairman unit's priority button is pressed.
- ② **LINE1 connection terminal [LINE 1]**
Up to 35 conference units can be connected to this terminal. When using the amplifier as an expansion amplifier, this terminal is used to connect the center amplifier.
- ③ **LINE2 connection terminal [LINE 2]**
Up to 35 conference units can be connected to this terminal. When using the amplifier as an expansion amplifier, this terminal is used to connect the expanded conference units.
- ④ **Recording output terminal [REC OUT] (RCA-pin jack)**
Connects to a cassette deck or other recording machine.
- ⑤ **Recording output terminal [REC OUT] (Phone jack)**
Connects to the AR-71B alternating recording machine, etc.
- ⑥ **AC inlet**
Connects to the supplied power cord.
- ⑦ **Power switch [POWER]**
Power is switched on and off with each depression of this switch.
- ⑧ **Voltage selector switch**
Set this switch according to the local power voltage.
100 – 120V operation: Preset for the 120 V position.
220 – 230V operation: Preset for the 230 V position.
- ⑨ **Expansion switch (with lock)**
Used when converting the center amplifier into the expansion amplifier.

4.3. Chairman Unit TS-701 [Front panel]

- ① **Speaker**
Outputs the speaker's voice. Adjust the volume with the center amplifier's LINE volume control. The speaker is temporarily disabled while the microphone in-use indicator is on.
- ② **Gooseneck microphone**
Keep your mouth 10–15 cm away from the microphone when speaking. Because the orientation of the microphone can be changed, set the microphone in the best position. The microphone can be removed when putting unit away.
- ③ **Microphone in-use indicator**
Lights when the microphone can be used.
- ④ **Priority button (press-to-talk type) [PRIORITY]**
While this button is pressed, the microphone in-use indicator remains lit, allowing priority speech to go through. As far as this button is pressed, no other conference units can be used. When this button is pressed, a single tone chime is sounded. Adjust the chime volume with the chime volume control on the center amplifier.
- ⑤ **Talk button [TALK]**
Press this button to speak. The microphone in-use indicator lights. Press this button again to turn off the microphone. The microphone indicator is extinguished.



4.4. Delegate Unit TS-702

[Front panel]

① **Speaker**

Outputs the speaker's voice. Adjust the volume with the center amplifier's LINE volume control. The speaker is temporarily disabled while the microphone in-use indicator is on.

② **Gooseneck microphone**

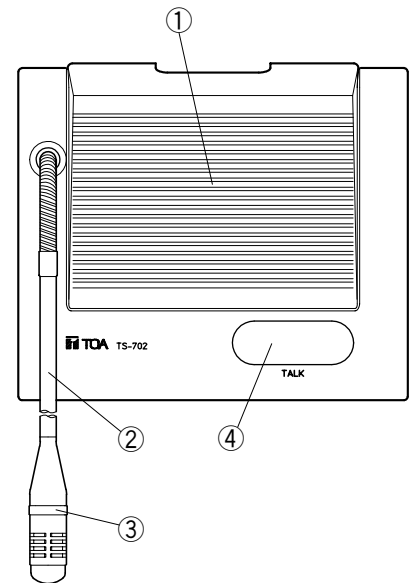
Keep your mouth 10–15 cm away from the microphone when speaking. Because the orientation of the microphone can be changed, set the microphone in the best position. The microphone can be removed when put unit away.

③ **Microphone in-use indicator**

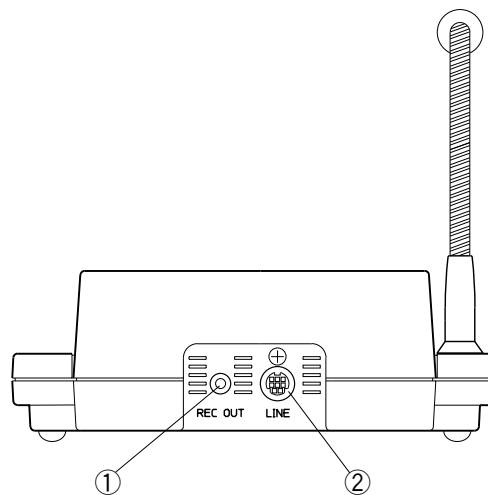
Lights when the microphone can be used.

④ **Talk button [TALK]**

Press this button to speak. The microphone in-use indicator lights. Press this button again to turn off the microphone. The microphone indicator is extinguished.



4.5. Rear Panels of The Chairman Unit and Delegate Unit



① **Recording output jack [REC OUT]**

Connects to a recording machine when recording the contents of the conference.

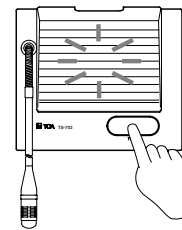
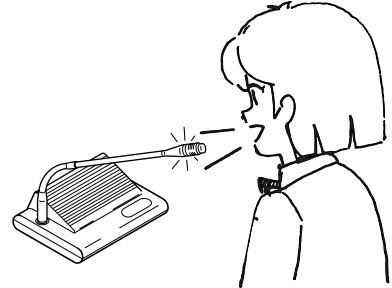
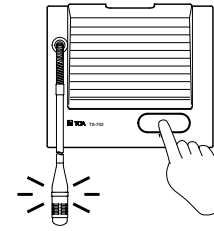
② **Line connection terminal [LINE]**

Connects to the supplied cord.

5. OPERATIONS

5.1. Using The Conference Unit

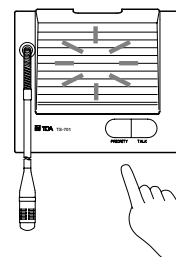
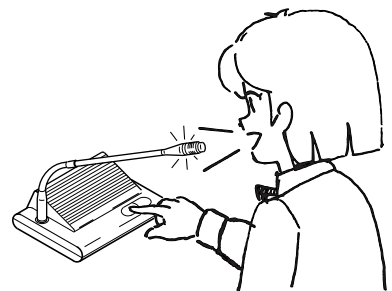
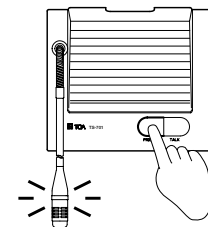
1. Press the TALK button.
The microphone in-use indicator lights, and the microphone can be used.
2. Speak into the microphone.
3. Press the TALK button again after speech completion.
(The microphone in-use indicator is extinguished.)



5.2. Making Priority Speech (Chairman Unit TS-701 Only)

When wishing to make priority speech while the delegate unit is in use, this can be accomplished by pressing the PRIORITY button. The microphone in-use indicator lights, and the chairman unit can be used. In this event, the speaker is disabled. When the button is pressed, a single-tone chime is sounded at the remaining conference units. (Adjust the chime volume with the center amplifier's chime volume control.)

1. Press the PRIORITY button.
2. Speak while holding down the button.
(None of other conference units can be used while the button is pressed.)
3. Release the PRIORITY button after speech completion.
The microphone indicator is extinguished, turning on the speaker.



Note

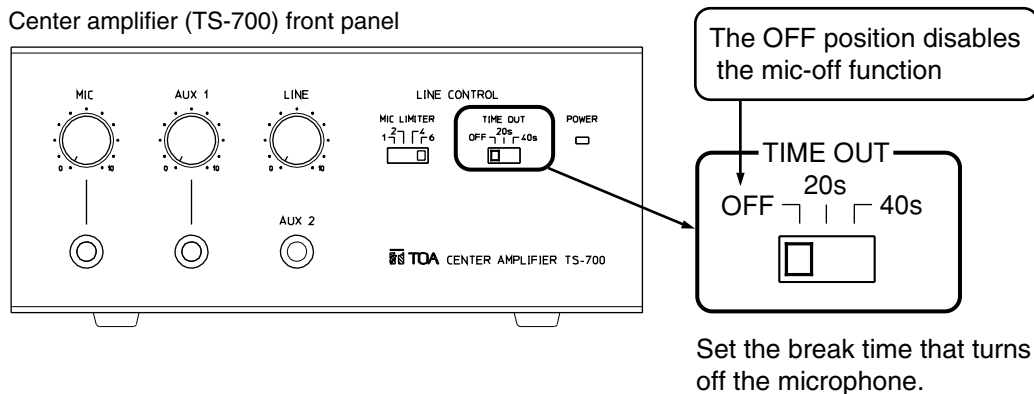
In the system employing two or more chairman units, while one unit is making priority speech, any other chairman unit can also make priority speech although a single-tone chime is not sounded.

Any previous speech that has been overridden by the priority speech is not restored even after priority speech completion. Press the TALK button again.

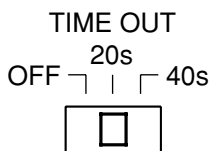
5.3. Mic-off Function

Delegate unit microphones can be set to automatically turn off if a speaker forgets to turn it off after use. Whenever a break in speech exceeds a specified period of time, the center amplifier presumes speech completion and automatically turns off the microphone.

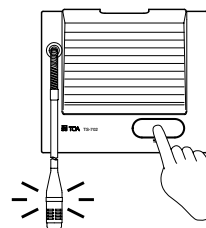
The break time can be set for either 20 or 40 seconds using the center amplifier's mic-off setting switch (TIME OUT). Set the switch to OFF if this function is unnecessary.



Example: The mic-off switch is set to 20s position

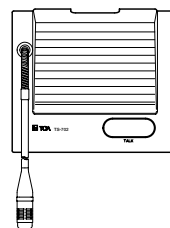


1. Turn on the microphone, and speak.



2. Leave the microphone on after speaking.

3. The microphone automatically turns off after 20 seconds.



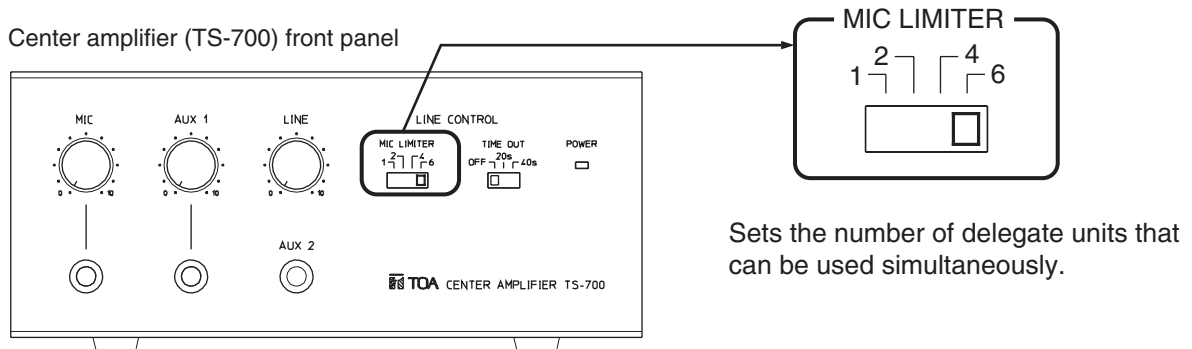
Note

When the mic-off function is selected, any break in speech exceeding the preset time will automatically turn off the microphone, even if speech is not yet finished. Therefore, for conferences in which long breaks in speech are expected, set the mic-off setting switch to the OFF position.

In areas with high levels of background noise, the center amplifier may mistake the noise to be speech and the mic-off function will not operate correctly. In such cases, the mic-off function should be disabled by placing the switch in the OFF position.

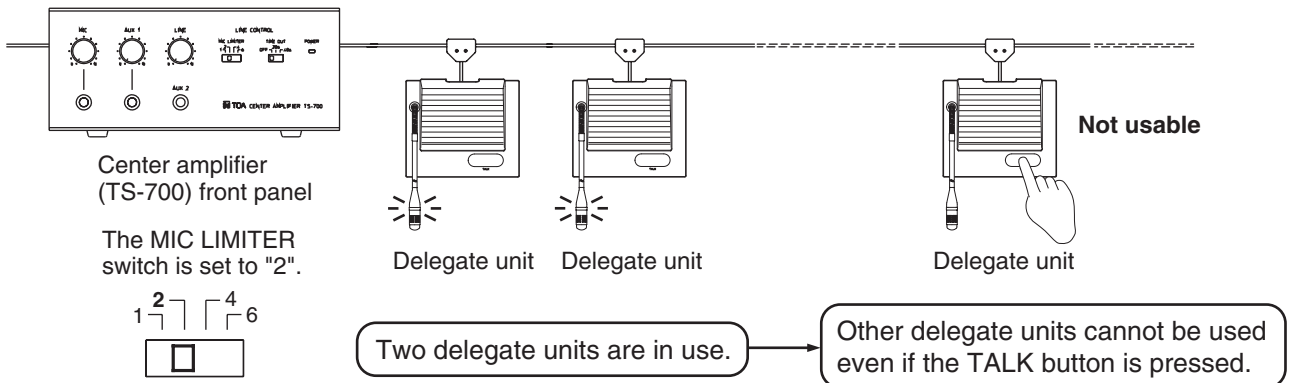
5.4. Limiting The Number of Simultaneously Usable Delegate Units (TS-702)

Using the center amplifier's speaker restriction switch (MIC LIMITER), the number of simultaneously-usable delegate units (TS-702) can be limited. Set the switch to 1, 2, 4 or 6 depending on the conference scale.

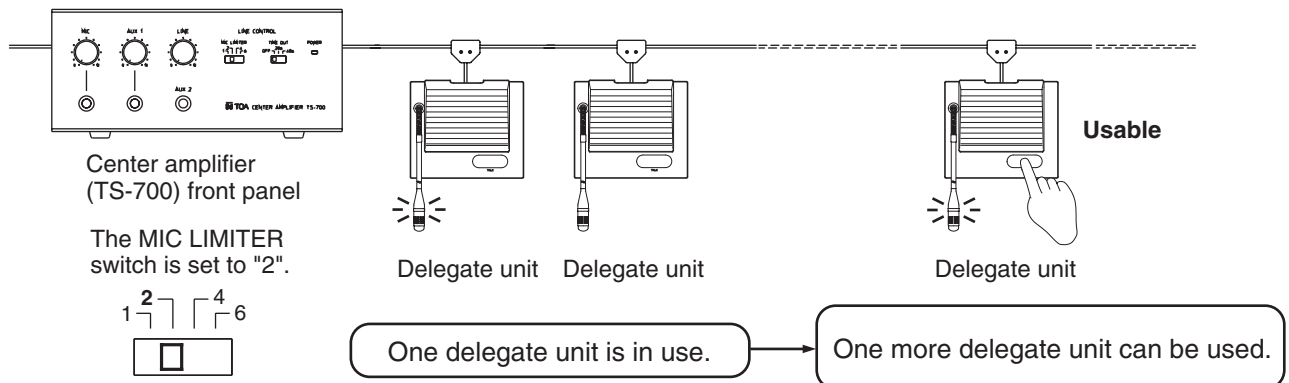


Example: The speaker restriction switch is set to the "2" position.

Two delegate units can be used simultaneously. Other delegate units cannot be used even if the TALK button is pressed.



If only one delegate unit is in use, up to one more delegate unit can be used.

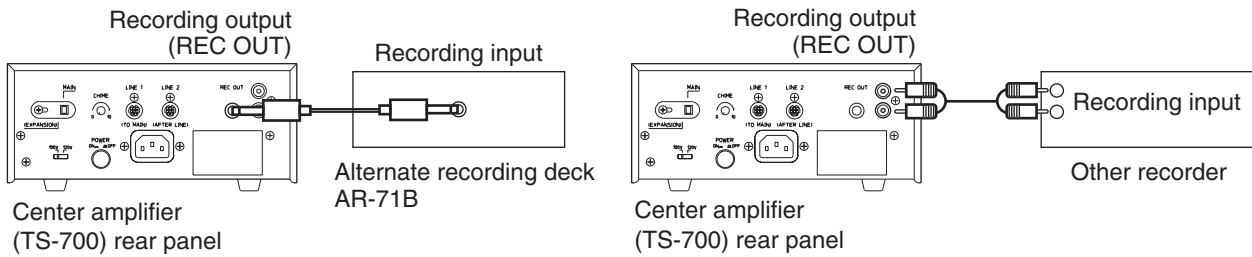


The chairman unit can be used at any time regardless of the limitation of the number of usable delegate units.

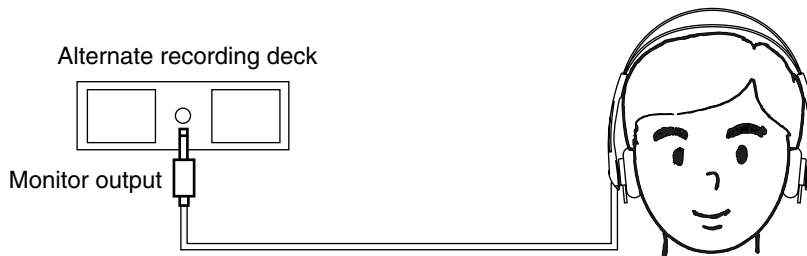
5.5. Recording

The contents of the conference can be recorded by connecting the AR-71B alternate cassette recorder or other cassette recorder.

1. Connect the center amplifier's recording output to the recorder's recording input. (The connection cable is separately needed.)

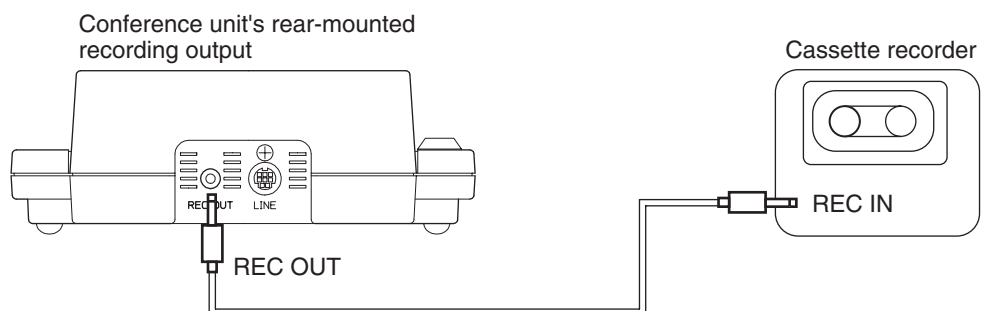


2. Connect a set of headphones into the recorder's monitor output to confirm that the contents of the conference are being recorded correctly. Adjust the recorder's recording level control.



For operation of the recorder, refer to the instruction manual attached to the recorder.

The conference unit's rear-mounted recording output can also be used for recording.



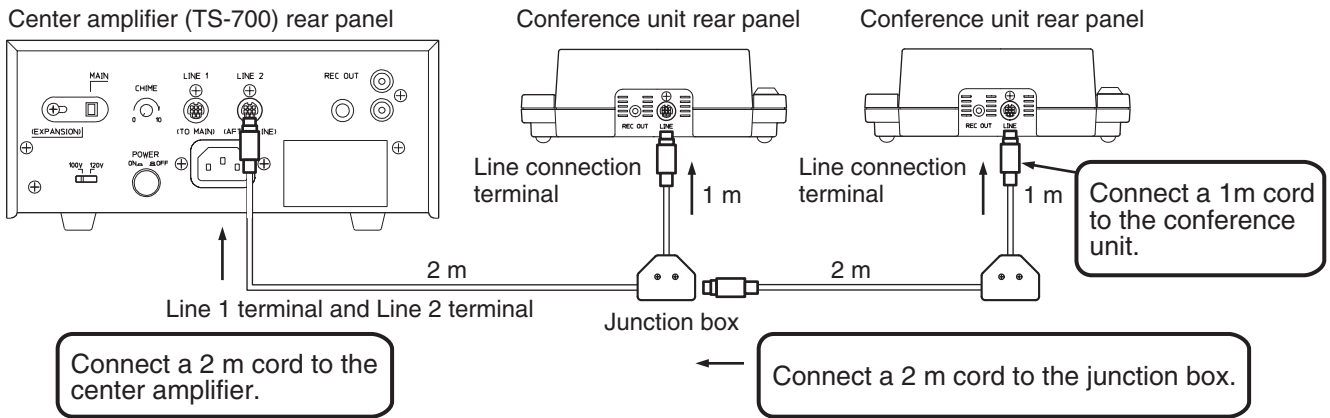
Note

It is possible to change the volume of the conference unit's recording output by means of the center amplifier's line volume control. When only recording and not amplifying speech from the conference unit, the recording output cannot be used. For such purposes, use the center amplifier's recording output.

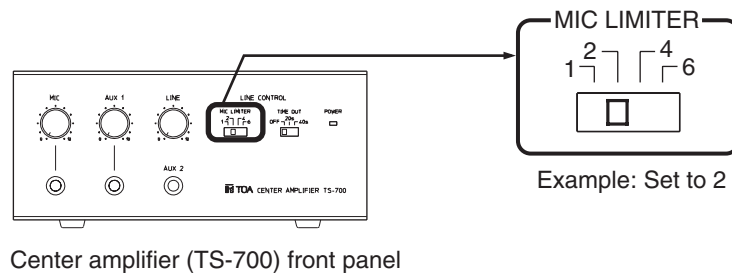
6. INSTALLATIONS AND CONNECTIONS

1. Connect the center amplifier to all conference units using the supplied connection cords. When connecting, take care to ensure correct orientation of the cord as shown below.

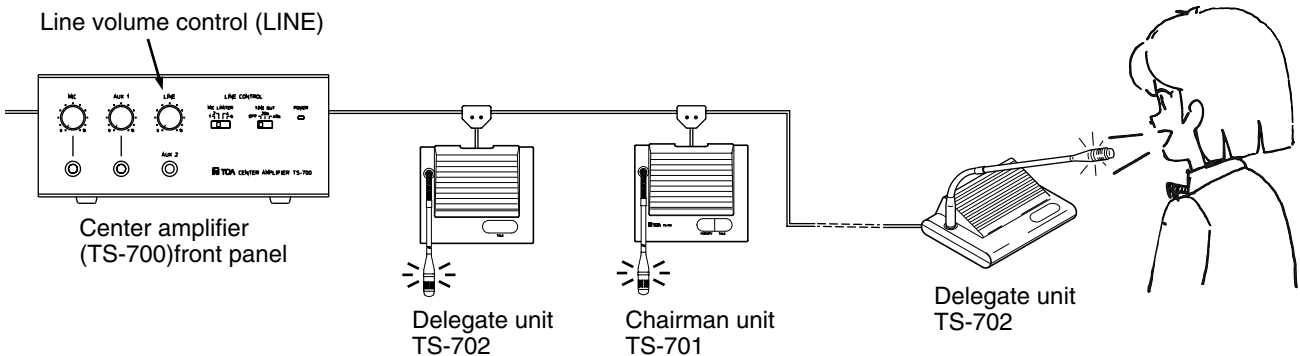
Note that the system does not operate if the cords are connected in reverse orientation. Space the conference units 1.5 – 2 m apart.



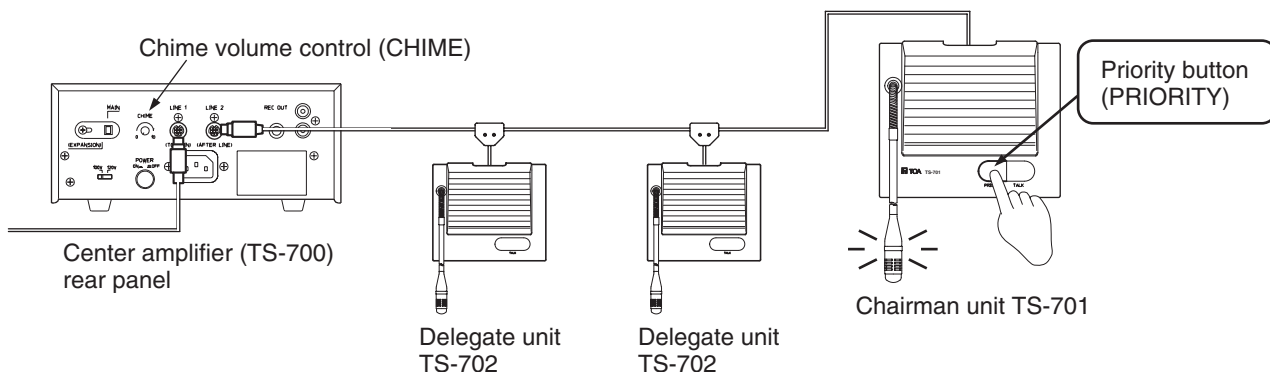
2. Using the center amplifier's front-mounted switch, set the number of simultaneous speakers. (Refer to p. 9 "5.4. Limiting the Number of Simultaneously Usable Delegate Units (TS-702)".



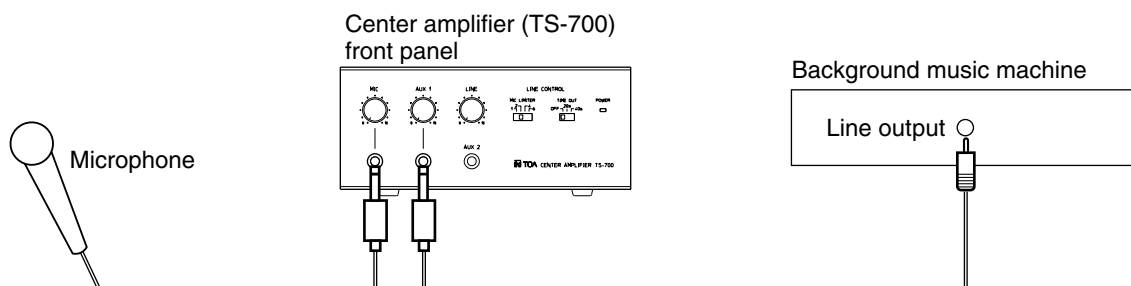
3. Turn on the chairman unit microphone and those of the delegate units of the number set in Step 2 above. Speaking into the microphones, adjust the microphone volume using the center amplifier's line volume control (LINE).



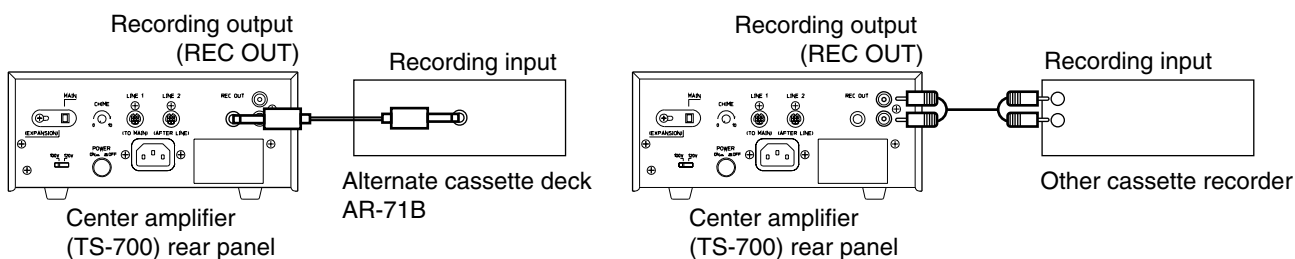
4. Confirm that no feedback is produced when each microphone to use is tested. If feedback is produced, either widen the spacing of conference units or decrease the volume with the line volume control.
5. Press the chairman unit's PRIORITY button to sound a single-tone chime and adjust its volume with the chime volume control located on the center amplifier rear panel.



6. When connecting a microphone and a background music machine to the center amplifier, adjust their sound volume with their respective volume controls on the amplifier.



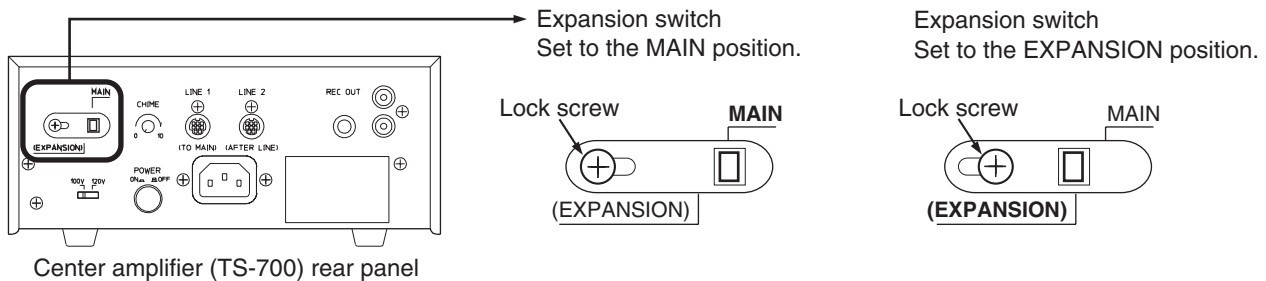
7. To record the contents of the conference, connect the center amplifier's recording output terminal to the recorder's recording input terminal.



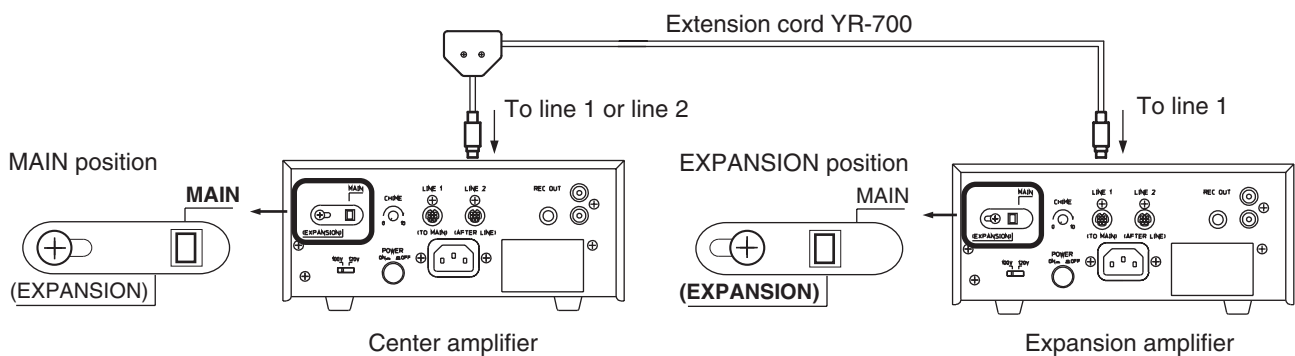
7. SYSTEM EXPANSION

By adding the center amplifier as the expansion amplifier, the conference units can be expanded. An optional extension cord YR-700 is required when connecting the expansion amplifier.

1. Loosen a lock screw on the expansion switch located on the center amplifier rear panel, and change the setting from the MAIN position to the EXPANSION position. Re-tighten the lock screw after the change.



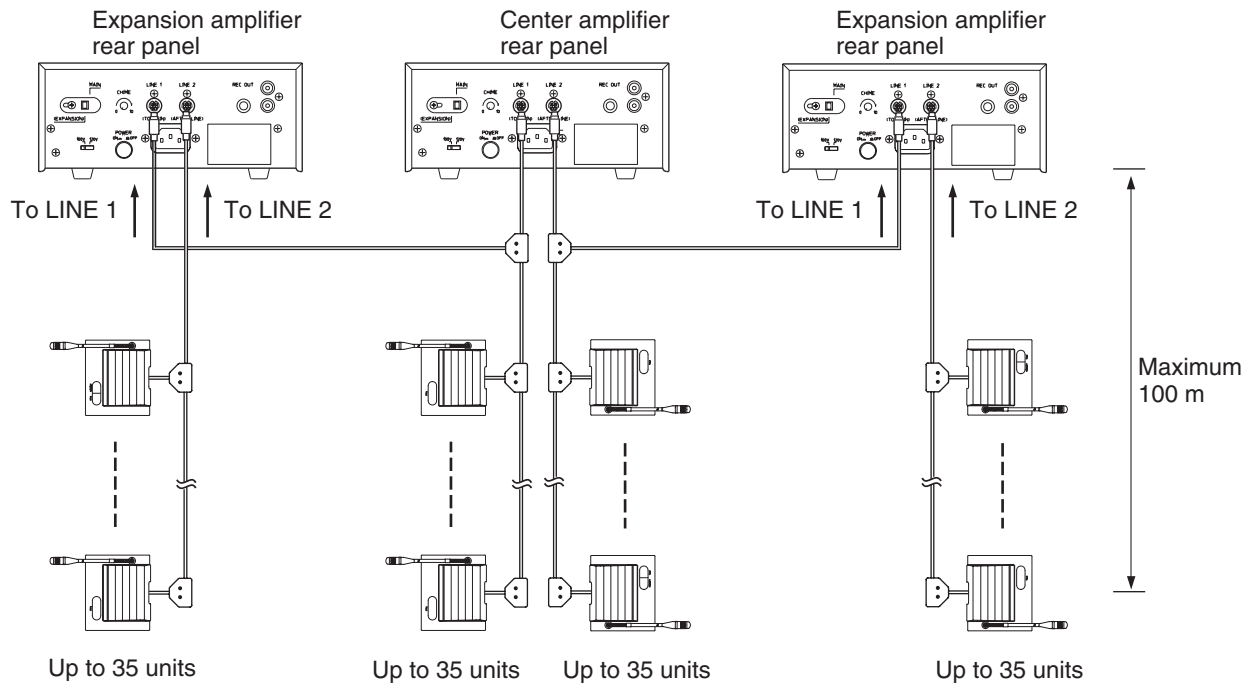
2. Using the extension cord, connect the center amplifier's line 1 or line 2 terminal to the expansion amplifier's line 1 terminal.



3. Set the expansion amplifier as follows:

- Speaker restriction switch
Only the center amplifier's speaker restriction switch is valid.
Place the expansion amplifier's switch in the [1] position.
- Mic-off setting switch
Place the switch in **the same position as the center amplifier.**
- Chime volume control
Place the expansion amplifier's chime volume control in the [0] position.
Use the center amplifier's chime volume control to adjust the chime volume.

4. Connect the conference units. Up to 35 units can be connected per expansion amplifier. One each of the expansion amplifier can be connected to the center amplifier's line 1 and line 2 terminals.



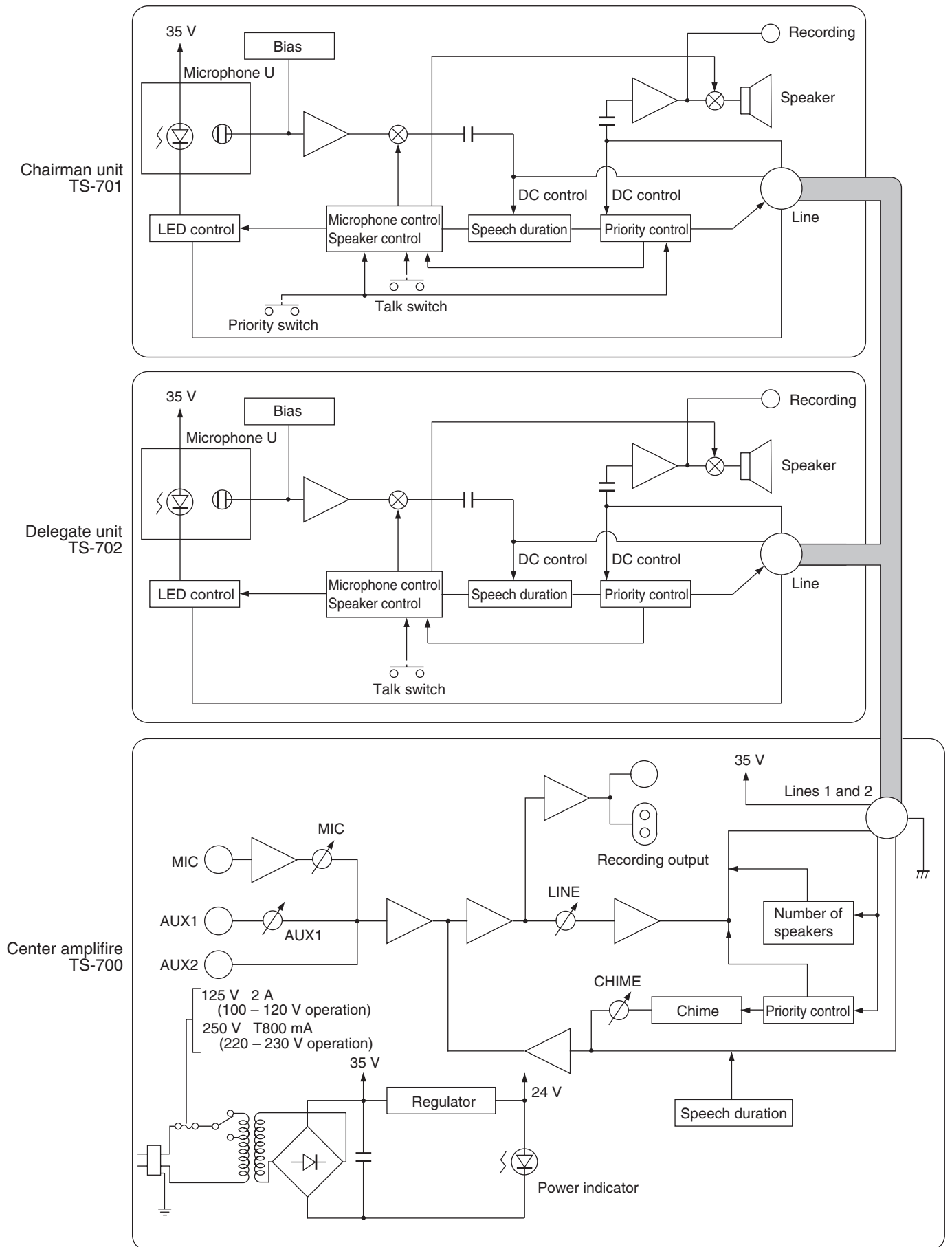
A total of 140 conference units can be connected.

Notes on expansion amplifier connections

The use of the expansion amplifier's input and output terminals is restricted as follows:

- MIC, AUX 1, and AUX 2: Can be used in the same manner as the center amplifier.
- Recording output: Cannot be used. When recording, use the recording output on the center amplifier or conference unit.

8. BLOCK DIAGRAM



9. SPECIFICATIONS

[TS-700]

Power Source		100 V/120 VAC changeable, 50/60 Hz (100 – 120 V operation)
		220 V/230 VAC changeable, 50/60 Hz (220 – 230 V operation)
Power Consumption		Max. 135 W
Input	Microphone	600 Ω , –60 dBV, unbalanced
	AUX 1	10 k Ω , –20 dBV, unbalanced
	AUX 2	600 Ω , 0 dBV, unbalanced
	Lines 1 & 2	0 dBV, unbalanced
Output	Recording	10 k Ω , –20 dBV, unbalanced
	Lines 1 & 2	0 dBV, unbalanced
Control	Priority speech chime	Single tone
	Speaker restriction	Number of simultaneously-usable delegate units can be limited to 1, 2, 4, or 6.
	Automatic mic-off	Function OFF/20 sec/40 sec (selectable)
Operating Temperature Range		0°C to +40°C
Dimensions		210 (w) X 93 (h) X 316 (d) mm
Finish		Colored steel plate, semi-mat black
Weight		3.9 kg

• Accessories

Power cord 1

[TS-701 and TS-702]

Power Source		35 VDC, under 30 mA supplied from center amplifier
Gooseneck Microphone		Unidirectional condenser type with LED (detachable)
Input	Line	0 dBV, unbalanced
Output	Recording	10 k Ω , –20 dBV, unbalanced
	Speaker	130 Ω , 200 mW
Control	Microphone switch	Microphone/speaker on-off control
	Priority switch (TS-701 only)	Chairman unit microphone/speaker on-off, other microphone cutoff, and single-tone chime activation
Operating Temperature Range		0°C to +40°C
Dimensions		170 (w) X 59 (h) X 147 (d) mm
Finish		Base : ABS resin, semi-mat black (Munsel N1.0) Speaker: Metallic brown
Weight		560 g

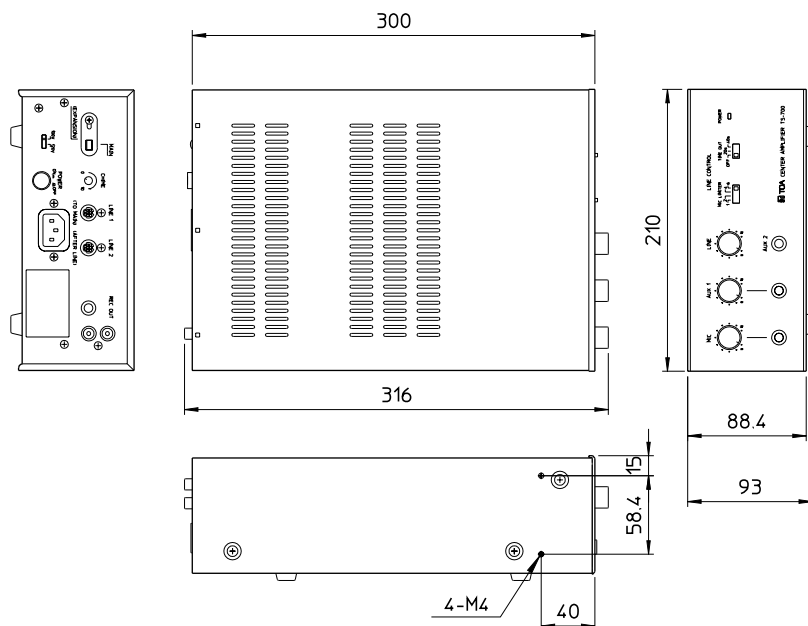
• Accessories

Connection cord of 1 m X 2 m branch (with two 8p DIN plugs and 1 socket) 1

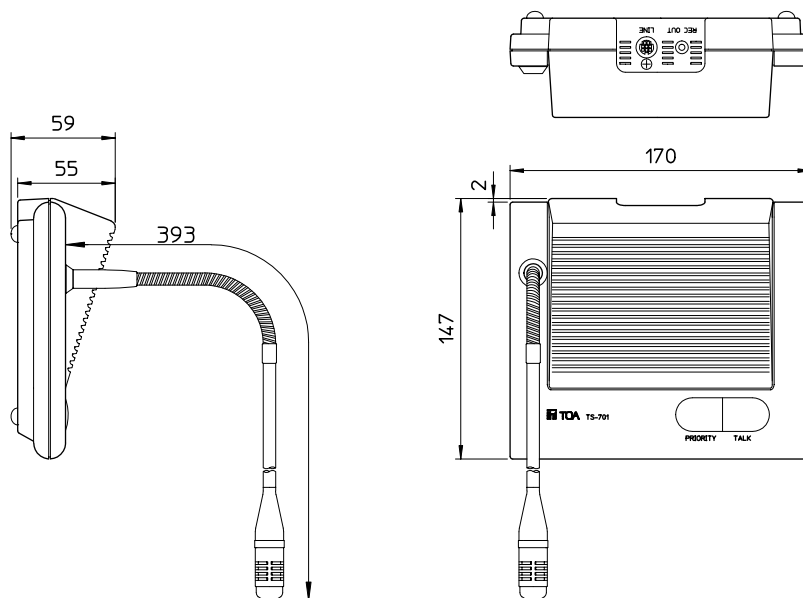
Note: The design and specifications are subject to change without notice for improvement.

10. DIMENSIONAL DIAGRAM (Unit: mm)

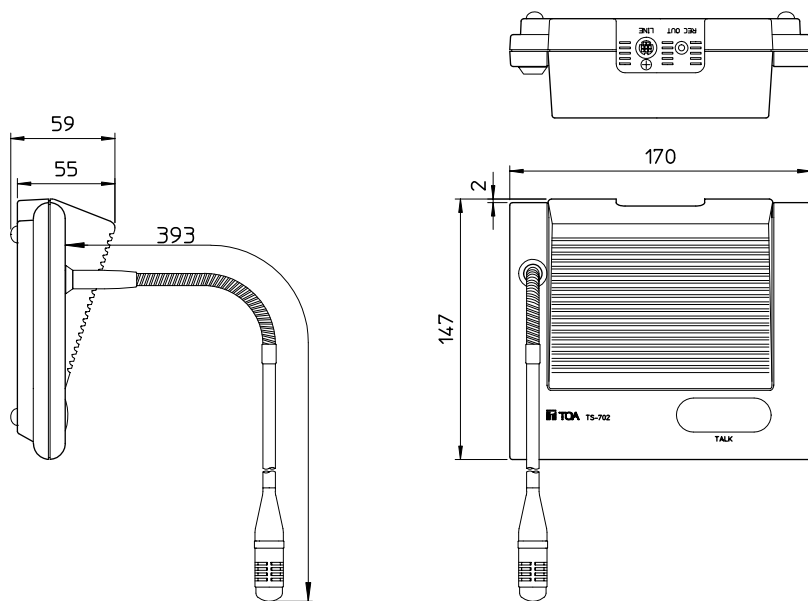
[Center Amplifier TS-700]



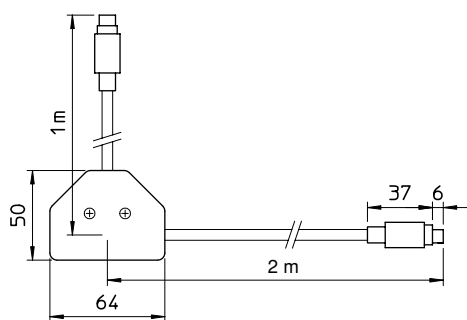
[Chairman Unit TS-701]



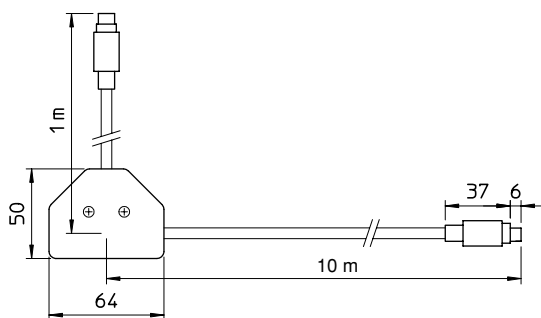
[Delegate unit TS-702]



[Connection cord] (Supplied with the TS-701 and TS-702)



[Extension cord YR-700] (Option)



11.TROUBLESHOOTING

Symptom	Cause	Remedy
No output from conference unit speaker.	Connection cord is not correctly connected.	Connect 1 m cable to conference unit, 2 m cable to center amplifier, and extension cord to junction box.
	Center amplifier's (TS-700) line volume control (LINE) is set to minimum position.	Set line volume control to appropriate position.
Microphone LED does not light when conference unit's talk button (TALK) is pressed.	Priority speech in progress.	Press talk button after priority speech completion.
	Delegate units (TS-702) of number set with speaker restriction switch (MIC LIMITER) are all in use.	Press talk button after one of busy delegate units is finished.
Microphone LED is extinguished during speech.	Priority button (PRIORITY) is pressed.	Press talk button (TALK) again after priority speech completion.
	There is longer break in speech than time set with mic-off setting switch (TIME OUT).	Set mic-off setting switch to OFF if long break in speech is expected in conference.
Single-tone chime does not sound when priority button (PRIORITY) is pressed.	Line volume control (LINE) located on center amplifier's front panel and chime volume control (CHIME) on rear panel are both set to minimum position.	Set volume controls to appropriate position.
Automatic mic-off function does not operate.	Air-conditioner produces noise.	Automatic mic-off function may not operate in areas with high levels of background noise. Either install conference units in quieter room or set mic-off setting switch (TIME OUT) to OFF.

