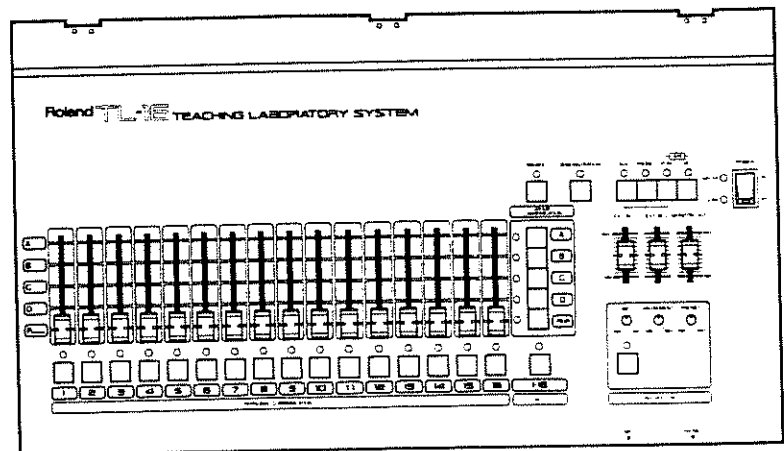


Roland

TEACHING LABORATORY SYSTEM

TL-16

Owner's Manual



The Roland Teaching Laboratory TL-16 is a music education system for group lessons, using electronic pianos, electronic organs, synthesizers etc. Setup is extremely easy, as no extra musical instruments or special installation is needed.

Please read the instructions carefully to make the best use of this unit.

FEATURES

☆One TL-16 can control up to 16 musical instruments, and up to 3 more Main Units can be added, allowing you to teach up to 64 students at the same time.

☆It is possible to divide the 16 students into four Groups (A,B,C and D) to give each group a different lesson separately. Also, individual instruction to each student is possible.

☆By connecting an external device such as a tape deck, record player or rhythm machine, you can record what students are playing or have them listen to a record.

☆No special installation is required for the TL-16 setup. The TL-16 can be set up by using Connecting Boxes and connection cords depending on the size of the classroom or the number of students.

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■ IMPORTANT NOTES

- Be sure to use the supplied AC adaptor (ACD-120, 220 or 240E/A). Using any other adaptor will cause trouble.
- Do not use the same socket used for any noise generating device (e.g. a motor, variable lighting system) or large power consuming unit.
- Make sure that the unit is turned off before connecting the AC adaptor to the socket.
- When disconnecting the power cord from the socket, do not pull the cord but hold the plug and disengage carefully.
- If the unit is not to be used for a long period of time, be sure to disconnect the power cord from the socket. Avoid using this unit in excessive heat or humidity, or where it may be affected by direct sunlight, dust or vibration.
- For cleaning the unit, use a soft cloth and a mild detergent.
- Do not use solvents such as paint thinner or alcohol.
- If this unit happens to fail to function properly, immediately turn it off, and call an authorized Roland dealer in your country.

■ WHAT TO PREPARE

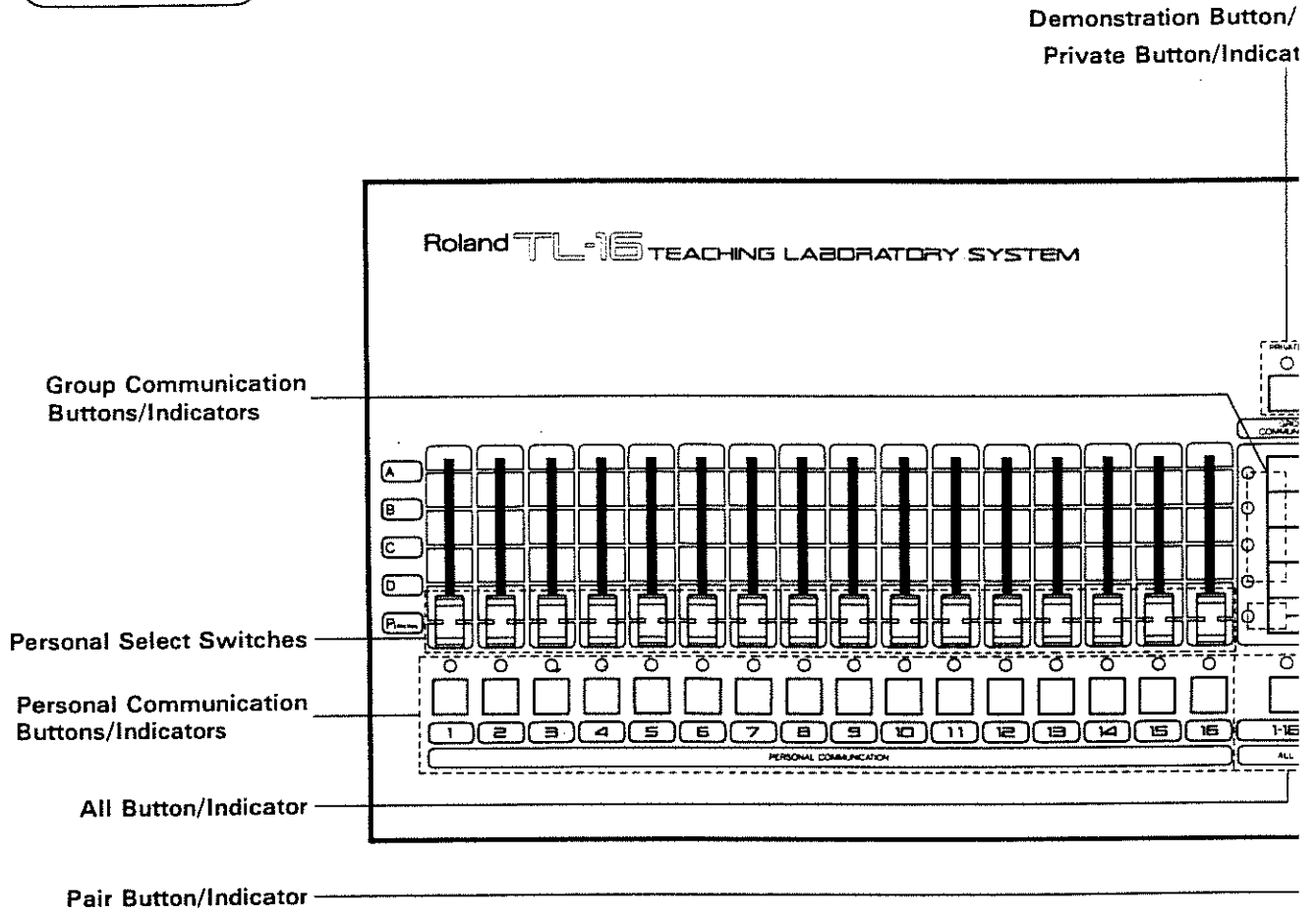
[e.g.] One Instructor and 16 Students :

TL-16	× 1
Keyboard (electronic piano/electronic organ/synthesizer)	× 17
Connecting Box	× 16
Head Set	× 17
DIN Cord	× 16
Standard Cord	× 17

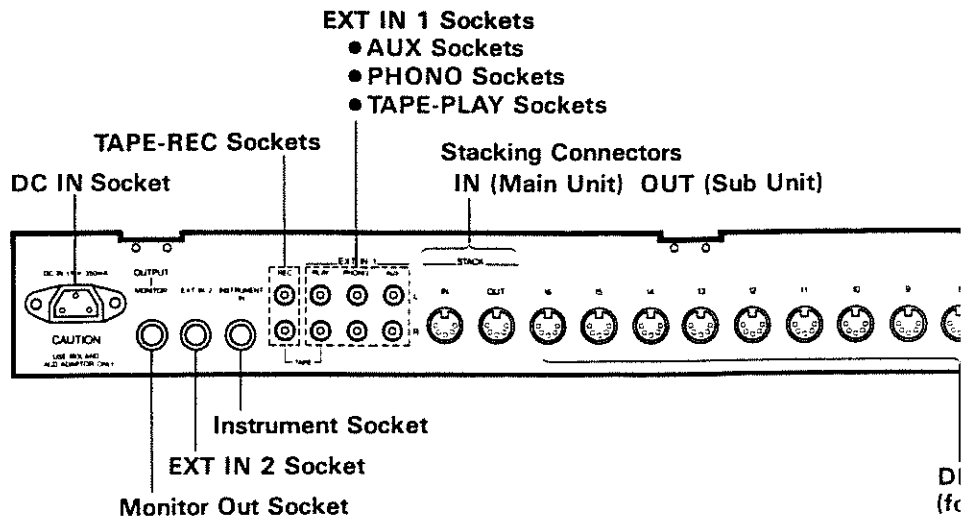
*When using the optional pianos (TP-20), you need only one standard cord (for the instructor) and no connecting box.

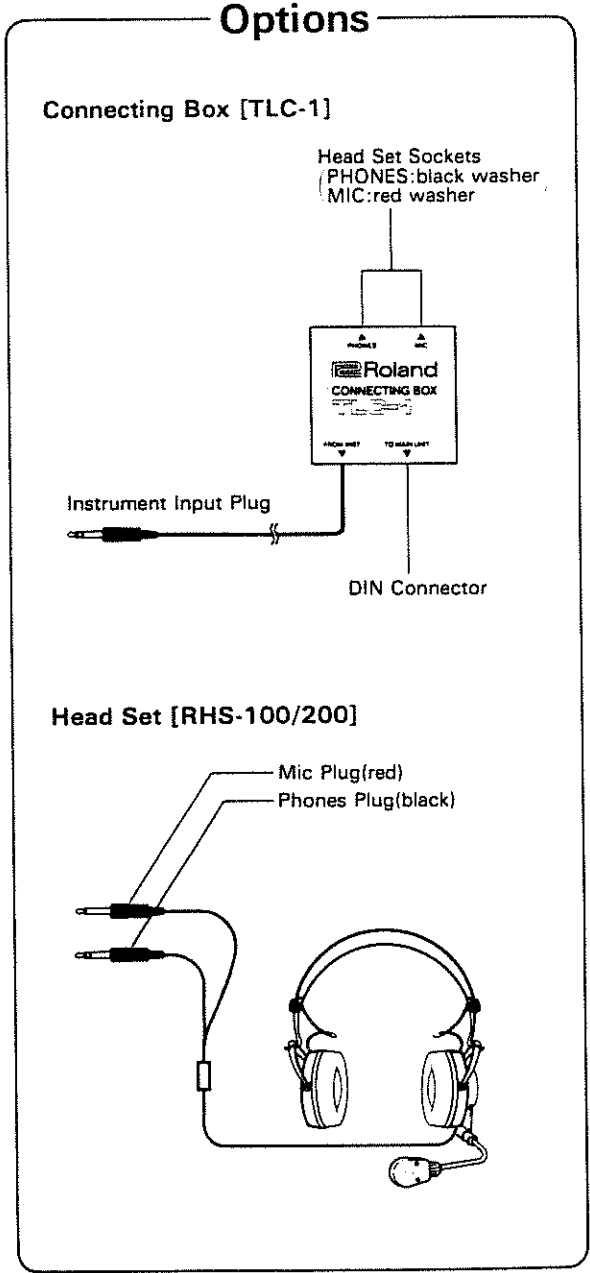
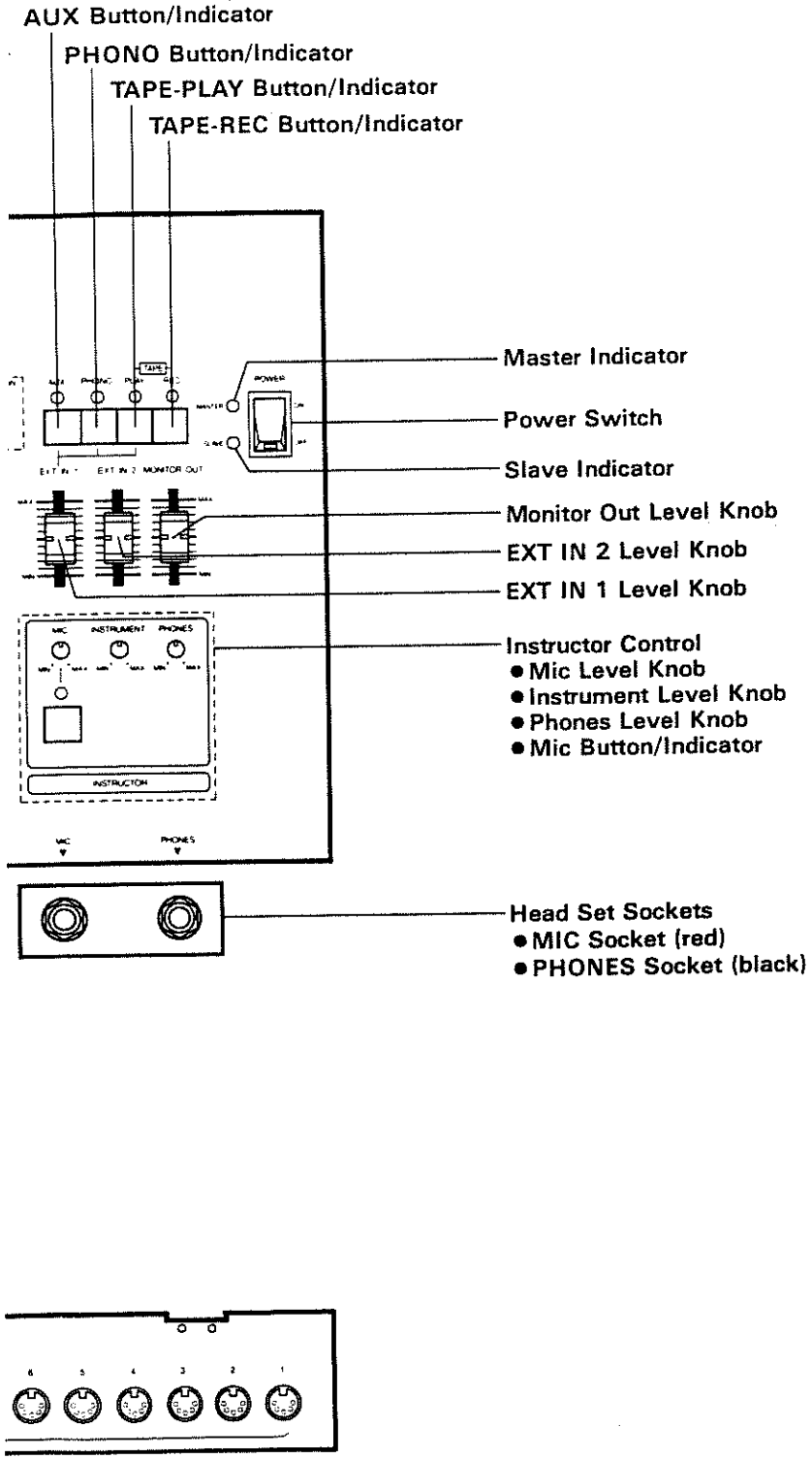
1 PANEL DESCRIPTION

Front Panel



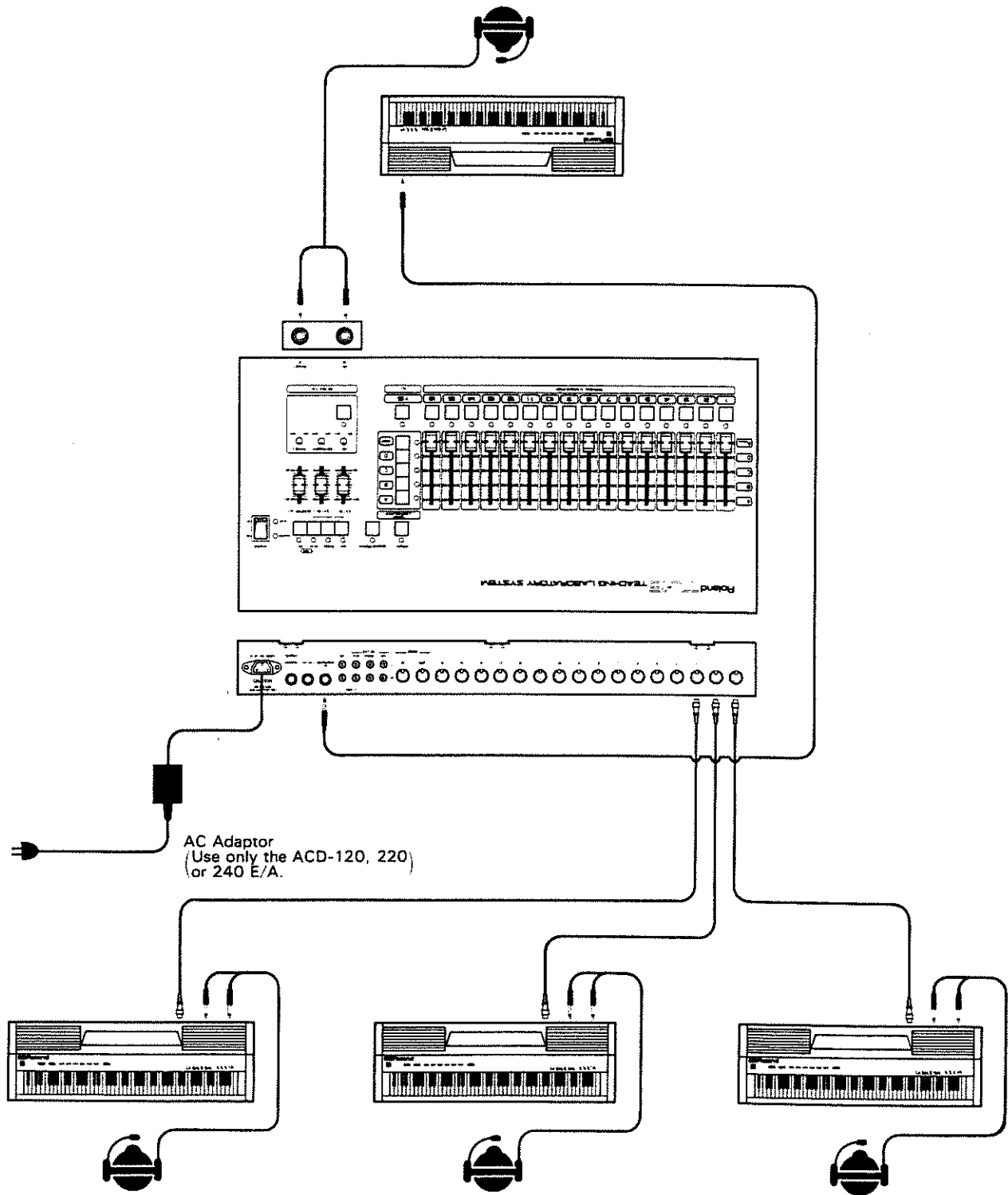
Rear Panel





connectors
 (connection with students' musical instruments)

2 CONNECTIONS



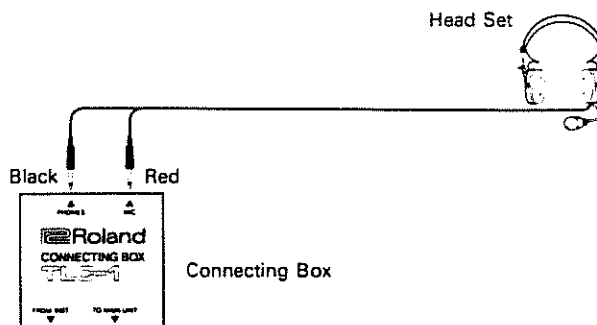
[Student Connections]

When using the optional pianos (TP-20), refer to page 37.

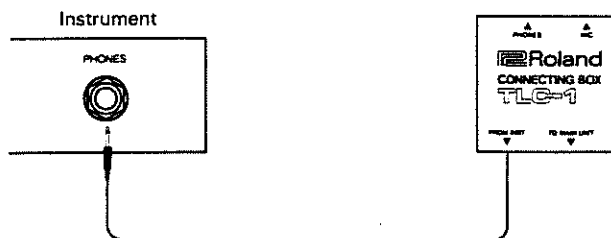
- ① Using the supplied screws, attach the Connecting Box to the rear of the musical instrument.

*If it is not possible to fix the Connecting Box on the instrument, attach it to the table or stand where the instrument is installed.

- ② Connect the Head Set to the Connecting Box.



- ③ Connect the Instrument Input Plug on the Connecting Box to the Headphone Socket on the instrument.

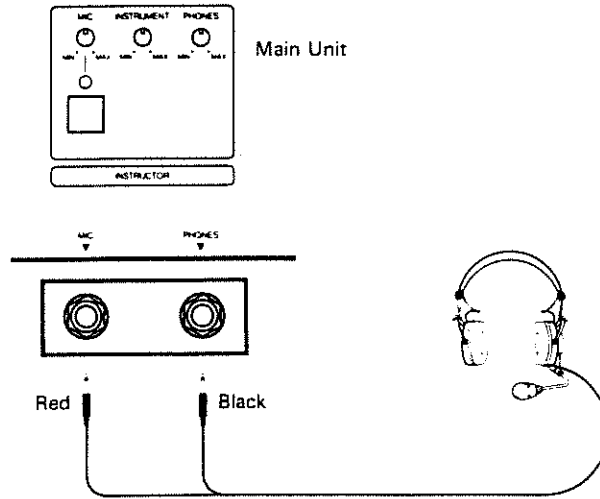


*If the instrument does not feature a headphone socket, use an output socket (OUTPUT) instead.

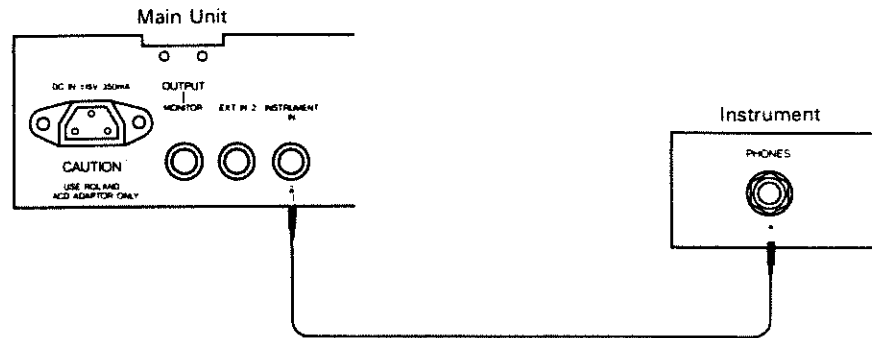
- ④ Connect the DIN Connector on the Connecting Box to that on the Main Unit using a DIN cord (5 pin).

[Instructor Connections]

① Connect the Head Set to the Main Unit.



② Connect the headphone socket (PHONES) on the instrument to the Instrument In Socket on the Main Unit.

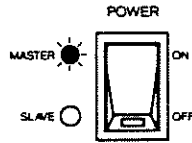


*If the instrument does not feature a headphone socket, use an output socket (OUTPUT) instead.

3 VOLUME CONTROL

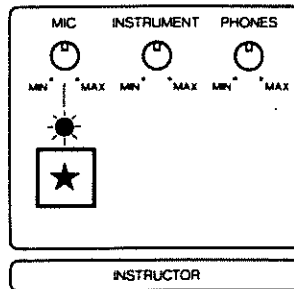
< PREPARATION >

① Turn the Main Unit on. (The Master Indicator lights up.)

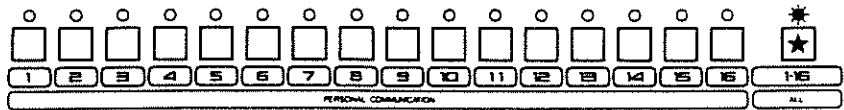


② Turn on the instrument of each student.

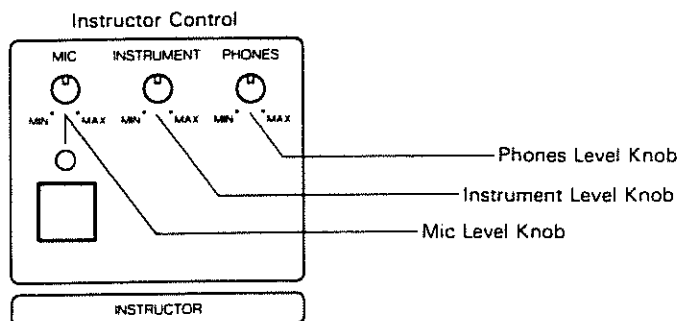
③ Push the Mic Button in the Instructor Control panel. (The indicator lights up.)



④ Push the All Button. (The indicator lights up.)



Now, using the Instructor Control panel, make the following adjustments.



[Instructor ← Students]

① Adjust the instrument volume from the students with the Phones Level Knob. (Set it to a comfortable level for the instructor.)

*The microphone volume from the students will also be changed (i.e. the mic volume cannot be controlled independently). If the volume difference between the microphone and instrument sounds is too large, adjust it using the volume knob of each instrument.

[Instructor → Students]

① Adjust the microphone volume from the instructor with the Mic Level Knob.

② Adjust the instrument volume of the instructor with the Instrument Level Knob.

*Be sure to place the microphone in front of your mouth, otherwise, sufficient proper volume may not be obtained.

4 DIFFERENT TYPES OF LESSONS

The TL-16 allows you to achieve the following four types of lessons.

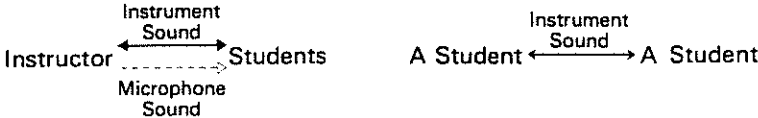
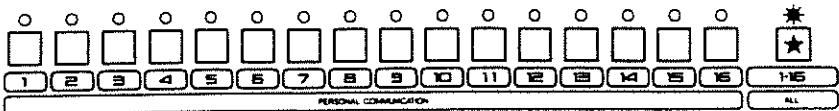
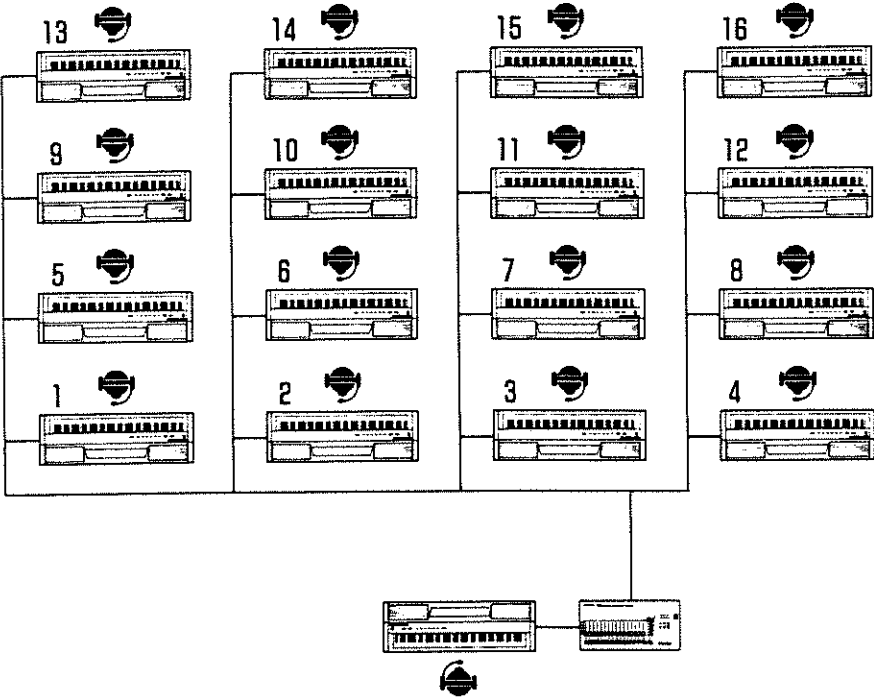
- The whole class (=teaching all the students)
- Individual (=self teaching/man-to-man instruction)
- Group (=group learning/group instruction/pair learning/pair instruction)
- Model performance

*The indicator on each button helps you see what functions are currently in use.

*The instructor's microphone can be turned on or off by pushing the Mic Button on the Instructor Control panel. When it is on, the indicator is lit.)

1. The Whole Class

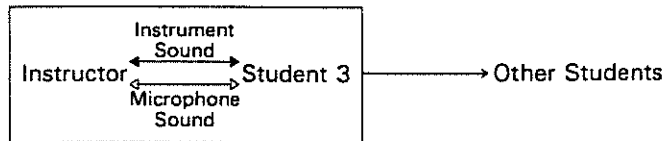
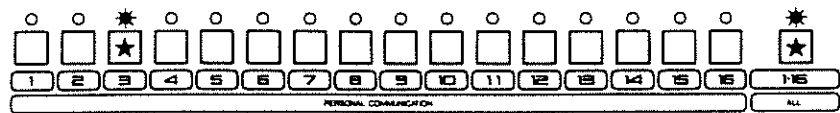
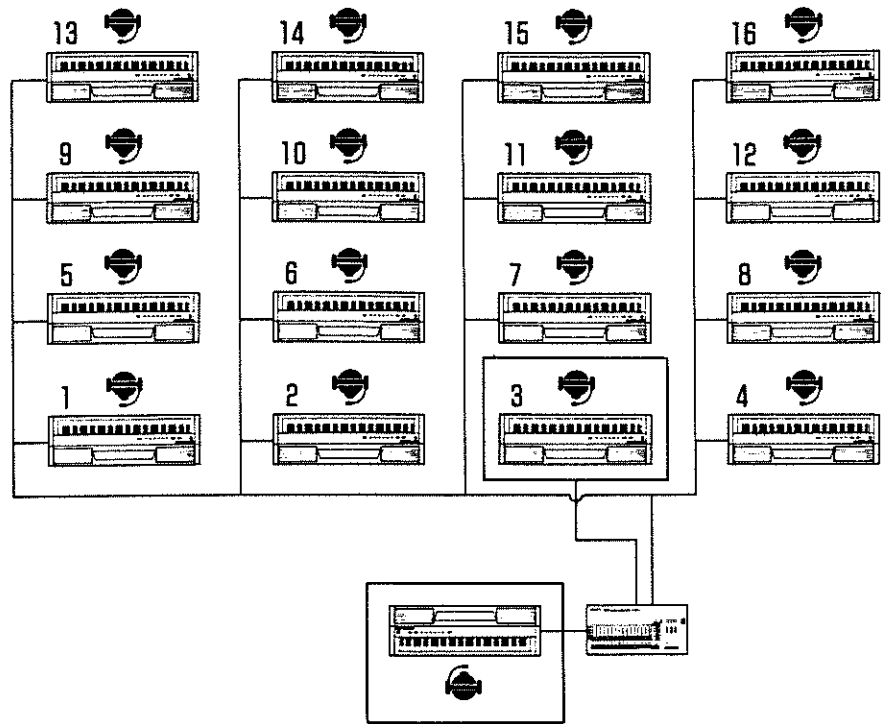
Push the All Button (the indicator lights up), and the teacher can talk to all the members of a class. The teacher and students can listen to each other's instrument sounds, but the teacher cannot hear the students' microphone sounds (=voices). Students cannot communicate with each other. (Only the instrument sounds of other students can be heard.)



At this stage, if you wish to communicate with a particular student, push the relevant Personal Communication Button. (The indicator lights up.)

The other students can hear what is communicated between the instructor and student.

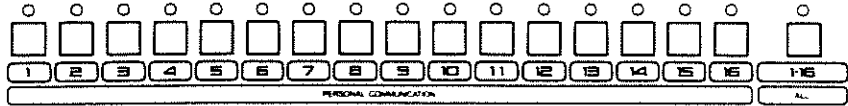
[e.g.] Communicating with Student 3



*Even when other operation buttons or switches have already been turned on, the All Button will have the first priority.

2. Individual Student

When the All Button is turned off (the indicator goes out), the teacher and each student can hear only his own instrument sound, therefore the students can study by themselves.

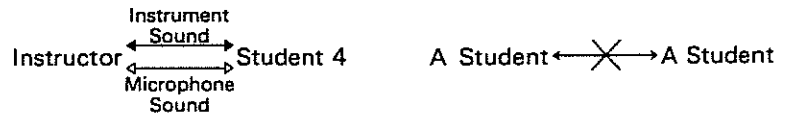
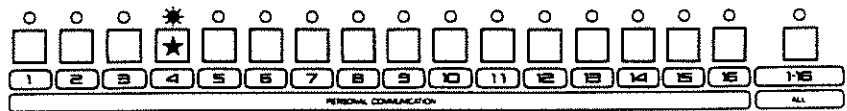
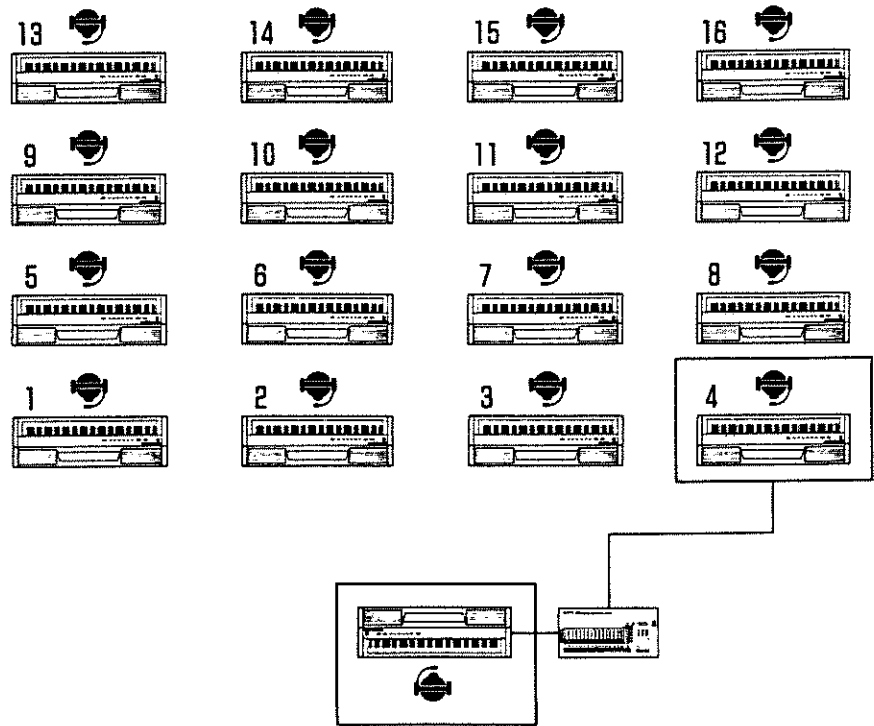


*The above self-teaching method cannot be achieved unless the Personal Select Switch is set to the "Personal" position.

At this stage, if you wish to communicate with a particular student, push the relevant Personal Communication Button. (The indicator lights up.) What is communicated between the teacher and student cannot be heard by the other students.

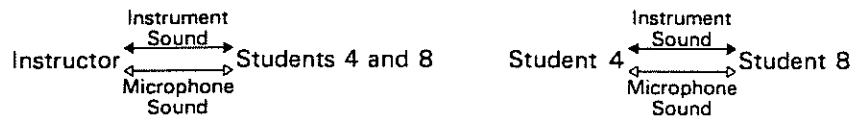
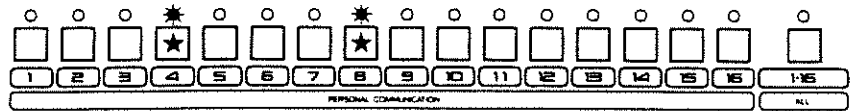
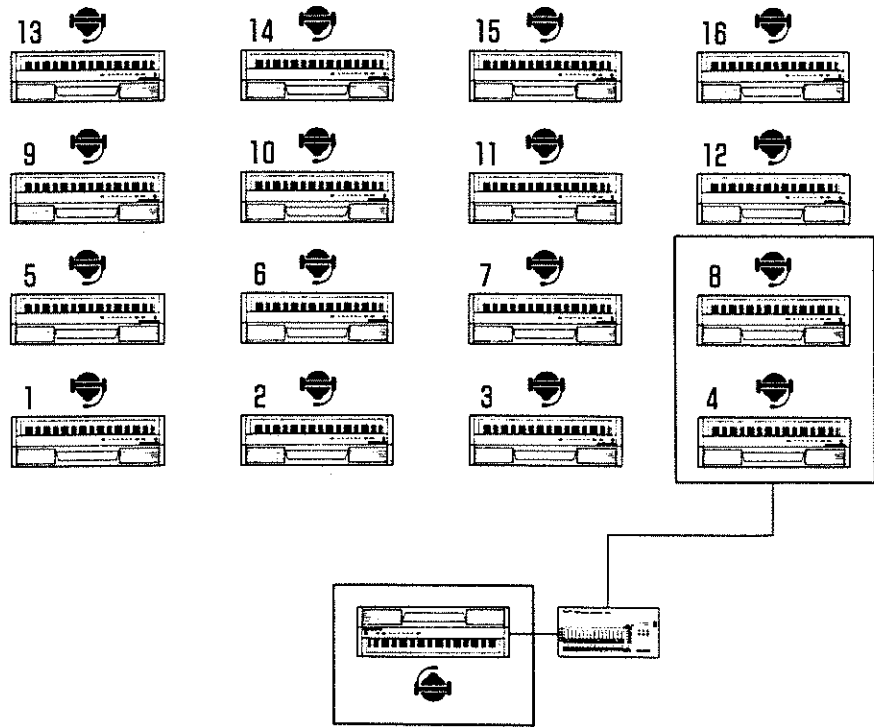
DIFFERENT TYPES OF LESSONS

[e.g.] Communicating with Student 4.



It is possible to select more than one student at the same time. In this case, the selected students can communicate with each other.

[e.g.] Communicating with Students 4 and 8.



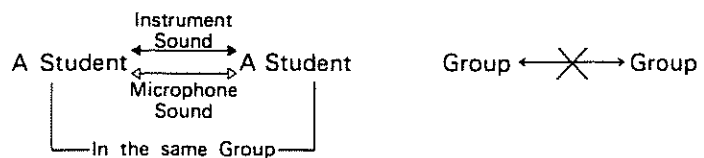
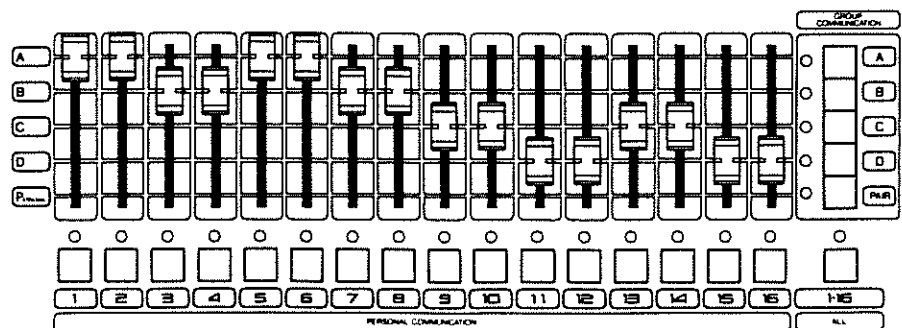
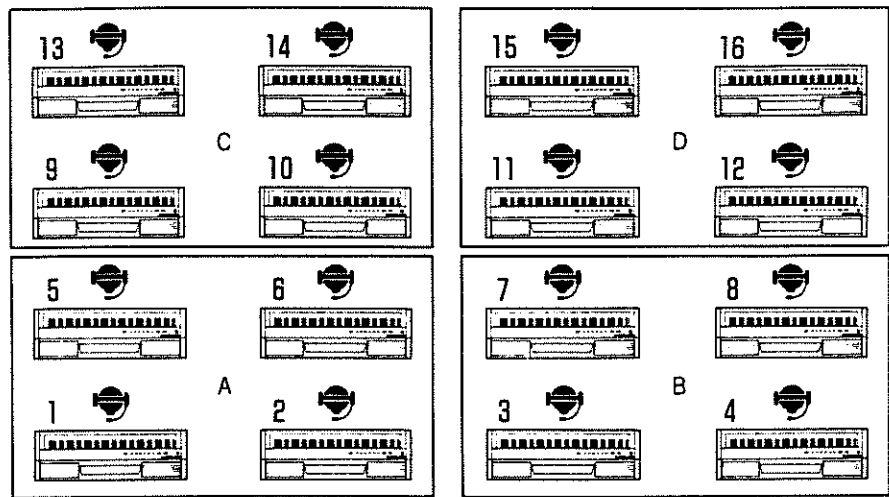
*The Personal Communication Button has priority over the Group Communication Button (see the following section "3. Group Lesson").

3. Group Lesson

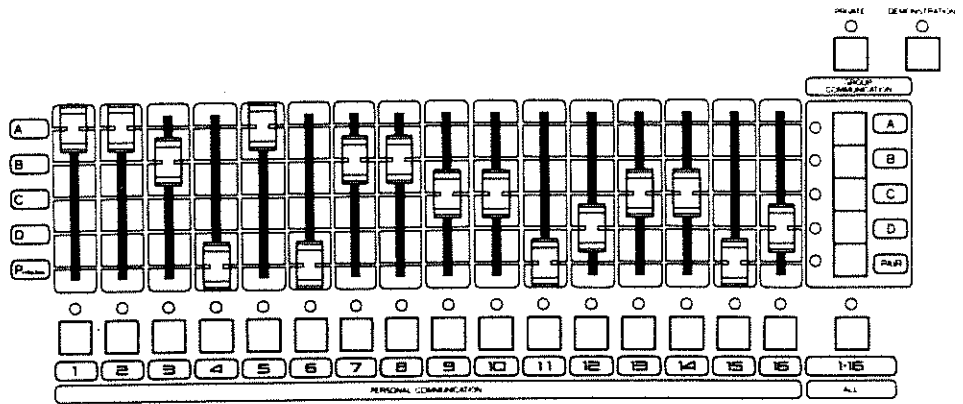
a. Group Learning

Students can be divided into four Groups, A, B, C and D by setting the Personal Select Switches (1 to 16) to the relevant Groups. In this way, the students in the same Group can communicate with each other, but students in different Groups cannot.

- [e.g.] Students 1, 2, 5 and 6 : Group A
 Students 3, 4, 7 and 8 : Group B
 Students 9, 10, 13 and 14 : Group C
 Students 11, 12, 15 and 16 : Group D



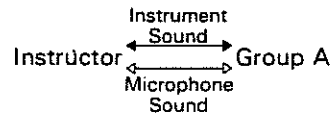
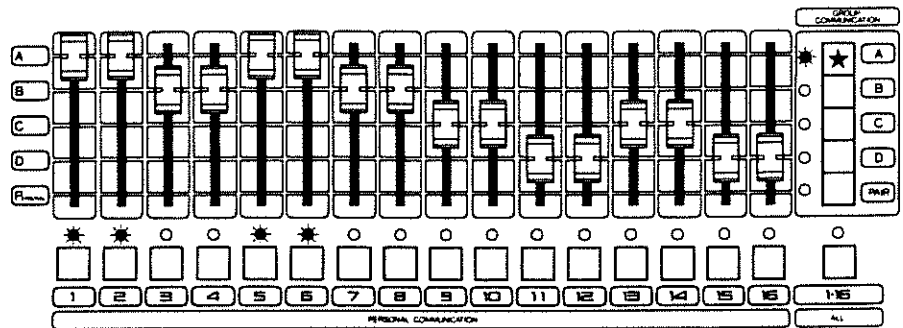
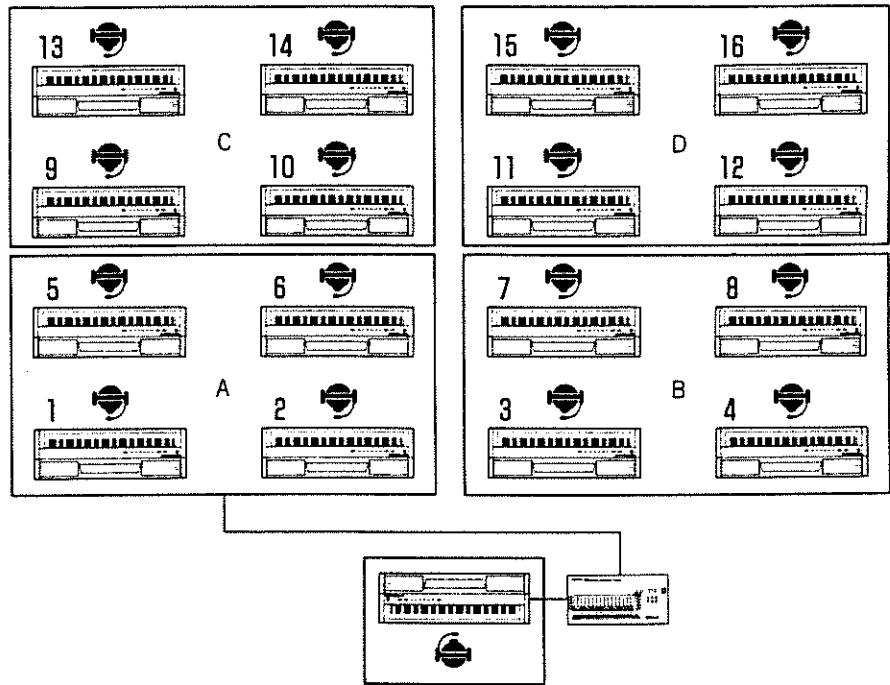
*You can exclude a particular student (or students) from the Groups, making him hear only his own sound for self-teaching. Set the relevant Personal Select Switch (or switches) to the "Personal" position.



b. Group Teaching

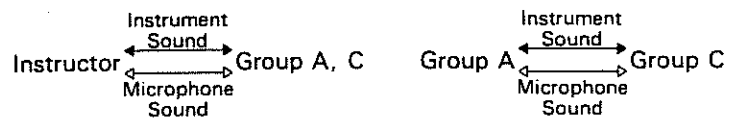
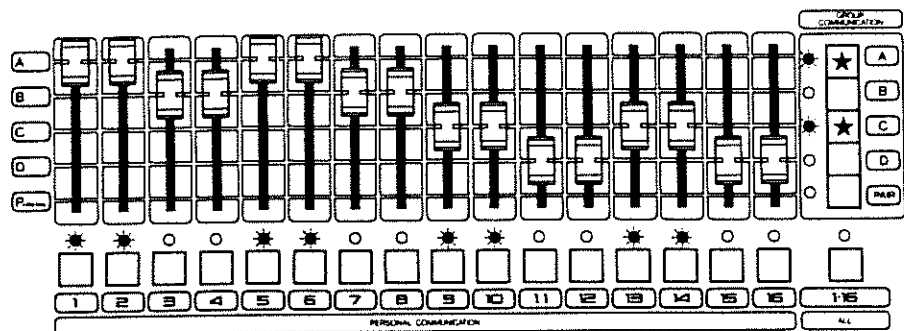
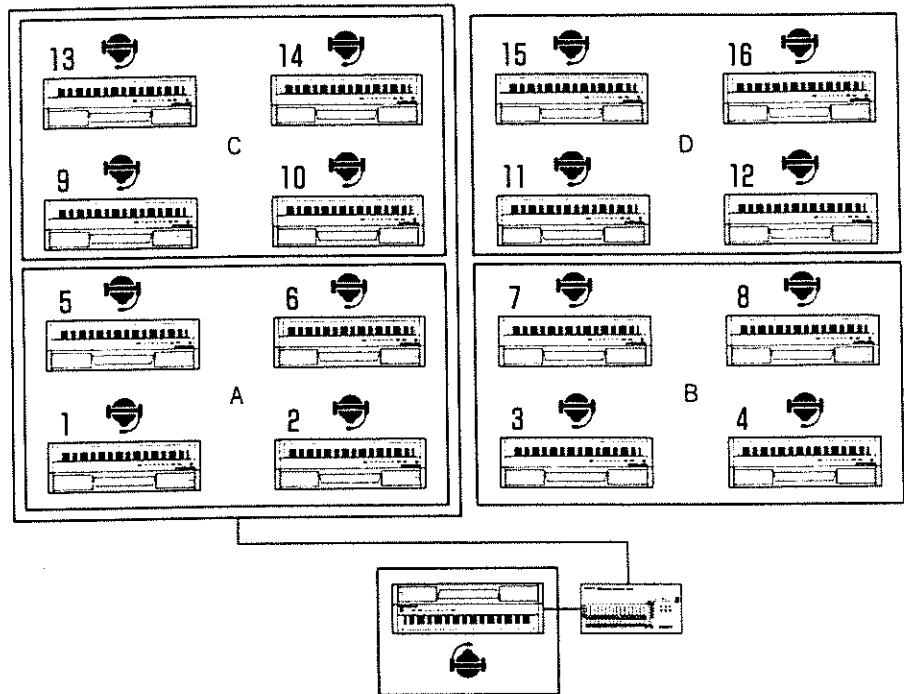
If you wish to join a Group, push the relevant Group Communication Button A, B, C or D. (The indicator lights up.) The Personal Communication Buttons of the students belonging to the selected Group will also light up.

[e.g.] Communicating with Group A.



It is possible to select more than one Group at the same time. In this case, the selected Groups can communicate with each other.

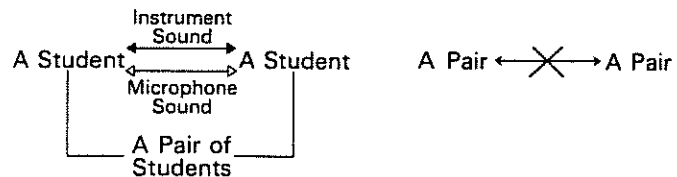
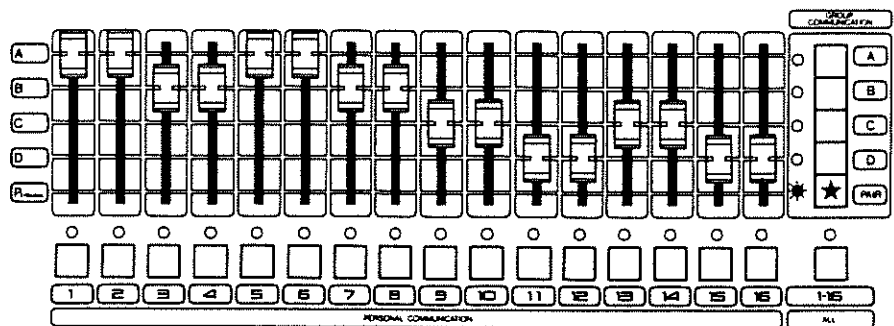
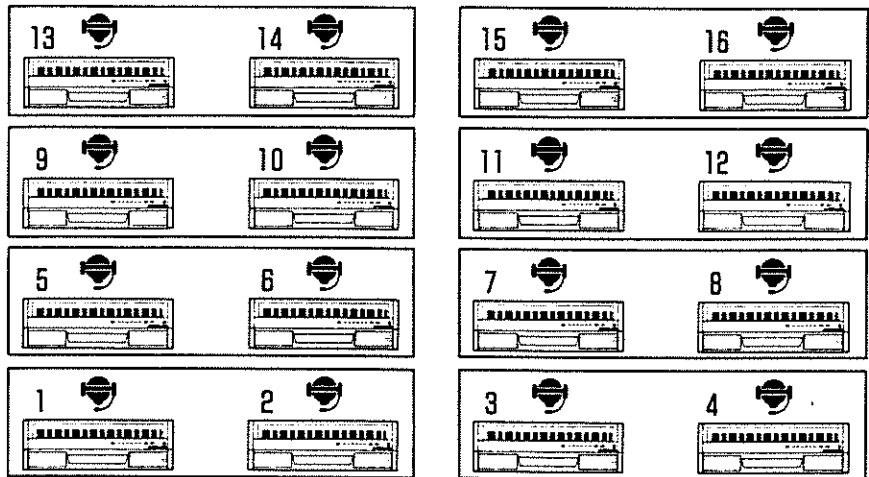
[e.g.] Communicating with Groups A and C



- *The Group Communication Button does not work in the following cases.
- When the All Indicator is lit.
- When the Personal Communication Indicator is lit.
- When the Demonstration Indicator is lit.

c. Pair Lesson

Push the Pair Button (the indicator lights up), and automatically, pairs are made, Students 1 and 2, 3 and 4, 5 and 6 and so on to 15 and 16. Each pair can communicate with each other. Students in different Pairs cannot.



If you wish to join a Pair, simply push the relevant two Personal Communication Buttons at the same time.

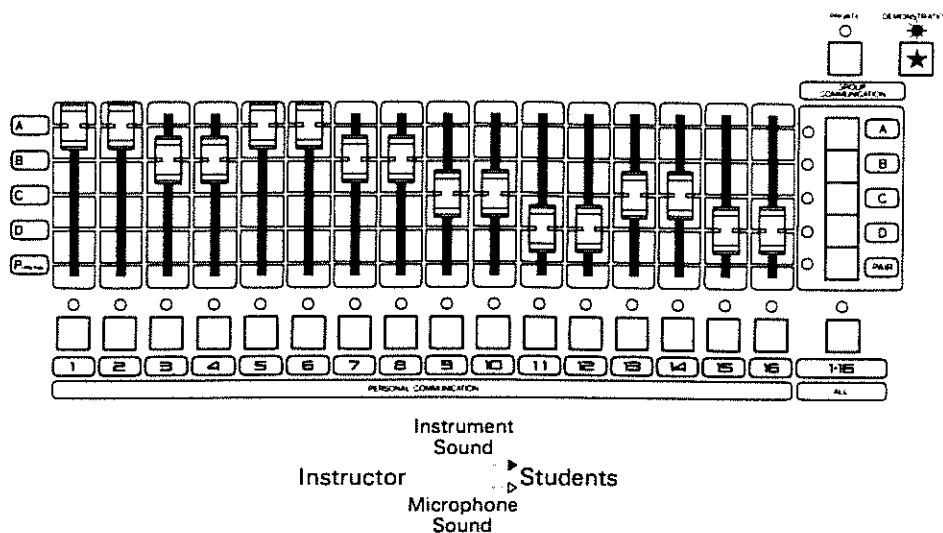
- *The Pair Button has priority over the Group Communication Buttons or Personal Select Switches, but does not work in the following cases.
- When the All Indicator is lit.
- When the Demonstration Indicator is lit.

4. Model Performance

Using the Demonstration Button, all the students can hear the instructor's, or a certain student's, performance.

a. Instructor's Performance

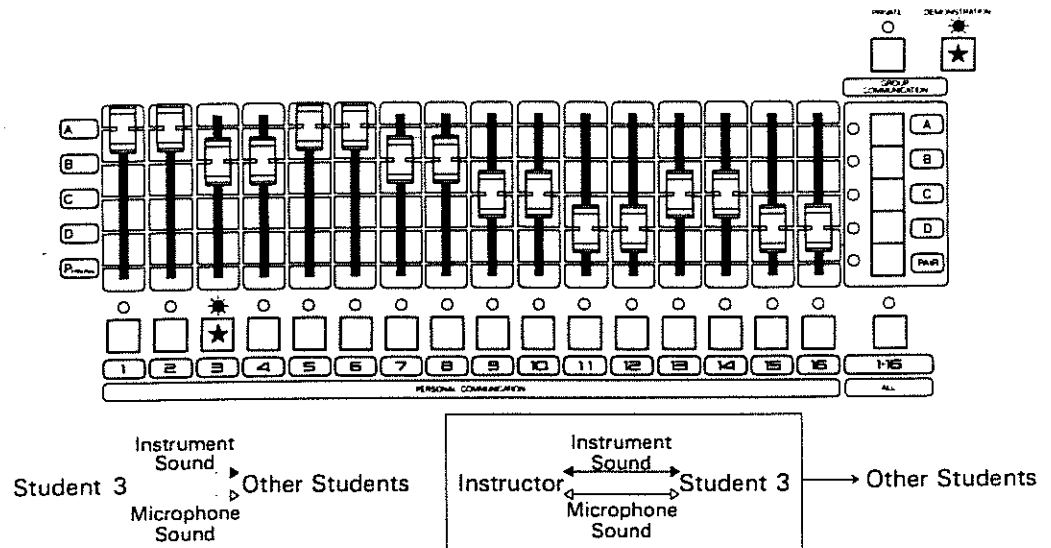
To have the students listen to the instructor's performance, turn on only the Demonstration Button. (All the other indicators except for the Demonstration Indicator are dark.)



b. Student's Performance

To have a certain student's performance heard by all the other students, push the Demonstration Button, then the Communication Button of the performer student. In this case, the teacher can communicate with the selected student and the other students can hear what is communicated.

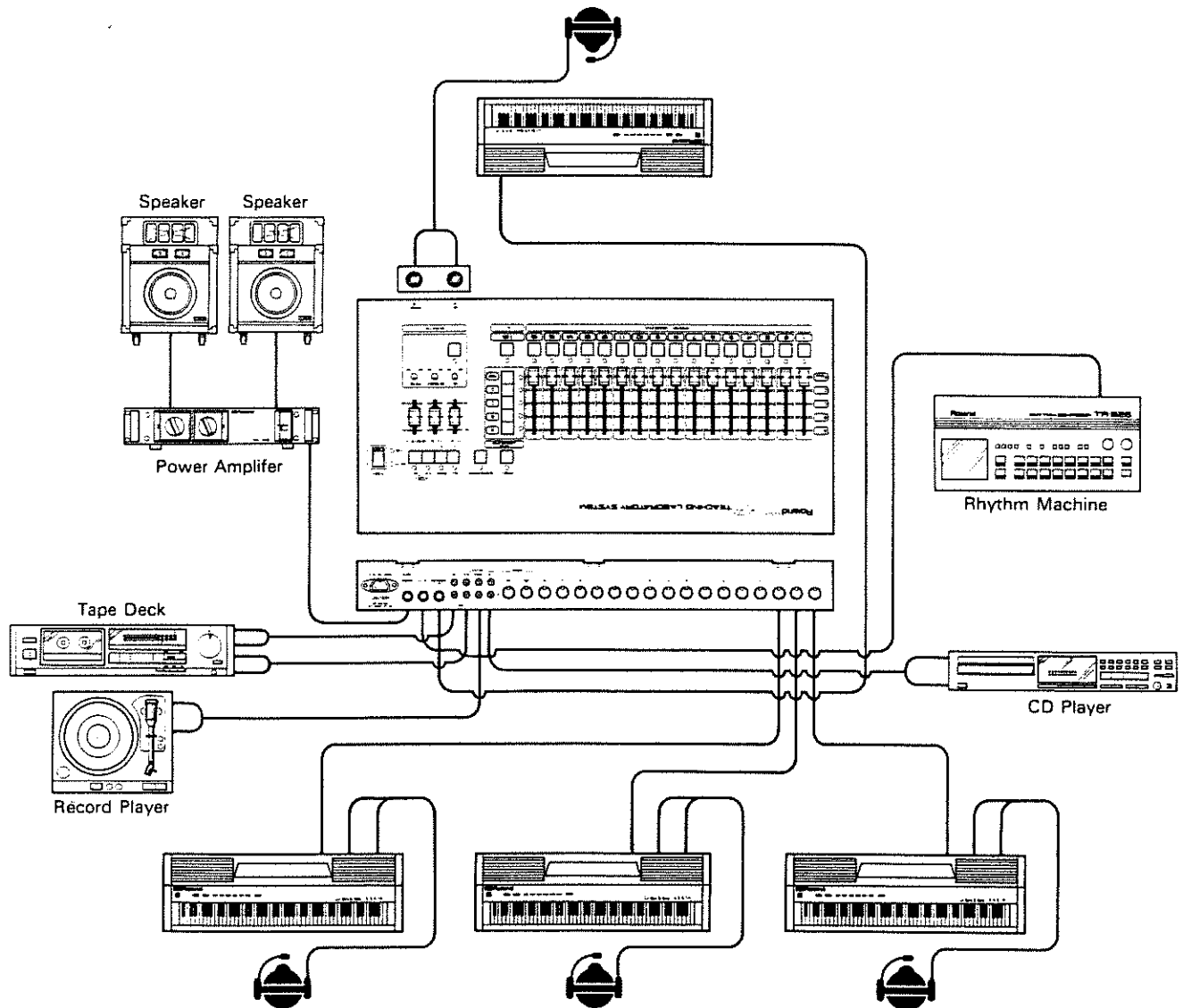
[e.g.] Model performance by Student 3



*The Demonstration Button does not function in the following cases.
 When the All Indicator is lit.
 When the Personal Communication Indicator is lit.

5 EXTERNAL DEVICE

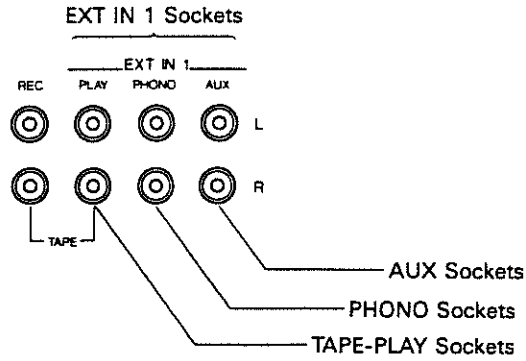
By connecting an external device, the lessons can be even more interesting.



1. Connections

For connecting an external device to the TL-16, use the EXT IN 1 Sockets, EXT IN 2 Socket and TAPE-REC Sockets on the rear panel.

● EXT IN 1 Sockets



PHONE

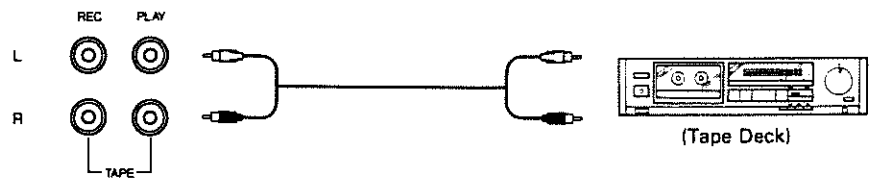
Connect a record player to these sockets.



*Use a record player featuring an MM cartridge.

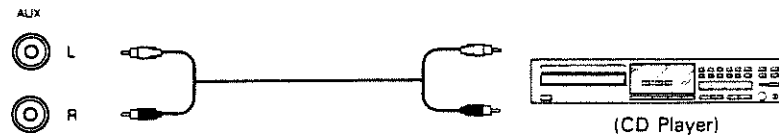
TAPE-PLAY

Connect this to the LINE OUT of a tape deck.



AUX

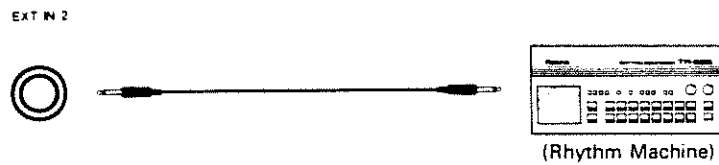
Connect this to the LINE OUT of a device such as a CD player.



*It is not possible to use the above three sockets at the same time. (You should select one of them by pushing the AUX, PHONO or TAPE-PLAY Button.)

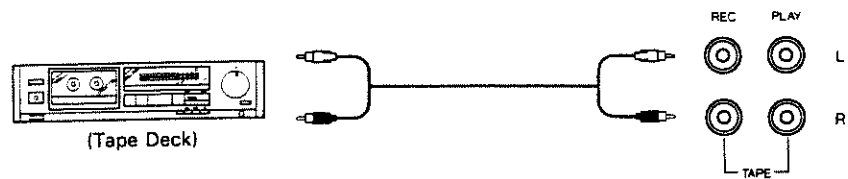
● **EXT IN 2 Socket**

Connect this to the OUTPUT socket of a device such as a rhythm machine.



● **TAPE-REC Sockets**

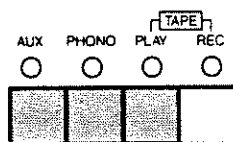
Connect this to the LINE IN sockets of a device such as a recording unit (e.g. tape deck).



2. Operation

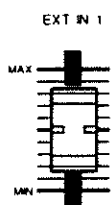
[EXT IN 1]

When an external device is connected to the EXT IN 1 Sockets, push the AUX, PHONO or TAPE-PLAY Button of the TL-16 (the indicator lights up), depending on the type of device connected, and set it to the playback mode.



Push one of the buttons

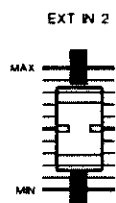
Adjust the volume with the EXT IN 1 Level Knob on the Main Unit or the Output Volume Knob on the external device.



or Output volume knob or external device.

[EXT IN 2]

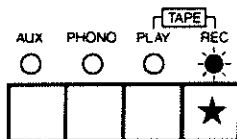
When an external device is connected to the EXT IN 2 Socket, set it to the playback mode, then adjust the volume with the EXT IN 2 Level Knob on the TL-16 or with the Output Volume Knob on the external device.



or Output volume knob or external device.

[TAPE-REC] (Recording)

To record the instructor's or a student's performance, connect a recording unit (e.g. tape deck) to the TAPE-REC Sockets, then push the TAPE-REC Button on the Main Unit (the indicator lights up).



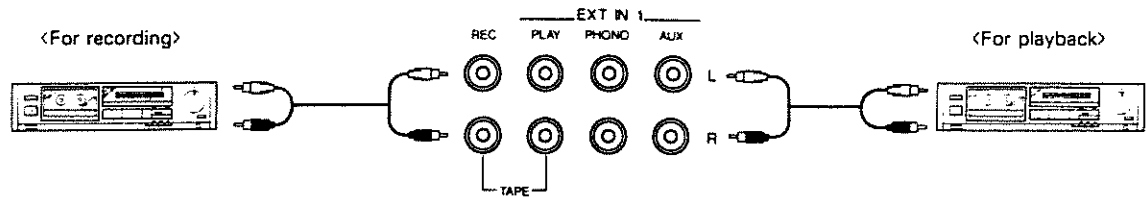
Adjust the recording level on the recording unit.

***It is not possible to use the TAPE-REC and TAPE-PLAY Buttons at the same time.**

3. Playing to an external device

The sound created on an external device can be sent to the students you select with the All, Personal Communication or Group Communication Buttons. Therefore, students can play to the performance of the external device. Moreover, this ensemble can be recorded onto a recording unit.

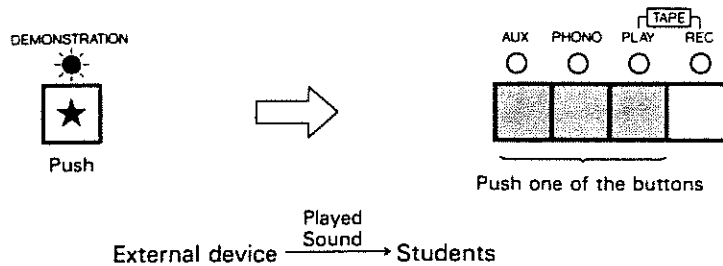
***To record what is played to a music tape, two tape decks will be required. Connect the tape deck for playback to the AUX Sockets.**



4. Listening Only

You can have all the students listen to the performance played on the external device.

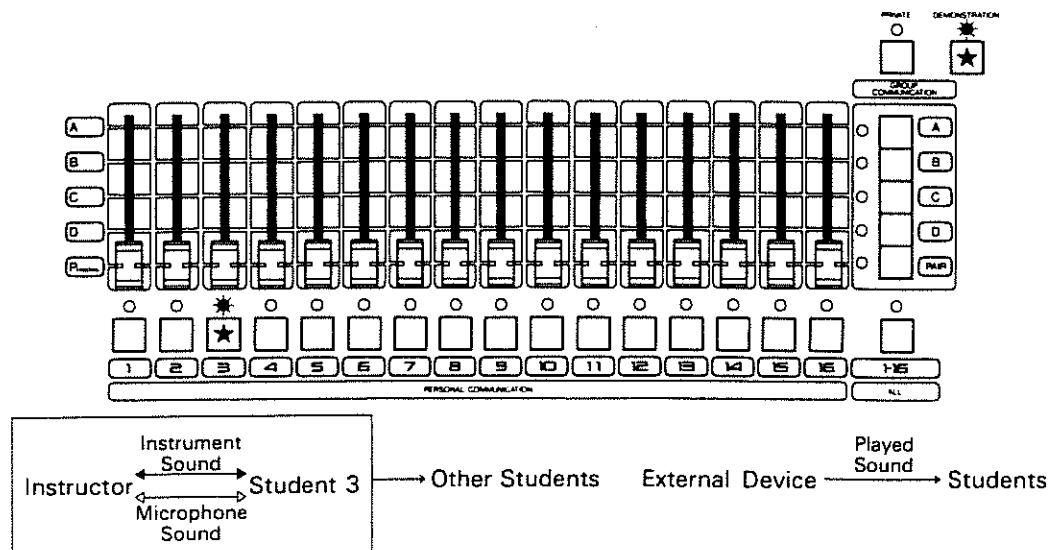
Push the Demonstration Button. Then push one of the AUX, PHONE and TAPE-PLAY Buttons (this is not necessary if the EXT IN 2 Socket is used). This mode is strictly for sending the sound of an external device to the students (=Listening Only).



● Personal Communication

In the Listening Only mode, to communicate with a particular student, the instructor uses the relevant Personal Communication Button to call him. What the instructor and the student say can be heard by other the students.

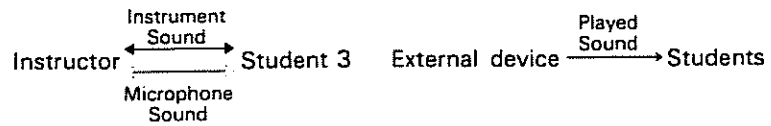
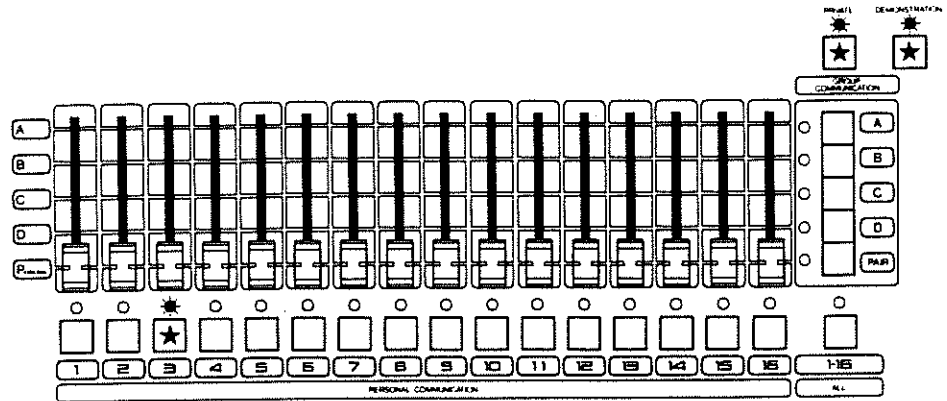
[e.g.] Communicating with Student 3



● Private Communication

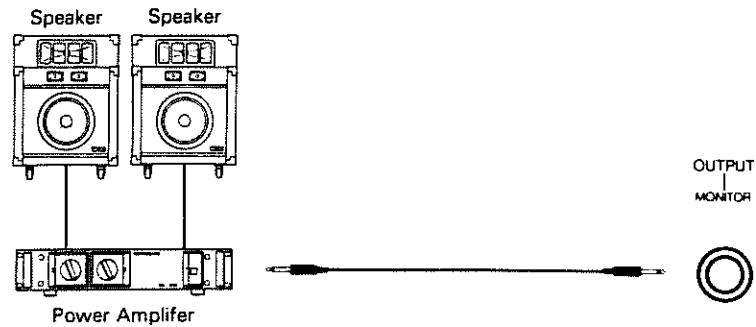
If you do not want the other students to hear what you and a student are saying, push the Private Button (the indicator lights up), before selecting a student with the Personal Communication Button.

[e.g.] Communicating with Student 3 without the other students listening



*The Private Button works only when the Demonstration Indicator is lit.

6 Connecting a Speaker System



By connecting a speaker unit (=an amplifier + speakers or a speaker with built-in amplifier) to the Monitor Out Socket, the following sounds can be heard through the speakers.

Students' Performance

*Performance of all the students (by pushing the All Button) or that of a selected student (with Personal Communication function) can be heard through the speakers. The microphone sound is automatically cut.

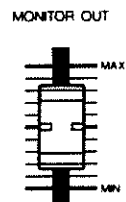
Instructor's Performance and Microphone Sound

*When the microphone sound is not necessary, mute it with the Mic Button on the Instructor Control panel.

Performance of an External Device

*The performance of an external device connected to the EXT IN 1 Sockets can be heard.

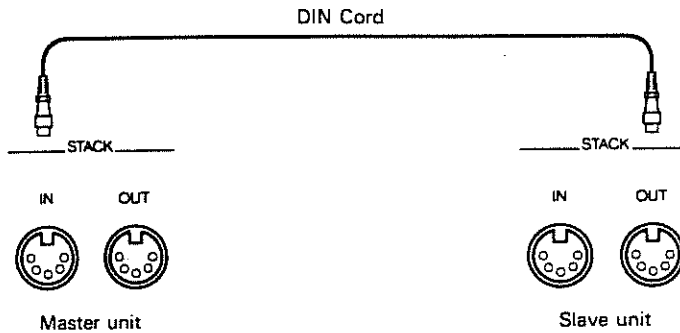
Adjust the volume with the Monitor Out Level Knob.



7 ADDING OTHER MAIN UNITS

Up to three more TL-16's can be added, allowing you to teach up to 64 students at the same time.

For setup, use the Stacking Connectors (IN/OUT). Connect the OUT on the slave unit (the unit to be added) to the IN on the master unit (the unit to which the instructor's Head Set and instrument is connected).



When setting up an external device, connect it to the master unit.

When the setup is complete, the Master Indicator of the master unit and the Slave Indicator of the slave unit will light up.



When operating more than one TL-16, you sometimes have to push the buttons on both the master and slave units.(See the table shown below.)

	Operation/ Connection			Operation/ Connection	
	Master Unit	Slave Unit		Master Unit	Slave Unit
Personal Select Switches	○	○	EXT IN 2 Level Knob	○	
Personal Communication Buttons	○	○	Monitor Out Level Knob	○	
All Button	○		Mic Button	○	
Pair Button	○	○	Phones Level Knob	○	
Group Communication Buttons	○	○	Instrument Level Knob	○	
Demonstration Button	○	○	Mic Level Knob	○	
Private Button	○	○	Monitor Out Socket	○	
AUX Button	○		EXT IN 1 Sockets	○	
PHONO Button	○		EXT IN 2 Socket	○	
TAPE-PLAY Button	○		TAPE-REC Sockets	○	
TAPE-REC Button	○				
EXT IN 1 Level Knob	○				

For example, to listen to a record, you only need to push the PHONE Button on the master unit. For Model Performance, however, you should push the Demonstration Buttons on the master and slave units. Group (A/B/C/D) setting is effective only in one unit, that is, Group A in a master unit differs from that in a slave unit.

8 SPECIFICATIONS

- **Maximum number of students controlled by one TL-16** : 16

- **Style of Lessons**

All
 Personal
 Group (including Pair)
 Demonstration

- **Controls**

Personal Communication Button ×16
 Group Communication Button ×4
 Pair Button ×1
 All Button ×1
 Demonstration Button ×1
 Private Button ×1
 Mic Button ×1
 AUX Button ×1
 PHONO Button ×1
 TAPE-PLAY Button ×1
 TAPE-REC Button ×1
 EXT IN 1 Level Knob ×1
 EXT IN 2 Level Knob ×1
 Monitor Out Level Knob ×1
 Mic Level Knob ×1
 Instrument Level Knob ×1
 Phones Level Knob ×1
 Power Switch ×1

- **Indicators**

Personal Communication Indicator ×16
 Group Communication Indicator ×4
 Pair Indicator ×1
 All Indicator ×1
 Demonstration Indicator ×1
 Private Indicator ×1
 Mic Indicator ×1
 AUX Indicator ×1
 PHONO Indicator ×1
 TAPE-PLAY Indicator ×1
 TAPE-REC Indicator ×1
 Master Indicator ×1
 Slave Indicator ×1

- **External Input Output Connectors**

Connector for student's instrument ×16
 (DIN Connector : DIN5P)
 Stacking Connectors IN ×1/OUT ×1
 (DIN Connector : DIN5P)
 Instrument Socket ×1
 (6.5 ϕ standard stereo jack : -10dBm, more than 50k Ω)
 Head Set Sockets
 MIC ×1
 (6.5 ϕ standard jack : -60dBm, more than 10k Ω)
 PHONES ×1
 (6.5 ϕ standard stereo jack : more than 16k Ω)
 EXT IN 1 Sockets
 TAPE-PLAY ×2 (L/R)
 (Pin Jack : -10dBm, more than 20k Ω)
 PHONO ×2 (L/R)
 (Pin Jack : 5mV, 47k Ω , RIAA)
 AUX ×2 (L/R)
 (Pin Jack : -10dBm, more than 50k Ω)
 EXT IN 2 Socket ×1
 (6.5 ϕ standard jack : -10dBm, more than 50k Ω)
 TAPE-REC Socket ×2 (L/R)
 (Pin Jack : -10dBm, less than 1k Ω)
 Monitor Out Socket ×1
 (6.5 ϕ standard jack : -10dBm, less than 1k Ω)
 DC IN ×1

- **Power** :

± 15 VDC (AC Adaptor ACD-120, 220 or 240E/A)

- **Consumption** :

350mA (± 15 VDC)

- **Dimensions** :

543 (W) × 321 (D) × 103 (H) mm
 21-3/8" × 12-5/8" × 4-1/16"
 (including the projection)

● **Weight :**
4.8kg/10lb 10oz

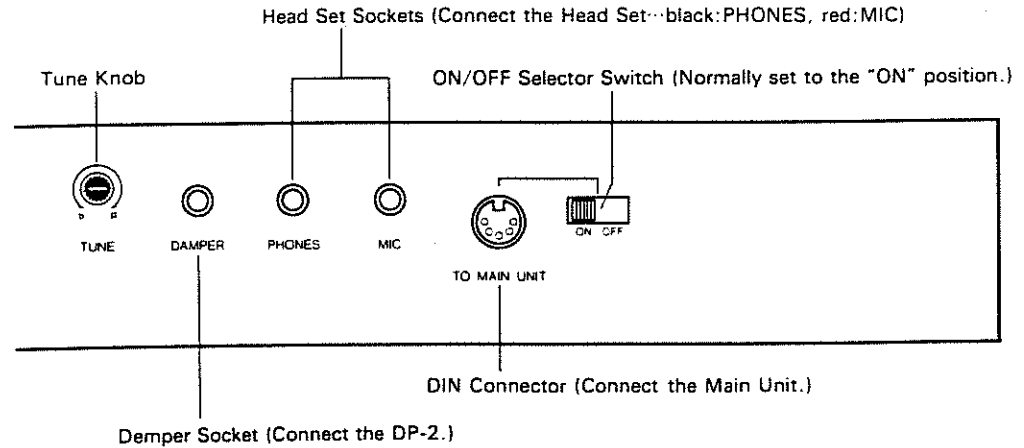
● **Accessories :**
Connection Cord (instrument ↔ TL-16)
×1
Marking Labels

● **OPTIONS**
Connecting Box : TLC-1
Head Set : RHS-100/RHS-200
DIN Cord : R-5 (5m) / T-10 (10m)

* Specifications are subject to change without
notice.

■ USING THE OPTIONAL PIANOS

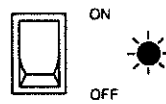
When using the optional pianos (TL-20) for students, you do not need the Connection Box (TLC-1). The Main Unit and the Head Set can be connected to each piano directly.



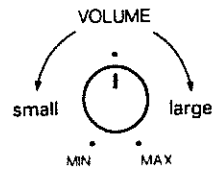
< Operation >

- ① Turn the piano on. (The Power Indicator lights up.)

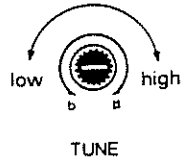
POWER



- ② Adjust the volume with the Volume Knob.



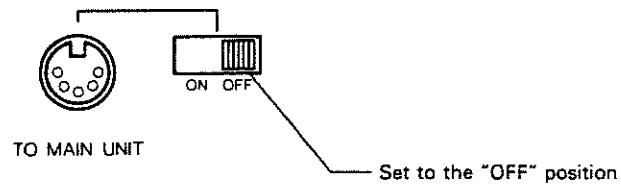
- ③ If necessary, tune the piano to another musical instrument using the Tune Knob. Rotating the knob clockwise raises the pitch, and counterclockwise lowers it. (At the center position, A=442Hz.)



- ④ Connect the supplied Pedal Switch (DP-2) to the Damper Pedal Socket to use it as a damper pedal.



- * When the TP-20 is not connected to the Main Unit, or when the Main Unit is not turned on, be sure to set the ON/OFF Selector Switch on the rear panel to the "OFF" position.



- * When using the TP-20 for an instructor's piano, connect the "PHONES" on the TP-20 to the Instrument Socket on the TL-16, using a standard stereo plug and set the ON/OFF Selector Switch to the "OFF" position.

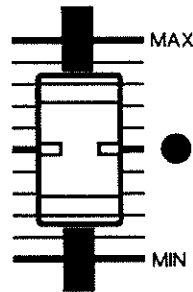
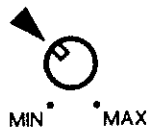
< TP-20 Specifications >

Keyboard : 61 keys, 5 octaves
Maximum number of voices : 8 voices
Tone : Piano
Controls : Volume, Tune
Sockets : Head Set (PHONES/MIC), Damper
Connector : DIN Connector (for Teaching Lab)
Switches : Power, ON/OFF Selector
Consumption : 10W
Dimensions : 912 (W) × 268 (D) × 89 (H) mm
 35-7/8" × 10-9/16" × 3-1/2"
Weight : 7kg/15lb 7oz
Accessories : Music Rest, Damper Pedal (DP-2)

Marking Labels

You can use the marking labels (▲, ●), as in the following examples, to remind you of the usual settings.

[e. g.]



 Roland®

10630

UPC

10630



10630

 Roland®