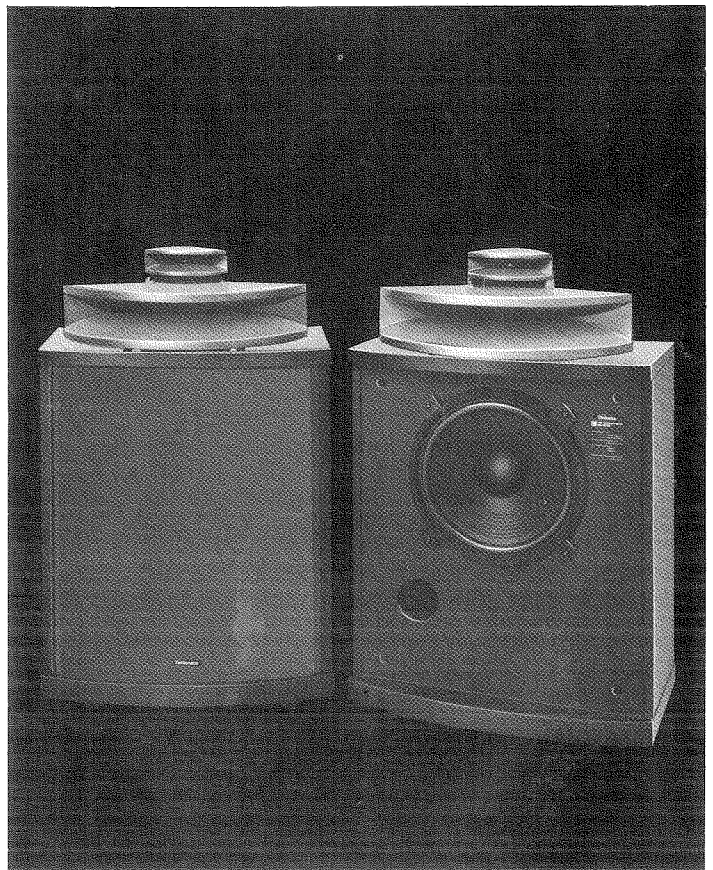


Technics

LINEAR PHASE SPEAKER SYSTEM

SB-E100

OPERATING INSTRUCTIONS



Before operating this speaker system, please read these instructions completely.

Thank you for selecting the **Technics** Linear Phase Speaker System SB-E100. To obtain maximum satisfaction from all of its many features as well as the longest possible service, be sure to first read these instructions carefully.

No matter how complex musical waveforms may be, all are composed of frequency components with their own amplitude and phase. In order to faithfully reproduce such musical waveforms, not only must the amplitude (sound pressure)/frequency response be flat, the phase/frequency response must also be linear. At Technics we have, by using BBD (Bucket-Brigade Device) technology, succeeded in developing our own unique phase-measurement system. As a result of long and deep research into the phase characteristics of speaker systems, and by developing wide-range, high-performance speaker units and arranging them in the ideal position, and furthermore by designing a new crossover network, we were able to successfully produce a true linear-phase speaker system.

INSTALLATION OF YOUR SPEAKER SYSTEM

The sound reproduced by a speaker system is easily influenced by such factors as room acoustics and the place where it is placed in the room. Before finally deciding upon the place where the speaker systems are to be placed, please carefully read the following information.

- In general, if a speaker system is placed on the floor, near a corner or near a wall, the level of the bass sound will be increased by the reflections of the sounds from the wall and floor. Consequently, it is possible to adjust the bass sound to some extent by changing the distance between the speaker systems and the wall and/or floor. Determine the location of the speaker systems which gives the best sound reproduction, therefore, depending upon the actual conditions of the room in which they are to be used.

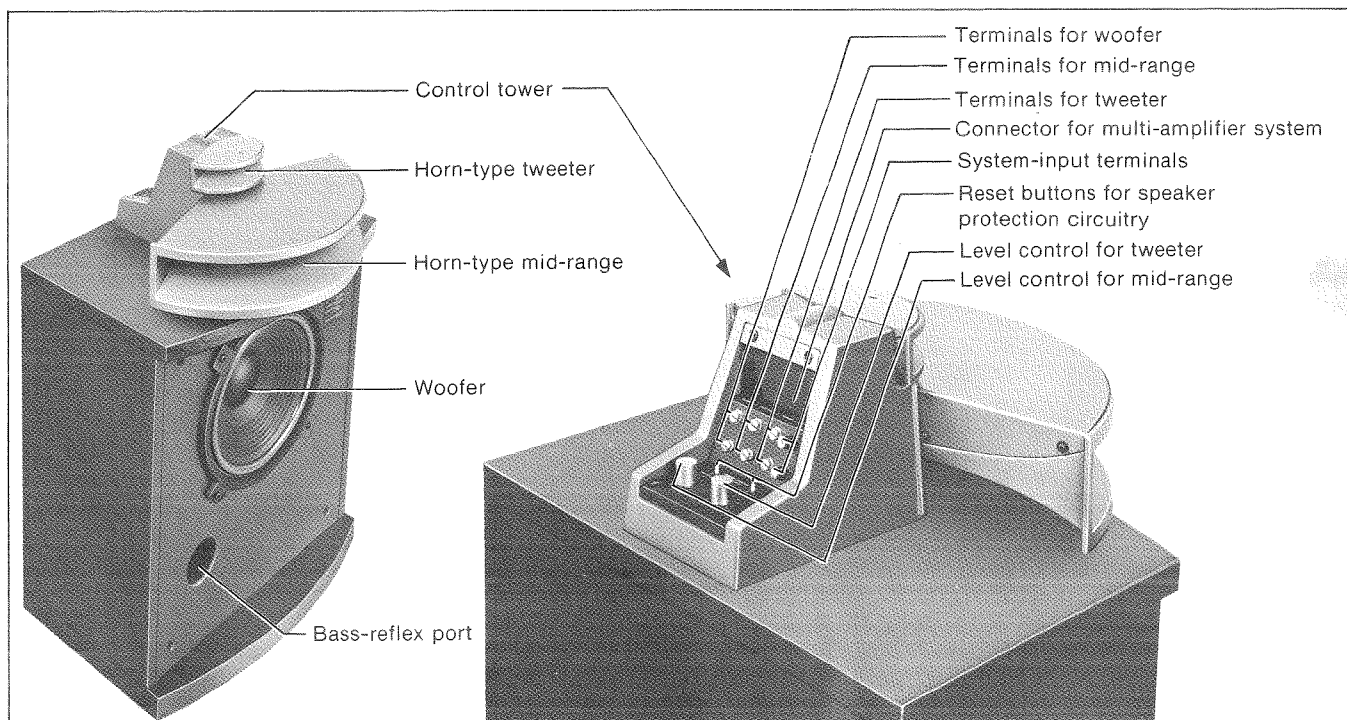
- If the speaker system faces toward a hard wall or a glass door or window, it is recommended that curtains or similar material be used in order to prevent undesirable resonance and sound reflection, especially of the treble sound.
- Vibrations from the speaker systems may be transmitted to a record player, causing acoustic feedback ("howling"). For best results, the speaker systems should not be placed near the record player, and should never be placed on the same table or shelf as the record player. It is often very effective, in order to prevent "howling", to place a thick piece of felt beneath the speaker systems and the record player.

CONNECTING THE SPEAKER SYSTEM

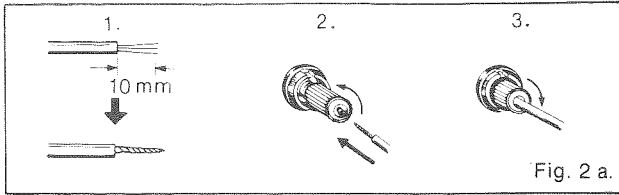
- Be sure to **turn off the power of the amplifier** before connecting the speaker systems to it.
- The impedance of this speaker system is **8 ohms**. Be sure that the load impedance of the amplifier to be used is 4 ~ 16 ohms.
- The input terminals of this unit are on the control tower on the top of the enclosure. There are located the "**system input**" terminals and the "**multi-amp system**" terminals. When this speaker system is used as an ordinary speaker system, connect the speaker connection wires to the "**system input**" terminals. If this speaker system is used with a multi-amplifier system, connect the speaker connection wires to the "**multi-amp system**" terminals. Be sure to read the instructions (below) concerning use with a multi-amplifier system.
- The upper terminal of each pair of terminals is positive, and the lower is negative (indicated + and -). When connecting speaker connection wires from the amplifier, **be sure that the left and right connections and the plus and the minus connections are made correctly.**

When speaker connection wires are connected to the "**system input**" terminals, make the connections as shown in figure 2a.

1. Strip about 10 mm (1/2") of the insulation from the wire, and then twist the core.

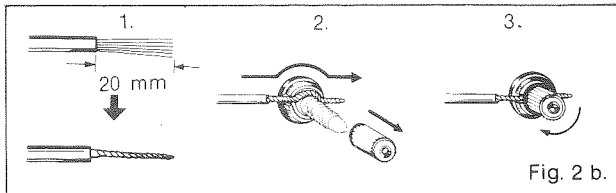


- Loosen the terminal knob by turning it counterclockwise 2 or 3 times. Insert the wire into the hole on the knob until the core cannot be seen.
- Tighten it by turning it clockwise.



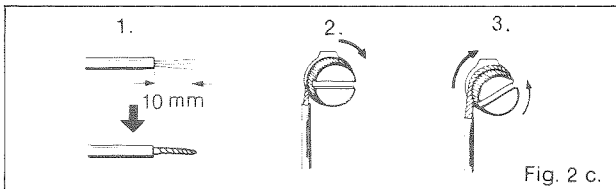
If thick wire is used, make the connection as shown in figure 2b.

- Strip about 20 mm (1") of the insulation from the wire, and then twist the core.
- Remove the terminal knob by turning it counterclockwise. Insert the core wire through one of the notches on the terminal base, pass it clockwise around the screw, and out from the other notch.
- Put the terminal knob back on the screw, and tighten it by turning it clockwise.



To connect speaker connection wires to the "multi-amp system" terminals, make the connections as shown in figure 2c.

- Strip about 10 mm (1/2") of insulation from the wire and then twist the core.
- Loosen the terminal by turning it counterclockwise. Twist the wire clockwise around the screw.
- Tighten the terminal by turning it clockwise.



Note 1: Be sure that the core wires don't touch each other.

Note 2: The "multi-amp system" terminals of this unit can be tightened by using a coin.

POWER-HANDLING CAPACITY

The power-handling capacity of this unit is indicated in the specifications, and is determined according to the temperature increase of the voice coils.

- If the amplifier to be used has an output power which exceeds the power-handling capacity of this unit, be sure that the **amplifier's volume control** is set so that **excessive input** is not applied to the speaker system.
- Even if the amplifier to be used has an output power which is less than the power-handling capacity of this unit, the output of the amplifier will become distorted and excessive input will be applied to the speaker units, especially for the middle and high frequencies, if the **input signals to the amplifier are too large or the amplifier volume level is too high**. Also note that higher-than-normal power is applied to the speaker systems if the tone controls of an amplifier or a frequency equalizer are used to **raise the level of bass and/or treble sounds**. When adjusting the volume level, therefore, **do so with great care: confirming that amplifier output is not distorted**.

- The power-handling capacity of this unit is set for reproduction of ordinary music. If an oscillator or test record is used **to produce a continuous signal such as a sine wave, etc., a signal exceeding 10 watts must never be applied**.
- If the following **special types of signals** are applied to the speaker system, be sure to **reduce the volume level of the amplifier**.

- Interstation hiss on the FM broadcast band.
- Output from a tape deck during fast forward or rewind.
- Acoustic feedback from a microphone or an electric musical instrument.
- "Shock" noise which occurs when input or output connection cords are connected or disconnected or when a phono cartridge is replaced.

SPEAKER-PROTECTION CIRCUITRY

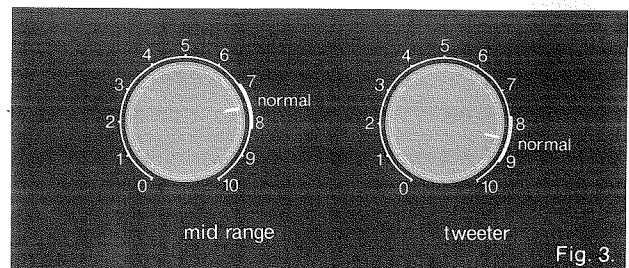
This unit includes built-in **speaker-protection circuitry** to protect the speakers from damage by excessive input or an abnormal signal.

- This unit is designed so that the protection circuitry will **automatically** function if **excessive input or an abnormal signal** is applied to the speaker system, thus **cutting off the input** to the speakers.
- To operate the speaker protection circuitry, please **note the following instructions**:

- Before making connection to the amplifier**, be sure to **push the reset buttons** on the control tower.
- If sounds from the mid-range and/or the tweeter are interrupted** suddenly while using your speaker system:
 - Reduce the amplifier volume.**
 - Check to be sure all equipment in your reproduction system is functioning properly.**
 - Wait for about 20 seconds.**
 - Push the reset buttons.**
 - After resetting the protection circuitry, reduce the amplifier volume** to a level lower than before to prevent the speaker-protection circuitry from functioning again.

LEVEL CONTROLS

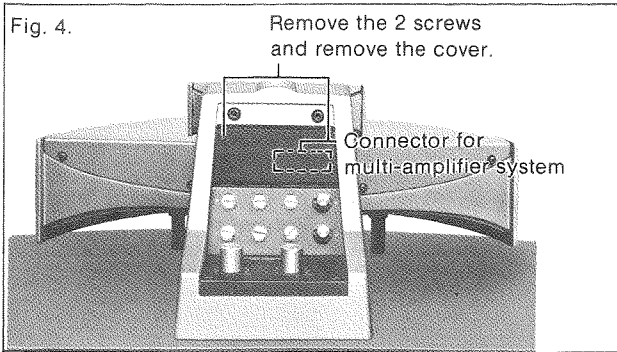
This speaker system includes level controls which can be used for continuous adjustment of the level of the mid-range and treble sound depending upon the room acoustics, the sound source, and the characteristics of the phono cartridge and the amplifier which are used with this speaker system, as well as your own preference. The standard setting of the level controls is the "normal" position.



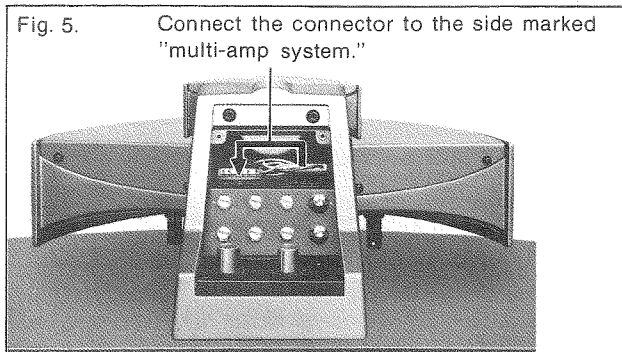
How to use this system as part of a multi-amplifier system

This speaker system is designed so that it can also be used in a multi-amplifier system. Follow the instructions below when using it in a multi-amplifier system.

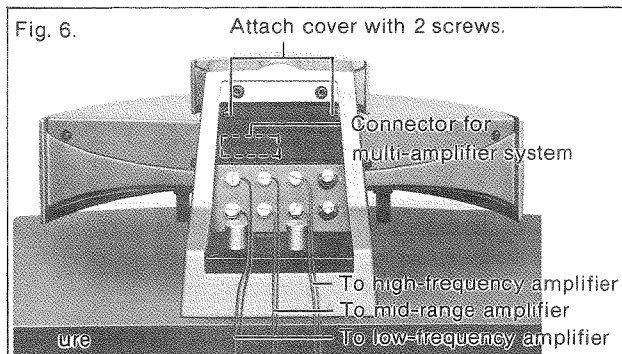
- Remove the cover of the connector for multi-amplifier system by loosening the 2 screws. (The connector is located above the input terminals.)



2. Pull out the connector at the side marked "full system," and connect it to the side marked "multi-amp system."



3. Attach the cover once again by using the 2 screws.
4. Connect the output lead wires from the 3 amplifiers (low-frequency amplifier, mid-range amplifier, and high-frequency amplifier) to the 3 input terminals (woofer, mid-range and tweeter). The upper multi-amplifier input terminals are positive (+), and the lower ones are negative (-). Be sure to take care to make the connections correctly.



Carefully note the following information when using this speaker system in a multi-amplifier system.

- The impedance of each speaker unit (woofer, mid-range and tweeter) is 8 ohms. Be sure that the amplifiers to be used have a load impedance of 4 ~ 16 ohms.
- When the connector for multi-amplifier system is connected to the side marked "multi-amp system," the network, the level controls and the protection circuitry naturally have no effect. The level for each speaker unit should be adjusted by using the volume control on the amplifier to which the speaker unit is connected.
- The following crossover frequencies are recommended:
Woofer—Mid-range: 1 kHz ~ 2 kHz
Mid-range—Tweeter: 5 kHz ~ 10 kHz
- In order to protect the speaker units from low-frequency noise, etc. from the amplifiers, a bipolar capacitor should be

connected in series between each amplifier and speaker unit as follows:

1. Between the mid-range amplifier and the mid-range speaker unit: about 68 μ F.
2. Between the high-frequency amplifier and the tweeter: about 10 μ F.

NOTES

- Although the enclosure and the speaker units of this speaker system are made of carefully selected material and have been produced by the finest manufacturing techniques, sudden changes in surrounding temperatures and/or humidity should be avoided. **Keep this unit away from sources of heat, high humidity and direct sunlight.**
- The speaker system **should not be placed near a TV**, because the magnet may cause a disturbance in the TV picture.
- If the enclosure becomes dirty, use a soft, dry cloth to wipe it clean. If the dirt is excessive, soak a soft cloth in a weak solution of soap and water, wring it thoroughly, and then clean the enclosure. A soft dry cloth should then be used to wipe it dry.
- **Never use alcohol, paint thinner, benzine nor other volatile chemicals** to clean this unit because they may damage the finish, causing it to lose its luster. Also **never use a wet cloth or a chemically-impregnated cloth.**

SPECIFICATIONS

Type:	3-way 3-speaker system
Speakers:	Woofer: 30 cm, cone type Midrange: horn type Tweeter: horn type
Impedance:	8 ohms
Power Handling Capacity:	150 watts, Music 100 watts, DIN
Output Sound Pressure Level:	95 dB/W (1.0 m)
Crossover Frequency:	1,500 Hz, 6,500 Hz
Frequency Range:	37 ~ 22,000 Hz (-10 dB)
Dimensions:	52,5(W)×84,6(H)×42,4(D) cm
Weight:	29.0 kg

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