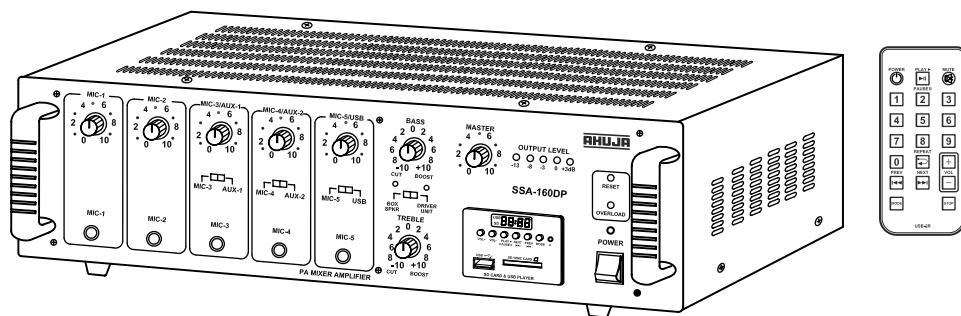


AHUJA®

PA Mixer Amplifier

160W RMS / 220W Max.

SSA-160® DP



- ◆ Thank you for purchasing the AHUJA PA Mixer Amplifier.
- ◆ Please read this manual thoroughly before making connections and turning on the power. Following the instructions in this manual will enable you to obtain optimum performance from your new AHUJA PA Mixer Amplifier + Digital Player.
- ◆ Please retain this manual for future reference.

• Safety Instructions

Read the Instructions: Please read all the instructions in this section carefully before installation or use of the product. All the safety instructions must be followed.

Retain the Instructions: Please retain this Instruction Manual for future reference.



This symbol, wherever it appears, alerts you to the presence of uninsulated hazardous voltage that may be sufficient to constitute a risk of electric shock. External wiring to any terminal marked with this symbol must be done by a trained and instructed person only.



This symbol, wherever it appears adjacent to a component, alerts you that the concerned component can only be replaced by another of the exact same specifications.

WARNING

- To reduce the risk of electric shock, do not remove the top cover. No user serviceable parts inside. Refer all servicing to qualified personnel only.
- Before replacing any fuse, make sure the set is switched off and disconnected from the AC mains or any other power source. Replace a fuse only with another of exactly same specification.

CAUTIONS

Water & Moisture: To reduce the risk of fire or electrical shock, do not expose this set to rain or moisture. Do not use this set near water or in a wet location. Do not keep any object filled with liquid, such as a vase, on top of this set. Do not insert or remove the AC mains plug with wet hands.

Power Source: The voltage & frequency of the AC mains supply, and the voltage of the external battery, (if applicable) to which this set can be connected, is marked on the rear panel of the set. Do not connect this set to any power source other than those specified on the rear panel.

Power Cord Protection: Do not cut, kink, damage or modify the AC power cord supplied with this set. Keep the AC power cord away from heaters and harmful chemicals. Do not keep any heavy object on the power cord.

Operation on Generator: When operating this set on a generator, make sure the set is switched off till the generator voltage has stabilized.

Ventilation: This set should be situated so that its location or position does not interfere with its proper ventilation. Do not cover the ventilation holes / slots. Do not insert or drop anything into the ventilation holes / slots.

Stability: This set must be kept in a stable and flat horizontal position, and never in a tilted position. Do not place this set on an unstable stand, tripod, bracket or mount. Do not use attachments which are not supplied or explicitly recommended by the manufacturer.

Cover Strip: The cover strip of the 100V / 70V audio output terminal strip, and of any other high voltage output terminal strip, must be replaced after making connections. Failure to do so may result in exposure to hazardous voltages.

Earthing: This set must be earthed properly before use. A wire from the Earth terminal on the rear panel must be connected to electrical earth.

Cleaning: Disconnect this equipment from the AC mains and external battery before cleaning. Clean with a damp cloth, but do not allow any liquid to enter the set. Do not clean with liquids or aerosols.

Exposure to Heat: Do not touch the heatsinks while the set is working.

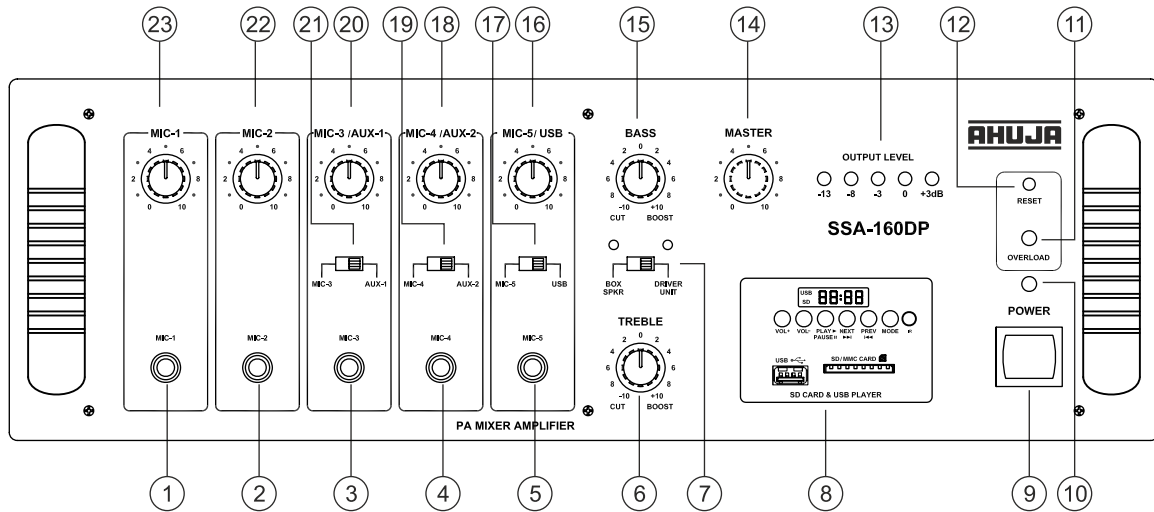
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• Features/General Description of Product

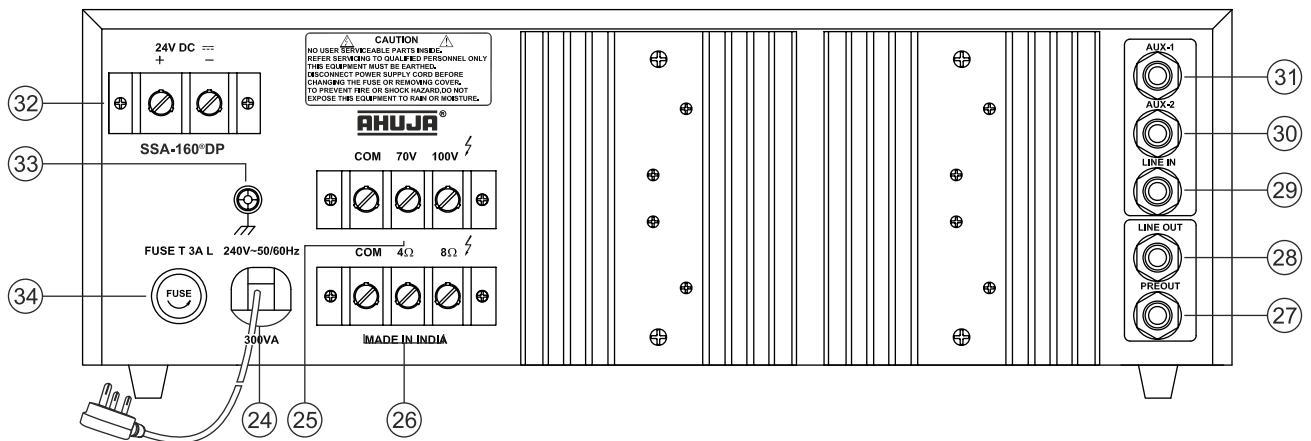
- Designed for use in a wide variety of PA applications.
- SSA-160®DP is a Mixer Amplifier of 160Watts rated output with five unbalanced Mic inputs, 2 Aux inputs and built-in MP3 playback facility.
- SSA-160®DP has a Preamp output for connecting a recorder, a Line output for connecting to a Booster Amplifier and a Line input for connecting to an external PA Audio Mixer.
- Box Speaker/ Driver Unit selector switch has been provided for protecting the Driver Unit's diaphragm from unwanted low frequencies. Since Box speakers can reproduce the full spectrum of audio frequencies but Driver Units cannot reproduce very low frequencies, the switch should be positioned to the Driver Unit side when Driver Units, Horns and Column speakers are connected.
- Circuit Protector Device has been provided which safeguards the amplifier against overload and short circuit.
- Provision for automatic changeover from AC to Battery Operation ensures continuity of program (if battery is connected).
- Protection provided against reverse polarity of Battery connections.
- Ease of operation, & easy service accessibility has been optimized in the design.

• Front Panel Controls & Features



1. **MIC-1 Input Jack Socket**
For accepting unbalanced signal from a low impedance microphone.
2. **MIC-2 Input Jack Socket**
3. **MIC-3 Input Jack Socket**
4. **MIC-4 Input Jack Socket**
5. **MIC-5 Input Jack Socket**
6. **TREBLE Control**
For attenuating or boosting the signal level of high frequencies.
7. **BOX SPEAKER / DRIVER UNIT Selector Switch**
8. **MP3 Playback Facility** (see description page)
9. **POWER Switch**
Push the top part of the knob to switch the amplifier ON. Push the bottom part of the knob to switch the amplifier OFF.
10. **POWER LED**
This LED glows when the amplifier is switched ON.
11. **OVERLOAD LED**
This LED glows when the circuit protector trips.
12. **RESET button**
This button pops out when the circuit protector trips. Rectify the cause and press the RESET button for resetting normal operation of the amplifier.
13. **LED Array**
This indicates the output level of the amplifier.
14. **MASTER Volume Control**
For adjustment of the overall volume level from the amplifier.
15. **BASS Control**
For attenuating or boosting the signal level of low frequencies.
16. **MIC-5/USB Volume Control**
17. **MIC-5/USB Selector Switch**
18. **MIC-4/AUX-2 Volume Control**
19. **MIC-4/AUX-2 Selector Switch**
20. **MIC-3/AUX-1 Volume Control**
21. **MIC-3/AUX-1 Selector Switch**
22. **MIC-2 Volume Control**
23. **MIC-1 Volume Control**

• Rear Panel Controls & Features

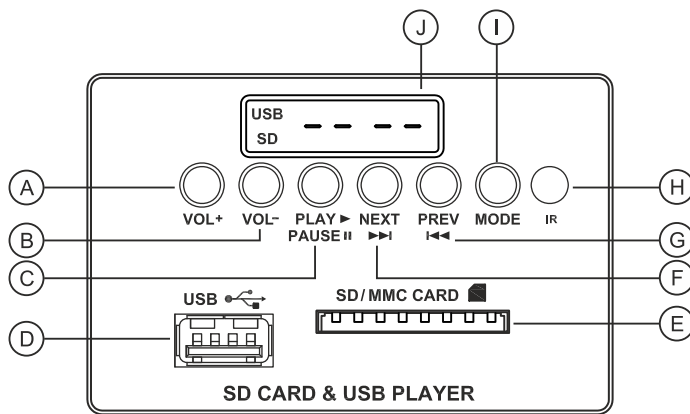


- 24. 3 Core AC Mains Cable With Plug**
- 25. SPEAKER Terminal Block (70V, 100V)**
For connecting speakers with 100V line matching transformers.
- 26. SPEAKER Terminal Block (4 ohm and 8 ohm)**
For connecting low impedance speakers.
- 27. PREAMPLIFIER Output Jack Socket**
For connecting to the AUX input of another amplifier or a recorder for recording purpose.
- 28. LINE Output Jack Socket**
For connecting to a booster amplifier to obtain combined higher power output.
- 29. LINE Input Jack Socket**
For connecting a Mixer to enhance the number of inputs.
- 30. AUX-2 Input Jack Socket**
For accepting an unbalanced signal from an auxiliary source like a Tuner, Echo or CD Player etc.
- 31. AUX-1 Input Jack Socket**
- 32. BATTERY Terminal Block**
For connecting two 12V Car Batteries in series (which becomes 24V) as standby power source.
- 33. EARTH Terminal**
- 34. AC MAINS FUSE Rating 3 AMP (T 3A L)**
This protects the amplifier from any excessive current flow.

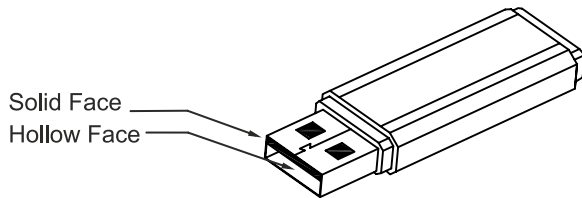
Caution

- The equipment must be earthed properly before operating it to avoid electric shock. A wire from the Earth Terminal must be connected to electrical earth for safe operation.

• MP3 Playback Facility: Controls & Features



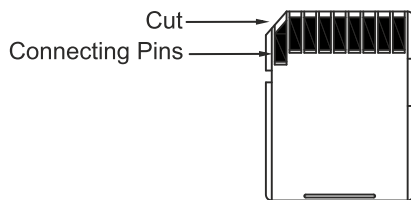
- A. **VOL+ :** To increase volume level of Mp3 player.
- B. **VOL- :** To decrease volume level of Mp3 player.
- C. **▶|| PLAY/PAUSE:** Press PLAY/PAUSE once to Pause if music is already playing. Press PLAY/PAUSE again to resume playing.
- D. **USB Connector:** Insert the USB drive here. While inserting USB drive into the USB connector, hold the USB drive in such a way that hollow part of the USB drive is downwards as shown in Figure.



Any forceful insertion in wrong direction will damage the connector.

- E. **SD/MMC Card Connector:** Insert the SD/MMC Card into its appropriate slot to play. When taking out the card, pull the card to take out.

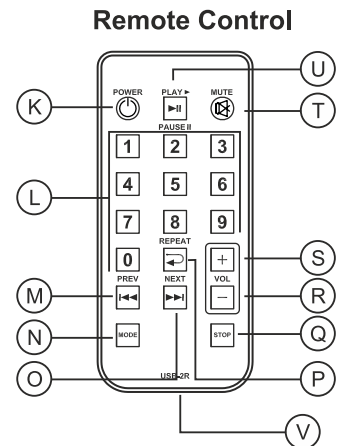
While inserting SD/MMC card into the slot, ensure that the card is inserted in such a way that all pins are facing upward and cut is towards left as shown in figure.



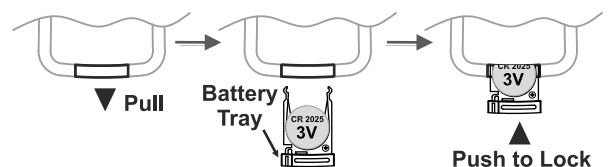
- F. **▶▶ Next:** Press NEXT to select next forward music track. Pressing NEXT repeatedly will move the system to successively next forward tracks.
- G. **◀◀ Prev:** Press PREV to Select the previous track. Pressing PREV repeatedly will move the system to successively previous tracks.

- H. **IR Sensor:** Picks up signal from the Remote control. Point the Remote control toward this sensor for best results.
- I. **Mode:** To select USB or SD when both are inserted.
- J. **LED Display:** Instantly displays 3 digits of the track selected to play i.e 001 to 999. During play, displays the time duration of the track played.

Remote Control



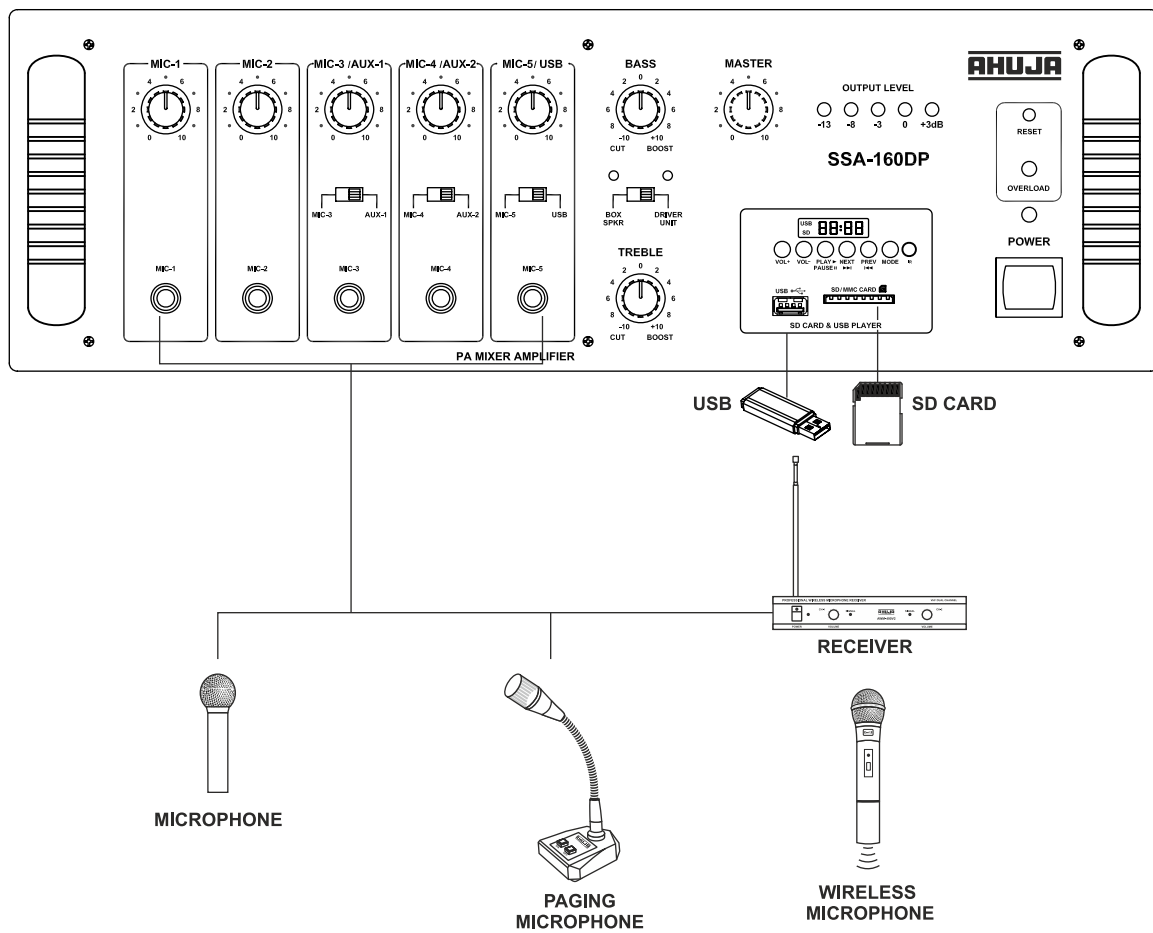
- K. **Power:** Press once to switch off MP3 digital player, press again to switch ON.
- L. Number key 0 to 9. To choose the track number to be played.
- M. **◀◀ :** To select the previous track.
- N. **MODE :** To select SD or USB if both are inserted.
- O. **▶▶ :** Press to select the next track.
- P. **↺** Press once to repeat the song being played. Press again to repeat all the songs.
- Q. **STOP:** Press to stop the track being played.
- R. **Vol:** Press to decrease the volume of Digital Player.
- S. **Vol:** Press to increase the volume of Digital Player.
- T. **⊘ MUTE:** Press once to mute the sound, press again the resume the sound.
- U. **▶|| PLAY/PAUSE:** Press Play/Pause once to Pause when music is already playing. Press Play/Pause again to resume playing.
- V. **Battery Replacement:** Pull out the battery tray and replace the battery with positive electrode facing upwards as shown in fig. below. Push the battery compartment back to the close position. Use CR2025 or equivalent lithium coin cell.



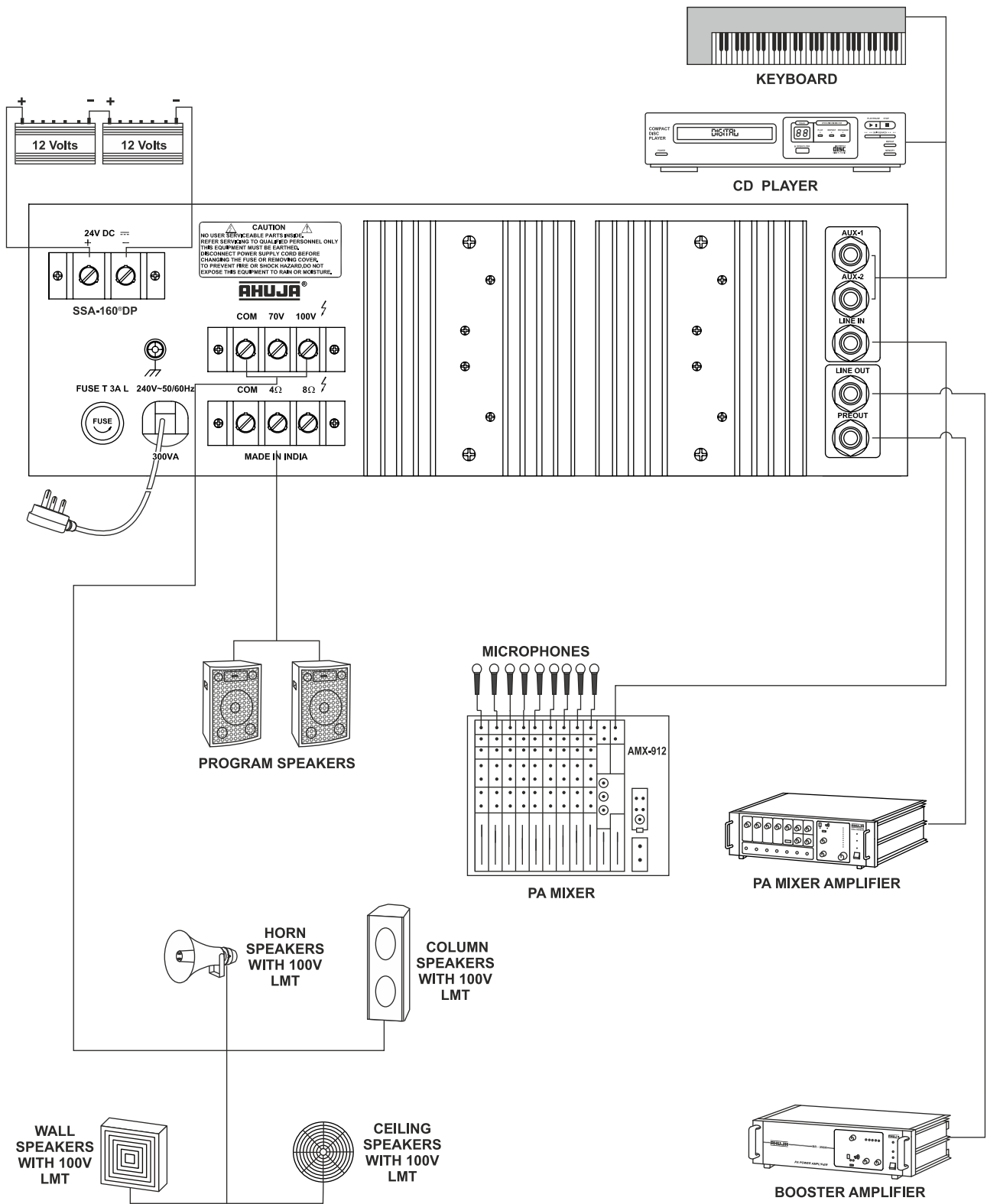
• Interconnections

- The amplifier can be placed as a tabletop unit. The amplifier should be situated so that its location or position does not interfere with its proper ventilation.
- The amplifier must be powered through an AC earthed mains outlet.
- All connections must only be carried out or changed with the amplifier switched OFF and the power cord disconnected from the AC mains.
- The amplifier may be operated from a DC supply of 24 Volts (two car batteries connected in series).
- To avoid loud switching noise, always switch ON the Power amplifier after all other units of the audio system have been switched ON. After operation switch it OFF first, then the other units.
- The connection diagrams that follow display typical types of input sources (Mics, Keyboard, Mixer, CD Players etc.) and speakers (Wall, Ceiling, Box, Horn, Column) which can be connected to the amplifier. For correct connections and operation check the specifications of the connected equipment.

FRONT PANEL - SSA-160®DP



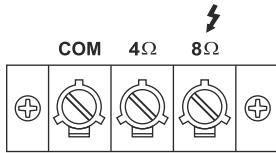
REAR PANEL - SSA-160®DP



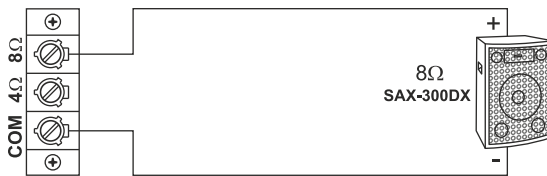
• Speaker Connection Guidelines

SSA-160[®]DP is a medium power PA mixer amplifier. Therefore it is very important that correct loudspeaker connections are made to avoid damage to the amplifier or speakers.

Low Impedance Speaker Connections

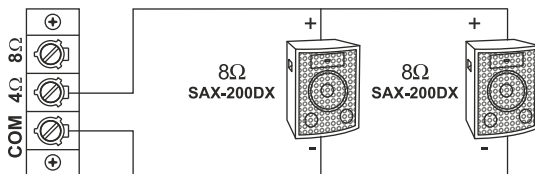


- Box type Speakers can be directly connected to COM-4Ω / 8Ω Terminal Strip.
- The Box Speaker / Driver Unit switch must be kept at Box Speaker position. If by mistake the switch remains in Driver Unit position the quality of sound will not be rich and natural.
- No Driver Units / Horn Speakers / Column Speakers (with 100V LMT) should be connected to COM-4Ω / 8Ω.



Connecting SAX-300DX Speaker

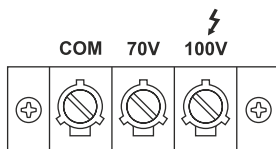
- SAX-300DX speaker (300W) should be connected to COM & 8 ohm as shown in figure.



Resultant Impedance = $(8 \text{ ohm}/2) = 4 \text{ ohm}$

Connecting Two SAX-200DX Speakers

- The Two SAX-200DX Speakers (each speaker can handle 200W of power) should be wired in a parallel as shown in figure. The resulting impedance will be 4 ohm. The speaker system should be connected to the 4 ohm tap of the amplifier.



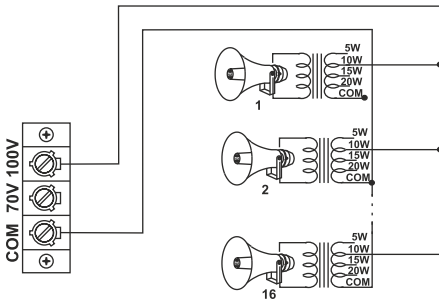
High Impedance Speakers or Speakers Using A 100V Line Matching Transformer

- Only Driver Units / Horn Speakers / Column Speakers with 100V Line Matching Transformers are to be connected to COM-70V / 100V Terminal Strip.
- The Box Speaker / Driver Unit switch must be kept at Driver Unit position.
- When any of the above speakers are connected to the COM-70V / 100V Terminal Strip then NO Box speakers should be connected to the COM-4Ω / 8Ω Terminal Strip.
- The power drawn from the amplifier should not exceed 160 Watts.

IMPORTANT

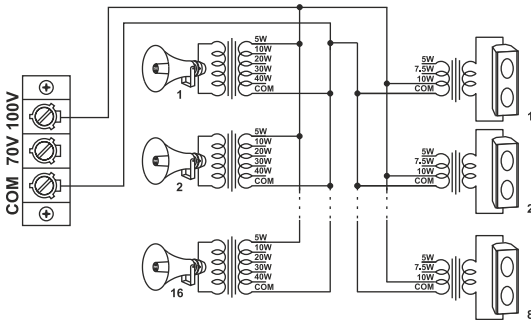
- When speakers are connected to COM-4Ω/8Ω Terminal Strip, NO Speakers / Driver Units with 100V LMTs should be connected to the Terminal Strip marked COM-70V/100V (fitted with RED cover).
- Speakers should be connected only to either COM-4Ω or COM-8Ω terminals as illustrated above but never to more than one set of terminals.

Speaker Connection Guidelines....



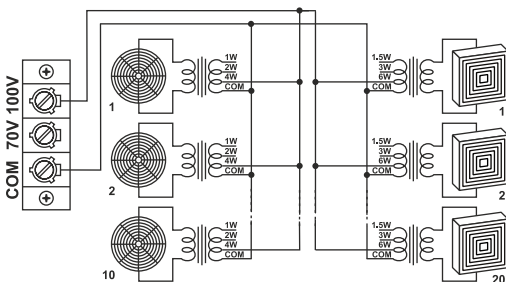
Connecting Sixteen Driver Units with 100V LMT

16 Driver Units with 100V Line Matching Transformer connected at 10 Watts tap can be operated.



Connecting a Combination of Driver Units and Column Speakers with 100V LMT

8 Column Speakers with 100V LMT at 10 Watts and 16 Driver Units with 100V LMT at 5 Watts can be connected together. The power drawn from the amplifier should not exceed 160 Watts.



Connecting a combination of Wall and Ceiling Speakers with 100V LMT

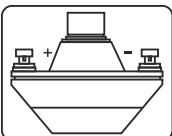
10 Ceiling Speakers with 100V LMT at 4 Watts and 20 Wall Speakers with 100V LMT at 6 Watts can be connected together. The power drawn from the amplifier should not exceed 160 Watts.

Use of 70 Volt Line

A loudspeaker / Driver Unit with its LMT adjusted to the 15W tap, when connected to COM and 100V terminals on the Amplifier's Terminal Strip will draw 15W from the Amplifier but when the same is connected to COM and 70V it will only draw half power i.e. 7.5W. A good use of 70V line tap can be made in installations where large number of Speakers / Driver Units are to be installed for more even distribution of sound.

Correct Phasing of Loudspeaker

When two or more Speakers/Units are installed in the same area and are facing the same direction, it is essential that their cones/diaphragms act in unison. Otherwise the sound level of one speaker will be cancelling the sound level of the other. To avoid any mistake, the terminals of Box speakers and the Driver Units are marked '+' & '-'. Always connect the COM of the Amplifier to '-' of speaker & 4Ω/8Ω of the amplifier to the '+' of the speakers.



In case of LMT's the COM of all the LMT's should be connected to the COM of the red strip terminal of the amplifier and the power tap to 100V line as shown in above figure.

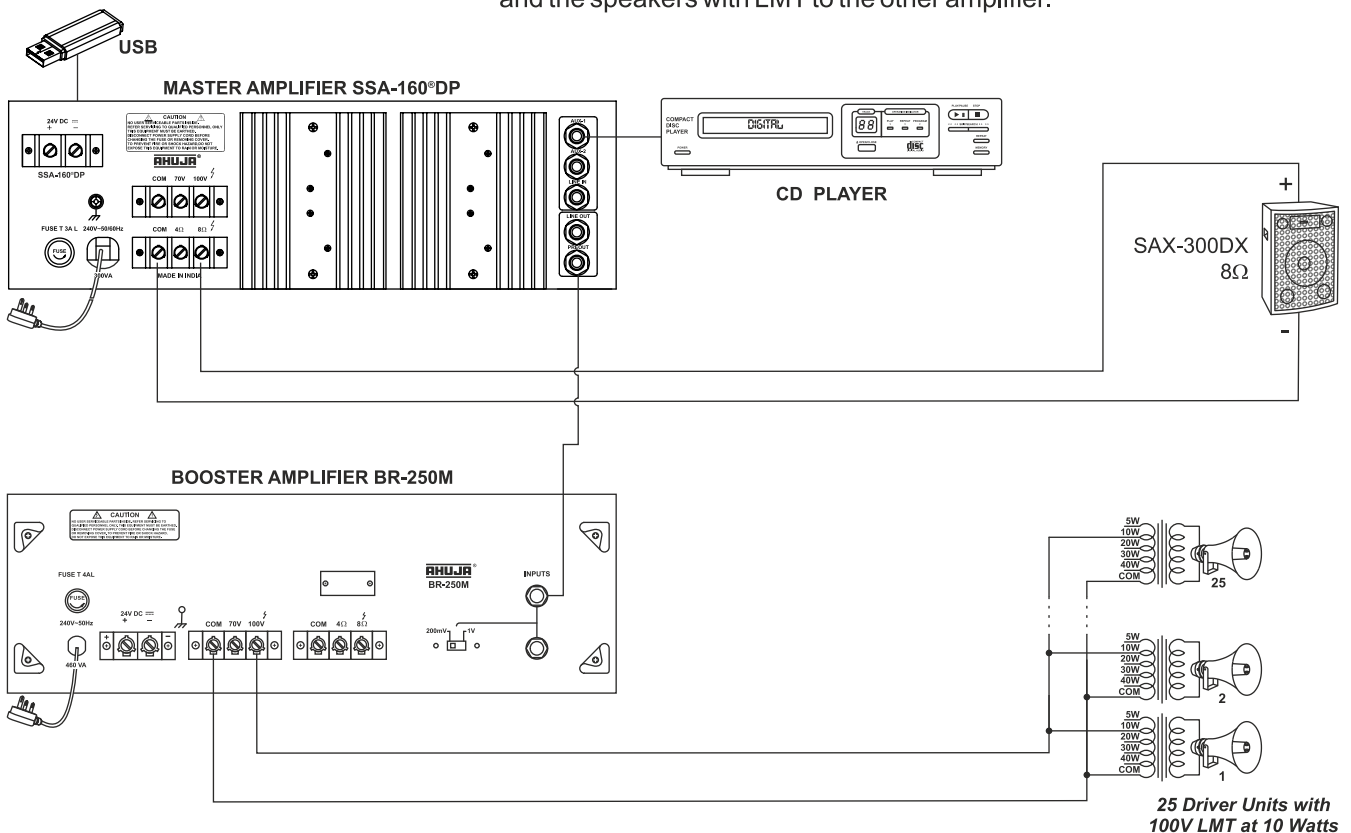
IMPORTANT

- When 70 / 100 Volt line is being used, no speakers / driver units should be connected to 4Ω / 8Ω (Low Impedance) Tap.
- Loudspeaker / driver unit should be connected to either COM-100V or COM-70V terminals, but never to more than one set of terminals.

Typical Applications

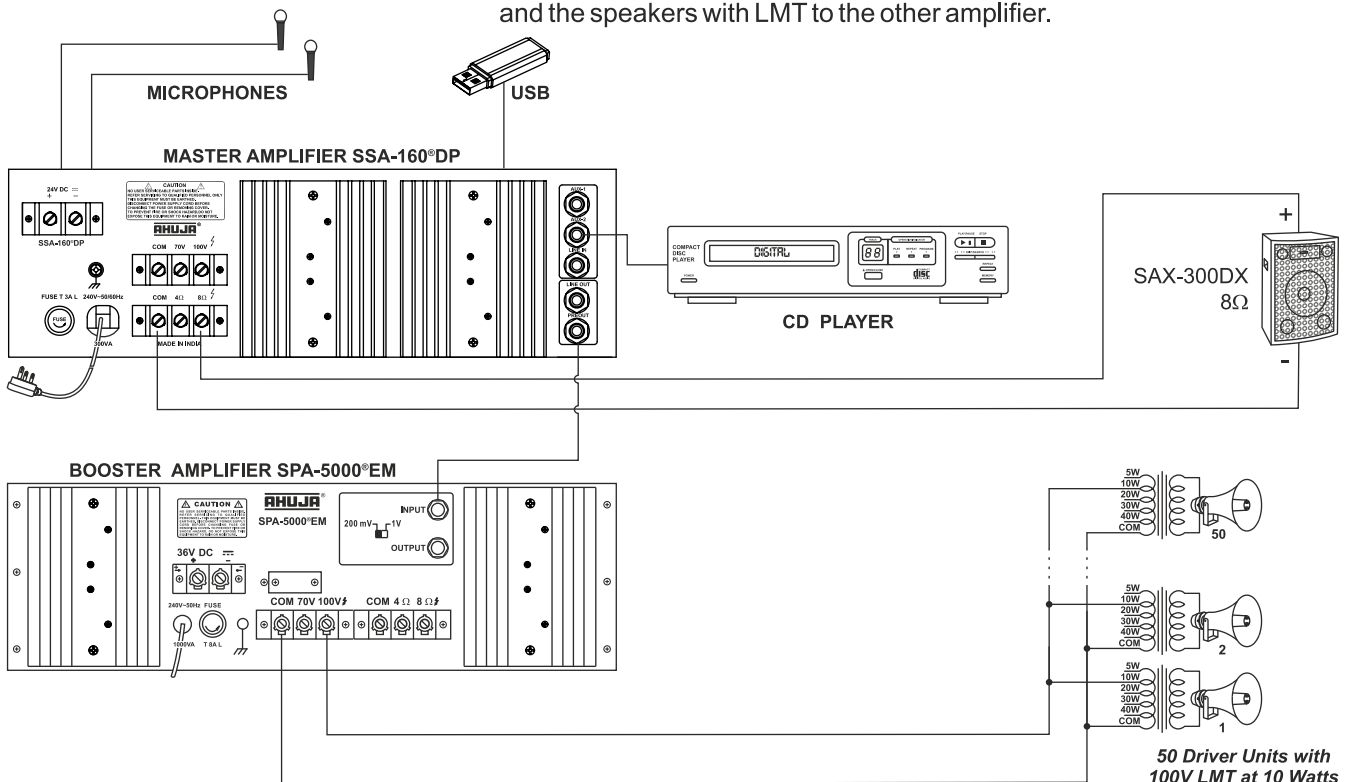
Connecting SSA-160®DP To One BR-250M To Get A 410W Mono System

1. Connect Microphones and other Program Sources (e.g., USB, CD player etc.) to the input jacks of the MASTER AMPLIFIER, which is the SSA-160®DP.
2. The Pre-Out jack of SSA-160®DP should be connected to the Input jack of the BR-250M. The sensitivity switch of the BR-250M should be at 200mV.
3. In this manner the inputs connected to SSA-160®DP will feed both the amplifiers creating a $(160+250)= 410W$ output system.
4. Loudspeaker connections to both the amplifiers should be done independently. Each of the amplifiers can be connected to either box type speakers or to speakers using the 100V LMT but NEVER to both together. Speaker system impedance should be matched to the output impedance of the amplifier and thus should be connected to the appropriate tap of the amplifier.
5. When connecting box speakers to an amplifier the Box Speaker / Driver Unit switch should be set to the Box Speaker side and when connecting driver units, wall, ceiling or column speakers with 100V LMT, the switch should be turned to the Driver Unit side.
6. When speakers with 100V LMT are used, total power drawn should not exceed 250W in case of BR-250M & 160W in case of SSA-160®DP respectively.
7. Finally when operating the system, the Bass & Treble controls of the individual amplifiers can be adjusted to give optimum tonal quality of sound to suit the system requirements.
8. This kind of system is ideal where both high and low impedance speakers are being used. Connect low impedance box speaker to one amplifier, and the speakers with LMT to the other amplifier.



Connecting SSA-160®DP To One SPA-5000®EM To Get A 660W Mono System

1. Connect Microphones and other Program Sources (e.g., USB CD player etc.) to the input jacks of the MASTER AMPLIFIER, which is the SSA-160®DP.
2. The Pre-Out jack of SSA-160®DP should be connected to the Input jack of the SPA-5000®EM. The sensitivity switch of the SPA-5000®EM should be at 200mV.
3. In this manner the inputs connected to SSA-160®DP will feed both the amplifiers creating a (160+500) = 660W output system.
4. Loudspeaker connections to both the amplifiers should be done independently. Each of the amplifiers can be connected to either box type speakers or to speakers using the 100V LMT but NEVER to both together. Speaker system impedance should be matched to the output impedance of the amplifier and thus should be connected to the appropriate tap of the amplifier.
5. When connecting box speakers to an amplifier the Box Speaker / Driver Unit switch should be set to the Box Speaker side and when connecting driver units, wall, ceiling or column speakers with 100V LMT, the switch should be turned to the Driver Unit side.
6. When speakers with 100V LMT are used, total power drawn should not exceed 500W in case of SPA-5000®EM & 160W in case of SSA-160®DP respectively.
7. Finally when operating the system, the Bass & Treble controls of the individual amplifiers can be adjusted to give optimum tonal quality of sound to suit the system requirements.
8. This kind of system is ideal where both high and low impedance speakers are being used. Connect low impedance box speaker to one amplifier, and the speakers with LMT to the other amplifier.

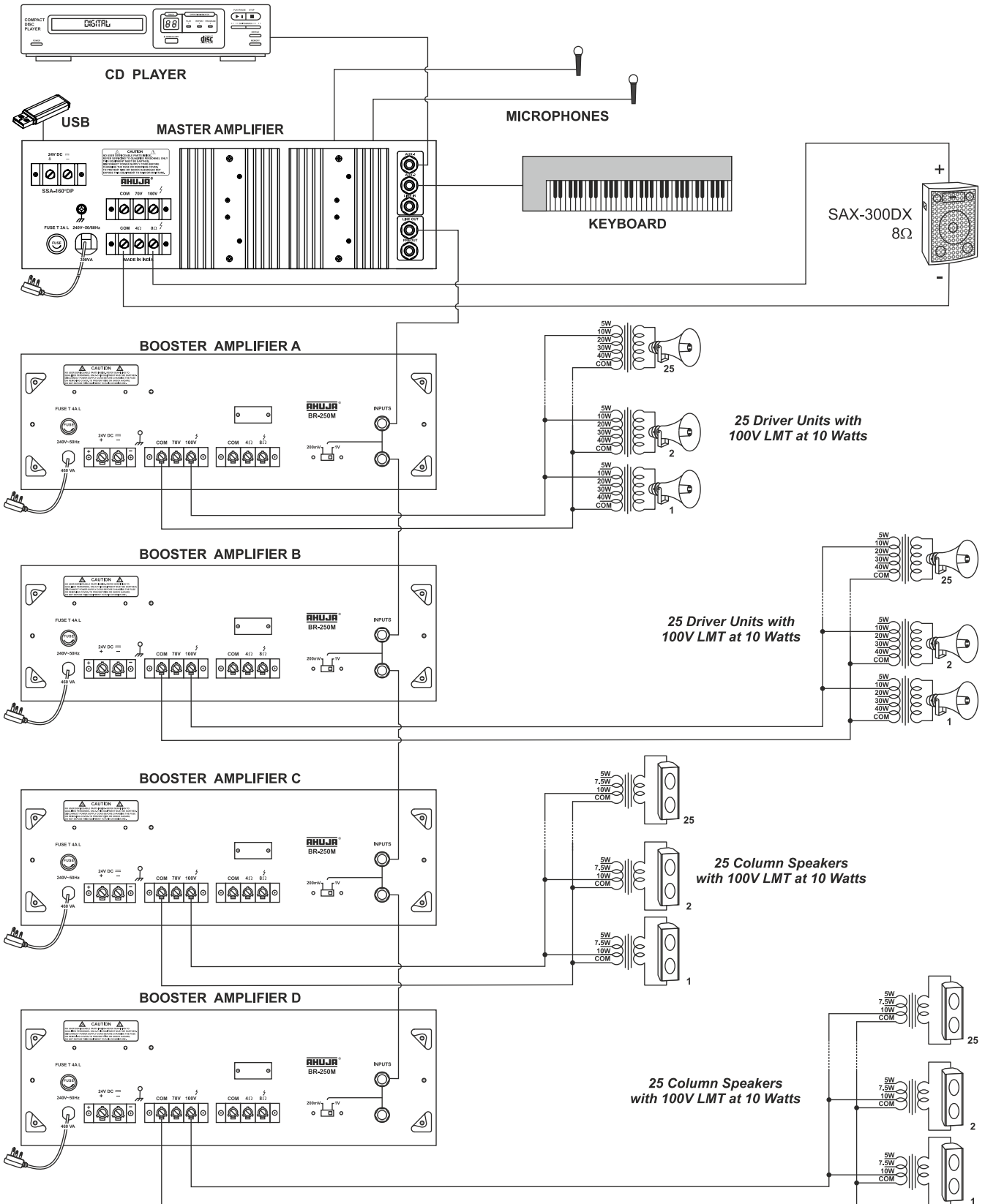


Connecting Four BR-250M And A SSA-160®DP For Making A 1160 W Mono System

1. Connect Microphones and other Program Sources (e.g., USB, CD player etc.) to the input jack sockets of the Master Amplifier, which is the SSA-160®DP.
2. Connect the Line-Out of the Master Amplifier to the first Input jack socket of the first BR-250M (Booster A) using a patch-cord with ¼" phone plugs at both ends. The sensitivity switch next to the input jack sockets should be towards 1V.
3. Second Input jack socket of Booster A should be connected to the first input jack socket of the second BR-250M (Booster B). The sensitivity switch of the second booster should also be at 1V.
4. The third and the fourth BR-250M (Booster C and Booster D) should be connected in the same way. A maximum of four boosters should be connected in this way otherwise the line output of the Master Amplifier will get loaded.
5. In this manner the inputs connected to the Master Amplifier will feed all the five amplifiers creating a 1160W output system.
6. Loudspeaker connections to each of the five amplifiers should be done independently. Each of the amplifiers can be connected to either Box type speakers or to speakers using the 100V LMT but never to both together. Speaker system impedance should be matched to the output impedance of the amplifier and thus should be connected to the corresponding tap of the amplifier.
7. When connecting box speakers to an amplifier the Box Speaker / Driver Unit switch should be set to the Box Speaker side and when connecting driver units, wall, ceiling or column speakers with 100V LMT, the switch should be turned to the Driver Unit side.
8. When speakers with 100V LMT are used, total power drawn should not exceed 250W in case of BR-250M & 160W in case of SSA-160®DP respectively.
9. Finally when operating the system, any adjustments in the tonal quality of the sound if required can be made from the Master Amplifier.

(Refer to page 15 for illustration)

Connecting One SSA-160® DP And Four BR-250M For Making A 1160W Mono System



• Specifications

Model	SSA-160®DP	
Power Output	220W RMS Max. 160W RMS at 10%THD 140W RMS at 5% THD 120W RMS at 2% THD	
Output Regulation	≤ 2 dB no load to full load at 1kHz	
Input Channels	5 × Mic. 0.65 mV / 4.7kΩ (Mic source impedance 50Ω to 1kΩ) 2 × Aux.-1 & 2 100mV / 470kΩ Line Input 1V / 50kΩ	
MP3 Playback	Built-in MP3 playback facility (USB, SD and MMC card) Remote Control provided	
Frequency Response	50 – 15,000 Hz ± 3 dB	
Signal to Noise Ratio	60dB	
Tone Controls:		
Switch at Box Speaker Position	Bass: ±10dB at 100Hz	Treble: ±10 dB at 10kHz
Switch at Driver Unit Position	Bass: -10dB at 100Hz	Treble: ±10 dB at 10kHz
Pre-amp Output	200mV / 600Ω	
Line Output	1V / 1kΩ	
Output Taps for Speaker Matching	4 & 8Ω (for direct connections) 70 & 100V Line (for use with LMT)	
Power Supply	AC: 220-240V 50 / 60Hz; DC: 24V (2 × 12V Car Battery)	
Protection	AC: Fuse 3Amp. (T 3A L); DC: 10Amp. Circuit Protector	
AC Power Consumption	300 VA	
DC Power Consumption	4 A	
Dimensions	W426 × H155 × D325 mm	
Weight	13.30 kg approx.	

- Design and Specifications are subject to change without notice owing to continuous product upgradation.
- Technical specifications are subject to production tolerances.

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