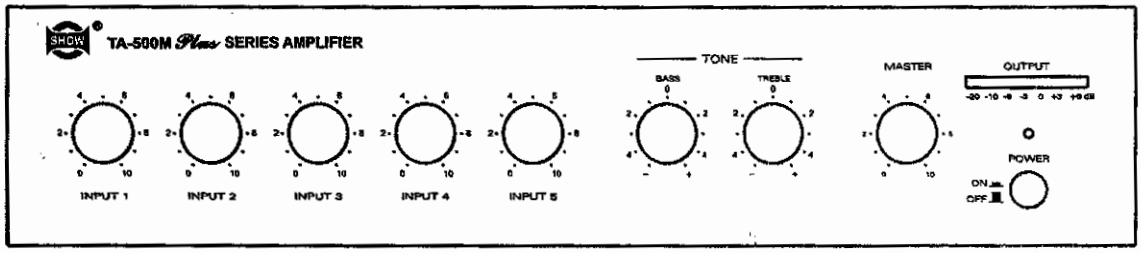
Operation Instruction Manual

TA-500M PLUS SERIES MIXER POWER AMPLIFIER



CAUTION FOR USING POWER LINE

- You shall hold the plug firmly to avoid the pull-out of power line and risk occurring when you pull the power line out from AC outlet.
- The plug of power line for this unit should be pulled out from power outlet to cut down the power supply, when this unit isn't used for a long period.
- Don't force any matter on the power line of this system to avoid the damaging power line and don't insert the knoted power line into unit.

This broadcast system, main unit, 500series should be placed on a solid

surface with a minimum distance of 1m from the back or side plate to the wall and. rot in the following environments of cases:

- Moist place;
- Under direct radiation of sunlight or other strong heat radiation;
- No air ventilation;
- To prevent the risk of fire or electrical shock, never expose this equipment to rain or dampness.

HANDLING THIS UNIT

Check if the power supply is being shut down, the power line is pulled out form outlet and other lines connecting this unit are also disconnected.

DON'T DISASSEMBLE THIS UNIT

Don't disassemble and repair the unit by yourself, otherwise of may induce electric shock or fires. If you can't remedy any occurred trouble according to the methods described in the Last of this manual, you must call a qualified technician or consult with our company, A forced using if may cause electric shock or fires.

CLEANING

When the unit needs a cleaning, you can blow off dust from the unit with a blower or clean with rag etc. Don't use solvents such as ben. zol, thinner, alcohol or other fluids with very storing volatility and flammability for cleaning the unit body.

General Description

The 500 series Mixer Power Amplifiers 30W, 60W and 120W are designed for PA system applications such as paging, announcements, intercommunications, background music and broad-casting in industrial plants, offices, schools, churches, department stores, shopping centres, night clubs, dining rooms, convention halls, auditoriums and recreation areas.

The primary feature is their ability to withstand overload or short-circuits of output. Because of the engineered circuitry design, the 500 series amplifiers require no complicated protective circuit to withstand accidents and mismatched output connections that may occur during the installation or use of PA system. This results in very high reliability.

The 500 series amplifiers come with 4 microphone inputs, 3 auxiliary inputs and a mag. phono input. Microphone inputs may be used with unbalanced low impedance (30-600 ohms) microphone.

Three auxiliary inputs are provided for high level signal sources such as radio tuner, tape recorder, mixer preamplifier, remote microphone and record player with ceramic or crystal type cartridge.

Speaker outputs are complete with 4 ohms (usable 4-16 ohms), 25V, 70V and 100V on the terminal strip. An auxiliary output is equipped for a booster amplifier and a tae output is equipped for a tape recorder.

Each input volume can be controlled with the corresponding individual input volume control, and can further be adjusted by means of a master volume control and individual bass and treble tone controls. Emergency operation can be made by DC power source 30W. 12V DC, 60W and 120W 24V DC), even in case of AC power failure.

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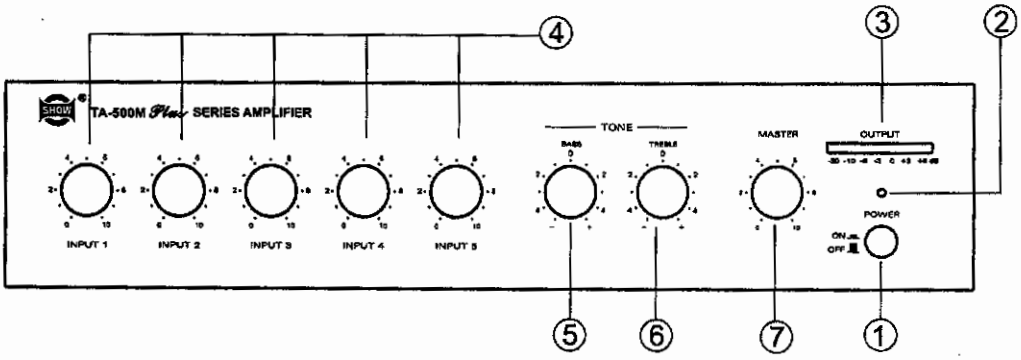
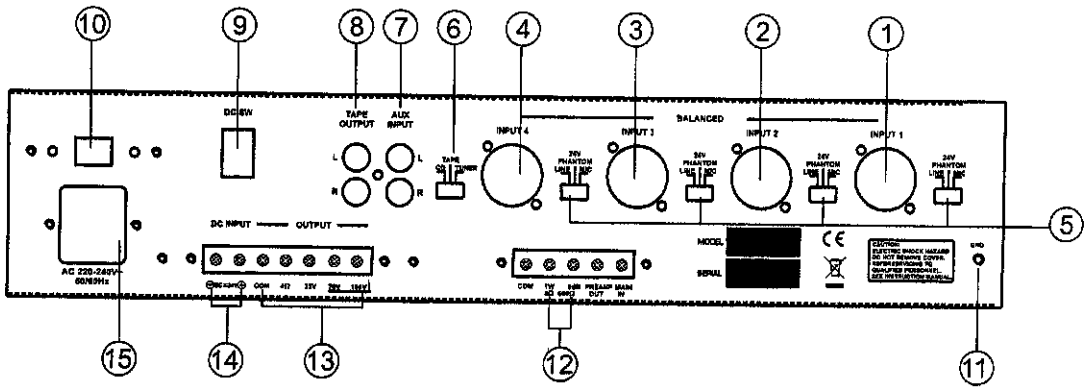
Front Panel Controls and Features



No.	Name	Function/Description
1	POWER ON-OFF SWITCH	Applies Line power. Two-position button switch for on-off modes.
2	POWER INDICATOR	Comes on when power is turned on.
3	OUTPUT LEVEL METER	Indicates output level.
4	INPUT 1-5 VOLUME CONTROL	Adjusts gain of INPUT 1-5 respectively.
5	BASS CONTROL	Adjusts bass response. Turn clockwise (CW) to boost and counterclockwise (CCW) to attenuate the bass response. Tone is flat at centre.
6	TREBLE CONTROL	Adjusts treble response. Turn clockwise (CW) to boost and counterclockwise (CCW) to attenuate the treble response. Tone is flat at centre.
7	MASTER VOLUME CONTROL	Adjusts overall gain of unit.

Rear Panel Controls and Features



No.	Name	Function/Description
1	INPUT 1	Connects to a microphone of balanced or unbalanced low impedance (30-600 ohms).
2	INPUT 2	Connects to a microphone of balanced or unbalanced low impedance (30-600 ohms).
3	INPUT 3	Connects to a microphone of balanced or unbalanced low impedance (30-600 ohms).
4	INPUT 4	Connects to a microphone of balanced or unbalanced low impedance (30-600 ohms).
5	SELECT SWITCH	MIC, 24V PHANTOM OR LINE
6	AUX SELECT SWITCH	CD,TAPE OR TUNER
7	AUX INPUT	Connects to Aux input.
8	TAPE OUTPUT	Provides connections for a tape recorder. The input impedance of the equipment should be more than 4.7k ohms.
9	DC POWER SWITCH	Control DC supply.
10	AC SELECTS	110-120V 60Hz/220-240V 50Hz
11	EARTH TERMINAL	Normally connect to record player's ground.
12	MOH	1W 8Ω/0dB 600Ω
13	OUTPUT TERMINALS	Connect to speakers.
14	DC TERMINALS	Connect to DC power supply. 24V DC: 30W,60W, 120W
15	AC POWER SUPPLY CORD	Connects to AC power source.

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Installation

Unpacking
State date, nature of damage, whether any damage was noticed on the shipping container, prior to unpacking. Please give waybill number of shipping order.

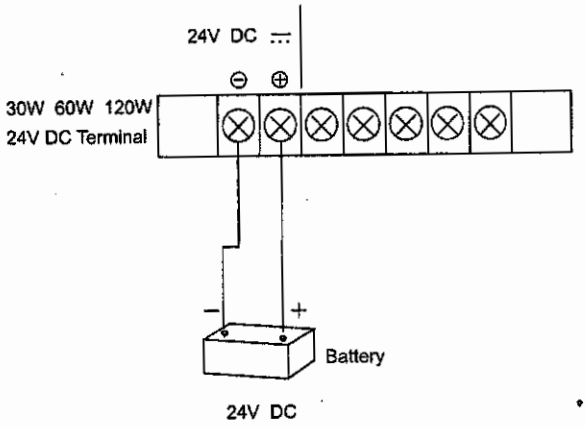
Do not block cover ventilation holes.
The amplifier should not be placed in areas.

1) with poor ventilation.
2) exposed to direct sunlight.
3) with high ambient temperature or adjacent to heat-generating equipment.
4) with high humidity or dust levels.
5) susceptible to vibration.

CAUTION
Do not remove the cover since this may cause an dlectric shock.

DC Power Operation

The unit will also operate from an external battery or other direct current source with negative (-) as ground. Power connections are made at the DC terminal strip on the rear panel.
If AC power supply fails, transfer to DC power is instantaneous, automatic and silent.
The battery power supply is operated by the primary power switch.

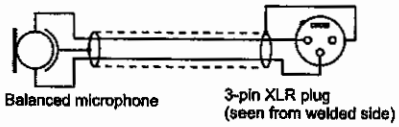


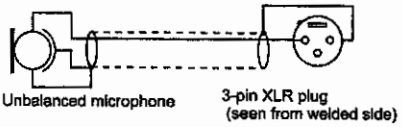
CAUTION
The unit should be used only with negative-grounded vehicle or frame when DC operation is required.
Do not use the unit with positive-grounded equipment of DC operation.

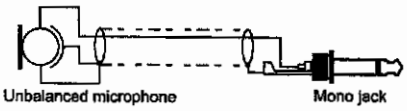
Input Connection

INPUTS

These four balanced/unbalanced combination type jack(XLR and 6.3mm) inputs, meant for the connection of condenser type microphone that accepts 24V phantom power, dynamic microphone (30- 600 ohms) or a high level sound source (e.g. AM/FM tuner, cassette desk,CD player,etc.). In case you are using, it is necessary to use the switch(5). **"Input1"** has a "Voice Priority" function that excludes all the other inputs as soon as a message is transmitted with a microphone; it is possible to exclude this function by calling a SHOW SERVICE CENTER.



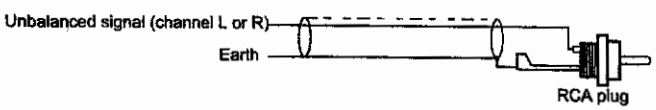




"AUX IN" inputs

"AUX IN" inputs

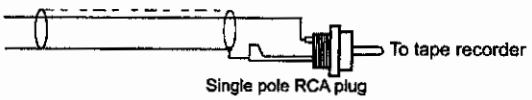
The "R" and "L" sockets permit input of the right ("R")and left ("L") channels of an audio source with a high-level output signal , such as an AM/FM tuner,a cassette deck, a CD player, etc.. Use input sensitivity switch (6),suitable for difference appliances. They are able to take RCA-type coaxial connectors,and unbalanced signals.



Output Connection

TAPE OUTPUT

To operate a tape recorder, connect the single conductor shielded cable with RCA plug form the TAPE OUT jack to the Input of the tape recorder.
Since this output level cannot be controlled with the tone or the master control of the amplifier, use the controls of the tape recorder to adjust the signal level.



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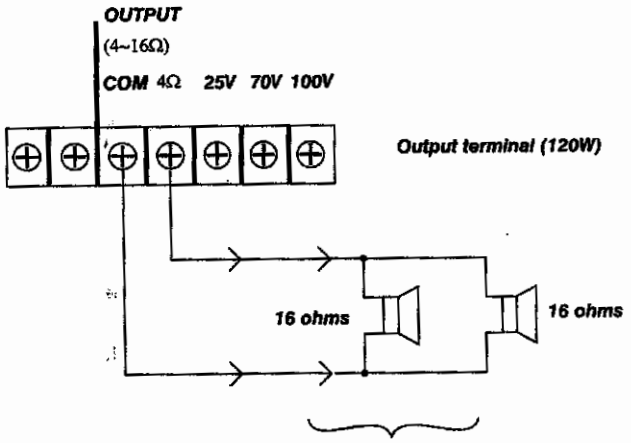
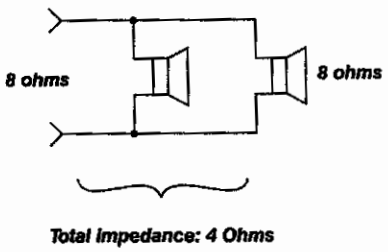
SPEAKER OUTPUTS

The amplifier may be used in conjunction with a speaker rated at 4 ohms or with 25 Volt. 70 Volt or 100 Volt constant-voltage speaker systems.

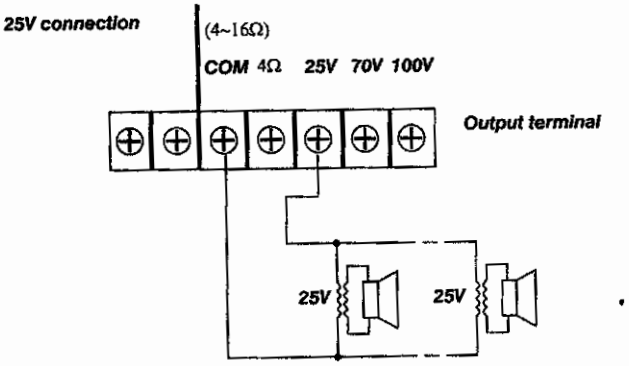
4 ohms (4~16 ohms) speaker output (balanced)
The 4 ohms (4~16 ohms) speaker output terminal is provided for connection with low impedance speakers (more than 4 ohms in total) when constant-voltage speaker system is unnecessary or in case the distance between the amplifier and the speaker is short enough (less than 50m). It is requested that the total speaker load impedance be correctly matched to the output impedance (4 ohms) of the amplifier for most efficient transfer of power.

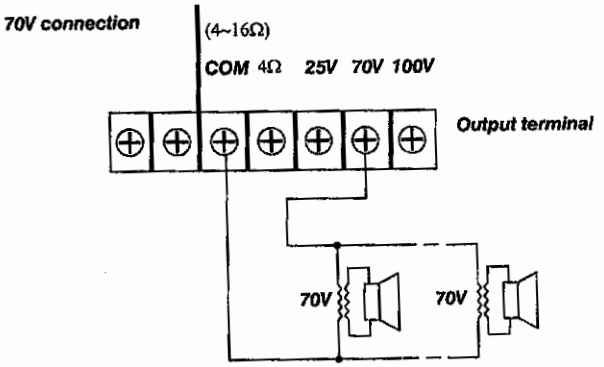


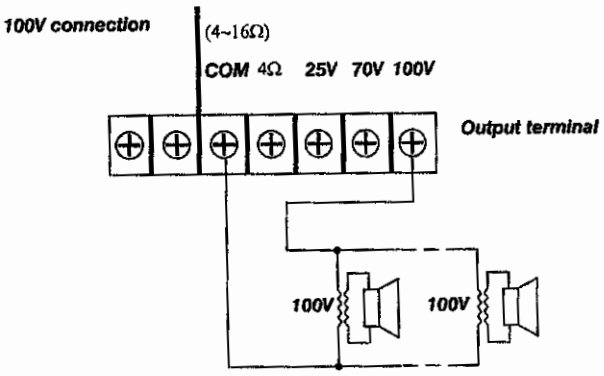


CAUTION
When connecting speakers to any one of the outputs of 4 ohms. 50V. 70V or 100V

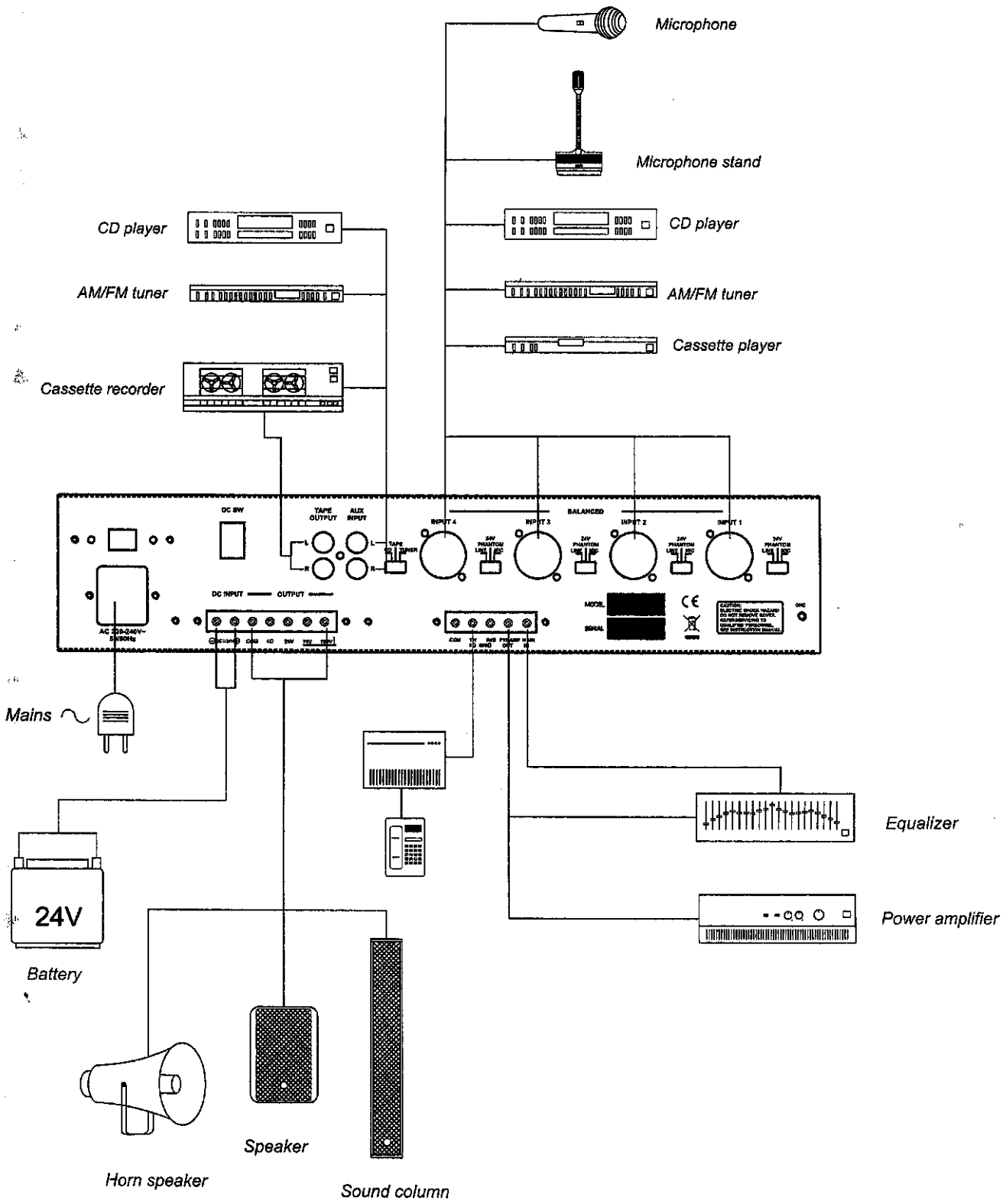
25V, 70V and 100V speaker output (balanced)
When it is desired to operate the speakers form the distance, over 50 Meters of the amplifier, it is recommended that line matching transformers be installed on the speaker units to prevent excessive line losses. This method of load matching known as the constant voltage distribution system eliminates the calculation of lade impedance and series-parallel speaker arrangements. In this method, all speakers are connected in parallel.
These constant voltage outputs are most convenient for distribution of power when a number of speakers are installed. Each speaker must have 25 volt, 70 volt or 100 volt line transformer with a tap that gives the power desired for that speaker. The total number of power settings for all speakers should be equal to the amplifier power rating or less. See the following diagrams.







Typical connection



Operation

Volume control setting

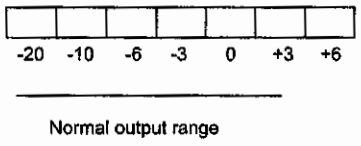
For the average input signals, the master volume control should be set to around 7. In relation to the levels of inputs, it is recommended that the gains or losses should be equally divided between individual con-trols and the master control.

Tone control setting

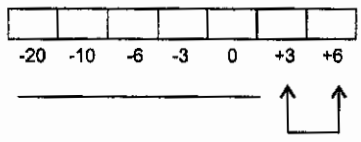
The separate tone controls provide boost and attenuation of bass and treble response. The flat position is obtained when the knobs are set to o. Turn bass control knob (BASS) and treble tone control knob (TREBLE), respectively, clockwise to raise tone level by approximately +10 dB; turn counterclockwise to lower tone level by approximately -10 dB. Where a microphone paging is provided to a reverberant room, clear, crisp sound reproduction is possible by attenuating bass.

Output level meter

The LED meter indicates output level.
When voice or music is amplified in practice, set the volume control at the position where the maximum output level is below zero.
While the red LED indicator remains lit, the output is distorted.
In this case, lower the sound volume by means of a volume control.



Normal output range



When the red LED's remain lit,
the output is distorted.

Specifications

Type	**Mixer power amplifier**		
Modell	30W	60W	120W
Power output	Rated: 30W Max.: 45W	Rated: 60W Max.: 90W	Rated: 120W Max.: 180W
Output regulation	Less than 2 dB no load to full load		
Outputs	Speaker outputs (balanced) 30W 4Ω (11V), 25V (21Ω) 70V (170Ω), 100V (330Ω) 60W 4Ω (15.5V) 25V (10.5Ω) 70V (83Ω), 100V (170Ω) 120W 4Ω (22V) 25V (5.2Ω) 70V (42Ω), 100V (830Ω) TAPE OUT: 4.7K ohms, 650mV MOH OUT: 8 ohms 1W/ 600 ohms, 1V		
Inputs	INPUT 1: (MIC 1) 600 ohms, 0.5mV INPUT 2: (MIC 2) 600 ohms, 0.5mV INPUT 3: (MIC 3) 600 ohms, 0.5mV INPUT 4: (MIC 4) 600 ohms, 0.5mV INPUT 5: (AUX) 10K ohms, 100mV		
Frequency Response	50-15,000Hz ±3 dB		
Total harmonic distortion	Less than 4% at 1kHz, rated power	Less than 2% 1kHz, rated power	
Signal to noise ratio (Tone control centerd)	All volume controls c.c.w. : 80 dB below rated power Microphone : 60 dB below rated power AUX : 70 dB below rated power		
Tone controls	BASS :±10 dB at 100Hz TREBLE :±10dB at 10kHz		
Controls	INPUT 1 Volume control Tone controls (BASS, TREBLE) INPUT 2 Volume control INPUT 3 Volume control MASTER volume control INPUT 4 Volume control Voltage selector INPUT 5 Volume control		
Indicator	Power indicator (LED) LED output level meter		
AC power supply	110~120V 60Hz / 220~240V 50Hz		
Dc power supply	24V	24V	24V
AC power consumption	90 Watts at rated output	160 Watts at rated output	320 Watts at rated output
Dimensions	88.5mm(H) x 420mm(W) x 280mm(D)		
Weight	8.2kg	9.3kg	10.0kg
Color	Black		