



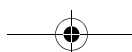
RadioShack®

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MPA-125 100-Watt PA Amplifier



Owner's Manual
Please read before using this equipment.



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Features

Your RadioShack MPA-125 100-Watt PA Amplifier gives you the versatility and power you need in a professional sound system. Its wide frequency response easily handles amplification of voice and music. Use it in meeting halls and auditoriums, at sports events, in schools, and in the office for paging systems — anywhere you need to deliver special announcements with excellent sound.

Your amplifier includes these features:

100-Watt Output — provides powerful audio output for many types of sound installations.

60–25000 Hz Frequency Response — provides wide-ranging response for true audio reproduction.

Lighted VU Meter — measures the amplifier's output in decibels.

Two Mounting Options — you can mount the amplifier in a standard-sized audio equipment rack or on a desk, shelf, or table.

Clipping Indicator — lights when a sound source signal exceeds its mixing control setting.

Overload Protection — automatically interrupts the amplifier's power and lights an indicator if the amplifier gets too hot due to power overload.

Four Microphone Input Jacks — you can connect up to four balanced or unbalanced microphones to the amplifier.

CD/Auxiliary Input Jack — you can connect a variety of audio input sources for music and special effects.

Phones Jack — you can connect headphones so you can hear the mixed audio in privacy.

Master Volume Control — lets you adjust the overall sound level.

EQ IN/OUT Switch — lets you connect and use an equalizer with the amplifier.

Push-Terminal Connectors — let you easily connect wires directly to the amplifier.

Five Individual Source Mixing Controls — let you mix connected sound sources individually or all at the same time.

Feedback Filter — lets you control audio feedback.

Read this manual carefully. It describes various speaker connections to help you select the best arrangement for your amplifier and connected equipment, and explains how to use the amplifier.

WARNING: To reduce the risk of fire or shock hazard, do not expose this product to rain or moisture.



CAUTION

RISK OF ELECTRIC SHOCK.
DO NOT OPEN.



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER OR BACK. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.



This symbol is intended to alert you to the presence of uninsulated dangerous voltage within the product's enclosure that might be of sufficient magnitude to constitute a risk of electric shock. Do not open the product's case.



This symbol is intended to inform you that important operating and maintenance instructions are included in the literature accompanying this product.

□ Preparation

PRESETTING THE CONTROLS

Before you begin making connections or using your amplifier, preset the audio input source's and the amplifier's controls to avoid over-driving a channel or producing sudden unexpected loud sounds.

Presetting Audio Input Devices

Set the audio input sources' controls to these levels:

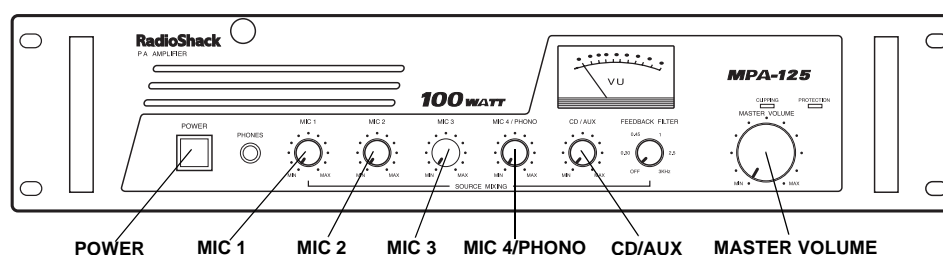
Audio Device	Control	Setting
Turntable	Power	Off
Tape Deck	Power	Off
CD Player	Power	Off
Amplifier/Receiver	Power Tone	Off Flat

Presetting the Amplifier

Warning: To prevent possible hearing loss, set the amplifier's controls to the settings shown below. After you turn on the amplifier or change the program source, adjust the controls to a comfortable listening level.

Set the amplifier's controls to these levels:

Control	Setting
POWER	Out
MIC 1, MIC 2, MIC 3, MIC 4/PHONO, CD AUX	MIN
MASTER VOLUME	MIN



MOUNTING THE AMPLIFIER

You can mount the amplifier in a standard-sized audio equipment rack or on a desk, shelf, or table. Be sure you place it in a location with adequate ventilation. Do not put it on thick carpeting (which can restrict air flow) or near a heat source such as a heat vent or radiator (which can cause it to overheat).

PLACING THE SPEAKERS

Speaker placement depends on your room's size and arrangement. We recommend you play a wide-range recording and experiment with speaker placement until you find the locations that result in the best sound. For the best results, point the speakers in toward the listeners, especially if you place speakers far apart so their coverage areas overlap to prevent dead spots (areas not covered by the speakers' sound). Position the speakers slightly above the level of the listeners' heads (see "Connecting the Speakers" on Page 8).

Connections

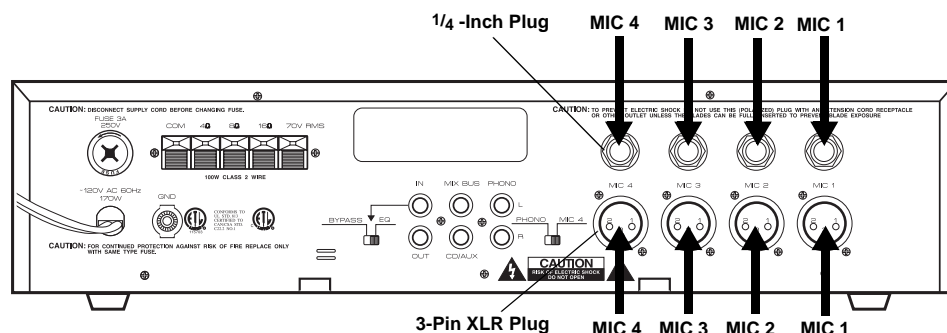
CONNECTING INPUT SOURCES

You can connect optional components such as microphones, a tuner, a turntable, or a CD player to your amplifier to expand your audio system. To prevent hum and other noise, use low-capacitance shielded cable. Your local RadioShack store carries a wide selection of audio components and cable.

Before you make any connections, be sure **POWER** on the front of the amplifier is out and the AC power cord is not plugged in.

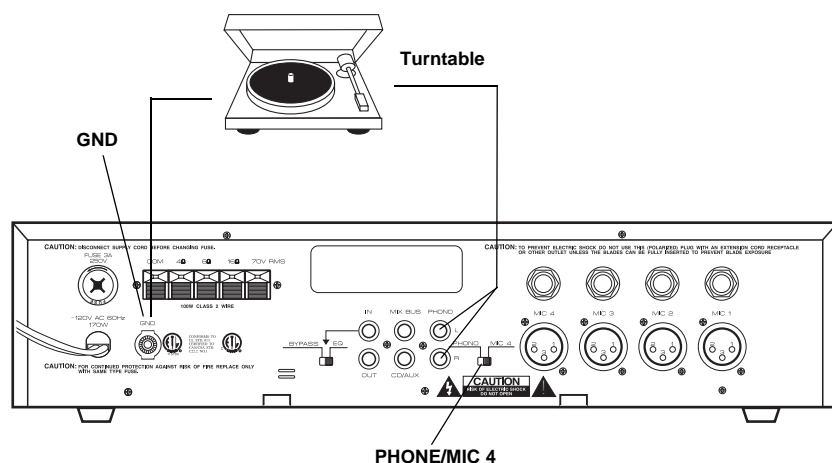
Connecting Microphones

You can connect up to four high- or low-impedance microphones to the microphone inputs on the back of the amplifier. Each input (labeled **MIC 1**, **MIC 2**, **MIC 3**, and **MIC 4**) has a balanced and unbalanced jack. You need a microphone cord with a 1/4-inch (6.35-mm) plug to connect to an unbalanced jack or a microphone cord with a 3-pin XLR plug to connect to a balanced jack.



Notes:

- If your microphone's cord is longer than 20 feet (6.01 meters), we recommend that you connect it to a balanced jack to reduce signal hum.
- If you connect a microphone to both jacks for **MIC 1**, **MIC 2**, **MIC 3**, or **MIC 4**, the microphone you connect to the unbalanced jack has priority.
- If you connect a microphone to either **MIC 4** jack, set **PHONO/MIC 4** on the back of the amplifier to **MIC 4**.

Connecting a Turntable

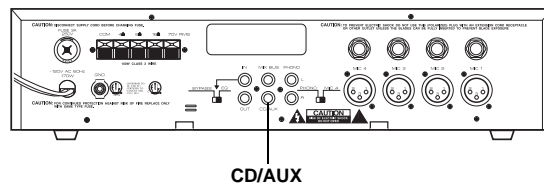
You can connect a low-level audio input source (such as a magnetic cartridge turntable) to the **L PHONO** and **R PHONO** jacks on the back of the amplifier.

If you connect a low-level audio input source to the **PHONO** jacks, set **PHONO/MIC 4** on the back of the amplifier to **PHONO**.

To avoid a low-frequency hum, connect your turntable's ground wire (usually black or green) to the amplifier's **GND** terminal.

Connecting an Auxiliary Sound Source

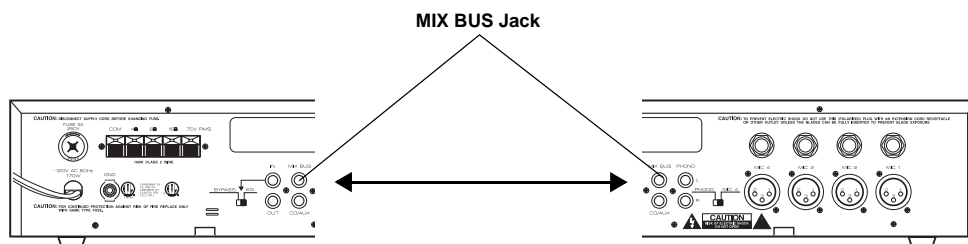
You can connect any high-level sound source, such as a CD player, tape deck, or tuner, to the **CD/AUX** jack on the back of the amplifier.



Connecting the MIX BUS Jack

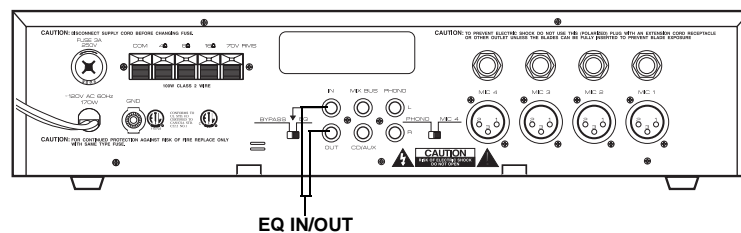
You can connect another MPA-125 to this jack to double the size of your PA system. This lets you use up to eight microphones (or six microphones and two turntables), and two auxiliary sound sources.

Use a shielded cable with phono plugs at each end, and connect the cable between the **MIX BUS** jacks on the back of the two amplifiers. For the best results, do not use a cable longer than 6 feet.



Connecting an Equalizer

You can connect an equalizer or other external signal processor to the **EQ IN** and **EQ OUT** jacks on the back of the amplifier.



Note: You can also connect a tape deck to the **EQ OUT** jack for recording.

CONNECTING THE SPEAKERS

You can connect one or more 4-, 8- or 16-ohm speakers to the amplifier, with or without transformers. To ensure equal volume from each speaker, all connected speakers should have the same impedance rating.

Proper phasing is important when you use more than one speaker in the same room or area. Out-of-phase speakers can lose up to one-half of their potential volume, and can have a significantly decreased bass effect.

Most speaker terminals are color-coded or have a mark that indicates the terminal's polarity. Usually, terminals with positive polarity are red or have a plus symbol (+), and terminals with negative polarity are black or have a minus symbol (-). Phasing is correct when you connect + to + and - to -.

Determining Total Speaker Impedance

Before you connect speakers to the amplifier, you must determine the total speaker impedance.

Caution: A total speaker impedance higher than 16 ohms or lower than 4 ohms can damage your amplifier or speakers.

In determining the total speaker impedance, you must first determine if you are connecting the speakers in series, parallel, or a series/parallel combination.

Note: For the best results when connecting speakers (in series or parallel), only use speakers that have the same impedance.

- Speakers are connected in series when the first speaker's positive terminal is connected to the next speaker's negative terminal.

Determine the total impedance of speakers you want to connect in series by adding up the individual impedances of all the connected speakers. For example, if you want to connect two 8-ohm speakers in series, add 8 (the impedance of one speaker) plus 8 (the impedance of the other speaker) for a total speaker impedance of 16 ohms (see "Connecting Two Speakers In Series" on Page 9).

- Speakers are connected in parallel when all the speakers' negative terminals are connected together and all their positive terminals are connected together.

Determine the total impedance of speakers you want to connect in parallel by dividing the impedance of one speaker by the number of speakers. For example, if you plan to connect two 8-ohm speakers in parallel, divide 8 (the impedance of one speaker) by 2 (the number of speakers) for a total speaker impedance of 4 ohms (see "Connecting Two Speakers In Parallel" on Page 10).

- If you are connecting more than two speakers using only series or only parallel connections, the total impedance might exceed the amplifier's maximum impedance (16 ohms) or fall below its minimum impedance (4 ohms).

For example, if you connect four 8-ohm speakers:

- In series, the total impedance is 32 ohms ($8 + 8 + 8 + 8 = 32$). This exceeds the maximum rating.
- In parallel, the total impedance is 2 ohms ($8 \text{ divided by } 4 = 2$). This falls below the minimum rating.

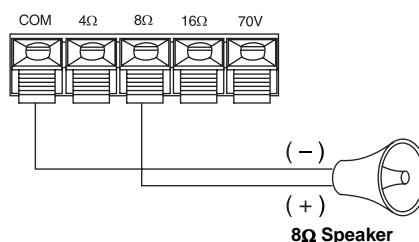
Preparing the Speaker Wire

Wire Length	Wire Gauge
25 feet or less	18 gauge
Over 25 feet	16 gauge

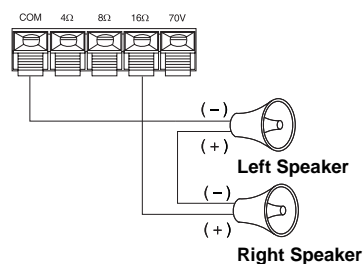
To connect speaker wire to the amplifier, press the push terminal lever on the amplifier for the connector you want, insert the end of the wire into the terminal's hole, then release the lever to secure the wire.



Connect the speaker's negative (–) terminal to **COM** (common) on the back of the amplifier. Then connect the speaker's positive (+) terminal to the speaker terminal (**4Ω**, **8Ω**, or **16Ω**) on the back of the amplifier that matches the speaker's impedance.

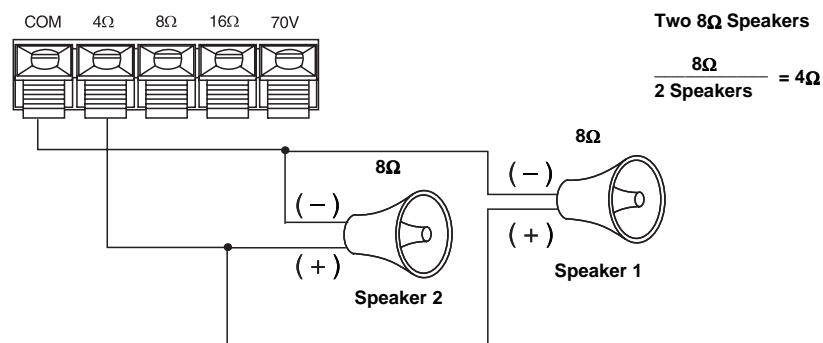


Follow these steps to connect speakers in series.



Connecting Two Speakers In Parallel

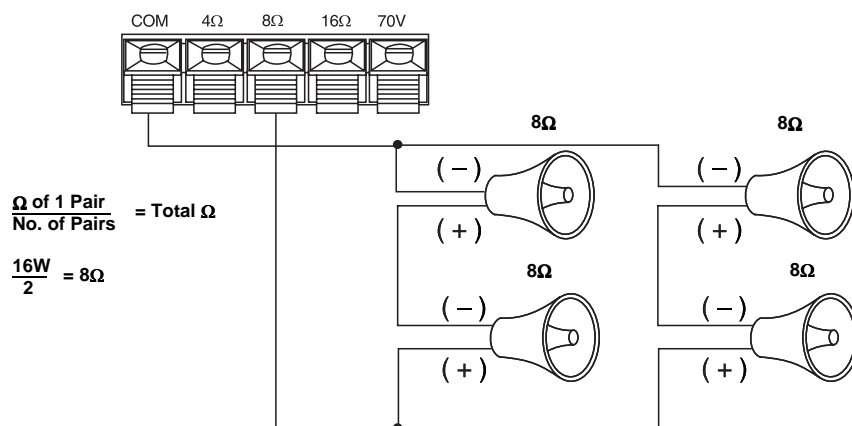
Follow these steps to connect speakers in parallel.



1. Connect both speaker's negative (–) terminals to each other, then connect both wires to the **COM** terminal on the back of the amplifier.
2. Connect both speaker's positive (+) terminals to each other, then connect both wires to the speaker terminal (**4Ω**, **8Ω**, or **16Ω**) on the back of the amplifier that matches the total speaker impedance.

Connecting Four Speakers In Series/Parallel Combination

Follow these steps to combine series and parallel connections.



1. Group the four speakers into two pairs.
2. Connect each pair of speakers in series. If you connected 8-ohm speakers, the total impedance of each pair is 16 ohms (8 + 8 = 16).

3. Connect the two pairs of speakers in parallel. If you connected 8 ohm speakers the total impedance of both pairs is 8 ohms ($16 \div 2 = 8$).

Note: If each of the four speakers is 8 ohms, the total speaker impedance of the combined series/parallel connection described above is also 8 ohms. Likewise, the total speaker impedance is 4 or 16 ohms if the speakers are 4 or 16 ohms, respectively.

4. Connect the speakers' negative (–) terminals to the **COM** terminal on the back of the amplifier.
5. Connect the speaker's positive (+) terminals to the speaker terminal (**4Ω**, **8Ω**, or **16Ω**) on the back of the amplifier that matches the total speaker impedance as calculated in Step 3.

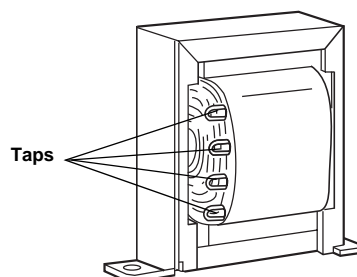
Connecting Speakers with Transformers

For the best results when you connect two or more speakers to your system, use a line transformer (not supplied) for each speaker.

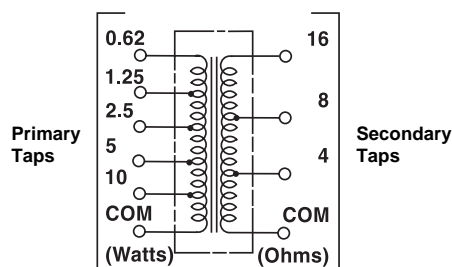
Transformers offer these advantages:

- You can connect speakers with different impedances without causing differences in output between the speakers.
- You can add or remove a speaker from the system without having to recalculate the entire system's impedance.
- You can reduce signal loss when you use speaker wire over 50 feet long.

Line transformers have several connectors called taps.



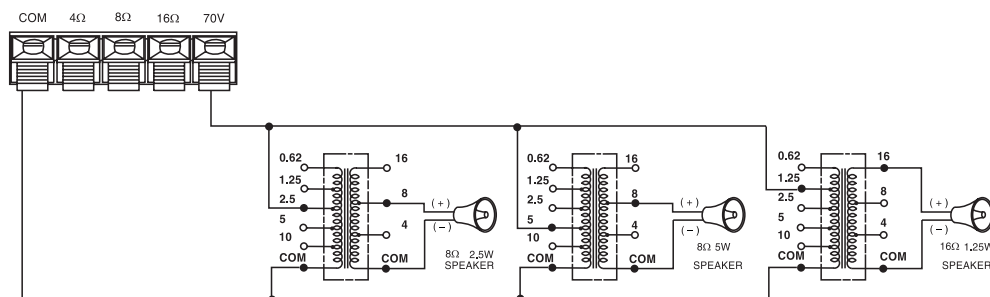
The primary taps (on one side of the transformer) are the inputs and are rated in watts. The secondary taps (on the opposite side of the transformer) are the outputs and are rated in ohms.



Cautions:

- Before you connect the speakers, be sure the total wattage of the primary tap you intend to use does not exceed the amplifier's maximum 100-watt output power rating.
- Avoid multiple connections to the **70V RMS** and **COM** terminals on the back of the amplifier.

Follow these steps to connect speakers using a transformer.



Connect a wire from **70V RMS** on the back of the amplifier to the transformer's desired primary tap (10, 5, 2.5, 1.25 or 0.62 watts).

Note: Usually, each speaker in a system uses the same wattage tap. If you want a particular speaker to have a higher volume level, connect the wire from **70V RMS** to a higher wattage tap on the transformer.

Connect a wire from **COM** on the back of the amplifier to the **C** (common) taps on the transformer's primary side.

Connect a wire from the speaker's positive (+) terminal to the transformer's secondary tap that matches the speaker's total impedance (4 ohms, 8 ohms, or 16 ohms).

Connect a wire from the speaker's negative (–) terminal to the **C** (common) tap on the transformer's secondary side.

CONNECTING POWER

To connect the amplifier to power, plug its power cord into a standard AC outlet.

Your amplifier's fuse (located on the amplifier's back panel) protects the amplifier from voltage surges. If the **PROTECTION** indicator does not light when you press **POWER** (see "Using Your Amplifier" and "Safety Indicators" on Page 13), check the fuse. If it is blown, see "Replacing the Fuse" on Page 17.

USING YOUR AMPLIFIER

Press in **POWER** to turn on the amplifier.

Start the input sound source.

Rotate **MASTER VOLUME** to its mid-position.

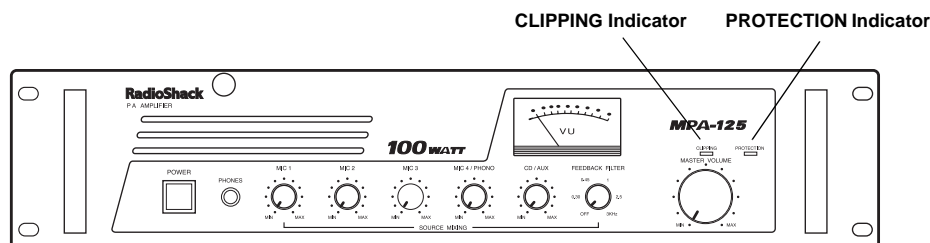
One at a time, adjust **MIC 1**, **MIC 2**, **MIC 3**, **MIC 4/PHONO**, and **CD/AUX** to the desired volume and balance.

Note: If you hear feedback after you adjust these controls, turn **FEEDBACK FILTER** clockwise until the noise disappears (see "Using the Feedback Filter" on Page 14).

After you get the desired balance, adjust **MASTER VOLUME** to the desired volume level.

SAFETY INDICATORS

Your amplifier has two indicators that warn you of potential damage to the amplifier.



The **CLIPPING** indicator lights when a sound source's signal exceeds its mixing control setting. If this happens, reduce the level of the appropriate mixing control or reduce **MASTER VOLUME** until the indicator flickers only at peak volume levels.

The **PROTECTION** indicator lights if the amplifier gets too hot because of a power overload. The amplifier's built-in protection circuit temporarily interrupts the amplifier's power. If this happens, press **POWER** to turn off the amplifier, let the amplifier cool for about 15 minutes, and correct whatever caused the overload. Then press **POWER** again to turn on the amplifier.

Note: If the power does not immediately come on, turn off the power again, wait about 5 more minutes, then press **POWER** again.

MONITORING THE SOUND SOURCES

To monitor the sound sources, plug a pair of mono or stereo headphones (not supplied) with a $\frac{1}{4}$ -inch (6.35-mm) plug into the **PHONES** jack on the front of the amplifier. Using headphones lets you easily check and adjust the sound source's balance. Your local RadioShack store carries a wide selection of headphones.

Listening Safely

To protect your hearing, follow these guidelines when you use headphones.

- Set the volume to the lowest setting before you begin listening. After you begin listening, adjust the volume to a comfortable level.

- Do not listen at extremely high volume levels. Extended high-volume listening can lead to permanent hearing loss.
- Once you set the volume, do not increase it. Over time, your ears adapt to the volume level, so a volume level that does not cause discomfort might still damage your hearing.

USING AN EQUALIZER

If you connected an equalizer, set **EQ/BYPASS** on the back of the amplifier to **EQ**.

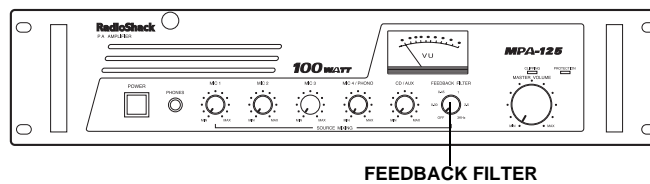
Note: If the equalizer has a bypass switch, be sure it is set to **OUT** or turned off. Otherwise, the equalizer has no effect on your system's sound.

USING THE FEEDBACK FILTER

The **FEEDBACK FILTER** control lets you reduce or eliminate squeal and other noise caused by feedback.

After you adjust **MASTER VOLUME**, **MIC 1**, **MIC 2**, **MIC 3**, **MIC 4/PHONO**, and **CD/AUX**, turn on the amplifier and any connected sound source. If you hear any feedback, turn **FEEDBACK FILTER** clockwise until you reduce or eliminate the feedback.

Note: The **FEEDBACK FILTER** control decreases feedback frequencies by up to 12 dB. If it does not eliminate the feedback, try using a frequency equalizer to further decrease the feedback frequencies.



Troubleshooting

We do not expect you to have any problems with your RadioShack MPA-125 100-Watt PA Amplifier, but if you do have a problem, this chart might help. If not, take the amplifier to your local RadioShack store for assistance.

Symptom	Possible Cause	Suggestion
No power.	The fuse might be blown.	Check the amplifier's fuse and replace it if necessary (see "Replacing the Fuse" on Page 17).
	Sound source or speakers not connected correctly.	Check all connections.
No sound.	Amplifier's MASTER VOLUME, MIC 1, MIC 2, MIC 3, MIC 4/PHONO, or CD/AUX controls set to minimum.	Adjust MASTER VOLUME, MIC 1, MIC 2, MIC 3, MIC 4/PHONO, and CD/AUX .
	Sound source or speakers not connected correctly.	Check all connections.
	A microphone or cable might be faulty.	Check all microphones and cables.
	The speaker's wiring might be shorted.	Check all connections.
	The speakers might be the wrong impedance.	Make sure all connected speakers have the same impedance rating (see "Connecting the Speakers" on Page 8).
	The speaker's wires might be too small.	Make sure the speaker's wires are 18-gauge (for wire lengths up to 25 feet) or 16-gauge (for lengths over 25 feet). For the best results, use the shortest length of speaker wire possible.
Feedback.	The amplifier might have shut down.	Turn the amplifier off and let it cool. Make sure the amplifier is properly ventilated, then turn it back on.
	FEEDBACK FILTER might need adjustment.	Turn the amplifier off and let it cool. Make sure the amplifier is properly ventilated, then turn it back on.
	Microphones or speakers are too close together.	Reposition the microphones and speakers.

Care and Maintenance

Your RadioShack MPA-125 100-Watt PA Amplifier is an example of superior design and craftsmanship. The following suggestions will help you care for your amplifier so you can enjoy it for years.



Keep the amplifier dry. If it gets wet, wipe it dry immediately. Liquids might contain minerals that can corrode the electronic circuits.



Use and store the amplifier only in normal temperature environments. Temperature extremes can shorten the life of electronic devices and distort or melt plastic parts.



Keep the amplifier away from dust and dirt, which can cause premature wear of parts.



Handle the amplifier gently and carefully. Dropping it can damage circuit boards and cases and can cause the amplifier to work improperly.



Wipe the amplifier with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the amplifier.

Modifying or tampering with the amplifier's internal components can cause a malfunction and might invalidate its warranty. If your amplifier is not performing as it should, take it to your local RadioShack store for assistance.

REPLACING THE FUSE

If the amplifier does not operate, you might need to replace the fuse on the back of the amplifier with the supplied (or another) 3-amp, 250-volt fuse.

Important: Let the amplifier cool down and see if it starts again before you assume a fuse needs to be replaced.

Caution: Do not use a fuse with ratings other than those specified. Doing so might damage your amplifier.

1. Unplug the amplifier.
2. Use a Phillips screwdriver to remove the fuse holder cap on the back of the amplifier, then pull out the cap to remove the fuse.
3. If the fuse is blown, replace it.
4. Insert the fuse into the fuse holder's socket, press the fuse holder back into the amplifier, then use a Phillips screwdriver to replace the fuse holder cap.

THE FCC WANTS YOU TO KNOW

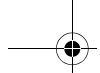
Your amplifier might cause TV or radio interference even when it is operating properly. To determine whether your amplifier is causing the interference, turn off your amplifier. If the interference goes away, your amplifier is causing it. Try to eliminate the interference by:

- moving your amplifier away from the receiver
- contacting your local RadioShack store for help

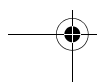
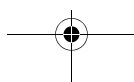
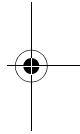
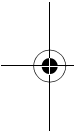
Specifications

Output Power at THD 2%, 8 Ohm Load 1 kHz	100 W
Total Harmonic Distortion (at 70 Watts, 8 ohms, 1 kHz, with Band Pass Filter)	
MIC (Phone Jack)	0.25%
MIC (XLR Jack)	0.35%
CD/AUX	0.20%
PHONO	0.25%
Input Sensitivity (at 2% THD, 1 kHz)	
MIC (Phone Jack)	1.35 mV
MIC (XLR Jack)	1 mV
CD/AUX	150 mV
PHONO	2.8 mV
Signal to Noise Ratio (Input Shorted) with WTD	
MIC (Phone Jack)	60 dB
MIC (XLR Jack)	54 dB
CD/AUX	73 dB
PHONO	60 dB
Frequency Response (at 1 Watt, +/- 3 dB)	
MIC (Phone Jack)	60 Hz–20 kHz
MIC (XLR Jack)	60 Hz–20 kHz
CD/AUX	60 Hz–20 kHz
PHONO (RIAA 100 Hz/10 kHz)	+12 dB/–12.5 dB
Notch Filter Effect	
Range	300 Hz–3 kHz
Depth	–12 dB
Noise Level (Input Short)	0.75 mV
Power Requirements	120V AC 60 Hz
Dimensions (HWD)	$4\frac{3}{16} \times 18\frac{15}{16} \times 11\frac{15}{16}$ Inches (10.0 × 48.2 × 27.3 cm)
Weight	22.3 lbs (10.1 kg)

Specifications are typical; individual units might vary. Specifications are subject to change and improvement without notice.



Notes



Limited One-Year Warranty

This product is warranted by RadioShack against manufacturing defects in material and workmanship under normal use for one (1) year from the date of purchase from RadioShack company-owned stores and authorized RadioShack franchisees and dealers. EXCEPT AS PROVIDED HEREIN, RadioShack MAKES NO EXPRESS WARRANTIES AND ANY IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE DURATION OF THE WRITTEN LIMITED WARRANTIES CONTAINED HEREIN. EXCEPT AS PROVIDED HEREIN, RadioShack SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO CUSTOMER OR ANY OTHER PERSON OR ENTITY WITH RESPECT TO ANY LIABILITY, LOSS OR DAMAGE CAUSED DIRECTLY OR INDIRECTLY BY USE OR PERFORMANCE OF THE PRODUCT OR ARISING OUT OF ANY BREACH OF THIS WARRANTY, INCLUDING, BUT NOT LIMITED TO, ANY DAMAGES RESULTING FROM INCONVENIENCE, LOSS OF TIME, DATA, PROPERTY, REVENUE, OR PROFIT OR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, EVEN IF RadioShack HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

In the event of a product defect during the warranty period, take the product and the RadioShack sales receipt as proof of purchase date to any RadioShack store. RadioShack will, at its option, unless otherwise provided by law: (a) correct the defect by product repair without charge for parts and labor; (b) replace the product with one of the same or similar design; or (c) refund the purchase price. All replaced parts and products, and products on which a refund is made, become the property of RadioShack. New or reconditioned parts and products may be used in the performance of warranty service. Repaired or replaced parts and products are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the product made after the expiration of the warranty period.

This warranty does not cover: (a) damage or failure caused by or attributable to acts of God, abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation or maintenance, alteration, lightning or other incidence of excess voltage or current; (b) any repairs other than those provided by a RadioShack Authorized Service Facility; (c) consumables such as fuses or batteries; (d) cosmetic damage; (e) transportation, shipping or insurance costs; or (f) costs of product removal, installation, set-up service adjustment or reinstallation.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

RadioShack Customer Relations, 200 Taylor Street, 6th Floor, Fort Worth, TX 76102

We Service What We Sell

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Fort Worth, Texas 76102

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