

Owner's Manual

QSC

MX 700



TD-000025-00

**LIMITED
WARRANTY
(United States)**

QSC Audio Products warrants this product to be free from defective material and/or workmanship for a period of three years from date of sale, and will replace defective parts and repair malfunctioning products under this warranty when the defect occurs under normal installation and use; provided the unit is returned to our factory or one of our Authorized Service Stations via prepaid transportation. This warranty provides that examination of the returned product must disclose, in our judgement, a manufacturing defect. This warranty does not extend to any product which has been subject to misuse, neglect, accident, improper installation, or where serial number has been removed or defaced. Manufacturer shall not be liable for consequential damages resulting from defects in material and/or workmanship.

SAFEGUARDS

Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety. Improper use can result in potential electrical shock or fire hazard. In order not to defeat the safeguards, observe the following instructions for its installation, use and servicing.

PRECAUTIONS

L'énergie électrique peut remplir de nombreuses fonctions utiles. Cet appareil a été conçu et réalisé pour assurer une sécurité personnelle entière. Une utilisation impropre peut entraîner des risques d'électrocution ou d'incendie. Dans le but de ne pas rendre inutiles les mesures de sécurité, bien observer les instructions suivantes pour l'installation, l'utilisation et l'entretien de l'appareil.



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



Explanation of Graphical Symbols

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the users to the presence of important operating a maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NES PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVANT ENTRE INSEREES A FOND SANS EN LAISER AUCUNE PARTIE A DECOUVERT.

MX 700

OWNERS MANUAL

Table of Contents

Section One....Introduction

- 1-1 Welcome
Overview and Description

Section Two....Basic Instructions

- 2-1 Unpacking and Inspection
Important Precautions
- 2-2 Quick Instructions
 - Stereo Operation
 - AC Power
 - Floating Chassis Ground
- 2-3 Input Connections
 - Speaker Connections
 - Power Up
 - Operation and Indicators

Section Three...Operation

- 3-1 Cooling
 - Input Connections
 - Input Circuit
 - Balanced Inputs
 - Unbalanced Inputs and Polarity
- 3-2 Cross Connecting Both Channels
 - Mono Bridging
- 3-3 Speaker Connections
 - Speaker Terminals
 - Terminal Polarity
 - Speaker Voltage
 - Speaker Cables
 - Cable Polarity
 - Speaker Impedance
- 3-4 Distributed Sound System
 - 25-Volt Lines
 - 70-Volt Lines
 - 100-Volt Lines
 - Low Frequency
 - Amplifier Protection Features
 - Short Circuit Protection
 - Thermal Protection
 - DC Fault Protection
 - Turn-on/turn-off Muting

Input/Output Protection
Indicators

Section Four....Troubleshooting & Precautions

- 4-1 Summary
 - No Sound
 - Weak but Clear Sound
 - Weak and Distorted Sound
 - Sound Cuts In and Out
- 4-2 Sound has Bad Tone
 - Lacks Power
- 4-2 Unwanted Noises
 - Hum
 - Buzz
 - Hiss
- 4-3 Crackles
- 4-3 Precautions
 - Background
 - DC Protection
 - User Responsibility

Section Five....Maintenance & Service

- 5-1 Cleaning
 - Dust Removal
 - User Maintenance
 - Obtaining Service

Section Six....Specifications & Schematics

- 6-1 Specifications
 - Schematic

Welcome.

Thank you for selecting a QSC MX 700 power amplifier. We recommend that experienced as well as first time users review the contents of this manual. Please do not hesitate to call your QSC Dealer or QSC Audio Products, Inc. if you have any service problems or questions not answered in this manual.

Overview of Amplifier.

Each channel is isolated by separate power transformer secondary windings feeding its own balanced bipolar power supply. Balanced or unbalanced inputs can be made with screw lugs to the barrier strip, or with 1/4-inch plugs (ring-tip-sleeve for balanced inputs). Speaker connections are made with 5-way binding posts.

The chassis is a single piece design with integral rack mounting ears. The recessed front panel houses the AC switch, Gain controls, and essential read-outs. Clipping indicators are provided for each channel, to monitor amplifier performance. The AC switch, and gain controls are front mounted. A Power ON indicator shows the application of power by the AC switch. The transformer has an internal thermally activated circuit breaker that resets automatically.

Complete protection is provided for open circuit, short circuit, and mismatched loads; the amplifier will shut down temporarily if it overheats, and an internal AC circuit breaker protects the power supply against unusual overloads. All protection systems will reset automatically as soon as safe operation is assured. A system protects the user's loudspeakers from unexpected damage, by muting the amp during turn-on and turn-off and by blocking DC faults (uncontrolled power breakdown) whether caused by the amplifier or preceding components.

All of these points are more fully explained in the following Sections.

All QSC MX 700 amplifiers are checked for good condition before being shipped from the factory. Despite the protective carton and rugged amplifier design, it is possible for shipping abuse to damage the amplifier. Check for obvious carton damage while unpacking the unit, and check the amp for loose parts inside.

Please save the carton for return shipment, if required. QSC does not warranty against damage caused by sending amplifiers back improperly packed or in the wrong carton.

If shipping damage is evident, notify the transportation company immediately. Only the consignee can file a claim with the carrier for shipping damage. QSC will cooperate fully in such an event. Be sure to save the carton for the shipper to inspect.

The power must be OFF when making any connections. If you connect plugs with the power on, especially in dry environments, static sparks or bad cables can cause pops or hums which can damage speakers.

When first powering up the amp, have the amplifier Gain controls all the way off, in case of defective cables or hookups. Turn the Gain controls up gradually until normal operation is verified.

Check the AC voltage printed on the serial number label to ensure your amp is properly configured for the AC voltage supplied in your area before connecting the AC plug. CONNECTION TO A VOLTAGE SOURCE OTHER THAN THE ONE SPECIFIED WILL IMMEDIATELY DAMAGE THE AMP, AND VOIDS THE WARRANTY.

Never connect the speaker terminals (red binding posts) for two channels together on any power amplifier. The two channels will fight each other and possibly fail. Do not connect the speaker ground terminals (black binding posts) to chassis or signal grounds, as the resultant ground loop could cause ultrasonic oscillations. Keep all speaker wiring separate for each channel, and separate from input wiring.

Do not remove the amplifier cover, there are dangerous voltages inside. Do not expose to rain or moisture. Refer all

Unpacking and Inspection.

Important Precautions.

servicing to qualified personnel. The warranty may be void if the amp is tampered with by non-QSC repair centers or personnel. Please call the factory for Service Center information and locations.

High voltages can be present on the speaker terminals. Always connect speaker terminals with the power off, and use heavy gauge cable with no frayed strands or damaged insulation.

Power amplifiers have high power circuitry inside with potential for fire and shock hazard; never plug in a damaged amplifier until the condition of the internal insulation is checked. If a circuit breaker blows quickly when turning the amp on, the channel is defective and should not be restarted until repaired or replaced. Failure to observe these precautions could lead to fire or shock hazard.

Power amplifiers are inherently heavy and may become hot after use. Provide adequate support and be careful how you grab the amplifier when handling it.

Quick Instructions.

Stereo Operation.

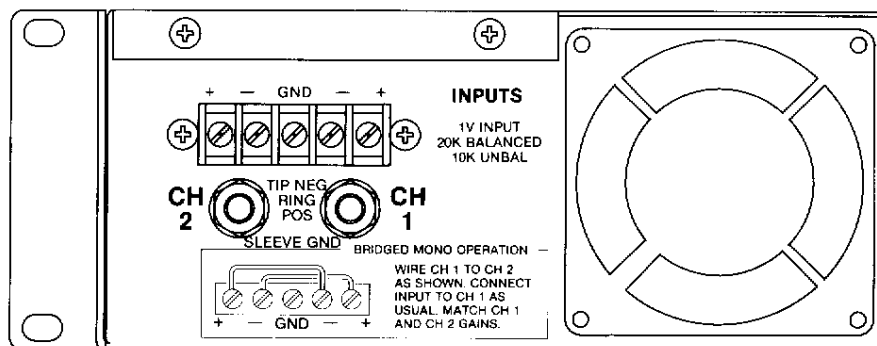
These instructions cover the normal use of the amplifier in two-channel or stereo applications. See Section 3 for detailed installation instructions and special cases.

AC Power.

Connect the AC cord to a standard outlet only. The amplifier will operate satisfactorily over a +/- 10% range of voltages, but full rated performance will be met only at the rated voltage.

Floating Chassis Ground.

There is no provision for lifting signal ground relative to chassis ground on this model. Electronic balanced inputs are provided for hum rejection. Use balanced input cables to avoid hum and



interference. For safety reasons do not remove the ground pin on the AC cord.

The input polarity is as follows:

- 1/4-inch plug: Tip is “minus” or inverting Ring is “plus” or non-inverting. Barrel is ground, (as always).
- Barrier Strip: “GND” is circuit ground
“+” is the plus input
“-” is the minus input

Input Connection.

When making unbalanced connections, the unused terminal must be grounded for proper response. The barrel of an ordinary two-wire 1/4 inch plug will ground the “plus” side of the balanced input. The installer will need to ground the unused screw on the barrier strip.

You may connect banana plugs, spade lugs, or bare wire ends to the 5-way binding posts. Observe correct polarity (red/black terminals) so all speakers move in the same direction.

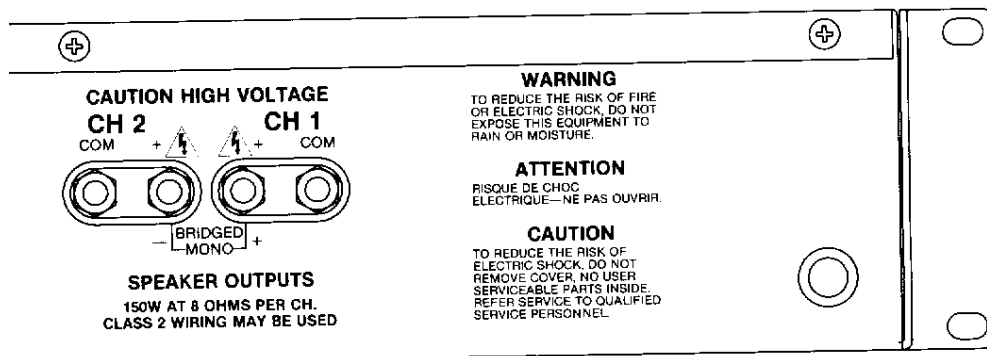
Speaker Connections

When first powering up, start with the gain controls off until proper operation is verified. Upon turning on the AC switch, the “Power” LED should come on, and after two seconds, the muting will stop and sound can be heard. The amp should now be working, in case of difficulty consult Section 4.

Power Up.

Gain should be kept in the upper half of its range for full performance. Monitor LED indicators are provided to monitor the operation of each channel. Each channel has a red “Clip” indicator that will show any distortion in the amplifier. The mute circuit should cut the sound off as soon as you turn off the amp, and mute for two seconds before restoring power to the speakers. This blocks turn-on and turn-off thumps.

Operation and Indicators.



Cooling.

Your MX 700 features a two speed fan. This will allow its use in areas where constant fan noise may be objectionable.

While the amp is operating at low power levels, the fan will operate at approximately half speed. As power level or ambient temperature increases, the fan speed will switch to full speed. The transition from low to high speed operation begins when the internal components reach approximately 50 degrees C.

The two speed fan forces air across heatsinks. Air flow is from the rear and warm air is exhausted to the front. This prevents the recirculation of heated air and reduces rack temperatures. Be sure that plenty of inlet space is allowed in the rack for free air flow.

When installing the MX 700 in the same rack with passively cooled amps or fan cooled amps that exhaust into the rack, locate the MX 700 amp on the bottom. This will assure the coolest air for all amps.

Input Connections.

(Please see illustrations in Section 2)

Input Circuit.

An electronic balanced input is standard. For best performance in the balanced input mode, the source should have equal impedances for both signal conductors, so that the loading effect on each leg will be the same for common mode (noise) signals. Minor mismatches will result in slight loss of common mode rejection, but will still have much greater noise rejection than unbalanced inputs.

Balanced Inputs.

For proper balanced line operation, the cable shield must be kept separate from both signal conductors. The cable shield is connected to the barrel of a 1/4-inch plug, or to the "GND" terminal of the barrier strip.

Unbalanced Inputs and Polarity.

The input circuit responds to the difference between the plus and minus signals. If only an unbalanced (single-ended) signal is available, the unused input terminal should be grounded for normal operation, without loss of gain. The ability to reject cable induced hum and noise is lost, but this may not be needed in well shielded environments with short distances between audio components.

We have used the safest or most stable assignment (inverting) for the input polarity of the 1/4-inch plug. Unbalanced 1/4-inch plugs can simply be fully inserted in the 1/4-inch jack without special concern.

You can wire to the “-” input of the barrier strip for stability, or the “+” input for non-inverting polarity, and ground the unused input and the cable shield to the central “Gnd” terminal.

NOTE. You can always reverse the red-black polarity to all the speakers to restore non-inverting polarity even when using the “more stable” inverting mode. In any case, be sure to use the same polarity for all of the speakers so they work together.

You can always connect the inputs of two or more channels to the same signal, but **NEVER CONNECT TWO CHANNELS TO THE SAME SPEAKER**. Connect separate speakers to each channel to avoid amplifier damage. Rather than using a “Y” cable, jumper wires at the barrier strip can be used. This connects the input jacks for Ch.1 and Ch.2 in parallel making it easy to cross patch to as many channels as desired. Bring the input signal into channel 1. Connect jumpers between the “+” terminals of Ch. 1 and Ch. 2, and also between the “-” terminals. (Do not be confused by the wiring diagram printed on the amplifier for Bridged Mono). This will send the signal from Ch. 1 to Ch. 2. Then you may connect another cable from Channel 2 of the first amp to Channel 1 of the next amp. By using the same procedure in each amp, you can “loop through” to as many amps as desired. Each channel’s Gain control will affect only that channel, not the signal reaching the other channels.

Cross Connecting Both Channels.

NOTE 1: For balanced line operation, you must maintain balanced cables all the way through. Any unbalanced cables will unbalance the whole network.

NOTE 2: It will not increase the power of a given amplifier channel by connecting additional channels. You must connect additional, separate speakers to each additional amp channel to multiply your total power rating. See Section 3.3 for a discussion of Mono Bridging, which is a partial exception to this rule.

Mono Bridging.

To engage the bridged mono mode, jumper the barrier strip inputs on the rear, in accordance with the diagram printed under the barrier strip inputs. Connect the amplifier input to Ch.1 only, with the jumpers as shown to channel 2. Do not feed another input into Channel 2. Channel 1 and 2 Gains must be matched. A 4, 8 or 16 ohm speaker load can be connected across the two red speaker terminals, using the red binding post of Ch.1 for “+” or “hot”.

Mono Bridge Precautions.

- a. Minimum load impedance is 4 ohms, which will be the equivalent, to the amp, of 2 ohms per channel. Be sure the speakers can handle the high power ratings (see Section 6, Bridged Mono Ratings).
- b. Both sides of the speaker cable are “hot” or active. Do not connect any other circuit to either speaker conductor.
- c. With a 4 ohm load, the amp will be working at its rated limit (2 ohms per channel). Assure adequate cooling and AC power. Do not expect continuous full power operation without tripping the thermal protection circuits.

Speaker Connections.

Speaker Terminals.

Red and Black 5-way binding posts, on standard 3/4-inch centers, are located on the rear of the chassis. All speaker labels are shown in red.

Terminal Polarity.

The Red binding post carries the positive or “hot” speaker output. The Black binding post is the ground return for the speaker. Do not ground the speaker common to other parts of the chassis as this might cause audio ground loops and oscillations.

Speaker Voltage.

Because of the amplifier's high power capability there is a possibility of shock hazard at the speaker terminals. Always make connections with the power off. Observe good wiring practice and avoid stray wire strands.

Speaker Cables.

In order to obtain the full benefit of the high power and high damping factor use the heaviest gauge, finely stranded wiring possible. 12 gauge speaker cable is available, and heavier gauge “specialty” cable is sold by audio dealers.

Be sure to observe correct polarity at both the speaker and amplifier end.

The MX 700 amplifier has adequate current capability to fully drive loads down to two ohms. However, many high performance "8-ohm" loudspeakers, especially multi-way systems with passive crossovers, have impedances at some frequencies which are far lower than the average rating. An impedance minimum of 2 ohms or less is not uncommon. For this reason, speaker impedance curves should be consulted before connecting speakers in parallel. The amplifier will do an outstanding job with any 8 ohm, full range speaker system, and provide equally outstanding performance when driving 4 ohm loads without passive crossovers (as part of a bi or tri-amped system, for instance). 2 ohm loads should be approached with caution, as there is no further margin for impedance dips. 2 ohm operation will not damage the amp, but high power operation into reactive 2 ohm loads may result in overheating or excessive AC current consumption, causing shutdowns. In addition, some power may be lost at those frequencies where the impedance dips below 2 ohms. For these reasons, operation with 2 ohm loads should be tested thoroughly before putting into use.

The MX 700 amplifier delivers about 35 VRMS per channel (or about 50V peak), depending on loading. Special circuitry or an output transformer to limit the MX 700 to 42V peak might be required. A smaller power amplifier such as the QSC 1200, with exactly 25V output at 150W per channel may be a better choice.

The MX 700 will drive 70 volt lines directly in the bridged mode (see Section 3.3), with up to 300 watts. Actual undistorted maximum power will reach 60V at 450 watts loading. The QSC OT-300 can also be used to step up the output of individual channels to 70V, at 150-225 watts.

The QSC OT-300 output autotransformer can be used to step up individual channels to 100V, with up to about 150 watts available per channel.

Cable Polarity.

Speaker Impedance.

Distributed Sound System.

25-Volt Lines.

70-Volt Lines.

100-Volt Lines.

- Low Frequency Rolloff.** In commercial sound systems, a rolloff below about 50Hz is desirable to prevent excess drive and wasted power at frequencies below the range of the speakers and their small transformers.
- Amplifier Protection Features.**
- Short Circuit Protection.** Patented QSC "Output Averaging" short circuit protection continuously monitors the actual load impedance. The result is full performance into rated loads, ability to handle normal program peaks into marginal loads, and good protection into short circuits. At no time will the circuit cause abnormal distortion spikes or loss of sound.
- Thermal Protection.** If the heat sink temperature rises to about 90C, the muting will be triggered permitting the circuit to rest until temperatures fall to safe levels. The power indicator will still be lit but no sound will come through. If the Power indicator goes out but the fan is still running, this means the transformer's internal circuit breaker has tripped. In either case, reset should occur within a minute or two. If thermal problems occur, check for blocked ventilation, proximity to a heat source, short circuit, or improper load (too many speakers).
- DC Fault Protection.** The MX 700 has an AC coupled output with inherent DC protection.
- Turn-on/turn-off Muting.** The MX 700 uses solid state circuitry for muting. There will be a two second muting interval after turn on. After turn off, or loss of power for any reason, the amp will mute within a quarter of a second.
- Input/Output Protection.** The amplifier inputs are isolated by 10K resistors, which are part of the balanced input circuit. This protects the inputs from burn out due to extremely high input signals or RF interference. The amplifier output is isolated from capacitive and inductive loads by a ultrasonic network which decouples the speaker terminals slightly at frequencies above about 50kHz.
- Indicators.** A green power LED shows when AC power is applied. A red LED accurately shows signal clipping distortion for each channel. If distortion is heard without clip indication, check for extremely low input Gain or distortion in other parts of the system.

This Section contains troubleshooting hints. A problem can usually be isolated by using a step-by-step evaluation, comparing the function of both channels, and using one channel to check the inputs and outputs of the other. Please refer to the front and rear illustrations as required.

Power LED does not come on: no AC power. Check AC plug, AC switch, and AC outlet with another device. If the power transformer's internal thermal circuit breaker tripped, the fan will still be running. It will reset automatically in a few minutes.

Power LED comes on: input or output is not connected, or the channel is faulty. If one channel is working, use it to test the inputs and speaker wires from the bad channel. If there is still no sound, trace those connections back to the preceding unit and speaker to isolate the fault. If the good channel works using the bad channel's cables, then the fault is somewhere in the bad channel. Check the input jacks, trying an alternate type jack if possible, and check the speaker binding posts for looseness. Is the volume control turned up?

Usually indicates lack of input signal or incorrect Gain adjustment at some point. If the other channel is working, try swapping the connections. If the sound is very thin or muffled, suspect that one driver in a multi-way speaker has failed.

The amplifier clip light comes on during the distortion. There is a shorted speaker cable, the speaker is blown out, or the amplifier channel is defective.

The clip light does not show during the distortion. The distortion is happening outside the amplifier. Check for misadjusted or defective units before the amplifier, or bad speakers on the affected channel. Verify that amplifier Gain is in the normal range (half way up or higher) to prevent input overload.

Generally caused by a bad connection somewhere. To test, shake the amp or the input/output connectors. An intermittent connection to one side of the balanced input can cause a 6dB fluctuation of input level.

If the sound stops for a minute or two, and then resumes by itself, check the amp for overheating.

Summary.

No Sound.

Weak but Clear Sound.

Weak and Distorted Sound.

Sound Cuts In and Out.

**Sound has Bad Tone
(poor treble or bass).**

The amplifier itself is very unlikely to develop a frequency response problem without more serious effects. Therefore, lack of frequency range must be traced to the speakers or preceding units.

Lacks Power.

A common but indefinite complaint. If it is a lack of power that is soft but clear or it seems to distort too easily see above. Speaker efficiency will drop perceptibly after heavy usage, due to the increased resistance of the voice coils as they heat up. Volume will return when the speakers cool down. In a multi-speaker system, be sure all of the speakers are still working. Your ears get used to high sound levels, and as the room fills up with people, the sound will be absorbed more greatly. Only a sound level meter, used with a standard signal level and at a standard distance from the speaker, can really tell if you are getting the expected output.

Unwanted Noises.

Hum

Defined as a fairly rounded 60 cycle tone. Severe hum usually is caused by broken cables or jacks with disconnected ground (shield), and corroded connectors, especially 1/4-inch types. A mild hum, often with a little more "tone" or harmonic content, is usually the result of ground loops. This problem is caused by 60 cycle magnetic fields, which radiate from power transformers including the ones in the amplifier. Try repositioning the cables away from the various components.

Note: tape recorder heads, phono cartridges, and electric guitar pick-ups are especially sensitive to this type of interference, and must be kept away from high power electronics.

Buzz

Defined as a very "razzy" kind of hum. This is usually caused by interference from solid-state light dimmer circuits. Follow the same precautions shown above, and make sure the electronics are not connected to an AC outlet which has a dimmer control.

Hiss

Defined as a smooth "shhh" noise. This is always a problem with sensitive electronic inputs, and usually starts at the point of weakest signal. In a properly designed system, this will be the initial microphone, phono, or tape source. There is a noise "floor" caused by random atomic vibrations. This limits the signal to noise ratio of the original signal. The goal of a proper system is to have a quiet pre-amp which immediately amplifies

the input signal to a standard "line level", well above the noise floor, so that further degradation does not occur. The idea is to maintain a fairly constant signal level after the initial pre-amp. To isolate the source of unwanted hiss, start at the amp and work backwards, reducing and then restoring gains. You should hear a reduction of hiss and audio together at each point. When you find a control which lowers the audio volume, but not the hiss level, you know the hiss is coming in after that stage. Assuming that the hiss has not always been there, this indicates defective electronics. Certain special effects units are rather noisy so compare with other users.

Defined as a "popcorn" noise. If the crackle persists during pauses, this indicates defective electronics, and must be traced down using the above procedure. Crackles which occur during audio peaks or when the electronics are vibrated usually indicate bad connections.

Crackles

Precautions.

Speakers have several limits which should not be exceeded for reliable operation. It is the user's responsibility to determine these limits and operate the amplifier accordingly. We offer several ways to avoid unexpected accidents, but you must still select speakers of appropriate type and power capacity.

Background.

All QSC amplifiers protect the speakers against amplifier faults, so no special protection is required for full range loudspeakers. The MX 700 amplifier limits the response below 20Hz to protect the amp and load from possible damage caused by large subsonic transients, such as breath pops, dropped microphones, etc.

DC Protection.

Remember that your MX 700 amplifier is very powerful with extra peak power (dynamic headroom) in reserve. Observe the hook up and operating precautions. QSC is not liable for any damage to loudspeakers caused by overpowering, wrong frequency operation or electronic faults.

User Responsibility.

Cleaning.

The faceplate and chassis can be cleaned with a soft cloth and mild non-abrasive cleaning solution, such as Windex. Avoid cleaning powders or scrubbing pads, as these will scratch and dull the paint. Be sure to unplug the unit prior to cleaning. Dampen the cloth with the cleaning solution and wipe gently. You may wish to buff the surface lightly with a dry soft cloth.

Dust Removal.

After prolonged use, especially in dusty environments, the heat sinks may become clogged with dust. This will interfere with cooling, leading to higher temperature operation and reduced life. Some dust can be removed by directing an air jet in the fan intake on the rear. Severe build-ups will require qualified service personnel to remove the top cover for thorough dust removal.

User Maintenance.

There are no periodic “tune-up” adjustments required. The amplifier should provide stable performance until parts fail from age. Internal servicing must be referred to qualified personnel. The amplifier may be inspected for loose screws on the outside. If any loose parts rattle around on the inside, please have it serviced immediately, as a loose part could lodge in a dangerous place and cause further damage or shock hazard.

Obtaining Service.

If the amplifier isn't working properly, please consult the troubleshooting chart in Section 4. If proper operation cannot be restored the amplifier may require service. This must be performed by qualified technical personnel, to avoid shock hazard or improper repairs. To obtain the location of the nearest authorized Service Center, please contact your QSC dealer or the QSC factory (714-645-2540, Costa Mesa, California 92627).

Please note that the warranty does not cover repairs made by non-authorized service personnel, and that improper repairs may void future warranty coverage.

If the amplifier is returned to the factory for service, it must be sent in a proper QSC shipping carton. If you have not saved your carton, ask your dealer for one, or call QSC to have an empty carton sent for shipping. The warranty does not cover shipping damage caused by returning an amplifier in the wrong carton or improperly packed.

Output Power (per channel, RMS watts, both channels driven)	2 ohms, 1 kHz, 1% THD +/- 1 dB 4 ohms, 1 kHz, 1% THD 4 ohms, 20 Hz-20 kHz, 0.1% THD 8 ohms, 1 kHz, 1% THD 8 ohms, 20 Hz-20 kHz, 0.1% THD	350 270 225 170 150
Bridged-Mono Operation.	4 ohms, 1 kHz, 1% THD +/- 1dB 8 ohms, 20 Hz-20 kHz, 0.1% THD 16 ohms, 20 Hz-20 kHz, 0.1% THD	700 450 300
Dynamic Headroom.	3dB at 4 ohms	
Distortion.	8 ohms, THD, 20 Hz-20 kHz less than 0.1%, 0.01% typical 8 ohms, SMPTE-IMD less than 0.025% at rated power	
Frequency Response .	20 Hz-20 kHz +0, -1 dB at 1 watt	
Damping Factor (at 8 ohms).	Greater than 200 at 8 ohms, 20 Hz-1 kHz	
Noise.	20 Hz-20 kHz more than 100 dB below rated power, A weighted	
Input Sensitivity.	0.96 VRMS at 8 ohms	
Gain.	31 dBV	
Input Impedance.	10K unbalanced (inverting polarity), 20K balanced	
Controls.	Front: AC Switch, Gain Knobs	
Indicators.	Front: Power: 1 Green LED Clip: 2 Red LEDs	
Connectors.	Rear: Inputs: 1/4-inch RTS, 5 position Barrier Strip, Speakers: 5-way Binding Posts	
Cooling.	2-speed fan, rear-to-front air flow	
Amplifier Protection.	Full Short Circuit (U.S. Patent 4,321,554), open circuit, over- temp, ultrasonic and RF protection. Stable into reactive or mismatched loads.	
Load Protection.	AC coupled output. 2-Second On, Instant Off muting	

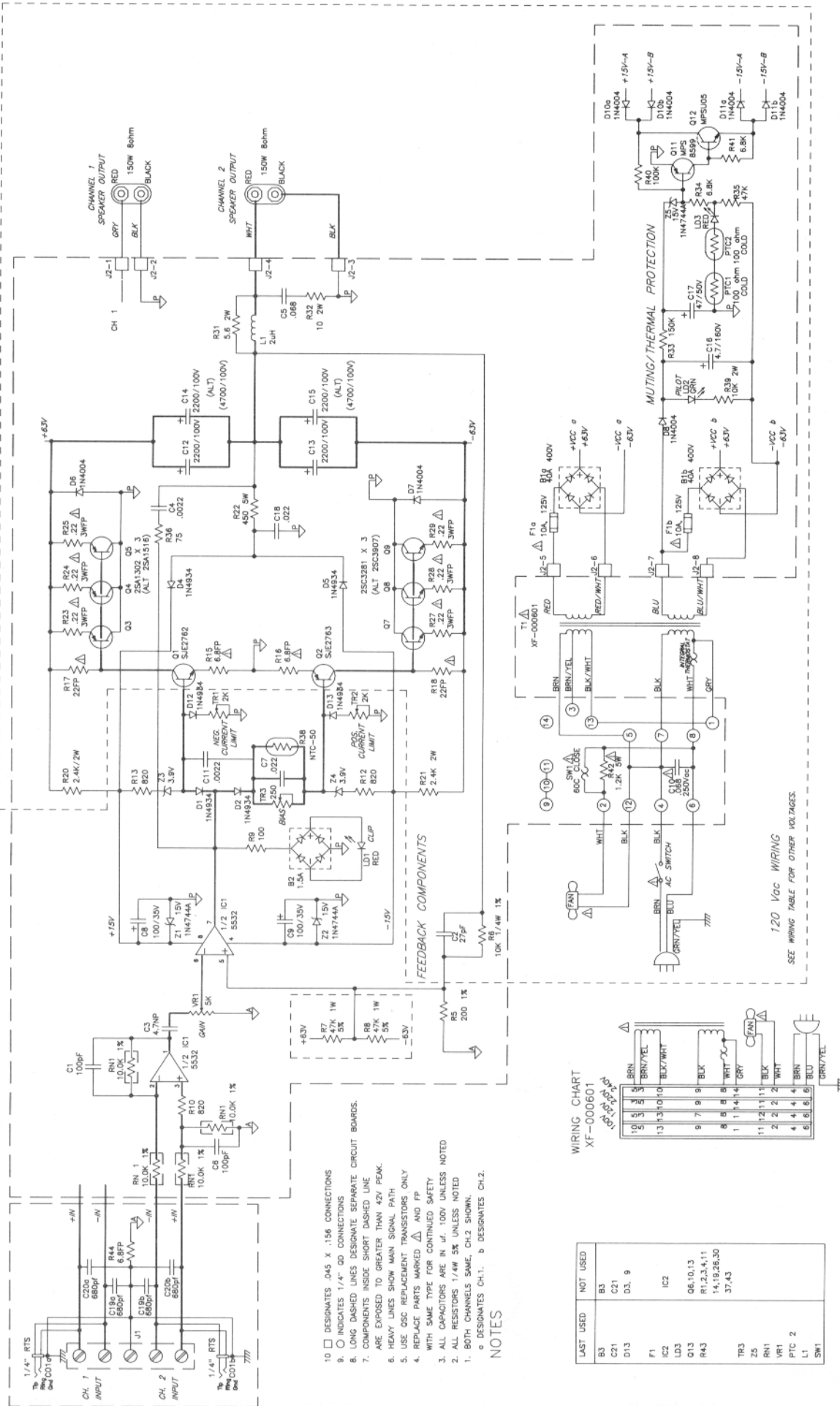
Complementary Output Devices.	12
Amplifier Power Supply.	Separate transformer secondaries, rectifiers, and DC filter capacitors.
Power Requirements.	100, 120, 220-240 Vac, 50-60 Hz
Dimensions.	19.0" (48.3 cm) rack mounting 3.50" (8.9 cm) tall (2 rack spaces) 12.0" (30.5 cm) deep
Weight.	25 lbs (11.3 kg) net, 31 lbs (14 kg) shipping

Specifications and design may be changed without notice.

QSC POWER AMPLIFIER MODEL MX700

SH-000630-CX REV D PCB 02-19-90

THIS INFORMATION FOR QUALIFIED SERVICE PERSONNEL ONLY

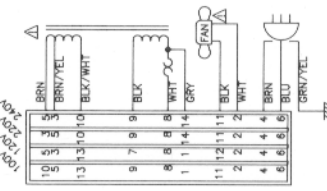


10. □ DESIGNATES .045 X .156 CONNECTIONS
 8. ○ INDICATES 1/4" X .156 CONNECTIONS
 9. LONG DASHED LINES DESIGNATE SEPARATE CIRCUIT BOARDS.
 7. COMPONENTS INSIDE SHORT DASHED LINE ARE EXPOSED TO GREATER THAN 42V PEAK.
 6. HEAVY LINES SHOW MAIN SIGNAL PATH
 5. USE QSC REPLACEMENT TRANSISTORS ONLY
 4. REPLACE PARTS MARKED Δ AND ∇ WITH SAME TYPE FOR CONTINUED SAFETY
 3. ALL CAPACITORS ARE IN μ. 100V UNLESS NOTED
 2. ALL RESISTORS ARE IN Ω. 5% UNLESS NOTED
 1. BOTH CHANNELS SAME. CH.2 SHOWN.
 a DESIGNATES CH.1. b DESIGNATES CH.2.

NOTES

LAST USED	NOT USED
B3	C21
D13	D3, 9
IC2	IC2
D13	Q6, 10, 13
R43	R1, 2, 3, 4, 11, 14, 19, 26, 30, 37, 43
TR3	
Z5	
VR1	
PTC 2	
L1	
SW1	

WIRING CHART
XF-000601



120 VCC WIRING
SEE WIRING TABLE FOR OTHER VOLTAGES.



"QSC" is a registered trademark of QSC Audio Products, Inc.

1675 MacArthur Blvd. Costa Mesa, CA 92626

(714) 754-6175

FAX (714) 754-6174