

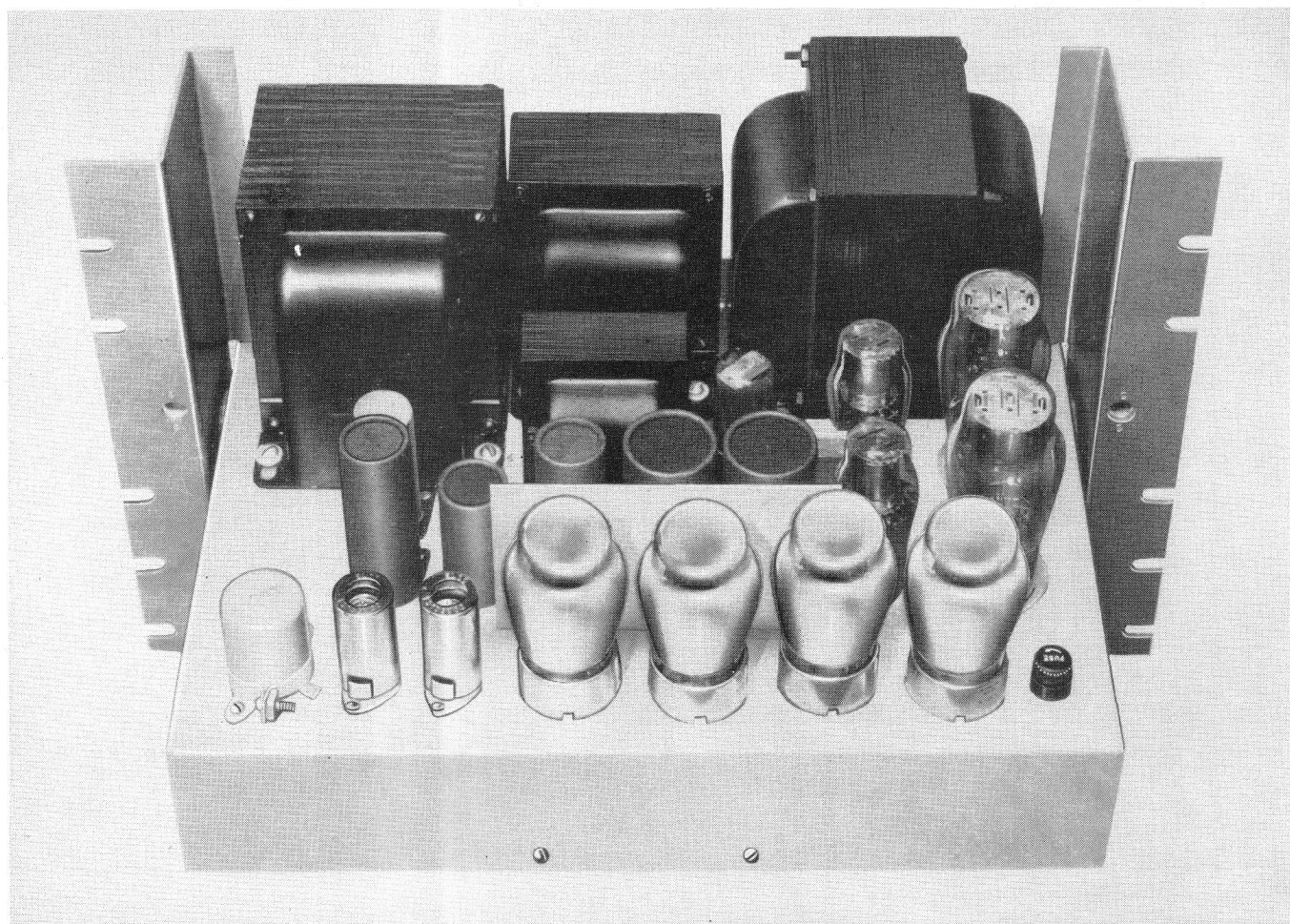


150-WATT POWER AMPLIFIER

MASTER ITEM - 9289

CATALOG

S.3099



Hinge-mounted amplifier tipped forward for top-chassis inspection.

FEATURES

- Dependable service
- Improved circuitry
- Furnished with or without front panel
- Three separate a-c input taps
- High quality—low distortion
- Excellent frequency response (20-20,000 cps)
- Low noise level
- Separate plate and filament transformers
- Balanced or unbalanced 500-ohm input
- Combined voltage and VU meter
- For rack or cabinet mounting
- Operates class AB with fixed bias
- Gives maximum tube life
- Excellent output regulation
- Supplies plate and filament power for external loads

APPLICATION

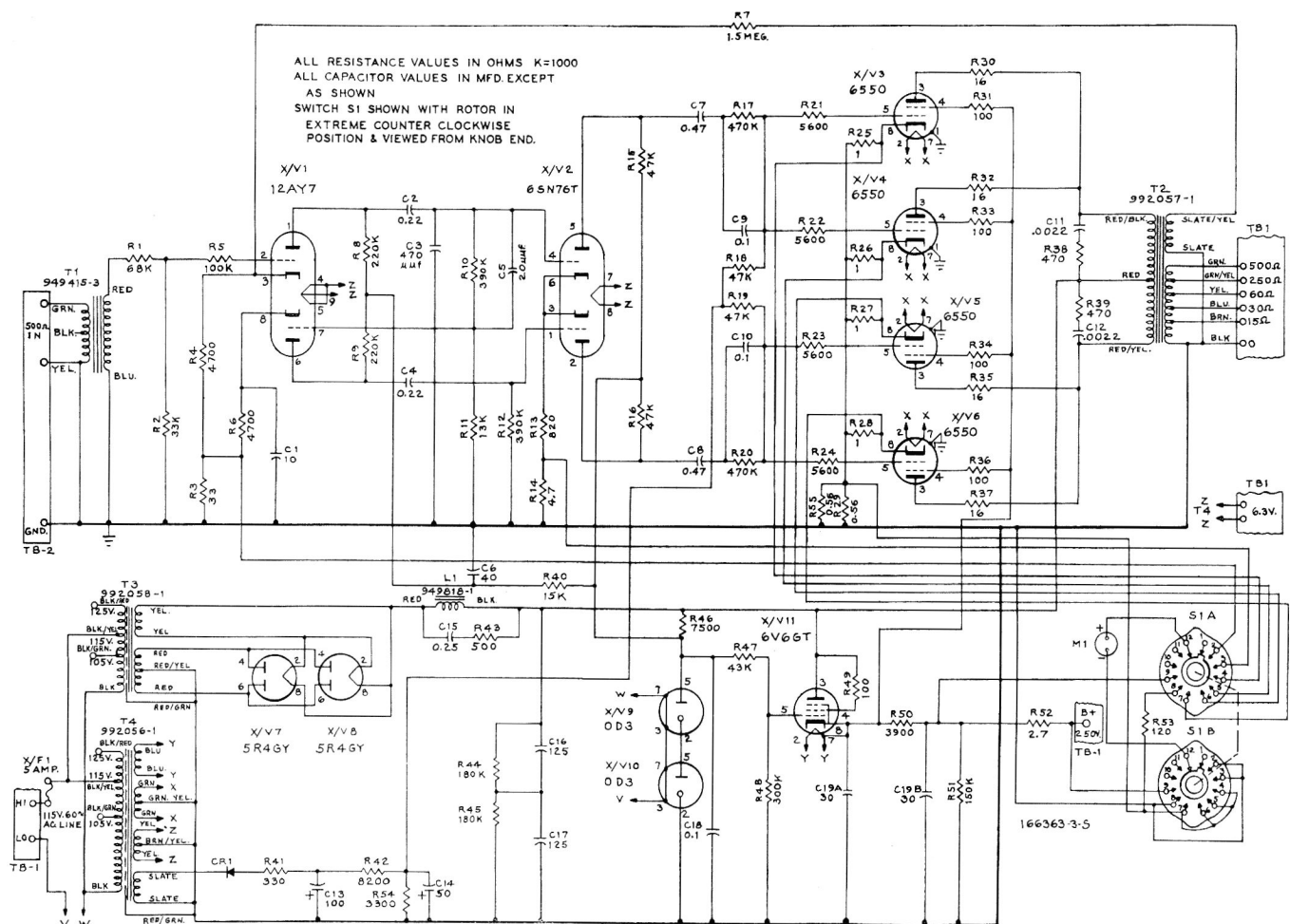
This amplifier has been designed for reliable operation in high power industrial and institutional sound systems such as factory, warehouse, arena, stadium, school, theatre, drive-in, hospital, office building, and many other applications. It is ideal for public address, music, sound re-enforcing and paging systems. Its exceptional frequency response and low distortion characteristics make it an ideal amplifier for wide range reproduction of music. One or more of these amplifiers can be used in a system, when required. When more than one is used, the inputs can be paralleled and driven by the same source.

DESCRIPTION

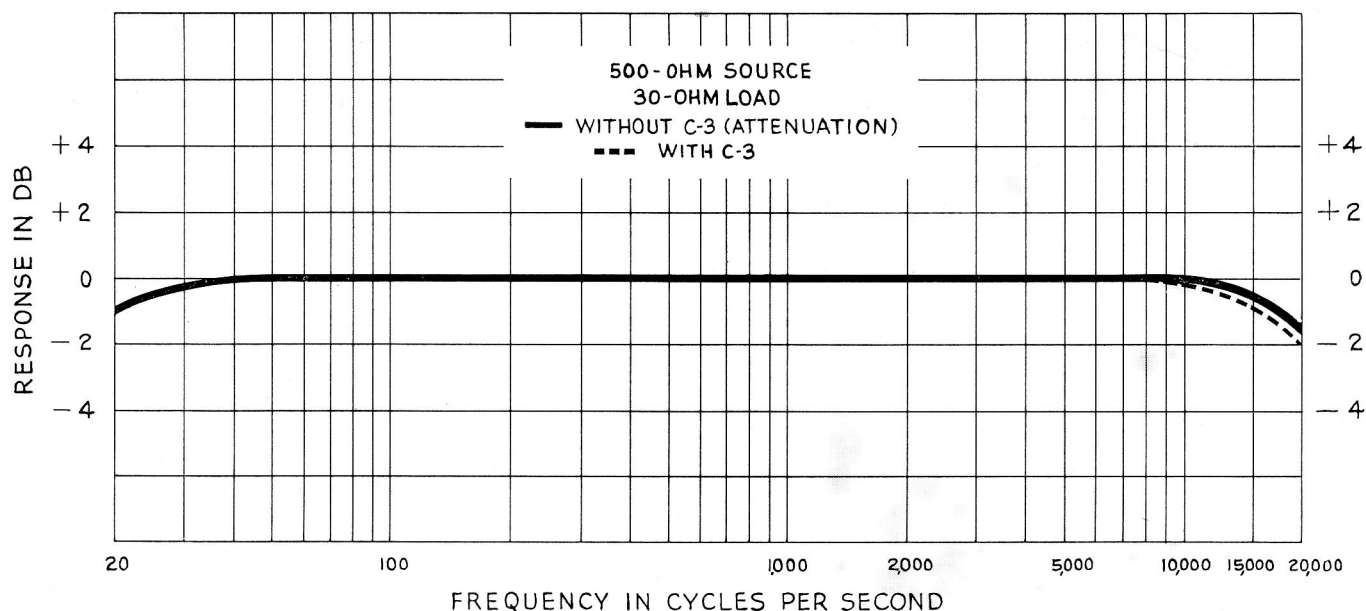
The MI-9289 is a bridging type power amplifier using four type 6550 tubes in push-pull class AB₁ operation. With 16 db of inverse feedback, for frequency stabilization, it is capable of producing a minimum of 150 watts of clean audio power to any load, with matching impedance, when supplied with normal a-c power and bridged across a line with a minimum of 0.22 volt audio input.

The self-contained a-c power rectifier unit operates from 105/115/125 volts, 50/60 cps source. Power consumption of the amplifier is 430 watts. D-C voltage regulation is

Schematic Diagram, MI-9289 Power Amplifier.



R-1, R-2, R-5 Input Pad.



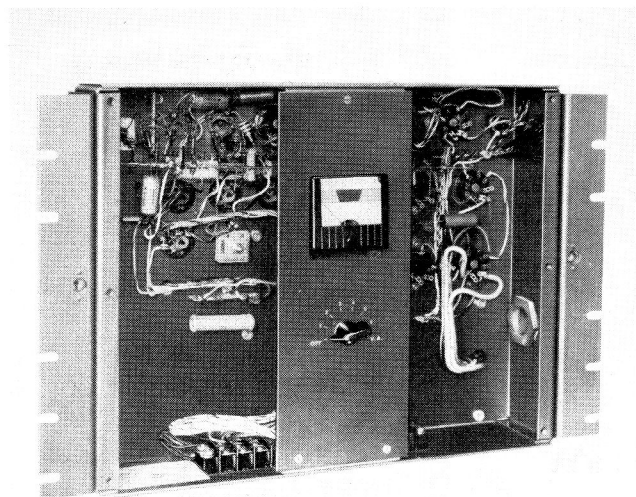
Frequency Response Curve, MI-9289 Power Amplifier.

maintained for the screen elements of the output tubes by means of 2 RCA OD3 voltage regulator tubes and 1 6V6GT. The amplifier is equipped with necessary number of screw type terminals assembled on 2 barrier terminal boards.

The frequency range is approximately flat from 20 to 20,000 cycles with the low end at 20 cycles being down

-.6 db, the high frequency end being down 1.6 db at 20,000 cycles. The amplifier as shipped from the factory has connected in the input circuit a C3 capacitor 470 mmf which has been inserted to give the frequency response required for large outdoor (drive-in) theater installations. This only affects the frequency at the high end dropping it approximately .4 of a db at 1,000 cycles (see curve).

Two sections of front panel removed, exposing sub-chassis wiring.



The amplifier is designed for hinge-mounting (to give instant access to tubes for quick servicing) in a standard 19" rack or cabinet. Due to the hinge mounting it requires 14" of panel space. Due to its feature for service the "tip out" unit is completely front servicing.

A meter is supplied on a center panel with a selector switch which can be used to test the condition of the amplifier tubes.

The meter can also be used when the switch is in #7 position to indicate the power output (as a VU meter). When the amplifier is mounted in an open cabinet or rack an additional front cover is available. This front panel is held in place by two captive spring thumb screws.

SPECIFICATIONS

RCA Number (less tubes).....MI-9289
(Tube Kit)MI-9663

Power Required:

Operating.....105/115/125 volts, 50/60 cycles, 430 watts
Idling205 watts

Power Output and Distortion:

Cycles	Output at 5% Distortion	Distortion at	
		150 watts (Rated Output)	167 watts (Rated Output)
50*	173 watts	1.3%	3.5%
400	179 watts	0.7%	1.5%
1000*	179 watts	0.7%	1.5%
5000	170 watts	1.6%	3.5%
10,000*	163 watts	2.8%	6.0%

* Measurements not required by EIA standards
Source Conditions 500 ohms, with 0.22 volts input
Load Conditions 30 ohm tap; 30 ohm load

Maximum Power Output.....240 watts

Gain at 1000 cps.....62 or 72 db measured from a 500 ohm
source to 30 ohm load at 1000 cycles

Frequency Response.....20 to 20,000 cycles (refer to response curve)

Feedback.....16 db at 1000 cps

Noise Level:

With reference to:

1.0 milliwatt.....-40 dbm

6.0 milliwatt.....-48 db

Signal-to-Noise Ratio.....91 db

Input Impedance.....500 ohms

Input Voltage.....0.22 at 1000 cps for full output with input pad
0.07 at 1000 cps for full output without pad

Output Impedances.....15, 30, 60, 250, 500 ohms

Output Voltage at 150 Watts.....48, 67, 95, 193, 274 volts

Output Voltage at 167 Watts.....50, 70, 100, 204, 289 volts

Output Voltage Regulation.....2.5 db—no load to full load

Number of Stages.....3

Tube Complement:

1 RCA Type 12AY7	1 RCA Type 6V6GT
1 RCA Type 6SN7GT	2 RCA Type 5R4GY
2 RCA Type OD3	4 Type 6550

Fuses:

5 Amperes.....Type 3AG, Slo-Bio

Physical Dimensions.....Length 15 $\frac{5}{8}$ " with rack mounting
brackets 19", Depth 8 $\frac{1}{4}$ "; height 12" with front panel 14"
rack space

Weight (unpacked)68 lbs.

Finish.....Chassis finished light umber gray

Connections.....Two screw type, barrier terminal boards

Accessories

Set of Tubes with Approximately 50% Spare.....MI-9663

Consists of:

6 Type 6550	3 RCA Type OD3
2 RCA Type 12AY7	2 RCA Type 5R4GY
2 RCA Type 6SN7GT	2 RCA 6V6GT

Relay (24 volt dc).....MI-38154-1

Relay (117 volt ac).....MI-38153-1

Panel for Rack or Cabinet.....MI-9789-2

SPECIAL FEATURES:

a. Power available for external loads:

0.6 amperes @ 6.3 volts a-c

10 ma @ 250 volts d-c

b. Designed for 24 hour per day operation

c. VU meter to permit metering the tubes

Checked as per EIA standards

Architects' and Engineers' Specifications

The power amplifier shall be a resistance-capacity coupled, three-stage, 150-watt amplifier unit with self-contained power supply. The frequency range shall be 20 to 20,000 cps. The output tubes shall operate class AB, with fixed bias and voltage set to give maximum tube life and 24-hour a day operation. The amplifier shall be designed for mounting in a 19-inch rack or cabinet taking 14 inches of panel space for complete front servicing.

A meter with a selector switch shall be mounted in the front of the amplifier to be used to test the condition of the amplifier tubes and external 250 volt d-c circuit. The meter, when the switch is in #7 position shall indicate power output. The meter in this position shall read approximately zero ("0") with zero input signal.* The meter scale shall be divided into three portions to indicate low, safe and high values.

The source impedance shall be 500 ohms, balanced or unbalanced, as desired. The output (load) impedances shall be 15, 30, 60, 250 and 500 ohms. The output voltages at 150 watts shall be 48, 67, 95, 193 and 274 volts.

Tube complement shall consist of 1 RCA Type 12AY7, 1 RCA Type 6SN7GT, 2 RCA Type OD3, 1 RCA Type 6V6GT, 2 RCA Type 5R4GY, and 4 Type 6550.

The rated power output of the amplifier shall be 150 watts at less than 1.3% total harmonic distortion at 50 cycles to less than 5% total harmonic distortion at 15,000 cycles. The maximum power output shall be not less than 240 watts at 400 cycles.

The amplifier gain at 1000 cycles from the 500-ohm source to a 30-ohm load shall be 62 db (72 db with input pad removed). The amplifier shall have a minimum of 16 db of inverse feedback, and shall be capable of producing 150 watts of audio power to any load with matching impedance, when supplied with normal a-c power and bridged across a line with a minimum of 0.22 volt audio input. Noise level with reference to 1.0 milliwatt shall be -40 dbm.

All external connections to the amplifier are made at two terminal boards (TB-1 and TB-2) located on the inside lower apron of the chassis. The amplifier shall be fused with a 5 ampere, "Slo-Blo" type fuse. Power supply shall be 105/125 volts 60 cycles a-c, the power transformer being tapped for 105, 115 and 125 volts. Provisions shall be made on terminal board TB-2 to supply 6.3 volts, 0.6 amperes a-c and 250 volts, 10 milliamperes d-c to external devices.

* The amplifier may be provided with a front cover. This is optional and is not required when the amplifier is to be installed in a locked cabinet.



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