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H.H. SCOTT
111 Powdermill Road, Maynard, Mass.

INSTRUCTIONS FOR THE MODEL 208 80-watt STEREOPHONIC LABORATORY POWER AMPLIFIER

The 208 is a precision, dual power amplifier designed for high quality audio applications. It is ideally suited for use with the 355 AM-FM multiplex stereo control center or a good quality preamplifier. The 208 is completely stable under all conditions and may be used with any electrostatic loudspeakers.

INSTALLATION

The 208 can be placed on a shelf, in a cabinet, or in a bookcase. When used with the 355 it may be as close or as far as desired. If you wish, the 208 may actually be clamped to the 355 to make an integrated unit. The two clamps for this purpose are available at no charge by writing to the Parts Dept., H. H. Scott, 111 Powdermill Rd., Maynard, Mass.

Wherever the 208 is placed, adequate provision for ventilation should be made. Never enclose the amplifier completely. If it is placed inside a cabinet, either the back or the front should have openings to allow dissipation of the warm air.

CONNECTIONS

To the Model 355 -- If you plan to use the 208 bolted to the 355, or next to it, the short leads supplied with the 208 are ideal. Connect one cable from the 355 left output to the left 1.5v input on the 208. Connect the other cable from the 355 right output to the right channel 1.5v input on the 208. If you intend to separate the 208 from the 355, use longer audio cables but follow the same connection instructions.

To a Preamplifier -- Shielded audio cables are provided with most preamplifiers. If you are using preamplifiers with over 2.0 volts output connect a shielded cable from the preamplifier's Left or Channel A output to the Left 2.5 volt input on the 208. Connect another cable from the Right or Channel B output of the preamplifier to the right 2.5 volt input on the 208. If you use a preamplifier with 1.0 to 2.0 volt output, follow the same directions except use the 1.5 volt inputs on the 208.

Power Connections -- The power cord should be plugged into any 105 to 125 volt, 50 to 60 cycle, AC source. Do not use with DC. The amplifier can be connected to any of the auxiliary AC outlets on the back of the 355 or of your preamplifier. When connected in this manner, leave the on-off switch of the 208 in the "on" position at all times. When the 355 (or preamplifier) is turned on or off, it will turn the 208 on or off at the same time.

Auxiliary AC outlets -- The 208 has an auxiliary AC outlet. You may connect any units like a turntable or tape recorder to this outlet. When the 208 is turned off, these units will go off as well.

Speakers -- Terminal strips for making speaker connections are located on the back... The one marked Channel A Speaker is for connecting the left speaker (as you face them). The one marked Channel B Speaker is for the right. Below each strip are the numbers 4, 8, 16 and 0. This permits you to match the amplifier output to the impedance of the speaker. Each speaker is rated by its manufacturer at a certain impedance. This information is either marked on the speaker or can be supplied by the dealer.

(Continued Inside)

To make the connections use standard twin lead lamp wire. Simply connect one end of the twin lead wire to the two terminals on the speaker or speaker enclosure, as the case may be. At the other end connect one lead to the "0" terminal and the other lead to the terminal whose number is closest to the value of the loudspeaker impedance. When making the connections, be extremely careful to prevent any strands of wire from one screw accidentally touching a strand on the other screw, as the speaker will not perform properly.

After the speakers are connected, they should be properly phased to give a full stereo effect with good bass. The simplest way to accomplish this is to feed the same monophonic program material simultaneously into both channels. A male speaking voice is ideal for this purpose. Turn the volume to full room level. Stand in front of the two speaker systems and midway between them. Have someone reverse the leads of one speaker. In one position, the voice will sound full and appear to be coming from directly between the two speakers. In the other position, the voice will lose some of its bass, and will appear to be coming from both speakers. The first is the correct position.

SPECIFICATIONS

Maximum power output each channel at 1000 cycles:	Music waveforms	40 watts
	Steady state	35 watts
Maximum total harmonic distortion at rated output		0.5%
Frequency response for 35 watts steady state at less than 2.0% total distortion		20 to 20,000 cycles ±0 db.
Maximum usable power output at 20 cycles:	Music waveforms	42 watts
	Steady state	36 watts
Power bandwidth at rated distortion (IHFM method)		below 19 cycles to * above 25,000 cycles (limits of test equip)
Intermodulation distortion		below 0.5%
Hum and noise		80 db. below rated power

(These characteristics are measured at a line voltage of 117 volts rms and line frequency of 60 cycles per second. No significant changes of characteristics should be experienced for normal variations of line voltages or a line frequency of 50 cycles per second).

Range of line voltage and frequency	105-125 volts, 50-60 cycles
Power consumption -- 117 volts at 60 cps (A.C. only)	200 watts

* All H. H. Scott amplifiers and preamplifiers incorporate a low frequency rolloff which becomes full operative below 20 cycles. This is designed to prevent overload of the output stage and the loudspeaker due to subsonic rumble frequencies and record eccentricity. This means that the full power of the amplifier can be concentrated into the audible range.

GENERAL SERVICE NOTES

1. Check the tubes, particularly those in the power output stage and the rectifier every year. If the tubes are outside the manufacturer's ratings or show gas, they should be replaced. Gassy tubes may damage other components of the circuit.

2. When the amplifier is being checked yearly, clean the tubes of dust so that they may radiate their heat more effectively.

3. If at any time the hum or noise increases noticeably, check the power tubes. This symptom is often an indication of gassy tubes.

4. If the amplifier blows fuses frequently, check the line voltage. If it rises above 125 volts, drop the line voltage by means of an auto-transformer or place a voltage regulator transformer between the amplifier and the line. If the line voltage is correct, check the amplifier itself. Do not use fuse sizes other than the fuse size specified.

5. D.C. Balance Adjustment:

   Equipment needed - Oscilloscope and/or AC VTVM, 16 ohm resistive load of adequate wattage (Some wirewound resistors have considerable residual inductance and these should be avoided).

   The balance pot for each output stage is located between the output tubes for that stage. These controls should be adjusted when the output tubes age appreciably or are replaced. To set these controls use the following procedure.

   (a) Connect the 16 ohm resistor across the output terminal of the channel under test.

   (b) Connect the oscilloscope and/or VTVM across the resistor, and turn the horizontal selector of the scope to "LINE".

   (c) Remove the phase inverter tube 6U8/6GH8 of the output stage under test.

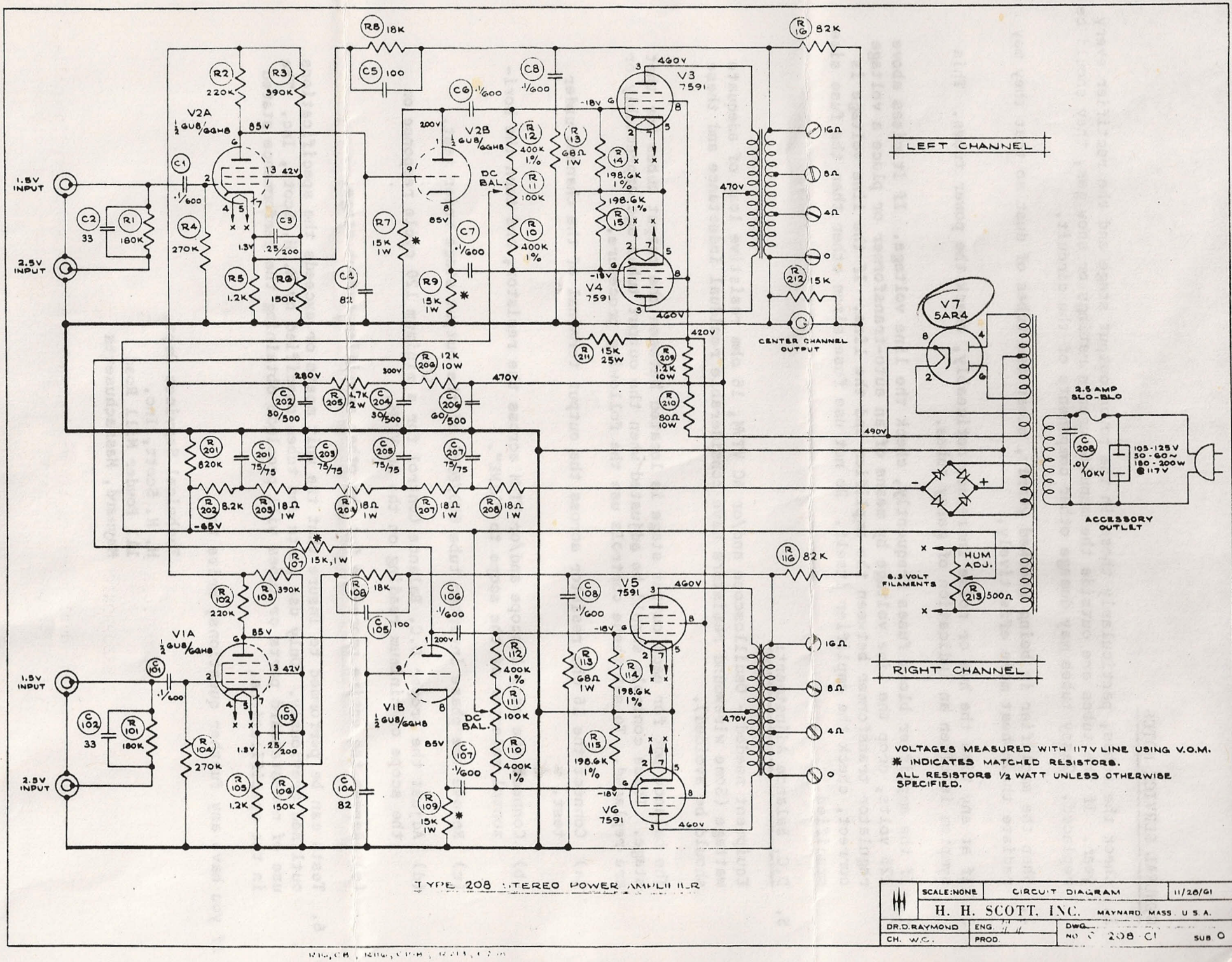
   (d) Adjust the proper D.C. Balance Control for a minimum 120 cycle response on the scope or minimum reading on the AC VTVM.

   (e) Repeat the entire procedure for the other amplifier output stage.

6. Tests can be performed to insure that the unit meets or exceeds the specifications outlined previously. Only use parts and tubes specified by H. H. Scott, Inc. The use of non-standard parts or tubes will preclude obtaining the performance stated in the specifications.

If you have any further questions, write to:

Technical Services Dept.
H. H. Scott, Inc.
111 Powder Mill Road
Maynard, Massachusetts



TYPE 208 STEREO POWER AMPLIFIER

	SCALE: NONE	CIRCUIT DIAGRAM	11/26/61
	H. H. SCOTT, INC. MAYNARD, MASS. U.S.A.		
DR. D. RAYMOND	ENG.	DWG. NO. C-208 C1	SUB 0
CH. W.C.	PROD.		

C-208-C1