Standel®
Solid State Music Systems
P. O. BOX 709
4918 DOUBLE DRIVE
EL MONTE, CALIFORNIA 91734
686-0850 (213) 442-0301

STANDEL SERVICE INFORMATION

1968

BASS AMPLIFIERS
SI15B, I12B, I15B, SA15B, A20B
A12B, A15B, A10B

S-148-2
13C168

STANDEL SERVICE INFORMATION

CIRCUIT DESCRIPTION

A modular design concept has been utilized throughout the amplifier in order to provide a unit that may be serviced with a minimum of individual component measurements.

The blue modules are high input impedance pre-amplifiers which amplify the signal from the instrument to a level which is compatible with the tone and volume control circuitry. The tone and volume control components are mounted directly on the terminals of the associated controls.

The output signals from the tone controls of the two channels are resistively mixed by R 11 and R 12 and the composite signal is fed into the green module which serves as an interstage amplifier. It provides the necessary signal gain and impedance level to drive the power output section.

The components of the power output section, which include a drive transistor (Q1), a drive transformer, the power output transistors, and all associated components, are mounted directly on the heatsink assembly.

The power amplifier section is operated Class B in a single-ended push-pull configuration, which is similar to a balanced bridge with the speaker connection at approximately zero voltage. The static current is very low until the transistors are switched into a high current condition by the signal applied to the base. Each transistor conducts on alternate signal cycles through the speaker to the ground. Since the internal resistance of the transistor in a conduction state is negligible, the speaker becomes the limiting factor. For this reason, extension speakers should not be used.

The power supply consists of a stepdown isolation transformer, a rectifier bridge, a capacitive input filter, and resistance capacitance filtering as required for the various stages of the amplifier.

TROUBLE SHOOTING

Signal tracing methods may be used to isolate the trouble to a module or component. The signal levels indicated at various points on the circuit should result from a 50 mv RMS input of approximately 300 cycles/second.

The DC levels indicated at various points on the power supply are for no signal conditions, and will average 2 to 5 volts less when the amplifier is operating at full power output.

CROSSOVER DISTORTION

In some cases under lower power line voltage conditions, the amplifier will develop low level distortion which sounds very much like a bad speaker.

The problem will generally occur at line voltages below 115V when the amplifier is played at low volume levels.

This can be eliminated by replacing resistors R19, R20, R21, and R22 as shown on the schematic diagram. Replacement kit must be obtained from the Standel Company. When ordering replacement kit, please send the model and serial number of the amplifier involved.

PARTS REPLACEMENT AND BIAS SETTINGS

If it is necessary to replace the power drive transistor or related components, it will be necessary to readjust R15 as indicated on schematic. Should it be necessary to replace the power transistors, matched sets should be obtained from the factory and silicon grease should be used between the transistor and heatsink to provide maximum heat transfer. Care should be taken to position the teflon insulating spacers correctly to avoid shorting the transistors to the chassis.

Replacements for faulty modules or components may be ordered from the factory. When ordering replacement parts, please specify the Standel part number of the required parts, as well as the model and year of the unit for which they are required.

If further information is required, contact factory Service Department at the following address:

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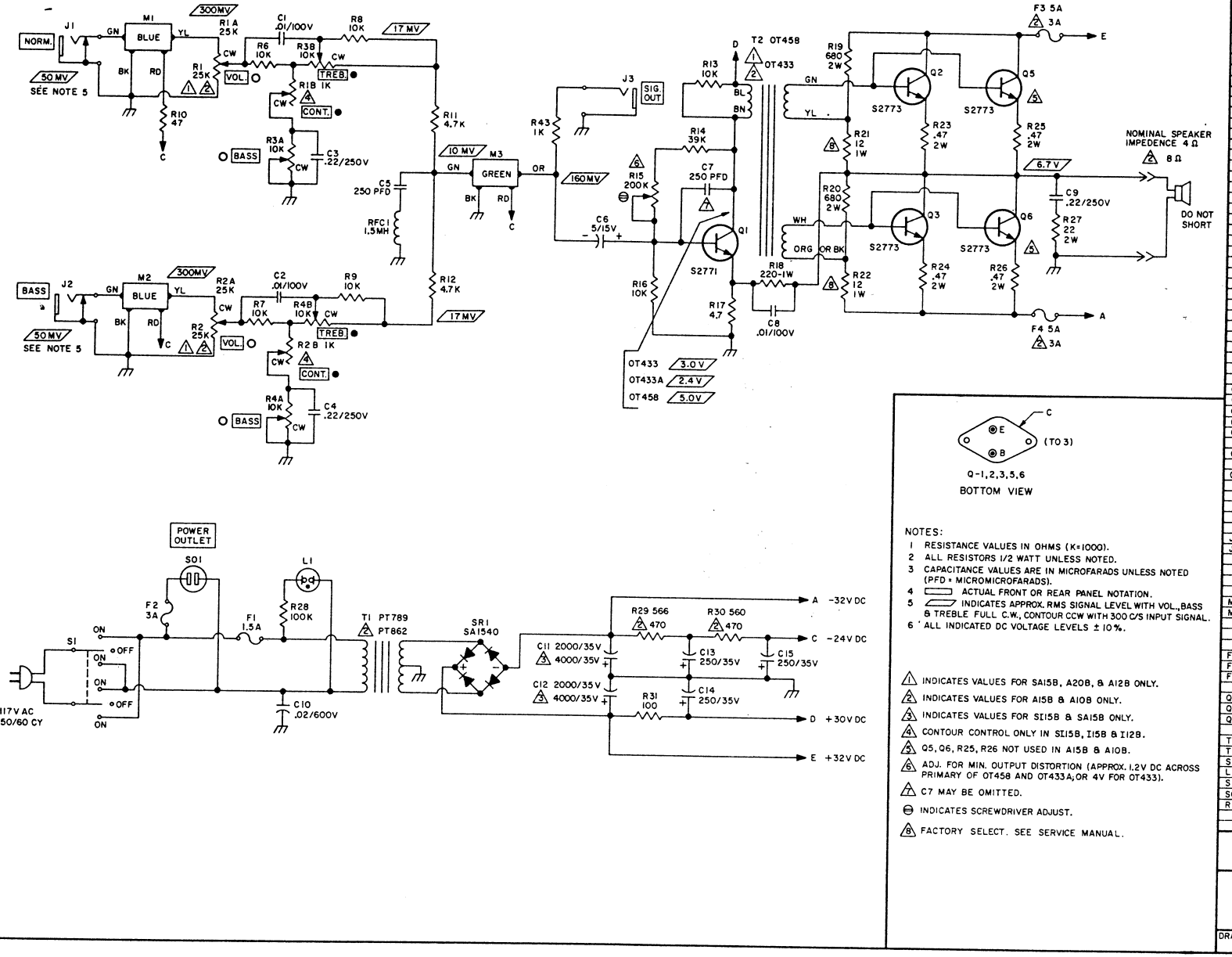


Q-1,2,3,5,6

BOTTOM VIEW

NOTES:

1. RESISTANCE VALUES IN OHMS (K=1000).
2. ALL RESISTORS 1/2 WATT UNLESS NOTED.
3. CAPACITANCE VALUES ARE IN MICROFARADS UNLESS NOTED (PFD = MICROMICROFARADS).
4. ▭ ACTUAL FRONT OR REAR PANEL NOTATION.
5. ▱ INDICATES APPROX. RMS SIGNAL LEVEL WITH VOL., BASS & TREBLE FULL C.W., CONTOUR CCW WITH 300 C/S INPUT SIGNAL.
6. ALL INDICATED DC VOLTAGE LEVELS ± 10%.

△1 INDICATES VALUES FOR SA15B, A20B, & A12B ONLY.

△2 INDICATES VALUES FOR A15B & A10B ONLY.

△3 INDICATES VALUES FOR SI15B & SA15B ONLY.

△4 CONTOUR CONTROL ONLY IN SI15B, I15B & I12B.

△5 Q5, Q6, R25, R26 NOT USED IN A15B & A10B.

△6 ADJ. FOR MIN. OUTPUT DISTORTION (APPROX. 1.2V DC ACROSS PRIMARY OF OT458 AND OT433A; OR 4V FOR OT433).

△7 C7 MAY BE OMITTED.

⊖ INDICATES SCREWDRIVER ADJUST.

△8 FACTORY SELECT. SEE SERVICE MANUAL.

ITEM	STANDEL PART NO.	DESCRIPTION
R1,2 A-B	10-28	DUAL CONCENTRIC POT
△1 △2 △4	10-4	POT
R1,2		
R3,4 A-B	10-18	DUAL CONCENTRIC POT
R6,7,8,9	5-25	RESISTOR
R10	5-4	
R11,12	5-24	
R13	5-25	
R14	5-32	
R15	10-6	VARIABLE RESISTOR
R16	5-25	RESISTOR
R17	5-3	
R18	5-78	-1W
R19,20	5-73	-2W
R21,22	5-75 △8	-1W
R23,24	5-1	-2W
R25,26	5-1 △2 OMIT	
R27	5-74	-2W
R28	5-38	
R29,30	5-19 △2 5-18	
R31	5-5	
R43	5-22	
C1,2	4-16	CAPACITOR
C3,4	4-12	
C5	4-19	
C6	4-9	ELECTROLYTIC CAPACITOR
C7	4-19	CAPACITOR
C8	4-16	
C9	4-12	
C10	4-15	
C11	4-3 △3 4-1	ELECTROLYTIC CAPACITOR
C12	4-4 △3 4-2	
C13,14,15	4-6	
J1,2	15-1	CLOSED CIRCUIT JACK
J3	15-2	OPEN CIRCUIT JACK
M1,2	22-1A	BLUE MODULE
M3	22-2	GREEN MODULE
F1	17-6	3 AG SLO-BLO FUSE
F2	17-5	3 AG FUSE
F3,4	17-101 △2 17-58	3 AG PIGTAIL FUSE
Q1	7-14	DRIVER TRANSISTOR
Q2,3, Q5,6	7-12 △1 7-13 △2 OMIT	OUTPUT TRANSISTOR
T1	2-1 △2 2-8	POWER TRANSFORMER
T2	2-6 △1 2-6	DRIVER TRANSFORMER
SR1	7-11	BRIDGE RECTIFIER
LI	13-2	PILOT LIGHT
S1	8-1	DPDT POWER SWITCH
SO1	9-28	POWER OUTLET
RFC1	2-15	R.F. CHOKE

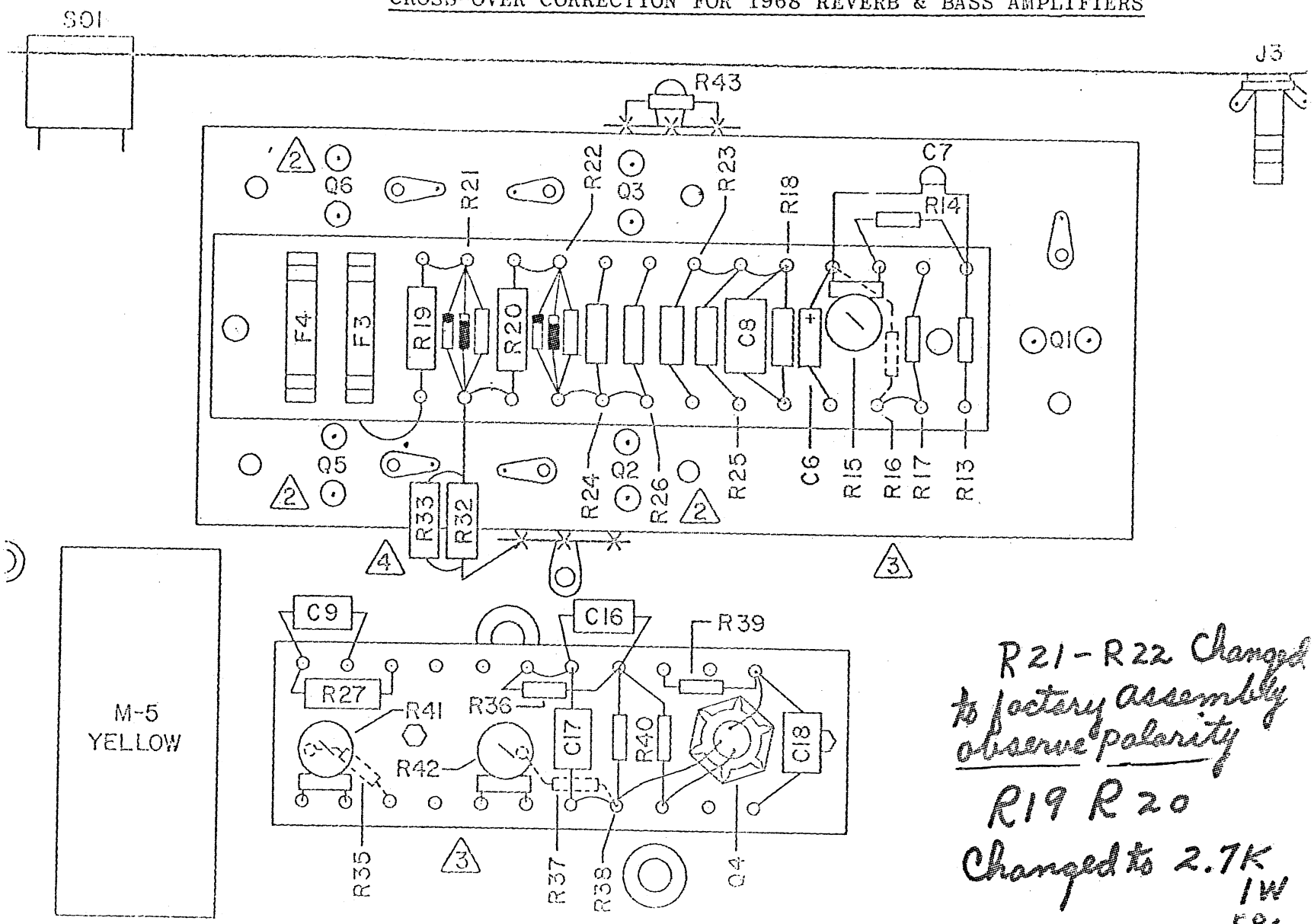
Standel.

SCHEMATIC DIAGRAM
1968 BASS AMPLIFIERS
SI15B, I12B, I15B, SA15B, A20B, AI2B, A15B, A10B

DRAFTSMAN	CHECKED	APP	DATE	
I.D.S.	M.J.Q.	R.E.B.	11-27-67	ID002

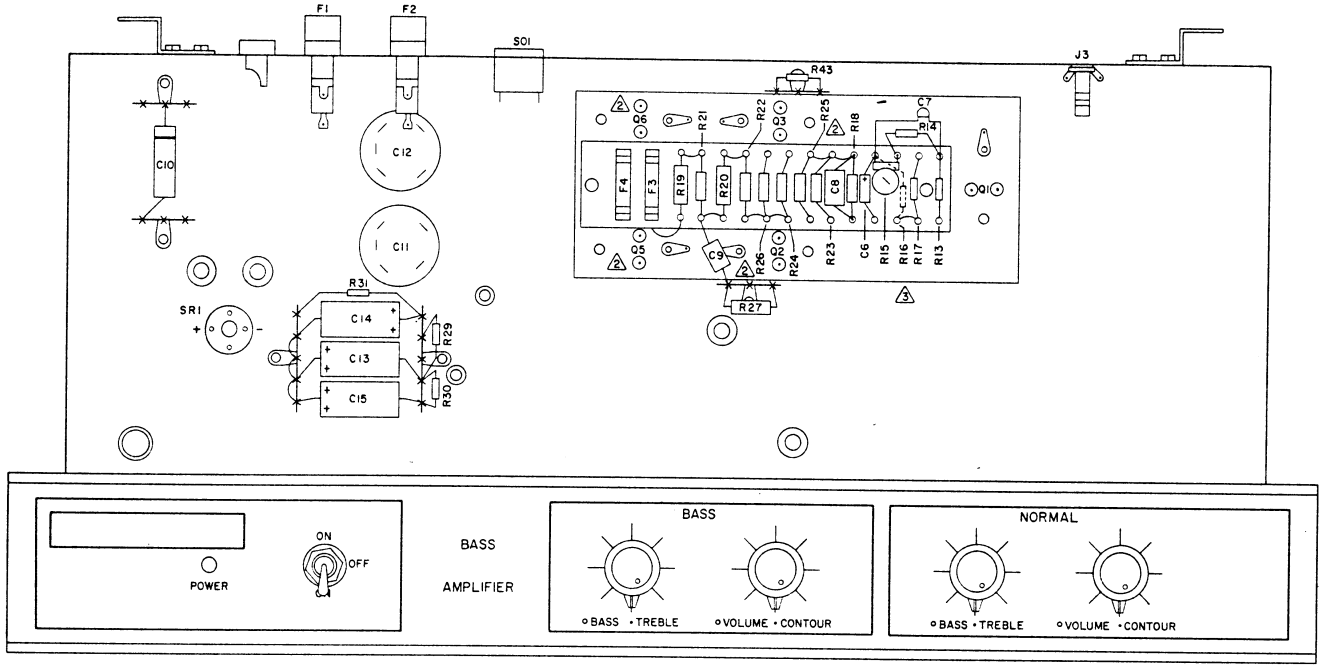
5-148-19-2A
3/c 268

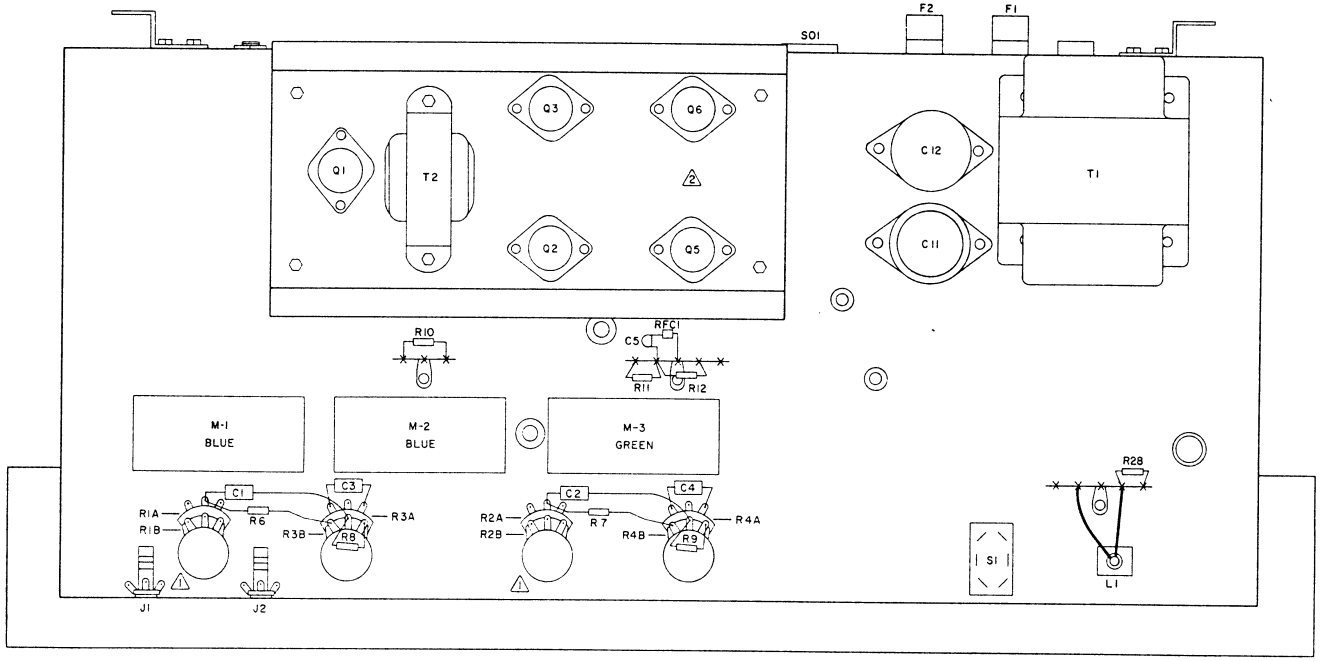
CROSS-OVER CORRECTION FOR 1968 REVERB & BASS AMPLIFIERS



R21 - R22 Changed to factory assembly observe polarity

R19 R20 Changed to 2.7K 1W 5%





NOTES:

1. CONTOUR CONTROL (R1B, R2B) USED ONLY IN SI 15B, I 12B & I 15B.
2. Q5, Q6, R25 & R26 OMITTED IN A15B & A10B.
3. R16 LOCATED UNDER BOARD.

Standel.

PICTORIAL DIAGRAM
1968
BASS AMPLIFIERS
SI15B, I12B, I15B, SA15B
A20B, A12B, A15B, A10B

DRAFTSMAN	CHECKED	APP	DATE	
H.M.M.	M.J.Q.	R.E.B.	12-14-67	1E002