

# Standel.

Solid State Music Systems

P.O. BOX 709

4918 SANTA ANITA AVENUE

EL MONTE, CALIFORNIA 91734

686-0850 (213) 442-0301



## STANDEL SERVICE INFORMATION

1967

- Artist Reverb and Studio Models  
SA15R, A20R, A12R, A15R, A10R,  
S20, S15, S10, S12

## STANDEL SERVICE INFORMATION

### PRE-AMPLIFIER SECTION

For simplicity of maintenance, the pre-amplifier is divided into several encapsulated modules, each containing a separate circuit designated by color code and designed for rapid replacement.

Signal tracing methods may be used to isolate trouble in any one of the modules, which may then be replaced without time consuming voltage and component tests.

The following is a module description and color code. The blue modules are high impedance input amplifiers. The green module is an interstage mixer amplifier. The yellow is the reverberation amplifier, and the red module is the tremolo oscillator and modulator.

Defective modules should be returned to the factory for replacement.

### DRIVER AND POWER SECTION

The power amplifier section consists of a driver transistor, driver transformer, and two power output transistors direct coupled to the speaker.

The driver transistor, driver transformer, and main terminal board are mounted on the power amplifier heat sink. If it is necessary to replace the driver transistor, disconnect the leads and unscrew the top of the heat sink. Silicon grease should be applied to the new transistor before it is installed in the heat sink. It may be necessary to reset the collector current to 30 M.A. by adjusting the value of R14 and measuring the drop across the driver transformer primary.

If the adjustment of R14 requires a resistance less than 47000 ohms the beta of the transistor is too low for satisfactory operation and a new transistor must be selected.

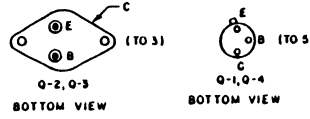
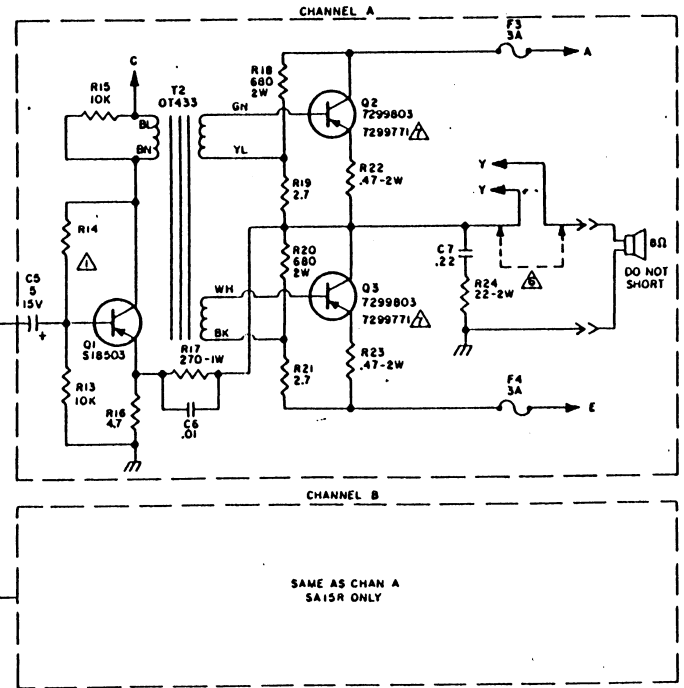
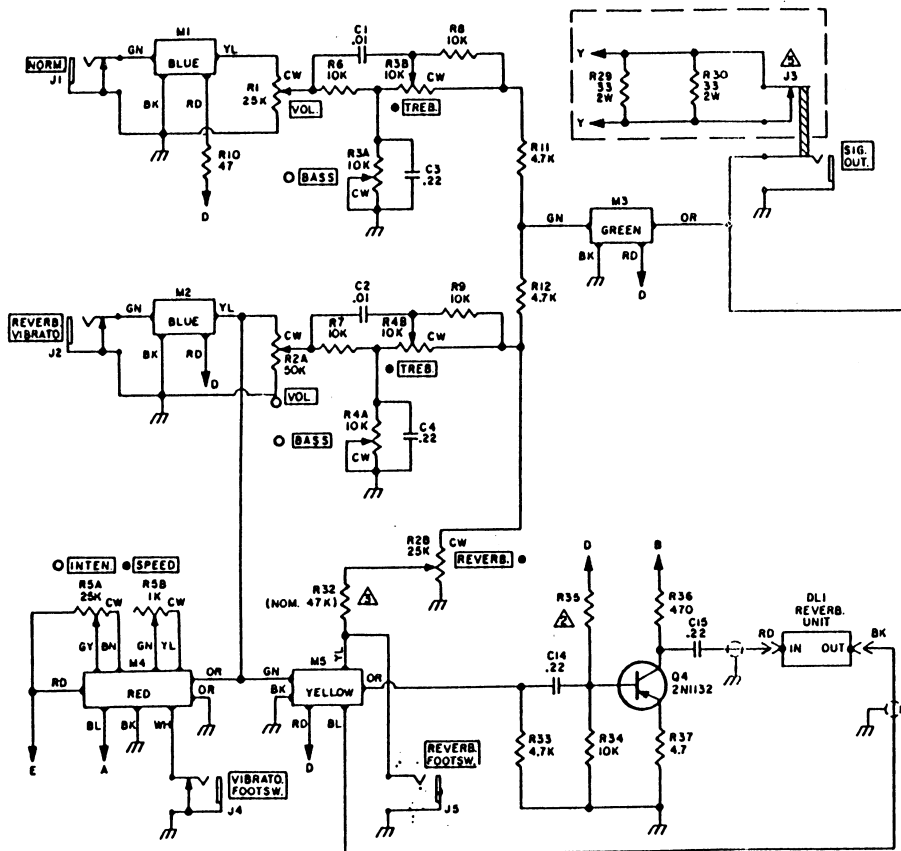
The power amplifier section is operated Class B in a single-ended push-pull configuration, which is similar to a balanced bridge with the speaker connection at approximately zero voltage. The static current is very low until the transistors are switched into a high current condition by the signal applied 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 resistance becomes the limiting factor, and in this case a speaker impedance of less than 8 ohms will allow excessive current to flow which will damage the transistors. For this reason extension speakers should not be used.

The usable life of the transistor is indefinite as long as the temperature, voltage and current ratings are not exceeded. When the amplifier is operated at high power levels for long periods of time, it is possible to accumulate heat on the heat sinks more rapidly than it can be dissipated. Under these conditions the customer should be instructed to use the power switch as a standby, and turn the amplifier off at regular intervals. The amplifier has been operated in factory tests at full undistorted sine wave power for periods of one and one-half hours without damage. This should be considered a maximum condition.

When it is necessary to replace the power transistors, matched sets should be obtained from the factory and silicon grease should be used between the transistor and heat sink to provide maximum heat transfer. Care should be taken to position the Teflon insulating spacers correctly to avoid shorting the transistors to the chassis.

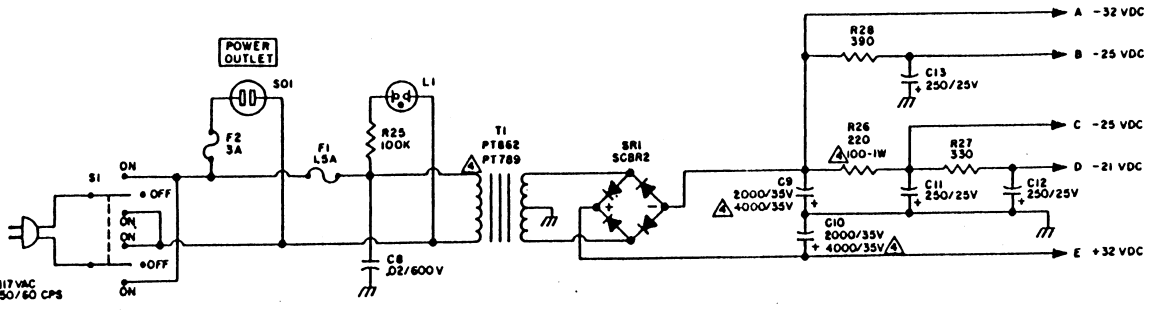
If further information or replacements parts are required, contact the factory service department at the following address:

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P.O. BOX 709  
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EL MONTE, CALIFORNIA 91734  
484-0850 (213) 442-0301



- NOTES:
- 1 RESISTANCE VALUES ARE IN OHMS. (K=1000).
  - 2 CAPACITANCE VALUES ARE IN MICROFARADS.
  - 3 ALL RESISTORS 1/2 WATT UNLESS NOTED.
  - 4 VOLTAGES ± 10% MEASURED WITH VTVM.
  - 5 DC VOLTAGES MEASURED WITH NO SIGNAL APPLIED.

- △ ADJUST FOR 30 MA COLLECTOR CURRENT (4.0VDC ACROSS XFORMER PRI).
- △ ADJUST FOR 21 MA COLLECTOR CURRENT (10 VDC ACROSS 470 Ω LOAD RES.).
- △ ADJUST FOR CORRECT MAXIMUM REVERB VOL.
- △ APPLIES ONLY TO SAISR MODEL.
- △ SWITCH TYPE JACK USED ONLY ON STUDIO MODEL LINE.
- △ JUMPER INCLUDED ON ARTIST LINE.
- △ USED ONLY ON STUDIO MODEL LINE.

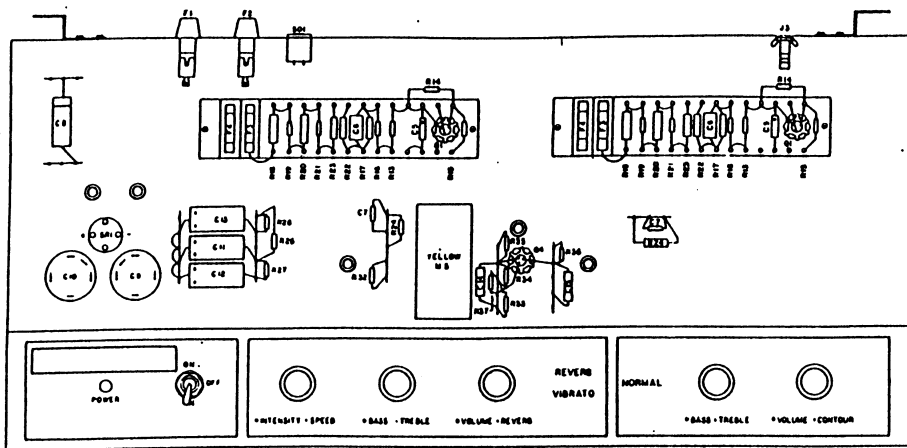


ITEM	STANDEL PART NO.	DESCRIPTION
R1	10-4	
R2 A-B	10-3C	POT
R3,4 A-B	10-10	DUAL CONCENTRIC POT
R5 A-B	10-2B	
R6,7,8,9	5-25	RESISTOR
R10	5-4	
R11,12	5-24	
R13	5-25	
R14	FACTORY SELECT	
R15	5-23	
R16	5-5	
R17	5-6B	
R18	5-7,3	-1W
R19	5-2	
R20	5-73	-2W
R21	5-2	
R22,23	5-1	-2W
R24	5-74	-2W
R25	5-3B	
R26	5-10	
R27	5-64	
R28	5-14	
R29,30	5-72	-2W
R32	FACTORY SELECT	
R33	5-24	
R34	5-29	
R35	FACTORY SELECT	
R36	5-18	
R37	5-3	
C1,2	4-16	CAPACITOR
C3,4	4-2	
C5	4-9	ELECTROLYTIC CAP
C6	4-16	CAPACITOR
C7	4-12	
C8	4-15	
C9	4-3	ELECTROLYTIC CAP
C10	4-4	
C11	4-2	
C12,13	4-6	
C14,15	4-12	CAPACITOR
J1,2	15-1	CLOSED CIRCUIT JACK
J3	15-2	OPEN CIRCUIT JACK
J4	5-1	SPECIAL JACK
J5	5-2	
M1,2	22-1	BLUE MODULE
M3	22-2	GREEN MODULE
M4	22-4	RED MODULE
M5	22-3	YELLOW MODULE
F1	17-6	3AG SLO-BLO FUSE
F2	17-5	3AG FUSE
F3,4	17-5B	3AG PIGTAIL FUSE
Q1	7-3	DRIVER TRANSISTOR
Q2,3	7-2	7-1 OUTPUT TRANSISTOR
Q4	7-4	
T1	7-1	2-8 POWER TRANSFORMER
T2	2-5	DRIVER TRANSFORMER
S1	8-1	DPDT POWER SWITCH
SRI	7-8	BRIDGE RECTIFIER
L1	13-2	PILOT LIGHT
S01	9-1	AC OUTLET
DL1	56-1	REVERB UNIT

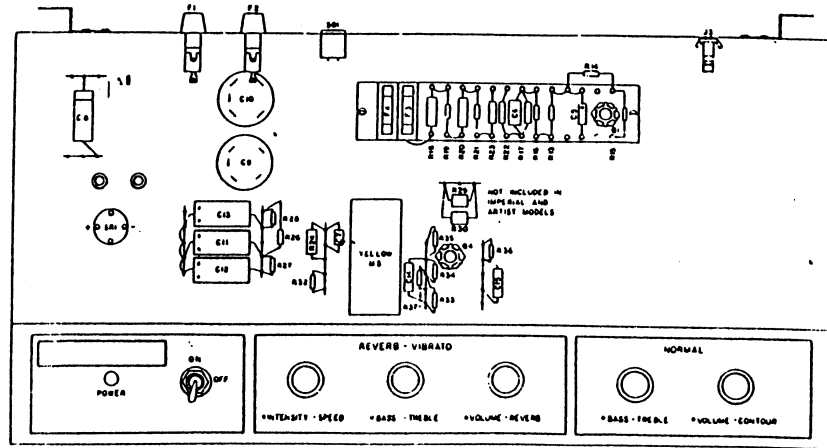
Standel.

SCHEMATIC DIAGRAM  
 1967  
 ARTIST REVERB & STUDIO MODELS  
 SAISR AZOR AISR AISR AISR  
 SZOR SISR SISR SISR

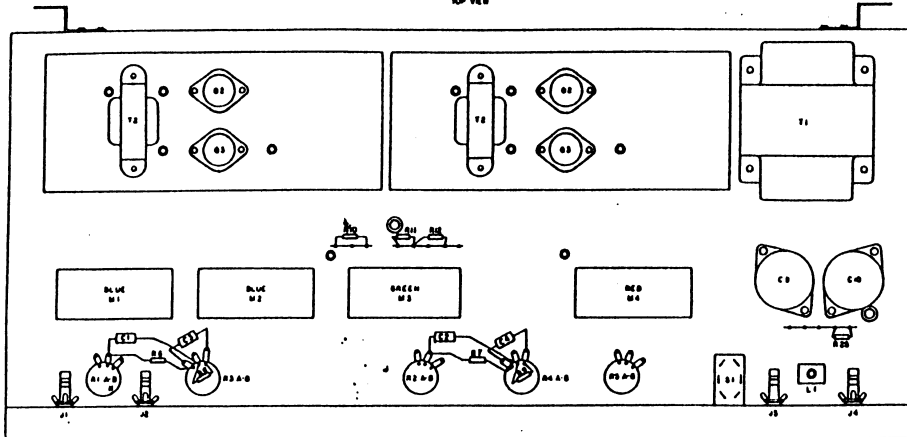
DRAFTSMAN	CHECKED	APPROVED	DATE
105	M J Q	REB	9-27-67



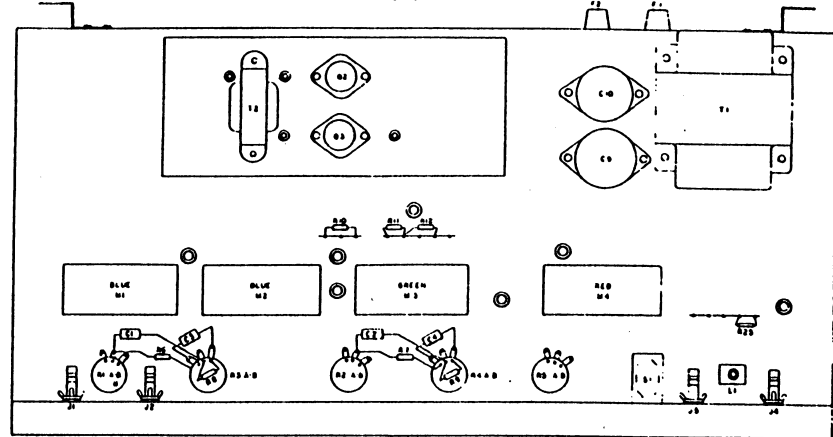
FRONT TOP VIEW



FRONT TOP VIEW



FRONT BOTTOM VIEW



FRONT BOTTOM VIEW

THE STADEL CO			
25 MONTE CALIF			
PICTORIAL DIAGRAM			
NO. 1			
SUPER IMPERIAL & SUPER ARTIST			
REVERB MODELS			
REF. MARK	VALUE	QUANTITY	DATE
W-0	W-0	AS B	11-21-57

THE STADEL CO			
25 MONTE CALIF			
PICTORIAL DIAGRAM			
NO. 2			
IMPERIAL, CUSTOM, ARTIST & STUDIO			
REVERB MODELS			
REF. MARK	VALUE	QUANTITY	DATE
W-0	W-0	AS B	11-21-57