STANDEL SERVICE INFORMATION

1967

- Artist Reverb and Studio Models
S20, S15, S10, S12

S-147-3
2C127
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:

[Address]