



Fender Musical Instruments Corp.
1130 Columbia Street, Brea, California 92621 USA 714-990-0909

April 6, 1987

Dear Fender/Sunn Service Dealer:

We are pleased to provide service documentation for new models in our ongoing product line. This package includes schematics and parts lists for the following models:

SUNN STINGER 35 SELF CONTAINED GUITAR AMPLIFIER (9909950-350)
SUNN SPL 7000 LOGIC CONTROLLED POWER AMPLIFIER (9909970-000)
SUNN PLC-816 PROGRAMMABLE/MIDI LIGHT CONTROLLER (9909900-420)
FENDER CHAMP 12 SELF CONTAINED GUITAR AMPLIFIER (21-6000-000)
FENDER 2235 PROFESSIONAL SOUND POWER AMPLIFIER (70-2235-000)

Also included are three newly revised technical service bulletins for the Sunn SX series powered mixers. They are:

FIELD CHANGE NOTICE 6-003 (6/8 CHANNEL) THERMAL TRACKING
FIELD CHANGE NOTICE 6-004 (4 CHANNEL) THERMAL TRACKING
FIELD CHANGE NOTICE 6-005 (4/6/8 CHANNEL) R.F. INTERFERENCE

Please notice the revision date (on the first page) of each FCN and replace earlier versions in your file saving only those with the latest dates. Due to requests from the field we are offering all parts needed for a given mod. as a kit under a single part number. Example: to order a kit for FCN 6-004 call the Fender parts department and order part number KFC 6-004. You may of course still opt to use parts you have off the shelf and order only what you need. That is why all parts are still listed individually by part number as well as by one mod. kit number.

Certain models in the Sunn line have Fender counterparts. For this reason please use your Fender schematics for the following:

FOR SUNN:	USE FENDER:
STINGER 12 (9909950-120)	SIDEKICK 15 (23-1000)
STINGER 100 (9909951-000)	STAGE LEAD II (23-1400)
STINGER BASS (9909952-000)	SIDEKICK 35 BASS (23-1600)

Technical consultation for service or application queries is offered from 8 A.M. to 3 P.M. daily. Call 1-

Very truly yours,

Bill Thomas
Bill Thomas
National Service Manager

Enclosure(s)



FENDER MUSICAL INSTRUMENTS
1130 Columbia Street
Brea, California 92621

TECHNICAL SERVICE BULLETIN
NOVEMBER 18, 1986
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FIELD CHANGE NOTICE 6-003

EFFECTIVITY:

SUNN part number 9909971-510 SX6350 and 9909971-520 SX8350 powered mixers, early production.

REASON FOR CHANGE:

To provide better thermal tracking thereby increasing stability and reliability.

MATERIAL REQUIRED:

- (1) 990-22-0067-0 transistor, GE67A with heatsink
- (1) 990-22-5023-0 transistor, Motorola MJ15023
- (1) 990-22-0042-0 transistor, Motorola MPSW42
- (1) 990-22-0092-0 transistor, Motorola MPSW92
- (2) 990-17-0301-0 resistors, 300 ohm, 10W
- (2) 990-13-0052-0 resistors, 5.6 ohm, 1W, 5%
- (1) 990-75-0500-0 wire, 4", 24AWG, red
- (1) 990-75-0501-0 wire, 4", 24AWG, green
- (1) 990-75-0502-0 wire, 4", 24AWG, black
- (4) 990-43-0093-0 washer, nylon shoulder
- (4) 990-43-0018-0 nut, 4/40
- (4) 014174-000 screw, 4/40

PARTS KIT:

Order parts kit KFC 6-003

MODIFICATION PROCEDURE:

Prepare the GE67A transistor for installation by following these two steps: (an RCA SK9143 is an acceptable substitute for GE67A).

1. Increase the mounting hole in its heatsink from 0.140" to 0.156" using a 5/32" drill.
2. Using 4" lengths of 24AWG wire, strip and tin 3/16" from each end. Solder one end of the red wire to the collector, one end of the black wire to the emitter and one end of the green wire to the base. Slide sleeving over the solder joints.

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MODIFICATION PROCEDURE (CONTINUED):

Replace Q17 MJ15016 with a Motorola MJ15023. Mount the heatsink of the GE67A directly on a mounting tab of Q17. Use thermal grease. Remove bias transistor Q13 TIP 30B and install the flying leads from the GE67A into the appropriate holes from which you removed the TIP 30B. Follow the color code, emitter - black, base - green and collector - red.

Replace Q5 2N4888/2N5401 with a Motorola MPSW92. Replace Q14 with a Motorola MPSW42. NOTE: The MPSW92 PNP and the MPSW42 NPN are a complimentary pair. You may use an MPSU60 for Q5 and an MPSU10 for Q14 instead but only if you replace them in pairs i.e. MPSW92 paired with MPSW42 or MPSU60 paired with MPSU10.

Replace the nylon hardware used to mount the TIP transistors with steel hardware and nylon shoulder washers.

Remove 220 ohm 10W resistor R23 and replace it with a 300 ohm 10W resistor. NOTE: Resistor R3 must be replaced and moved to the back (non-components) side of the circuit board to keep its radiated heat from affecting nearby signal transistors. Remove 220 ohm 10W resistor R3 and replace it with a 300 ohm 10W resistor mounted 1/4" off the P.C. board on the back of the board.

Change R17 and R47 from 15 ohms to 5.6 ohm 1 watt resistors.

NOTE: THIS BULLETIN DESCRIBES MODIFICATIONS RESULTING FROM THREE ENGINEERING CHANGES. THE CHANGES WERE PUT INTO PRODUCTION AT DIFFERENT TIMES SO IT IS VERY IMPORTANT TO EXAMINE THE MIXER CAREFULLY TO ENSURE ALL CHANGES HAVE BEEN MADE. CHANGE ONE ADDED THE GE67A BIAS TRANSISTOR AND THE 300 OHM 10 WATT RESISTORS. CHANGE TWO ADDED THE MJ15023 FOR Q17 AND THE MPSW42/MPSW92 FOR Q5/Q14. CHANGE THREE ADDED THE 5.6 OHM 1 WATT RESISTORS FOR R17 AND R47.

BIAS SET-UP:

Run the amplifier into a 4 ohm load (or speaker) for 5 minutes with no signal input. Use a variac and set the line voltage to 120 VAC for this. Shut down and remove the load. Run the amplifier in an idle state (no load, no input signal) and adjust bias control R42 for a drop of 350 millivolts across 5.6 ohm resistor R17 or R47. If easier, you may adjust R42 for 350 millivolts from the base of any output transistor to the speaker line.