

BOSS BF-1 SERVICE NOTES

SPECIFICATIONS:

Power Requirements:	12.5V 30mA DC	LFO Sweep Rate:	20S - 100mS
Input Impedance:	220K ohms		(0.05Hz - 10Hz)
Output Impedance:	Designed to work into 600 ohms or higher	Maximum Signal Level:	0dBm
Gain:	Unity 1	S/N Ratio:	More than 80dB
Frequency Response:	20Hz - 20KHz	Dimensions:	115W x 65H x 205Dmm
Time Delay Range:	0.5mS - 16mS	Weight:	650 g

BOSS AC ADAPTOR (OPTION)



BOSS ACA-220
FOR 220V AC



BOSS ACA-240
FOR 240V AC



BOSS ACA-120
FOR 117V AC

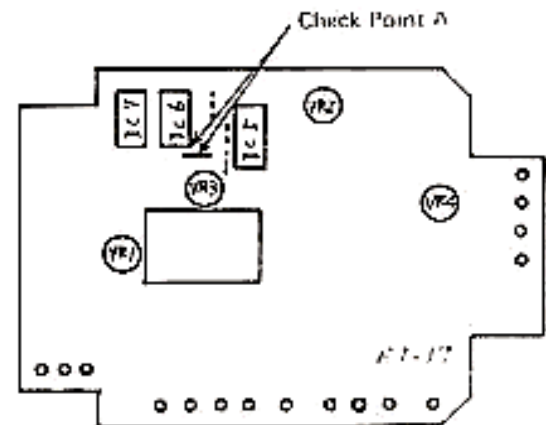


PARTS LIST

066-016	Case No. 16	151-017C	PCB Assy ET-17C
065-021	Cover No. 21 case bottom	052-245C	PCB less parts ET-17C
072-164	Panel No. 164 control	020-079	IC SAD-1024 A
072-165	Panel No. 165 BOSS BF-1	020-041	IC TC-4013 P
075-997	Name Plate No. 997 jack OUTPUT	020-040	IC TC-4011 P
075-998	Name Plate No. 998 jack INSTRUMENT	020-064	IC uPC-4558 C
076-116A	Marking No. 116A AC adaptor		Transistors
130-166	Carton No. 166	017-021	2SC-900 F
120-052	Nut No. 52 largest spacer	017-012	2SA-733 Q
		017-072	2SD 571 L
016-068	Knob TK 1140 grub screw fixing	017 016	2SK-30A GR PBT
009-004	Jack TJ-241-2 (1-2 closest)		Diode 1S-2473
009-019	Jack X-G9242 AC adaptor	018-068	Diode 05Z-11 A zener
111-025	Rubber Foot G 14	016-025	Thermistor SDT-250
001-181	Switch SS-030 push		Capacitors
	Potentiometers	032-107	22uF 10V tantalum
028-429	VM10A15S50KA S-15 50KA	032-033	ECEA16V10 10uF 16V electrolytic
028-449	VM10A15S50KB S-15 50KB	032-038	ECEA18V220 220uF 16V electrolytic
028-463	VM10A15S100KC S-15 100KC	032-010	ECEA6V220 220uF 6V electrolytic
	*EVH90A, EVH00A, EVH04A and V16L4N of S shaft are substitutable	032-070	ECEA50VR47 0.47uF 50V electrolytic
030-462	SR-19R 4.7K trimmer	035-092	MHK100V1uF 1uF 100V polystyrene
030-467	SR-19R 22K trimmer		Resistors of 1/4W, Ceramic and Mylar Capacitors are substituted
030-471	SR-19R 100K trimmer		
030-473	SR-19R 220K trimmer		

CHECKING AND ADJUSTMENT

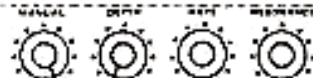
NOTE: Before attempting any electrical check or adjustment, it is necessary to check the condition of DC supply. The voltage at 2SD-571L emitter should be 10 - 11.5V.



CLOCK Frequency Adjustment

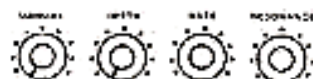


Check Point: A (IC6 pin NO. 1)
Adjust VR1 for 40 KHz (25 μ S).

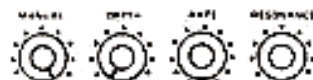


Frequency is 1 - 1.2MHz (0.1 - 0.8 μ S) with MANUAL at max.

BBD Bias Adjustment



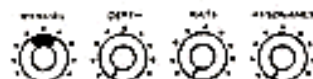
Check Point: RESONANCE NO.3 Terminal
Test Signal: 500Hz 0dBm (2.2Vpp) sine into INSTRUMENT jack
Turn VR2 and stop it where positive top is onset of saturation.



If distorted, go back to the above step with VR2 slightly turned in the reverse direction of earlier.

Repeat the above steps until the both waveforms at extremes became distortion-free.

MIXING Balance Adjustment



Check Point: OUTPUT Jack
Test Signal: 800Hz -10dBm (0.7Vpp) sine into INSTRUMENT jack

Turn MANUAL Knob slowly around midpoint and set it where the deepest dip is obtained at OUTPUT.

Fine-tune Test Signal for a further dip.
Adjust VR3 for -50dBm \pm 5dBm output.

RESONANCE Adjustment



Connect the OUTPUT into an amplifier.

Set VR4 for onset of self-oscillation.

While turning MANUAL from min. to max, make sure that no oscillation occurs at any point.

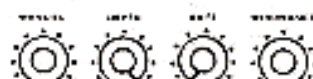


Test Signal: Guitar Sound

Give a staccattos by picking the guitar.

The sound should sustain about one second.

LFO Sweep Check



Check Point: Check Point A

Make sure that CLOCK Frequency sweeps from 1MHz (1 μ S) - 40kHz (25 μ S), -5% - +15%, and sweep time is 20S \pm 10%.



Check Point: RATE terminal NO.3

Sweep Time is 100ms \pm 10%.

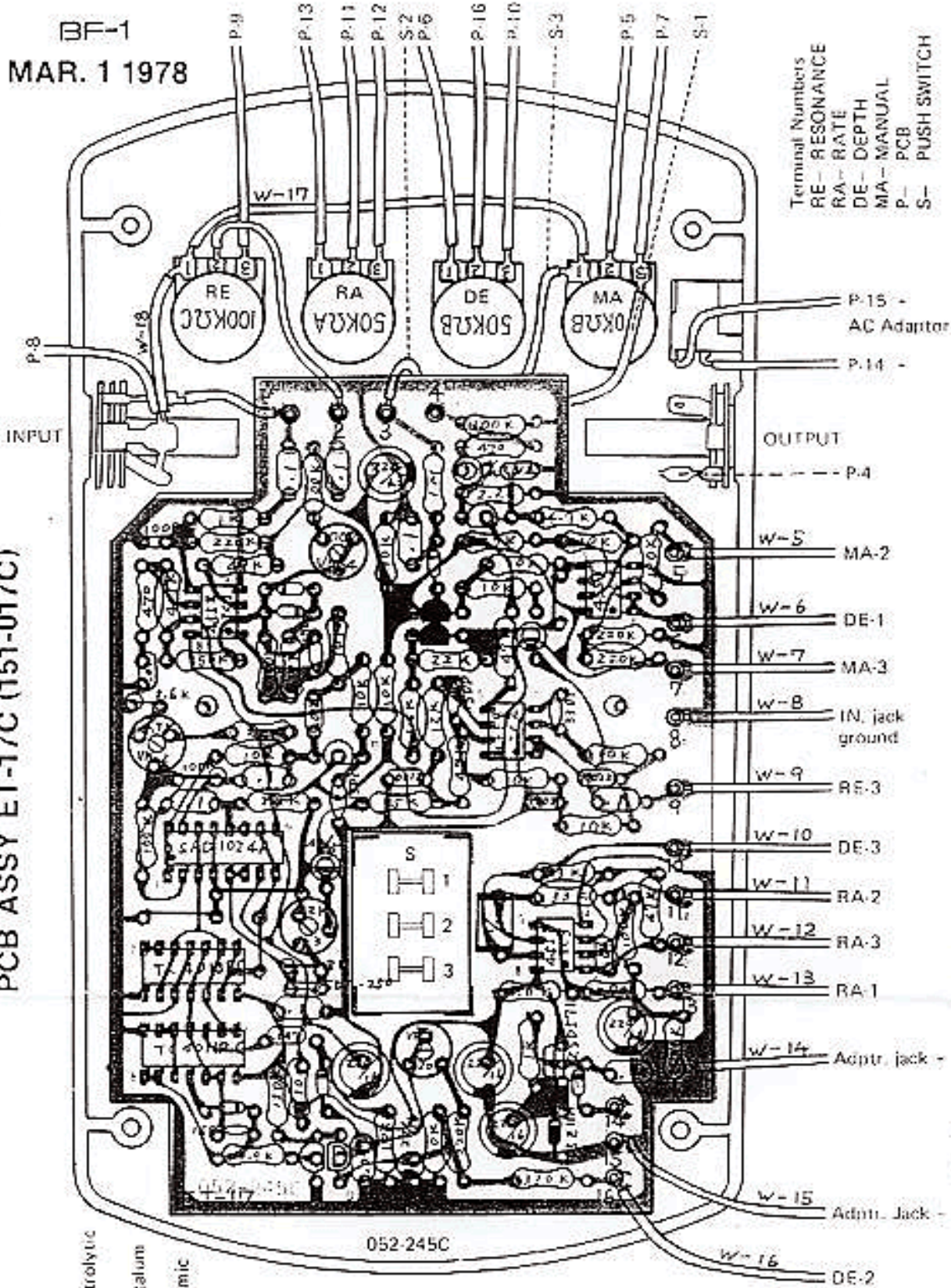
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PCB ASSY ET-17C (151-017C)

TOP VIEW

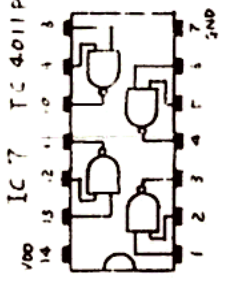
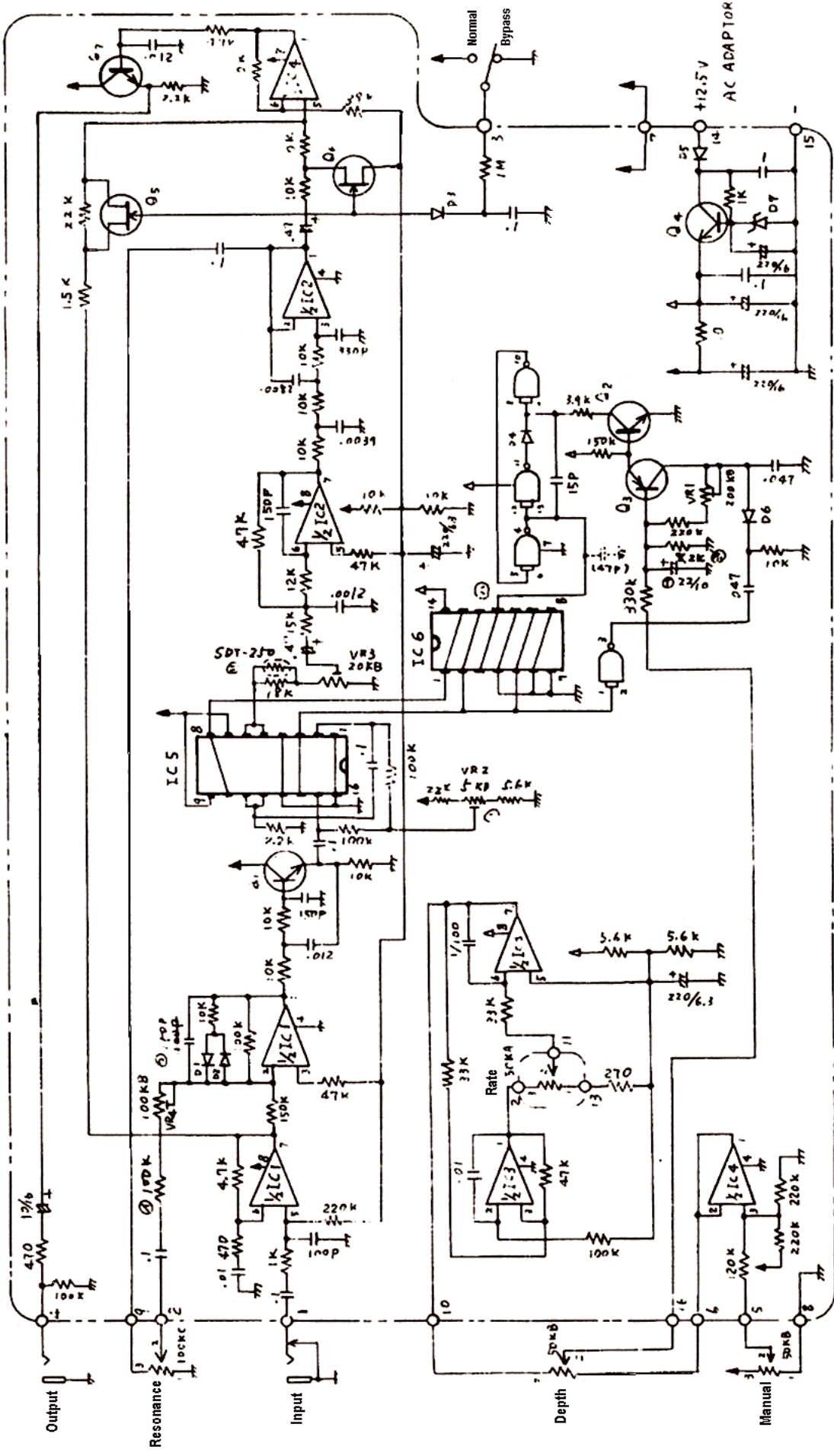
- Capacitor Electrolytic
- Capacitor Tantalum
- Capacitor Ceramic

- 25C9001(F)
- 25A733(O)
- 25K30A(IGR)
- IS2473
- 05Z11A



Terminal Numbers
RE - RESONANCE
RA - RATE
DE - DEPTH
MA - MANUAL
P - PCB
S - PUSH SWITCH

Resistor 1/4W ± 5%
 Capacitor Mylar ± 10%



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|--------|-----------|-----------|----------|-------|--------|
| IC 1~4 | µPC4558C | Q 1, 2, 7 | 2SC900F | D 1~6 | IS2473 |
| IC 5 | SAD-1024A | Q 3 | 2SA733Q | D 7 | 05Z11A |
| IC 6 | TC4013P | Q 4 | 2SD571L | | |
| IC 7 | TC4011P | Q 5, 6 | 2SK30AGR | | |