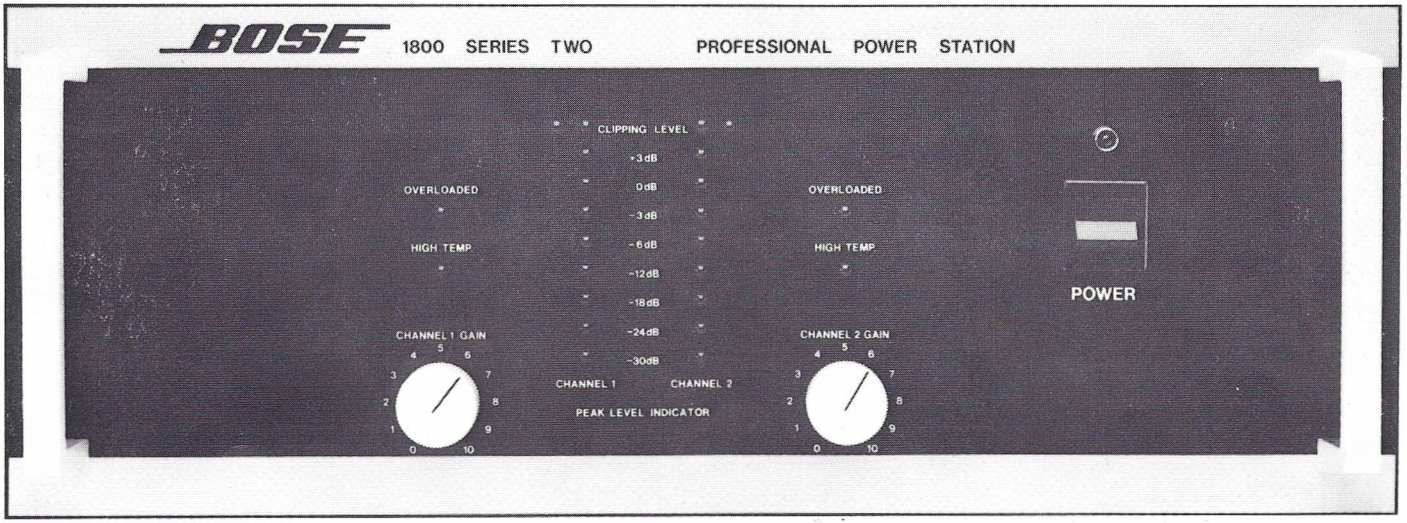
BOSE

1800™

INSTRUCTION MANUAL



Please read this manual before operating your BOSE 1800 power station

Your new Bose 1800 power staion is designed to provide years of of trouble frewe performance.

Observing these few precaustions will ensure proper operation.

- o All connections should be made to the power amplifier with the power OFF.
- o Never connect the output of one channel to that of another amplifier OUTPUT CHANNEL.
- o Connect the power cord only to the correct voltage mains as indicated on the rear of the amplifier.
- o Do not remove the ampfilier's cover. Ampfiliers may not be covered under warranty if they are tampered with.
  Potentially lethal voltages exist within the ampfilier. Refer all service work to an authorised BOSE service station.
- o Ensure that the mains power cord is connected according to the correct colour-coding.
  BROWN/RED-LIVE
  BLUE/BLACK-NEUTRAL
  GREEN/YELLOW-GROUND
- o Since each unit can draw up to 10 amps of current it is essential that heavy guage mains cable is used and that total mains loading does not exceed the rating of the supply point.

The BOSE 1800 power stations have individual power supplies for each channel. They combine excellent ruggedness and reliability with an excellent performance and protection.

Description

The Bose 1800 power station is designed with two low noise, high speed op-amps per channel, followed by a heat-sink-mounted bias circuit, to provide precise temperature compensation; and a full complementary output stage, featuring ten 200 watt transistors in each channel (2000 watt total dissipation capability per channel).
The power and drive-transistors are mounted on two heatsinks with "SIL-PADS" for superior long life heat transmission.
The "SIL-PAD" is a new product, specially developed for this purpose and gives a better heat transmission and has a much longer life than the conventional method with mica-isolators and silicon paste.
Experience has proved, that after a period of use, ordinary silicone paste dries out with the result that heat transmission reduces strongly and power devices are "blown" without even delivering their maximum power.
The "SILL-PAD" prevents such a breakdown.
A2-speed temperature operated ultra low noise fan is built in for optimal cooling. With specially designed aluminium profiles, the BOSE 1800 power station is very solid and really capable of handling heavy road conditions.

Front panel

The BOSE 1800 power station is provided with 2 LED Bars showing the peak output power in use, and in addition to this you will find LED-indication, showing the cause of trouble or misuse in various situations.
Besides the usual clip-indication, each channel has an LED for:
a) heavy overload/speaker short-circuit,
b) overheating.

In case, a or b, the LEDs illuminate, indicating that the specific protection is working and the amplifier delivers no powerinto the load until the situation is within acceptable limits again.
The BOSE 1800 power station also protects your loud-speakers against switching peaks or D.C. current.
Approximately 3-5 seconds after switching on the mains power, the load is coupled to the ampfilier. When switching off mains, in case of mainsfailure or D.C. at the output, the load is decoupled very quickly.

Rear panel
On the rear panel you will find two inputs per channel.
a) One three pin XLR for balanced and unbalanced mode (N.B. Pin 3 hot).
b) One phone jack, only for unbalanced mode.
When using the phone jack, pin two of the XLR will automatically be connected to ground.
If desired, signal ground can be separated from chassis ground, by switching ground lift.
With the XLR input to a single channel connected, that same channel's phone jack input can function as a low level signal feed to link with another ampfilier or as a feed to the unused amp channel for mono operation. This is not the same arrangement as for bridged mono operation. See diagram.
The Bose 1800 Series II may therefore be used for
Stereo or twin channel mono operation (normal mode)
Stereo or twin channel mono link operation (with other amplifiers)
Bridged mono single channel operation (8 ohms only).

Important note:
The XLR pin assignments used are the same as in other Bose label products (pin 3 hot). they are not the same as the IEC (pin 2 hot) assignments used by some other manufactures equipment. But this can be changed easily if needed.

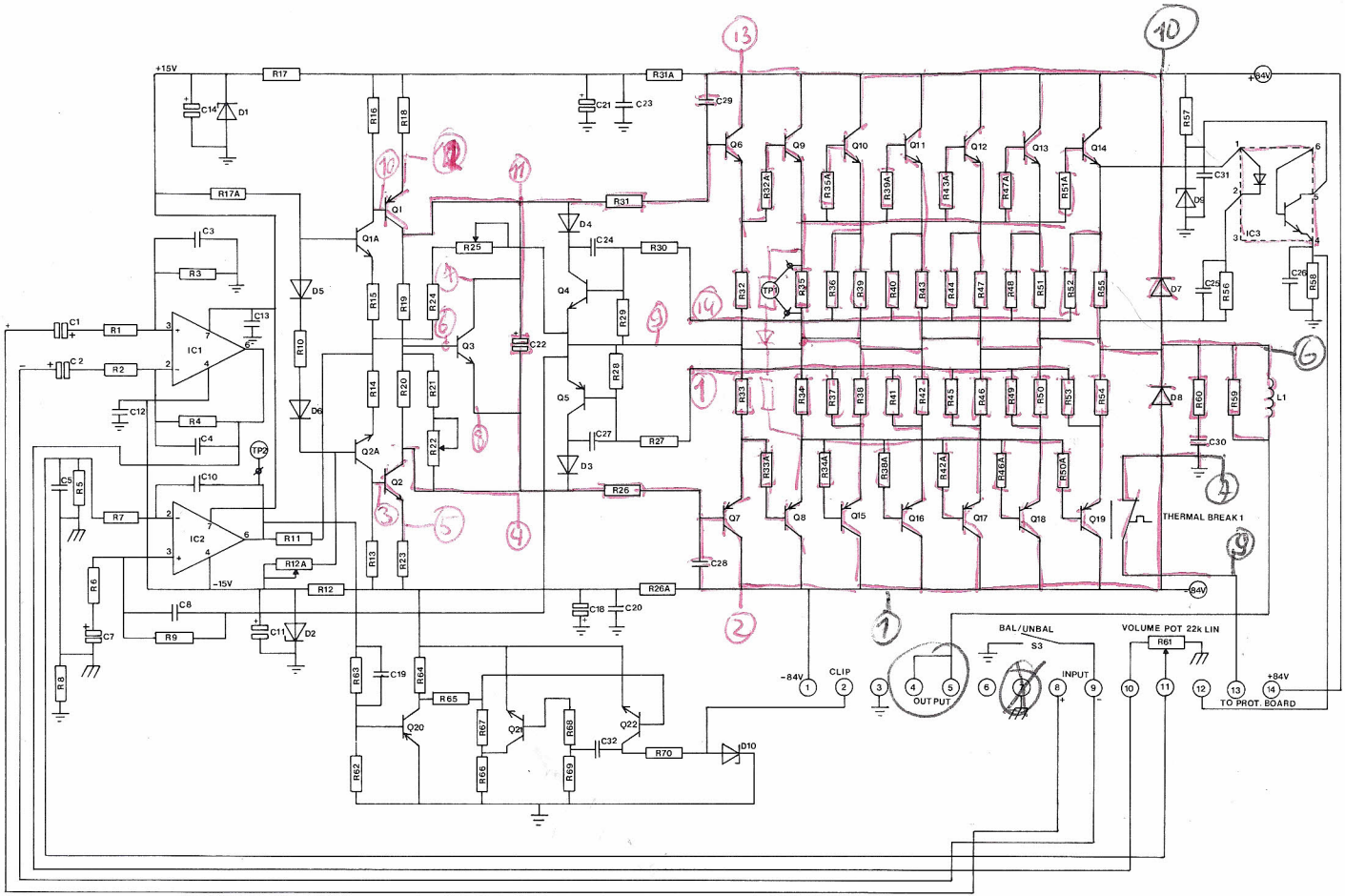
Bridged mode operation
Output:
Connect speakers across the two red bind posts.
Channel II output is +.
Do not connect the speakers to ground!
Minimum load impedance should be **8 Ohms.**

Input:
Connect input signal cord to pin 3 (hot) at input channel II and also to pin 2 (cold) at input channel 1.
Connect shield of input signal cord to pin 1 and 2 of channel II and also to pin 1 and 3 of channel 1.
Set ground lift 'off".
Set both potentio-meters at maximum volume.

Specifications: BOSE 1800 power station

Output power	- 2×280 W 8 Ohms/R.M.S. 2×440 W 4 Ohms/R.M.S.
Frequency range	- 10 Hz - 20 kHz, ± 1 dB
T.H.D.	- better than 0,08% 30 V in 8 Ohms 20 Hz - 20 kHz.
TIM	- better than 0,03%
IMD(SMPTE)	- better than 0,03%
Crosstalk	- better than - 90 dB
Input Impedance	- 15 kOhms
Input sensitivity	- 1,55 V for max. output
Damping factor	- better than 230:1, 1 kHz in 8 Ohms
Slew rate	- better than 30V/u sec.
Protection against	- switching peaks, heavy overload, short circuit DC and overheating
Inputs	- balanced XLR/unbalanced phone jack
Cooling	- 2-speed temperature operated low noise fan
Power supplies	- 2×500 VA toroidal transformers
Housing/dimensions	- 19" rackmounting 13" deep 4 U high

Bose reserves the right to change specifications without prior notice.



BOSE 1800-2
AMPLIFIER BOARD

NO.	CAPACITORS
C 1	10UF 35V TANTALUM
C 2	10UF 35V TANTALUM
C 3	33PF CERAMIC
C 4	33P CERAMIC
C 5	220PF CERAMIC
C 7	1000UF 16V ELECTROLYTIC
C 8	120P
C10	33PF CERAMIC
C11	100NF 250V
C12	100NF 250V
C13	100NF 250V
C14	100NF 250V
C18	10U 35V ELECTROLYTIC
C19	120PF CERAMIC
C20	22UF 100V
C21	10U 35V
C22	10U 16V TANTALUM
C23	22U 100V
C24	47NF 250V
C25	15NF 400V
C26	680NF 100V
C27	47NF 250V
C28	47PF CERAMIC
C29	47PF CERAMIC
C30	100NF 250V
C31	100NF 250V
C32	470NF 100V

NO.	DIODES
D 1	15V ZENER DIODE
D 2	15V ZENER DIODE
D 3	1N4148
D 4	1N4148
D 5	1N4148
D 6	1N4148
D 7	1N4005
D 8	1N4005
D 9	16V ZENER DIODE
D10	16V ZENER DIODE

NO.	INTEGRATED CIRCUITS
IC1	NE5534N OP AMP.
IC2	TLO71CP OP AMP.
IC3	4N26 OPTO COUPLER.

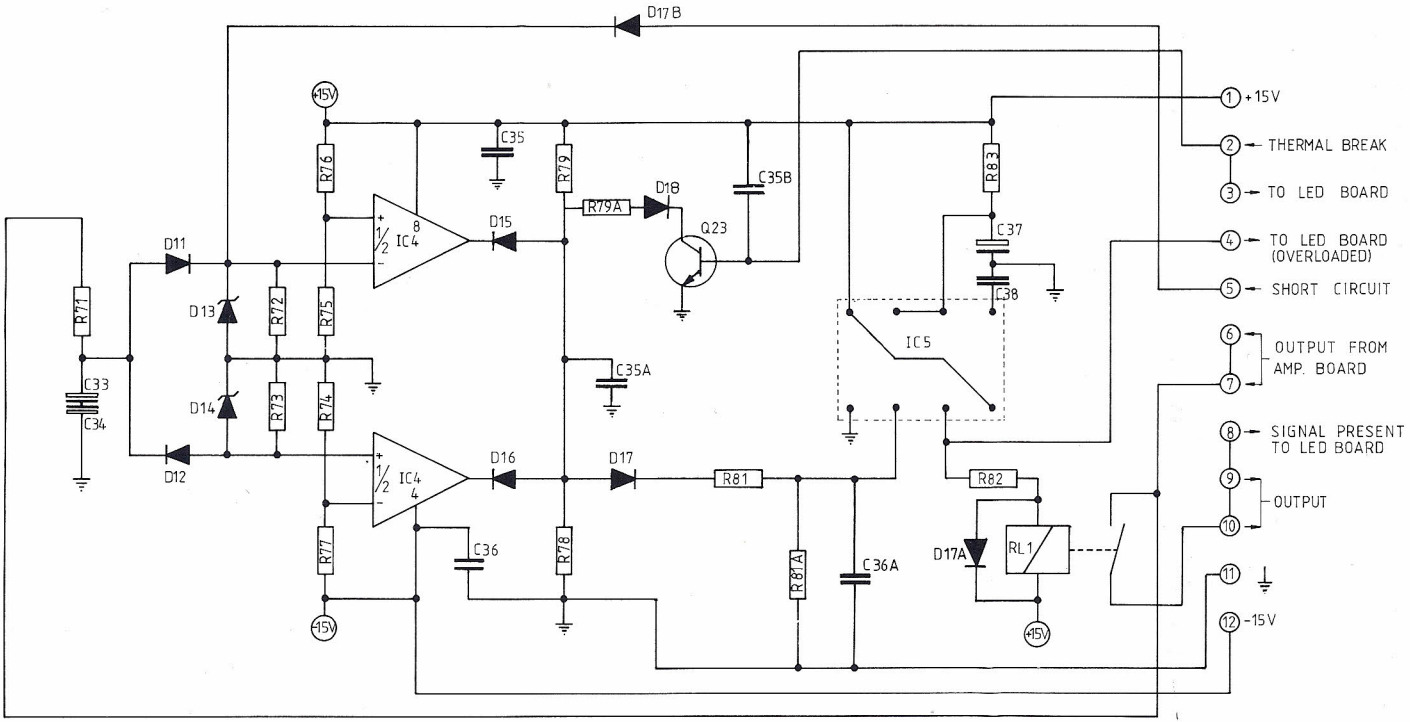
NO.	INDUCTOR
L 1	0,5UH INDUCTOR

NO.	TRANSISTORS
Q 1	MJE 350 PNP
Q 1A	MPSA 43 NPN
Q 2	MJE 340 NPN
Q 2A	MPSA 93 PNP
Q 3	BD 235 NPNBIAS
Q 4	MPSA 43 NPN
Q 5	MPSA 93 PNP
Q 6	MJE 340 NPN
Q 7	MJE 350 PNP
Q 8	2SA1116 PNP
Q 9	2SC2607 NPN
Q10	2SC2607 NPN
Q11	2SC2607 NPN
Q12	2SC2607 NPN
Q13	2SC2607 NPN
Q14	2SC2607 NPN
Q15	2SA1116 PNP
Q16	2SA1116 PNP
Q17	2SA1116 PNP
Q18	2SA1116 PNP
Q19	2SA1116 PNP
Q20	MPSA 93 PNP
Q21	MPSA 43 NPN
Q22	MPSA 93 NPN

NO.	RESISTORS
R 1	15K - 1%
R 2	15K - 1%
R 3	14K - 1%
R 4	14K - 1%
R 5	2K - 1%
R 6	200 OHMS - 1%
R 7	1KOHM - 1%
R 8	1 OHM - 1%
R 9	6,2K - 1%
R10	510 OHMS
R11	300 OHMS - 1%
R12	47K
R12A	10K POTMETER
R13	100 OHMS
R14	15K
R15	15K
R16	100 OHMS
R17	3K - 2W
R18	680 OHMS
R19	360 OHMS
R20	680 OHMS - 1%
R21	150 OHMS - 1%
R22	100 OHMS POTMETER
R23	680 OHMS
R25	22K POTMETER
R26	100 OHMS
R26A	100 OHMS
R27	100 OHMS
R28	100 OHMS - 1%
R29	100 OHMS - 1%
R30	100 OHMS

NO.	RESISTORS
R31	100 OHMS
R31A	100 OHMS
R32	100 OHMS
R32A	22 OHMS
R33	100 OHMS
R33A	22 OHMS
R34	22 OHMS 2W
R34A	4,7 OHMS
R35	22 OHMS 2W
R35A	4,7 OHMS
R36	10 OHMS
R37	10 OHMS
R38	0,33 OHMS 5W
R38A	4,7 OHMS
R39	0,33 OHMS 5W
R39A	4,7 OHMS
R40	10 OHMS
R41	10 OHMS
R42	0,33 OHMS 5W
R42A	4,7 OHMS
R43	0,33 OHMS 5W
R43A	4,7 OHMS
R44	10 OHMS
R45	10 OHMS
R46	0,33 OHMS 5W
R46A	4,7 OHMS
R47	0,33 OHMS 5W
R47A	4,7 OHMS
R48	10 OHMS
R49	10 OHMS
R50	0,33 OHMS 5W
R50A	4,7 OHMS
R51	0,33OHMS 5W
R51A	4,7 OHMS
R52	10 OHMS
R53	10 OHMS
R54	0,33OHMS 5W
R55	0,33OHMS 5W
R56	2K5 POTMETER
R57	47K
R58	100K
R59	1 OHM 2W
R60	33 OHMS 5W
R62	1K - 1%
R63	20K5 - 1%
R64	100K
R65	100K
R66	10K
R67	47K
R68	4K7
R69	100K
R70	2K2 2W

NO.	SWITCHES
S 4	THERMAL SWITCH 85°C.



BOSE 1800-2
PROTECTION BOARD

NO.	CAPACITORS
C33	10UF 35V ELECTROLYTIC
C34	10UF 35V ELECTROLYTIC
C35	100NF 100V
C35A	100NF 100V
C36	100NF 100V
C36A	100NF 100V
C37	47UF 25V ELECTROLYTIC
C38	10NF 100V MKT

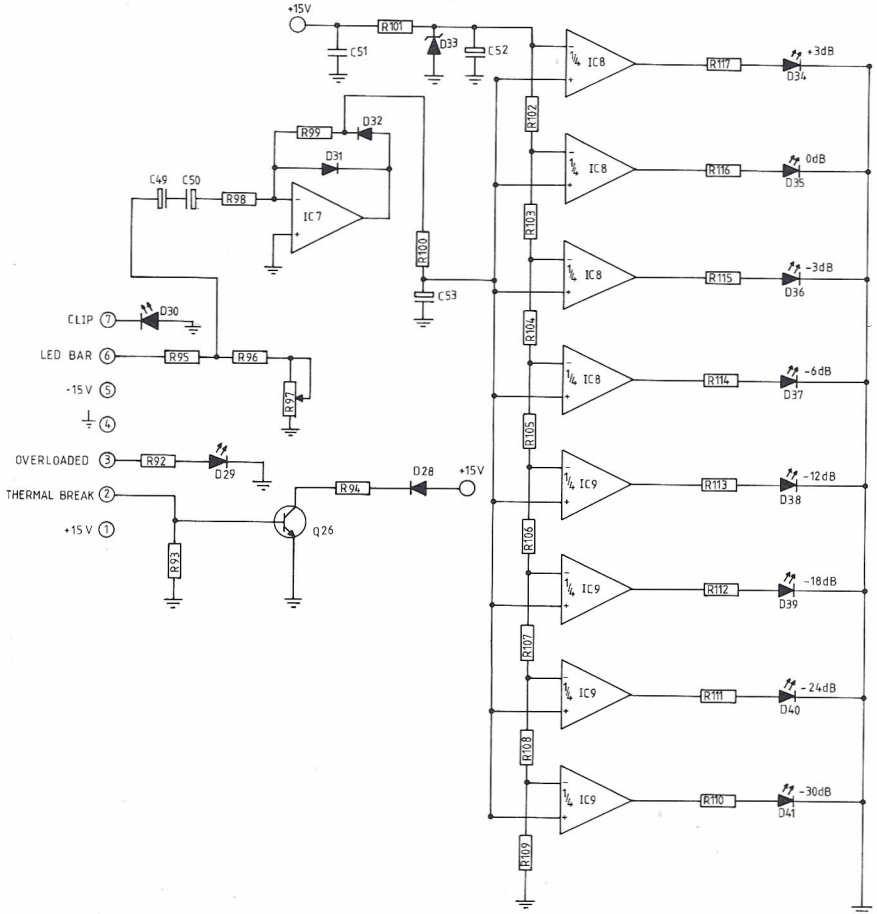
NO.	DIODES
D11	1N4005
D12	1N4005
D13	10V ZENER DIODE
D14	10V ZENER DIODE
D15	1N4005
D16	1N4005
D17	1N4005
D17A	1N4005
D17B	1N4005
D18	1N4005

NO.	INTEGRATED CIRCUITS
IC4	TL 072
IC5	NE 555

NO.	TRANSISTORS
Q23	BC 547 B

NO.	RESISTORS
R71	180K 1%
R72	100K 1%
R73	100K 1%
R74	22K 1%
R75	100K 1%
R76	100K 1%
R77	100K 1%
R78	100K 1%
R79	47K 1%
R79A	22K 1%
R81	47K 1%
R81A	100K 1%
R82	100 OHMS 1%
R83	62K 1%

NO.	RELAYS
RL1	RAPA 011.51-22-001



BOSE 1800-2
PEAK LEVEL INDICATOR

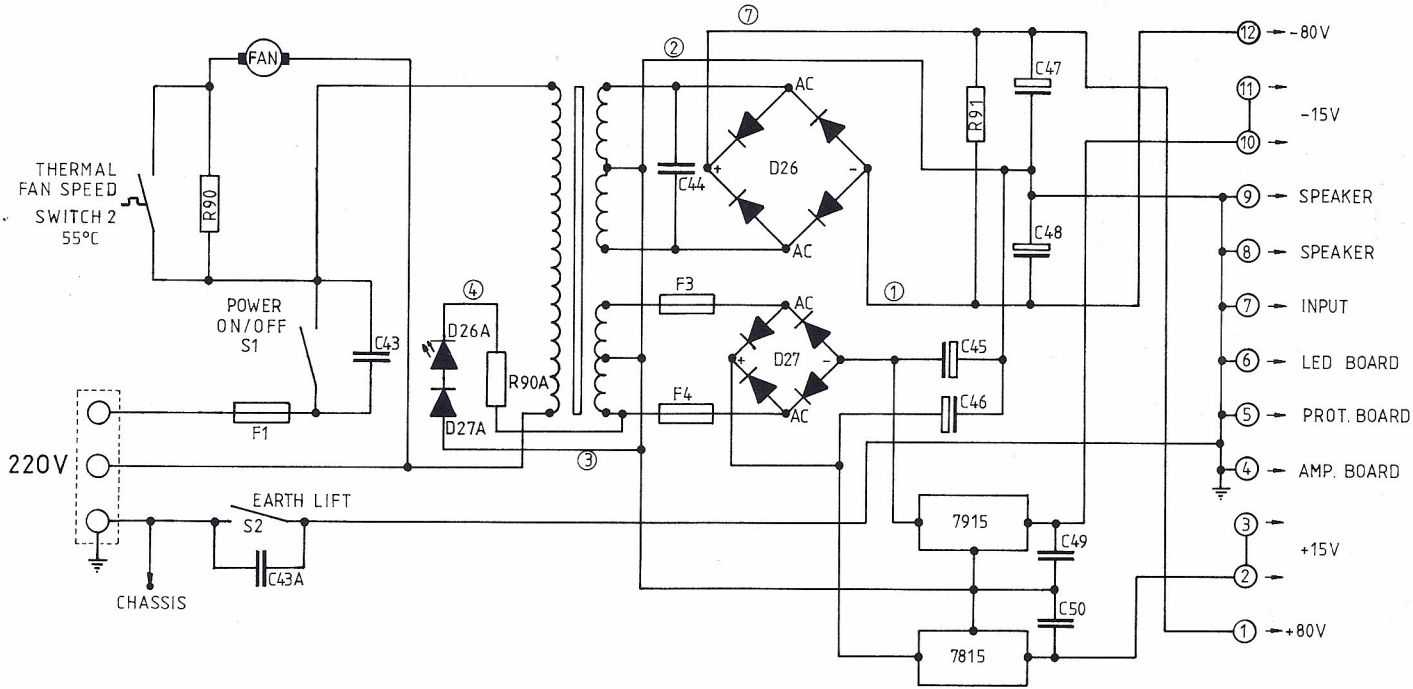
NO.	TRANSISTORS
Q26	BC 547 B

NO.	RESISTORS
R 92	470 OHMS 1%
R 93	100K 1%
R 94	470 OHMS 1%
R 95	100K 1%
R 96	1K 1%
R 97	1K POTMETER
R 98	10K 1%
R 99	100K 1%
R100	1K 1%
R101	4K7 1%
R102	2K94 1%
R103	2K15 1%
R104	1K78 1%
R105	1K4 1%
R106	909 OHMS 1%
R107	422 OHMS 1%
R108	232 OHMS 1%
R109	221 OHMS 1%
R110	470 OHMS 1%
R111	470 OHMS 1%
R112	470 OHMS 1%
R113	470 OHMS 1%
R114	470 OHMS 1%
R116	470 OHMS 1%
R117	470 OHMS 1%

NO.	CAPACITORS
C49	10UF 35V ELECTROLYTIC
C50	10UF 35V ELECTROLYTIC
C51	100NF 100V ELECTROLYTIC
C52	10UF 35V ELECTROLYTIC
C53	1UF 35V TANTALUM

NO.	DIODES
D28	LED 5MM. RED
D29	LED 5MM. RED
D30	2 LEDS 5MM. RED
D31	1N4148
D32	1N4148
D33	5V1 ZENER DIODE
D34	LED 5MM. RED
D35	LED 5MM. RED
D36	LED 5MM. RED
D37	LED 5MM. RED
D38	LED 5MM. RED
D39	LED 5MM. RED
D40	LED 5MM. RED
D41	LED 5MM. RED

NO.	INTEGRATED CIRCUITS
IC7	TL 071 OP AMP
IC8	TL 084 QUAD OP AMP
IC9	TL 084 QUAD OP AMP



BOSE 1800-2
POWER SUPPLY BOARD

NO.	CAPACITORS
C43	.01UF 630V
C43A	100NF 250V
C44	.01UF 630V CERAMIC
C45	100UF 50V ELECTROLYTIC
C46	100UF 50V ELECTROLYTIC
C47	10000UF 100V ELECTROLYTIC
C48	10000UF 100V ELECTROLYTIC
C49	100NF 100V MKT
C50	100NF 100V MKT

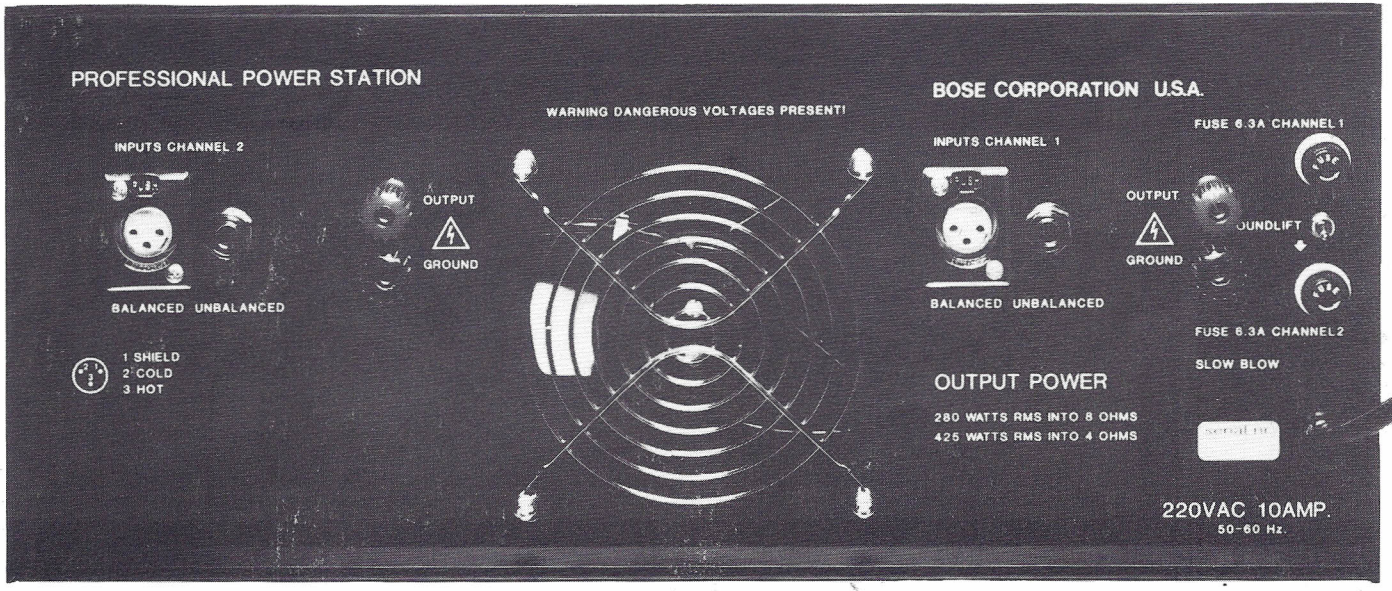
NO.	DIODES
D26	DIODE RECTIFIER KBPC 25-06
D27	DIODE RECTIFIER B80 C1500
D26A	LED 5MM. RED
D27A	1N4005

NO.	FUSES
F 1	FUSE 6,3A SLOW BLOW 5×20 MM.

NO.	RESISTORS
R90	2K2 9W 5%
R91	2K7 9W 5%

NO.	SWITCHES
S 1	= POWER SWITCH C&K
S 2	= GROUND LIFT SWITCH C&K 7101
S 3	= THERMAL SWITCH 55°C

NO.	TRANSFORMER
T 1	= TOROÏDAL TRANSFORMER 500 VA T.B.S.


PROFESSIONAL POWER STATION
WARNING DANGEROUS VOLTAGES PRESENT!
BOSE CORPORATION U.S.A.
INPUTS CHANNEL 2
OUTPUT
GROUND
BALANCED UNBALANCED
1 SHIELD
2 COLD
3 HOT
INPUTS CHANNEL 1
FUSE 6.3A CHANNEL 1
OUTPUT
GROUND
BALANCED UNBALANCED
FUSE 6.3A CHANNEL 2
SLOW BLOW
OUTPUT POWER
280 WATTS RMS INTO 8 OHMS
425 WATTS RMS INTO 4 OHMS
220VAC 10AMP.
50-60 Hz.