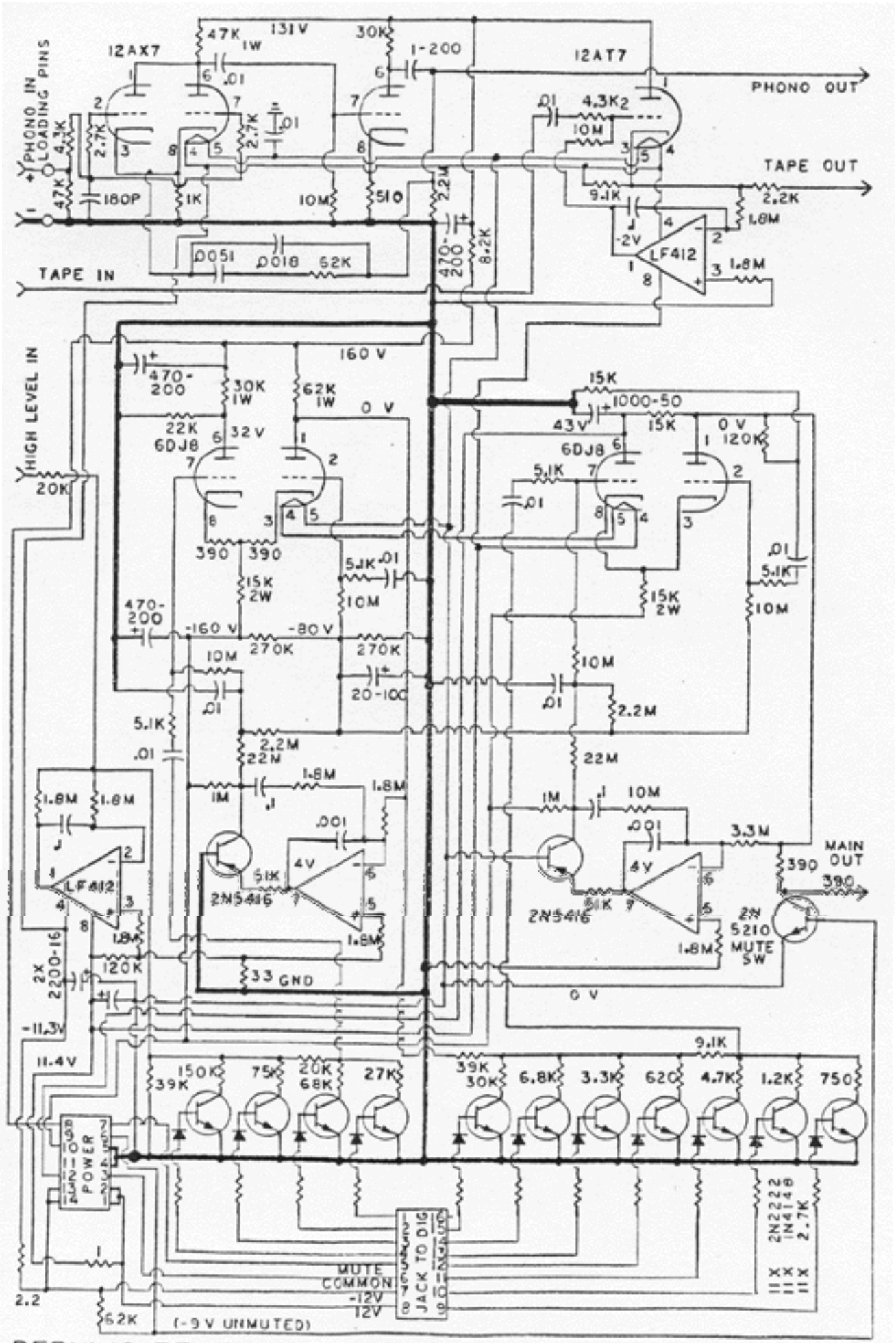
TF-12

The failure prone parts in the TF-12 are the optical encoder volume control, 1Meg resistor in the mute time out (located on the power supply board), the HER602 diodes in the power supply, 470 µF capacitors associated with these diodes, socket for 7805 voltage regulator IC on digital board (soldered in in later versions), and foil connections under tube sockets on the Teflon circuit board.

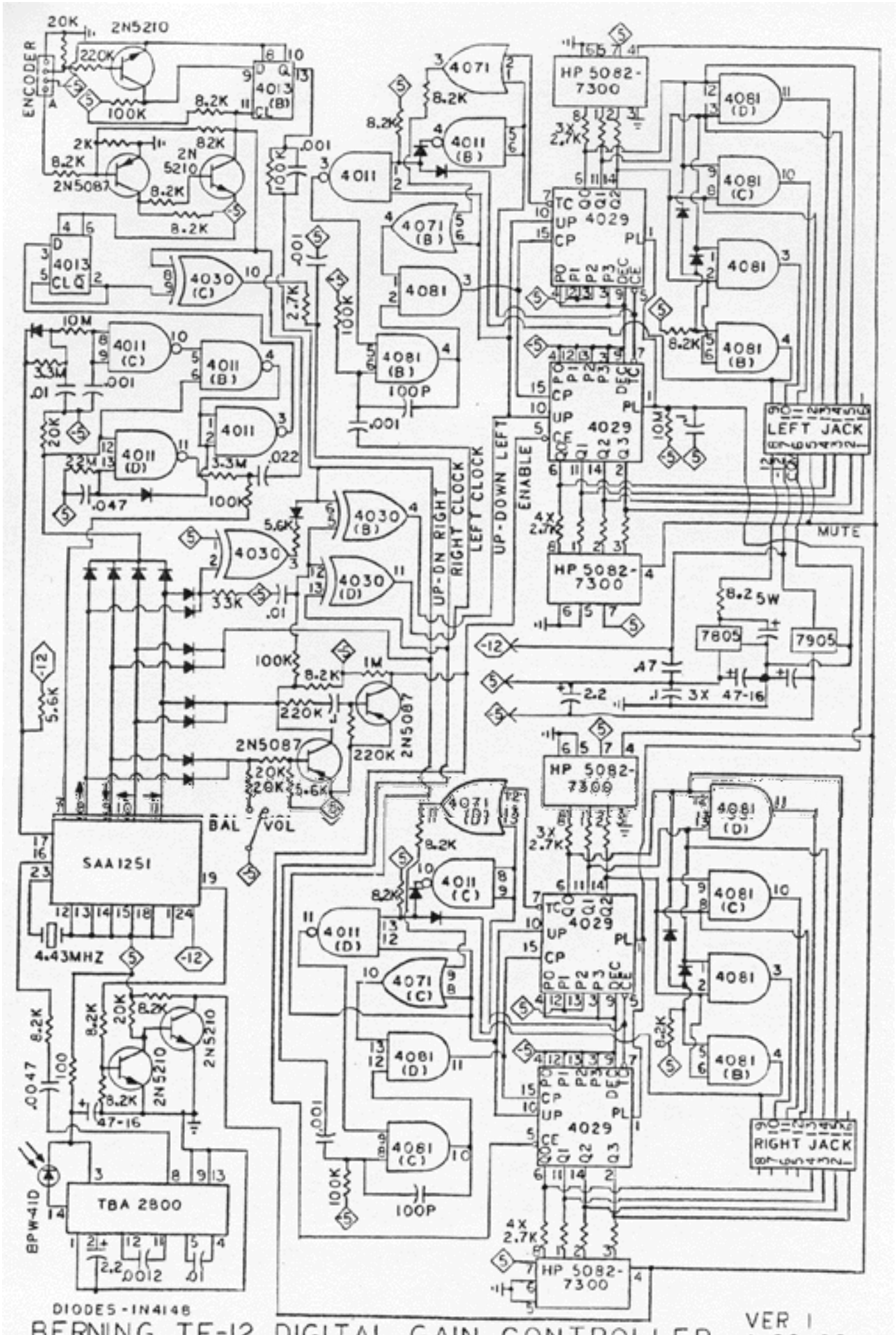
The failure of the optical encoder involves oxidation of the solder connections due to improper assembly by US Digital, in that the leads were cut too short. These controls can be pried open and these connections resoldered. Alternatively, a new control can be ordered from US Digital. http://www.usdigital.com Go to products tab, and then incremental encoders, and then look for the SP-16.

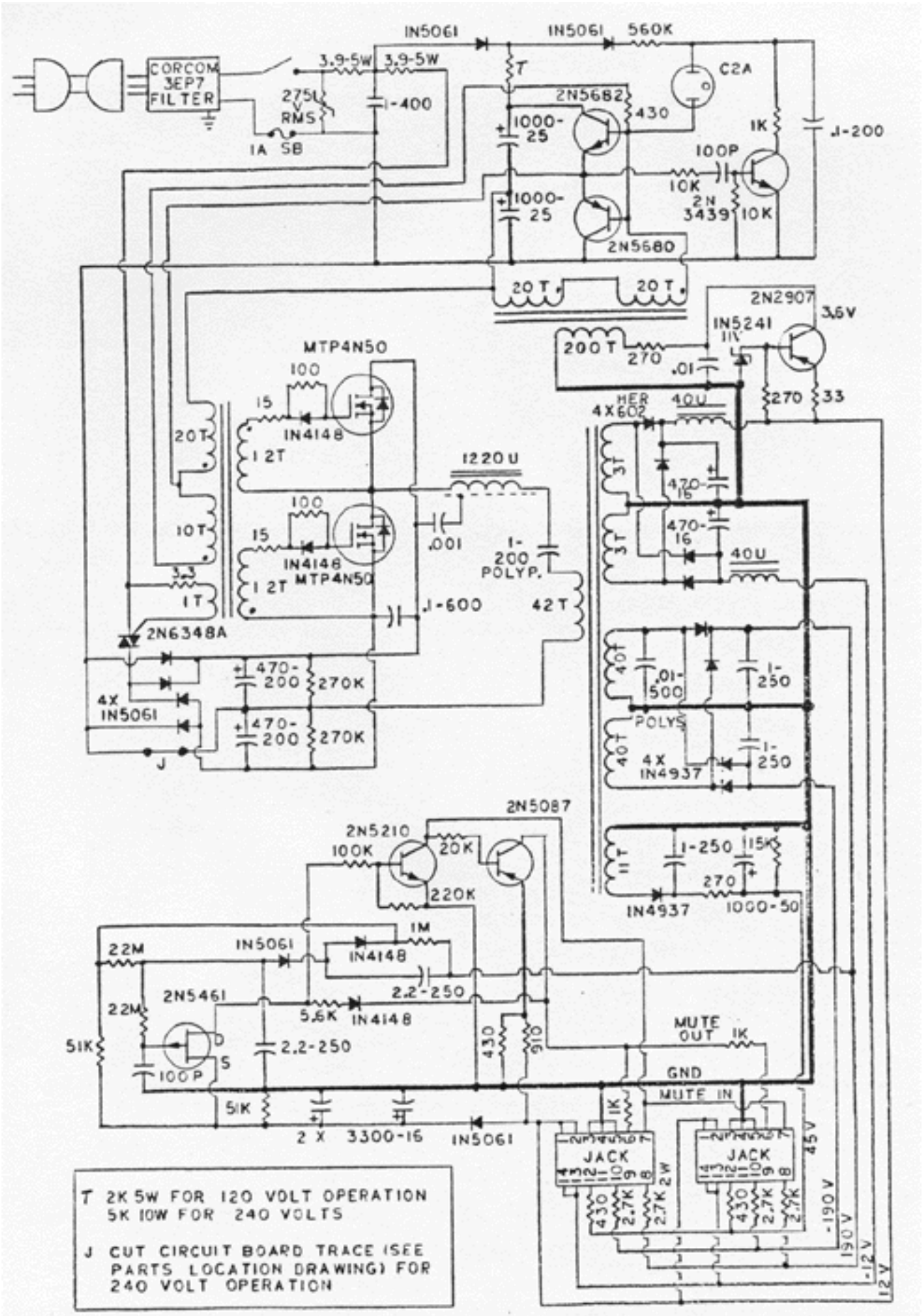
It is recommended that the HER602 diodes be replaced with the MUR820 (was Motorola, now ON Semiconductors), and that the 470µF capacitors be upgraded to 1000µF high-frequency types.

Loud pops, particularly in the phono section when the tubes are moved indicates broken foil on the circuit board. Thin foil traces should be bridged with light-gauge bare wire, even though the breaks can not be seen. Audio noise is sometimes caused by noisy 15K, 2W plate resistors on the 6DJ8/6922 tubes.



BERNING TF-12 AUDIO (ONE CHANNEL) VER 1 1-19-88


ENCODER
2N5210
20K
220K
100K
8.2K
4013 (B)
2K
82K
2N5087
2N 5210
4013 CLK
4030 (C)
2.7K
.001
4011
4071
4011 (B)
4071 (B)
4081
4081 (B)
100P
10M
33M
.01
4011 (C)
4011 (D)
3.3M
.022
.047
4030
4030 (B)
4030 (D)
5.6K
33K
1M
220K
2N5087
20K
SAA1251
BAL
VOL
4.43MHZ
47-16
.0047
100
2N5210
BPW41D
TBA 2800
2.2
.0012
DIODES - IN4148
UP-DN RIGHT
RIGHT CLOCK
LEFT CLOCK
UP-DOWN LEFT
ENABLE
HP 5082-7300
3X 2.7K
4X 2.7K
TC UP CP CE PL PO P1 P2 P3 DEC Q0 Q1 Q2 Q3
4029
4081 (D)
4081 (C)
4081 (B)
LEFT JACK
RIGHT JACK
MUTE
8.2 5W
7805
7905
.47
2.2
3X 47-16
-12
5
BERNING TF-12 DIGITAL GAIN CONTROLLER
VER 1
1-20-88



T 2K 5W FOR 120 VOLT OPERATION
5K 10W FOR 240 VOLTS

J CUT CIRCUIT BOARD TRACE (SEE PARTS LOCATION DRAWING) FOR 240 VOLT OPERATION

BERNING TF-12 POWER SUPPLY VER 1 1-18-88