

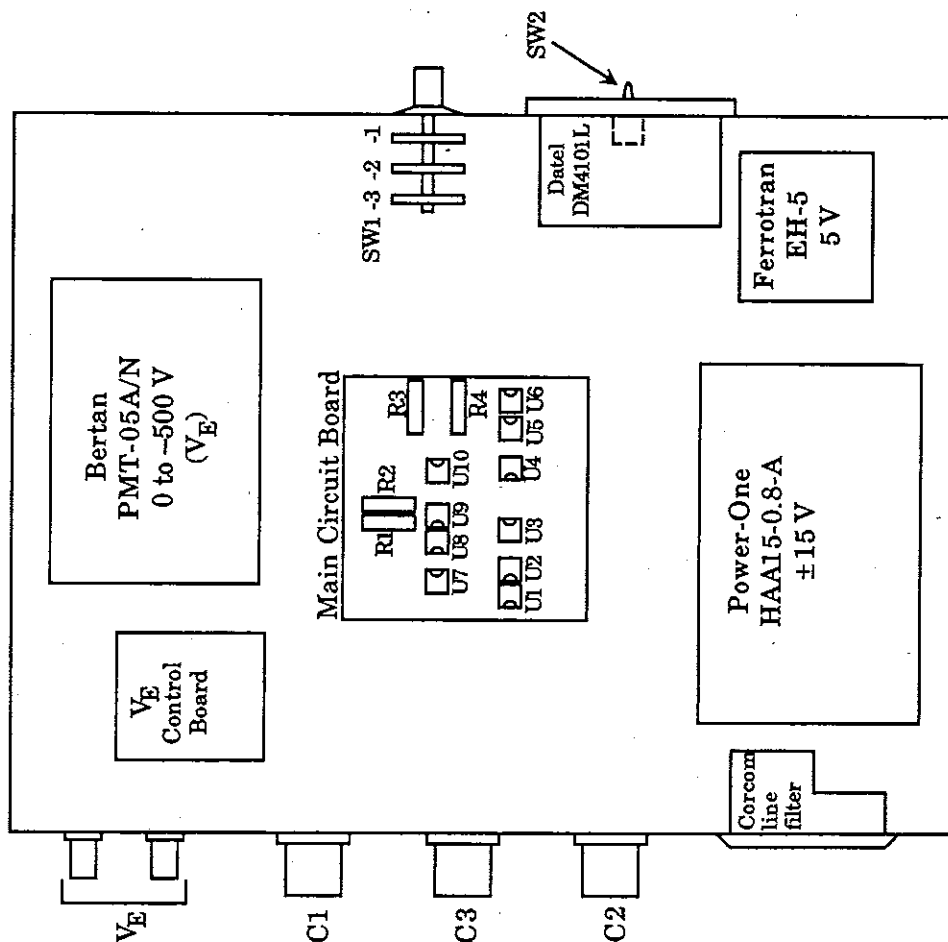
# Internal Wiring\*

C1-A: 4	(VF2 prgm)
C1-B: SW1-2-1, B	(VF2 + 1000)
C1-C: SW1-3-1	(VF2 + 10,000)
C1-D: SW1-1-1, SW1-1-3, 1, A (bias for VF2-VF3 section)	
C1-E: SW1-2-3, C	(VF3 + 1000)
C1-F: D	(VF3 prgm)
C1-G: SW1-3-3	(VF3 + 10,000)
C2-A: SW1-1-5, 7, H, 18	(bias for mono. section)
C2-B: 9	(not used)
C2-C: 10, 19	(Vmono(+) + 400)
C2-D: X	(Vmono(+) + 4000)
C2-E: 11	(Vmono(-) prgm)
C2-F: M	(Vmono(+) prgm)
C2-G:	(not connected)
C3-A: SW1-1-7, 13, P	(bias for VF4 section)
C3-B: SW1-2-7, R	(VF4 + 1000)
C3-C: SW1-3-7	(VF4 + 10,000)
C3-D: 15	(VF4 prgm)

\*Bold letters and numbers refer to circuit board connections

## Parts List

U1, U2, U4, U8, U9, U12: RC741N  
 U5, U6 : LF356N  
 U3, U7, U10, U11 : REF-01HP  
 Unless otherwise noted, all resistors are 1/4 W, 1% metal film.



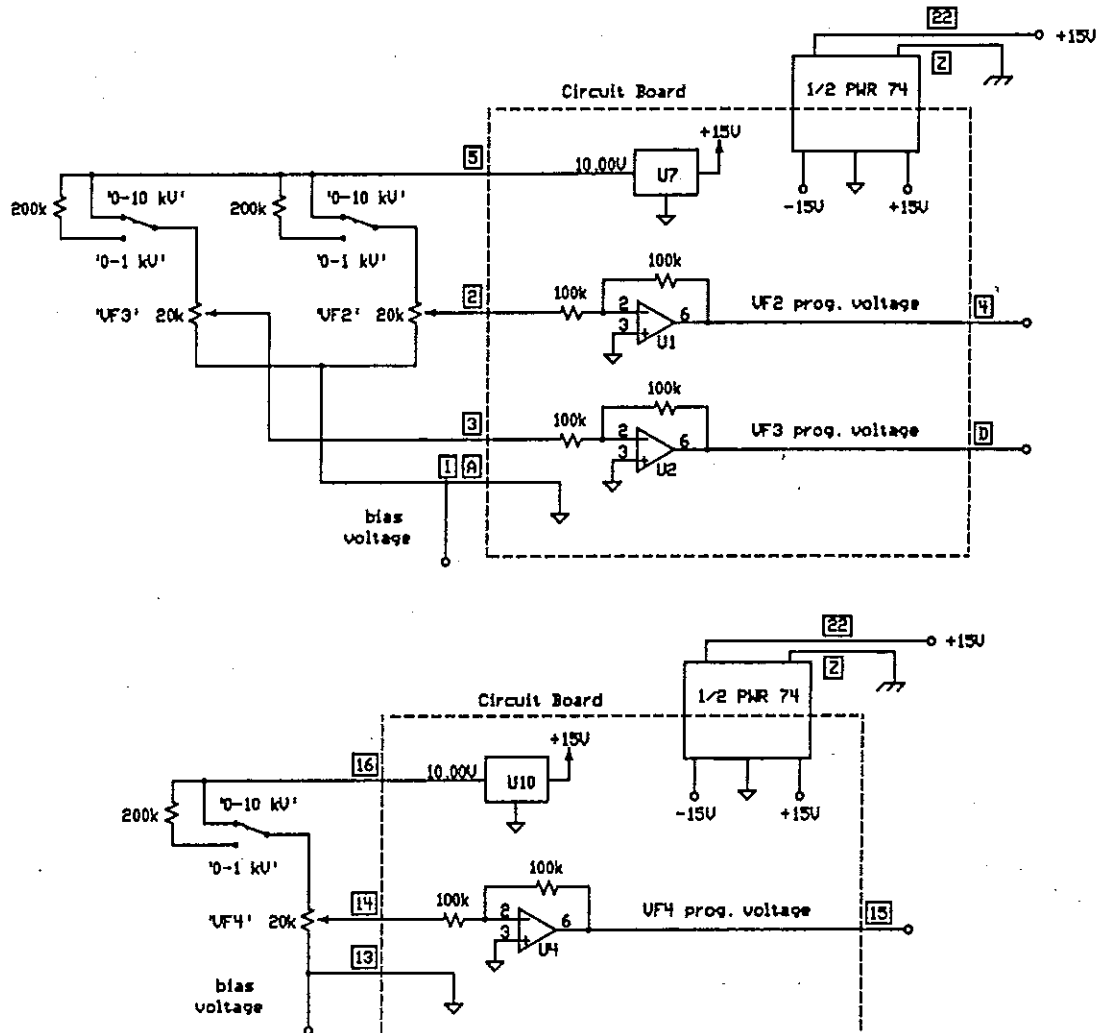
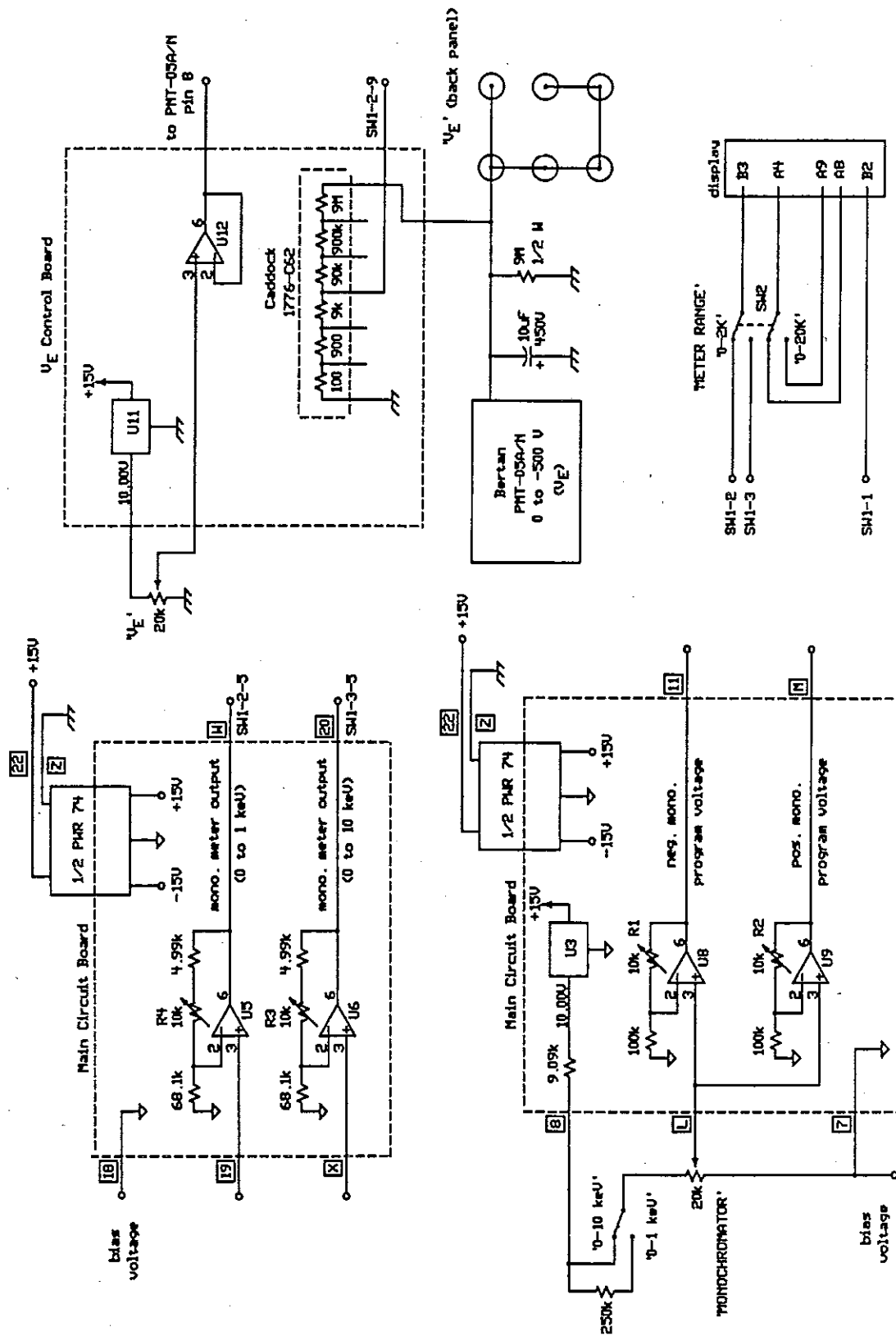


Figure A.2: Schematic diagrams of the high voltage controller showing the sections associated with controlling VF2, VF3, and VF4. The dashed rectangles enclose parts located on the main circuit board. The numbers and letters contained in boxes refer to pins on the circuit board edge connector, and the characters in quotes refer to labels on the front panel of the chassis.



### Internal Wiring

C1-A:	X-Y 2	Right/Left switch	(to right el. of X-Y 2)
C1-B:	X-Y 2	Right/Left switch	(to left el. of X-Y 2)
C1-C:	X-Y 2	Up/Down switch	(to top el. of X-Y 2)
C1-D:	X-Y 2	Up/Down switch	(to bottom el. of X-Y 2)
C1-E:	X-Y 1	Up/Down switch	(to top el. of X-Y 1)
C1-F:	X-Y 1	Up/Down switch	(to bottom el. of X-Y 1)
C1-G:	X-Y 1	Right/Left switch	(to right el. of X-Y 1)
C1-H:	X-Y 1	Right/Left switch	(to left el. of X-Y 1)

### Parts List

U1-U4: Burr-Brown 3582J

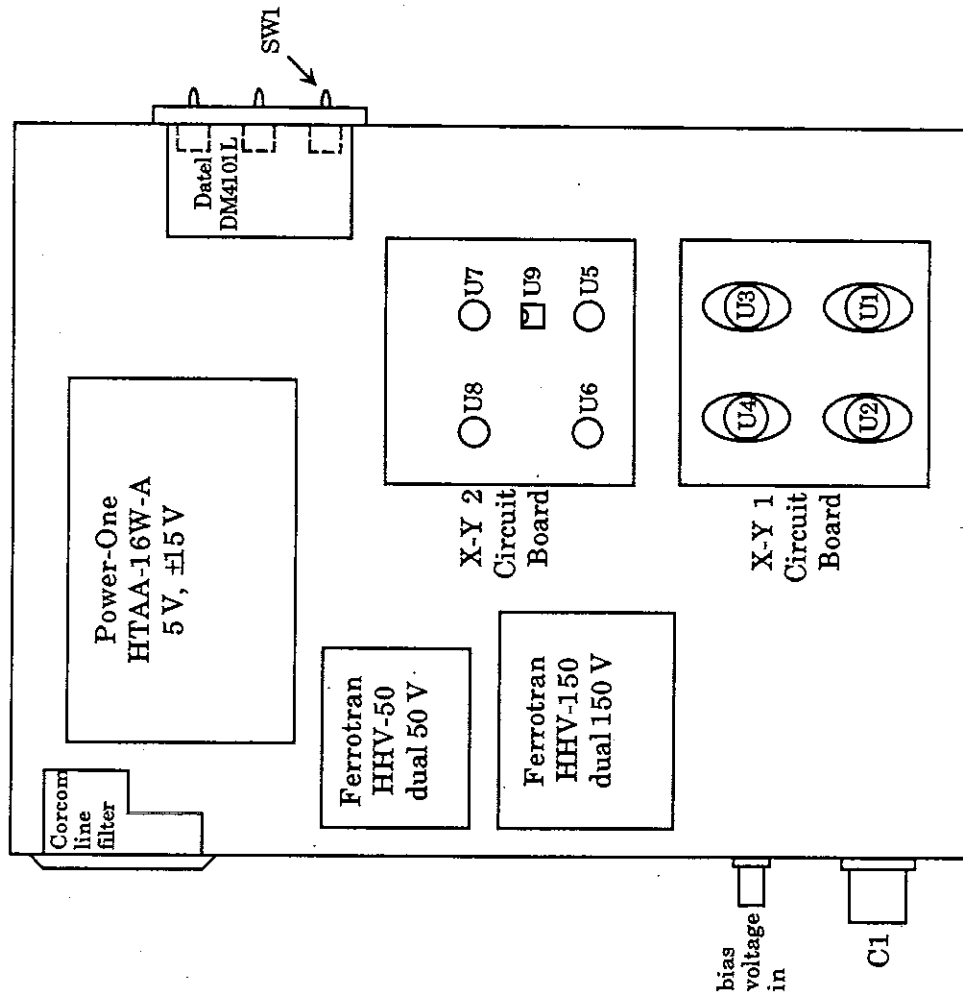
U5-U8: LM343

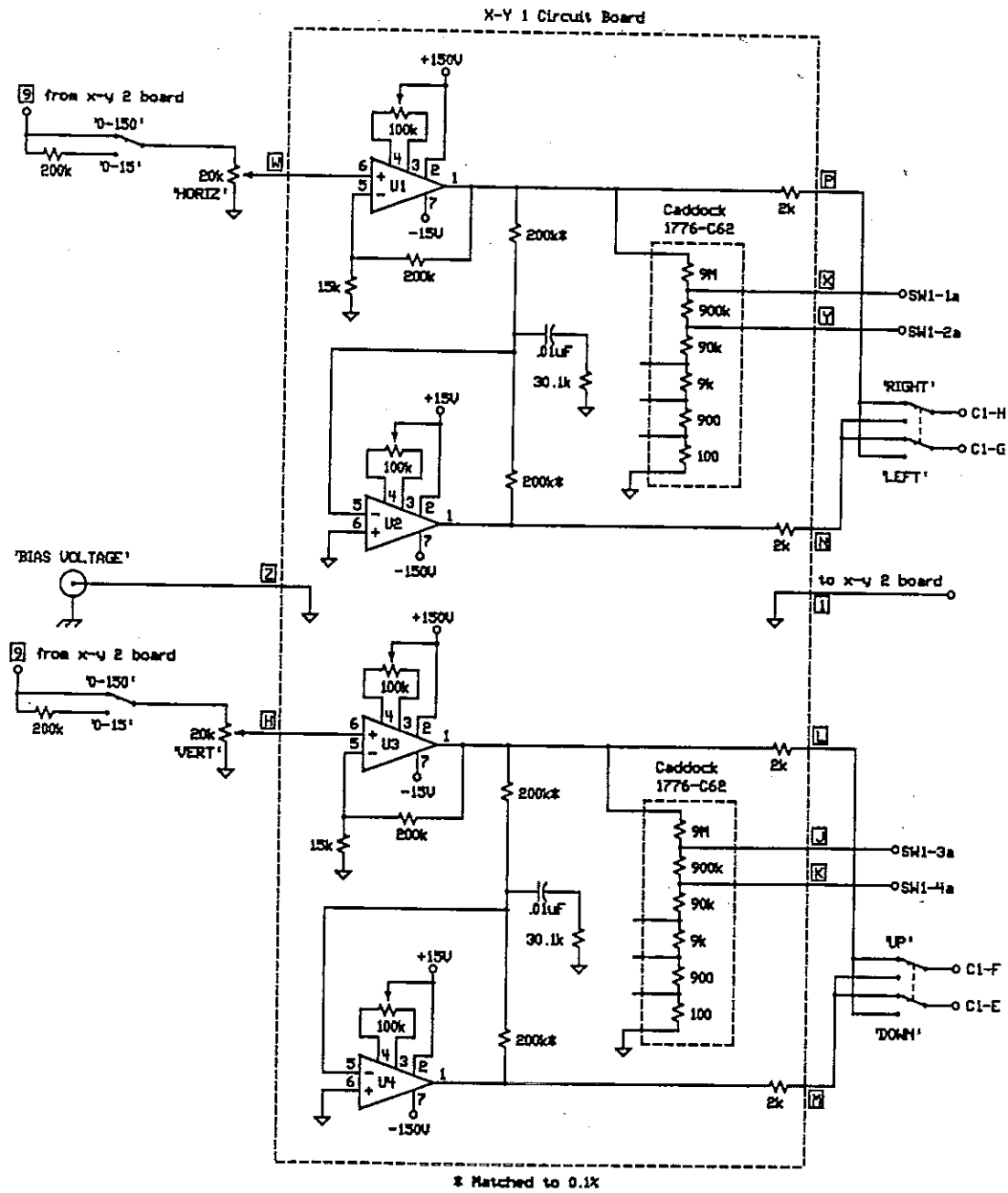
U9: REF-01HP

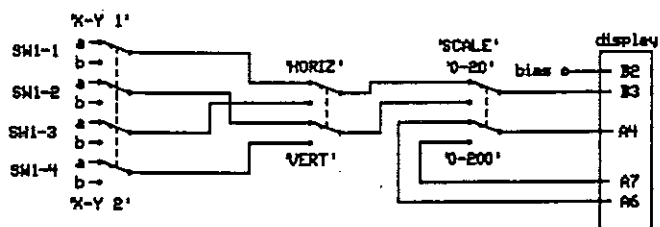
Unless otherwise noted, all resistors are 1/4 W, 1% metal film.

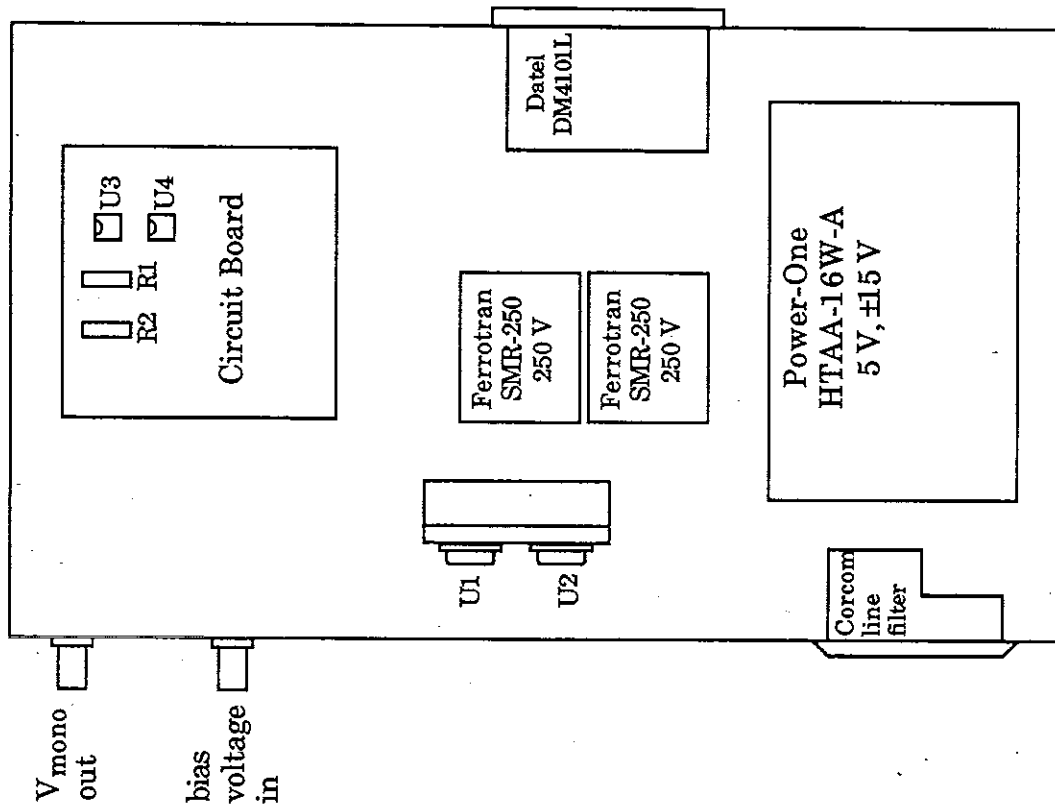
### Notes

1. All three power supplies are separately fused, apart from the fuse in the line filter. These are labeled F1, F2, and F3 on the back panel. F1 goes to the HHV-150, F2 goes to the HHV-50, and F3 goes to the Power-One.
2. U1-U4 were originally 3584 op-amps, which require external compensation. Consequently, there are components attached to pin 8 of each 3582, which is not connected. These components can be ignored.









### Parts List

U1, U2: Burr-Brown 3582J  
 U3: OP-07DP  
 U4: REF-01HP  
 Unless otherwise noted, all resistors are 1/4 W, 1% metal film.

### Notes

1. All three power supplies are separately fused, apart from the fuse in the line filter. These fuses are labeled F1, F2, and F3 on the back panel. F1 and F2 go to the Ferrotran supplies, and F3 goes to the Power-One.

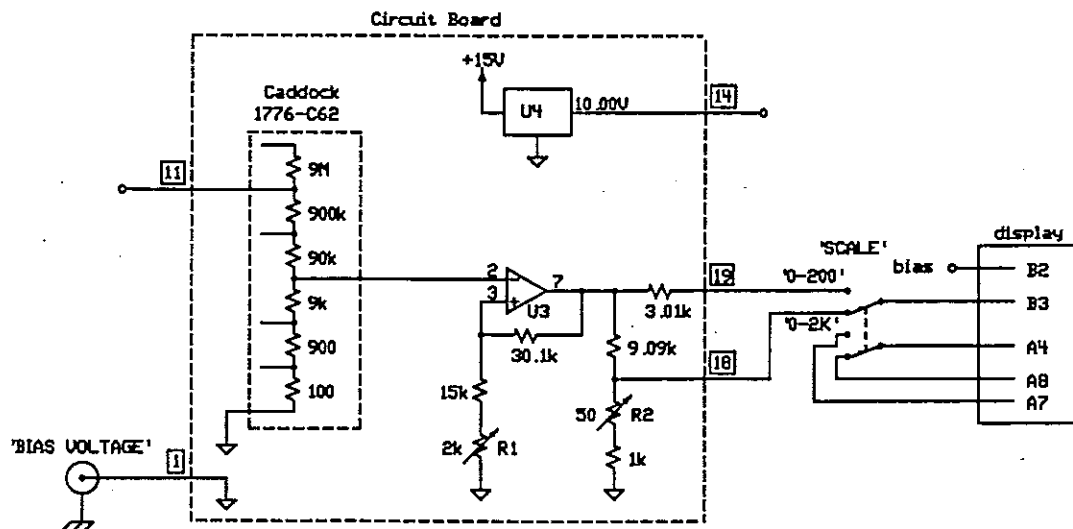
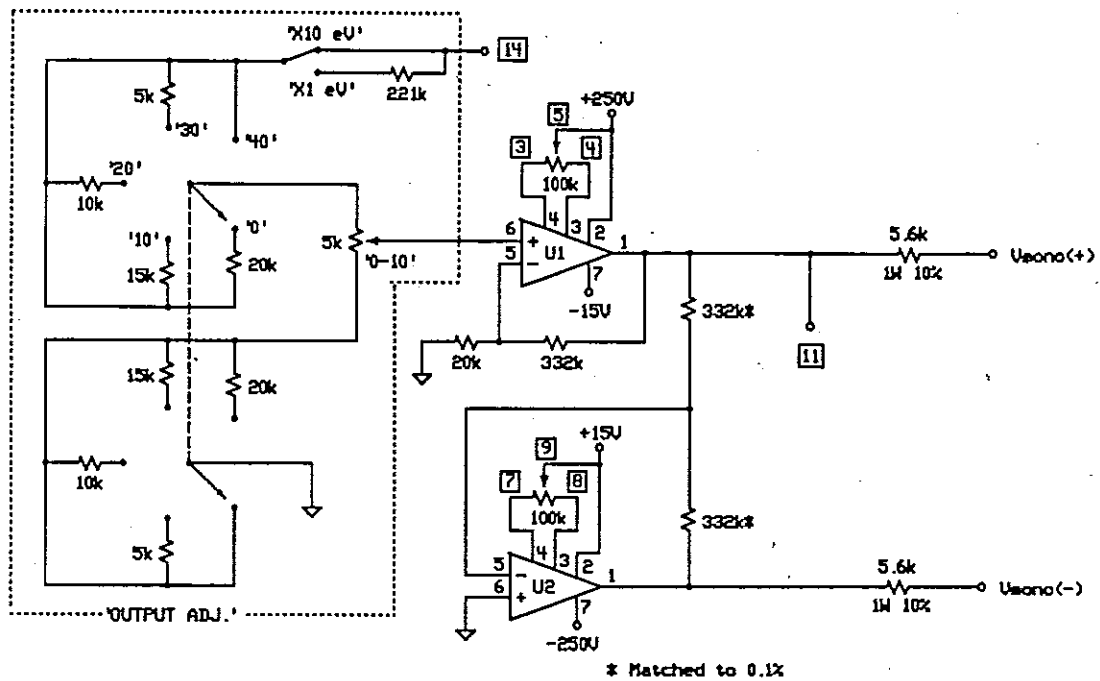


Figure A.8: The schematic diagram of the monochromator low voltage supply. The dashed rectangle encloses those components located on the circuit board. The numbers enclosed by squares refer to pins on the circuit board edge connector, and the characters in quotes are labels on the front or back panel.



Parts List

U1: OP-07DP  
 U2, U3: Linear Technology  
 LT1012CN  
 U4: REF-01HP  
 Unless otherwise noted, all  
 resistors are 1/4 W, 1% metal  
 film.

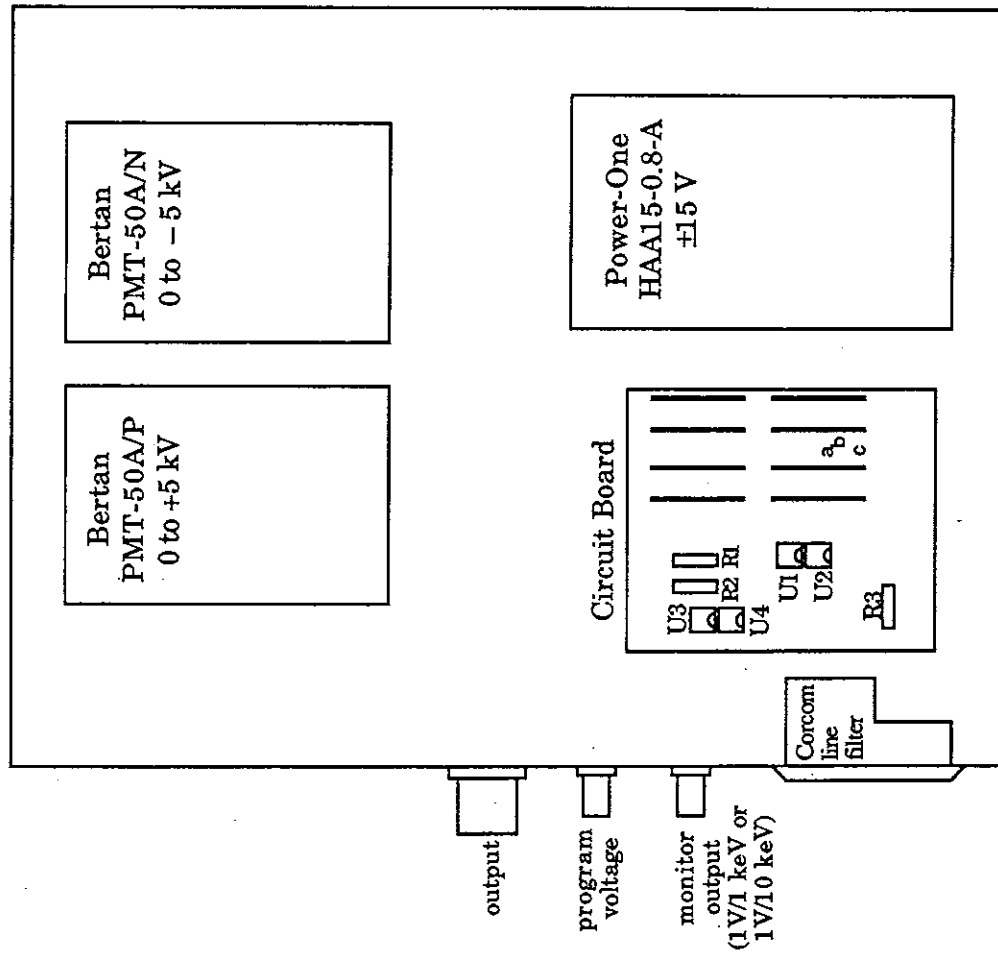
Notes

The labels 'a', 'b', and 'c' on the circuit  
 board denote test points.

a= output(+) + 400

b= output(+) + 4000

c= the inverting input of U2— nominally  
 0 V.



U2. replaced with LH741 for  
 a brief period of time  
 changed back to LT612CN  
 Jan 1st 1998

