

410B

VACUUM TUBE VOLTMETER

SERIALS PREFIXED: 024-

OPERATING AND SERVICING MANUAL



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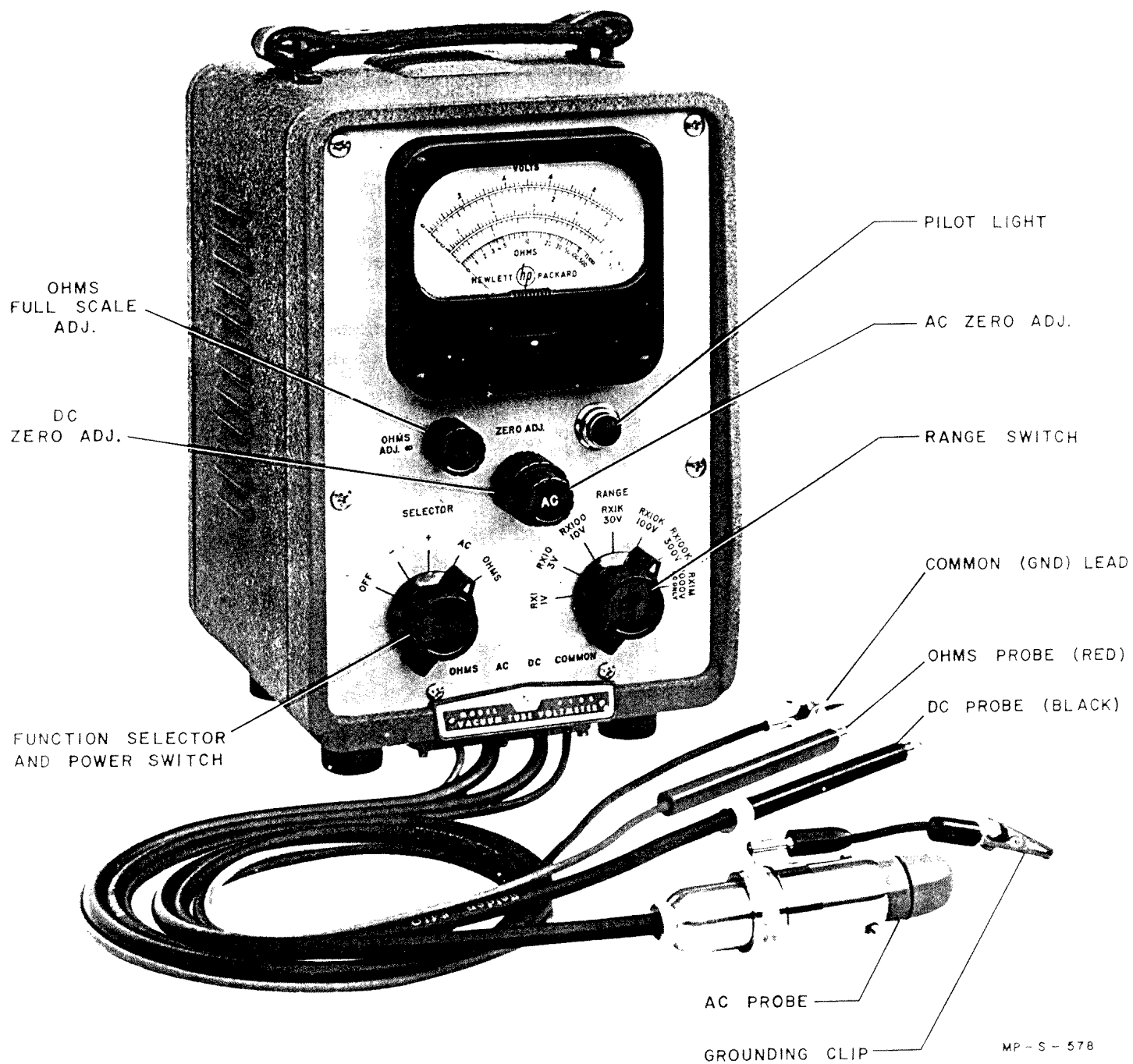


Figure 2-1. Model 410B Controls and Terminals Labeled

SPECIFICATIONS

RANGES:	1 to 300 volts full scale in 6 ranges: 1, 3, 10, 30, 100, and 300 volts AC or DC and 0-1000 volt range DC. Resistance 0.2 ohm to 500 megohms in seven ranges. Mid-scale reading of 10, 100, 1,000, 10,000, 100,000 ohms, 1 megohm, and 10 megohms.
ACCURACY:	$\pm 3\%$ of full scale on all ranges on sinusoidal AC voltages and DC voltages. The AC portion of the instrument is a peak-reading device, calibrated in rms volts. Ohmmeter accuracy is ± 1 ohm at mid-scale of RX1 range, $\pm 5\%$ at mid-scale of all other ranges.
FREQUENCY RESPONSE:	Frequency response is flat within ± 1 db up to 700 mc and drops off less than 1 db at 20 cps. Probe resonant frequency is about 1,250 mc and an indication can be obtained up to 3,000 mc.
INPUT IMPEDANCE:	Input capacity is 1.5 $\mu\mu$ f; input resistance is 10 megohms at low frequencies. At high frequencies resistance drops off due to dielectric losses. DC input resistance is approximately 122 megohms for all ranges.
PROBE:	The probe is approximately 1" diameter and 4-1/2" long. It is equipped with a ground clip, and the connector may be soldered to the point under test. Adapting connectors are available to measure voltages in coaxial transmission lines.
POWER SUPPLY:	115/230 volts $\pm 10\%$, 50/1,000 cps, 40 watts.
SIZE:	Cabinet Mount: 11-1/2" high, 7-3/8" wide, 8-3/4" deep. Compartment at rear of instrument stores probe and test leads when not in use.
WEIGHT:	Cabinet Mount: 12 lbs.; shipping weight approximately 17 lbs. Rack Mount: 12 lbs.; shipping weight approximately 26 lbs.
RACK MOUNTING:	Available on standard RETMA 7" x 19" panel.
ACCESSORIES AVAILABLE:	<ul style="list-style-type: none">Ⓢ 452A Capacitive Voltage Divider, 25 KV max., requires Ⓢ 452A-95A Adapter.Ⓢ 453A Capacitive Voltage Divider, 2 KV max.Ⓢ 455A Probe Coaxial "T" Connector, for Type "N" systems.Ⓢ 458A Probe Coaxial "N" Connector, terminates Type "N" systems.Ⓢ 459A DC Resistive Voltage Multiplier, 30 KV max.

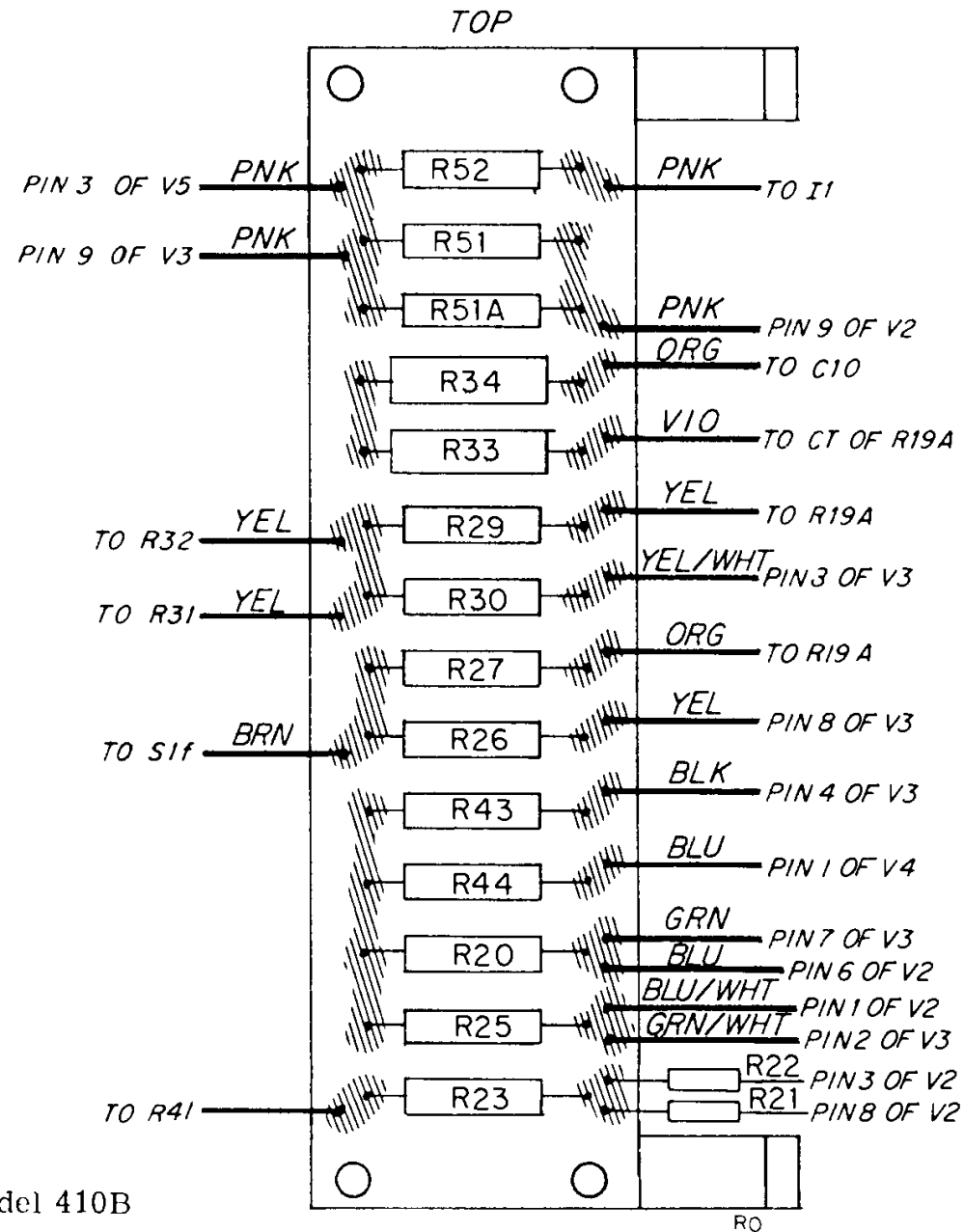
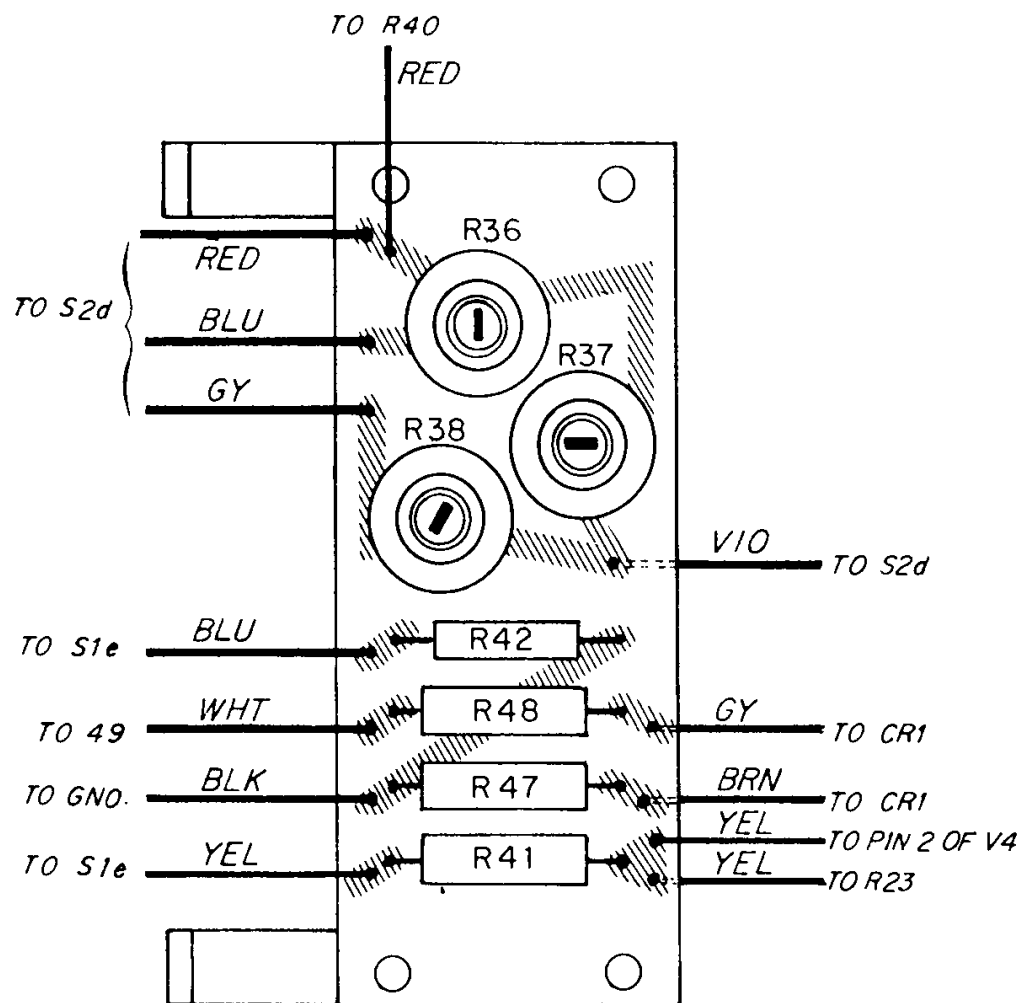
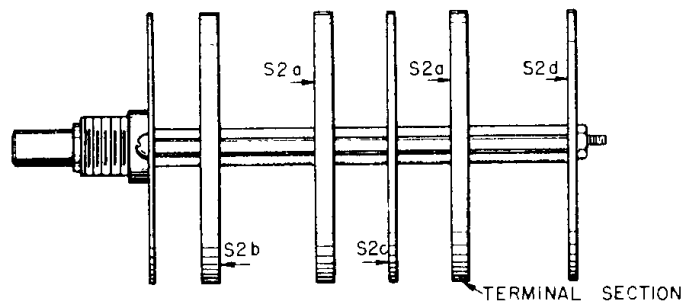
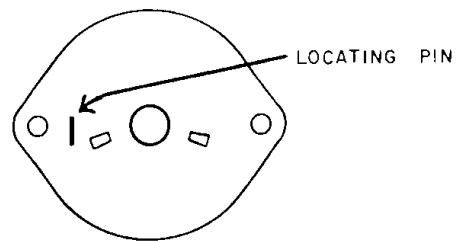


Figure 4-5. Resistor Board Details Model 410B

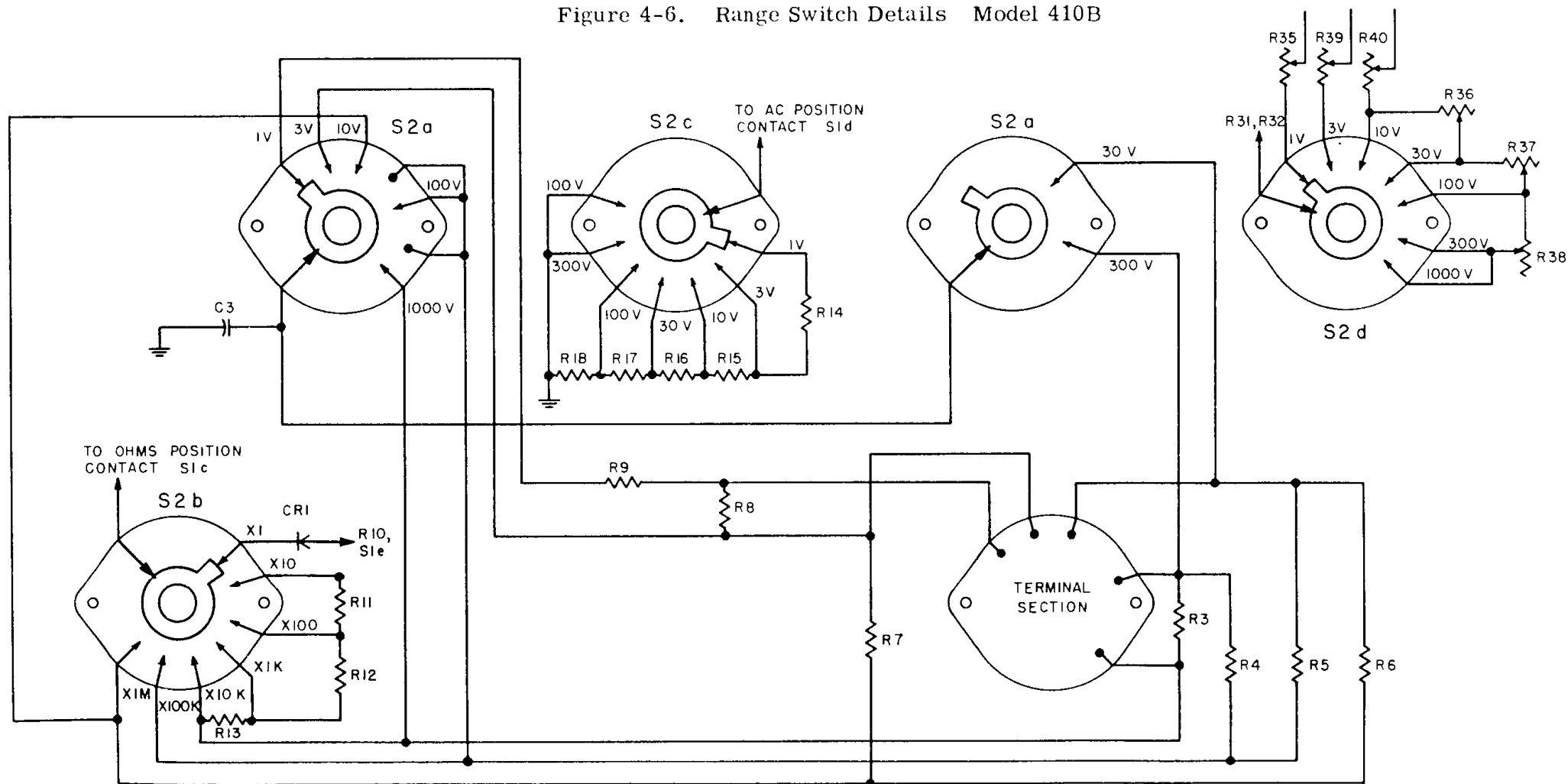


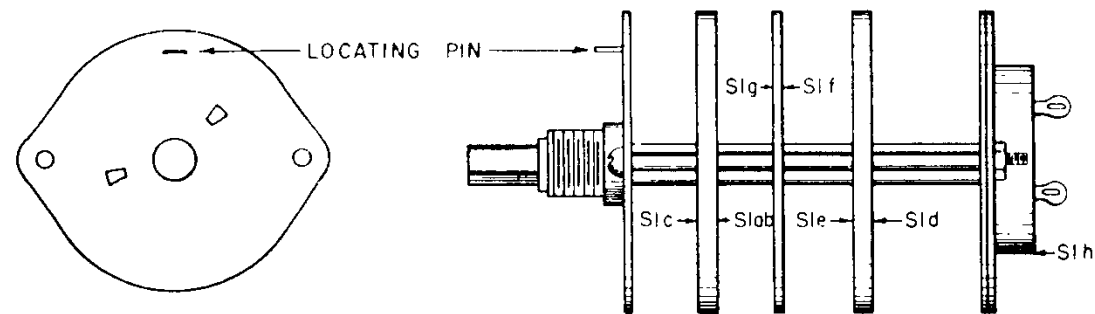
NOTES.

1. ALL CIRCUIT REFERENCES CORRESPOND TO THOSE IN THE SCHEMATIC WIRING DIAGRAM.

2. FRONT AND REAR SECTIONS OF SWITCH ARE VIEWED FROM THE BOTTOM OF THE INSTRUMENT AND THE KNOB END OF THE SWITCH. SWITCH SHOWN IN THE 1V POSITION.

Figure 4-6. Range Switch Details Model 410B

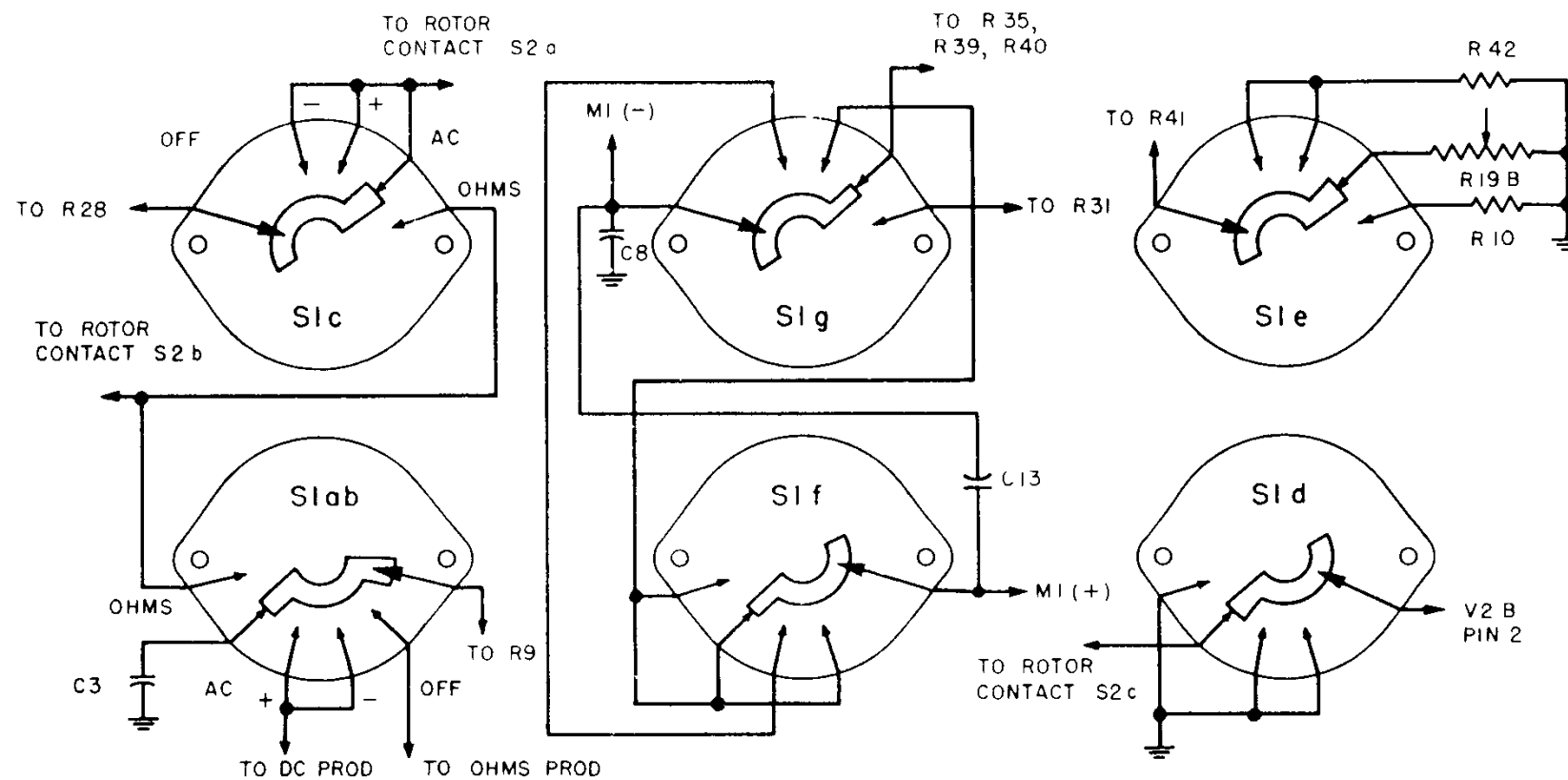




NOTES:

1. ALL CIRCUIT REFERENCES CORRESPOND TO THOSE IN THE SCHEMATIC WIRING DIAGRAM.
2. FRONT AND REAR SECTIONS OF SWITCH ARE VIEWED FROM THE BOTTOM OF THE INSTRUMENT AND THE KNOB END OF THE SWITCH. SWITCH SHOWN IN THE AC POSITION.

Figure 4-7. Selector Switch Details Model 410B



MODEL 410 B
SELECTOR SWITCH DETAILS

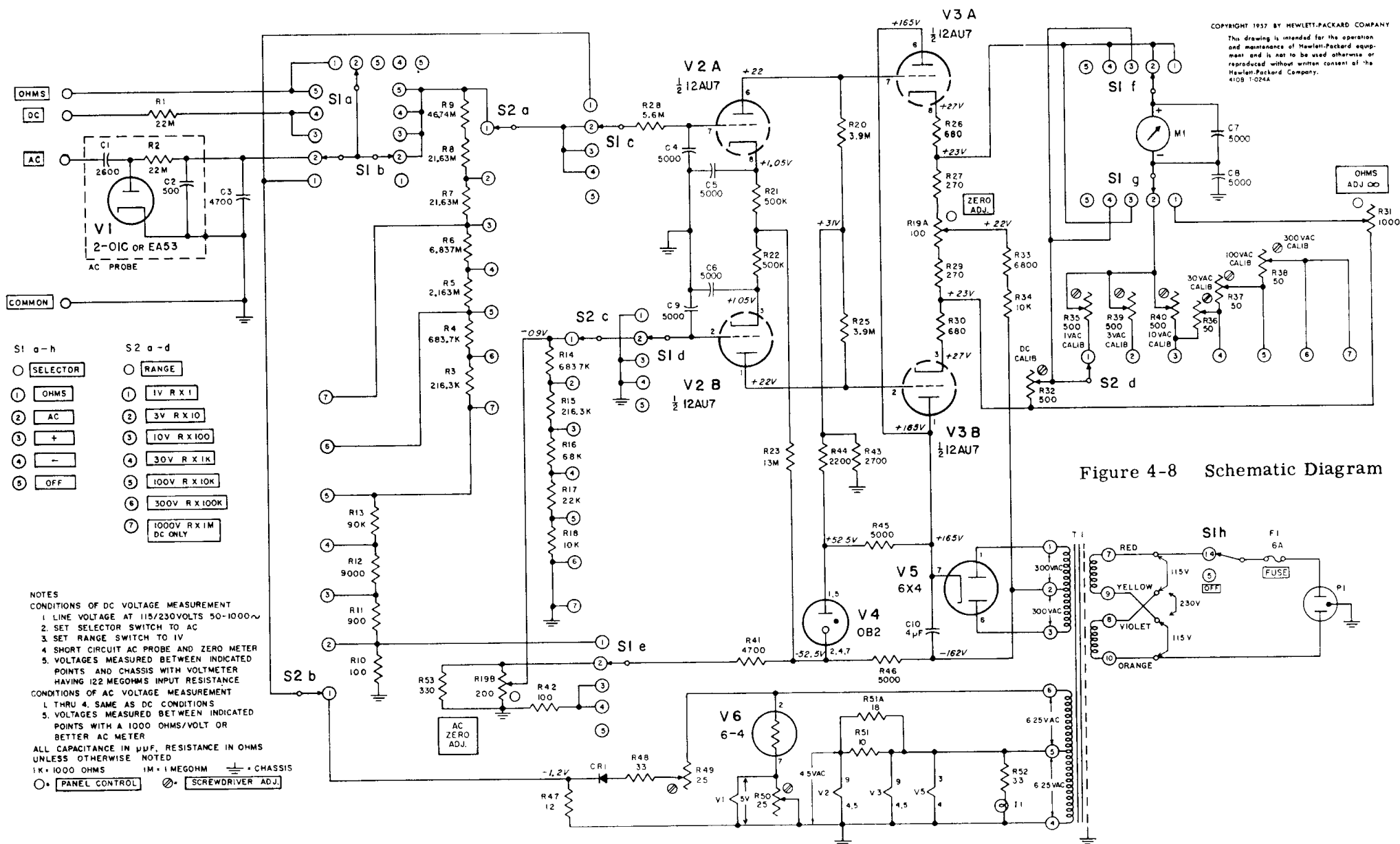


Figure 4-8 Schematic Diagram