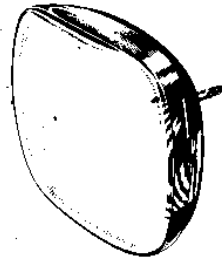


TUNG-SOL[®]

MODEL TS 78

TUBE TESTER

REPLACE WITH



TUNG-SOL TUBES

TUBE INDEX.....SET-UP DATA

FOREIGN AND INDUSTRIAL SET-UP DATA IMMEDIATELY AFTER INSTRUCTION SECTION.



Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"	Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"	Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"	Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"
1AX2	1	H	100	X	2EV5	2	A	50		3ER5	3	B	60		5AM8	5	B	40	
Special Socket 30% OK					2FV6	2	A	50		3EV5	3	A	50		"	"	F	"	
1B3	1	H	100	Y	2J2	2	H	100	X	4AU6	4	A	50		5AN8	5	B	40	
*1G3	1	H	100	Y	Special Socket					4BA6	4	A	35		"	"	F	"	
1H2	1	H	100	X	*2T4	2	B	40	Y	4BC5	4	A	35	X	5AQ5	5	A	60	X
Special Socket					2V3	2	H	100	X	4BC8	4	B	40		5AR4	5	C	70	Y
*1J3	1	H	100	Y	2W3	2	C	100	Y	"	"	C	"	"	"	"	F	"	
*1K3	1	H	100	Y	3A2	3	H	100	X	4BE6	4	A	45		Merit Test Only				
1N2	1	H	100	Y	Special Socket					*4BN4	4	B	35	X	5AS4	5	C	70	Y
1S2	1	H	100	X	3A3	3	H	100	X	4BN6	4	G	100		"	"	F	"	
Special Socket					*3AF4	3	B	40	Y	4BQ7	4	B	40		Merit Test Only				
1V2	1	E	100		3AL5	3	B	45		"	"	C	"	"	5AS8	5	B	40	
Special Socket					"	"	E	"		4BS8	4	B	45		"	"	D	"	
1X2	1	H	100	X	3AU6	3	A	50		"	"	C	"	"	5AT8	5	A	40	
Special Socket					3AV6	3	A	60		4BU8	4	C	45		"	"	E	"	
1Z2	1	H	100	X	"	"	D	100		4BX8	4	B	50		5AU4	5	C	50	Y
Special Socket					"	"	G	"	"	"	"	C	"	"	"	"	F	"	
*2AF4	2	B	40	Y	3B2	3	M	100	X	4BZ6	4	A	45		Merit Test Only				
2B3	2	H	100	Y	3BA6	3	A	40		4BZ7	4	B	40		5AV8	5	B	40	
*2BN4	2	B	35	X	3BC5	3	A	35	X	"	"	C	"	"	"	"	D	"	
2C22	6	H	45		3BE6	3	A	45		4BZ8	4	B	40		Merit Test Only				
2C50	12	A	55		*3BN4	3	B	35	X	"	"	C	"	"	5AW4	5	C	50	Y
"	"	C	"		3BN6	3	G	100		4CB6	4	A	35		"	"	F	"	
2C52	12	A	60		3BU8	3	C	45		4CE5	4	A	45	X	Merit Test Only				
"	"	C	"		3BY6	3	A	45		4CM6	4	G	80	Y	5AX4	5	C	90	Y
2CY5	2	A	45	X	3BZ6	3	A	45		4CS6	4	A	45		"	"	F	"	
2D21	6	A	30	X	3C2	3	H	100	Y	4CX7	4	B	40	X	Merit Test Only				
2E26	6	D	50	X	3CB6	3	A	35		"	"	C	"	"	5AZ4	5	C	85	Y
2EA5	2	A	40	X	3CE5	3	A	45	X	4CY5	4	A	40	X	"	"	F	"	
2EN5	2	B	45		3CF6	3	A	40		4DE6	4	A	35		Merit Test Only				
"	"	E	"		3CS6	3	A	45		4DK6	4	A	35		"	"	C	"	
2ER5	2	B	60	X	3CY5	3	A	40	X	4DT6	4	A	45		"	"	F	"	
2ES5	2	B	60	X	3DK6	3	A	35		4ES8	4	B	50		Merit Test Only				
"	"	D	100	"	3DT6	3	A	45		"	"	C	"	"	"	"	F	"	
					3EA5	3	A	40	X	4EW6	4	A	30						

CARD 1

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

PART #2078

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6AK5	6	A	40	X
6AK6	6	A	75	
6AK7	6	C	50	X
6AK8	6	F	65	
"	"	B	45	
"	"	A	"	
"	"	D	"	
6AL5	6	B	45	
"	"	E	"	
6AL6	6	D	40	X
6AM5	6	A	65	
6AM6	6	A	50	
6AM8	6	B	35	
"	"	F	45	
*6AN4	6	B	35	Y
6AN5	6	A	55	X
6AN7	6	B	50	
"	"	E	"	
6AN8	6	B	40	
"	"	F	"	
*6AQ4	6	A	55	Y
6AQ5	6	A	60	X
6AQ6	6	A	70	
"	"	D	100	
"	"	G	"	
6AQ7	6	C	70	
"	"	A	100	
"	"	G	"	
6AQ8	6	B	55	
"	"	C	"	
6AR5	6	A	70	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6AR8	6	D	60	
6AS5	6	B	55	Z
6AS6	6	A	35	
6AS7	6	A	50	
"	"	C	"	
6AS8	6	B	40	
"	"	D	"	
6AT6	6	A	60	
"	"	D	100	
"	"	G	"	
6AT8	6	A	40	
"	"	E	"	
6AU4	6	D	50	
6AU5	6	A	40	X
6AU6	6	A	50	
6AU7	6	C	50	X
"	"	D	"	"
6AU8	6	B	50	
"	"	C	"	
6AV4	6	A	85	
"	"	D	"	
6AV5	6	A	40	X
6AV6	6	A	60	
"	"	D	100	
"	"	G	"	
6AV8	6	B	40	
"	"	D	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6AW7	6	B	60	
"	"	C	100	
"	"	G	"	
6AW8	6	B	40	
"	"	C	"	
6AX4	6	D	55	
6AX5	6	D	80	X
"	"	G	"	"
6AX6	6	D	55	X
"	"	G	"	"
6AX7	6	B	60	X
"	"	C	"	"
6AX8	6	B	40	
"	"	E	"	
6AZ8	6	D	30	
"	"	E	40	
6B3	6	B	40	
Special Socket				
6B4	6	D	50	X
6B6G	6	H	50	X
"	"	D	100	"
"	"	C	"	"
6B8	6	H	80	X
"	"	D	100	"
"	"	C	"	"
6BA6	6	A	40	
6BA7	6	B	40	
6BA8	6	B	65	
"	"	C	35	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
*6BC4	6	D	40	
Merit Test Only - Reads to Left				
6BC5	6	A	35	X
6BC6	6	A	45	
6BC7	6	B	35	
"	"	D	"	
"	"	F	"	
6BC8	6	B	40	
"	"	C	"	
6BD4	6	D	100	X
6BD5	6	A	40	X
6BD6	6	A	55	
6BD7	6	B	60	
"	"	D	100	"
"	"	F	"	
6BE6	6	A	45	
6BE7	6	C	50	
6BE8	6	A	35	
"	"	E	"	
6BF5	6	A	40	X
6BF6	6	A	80	
"	"	D	100	"
"	"	G	"	
6BG6	6	D	50	X
6BH5	6	B	55	
6BH6	6	A	35	
6BH8	6	B	60	
"	"	C	"	
6BJ5	6	A	45	

CARD 2

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

PART #2078

CARD 2

PART #2078

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
5B8	5	B	40	
"	"	D	35	
5BE8	5	A	35	
"	"	E	"	
5BK7	5	B	35	
"	"	C	"	
5BQ5	5	E	30	
Special Socket				
5BQ7	5	B	45	
"	"	C	"	
5BR8	5	A	35	
"	"	E	"	
5BS8	5	B	40	
"	"	C	"	
5BT8	5	F	55	
"	"	A	100	
"	"	D	"	
5BW8	5	B	35	
"	"	A	45	
"	"	G	"	
5BZ7	5	B	40	
"	"	C	"	
5CG4	5	C	70	Y
"	"	F	"	"
Merit Test Only				
5CG8	5	A	40	Z
"	"	E	35	"
5CL8	5	A	45	
"	"	E	35	
5CM6	5	G	80	Y

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
5CM8	5	B	40	
"	"	E	60	
5CQ8	5	B	40	
"	"	E	"	
5CR8	5	B	45	
"	"	E	"	
5CZ5	5	D	60	Z
5DB4	5	C	60	Y
"	"	F	"	"
Merit Test Only				
5DH8	5	A	35	
"	"	E	"	
5EA8	5	B	40	
"	"	E	"	
5EH8	5	B	40	
"	"	C	"	
5EU8	5	B	35	
"	"	C	"	
5FV8	5	A	35	
"	"	E	"	
5GH8	5	B	35	
"	"	E	"	
5J6	5	D	40	
"	"	G	"	
5R4	5	C	70	Y
"	"	F	"	"
Merit Test Only				
5Y4	5	C	50	Y
"	"	F	"	"
Merit Test Only				
5T8	5	F	65	
"	"	B	45	
"	"	A	"	
"	"	D	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
5U4	5	C	50	Y
"	"	F	"	"
Merit Test Only				
5U8	5	B	40	
"	"	E	"	
5Y3	5	C	50	Y
"	"	F	"	"
Merit Test Only				
5Y4	5	C	40	Y
"	"	F	"	"
Merit Test Only				
5Y6	5	D	45	X
5W4	5	C	85	Y
"	"	F	"	"
Merit Test Only				
5X4	5	D	55	
"	"	G	"	
Merit Test Only				
5X8	5	B	35	
"	"	C	"	
5Y3	5	C	85	Y
"	"	F	"	"
Merit Test Only				
5Y4	5	D	85	
"	"	G	"	
Merit Test Only				
5Z4	5	C	40	Y
"	"	F	"	"
Merit Test Only				
6A8	6	D	75	X
6AB4	6	D	35	
6AB7	6	C	50	X
6AB8	6	B	50	
"	"	E	"	
6AC5	6	D	70	X

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6AC6	6	D	80	X
6AC7	6	C	70	X
6AD5	6	D	60	X
6AD7	6	A	70	X
"	"	D	"	"
6AD8	6	B	55	
"	"	C	100	"
"	"	F	"	
6AE5	6	D	55	X
6AE6	6	E	50	X
6AE7	6	C	60	X
"	"	F	"	"
6AE8	6	B	50	
"	"	C	"	
6AF3	6	B	50	X
*6AF4	6	B	40	Y
6AF5	6	D	55	X
6AG5	6	A	35	X
6AG6	6	F	60	X
6AG7	6	C	40	X
6AH4	6	A	50	X
6AH5	6	F	70	X
6AH6	6	A	40	
6AH7	6	A	60	
"	"	D	"	
6AJ5	6	A	50	X
6AJ7	6	C	50	X
6AJ8	6	B	60	
"	"	E	"	

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6BJ6	6	A	45	
6BJ7	6	B	45	
"	"	D	"	
"	"	F	"	
6BJ8	6	A	50	
"	"	D	"	
"	"	F	"	
6BK4	6	D	100	X
6BK5	6	C	40	Z
6BK6	6	A	60	
"	"	D	100	
"	"	G	"	
6BK7	6	B	35	
"	"	C	"	
6BK8	6	E	45	
6BL4	6	D	55	
6BL7	6	A	45	
"	"	C	"	
6BL8	6	B	50	
"	"	E	"	
6BM5	6	A	45	X
6BM8	6	A	65	
"	"	G	55	
*6BN4	6	B	35	X
6BN5	6	E	40	
6BN6	6	G	100	
6BN7	6	B	50	
"	"	C	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6BN8	6	F	40	
"	"	A	50	
"	"	D	"	
6BQ5	6	E	30	
Special Socket				
6BQ6	6	D	35	X
6BQ7	6	B	40	
"	"	C	"	
6BR7	6	B	50	
6BR8	6	A	35	
"	"	E	"	
6BS5	6	E	40	
Special Socket				
6BS7	6	H	50	
6BS8	6	B	45	
"	"	C	"	
6BT4	6	B	80	
"	"	D	"	
6BT6	6	A	60	
"	"	D	100	
"	"	G	"	
6BT8	6	F	55	
"	"	A	100	
"	"	B	"	
6BU4	6	D	90	X
*6BU5	6	C	90	
6BU6	6	A	80	
"	"	D	100	
"	"	G	"	
6BU8	6	C	45	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6BV7	6	F	40	
"	"	A	100	
"	"	D	"	
6BV8	6	B	35	
"	"	D	45	
"	"	E	"	
6BW4	6	A	60	
"	"	C	"	
6BW6	6	A	45	
Special Socket				
6BW7	6	B	45	Z
6BW8	6	D	35	
"	"	A	45	
"	"	G	"	
6BX4	6	A	70	
"	"	D	"	
6BX6	6	B	50	Z
6BX7	6	A	65	
"	"	C	"	
6BX8	6	B	55	
"	"	C	"	
6BY5	6	C	60	X
"	"	D	"	
6BY6	6	A	45	
6BY7	6	B	50	Z
6BY8	6	A	50	
"	"	D	"	
6BZ6	6	A	45	
6BZ7	6	B	40	
"	"	C	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6BZ8	6	B	40	
"	"	C	"	
6C4	6	D	45	Z
6C5	6	D	90	X
6C8	6	H	60	X
"	"	D	"	
6CA4	6	A	55	
"	"	C	"	
6CA5	6	B	60	Z
6CA7	6	D	40	X
*6CB5	6	C	35	Y
Check Merit Only				
6CB6	6	A	35	
6CD6	6	D	40	X
6CE5	6	A	45	X
6CF6	6	A	40	
6CG6	6	A	65	
6CG7	6	B	60	
"	"	C	"	
6CG8	6	A	40	Z
"	"	E	35	"
6CH6	6	B	45	
6CH7	6	B	40	X
"	"	C	"	
6CH8	6	C	40	
"	"	F	"	
6CJ5	6	D	55	
6CJ6	6	B	50	
6CK4	6	A	35	Z

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6CK5	6	D	45	
6CK6	6	B	40	
*6CL5	6	C	50	Y
Merit Test Only				
*6CL6	6	B	35	X
6CL8	6	A	35	
"	"	E	"	
6CM5	6	D	35	X
6CM6	6	G	70	Y
6CM7	6	C	65	
"	"	F	50	
6CM8	6	B	40	
"	"	E	60	
6CN6	6	D	50	X
6CN7	6	C	85	X
"	"	A	45	"
"	"	B	"	"
6CQ6	6	A	45	
6CQ8	6	B	35	
"	"	E	"	
6CR5	6	F	55	Z
6CR6	6	E	60	
"	"	B	100	
6CR8	6	A	45	
"	"	E	"	
*6CS5	6	D	50	Z
6CS6	6	A	45	
6CS7	6	C	80	
"	"	G	50	
6CS8	6	B	45	
"	"	E	"	
6CU5	6	B	50	Z
6CU6	6	D	35	X
6CUB	6	C	45	
"	"	F	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6CW5	6	B	40	
6CX7	6	C	40	X
"	"	B	"	"
6CX8	6	B	50	
"	"	C	35	
6CY5	6	A	45	X
6CY7	6	B	35	Z
"	"	C	80	"
6CZ5	6	D	60	Z
6D4	6	A	35	
6D8	6	D	60	X
6DA4	6	D	35	
6DA6	6	B	55	
6DA7	6	G	50	
"	"	C	80	
6DB5	6	D	65	Z
6DB6	6	A	45	
6DC6	6	A	40	
6DE4	6	D	55	
6DE6	6	A	35	
6DE7	6	B	50	Z
"	"	C	90	"
6DG6	6	D	55	X
6DG7	6	B	50	
6DH8	6	B	35	
"	"	E	"	
6DJ8	6	B	60	
"	"	C	"	
6DK6	6	A	35	
6DN6	6	D	30	X
6DN7	6	A	55	
"	"	C	75	
*6DQ5	6	A	40	Y
Merit Test Only				
6DQ6	6	D	35	X

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6DR6	6	B	55	
6DR7	6	B	40	Z
"	"	C	80	"
6DS5	6	A	60	X
6DT5	6	D	70	Z
6DT6	6	A	45	
6DT8	6	B	40	
"	"	C	"	
6DW5	6	D	40	Z
6DY7	6	A	45	X
"	"	D	"	"
6DZ7	6	A	50	X
"	"	D	"	"
6DZ8	6	A	60	
"	"	G	40	
6E8	6	D	70	X
"	"	H	"	"
6EA5	6	A	45	X
6EA7	6	A	40	
"	"	C	80	
6EA8	6	B	40	
"	"	E	"	
6EB5	6	B	45	
"	"	E	"	
6EB8	6	B	40	
"	"	C	30	
6EC7	6	B	45	Z
6EF6	6	D	50	X
6EH5	6	B	35	Z
6EH8	6	B	35	Y
"	"	C	"	"
6EM5	6	D	40	Z
6EM7	6	A	45	
"	"	C	"	
6ER5	6	B	60	X

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6ES5	6	B	60	X
6ES6	6	A	40	
6ES8	6	B	45	
"	"	C	"	
6ET6	6	A	40	
6EU8	6	B	35	
"	"	C	"	
6EV5	6	A	50	
6EW6	6	A	30	
6EX6	6	D	35	X
6EY6	6	D	40	X
6EZ8	6	B	35	
"	"	C	70	
"	"	E	70	
Merit Test Only				
6F5	6	H	70	X
6F6	6	D	80	X
6F8	6	H	80	X
"	"	D	"	"
6FG6	6	A	60	
6FH5	6	B	50	
6FH6	6	D	35	X
6FH8	6	B	50	
"	"	D	"	
6FM8	6	F	65	
"	"	B	40	
"	"	D	"	
6FV6	6	A	40	
6FV8	6	A	35	
"	"	E	"	
6FW8	6	B	50	
"	"	C	"	
6FY8	6	A	35	
"	"	G	"	

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	
6G6	6	D	70	X	6M8	6	D	70	X	6S7	6	H	70	X	6SS7	6	C	70	X	
6G7	6	H	60	X	"	"	H	"	"	6S8	6	H	65	"	6ST7	6	B	90	"	
6GH8	6	B	35	"	"	"	E	100	"	"	"	C	100	"	"	"	C	100	"	
"	"	E	"	"	*6N4	6	A	65	X	"	"	A	"	"	"	"	D	"	"	
6GK6	6	"	35	"	6N6G	6	D	50	X	"	"	C	100	"	6SU7	6	A	60	"	
6GN8	6	B	40	"	6N7	6	C	70	X	"	"	A	"	"	"	"	C	"	"	
"	"	C	"	"	"	"	D	"	"	6SA7	6	D	60	X	"	"	"	"	"	
6H4	6	C	90	X	6N8	6	B	55	"	6SB7	6	D	40	X	6SV7	6	B	75	"	
6H6	6	G	90	X	"	"	C	100	"	6SC7	6	C	90	"	"	"	D	100	"	
"	"	D	"	"	"	"	F	"	"	"	"	G	"	"	6SZ7	6	B	90	"	
6H7	6	D	80	X	6P5	6	D	60	X	6SD7	6	C	60	X	"	"	C	100	"	
"	"	H	"	"	6P8	6	H	90	X	6SE7	6	C	55	X	"	"	D	"	"	
6H8	6	H	80	X	"	"	D	100	"	6SF5	6	G	65	"	"	"	"	"	"	
"	"	C	"	"	*6Q4	6	G	40	"	6SF7	6	B	80	"	*6T4	6	B	40	Y	
"	"	D	"	"	Merit Test Only - Reads to Left	"	D	100	"	"	"	D	100	"	6T6	6	H	60	X	
*6J4	6	B	40	"	6Q5	6	D	70	X	6SG7	6	C	40	Y	6T7	6	H	70	X	
Merit Test Only - Reads to Left					6Q6	6	H	70	X	6SH7	6	C	50	Y	"	"	C	100	"	
6J5	6	D	60	X	"	"	D	100	"	6SJ7	6	C	60	X	"	"	D	"	"	
6J6	6	D	40	"	6Q7	6	H	70	X	6SK7	6	C	70	X	6T8	6	F	65	"	
"	"	G	"	"	"	"	C	100	"	"	"	A	"	"	"	"	B	45	"	
6J7	6	H	80	X	"	"	D	"	"	6SL7	6	A	60	"	"	"	A	"	"	
6J8	6	H	50	X	6R4	6	A	50	"	"	"	C	"	"	6U3	6	E	40	"	
"	"	D	100	"	6R6	6	H	70	X	6SN7	6	A	60	"	6U4	6	D	40	"	
6K5	6	H	70	X	6R7	6	H	85	X	"	"	C	60	"	6U6	6	D	55	X	
6K6	6	D	70	X	"	"	C	100	"	"	"	D	"	"	6U7	6	H	45	X	
6K7	6	H	90	X	"	"	D	"	"	6SQ7	6	B	70	"	6U8	6	B	40	"	
6K8	6	D	40	X	6R8	6	F	85	"	"	"	C	100	"	"	"	E	"	"	
6L5	6	D	65	X	"	"	B	"	"	"	"	B	90	"	6V3	6	D	40	"	
6L6	6	D	40	X	"	"	A	100	"	"	"	C	100	"	Special Socket					
6L7	6	H	70	X	"	"	D	"	"	6SR7	6	C	90	"	6V4	6	A	70	"	
6M5	6	B	45	"	6S2	6	H	100	X	"	"	B	70	"	"	"	C	"	"	
6M6	6	D	45	X	Special Socket					"	"	D	"	"						
6M7	6	H	55	X	6S4	6	G	50	Y											
					6S5	6	C	75	X											
					6S6	6	H	50	X											

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"
*6V5	6	D	55	"	6ZY5	6	D	65	X	7C6	6	A	75	X	7R7	6	D	50	"
Merit Test Only					"	"	G	"	"	"	"	D	100	"	"	"	A	100	"
6V6	6	D	45	X	7A4	6	D	55	"	"	"	F	"	"	"	"	G	"	"
6V7	6	H	90	X	7A5	6	D	50	"	7C7	6	D	50	"	7S7	6	D	50	"
"	"	C	100	"	7A6	6	A	75	"	7D7	6	G	65	"	"	"	G	100	"
"	"	D	"	"	"	"	D	"	"	7DJ8	7	B	40	"	7T7	6	D	45	"
6V8	6	D	65	"	7A7	6	D	70	"	"	"	C	"	"	7V7	6	D	45	"
"	"	C	50	"	7A8	6	G	60	"	7E6	6	A	65	X	7W7	6	D	45	"
"	"	B	100	"	7AD7	6	D	40	"	"	"	D	100	"	"	"	A	65	"
"	"	E	"	"	7AF7	6	F	65	"	"	"	F	"	"	7X6	6	A	65	"
6W4	6	D	40	"	"	"	G	"	"	7E7	6	D	75	"	7X7	6	A	80	"
6W5	6	G	70	X	7AG7	6	D	35	"	"	"	A	100	"	"	"	B	100	"
"	"	D	"	"	7AH7	6	D	40	"	"	"	G	"	"	"	"	D	50	"
6W6	6	D	40	X	7AJ7	6	D	50	"	7EY6	7	D	50	X	7Y4	6	A	70	"
6W7	6	H	45	X	7AK7	6	D	40	"	7F7	6	F	70	"	"	"	D	"	"
6X4	6	A	65	"	*7AN7	7	B	55	"	"	"	G	"	"	7Z4	6	A	90	"
"	"	D	"	"	"	"	D	"	"	7G7	6	D	55	"	"	"	D	"	"
6X5	6	D	55	X	7AU7	7	B	50	X	7G8	6	F	60	"	8AU8	8	B	50	"
"	"	G	"	"	"	"	C	"	"	"	"	G	"	"	"	"	C	"	"
6X6	6	C	60	X	7B4	6	D	60	"	7H7	6	D	35	"	8AW8	8	B	40	"
6X8	6	B	35	"	7B5	6	D	75	"	7J7	6	D	65	"	"	"	C	"	"
"	"	C	"	"	7B6	6	A	60	X	"	"	G	100	"	8BA8	8	B	65	"
6Y3	6	H	90	X	"	"	D	100	"	7K7	6	G	70	"	"	"	C	35	"
6Y6	6	D	60	X	"	"	F	"	"	"	"	D	100	"	8BH8	8	B	60	"
6Y7	6	C	60	X	7B7	6	D	78	"	7L7	6	D	45	"	"	"	C	"	"
"	"	D	"	"	7B8	6	G	60	"	7N7	6	F	65	"	8BN8	8	F	40	"
6Z6	6	D	65	X	7C4	6	G	80	"	"	"	G	"	"	"	"	A	50	"
6Z7	6	C	60	X	7C5	6	D	55	"	7Q7	6	G	50	"	"	"	D	"	"

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
8BQ5	8	E	30	
8BQ7	8	B	40	
8CG7	8	C	60	
8CM7	8	C	65	
8CN7	8	C	75	X
8CS7	8	C	80	
8CX8	8	B	50	
8CY7	8	B	35	Z
8EB8	8	B	40	
8EM5	8	D	40	Z
8GN8	6	B	40	
8SN7	8	A	60	
9A8	9	B	50	
9AK8	9	F	65	
9AQ8	9	B	55	
9AU7	9	B	50	X
9BM5	9	A	45	X
9BR7	9	B	35	X
9BR8	9	A	35	
9BW6	9	B	45	
9CL8	9	A	45	
9DZ8	9	A	60	
9EF6	9	D	50	X
9EJ5	9	B	30	
9U8	9	B	40	
9X8	9	B	35	
10C8	10	B	50	
10DA7	10	G	50	
10DE7	10	B	50	Z
10DR7	10	B	40	Z
10EB8	10	B	40	
10EG7	10	A	50	
11C5	11	B	45	Z
11CY7	11	B	35	Z
12A4	12	D	50	Z
12A6	12	D	45	X
12A8	12	D	75	X
12AB5	12	D	50	Z
12AC6	12	A	60	
12AD5	12	B	70	
12AD6	12	A	35	
12AD7	12	B	65	X
12AE6	12	A	60	
12AE7	12	B	40	X
12AF3	12	B	50	X
12AF6	12	A	55	
12AG6	12	A	50	
12AH7	12	A	100	
12AH8	12	B	65	X
12AJ6	12	A	60	
12AJ7	12	B	60	
12AL5	12	B	45	
12AL8	12	F	90	
12AQ5	12	A	60	X
12AS5	6	B	45	Z
12AT6	12	A	60	
12AT7	12	B	40	X
12AU6	12	A	50	
12AU7	12	B	50	X
12AV5	12	A	40	X
12AV6	12	A	60	
12AV7	12	B	50	X
12AW6	12	A	45	
12AW7	12	A	50	
12AX4	12	D	55	
12AX7	12	B	60	X
12AY7	12	B	80	X
12AZ7	12	B	55	X
12B3	12	B	40	

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
12B4	12	D	45	Z
12B6	12	H	80	X
12B7	12	D	70	
12B8	12	H	50	X
12BA6	12	A	40	
12BA7	12	B	40	
12BD6	12	A	55	
12BE6	12	A	45	
12BF6	12	A	80	
12BH7	12	B	45	X
12BK5	12	C	40	Z
12BK6	12	A	60	
12BL6	12	A	55	
12BN6	12	G	100	
12BQ6	12	D	35	X
12BR7	12	B	35	X
12BT6	12	A	60	
12BU6	12	A	80	
12BV7	12	B	40	Y
12BW4	12	A	65	
12BY7	12	B	35	Y
12BZ6	12	A	45	
12BZ7	12	B	60	X
12C5	12	B	45	Z
12C8	12	H	100	X
12CA5	12	B	45	Z
12CM6	12	G	80	Y
12CN5	12	B	35	Z
12CR5	12	F	55	Z
12CR6	12	E	60	
12CS5	12	D	50	Z
12CS6	12	A	45	
12CS7	12	G	50	
12CT8	12	B	50	
12CU5	12	B	45	Z
12CU6	12	D	35	X
12CW6	12	D	70	X
12CX6	12	A	40	
12CY6	12	A	40	
12D4	12	D	35	
12DB5	12	D	65	Z
12DE8	12	A	50	
12DF5	12	A	65	
12DF7	12	B	45	
12DK5	12	B	40	
12DK7	12	A	60	
12DL8	12	G	55	
12DM5	12	B	40	Z
12DM7	12	B	50	X
12DQ6	12	D	35	X
12DQ7	12	B	40	Y
12DS7	12	G	45	
12DT5	12	D	70	Z
12DT7	12	B	50	X
12DT8	12	B	40	
12DU7	12	A	45	
12DV7	12	C	55	
12DV8	12	G	60	
12DW5	12	D	40	Z
12DW7	12	B	60	X
12DW8	12	B	60	
12DY8	12	A	50	
12DZ6	12	A	40	
12DZ8	12	A	60	
12E5	12	D	60	X
12EA6	12	A	40	
12EC8	12	A	60	
12ED5	12	B	40	Z
12EF6	12	D	50	X
12EG6	12	A	40	
12EH5	12	B	35	Z
12EK6	12	A	35	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"
12EL6	12	A	55		12G8	12	G	60	X	12SH7	12	C	50	Z	14A4	12	D	55	
"	"	D	100		"	"	F	"	"	12SJ7	12	C	60	X	14A5	12	D	50	
"	"	G	"		12GA6	12	A	45		12SK7	12	C	70	X	14A7	12	D	70	
12EM6	12	A	50		12GC6	12	D	35		12SL7	12	A	60		14AF7	12	F	65	
"	"	E	100		12H6	12	G	90	X	"	"	C	"		"	"	G	"	
12EN6	12	D	50	X	"	"	D	"	"	12SN7	12	A	60		14B6	12	A	60	X
12EZ6	12	A	40		12J5	12	D	60	X	"	"	C	"		"	"	D	100	"
12F5	12	H	70	X	12J7	12	H	80	X	12SQ7	12	B	70		"	"	F	"	"
12F8	12	F	60		12J8	12	A	35		"	"	C	100		14B8	12	G	60	
"	"	A	100		"	"	E	90		12SR7	12	B	90		14C5	12	D	55	
"	"	D	"		"	"	F	"		"	"	C	100		14C7	12	D	50	
12FA6	12	A	40		12K5	12	D	45	Z	"	"	D	"		14E6	12	A	65	
12FK6	12	A	60		12K7	12	H	90	X	12SW7	12	B	90		"	"	D	100	
"	"	D	100		12K8	12	D	40	X	"	"	C	100		"	"	F	"	
"	"	G	"		12L6	12	D	40	X	"	"	D	"		14E7	12	A	75	
12FM6	12	A	45		12Q7	12	H	70	X	"	"	A	60		"	"	D	100	
"	"	D	100		"	"	C	100	"	12SX7	12	A	60		"	"	A	100	
"	"	G	"		"	"	D	"	"	"	"	C	"		"	"	G	"	
12FQ8	12	B	50		12R5	12	B	40	Z	12SY7	12	D	70	X	14F7	12	F	70	
"	"	C	"		12S8	12	H	65		12U7	12	B	60	X	"	"	G	"	
12FR8	12	A	60		"	"	C	"		"	"	C	"		14G6	14	B	70	
"	"	F	100		"	"	G	100		12V6	12	D	45	X	"	"	D	100	
"	"	G	"		"	"	A	"		12W6	12	D	40	X	"	"	F	"	
12FT6	12	A	55		12SA7	12	D	70	X	12X4	12	A	65		14H7	12	D	35	
"	"	D	100		12SB7	12	D	40	X	"	"	D	"		14J7	12	D	65	
"	"	G	"		12SB8	12	A	70		13DE7	13	B	50	Z	"	"	G	100	
12FX8	12	B	50		"	"	C	100		"	"	C	90	"	14N7	12	F	65	
"	"	D	"		"	"	G	"		13DR7	13	B	40	Z	"	"	G	"	
12FY8	12	A	35		12SC7	12	C	90		"	"	C	80	"	14Q7	12	G	50	
"	"	G	"		"	"	G	"		"	"	"	"		"	"	"	"	
12G4	12	D	65	Z	12SF5	12	G	65		"	"	"	"		"	"	"	"	
12G7	12	H	70	X	12SF7	12	B	80		"	"	"	"		"	"	"	"	
"	"	C	100	"	"	"	D	100		"	"	"	"		"	"	"	"	
"	"	D	"	"	12SG7	12	C	40	Z	"	"	"	"		"	"	"	"	

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"
14R7	12	D	50		18DZ8	18	A	60		19V8	19	D	65		25D8	25	H	45	X
"	"	A	100		"	"	G	40		"	"	C	50		"	"	D	55	"
"	"	G	"		18FW6	18	A	40		"	"	B	100		"	"	E	100	"
14S7	12	D	50		18FX6	18	A	45		"	"	E	"		25DN6	25	D	30	X
"	"	G	100		18FY6	18	A	60		19X3	19	E	35		25DQ6	25	D	35	X
14W7	12	D	45	X	"	"	D	100		19X8	19	B	35		25DT5	25	D	50	Z
14X7	12	A	60		"	"	G	"		"	"	C	"		25E5	25	D	45	X
"	"	D	"		18GD6	18	A	45		19Y3	19	E	35		25EC6	25	D	45	X
"	"	F	100		18GE6	18	A	60		21A6	21	B	45		25EH5	25	B	35	Z
14Y4	12	A	70		"	"	D	100		21A7	21	D	60		25F5	25	B	50	Z
"	"	D	"		"	"	G	"		"	"	G	"		25FY8	25	A	35	
14Y7	14	B	55		18J6	18	D	40		21B6	21	B	45		"	"	G	"	
"	"	E	"		"	"	G	"		21EX6	21	D	35	X	25L6	25	D	40	X
15A6	15	B	45		19AQ5	19	A	60	X	22DE4	22	D	40		25N6	25	D	40	X
15A8	15	C	45	X	19AU4	19	D	50		25A6	25	D	45	X	25U4	25	D	40	
"	"	G	"	"	19BG6	19	D	50	X	25A7	25	D	50	X	25W4	25	D	40	
16A5	16	B	40		19C8	19	F	65		"	"	F	"	"	25W6	25	D	40	X
17AV5	17	A	40	X	"	"	B	45		25AC5	25	D	80	X	25X6	25	G	45	X
17AX4	17	D	55		"	"	A	"		25AC7	25	D	70	X	"	"	E	"	"
17BQ6	17	D	35	X	"	"	D	"		25AV5	25	A	40	X	25Y4	25	D	45	X
17C5	17	B	45	Z	19CL8	19	A	35		25AX4	25	D	55		25Z4	25	D	35	X
17C8	17	B	70		"	"	E	"		25B6	25	D	45	X	25Z6	25	D	50	X
"	"	C	100		19DE7	19	B	50	Z	25B8	25	H	50	X	"	"	G	"	"
"	"	F	"		"	"	C	90	"	"	"	E	"		26A6	26	A	40	
17CA5	17	B	45	Z	19EA8	19	B	40		25BK5	25	C	40	Z	26BK6	26	A	60	
17D4	17	D	35		"	"	E	"		25BQ6	25	D	35	X	"	"	D	100	
17DE4	17	D	40		19J6	19	D	40		25C5	25	B	45	Z	"	"	G	"	
17DQ6	17	D	35	X	"	"	G	"		25C6	25	D	45	X	26C6	26	A	80	
17H3	17	F	45	Z	19T8	19	F	65		25CA5	25	B	45	Z	"	"	D	100	
17L6	17	D	40	X	"	"	B	45		25CD6	25	D	35	X	"	"	G	"	
17R5	17	B	40	Z	"	"	A	"		25CG6	25	A	65	X	"	"	"	"	
17Z3	17	E	50		"	"	D	"		25CR5	25	F	55	Z	"	"	"	"	
18A5	18	A	45	X	"	"	"	"		25CU6	25	D	35	X	"	"	"	"	
18AK5	18	A	40		"	"	"	"		25D4	25	D	35		"	"	"	"	
18AQ5	18	A	60	X	"	"	"	"		"	"	"	"		"	"	"	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"
26CG6	26	A	40		35A6	35	D	45		45B5	45	B	35		50L6	50	D	40	X
26D6	26	A	45		35B5	35	A	50	X	45Z5	45	D	35	Z	50X6	50	A	35	
26E6	26	D	40	X	35C5	35	B	45	Z	50A5	50	D	35		"	"	D	"	
26Z5W	26	A	50	X	35CD6	35	D	35	X	50AX6	50	D	35	X	50Y6	50	D	40	X
"	"	D	"	"	35DZ8	35	A	60		"	"	G	"	"	"	"	G	"	"
28D7	28	B	40		"	"	G	40		50B5	50	A	50	X	50Y7	50	D	45	X
"	"	E	"		35EH5	35	B	35	Z	50BK5	50	C	40	Z	"	"	G	"	"
28Z5	28	A	70		35L6	35	D	40	X	50BM8	50	A	65		Merit Test Only				
"	"	D	"		35W4	35	G	35	Y	"	"	G	55		50Z6	50	D	45	X
30A5	30	D	35		35Y4	35	B	30	Z	50C5	50	B	45	Z	"	"	G	"	"
31A3	31	B	50		35Z3	35	B	30		50C6	50	D	45	X	50Z7	50	D	45	X
32ET5	32	B	40	Z	35Z4	35	D	35	X	50CA5	50	B	45	Z	"	"	G	"	"
32L7	32	F	60	X	35Z5	35	D	35	Z	50CD6	50	D	35	X	Merit Test Only				
"	"	D	"	"	35Z6	35	D	35	X	50DC4	50	G	35	Y	55N3	50	E	35	
35A5	35	D	35		"	"	G	"	"	50EH5	50	B	35	Z					
					36AM3	36	G	35	Y	50FY8	50	A	35						
					38A3	38	E	35		"	"	G	"						
					40Z5	40	D	35	Z										
					45A5	45	D	35											

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

SECO MODEL 78 TUBE TESTER

GENERAL DESCRIPTION

The Seco Model 78 Grid Circuit and Tube Merit tester is a very compact and highly accurate tube tester designed primarily for the television technician. Its test coverage includes the majority of heater type radio tubes as well as filament rectifiers.

Three basic tests are available, each in turn applies the desired data to a special two stage DC amplifier. The amplified signal voltage which is either D.C. or rectified signal voltage is fed to the meter through the proper amplifier input.

These three tests are namely:

1. Grid Circuit and shorts test
2. Merit test
3. Filament continuity

The Grid Circuit and selected leakage and shorts test employs the Seco developed and patented "D.C. testing procedure" for detecting "hard-to-find" faults such as grid emission, small leakage and shorts. Low test voltages (4.5 - 50 VDC) are selected to minimize danger of damage to a good tube. If the tube is free of the above undesired faults, the meter pointer will deflect into the good area on the left of the meter arc.

The Tube Merit Test is accomplished by feeding a low test voltage of 22 volts through a suitable

limiting resistance to the cathode and the plate or grids. This constitutes an emission quality test. The tube under test is always isolated from the actual meter circuit. The circuit employed in the Model 78 makes available an unusually wide choice of test conditions as well as safeguarding against meter damage. A good tube will cause the meter pointer to read in the "good area" on the right of the meter arc.

The Filament Continuity Test is convenient for locating open heaters in series string operated receivers. If heater continuity is satisfactory, the meter pointer will read in the "good" area to the right.

The pin selector and switching circuits:

It is possible through proper choice of switches to test as many tubes on the Model 78 with its five sockets as some testers do using in excess of one hundred sockets.

The rotary switch "R" is a dual ganged switch. One section is an isolating type while the other is a selecting type.

The lever switch "L" is a multi-rotor switch arranged for opening circuits to selected pins. It also transposes the heater voltage to different pins. Study of the chart will reveal that 14 heater pin combinations are available in addition to the 9 pin special socket.

OPERATING INSTRUCTIONS-ADDITIONAL NOTES

1. See operating instructions in the cover of your tester.
2. Test each section of dual and multi-purpose tubes individually. Usually only the switch "R" and the load pot need to be adjusted.
3. Filament type rectifiers are checked for emission only, a shorted tube will produce no reading.
4. Lever switch "L" is always left at position marked "normal" unless specified otherwise under the heading switch "L" on the set up data card.

PLUS FEATURES OF THE MODEL 78 TUBE TESTER

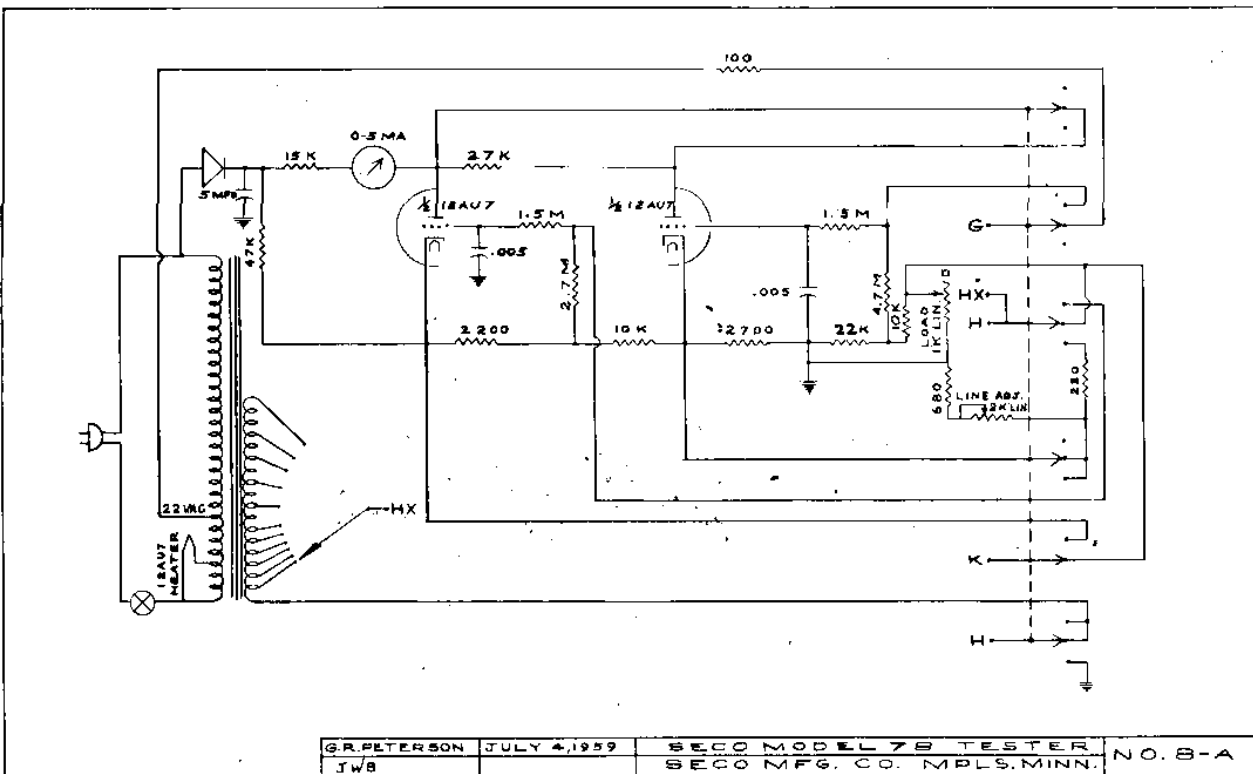
To perform a complete high sensitivity interelement short test or for determining where the short exists:

1. After tube is thoroughly heated and tested for merit and GCT, hold the FUNCTION switch forward in GCT and Shorts positions.
2. Rotate Switch "R" through all positions A to H and watch meter. On a single purpose tube, the pointer should remain in the good area to the left in all positions except ONE, the cathode position. Readings in the "red" area in excess of one mean that a short is present and associated with the pin selected by Switch "R" in this position. Consult chart showing electrical detail of Switch "R".
3. A common dual tube such as the 12AU7 has one cathode for each section. Two set-up entries are shown. The meter will read in the "red" area in two positions, namely the F and G positions.

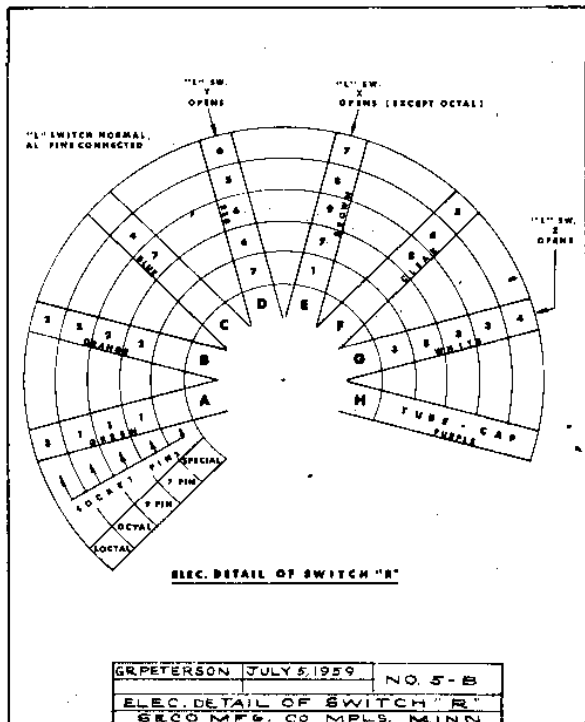
4. If an asterisk appears opposite the tube set-up, this means that an inter-connection exists in the tube which cannot be isolated with lever switch "L". Such interconnections will indicate the same as a short between these pins and cause the meter to read in the red. Consult the tube manual if necessary.

HOW TO PERFORM THE "OPEN" ELEMENT AND ELEMENT IDENTIFICATION TEST

1. Set up the tester controls as usual.
2. After the tube is thoroughly heated, turn the LOAD pot to 100. On most types the meter will pin at full scale, depending on the position of switch "R". This is normal and no harm can be done to the meter because its current is limited by tube limiting action in the tester.
3. "Function switch" should be in "TUBE MERIT TEST" position.
4. Rotate switch "R" through all of its positions A to H.
5. All plates and grids will deflect the meter pointer to the right.
6. Cathodes will deflect the meter pointer to the left.
7. Pins with no connections, or interconnected pins that cannot be isolated with switch "L", will cause pointer to remain at center. Such interconnected pins will be indicated by an asterisk in the set-up.
8. The grids or plates nearest to the cathode will produce the greater deflection as the load pot is backed off from 100.



GR. PETERSON	JULY 4, 1959	SECO MODEL 78 TESTER	NO. 8-A
JWB		SECO MFG. CO. MPLS. MINN.	



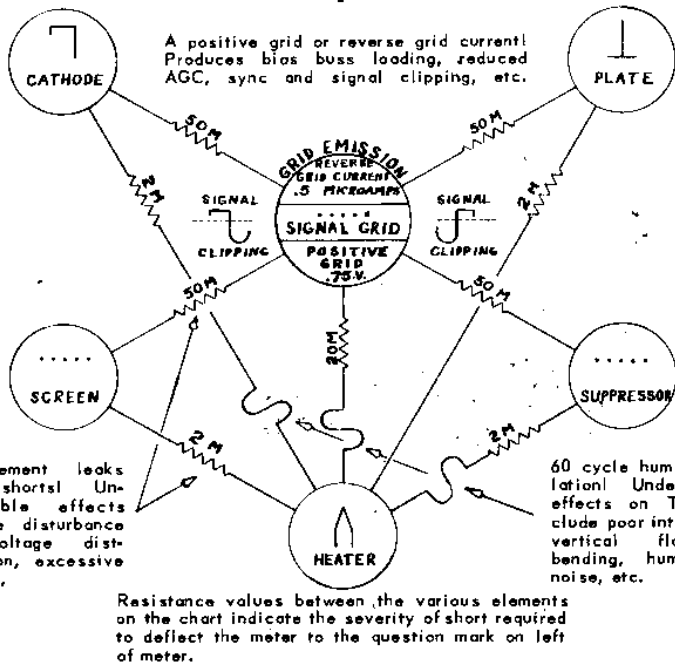
DETAIL OF LEVER SWITCH "L" MODEL 78 SECO TUBE TESTER

POSITION OF SWITCH "L"	9 PIN (4 & 5 HTRS.)	7 PIN (3 & 4 HTRS.)	OCTAL	LOCTAL	9 PIN SPEC SOCKET
NORMAL	All socket pins except htrs. connected to circuit thru ROTARY switch "R".	All socket pins except htrs. in circuit thru switch "R".	Pins 7 & 8 are heater pins. Rest of pins in circuit thru switch "R".	Pins 1 & 8 are heater pins. Rest of pins in circuit thru switch "R".	This socket wired for 1X2 etc. Also tests 12B4 & siml. Set LEVER SW. "L" as shown in set-up chart.
X	All pins in (same as above) except #9 is out of circuit.	All pins in the circuit except #7.	Pins 2 & 7 are the heaters. The rest of pins in circuit.		Pin #1 disconnected.
Y	All pins in the circuit except #6.	All pins in the circuit except #6.	Pins 2 & 8 are the heater pins for 5Y4 etc. Pin #5 open.		Pin #7 disconnected.
Z	All pins in the circuit except #3.	All pins in the circuit except #5.	Pins 2 & 7 are heater pins. #3 is out of circuit.	Pins 1 & 8 are heaters. Pin #4 is out of circuit.	Pin #3 disconnected.

All modern TV and radio heater type tubes (including rectifiers) that have the following heater pin combinations may be tested on the Model 78 Seco Tube Tester:

9 PIN	7 PIN	OCTAL	LOCTAL	SPECIAL SOCKET FOR
4-5	3-4	2-7	1-8	1X2
3-4-5	3-4-5	7-8	1-4-8	12B4
4-5-6	3-4-6	2-8		etc.
4-5-9	3-4-7	2-3-7		
		2-7-8		
		2-5-7		

MODEL 78 Grid Circuit & Compound Shorts Test



Warranty

SECO MFG. CO. warrants each instrument and every other piece of equipment manufactured by it to be free from defects in material and workmanship. This warranty is limited to making good at its factory any device which shall, within 90 days after date of purchase, prove to be defective.



5015 Penn. Ave. So., Minneapolis, Minn.

CARD 10

PICTURE TUBE ADAPTOR FOR SECO MODEL 78

Construct the illustrated adaptor from any picture tube bridge and an Amphenol Octal connector #86PM8 plus grommet cap #3-13.

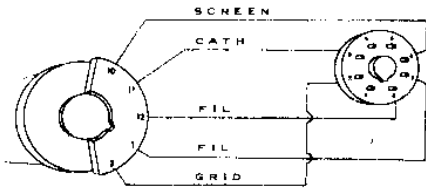
Adjust the filament voltage (6), the "R" switch (B) and the load (100). Plug the Amphenol connector into the octal socket of the Model 78 Tube Tester and attach the female socket to the picture tube to be tested.

In the "Tube Merit" position, the picture tube is tested for cathode current. A good picture tube will read "good" on the meter. Weak picture tubes will draw less than 100, and dim tubes will read "replace".

In the "GCT" position, the tube will be checked for shorts, gas and grid emission.

For new short picture tubes, consult your tube manual for basing diagram and filament volts. Wire the appropriate CRT socket, identifying the screen, cathode, grid and filament voltage, the setup will be the same.

Fil. Volts	SW "R"	LOAD	SW "L"
6	B	100	Norm.

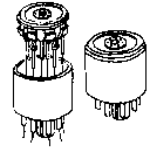


INSTRUCTIONS FOR AN ADAPTOR TO ACCOMMODATE SEVEN PIN BATTERY TYPES SECO MODEL 78

Remove glass from any GT tube base having all eight pins intact, (example 6SA7GT). Clean inside of base sufficiently

to fit an Amphenol 78A7P socket. Then solder a three-inch piece of hook-up wire to each terminal of the 78A7P socket except the number five pin. Strip enough insulation from each lead to leave one-half inch of insulation snugged up to each terminal. Next proceed to wire as follows.

78A7P	Tube Base
From pin 1 of Socket through pin 8 of tube base	
From pin 2 of Socket through pin 2 of tube base	
From pin 3 of Socket through pin 3 of tube base	
From pin 4 of Socket through pin 4 of tube base	
5	leave open
From pin 6 of Socket through pin 6 of tube base	
From pin 7 of Socket through pin 7 of tube base	



Apply service cement to grove around socket and pulling all wires tight, fit socket into tube base. Solder and cut off excess wire.

Filament voltage is one (1) on battery types (example 1R5, 1S5), except output tubes, which are three (3) (example 3V4, 3S4).

Load settings are 100, except output tubes which are 90.

Switch "R" settings will be determined by locating the signal grid pin or diode plate pin in a tube manual and applying that pin number to the "Octal" arc of the "R" switch diagram on card nine (9) of the flip chart.

Examples:

1R5	1	C	100
1S5	1	F	100
1S5	1	G	100
1T4	1	F	100
3V4	3	F	90

ADAPTOR TO ACCOMMODATE OLD STYLE TUBE BASES

Proceed as described in adaptor for battery types except for Amphenol socket types. Wire the chosen socket as follows:

78S4 Socket	Tube Base	78S5 Socket	Tube Base
From pin 1 through pin 8		Pin 1 through pin 8	
From pin 2 through pin 2		Pin 2 through pin 2	
From pin 3 through pin 3		Pin 3 through pin 3	
From pin 4 through pin 7		Pin 4 through pin 4	
		Pin 5 through pin 7	

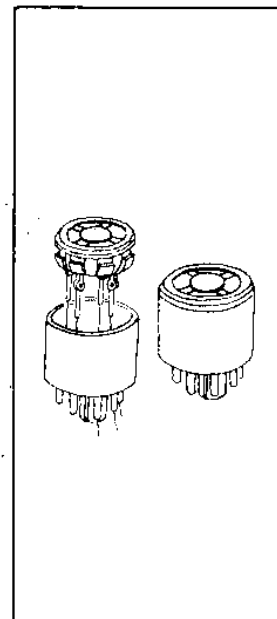
78S6 Socket	Tube Base	78S7S Socket	Tube Base
From pin 1 through pin 8		Pin 1 through pin 8	
From pin 2 through pin 2		Pin 2 through pin 2	
From pin 3 through pin 3		Pin 3 through pin 3	
From pin 4 through pin 4		Pin 4 through pin 4	
From pin 5 through pin 5		Pin 5 through pin 5	
From pin 6 through pin 7		Pin 6 through pin 6	
		Pin 7 through pin 7	

Filament Voltages will be determined from a tube manual.

Load Settings will be derived from a known good tube.

Switch "R" Setting determination same as described for Battery Types.

Switch "L" remains in Normal.



FOREIGN AND INDUSTRIAL TUBE INDEX SET-UP DATA

CARD 11

Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"
2C33	2	H	30	X	30L1	7	B	40		B719	6	B	35		DDR7	6	A	35	
2D21	6	D	40		"	"	D	"		"	"	C	"		DF33	1	H	100	X
2E26	6	D	45	X	B36	12	A	40		BPM04	6	A	40	X	DH63	6	H	60	X
3B26	3	H	40	X	"	"	C	"		D63	6	G	60	X	"	"	C	"	"
6D2	6	B	35		B65	6	A	40		"	"	D	"	"	"	"	D	"	"
"	"	E	"		"	"	C	"											
6E8	6	D	45	X	B152	12	B	35	X	D77	6	B	35		DH77	6	A	50	
6F12	6	A	40		"	"	C	"	"	"	"	E	"		"	"	D	100	
6H8	6	H	60	X	B309	12	B	35	X	D152	6	B	35		"	"	G	"	
"	"	C	100	"	"	"	C	"	"	"	"	E	"		DH149	6	A	50	
"	"	D	"	"	B319	7	B	40							"	"	D	"	"
					"	"	D	"							"	"	F	"	"
7D9	6	A	35		B329	12	B	35	X	DAC32	1	H	100	X	DK32	1	D	100	X
8D3	6	A	40		"	"	C	"	X	DC70	1	A	40		DL35	1	D	100	X
30C1	8	B	30		B339	12	B	50	X	DC80	1	A	90	Z	DL36	1	D	100	X
"	"	E	"		"	"	C	"	"	DD6	6	B	35		DM70	1	A	100	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"
DP61	6	A	35		EBC81	6	B	65		EC80	6	E	40	Y	ECC83	12	B	50	X
DY30	1	H	100	Y	"	"	D	100		Special Socket				"	"	C	"	"	
DY80	1	H	100	X	EBC90	6	A	45		EC81	6	A	30		ECC84	6	B	35	
					"	"	D	"		EC90	6	D	40		"	"	D	"	"
DY86	1	H	100	X	"	"	G	"		EC91	6	A	45	Y	ECC85	6	B	35	
										EC92	6	D	45		"	"	C	"	"
DY87	1	H	100	X	EBC91	6	A	50		ECC33	6	A	40		ECC86	12	B	50	X
					"	"	D	"		"	"	C	"		"	"	C	"	"
EAA91	6	B	35		"	"	G	"		ECC35	6	A	50		ECC88	6	B	45	
"	"	E	"		EBF80	6	B	50		"	"	C	"		"	"	C	"	"
EABC80	6	F	65		"	"	C	100		ECC40	6	C	50	X	ECC90	6	D	30	
"	"	B	"		"	"	F	"		"	"	D	"	"	"	"	G	"	"
"	"	A	"																
"	"	D	"		EBF83	6	B	60		ECC80	12	B	40	X	ECC91	6	D	30	
EB34	6	D	50	X	"	"	C	100		"	"	C	"	"	"	"	G	"	"
"	"	G	"	"	"	"	F	"		ECC81	12	B	35	X	ECC92	6	D	30	
EB91	6	B	35		EBF89	6	B	40		"	"	C	"	"	"	"	G	"	"
"	"	E	"		"	"	C	100		ECC82	12	B	40	X	ECF80	6	B	40	
EBC41	6	A	45		"	"	F	"		"	"	C	"	"	"	"	E	30	
"	"	D	"																
"	"	G	"																

CARD 11

CARD 12

Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"
ECH82	6	B	40		EF86	6	E	60		EL70	1	B	60		EY81	6	D	30	
"	"	E	30		EF89	6	B	35		EL80	6	B	30		"	Special Socket			
ECF83	6	B	40		EF91	6	A	40		EL81	6	B	30		EY84	6	H	35	
"	"	E	30		EF92	6	A	45		EL83	6	B	30		EY86	6	H	100	X
ECH35	6	H	50	X	EF93	6	A	30		EL84	6	E	30		"	Special Socket			
"	"	D	"	"	EF94	6	A	35		EL85	6	B	35		EZ35	6	G	30	X
					EF95	6	A	35							"	D	"	"	
ECH81	6	B	35		EF96	6	A	35		EL86	6	E	30		EZ80	6	A	30	
"	"	E	50		EF97	6	A	35		"	Special Socket			"	C	"	"		
ECH83	6	B	60		EF98	6	A	35		EL90	6	A	30	X	EZ81	6	A	30	
"	"	E	"		EF180	6	B	35		EL91	6	A	35		"	C	"	"	
ECL80	6	B	50		EH90	6	A	40		EL95	6	A	35	X	EZ90	6	A	30	
"	"	E	35		EH91	6	A	45		EL821	6	B	30		"	D	"	"	
ECL82	6	A	40																
"	"	G	30		EK90	6	A	40		EM80	6	A	75		GZ30	5	C	35	Y
ED2	6	B	35		EL32	6	H	50	X	EM81	6	A	75		"	F	"	"	
"	"	E	"		EL33	6	D	35	X	EM84	6	A	75		"	Merit Test Only			
EF80	6	B	40	Z	EL34	6	D	30	X	EM90	6	A	75		GZ32	5	C	35	Y
EF83	6	B	40	Z	EL37	6	D	30	X	EQ80	6	C	70		"	F	"	"	
EF85	6	B	30	Z	EL38	6	D	35	X	EY80	6	E	30		"	Merit Test Only			

Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"	Tube Type	Fil. Volts	SW "R"	Load	SW "L"
GZ34	5	C	50	Y	HL90	19	A	35	X	N78	6	A	45		PCF82	9	B	35	
"	"	F	"	"	HL92	50	B	35	Z	N144	6	A	65		"	E	"	"	
		Merit Test Only			HMO4	6	A	40		N147	6	D	35	X	PCL81	12	A	50	Z
H63	6	H	70	X	HY90	35	G	35	Y	N148	6	D	35		"	E	30	"	
HABC80	19	F	65		KT32	25	D	35	X	N152	21	B	35		PCL82	16	A	50	
"	"	B	45		KT61	6	D	35	X	N329	15	B	40		"	G	30		
"	"	A	"																
"	"	D	"		KT63	6	D	30	X	N359	21	B	35		PCL84	15	A	50	
HBC90	12	A	45		KT66	6	D	30	X	N709	6	E	30		"	F	35		
"	"	D	100		KT88	6	D	30	X	"	Special Socket			PL21	6	D	70		
"	"	G	"		KTW63	6	H	90	X	N727	6	A	40	X	PL36	25	D	35	
HBC91	12	A	50		L63	6	D	60	X	PABC80	9	F	65		PL81	21	B	30	
"	"	D	100		L77	6	D	45	Z	"	"	B	45		PL82	16	B	30	
"	"	G	"							"	"	A	"		PL83	15	B	35	
					LN152	6	B	50		"	"	D	"						
HD14	1	H	100		"	E	"			PCC84	7	B	50		PL84	15	B	35	
"	"	D	"		LZ319	8	B	30		"	D	"		PMO4	6	A	40		
HF93	12	A	35		"	E	"			PCC85	9	B	45		PMO5	6	A	40	
HF94	12	A	35		N14	1	D	100	X	"	C	"		PMO5	6	A	35		
HK90	12	A	40		N77	6	B	35		PCC80	9	B	40		PMO7	6	A	40	
					"	E	"			"	E	"		PM84	4	A	60		
														PY80	19	E	35		

CARD 12

CARD 13

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
PY81	17	E	45	
PY82	19	E	35	
PY83	19	E	30	
SP6	6	A	40	
U50	5	C	40	Y
Merit Test Only				
U52	5	C	35	Y
"	"	F	"	"
Merit Test Only				
U70	6	G	50	X
"	"	D	"	"
U78	6	A	50	
"	"	D	"	"
U147	6	G	50	X
"	"	D	"	"
U149	6	A	55	
"	"	D	"	"
U154	19	E	35	
U319	19	E	35	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
UABC80	28	F	65	
"	"	B	45	
"	"	A	"	"
"	"	D	"	"
UBC41	12	A	50	
"	"	F	"	"
"	"	D	"	"
UBF80	17	B	50	
"	"	C	90	
"	"	F	"	"
UBF89	19	B	40	
"	"	C	90	
"	"	F	"	"
UC92	9	D	35	
UCC85	26	B	40	
"	"	C	"	"
UCH42	12	G	50	
"	"	D	"	"
UCH81	19	B	40	
"	"	E	"	"

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
UCL81	39	A	60	
"	"	E	30	
UCL82	50	A	50	
"	"	G	30	
UF41	12	D	45	
UF80	19	B	40	Z
UF85	19	B	40	Z
V2M70	6	A	45	
"	"	D	"	"
W63	6	H	80	X
W77	6	A	35	
W149	6	A	65	
"	"	D	"	"
W179	6	B	40	Z
X14	1	D	100	X
X63M	6	D	75	X
X79	6	B	50	
"	"	C	"	"
X81	6	G	50	
"	"	D	"	"

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
X148	6	G	50	
"	"	D	"	"
X727	6	A	40	
Z14	1	H	100	X
Z63	6	H	70	X
Z77	6	A	50	
Z152	6	B	35	
Z179	6	B	35	
Z719	6	B	35	
403B	6	A	45	X
502	6	G	30	X
717	6	C	50	X
731	6	A	40	
884	6	G	35	X
FM1000	6	B	45	
1201	6	A	70	Y
1203	6	G	35	
1206	6	G	40	
"	"	F	"	"

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
1223	6	H	80	X
1225	6	H	70	X
1231	6	D	40	
1232	6	D	45	
1273	6	D	50	
1274	6	G	60	X
"	"	D	"	"
1280	6	D	50	
1282	6	D	50	
1284	12	D	50	
1291	1	A	90	Z
"	"	D	"	"
1293	1	D	100	
1294	1	G	100	
1381	6	A	40	
1611	6	D	35	X
1612	6	H	50	X
1613	6	D	35	X
1614	6	D	30	X

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
1619	2	D	35	X
1620	6	H	80	X
1621	6	D	35	X
1622	6	D	30	X
1626	12	D	40	X
1631	12	D	35	X
1632	12	D	35	X
1633	25	A	35	
"	"	C	"	"
1634	12	G	60	
"	"	C	"	"
"	"	C	"	"
1635	6	C	40	X
"	"	D	"	"
1638	6	D	50	
"	"	G	"	"
1649	6	C	40	X
1655	6	G	50	
"	"	C	"	"
1664	12	H	50	X
"	"	C	100	"
"	"	D	"	"

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
1851	6	C	40	X
1852	6	C	40	X
1853	6	C	40	X
1999	1	D	90	X
2050	6	G	35	X
2051	6	G	35	X
3223	6	A	45	
"	6	C	"	"
5590	6	A	40	
5591	6	A	35	
5610	6	D	35	
5654	6	A	35	
5656	6	B	40	
"	"	G	"	"
5661	12	C	50	X
5662	6	E	50	
5663	6	E	50	
5679	6	A	70	Z
"	"	D	"	"
5686	6	B	30	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
5691	6	A	50	
"	"	C	"	"
5692	6	A	40	
"	"	C	"	"
5693	6	C	50	X
5694	6	C	45	X
"	"	D	"	"
5696	6	A	30	
5702	6	E	50	
5725	6	A	40	
5726	6	B	35	
"	"	E	"	"
5727	6	D	40	
5732	6	H	70	X
5749	6	A	30	
5750	6	A	40	
5751	12	B	60	X
"	"	C	"	"
5755	12	G	50	X
"	"	D	"	"

CARD 13

CARD 14

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
5757	6	D	40	
5763	6	F	30	
5784	6	E	70	
5797	25	A	45	
5812	12	A	35	X
5814	12	B	40	X
"	"	C	"	"
5824	25	D	30	X
5838	12	G	40	X
"	"	D	"	"
5839	25	G	40	X
"	"	D	"	"
5844	6	G	35	
"	"	D	"	
5845	5	A	50	X
"	"	G	"	"
5852	6	G	40	X
"	"	D	"	"
5871	6	D	30	X
5873	6	A	50	
"	"	D	"	
5879	6	A	45	
5881	6	D	30	X
5915	6	A	45	
5920	6	G	35	
"	"	D	"	
5931	5	C	35	Y
"	"	F	"	"
5932	6	D	30	X
5961	6	D	40	X
5963	12	B	40	X
"	"	C	"	"
5964	6	G	35	
"	"	D	"	
5965	12	B	40	X
"	"	C	"	"
5968	1	B	100	
"	"	E	"	
5969	1	B	100	
"	"	E	"	
5970	1	B	100	
"	"	E	"	
5975	6	G	45	
5992	6	D	30	X
5995	6	A	35	
5998	6	A	30	
"	"	C	"	
6004	5	H	40	
"	"	H	"	
6005	6	A	30	X
6006	6	C	50	X
6012	6	D	30	X
6024	6	A	40	
6026	6	C	40	
6028	19	A	35	
6030	3	C	90	Y
6042	25	A	35	
"	"	C	"	
6045	6	G	30	
"	"	D	"	
6046	25	D	35	X
6057	12	B	50	X
"	"	C	"	"
6058	6	B	35	
"	"	E	"	
6059	6	B	50	
6060	12	B	35	X
"	"	C	"	"
6061	6	E	40	
6062	6	F	40	
6063	6	A	40	
"	"	D	"	
6064	6	A	40	
6065	6	A	35	
6066	6	A	55	
"	"	D	"	
"	"	G	"	
6067	12	B	40	X
"	"	C	"	"

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6072	12	B	50	X
"	"	C	"	"
6080	6	A	30	
"	"	C	"	
6082	25	A	30	
"	"	C	"	
6084	6	E	50	
6085	12	B	40	X
"	"	C	"	"
6086	19	B	40	
6087	5	C	40	Y
"	"	F	"	"
6095	6	A	30	X
6096	6	A	35	
6097	6	B	35	
"	"	E	"	
6099	6	G	35	
"	"	D	"	
6100	6	G	40	
6101	6	G	35	
"	"	D	"	
6105	5	C	45	Y
"	"	F	"	"
6106	5	C	40	Y
"	"	F	"	"
6113	6	A	50	
"	"	C	"	
6118	6	H	60	X
"	"	D	100	"
"	"	C	"	"
6125	6	D	40	
6132	6	B	25	
6134	6	C	45	X
6135	6	D	40	
6136	6	A	35	
6137	6	C	45	X
6145	6	D	40	
6146	6	D	30	X
6150	6	E	70	
6152	6	G	50	
6156	6	A	50	
6157	6	H	30	
6158	12	B	50	X
"	"	C	"	"
6180	6	A	40	
"	"	C	"	
6186	6	A	40	
6187	6	A	40	
6188	6	A	50	
"	"	C	"	
6189	12	B	40	X
"	"	C	"	"
6197	6	B	30	
6201	12	B	35	X
"	"	C	"	"
6202	6	A	50	
"	"	D	"	
6203	6	A	50	
"	"	D	"	
6211	12	B	50	X
"	"	C	"	"
6215	1	H	100	X
6216	6	B	30	
6227	6	B	25	
6245	6	E	50	
6265	5	A	35	
6267	6	E	60	
6287	6	F	30	
6305	4	H	90	
6325	6	G	30	
"	"	D	"	
6327	6	D	30	X
6350	12	G	45	
"	"	F	"	
6360	12	A	35	X
"	"	G	"	"
6373	1	B	90	
6374	6	H	35	

CARD 14

CARD 15

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6375	1	A	60	
6394	26	A	25	
"	"	C	"	
6414	12	B	50	X
"	"	C	"	"
6417	12	F	30	
6443	6	H	40	
6463	12	G	40	
"	"	F	"	
6485	6	A	30	
6516	6	A	35	
6520	6	A	30	
"	"	C	"	
6525	6	D	60	
6550	6	D	30	X
6660	6	A	35	
6661	6	A	30	
6662	6	A	40	
6663	6	B	35	
"	"	E	"	
6669	6	A	35	X
6677	6	B	30	
6678	6	B	30	
"	"	E	"	
6679	12	B	35	X
"	"	C	"	"
6680	12	B	40	X
"	"	C	"	"
6681	12	B	50	X
"	"	C	"	"
6686	6	B	25	
6687	6	A	45	
6688	6	B	35	
6689	6	B	30	
6754	6	A	35	
"	"	E	"	
6760	19	B	30	
6761	6	B	30	
6792	6	D	100	X
6829	12	B	30	X
"	"	C	"	"
6840	12	F	30	X
"	"	G	"	"
6851	12	B	50	X
"	"	C	"	"
6870	12	B	30	Y
6883	12	D	30	X
6887	6	B	35	
"	"	E	"	
6888	6	C	30	X
6893	12	D	30	X
6913	12	B	40	X
"	"	C	"	"
6919	6	B	35	
"	"	E	"	
6922	6	B	40	
"	"	C	"	
6927	6	D	30	
"	"	G	"	
6928	6	A	30	X
6954	6	A	40	
6955	12	B	40	X
"	"	C	"	"
6968	6	A	40	Z
6973	6	D	30	Z
7000	6	H	80	X
7025	12	B	50	X
"	"	C	"	"
7027	6	F	30	X
7032	6	A	40	
7036	6	A	40	
7054	12	B	30	
7055	12	B	35	
"	"	E	"	
7056	12	A	30	
7057	12	B	35	
"	"	C	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
7058	12	B	50	
"	"	C	"	
7059	12	B	30	
"	"	E	"	
7060	12	B	30	
"	"	F	50	
7061	12	D	40	Z
7062	12	B	45	X
"	"	C	"	"
7083	6	E	50	
7105	12	A	30	
"	"	C	"	
7125	6	E	40	
"	"	C	100	
"	"	F	"	
7137	6	B	40	
Merit Test Only - Reads to Left				
7167	13	A	35	X
7184	6	D	30	
7189	6	E	30	
Special Socket				
7199	6	C	30	
"	"	E	35	
7212	6	D	30	X
7227	25	E	30	
Special Socket				
7244	6	G	30	
"	"	D	"	
7245	6	B	40	
Merit Test Only - Reads to Left				
7247	6	B	50	
"	"	C	"	
7258	13	B	35	
"	"	F	"	
7320	6	E	30	
Special Socket				
7355	6	F	35	X
7408	6	D	30	X
7543	6	A	35	
7581	6	D	30	X
7687	6	B	35	
"	"	E	"	
7695	50	D	25	
7752	6	A	35	
7755	6	A	50	X
9001	6	A	45	
9002	6	D	40	
9003	6	A	35	
9006	6	A	50	Z
XXD	12	G	40	
"	"	F	"	
XXFM	12	A	50	
"	"	D	100	
"	"	F	"	
XXL	6	D	40	

CARD 15

