



MODEL 78 TUBE TESTER

TUBE INDEX ... SET-UP DATA

1AX2
TO
6AJ8

6AK5
TO
6CK4

6CK5
TO
6V4

6V5
TO
12B3

12B4
TO
14Q7

14R7
TO
55N3

INSTRUC-
TIONS

Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"
[1AX2	1	H	100	X
Special Socket 30% OK				
1B3	1	H	100	Y
+ 1G3	1	H		Y
[1H2	1	H	100	X
Special Socket				
* 1J3	1	H	100	Y
* 1K3	1	H	100	Y
[1S2	1	H	100	X
Special Socket				
[1X2	1	H	100	X
Special Socket				
[1Z2	1	H	100	X
Special Socket				
* 2AF4	2	B	40	Y
2B3	2	H	100	Y
* 2BN4	2	B	35	X
2C22	6	H	45	
2C50	12	A	55	
"	"	C	"	"
2C52	12	A	60	
"	"	C	"	"
2CY5	2	A	45	X
2D21	6	A	30	X
2E26	6	D	50	X
2EA5	2	A	40	X
2EN5	2	B	45	
"	"	E	"	"
2ER5	2	B	60	X
"	"	D	100	"
2ES5	2	B	60	X
"	"	D	100	"
[2J2	2	H	100	X
Special Socket				

Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"
* 2T4	2	B	40	Y
2V3	2	H	100	X
2W3	2	C	100	Y
[3A2	3	H	100	X
Special Socket				
3A3	3	H	100	X
* 3AF4	3	B	40	Y
3AL5	3	B	45	
"	"	E	"	"
3AU6	3	A	50	
3AV6	3	A	60	
"	"	D	100	
"	"	G	"	"
3B2	3	H	100	X
3BA6	3	A	40	
3BC5	3	A	35	X
3BE6	3	A	45	
* 3BN4	3	B	35	X
3BN6	3	G	100	
3BU8	3	C	45	
3BY6	3	A	45	
3BZ6	3	A	45	
3C2	3	H	100	Y
3CB6	3	A	35	
3CE5	3	A	45	X
3CF6	3	A	40	
3CS6	3	A	45	
3CY5	3	A	40	X
3DK6	3	A	35	
3DT6	3	A	45	
3EA5	3	A	40	X

Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"
4AU6	4	A	50	
4BA6	4	A	35	
4BC5	4	A	35	X
4BC8	4	B	40	
"	"	C	"	"
4BE6	4	A	45	
* 4BN4	4	B	35	X
4BN6	4	G	100	
4BQ7	4	B	40	
"	"	C	"	"
4BS8	4	B	45	
"	"	C	"	"
4BU8	4	C	45	
4BX8	4	B	50	
"	"	C	"	"
4BZ6	4	A	45	
4BZ7	4	B	40	
"	"	C	"	"
4BZ8	4	B	40	
"	"	C	"	"
4CB6	4	A	35	
4CE5	4	A	45	X
4CS6	4	A	45	
4CX7	4	B	40	X
"	"	C	"	"
4CY5	4	A	40	X
4DE6	4	A	35	
4DK6	4	A	35	
4DT6	4	A	45	
4ES8	4	B	50	
"	"	C	"	"
4EW6	4	A	30	

Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"
5AM8	5	B	40	
"	"	F	"	"
5AN8	5	B	40	
"	"	F	"	"
5AQ5	5	A	60	X
5AR4	5	C	70	Y
"	"	F	"	"
Merit Test Only				
5AS4	5	C	70	Y
"	"	F	"	"
Merit Test Only				
5AS8	5	B	40	
"	"	D	"	"
5AT8	5	A	40	
"	"	E	"	"
5AU4	5	C	50	Y
"	"	F	"	"
Merit Test Only				
5AV8	5	B	40	
"	"	D	"	"
5AW4	5	C	50	Y
"	"	F	"	"
Merit Test Only				
5AX4	5	C	90	Y
"	"	F	"	"
Merit Test Only				
5AZ4	5	C	85	Y
"	"	F	"	"
Merit Test Only				

CARD 1

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

PART #1198

has short

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	
"	"	B	"	
5BW8	5	D	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	
"	"	E	"	
5FV8	5	A	35	
"	"	E	"	
5GH8	5	B	35	
"	"	E	"	
5J6	5	D	40	
"	"	G	"	
5R4	5	C	70	Y
"	"	F	"	"
Merit Test Only				
5T4	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	"	
5V3	5	C	50	Y
"	"	F	"	"
Merit Test Only				
5V4	5	C	40	Y
"	"	F	"	"
Merit Test Only				
5V6	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	"	"

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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	
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	"	
"	"	D	100	X
6BD4	6	A	50	X
6BD5	6	A	50	
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	

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	
Special Socket				
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	45	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	50	Y
Check Merit Only				
6CB6	6	A	35	
6CD6	6	D	50	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	"	
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	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6CU5	6	B	50	Z
6CU6	6	D	50	X
6CU8	6	C	45	
"	"	F	"	
6CW5	6	B	40	
6CX7	6	B	40	X
"	"	C	"	"
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	60	X

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6DN7	6	A	55	
"	"	C	75	
*6DQ5	6	A	40	Y
Merit Test Only				
6DQ6	6	D	45	X
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	"	"
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	
6EF6	6	D	50	X
6EH5	6	B	35	Z
6EH8	6	B	35	Y
"	"	C	"	"
6EM5	6	D	40	Z

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6ER5	6	D	100	X
"	"	B	60	"
6ES5	6	D	100	X
"	"	B	60	"
6ES6	6	A	40	
6ES8	6	B	45	
"	"	C	"	
6ET6	6	A	40	
6EU8	6	B	35	
"	"	E	"	
6EW6	6	A	30	
6EX6	6	D	45	X
6EY6	6	D	40	X
6F5	6	H	70	X
6F6	6	D	80	X
6F8	6	H	80	X
"	"	D	"	"
6FH8	6	D	45	X
6FM8	6	F	65	
"	"	B	40	
"	"	D	"	
6FV6	6	A	40	
6FV8	6	A	35	
"	"	E	"	
6FY8	6	A	35	
"	"	G	"	
6G6	6	D	70	X
6G7	6	H	60	X
6GH8	6	B	35	
"	"	E	"	
6H4	6	C	90	X
6H6	6	G	90	X
"	"	D	"	"
6H7	6	D	80	X
"	"	H	"	"

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6H8	6	H	80	X
"	"	C	"	"
"	"	D	"	"
*6J4	6	B	40	
[Merit Test Only - Reads to Left				
6J5	6	D	60	X
6J6	6	D	40	
"	"	G	"	
6J7	6	H	80	X
6J8	6	H	50	X
"	"	D	100	"
6K5	6	H	70	X
6K6	6	D	70	X
6K7	6	H	90	X
6K8	6	D	40	X
6L5	6	D	65	X
6L6	6	D	40	X
6L7	6	H	70	X
6M5	6	B	45	
6M6	6	D	45	X
6M7	6	H	55	X
6M8	6	D	70	X
"	"	H	"	"
"	"	E	100	"
*6N4	6	A	65	X
6N6G	6	D	50	X
6N7	6	C	70	X
"	"	D	"	"

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6N8	6	B	55	
"	"	C	100	
"	"	F	"	
6P5	6	D	60	X
6P8	6	H	90	X
"	"	D	100	"
*6Q4	6	G	40	
[Merit Test Only - Reads to Left				
6Q5	6	D	70	X
6Q6	6	H	70	X
"	"	D	100	"
6Q7	6	H	70	X
"	"	C	100	"
"	"	D	"	"
6R4	6	A	50	
6R6	6	H	70	X
6R7	6	H	85	X
"	"	C	100	"
"	"	D	"	"
6R8	6	F	85	
"	"	B	"	
"	"	A	100	
"	"	D	"	
6S2	6	H	100	X
[Special Socket				
6S4	6	G	50	Y
6S5	6	C	75	X
6S6	6	H	50	X

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6S7	6	H	70	X
6S8	6	H	65	
"	"	G	"	
"	"	C	100	
"	"	A	"	
6SA7	6	D	60	X
6SB7	6	D	40	X
6SC7	6	C	90	
"	"	G	"	
6SD7	6	C	60	X
6SE7	6	C	55	X
6SF5	6	G	65	
6SF7	6	B	80	
"	"	D	100	
6SG7	6	C	40	Y
6SH7	6	C	50	Y
6SJ7	6	C	60	X
6SK7	6	C	70	X
6SL7	6	A	60	
"	"	C	"	
6SN7	6	A	60	
"	"	C	"	
6SQ7	6	B	70	
"	"	C	100	
"	"	D	"	
6SR7	6	B	90	
"	"	C	100	
"	"	D	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
6SS7	6	C	70	X
6ST7	6	B	90	
"	"	C	100	
"	"	D	"	
6SU7	6	A	60	
"	"	C	"	
6SV7	6	B	75	
"	"	D	100	
6SZ7	6	B	90	
"	"	C	100	
"	"	D	"	
*6T4	6	B	40	Y
6T6	6	H	60	X
6T7	6	H	70	X
"	"	C	100	"
"	"	D	"	"
6T8	6	F	65	
"	"	B	45	
"	"	A	"	
"	"	D	"	
6U3	6	E	40	
6U4	6	D	40	
6U6	6	D	55	X
6U7	6	H	45	X
6U8	6	B	40	
"	"	E	"	
6V3	6	D	40	
[Special Socket				
6V4	6	A	70	
"	"	C	"	

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Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"
*6V5	6	D	55	
Merit Test Only				
6V6	6	D	45	X
6V7	6	H	90	X
"	"	C	100	"
"	"	D	"	"
6V8	6	D	65	
"	"	C	50	
"	"	B	100	
"	"	E	"	
6W4	6	D	40	
6W5	6	G	70	X
"	"	D	"	"
6W6	6	D	40	X
6W7	6	H	45	X
6X4	6	A	65	
"	"	D	"	
6X5	6	D	55	X
"	"	G	"	"
6X6	6	C	60	X
6X8	6	B	35	
"	"	C	"	
6Y3	6	H	90	X
6Y6	6	D	60	X
6Y7	6	C	60	X
"	"	D	"	"
6Z6	6	D	65	X
6Z7	6	C	60	X
"	"	D	"	"

Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"
6ZY5	6	D	65	X
"	"	G	"	"
7A4	6	D	55	
7A5	6	D	50	
7A6	6	A	75	
"	"	D	"	
7A7	6	D	70	
7A8	6	G	60	
7AD7	6	D	40	
7AF7	6	F	65	
"	"	G	"	
7AG7	6	D	35	
7AH7	6	D	40	
7AJ7	6	D	50	
7AK7	6	D	40	
*7AN7	7	B	55	
"	"	D	"	
7AU7	7	B	50	X
"	"	C	"	"
7B4	6	D	60	
7B5	6	D	75	
7B6	6	A	60	X
"	"	D	100	"
"	"	F	"	"
7B7	6	D	70	
7B8	6	G	60	
7C4	6	G	80	
7C5	6	D	55	

Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"
7C6	6	A	75	X
"	"	D	100	"
"	"	F	"	"
7C7	6	D	50	
7D7	6	G	65	
7DJ8	7	B	40	
"	"	C	"	
7E6	6	A	65	X
"	"	D	100	"
"	"	F	"	"
7E7	6	D	75	
"	"	A	100	
"	"	G	"	
7EY6	7	D	50	X
7F7	6	F	70	
"	"	G	"	
7G7	6	D	55	
7G8	6	F	60	
"	"	G	"	
7H7	6	D	35	
7J7	6	D	65	
"	"	G	100	
7K7	6	G	70	
"	"	D	100	
"	"	F	"	
7L7	6	D	45	
7N7	6	F	65	
"	"	G	"	
7Q7	6	G	50	

Tube Type	Fil. Volts	SW "R"	SW Load	SW "L"
7R7	6	D	50	
"	"	A	100	
"	"	G	"	
7S7	6	D	50	
"	"	G	100	
7T7	6	D	45	
7V7	6	D	45	
7W7	6	D	45	
7X6	6	A	65	
"	"	D	"	
7X7	6	A	80	
"	"	B	100	
"	"	D	50	
7Y4	6	A	70	
"	"	D	"	
7Z4	6	A	90	
"	"	D	"	
8AU8	8	B	50	
"	"	C	"	
8AW8	8	B	40	
"	"	C	"	
8BA8	8	B	65	
"	"	C	35	
8BH8	8	B	60	
"	"	C	"	
8BN8	8	F	40	
"	"	A	50	
"	"	D	"	

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

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Tube Type	Fil. Volts	SW "R"	Load	SW "L"
12B4	12	D	45	Z
Special Socket				
12B6	12	H	80	X
12B7	12	D	70	
12B8	12	H	50	X
"	"	E	"	"
12BA6	12	A	40	
12BA7	12	B	40	
12BD6	12	A	55	
12BE6	12	A	45	
12BF6	12	A	80	
"	"	D	100	
"	"	G	"	
12BH7	12	B	45	X
"	"	C	"	"
12BK5	12	C	40	Z
12BK6	12	A	60	
"	"	D	100	
"	"	G	"	
12BL6	12	A	55	
12BN6	12	G	100	
12BQ6	12	D	45	X
12BR7	12	B	35	X
"	"	C	55	"
"	"	D	"	"
12BT6	12	A	60	
"	"	D	100	
"	"	G	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
12BU6	12	A	80	
"	"	D	100	
"	"	G	"	
*12BV7	12	B	40	Y
12BW4	12	A	65	
"	"	C	"	
*12BY7	12	B	35	Y
12BZ6	12	A	45	
12BZ7	12	B	60	X
"	"	C	"	
12C5	12	B	45	Z
12C8	12	H	100	X
"	"	C	"	"
"	"	D	"	"
12CA5	12	B	45	Z
12CM6	12	G	80	Y
12CN5	12	B	35	Z
12CR5	12	F	55	Z
12CR6	12	E	60	
"	"	B	100	
*12CS5	12	D	50	Z
12CS6	12	A	45	
12CS7	12	G	50	
"	"	C	80	
12CT8	12	B	50	
"	"	F	40	
12CU5	12	B	45	Z
12CU6	12	D	50	X
12CW6	12	D	70	X

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
12CX6	12	A	40	
12CY6	12	A	40	
12D4	12	D	35	
12DB5	12	D	65	Z
12DE8	12	A	50	
"	"	G	100	
12DF5	12	A	65	
"	"	D	"	
12DF7	12	B	45	
"	"	C	"	
12DK5	12	B	40	
12DK7	12	A	60	
"	"	D	100	
"	"	E	"	
12DL8	12	G	55	
"	"	A	100	
"	"	E	"	
12DM5	12	B	40	Z
12DM7	12	B	50	X
"	"	C	"	"
12DQ6	12	D	45	X
12DQ7	12	B	40	Y
12DS7	12	G	45	
"	"	A	100	
"	"	E	"	
12DT5	12	D	70	Z
12DT7	12	B	50	X
"	"	C	"	"
12DT8	12	B	40	
"	"	C	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
12DU7	12	A	45	
"	"	C	100	
"	"	E	"	
12DV7	12	C	55	
"	"	B	100	
"	"	G	"	
12DV8	12	G	60	
"	"	A	100	
"	"	E	"	
12DW5	12	D	40	Z
12DW7	12	B	60	X
"	"	C	"	"
12DW8	12	B	60	
"	"	C	"	
"	"	E	100	
12DY8	12	A	50	
"	"	E	100	
12DZ6	12	A	40	
12E5	12	D	60	X
12EA6	12	A	40	
12EC8	12	A	60	
"	"	E	"	
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"
12EL6	12	A	55	
"	"	D	100	
"	"	G	"	
12EM6	12	A	50	
"	"	E	100	
12EN6	12	D	50	X
12EZ6	12	A	40	
12F5	12	H	70	X
12F8	12	F	60	
"	"	A	100	
"	"	D	"	
12FA6	12	A	40	
12FK6	12	A	60	
"	"	D	100	
"	"	G	"	
12FM6	12	A	45	
"	"	D	100	
"	"	G	"	
12FQ8	12	B	50	
"	"	C	"	
12FT6	12	A	55	
"	"	D	100	
"	"	G	"	
12FY8	12	A	35	
"	"	G	"	
12G4	12	D	65	Z
12G7	12	H	70	X
"	"	C	100	"
"	"	D	"	"
12G8	12	G	60	X
"	"	F	"	"
12H6	12	G	90	X
"	"	D	"	"

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
12J5	12	D	60	X
12J7	12	H	80	X
12J8	12	A	35	
"	"	E	90	
"	"	F	"	
12K5	12	D	45	Z
12K7	12	H	90	X
12K8	12	D	40	X
12L6	12	D	40	X
12Q7	12	H	70	X
"	"	C	100	"
"	"	D	"	"
12R5	12	B	40	Z
12S8	12	H	65	
"	"	G	"	
"	"	C	100	
"	"	A	"	
12SA7	12	D	70	X
12SB7	12	D	40	X
12SB8	12	A	70	
"	"	C	100	
"	"	G	"	
12SC7	12	C	90	
"	"	G	"	
12SF5	12	G	65	
12SF7	12	B	80	
"	"	D	100	
12SG7	12	C	40	Z

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
12SH7	12	C	50	Z
12SJ7	12	C	60	X
12SK7	12	C	70	X
12SL7	12	A	60	
"	"	C	"	
12SN7	12	A	60	
"	"	C	"	
12SQ7	12	B	70	
"	"	C	100	
"	"	D	"	
12SR7	12	B	90	
"	"	C	100	
"	"	D	"	
12SW7	12	B	90	
"	"	C	100	
"	"	D	"	
12SX7	12	A	60	
"	"	C	"	
12SY7	12	D	70	X
12U7	12	B	60	X
"	"	C	"	"
12V6	12	D	45	X
12W6	12	D	40	X
12X4	12	A	65	
"	"	D	"	
13DE7	13	B	50	Z
"	"	C	90	"
13DR7	13	B	40	Z
"	"	C	80	"

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
14A4	12	D	55	
14A5	12	D	50	
14A7	12	D	70	
14AF7	12	F	65	
"	"	G	"	
14B6	12	A	60	X
"	"	D	100	"
"	"	F	"	"
14B8	12	G	60	
14C5	12	D	55	
14C7	12	D	50	
14E6	12	A	65	
"	"	D	100	
"	"	F	"	
14E7	12	D	75	
"	"	A	100	
"	"	G	"	
14F7	12	F	70	
"	"	G	"	
14G6	14	B	70	
"	"	D	100	
"	"	F	"	
14H7	12	D	35	
14J7	12	D	65	
"	"	G	100	
14N7	12	F	65	
"	"	G	"	
14Q7	12	G	50	

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Tube Type	Fil. Volts	SW "R"	Load	SW "L"
14R7	12	D	50	
"	"	A	100	
"	"	G	"	
14S7	12	D	50	
"	"	G	100	
14W7	12	D	45	X
14X7	12	A	60	
"	"	D	"	
"	"	F	100	
14Y4	12	A	70	
"	"	D	"	
14Y7	14	B	55	
"	"	E	"	
15A6	15	B	45	
15A8	15	C	45	X
"	"	G	"	"
16A5	16	B	40	
17AV5	17	A	40	X
17AX4	17	D	55	
17BQ6	17	D	55	X
17C5	17	B	45	Z
17C8	17	B	70	
"	"	C	100	
"	"	F	"	
17CA5	17	B	45	Z
17D4	17	D	35	
17DE4	17	D	40	
17DQ6	17	D	45	X
17H3	17	F	45	Z
17L6	17	D	40	X
17R5	17	B	40	Z
17Z3	17	E	50	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
18A5	18	A	45	X
18AK5	18	A	40	
18AQ5	18	A	60	X
18FW6	18	A	40	
18FX6	18	A	45	
18FY6	18	A	60	
"	"	D	100	
"	"	G	"	
18GD6	18	A	45	
18GE6	18	A	60	
"	"	D	100	
"	"	G	"	
18J6	18	D	40	
"	"	G	"	
19AQ5	19	A	60	X
19AU4	19	D	50	
19BG6	19	D	50	X
19C8	19	F	65	
"	"	B	45	
"	"	A	"	
"	"	D	"	
19DE7	19	B	50	Z
"	"	C	90	"
19J6	19	D	40	
"	"	G	"	
19T8	19	F	65	
"	"	B	45	
"	"	A	"	
"	"	D	"	
19V8	19	D	65	
"	"	C	50	
"	"	B	100	
"	"	E	"	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
19X3	19	E	35	
19X8	19	B	35	
"	"	C	"	
19Y3	19	E	35	
21A6	21	B	45	
21A7	21	D	60	
"	"	G	"	
21B6	21	B	45	
21EX6	21	D	45	X
22DE4	22	D	40	
25A6	25	D	45	X
25A7	25	D	50	X
"	"	F	"	"
25AC5	25	D	80	X
25AC7	25	D	70	X
25AV5	25	A	40	X
25AX4	25	D	55	
25B6	25	D	45	X
25B8	25	H	50	X
"	"	E	"	"
25BK5	25	C	40	Z
25BQ6	25	D	55	X
25C5	25	B	45	Z
25C6	25	D	45	X
25CA5	25	B	45	Z
25CD6	25	D	50	X
25CG6	25	A	65	X
25CR5	25	F	55	Z
25CU6	25	D	50	X
25D4	25	D	35	

Tube Type	Fil. Volts	SW "R"	Load	SW "L"
25D8	25	H	45	X
"	"	D	55	"
"	"	E	100	"
25DN6	25	D	60	X
25DQ6	25	D	45	X
25DT5	25	D	50	Z
25E5	25	D	45	X
25EC6	25	D	45	X
25EH5	25	B	35	Z
25F5	25	B	50	Z
25FY8	25	A	35	
"	"	G	"	
25L6	25	D	40	X
25N6	25	D	40	X
25U4	25	D	40	
25W4	25	D	40	
25W6	25	D	40	X
25X6	25	G	45	X
"	"	E	"	"
25Y4	25	D	45	X
25Z4	25	D	35	X
25Z6	25	D	50	X
"	"	G	"	"
26A6	26	A	40	
26BK6	26	A	60	
"	"	D	100	
"	"	G	"	
26C6	26	A	80	
"	"	D	100	
"	"	G	"	

CARD 6

* SEE TUBE MANUAL FOR INTERCONNECTED PINS

PART #1198

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	50	X	50AX6	50	D	35	X	50Y6	50	D	40	X
"	"	D	"	"	35L6	35	D	40	X	"	"	G	"	"	"	"	G	"	"
28D7	28	B	40		35W4	35	G	35	Y	50B5	50	A	50	X	50Y7	50	D	45	X
"	"	E	"		35Y4	35	B	30	Z	50BK5	50	C	40	Z	"	"	G	"	"
28Z5	28	A	70		35Z3	35	B	30	Z	50BM8	50	A	65		Merit Test Only				
"	"	D	"		35Z4	35	D	35	X	"	"	G	55		50Z6	50	D	45	X
30A5	30	D	35		35Z5	35	D	35	Z	50C5	50	B	45	Z	"	"	G	"	"
31A3	31	B	50		35Z6	35	D	35	X	50C6	50	D	45	X	50Z7	50	D	45	X
32ET5	32	B	40	Z	"	"	G	"	"	50CA5	50	B	45	Z	"	"	G	"	"
32L7	32	D	60	X	36AM3	36	G	35	Y	50CD6	50	D	50	X	Merit Test Only				
"	"	F	"	"	38A3	38	E	35		50DC4	50	G	35	Y	55N3	50	E	35	
35A5	35	D	35		40Z5	40	D	35	Z	50EH5	50	B	35	Z					
					45A5	45	D	35		50FY8	50	A	35						
										"	"	G	"						

* 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

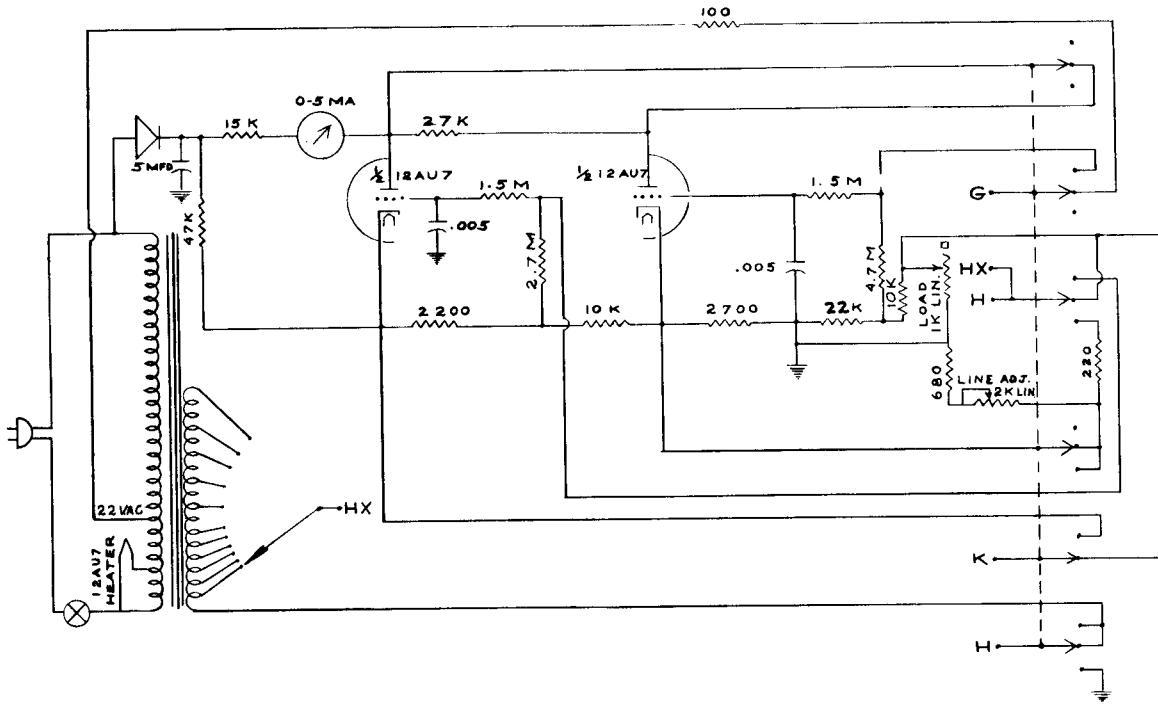
To perform a complete high sensitivity interelement short test or for determining where the short exists:

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.

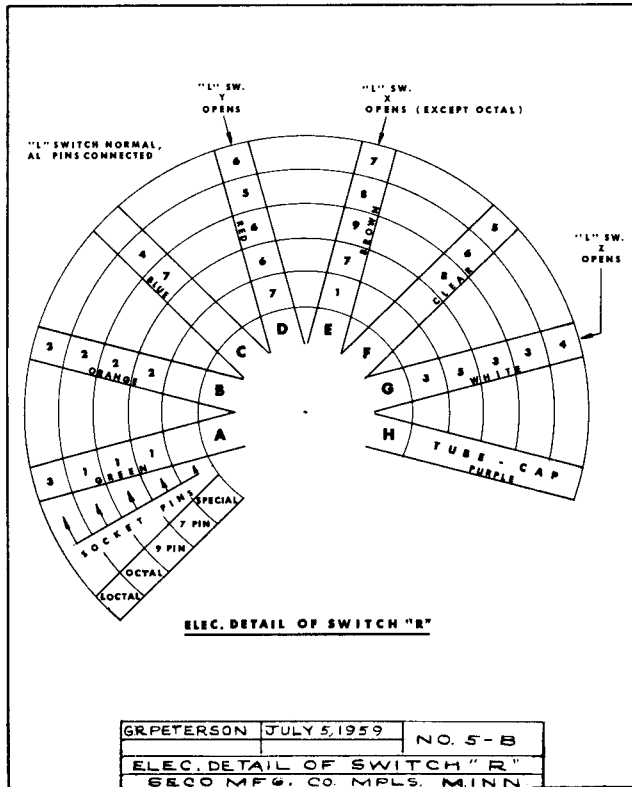
4. If an asterisk appears opposite the tube set-up, this means that an inter-connection exists in the tube which cannot be isolated with lever switch "L". Such interconnections will indicate the same as a short between these pins and cause the meter to read in the red. Consult the tube manual if necessary.

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.



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



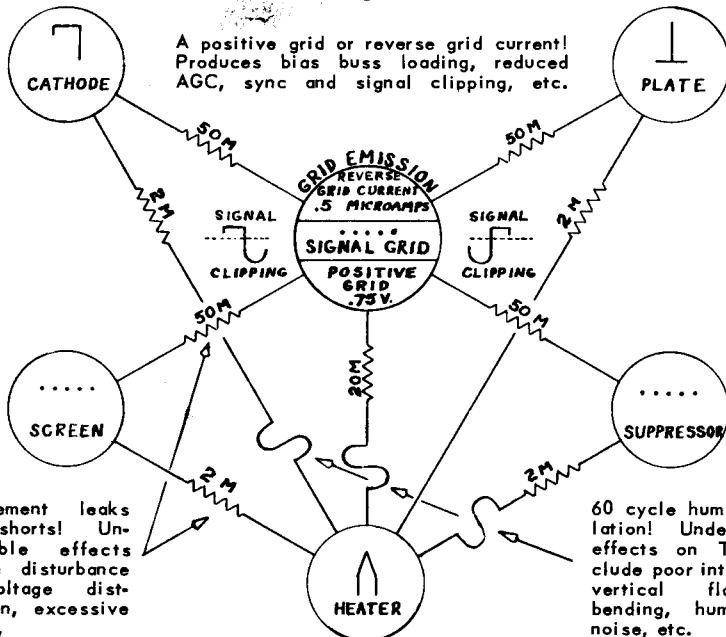
DETAIL OF LEVER SWITCH "L" MODEL 78 SECO TUBE TESTER

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 & simil. 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



A positive grid or reverse grid current!
Produces bias buss loading, reduced
AGC, sync and signal clipping, etc.

Interelement leaks
and shorts! Un-
desirable effects
include disturbance
of voltage distri-
bution, excessive
current,

60 cycle hum modu-
lation! Undesirable
effects on TV in-
clude poor interlace,
vertical flopover,
bending, hum bar,
noise, etc.

Resistance values between the various elements
on the chart indicate the severity of short required
to deflect the meter to the question mark on left
of meter.

Warranty

SECO MFG. CO. war-
rants each instrument and
every other piece of
equipment manufactured
by it to be free from de-
fects in material and
workmanship. This war-
ranty is limited to mak-
ing good at its factory
any device which shall,
within 90 days after date
of purchase, prove to be
defective.



MANUFACTURING
COMPANY

5015 Penn Ave. So., Minneapolis, Minn.

PART #1198