

# Supplementary Tube Chart For Models 430-440

Tube	Load	Filament Volts	Selector	Tube	Load	Filament Volts	Selector	Tube	Load	Filament Volts	Selector
1A5	69	1.5	1	6SA7	34	6.3	7	7A8—Use Adapter C			
1A7	76	1.5	1	6SC7—Use Adapter D				44	6.3		1
1C5	45	1.5	1	35	6.3	7		7Y4—Use Adapter C			
1H5	83	1.5	1	6SF5—Use Adapter E				1st Test	43	6.3	3
1J5	62	2	1	33	6.3	1		2nd Test	40	6.3	4
1N5	98	1.5	1	6SJ7	39	6.3	9	83-V	18	5	1
2A4	28	2.5	1	6SK7	39	6.3	9	87-S	61	6.3	1
2E5—Good tube reads 35 or more on dial				6SQ7—Use Adapter D				88-S	55	6.3	1
95	2.5	1		37	6.3	1		89-RS—Good tube will show short on position R			
				6T5	62	6.3	1	60	6.3	9	
2S/4S	80	2.5	1	6U5	80	6.3	4	182-B	39	5	1
2X3—Good tube will show short on position O				6W5	24	6.3	1	482-B	39	5	1
57	2.5	12		6W7	56	6.3	1	486	95	3.3	1
6AC5	40	6.3	1	6X6—Good tube reads above 6 on dial				585	50	7.5	1
6AE6	57	6.3	1	95	6.3	13		1223	62	6.3	1
6C8	40	6.3	1	6Y6	22	6.3	1	1231—Use Adapter C			
2nd Test	40	6.3	10	6Y7	27	6.3	1	25	6.3		1
6F8	44	6.3	1	6ZY5	30	6.3	1	1612	55	6.3	1
6G6	40	6.3	1	6Z7	27	6.3	1	1851	48	6.3	1
6J8	44	6.3	1	7A7—Use Adapter C				1852	33	6.3	9
6K8	24	6.3	1	37	6.3	1		1853	27	6.3	9
6P5	43	6.3	1					25Y5	43	25	5
								GA	40	5	2

Adapters are available for Models 430 and 440 to permit testing the many new type tubes released recently. Three are needed:

	List Price	Dealer Net Price
Adapter C—for octal loctal types.....	\$1.25	\$ .75
Adapter D—for 6SC7 and 6SQ7.....	1.25	.75
Adapter E—for 6SF5.....	1.25	.75

The above may be obtained through your regular jobber.

**Readrite Meter Works**  
BLUFFTON, OHIO



# Supplementary Instructions

## 430 TUBE TESTER

Below Serial Number 2850

The following are correct settings for tubes which are not listed on Form 71535. The general instructions to be followed are found on that form.

1 TUBE	2 LOAD	3 FIL. V.	4 SEL.
1A4	81	2	1
§1B4	91	2	1
6B6	52	6.3	1
6D6	52	6.3	1
6E5	70	6.3	1
6N6	50	6.3	1
‡6P7	60	6.3	1
6Q7	47	6.3	1
6R7	46	6.3	1
25A6	27	25	1
*30	98	2	12
950	59	2	2
°951	95	2	1

### Rectifier Group and Double Plate Check

1 TUBE	2 LOAD 1st Plate	3 FIL. V.	4 SEL. 1st Plate	5 LOAD 2 Plate	6 SEL. 2 Plate
†5Y3	31	5	12		
*5Z4	24	5	12		
6A6	35	6.3	7	33	8
*6E6	38	6.3	7	38	8
6X5	24	6.3	1		
*12A7	58	12.6	1	28	7
25Z6	23	25	1		

\*—Corrected values from Form 71535.

†—Disregard short indication for 5Y3 in position O or S.

‡—6P7 Adapter must be used.

°—A good tube reads above 30 on dial.

§—A good tube reads above 40 on dial.



# READRITE MODEL 430 TUBE CHART

1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Tube	Load	Fil. Volt	Selector	Tube	Load	Fil. Volt	Selector	Tube	Load	Fil. Volt	Selector	Tube	Load	Fil. Volt	Selector
\$1A4	81	2	1	6C7	46	6.3	1	25A6	27	25	1	48	26	25	1
1A6	85	2	2	6C8	43	6.3	1	25A7	42	25	1	49	68	2	2
*1B4	91	2	1	6D6	52	6.3	1	25B5	57	25	1	50	50	7.5	1
†1B5	95	2	1	6D7	57	6.3	1	25B6	25	25	1	51	75	2.5	1
1C6	65	2	2	6D8	46	6.3	1	25L6	23	25	1	53	See Double Plate Test		
1C7	60	2	1	†6E5	70	6.3	1	25N6	45	25	1	55	44	2.5	1
1D5	90	2	1	6E6	See Double Plate Test			'00A	55	5	1	56	42	2.5	1
1D7	92	2	1	6E7	58	6.3	1	'01A	50	5	1	57	53	2.5	1
1E5	75	2	1	6F5	61	6.3	1	'10	49	7.5	1	58	53	2.5	1
1E7	See Double Plate Test			6F6	38	6.3	1	'12A	35	5	1	59	38	2.5	1
1F4	62	2	1	6F7	63	6.3	1	14	68	12.6	1	64	55	6.3	1
1F5	49	2	1	6G5	50	6.3	1	*15	95	2	1	65	75	6.3	1
1F6	30	2	2	6G7S	60	6.3	9	17	48	12.6	1	67	43	6.3	1
1F7	95	2	1	†6H6	95	6.3	13	19	See Double Plate Test			68	74	6.3	1
\$1G5	55	2	1	6H7S	42	6.3	1	20	95	3.3	1	'71A	38	5	1
1H4	92	2	1	6J5	29	6.3	1	22	95	3.3	1	75	52	6.3	1
1H6	85	2	1	6J7	58	6.3	1	24A	75	2.5	1	76	51	6.3	1
1J6	39	2	1	6K5	53	6.3	1	†25S	95	2	1	77	54	6.3	1
2A3	25	2.5	1	6K6	35	6.3	1	26	53	1.5	1	78	62	6.3	1
2A5	42	2.5	1	6K7	61	6.3	1	27	54	2.5	1	79	See Double Plate Test		
2A6	61	2.5	1	6L5	53	6.3	1	29	42	2.5	1	85	56	6.3	1
2A7	37	2.5	1	6L6	30	6.3	1	\$30	75	2	12	86M	45	6.3	1
2B6	45	2.5	1	6L7	50	6.3	1	31	64	2	1	88M	52	6.3	1
2B7	70	2.5	1	†6N5	95	6.3	1	†32	80	2	1	89	55	6.3	1
6A3	24	6.3	1	6N6	50	6.3	1	33	45	2	2	99	90	3.3	1
6A4	39	6.3	2	6N7	24	6.3	1	34	95	2	1	133	39	5	1
6A5	26	6.3	13	6P7	84	6.3	10	35	72	2.5	1	483	32	5	1
6A6	See Double Plate Test			76P7	60	6.3	1	36	68	6.3	1	484	55	3.3	1
6A7	36	6.3	1	6Q6	68	6.3	1	37	43	6.3	1	485	40	3.3	1
6A8	40	6.3	1	6Q7	47	6.3	1	38	74	6.3	1	950	59	2	2
6AB5	60	6.3	1	6R7	52	6.3	1	39	75	6.3	1	\$951	95	2	1
6AC6	44	6.3	1	6S7	52	6.3	1	40	53	5	1	@954	35	6.3	1
6B4	25	6.3	1	6T7	55	6.3	1	41	44	6.3	1	@955	32	6.3	1
6B5	50	6.3	1	6U7	55	6.3	1	42	42	6.3	1	1603	63	6.3	1
6B6	52	6.3	1	6V6	33	6.3	1	43	34	25	1	2S-4S	82	2.5	1
6B7	68	6.3	1	6V7	53	6.3	1	44	75	6.3	1	Wunderlich 62	2.5	1	
6B8	65	6.3	1	6Y7	30	6.3	1	45	37	2.5	1	Wund. Auto 47	6.3	1	
6C5	47	6.3	1	12A5	42	12.6	9	46	40	2.5	2				
6C6	52	6.3	1	12A7	See Double Plate Test			47	39	2.5	2				

## RECTIFIER GROUP AND DOUBLE PLATE CHECK

1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Tube No.	Load 1st Plate	Fil. V.	Selector 1 Pkte	Load 2 Pkte	Selector 2 Pkte	Tube No.	Load 1st Plate	Fil. V.	Selector 1 Pkte	Load 2 Pkte	Selector 2 Pkte	Tube No.	Load 1st Plate	Fil. V.	Selector 1 Pkte	Load 2 Pkte	Selector 2 Pkte
1E7	50	2	7	50	8	6E6	38	6.3	7	38	8	1V	29	6.3	7		
5T4	26	5	12			6X5	24	6.3	1			19	69	2	6	69	7
5U4	24	5	12			6Y5	25	6.3	8			53	41	2.5	7	41	8
5V4	20	5	12			6Z4	34	6.3	3	34	4	79	62	6.3	5	36	6
5W4	34	5	1			6Z5	24	6.3	11			80	63	5	3	66	4
5X4	23	5	1			12A7	58	12.6	1	28	7	81	76	7.5	1		
5Y3	31	5	12			12Z3	25	12.6	7			82	24	2.5	3	24	4
5Y4	35	5	1			12Z5	24	6.3	11			83	24	5	3	24	4
5Z3	39	5	3	34	4	25Z5	25	25	7	25	8	84	34	6.3	3	34	4
5Z4	24	5	12			o25Z5	30	25	1	30	7	KR1	26	6.3	7		
6A6	35	6.3	7	33	8	25Z6	26	25	1	26	7	KR98	34	6.3	3	34	4

\*—A good tube reads 40 or more on the dial.

\$—A good tube reads 30 or more on the dial.

†—A good tube reads 10 or more on the dial.

‡—Triode Section only.

?—For serial number under 2850 a 6P7 adapter must be used with this reading.

@—Use Acorn tube adapter with these readings.

o—Octal type base.

NOTE—"G" or "MG" type tubes will test the same as metal tubes of same type.

# READRITE METER WORKS, BLUFFTON, OHIO, U. S. A.

Printed in U. S. A.



# READRITE TUBE TESTER - MODEL 430

## TECHNICAL DESCRIPTION

Since Tube Testing has become such an important function of the Serviceman's and Dealer's business it is imperative that the tester for this purpose be designed to give the least possible error in its final analysis of tube value. In general, tubes should be discarded when their amplification factor or rectifier action has depreciated approximately 35%. Due to its simplicity and low cost the Emission type Tube Tester has become the most common means for checking tube values. The Readrite model 430 Tester is the emission type, and is designed to give corresponding values to the more elaborate type testers, which necessarily are more costly to build.

In general the Emission type tester places a voltage between the emitter and all the other elements which are tied together. A meter is placed in series with this voltage to measure the total emission current. In the Readrite Model 430 Tester, 30 volts are applied for this purpose. This value has been selected and has become generally accepted as giving the best co-relation between amplification factor and emission. The meter which is used in the 430 Tester is a Triplett, 0-8 Milliampere D'Arsonval type precision instrument.

In order that the Meter may read directly the value of a tube as good or bad, a load control is used as a voltage divider in connection with a resistor across which the meter is placed. This load control is adjusted for different values of emission so the meter will indicate the tube as GOOD or BAD, according to its emission. The settings for the load control are carefully worked out for each tube along with the operating data. This load control is designed to offer a constant impedance to current flow which is of very great importance since any change in current in the tube would otherwise upset the circuit balance.

This voltage, together with all the other voltages used in the tester are supplied by a transformer with the necessary secondary windings and an adjustable primary. The primary is tapped at 97 and 133 volts, and a potentiometer is placed across these taps. The moving arm is connected to one side of the line cord through a line switch which is operated by the potentiometer. The other side of the line cord is connected to the beginning of the primary winding. The potentiometer is adjusted to compensate for various line voltages. This adjustment is very important since the Tester is accurately calibrated to the exact 30 volt secondary voltage. Since this voltage is the most important one of the tester, the shadow line meter is placed across this winding. Great care is taken in construction to hold this winding to very close tolerance and to calibrate the line volt meter accurately.

The proper filament voltage is supplied to the tube under test by means of a secondary winding on this same transformer. One terminal of the filament winding is connected to one filament contact in the tube socket, while the various voltage taps are connected to the other filament contact through a filament volt selector switch, making available ranges of 1.5, 2, 2.5, 3.3, 5, 6.3, 7.5, 12.6, and 25 volts. Adjustment of the switch permits placing the desired filament voltage on the tube under test.

The selector switch marked "Tube Selector" is used to connect the meter in the proper circuit and to connect the proper voltage to all the tube elements. The tube chart furnished with the tester on the reverse side of this sheet shows the proper setting of this switch for any tube under test. The positions on this switch marked S-H-O-R-T-S are used to place a short test on the elements of the tube.

To make a short test, 110 A. C. volts are used in series with a condenser, copper-oxide rectifier, meter, and tube element to test all inter-element shorts. Any leakage within the tube will cause the current to flow in the circuit. This current is rectified by the copper-oxide unit and allows the meter to indicate. Since this short test should be made while the tube is hot, a blocking condenser is used in the circuit, preventing any unwanted D. C. current flowing in the tube circuit.

The Readrite tester incorporates a sensitive short test which leaves nothing for granted, as it is positive and accurate. Leakages are measured in excess of a half million ohms, which is far beyond the sensitivity necessary to accurately determine a shortage or leakage condition in a tube.

Each SHORT position on the switch is designed to detect shorts between a given element and all other elements. In this way any short whatsoever in the tube can be detected at one of the six positions. A test will be given between the elements listed below and any other element in the tube for the given selector switch position and sockets. The elements are numbered according to the RMA system.

Selector Position	4 Hole Socket	5 Hole Socket	6 Hole Socket	7 Hole Socket	8 Hole Socket
S				4	6
H			4	5	5
O		4	5	6	8
R	3	3	3	3	4
T	2	2	2	2	3
S	TC	TC	TC	TC	TC

Mercury vapor type rectifying tubes are critical as to load setting and in some instances the meter needle will go slightly off scale. These tubes are fast being replaced by the high vacuum type of the same number.

The transconductance values of all tubes have been standardized. Some manufacturers allow the production tolerance for tubes to run considerably higher than others. This may cause a slight variation in the meter readings of different brands. The tester has been designed for the best average and the tube that has outlived its usefulness will be so indicated.

If further information is desired a wiring diagram will be furnished on request.

## OPERATING INSTRUCTIONS

1. Connect the A. C. line cord to 60 cycles 103-125 volts with switches set in OFF position.
2. Note type of tube to be tested in column 1 of operating data on reverse side of this sheet.
3. Set FILAMENT VOLTS switch to correct position shown in column 3.
4. Insert tube and connect grid lead if tube has cap.
5. Rotate TUBE SELECTOR switch from OFF in a clockwise direction to all positions marked SHORTS. A short or leakage will be indicated by a deflection of the meter needle in the BAD portion of the scale. If no short is indicated continue to rotate switch in the same clockwise direction until the proper tube position is reached, as shown in column 4. Due to the peculiar arrangement of the elements, certain tubes will show false SHORT indications at certain Selector Switch positions. Disregard SHORT indications for tubes 6T5 and 12Z5 on position T, tubes 5T4, 5U4, 5W4, 5X4, 5Y3, 5Y4, 5Y4, 6A5, and 12A5 on position O, 2B6 on position H, and tube 6G7S on position R.
6. A condenser discharge at certain short positions will cause a needle "kick" which should not be confused with a short. The needle will return immediately to zero on a condenser discharge and will not move again until the switch is rotated. On an intermittent short the meter needle will not remain steady but will move when the tube is tapped or jarred. Lightly tap all tubes at each short position on tube selector switch.
7. Set LOAD CONTROL to proper position according to column 2.
8. When the tube requires two plate checks refer to column 6 for the second plate selector switch position.
9. For the rectifier group the LOAD CONTROL for certain tubes is set in more than one position. See column 2 for the first plate test and column 5 for the second plate test.
10. Press VALUE button after tube has thoroughly heated. The meter pointer will indicate the worth of the tube directly as GOOD—DOUBTFUL—BAD.



# TUBE CHART

## READRITE TUBE TESTER - MODEL 430

1	2	3	4
Tube	Load	Fil. Volt	Selector
1A4	81	2	1
1A6	85	2	2
*1B4	91	2	1
1C6	65	2	2
1C7G	60	2	1
1D5G	90	2	1
1D7G	92	2	1
1E5G	75	2	1
1E7G	See 1E7G Under Double Plate Test		
1F4	62	2	1
1F5G	49	2	1
1F6	30	2	2
1H4G	92	2	1
1H6G	85	2	1
1J6G	39	2	1
2A3	25	2.5	1
2A5	42	2.5	1
2A6	61	2.5	1
2A7	37	2.5	1
2B7	70	2.5	1
6A3	24	6.3	1
6A4	39	6.3	2
6A6	See 6A6 Under Double Plate Test		
6A7	36	6.3	1
6A8	35	6.3	1
6B4G	25	6.3	1
6B5	50	6.3	1
6B6	52	6.3	1
6B7	68	6.3	1
6C5	47	6.3	1

1	2	3	4
Tube	Load	Fil. Volt	Selector
6C6	52	6.3	1
6C7	46	6.3	1
6D6	52	6.3	1
6D7	57	6.3	1
†6E5	70	6.3	1
6E6	See 6E6 Under Double Plate Test		
6E7	58	6.3	1
6F5	61	6.3	1
6F6	38	6.3	1
6F7	63	6.3	1
6G5	50	6.3	1
6G7S	60	6.3	9
†6H6	95	6.3	13
6H7S	42	6.3	1
6J7	62	6.3	1
6K5G	53	6.3	1
6K6G	35	6.3	1
6K7	61	6.3	1
6L6	30	6.3	1
6L7	50	6.3	1
6N6	50	6.3	1
6N7	24	6.3	1
6P7	84	6.3	10
†6P7	60	6.3	1
6Q7	47	6.3	1
6R7	52	6.3	1
12A5	42	12.6	9
12A7	See 12A7 Under Double Plate Test		
25A6	27	25	1
'00A	55	5	1

1	2	3	4
Tube	Load	Fil. Volt	Selector
'01A	50	5	1
'10	49	7.5	1
'12A	35	5	1
14	68	12.6	1
*15	95	2	1
17	48	12.6	1
19	See 19 Under Double Plate Test		
20	95	3.3	1
22	95	3.3	1
24A	75	2.5	1
†25S	95	2	1
26	53	1.5	1
27	54	2.5	1
30	98	2	12
31	64	2	1
32	85	2	1
33	45	2	2
34	95	2	1
35	72	2.5	1
36	68	6.3	1
37	43	6.3	1
38	74	6.3	1
39	75	6.3	1
40	53	5	1
41	44	6.3	1
42	42	6.3	1
43	34	25	1
44	75	6.3	1
45	37	2.5	1
46	40	2.5	2
47	39	2.5	2

1	2	3	4
Tube	Load	Fil. Volt	Selector
48	26	25	1
49	68	2	2
50	50	7.5	1
51	75	2.5	1
53	See 53 Under Double Plate Test		
55	44	2.5	1
56	42	2.5	1
57	53	2.5	1
58	53	2.5	1
59	38	2.5	1
64	55	6.3	1
65	75	6.3	1
67	43	6.3	1
68	74	6.3	1
'71A	38	5	1
75	52	6.3	1
76	51	6.3	1
77	54	6.3	1
78	62	6.3	1
79	See 79 Under Double Plate Test		
85	56	6.3	1
89	55	6.3	1
99	90	3.3	1
133	39	5	1
483	32	5	1
485	40	3.3	1
950	59	2	2
§951	95	2	1
Wunderlich 62	2.5	1	1
Wund. Auto 47	6.3	1	1

### RECTIFIER GROUP AND DOUBLE PLATE CHECK

1	2	3	4	5	6
Tube No.	Load 1st Plate	Fil. V.	Selec. 1 Plte	Load 2 Plte	Selec. 2 Plte
1E7G	50	2	7	50	8
5W4	34	5	12		
5X4G	23	5	1		
5Y3	31	5	12		
5Y4G	35	5	1		
5Z3	39	5	3	34	4
5Z4	24	5	12		
6A8	35	6.3	7	33	8
6E6	38	6.3	7	38	8
6X5	24	6.3	1		

1	2	3	4	5	6
Tube No.	Load 1st Plate	Fil. V.	Selec. 1 Plte	Load 2 Plte	Selec. 2 Plte
6Y5	25	6.3	8		
6Z4	34	6.3	3	34	4
6Z5	24	6.3	11		
12A7	58	12.6	1	28	7
12Z3	25	12.6	7		
12Z5	24	6.3	11		
25Z5	25	25	7	25	8
25Z6	26	25	1	26	7
1V	29	6.3	7		
†19	69	2	6	69	7

1	2	3	4	5	6
Tube No.	Load 1st Plate	Fil. V.	Selec. 1 Plte	Load 2 Plte	Selec. 2 Plte
53	41	2.5	7	41	8
79	62	6.3	5	36	6
80	63	5	3	66	4
81	76	7.5	1		
82	24	2.5	3	24	4
83	24	5	3	24	4
84	34	6.3	3	34	4
KR1	26	6.3	7		
KR98	34	6.3	3	34	4

\*—A good tube reads 40 or more on the dial.

§—A good tube reads 30 or more on the dial.

†—A good tube reads 10 or more on the dial.

NOTE—Glass tubes will test the same as metal tubes of same type.

‡—Triode Section only.

?—For serial number under 2850 a 6P7 adapter must be used with this reading.

## READRITE METER WORKS, BLUFFTON, OHIO, U. S. A.



# READRITE TUBE TESTER - MODEL 430

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Since Tube Testing has become such an important function of the Serviceman's and Dealer's business it is imperative that the tester for this purpose be designed to give the least possible error in its final analysis of tube value. In general, tubes should be discarded when their amplification factor or rectifier action has depreciated approximately 35%. Due to its simplicity and low cost the Emission type Tube Tester has become the most common means for checking tube values. The Readrite model 430 Tester is the emission type, and is designed to give corresponding values to the more elaborate type testers, which necessarily are more costly to build.

In general the Emission type tester places a voltage between the emitter and all the other elements which are tied together. A meter is placed in series with this voltage to measure the total emission current. In the Readrite Model 430 Tester, 30 volts are applied for this purpose. This value has been selected and has become generally accepted as giving the best co-relation between amplification factor and emission. The meter which is used in the 430 Tester is a Triplett, 0-8 Milliampere D'Arsonval type precision instrument.

In order that the Meter may read directly the value of a tube as good or bad, a load control is used as a voltage divider in connection with a resistor across which the meter is placed. This load control is adjusted for different values of emission so the meter will indicate the tube as GOOD or BAD, according to its emission. The settings for the load control are carefully worked out for each tube along with the operating data. This load control is designed to offer a constant impedance to current flow which is of very great importance since any change in current in the tube would otherwise upset the circuit balance.

This voltage, together with all the other voltages used in the tester are supplied by a transformer with the necessary secondary windings and an adjustable primary. The primary is tapped at 97 and 133 volts, and a potentiometer is placed across these taps. The moving arm is connected to one side of the line cord through a line switch which is operated by the potentiometer. The other side of the line cord is connected to the beginning of the primary winding. The potentiometer is adjusted to compensate for various line voltages. This adjustment is very important since the Tester is accurately calibrated to the exact 30 volt secondary voltage. Since this voltage is the most important one of the tester, the shadow line meter is placed across this winding. Great care is taken in construction to hold this winding to very close tolerance and to calibrate the line volt meter accurately.

The proper filament voltage is supplied to the tube under test by means of a secondary winding on this same transformer. One terminal of the filament winding is connected to one filament contact in the tube socket, while the various voltage taps are connected to the other filament contact through a filament volt selector switch, making available ranges of 1.5, 2, 2.5, 3.3, 5, 6.3, 7.5, 12.6, and 25 volts. Adjustment of the switch permits placing the desired filament voltage on the tube under test.

The selector switch marked "Tube Selector" is used to connect the meter in the proper circuit and to connect the proper voltage to all the tube elements. The tube chart furnished with the tester on the reverse side of this sheet shows the proper setting of this switch for any tube under test. The positions on this switch marked S-H-O-R-T-S are used to place a short test on the elements of the tube.

To make a short test, 110 A. C. volts are used in series with a condenser, copper-oxide rectifier, meter, and tube element to test all inter-element shorts. Any leakage within the tube will cause the current to flow in the circuit. This current is rectified by the copper-oxide unit and allows the meter to indicate. Since this short test should be made while the tube is hot, a blocking condenser is used in the circuit, preventing any unwanted D. C. current flowing in the tube circuit.

The Readrite tester incorporates a sensitive short test which leaves nothing for granted, as it is positive and accurate. Leakages are measured in excess of a half million ohms, which is far beyond the sensitivity necessary to accurately determine a shortage or leakage condition in a tube.

Each SHORT position on the switch is designed to detect shorts between a given element and all other elements. In this way any short whatsoever in the tube can be detected at one of the six positions. A test will be given between the elements listed below and any other element in the tube for the given selector switch position and sockets. The elements are numbered according to the RMA system.

Selector Position	4 Hole Socket	5 Hole Socket	6 Hole Socket	7 Hole Socket	8 Hole Socket
S				4	6
H			4	5	5
O		4	5	6	8
R	3	3	3	3	4
T	2	2	2	2	3
S	TC	TC	TC	TC	TC

Mercury vapor type rectifying tubes are critical as to load setting and in some instances the meter needle will go slightly off scale. These tubes are fast being replaced by the high vacuum type of the same number.

The transconductance values of all tubes have been standardized. Some manufacturers allow the production tolerance for tubes to run considerably higher than others. This may cause a slight variation in the meter readings of different brands. The tester has been designed for the best average and the tube that has outlived its usefulness will be so indicated.

If further information is desired a wiring diagram will be furnished on request.

## OPERATING INSTRUCTIONS

1. Connect the A. C. line cord to 60 cycles 103-125 volts with switches set in OFF position.
2. Note type of tube to be tested in column 1 of operating data on reverse side of this sheet.
3. Set FILAMENT VOLTS switch to correct position shown in column 3.
4. Insert tube and connect grid lead if tube has cap.
5. Rotate TUBE SELECTOR switch from OFF in a clockwise direction to all positions marked SHORTS. A short or leakage will be indicated by a deflection of the meter needle in the BAD portion of the scale. If no short is indicated continue to rotate switch in the same clockwise direction until the proper tube position is reached, as shown in column 4. Due to the peculiar arrangement of the elements, certain tubes will show false SHORT indications at certain Selector Switch positions. Disregard SHORT indications for tubes 6Z5 and 12Z5 in position T, tubes 5W4, 5X4G, 5Y4G, 5Z4, and 12A5 in position O, and tube 6G7S on position R.  
A condenser discharge at certain short positions will cause a needle "kick" which should not be confused with a short. The needle will return immediately to zero on a condenser discharge and will not move again until the switch is rotated. On an intermittent short the meter needle will not remain steady but will move when the tube is tapped or jarred. Lightly tap all tubes at each short position on tube selector switch.
6. Set LOAD CONTROL to proper position according to column 2.
7. When the tube requires two plate checks refer to column 6 for the second plate selector switch position.
8. For the rectifier group the LOAD CONTROL for certain tubes is set in more than one position. See column 2 for the first plate test and column 5 for the second plate test.
9. Press VALUE button after tube has thoroughly heated. The meter pointer will indicate the worth of the tube directly as GOOD—DOUBTFUL—BAD.



# READRITE TUBE TESTER MODEL 430

## OPERATING DATA

**ADJUSTMENTS:** Connect the A. C. line to 60 cycles 103-125 volts. Switches should be set in the OFF position. Note type of tube to be tested. Column 1.

- (1) Set switch FILAMENT VOLTS—to the correct position. Column 3.
- (2) Insert tube, connect grid lead if tube has cap.
- (3) Rotate switch TUBE SELECTOR from OFF in a clockwise direction to all positions marked SHORTS. A short or leakage will be indicated by a deflection of the meter needle in the BAD portion of the scale. If no short is indicated continue to rotate switch TUBE SELECTOR in the same clockwise direction until the proper tube position is reached as shown in Column 4.
- (4) Set control load to proper position. Column 2.
- (5) When the tube requires two plate checks refer to Column 6 for the second plate selector switch position.
- (6) Rectifier group. The load control for certain tubes is set in more than one position. See Column 2 for the first plate test; Column 5 for the second plate test.

**SPECIAL:** Since tubes 6Z5, 12Z5, 12A5 have filaments with center tapped connections disregard meter short indications when switch for testing shorts is in position T for tubes 6Z5, 12Z5 and position O for tubes 12A5 and 5Z4.

(7) **VALUE TESTS:** Press button VALUE after tube has thoroughly heated. The meter pointer will indicate the worth of the tube directly as GOOD—DOUBTFUL—BAD.

**GENERAL:** The Readrite tester incorporates a sensitive short test which leaves nothing for granted, as it is positive and accurate. Leakages are measured in excess of a half million ohms, which is far beyond the sensitivity necessary to accurately determine a shortage or leakage condition in a tube.

Mercury vapor type rectifying tubes are critical as to load setting and in some instances the meter needle will go slightly off scale. These tubes are fast being replaced by the high vacuum type of the same number. The transconductance values of all tubes have been standardized. Some manufacturers allow the production tolerance for tubes to run considerably higher than others. This may cause a slight variation in the meter readings of different brands. The tester has been designed for the best average and the tube that has outlived its usefulness will be so indicated.

A condenser discharge at certain short positions will cause a needle "kick" which should not be confused with a short. The needle will return immediately to zero on a condenser discharge and will not move again until the switch is rotated. On an intermittent short the meter needle will not remain steady but will move when the tube is tapped or jarred. Lightly tap all tubes at each short position on tube selector switch.

1	2	3	4
Tube	Load	Fil. V.	Selector 1st Plate
1A6	85	2	2
1C6	65	2	2
2A3	25	2.5	1
2A5	42	2.5	1
2A6	61	2.5	1
2A7	37	2.5	1
2B7	70	2.5	1
6A4	39	6.3	2
6A7	36	6.3	1
6A8	35	6.3	1
6B5	56	6.3	1
6B7	68	6.3	1
6C5	47	6.3	1
6C6	52	6.3	1
6C7	46	6.3	1
6D5	44	6.3	1
6D7	57	6.3	1
6E6	See 6E6 Under Double Plate Test		
6E7	58	6.3	1
6F5	36	6.3	1
6F6	38	6.3	1
6F7	63	6.3	1
6J7	62	6.3	1
6K7	61	6.3	1
6L7	50	6.3	1
'00A	55	5	1
'01A	50	5	1
'10	49	7.5	1
'12A	35	5	1
6DL	52	6.3	1

1	2	3	4
Tube	Load	Fil. V.	Selector 1st Plate
12A5	42	12.6	9
12A7	58	12.6	1
14	68	12.6	1
*15	98	2	1
17	48	12.6	1
19	See 19 Under Double Plate Test		
20	100	3.3	1
22	98	3.3	1
24A	75	2.5	1
26	53	1.5	1
27	54	2.5	1
30	98	2	12
31	64	2	1
32	85	2	1
33	45	2	2
34	98	2	1
35	72	2.5	1
36	68	6.3	1
37	43	6.3	1
38	74	6.3	1
39	75	6.3	1
40	53	5	1
41	44	6.3	1
42	42	6.3	1
43	34	25	1
44	75	6.3	1
45	37	2.5	1
46	40	2.5	2
47	39	2.5	2

1	2	3	4
Tube	Load	Fil. V.	Selector 1st Plate
48	26	25	1
49	68	2	2
50	50	7.5	1
51	75	2.5	1
53	See 53 Under Double Plate Test		
55	44	2.5	1
56	42	2.5	1
57	53	2.5	1
58	53	2.5	1
59	38	2.5	1
64	55	6.3	1
65	75	6.3	1
67	43	6.3	1
68	74	6.3	1
'71A	38	5	1
75	52	6.3	1
76	51	6.3	1
77	54	6.3	1
78	62	6.3	1
79	See 79 Under Double Plate Test		
85	56	6.3	1
89	55	6.3	1
485	40	3.3	1
99	90	3.3	1
183	39	5	1
483	53	3.3	1
†25S	98	2	1
†6H6	98	6.3	13

1	2	3	4	5	6
Tube	Load	Fil. V.	Selector 1st Plate	Selector 2nd Plate	Selector 2nd Plate
1V	29	6.3	7		
5Z3	39	5	3	34	4
5Z4	24	5.8	12		
25Z5	25	25	7	25	8
6Z4	34	6.3	3	34	4
80	63	5	3	66	4
81	76	7.5	1		
82	24	2.5	3	24	4
83	24	5	3	24	4
84	34	6.3	3	34	4
KR98	34	6.3	3	34	4
12Z3	25	12.6	7		
6Y5	25	6.3	8		
KR1	26	6.3	7		
6Z5	34	6.3	10	31	11
12Z5	34	6.3	10	31	11
79	62	6.3	5	36	6
6E6	38	6.3	7	38	8
†19	69	2	6	69	7
53	41	2.5	7	41	8

### NOTE:

- \*A good tube reads 40 or more on dial.  
†A good tube reads 10 or more on dial.

READRITE METER WORKS, BLUFFTON, OHIO, U. S. A.