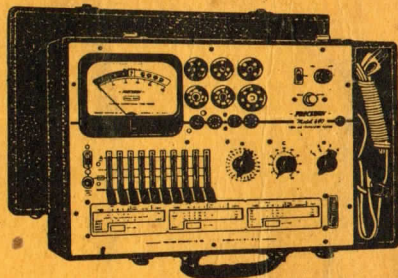


SAVE

SUPPLEMENTARY TUBE DATA

13DR7 *Test*
67
123

FOR USE WITH
PRECISION TUBE TESTERS



MODELS
640, 660

PRECISION
TEST INSTRUMENTS BY



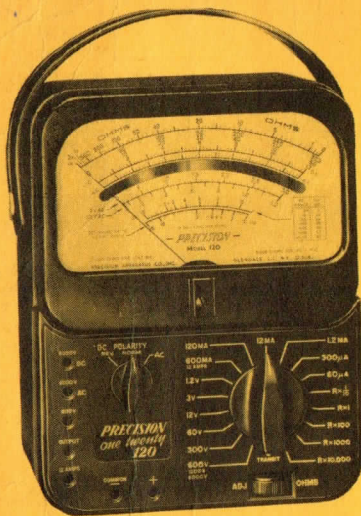
SAVE

This Supplementary Chart provides settings for tubes which fall into one or more of the following classifications:

1. Infrequently encountered types;
2. Obsolete types;
3. Tubes manufactured for special or limited applications;
4. Foreign tubes.



PRECISION Apparatus Co., Inc.
(A SUBSIDIARY OF PACOTRONICS, INC.)
70-31 84th Street, Glendale 27, Long Island, N. Y.



MODEL 120

LABORATORY-TYPE VOLT-OHM- MILLIAMMETER WITH MIRRORED-SCALE

This instrument is the most comprehensive Volt-Ohm-Milliammeter ever offered within its price range. It features 61 ranges and functions specifically designed for use in industry, laboratory, maintenance shop and technical school.

MODEL 120, complete with batteries, test leads and technical manual.

NET PRICE\$44.95

MORE OF EVERYTHING YOU WANT IN A V-O-M

- New Mirrored Scale Plate
- Wider Frequency Response AC Ranges
- New DC Polarity Reversing Switch

MODEL 120 FEATURES

20,000 OHMS-PER-VOLT DC

5,000 OHMS-PER-VOLT AC

61 RANGES start lower and go higher than other instruments of its size and type

EXTRA-LOW RESISTANCE RANGE

2 ohms at center scale (R x 1/10)

EXTRA-LOW VOLTAGE RANGES 0.3 V full scale DC, 1.2 V full scale AC

EXTENDED LOW-CURRENT RANGE 60 μ A first DC range

EXTRA-LARGE 5 1/2" WIDE VISION PACE METER

with polished mirrored-scale

SIMPLE RANGE SELECTOR with silver-plated contacts

DC POLARITY REVERSING SWITCH

WIDE FREQUENCY RESPONSE AC AND DB RANGES

flat from 15 cps to 100 Kc \pm 1 Db

"TRANSIT" POSITION ON RANGE SELECTOR

protects meter during transportation

ONLY 2 PLUG-JACKS SERVE ALL STANDARD RANGES

SOLID BRASS BANANA-TYPE JACKS AND PLUGS

CUSTOM-MOLDED PHENOLIC CASE AND PANEL

SPECIFICATIONS

9 DC VOLTAGE RANGES 20,000 ohms-per-volt (neg. and pos. reading) 0-0.3-1.2-3-12-60-300-600-1200-6000 V.

8 AC AND OUTPUT VOLTAGE RANGES 5000 ohms-per-volt (wide frequency response); built-in 600 V blocking capacitor; 0-1.2-3-12-60-300-600-1200-6000 volts

7 DC CURRENT RANGES (neg. and pos. reading) 0-60-300 μ amps; 0-1.2-12-120-600 Ma; 0-12 amps

5 RESISTANCE RANGES (self-contained batteries) 0-200-2000-200,000 ohms; 0-2-20 megohms

8 WIDE-FREQUENCY DECIBEL RANGES

from -20 to +77 Db; 0 Db equals 1 Mw, 600 ohms

RUGGED 50 MICROAMP PACE METER \pm 2% accuracy

1% MULTIPLIERS AND SHUNTS

DIMENSIONS 5 3/8" x 7" x 3 1/8"

SHIPPING WEIGHT 4 lbs

Tube	Sect.	A	B	C	D	Cath. Short	Cont.	Test
O1A		1	8	34	2			23
1A4		1	3	34	2			230
1AC5		4	2	31	2			278
1AD4		5	2	26	2			124
1AD5		4	2	32	2			278
1AG4		3	2	30	2			124
1AG5	pen	4	2	34	2			125
"	di	4	2	25	3			3
1AH4		3	2	29	2			124
1AJ5	pen	4	2	36	2			125
"	di	4	2	24	3			3
1AK4		3	2	32	3			124
1AK5	pen	4	2	35	3			125
"	di	4	2	29	3			3
1B4		1	3	34	2			230
1B7	tot	2	2	31	2			34560
"	tri	2	2	35	2			56
1C3		1	2	32	2		26	●264
●(1C3—Ignore Glow on 2)								
1C8	tri	4	2	36	2			27
"	tot	4	2	36	2			2678
1C21			24	14	1	2		5
1D3		4	2	26	2			18
1D5		2	3	33	2			340
1E8	tot	4	2	33	2			2678
"	tri	4	2	33	2			27
1L6	tot	1	2	35	2			23456
"	tri	1	2	39	2			34
1Q6	pen	4	2	35	2			278
"	di	4	2	27	3			6
1T6	pen	4	2	33	2			138
"	di	4	2	28	3			6
1V5		4	3	33	2			278
1V6	tri	4	2	35	2			56
"	pen	4	2	30	2			123
1W4		1	2	33	2			236
1W5		4	2	32	2			278
2B5	tri-1	2-7	2	14	1		45	68
"	tri-2	2-7	2	14	1			13
2C51	tri-1	1	9	24	2	2		34
"	tri-2	1	9	24	2	8		67
2C52	tri-1	7	13	8	1	3		12
"	tri-2	7	13	8	1	6		45
2C53		2	9	17	1	8		50
2D21		3	9	3	1	2	57	●1576
●(2D21—Ignore Glow on 5)								
2E24		2-7	4	7	1		146	350
2E25		2	9	12	1			4580
2E26		2	9	5	1	146	146	350
2E30		7	5	9	1		34	156
2E31		3	2	29	2			124
2E32		3	2	29	2			124
2E35		3	2	32	2			124
2E36		3	2	32	2			124
2E41	pen	4	2	33	2			125
"	di	4	2	45	3			3
2E42	pen	4	2	33	2			125
"	di	4	2	45	3			3
2F7	tri	1	4	30	1	6		45
"	pen	1	4	15	1			230

Tube	Sect.	A	B	C	D	Cath.		
						Short	Cont.	Test
2G21	tri	4	2	32	2			13
"	tot	4	2	30	2			12356
2G22	tri	4	2	32	2			13
"	tot	4	2	30	2			12356
2X2-879		1	4	17	4			0
3C6	tri-1	7	2	33	2		18	56
"	tri-2	7	2	33	2			34
5A6		9	4	8	1		4538	●13867
●(5A6—Ignore Glow on 3)								
6A4		1	9	12	1			234
6A5		8	5	5	1		27	35
6AD4		3	8	11	2	5		12
6AK4		3	9	23	2	5		18
These settings apply ONLY WHEN USING G140 ADAPTER. For instruments having sockets on the panel, see roll chart for test settings.								
6AX3	Insert tube in socket with key at 5							
"		6	9	24	2	0	29	●29
●(6AX3—Ignore Glow on 2)								
6AZ5	di-1	3	9	18	3	7		8
"	di-2	3	9	18	3	2		1
6AZ6	di-1	3	9	18	3	4		2
"	di-2	3	9	18	3	5		7
These settings apply ONLY WHEN USING G140 ADAPTER. For instruments having sockets on the panel, see roll chart for test settings.								
6B10	Insert tube in socket with key at 0							
"	tri-1	1	9	25	2	7		56
"	tri-2	1	9	25	2	2		34
Insert tube in socket with key at 6								
"	di-1	7	9	18	3	2		3
"	di-2	7	9	18	3			1
6BA5		4	9	24	2	2		135
6BF7	tri-1	3	9	24	2	5		78
"	tri-2	3	9	24	2	4		12
6BG7	tri-1	3	9	24	2	5		78
"	tri-2	3	9	24	2	4		12
These settings apply ONLY WHEN USING G140 ADAPTER. For instruments having sockets on the panel, see roll chart for test settings.								
6C10	Insert tube in socket with key at 0							
"	tri-2	1	9	26	2	6		57
Insert tube in socket with key at 5								
"	tri-1	6	9	26	2	9		12
"	tri-3	6	9	26	2	8		37
These settings apply ONLY WHEN USING G140 ADAPTER. For instruments having sockets on the panel, see roll chart for test settings.								
6D10	Insert tube in socket with key at 0							
"	tri-2	1	9	22	2	6		57
Insert tube in socket with key at 5								
"	tri-1	6	9	22	2	9		12
"	tri-3	6	9	22	2	8		37

Tube	Sect.	A	B	C	D	Cath. Short	Cont.	Test
These settings apply ONLY WHEN USING G140 ADAPTER. For instruments having sockets on the panel, see roll chart for test settings.								
6FJ7		Insert tube in socket with key at 6						
"	tri-1	7	9	28	2			34
Insert tube in socket with key at 0								
"	tri-2	1	9	24	2	7		35
These settings apply ONLY WHEN USING G140 ADAPTER. For instruments having sockets on the panel, see roll chart for test settings.								
6K11		Insert tube in socket with key at 0						
"	tri-2	1	9	7	1	6		57
Insert tube in socket with key at 5								
"	tri-1	6	9	7	1	9		12
"	tri-3	6	9	7	1	8		37
12A		1	8	9	1			23
These settings apply ONLY WHEN USING G140 ADAPTER. For instruments having sockets on the panel, see roll chart for test settings.								
12AX3		Insert tube in socket with key at 5						
"		6	13	24	2	0	29	● 29
● (12AX3—Ignore Glow on 2)								
15		1	3	34	2	4		230
17		1	13	12	1	4		23
18		1	13	11	1	5		234
20		1	5	35	2			23
22		1	5	42	2			230
25B8	tri	2	18	7	1	6		58
"	pen	2	18	4	1	1		340
26D6	tot	3	18	6	1	2		1567
"	tri	3	18	6	1			16
40		1	8	15	1			23
45Z5		7	20	3	1	8	23	5
48		1	19	6	1	5		234
50Z7	pl-1	2	20	6	1	4	67	3
"	pl-2	2	20	6	1	8		5
52		1	9	8	1			234
56A		1	9	12	1	4		23
57A		1	9	10	1	5		2340
58A		1	9	10	1	5		2340
RK-61		2	2	30	2			13
HY-69		1	9	14	1			230
70A7	amp.	2	21	5	1	8	67	345
"	rec.	2	21	3	1	1		*
*(70A7—Rect. Test—See instructions)								
99		1	5	41	2			23
101F		1	8	20	1			23
262B		1	12	16	1	3		20
264C		1	2	24	1			23
271A		1	8	9	1	4		23
272A		1	12	15	1	4		23
274A	pl-1	1	8	15	1			2
"	pl-2	1	8	15	1			3
300B		1	8	7	1			23
307A		1	8	8	1			2340
310A		1	12	10	1	5		2340

Tube	Sect.	A	B	C	D	Cath. Short	Cont.	Test
313C			10	13	4	1		2
328A		1	10	10	1	5		2340
329A		1	10	9	1	4		230
331B		1	12	26	2	4		230
336A		1	12	9	1	5		234
345A	pl-1	1	9	5	1	4		2
"	pl-2	1	9	5	1			3
347A		2	9	16	1	8		40
348A		2	9	9	1	8		3450
349A		2	9	7	1	8		345
350A		1	9	4	4	4		230
350B		2	9	4	4	8		345
351A	pl-1	2	9	6	1	8		3
"	pl-2	2	9	6	1			5
352A	tri	1	12	15	1	5		20
"	di-1	1	12	23	3			3
"	di-2	1	12	23	3			4
TS-383		4	9	17	4			1
398A		2	9	7	1			3468
401A		3	9	27	2	27	27	156
407-A	tri-1	5	16	24	2	2	19	34
"	tri-2	5	16	24	2	8		67
408-A		3	16	25	2	27	27	156
412A	pl-1	4	9	5	1	7		9
"	pl-2	4	9	5	1	3		1
417-A		3	9	23	2	6	4578	●14578

● (417-A—Ignore Glow on 457)

CK-501-AX		3	2	32	2			124
502-A		2	9	4	1	8		356
CK-502-AX		1	2	32	2			245
CK-503-AX		1	2	33	2			245
CK-505-AX		3	1	43	3			124
CK-506-AX		3	2	32	2			124
CK-507-AX		3	2	32	2			124
CK-511-X		3	2	31	2			1245
CK-512-AX		3	1	50	3			124
CK-521-AX		3	2	31	2			124
CK-522-AX		3	2	32	2			124
CK-527-AX		3	2	34	3			124
CK-532-DX		3	2	33	3			124
CK-536-AX		3	2	33	3			124
CK-542-DX		3	2	20	3			124
CK-551-AXA	pen	4	2	47	3			125
"	di	4	2	47	3			3
CK-553-AXA		3	2	29	2			124
CK-556-AX		2	2	28	2			13
CK-568-AX		2	2	30	2			13
CK-569-AX		3	2	28	2			124
CK-573-AX		2	2	28	2			13
CK-605-CX		3	9	22	2	6		1257
CK-606-BX		2	9	16	3	4		1
CK-608-CX		3	9	5	1	6		15
CK-619-CX		2	9	25	2	5		14
713A		2	9	24	2	35	35	468
717A		2	9	24	2	35	35	468
801		1	10	20	1			23
802		1	9	11	1	6		3450
807		1	9	7	1	4		230
809		1	9	10	1			30
811A		4	9	12	1			30
812		1	9	4	4			30
837		1	13	7	1	6		3450

Tube	Sect.	A	B	C	D	Cath.		
						Short	Cont.	Test
841		1	10	17	1			23
842		1	10	23	1			23
843		1	4	16	1	4		23
864		1	2	37	2			23
866-JR		1	4	4	4			2
884		2	9	8	1	8		35
885		1	4	7	1	4		23
932		1	3	17	1			230
950		1	3	31	1			234
954		1	9	10	1	5		2360
955		1	9	8	1	5		23
956		1	9	8	1	5		2360
957		1	2	23	1		45	23
958		1	2	13	1		45	23
959		1	2	18	1		45	2360
FM-1000	tot	1	9	3	1	3		24567
"	tri	1	9	4	1			25
1005	pl-1	6	9	5	4			3
"	pl-2	6	9	5	4			5
CK-1013		2	1	12	4	1267	1267	0
1201		2	9	5	1	46	134567	1537

● (1201—Ignore Glow on 13)

1203		1	9	21	3	7		4
1206	sec-1	1	9	7	1	6		357
"	sec-2	1	9	6	1			234
1221		1	9	10	1	5		2340
1222-A		1	9	5	1	7		234
1223		1	9	10	1	8		3450
1229		1	3	21	1			230
1231		1	9	4	1	7		2346
1232		1	9	4	1	7		2346
HY-1269		4	9	10	1		15	230
1273		1	9	8	1	7		2346
1276		1	8	8	1			23
1280		1	13	8	1	7		2346
1282		1	9	4	1	47	47	2356
1291	tri-1	4	2	29	2		18	23
"	tri-2	4	2	29	2			67
1299		7	2	28	2		18	236
1602		1	10	18	1			23
1603		1	9	10	1	5		2340
1609		1	2	19	1			234
1610		1	4	12	1			234
1611		2	9	11	1	8		345
1612		2	9	8	1	8		3450
1613		2	9	11	1	8		345
1614		2	9	7	1	8		345
1619		2	4	9	1			3458
1620		2	9	11	1	8		3450
1621		2	9	11	1	8		345
1622		2	9	7	1	8		345
1624		1	4	9	1			230
1625		1	13	7	1			340
1626		2	13	13	1	8		35
1629	tri	2	13	19	1	8		35
"	eye	2	13	0	4			34

(1629—Eye Test—see Instructions)

1631		2	13	7	1	8		345
1632		2	13	5	1	8		345
1633	tri-1	7	18	8	1	6		45
"	tri-2	7	18	8	1	3		12

Tube	Sect.	A	B	C	D	Cath. Short	Cont.	Test
1634	tri-1	7	13	13	1	6		23
"	tri-2	7	13	13	1			45
1635	tri-1	2	9	11	1	8		56
"	tri-2	2	9	11	1			34
1639	tri	2	9	7	1	8		30
"	di-1	2	9	21	3			5
"	di-2	2	9	21	3			4
1644	pen-1	6	13	10	1	2		345
"	pen-2	6	13	10	1			158
1650		1	9	8	1	5		23
1655	tri-1	7	9	12	1	6		45
"	tri-2	7	9	12	1			23
1657		2	9	3	1	8	14	35
1659	tri	1	4	10	1	5		20
"	di-1	1	4	27	3			3
"	di-2	1	4	27	3			4
1662		5	2	30	1		1267	●2634

●(1662—Ignore Glow on 2)

1851		2	9	3	1	8		3450
1852		2	9	3	1	5		3468
1853		2	9	5	1	5		3468
5516		2-7	4	8	1		146	350
CK-5517			1	12	4	1267	1267	0
5590		3	9	27	2	27	27	156
5603		2	9	7	1			3648
CK-5608	tri-1	7	4	9	1	4		56
"	tri-2	7	4	9	1			23
5610		3	9	25	2	2	15	●156

●(5610—Ignore Glow on 1)

5618		5	4	6	1		17	236
5636		3	9	25	2	28	28	1457
5642		2	2	18	4			0

(5642—The 2 Bottom Leads of Tube Connect to Pins 1 & 2 of Octal Socket. Top Lead Connects to Grid Cap)

5654		3	9	25	2	27	27	156
5663		3	9	4	1	2		157
5670	tri-1	1	9	24	2	8		67
"	tri-2	1	9	24	2	2		34
5672		3	2	32	2			124
5676		2	2	27	2			13
5678		3	2	28	2			124
5679	di-1	4	5	18	3	7	18	6
"	di-2	4	5	18	3	2		3
5686		4	9	8	1	138	13869	●2697

●(5686—Ignore Glow on 6)

5687	tri-1	8	9	23	2	6	45	79
"	tri-2	8	9	23	2	3		12
5691	tri-1	7	9	11	1	3		12
"	tri-2	7	9	11	1	6		45
5692	tri-1	7	9	9	1	3		12
"	tri-2	7	9	9	1	6		45
5693		2	9	8	1	5		3468
CK-5694	tri-1	2	9	9	1	1		34
"	tri-2	2	9	9	1	8		56
5695		1	4	4	4			2
5696		3	9	29	2	2	57	●1576

●(5696—Ignore Glow on 5)

Tube	Sect.	A	B	C	D	Cath.		Test
						Short	Cont.	
5702		3	9	22	2	6		1257
5703		3	9	5	1	6		15
5718		3	9	6	1	5		18
5719		3	9	25	2	5		18
5725		3	9	4	1	2		1567
5726	di-1	3	9	17	3	1		7
"	di-2	3	9	17	3	5		2
5727		3	9	3	1	2	57	●1576
●(5727—Ignore Glow on 5)								
5744		2	9	26	2	5		14
5749		3	9	5	1	7		1256
5750	tot	3	9	24	2	2		1567
"	tri	3	9	25	2			16
5751	tri-1	9	9	27	2	8	45	67
"	tri-2	9	9	27	2	3		12
5755	tri-1	9	9	19	3	7		68
"	tri-2	9	9	19	3	2		13
5763		4	9	4	1	7	89	●13689
●(5763—Ignore Glow on 8)								
5784		3	9	24	2	6		1257
5812		7	5	6	1	2	34	156
5814	tri-1	9	9	8	1	3	45	12
"	tri-2	9	9	8	1	8		67
5823			24	11	4	37	37	1
5824		2	18	5	1	8		345
CK-5829	di-1	3	9	17	3	7		6
"	di-2	3	9	17	3	2		1
5840		3	9	24	2	248	248	156
5842		3	9	23	2	6	4578	●14578
●(5842—Ignore Glow on 457)								
5847		3	9	22	2	4		168
CK-5854		3	2	29	3			124
5879		4	9	11	1	3		1789
5881		2	9	5	1	8		345
5899		3	9	25	2	248	248	157
5902A		3	9	25	2	248	248	157
5915	tot	3	9	5	1	2		1567
"	tri	3	9	5	1			16
5931	pl-1	2	8	12	1			4
"	pl-2	2	8	12	1			6
5932		2	9	7	1	8		345
5933		1	9	7	1	4		230
5963	tri-1	9	9	8	1	3	45	12
"	tri-2	9	9	8	1	8		67
5964	tri-1	3	9	23	2	7		25
"	tri-2	3	9	23	2			16
5965	tri-1	9	9	22	2	8	45	67
"	tri-2	9	9	22	2	3		12
6005		3	9	7	1	2	17	●1756
●(6005—Ignore Glow on 1)								
6021	tri-1	3	9	24	2	5		78
"	tri-2	3	9	24	2	4		12
6028		3	16	25	2	27	27	156
6029		2	2	28	2			13
6046		2	18	5	1	8		345
6072	tri-1	9	9	28	2	8	45	67
"	tri-2	9	9	28	2	3		12
6080	tri-1	7	9	22	2	6		45
"	tri-2	7	9	22	2	3		12

Tube	Sect.	A	B	C	D	Cath. Short	Cont.	Test
6087	pl-1	2	8	18	1			4
"	pl-2	2	8	18	1			6
6088		3	2	32	2			124
6096		3	9	25	2	27	27	156
6097	di-1	3	9	17	3	1		2
"	di-2	3	9	17	3	5		7
6098		6	9	25	2	1		357
6111	tri-1	3	9	26	2	5		78
"	tri-2	3	9	26	2	4		12
6112	tri-1	3	9	26	2	5		78
"	tri-2	3	9	26	2	4		12
6135		3	9	8	1	7	15	●156

●(6135—Ignore Glow on 1)

6136		3	9	5	1	7		1256
6137		2	9	9	1	5		3468
6146		2	9	5	1	146	146	350
6159		2	18	5	1	146	146	350
6187		3	9	4	1	2		1567
6188	tri-1	7	9	10	1	3		12
"	tri-2	7	9	10	1	6		45
6189	tri-1	9	9	8	1	3	45	12
"	tri-2	9	9	8	1	8		67
6197		4	9	22	2	1	2389	●2938

●(6197—Ignore Glow on 23)

6201	tri-1	9	9	4	1	8	45	67
"	tri-2	9	9	4	1	3		12
6202	pl-1	3	9	12	1	7		6
"	pl-2	3	9	12	1			1
6203	di-1	4	9	18	3	7		9
"	di-2	4	9	18	3			1
6205		3	9	24	2	28	28	1457
6206		3	9	24	2	28	28	1457
6211	tri-1	9	9	23	2	8	45	67
"	tri-2	9	9	23	2	3		12
6265		3	9	4	1	2		156
6267		4	9	26	2	3	27	169
6336	tri-1	7	9	22	2	6		45
"	tri-2	7	9	22	2	3		12
6350	tri-1	9	9	24	2	7		68
"	tri-2	9	9	24	2	2		13
6360	tet-1	9	9	5	1	2		378
"	tet-2	9	9	5	1			167
6386	tri-1	1	9	25	2	8		67
"	tri-2	1	9	25	2	2		34
6394	tri-1	7	18	24	2	6		45
"	tri-2	7	18	24	2	3		12
6417		4	13	4	1	7	89	●13689

●(6417—Ignore Glow on 8)

6463	tri-1	9	9	24	2	7	45	68
"	tri-2	9	9	24	2	2		13
6550		2	9	24	2	8		345
6660		3	9	5	1	7		1256
6661		3	9	4	1	2		156
6662		3	9	5	1	2		1567
6663	di-1	3	9	17	3	1		7
"	di-2	3	9	17	3	5		2
6669		3	9	7	1	2	17	●1756

●(6669—Ignore Glow on 1)

Tube	Sect.	A	B	C	D	Cath.		Test
						Short	Cont.	
6677		4	9	22	2	1	2389	●2938
●(6677—Ignore Glow on 23)								
6678	tri	4	9	24	2	8		19
"	pen	4	9	24	2			236
6679	tri-1	9	9	4	1	8	45	67
"	tri-2	9	9	4	1	3		12
6680	tri-1	9	9	8	1	8	45	67
"	tri-2	9	9	8	1	3		12
6681	tri-1	9	9	8	1	8	45	67
"	tri-2	9	9	8	1	3		12
6688		4	9	22	2	13	13	279
6829	tri-1	9	9	22	2	8	45	67
"	tri-2	9	9	22	2	3		12
6883		2	13	24	2	146	146	350
6919	di-1	3	9	19	3	1		7
"	di-2	3	9	19	3	5		2
6922	tri-1	4	9	21	2	8		67
"	tri-2	4	9	21	2	3		12
6973		4	9	7	1	7	1368	●18369
●(6973—Ignore Glow on 13)								
(6973—Grid short test—Throw 36 together)								
(6973—Screen short test—Throw 18 together)								
7025	tri-1	9	9	27	2	8	45	67
"	tri-2	9	9	27	2	3		12
7027		7	9	24	2	8	1456	●31456
●(7027—Ignore Glow on 1-5)								
7036	tet	3	9	5	1	2		1567
"	tri	3	9	5	1			16
7054		4	13	22	2	1	39	278
7055	di-1	3	13	17	3	1		7
"	di-2	3	13	17	3	5		2
7056		4	13	23	2	2		1567
7057	tri-1	4	13	23	2	8		67
"	tri-2	4	13	23	2	3		12
7058	tri-1	4	13	27	2	8		67
"	tri-2	4	13	27	2	3		12
7059	tri	4	13	24	2	8		19
"	pen	4	13	24	2	7		236
7060	tri	4	13	24	2	1		23
"	pen	4	13	24	2	6		789
7061		4	13	8	1	7	1368	●18369
●(7061—Ignore Glow on 13)								
7167		3	13	23	2	27	27	156
7189		4	9	22	2	3		●1279
●(7189—Ignore Glow on 168)								
(7189—May show short on 12)								
7199	tri	4	9	22	2	8		19
"	pen	4	9	21	2	6		237
7247	tri-1	9	9	7	1	8		67
"	tri-2	9	9	7	1	3		12
7258	tri	4	13	27	2	3		12
"	pen	4	13	26	2	9		678
7355		2	9	3	1	5		368
7370	tri-1	8	16	25	2	6	4-5	79
"	tri-2	8	16	24	2	3		12
7586		4	9	21	2	3		12
(7586—Use red grid cap)								

Tube	Sect.	A	B	C	D	Cath.		
						Short	Cont.	Test
7587		4	9	24	3	3		12
7701		4	13	26	2	138	13789	●2679
●(7701—Ignore Glow on 7)								
7716	tri	4	13	24	2	1		23
"	pen	4	13	23	2	6		789
7754		4	9	23	2	7		169
8016	(Same as 1B3)							
9001		3	9	9	1	27	27	156
9002		3	9	11	1	27	1257	●156
●(9002—Ignore Glow on 1)								
9003		3	9	8	1	27	27	156
9004	di	1	9	17	3	3		2
9005	di	1	5	17	3	2	45	3
9006	di	3	9	20	3	27	1257	●15
●(9006—Ignore Glow on 1)								
PJ-8		1	8	20	1			23

TEST DATA FOR PICTURE TUBES

Instrument Model No.	A	B	C	D	Cath. Short	Cont.	Test
640	1	9	16	3	7	—	2456
660	1	9	20	5	7	*	6

*Throw levers 2-4-6 individually to test row.
If neon bulb glows, tube is shorted.

Read on Meter Scale	Reject	?	Good	Most New Tubes Will Read
0-100	0-10	10-15	15-100	60-70

Read brightness quality on the
3 colored "Picture Tube" arc.

*—Denotes tubes with special European 8 pin miniature basing. The **PRECISION G-118** adapter, designed especially for these tubes, is available from your **PRECISION** Distributor or directly from the factory service department at the net price of **\$3.95**.

Tube	Sect.	Cath.				Short	Cont.	Test
		A	B	C	D			
DA-90	di	1	2	27	3	3	26	●26
●(DA-90—Ignore Glow on 2) (DA-90—Throw lever 5 to "open" position)								
DAC-32	tri	2	2	35	2			30
"	di	2	2	27	3			5
DAF-91	pen	1	2	34	2			456
"	di	1	2	29	3			3
DAF-96	pen	7	2	44	2			456
"	di	7	2	30	3			3
DC-90		7	2	33	1		2356	●2356
●(DC-90—Ignore Glow on 25)								
DC-96		1	2	30	2		2356	●2356
●(DC-96—Ignore Glow on 25)								
DCC-90	tri-1	4	2	28	2		17	23
"	tri-2	4	2	28	2			56
DF-33		2	2	31	2			340
DF-91		7	2	31	2		15	236
DF-92		7	2	32	2		15	236
DF-96		7	2	32	2		15	632
DF-97		7	2	17	1		15	2346
DF-904		7	2	31	2		15	236
DK-32	tot	2	2	33	2			34560
"	tri	2	2	38	2			56
DK-91	tot	7	2	32	2		15	2346
"	tri	7	2	32	2			34
DK-92	amp	7	2	12	1			23456
"	osc	7	2	29	2			345
DK-96		7	2	20	1			23456
DL-33		8	2	28	2		27	345
DL-35		2	2	30	2			345
DL-41		1	2	27	2		378	256
DL-92		5	2	29	2		1267	●2634
●(DL-92—Ignore Glow on 2)								
DL-94		5	2	28	2		17	236
DL-96		5	2	28	2		17	236
DM-70	eye	4	2	0	3			18
(DM-70—See instructions for eye test)								
DM-71	eye	4	2	0	3			18
(DM-71—See instructions for eye test)								
E-88-CC	tri-1	4	9	21	2	8		67
"	tri-2	4	9	21	2	3		12
E-180-F		4	9	22	2	13	13	279
DY-80		258	2	24	4			†
†(DY-80—Must show short on 1245689)								
DY-86		258	2	20	4		1469	0
EAA-11	di-1	2	9	17	3	4		5
"	di-2	2	9	17	3	7		6
EAA-91	di-1	3	9	17	3	1		7
"	di-2	3	9	17	3	5		2
EAA-901	di-1	3	9	17	3	1		7
"	di-2	3	9	17	5			2

Tube	Sect.	A	B	C	D	Cath. Short	Cont.	Test
EABC-80	tri	4	9	10	1	7		89
"	di-1	4	9	16	3			6
"	di-2	4	9	16	3	3		2
"	di-3	4	9	16	3			1
EAC-91	tri	3	9	7	1	5		67
"	di	3	9	18	3	2		1
*EAF-42	pen	1	9	25	2	7		2456
"	di	1	9	25	3			3
EBC-11	tri	2	9	6	1	8		67
"	di-1	2	9	21	3			5
"	di-2	2	9	21	3			4
EBC-33	tri	2	9	7	1	8		30
"	di-1	2	9	21	3			5
"	di-2	2	9	21	3			4
EBC-41	tri	1	9	26	2	7		23
"	di-1	1	9	23	3			5
"	di-2	1	9	23	3			6
EBC-90	tri	3	9	8	1	2		17
"	di-1	3	9	26	3			5
"	di-2	3	9	26	3			6
EBC-91	tri	3	9	27	2	2		17
"	di-1	3	9	27	3			5
"	di-2	3	9	27	3			6
EBF-15	pen	2	9	23	2	8		167
"	di-1	2	9	21	3			5
"	di-2	2	9	21	3			4
EBF-80	pen	5	9	5	1	3		1269
"	di-1	5	9	25	3			7
"	di-2	5	9	23	3			8
EBF-83	pen	4	9	24	2	3		126
"	di-1	4	9	23	3			7
"	di-2	4	9	23	3			8
EBF-89	pen	4	9	23	2	3		126
"	di-1	4	9	23	3			7
"	di-2	4	9	23	3			8
EC-92		3	9	23	2	7		16
ECC-33	tri-1	7	9	5	1	6		45
"	tri-2	7	9	5	1	3		12
ECC-35	tri-1	7	9	6	1	6		45
"	tri-2	7	9	6	1	3		12
ECC-81	tri-1	9	9	4	1	8	45	67
"	tri-2	9	9	4	1	3		12
ECC-82	tri-1	9	9	8	1	8	45	67
"	tri-2	9	9	8	1	3		12
ECC-83	tri-1	9	9	8	1	8	45	67
"	tri-2	9	9	8	1	3		12
ECC-84	tri-1	4	9	24	2	78	78	69
"	tri-2	4	9	24	2	1		23
ECC-85	tri-1	5	9	22	2	8		67
"	tri-2	5	9	22	2	3		12
ECC-86	tri-1	4	9	23	2	8		67
"	tri-2	4	9	23	2	3		12
ECC-88	tri-1	4	9	21	2	8		67
"	tri-2	4	9	21	2	3		12
ECF-12	tri	2	9	27	2	8		45
"	pen	2	9	26	2			167
ECF-80	tri	4	8	23	2	8		19
"	pen	4	8	22	2	7		236
ECF-82	tri	4	9	24	2	8		19
"	pen	4	9	24	2			236
ECF-86	tri	4	9	23	2	3	13	67
"	pen	4	9	22	2	1	13	289

Tube	Sect.	A	B	C	D	Cath. Short	Cont.	Test
ECH-42	tri	1	9	7	1	7		34
"	osc	1	9	9	1			24
"	hex	1	9	5	1			256
ECH-81	hep	5	9	24	2	3		1267
"	tri	5	9	27	2			89
ECH-83	hep	4	9	18	2	3		1267
"	tri	4	9	18	2			89
ECL-80	pen	4	9	6	1	3		6789
"	tri	4	9	11	1			12
ECL-82	tri	4	9	23	2	8		19
"	pen	4	9	23	2	2		367
ECL-84	tri	4	9	23	2	3		12
"	pen	4	9	23	2	7		689
ECL-86	tri	4	9	26	2	2		19
"	pen	4	9	23	2	7		368
*EF-41		1	9	6	1	7		256
(EF-41—May show short on 37)								
EF-80		4	9	22	2	13	13	278
(EF-80—Must show short on 13)								
(EF-80—Cathode short test—Throw 13 together)								
EF-83		4	9	26	2	3	27	1689
EF-85		4	9	22	2	13	13	278
EF-86		4	9	26	2	3	27	169
EF-89		4	9	25	2	3	16	2789
EF-91		3	9	23	2	2		1567
EF-93		3	9	5	1	7		1256
EF-94		3	9	5	1	7		1256
EF-97		3	9	23	2	2		156
EF-98		3	8	23	2	2		156
EF-183		4	9	22	2	13	13	2789
EF-184		4	9	21	2	13	13	2789
EF-804		4	9	25	2	3	26	1789
EH-90	tri	3	9	24	2	2		16
"	tot	3	9	24	2			1567
EK-90	tot	3	9	24	2	2		1567
"	tri	3	9	25	2			16
EL-12		2	9	24	2	8		567
EL-34		7	9	4	1	8		1345
EL-37		2	9	24	2	8		345
EL-38		2	8	3	1	8		450
*EL-41		1	9	24	2	37	37	256
EL-84		4	9	5	1	3	12	●1279
●(EL-84—Ignore Glow on 1)								
EL-86		4	8	21	2	3		●126978
●(EL-86—Ignore Glow on 167)								
(EL-86—May show short on 126789)								
EL-90		3	9	7	1	2	17	●1756
●(EL-90—Ignore Glow on 1)								
EL-95		3	8	23	2	2	17	●1756
●(EL-95—Ignore Glow on 1)								
EM-11	tri	2	9	6	1	8		57
"	eye	2	9	0	4			561
(EM-11—See Instructions for Eye Test)								
EM-35	tri	2	9	27	2	8		34
"	eye	2	9	0	4			365
(EM-35—See instructions for eye test)								

Tube	Sect.	A	B	C	D	Cath.		Test
						Short	Cont.	
EM-80	tri	4	9	13	1	2		17
"	eye	4	9	0	4			79
(EM-80—Levers 36 must be thrown to open position)								
(EM-80—May show short on 369)								
(EM-80—See instructions for eye test)								
EM-81	tri	4	9	32	2	2	389	17
"	eye	4	9	0	4			●7-389
●(EM-81—Ignore Glow on 38)								
(EM-81—See instructions for eye test)								
(EM-81—Target short test—Throw 389 together)								
EM-84	tri	5	9	24	1	3	268	19
"	eye	5	9	0	4			●7-268
●(EM-84—Ignore Glow on 26)								
(EM-84—See instructions for eye test)								
(EM-84—Target short test—Throw 268 together)								
EY-51*		2	9	18	4			0
*(EY-51—Connect 2 bottom leads to contacts 1 & 2 of octal socket. Top lead connect to grid cap)								
EY-88		4	9	23	2	0	*	●389
●(EY-88—Ignore Glow on 38)								
*(EY-88—Cont. Test—1236789)								
EZ-35	pl-1	2	9	10	1	8		3
"	pl-2	2	9	10	1			5
EZ-80	pl-1	4	9	11	1	3		1
"	pl-2	4	9	11	1			7
EZ-81	pl-1	4	9	6	1	3		1
"	pl-2	4	9	6	1			7
EZ-90	pl-1	3	9	11	1	7		1
"	pl-2	3	9	11	1			6
GZ-30	pl-1	2	8	5	1			6
"	pl-2	2	8	5	1			4
GZ-34	pl-1	2	8	3	1			4
"	pl-2	2	8	3	1			6
HBC-90	tri	3	13	8	1	2		17
"	di-1	3	13	26	3			5
"	di-2	3	13	26	3			6
HF-93		3	13	4	1	7		1256
HK-90	tot	3	13	4	1	2		1567
"	tri	3	13	4	1			16
HL-92		3	20	3	1	1	25	●2567
●(HL-92—Ignore Glow on 2)								
HY-90		3	19	4	1	7	46	5
KT-66		2	9	5	1	8		345
KT-88		2	8	3	1	8		345
PABC-80	tri	4	12	6	1	7		89
"	di-1	4	12	25	3			6
"	di-2	4	12	18	3			2
"	di-3	4	12	18	3			1
PC-86		4	5	22	2	37	*	●12689
*(PC-86—Cont.—1236789)								
●(PC-86—Ignore Glow on 1268)								
PCC-84	tri-1	4	10	23	2	78	78	69
"	tri-2	4	10	23	2	1		23
PCC-85	tri-1	4	11	22	2	8		67
"	tri-2	4	11	22	2	3		12

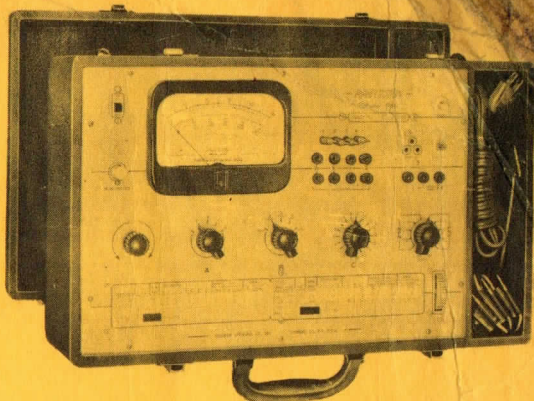
Tube	Sect.	A	B	C	D	Cath. Short	Cont.	Test
PCC-88	tri-1	4	9	23	2	8		67
"	tri-2	4	9	23	2	3		12
PCF-80	tri	4	11	24	2	8		19
"	pen	4	11	2	1	7		236
PCF-82	tri	4	12	24	2	8		19
"	pen	4	12	24	2			236
PCL-82	tri	4	15	25	2	8		19
"	pen	4	15	23	2	2		367
PL-36		2	18	2	4	38	1348	●1450
●(PL-36—Ignore Glow on 1)								
PY-80		4	16	3	1	3		9
PY-81		4	13	4	1	0	29	●29
●(PY-81—Ignore Glow on 2)								
PY-82		4	13	3	1	3		9
PY-83		4	16	2	4	0		9
PY-88		4	19	23	2	0	*	●389
●(PY-88—Ignore Glow on 38)								
*(PY-88—Cont. Test—1236789)								
UABC-80	tri	4	18	25	2	7		89
"	di-1	4	18	25	3			6
"	di-2	4	18	17	3	3		2
"	di-3	4	18	17	3			1
*UBC-41	tri	1	13	26	2	7		23
"	di-1	1	13	27	3			6
"	di-2	1	13	27	3			5
UBC-81	tri	4	13	8	1	3	79	12
"	di-1	4	13	26	3			8
"	di-2	4	13	26	3			6
(UBC-81—May show short 79)								
UBF-80	pen	4	15	25	2	3		1269
"	di-1	4	15	25	3			8
"	di-2	4	15	25	3			7
UBF-89	pen	4	16	24	2	3		1269
"	di-1	4	16	21	3			7
"	di-2	4	16	21	3			8
UC-92		3	12	22	2	7		16
UCC-85	tri-1	4	18	22	2	8		67
"	tri-2	4	18	22	2	3		12
UCH-42	tri	1	13	26	2	7		34
"	hex	1	13	24	2			2456
UCH-81	hep	4	16	23	2	3		126
"	tri	4	16	24	2			89
UCL-81	tri	4	19	26	2	38	38	17
"	pen	4	19	23	2			269
UF-80		4	16	21	2	13	13	2897
UF-85		4	16	23	2	13	13	2789
UF-89		4	13	24	2	3	16	278
UL-84		4	19	23	2	3	12689	●12697
●(UL-84—Ignore Glow on 16)								
UM-35	tri	1	13	25	2	7		56
"	eye	1	13	0	4			364
(UM-35—See instructions for eye test)								
UM-80	tri	4	16	7	1	2	369	17
"	eye	4	16	0	4			7369
(UM-80—See instructions for eye test)								

Tube	Sect.	A	B	C	D	Cath. Short	Cont.	Test
*UY-41	1	19	2	4	7			2
UY-85	4	19	24	2	3		169	●169
●(UY-85—Ignore Glow on 16)								
XC-97	3	4	22	2	17		17	25
XF-183	4	5	22	2	13		13	2789
XF-184	4	5	21	2	13		13	2789
XY-88	4	14	23	2	0		*	●389
●(XY-88—Ignore Glow on 38)								
*(XY-88—Cont. Test—1236789)								
YF-183	4	6	22	2	13		13	2789
YF-184	4	6	21	2	13		13	2789

MORE

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TRANSISTOR AND CRYSTAL DIODE TESTER



MODEL 960 FEATURES

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3. POWER TRANSISTORS
4. CRYSTAL DIODES

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PORTABLE WELL-CONSTRUCTED INSTRUMENT CARRYING CASE has accessory compartment and hinged, removable cover

ETCHED SATIN BRUSHED-ALUMINUM 3-COLOR PANEL

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SHIPPING WEIGHT 15 lbs

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RESPONSE, 10 CYCLES TO 5 MEGACYCLES

PUSH-PULL WIDE-BAND VERTICAL AMPLIFIER
10 MV (.01 volts) per inch sensitivity
Cathode-follower Input: 2 megohms and 22 mmf
Response 1 Db from 10 cps to 3.5 Mc; 3 Db at 5 Mc

3-POSITION VERTICAL STEP ATTENUATOR
frequency-compensated; X100, X10, X1

DIRECT-READING PEAK-TO-PEAK VOLTAGE CALIBRATOR permits use of oscilloscope as dependable high-impedance Vacuum Tube Voltmeter

VERTICAL PATTERN REVERSING SWITCH

PUSH-PULL WIDE-RANGE HORIZONTAL AMPLIFIER
100 MV (0.1 volts) per inch sensitivity
Cathode-follower Input: 2 megohms and 22 mmf
Response 1 Db from 10 cps to 1.0 Mc; 3 Db at 2 Mc

3-POSITION HORIZONTAL STEP ATTENUATOR
frequency compensated; X100, X10, X1

LINEAR MULTI-VIBRATOR SWEEP CIRCUIT
10 cycles to 100 Kc; automatically synchronized 30 cycles and 7875 cycles sweep for TV sync-pulse analysis; amplified sweep retrace blanking

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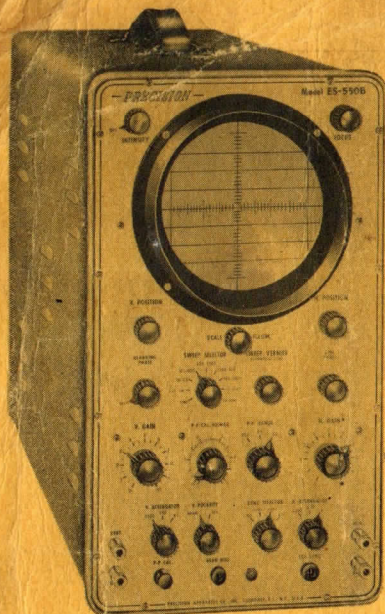
TUBE COMPLEMENT:
12AV7 vertical cathode follower and amplifier
6U8 vertical amplifier and phase splitter
Two 6CL6 push-pull vertical drivers
6U8 horizontal cathode-follower and amplifier
6C4 horizontal phase splitter
12BH7 push-pull horizontal driver
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