

HICKOK

**MODEL CA99
ADAPTER**

for use with

MODEL 799

**DYNAMIC MUTUAL CONDUCTANCE
TUBE TESTER**

**IMPORTANT:
NOTE →**

YOU HAVE RECEIVED 2 DATA BOOKLETS WITH YOUR MODEL CA-99 ADAPTER. ONLY ONE IS APPLICABLE TO YOUR TUBE TESTER. IF YOUR MODEL 799 TESTER SERIAL NUMBER BEGINS WITH 355 OR 356, USE THIS BOOKLET AND DISCARD THE WHITE ONE. IF YOUR SERIAL NUMBER BEGINS WITH 345, DISCARD THIS BOOKLET AND USE THE WHITE ONE. TO AVOID POSSIBLE MIXUPS, BE SURE YOU DESTROY THE BOOKLET NOT APPLICABLE TO YOUR 799 TUBE TESTER.

The Model CA-99 Adapter is designed to supplement the Model 799 Tube Tester. It makes possible the testing of recently-added tube types. In addition, it accommodates certain foreign tubes and little-used tubes not sufficiently popular to have been included with the Model 799. Included herein are instructions for installing the CA-99 Adapter, instructions for operating it, and the data for the tubes it covers. This data is brought up to date at regular intervals; thus, with the CA-99, your "Mustang" Tube Tester need never be obsolete.

INSTALLATION INSTRUCTIONS

1. Remove the blank panel from the Model 799 by removing the four screws which retain it. Save the screws, discard the removed panel.
2. Locate the eight-lug terminal strip attached to the calibration mounting bracket inside the Model 799. Note the numbering of the individual lugs as shown in Fig. 1, page 2.
3. Locate the six color-coded leads attached to the CA-99 Adapter.
4. Solder these six leads to the appropriate lugs on the terminal strip according to the following chart:

COLOR-CODED LEADS		TERMINAL STRIP
FROM MODEL CA-99	Should be Soldered To	LUG NUMBER
Yellow-Orange	1
Yellow-Black	3
Yellow-Purple	4
White-Brown	5
Black	6
Brown	8

5. After soldering, tuck the leads into the Model 799 and mount the Model CA-99 onto the panel, using the four screws which had secured the discarded panel. Upon completion, the Model 799 should appear as illustrated in Fig. 2, Page 2. Do not lace the six leads.

OPERATING INSTRUCTIONS

1. Testing of tubes with the Model CA-99 Adapter is identical with testing done with the Model 799 Tube Tester with the single exception that control settings data is obtained from the data information contained herein.
2. All other tests and instructions remain unchanged from those in the Model 799.
3. When not using the Model CA-99 Adapter, turn the Adapter Controls as follows: Switch A to the Number One position; Switches B, C and D to the "zero" position. This separates the Adapter circuitry from the circuitry of the Model 799.

SYMBOLS: When the Δ appears in the Notations column follow the instructions below.

- Δ Make Leakage Test with:
 - a. Leakage switch in position 1.
 - b. Rotate Selector D of the Adapter through each of its positions, pausing at each position to check the meter reading. Excess leakage is indicated the same as the normal 799 leakage indication, and the tube should be discarded unless the notation after the symbol Δ allows a leakage exception.
 - c. Disregard any momentary leakage that may be due to a voltage discharge on the tube elements and the leakage circuit.

NOTE: THIS DATA IS APPLICABLE TO MODEL CA-99 ADAPTERS FOR USE WITH MODEL 799 TUBE TESTERS HAVING SERIAL NUMBER BEGINNING WITH 355 OR 356.

NOTE: When # appears in socket column use Hickok Adapter SA-1. All other symbols are explained on page 1 of the Model 799 Data Book.

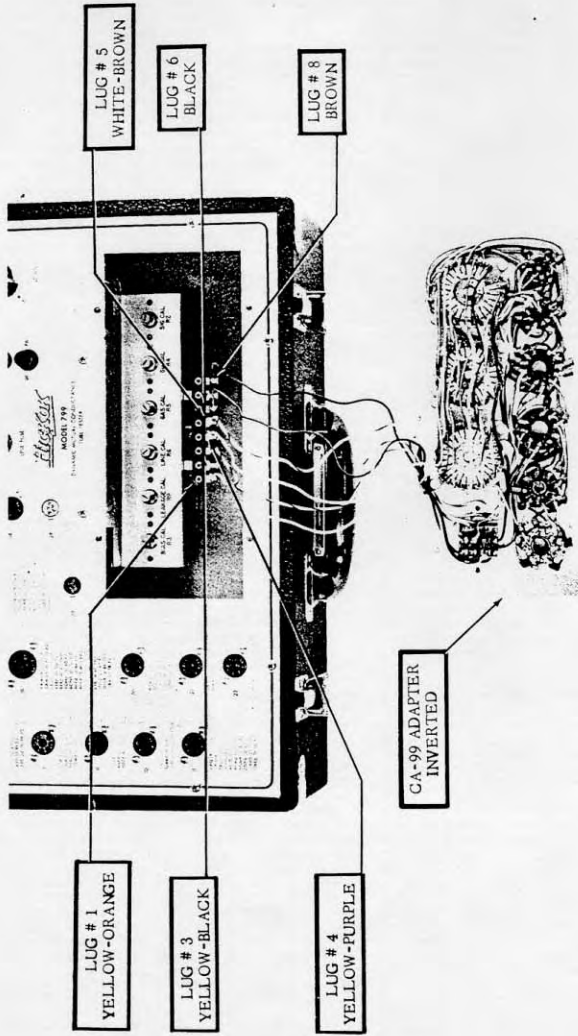


FIG. 1 -- Completed wiring of Model CA-99 Adapter to Model 799 Tube Tester

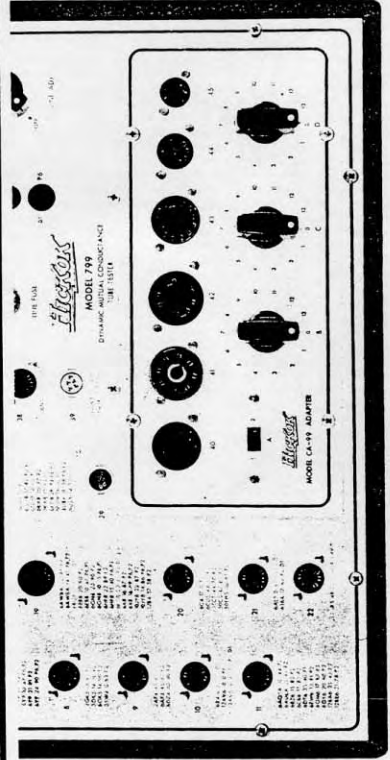


FIG. 2 -- View of lower part of Model 799 Tester panel with Model CA-99 Adapter Installed

HICKOK MODEL CA99. TUBE CHART

Tube Type	Color	Htr	Bias	Shunt	Socket	Press	Selectors A B C D Notations	Tube Type	Color	Htr	Bias	Shunt	Socket	Press	Selectors A B C D Notations
OY4	G	OFF	0	40	40	P4	1-0-0-5	2E26	B	6.3	40	60	40	P2	2-5-3-0 Δ Cap = P Short 1, 4 & 6
IAB5	B	1.4	20	66	41	P1	2-6-3-2 * Δ Short 7 & 12	2E31	G	1.4	0	0	#	P5	1-3-5-13 Δ
IAB6	G	1.4	0	45	45	P5	1-4-5-13 Δ	2E32	G	1.4	0	0	#	P5	1-3-5-13 Δ 250 Min
IAC5	G	1.4	0	40	#	P5	1-4-5-13 Δ	2E33	G	1.1	0	0	#	P5	1-3-5-13 Δ 250 Min
IAD4	G	1.1	0	44	#	P5	1-3-5-4 Δ	2E35	G	1.1	0	0	#	P5	1-3-5-13 Δ 250 Min
IAD5	G	1.4	0	40	#	P5	1-4-5-13 Δ	2E36	G	1.1	0	0	#	P5	1-4-6-5 Δ
IAP5	G	1.4	0	44	45	P5	1-1-7-6 Δ	2E41	G	1.1	0	43	#	P5	1-4-6-3 Δ
IAP5	G	1.4	0	40	45	P5	1-1-7-12 Δ	2E41	G	1.1	0	43	#	P5	1-4-6-3 Δ
IAG4	G	1.1	0	45	#	P5	1-3-5-4 Δ	2V2	G	2.5	0	32	40	P4	2-6-4-0 Cap = P Short Normal Pos.2 & 3
IAG5	G	1.1	0	45	#	P5	1-4-6-5 Δ		G	2.5	0	32	40	P4	2-6-4-0 Cap = P Short Normal Pos.2 & 3
IAH4	G	1.1	0	45	#	P5	1-3-5-4 Δ		G	2.5	0	32	40	P4	2-6-4-0 Cap = P Short Normal Pos.2 & 3
IAH5	G	1.1	0	45	45	P5	1-1-7-6 Δ	3A4	G	2.5	0	45	45	P5	1-1-7-13 * Δ Short 1, 2, 5, 6 & 7
IAH5	G	1.1	0	45	45	P5	1-1-7-12 Δ		G	2.5	0	45	45	P5	1-1-7-6 *
IAJ5	G	1.1	0	45	#	P5	1-1-7-12 Δ		G	2.5	0	45	45	P5	1-1-7-12 *
IAJ5	G	1.1	0	10	#	P5	1-4-6-5 Δ		G	3	0	45	45	P5	1-1-7-12 *
IAK4	G	1.1	0	45	#	P5	1-4-6-13 Δ 350 Min	3A5	G	3	0	45	45	P5	1-1-7-12 *
IAK4	G	1.1	0	45	#	P5	1-3-5-4 Δ	3A5	G	3	0	45	45	P5	1-1-7-12 *
IAK5	G	1.4	0	44	45	P5	1-1-7-6 Δ	3AJ8	G	3	40	60	44	P2	2-2-0-1 Δ Short 3
IAK5	G	1.4	0	44	45	P5	1-1-7-6 Δ	3AJ8	G	3	19	10	44	P2	2-9-0-8
IAK5	G	1.4	0	40	45	P5	1-1-7-12 Δ	3AJ8	G	3	0	43	43	P3	2-0-0-0 *
IBC2	B	1.1	0	40	44	P4	1-1-13-0 Cap = P	3AW2	B	3	0	43	43	P3	2-0-0-0 *
IC3	G	1.4	0	45	45	P5	1-1-13-0 *	3B4	G	2.5	0	45	45	P5	1-13-5-1 * Δ Short 2, 5, 6, & 13
IC8	G	1.4	0	35	#	P5	1-1-7-13 * Δ Short 1, 4 & 5	3B7	G	3	10	70	41	P2	2-6-0-7 *
IC21	G	OFF	0	35	40	P4	2-0-0-5 250 Min	3B7	G	3	10	77	41	P1	2-3-0-2 *
ID8	B	1.4	65	45	40	P1	2-5-4-3 Δ Short 5	3C2	G	3	0	38	40	P4	2-6-4-0 Cap = P Short Normal Pos.2 & 3
ID8	G	1.4	15	10	40	P1	2-0-0-6 Δ	3D6	G	1.4	0	34	41	P6, P5	2-0-7-3 Δ Short 5, 12 & 13
ID8	G	1.4	0	40	40	P5	2-0-0-8 Δ	3E6	B	2.5	30	83	41	P1	2-6-3-2 *
IE7	G	2	48	76	40	P1	2-4-5-8 Δ		G	1.4	0	34	41	P6, P5	2-0-7-3 Δ Short 5, 12 & 13
IF7	B	2	45	30	40	P1	2-0-6-3 Δ Cap = G		G	1.4	0	34	41	P6, P5	2-0-7-3 Δ Short 5, 12 & 13
IF7	G	1	2	0	40	P5	2-0-0-5	4A6	G	4.3	35	47	40	P1	2-5-0-6 *
IF7	G	2	0	40	40	P5	2-0-0-4 Δ	4A6	G	4.3	10	10	40	P1	2-4-0-3 *
IG6	G	1.4	14	32	40	P1	2-5-0-6 Δ	4GJ7	B	4.3	17	87	44	P2	2-2-7-6
IG6	G	1.4	20	10	40	P1	2-4-0-3 Δ	4GJ7	B	4.3	32	75	44	P2	2-2-7-6
IH5	G	1.4	0	0	40	P1	2-0-0-3 Δ Cap = G	4GX7	B	4.3	16	89	44	P2	2-9-0-8 Δ Short 1 & 3
IH5	G	1.4	0	0	40	P5	2-0-0-5 Δ 250 Min	4GX7	G	4.3	13	85	44	P2	2-9-0-8 Δ Short 2
IH6	G	2	17	30	40	P1	2-6-0-3 Δ	4M-P12	B	4.3	20	77	45	P2	2-1-5-6 Δ Short 2
IH6	G	2	0	40	40	P5	2-0-0-5 Δ	5A6	B	5	37	35	44	P2	2-7-1-6 * Δ Short 2, 8, 9, 12, & 13
IH6	G	2	0	40	40	P5	2-0-0-4 Δ		B	5	37	35	44	P2	2-7-1-6 * Δ Short 2, 8, 9, 12, & 13
IJ6	G	2	34	10	40	P1	2-5-0-6 Δ		B	5	15	83	44	P2	2-2-7-6 Δ Short 3 & 8
IJ6	G	2	34	10	40	P1	2-4-0-3 Δ		B	5	15	83	44	P2	2-2-7-6 Δ Short 3 & 8
IJ6	R	1.4	0	40	45	P5	1-1-7-0 Δ	5CR8	B	5	20	53	44	P2	2-9-0-1
ILA4	B	1.4	58	30	41	P1	2-6-3-2 Δ	5CR8	G	5	0	60	40	P3	1-13-8-6
ILA6	G	1.4	58	0	41	P1	2-4-0-5 Δ	5CU4	G	5	0	60	40	P3	1-13-8-6
ILB4	B	1.4	65	55	41	P1	2-6-3-2 Δ	5CU4	G	5	0	60	40	P3	1-13-8-6

ILB6	B	1.4	15	73	41	P1	2-6-3-4-4 2-6-3-2 *Δ Short 5, 12 & 13	5D14	R	5	0	60	* 40	P6, P3	2-1-0-8	Short Normal Pos. 2 & 3 Δ Short 1 & 3
ILC5	B	1.4	35	0	41	P1	2-4-3-5-5 2-6-3-2 * Δ 300 Min	5GJ7	B	6.3	23	87	44	P2	2-2-7-6	Δ Short 1 & 3
ILD5	G	1.4	53	0	41	P1	2-0-0-4 2-6-0-2 2-6-3-2 * Δ Short 5, 12 & 13	5GJ7	G	6.3	32	75	44	P2	2-9-0-8	Δ Short 1 & 3
ILF3	G	1.4	38	35	41	P1	2-6-0-2 2-6-3-2 * Δ Short 5, 12 & 13	5GX7	B	5	16	89	44	P2	2-2-7-6	Δ Short 1 & 3
ILG5	B	1.4	38	45	41	P1	2-6-0-2 2-6-3-2 * Δ Short 5, 12 & 13	5GX7	G	5	13	85	44	P2	2-9-0-8	Δ Short 1 & 3
ILH4	G	1.4	0	0	41	P1	2-6-0-4 2-6-3-2 * Δ Short 5, 12 & 13	5HB7	G	5	10	84	44	P2	2-9-0-8	Δ Short 3, 4 & 8
ILN5	B	1.4	27	60	41	P1	2-6-0-4 2-6-3-2 * Δ Short 5, 12 & 13	6AC9	B	6.3	25	62	43	P2	2-9-10-11	Δ Short 3, 4 & 8
IN5	B	1.4	22	0	40	P1	2-0-4-3 2-5-4-3 2-0-0-6 1-4-5-8 1-4-5-6 2-0-0-4 1-1-7-6 1-1-7-12 2-4-6-8 2-8-4-3 2-0-0-5 1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AC9	B	6.3	0	45	43	P5	2-0-0-2	Eye 1 & 2 Closed
IN6	B	1.4	50	50	40	P1	2-5-4-3 2-0-0-6 1-4-5-8 1-4-5-6 2-0-0-4 1-1-7-6 1-1-7-12 2-4-6-8 2-8-4-3 2-0-0-5 1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AC9	B	6.3	0	45	43	P5	2-0-0-2	Eye 2
IN6	G	1.4	0	20	40	P5	2-0-0-6 1-4-5-8 1-4-5-6 2-0-0-4 1-1-7-6 1-1-7-12 2-4-6-8 2-8-4-3 2-0-0-5 1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AC10	B	6.3	15	59	43	P2	2-9-0-10	Open
IQ6	G	1.4	0	19	#	P3	1-4-5-8 1-4-5-6 2-0-0-4 1-1-7-6 1-1-7-12 2-4-6-8 2-8-4-3 2-0-0-5 1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AC10	B	6.3	15	59	43	P2	2-7-0-5	Open
IR4	G	1.4	0	35	#	P5	1-4-5-6 2-0-0-4 1-1-7-6 1-1-7-12 2-4-6-8 2-8-4-3 2-0-0-5 1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AD4	G	6.3	0	40	#	P3	2-11-0-2	Open
IS5	G	1.4	0	44	45	P5	2-0-0-4 1-1-7-6 1-1-7-12 2-4-6-8 2-8-4-3 2-0-0-5 1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AD6	R	6.3	0	100	40	P2	1-3-6-8	Open
ISA6	B	1.4	36	75	40	P5	1-1-7-6 1-1-7-12 2-4-6-8 2-8-4-3 2-0-0-5 1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AD6	R	6.3	0	100	40	P2	2-3-8-0	Open
ISB6	B	1.4	33	50	40	P1	2-8-4-3 2-0-0-5 1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AD6	R	6.3	0	100	40	P2	2-4-8-0	Open
ISB6	G	1.4	0	45	40	P5	1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AD6	R	6.3	0	100	40	P2	2-4-8-3	Open
IU6	R	1.4	0	40	45	P5	1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AD6	R	6.3	0	100	40	P2	2-4-8-3	Open
IV5	R	1.4	0	45	#	P5	1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AD6	R	6.3	0	100	40	P2	2-4-8-3	Open
IV6	G	1.1	0	44	#	P5	1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AD7	B	6.3	15	89	40	P1	2-5-4-3	Δ Short 8
IV6	G	1.1	0	44	#	P5	1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AD7	G	6.3	40	30	40	P1	2-1-0-6	Δ Short 8
1W5	R	1.4	0	45	#	P5	1-1-7-0 1-4-5-0 1-4-12-3 1-4-12-5 1-4-5-0 2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AE6	G	6.3	10	10	40	P1	2-5-0-4	300 Min
2A4	G	2.5	0	63	40	P3	2-0-0-3 2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AE6	G	6.3	10	10	40	P1	2-5-0-3	
2AC15	G	2	0	40	40	P5	2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AE7	G	6.3	35	83	40	P6, P1	2-6-5-3	
2AS15	G	2	0	40	40	P5	2-0-0-5 2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AE7	G	6.3	35	83	40	P6, P1	2-6-5-3	
2B22	G	6.3	0	45	40	P4	2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AF6	R	6.3	0	100	40	P2	2-0-8-0	Eye 1 & 2 Closed
2BA2	B	2	0	40	44	P4	2-0-0-0 2-0-1-9 1-1-7-5 2-0-0-0	6AF6	R	6.3	0	100	40	P2	2-3-8-0	Eye 2
2C4	G	2.5	0	44	45	P3	1-1-7-5 2-0-0-0	6AF6	R	6.3	0	100	40	P2	2-4-8-0	Open
2C26A	G	6.3	10	83	40	P1	2-0-0-0 1-1-9-3 1-1-9-7 2-0-0-6 2-8-7-1 2-5-0-3 2-5-0-4 2-5-0-4	6AF6	R	6.3	0	100	40	P2	2-4-8-3	Open
2C51	G	6.3	0	46	44	P5	1-1-9-3 1-1-9-7 2-0-0-6 2-8-7-1 2-5-0-3 2-5-0-4 2-5-0-4	6AH7	G	6.3	0	45	40	P5	1-12-8-5	
2C51	G	6.3	0	46	44	P5	1-1-9-3 1-1-9-7 2-0-0-6 2-8-7-1 2-5-0-3 2-5-0-4 2-5-0-4	6AH7	G	6.3	0	45	40	P5	1-12-8-1	
2D21	G	6.3	0	63	45	P3	2-8-7-1 2-5-0-3 2-5-0-4 2-5-0-4	6AK4	G	6.3	0	45	44	P5	1-7-8-13	
2DF4	G	2.5	10	82	44	P6, P2	2-8-7-1 2-5-0-3 2-5-0-4 2-5-0-4	6AJ8	G	6.3	40	60	44	P1	1-3-6-1	
2E24	G	6.3	55	90	40	P1	2-5-0-3 2-5-0-4 2-5-0-4 2-5-0-4	6AJ8	G	6.3	19	10	44	P2	2-2-0-1	Δ Short 3
2E25	G	6.3	40	10	40	P2	2-5-0-3 2-5-0-4 2-5-0-4 2-5-0-4	6AJ8	G	6.3	19	10	44	P2	2-9-0-8	

HICKOK MODEL CA99 A THER TUBE CHART

Tube Type	Color	Htr	Bias Shunt	Socket	Press	Selectors A B C D	Notations	Tube Type	Color	Htr	Bias Shunt	Socket	Press	Selectors A B C D	Notations
6AL7	R	6.3	Vary	100	40	P2	Bias Controls Right Pattern	6CM5	G	6.3	65	53	40	P6, P2	2-5-1-4 Cap = P Δ Short 1, 3 & 8 Δ Short 3 & 8
6AL7	R	6.3	Vary	100	40	P2	Bias Controls Both Patterns	6CR8	B	6.3	15	83	44	P2	2-2-7-6
6AL7	R	6.3	Vary	100	40	P2	Bias Controls Left Pattern	6CR8	G	6.3	20	53	44	P2	2-9-0-1
6AM4	G	6.3	0	0	44	P5	1-12-8-13	6D4	G	6.3	0	45	45	P3	2-0-0-7
6AN6	G	6.3	0	45	45	P5	1-1-7-5	6DA5	R	6.3	100	100	44	P2	2-1-0-2
6AN6	G	6.3	0	45	45	P5	1-1-7-12	6DA5	R	6.3	100	100	44	P2	2-1-7-2
6AN6	G	6.3	0	45	45	P5	1-1-7-13	6DL4	G	6.3	0	40	44	P5	2-0-0-8
6AN6	G	6.3	0	45	45	P5	1-1-7-2	6DT4	R	6.3	0	100	40	P3	1-12-8-3
6AR6	R	6.3	0	48	40	P3	1-6-8-1	6DZ7	G	6.3	30	85	40	P2	2-1-5-4
6AW7	G	6.3	0	40	40	P4	1-8-12-6	6EA4	G	6.3	0	43	40	P5	2-0-0-6
6AW7	G	6.3	0	45	40	P5	1-8-12-3	6F8	G	6.3	10	89	40	P1	2-5-0-6
6AX6	G	6.3	0	63	40	P3	1-8-12-4	6F8	G	6.3	10	89	40	P1	2-0-0-3
6AX6	G	6.3	0	63	40	P3	2-0-0-5	6GAT	B	6.3	60	10	43	P2	2-4-2-3
6AZ5	G	6.3	0	45	#	P5	2-0-0-3	6GAT	G	6.3	60	10	43	P2	2-0-0-1
6AZ5	G	6.3	0	45	#	P5	1-3-6-1	6GAT	G	6.3	0	63	43	P3	2-0-0-11
6AZ6	G	6.3	0	48	#	P5	1-3-6-12	6GE8	B	6.3	19	45	44	P2	2-8-1-9 Δ Short 2 & 7
6AZ6	G	6.3	0	48	#	P5	1-3-6-13	6GE8	B	6.3	19	45	44	P2	2-8-1-9 Δ Short 2 & 7
6B6	G	6.3	10	10	40	P1	2-0-0-3	6GE8	G	6.3	65	42	44	P2	2-3-0-6
6B6	G	6.3	0	45	40	P5	2-0-0-5	6GJ7	B	6.3	17	87	44	P2	2-2-7-6
6B6	G	6.3	0	45	40	P5	2-0-0-4	6GJ7	B	6.3	17	87	44	P2	2-2-7-6
6B8	B	6.3	30	81	40	P1	2-0-3-6	6GJ7	G	6.3	32	75	44	P2	2-9-0-8
6B8	G	6.3	0	40	40	P5	2-0-0-5	6GM8	G	6.3	0	45	44	P5	2-0-0-6
6B8	G	6.3	0	40	40	P5	2-0-0-4	6GM8	G	6.3	0	45	44	P5	2-0-0-6
6BA5	G	6.3	0	46	#	P5	1-3-6-1	6GM8	G	6.3	0	45	44	P5	2-0-0-1
6BE7	B	6.3	20	42	44	P2	2-7-1-6	6GV7	B	6.3	24	83	44	P2	2-7-3-2 Δ Short 6 & 8
6BFTW	G	6.3	0	44	#	P5	1-3-6-8	6GV7	B	6.3	35	20	44	P2	2-9-0-1 Δ Short 1 & 3
6BFTW	G	6.3	0	44	#	P5	1-3-6-1	6GX7	B	6.3	14	89	44	P2	2-2-7-6
6BF8	G	6.3	0	45	44	P3	2-0-0-1	6GX7	G	6.3	13	85	44	P2	2-9-0-8
6BF8	G	6.3	0	45	44	P3	2-0-0-2	6GX8	B	6.3	100	100	44	P2	2-8-3-6
6BF8	G	6.3	0	45	44	P3	2-0-0-3	6GX8	B	6.3	100	100	44	P2	2-8-3-6
6BF8	G	6.3	0	45	44	P3	2-0-0-7	6GX8	B	6.3	100	100	44	P2	2-8-7-6
6BF8	G	6.3	0	45	44	P3	2-0-0-8	6GX8	B	6.3	100	100	44	P2	2-8-7-6
6BF8	G	6.3	0	45	44	P3	2-0-0-9	6GX8	B	6.3	100	100	44	P2	2-8-7-6
6BG7	G	6.3	0	44	#	P5	1-3-6-8	6GX8	G	6.3	10	84	44	P2	2-9-0-8 & 3
6BG7	G	6.3	0	44	#	P5	1-3-6-1	6HE7	G	6.3	62	47	43	P2	2-9-11-5 * Δ Short 4, 8, 12 & 13
6BG7	G	6.3	0	44	#	P5	1-3-6-1	6HE7	G	6.3	62	47	43	P2	2-9-11-5 * Δ Short 4, 8, 12 & 13

6BH11	B	6.3	17	80	43	P2	2-8-9-10 Δ Short 2, 5 & 11	6HU8	B	6.3	25	81	44	P2	2-6-9-8 Δ Short 7
6BH11	G	6.3	11	85	43	P2	2-6-0-7	6HU8	B	6.3	25	81	44	P2	2-2-1-3 Δ Short 7
6BH11	B	6.3	11	85	43	P2	2-4-0-3	6HW8	B	6.3	10	57	44	P2	2-6-3-8 Δ Short 7
6BJ5	G	6.3	10	87	45	P2	2-1-7-5 Δ Short 2 & 6	6J8	G	6.3	40	40	40	P1	2-0-0-4 Cap = G Δ Short 8
6BK8	B	6.3	20	83	44	P1	2-9-1-6 Δ Short 2, 3 & 7	6J8	G	6.3	40	40	40	P1	2-5-0-6
6BL4	R	6.3	0	100	40	P3	1-8-12-3	6J9	B	6.3	15	54	44	P2	2-7-0-8
6BN5	G	6.3	45	79	44	P1	2-2-1-9 Δ Short 1, 2,3,6 & 8	6J9	B	6.3	15	54	44	P2	2-9-0-6
6BN11	B	6.3	19	81	43	P2	2-7-9-11 Δ Short 2 & 8	6JF8	B	6.3	0	15	40	P3	2-2-0-1 Cap = P Δ Short 6 & 13
6BN11	B	6.3	19	81	43	P2	2-3-4-5 Δ Short 2 & 8	6JF8	B	6.3	0	63	40	P3	1-1-12-8
6BR5	B	6.3	100	100	44	P4	2-1-7-2 Screen OFF	6JM6	B	6.3	55	43	43	P2	2-5-3-0 Cap = P Δ Short 2, 4 & 10 Δ Short 2, 4 & 10
6BR5	B	6.3	100	100	44	P4	Short on Pos. 1 or 1&3	6JN6	B	6.3	55	43	43	P2	2-11-3-7
6BR5	B	6.3	100	100	44	P4	2-1-8-2 Screen on for Tubes Short on 1&3	6JH8	B	6.3	0	23	44	P1	2-0-3-11 Cap = P Δ Short 7
6BR5	B	6.3	100	100	44	P4	2-1-6-2 Screen on for tubes	6KH8	G	6.3	47	10	44	P1	2-2-6-9 Δ Short 7
6BW6	G	6.3	10	89	44	P1	2-2-1-8 Δ Short 1, 2 & 3	6LH8	G	6.3	45	60	43	P2	2-0-2-1 Δ Short 7 2-9-8-6 Δ Short 3 2-9-8-1 Δ Short 3 2-2-7-6 Δ Short 1 & 3
6C8	G	6.3	10	75	40	P1	2-5-0-6 Cap = G	6LH8	B	6.3	17	55	42	P2	2-9-0-8
6C8	G	6.3	10	75	40	P1	2-0-0-3	6LH8	R	6.3	15	90	44	P2	2-9-1-0
6CD7	B	6.3	100	100	40	P2	2-4-0-5 Both screens open	6MD8	B	6.3	29	23	42	P2	2-0-0-6
6CD7	B	6.3	100	100	40	P2	2-4-3-5 Left Screen Closed	6MD8	B	6.3	29	23	42	P2	2-0-0-8
6CD7	B	6.3	100	100	40	P2	2-4-3-5 Right Screen Closed	6N3	G	6.3	29	23	42	P2	2-6-7-8 Δ Short 6, 7,9&11
6CD7	B	6.3	100	100	40	P2	2-4-6-5 Only	6N4	G	6.3	20	68	45	P2	2-10-0-2 2-13-8-1 * Cap = K
6CF8	B	6.3	20	83	44	P1	2-9-1-6 Δ Short 2, 3 & 7	6N7	G	6.3	10	75	40	P1	2-10-0-3 Cap = G
6CH6	B	6.3	18	85	44	P2	2-2-8-7 Δ Short 1, 3 & 9	6N7	G	6.3	25	87	40	P1	2-0-0-4 2-0-0-3 Cap = G
6CJ6	B	6.3	62	20	44	P2	2-2-7-8 Cap = P	6P7	G	6.3	0	40	40	P5	2-0-0-5 2-0-0-4 Δ Short 12 & 13
6CK6	B	6.3	32	63	44	P2	2-2-1-7 Δ Short 3	6P7	G	6.3	0	15	40	P5	2-1-2-9 Δ Short 12 & 13

HICKOK MODEL CA99 TUBE CHART

Tube Type	Color	Htr	Bias	Shunt	Socket	Press	Selectors A B C D	Notations	Tube Type	Color	Htr	Bias	Shunt	Socket	Press	Selectors A B C D	Notations
6R-P22	R	6.3	30	84	44	P0, P2	2-2-9-1	Cap = G	8BM8	B	7.5	20	75	43	P2	2-11-9-7	Δ Short 5 & 10
6S8	G	6.3	10	45	40	P1	1-12-8-6	300 Min	8BM8	B	7.5	20	79	43	P2	2-6-3-2	Δ Short 5 & 10
6S8	G	6.3	0	40	40	P5	1-12-8-3		8BU8	B	7.5	21	76	43	P2	2-8-9-10	
6S8	G	6.3	0	40	40	P5	1-12-8-4		8BU8	B	7.5	15	81	43	P2	2-6-0-7	
6S8	G	6.3	0	40	40	P5	1-12-8-1	Δ Short 3	8BU8	B	7.5	15	81	43	P2	2-4-0-3	
6SF7	G	6.3	0	15	40	P5	1-12-8-4		8GJ7	B	7.5	17	87	44	P2	2-2-7-6	
6SF7	G	6.3	0	40	40	P5	1-12-8-5		8GJ7	B	7.5	32	75	44	P2	2-9-0-8	
6SV7	G	6.3	0	37	40	P5	1-12-8-4	Δ Short 3	8GX7	B	7.5	16	89	44	P2	2-2-7-6	Δ Short 1 & 3
6SV7	G	6.3	0	45	40	P5	1-12-8-5		8GX7	B	7.5	16	89	44	P2	2-2-7-6	Δ Short 1 & 3
6T7	G	6.3	17	28	40	P1	2-0-0-3	Cap = G	8GX7	G	7.5	13	85	44	P2	2-9-0-8	
6T7	G	6.3	0	40	40	P5	2-0-0-5		8LE8	B	7.5	34	75	44	P2	2-9-8-6	Δ Short 3
6V7	G	6.3	0	40	40	P5	2-0-0-4	Cap = G	8LE8	B	7.5	34	75	44	P2	2-9-8-6	Δ Short 3
6V7	G	6.3	36	73	40	P1	2-0-0-3		8LT8	B	7.5	17	87	44	P2	2-9-2-3	
6V7	G	6.3	0	40	40	P5	2-0-0-5		8LT8	B	7.5	17	87	44	P2	2-9-2-3	
6V7	G	6.3	0	40	40	P5	2-0-0-4		8LT8	B	7.5	0	63	44	P3	2-0-0-6	
6V8	G	6.3	17	10	44	P1	2-0-6-1		8LT8	G	7.5	0	63	44	P3	2-0-0-8	
6V8	G	6.3	0	45	44	P5	2-0-0-7		9BJ11	B	10	11	89	43	P2	2-11-9-7	Δ Short 5 & 10
6V8	G	6.3	0	45	44	P5	2-0-0-9		9BJ11	B	10	17	85	43	P2	2-6-3-2	Δ Short 5 & 10
6V8	G	6.3	0	45	44	P5	2-0-0-2		9K11	B	10	17	85	43	P2	2-6-3-2	Δ Short 5 & 10
6Y10	B	6.3	27	82	43	P2	2-8-10-11	Δ Short 2	9K6	B	7.5	20	88	44	P2	2-2-9-7	Δ Short 1
6Y10	B	6.3	27	82	43	P2	2-8-10-11	Δ Short 2 & 9	10LE8	B	10	34	75	44	P2	2-9-8-6	Δ Short 3
6Y10	B	6.3	27	82	43	P2	2-3-6-7	Δ Short 2 & 9	10LE8	B	10	34	75	44	P2	2-9-8-6	Δ Short 3
7A4	G	6.3	20	88	41	P1	2-6-0-2	Δ Short 7	11BT11	B	10	29	93	43	P2	2-1-10-2	
7A5	B	6.3	40	48	41	P2	2-6-3-2		11BT11	B	10	14	44	43	P2	2-5-0-7	
7A6	G	6.3	0	45	41	P5	2-0-0-6		11BT11	B	10	24	44	43	P2	2-3-0-9	
7A6	G	6.3	0	45	41	P5	2-0-0-3		11BT11	B	10	24	44	43	P2	2-3-0-9	
7A7	B	6.3	39	82	41	P1	2-6-3-2	Δ Short 7	12AH7	G	12.6	0	45	40	P5	1-12-8-5	
7A8	G	6.3	0	45	41	P5	2-0-0-4	Δ Short 7	12AH7	G	12.6	40	60	44	P1	2-2-0-1	Δ Short 3
7AB7	G	6.3	0	35	41	P5	1-2-13-12	Δ Short 2, 4, 6, 7, & 13	12AJ7	G	12.6	19	10	44	P2	2-9-0-8	
7AD7	B	6.3	19	86	41	P2	2-6-3-2	Δ Short 7	12B8	B	12.6	45	58	40	P1	2-8-0-5	Cap = G
7AF7	G	6.3	35	83	41	P1	2-5-0-6	Δ Short 7	12B8	B	12.6	45	58	40	P1	2-0-3-4	250 Min Δ Short 1 & 6
7AF7	G	6.3	35	83	41	P1	2-4-0-3		12C8	B	12.6	30	81	40	P1	2-0-3-6	Cap = G
7AG7	B	6.3	10	75	41	P2	2-6-3-2	Δ Short 7	12C8	G	12.6	0	40	40	P5	2-0-0-5	Δ Short 8
7AH7	B	6.3	10	65	41	P2	2-6-3-2	Δ Short 7	12C8	G	12.6	0	40	40	P5	2-0-0-5	Δ Short 8
7AJ7	B	6.3	10	10	41	P2	2-6-3-2	Δ Short 7	12C8	B	12.6	0	40	40	P5	2-0-0-4	Δ Short 3
7AK7	B	6.3	29	72	41	P2	2-6-3-2	Δ Short 7	12EC8	B	12.6	0	45	44	P5	2-0-7-6	Δ Short 3 & 8
7B4	G	6.3	0	0	41	P1	2-6-0-2		12EC8	G	12.6	0	45	44	P5	2-0-0-2	
7B5	B	6.3	40	88	41	P1	2-6-3-2		12G-K17	G	12.6	0	63	40	P3	1-12-8-5	
7B6	G	6.3	10	10	41	P1	2-3-0-2	300 Min	12H6	G	12.6	0	45	40	P5	2-0-0-5	
7B6	G	6.3	0	45	41	P5	2-0-0-6		12H6	G	12.6	0	45	40	P5	2-0-0-5	
7B6	G	6.3	0	45	41	P5	2-0-0-5		12H6	G	12.6	0	45	40	P5	2-0-0-5	
7B7	B	6.3	35	80	41	P1	2-6-3-2	Δ Short 7	12HE7	B	12.6	62	47	43	P2	2-9-11-5	* Δ Short 4, 8, 12 & 13
7B8	B	6.3	55	63	41	P1	2-4-5-3	Δ Short 7	12HE7	B	12.6	62	47	43	P2	2-9-11-5	* Δ Short 4, 8, 12 & 13
7C4	G	6.3	0	45	41	P5	2-0-0-4		12HG7	G	12.6	0	61	43	P3	2-0-10-2	
7C4	G	6.3	0	45	41	P5	2-0-0-4		12HG7	B	12.6	24	90	44	P2	2-2-8-7	*

7C5	B	6.3	30	45	41	P2	2-6-3-2	Δ Short 7 200 Min	12HU8	B	12.6	25	81	44	P2	2-6-9-8	Δ Short 7
7C6	G	6.3	0	45	41	P1	2-3-0-2		12HU8	B	12.6	25	81	44	P2	2-2-1-3	Δ Short 7
7C7	G	6.3	0	45	41	P5,P3	2-0-0-6		12JN6	B	12.6	55	43	43	P2	2-11-3-7	Δ Short 2, 4 & 10
7C8	B	6.3	31	83	41	P1	2-6-3-2	Δ Short 7	12L8	G	12.6	0	43	40	P5,P3	1-6-12-1	Δ Short 13
7E6	G	6.3	23	0	41	P2	2-3-0-2	400 Min	12L8	G	12.6	10	10	40	P1	1-6-12-3	Δ Short 13
7E6	G	6.3	0	40	41	P5,P3	2-0-0-5		12Q7	G	12.6	0	40	40	P5,P3	2-0-0-5	Cap = G
7E6	G	6.3	38	67	41	P1	2-6-5-2	Δ Short 7	12Q7	G	12.6	0	40	40	P5,P3	2-0-0-4	Cap = G
7E7	G	6.3	0	40	41	P5,P3	2-0-0-4		12S8	G	12.6	10	45	40	P1	1-12-8-6	300 Min
7E7	G	6.3	10	10	41	P1	2-5-0-6		12S8	G	12.6	0	40	40	P5,P3	1-12-8-3	
7E7	G	6.3	10	10	41	P1	2-4-0-3		12S8	G	12.6	0	40	40	P5,P3	1-12-8-4	
7F8	R	6.3	0	45	41	P3	1-2-7-4		12S8	G	12.6	0	40	40	P5,P3	1-12-8-1	Δ Short 3
7F8	R	6.3	0	45	41	P3	1-2-7-5		12SF7	G	12.6	0	15	40	P3	1-12-8-4	
7G7	R	6.3	27	41	41	P2	2-6-3-2	Δ Short 7	12SF7	G	12.6	0	40	40	P5,P3	1-12-8-5	
7G8	G	6.3	32	90	41	P1	2-4-5-3	Δ Short 6	13CM5	G	12.6	65	53	40	P6,P2	2-5-1-4	Cap = P
7GV7	B	7.5	24	83	44	P2	2-7-3-2	Δ Short 6 & 8	13Y10	B	12.6	42	50	43	P2	2-8-10-11	Δ Short 2 & 9
7GV7	B	7.5	35	20	44	P2	2-9-0-1		13Y10	B	12.6	26	20	43	P2	2-3-6-7	Δ Short 2 & 9
7H7	G	6.3	19	45	41	P2	2-6-3-2	Δ Short 7	14A4	G	12.6	20	88	41	P1	2-6-0-2	
7J7	G	6.3	10	74	41	P1	2-4-0-3		14A5	B	12.6	30	0	41	P2	2-6-3-2	Δ Short 7
7K7	B	6.3	40	50	41	P1	2-6-5-2		14A7	B	12.6	39	82	41	P1	2-6-3-2	Δ Short 7
7K7	G	6.3	0	13	41	P1	2-4-0-3		14AF7	G	12.6	35	83	41	P1	2-3-0-6	
7K7	G	6.3	0	42	41	P5	2-0-0-5		14AF7	G	12.6	35	83	41	P1	2-4-0-3	
7K7	G	6.3	0	42	41	P2	2-0-0-6	Δ Short 7	14B6	G	12.6	10	10	41	P1	2-3-0-2	300 Min
7L7	B	6.3	24	0	41	P2	2-5-0-6		14B6	G	12.6	0	45	41	P5	2-0-0-6	
7N7	G	6.3	20	89	41	P1	2-4-0-3	Δ Short 7	14B6	G	12.6	0	45	41	P5	2-0-0-6	
7Q7	G	6.3	45	82	41	P1	2-4-0-3	Δ Short 7	14B6	G	12.6	0	45	41	P5	2-0-0-6	
7R7	G	6.3	30	84	41	P1	2-6-5-2	Δ Short 7	14B8	B	12.6	55	63	41	P1	2-4-5-3	Δ Short 7
7R7	G	6.3	0	30	41	P5	2-0-0-4		14BL11	B	12.6	27	90	43	P2	2-11-10-2	Δ Short 2, 6 & 8
7R7	G	6.3	0	30	41	P1	2-0-0-3	Δ Short 7	14BL11	B	12.6	13	56	43	P2	2-5-0-7	
7S7	G	6.3	30	77	41	P1	2-6-0-5		14BL11	B	12.6	23	56	43	P2	2-3-0-9	
7S7	G	6.3	30	75	41	P1	2-4-0-3		14BR11	B	12.6	24	85	43	P2	2-2-3-11	Δ Short 4, 5 & 7
7T7	B	6.3	12	66	41	P2	2-6-3-2	Δ Short 7	14BR11	B	12.6	24	85	43	P2	2-2-3-11	Δ Short 4, 5 & 7
7V7	B	6.3	23	75	41	P2	2-6-3-2	Δ Short 7	14BR11	B	12.6	24	85	43	P2	2-2-3-11	Δ Short 4, 5 & 7
7W7	B	6.3	23	75	41	P2	2-6-3-2	Δ Short 7	14BR11	B	12.6	20	24	43	P2	2-10-0-9	
7X6	G	6.3	0	45	41	P3	2-0-0-6		14BR11	B	12.6	15	58	43	P2	2-3-0-6	
7X6	G	6.3	0	45	41	P3	2-0-0-3	300 Min	14C5	B	12.6	30	45	41	P2	2-8-3-2	Δ Short 7
7X7	G	6.3	0	0	41	P1	2-3-0-2		14C7	B	12.6	31	83	41	P1	2-6-3-2	Δ Short 7
7X7	G	6.3	0	45	41	P5	2-0-0-6		14E6	G	12.6	23	0	41	P2	2-3-0-2	400 Min
7X7	G	6.3	0	45	41	P5	2-0-0-5		14E6	G	12.6	0	40	41	P5	2-0-0-6	
7X7	G	6.3	0	45	41	R3	2-0-0-6		14E6	G	12.6	0	40	41	P5	2-0-0-5	
7Y4	G	6.3	0	30	41	P3	2-0-0-3		14E6	G	12.6	38	67	41	P1	2-8-5-2	Δ Short 7
7Y4	G	6.3	0	30	41	R3	2-0-0-6		14E7	G	12.6	0	40	41	P5	2-0-0-4	
7Z4	G	6.3	0	20	41	R3	2-0-0-3		14E7	G	12.6	0	40	41	P5	2-0-0-3	
7Z4	G	6.3	0	20	41	R3	2-0-0-3		14E7	G	12.6	10	10	41	P1	2-5-0-6	
8AC9	B	7.5	25	62	43	P5,P2	2-9-10-11	Δ Short 3, 4 & 8	14F7	G	12.6	10	10	41	P1	2-4-0-3	
8AC9	B	7.5	0	45	43	P5	2-0-0-2		14F7	G	12.6	10	10	41	P1	2-4-0-3	
8AC9	B	7.5	0	45	43	P5	2-0-0-3		14F8	R	12.6	0	45	41	P5	1-2-7-4	
8AC9	B	7.5	0	45	43	P5	2-0-0-3		14F8	R	12.6	0	45	41	P5	1-2-7-5	

HICKOK MODEL CA99 A. PER TUBE CHART

Tube Type	Color	Htr	Bias Shunt	Socket	Press	Selectors A B C D	Notations	Tube Type	Color	Htr	Bias Shunt	Socket	Press	Selectors A B C D	Notations	
14H7	B	12.6	19	45	41	P2	2-6-3-2	28D7	G	25	0	48	41	P5	2-0-0-3	Δ Short 6
14J7	G	12.6	10	74	41	P1	2-4-0-3	31J56A	B	25	0	23	43	P3	2-0-3-11	Cap = P
14JG8	B	12.6	40	50	41	P1	2-8-5-2	32L7	B	35	50	30	40	P2	2-5-4-3	Δ Short 1
14JG8	B	12.6	7	35	44	P1	2-8-0-9	32L7	B	35	0	63	40	P3	2-0-0-6	Δ Short 2,
14JG8	B	12.6	0	45	44	P5	2-0-0-2	33JV6	G	35	65	75	43	P2	2-11-3-7	4 & 10
14N7	G	12.6	0	45	44	P1	2-5-0-6	35A5	B	35	54	45	41	P2	2-6-3-2	Δ Short 7
14N7	G	12.6	20	89	41	P1	2-4-0-3	35Y4	B	35	0	63	41	P3	2-0-4-2	Δ Short 7
14Q7	G	12.6	45	82	41	P1	2-4-0-3	35Z3	G	35	0	63	41	P3	2-0-0-2	Δ Short 7
14R7	B	12.6	30	84	41	P1	2-6-5-2	35Z6	G	35	0	100	40	P3	2-0-0-3	Δ Short 7
14R7	G	12.6	0	30	41	P5	2-0-0-4	35Z6	G	35	0	100	40	P3	2-0-0-3	Δ Short 7
14R7	G	12.6	0	30	41	P5	2-0-0-3	38HE7	B	35	65	47	43	P2	2-9-11-5	* Δ Short 4,
14S7	G	12.6	30	77	41	P1	2-6-0-5	38HE7	B	35	65	47	43	P2	2-9-11-5	8,12 & 13
14S7	G	12.6	30	75	41	P1	2-4-0-3	38HE7	G	35	0	100	43	P3	2-0-10-2	* Δ Short 4,
14V7	B	12.6	23	75	41	P2	2-6-3-2	38HK7	B	35	77	58	43	P2	2-9-11-5	8,12 & 13
14W7	B	12.6	23	75	41	P2	2-8-3-2	38HK7	B	35	77	58	43	P2	2-9-11-5	* Δ Short 4,
14X7	G	12.6	0	0	41	P1	2-3-0-2	38HK7	B	35	0	100	43	P3	2-0-0-2	Δ Short 7
14X7	G	12.6	0	45	41	P5	2-0-0-6	50A5	B	50	50	62	41	P2	2-6-3-2	Δ Short 7
14Y4	G	12.6	0	45	41	P5	2-0-0-5	50AX6	G	50	0	63	40	P3	2-0-0-5	Δ Short 7
14Y4	G	12.6	0	30	41	P3	2-0-0-3	50AX6	G	50	0	63	40	P3	2-0-0-3	Δ Short 7
14Y4	G	12.6	0	30	41	P3	2-0-0-3	50AY6	G	50	0	100	40	P3	2-0-0-8	Cap = P
15LE8	B	12.6	34	75	44	P2	2-9-8-6	50Y6	G	50	0	100	40	P3	2-0-0-6	Δ Short 1
15LE8	B	12.6	34	75	44	P2	2-9-8-1	50Y6	G	50	0	100	40	P3	2-0-0-6	& 6
16KA6	G	17	69	48	43	P2	2-0-5-3	50X6	G	50	0	45	41	P3	2-0-0-3	Δ Short 1
17M6	B	17	55	43	43	P2	2-5-3-0	50X6	G	50	0	45	41	P3	2-0-0-3	& 6
17JN6	B	17	55	43	43	P2	2-5-3-0	50Y6	G	50	0	60	40	P3	2-0-0-5	Δ Short 1
19AJ8	G	20	40	60	44	P1	2-11-3-7	50Y6	G	50	0	60	40	P3	2-0-0-3	Δ Short 1
19AJ8	G	20	19	10	44	P2	2-2-0-1	50Y7	G	50	0	60	40	P3	2-0-6-3	Δ Short 1
19BR5	B	20	100	100	44	P4	2-9-0-8	50Z6	G	50	0	100	40	P3	2-0-0-5	Δ Short 1
19BR5	B	20	100	100	44	P4	2-1-7-2	50Z7	G	50	0	60	40	P3	2-0-6-3	Δ Short 1
19BR5	B	20	100	100	44	P4	2-1-7-2	50Z7	C	50	0	60	40	P3	2-0-6-3	Δ Short 1
19BR5	B	20	100	100	44	P4	2-1-7-2	70L7	B	75	45	67	40	P2	2-5-4-3	Δ Short 1
19BR5	B	20	100	100	44	P4	2-1-8-2	70L7	B	75	0	63	40	P3	2-0-0-8	& 6
19BR5	B	20	100	100	44	P4	2-1-8-2	117L7	G	117	43	57	40	P2	2-4-5-6	Δ Short 1
19BR5	B	20	100	100	44	P4	2-1-8-2	117L7	B	117	0	63	40	P3	2-0-0-6	& 8
19BR5	B	20	100	100	44	P4	2-1-8-2	117M7	B	117	43	57	40	P2	2-4-5-6	Δ Short 1
19BR5	B	20	100	100	44	P4	2-1-6-2	117M7	B	117	0	63	40	P3	2-0-0-6	& 8
19BR5	B	20	100	100	44	P4	2-1-6-2	117Z3	B	117	0	63	45	P3	2-0-0-3	Δ Short 1
19BR5	B	20	100	100	44	P4	2-1-6-2	117Z6	G	117	0	100	40	P3	2-0-0-3	Δ Short 1
19BR5	B	20	100	100	44	P4	2-1-6-2	117Z6	G	117	0	100	40	P3	2-0-0-5	Δ Short 1
19BR5	B	20	100	100	44	P4	2-1-6-2	403A	B	6, 3	27	48	45	P2	2-1-6-5	Δ Short 2
19BR5	B	20	100	100	44	P4	2-1-6-2	403A	B	6, 3	27	48	45	P2	2-1-6-5	& 7

19D8	G	20	40	60	44	P1	2-0-0-1	Δ Short 3	403B	B	6.3	27	48	45	P2	2-1-6-5	Δ Short 2 & 7
19D8	G	20	19	10	44	P2	2-9-0-8	Δ Short 7 & 10	404A	G	6.3	0	45	44	P5	1-3-9-8	Δ Short 12
19Q9	B	20	17	79	44	P2	2-1-2-3		409A	B	6.3	28	54	45	P2	2-1-6-5	Δ Short 2
19Q9	B	20	16	76	44	P2	2-8-0-9		415A	R	6.3	28	54	45	P5	1-3-5-2	Δ
19R8	G	20	17	10	44	P1	2-0-6-1		CK503AX	B	1.1	0	47	#	P5	1-13-4-1	*
19R8	G	20	0	45	44	P5	2-0-0-7		CK556AX	R	1.1	0	45	#	P5	1-13-4-1	*
19R8	G	20	0	45	44	P5	2-0-0-9		CK573AX	G	1.1	0	45	#	P5	1-13-4-1	*
19R8	G	20	0	45	44	P5	2-0-0-2		CK606BX	G	6.3	0	45	#	P5	1-13-3-1	
21A6	B	20	57	50	44	P2	2-2-7-8	Cap = P	CK619CX	R	6.3	0	45	#	P5	1-13-3-1	
21EX6	B	20	60	45	40	P6, P2	2-5-1-8	Cap = P	CK827CX	R	6.3	0	45	#	P5	1-3-4-0	
								Δ Short 1	SN982	G	6.3	0	10	40	P3	1-3-6-12	* 300 Min
								& 3	884	G	6.3	0	40	40	P3	2-0-0-3	
21JV6	B	20	65	75	43	P2	2-11-3-7	Δ Short 2, 4 & 10	1005	G	6.3	0	63	40	P3	1-6-8-3	*
21JZ6	B	20	77	46	43	P2	2-5-0-3	Δ Short 2, 4 & 10	1203A	G	6.3	0	45	41	P5	1-6-8-5	*
21KA6	G	20	69	48	43	P2	2-0-5-3	Δ Short 4, 10 & 11	1204	G	6.3	0	35	41	P3	2-0-0-4	
								Δ Short 6, 7, 9, & 11								Δ Short 2, 4, 6, 7, & 13	
21LR8	B	20	42	76	42	P2	2-2-7-6	Δ Short 1 & 3	1206	G	6.3	32	90	41	P1	2-4-5-3	Δ Short 6
21LR8	B	20	21	45	42	P2	2-9-0-8		1232	B	6.3	27	47	41	P2	2-6-3-2	Δ Short 7
21LU8	G	20	62	89	43	P1	2-6-7-8		1273	B	6.3	31	83	41	P1	2-6-3-2	Δ Short 7
21LU8	G	20	19	40	43	P2	2-10-0-2		1280	B	12.6	31	83	41	P1	2-6-3-2	Δ Short 7
23Z9	B	25	47	58	43	P2	2-8-9-5	Δ Short 7	1282	B	6.3	23	75	41	P2	2-6-3-2	Δ Short 4 & 7
23Z9	G	25	19	40	43	P2	2-10-0-11		1294	G	1.4	0	40	41	P5	2-0-0-4	
23Z9	G	25	33	87	43	P1	2-3-0-2		1299	G	1.4	0	34	41	P5	2-0-7-3	Δ
23A7	B	25	75	77	40	P1	2-5-4-3	Δ Short 1 & 8	1629	R	12.6	0	100	40	P4	2-5-0-8	Eye Closed
25A7	G	25	0	60	40	P3	2-0-0-6		1629	R	12.6	0	100	40	P4	2-5-3-8	Eye Open
25B8	G	25	10	47	40	P1	2-8-0-5	Cap = G	1635	G	6.3	0	0	40	P1	2-5-0-6	300 Min
25B8	B	25	45	58	40	P1	2-0-3-4	250 Min	1644	G	12.6	0	45	40	P5	2-4-0-3	300 Min
25D8	B	25	37	40	40	P2	2-0-4-3	Δ Short 1 & 6	1644	G	12.6	0	45	40	P5	1-6-12-1	Δ Short 13
25D8	G	25	0	0	40	P1	2-5-0-6	Cap = G	2050	G	6.3	0	63	40	P3	2-0-0-3	Δ Short 8
25D8	G	25	0	43	40	P5	2-0-0-8	Δ Short 1	2051	G	6.3	0	63	40	P3	2-0-0-3	Δ Short 8
25E5	G	25	65	53	40	P6, P2	2-5-1-4	Cap = G	4604	B	6.3	73	10	40	P2	2-5-3-0	Cap = P
25X6	G	25	0	45	40	P3	2-0-0-5	350 Min								Δ Short 1, 4, 6, 12 & 13	
25Z6	G	25	0	45	40	P3	2-0-0-3		5635	G	6.3	0	45	#	P5	1-3-6-1	
25Z6	G	25	0	60	40	P3	2-0-0-5	Cap = P	5635	G	6.3	0	45	#	P5	1-3-6-13	
25Z6	G	25	0	60	40	P3	2-0-0-5	Δ Short 1, 3 & 8	5636	G	6.3	0	45	#	P5	1-3-6-1	
26A7	G	25	0	45	40	P5	1-6-12-1		5639	G	6.3	0	45	#	P5	1-3-6-1	
26A7	G	25	0	45	40	P5	1-6-12-3	Δ Short 13	5641	R	6.3	0	48	#	P5	1-3-6-5	
26E6	B	25	63	37	40	P2	2-5-4-3	Δ Short 8	5643	G	6.3	0	10	#	P5	1-3-6-12	* 300 Min
26Z5W	G	25	0	40	44	P3	2-0-9-6		5647	G	6.3	0	45	#	P5	1-13-3-1	Δ Short 4, 5, 8, & 13
26Z5W	G	25	0	40	44	P3	2-0-9-1		5663	G	6.3	0	42	45	P3	2-0-0-7	Δ Short 2

5903	G	25	0	47	#	P5	1-3-6-5	6900	G	12.6	36	73	44	P2	2-7-0-9 *
5903	G	25	0	47	#	P5	1-3-6-1	6900	G	12.6	36	73	44	P2	2-2-8-1
5904	G	25	0	47	#	P5	1-3-6-8	6943	G	6.3	0	43	#	P5	1-3-6-12 Δ Short 8 & 13
5905	G	25	0	45	#	P5	1-3-6-12 Δ Short 4, 8 & 13	6944	G	6.3	0	40	#	P5	1-3-6-12 Δ Short 8 & 13
5906	G	25	0	47	#	P5	1-3-6-1 Δ Short 4, 8 & 13	6945	G	6.3	0	40	#	P5	1-3-6-12 Δ Short 4, 8 & 13
5907	G	25	0	45	#	P5	1-3-6-12 Δ Short 4, 8 & 13	6946	G	6.3	0	47	#	P5	1-3-6-1
5908	G	25	0	45	#	P5	1-3-6-12 Δ Short 8 & 13	6947	G	6.3	0	40	#	P5	1-3-6-1
5916	G	25	0	47	#	P5	1-3-6-1 Δ Short 8 & 13	6948	G	6.3	0	45	#	P5	1-3-6-1
5971	G	1.1	0	18	#	P5	1-3-5-1 *	7027	R	6.3	0	65	40	P3	1-3-6-8
5977	G	6.3	0	45	#	P5	1-3-6-8	7044	G	12.6	20	88	44	P6, P2	1-13-12-8 *
5987	G	6.3	0	45	#	P5	1-3-6-1	7044	G	12.6	25	89	44	P6, P2	2-7-8-9
5993	G	6.3	0	40	44	P3	1-3-7-1	7119	G	12.6	25	89	44	P6, P2	2-2-8-1
5993	G	6.3	0	40	44	P3	1-3-7-9	7212	B	6.3	73	10	40	P2	2-5-3-0
6000	B	25	38	78	40	P2	2-1-5-8	7233	R	6.3	0	46	44	P5	1-12-13-8
6007	G	1.1	0	35	#	P5	1-3-5-13 Δ Short 3	7239	B	6.3	38	50	44	P2	2-1-0-6
6012	G	6.3	0	40	40	P3	2-0-0-5 Δ Short 1	7289	B	6.3	20	68	44	P2	2-3-2-6
6021	G	6.3	0	45	#	P5	1-3-6-1	7360	B	6.3	20	68	44	P2	2-3-2-7 Δ Short 1
6021	G	6.3	0	45	#	P5	1-3-6-8	7360	B	6.3	20	68	44	P2	2-3-2-7 Δ Short 1
6029	R	1.1	0	40	#	P5	1-13-4-1 *	7370	G	35	34	61	44	P6, P2	2-7-8-9
X6030	R	2.5	0	45	41	P5	1-2-7-0	7370	G	35	34	61	44	P6, P2	2-2-8-1
6050	G	1.1	0	47	#	P5	1-13-4-1 *	7701	B	12.6	15	43	44	P2	2-2-7-9
6061	G	6.3	10	89	44	P1	2-2-1-8 Δ Short 1, 2 & 3	7734	B	6.3	19	45	44	P2	2-8-1-9 Δ Short 2 & 7
6084	B	6.3	30	83	44	P1	2-9-1-6 Δ Short 2, 3 & 7	7734	G	6.3	65	42	44	P2	2-3-0-6
6094	R	6.3	0	45	44	P3	1-3-13-8	7737	B	6.3	14	90	44	P2	2-2-7-9 Δ Short 1 & 3
6098	R	6.3	0	48	40	P2	1-6-8-1	7751	R	6.3	74	47	40	P2	2-5-0-8
6110	G	6.3	0	47	#	P5	1-3-6-1	7757	R	6.3	0	45	44	P3	1-3-13-8
6110	G	6.3	0	47	#	P5	1-3-6-5	7759	G	25	0	45	#	P5	1-3-6-1
6111	G	6.3	0	45	#	P5	1-3-6-8	7759	G	25	0	45	#	P5	1-3-6-8
6111	G	6.3	0	45	#	P5	1-3-6-1	7759	G	25	0	47	#	P5	1-3-6-1
6112	G	6.3	0	40	#	P5	1-3-6-1	7760	G	25	0	47	#	P5	1-3-6-8
6112	G	6.3	10	40	40	P1	2-0-0-3	7761	G	25	0	45	#	P5	1-3-6-1 Δ Short 4, 8 & 13
6118	G	6.3	0	40	40	P5	2-0-0-5	7762	G	25	0	10	#	P5	1-3-6-12 Δ Short 4, 8 & 13
6118	G	6.3	0	40	40	P5	2-0-0-4	7782	G	6.3	27	90	44	P2	2-2-1-3
6132	B	6.3	18	85	44	P2	2-2-8-7	7788	R	12.6	0	45	44	P5	1-1-9-3
6146, A	B	6.3	73	10	40	P2	2-5-3-0	7861	R	12.6	0	45	44	P5	1-1-9-3
6147	R	2.5	0	45	#	P5	1-1-7-0	7861	C	12.6	0	45	44	P5	1-1-9-7
6148	G	6.3	0	45	#	P5	1-3-4-12	7889	G	25	0	40	#	P5	1-3-6-8
6159	B	25	73	10	40	P2	2-5-3-0	7889	G	25	0	40	#	P5	1-3-6-1
6184	G	6.3	0	47	#	P5	1-3-6-12	7905	B	6.3	0	90	44	P3	1-1-9-2
6184	G	6.3	0	47	#	P5	1-3-6-13	8032	B	12.6	73	10	40	P2	2-5-3-0
								8064	G	25	0	47	#	P5	1-3-6-1
								8106	B	12.6	22	85	44	P2	2-7-8-3

HICKOK MODEL CA99 PTER TUBE CHART

Tube Type	Color	Htr	Bias Shunt	Socket	Press	Selectors A B C D Notations	Tube Type	Color	Htr	Bias Shunt	Socket	Press	Selectors A B C D Notations
8149	B	12.6	50	43	P2	2-10-4-8 *	CV891	G	6.3	23	0	P2	2-3-0-2
8150	B	12.6	60	50	P2	2-10-5-8 *	CV891	G	6.3	0	40	P5	2-0-0-6
8156	B	12.6	53	10	P2	2-10-7-11	CV891	G	6.3	0	40	P5	2-0-0-5
8185	G	6.3	0	47	P5	1-1-8-3	CV892	B	6.3	38	67	P1	2-6-5-2
8186	G	25	0	47	P5	1-1-8-3	CV892	G	6.3	0	40	P5	2-0-0-4
8298	B	6.3	73	10	P2	2-5-3-0	CV892	G	6.3	10	10	P1	2-5-0-6
						Cap = P	CV893	G	6.3	10	10	P1	2-4-0-3
						Δ Short 1,	CV894	B	6.3	27	47	P2	2-6-3-2
8552	B	12.6	73	10	P2	2-5-3-0	CV894	B	6.3	19	45	P2	2-6-3-2
						Cap = P	CV895	B	6.3	19	45	P1	2-6-3-2
						Δ Short 1,	CV896	G	6.3	0	13	P1	2-4-0-3
						4 & 6	CV896	G	6.3	0	42	P1	2-0-0-5
8569	G	.6	0	100	P5	OK if lit	CV896	G	6.3	0	42	P5	2-0-0-6
						1-1-3-4	CV897	G	6.3	10	74	P1	2-4-0-3
CV500	G	6.3	17	28	P1	2-0-0-3	CV897	G	6.3	40	50	P1	2-6-5-2
CV500	G	6.3	0	40	P5	2-0-0-5	CV898	G	6.3	20	89	P1	2-5-0-6
CV500	G	6.3	0	40	P5	2-0-0-4	CV898	G	6.3	20	89	P1	2-4-0-3
CV522	B	6.3	35	80	P1	2-6-3-2	CV899	G	6.3	45	82	P1	2-4-0-3
CV529	G	12.6	0	45	P5	1-12-8-5	CV900	B	6.3	30	84	P1	2-6-5-2
CV529	G	12.6	0	45	P5	1-12-8-1	CV900	B	6.3	30	84	P5	2-0-0-4
CV531	B	12.6	30	81	P1	2-0-3-6	CV900	G	6.3	0	30	P1	2-0-0-3
						Cap = G	CV901	G	6.3	0	41	P3	2-0-0-6
						Δ Short 8	CV901	G	6.3	0	30	P3	2-0-0-3
CV531	G	12.6	0	40	P5	2-0-0-5	CV901	G	6.3	0	30	P3	2-0-0-3
CV531	G	12.6	0	40	P5	2-0-0-4	CV911	G	12.6	10	10	P1	2-8-0-5
CV558	G	25	0	60	P3	2-0-0-3	CV911	G	12.6	10	10	P1	2-8-0-5
CV558	G	25	0	60	P3	2-0-0-5	CV911	B	12.6	45	58	P1	2-0-3-4
CV559	G	25	0	60	P3	2-0-0-3							
CV559	G	25	0	60	P3	2-0-0-5							
CV559	G	25	0	60	P3	2-0-0-5							
CV564	G	35	0	63	P1	2-0-0-2	CV916	G	12.6	0	45	P5	2-0-0-5
CV587	G	6.3	10	10	P1	2-0-0-3	CV916	G	12.6	0	45	P5	2-0-0-3
CV587	G	6.3	0	40	P5	2-0-0-5	CV921	G	12.6	0	15	P5	1-12-8-4
CV587	G	6.3	0	40	P5	2-0-0-4	CV921	G	12.6	0	40	P5	1-12-8-5
CV588	G	6.3	10	10	P1	2-0-0-3	CV930	G	12.6	10	10	P1	2-5-0-6
CV588	G	6.3	0	40	P5	2-0-0-5	CV930	G	12.6	10	10	P1	2-4-0-3
CV588	G	6.3	0	40	P5	2-0-0-4	CV937	B	25	75	77	P1	2-5-4-3
CV589	G	6.3	10	10	P1	2-0-0-3	CV937	B	25	75	77	P1	2-5-4-3
CV589	G	6.3	0	40	P5	2-0-0-5	CV946	G	25	0	60	P3	2-0-0-6
CV589	G	6.3	0	40	P5	2-0-0-4	CV946	G	25	0	45	P5	2-0-0-3
CV726	G	35	0	63	P1	2-0-0-2	CV948	B	35	50	30	P2	2-5-4-3
CV770	B	2	45	30	P1	2-0-6-3	CV948	G	35	0	63	P3	2-0-0-6
CV770	G	2	0	40	P5	2-0-0-5	CV948	G	35	0	63	P5	2-0-0-6
CV770	G	2	0	40	P5	2-0-0-4	CV1301	G	6.3	0	45	P5	2-0-0-3
CV772	G	1.4	14	32	P1	2-5-0-6	CV1301	G	6.3	0	45	P5	2-0-0-3
CV772	G	1.4	20	10	P1	2-4-0-3	CV1753	B	35	54	45	P2	2-6-3-2
CV773	G	1.4	14	32	P1	2-5-0-6	CV1756	R	12.6	0	100	P4	2-5-0-8
CV773	G	1.4	20	10	P1	2-4-0-3	CV1756	R	12.6	0	100	P4	2-5-0-8
CV775	G	1.4	58	0	P1	2-4-0-3	CV1756	R	12.6	0	100	P4	2-5-3-8
CV776	B	1.4	65	55	P1	2-6-3-2	CV1759	G	6.3	10	83	P1	2-0-0-0
CV777	B	1.4	35	0	P1	2-6-3-2 *	CV1759	G	6.3	10	83	P1	2-0-0-0
						12 & 13							Cap = P
						Δ Short 5,							Front
						12 & 13							Cap = G

HICKOK MODEL CA99 A THER TUBE CHART

Tube Type	Color	Htr	Bias	Shunt	Socket	Press	Selectors A B C D	Notations	Tube Type	Color	Htr	Bias	Shunt	Socket	Press	Selectors A B C D	Notations
CV2136	G	6.3	10	89	44	P1	2-2-1-8	Δ Short 1, 2 & 3	E80F	B	6.3	30	83	44	P1	2-9-1-6	Δ Short 2, 3 & 7
CV2237	G	1.1	0	44	#	P5	1-3-5-4	Δ	E81L	B	6.3	18	90	44	P2	2-2-8-7	Δ Short 1, 3 & 6
CV2238	G	1.1	0	45	#	P5	1-3-5-4	Δ	E83F	B	6.3	23	85	44	P2	2-2-1-6	Δ Short 3
CV2239	G	1.1	0	45	#	P5	1-13-4-1	*	E91N	G	6.3	0	0	45	P3	2-0-0-6	Δ Short 2, 5 & 7
CV2240	G	2.5	0	45	45	P5	1-13-5-1	*Δ Short 2, 5, 6 & 13	E180F	B	6.3	14	90	44	P2	2-2-7-9	Δ Short 1 & 3
CV2556	B	117	43	57	40	P2	2-4-5-3	Δ Short 1 & 8	E182CC	G	12.6	25	89	44	P6, P2	2-7-8-9	
CV2556	B	117	0	63	40	P3	2-0-0-6		E182CC	G	12.6	25	89	44	P6, P2	2-2-8-1	
CV2565	G	6.3	0	63	40	P3	2-0-0-3	Δ Short 8	E182F	G	6.3	0	45	44	P5	1-3-9-8	Δ Short 12
CV2575	G	6.3	0	45	44	P5	1-1-9-3		E186F	B	6.3	14	90	44	P2	2-2-7-9	Δ Short 1 & 3
CV2575	G	12.6	36	73	44	P2	1-1-9-7		E235L	R	6.3	74	47	40	P2	2-5-0-8	
CV2578	G	12.6	36	73	44	P6, P2	2-7-0-9	*	EAM86	B	6.3	100	100	44	P2	2-8-3-6	
CV2662	G	6.3	0	45	#	P5	2-2-8-1										Screen OFF
CV2662	G	6.3	0	45	#	P5	1-3-6-1										Short
CV2698	G	6.3	0	47	#	P5	1-3-6-1		EAM86	B	6.3	100	100	44	P2	2-8-7-6	Screen Pos. 1
CV2698	G	6.3	0	47	#	P5	1-3-6-5										Screen ON
CV2705	G	6.3	0	45	41	P5	2-0-0-4		EAM86	B	6.3	0	45	44	P5	2-0-0-2	
CV2709	G	1.4	0	40	41	P5	2-0-0-4		EC88	G	6.3	0	40	44	P5	2-0-0-8	
CV2710	G	1.4	0	34	41	P5	2-0-7-3	Δ	ECC86	G	6.3	0	45	44	P5	2-0-0-6	
CV2721	B	6.3	62	20	44	P2	2-2-7-8	Cap = P	ECC86	G	6.3	0	45	44	P5	2-0-0-1	
CV2729	B	6.3	30	83	44	P1	2-9-1-6	Δ Short 2, 3 & 7	ECF801	B	6.3	17	87	44	P2	2-2-7-6	
CV2831	G	6.3	0	46	44	P5	1-1-9-3		ECF801	B	6.3	32	75	44	P2	2-9-0-8	
CV2831	G	6.3	0	46	44	P5	1-1-9-7		ECF805	B	6.3	24	83	44	P2	2-7-3-2	Δ Short 6 & 8
CV2847	G	6.3	0	45	#	P3	1-13-3-1	Δ Short 2, 5 & 7	ECF805	B	6.3	35	20	44	P2	2-9-0-1	
CV2876	G	6.3	0	63	45	P3	2-0-0-6	Δ Short 2, 5 & 7	ECH81	G	6.3	19	10	44	P2	2-2-0-1	Δ Short 3
CV2901	B	6.3	20	83	44	P1	2-9-1-6	Δ	ECL83	B	6.3	35	51	44	P2	2-9-8-6	Δ Short 3 & 7
CV2912	G	6.3	25	87	40	P5	2-0-0-3	Cap = G	ECL83	G	6.3	15	47	44	P1	2-2-0-1	
CV2912	G	6.3	0	40	40	P5	2-0-0-5		ECLL800	B	6.3	47	10	44	P1	2-2-6-9	Δ Short 7
CV2912	G	6.3	0	40	40	P5	2-0-0-4	Cap = P	ECLL800	B	6.3	0	47	44	P5	2-0-2-1	Δ Short 7
CV2940	G	6.3	65	53	40	P6, P2	2-5-1-4	Δ Short 1, 3 & 8	EF66	B	6.3	20	83	44	P1	2-9-1-6	Δ Short 2, 3 & 7
CV2968	G	6.3	0	45	41	P5	1-2-7-4		EF66	B	6.3	14	90	44	P2	2-2-7-9	Δ Short 1 & 3
CV2968	G	6.3	0	45	41	P5	1-2-7-5		EL36	G	6.3	65	53	40	P6, P2	2-5-1-4	Cap = P
CV3512	G	6.3	0	63	45	P3	2-0-0-6	Δ Short 2, 5 & 7									Δ Short 1, 3 & 8
CV3523	B	6.3	66	10	40	P2	2-5-3-0	Cap = P	EL81	B	6.3	62	20	44	P2	2-2-7-8	Δ Cap = P
CV3526	G	6.3	45	79	44	P1	2-2-1-9	Δ Short 1, 4 & 6	EL83	B	6.3	32	63	44	P2	2-2-1-7	Δ Short 3
CV3526	G	6.3	45	79	44	P1	2-2-1-9	Δ Short 1, 2, 3, 6 & 8	EL85	G	6.3	45	79	44	P1	2-2-1-9	Δ Short 1, 2, 3, 6 & 8

CV3577	G	25	0	45	40	P5	1-6-12-1 1-6-12-3 2-0-0-7 2-2-6-9	Δ Short 13 Δ Short 13 Δ Short 2	EL360	G	6.3	65	53	40	P6, P2	2-5-1-4 2-2-8-7 2-2-8-7 2-2-8-7 2-6-9-8 2-2-1-3 2-4-0-5	Δ Cap = P Short 1, 3 & 8 Δ Short 1, 3 & 9 Δ Short 3 Δ Short 7 Both screens open Left screen closed Right screen closed Screen OFF Short on Pos. 1 or 1 & 3 Screen on for tubes with short on Pos. 1 & 3 Screen on for tubes with short on Pos. 1 only Screen ON Screen OFF Δ Short 2, 7 & 9 Δ Short 3 & 8 Δ Short 3 2-9-0-8 Δ Short 1 & 3 Δ Short 2 & 6
CV3577	G	25	0	45	40	P5	1-6-12-1 1-6-12-3 2-0-0-7 2-2-6-9	Δ Short 13 Δ Short 13 Δ Short 2	EL821	B	6.3	18	85	44	P2	2-2-8-7	Δ Short 1, 3 & 9
CV3612	R	6.3	15	35	40	P2	1-6-8-1 2-4-1-8	Bias Controls Right Pattern	EL822 ELL80 ELL80 EM34	B	6.3	18	85	44	P2	2-2-8-7 2-6-9-8 2-2-1-3 2-4-0-5	Δ Short 3 Δ Short 7 Both screens open
CV3707	R	6.3	Vary	100	40	P2	2-5-1-8	Bias Controls Both Patterns Bias Controls Left Pattern	EM34	B	6.3	100	100	40	P2	2-4-3-5	Left screen closed Right screen closed
CV3707	R	6.3	Vary	100	40	P2	2-6-1-8	Bias Controls Left Pattern	EM34	B	6.3	100	100	40	P2	2-4-6-5	Right screen closed
CV3711	B	6.3	10	88	45	P2	2-1-7-5	Δ Short 2 & 6 Cap = G Δ Short 8	EM80	B	6.3	100	100	44	P4	2-1-7-2	Screen OFF
CV3827	B	12.6	30	81	40	P1	2-0-3-6	Cap = G Δ Short 8	EM80	B	6.3	100	100	44	P4	2-1-8-2	Short on Pos. 1 or 1 & 3 Screen on for tubes with short on Pos. 1 & 3
CV3827	G	12.6	0	40	40	P5	2-0-0-5	Δ Short 2, 5 & 7 Δ Short 4, 8 & 13 Δ Short 1, 3 & 9	EM80	B	6.3	100	100	44	P4	2-1-6-2	Screen on for tubes with short on Pos. 1 only Screen ON Screen OFF
CV3827	G	12.6	0	40	40	P5	2-0-0-4	Δ Short 2, 5 & 7 Δ Short 4, 8 & 13 Δ Short 1, 3 & 9	EM80	B	6.3	100	100	44	P4	2-1-6-2	Screen on for tubes with short on Pos. 1 only Screen ON Screen OFF
CV3894	G	6.3	0	44	#	P5	1-3-6-8	Δ Short 12	EM81	R	6.3	100	100	44	P2	2-1-0-2	Screen ON Screen OFF
CV3894	G	6.3	0	44	#	P5	1-3-6-1	Δ Short 12	EM81	R	6.3	100	100	44	P2	2-1-7-2	Screen ON Screen OFF
CV3905	G	6.3	0	45	44	P5	1-3-9-8	Δ Short 12	EN91	G	6.3	0	63	45	P3	2-0-0-6	Δ Short 2, 7 & 9 Δ Short 3 & 8
CV4008	G	6.3	0	0	#	P5	1-3-6-8	Δ Short 12	EQ80	B	6.3	20	42	44	P2	2-7-1-6	Δ Short 3 & 8
CV4013	G	6.3	0	45	44	P5	1-1-9-3	Δ Short 2, 5 & 7 Δ Short 4, 8 & 13 Δ Short 1, 3 & 9	EY82 HCH81 HCH81 LCF801	G G G B	6.3 12.6 12.6 6.3	0 60 19 17	63 44 44 44	P3 P1 P2 P2	2-0-0-9 2-2-0-1 2-9-0-8 2-2-7-6	Δ Short 3 2-9-0-8 Δ Short 1 & 3 Δ Short 2 & 6	
CV4013	G	6.3	0	45	44	P5	1-1-9-7	Δ Short 2, 5 & 7 Δ Short 4, 8 & 13 Δ Short 1, 3 & 9	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
CV4018	G	6.3	0	0	45	P3	2-0-0-6	Δ Short 2, 5 & 7 Δ Short 4, 8 & 13 Δ Short 1, 3 & 9	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
CV4029	G	6.3	0	10	#	P5	1-3-6-12	Δ Short 4, 8 & 13 Δ Short 1, 3 & 9	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
CV4055	B	6.3	18	85	44	P2	2-2-8-7	Δ Short 1, 3 & 9	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DAF91	G	1.4	0	44	45	P5	1-1-7-13	Δ	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DAF91	G	1.4	0	40	45	P5	1-1-7-12	Δ	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DAF96	G	1.1	0	45	45	P5	1-1-7-6	Δ	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DAF96	G	1.1	0	45	45	P5	1-1-7-12	Δ	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DAF96	G	1.1	0	45	45	P5	1-1-7-12	Δ	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DC70	G	1.4	0	45	#	P5	1-4-5-8	Δ	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DCC90	G	3	0	45	45	P5	1-1-7-6	*	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DCC90	G	3	0	45	45	P5	1-1-7-12	*	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DK96	G	1.4	0	45	45	P5	1-1-7-13	Δ	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DL63	G	6.3	25	87	40	P1	2-0-0-3	Cap = G	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DL63	G	6.3	0	40	40	P5	2-0-0-5	Cap = G	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DL63	G	6.3	0	40	40	P5	2-0-0-4	Cap = G	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DL63	G	6.3	0	40	40	P5	2-0-0-5	Cap = G	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DL67	G	1.1	0	35	45	P5	1-3-5-13	Δ	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DL93	G	2.5	0	45	45	P5	1-1-7-3	*Δ Short 1, 2,5,6,&7 *Δ Short 2, 5,6,&13	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6
DL98	G	2.5	0	45	45	P5	1-13-5-1	*Δ Short 2, 5,6,&13	LCF801 N78	B B	6.3 6.3	32 10	75 88	44 45	P2 P2	2-9-0-8 2-1-7-5	Δ Short 2 & 6

K4XL's **BAMA**

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