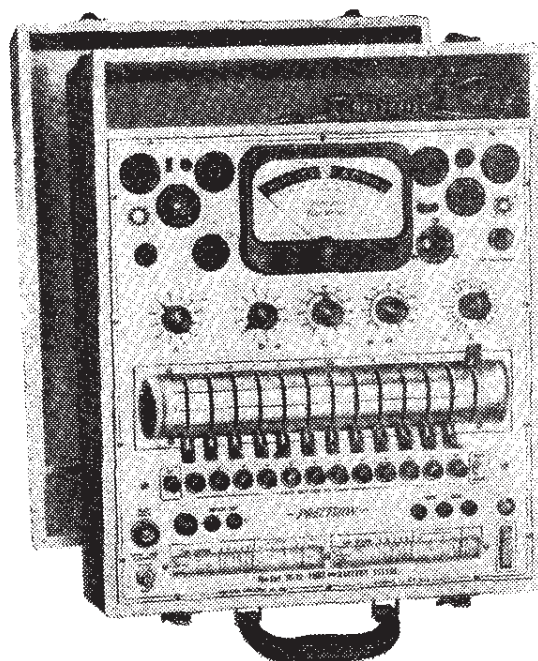


# SUPPLEMENTARY TUBE DATA

FOR USE WITH  
PRECISION TUBE TESTERS



**MODELS**  
10-12, 10-15, 10-20,  
10-22, 10-54

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.)  
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| Tube | Section |                                             |   |    |    |    | Lever |     |     |    | Fil.<br>Cont. |
|------|---------|---------------------------------------------|---|----|----|----|-------|-----|-----|----|---------------|
|      |         | A                                           | B | C  | D  | E  | W     | X   | Y   | Z  |               |
| OA4  |         | 7                                           | 1 | 0  | 10 | 1  | ■     |     | 5   |    | ■             |
|      |         | (OA4—May show short on 2-7)                 |   |    |    |    |       |     |     |    |               |
| OY4  |         | 1                                           | 2 | 0  | 4  | 18 | ■     |     | 5   |    | ■             |
|      |         | (OY4—Must show short on 7-8)                |   |    |    |    |       |     |     |    |               |
|      |         | (OY4—May show short on 3)                   |   |    |    |    |       |     |     |    |               |
| OZ3  | plate-1 | 7                                           | 3 | 0  | 4  | 18 | ■     |     | 3   |    | ■             |
| "    | plate-2 | 7                                           | 3 | 0  | 4  | 18 | ■     |     | 2   |    | ■             |
|      |         | (OZ3—Must show short on 1-8)                |   |    |    |    |       |     |     |    |               |
| OZ4  | plate-1 | 7                                           | 1 | 0  | 4  | 18 | ■     |     | 5   |    | ■             |
| "    | plate-2 | 7                                           | 1 | 0  | 4  | 18 | ■     |     | 3   |    | ■             |
| 01A  |         | 1                                           | 1 | 19 | 20 | 6  | ■     |     | 2   | 3  | ■ 1-4         |
| 1    |         | 2                                           | 1 | 0  | 3  | 7  | ■     |     | 2   |    | ■ 1-4         |
| 1A3  |         | 3                                           | 1 | 0  | 27 | 2  | ■     | 2-5 | 6   |    | ■ 1-7         |
|      |         | (1A3—Must show short on 2-5-6)              |   |    |    |    |       |     |     |    |               |
|      |         | (1A3—Plate short test—depress 2-6 together) |   |    |    |    |       |     |     |    |               |
| 1A4  |         | 1                                           | 1 | 28 | 25 | 3  | ■     | 3   | 2   | 11 | ■ 1-4         |
| 1A5  |         | 1                                           | 2 | 33 | 17 | 2  | ■     | 4   | 3   | 5  | ■ 2-7         |
| 1A6  | amp.    | 4                                           | 1 | 26 | 33 | 3  | ■     | 5   | 2   | 11 | ■ 1-6         |
| "    | osc.    | 1                                           | 1 | 33 | 47 | 3  | ■     |     | 3   | 4  | ■             |
| 1A7  | amp.    | 4                                           | 2 | 25 | 29 | 2  | ■     | 4   | 3   | 11 | ■ 2-7         |
| "    | osc.    | 2                                           | 2 | 14 | 36 | 2  | ■     |     | 4-6 | 5  | ■             |
| 1B4  |         | 1                                           | 1 | 23 | 35 | 3  | ■     | 3   | 2   | 11 | ■ 1-4         |
| 1B5  | triode  | 1                                           | 1 | 11 | 38 | 3  | ■     |     | 2   | 5  | ■ 1-6         |
| "    | diode-1 | 3                                           | 1 | 0  | 27 | 3  | ■     |     | 3   |    | ■             |
| "    | diode-2 | 3                                           | 1 | 0  | 27 | 3  | ■     |     | 4   |    | ■             |
| 1B8  | diode   | 3                                           | 2 | 0  | 27 | 2  | ■     |     | 8   |    | ■ 2-7         |
| "    | triode  | 2                                           | 2 | 25 | 46 | 2  | ■     |     | 6   | 11 | ■             |
| "    | pent.   | 1                                           | 2 | 33 | 15 | 2  | ■     | 4   | 3   | 5  | ■             |
| 1C3  |         | 5                                           | 1 | 13 | 22 | 2  | ■     | 2   | 6   | 4  | ■ 1-7         |
|      |         | (1C3—Must show short on 2-6)                |   |    |    |    |       |     |     |    |               |
|      |         | (1C3—Plate short test—Depress 2-6 together) |   |    |    |    |       |     |     |    |               |
| 1C5  |         | 1                                           | 2 | 27 | 13 | 2  | ■     | 4   | 3   | 5  | ■ 2-7         |
| 1C6  | amp.    | 4                                           | 1 | 20 | 29 | 3  | ■     | 5   | 2   | 11 | ■ 1-6         |
| "    | osc.    | 1                                           | 1 | 34 | 45 | 3  | ■     |     | 3   | 4  | ■             |
| 1C7  | amp.    | 4                                           | 2 | 20 | 29 | 3  | ■     | 4   | 3   | 11 | ■ 2-7         |
| "    | osc.    | 1                                           | 2 | 34 | 45 | 3  | ■     |     | 6   | 5  | ■             |
| 1C8  | amp.    | 5                                           | 5 | 13 | 43 | 2  | ■     | 1   | 7   | 6  | ■ 4-5         |
| "    | osc.    | 5                                           | 5 | 27 | 14 | 2  | ■     | 1   | 7   | 2  | ■             |
|      |         | (1C8—Must show short on 1)                  |   |    |    |    |       |     |     |    |               |
| 1C21 |         | 1                                           | 1 | 0  | 11 | 18 | ■     |     | 5   |    | ■             |
|      |         | (1C21—May show short on 2-7)                |   |    |    |    |       |     |     |    |               |
| 1D3  |         | 5                                           | 4 | 11 | 10 | 2  | ■     |     | 8   | 1  | ■ 4-5         |
| 1D5  |         | 1                                           | 2 | 21 | 35 | 3  | ■     | 4   | 3   | 11 | ■ 2-7         |
| 1D7  | amp.    | 4                                           | 2 | 30 | 36 | 3  | ■     | 4   | 3   | 11 | ■ 2-7         |
| "    | osc.    | 1                                           | 2 | 38 | 45 | 3  | ■     |     | 6   | 5  | ■             |
| 1D8  | diode   | 3                                           | 2 | 0  | 27 | 2  | ■     |     | 8   |    | ■ 2-7         |
| "    | triode  | 1                                           | 2 | 15 | 40 | 2  | ■     |     | 6   | 11 | ■             |
| "    | pent.   | 1                                           | 2 | 32 | 15 | 2  | ■     | 4   | 3   | 5  | ■             |
| 1E4  |         | 1                                           | 2 | 13 | 24 | 2  | ■     |     | 3   | 5  | ■ 2-7         |
| 1E5  |         | 1                                           | 2 | 23 | 35 | 3  | ■     | 4   | 3   | 11 | ■ 2-7         |
| 1E7  | pent-1  | 1                                           | 2 | 35 | 11 | 3  | ■     | 8   | 3   | 4  | ■ 2-7         |
| "    | pent-2  | 1                                           | 2 | 35 | 11 | 3  | ■     | 8   | 6   | 5  | ■             |
| 1E8  | amp.    | 5                                           | 4 | 5  | 38 | 2  | ■     | 7   | 6   | 8  | ■ 4-5         |
| "    | osc.    | 5                                           | 4 | 12 | 19 | 2  | ■     |     | 7   | 2  | ■             |
| 1F4  |         | 1                                           | 1 | 33 | 14 | 3  | ■     | 4   | 2   | 3  | ■ 1-5         |
| 1F5  |         | 1                                           | 2 | 33 | 14 | 3  | ■     | 4   | 3   | 5  | ■ 2-7         |

| Tube | Section  | A | B | C  | D  | E | Lever |   |   |      | Fil.<br>Cont. |
|------|----------|---|---|----|----|---|-------|---|---|------|---------------|
|      |          |   |   |    |    |   | W     | X | Y | Z    |               |
| 1F6  | diode-1  | 3 | 1 | 0  | 27 | 3 | ■     |   |   | 4    | ■ 1-6         |
| "    | diode-2  | 3 | 1 | 0  | 27 | 3 | ■     |   |   | 5    | ■             |
| "    | pent.    | 1 | 1 | 31 | 30 | 3 | ■     |   | 3 | 2 11 | ■             |
| 1F7  | diode-1  | 3 | 2 | 0  | 27 | 3 | ■     |   |   | 4    | ■ 2-7         |
| "    | diode-2  | 3 | 2 | 0  | 27 | 3 | ■     |   |   | 5    | ■             |
| "    | pent.    | 1 | 2 | 31 | 30 | 3 | ■     |   | 6 | 3 11 | ■             |
| 1G4  |          | 2 | 2 | 23 | 29 | 2 | ■     |   |   | 3    | ■ 2-7         |
| 1G5  |          | 1 | 2 | 28 | 14 | 3 | ■     |   | 4 | 3    | ■ 2-7         |
| 1G6  | triode-1 | 1 | 2 | 31 | 16 | 2 | ■     |   |   | 3    | ■ 2-7         |
| "    | triode-2 | 1 | 2 | 31 | 16 | 2 | ■     |   |   | 6    | ■             |
| 1H4  |          | 1 | 2 | 21 | 18 | 3 | ■     |   |   | 3    | ■ 2-7         |
| 1H5  | diode    | 3 | 2 | 0  | 27 | 2 | ■     |   |   | 5    | ■ 2-7         |
| "    | triode   | 5 | 2 | 12 | 46 | 2 | ■     |   |   | 3    | ■             |
| 1H6  | triode   | 1 | 2 | 9  | 40 | 3 | ■     |   |   | 3    | ■ 2-7         |
| "    | diode-1  | 3 | 2 | 0  | 30 | 3 | ■     |   |   | 4    | ■             |
| "    | diode-2  | 3 | 2 | 0  | 30 | 3 | ■     |   |   | 5    | ■             |
| 1J5  |          | 1 | 2 | 37 | 11 | 3 | ■     |   | 4 | 3    | ■ 2-7         |
| 1J6  | triode-1 | 1 | 2 | 20 | 23 | 3 | ■     |   |   | 3    | ■ 2-7         |
| "    | triode-2 | 1 | 2 | 20 | 23 | 3 | ■     |   |   | 6    | ■             |
| 1L6  | amp.     | 5 | 1 | 6  | 45 | 2 | ■     |   | 5 | 2    | ■ 1-7         |
| "    | osc.     | 1 | 1 | 30 | 46 | 2 | ■     |   |   | 3    | ■             |
| 1LA4 |          | 1 | 1 | 33 | 17 | 2 | ■     |   | 3 | 2    | ■ 1-8         |
| 1LA6 | amp.     | 4 | 1 | 26 | 30 | 2 | ■     |   | 5 | 2    | ■ 1-8         |
| "    | osc.     | 1 | 1 | 30 | 45 | 2 | ■     |   |   | 3    | ■             |
| 1LB4 |          | 1 | 1 | 26 | 23 | 2 | ■     |   | 3 | 2    | ■ 1-8         |
| 1LC5 |          | 1 | 1 | 18 | 40 | 2 | ■     | 5 | 3 | 2    | ■ 1-5-8       |
| 1LC6 | amp.     | 4 | 1 | 28 | 25 | 2 | ■     |   | 5 | 2    | ■ 1-8         |
| "    | osc.     | 1 | 1 | 30 | 40 | 2 | ■     |   |   | 3    | ■             |
| 1LD5 | pent.    | 1 | 1 | 27 | 31 | 2 | ■     |   | 3 | 2    | ■ 1-8         |
| "    | diode    | 3 | 1 | 0  | 27 | 2 | ■     |   |   | 4    | ■             |
| 1LE3 |          | 1 | 1 | 13 | 24 | 2 | ■     |   |   | 2    | ■ 1-8         |
| 1LF3 |          | 1 | 1 | 13 | 24 | 2 | ■     |   |   | 2    | ■ 1-8         |
| 1LG5 |          | 1 | 1 | 21 | 35 | 2 | ■     | 5 | 3 | 2    | ■ 1-5-8       |
| 1LH4 | triode   | 5 | 1 | 12 | 46 | 2 | ■     |   |   | 2    | ■ 1-8         |
| "    | diode    | 3 | 1 | 0  | 27 | 2 | ■     |   |   | 4    | ■             |
| 1LN5 |          | 1 | 1 | 25 | 35 | 2 | ■     | 5 | 3 | 2    | ■ 1-5-8       |
| 1N5  |          | 1 | 2 | 25 | 40 | 2 | ■     |   | 4 | 3    | ■ 2-7         |
| 1N6  | pent.    | 1 | 2 | 30 | 20 | 2 | ■     |   | 4 | 3    | ■ 2-7         |
| "    | diode    | 3 | 2 | 0  | 37 | 2 | ■     |   |   | 6    | ■             |
| 1P5  |          | 1 | 2 | 22 | 42 | 2 | ■     |   | 4 | 3    | ■ 2-7         |
| 1Q6  | pent.    | 5 | 5 | 15 | 30 | 2 | ■     |   | 8 | 7    | ■ 4-5         |
| "    | diode    | 3 | 5 | 0  | 27 | 2 | ■     |   |   | 6    | ■             |
| 1SA6 |          | 1 | 2 | 31 | 24 | 2 | ■     |   | 6 | 8    | ■ 2-7         |
| 1SB6 | pent.    | 4 | 2 | 6  | 34 | 2 | ■     |   | 4 | 3    | ■ 2-7         |
| "    | diode    | 3 | 2 | 0  | 32 | 2 | ■     |   |   | 5    | ■             |
| 1T6  | pent.    | 5 | 4 | 7  | 41 | 2 | ■     |   | 8 | 1    | ■ 4-5         |
| "    | diode    | 3 | 4 | 0  | 28 | 2 | ■     |   |   | 6    | ■             |
| 1U6  | amp.     | 4 | 1 | 4  | 35 | 2 | ■     |   | 5 | 2    | ■ 1-7         |
| "    | osc.     | 4 | 1 | 18 | 45 | 2 | ■     |   |   | 3    | ■             |
| 1V   |          | 2 | 1 | 0  | 3  | 7 | ■     |   |   | 2    | ■ 1-4         |
| 1V5  |          | 5 | 5 | 15 | 17 | 2 | ■     |   | 8 | 7    | ■ 4-5         |
| 1V6  | triode   | 3 | 4 | 7  | 39 | 2 | ■     |   |   | 6    | ■ 4-7         |
| "    | pent.    | 3 | 4 | 8  | 36 | 2 | ■     |   | 2 | 1    | ■             |
| 1W4  |          | 1 | 1 | 26 | 23 | 2 | ■     |   | 3 | 2    | ■ 1-7         |
| 1W5  |          | 5 | 5 | 14 | 25 | 2 | ■     |   | 8 | 7    | ■ 4-5         |
| 2A3  |          | 1 | 1 | 40 | 4  | 4 | ■     |   |   | 2    | ■ 1-4         |
| 2A4  |          | 2 | 2 | 0  | 3  | 4 | ■     |   |   | 3    | ■ 2-7         |
| 2A5  |          | 1 | 1 | 34 | 10 | 4 | ■     |   | 3 | 2    | ■ 1-6         |
| 2A6  | triode   | 1 | 1 | 12 | 40 | 4 | ■     |   |   | 2    | ■ 1-6         |
| "    | diode-1  | 3 | 1 | 0  | 27 | 4 | ■     |   |   | 3    | ■             |
| "    | diode-2  | 3 | 1 | 0  | 27 | 4 | ■     |   |   | 4    | ■             |
| 2A7  | amp.     | 4 | 1 | 40 | 19 | 4 | ■     |   | 3 | 2    | ■ 1-7         |
| "    | osc.     | 1 | 1 | 28 | 31 | 4 | ■     |   |   | 4    | ■             |

| Tube                                             | Section                                                                                                                                                | Lever |   |    |    |    |   |     |   |     |    | Fil. Cont. |       |       |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---|----|----|----|---|-----|---|-----|----|------------|-------|-------|
|                                                  |                                                                                                                                                        | A     | B | C  | D  | E  | W | X   | Y | Z   |    |            |       |       |
| 2B4                                              |                                                                                                                                                        | 2     | 1 | 0  | 2  | 4  | ■ |     | 3 |     | ■  | 1-5        |       |       |
| 2B5                                              | Caution:—Lever 2 must be thrown to position "W" BEFORE inserting tube and MUST remain in position "W" throughout ALL TESTS, INCLUDING SHORT TESTS.     |       |   |    |    |    |   |     |   |     |    |            |       |       |
| "                                                | triode-1                                                                                                                                               | 1     | 7 | 11 | 28 | 2  | ■ | 2   |   | 8   | 6  | ■          | 4-5-7 |       |
| "                                                | triode-2                                                                                                                                               | 1     | 7 | 11 | 28 | 2  | ■ | 2   |   | 1   | 3  | ■          |       |       |
| 2B6                                              | input                                                                                                                                                  | 1     | 1 | 26 | 27 | 4  | ■ |     |   | 3   | 4  | ■          | 1-7   |       |
| "                                                | output                                                                                                                                                 | 1     | 1 | 34 | 8  | 4  | ■ |     |   | 2   | 5  | ■          |       |       |
| 2B7                                              | pent.                                                                                                                                                  | 1     | 1 | 27 | 26 | 4  | ■ |     | 3 | 2   | 11 | ■          | 1-7   |       |
| "                                                | diode-1                                                                                                                                                | 3     | 1 | 0  | 27 | 4  | ■ |     |   | 4   |    | ■          |       |       |
| "                                                | diode-2                                                                                                                                                | 3     | 1 | 0  | 27 | 4  | ■ |     |   | 5   |    | ■          |       |       |
| 2C22                                             |                                                                                                                                                        | 1     | 2 | 32 | 7  | 7  | ■ |     |   | 11  | 12 | ■          | 2-7   |       |
| (2C22—Black cap on side nearest octal key)       |                                                                                                                                                        |       |   |    |    |    |   |     |   |     |    |            |       |       |
| 2C51                                             | triode-1                                                                                                                                               | 1     | 1 | 21 | 9  | 7  | ■ |     |   | 4   | 3  | ■          | 1-9   |       |
| "                                                | triode-2                                                                                                                                               | 1     | 1 | 21 | 9  | 7  | ■ |     |   | 6   | 7  | ■          |       |       |
| 2C52                                             | triode-1                                                                                                                                               | 1     | 7 | 30 | 14 | 10 | ■ |     |   | 2   | 1  | ■          | 7-8   |       |
| "                                                | triode-2                                                                                                                                               | 1     | 7 | 30 | 14 | 10 | ■ |     |   | 5   | 4  | ■          |       |       |
| 2D21                                             |                                                                                                                                                        | 7     | 3 | 0  | 3  | 7  | ■ |     |   | 6   | 1  | ■          | 3-4   |       |
| (2D21—Must show short on 5-7)                    |                                                                                                                                                        |       |   |    |    |    |   |     |   |     |    |            |       |       |
| (2D21—Screen short test—Depress 5-7 together)    |                                                                                                                                                        |       |   |    |    |    |   |     |   |     |    |            |       |       |
| 2E5                                              | triode                                                                                                                                                 | 1     | 1 | 20 | 31 | 4  | ■ |     |   | 2   | 3  | ■          | 1-6   |       |
| "                                                | eye                                                                                                                                                    | 1     | 1 | 0  | 0  | 4  | ■ |     |   | 2-4 |    | ■          |       |       |
| (2E5—See instructions for Eye Test)              |                                                                                                                                                        |       |   |    |    |    |   |     |   |     |    |            |       |       |
| 2E24                                             | (Caution—Levers 4-6 MUST be thrown to position "W" BEFORE inserting tube, and MUST remain in position "W" throughout ALL TESTS, INCLUDING SHORT TESTS) |       |   |    |    |    |   |     |   |     |    |            |       |       |
| "                                                |                                                                                                                                                        | 6     | 1 | 38 | 3  | 4  | ■ | 4-6 |   | 3   | 11 | 5          | ■     | 1-2-7 |
| 2E25                                             |                                                                                                                                                        | 1     | 2 | 36 | 10 | 7  | ■ |     |   | 4   | 11 | 5          | ■     | 2-7   |
| 2E26                                             |                                                                                                                                                        | 1     | 2 | 16 | 8  | 7  | ■ |     |   | 3   | 11 | 5          | ■     | 2-7   |
| (2E26—Must show short on 1-4-6)                  |                                                                                                                                                        |       |   |    |    |    |   |     |   |     |    |            |       |       |
| (2E26—Cathode short test—Depress 1-4-6 together) |                                                                                                                                                        |       |   |    |    |    |   |     |   |     |    |            |       |       |
| 2E30                                             |                                                                                                                                                        | 1     | 7 | 28 | 10 | 5  | ■ |     |   | 6   | 5  | 1          | ■     | 3-4-7 |
| 2E31                                             |                                                                                                                                                        | 5     | 3 | 5  | 35 | 2  | ■ |     |   | 2   | 1  | 4          | ■     | 3-5   |
| 2E32                                             |                                                                                                                                                        | 5     | 3 | 5  | 35 | 2  | ■ |     |   | 2   | 1  | 4          | ■     | 3-5   |
| 2E35                                             |                                                                                                                                                        | 5     | 3 | 5  | 35 | 2  | ■ |     |   | 2   | 1  | 4          | ■     | 3-5   |
| 2E36                                             |                                                                                                                                                        | 5     | 3 | 5  | 35 | 2  | ■ |     |   | 2   | 1  | 4          | ■     | 3-5   |
| 2G5                                              | triode                                                                                                                                                 | 1     | 1 | 19 | 20 | 4  | ■ |     |   | 2   | 3  | ■          | 1-6   |       |
| "                                                | eye                                                                                                                                                    | 1     | 1 | 0  | 0  | 4  | ■ |     |   | 2-4 |    | ■          |       |       |
| (2G5—See instructions for Eye Test)              |                                                                                                                                                        |       |   |    |    |    |   |     |   |     |    |            |       |       |
| 2G21                                             | triode                                                                                                                                                 | 5     | 4 | 7  | 34 | 2  | ■ |     |   | 1   | 3  | ■          | 4-7   |       |
| "                                                | heptode                                                                                                                                                | 3     | 4 | 19 | 31 | 2  | ■ |     |   | 2   | 6  | 3          | ■     |       |
| 2G22                                             | triode                                                                                                                                                 | 5     | 4 | 7  | 34 | 2  | ■ |     |   | 1   | 3  | ■          | 4-7   |       |
| "                                                | heptode                                                                                                                                                | 3     | 4 | 19 | 31 | 2  | ■ |     |   | 2   | 6  | 3          | ■     |       |
| 2T4                                              |                                                                                                                                                        | 2     | 3 | 23 | 11 | 4  | ■ | 1-2 |   | 7   | 6  | ■          | 3-4   |       |
| (2T4—Must show short on 1-2-6-7)                 |                                                                                                                                                        |       |   |    |    |    |   |     |   |     |    |            |       |       |
| (2T4—Grid short test—depress 2-6 together)       |                                                                                                                                                        |       |   |    |    |    |   |     |   |     |    |            |       |       |
| (2T4—Plate short test—depress 1-7 together)      |                                                                                                                                                        |       |   |    |    |    |   |     |   |     |    |            |       |       |
| 2W3                                              |                                                                                                                                                        | 2     | 2 | 0  | 9  | 4  | ■ |     |   | 4   |    | ■          | 2-8   |       |
| 2X2-879                                          |                                                                                                                                                        | 1     | 1 | 0  | 21 | 4  | ■ |     |   | 11  |    | ■          | 1-4   |       |
| 2Y3                                              |                                                                                                                                                        | 2     | 2 | 0  | 7  | 4  | ■ |     |   | 4   |    | ■          | 2-8   |       |
| 2Z2                                              |                                                                                                                                                        | 2     | 1 | 0  | 11 | 4  | ■ |     |   | 2   |    | ■          | 1-4   |       |
| 3B5                                              |                                                                                                                                                        | 1     | 8 | 22 | 13 | 2  | ■ |     | 4 | 3   | 5  | ■          | 2-7-8 |       |
| 3B7                                              | triode-1                                                                                                                                               | 1     | 4 | 17 | 18 | 2  | ■ |     |   | 7   | 6  | ■          | 1-4-8 |       |
| "                                                | triode-2                                                                                                                                               | 1     | 4 | 17 | 18 | 2  | ■ |     |   | 2   | 3  | ■          |       |       |
| 3C5                                              |                                                                                                                                                        | 1     | 8 | 27 | 13 | 2  | ■ |     | 4 | 3   | 5  | ■          | 2-7-8 |       |

| Tube                                             | Section  | A | B | C  | D  | E | Lever |   |     |    | Fil. Cont. |       |
|--------------------------------------------------|----------|---|---|----|----|---|-------|---|-----|----|------------|-------|
|                                                  |          |   |   |    |    |   | W     | X | Y   | Z  |            |       |
| 3D6                                              |          | 1 | 7 | 18 | 15 | 2 | ■     | 3 | 2   | 6  | ■          | 1-7-8 |
| 4A6                                              | triode-1 | 1 | 8 | 25 | 22 | 3 | ■     |   | 6   | 5  | ■          | 2-7-8 |
| "                                                | triode-2 | 1 | 8 | 25 | 22 | 3 | ■     |   | 3   | 4  | ■          |       |
| 5A6                                              |          | 1 | 9 | 20 | 10 | 4 | ■     | 6 | 1   | 7  | ■          | 4-5-9 |
| (5A6—Must show short on 3-8)                     |          |   |   |    |    |   |       |   |     |    |            |       |
| (5A6—Suppressor short test—Depress 3-8 together) |          |   |   |    |    |   |       |   |     |    |            |       |
| 5B8                                              | triode   | 1 | 4 | 9  | 14 | 6 | ■     |   | 3   | 2  | ■          | 4-5   |
| "                                                | pent.    | 1 | 4 | 5  | 29 | 6 | ■     | 8 | 9   | 6  | ■          |       |
| (5B8—May show short on 1)                        |          |   |   |    |    |   |       |   |     |    |            |       |
| 5T4                                              | plate-1  | 2 | 2 | 0  | 4  | 6 | ■     |   | 4   |    | ■          | 2-8   |
| "                                                | plate-2  | 2 | 2 | 0  | 4  | 6 | ■     |   | 6   |    | ■          |       |
| 5X4                                              | plate-1  | 2 | 7 | 0  | 5  | 6 | ■     |   | 3   |    | ■          | 7-8   |
| "                                                | plate-2  | 2 | 7 | 0  | 5  | 6 | ■     |   | 5   |    | ■          |       |
| 5Y4                                              | plate-1  | 2 | 7 | 0  | 8  | 6 | ■     |   | 3   |    | ■          | 7-8   |
| "                                                | plate-2  | 2 | 7 | 0  | 8  | 6 | ■     |   | 5   |    | ■          |       |
| 5Z3                                              | plate-1  | 2 | 1 | 0  | 5  | 6 | ■     |   | 2   |    | ■          | 1-4   |
| "                                                | plate-2  | 2 | 1 | 0  | 5  | 6 | ■     |   | 3   |    | ■          |       |
| 5Z4                                              | plate-1  | 2 | 2 | 0  | 2  | 6 | ■     |   | 4   |    | ■          | 2-8   |
| "                                                | plate-2  | 2 | 2 | 0  | 2  | 6 | ■     |   | 6   |    | ■          |       |
| 6A3                                              |          | 1 | 1 | 40 | 4  | 7 | ■     |   | 2   | 3  | ■          | 1-4   |
| 6A4-LA                                           |          | 1 | 1 | 30 | 10 | 7 | ■     | 4 | 2   | 3  | ■          | 1-5   |
| 6A5                                              |          | 1 | 8 | 40 | 4  | 5 | ■     |   | 3   | 5  | ■          | 2-7-8 |
| 6A6                                              | triode-1 | 1 | 1 | 36 | 7  | 7 | ■     |   | 6   | 5  | ■          | 1-7   |
| "                                                | triode-2 | 1 | 1 | 36 | 7  | 7 | ■     |   | 2   | 3  | ■          |       |
| 6A7                                              | amp.     | 4 | 1 | 40 | 19 | 7 | ■     | 3 | 2   | 11 | ■          | 1-7   |
| "                                                | osc.     | 1 | 1 | 28 | 31 | 7 | ■     |   | 4   | 5  | ■          |       |
| 6A8                                              | amp.     | 4 | 2 | 29 | 24 | 7 | ■     | 4 | 3   | 11 | ■          | 2-7   |
| "                                                | osc.     | 1 | 2 | 33 | 28 | 7 | ■     |   | 6   | 5  | ■          |       |
| 6AC5                                             |          | 1 | 2 | 37 | 8  | 7 | ■     |   | 3   | 5  | ■          | 2-7   |
| 6AN5                                             |          | 1 | 3 | 13 | 7  | 7 | ■     | 6 | 5   | 1  | ■          | 3-4   |
| (6AN5—Must show short on 2-7)                    |          |   |   |    |    |   |       |   |     |    |            |       |
| (6AN5—Cathode short test—Depress 2-7 TOGETHER)   |          |   |   |    |    |   |       |   |     |    |            |       |
| 6B4                                              |          | 1 | 2 | 40 | 4  | 7 | ■     |   | 3   | 5  | ■          | 2-7   |
| 6B5                                              | input    | 1 | 1 | 40 | 15 | 7 | ■     |   | 3   | 4  | ■          | 1-6   |
| "                                                | output   | 1 | 1 | 38 | 9  | 7 | ■     | 3 | 2   | 4  | ■          |       |
| 6B6                                              | triode   | 1 | 2 | 12 | 37 | 7 | ■     |   | 3   | 11 | ■          | 2-7   |
| "                                                | diode-1  | 3 | 2 | 0  | 27 | 7 | ■     |   | 5   |    | ■          |       |
| "                                                | diode-2  | 3 | 2 | 0  | 27 | 7 | ■     |   | 4   |    | ■          |       |
| 6B7                                              | pent.    | 1 | 1 | 29 | 25 | 7 | ■     | 3 | 2   | 11 | ■          | 1-7   |
| "                                                | diode-1  | 3 | 1 | 0  | 27 | 7 | ■     |   | 5   |    | ■          |       |
| "                                                | diode-2  | 3 | 1 | 0  | 27 | 7 | ■     |   | 4   |    | ■          |       |
| 6B8                                              | pent.    | 1 | 2 | 29 | 25 | 7 | ■     | 6 | 3   | 11 | ■          | 2-7   |
| "                                                | diode-1  | 3 | 2 | 0  | 27 | 7 | ■     |   | 4   |    | ■          |       |
| "                                                | diode-2  | 3 | 2 | 0  | 27 | 7 | ■     |   | 5   |    | ■          |       |
| 6C5                                              |          | 1 | 2 | 15 | 18 | 7 | ■     |   | 3   | 5  | ■          | 2-7   |
| 6C6                                              |          | 1 | 1 | 28 | 20 | 7 | ■     | 3 | 2   | 11 | ■          | 1-6   |
| 6C7                                              | triode   | 1 | 1 | 25 | 15 | 7 | ■     |   | 2   | 11 | ■          | 1-7   |
| "                                                | diode-1  | 3 | 1 | 0  | 27 | 7 | ■     |   | 4   |    | ■          |       |
| "                                                | diode-2  | 3 | 1 | 0  | 27 | 7 | ■     |   | 5   |    | ■          |       |
| 6C8                                              | triode-1 | 1 | 2 | 31 | 11 | 7 | ■     |   | 3   | 11 | ■          | 2-7   |
| "                                                | triode-2 | 1 | 2 | 31 | 11 | 7 | ■     |   | 6   | 5  | ■          |       |
| 6D4                                              |          | 7 | 3 | 0  | 4  | 7 | ■     |   | 7   |    | ■          | 3-4   |
| 6D5                                              |          | 1 | 2 | 38 | 6  | 7 | ■     |   | 3   | 5  | ■          | 2-7   |
| 6D6                                              |          | 1 | 1 | 27 | 19 | 7 | ■     | 3 | 2   | 11 | ■          | 1-6   |
| 6D7                                              |          | 1 | 1 | 28 | 20 | 7 | ■     | 3 | 2   | 11 | ■          | 1-7   |
| 6D8                                              | amp.     | 4 | 2 | 40 | 20 | 7 | ■     | 4 | 3   | 11 | ■          | 2-7   |
| "                                                | osc.     | 1 | 2 | 30 | 33 | 7 | ■     |   | 6   | 5  | ■          |       |
| 6E5                                              | triode   | 1 | 1 | 25 | 24 | 7 | ■     |   | 2   | 3  | ■          | 1-6   |
| "                                                | eye      | 1 | 1 | 0  | 0  | 7 | ■     |   | 2-4 |    | ■          |       |
| (6E5—See instructions for eye test)              |          |   |   |    |    |   |       |   |     |    |            |       |

| Tube                                          | Section  | A | B | C  | D  | E | Lever |     |     |    | Fil.<br>Cont |
|-----------------------------------------------|----------|---|---|----|----|---|-------|-----|-----|----|--------------|
|                                               |          |   |   |    |    |   | W     | X   | Y   | Z  |              |
| 6E6                                           | triode-1 | 1 | 1 | 30 | 9  | 7 | ■     |     | 2   | 3  | ■ 1-7        |
| "                                             | triode-2 | 1 | 1 | 30 | 9  | 7 | ■     |     | 6   | 5  | ■            |
| 6E7                                           |          | 1 | 1 | 29 | 18 | 7 | ■     | 3   | 2   | 11 | ■ 1-7        |
| 6F4                                           |          | 1 | 1 | 35 | 5  | 7 | ■     | 2-7 | 3   | 8  | ■ 1-4        |
| (6F4—Plate short test—depress 2-3 together)   |          |   |   |    |    |   |       |     |     |    |              |
| (6F4—Grid short test—depress 7-8 together)    |          |   |   |    |    |   |       |     |     |    |              |
| (6F4—Must show short on 2-3-7-8 individually) |          |   |   |    |    |   |       |     |     |    |              |
| 6F5                                           |          | 1 | 2 | 12 | 33 | 7 | ■     |     | 4   | 11 | ■ 2-7        |
| 6F6                                           |          | 1 | 2 | 32 | 10 | 7 | ■     | 4   | 3   | 5  | ■ 2-7        |
| 6F7                                           | triode   | 1 | 1 | 41 | 15 | 7 | ■     |     | 4   | 5  | ■ 1-7        |
| "                                             | pent     | 1 | 1 | 28 | 27 | 7 | ■     | 3   | 2   | 11 | ■            |
| 6F8                                           | triode-1 | 1 | 2 | 15 | 16 | 7 | ■     |     | 3   | 11 | ■ 2-7        |
| "                                             | triode-2 | 1 | 2 | 15 | 16 | 7 | ■     |     | 6   | 5  | ■            |
| 6G5                                           | triode   | 1 | 1 | 19 | 27 | 7 | ■     |     | 2   | 3  | ■ 1-6        |
| "                                             | eye      | 1 | 1 | 0  | 0  | 7 | ■     |     | 2-4 |    | ■            |
| (6G5—See instructions for eye test)           |          |   |   |    |    |   |       |     |     |    |              |
| 6G6                                           |          | 1 | 2 | 32 | 10 | 7 | ■     | 4   | 3   | 5  | ■ 2-7        |
| 6G7                                           | pent.    | 1 | 1 | 32 | 12 | 7 | ■     | 3   | 2   | 11 | ■ 1-7        |
| "                                             | rect.-1  | 2 | 1 | 0  | 5  | 7 | ■     |     | 6   |    | ■            |
| "                                             | rect.-2  | 2 | 1 | 0  | 5  | 7 | ■     |     | 4   |    | ■            |
| (6G7—Must show short on 3)                    |          |   |   |    |    |   |       |     |     |    |              |
| 6H4                                           |          | 3 | 2 | 0  | 18 | 7 | ■     |     | 4   |    | ■ 2-7        |
| 6H5                                           | triode   | 1 | 1 | 14 | 27 | 7 | ■     |     | 2   | 3  | ■ 1-6        |
| "                                             | eye      | 1 | 1 | 0  | 0  | 7 | ■     |     | 2-4 |    | ■            |
| (6H5—See instructions for eye test)           |          |   |   |    |    |   |       |     |     |    |              |
| 6H6                                           | diode-1  | 3 | 2 | 0  | 18 | 7 | ■     |     | 5   |    | ■ 2-7        |
| "                                             | diode-2  | 3 | 2 | 0  | 18 | 7 | ■     |     | 3   |    | ■            |
| 6J4                                           |          | 1 | 3 | 33 | 6  | 7 | ■     | 1-5 | 7   | 6  | ■ 3-4        |
| (6J4—Must show short on 1-5-6)                |          |   |   |    |    |   |       |     |     |    |              |
| (6J4—Grid short test—depress 1-5-6 together)  |          |   |   |    |    |   |       |     |     |    |              |
| 6J7                                           |          | 1 | 2 | 28 | 20 | 7 | ■     | 4   | 3   | 11 | ■ 2-7        |
| 6J8                                           | triode   | 1 | 2 | 20 | 18 | 7 | ■     |     | 6   | 5  | ■ 2-7        |
| "                                             | heptode  | 4 | 2 | 8  | 25 | 7 | ■     | 4   | 3   | 11 | ■            |
| 6K5                                           |          | 1 | 2 | 11 | 30 | 7 | ■     |     | 3   | 11 | ■ 2-7        |
| 6K7                                           |          | 1 | 2 | 15 | 32 | 7 | ■     | 4   | 3   | 11 | ■ 2-7        |
| 6K8                                           | triode   | 1 | 2 | 28 | 18 | 7 | ■     |     | 6   | 5  | ■ 2-7        |
| "                                             | heptode  | 4 | 2 | 15 | 32 | 7 | ■     | 4   | 3   | 11 | ■            |
| 6L5                                           |          | 1 | 2 | 16 | 16 | 7 | ■     |     | 3   | 5  | ■ 2-7        |
| 6L7                                           | amp.     | 4 | 2 | 10 | 29 | 7 | ■     | 4   | 3   | 5  | ■ 2-7        |
| "                                             | osc.     | 3 | 2 | 12 | 25 | 7 | ■     |     | 4   | 11 | ■            |
| 6N6                                           | input    | 1 | 2 | 40 | 15 | 7 | ■     |     | 4   | 5  | ■ 2-7        |
| "                                             | output   | 1 | 2 | 38 | 9  | 7 | ■     | 4   | 3   | 5  | ■            |
| 6N7                                           | triode-1 | 1 | 2 | 36 | 7  | 7 | ■     |     | 3   | 4  | ■ 2-7        |
| "                                             | triode-2 | 1 | 2 | 36 | 7  | 7 | ■     |     | 6   | 5  | ■            |
| 6P5                                           |          | 1 | 2 | 15 | 17 | 7 | ■     |     | 3   | 5  | ■ 2-7        |
| 6P7                                           | triode   | 1 | 2 | 41 | 15 | 7 | ■     |     | 6   | 7  | ■ 2-3        |
| "                                             | pent     | 1 | 2 | 28 | 27 | 7 | ■     | 5   | 4   | 11 | ■            |
| 6Q5                                           |          | 1 | 2 | 0  | 4  | 7 | ■     |     | 3   |    | ■ 2-7        |
| 6Q7                                           | triode   | 1 | 2 | 13 | 33 | 7 | ■     |     | 3   | 11 | ■ 2-7        |
| "                                             | diode-1  | 3 | 2 | 0  | 27 | 7 | ■     |     | 4   |    | ■            |
| "                                             | diode-2  | 3 | 2 | 0  | 27 | 7 | ■     |     | 5   |    | ■            |
| 6R6                                           |          | 1 | 2 | 15 | 33 | 7 | ■     | 3   | 5   | 11 | ■ 2-7        |
| 6R7                                           | triode   | 1 | 2 | 18 | 15 | 7 | ■     |     | 3   | 11 | ■ 2-7        |
| "                                             | diode-1  | 3 | 2 | 0  | 27 | 7 | ■     |     | 4   |    | ■            |
| "                                             | diode-2  | 3 | 2 | 0  | 27 | 7 | ■     |     | 5   |    | ■            |
| 6S7                                           |          | 1 | 2 | 26 | 20 | 7 | ■     | 4   | 3   | 11 | ■ 2-7        |
| 6SB7                                          | amp.     | 4 | 2 | 9  | 20 | 7 | ■     | 4   | 3   | 8  | ■ 2-7        |
| "                                             | osc.     | 1 | 2 | 37 | 6  | 7 | ■     |     | 4   | 5  | ■            |

| Tube | Section  | A | B | C  | D  | E | Lever |   |   |    | Fil.<br>Cont. |
|------|----------|---|---|----|----|---|-------|---|---|----|---------------|
|      |          |   |   |    |    |   | W     | X | Y | Z  |               |
| 6SD7 |          | 1 | 2 | 12 | 27 | 7 | ■     | 6 | 8 | 4  | ■ 2-7         |
| 6SZ7 | triode   | 1 | 7 | 14 | 30 | 7 | ■     |   | 6 | 2  | ■ 7-8         |
| "    | diode-1  | 3 | 7 | 0  | 27 | 7 | ■     |   | 5 |    | ■             |
| "    | diode-2  | 3 | 7 | 0  | 27 | 7 | ■     |   | 4 |    | ■             |
| 6T7  | triode   | 1 | 2 | 20 | 29 | 7 | ■     |   | 3 | 11 | ■ 2-7         |
| "    | diode-1  | 3 | 2 | 0  | 27 | 7 | ■     |   | 5 |    | ■             |
| "    | diode-2  | 3 | 2 | 0  | 27 | 7 | ■     |   | 4 |    | ■             |
| 6U6  |          | 1 | 2 | 13 | 7  | 7 | ■     | 4 | 3 | 5  | ■ 2-7         |
| 6U7  |          | 1 | 2 | 27 | 19 | 7 | ■     | 4 | 3 | 11 | ■ 2-7         |
| 6V7  | triode   | 1 | 2 | 25 | 12 | 7 | ■     |   | 3 | 11 | ■ 2-7         |
| "    | diode-1  | 3 | 2 | 0  | 26 | 7 | ■     |   | 4 |    | ■             |
| "    | diode-2  | 3 | 2 | 0  | 26 | 7 | ■     |   | 5 |    | ■             |
| 6W7  |          | 1 | 2 | 18 | 28 | 7 | ■     | 4 | 3 | 11 | ■ 2-7         |
| 6Y5  | plate-1  | 2 | 2 | 0  | 3  | 7 | ■     |   | 3 |    | ■ 2-7         |
| "    | plate-2  | 2 | 2 | 0  | 3  | 7 | ■     |   | 5 |    | ■             |
| 6Y7  | triode-1 | 1 | 2 | 33 | 9  | 7 | ■     |   | 3 | 4  | ■ 2-7         |
| "    | triode-2 | 1 | 2 | 33 | 9  | 7 | ■     |   | 6 | 5  | ■             |
| 6Z5  | plate-1  | 2 | 1 | 0  | 3  | 7 | ■     |   | 3 |    | ■ 1-2-6       |
| "    | plate-2  | 2 | 1 | 0  | 3  | 7 | ■     |   | 5 |    | ■             |
| 6Z7  | triode-1 | 1 | 2 | 33 | 11 | 7 | ■     |   | 3 | 4  | ■ 2-7         |
| "    | triode-2 | 1 | 2 | 33 | 11 | 7 | ■     |   | 6 | 5  | ■             |
| 6ZY5 | plate-1  | 2 | 2 | 0  | 4  | 7 | ■     |   | 3 |    | ■ 2-7         |
| "    | plate-2  | 2 | 2 | 0  | 4  | 7 | ■     |   | 5 |    | ■             |
| 7A4  |          | 1 | 1 | 27 | 10 | 7 | ■     |   | 2 | 6  | ■ 1-8         |
| 7A5  |          | 1 | 1 | 12 | 8  | 7 | ■     | 3 | 2 | 6  | ■ 1-8         |
| 7A6  | diode-1  | 3 | 1 | 0  | 19 | 7 | ■     |   | 3 |    | ■ 1-8         |
| "    | diode-2  | 3 | 1 | 0  | 19 | 7 | ■     |   | 6 |    | ■             |
| 7A7  |          | 1 | 1 | 25 | 20 | 7 | ■     | 3 | 2 | 6  | ■ 1-8         |
| 7A8  | amp.     | 4 | 1 | 40 | 20 | 7 | ■     | 5 | 2 | 6  | ■ 1-8         |
| "    | osc.     | 1 | 1 | 26 | 47 | 7 | ■     |   | 3 | 4  | ■             |
| 7B4  |          | 1 | 1 | 12 | 33 | 7 | ■     |   | 2 | 6  | ■ 1-8         |
| 7B5  |          | 1 | 1 | 31 | 11 | 7 | ■     | 3 | 2 | 6  | ■ 1-8         |
| 7B6  | triode   | 1 | 1 | 14 | 35 | 7 | ■     |   | 2 | 3  | ■ 1-8         |
| "    | diode-1  | 3 | 1 | 0  | 27 | 7 | ■     |   | 5 |    | ■             |
| "    | diode-2  | 3 | 1 | 0  | 27 | 7 | ■     |   | 6 |    | ■             |

(7B6—Must show short on 4-7)

(7B6—Cathode short test—depress 4-7 together)

|     |         |   |   |    |    |   |   |   |   |   |       |
|-----|---------|---|---|----|----|---|---|---|---|---|-------|
| 7B7 |         | 1 | 1 | 27 | 20 | 7 | ■ | 3 | 2 | 6 | ■ 1-8 |
| 7B8 | amp.    | 4 | 1 | 29 | 24 | 7 | ■ | 5 | 2 | 6 | ■ 1-8 |
| "   | osc.    | 1 | 1 | 29 | 30 | 7 | ■ |   | 3 | 4 | ■     |
| 7C4 |         | 3 | 1 | 0  | 21 | 7 | ■ |   | 4 |   | ■ 1-8 |
| 7C5 |         | 1 | 1 | 31 | 9  | 7 | ■ | 3 | 2 | 6 | ■ 1-8 |
| 7C6 | triode  | 1 | 1 | 22 | 33 | 7 | ■ |   | 2 | 3 | ■ 1-8 |
| "   | diode-1 | 3 | 1 | 0  | 26 | 7 | ■ |   | 5 |   | ■     |
| "   | diode-2 | 3 | 1 | 0  | 26 | 7 | ■ |   | 6 |   | ■     |

(7C6—Must show short on 4-7)

(7C6—Cathode short test—depress 4-7 together)

|     |  |   |   |    |    |   |   |     |   |   |       |
|-----|--|---|---|----|----|---|---|-----|---|---|-------|
| 7C7 |  | 1 | 1 | 25 | 22 | 7 | ■ | 3   | 2 | 6 | ■ 1-8 |
| 7E5 |  | 1 | 2 | 36 | 7  | 7 | ■ | 3-5 | 7 | 1 | ■ 2-8 |

(7E5—Plate short test—depress 3-7 together)

(7E5—Grid short test—depress 1-5 together)

(7E5—Cathode short test—depress 4-6 together)

(7E5—Must show short on 1-3-4-5-6-7 individually)

|     |         |   |   |    |    |   |   |  |   |   |       |
|-----|---------|---|---|----|----|---|---|--|---|---|-------|
| 7E6 | triode  | 1 | 1 | 18 | 15 | 7 | ■ |  | 2 | 3 | ■ 1-8 |
| "   | diode-1 | 3 | 1 | 0  | 27 | 7 | ■ |  | 5 |   | ■     |
| "   | diode-2 | 3 | 1 | 0  | 27 | 7 | ■ |  | 6 |   | ■     |

(7E6—Must show short on 4-7)

(7E6—Cathode short test—depress 4-7 together)

| Tube | Section  | A | B | C  | D  | E | Lever |   |   |   | Fil.<br>Cont. |
|------|----------|---|---|----|----|---|-------|---|---|---|---------------|
|      |          |   |   |    |    |   | W     | X | Y | Z |               |
| 7E7  | pent.    | 1 | 1 | 26 | 25 | 7 | ■     | 5 | 2 | 6 | 1-8           |
| "    | diode-1  | 3 | 1 | 0  | 27 | 7 | ■     |   | 3 |   |               |
| "    | diode-2  | 3 | 1 | 0  | 27 | 7 | ■     |   | 4 |   |               |
| 7F7  | triode-1 | 1 | 1 | 16 | 30 | 7 | ■     |   | 3 | 4 | 1-8           |
| "    | triode-2 | 1 | 1 | 16 | 30 | 7 | ■     |   | 6 | 5 |               |
| 7F8  | triode-1 | 1 | 2 | 13 | 14 | 7 | ■     |   | 3 | 1 | 2-7           |
| "    | triode-2 | 1 | 2 | 13 | 14 | 7 | ■     |   | 6 | 8 |               |
| 7G7  |          | 1 | 1 | 11 | 23 | 7 | ■     | 3 | 2 | 6 | 1-8           |
| 7G8  | sect.-1  | 1 | 1 | 27 | 14 | 7 | ■     | 3 | 7 | 5 | 1-8           |
| "    | sect.-2  | 1 | 1 | 27 | 14 | 7 | ■     | 3 | 2 | 4 |               |
| 7H7  |          | 1 | 1 | 18 | 22 | 7 | ■     | 3 | 2 | 6 | 1-8           |
| 7J7  | hexode   | 1 | 1 | 22 | 34 | 7 | ■     | 5 | 2 | 6 | 1-8           |
| "    | triode   | 1 | 1 | 22 | 19 | 7 | ■     |   | 3 | 4 |               |
| 7K7  | triode   | 1 | 1 | 16 | 30 | 7 | ■     |   | 3 | 4 | 1-8           |
| "    | diode-1  | 3 | 1 | 0  | 27 | 7 | ■     |   | 5 |   |               |
| "    | diode-2  | 3 | 1 | 0  | 27 | 7 | ■     |   | 6 |   |               |
| 7L7  |          | 1 | 1 | 12 | 30 | 7 | ■     | 3 | 2 | 6 | 1-8           |
| 7N7  | triode-1 | 1 | 1 | 27 | 10 | 7 | ■     |   | 3 | 4 | 1-8           |
| "    | triode-2 | 1 | 1 | 27 | 10 | 7 | ■     |   | 6 | 5 |               |
| 7Q7  | amp.     | 4 | 1 | 8  | 29 | 7 | ■     | 3 | 2 | 6 | 1-8           |
| "    | osc.     | 1 | 1 | 21 | 9  | 7 | ■     |   | 3 | 4 |               |
| 7R7  | pent.    | 1 | 1 | 17 | 26 | 7 | ■     | 5 | 2 | 6 | 1-8           |
| "    | diode-1  | 3 | 1 | 0  | 26 | 7 | ■     |   | 3 |   |               |
| "    | diode-2  | 3 | 1 | 0  | 26 | 7 | ■     |   | 4 |   |               |
| 7S7  | heptode  | 1 | 1 | 13 | 34 | 7 | ■     | 5 | 2 | 6 | 1-8           |
| "    | triode   | 1 | 1 | 28 | 14 | 7 | ■     |   | 3 | 4 |               |
| 7T7  |          | 1 | 1 | 14 | 27 | 7 | ■     | 3 | 2 | 6 | 1-8           |
| 7V7  |          | 1 | 1 | 12 | 24 | 7 | ■     | 3 | 2 | 6 | 1-8           |
| 7W7  |          | 1 | 1 | 12 | 24 | 7 | ■     | 3 | 2 | 6 | 1-8           |

(7W7—Must show short on 4-7)

(7W7—Cathode short test—depress 4-7 together)

|      |         |   |   |    |    |   |   |   |   |   |       |
|------|---------|---|---|----|----|---|---|---|---|---|-------|
| 7X6  | plate-1 | 1 | 1 | 0  | 5  | 7 | ■ |   | 3 |   | 1-8   |
| "    | plate-2 | 1 | 1 | 0  | 5  | 7 | ■ |   | 6 |   |       |
| 7X7  | triode  | 1 | 1 | 13 | 45 | 7 | ■ |   | 2 | 3 | 1-8   |
| "    | diode-1 | 3 | 1 | 0  | 26 | 7 | ■ |   | 5 |   |       |
| "    | diode-2 | 3 | 1 | 0  | 26 | 7 | ■ |   | 6 |   |       |
| 7Y4  | plate-1 | 2 | 1 | 0  | 4  | 7 | ■ |   | 3 |   | 1-8   |
| "    | plate-2 | 2 | 1 | 0  | 4  | 7 | ■ |   | 6 |   |       |
| 7Z4  | plate-1 | 2 | 1 | 0  | 7  | 7 | ■ |   | 3 |   | 1-8   |
| "    | plate-2 | 2 | 1 | 0  | 7  | 7 | ■ |   | 6 |   |       |
| 10   |         | 1 | 1 | 32 | 10 | 8 | ■ |   | 2 | 3 | 1-4   |
| 12A  |         | 1 | 1 | 23 | 10 | 6 | ■ |   | 2 | 3 | 1-4   |
| 12A4 |         | 1 | 3 | 25 | 6  | 7 | ■ | 2 | 9 | 7 | 3-4-5 |

(12A4—Must show short on 2-7)

(12A4—Grid short test—Depress 2-7 together)

|      |         |   |   |    |    |    |   |   |   |    |       |
|------|---------|---|---|----|----|----|---|---|---|----|-------|
| 12A6 |         | 1 | 2 | 31 | 11 | 10 | ■ | 4 | 3 | 5  | 2-7   |
| 12A7 | pent.   | 1 | 1 | 34 | 12 | 10 | ■ | 3 | 2 | 11 | 1-7   |
| "    | rect.   | 2 | 1 | 0  | 3  | 10 | ■ |   | 5 |    |       |
| 12A8 | amp.    | 4 | 2 | 29 | 24 | 10 | ■ | 4 | 3 | 11 | 2-7   |
| "    | osc.    | 1 | 2 | 33 | 28 | 10 | ■ |   | 6 | 5  |       |
| 12B8 | triode  | 1 | 2 | 14 | 25 | 10 | ■ |   | 5 | 8  | 2-7   |
| "    | pent.   | 1 | 2 | 29 | 12 | 10 | ■ | 4 | 3 | 11 |       |
| 12C8 | pent.   | 1 | 2 | 17 | 34 | 10 | ■ | 6 | 3 | 11 | 2-7   |
| "    | diode-1 | 3 | 2 | 0  | 27 | 10 | ■ |   | 4 |    |       |
| "    | diode-2 | 3 | 2 | 0  | 27 | 10 | ■ |   | 5 |    |       |
| 12Z3 |         | 2 | 1 | 0  | 1  | 10 | ■ |   | 2 |    | 1-4   |
| 12Z5 | plate-1 | 2 | 4 | 0  | 3  | 7  | ■ |   | 2 |    | 1-4-7 |
| "    | plate-2 | 2 | 4 | 0  | 3  | 7  | ■ |   | 6 |    |       |
| 14A4 |         | 1 | 1 | 27 | 10 | 10 | ■ |   | 2 | 6  | 1-8   |
| 14A5 |         | 1 | 1 | 31 | 11 | 10 | ■ | 3 | 2 | 6  | 1-8   |
| 14A7 |         | 1 | 1 | 25 | 20 | 10 | ■ | 3 | 2 | 6  | 1-8   |

| Tube                                           | Section  | A | B | C  | D  | E  | Lever |   |   |    | Fil.<br>Cont. |
|------------------------------------------------|----------|---|---|----|----|----|-------|---|---|----|---------------|
|                                                |          |   |   |    |    |    | W     | X | Y | Z  |               |
| 14B6                                           | triode   | 1 | 1 | 12 | 39 | 10 | ■     |   | 2 | 3  | ■ 1-8         |
| "                                              | diode-1  | 3 | 1 | 0  | 26 | 10 | ■     |   | 5 |    | ■             |
| "                                              | diode-2  | 3 | 1 | 0  | 26 | 10 | ■     |   | 6 |    | ■             |
| (14B6—Must show short on 4-7)                  |          |   |   |    |    |    |       |   |   |    |               |
| (14B6—Cathode short test—depress 4-7 together) |          |   |   |    |    |    |       |   |   |    |               |
| 14B8                                           | amp.     | 4 | 1 | 29 | 24 | 10 | ■     | 5 | 2 | 6  | ■ 1-8         |
| "                                              | osc.     | 1 | 1 | 29 | 30 | 10 | ■     |   | 3 | 4  | ■             |
| 14C5                                           |          | 1 | 1 | 31 | 9  | 10 | ■     | 3 | 2 | 6  | ■ 1-8         |
| 14C7                                           |          | 1 | 1 | 21 | 25 | 10 | ■     | 3 | 2 | 6  | ■ 1-8         |
| 14E6                                           | triode   | 1 | 1 | 16 | 18 | 10 | ■     |   | 2 | 3  | ■ 1-8         |
| "                                              | diode-1  | 3 | 1 | 0  | 27 | 10 | ■     |   | 5 |    | ■             |
| "                                              | diode-2  | 3 | 1 | 0  | 27 | 10 | ■     |   | 6 |    | ■             |
| (14E6—Must show short on 4-7)                  |          |   |   |    |    |    |       |   |   |    |               |
| (14E6—Cathode short test—depress 4-7 together) |          |   |   |    |    |    |       |   |   |    |               |
| 14E7                                           | pent.    | 1 | 1 | 26 | 25 | 10 | ■     | 5 | 2 | 6  | ■ 1-8         |
| "                                              | diode-1  | 3 | 1 | 0  | 27 | 10 | ■     |   | 3 |    | ■             |
| "                                              | diode-2  | 3 | 1 | 0  | 27 | 10 | ■     |   | 4 |    | ■             |
| 14F7                                           | triode-1 | 1 | 1 | 16 | 30 | 10 | ■     |   | 6 | 5  | ■ 1-8         |
| "                                              | triode-2 | 1 | 1 | 16 | 30 | 10 | ■     |   | 3 | 4  | ■             |
| 14F8                                           | triode-1 | 1 | 2 | 13 | 14 | 10 | ■     |   | 6 | 8  | ■ 2-7         |
| "                                              | triode-2 | 1 | 2 | 13 | 14 | 10 | ■     |   | 3 | 1  | ■             |
| 14H7                                           |          | 1 | 1 | 18 | 22 | 10 | ■     | 3 | 2 | 6  | ■ 1-8         |
| 14J7                                           | triode   | 1 | 1 | 20 | 18 | 10 | ■     |   | 3 | 4  | ■ 1-8         |
| "                                              | hexode   | 1 | 1 | 22 | 34 | 10 | ■     | 5 | 2 | 6  | ■             |
| 14N7                                           | triode-1 | 1 | 1 | 27 | 10 | 10 | ■     |   | 3 | 4  | ■ 1-8         |
| "                                              | triode-2 | 1 | 1 | 27 | 10 | 10 | ■     |   | 6 | 5  | ■             |
| 14Q7                                           | amp.     | 4 | 1 | 8  | 29 | 10 | ■     | 3 | 2 | 6  | ■ 1-8         |
| "                                              | osc.     | 1 | 1 | 21 | 9  | 10 | ■     |   | 3 | 4  | ■             |
| 14R7                                           | pent.    | 1 | 1 | 17 | 26 | 10 | ■     | 5 | 2 | 6  | ■ 1-8         |
| "                                              | diode-1  | 3 | 1 | 0  | 26 | 10 | ■     |   | 3 |    | ■             |
| "                                              | diode-2  | 3 | 1 | 0  | 26 | 10 | ■     |   | 4 |    | ■             |
| 14S7                                           | triode   | 1 | 1 | 28 | 14 | 10 | ■     |   | 3 | 4  | ■ 1-8         |
| "                                              | heptode  | 1 | 1 | 13 | 34 | 10 | ■     | 5 | 2 | 6  | ■             |
| 14W7                                           |          | 1 | 1 | 12 | 26 | 10 | ■     | 3 | 2 | 6  | ■ 1-8         |
| (14W7—Must show short on 4-7)                  |          |   |   |    |    |    |       |   |   |    |               |
| (14W7—Cathode short test—depress 4-7 together) |          |   |   |    |    |    |       |   |   |    |               |
| 14X7                                           | triode   | 1 | 1 | 13 | 45 | 10 | ■     |   | 2 | 3  | ■ 1-8         |
| "                                              | diode-1  | 3 | 1 | 0  | 26 | 10 | ■     |   | 5 |    | ■             |
| "                                              | diode-2  | 3 | 1 | 0  | 26 | 10 | ■     |   | 6 |    | ■             |
| 14Y4                                           | plate-1  | 2 | 1 | 0  | 3  | 10 | ■     |   | 3 |    | ■ 1-8         |
| "                                              | plate-2  | 2 | 1 | 0  | 3  | 10 | ■     |   | 6 |    | ■             |
| 15                                             |          | 1 | 1 | 24 | 37 | 3  | ■     | 3 | 2 | 11 | ■ 1-5         |
| 17                                             |          | 1 | 1 | 27 | 11 | 10 | ■     |   | 2 | 3  | ■ 1-5         |
| 18                                             |          | 1 | 1 | 35 | 10 | 10 | ■     | 3 | 2 | 4  | ■ 1-6         |
| 19                                             | triode-1 | 1 | 1 | 20 | 23 | 3  | ■     |   | 2 | 3  | ■ 1-6         |
| "                                              | triode-2 | 1 | 1 | 20 | 23 | 3  | ■     |   | 5 | 4  | ■             |
| 20                                             |          | 1 | 1 | 29 | 13 | 5  | ■     |   | 2 | 3  | ■ 1-4         |
| 22                                             |          | 1 | 1 | 33 | 25 | 5  | ■     | 3 | 2 | 11 | ■ 1-4         |
| 24                                             |          | 1 | 1 | 26 | 25 | 4  | ■     | 3 | 2 | 11 | ■ 1-5         |
| 25A6                                           |          | 1 | 2 | 31 | 7  | 12 | ■     | 4 | 3 | 5  | ■ 2-7         |
| 25A7                                           | pent     | 1 | 2 | 28 | 9  | 12 | ■     | 4 | 3 | 5  | ■ 2-7         |
| "                                              | rect.    | 2 | 2 | 0  | 2  | 12 | ■     |   | 6 |    | ■             |
| 25AC5                                          |          | 1 | 2 | 25 | 16 | 12 | ■     |   | 3 | 5  | ■ 2-7         |
| 25B5                                           | input    | 1 | 1 | 36 | 9  | 12 | ■     |   | 3 | 4  | ■ 1-6         |
| "                                              | output   | 1 | 1 | 34 | 6  | 12 | ■     | 3 | 2 | 4  | ■             |
| 25B6                                           |          | 1 | 2 | 14 | 5  | 12 | ■     | 4 | 3 | 5  | ■ 2-7         |
| 25C6                                           |          | 1 | 2 | 14 | 6  | 12 | ■     | 4 | 3 | 5  | ■ 2-7         |
| 25D8                                           | triode   | 4 | 2 | 6  | 23 | 12 | ■     |   | 6 | 5  | ■ 2-7         |
| "                                              | pent     | 1 | 2 | 29 | 15 | 12 | ■     | 4 | 3 | 11 | ■             |
| "                                              | diode    | 3 | 2 | 0  | 26 | 12 | ■     |   | 8 |    | ■             |

| Tube                                         | Section  | A | B | C  | D  | E  | Lever |   |   |   | Fil. Cont. |   |       |
|----------------------------------------------|----------|---|---|----|----|----|-------|---|---|---|------------|---|-------|
|                                              |          |   |   |    |    |    | W     | X | Y | Z |            |   |       |
| 25F5                                         |          | 1 | 3 | 16 | 7  | 12 | ■     | 2 | 6 | 7 | 5          | ■ | 3-4   |
| (25F5—Must show short on 2-5)                |          |   |   |    |    |    |       |   |   |   |            |   |       |
| (25F5—Grid short test—depress 2-5 together)  |          |   |   |    |    |    |       |   |   |   |            |   |       |
| 25L6                                         |          | 1 | 2 | 10 | 6  | 12 | ■     |   | 4 | 3 | 5          | ■ | 2-7   |
| 25N6                                         | input    | 1 | 2 | 36 | 9  | 12 | ■     |   |   | 4 | 5          | ■ | 2-7   |
| "                                            | output   | 1 | 2 | 34 | 6  | 12 | ■     |   | 4 | 3 | 5          | ■ |       |
| 25X6                                         | plate-1  | 2 | 2 | 0  | 2  | 12 | ■     |   |   | 3 |            | ■ | 2-7   |
| "                                            | plate-2  | 2 | 2 | 0  | 2  | 12 | ■     |   |   | 5 |            | ■ |       |
| 25Y4                                         |          | 2 | 2 | 0  | 1  | 12 | ■     |   |   | 5 |            | ■ | 2-7   |
| 25Y5                                         | plate-1  | 2 | 1 | 0  | 4  | 12 | ■     |   |   | 5 |            | ■ | 1-6   |
| "                                            | plate-2  | 2 | 1 | 0  | 4  | 12 | ■     |   |   | 2 |            | ■ |       |
| 25Z3                                         |          | 2 | 1 | 0  | 1  | 12 | ■     |   |   | 2 |            | ■ | 1-4   |
| 25Z4                                         |          | 2 | 2 | 0  | 2  | 12 | ■     |   |   | 5 |            | ■ | 1-7   |
| 25Z5                                         | plate-1  | 2 | 1 | 0  | 2  | 12 | ■     |   |   | 5 |            | ■ | 1-6   |
| "                                            | plate-2  | 2 | 1 | 0  | 2  | 12 | ■     |   |   | 2 |            | ■ |       |
| 25Z6                                         | plate-1  | 2 | 2 | 0  | 2  | 12 | ■     |   |   | 5 |            | ■ | 2-7   |
| "                                            | plate-2  | 2 | 2 | 0  | 2  | 12 | ■     |   |   | 3 |            | ■ |       |
| 26                                           |          | 1 | 1 | 19 | 18 | 2  | ■     |   |   | 2 | 3          | ■ | 1-4   |
| 26A6                                         |          | 1 | 3 | 24 | 18 | 12 | ■     |   | 6 | 5 | 1          | ■ | 3-4   |
| 26A7                                         | pent-1   | 2 | 6 | 15 | 4  | 12 | ■     |   | 5 | 8 | 1          | ■ | 6-7   |
| "                                            | pent-2   | 2 | 6 | 15 | 4  | 12 | ■     |   | 5 | 4 | 3          | ■ |       |
| 26C6                                         | triode   | 1 | 3 | 18 | 15 | 12 | ■     |   |   | 7 | 1          | ■ | 3-4   |
| "                                            | diode-1  | 3 | 3 | 0  | 27 | 12 | ■     |   |   | 6 |            | ■ |       |
| "                                            | diode-2  | 3 | 3 | 0  | 27 | 12 | ■     |   |   | 5 |            | ■ |       |
| 26D6                                         | amp.     | 4 | 3 | 11 | 28 | 12 | ■     |   | 6 | 5 | 7          | ■ | 3-4   |
| "                                            | osc.     | 1 | 3 | 24 | 9  | 12 | ■     |   |   | 6 | 1          | ■ |       |
| 26E6                                         |          | 1 | 2 | 13 | 7  | 12 | ■     |   | 4 | 3 | 5          | ■ | 2-7   |
| 26Z5                                         | plate-1  | 2 | 9 | 0  | 4  | 10 | ■     |   |   | 6 |            | ■ | 4-5-9 |
| "                                            | plate-2  | 2 | 9 | 0  | 4  | 10 | ■     |   |   | 1 |            | ■ |       |
| 27                                           |          | 1 | 1 | 17 | 17 | 4  | ■     |   |   | 2 | 3          | ■ | 1-5   |
| 28D7                                         | sect-1   | 2 | 1 | 33 | 5  | 12 | ■     |   | 3 | 5 | 7          | ■ | 1-8   |
| "                                            | sect-2   | 2 | 1 | 33 | 5  | 12 | ■     |   | 3 | 4 | 2          | ■ |       |
| 28Z5                                         | plate-1  | 2 | 4 | 0  | 6  | 10 | ■     |   |   | 6 |            | ■ | 1-4-8 |
| "                                            | plate-2  | 2 | 4 | 0  | 6  | 10 | ■     |   |   | 3 |            | ■ |       |
| 30                                           |          | 1 | 1 | 17 | 23 | 3  | ■     |   |   | 2 | 3          | ■ | 1-4   |
| 31                                           |          | 1 | 1 | 31 | 8  | 3  | ■     |   |   | 2 | 3          | ■ | 1-4   |
| 32                                           |          | 1 | 1 | 20 | 35 | 3  | ■     |   | 3 | 2 | 11         | ■ | 1-4   |
| 32L7                                         | amp.     | 1 | 2 | 16 | 8  | 13 | ■     |   | 4 | 3 | 5          | ■ | 2-7   |
| "                                            | rect.    | 2 | 2 | 0  | 2  | 13 | ■     |   |   | 6 |            | ■ |       |
| 33                                           |          | 1 | 1 | 32 | 11 | 3  | ■     |   | 4 | 2 | 3          | ■ | 1-5   |
| RK-33                                        | triode 1 | 1 | 1 | 29 | 9  | 7  | ■     |   |   | 3 | 11         | ■ | 1-7   |
| "                                            | triode-2 | 1 | 1 | 29 | 9  | 7  | ■     |   |   | 5 | 4          | ■ |       |
| 34                                           |          | 1 | 1 | 34 | 23 | 3  | ■     |   | 3 | 2 | 11         | ■ | 1-4   |
| 35/51                                        |          | 1 | 1 | 35 | 15 | 4  | ■     |   | 3 | 2 | 11         | ■ | 1-5   |
| 35Z6                                         | plate-1  | 2 | 2 | 0  | 0  | 13 | ■     |   |   | 3 |            | ■ | 2-7   |
| "                                            | plate-2  | 2 | 2 | 0  | 0  | 13 | ■     |   |   | 5 |            | ■ |       |
| 36                                           |          | 1 | 1 | 30 | 20 | 7  | ■     |   | 3 | 2 | 11         | ■ | 1-5   |
| 37                                           |          | 1 | 1 | 27 | 11 | 7  | ■     |   |   | 2 | 3          | ■ | 1-5   |
| 38                                           |          | 1 | 1 | 38 | 12 | 7  | ■     |   | 3 | 2 | 11         | ■ | 1-5   |
| 39/44                                        |          | 1 | 1 | 35 | 17 | 7  | ■     |   | 3 | 2 | 11         | ■ | 1-5   |
| 40                                           |          | 1 | 1 | 14 | 41 | 6  | ■     |   |   | 2 | 3          | ■ | 1-4   |
| 41                                           |          | 1 | 1 | 31 | 11 | 7  | ■     |   | 3 | 2 | 4          | ■ | 1-6   |
| 42                                           |          | 1 | 1 | 32 | 11 | 7  | ■     |   | 3 | 2 | 4          | ■ | 1-6   |
| 43                                           |          | 1 | 1 | 31 | 7  | 12 | ■     |   | 3 | 2 | 4          | ■ | 1-6   |
| 45                                           |          | 1 | 1 | 35 | 6  | 4  | ■     |   |   | 2 | 3          | ■ | 1-4   |
| 45Z3                                         |          | 2 | 1 | 0  | 2  | 14 | ■     | 6 |   | 2 |            | ■ | 1-7   |
| (45Z3—Must show short on 2-6)                |          |   |   |    |    |    |       |   |   |   |            |   |       |
| (45Z3—Plate short test—depress 2-6 together) |          |   |   |    |    |    |       |   |   |   |            |   |       |
| (45Z3—Fil. cont. set control "E" at 12)      |          |   |   |    |    |    |       |   |   |   |            |   |       |
| 45Z5                                         |          | 2 | 7 | 0  | 1  | 14 | ■     | 3 |   | 5 |            | ■ | 2-3-7 |
| (45Z5—Fil. Cont.—Set Control "E" at 12)      |          |   |   |    |    |    |       |   |   |   |            |   |       |

| Tube | Section | A | B | C  | D  | E  | Lever |   |   |   | Fil.<br>Cont. |       |
|------|---------|---|---|----|----|----|-------|---|---|---|---------------|-------|
|      |         |   |   |    |    |    | W     | X | Y | Z |               |       |
| 46   |         | 1 | 1 | 31 | 8  | 4  | ■     | 4 | 2 | 3 | ■             | 1-5   |
| 47   |         | 1 | 1 | 37 | 8  | 4  | ■     | 4 | 2 | 3 | ■             | 1-5   |
| 48   |         | 1 | 1 | 28 | 4  | 13 | ■     | 3 | 2 | 4 | ■             | 1-6   |
| 49   |         | 1 | 1 | 30 | 12 | 3  | ■     | 4 | 2 | 3 | ■             | 1-5   |
| 50   |         | 1 | 1 | 40 | 6  | 8  | ■     |   | 2 | 3 | ■             | 1-4   |
| 50Z7 | plate-1 | 2 | 2 | 0  | 2  | 14 | ■     | 6 | 3 |   | ■             | 2-6-7 |
| "    | plate-2 | 2 | 2 | 0  | 2  | 14 | ■     | 6 | 5 |   | ■             |       |

(50Z7—Fil. Cont.—Set Control "E" at 12)

|       |          |   |   |    |    |    |   |  |   |    |    |         |
|-------|----------|---|---|----|----|----|---|--|---|----|----|---------|
| 53    | triode-1 | 1 | 1 | 36 | 7  | 4  | ■ |  |   | 2  | 3  | ■ 1-7   |
| "     | triode-2 | 1 | 1 | 36 | 7  | 4  | ■ |  |   | 6  | 5  | ■       |
| 55    | triode   | 1 | 1 | 29 | 12 | 4  | ■ |  |   | 2  | 11 | ■ 1-6   |
| "     | diode-1  | 3 | 1 | 0  | 26 | 4  | ■ |  |   | 3  |    | ■       |
| "     | diode-2  | 3 | 1 | 0  | 26 | 4  | ■ |  |   | 4  |    | ■       |
| 56    |          | 1 | 1 | 15 | 17 | 4  | ■ |  |   | 2  | 3  | ■ 1-5   |
| 56A   |          | 1 | 1 | 15 | 16 | 7  | ■ |  |   | 2  | 3  | ■ 1-5   |
| 57    |          | 1 | 1 | 28 | 20 | 4  | ■ |  | 3 | 2  | 11 | ■ 1-6   |
| 57A   |          | 1 | 1 | 28 | 20 | 7  | ■ |  | 3 | 2  | 11 | ■ 1-6   |
| 58    |          | 1 | 1 | 28 | 20 | 4  | ■ |  | 3 | 2  | 11 | ■ 1-6   |
| 58A   |          | 1 | 1 | 28 | 20 | 7  | ■ |  | 3 | 2  | 11 | ■ 1-6   |
| 59    |          | 1 | 1 | 31 | 7  | 4  | ■ |  | 3 | 2  | 4  | ■ 1-7   |
| RK-61 |          | 5 | 2 | 0  | 13 | 2  | ■ |  |   | 1  | 3  | ■ 2-4   |
| KT-66 |          | 1 | 2 | 14 | 9  | 7  | ■ |  | 4 | 3  | 5  | ■ 2-7   |
| HY-69 |          | 6 | 1 | 40 | 6  | 7  | ■ |  | 2 | 11 | 3  | ■ 1-5   |
| 70A7  | amp.     | 1 | 2 | 20 | 6  | 15 | ■ |  | 4 | 3  | 5  | ■ 2-6-7 |
| "     | *rect.   | 2 | 2 | 0  | 0  | 15 | ■ |  |   | 6  |    | ■       |

\*(70A7—Rect Test—See instructions)

(70A7—Fil. Cont.—Set Control "E" at 12)

|      |       |   |   |    |   |    |   |  |   |   |   |       |
|------|-------|---|---|----|---|----|---|--|---|---|---|-------|
| 70L7 | amp.  | 1 | 2 | 19 | 6 | 15 | ■ |  | 4 | 3 | 5 | ■ 2-7 |
| "    | rect. | 2 | 2 | 0  | 1 | 15 | ■ |  |   | 8 |   | ■     |

(70L7—Fil. cont.—set control "E" at 12)

|       |         |   |   |    |    |   |   |  |  |    |    |       |
|-------|---------|---|---|----|----|---|---|--|--|----|----|-------|
| 71    |         | 1 | 1 | 37 | 5  | 6 | ■ |  |  | 2  | 3  | ■ 1-4 |
| 75    | triode  | 1 | 1 | 12 | 40 | 7 | ■ |  |  | 2  | 11 | ■ 1-6 |
| "     | diode-1 | 3 | 1 | 0  | 27 | 7 | ■ |  |  | 3  |    | ■     |
| "     | diode-2 | 3 | 1 | 0  | 27 | 7 | ■ |  |  | 4  |    | ■     |
| HY-75 |         | 7 | 2 | 36 | 7  | 7 | ■ |  |  | 12 | 11 | ■ 2-7 |

(HY-75 Red grid cap connects to right hand side of tube, when plugged in)

|      |          |   |   |    |    |   |   |  |   |   |    |       |
|------|----------|---|---|----|----|---|---|--|---|---|----|-------|
| 76   |          | 1 | 1 | 15 | 17 | 7 | ■ |  |   | 2 | 3  | ■ 1-5 |
| 77   |          | 1 | 1 | 12 | 39 | 7 | ■ |  | 3 | 2 | 11 | ■ 1-6 |
| 78   |          | 1 | 1 | 15 | 32 | 7 | ■ |  | 3 | 2 | 11 | ■ 1-6 |
| 79   | triode-1 | 1 | 1 | 33 | 9  | 7 | ■ |  |   | 2 | 3  | ■ 1-6 |
| "    | triode-2 | 1 | 1 | 33 | 9  | 7 | ■ |  |   | 5 | 11 | ■     |
| 80   | plate-1  | 2 | 1 | 0  | 8  | 6 | ■ |  |   | 2 |    | ■ 1-4 |
| "    | plate-2  | 2 | 1 | 0  | 8  | 6 | ■ |  |   | 3 |    | ■     |
| 81   |          | 2 | 1 | 0  | 13 | 8 | ■ |  |   | 2 |    | ■ 1-4 |
| 82   | plate-1  | 2 | 1 | 0  | 2  | 4 | ■ |  |   | 2 |    | ■ 1-4 |
| "    | plate-2  | 2 | 1 | 0  | 2  | 4 | ■ |  |   | 3 |    | ■     |
| 83   | plate-1  | 2 | 1 | 0  | 2  | 6 | ■ |  |   | 2 |    | ■ 1-4 |
| "    | plate-2  | 2 | 1 | 0  | 2  | 6 | ■ |  |   | 3 |    | ■     |
| 84   | plate-1  | 2 | 1 | 0  | 4  | 7 | ■ |  |   | 2 |    | ■ 1-5 |
| "    | plate-2  | 2 | 1 | 0  | 4  | 7 | ■ |  |   | 3 |    | ■     |
| G-84 |          | 2 | 1 | 0  | 11 | 4 | ■ |  |   | 2 |    | ■ 1-4 |
| 85   | triode   | 1 | 1 | 29 | 12 | 7 | ■ |  |   | 2 | 11 | ■ 1-6 |
| "    | diode-1  | 3 | 1 | 0  | 26 | 7 | ■ |  |   | 3 |    | ■     |
| "    | diode-2  | 3 | 1 | 0  | 26 | 7 | ■ |  |   | 4 |    | ■     |
| 89   |          | 1 | 1 | 33 | 10 | 7 | ■ |  | 3 | 2 | 11 | ■ 1-6 |
| 99   |          | 1 | 1 | 27 | 20 | 5 | ■ |  |   | 2 | 3  | ■ 1-4 |
| 101F |          | 1 | 1 | 29 | 11 | 6 | ■ |  |   | 2 | 3  | ■ 1-4 |

(101F—Test with pin facing top of panel)

| Tube                                                   | Section | A     | B | C  | D  | E  | Lever |    |    |    | Fil. Cont. |     |
|--------------------------------------------------------|---------|-------|---|----|----|----|-------|----|----|----|------------|-----|
|                                                        |         |       |   |    |    |    | W     | X  | Y  | Z  |            |     |
| 117L7                                                  | amp.    | 1     | 2 | 25 | 7  | 17 | ■     | 5  | 3  | 4  | ■          | 2-7 |
| 117M7                                                  |         | rect. | 2 | 2  | 0  | 2  | 17    | ■  | 6  |    |            | ■   |
| (117L7-M7—Fil. cont.—set control "E" at 12)            |         |       |   |    |    |    |       |    |    |    |            |     |
| 117N7                                                  | amp.    | 1     | 2 | 12 | 7  | 17 | ■     | 5  | 3  | 4  | ■          | 2-7 |
| "                                                      | rect.   | 2     | 2 | 0  | 0  | 17 | ■     | *2 | *7 |    | ■          |     |
| *(117N7—Rect. test—see instructions)                   |         |       |   |    |    |    |       |    |    |    |            |     |
| (117N7—Fil. cont.—set control "E" at 12)               |         |       |   |    |    |    |       |    |    |    |            |     |
| 117P7                                                  | amp.    | 1     | 2 | 25 | 7  | 17 | ■     | 5  | 3  | 4  | ■          | 2-7 |
| "                                                      | rect.   | 2     | 2 | 0  | 0  | 17 | ■     |    | 7  |    | ■          |     |
| (117P7—Fil. cont.—set control "E" at 12)               |         |       |   |    |    |    |       |    |    |    |            |     |
| (117P7—Rect. test—see instructions)                    |         |       |   |    |    |    |       |    |    |    |            |     |
| 117Z3                                                  |         | 2     | 3 | 0  | 1  | 17 | ■     | 1  | 5  |    | ■          | 3-4 |
| (117Z3—Fil. cont.—set control "E" at 12)               |         |       |   |    |    |    |       |    |    |    |            |     |
| (117Z3—May show short on 1-5)                          |         |       |   |    |    |    |       |    |    |    |            |     |
| 117Z4                                                  |         | 2     | 2 | 0  | 1  | 17 | ■     |    | 5  |    | ■          | 2-7 |
| (117Z4—Fil. cont.—set control "E" at 12)               |         |       |   |    |    |    |       |    |    |    |            |     |
| 117Z6                                                  | plate-1 | 2     | 2 | 0  | 1  | 17 | ■     |    | 3  |    | ■          | 2-7 |
| "                                                      | plate-2 | 2     | 2 | 0  | 1  | 17 | ■     |    | 5  |    | ■          |     |
| (117Z6—Fil. cont.—set control "E" at 12)               |         |       |   |    |    |    |       |    |    |    |            |     |
| 182-482A                                               |         | 1     | 1 | 37 | 5  | 6  | ■     |    | 2  | 3  | ■          | 1-4 |
| 182B-482B                                              |         | 1     | 1 | 33 | 6  | 6  | ■     |    | 2  | 3  | ■          | 1-4 |
| 183-483                                                |         | 1     | 1 | 35 | 5  | 6  | ■     |    | 2  | 3  | ■          | 1-4 |
| 205D                                                   |         | 1     | 1 | 32 | 10 | 6  | ■     |    | 2  | 3  | ■          | 1-4 |
| (205D—Test with bayonet pin towards upper left corner) |         |       |   |    |    |    |       |    |    |    |            |     |
| 247A                                                   |         | 1     | 1 | 17 | 25 | 3  | ■     |    | 2  | 3  | ■          | 1-5 |
| 262B                                                   |         | 1     | 1 | 21 | 20 | 9  | ■     |    | 2  | 11 | ■          | 1-4 |
| 264C                                                   |         | 1     | 1 | 26 | 18 | 2  | ■     |    | 2  | 3  | ■          | 1-4 |
| 271A                                                   |         | 1     | 1 | 32 | 7  | 6  | ■     |    | 2  | 3  | ■          | 1-5 |
| 272A                                                   |         | 1     | 1 | 30 | 11 | 9  | ■     |    | 2  | 3  | ■          | 1-5 |
| 274A                                                   | plate-1 | 2     | 1 | 0  | 7  | 6  | ■     |    | 2  |    | ■          | 1-4 |
| "                                                      | plate-2 | 2     | 1 | 0  | 7  | 6  | ■     |    | 3  |    | ■          |     |
| 300B                                                   |         | 1     | 1 | 40 | 4  | 6  | ■     |    | 2  | 3  | ■          | 1-4 |
| 307A                                                   |         | 1     | 1 | 17 | 15 | 6  | ■     | 2  | 11 | 3  | ■          | 1-5 |
| 310A                                                   |         | 1     | 1 | 30 | 15 | 9  | ■     | 3  | 2  | 11 | ■          | 1-6 |
| 313C                                                   |         | 1     | 5 | 0  | 13 | 8  | ■     |    | 2  |    | ■          |     |
| (313C—May show short on 1-4)                           |         |       |   |    |    |    |       |    |    |    |            |     |
| 328A                                                   |         | 1     | 1 | 30 | 15 | 8  | ■     | 3  | 2  | 11 | ■          | 1-6 |
| 329A                                                   |         | 1     | 1 | 16 | 11 | 8  | ■     | 3  | 2  | 11 | ■          | 1-5 |
| 331B                                                   |         | 2     | 1 | 23 | 10 | 9  | ■     | 3  | 2  | 11 | ■          | 1-5 |
| 336A                                                   |         | 1     | 1 | 27 | 9  | 9  | ■     | 3  | 2  | 4  | ■          | 1-6 |
| 345A                                                   | plate-1 | 2     | 1 | 0  | 6  | 7  | ■     |    | 2  |    | ■          | 1-5 |
| "                                                      | plate-2 | 2     | 1 | 0  | 6  | 7  | ■     |    | 3  |    | ■          |     |
| 347A                                                   |         | 1     | 2 | 16 | 23 | 7  | ■     |    | 4  | 11 | ■          | 2-7 |
| 348A                                                   |         | 1     | 2 | 27 | 17 | 7  | ■     | 4  | 3  | 11 | ■          | 2-7 |
| 349A                                                   |         | 1     | 2 | 25 | 10 | 7  | ■     | 4  | 3  | 5  | ■          | 2-7 |
| 350A                                                   |         | 7     | 1 | 18 | 7  | 7  | ■     | 2  | 11 | 3  | ■          | 1-5 |
| 350B                                                   |         | 7     | 2 | 18 | 7  | 7  | ■     | 4  | 3  | 5  | ■          | 2-7 |
| 351A                                                   | plate-1 | 1     | 2 | 0  | 5  | 7  | ■     |    | 3  |    | ■          | 2-7 |
| "                                                      | plate-2 | 1     | 2 | 0  | 5  | 7  | ■     |    | 5  |    | ■          |     |
| 352A                                                   | triode  | 1     | 1 | 17 | 24 | 9  | ■     |    | 2  | 11 | ■          | 1-6 |
| "                                                      | diode-1 | 3     | 1 | 0  | 23 | 9  | ■     |    | 3  |    | ■          |     |
| "                                                      | diode-2 | 3     | 1 | 0  | 23 | 9  | ■     |    | 4  |    | ■          |     |
| TS 383                                                 |         | 1     | 4 | 0  | 15 | 7  | ■     |    | 1  |    | ■          | 3-4 |

| Tube                                                                    | Section  |   |   |    |    |    | Lever |       |    |   | Fil. Cont. |
|-------------------------------------------------------------------------|----------|---|---|----|----|----|-------|-------|----|---|------------|
|                                                                         |          | A | B | C  | D  | E  | W     | X     | Y  | Z |            |
| 398A                                                                    |          | 1 | 2 | 20 | 7  | 7  | ■     | 6     | 8  | 4 | ■ 2-7      |
| 401A                                                                    |          | 1 | 3 | 23 | 13 | 7  | ■     | 6     | 5  | 1 | ■ 3-4      |
| (401A—Must show short on 2-7)                                           |          |   |   |    |    |    |       |       |    |   |            |
| (401A—Cathode short test—Depress 2-7 together)                          |          |   |   |    |    |    |       |       |    |   |            |
| 407A                                                                    | triode-1 | 1 | 5 | 8  | 15 | 11 | ■     |       | 4  | 3 | ■ 1-5-9    |
| "                                                                       | triode-2 | 1 | 5 | 8  | 15 | 11 | ■     |       | 6  | 7 | ■          |
| 408A                                                                    |          | 1 | 3 | 10 | 24 | 11 | ■     | 6     | 5  | 1 | ■ 3-4      |
| (408A—Must show short on 2-7)                                           |          |   |   |    |    |    |       |       |    |   |            |
| (408A—Cathode short test—Depress 2-7 together)                          |          |   |   |    |    |    |       |       |    |   |            |
| 412A                                                                    | plate-1  | 5 | 4 | 0  | 7  | 7  | ■     |       | 9  |   | ■ 4-5      |
| "                                                                       | plate-2  | 5 | 4 | 0  | 7  | 7  | ■     |       | 1  |   | ■          |
| 417A                                                                    |          | 1 | 3 | 14 | 7  | 7  | ■     | 5-7-8 | 1  | 4 | ■ 3-9      |
| (417A—Must short short on 4-5-7-8)                                      |          |   |   |    |    |    |       |       |    |   |            |
| (417A—Grid short test—Depress 4-5-7-8 together)                         |          |   |   |    |    |    |       |       |    |   |            |
| 484-485                                                                 |          | 1 | 1 | 17 | 17 | 5  | ■     |       | 2  | 3 | ■ 1-5      |
| CK-501-AX                                                               |          | 5 | 3 | 8  | 37 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| 502A                                                                    |          | 7 | 2 | 0  | 3  | 7  | ■     |       | 3  | 5 | ■ 2-7      |
| CK-502-AX                                                               |          | 5 | 3 | 5  | 36 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-503-AX                                                               |          | 5 | 3 | 5  | 38 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-505-AX                                                               |          | 5 | 3 | 10 | 43 | 1  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-506-AX                                                               |          | 5 | 3 | 12 | 17 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-507-AX                                                               |          | 5 | 3 | 10 | 25 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-511-X                                                                |          | 5 | 3 | 13 | 48 | 2  | ■     | 2     | 1  | 4 | ■ 3-6      |
| CK-512-AX                                                               |          | 3 | 3 | 7  | 50 | 1  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-520-AX                                                               |          | 5 | 3 | 10 | 48 | 1  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-521-AX                                                               |          | 5 | 3 | 19 | 13 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-522-AX                                                               |          | 5 | 3 | 7  | 29 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-527-AX                                                               |          | 3 | 3 | 17 | 34 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-532-DX                                                               |          | 3 | 3 | 6  | 33 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-536-AX                                                               |          | 3 | 3 | 6  | 33 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-542-DX                                                               |          | 3 | 3 | 8  | 29 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-553-AXA                                                              |          | 5 | 3 | 5  | 29 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-556-AX                                                               |          | 5 | 2 | 20 | 11 | 2  | ■     |       | 1  | 3 | ■ 2-4      |
| CK-568-AX                                                               |          | 5 | 2 | 10 | 24 | 2  | ■     |       | 1  | 3 | ■ 2-4      |
| CK-569-AX                                                               |          | 5 | 3 | 19 | 20 | 2  | ■     | 2     | 1  | 4 | ■ 3-5      |
| CK-573-AX                                                               |          | 5 | 2 | 10 | 14 | 2  | ■     |       | 1  | 3 | ■ 2-4      |
| 585-586                                                                 |          | 1 | 1 | 37 | 6  | 8  | ■     |       | 2  | 3 | ■ 1-4      |
| CX-605-CX                                                               |          | 2 | 3 | 15 | 22 | 7  | ■     | 2     | 1  | 7 | ■ 3-4      |
| CK-606-BX                                                               |          | 3 | 2 | 0  | 16 | 7  | ■     |       | 1  |   | ■ 2-3      |
| CK-608-CX                                                               |          | 1 | 3 | 22 | 8  | 7  | ■     |       | 1  | 5 | ■ 3-4      |
| CK-619-CX                                                               |          | 5 | 2 | 11 | 15 | 7  | ■     |       | 1  | 4 | ■ 2-3      |
| 717A                                                                    |          | 1 | 2 | 5  | 30 | 7  | ■     | 6     | 8  | 4 | ■ 2-7      |
| (717A—Must show short on 3-5)                                           |          |   |   |    |    |    |       |       |    |   |            |
| (717A—Cathode short test—Depress 3-5 together)                          |          |   |   |    |    |    |       |       |    |   |            |
| 801                                                                     |          | 1 | 1 | 30 | 10 | 8  | ■     |       | 2  | 3 | ■ 1-4      |
| 802                                                                     |          | 6 | 1 | 34 | 8  | 7  | ■     | 3     | 11 | 4 | ■ 1-7      |
| 807                                                                     |          | 1 | 1 | 27 | 11 | 7  | ■     | 2     | 11 | 3 | ■ 1-5      |
| 809                                                                     |          | 1 | 1 | 15 | 30 | 7  | ■     |       | 11 | 3 | ■ 1-4      |
| 811A                                                                    |          | 1 | 1 | 38 | 7  | 7  | ■     |       | 11 | 3 | ■ 1-4      |
| 812                                                                     |          | 6 | 1 | 25 | 10 | 7  | ■     |       | 11 | 3 | ■ 1-4      |
| 815                                                                     | sect-1   | 7 | 5 | 15 | 10 | 7  | ■     | 4     | 11 | 7 | ■ 1-5-8    |
| "                                                                       | sect-2   | 7 | 5 | 15 | 10 | 7  | ■     | 4     | 12 | 2 | ■          |
| (815—Red grid cap connects to right hand side of tube, when plugged in) |          |   |   |    |    |    |       |       |    |   |            |
| (815—Must show short on 3-6)                                            |          |   |   |    |    |    |       |       |    |   |            |
| 816                                                                     |          | 2 | 1 | 0  | 1  | 4  | ■     |       | 11 |   | ■ 1-4      |
| 837                                                                     |          | 1 | 1 | 28 | 10 | 10 | ■     | 3     | 11 | 4 | ■ 1-7      |
| 841                                                                     |          | 6 | 1 | 44 | 6  | 8  | ■     |       | 2  | 3 | ■ 1-4      |

| Tube    | Section | A | B | C  | D  | E | Lever |   |   |    | Fil.<br>Cont. |   |       |
|---------|---------|---|---|----|----|---|-------|---|---|----|---------------|---|-------|
|         |         |   |   |    |    |   | W     | X | Y | Z  |               |   |       |
| 842     |         | 6 | 1 | 37 | 4  | 8 | ■     |   |   | 2  | 3             | ■ | 1-4   |
| 843     |         | 1 | 1 | 30 | 10 | 4 | ■     |   |   | 2  | 3             | ■ | 1-5   |
| 864     |         | 1 | 1 | 27 | 18 | 2 | ■     |   |   | 2  | 3             | ■ | 1-4   |
| 866JR   |         | 7 | 1 | 0  | 4  | 4 | ■     |   |   | 2  |               | ■ | 1-4   |
| 884     |         | 1 | 2 | 0  | 4  | 7 | ■     |   |   | 3  |               | ■ | 2-7   |
| 885     |         | 1 | 1 | 0  | 4  | 4 | ■     |   |   | 2  |               | ■ | 1-5   |
| 932     |         | 4 | 1 | 20 | 10 | 3 | ■     |   | 3 | 2  | 11            | ■ | 1-4   |
| 950     |         | 1 | 1 | 37 | 11 | 3 | ■     |   | 4 | 2  | 3             | ■ | 1-5   |
| 954     |         | 1 | 1 | 13 | 34 | 7 | ■     |   | 2 | 11 | 6             | ■ | 1-4   |
| 955     |         | 1 | 1 | 25 | 13 | 7 | ■     |   |   | 2  | 3             | ■ | 1-4   |
| 956     |         | 1 | 1 | 31 | 15 | 7 | ■     |   | 2 | 11 | 6             | ■ | 1-4   |
| 957     |         | 1 | 1 | 24 | 22 | 2 | ■     | 5 |   | 2  | 3             | ■ | 1-4-5 |
| 958     |         | 1 | 1 | 27 | 10 | 2 | ■     | 5 |   | 2  | 3             | ■ | 1-4-5 |
| 959     |         | 1 | 1 | 23 | 35 | 2 | ■     | 5 | 2 | 11 | 6             | ■ | 1-4-5 |
| FM-1000 | amp.    | 4 | 1 | 5  | 24 | 7 | ■     |   | 5 | 4  | 2             | ■ | 1-8   |
| "       | osc.    | 1 | 1 | 15 | 8  | 7 | ■     |   |   | 5  | 2             | ■ |       |
| 1005    | plate-1 | 7 | 6 | 0  | 4  | 7 | ■     |   |   | 3  |               | ■ | 6-8   |
| "       | plate-2 | 7 | 6 | 0  | 4  | 7 | ■     |   |   | 5  |               | ■ |       |
| CK-1013 |         | 7 | 8 | 0  | 9  | 1 | ■     |   |   | 11 |               | ■ |       |

(CK-1013—Must show short on 1-2-6-7)

(CK-1013—May show short on 3-5)

(CK-1013—Cathode short test—Depress 1-2-6-7 together)

1201..... 1.. 2.. 36.. 7.. 7 ■ 3-5..... 7.... 1 ■ 2-8

(1201—Plate short test—Depress 3-7 TOGETHER)

(1201—Grid short test—Depress 1-5 TOGETHER)

(1201—Cathode short test—Depress 4-6 TOGETHER)

(1201—Must show short on 1-3-4-5-6-7 INDIVIDUALLY)

|         |        |   |   |    |    |    |   |  |   |    |    |         |
|---------|--------|---|---|----|----|----|---|--|---|----|----|---------|
| 1203    |        | 3 | 1 | 0  | 21 | 7  | ■ |  |   | 4  |    | ■ 1-8   |
| 1206    | sect-1 | 1 | 1 | 27 | 14 | 7  | ■ |  | 3 | 7  | 5  | ■ 1-8   |
| "       | sect-2 | 1 | 1 | 27 | 14 | 7  | ■ |  | 3 | 2  | 4  | ■       |
| 1221    |        | 1 | 1 | 28 | 20 | 7  | ■ |  | 3 | 2  | 11 | ■ 1-6   |
| 1222-A  |        | 1 | 1 | 17 | 10 | 7  | ■ |  | 3 | 2  | 4  | ■ 1-6   |
| 1223    |        | 1 | 2 | 28 | 20 | 7  | ■ |  | 4 | 3  | 11 | ■ 2-7   |
| 1229    |        | 1 | 1 | 15 | 35 | 3  | ■ |  | 3 | 2  | 11 | ■ 1-4   |
| 1231    |        | 1 | 1 | 10 | 25 | 7  | ■ |  | 3 | 2  | 6  | ■ 1-8   |
| 1232    |        | 1 | 1 | 11 | 23 | 7  | ■ |  | 3 | 2  | 6  | ■ 1-8   |
| HY-1269 |        | 6 | 4 | 35 | 5  | 7  | ■ |  | 2 | 11 | 3  | ■ 1-4-5 |
| 1273    |        | 1 | 1 | 21 | 25 | 7  | ■ |  | 3 | 2  | 6  | ■ 1-8   |
| 1276    |        | 1 | 1 | 35 | 4  | 6  | ■ |  |   | 2  | 3  | ■ 1-4   |
| 1280    |        | 1 | 1 | 21 | 25 | 10 | ■ |  | 3 | 2  | 6  | ■ 1-8   |
| 1282    |        | 1 | 1 | 12 | 26 | 7  | ■ |  | 3 | 2  | 6  | ■ 1-8   |

(1282—Must show short on 4-7)

(1282—Cathode short test—Depress 4-7 together)

|      |          |   |   |    |    |    |   |  |   |   |    |         |
|------|----------|---|---|----|----|----|---|--|---|---|----|---------|
| 1284 |          | 1 | 1 | 20 | 22 | 10 | ■ |  | 3 | 2 | 6  | ■ 1-8   |
| 1291 | triode-1 | 1 | 4 | 17 | 18 | 2  | ■ |  |   | 2 | 3  | ■ 1-4-8 |
| "    | triode-2 | 1 | 4 | 17 | 18 | 2  | ■ |  |   | 7 | 6  | ■       |
| 1293 |          | 1 | 1 | 20 | 18 | 2  | ■ |  |   | 2 | 6  | ■ 1-8   |
| 1299 |          | 1 | 7 | 18 | 15 | 2  | ■ |  | 3 | 2 | 6  | ■ 1-7-8 |
| 1602 |          | 1 | 1 | 30 | 10 | 8  | ■ |  |   | 2 | 3  | ■ 1-4   |
| 1603 |          | 1 | 1 | 28 | 20 | 7  | ■ |  | 3 | 2 | 11 | ■ 1-6   |
| 1609 |          | 1 | 1 | 25 | 29 | 2  | ■ |  | 4 | 2 | 3  | ■ 1-5   |
| 1610 |          | 1 | 1 | 37 | 8  | 4  | ■ |  | 4 | 2 | 3  | ■ 1-5   |
| 1611 |          | 1 | 2 | 32 | 10 | 7  | ■ |  | 4 | 3 | 5  | ■ 2-7   |
| 1612 | amp.     | 4 | 2 | 10 | 29 | 7  | ■ |  | 4 | 3 | 5  | ■ 2-7   |
| "    | osc.     | 3 | 2 | 12 | 25 | 7  | ■ |  |   | 4 | 11 | ■       |
| 1613 |          | 1 | 2 | 32 | 10 | 7  | ■ |  | 4 | 3 | 5  | ■ 2-7   |
| 1614 |          | 1 | 2 | 24 | 9  | 7  | ■ |  | 4 | 3 | 5  | ■ 2-7   |
| 1619 |          | 6 | 2 | 38 | 5  | 4  | ■ |  | 4 | 3 | 5  | ■ 2-7   |
| 1620 |          | 1 | 2 | 15 | 35 | 7  | ■ |  | 4 | 3 | 11 | ■ 2-7   |
| 1621 |          | 1 | 2 | 32 | 10 | 7  | ■ |  | 4 | 3 | 5  | ■ 2-7   |

| Tube                                                  | Section                                                                                                                                                | A | B | C  | D  | E  | W | Lever |     |    |   | Fil. Cont. |       |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|----|----|----|---|-------|-----|----|---|------------|-------|
|                                                       |                                                                                                                                                        |   |   |    |    |    |   | X     | Y   | Z  |   |            |       |
| 1622                                                  |                                                                                                                                                        | 1 | 2 | 24 | 9  | 7  | ■ | 4     | 3   | 5  | ■ | 2-7        |       |
| 1624                                                  |                                                                                                                                                        | 6 | 1 | 35 | 6  | 4  | ■ | 2     | 11  | 3  | ■ | 1-5        |       |
| 1625                                                  |                                                                                                                                                        | 1 | 1 | 28 | 8  | 10 | ■ | 3     | 11  | 4  | ■ | 1-7        |       |
| 1626                                                  |                                                                                                                                                        | 1 | 2 | 30 | 6  | 10 | ■ |       | 3   | 5  | ■ | 2-7        |       |
| 1629                                                  | triode                                                                                                                                                 | 1 | 2 | 25 | 24 | 10 | ■ |       | 3   | 5  | ■ | 2-7        |       |
| "                                                     | eye                                                                                                                                                    | 1 | 2 | 0  | 0  | 10 | ■ |       | 3-4 |    | ■ |            |       |
| (1629—See instructions for Eye Test)                  |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |
| 1631                                                  |                                                                                                                                                        | 1 | 2 | 24 | 9  | 10 | ■ | 4     | 3   | 5  | ■ | 2-7        |       |
| 1632                                                  |                                                                                                                                                        | 1 | 2 | 10 | 6  | 10 | ■ | 4     | 3   | 5  | ■ | 2-7        |       |
| 1633                                                  | triode-1                                                                                                                                               | 1 | 7 | 15 | 16 | 12 | ■ |       | 5   | 4  | ■ | 7-8        |       |
| "                                                     | triode-2                                                                                                                                               | 1 | 7 | 15 | 16 | 12 | ■ |       | 2   | 1  | ■ |            |       |
| 1634                                                  | triode-1                                                                                                                                               | 1 | 7 | 24 | 27 | 10 | ■ |       | 2   | 3  | ■ | 7-8        |       |
| "                                                     | triode-2                                                                                                                                               | 1 | 7 | 24 | 27 | 10 | ■ |       | 5   | 4  | ■ |            |       |
| 1635                                                  | triode-1                                                                                                                                               | 1 | 2 | 30 | 16 | 7  | ■ |       | 6   | 5  | ■ | 2-7        |       |
| "                                                     | triode-2                                                                                                                                               | 1 | 2 | 30 | 16 | 7  | ■ |       | 3   | 4  | ■ |            |       |
| 1639                                                  | triode                                                                                                                                                 | 1 | 2 | 30 | 10 | 7  | ■ |       | 3   | 11 | ■ | 2-7        |       |
| "                                                     | diode-1                                                                                                                                                | 3 | 2 | 0  | 19 | 7  | ■ |       | 5   |    | ■ |            |       |
| "                                                     | diode-2                                                                                                                                                | 3 | 2 | 0  | 19 | 7  | ■ |       | 4   |    | ■ |            |       |
| 1644                                                  | pentode-1                                                                                                                                              | 1 | 6 | 30 | 13 | 10 | ■ | 5     | 4   | 3  | ■ | 6-7        |       |
| "                                                     | pentode-2                                                                                                                                              | 1 | 6 | 30 | 13 | 10 | ■ | 5     | 8   | 1  | ■ |            |       |
| 1650                                                  |                                                                                                                                                        | 1 | 1 | 25 | 13 | 7  | ■ |       | 2   | 3  | ■ | 1-4        |       |
| 1655                                                  | triode-1                                                                                                                                               | 1 | 7 | 19 | 27 | 7  | ■ |       | 5   | 4  | ■ | 7-8        |       |
| "                                                     | triode-2                                                                                                                                               | 1 | 7 | 19 | 27 | 7  | ■ |       | 2   | 3  | ■ |            |       |
| 1657                                                  |                                                                                                                                                        | 7 | 2 | 0  | 3  | 7  | ■ |       | 3   | 5  | ■ | 2-7        |       |
| (1657—Must show short on 1-4)                         |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |
| 1659                                                  | triode                                                                                                                                                 | 1 | 1 | 12 | 40 | 4  | ■ |       | 2   | 11 | ■ | 1-6        |       |
| "                                                     | diode-1                                                                                                                                                | 3 | 1 | 0  | 27 | 4  | ■ |       | 3   |    | ■ |            |       |
| "                                                     | diode-2                                                                                                                                                | 3 | 1 | 0  | 27 | 4  | ■ |       | 4   |    | ■ |            |       |
| 1662                                                  |                                                                                                                                                        | 1 | 5 | 26 | 12 | 2  | ■ | 6     | 3   | 2  | 4 | ■          | 1-5-7 |
| (1662—Must show short on 2-6)                         |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |
| (1662—Plate short test—Depress 2-6 together)          |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |
| 1665                                                  |                                                                                                                                                        | 7 | 2 | 0  | 3  | 7  | ■ |       | 3   | 5  | ■ | 2-7        |       |
| 1851                                                  |                                                                                                                                                        | 1 | 2 | 6  | 26 | 7  | ■ | 4     | 3   | 11 | ■ | 2-7        |       |
| 1852                                                  |                                                                                                                                                        | 1 | 2 | 6  | 26 | 7  | ■ | 6     | 8   | 4  | ■ | 2-7        |       |
| 1853                                                  |                                                                                                                                                        | 1 | 2 | 12 | 22 | 7  | ■ | 6     | 8   | 4  | ■ | 2-7        |       |
| 2050                                                  |                                                                                                                                                        | 7 | 2 | 0  | 3  | 7  | ■ |       | 3   | 5  | ■ | 2-7        |       |
| 2051                                                  |                                                                                                                                                        | 7 | 2 | 0  | 3  | 7  | ■ |       | 3   | 5  | ■ | 2-7        |       |
| 5516                                                  | (Caution—Levers 4-6 MUST be thrown to position "W" BEFORE inserting tube, and MUST remain in position "W" Throughout ALL TESTS, INCLUDING SHORT TESTS) |   |   |    |    |    |   |       |     |    |   |            |       |
| "                                                     |                                                                                                                                                        | 6 | 1 | 38 | 6  | 4  | ■ | 4-6   | 3   | 11 | 5 | ■          | 1-2-7 |
| CK-5517                                               |                                                                                                                                                        | 7 | 8 | 0  | 9  | 1  | ■ |       |     | 11 |   | ■          |       |
| (CK-5517—Must show short on 1-2-6-7)                  |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |
| (CK-5517—May show short on 3-5)                       |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |
| (CK-5517—Cathode short test—Depress 1-2-6-7 together) |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |
| 5590                                                  |                                                                                                                                                        | 1 | 3 | 23 | 13 | 7  | ■ | 6     | 5   | 1  | ■ | 3-4        |       |
| (5590—Must show short on 2-7)                         |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |
| (5590—Cathode short test—Depress 2-7 together)        |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |
| 5603                                                  |                                                                                                                                                        | 1 | 2 | 20 | 7  | 7  | ■ | 6     | 8   | 4  | ■ | 2-7        |       |
| CK-5608                                               | triode-1                                                                                                                                               | 1 | 7 | 28 | 11 | 4  | ■ |       | 6   | 5  | ■ | 1-7        |       |
| "                                                     | triode-2                                                                                                                                               | 1 | 7 | 28 | 11 | 4  | ■ |       | 2   | 3  | ■ |            |       |
| (CK-5608—May show short on 4)                         |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |
| 5610                                                  |                                                                                                                                                        | 1 | 3 | 28 | 7  | 7  | ■ | 1     |     | 5  | 6 | ■          | 3-4   |
| (5610—Must show short on 1-5)                         |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |
| (5610—Plate short test—Depress 1-5 together)          |                                                                                                                                                        |   |   |    |    |    |   |       |     |    |   |            |       |

| Tube | Section  | A                                                                                                           | B | C  | D  | E | Lever |    |   |   | Fil.<br>Cont. |
|------|----------|-------------------------------------------------------------------------------------------------------------|---|----|----|---|-------|----|---|---|---------------|
|      |          |                                                                                                             |   |    |    |   | W     | X  | Y | Z |               |
| 5618 |          | 1                                                                                                           | 5 | 17 | 8  | 4 | ■     | 3  | 2 | 6 | ■ 1-5-7       |
| 5636 |          | 5                                                                                                           | 3 | 10 | 30 | 7 | ■     | 7  | 5 | 1 | ■ 3-6         |
|      |          | (5636—Must show short on 2-8)                                                                               |   |    |    |   |       |    |   |   |               |
|      |          | (5636—Cathode short test—depress 2-8 together)                                                              |   |    |    |   |       |    |   |   |               |
| 5642 |          | 3                                                                                                           | 2 | 0  | 33 | 2 | ■     | 11 |   |   | ■ 1-2         |
|      |          | (5642—The 2 bottom leads of tube connect to octal socket—<br>Pins 1 & 2. Top lead connect to blk. grid cap) |   |    |    |   |       |    |   |   |               |
| 5654 |          | 1                                                                                                           | 3 | 22 | 16 | 7 | ■     | 6  | 5 | 1 | ■ 3-4         |
|      |          | (5654—Must show short on 2-7)                                                                               |   |    |    |   |       |    |   |   |               |
|      |          | (5654—Cathode short test—Depress 2-7 together)                                                              |   |    |    |   |       |    |   |   |               |
| 5663 |          | 1                                                                                                           | 3 | 0  | 5  | 7 | ■     |    | 7 | 1 | ■ 3-4         |
| 5670 | triode-1 | 1                                                                                                           | 1 | 27 | 10 | 7 | ■     |    | 6 | 7 | ■ 1-9         |
| "    | triode-2 | 1                                                                                                           | 1 | 27 | 10 | 7 | ■     |    | 4 | 3 | ■             |
| 5672 |          | 5                                                                                                           | 3 | 14 | 18 | 2 | ■     | 2  | 1 | 4 | ■ 3-5         |
| 5676 |          | 5                                                                                                           | 2 | 8  | 21 | 2 | ■     |    | 1 | 3 | ■ 2-4         |
| 5678 |          | 5                                                                                                           | 3 | 19 | 20 | 2 | ■     | 2  | 1 | 4 | ■ 3-5         |
| 5679 | diode-1  | 3                                                                                                           | 4 | 0  | 18 | 5 | ■     |    | 6 |   | ■ 1-4-8       |
| "    | diode-2  | 3                                                                                                           | 4 | 0  | 18 | 5 | ■     |    | 3 |   | ■             |
| 5686 |          | 1                                                                                                           | 4 | 23 | 14 | 7 | ■     | 6  | 9 | 7 | ■ 4-5         |
|      |          | (5686—Screen short test—Depress 6-9 together)                                                               |   |    |    |   |       |    |   |   |               |
|      |          | (5686—Cathode short test—Depress 1-3-8 together)                                                            |   |    |    |   |       |    |   |   |               |
|      |          | (5686—Must show short on 1-3-6-8-9)                                                                         |   |    |    |   |       |    |   |   |               |
| 5687 | triode-1 | 1                                                                                                           | 8 | 27 | 5  | 7 | ■     |    | 9 | 7 | ■ 4-5-8       |
| "    | triode-2 | 1                                                                                                           | 8 | 27 | 5  | 7 | ■     |    | 1 | 2 | ■             |
| 5691 | triode-1 | 1                                                                                                           | 7 | 15 | 30 | 7 | ■     |    | 2 | 1 | ■ 7-8         |
| "    | triode-2 | 1                                                                                                           | 7 | 15 | 30 | 7 | ■     |    | 5 | 4 | ■             |
| 5692 | triode-1 | 1                                                                                                           | 7 | 27 | 10 | 7 | ■     |    | 2 | 1 | ■ 7-8         |
| "    | triode-2 | 1                                                                                                           | 7 | 27 | 10 | 7 | ■     |    | 5 | 4 | ■             |
| 5693 |          | 1                                                                                                           | 2 | 27 | 18 | 7 | ■     | 6  | 8 | 4 | ■ 2-7         |
| 5694 | triode-1 | 1                                                                                                           | 2 | 28 | 12 | 7 | ■     |    | 3 | 4 | ■ 2-7         |
| "    | triode-2 | 1                                                                                                           | 2 | 28 | 12 | 7 | ■     |    | 6 | 5 | ■             |
| 5695 |          | 7                                                                                                           | 1 | 0  | 4  | 4 | ■     |    | 2 |   | ■ 1-4         |
| 5696 |          | 1                                                                                                           | 3 | 0  | 4  | 6 | ■     |    | 6 | 1 | ■ 3-4         |
|      |          | (5696—Must show short on 5-7)                                                                               |   |    |    |   |       |    |   |   |               |
|      |          | (5696—Screen short test—Depress 5-7 together)                                                               |   |    |    |   |       |    |   |   |               |
| 5702 |          | 2                                                                                                           | 3 | 15 | 22 | 7 | ■     | 2  | 1 | 7 | ■ 3-4         |
| 5703 |          | 1                                                                                                           | 3 | 22 | 8  | 7 | ■     |    | 1 | 5 | ■ 3-4         |
| 5718 |          | 1                                                                                                           | 3 | 16 | 9  | 7 | ■     |    | 8 | 1 | ■ 3-6         |
| 5719 |          | 5                                                                                                           | 3 | 12 | 15 | 7 | ■     |    | 8 | 1 | ■ 3-6         |
| 5725 |          | 1                                                                                                           | 3 | 11 | 32 | 7 | ■     | 6  | 5 | 1 | ■ 3-4         |
| 5726 | diode-1  | 3                                                                                                           | 3 | 0  | 17 | 7 | ■     |    | 7 |   | ■ 3-4         |
| "    | diode-2  | 3                                                                                                           | 3 | 0  | 17 | 7 | ■     |    | 2 |   | ■             |
| 5727 |          | 7                                                                                                           | 3 | 0  | 3  | 7 | ■     |    | 6 | 1 | ■ 3-4         |
|      |          | (5727—Must show short on 5-7)                                                                               |   |    |    |   |       |    |   |   |               |
|      |          | (5727—Screen short test—Depress 5-7 together)                                                               |   |    |    |   |       |    |   |   |               |
| 5744 |          | 1                                                                                                           | 2 | 7  | 28 | 7 | ■     |    | 1 | 4 | ■ 2-3         |
| 5749 |          | 1                                                                                                           | 3 | 28 | 15 | 7 | ■     | 6  | 5 | 1 | ■ 3-4         |
| 5750 | amp.     | 4                                                                                                           | 3 | 7  | 27 | 7 | ■     | 6  | 5 | 7 | ■ 3-4         |
| "    | osc.     | 1                                                                                                           | 3 | 21 | 9  | 7 | ■     |    | 6 | 1 | ■             |
| 5751 | triode-1 | 1                                                                                                           | 9 | 9  | 37 | 7 | ■     |    | 6 | 7 | ■ 4-5-9       |
| "    | triode-2 | 1                                                                                                           | 9 | 9  | 37 | 7 | ■     |    | 1 | 2 | ■             |
| 5763 |          | 1                                                                                                           | 4 | 27 | 10 | 7 | ■     | 8  | 6 | 1 | ■ 4-5         |
|      |          | (5763—Must show short on 8-9)                                                                               |   |    |    |   |       |    |   |   |               |
|      |          | (5763—Grid short test—Depress 8-9 together)                                                                 |   |    |    |   |       |    |   |   |               |
| 5784 |          | 5                                                                                                           | 3 | 5  | 27 | 7 | ■     | 2  | 1 | 7 | ■ 3-4         |
| 5812 |          | 1                                                                                                           | 7 | 20 | 10 | 5 | ■     | 6  | 5 | 1 | ■ 3-4-7       |

| Tube                                               | Section  | A | B | C  | D  | E  | Lever |       |   |    | Fil. Cont. |   |       |
|----------------------------------------------------|----------|---|---|----|----|----|-------|-------|---|----|------------|---|-------|
|                                                    |          |   |   |    |    |    | W     | X     | Y | Z  |            |   |       |
| 5814                                               | triode-1 | 1 | 9 | 27 | 10 | 7  | ■     |       |   | 1  | 2          | ■ | 4-5-9 |
| "                                                  | triode-2 | 1 | 9 | 27 | 10 | 7  | ■     |       |   | 6  | 7          | ■ |       |
| 5823                                               |          | 7 | 1 | 0  | 0  | 18 | ■     |       |   | 1  |            | ■ |       |
| (5823—Must show short on 3-7)                      |          |   |   |    |    |    |       |       |   |    |            |   |       |
| 5824                                               |          | 1 | 2 | 14 | 5  | 12 | ■     |       | 4 | 3  | 5          | ■ | 2-7   |
| CK-5829                                            | diode-1  | 3 | 3 | 0  | 17 | 7  | ■     |       |   | 6  |            | ■ | 3-5   |
| "                                                  | diode-2  | 3 | 3 | 0  | 17 | 7  | ■     |       |   | 1  |            | ■ |       |
| 5840                                               |          | 1 | 3 | 10 | 25 | 7  | ■     |       | 7 | 5  | 1          | ■ | 3-6   |
| (5840—Must show short on 2-4-8)                    |          |   |   |    |    |    |       |       |   |    |            |   |       |
| (5840—Cathode short test—Depress 2-4-8 together)   |          |   |   |    |    |    |       |       |   |    |            |   |       |
| 5842                                               |          | 1 | 3 | 14 | 7  | 7  | ■     | 5-7-8 |   | 1  | 4          | ■ | 3-9   |
| (5842—Must show short on 4-5-7-8)                  |          |   |   |    |    |    |       |       |   |    |            |   |       |
| (5842—Grid short test—Depress 4-5-7-8 together)    |          |   |   |    |    |    |       |       |   |    |            |   |       |
| 5847                                               |          | 1 | 3 | 16 | 10 | 7  | ■     |       | 8 | 6  | 1          | ■ | 3-9   |
| CK-5854                                            |          | 3 | 3 | 11 | 29 | 2  | ■     |       | 1 | 2  | 4          | ■ | 3-5   |
| 5879                                               |          | 1 | 4 | 20 | 35 | 7  | ■     |       | 7 | 8  | 1          | ■ | 4-5   |
| 5881                                               |          | 1 | 2 | 21 | 9  | 7  | ■     |       | 4 | 3  | 5          | ■ | 2-7   |
| 5899                                               |          | 5 | 3 | 8  | 14 | 7  | ■     |       | 7 | 5  | 1          | ■ | 3-6   |
| (5899—Must show short on 2-4-8)                    |          |   |   |    |    |    |       |       |   |    |            |   |       |
| (5899—Cathode short test—Depress 2-4-8 together)   |          |   |   |    |    |    |       |       |   |    |            |   |       |
| 5902A                                              |          | 5 | 3 | 11 | 9  | 7  | ■     |       | 7 | 5  | 1          | ■ | 3-6   |
| (5902A—Must show short on 2-4-8)                   |          |   |   |    |    |    |       |       |   |    |            |   |       |
| (5902A—Cathode short test—Depress 2-4-8- together) |          |   |   |    |    |    |       |       |   |    |            |   |       |
| 5915                                               | amp.     | 4 | 3 | 6  | 25 | 7  | ■     |       | 6 | 5  | 7          | ■ | 3-4   |
| "                                                  | osc.     | 1 | 3 | 25 | 8  | 7  | ■     |       |   | 6  | 1          | ■ |       |
| 5931                                               | plate-1  | 2 | 2 | 0  | 5  | 6  | ■     |       |   | 4  |            | ■ | 2-8   |
| "                                                  | plate-2  | 2 | 2 | 0  | 5  | 6  | ■     |       |   | 6  |            | ■ |       |
| 5932                                               |          | 1 | 2 | 24 | 9  | 7  | ■     |       | 4 | 3  | 5          | ■ | 2-7   |
| 5933                                               |          | 1 | 1 | 27 | 11 | 7  | ■     |       | 2 | 11 | 3          | ■ | 1-5   |
| 5963                                               | triode-1 | 1 | 9 | 27 | 10 | 7  | ■     |       |   | 1  | 2          | ■ | 4-5-9 |
| "                                                  | triode-2 | 1 | 9 | 27 | 10 | 7  | ■     |       |   | 6  | 7          | ■ |       |
| 5964                                               | triode-1 | 1 | 3 | 21 | 11 | 7  | ■     |       |   | 2  | 5          | ■ | 3-4   |
| "                                                  | triode-2 | 1 | 3 | 21 | 11 | 7  | ■     |       |   | 1  | 6          | ■ |       |
| 5965                                               | triode-1 | 1 | 9 | 25 | 9  | 7  | ■     |       |   | 6  | 7          | ■ | 4-5-9 |
| "                                                  | triode-2 | 1 | 9 | 25 | 9  | 7  | ■     |       |   | 1  | 2          | ■ |       |
| 6005                                               |          | 1 | 3 | 32 | 8  | 7  | ■     | 1     | 6 | 5  | 7          | ■ | 3-4   |
| (6005—Must show short on 1-7)                      |          |   |   |    |    |    |       |       |   |    |            |   |       |
| (6005—Grid short test—Depress 1-7 together)        |          |   |   |    |    |    |       |       |   |    |            |   |       |
| 6021                                               | triode-1 | 1 | 3 | 16 | 14 | 7  | ■     |       |   | 8  | 7          | ■ | 3-6   |
| "                                                  | triode-2 | 1 | 3 | 16 | 14 | 7  | ■     |       |   | 1  | 2          | ■ |       |
| 6028                                               |          | 1 | 3 | 10 | 24 | 11 | ■     |       | 6 | 5  | 1          | ■ | 3-4   |
| (6028—Must show short on 2-7)                      |          |   |   |    |    |    |       |       |   |    |            |   |       |
| (6028—Cathode short test—Depress 2-7 together)     |          |   |   |    |    |    |       |       |   |    |            |   |       |
| 6029                                               |          | 5 | 2 | 10 | 14 | 2  | ■     |       |   | 1  | 3          | ■ | 2-4   |
| 6046                                               |          | 1 | 2 | 10 | 6  | 12 | ■     |       | 4 | 3  | 5          | ■ | 2-7   |
| 6072                                               | triode-1 | 1 | 9 | 24 | 20 | 7  | ■     |       |   | 6  | 7          | ■ | 4-5-9 |
| "                                                  | triode-2 | 1 | 9 | 24 | 20 | 7  | ■     |       |   | 1  | 2          | ■ |       |
| 6080                                               | triode-1 | 1 | 7 | 25 | 5  | 7  | ■     |       |   | 5  | 4          | ■ | 7-8   |
| "                                                  | triode-2 | 1 | 7 | 25 | 5  | 7  | ■     |       |   | 2  | 1          | ■ |       |
| 6087                                               | plate-1  | 2 | 2 | 0  | 8  | 6  | ■     |       |   | 4  |            | ■ | 2-8   |
| "                                                  | plate-2  | 2 | 2 | 0  | 8  | 6  | ■     |       |   | 6  |            | ■ |       |
| 6088                                               |          | 5 | 3 | 7  | 29 | 2  | ■     |       | 2 | 1  | 4          | ■ | 3-5   |
| 6096                                               |          | 1 | 3 | 22 | 16 | 7  | ■     |       | 6 | 5  | 1          | ■ | 3-4   |
| (6096—Must show short on 2-7)                      |          |   |   |    |    |    |       |       |   |    |            |   |       |
| (6096—Cathode short test—Depress 2-7 together)     |          |   |   |    |    |    |       |       |   |    |            |   |       |

| Tube                                             | Section   | A | B | C  | D  | E  | Lever |     |    |   | Fil.<br>Cont. |
|--------------------------------------------------|-----------|---|---|----|----|----|-------|-----|----|---|---------------|
|                                                  |           |   |   |    |    |    | W     | X   | Y  | Z |               |
| 6097                                             | diode-1   | 3 | 3 | 0  | 17 | 7  | ■     |     | 7  |   | 3-4           |
| "                                                | diode-2   | 3 | 3 | 0  | 17 | 7  | ■     |     | 2  |   | ■             |
| 6098                                             |           | 1 | 6 | 18 | 8  | 7  | ■     | 5   | 3  | 7 | 6-8           |
| 6111                                             | triode-1  | 5 | 3 | 13 | 10 | 7  | ■     |     | 8  | 7 | 3-6           |
| "                                                | triode-2  | 5 | 3 | 13 | 10 | 7  | ■     |     | 1  | 2 | ■             |
| 6112                                             | triode-1  | 5 | 3 | 13 | 13 | 7  | ■     |     | 8  | 7 | 3-6           |
| "                                                | triode-2  | 5 | 3 | 13 | 13 | 7  | ■     |     | 1  | 2 | ■             |
| 6135                                             |           | 1 | 3 | 25 | 11 | 7  | ■     | 1   | 5  | 6 | 3-4           |
| (6135—Must show short on 1-5)                    |           |   |   |    |    |    |       |     |    |   |               |
| (6135—Plate short test—Depress 1-5 together)     |           |   |   |    |    |    |       |     |    |   |               |
| 6136                                             |           | 1 | 3 | 13 | 27 | 7  | ■     | 6   | 5  | 1 | 3-4           |
| 6137                                             |           | 1 | 2 | 25 | 20 | 7  | ■     | 6   | 8  | 4 | 2-7           |
| 6146                                             |           | 1 | 2 | 7  | 6  | 7  | ■     | 3   | 11 | 5 | 2-7           |
| (6146—Must show short on 1-4-6)                  |           |   |   |    |    |    |       |     |    |   |               |
| (6146—Cathode short test—Depress 1-4-6 together) |           |   |   |    |    |    |       |     |    |   |               |
| 6159                                             |           | 1 | 2 | 7  | 6  | 12 | ■     | 3   | 11 | 5 | 2-7           |
| (6159—Must show short on 1-4-6)                  |           |   |   |    |    |    |       |     |    |   |               |
| (6159—Cathode short test—Depress 1-4-6 together) |           |   |   |    |    |    |       |     |    |   |               |
| 6187                                             |           | 1 | 3 | 11 | 32 | 7  | ■     | 6   | 5  | 1 | 3-4           |
| 6188                                             | triode-1  | 1 | 7 | 14 | 30 | 7  | ■     |     | 2  | 1 | 7-8           |
| "                                                | triode-2  | 1 | 7 | 14 | 30 | 7  | ■     |     | 5  | 4 | ■             |
| 6189                                             | triode-1  | 1 | 9 | 27 | 10 | 7  | ■     |     | 1  | 2 | 4-5-9         |
| "                                                | triode-2  | 1 | 9 | 27 | 10 | 7  | ■     |     | 6  | 7 | ■             |
| 6197                                             |           | 1 | 4 | 11 | 12 | 7  | ■     | 2-3 | 8  | 6 | 4-5           |
| (6197—Must show short on 2-3-8-9)                |           |   |   |    |    |    |       |     |    |   |               |
| (6197—Screen short test—Depress 3-8 together)    |           |   |   |    |    |    |       |     |    |   |               |
| (6197—Grid short test—Depress 2-9 together)      |           |   |   |    |    |    |       |     |    |   |               |
| 6201                                             | triode-1  | 1 | 9 | 32 | 9  | 7  | ■     |     | 6  | 7 | 4-5-9         |
| "                                                | triode-2  | 1 | 9 | 32 | 9  | 7  | ■     |     | 1  | 2 | ■             |
| 6202                                             | plate-1   | 2 | 3 | 0  | 5  | 7  | ■     |     | 6  |   | 3-4           |
| "                                                | plate-2   | 2 | 3 | 0  | 5  | 7  | ■     |     | 1  |   | ■             |
| 6203                                             | diode-1   | 3 | 4 | 0  | 18 | 7  | ■     |     | 9  |   | 4-5           |
| "                                                | diode-2   | 3 | 4 | 0  | 18 | 7  | ■     |     | 1  |   | ■             |
| 6205                                             |           | 1 | 3 | 10 | 25 | 7  | ■     | 7   | 5  | 1 | 3-6           |
| (6205—Must show short on 2-8)                    |           |   |   |    |    |    |       |     |    |   |               |
| (6205—Cathode short test—Depress 2-8 together)   |           |   |   |    |    |    |       |     |    |   |               |
| 6206                                             |           | 1 | 3 | 11 | 25 | 7  | ■     | 7   | 5  | 1 | 3-6           |
| (6206—Must show short on 2-8)                    |           |   |   |    |    |    |       |     |    |   |               |
| (6206—Cathode short test—Depress 2-8 together)   |           |   |   |    |    |    |       |     |    |   |               |
| 6211                                             | triode-1  | 1 | 9 | 20 | 11 | 7  | ■     |     | 6  | 7 | 4-5-9         |
| "                                                | triode-2  | 1 | 9 | 20 | 11 | 7  | ■     |     | 1  | 2 | ■             |
| 6265                                             |           | 1 | 3 | 20 | 27 | 7  | ■     | 6   | 5  | 1 | 3-4           |
| 6267                                             |           | 1 | 4 | 17 | 30 | 7  | ■     | 1   | 6  | 9 | 4-5           |
| (6267—Must show short on 2-7)                    |           |   |   |    |    |    |       |     |    |   |               |
| 6336                                             | triode-1  | 1 | 7 | 0  | 4  | 7  | ■     |     | 5  | 4 | 7-8           |
| "                                                | triode-2  | 1 | 7 | 0  | 4  | 7  | ■     |     | 2  | 1 | ■             |
| 6350                                             | triode-1  | 1 | 9 | 10 | 11 | 7  | ■     |     | 6  | 8 | 4-5-9         |
| "                                                | triode-2  | 1 | 9 | 10 | 11 | 7  | ■     |     | 1  | 3 | ■             |
| 6360                                             | tetrode-1 | 1 | 9 | 29 | 12 | 7  | ■     | 7   | 8  | 3 | 4-5-9         |
| "                                                | tetrode-2 | 1 | 9 | 29 | 12 | 7  | ■     | 7   | 6  | 1 | ■             |
| 6386                                             | triode-1  | 1 | 1 | 20 | 10 | 7  | ■     |     | 6  | 7 | 1-9           |
| "                                                | triode-2  | 1 | 1 | 20 | 10 | 7  | ■     |     | 4  | 3 | ■             |
| (6386—May show short on 5)                       |           |   |   |    |    |    |       |     |    |   |               |
| 6394                                             | triode-1  | 1 | 7 | 15 | 4  | 12 | ■     |     | 5  | 4 | 7-8           |
| "                                                | triode-2  | 1 | 7 | 15 | 4  | 12 | ■     |     | 2  | 1 | ■             |

| Tube | Section  | A                                              | B | C  | D  | E  | Lever |     |   |   | Fil.<br>Cont. |   |       |
|------|----------|------------------------------------------------|---|----|----|----|-------|-----|---|---|---------------|---|-------|
|      |          |                                                |   |    |    |    | W     | X   | Y | Z |               |   |       |
| 6417 |          | 1                                              | 4 | 27 | 10 | 10 | ■     | 8   | 6 | 1 | 9             | ■ | 4-5   |
|      |          | (6417—Grid short test—Depress 8-9 together)    |   |    |    |    |       |     |   |   |               |   |       |
|      |          | (6417—Must show short on 8-9)                  |   |    |    |    |       |     |   |   |               |   |       |
| 6463 | triode-1 | 1                                              | 9 | 26 | 8  | 7  | ■     |     |   | 6 | 8             | ■ | 4-5-9 |
| "    | triode-2 | 1                                              | 9 | 26 | 8  | 7  | ■     |     |   | 1 | 3             | ■ |       |
| 6550 |          | 1                                              | 2 | 9  | 9  | 7  | ■     |     | 4 | 3 | 5             | ■ | 2-7   |
| 6660 |          | 1                                              | 3 | 28 | 15 | 7  | ■     |     | 6 | 5 | 1             | ■ | 3-4   |
| 6661 |          | 1                                              | 3 | 26 | 20 | 7  | ■     |     | 6 | 5 | 1             | ■ | 3-4   |
| 6662 |          | 1                                              | 3 | 17 | 20 | 7  | ■     |     | 6 | 5 | 1             | ■ | 3-4   |
| 6663 | diode-1  | 3                                              | 3 | 0  | 17 | 7  | ■     |     |   | 7 |               | ■ | 3-4   |
| "    | diode-2  | 3                                              | 3 | 0  | 17 | 7  | ■     |     |   | 2 |               | ■ |       |
| 6669 |          | 1                                              | 3 | 32 | 8  | 7  | ■     | 1   | 6 | 5 | 7             | ■ | 3-4   |
|      |          | (6669—Must show short on 1-7)                  |   |    |    |    |       |     |   |   |               |   |       |
|      |          | (6669—Grid short test—depress 1-7 together)    |   |    |    |    |       |     |   |   |               |   |       |
| 6677 |          | 1                                              | 4 | 11 | 12 | 7  | ■     | 2-3 | 8 | 6 | 9             | ■ | 4-5   |
|      |          | (6677—Must show short on 2-3-8-9)              |   |    |    |    |       |     |   |   |               |   |       |
|      |          | (6677—Screen short test—depress 3-8 together)  |   |    |    |    |       |     |   |   |               |   |       |
|      |          | (6677—Grid short test—depress 2-9 together)    |   |    |    |    |       |     |   |   |               |   |       |
| 6678 | triode   | 1                                              | 4 | 28 | 8  | 7  | ■     |     |   | 1 | 9             | ■ | 4-5   |
| "    | pent.    | 1                                              | 4 | 14 | 29 | 7  | ■     |     | 3 | 6 | 2             | ■ |       |
| 6679 | triode-1 | 1                                              | 9 | 32 | 9  | 7  | ■     |     |   | 6 | 7             | ■ | 4-5-9 |
| "    | triode-2 | 1                                              | 9 | 32 | 9  | 7  | ■     |     |   | 1 | 2             | ■ |       |
| 6680 | triode-1 | 1                                              | 9 | 27 | 10 | 7  | ■     |     |   | 1 | 2             | ■ | 4-5-9 |
| "    | triode-2 | 1                                              | 9 | 27 | 10 | 7  | ■     |     |   | 6 | 7             | ■ |       |
| 6681 | triode-1 | 1                                              | 9 | 8  | 38 | 7  | ■     |     |   | 6 | 7             | ■ | 4-5-9 |
| "    | triode-2 | 1                                              | 9 | 8  | 38 | 7  | ■     |     |   | 1 | 2             | ■ |       |
| 6688 |          | 1                                              | 4 | 12 | 16 | 7  | ■     |     | 9 | 7 | 2             | ■ | 4-5   |
|      |          | (6688—Must show short on 1-3)                  |   |    |    |    |       |     |   |   |               |   |       |
|      |          | (6688—Cathode short test—depress 1-3 together) |   |    |    |    |       |     |   |   |               |   |       |
| 6829 | triode-1 | 1                                              | 9 | 24 | 10 | 7  | ■     |     |   | 6 | 7             | ■ | 4-5-9 |
| "    | triode-2 | 1                                              | 9 | 24 | 10 | 7  | ■     |     |   | 1 | 2             | ■ |       |
| 6919 | diode-1  | 3                                              | 3 | 0  | 17 | 7  | ■     |     |   | 7 |               | ■ | 3-4   |
| "    | diode-2  | 3                                              | 3 | 0  | 17 | 7  | ■     |     |   | 2 |               | ■ |       |
| 6922 | triode-1 | 1                                              | 4 | 6  | 12 | 7  | ■     |     |   | 6 | 7             | ■ | 4-5   |
| "    | triode-2 | 1                                              | 4 | 6  | 12 | 7  | ■     |     |   | 1 | 2             | ■ |       |
| 6973 |          | 1                                              | 4 | 18 | 13 | 7  | ■     | 1-3 | 8 | 9 | 6             | ■ | 4-5   |
|      |          | (6973—Must show short on 1-3-6-8)              |   |    |    |    |       |     |   |   |               |   |       |
|      |          | (6973—Grid short test—Depress 3-6 together)    |   |    |    |    |       |     |   |   |               |   |       |
|      |          | (6973—Screen short test—Depress 1-8 together)  |   |    |    |    |       |     |   |   |               |   |       |
| 7025 | triode-1 | 1                                              | 9 | 8  | 38 | 7  | ■     |     |   | 6 | 7             | ■ | 4-5-9 |
| "    | triode-2 | 1                                              | 9 | 8  | 38 | 7  | ■     |     |   | 1 | 2             | ■ |       |
| 7027 |          | 1                                              | 2 | 13 | 12 | 7  | ■     | 1-5 | 4 | 3 | 6             | ■ | 2-7   |
|      |          | (7027—Must show short on 1-4-5-6)              |   |    |    |    |       |     |   |   |               |   |       |
|      |          | (7027—Screen short test—Depress 1-4 together)  |   |    |    |    |       |     |   |   |               |   |       |
|      |          | (7027—Grid short test—Depress 5-6 together)    |   |    |    |    |       |     |   |   |               |   |       |
| 7036 | amp.     | 4                                              | 3 | 6  | 25 | 7  | ■     |     | 6 | 5 | 7             | ■ | 3-4   |
| "    | osc.     | 1                                              | 3 | 25 | 8  | 7  | ■     |     |   | 6 | 1             | ■ |       |
| 7054 |          | 1                                              | 4 | 16 | 12 | 10 | ■     |     | 8 | 7 | 2             | ■ | 4-5   |
|      |          | (7054—Must show short on 3-9)                  |   |    |    |    |       |     |   |   |               |   |       |
| 7055 | diode-1  | 3                                              | 3 | 0  | 17 | 10 | ■     |     |   | 7 |               | ■ | 4-5   |
| "    | diode-2  | 3                                              | 3 | 0  | 17 | 10 | ■     |     |   | 2 |               | ■ |       |
| 7056 |          | 1                                              | 4 | 8  | 30 | 10 | ■     |     | 6 | 5 | 1             | ■ | 4-5   |
| 7057 | triode-1 | 5                                              | 4 | 13 | 10 | 10 | ■     |     |   | 6 | 7             | ■ | 4-5   |
| "    | triode-2 | 5                                              | 4 | 16 | 10 | 10 | ■     |     |   | 1 | 2             | ■ |       |
| 7058 | triode-1 | 1                                              | 4 | 12 | 32 | 10 | ■     |     |   | 6 | 7             | ■ | 4-5   |
| "    | triode-2 | 1                                              | 4 | 12 | 32 | 10 | ■     |     |   | 1 | 2             | ■ |       |

| Tube                                           | Section       | A | B | C  | D  | E  | Lever |     |   |   | Fil. Cont. |
|------------------------------------------------|---------------|---|---|----|----|----|-------|-----|---|---|------------|
|                                                |               |   |   |    |    |    | W     | X   | Y | Z |            |
| 7059                                           | triode        | 1 | 4 | 28 | 8  | 10 | ■     |     | 1 | 9 | ■ 4-5      |
| "                                              | pent.         | 1 | 4 | 14 | 29 | 10 | ■     | 3   | 6 | 2 | ■ 4-5      |
| 7060                                           | triode        | 2 | 4 | 15 | 25 | 10 | ■     |     | 3 | 2 | ■ 4-5      |
| "                                              | pent.         | 2 | 4 | 8  | 24 | 10 | ■     | 8   | 9 | 7 | ■ 4-5      |
| 7061                                           |               | 1 | 4 | 10 | 19 | 10 | ■     | 1-3 | 8 | 9 | 6 ■ 4-5    |
| (7061—Must show short on 1-3-6-8)              |               |   |   |    |    |    |       |     |   |   |            |
| (7061—Grid short test—Depress 3-6 together)    |               |   |   |    |    |    |       |     |   |   |            |
| (7061—Screen short test—Depress 1-8 together)  |               |   |   |    |    |    |       |     |   |   |            |
| 7167                                           |               | 2 | 3 | 11 | 20 | 10 | ■     | 6   | 5 | 1 | ■ 3-4      |
| (7167—Must show short on 2-7)                  |               |   |   |    |    |    |       |     |   |   |            |
| (7167—Cathode short test—Depress 2-7 together) |               |   |   |    |    |    |       |     |   |   |            |
| 7189                                           |               | 1 | 4 | 16 | 10 | 7  | ■     | 1   | 9 | 7 | 2 ■ 4-5    |
| 7199                                           | triode        | 1 | 4 | 21 | 10 | 7  | ■     |     | 1 | 9 | ■ 4-5      |
| "                                              | pent.         | 1 | 4 | 16 | 25 | 7  | ■     | 3   | 2 | 7 | ■ 4-5-9    |
| 7247                                           | triode-1      | 1 | 9 | 33 | 10 | 7  | ■     |     | 6 | 7 | ■ 4-5-9    |
| "                                              | triode-2      | 1 | 9 | 27 | 10 | 7  | ■     |     | 1 | 2 | ■ 4-5      |
| 7258                                           | triode        | 5 | 4 | 10 | 13 | 10 | ■     |     | 1 | 2 | ■ 4-5      |
| "                                              | pent.         | 4 | 4 | 8  | 10 | 10 | ■     | 7   | 6 | 8 | ■ 2-7      |
| 7355                                           |               | 1 | 2 | 6  | 10 | 7  | ■     | 8   | 3 | 6 | ■ 3-4      |
| 8016                                           | (Same as 1B3) |   |   |    |    |    |       |     |   |   |            |
| 9001                                           |               | 1 | 3 | 16 | 33 | 7  | ■     | 6   | 5 | 1 | ■ 3-4      |
| (9001—Must show short on 2-7)                  |               |   |   |    |    |    |       |     |   |   |            |
| (9001—Cathode short test—Depress 2-7 together) |               |   |   |    |    |    |       |     |   |   |            |
| 9002                                           |               | 1 | 3 | 26 | 12 | 7  | ■     | 1   | 5 | 6 | ■ 3-4      |
| (9002—Plate short test—Depress 1-5 together)   |               |   |   |    |    |    |       |     |   |   |            |
| (9002—Cathode short test—Depress 2-7 together) |               |   |   |    |    |    |       |     |   |   |            |
| (9002—Must show short on 1-2-5-7 individually) |               |   |   |    |    |    |       |     |   |   |            |
| 9003                                           |               | 1 | 3 | 31 | 15 | 7  | ■     | 6   | 5 | 1 | ■ 3-4      |
| (9003—Must show short on 2-7)                  |               |   |   |    |    |    |       |     |   |   |            |
| (9003—Cathode short test—Depress 2-7 together) |               |   |   |    |    |    |       |     |   |   |            |
| 9004                                           |               | 3 | 1 | 0  | 17 | 7  | ■     |     | 2 |   | ■ 1-4      |
| 9005                                           |               | 3 | 1 | 0  | 17 | 5  | ■     |     | 3 |   | ■ 1-4-5    |
| 9006                                           |               | 3 | 3 | 0  | 20 | 7  | ■     | 1   | 5 |   | ■ 3-4      |
| (9006—Plate short test—Depress 1-5 together)   |               |   |   |    |    |    |       |     |   |   |            |
| (9006—Cathode short test—Depress 2-7 together) |               |   |   |    |    |    |       |     |   |   |            |
| (9006—Must show short on 1-2-5-7 individually) |               |   |   |    |    |    |       |     |   |   |            |
| PJ-8                                           |               | 1 | 1 | 26 | 16 | 6  | ■     |     | 2 | 3 | ■ 1-4      |
| XXB                                            | triode-1      | 3 | 7 | 22 | 24 | 2  | ■     |     | 6 | 5 | ■ 1-7-8    |
| "                                              | triode-2      | 3 | 7 | 22 | 24 | 2  | ■     |     | 3 | 4 | ■ 1-8      |
| XXD                                            | triode-1      | 1 | 1 | 15 | 15 | 10 | ■     |     | 6 | 5 | ■ 1-8      |
| "                                              | triode-2      | 1 | 1 | 15 | 15 | 10 | ■     |     | 3 | 4 | ■ 1-8      |
| XXFM                                           | triode        | 1 | 1 | 13 | 45 | 7  | ■     |     | 2 | 3 | ■ 1-8      |
| "                                              | diode-1       | 3 | 1 | 0  | 26 | 7  | ■     |     | 5 |   | ■          |
| "                                              | diode-2       | 3 | 1 | 0  | 26 | 7  | ■     |     | 6 |   | ■          |
| XXL                                            |               | 1 | 1 | 23 | 10 | 7  | ■     |     | 2 | 6 | ■ 1-8      |



| Tube                                                                                                                                                           | Section  | A | B | C  | D  | E | Lever |     |   |    | Fil. Cont. |   |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---|---|----|----|---|-------|-----|---|----|------------|---|-----|
|                                                                                                                                                                |          |   |   |    |    |   | W     | X   | Y | Z  |            |   |     |
| DY-80... Caution:—Levers 5-8 must be thrown to position "W" before inserting tube and must remain in position "W" throughout ALL TESTS, INCLUDING SHORT TESTS. |          |   |   |    |    |   |       |     |   |    |            |   |     |
| "                                                                                                                                                              |          | 7 | 2 | 0  | 16 | 2 | ■     | 5-8 |   | 11 | ■          | † |     |
| †(DY-80—Fil. cont.—1-2-4-6-9)                                                                                                                                  |          |   |   |    |    |   |       |     |   |    |            |   |     |
| (DY-80—May show short on 3-7)                                                                                                                                  |          |   |   |    |    |   |       |     |   |    |            |   |     |
| DY-86                                                                                                                                                          |          | 7 | 2 | 0  | 14 | 2 | ■     | 5-8 |   | 11 | ■          | † |     |
| Caution:—Levers 5-8 must be thrown to position "W" before inserting tube and must remain in position "W" throughout all tests including short tests.           |          |   |   |    |    |   |       |     |   |    |            |   |     |
| †(DY-86—Fil. Cont.—Must show short on 1-2-4-6-9)                                                                                                               |          |   |   |    |    |   |       |     |   |    |            |   |     |
| (DY-86—May show short on 3-7)                                                                                                                                  |          |   |   |    |    |   |       |     |   |    |            |   |     |
| E-88-CC                                                                                                                                                        | triode-1 | 1 | 4 | 6  | 12 | 7 | ■     |     |   | 6  | 7          | ■ | 4-5 |
| "                                                                                                                                                              | triode-2 | 1 | 4 | 6  | 12 | 7 | ■     |     |   | 1  | 2          | ■ |     |
| E-180-F                                                                                                                                                        |          | 1 | 4 | 12 | 16 | 7 | ■     |     | 9 | 7  | 2          | ■ | 4-5 |
| (E-180-F—Must show short on 1-3)                                                                                                                               |          |   |   |    |    |   |       |     |   |    |            |   |     |
| (E-180-F—Cathode short test—depress 1-3 together)                                                                                                              |          |   |   |    |    |   |       |     |   |    |            |   |     |
| EAA-11                                                                                                                                                         | diode-1  | 3 | 2 | 0  | 16 | 7 | ■     |     |   | 5  |            | ■ | 2-3 |
| "                                                                                                                                                              | diode-2  | 3 | 2 | 0  | 16 | 7 | ■     |     |   | 6  |            | ■ |     |
| (EAA-11—Make special adapter)                                                                                                                                  |          |   |   |    |    |   |       |     |   |    |            |   |     |
| EAA-91                                                                                                                                                         | diode-1  | 3 | 3 | 0  | 17 | 7 | ■     |     |   | 7  |            | ■ | 3-4 |
| "                                                                                                                                                              | diode-2  | 3 | 3 | 0  | 17 | 7 | ■     |     |   | 2  |            | ■ |     |
| EAA-901                                                                                                                                                        | diode-1  | 3 | 3 | 0  | 17 | 7 | ■     |     |   | 7  |            | ■ | 3-4 |
| "                                                                                                                                                              | diode-2  | 3 | 3 | 0  | 17 | 7 | ■     |     |   | 2  |            | ■ |     |
| EABC-80                                                                                                                                                        | triode   | 1 | 4 | 9  | 38 | 7 | ■     |     |   | 9  | 8          | ■ | 4-5 |
| "                                                                                                                                                              | diode-1  | 3 | 4 | 0  | 16 | 7 | ■     |     |   | 6  |            | ■ |     |
| "                                                                                                                                                              | diode-2  | 3 | 4 | 0  | 16 | 7 | ■     |     |   | 2  |            | ■ |     |
| "                                                                                                                                                              | diode-3  | 3 | 4 | 0  | 16 | 7 | ■     |     |   | 1  |            | ■ |     |
| EAC-91                                                                                                                                                         | triode   | 1 | 3 | 30 | 10 | 7 | ■     |     |   | 7  | 6          | ■ | 3-4 |
| "                                                                                                                                                              | diode    | 3 | 3 | 0  | 16 | 7 | ■     |     |   | 1  |            | ■ |     |
| *EAF-42                                                                                                                                                        | pent.    | 1 | 1 | 8  | 29 | 7 | ■     |     | 5 | 2  | 6          | ■ | 1-8 |
| "                                                                                                                                                              | diode    | 3 | 1 | 0  | 21 | 7 | ■     |     |   | 3  |            | ■ |     |
| EBC-11                                                                                                                                                         | triode   | 1 | 2 | 27 | 10 | 7 | ■     |     |   | 6  | 7          | ■ | 3-4 |
| "                                                                                                                                                              | diode-1  | 3 | 2 | 0  | 20 | 7 | ■     |     |   | 5  |            | ■ |     |
| "                                                                                                                                                              | diode-2  | 3 | 2 | 0  | 20 | 7 | ■     |     |   | 4  |            | ■ |     |
| EBC-33                                                                                                                                                         | triode   | 1 | 2 | 30 | 10 | 7 | ■     |     |   | 3  | 11         | ■ | 2-7 |
| "                                                                                                                                                              | diode-1  | 3 | 2 | 0  | 19 | 7 | ■     |     |   | 5  |            | ■ |     |
| "                                                                                                                                                              | diode-2  | 3 | 2 | 0  | 19 | 7 | ■     |     |   | 4  |            | ■ |     |
| EBC-41                                                                                                                                                         | triode   | 4 | 1 | 13 | 10 | 7 | ■     |     |   | 2  | 3          | ■ | 1-8 |
| "                                                                                                                                                              | diode-1  | 3 | 1 | 0  | 22 | 7 | ■     |     |   | 5  |            | ■ |     |
| "                                                                                                                                                              | diode-2  | 3 | 1 | 0  | 22 | 7 | ■     |     |   | 6  |            | ■ |     |
| EBC-90                                                                                                                                                         | triode   | 1 | 3 | 13 | 30 | 7 | ■     |     |   | 7  | 1          | ■ | 3-4 |
| "                                                                                                                                                              | diode-1  | 3 | 3 | 0  | 26 | 7 | ■     |     |   | 6  |            | ■ |     |
| "                                                                                                                                                              | diode-2  | 3 | 3 | 0  | 26 | 7 | ■     |     |   | 5  |            | ■ |     |
| EBC-91                                                                                                                                                         | triode   | 1 | 3 | 12 | 32 | 7 | ■     |     |   | 7  | 1          | ■ | 3-4 |
| "                                                                                                                                                              | diode-1  | 3 | 3 | 0  | 27 | 7 | ■     |     |   | 6  |            | ■ |     |
| "                                                                                                                                                              | diode-2  | 3 | 3 | 0  | 27 | 7 | ■     |     |   | 5  |            | ■ |     |
| EBF-15                                                                                                                                                         | pent.    | 4 | 2 | 3  | 10 | 7 | ■     |     | 6 | 1  | 7          | ■ | 2-3 |
| "                                                                                                                                                              | diode-1  | 3 | 2 | 0  | 18 | 7 | ■     |     |   | 5  |            | ■ |     |
| EBF-80                                                                                                                                                         | pent.    | 1 | 4 | 14 | 31 | 7 | ■     |     | 1 | 6  | 2          | ■ | 4-5 |
| "                                                                                                                                                              | diode-1  | 3 | 4 | 0  | 23 | 7 | ■     |     |   | 7  |            | ■ |     |
| "                                                                                                                                                              | diode-2  | 3 | 4 | 0  | 23 | 7 | ■     |     |   | 8  |            | ■ |     |
| EBF-83                                                                                                                                                         | pent.    | 1 | 4 | 20 | 19 | 7 | ■     |     | 1 | 6  | 2          | ■ | 4-5 |
| "                                                                                                                                                              | diode-1  | 3 | 4 | 0  | 21 | 7 | ■     |     |   | 7  |            | ■ |     |
| "                                                                                                                                                              | diode-2  | 3 | 4 | 0  | 21 | 7 | ■     |     |   | 8  |            | ■ |     |
| EBF-89                                                                                                                                                         | pent.    | 1 | 4 | 27 | 17 | 7 | ■     |     | 1 | 6  | 2          | ■ | 4-5 |
| "                                                                                                                                                              | diode-1  | 3 | 4 | 0  | 11 | 7 | ■     |     |   | 7  |            | ■ |     |
| "                                                                                                                                                              | diode-2  | 3 | 4 | 0  | 11 | 7 | ■     |     |   | 8  |            | ■ |     |

(EBF-89—Diode Section OK above 1/4 on meter scale)

| Tube                                                        | Section  | A | B | C  | D  | E | Lever |   |   |   | Fil.<br>Cont. |   |       |
|-------------------------------------------------------------|----------|---|---|----|----|---|-------|---|---|---|---------------|---|-------|
|                                                             |          |   |   |    |    |   | W     | X | Y | Z |               |   |       |
| EC-92                                                       |          | 1 | 3 | 30 | 10 | 7 | ■     |   |   | 1 | 6             | ■ | 3-4   |
| ECC-33                                                      | triode-1 | 1 | 7 | 28 | 10 | 7 | ■     |   |   | 5 | 4             | ■ | 7-8   |
| "                                                           | triode-2 | 1 | 7 | 28 | 10 | 7 | ■     |   |   | 2 | 1             | ■ |       |
| ECC-35                                                      | triode-1 | 1 | 7 | 33 | 10 | 7 | ■     |   |   | 5 | 4             | ■ | 7-8   |
| "                                                           | triode-2 | 1 | 7 | 33 | 10 | 7 | ■     |   |   | 2 | 1             | ■ |       |
| ECC-81                                                      | triode-1 | 1 | 9 | 32 | 9  | 7 | ■     |   |   | 6 | 7             | ■ | 4-5-9 |
| "                                                           | triode-2 | 1 | 9 | 32 | 9  | 7 | ■     |   |   | 1 | 2             | ■ |       |
| ECC-82                                                      | triode-1 | 1 | 9 | 27 | 10 | 7 | ■     |   |   | 1 | 2             | ■ | 4-5-9 |
| "                                                           | triode-2 | 1 | 9 | 27 | 10 | 7 | ■     |   |   | 6 | 7             | ■ |       |
| ECC-83                                                      | triode-1 | 1 | 9 | 8  | 38 | 7 | ■     |   |   | 6 | 7             | ■ | 4-5-9 |
| "                                                           | triode-2 | 1 | 9 | 8  | 38 | 7 | ■     |   |   | 1 | 2             | ■ |       |
| ECC-84                                                      | triode-1 | 5 | 4 | 9  | 10 | 7 | ■     |   |   | 9 | 6             | ■ | 4-5   |
| "                                                           | triode-2 | 5 | 4 | 9  | 10 | 7 | ■     |   |   | 3 | 2             | ■ |       |
| (ECC-84—Must show short on 7-8)                             |          |   |   |    |    |   |       |   |   |   |               |   |       |
| (ECC-84—Cathode short test, section 1—Depress 7-8 together) |          |   |   |    |    |   |       |   |   |   |               |   |       |
| ECC-85                                                      | triode-1 | 1 | 5 | 21 | 13 | 7 | ■     |   |   | 6 | 7             | ■ | 4-5   |
| "                                                           | triode-2 | 1 | 5 | 21 | 13 | 7 | ■     |   |   | 1 | 2             | ■ |       |
| ECC-86                                                      | triode-1 | 2 | 4 | 10 | 10 | 7 | ■     |   |   | 6 | 7             | ■ | 4-5   |
| "                                                           | triode-2 | 2 | 4 | 10 | 10 | 7 | ■     |   |   | 1 | 2             | ■ |       |
| "                                                           | diode    | 3 | 2 | 0  | 18 | 7 | ■     |   |   | 4 |               | ■ |       |
| ECC-88                                                      | triode-1 | 1 | 4 | 6  | 12 | 7 | ■     |   |   | 6 | 7             | ■ | 4-5   |
| "                                                           | triode-2 | 1 | 4 | 6  | 12 | 7 | ■     |   |   | 1 | 2             | ■ |       |
| ECF-12                                                      | triode   | 5 | 2 | 23 | 10 | 7 | ■     |   |   | 5 | 4             | ■ | 2-3   |
| "                                                           | pent.    | 4 | 2 | 10 | 15 | 7 | ■     |   | 6 | 1 | 7             | ■ |       |
| ECF-80                                                      | triode   | 1 | 4 | 14 | 10 | 6 | ■     |   |   | 1 | 9             | ■ | 4-5   |
| "                                                           | pent.    | 1 | 4 | 23 | 16 | 6 | ■     |   | 3 | 6 | 2             | ■ |       |
| ECF-82                                                      | triode   | 1 | 4 | 28 | 8  | 7 | ■     |   |   | 1 | 9             | ■ | 4-5   |
| "                                                           | pent.    | 1 | 4 | 14 | 29 | 7 | ■     |   | 3 | 6 | 2             | ■ |       |
| ECH-42                                                      | triode   | 1 | 1 | 30 | 10 | 7 | ■     |   |   | 3 | 4             | ■ | 1-8   |
| "                                                           | hexode   | 1 | 1 | 5  | 38 | 7 | ■     |   | 5 | 2 | 6             | ■ |       |
| ECH-81                                                      | amp.     | 1 | 4 | 14 | 31 | 7 | ■     |   | 1 | 6 | 2             | ■ | 4-5   |
| "                                                           | osc.     | 1 | 4 | 25 | 10 | 7 | ■     |   |   | 1 | 2             | ■ |       |
| "                                                           | triode   | 1 | 4 | 25 | 13 | 7 | ■     |   |   | 8 | 9             | ■ |       |
| ECH-83                                                      | amp.     | 1 | 4 | 17 | 29 | 7 | ■     |   | 1 | 6 | 2             | ■ | 4-5   |
| "                                                           | osc.     | 3 | 4 | 10 | 23 | 7 | ■     |   |   | 1 | 2             | ■ |       |
| "                                                           | triode   | 1 | 4 | 27 | 10 | 7 | ■     |   |   | 8 | 9             | ■ |       |
| ECL-80                                                      | pent.    | 1 | 4 | 26 | 10 | 7 | ■     |   | 8 | 6 | 9             | ■ | 4-5   |
| "                                                           | triode   | 1 | 4 | 34 | 10 | 7 | ■     |   |   | 1 | 2             | ■ |       |
| ECL-82                                                      | triode   | 1 | 4 | 31 | 11 | 7 | ■     |   |   | 9 | 1             | ■ | 4-5   |
| "                                                           | pent.    | 1 | 4 | 10 | 12 | 7 | ■     |   | 7 | 6 | 3             | ■ |       |
| *EF-41                                                      |          | 1 | 1 | 8  | 32 | 7 | ■     |   | 5 | 2 | 6             | ■ | 1-8   |
| (EF-41—May show short on 3-7)                               |          |   |   |    |    |   |       |   |   |   |               |   |       |
| EF-80                                                       |          | 1 | 4 | 8  | 29 | 7 | ■     | 3 | 8 | 7 | 2             | ■ | 4-5   |
| (EF-80—Must show short on 1-3)                              |          |   |   |    |    |   |       |   |   |   |               |   |       |
| (EF-80—Cathode short test—depress 1-3 together)             |          |   |   |    |    |   |       |   |   |   |               |   |       |
| EF-83                                                       |          | 5 | 4 | 0  | 28 | 7 | ■     |   | 1 | 6 | 9             | ■ | 4-5   |
| (EF-83—May show short on 2-7)                               |          |   |   |    |    |   |       |   |   |   |               |   |       |
| EF-85                                                       |          | 4 | 4 | 5  | 10 | 7 | ■     | 3 | 8 | 7 | 2             | ■ | 4-5   |
| (EF-85—Must show short on 1-3)                              |          |   |   |    |    |   |       |   |   |   |               |   |       |
| (EF-85—Cathode short test—depress 1-3 together)             |          |   |   |    |    |   |       |   |   |   |               |   |       |
| EF-86                                                       |          | 1 | 4 | 17 | 30 | 7 | ■     |   | 1 | 6 | 9             | ■ | 4-5   |
| (EF-86—Must show short on 2-7)                              |          |   |   |    |    |   |       |   |   |   |               |   |       |
| EF-89                                                       |          | 1 | 4 | 8  | 28 | 7 | ■     |   | 8 | 7 | 2             | ■ | 4-5   |
| (EF-89—May show short on 1-6)                               |          |   |   |    |    |   |       |   |   |   |               |   |       |
| EF-91                                                       |          | 4 | 3 | 10 | 10 | 7 | ■     |   | 7 | 5 | 1             | ■ | 3-4   |
| EF-93                                                       |          | 1 | 3 | 28 | 15 | 7 | ■     |   | 6 | 5 | 1             | ■ | 3-4   |
| EF-94                                                       |          | 1 | 3 | 13 | 27 | 7 | ■     |   | 6 | 5 | 1             | ■ | 3-4   |

| Tube                                                                                        | Section | A | B | C  | D  | E | Lever |       |       |     | Fil. Cont. |
|---------------------------------------------------------------------------------------------|---------|---|---|----|----|---|-------|-------|-------|-----|------------|
|                                                                                             |         |   |   |    |    |   | W     | X     | Y     | Z   |            |
| EF-97                                                                                       |         | 5 | 3 | 0  | 9  | 7 | ■     | 6     | 5     | 1   | ■ 3-4      |
| EF-98                                                                                       |         | 5 | 3 | 0  | 9  | 6 | ■     | 6     | 5     | 1   | ■ 3-4      |
| EF-804                                                                                      |         | 4 | 4 | 17 | 10 | 7 | ■     | 8     | 7     | 9   | ■ 4-5      |
| (EF-804—May show short on 2-6)                                                              |         |   |   |    |    |   |       |       |       |     |            |
| EH-90                                                                                       | amp.    | 4 | 3 | 7  | 28 | 7 | ■     | 6     | 5     | 7   | ■ 3-4      |
| "                                                                                           | osc.    | 1 | 3 | 22 | 10 | 7 | ■     |       | 6     | 1   | ■          |
| EK-90                                                                                       | amp.    | 4 | 3 | 7  | 27 | 7 | ■     | 6     | 5     | 7   | ■ 3-4      |
| "                                                                                           | osc.    | 1 | 3 | 21 | 9  | 7 | ■     |       | 6     | 1   | ■          |
| EL-12                                                                                       |         | 1 | 2 | 18 | 7  | 7 | ■     | 6     | 5     | 7   | ■ 2-3      |
| EL-34                                                                                       |         | 1 | 2 | 15 | 7  | 7 | ■     | 4     | 3     | 5   | ■ 2-7      |
| EL-37                                                                                       |         | 1 | 7 | 8  | 11 | 7 | ■     | 4     | 3     | 5   | ■ 2-7      |
| EL-38                                                                                       |         | 1 | 2 | 13 | 10 | 6 | ■     | 4     | 11    | 5   | ■ 2-7      |
| *EL-41                                                                                      |         | 1 | 1 | 12 | 10 | 7 | ■     | 5     | 2     | 6   | ■ 1-8      |
| (EL-41—Must show short on 3-7)                                                              |         |   |   |    |    |   |       |       |       |     |            |
| (EL-41—Cathode short test—depress 3-7 together)                                             |         |   |   |    |    |   |       |       |       |     |            |
| EL-84                                                                                       |         | 1 | 4 | 28 | 7  | 7 | ■     | 1     | 9     | 7   | ■ 4-5      |
| (EL-84—Must show short on 1-2)                                                              |         |   |   |    |    |   |       |       |       |     |            |
| (EL-84—Grid short test—depress 1-2 together)                                                |         |   |   |    |    |   |       |       |       |     |            |
| EL-86                                                                                       |         | 1 | 4 | 0  | 10 | 6 | ■     | 1-6-8 | 9     | 7   | ■ 4-5      |
| (EL-86—May show short on 1-2-6-7-8-9)                                                       |         |   |   |    |    |   |       |       |       |     |            |
| (EL-86—Grid short test—Depress 1-2 together)                                                |         |   |   |    |    |   |       |       |       |     |            |
| (EL-86—Plate short test—Depress 7-8 together)                                               |         |   |   |    |    |   |       |       |       |     |            |
| (EL-86—Screen short test—Depress 6-9 together)                                              |         |   |   |    |    |   |       |       |       |     |            |
| EL-90                                                                                       |         | 1 | 3 | 32 | 8  | 7 | ■     | 1     | 6     | 5   | ■ 3-4      |
| (EL-90—Must show short on 1-7)                                                              |         |   |   |    |    |   |       |       |       |     |            |
| (EL-90—Grid short test—depress 1-7 together)                                                |         |   |   |    |    |   |       |       |       |     |            |
| EL-95                                                                                       |         | 1 | 3 | 25 | 10 | 7 | ■     | 1     | 6     | 5   | ■ 3-4      |
| (EL-95—May show short on 1-7)                                                               |         |   |   |    |    |   |       |       |       |     |            |
| (EL-95—Grid short test—depress 1-7 together)                                                |         |   |   |    |    |   |       |       |       |     |            |
| EM-35                                                                                       | triode  | 1 | 2 | 13 | 25 | 7 | ■     |       | 3     | 4   | ■ 2-7      |
| "                                                                                           | eye     | 7 | 2 | 0  | 0  | 7 | ■     |       | 3-6-5 |     | ■          |
| (EM-35—See instructions for eye test)                                                       |         |   |   |    |    |   |       |       |       |     |            |
| EM-80                                                                                       | triode  | 1 | 4 | 19 | 20 | 7 | ■     |       | 7     | 1   | ■ 4-5      |
| "                                                                                           | eye     | 7 | 4 | 0  | 0  | 7 | ■     | 3-6   |       | 7-9 | ■          |
| (EM-80—See instructions for eye test)                                                       |         |   |   |    |    |   |       |       |       |     |            |
| (EM-80—May show short on 3-6-9)                                                             |         |   |   |    |    |   |       |       |       |     |            |
| EM-81                                                                                       | triode  | 1 | 4 | 34 | 24 | 7 | ■     |       | 7     | 1   | ■ 4-5      |
| "                                                                                           | eye     | 7 | 4 | 0  | 0  | 7 | ■     | 3-8   |       | 7-9 | ■          |
| (EM-81—Must show short on 3-8-9)                                                            |         |   |   |    |    |   |       |       |       |     |            |
| (EM-81—See instructions for eye test)                                                       |         |   |   |    |    |   |       |       |       |     |            |
| EM-84                                                                                       | triode  | 1 | 4 | 45 | 36 | 7 | ■     |       | 9     | 1   | ■ 4-5      |
| "                                                                                           | eye     | 4 | 4 | 0  | 0  | 7 | ■     | 2-8   |       | 7-6 | ■          |
| (EM-84—Must show short on 2-6-8)                                                            |         |   |   |    |    |   |       |       |       |     |            |
| (EM-84—See instructions for eye test)                                                       |         |   |   |    |    |   |       |       |       |     |            |
| EY-51                                                                                       |         | 1 | 2 | 0  | 21 | 7 | ■     |       | 11    |     | ■ 1-2      |
| (EY-51—Connect 2 bottom leads to octal sockets Pins 1 and 2. Top lead connect to grip cap.) |         |   |   |    |    |   |       |       |       |     |            |
| EZ-35                                                                                       | plate-1 | 2 | 2 | 0  | 3  | 7 | ■     |       | 3     |     | ■ 2-7      |
| "                                                                                           | plate-2 | 2 | 2 | 0  | 3  | 7 | ■     |       | 5     |     | ■          |
| EZ-80                                                                                       | plate-1 | 2 | 4 | 0  | 4  | 7 | ■     |       | 1     |     | ■ 4-5      |
| "                                                                                           | plate-2 | 2 | 4 | 0  | 4  | 7 | ■     |       | 7     |     | ■          |
| EZ-81                                                                                       | plate-1 | 2 | 4 | 0  | 1  | 7 | ■     |       | 1     |     | ■ 4-5      |
| "                                                                                           | plate-2 | 2 | 4 | 0  | 1  | 7 | ■     |       | 7     |     | ■          |
| EZ-90                                                                                       | plate-1 | 2 | 3 | 0  | 3  | 7 | ■     |       | 1     |     | ■ 3-4      |
| "                                                                                           | plate-2 | 2 | 3 | 0  | 3  | 7 | ■     |       | 6     |     | ■          |

| Tube   | Section | A | B | C  | D  | E  | Lever |   |   |   | Fil. Cont. |
|--------|---------|---|---|----|----|----|-------|---|---|---|------------|
|        |         |   |   |    |    |    | W     | X | Y | Z |            |
| GZ-30  | plate-1 | 2 | 2 | 0  | 2  | 6  | ■     |   | 6 |   | ■ 2-8      |
| "      | plate-2 | 2 | 2 | 0  | 2  | 6  | ■     |   | 4 |   | ■          |
| GZ-34  | plate-1 | 1 | 2 | 0  | 4  | 6  | ■     |   | 4 |   | ■ 2-8      |
| "      | plate-2 | 1 | 2 | 0  | 4  | 6  | ■     |   | 6 |   | ■          |
| HBC-90 | triode  | 1 | 3 | 13 | 30 | 10 | ■     |   | 7 | 1 | ■ 3-4      |
| "      | diode-1 | 3 | 3 | 0  | 26 | 10 | ■     |   | 5 |   | ■          |
| "      | diode-2 | 3 | 3 | 0  | 26 | 10 | ■     |   | 6 |   | ■          |
| HF-93  |         | 1 | 3 | 28 | 15 | 10 | ■     | 6 | 5 | 1 | ■ 3-4      |
| HK-90  | amp.    | 4 | 3 | 7  | 27 | 10 | ■     | 6 | 5 | 7 | ■ 3-4      |
| "      | osc.    | 1 | 3 | 21 | 9  | 10 | ■     |   | 6 | 1 | ■          |
| HL-92  |         | 1 | 3 | 8  | 8  | 14 | ■     | 2 | 6 | 7 | ■ 3-4      |

(HL-92—Must show short on 2-5)

(HL-92—Grid short test—depress 2-5 together)

(HL-92—Fil. Cont.—set control "E" at 12)

|         |         |   |   |    |    |    |   |       |   |   |         |
|---------|---------|---|---|----|----|----|---|-------|---|---|---------|
| HY-90   |         | 2 | 3 | 0  | 1  | 13 | ■ | 6     |   | 5 | ■ 3-4-6 |
| KT-88   |         | 1 | 2 | 5  | 8  | 6  | ■ | 4     |   | 3 | ■ 2-7   |
| PABC-80 | triode  | 4 | 4 | 10 | 10 | 9  | ■ |       | 9 | 8 | ■ 4-5   |
| "       | diode-1 | 3 | 4 | 0  | 23 | 9  | ■ |       | 6 |   | ■       |
| "       | diode-2 | 3 | 4 | 0  | 16 | 9  | ■ |       | 2 |   | ■       |
| "       | diode-3 | 3 | 4 | 0  | 16 | 9  | ■ |       | 1 |   | ■       |
| PC-86   |         | 2 | 4 | 19 | 10 | 5  | ■ | 1-2-6 |   | 9 | ■ 4-5   |

(PC-86—Must show short on 1-2-3-6-7-8-9)

(PC-86—Plate short test—Depress 1-9 together)

(PC-86—Grid short test—Depress 2-6-8 together)

(PC-86—Cathode short test—Depress 3-7 together)

|        |          |   |   |    |    |   |   |  |   |   |       |
|--------|----------|---|---|----|----|---|---|--|---|---|-------|
| PCC-84 | triode-1 | 5 | 4 | 10 | 10 | 8 | ■ |  | 9 | 6 | ■ 4-5 |
| "      | triode-2 | 5 | 4 | 10 | 10 | 8 | ■ |  | 3 | 3 | ■     |

(PCC-84—Must show short on 7-8)

(PCC-84—Cathode short test, section 1—Depress 7-8 together)

|        |          |   |   |    |    |    |   |     |   |    |       |
|--------|----------|---|---|----|----|----|---|-----|---|----|-------|
| PCC-85 | triode-1 | 1 | 4 | 25 | 10 | 8  | ■ |     | 6 | 7  | ■ 4-5 |
| "      | triode-2 | 1 | 4 | 25 | 10 | 8  | ■ |     | 1 | 2  | ■     |
| PCC-88 | triode-1 | 2 | 4 | 12 | 10 | 7  | ■ |     | 6 | 7  | ■ 4-5 |
| "      | triode-2 | 2 | 4 | 12 | 10 | 7  | ■ |     | 1 | 2  | ■     |
| PCF-80 | triode   | 5 | 4 | 12 | 10 | 8  | ■ |     | 1 | 9  | ■ 4-5 |
| "      | pent.    | 1 | 4 | 18 | 19 | 8  | ■ | 3   | 6 | 2  | ■     |
| PCF-82 | triode   | 1 | 4 | 28 | 8  | 9  | ■ |     | 1 | 9  | ■ 4-5 |
| "      | pent.    | 1 | 4 | 14 | 29 | 9  | ■ | 3   | 6 | 2  | ■     |
| PL-36  |          | 2 | 2 | 0  | 5  | 12 | ■ | 1-3 | 4 | 11 | ■ 2-7 |

(PL-36—Must show short on 1-3-4-8)

(PL-36—Cathode short test—Depress 1-8 together)

(PL-36—Screen short test—Depress 3-4 together)

|       |  |   |   |   |   |    |   |   |   |   |       |
|-------|--|---|---|---|---|----|---|---|---|---|-------|
| PY-80 |  | 1 | 4 | 0 | 4 | 10 | ■ |   | 9 |   | ■ 4-5 |
| PY-81 |  | 7 | 4 | 0 | 4 | 10 | ■ | 2 |   | 9 | ■ 4-5 |

(PY-81—Must show short on 2-9)

(PY-81—Plate short test—Depress 2-9 together)

|         |         |   |   |    |    |    |   |  |   |   |       |
|---------|---------|---|---|----|----|----|---|--|---|---|-------|
| PY-82   |         | 7 | 4 | 0  | 3  | 10 | ■ |  | 9 |   | ■ 4-5 |
| PY-83   |         | 7 | 4 | 0  | 3  | 11 | ■ |  | 9 |   | ■ 4-5 |
| UABC-80 | triode  | 1 | 4 | 35 | 12 | 12 | ■ |  | 9 | 8 | ■ 4-5 |
| "       | diode-1 | 3 | 4 | 0  | 25 | 12 | ■ |  | 6 |   | ■     |
| "       | diode-2 | 3 | 4 | 0  | 17 | 12 | ■ |  | 2 |   | ■     |
| "       | diode-3 | 3 | 4 | 0  | 17 | 12 | ■ |  | 1 |   | ■     |
| *UBC-41 | triode  | 4 | 1 | 15 | 10 | 10 | ■ |  | 2 | 3 | ■ 1-8 |
| "       | diode-1 | 3 | 1 | 0  | 27 | 10 | ■ |  | 6 |   | ■     |
| "       | diode-2 | 3 | 1 | 0  | 27 | 10 | ■ |  | 5 |   | ■     |
| UBC-81  | triode  | 1 | 4 | 34 | 10 | 10 | ■ |  | 1 | 2 | ■ 4-5 |
| "       | diode-1 | 3 | 4 | 0  | 25 | 10 | ■ |  | 8 |   | ■     |
| "       | diode-2 | 3 | 4 | 0  | 25 | 10 | ■ |  | 6 |   | ■     |

(UBC-81—May show short on 7-9)

| Tube                                             | Section  | A | B | C  | D  | E  | Lever |     |         |   | Fil. Cont. |     |     |
|--------------------------------------------------|----------|---|---|----|----|----|-------|-----|---------|---|------------|-----|-----|
|                                                  |          |   |   |    |    |    | W     | X   | Y       | Z |            |     |     |
| UBF-80                                           | pent.    | 4 | 4 | 12 | 10 | 11 | ■     | 1   | 6       | 2 | ■          | 4-5 |     |
| "                                                | diode-1  | 3 | 4 | 0  | 23 | 11 | ■     |     | 8       |   | ■          |     |     |
| "                                                | diode-2  | 3 | 4 | 0  | 23 | 11 | ■     |     | 7       |   | ■          |     |     |
| UBF-89                                           | pent.    | 1 | 4 | 21 | 17 | 11 | ■     | 1   | 6       | 2 | ■          | 4-5 |     |
| "                                                | diode-1  | 3 | 4 | 0  | 20 | 11 | ■     |     | 7       |   | ■          |     |     |
| "                                                | diode-2  | 3 | 4 | 0  | 20 | 11 | ■     |     | 8       |   | ■          |     |     |
| UC-92                                            |          | 1 | 3 | 30 | 10 | 9  | ■     |     | 1       | 6 | ■          | 3-4 |     |
| UCC-85                                           | triode-1 | 1 | 4 | 25 | 11 | 12 | ■     |     | 6       | 7 | ■          | 4-5 |     |
| "                                                | triode-2 | 1 | 4 | 25 | 11 | 12 | ■     |     | 1       | 2 | ■          |     |     |
| UCH-42                                           | triode   | 5 | 1 | 25 | 10 | 10 | ■     |     | 3       | 4 | ■          | 1-8 |     |
| "                                                | hexode   | 4 | 1 | 16 | 10 | 10 | ■     | 5   | 2       | 6 | ■          |     |     |
| UCH-81                                           | heptode  | 1 | 4 | 26 | 32 | 11 | ■     | 1   | 6       | 2 | ■          | 4-5 |     |
| "                                                | triode   | 1 | 4 | 26 | 11 | 11 | ■     |     | 8       | 9 | ■          |     |     |
| UCL-81                                           | triode   | 4 | 4 | 10 | 10 | 13 | ■     |     | 7       | 1 | ■          | 4-5 |     |
| "                                                | pent.    | 1 | 4 | 15 | 10 | 13 | ■     | 2   | 6       | 9 | ■          |     |     |
| (UCL-81—Must show short on 3-8)                  |          |   |   |    |    |    |       |     |         |   |            |     |     |
| (UCL-81—Cathode short test—Depress 3-8 together) |          |   |   |    |    |    |       |     |         |   |            |     |     |
| UF-80                                            |          | 1 | 4 | 8  | 28 | 11 | ■     | 8   | 7       | 2 | ■          | 4-5 |     |
| (UF-80—Must show short on 1-3)                   |          |   |   |    |    |    |       |     |         |   |            |     |     |
| (UF-80—Cathode short test—Depress 1-3 together)  |          |   |   |    |    |    |       |     |         |   |            |     |     |
| UF-85                                            |          | 4 | 4 | 3  | 10 | 11 | ■     | 8   | 7       | 2 | ■          | 4-5 |     |
| (UF-85—Must show short on 1-3)                   |          |   |   |    |    |    |       |     |         |   |            |     |     |
| (UF-85—Cathode short test—Depress 1-3 together)  |          |   |   |    |    |    |       |     |         |   |            |     |     |
| UF-89                                            |          | 1 | 4 | 20 | 25 | 10 | ■     | 8   | 7       | 2 | ■          | 4-5 |     |
| (UF-89—Must show short on 1-6)                   |          |   |   |    |    |    |       |     |         |   |            |     |     |
| UL-84                                            |          | 1 | 4 | 5  | 9  | 13 | ■     | 1-6 | 9       | 7 | 2          | ■   | 4-5 |
| (UL-84—Fil. Cont.—set control "E" at 12)         |          |   |   |    |    |    |       |     |         |   |            |     |     |
| (UL-84—May show short on 1-2-6-8-9)              |          |   |   |    |    |    |       |     |         |   |            |     |     |
| (UL-84—Grid short test—depress 1-2 together)     |          |   |   |    |    |    |       |     |         |   |            |     |     |
| (UL-84—Screen short test—depress 6-9 together)   |          |   |   |    |    |    |       |     |         |   |            |     |     |
| UM-35                                            | triode   | 4 | 1 | 4  | 10 | 10 | ■     |     | 6       | 5 | ■          | 1-8 |     |
| "                                                | eye      | 7 | 1 | 0  | 0  | 10 | ■     |     | 3-6-4   |   | ■          |     |     |
| (UM-35—See instructions for eye test)            |          |   |   |    |    |    |       |     |         |   |            |     |     |
| UM-80                                            | triode   | 2 | 4 | 35 | 10 | 11 | ■     |     | 7       | 1 | ■          | 4-5 |     |
| "                                                | eye      | 1 | 4 | 0  | 0  | 11 | ■     |     | 7-3-6-9 |   | ■          |     |     |
| (UM-80—Must show short on 3-6-9)                 |          |   |   |    |    |    |       |     |         |   |            |     |     |
| (UM-80—See instructions for eye test)            |          |   |   |    |    |    |       |     |         |   |            |     |     |
| *UY-41                                           |          | 2 | 1 | 0  | 3  | 13 | ■     |     | 2       |   | ■          | 1-8 |     |
| (UY-41—Fil. Cont.—Set control "E" at 12)         |          |   |   |    |    |    |       |     |         |   |            |     |     |
| UY-85                                            |          | 3 | 4 | 0  | 16 | 13 | ■     | 1-6 | 9       |   | ■          | 4-5 |     |
| (UY-85—May show short on 1-6-9)                  |          |   |   |    |    |    |       |     |         |   |            |     |     |
| (UY-85—Plate short test—Depress 1-6-9 together)  |          |   |   |    |    |    |       |     |         |   |            |     |     |