

# NEW **NATIONAL UNION ELECTRON TUBE** DATA

## 6170

### 25 CHANNEL RADIAL BEAM TUBE COLLECTOR TYPE

#### APPLICATION

The type 6170 is a collector type magnetically focused and deflected radial beam tube intended for high speed commutation or switching. It is capable of handling twenty-five (25) different channels for transmission over a single carrier in multiplexing or telemetering applications. This is the input tube of such a system.

The 6170 has twenty-five (25) grid leads which are brought out separately and common anode lead for all 25 anodes. A polyphase wound stator is necessary to focus and rotate the beam. The field from the stator produces two (2) rotating electron beams spaced 180° from each other. Double-beam scanning is normally employed, but one beam may be suppressed relatively simply if necessary. The value of the field required is determined by the degree of focusing desired and the voltages on the elements. It has a coated unipotential cathode.

#### RATINGS

|                                      |                     |
|--------------------------------------|---------------------|
| Heater Voltage (AC or DC) $\pm 10\%$ | 6.3 volts           |
| Maximum Anode Voltage                | 500 volts           |
| Maximum Cathode Current              | 30 mA <sub>dc</sub> |

#### TYPICAL OPERATING CONDITIONS:

|                                                                 |                           |
|-----------------------------------------------------------------|---------------------------|
| Heater Voltage                                                  | 6.3 volts                 |
| Heater Current                                                  | 0.300 amperes             |
| Anode Voltage                                                   | 300 volts dc              |
| Screen Grid Voltage ( $G_3$ )                                   | 77 volts dc               |
| Space Charge Voltage ( $G_1$ )                                  | 18 volts dc               |
| Channel Defining Post Voltage ( $G_5$ )                         | 50 volts dc               |
| Single Channel Peak Plate Current                               | 310 $\mu$ A <sub>dc</sub> |
| Screen Current                                                  | 4.7 $\mu$ A <sub>dc</sub> |
| Channel Defining Post Current                                   | 28 $\mu$ A <sub>dc</sub>  |
| Space Charge Grid Current                                       | 1.7 mA <sub>dc</sub>      |
| Single Channel Transconductance                                 | 80 $\mu$ mhos             |
| Single Channel Grid Bias ( $E_{g4}$ ) for Anode Current Cut Off | -4 volts dc               |
| Field                                                           | 140 Gauss                 |

Mica Rings ( $G_2$ ) Normally connected to the Cathode

#### PHYSICAL SPECIFICATIONS

|           |                      |
|-----------|----------------------|
| Style     | Special              |
| Bulb      | T-18                 |
| Base      | 34 Lead Acorn Type   |
| Dimension | See Attached Drawing |

#### BASE PIN CONNECTIONS

|         |          |         |          |
|---------|----------|---------|----------|
| PIN 1:  | $G_3$    | PIN 18: | $G_4-13$ |
| PIN 2:  | $G_4-1$  | PIN 19: | $G_4-14$ |
| PIN 3:  | $G_1$    | PIN 20: | $G_4-15$ |
| PIN 4:  | $G_4-2$  | PIN 21: | H        |
| PIN 5:  | $G_4-3$  | PIN 22: | $G_4-16$ |
| PIN 6:  | P        | PIN 23: | $G_4-17$ |
| PIN 7:  | $G_4-4$  | PIN 24: | $G_4-18$ |
| PIN 8:  | $G_4-5$  | PIN 25: | P        |
| PIN 9:  | $G_4-6$  | PIN 26: | $G_4-19$ |
| PIN 10: | $G_4-7$  | PIN 27: | $G_4-20$ |
| PIN 11: | H        | PIN 28: | $G_4-21$ |
| PIN 12: | $G_4-8$  | PIN 29: | $G_2$    |
| PIN 13: | $G_4-9$  | PIN 30: | $G_4-22$ |
| PIN 14: | $G_4-10$ | PIN 31: | $G_4-23$ |
| PIN 15: | $G_4-11$ | PIN 32: | $G_5$    |
| PIN 16: | NC       | PIN 33: | $G_4-24$ |
| PIN 17: | $G_4-12$ | PIN 34: | $G_4-25$ |

TOP CAP: Cathode

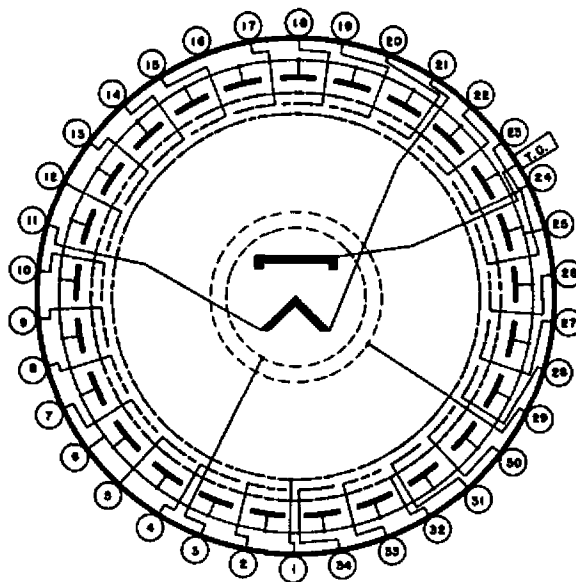
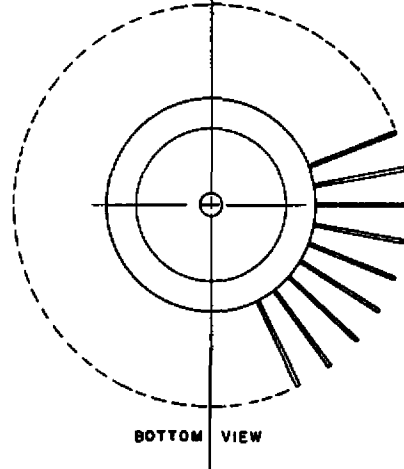
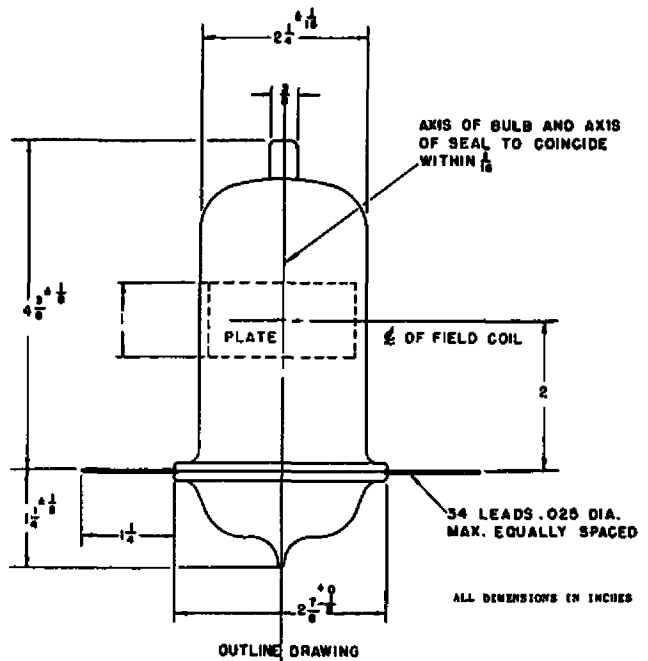
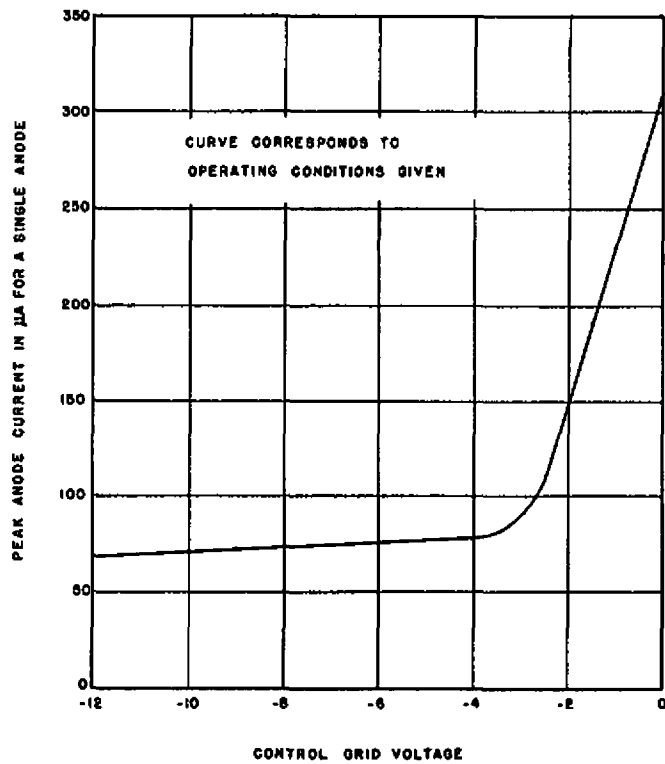
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Prepared by  
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ORANGE **NATIONAL UNION RADIO CORPORATION** NEW JERSEY



NOTE-  
LEAD NO. 1 IS  
MARKED BY A  
YELLOW DOT