GENERAL DATA

Electrical:
Cathode Excitation ........................................ Cyclic
Cathode-Spot Starting ..................................... By Ignitor
Minimum Requirements for Cathode Excitation:
  Peak ignitor voltage required to fire ... 200 volts
  Peak ignitor current required to fire ... 30 amp
Starting time at required voltage
  or current ............................................. 100 µsec
Tube Voltage Drop:
  At peak anode current of 6800 amperes ... 28 volts
  At peak anode current of 4400 amperes ... 14 volts

Mechanical:
Operating Position ...................................... Vertical, flexible lead up
Maximum Overall Length (Including
  flexible lead) ......................................... 27-1/4"
Maximum Radius (Including water connections) .... 3-5/8"
Weight ..................................................... 8 lbs
Terminal Connections (See Dimensional Outline):
  P-Anode Terminal
  (Flexible lead)
  K-Cathode Terminal
  (Bar opposite anode terminal)
  I-Ignitor Terminal
  (Within jacket skirt at cathode end)

Cooling:
Type ....................................................... Water
Minimum inlet water temperature ............. 10 °C
Maximum outlet water temperature .......... 40 °C
Minimum water flow ................................ 1.5 gpm
Maximum water-temperature rise ............ 6 °C
Maximum pressure drop ......................... 6 psi

INTERMITTENT RECTIFIER SERVICE

Maximum Ratings, Absolute-Maximum Values:
For zero phase-control angle and
frequencies from 25 to 60 cps

PEAK ANODE VOLTAGE:
  Forward ............................................. 500 max. volts
  Inverse ............................................. 500 max. volts
**ANODE CURRENT:**

 Peak: 1600 max. amp
 Average (Averaged over any interval of 6 seconds maximum): 100 max. amp
 Fault, for duration of 0.15 second maximum: 6000 max. amp

**RESISTANCE-WELDING-CONTROL SERVICE®**

*Two Tubes in Inverse-Parallel Circuit*

**Maximum Ratings, Absolute-Maximum Values:**

*For frequencies from 25 to 60 cps*

Ratings I-A and I-B Apply to Operation Either (1) Without Water-Saving Thermostat, or (2) With Water-Saving Thermostat Shunted by Auxiliary Contactor

**RATING I-A**

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPPLY VOLTAGE (RMS)</td>
<td>250 max.</td>
</tr>
<tr>
<td>DEMAND POWER (During conduction)</td>
<td>400 max.</td>
</tr>
<tr>
<td>DUTY†</td>
<td>19 max.</td>
</tr>
</tbody>
</table>

**ANODE CURRENT (Per tube):**

 Peak | 2260 max. | 6800 max. amp |
 Demand (RMS, during conduction) | 1600 max. | 4800 max. amp |
 Average (Averaged over any interval of 14 seconds maximum) | 140 max. | 75.6 max. amp |
 Fault, for duration of 0.15 second maximum | 13450 max. | 13450 max. amp |

**RATING I-B**

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPPLY VOLTAGE (RMS)</td>
<td>600 max.</td>
</tr>
<tr>
<td>DEMAND POWER (During conduction)</td>
<td>400 max.</td>
</tr>
<tr>
<td>DUTY†</td>
<td>47 max.</td>
</tr>
</tbody>
</table>

**ANODE CURRENT (Per tube):**

 Peak | 945 max. | 2830 max. amp |
 Demand (RMS, during conduction) | 666 max. | 2000 max. amp |
 Average (Averaged over any interval of 5.8 seconds maximum) | 140 max. | 75.6 max. amp |
 Fault, for duration of 0.15 second maximum | 5600 max. | 5600 max. amp |

*† † † † †: see next page.*
Ratings II-A and II-B Apply to Operation with Water-Saving Thermostat Not Shunted by Auxiliary Contactor

**RATING II-A**

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPPLY VOLTAGE (RMS)</td>
<td>250 max.</td>
</tr>
<tr>
<td>DEMAND POWER (During conduction)</td>
<td>400 max.</td>
</tr>
<tr>
<td>DUTY†</td>
<td>11 max.</td>
</tr>
<tr>
<td>ANODE CURRENT (Per tube):</td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td>2260 max.</td>
</tr>
<tr>
<td>Demand (RMS, during conduction)‡</td>
<td>1600 max.</td>
</tr>
<tr>
<td>Average (Averaged over any interval of 23.5 seconds maximum)‡</td>
<td>80 max.</td>
</tr>
<tr>
<td>Fault, for duration of 0.15 second maximum.</td>
<td>13450 max.</td>
</tr>
</tbody>
</table>

**RATING II-B**

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPPLY VOLTAGE (RMS)</td>
<td>600 max.</td>
</tr>
<tr>
<td>DEMAND POWER (During conduction)</td>
<td>400 max.</td>
</tr>
<tr>
<td>DUTY†</td>
<td>26 max.</td>
</tr>
<tr>
<td>ANODE CURRENT (Per tube):</td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td>945 max.</td>
</tr>
<tr>
<td>Demand (RMS, during conduction)‡</td>
<td>666 max.</td>
</tr>
<tr>
<td>Average (Averaged over any interval of 10 seconds maximum)‡</td>
<td>80 max.</td>
</tr>
<tr>
<td>Fault, for duration of 0.15 second maximum.</td>
<td>5600 max.</td>
</tr>
</tbody>
</table>

**IGNITOR**

**Maximum Ratings, Absolute-Maximum Values:**

**PEAK IGNITOR VOLTAGE:**
- Positive: Equal to anode volts
- Negative: 5 max. volts

**IGNITOR CURRENT:**
- Peak: 100 max. amp
- Average (Averaged over any interval of 5 seconds maximum): 1 max. amp
- RMS: 10 max. amp

†‡: See next page.
RMS voltage, current, and demand kVA are on the basis of full-cycle conduction (no phase delay) regardless of whether or not phase control is used.

Defined as \( \frac{\text{cycles "on"}}{\text{cycles "on" + cycles "off"}} \) during the specified averaging time.

For supply voltages between 250 volts and 600 volts, duty is proportional to supply voltage. For supply voltages lower than 250 volts, the values for 250 volts apply.

For supply voltages between 250 volts and 600 volts, demand anode current and averaging time are each inversely proportional to supply voltage. For supply voltages lower than 250 volts, the values for 250 volts apply.

Column 1 represents operation at maximum average anode current; Column 2 represents operation at maximum demand current.

OPERATING CONSIDERATIONS
for the 5552-A are the same as those shown for Type 5551-A
**IGNITRON**

**BOTTOM VIEW**

- EXHAUST-TUBE PINCHOFF
- MOUNTING PLATE FOR THERMOSTAT
- CATHODE TERMINAL

**NOTE 1:** MAY BE SLOTTED.

**NOTE 2:** DASHED POSITION AT MANUFACTURER'S OPTION.

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**RATING CHART**

**RESISTANCE-WELDING-CONTROL SERVICE**

- TWO TUBES CONNECTED IN INVERSE PARALLEL.
- RMS ANODE-SUPPLY VOLTS = 250 TO 600
- CURVE A: NO WATER-SAVING THERMOSTAT, OR WATER-SAVING THERMOSTAT SHUNT BY AUXILIARY CONTACTOR.
- CURVE B: WATER-SAVING THERMOSTAT, WITHOUT AUXILIARY CONTACTOR.

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**ELECTRON TUBE DIVISION**

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

**92CS-9712**
TWO TUBES CONNECTED IN INVERSE PARALLEL. NO WATER-SAVING THERMOSTAT, OR WATER-SAVING THERMOSTAT SHUNTED BY AUXILIARY CONTACTOR. PROTECTIVE THERMOSTAT OPTIONAL.

<table>
<thead>
<tr>
<th>CURVE</th>
<th>RMS ANODE-SUPPLY VOLTS</th>
<th>MAXIMUM AVERAGING TIME-SECONDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>250</td>
<td>14</td>
</tr>
<tr>
<td>B</td>
<td>500</td>
<td>7</td>
</tr>
<tr>
<td>C</td>
<td>600</td>
<td>5.8</td>
</tr>
</tbody>
</table>

CONDUCTION TIME = 0.5 SECOND

DEMAND AMPERES (RMS) IN LOAD

DUTY — PER CENT

ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY 92CM-9710
TWO TUBES CONNECTED IN INVERSE PARALLEL, WATER-SAVING THERMOSTAT WITHOUT AUXILIARY CONTACTOR, PROTECTIVE THERMOSTAT OPTIONAL.

<table>
<thead>
<tr>
<th>CURVE</th>
<th>RMS ANODE-SUPPLY VOLTS</th>
<th>MAXIMUM AVERAGING TIME—SECONDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>250</td>
<td>23.5</td>
</tr>
<tr>
<td>B</td>
<td>500</td>
<td>11.8</td>
</tr>
<tr>
<td>C</td>
<td>600</td>
<td>10</td>
</tr>
</tbody>
</table>

CONDUCTION TIME = 0.5 SECOND

ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY