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**THYRATRON**

MERCURY-VAPOR TETRODE

Electrical:	DATA	
Heater, for Unipotential Cathode:		
Voltage*	5.5 <sup>□</sup>	5.0 . . . . . volts
Current . . . . .	5.0 <sup>□</sup>	4.5 . . . . . amp
Direct Interelectrode Capacitance (Approx.):		
Grid No.1 to Anode. . . . .	0.2	. . . . . μmf
Peak Voltage Drop(Approx.).	16	. . . . . volts
Approx. Control Characteristics:		
Anode Voltage . . . . .	100	1000 . . . . . volts
Grid-No.2 Voltage . . . . .	0	0 . . . . . volts
Grid-No.1 Voltage . . . . .	+1	-9 . . . . . volts
Ionization Time(Approx.). . . . .	10	. . . . . μseconds
Deionization Time(Approx.)	1000	. . . . . μseconds

□ Applies only when this tube is used for ignitor firing.

**Mechanical:**

Mounting Position . . . . .	Vertical, Base Down
Overall Length. . . . .	7-11/16" ± 1/4"
Greatest Radius . . . . .	2-1/4"
Bulb. . . . .	ST-23
Caps. . . . .	Medium
Base. . . . .	Medium 4-Pin, Bayonet

**Maximum Ratings, Absolute Values:**

PEAK FORWARD ANODE VOLTAGE. . . . .	1000 max.	volts
PEAK INVERSE ANODE VOLTAGE. . . . .	1000 max.	volts
GRID-No.1 (CONTROL-GRID) VOLTAGE:		
Before Conduction . . . . .	-1000 max.	volts
During Conduction . . . . .	-10 max.	volts
GRID-No.2 (SHIELD-GRID) VOLTAGE:		
Before Conduction . . . . .	-300 max.	volts
During Conduction . . . . .	-5 max.	volts
INSTANTANEOUS ANODE CURRENT:		
Below 25 Cycles . . . . .	5 max.	amp
25 Cycles and Higher. . . . .	30 max. <sup>□</sup>	15 max. amp
AVERAGE ANODE CURRENT** . . . . .	0.5 max. <sup>□</sup>	2.5 max. amp
SURGE ANODE CURRENT for 0.1 sec., max.		200 max. amp
INSTANTANEOUS GRID-No.1 Current . . . . .	1.0 max.	amp
AVERAGE GRID-No.1 CURRENT** . . . . .	0.25 max.	amp
INSTANTANEOUS GRID-No.2 CURRENT . . . . .	1.0 max.	amp
AVERAGE GRID-No.2 CURRENT** . . . . .	0.25 max.	amp
COND.-MERCURY TEMPERATURE RANGE <sup>▲</sup> . . . . .	40 - 80	°C

\* Heater voltage must be applied at least 5 minutes before anode voltage is applied.

\*\* Averaged over any 15-second interval.

<sup>▲</sup> Recommended condensed-mercury temperature 40°C.

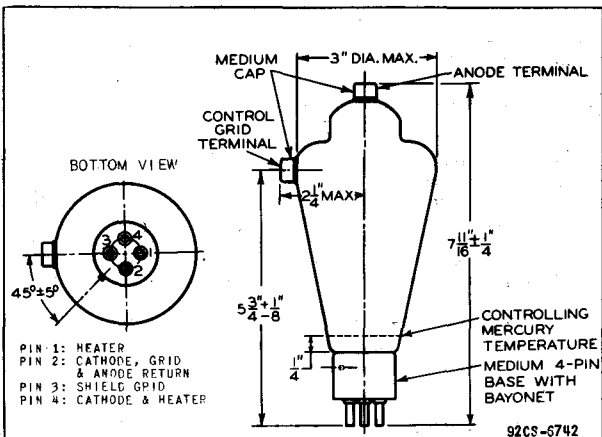
□ Applies only when this tube is used for ignitor firing.

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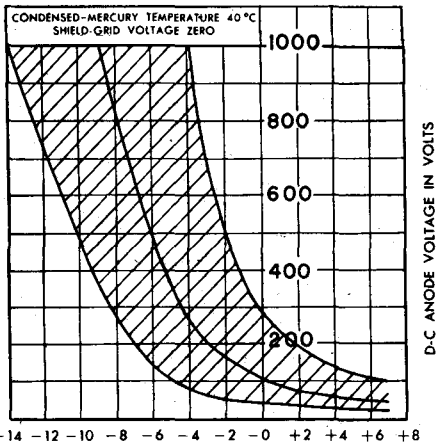


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# THYRATRON



OPERATIONAL REGION  
OF CRITICAL GRID VOLTAGE



92CS-6705

D-C GRID VOLTAGE AT START OF DISCHARGE IN VOLTS

MAY 1, 1946

TUBE DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

CE-6742-6705



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**THYRATRON**

MERCURY-VAPOR TETRODE

**DATA****Electrical:**

Heater, for Unipotential Cathode:

Voltage. . . . .	5.5 <sup>□</sup>	5.0	. . . . .	volts
Current. . . . .	5.0 <sup>□</sup>	4.5	. . . . .	amp

Cathode:

Minimum Heating Time, prior to tube conduction . . . . .	5	. . . . .	minutes
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Direct Interelectrode Capacitances (Approx.):

Grid No.1 to Anode . . . . .	0.2	. . . . .	μmf
Grid No.1 to Cathode . . . . .	4.4	. . . . .	μmf ←

Ionization Time (Approx.) . . . . .	100	. . . . .	μsec
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Deionization Time (Approx.) . . . . .	1000	. . . . .	μsec
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Anode Voltage Drop (Approx.) . . . . .	16	. . . . .	volts
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Grid-No.1 Control Ratio (Approx.) with grid-No.1 resistor (ohms) = 0; grid-No.1 and grid-No.2 volts = 0 . . . . .	170	←
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Grid-No.2 Control Ratio (Approx.) with grid-No.1 resistor (ohms) = 0; grid-No.1 and grid-No.2 volts = 0 . . . . .	300	←
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**Mechanical:**

Mounting Position. . . . .	Vertical, Base Down
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Overall Length . . . . .	7-11/16" ± 1/4"	←
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Seated Length. . . . .	7-1/16" ± 1/4"	←
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Greatest Radius. . . . .	2-1/4"
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Bulb . . . . .	ST-23
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Caps (Two) . . . . .	Medium
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Base . . . . .	Medium-Shell Small 4-Pin, Bayonet
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Basing Designation for BOTTOM VIEW . . . . .	4CD
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Pin 1-Heater

Pin 2-Cathode;  
Circuit  
Returns

Pin 3-Grid No.2

Pin 4-Heater,  
Cathode

Top Cap-Anode

Side Cap-Grid No.1

**Maximum Ratings, Absolute Values:**

PEAK ANODE VOLTAGE:

Forward. . . . .	1000 max.	volts
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Inverse. . . . .	1000 max.	volts
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GRID-No.2 (SHIELD-GRID) VOLTAGE:

Before Conduction. . . . .	-300 max.	volts
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During Conduction. . . . .	-5 max.	volts
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GRID-No.1 (CONTROL-GRID) VOLTAGE:

Before Conduction. . . . .	-1000 max.	volts
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During Conduction. . . . .	-10 max.	volts ←
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CATHODE CURRENT:

Peak . . . . .	30 max. <sup>□</sup>	15 max.	amp
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Average** . . . . .	0.5 max. <sup>□</sup>	2.5 max.	amp
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Fault, for 0.1 sec. maximum. . . . .	200 max.	amp
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□ \*\*: See next page.

← Indicates a change.

MARCH 1, 1951

TUBE DEPARTMENT

DATA

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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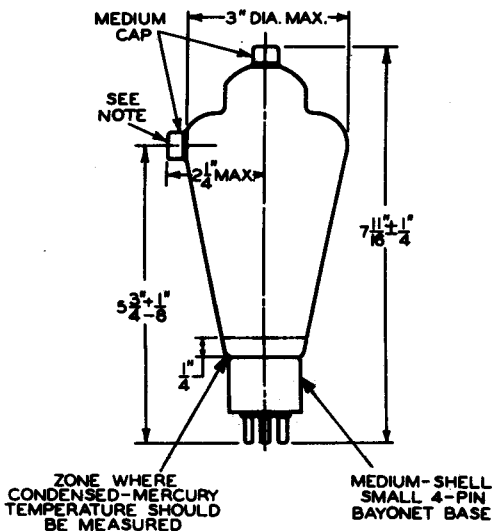


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GRID-No. 2 CURRENT:		
Average**	0.25 max.	amp
GRID No. 1 CURRENT:		
Average**	0.25 max.	amp
COND.-MERCURY TEMPERATURE RANGE <sup>▲</sup>	+40 to +80	°C
OPERATING FREQUENCY	150 max.	cps

- Applies when this tube is used for igniter firing.
- \*\* Averaged over any interval of 15 sec. max.
- ▲ Recommended operating temperature is 40°C.



92CS-6742R1

NOTE: THE PLANE THROUGH TUBE AXIS AND CENTER OF GRID-  
 N<sup>o</sup>1 CAP IS 45° ± 5° FROM THE PLANE THROUGH THE TUBE  
 AXIS AND CENTER OF BAYONET PIN. GRID-N<sup>o</sup>1 CAP IS ON  
 SAME SIDE AS PIN N<sup>o</sup>3.

TEMPERATURE-RISE CHARACTERISTIC of the 5560  
 is the same as that shown for Type 5559



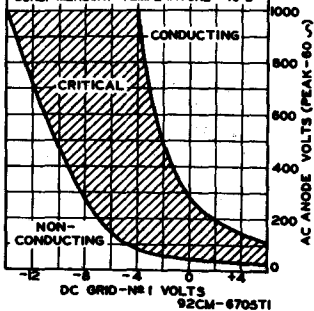
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## OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

**TYPE 5560**  
 RANGE IS FOR CONDITIONS WHERE:  
 $E_f = 5$  VOLTS AC  $\pm 5\%$ ; GRID-#2 (SHIELD) VOLTS = 0; CIRCUIT RETURNS TO PIN #2. THE RANGE INCLUDES INITIAL AND LIFE VARIATIONS OF INDIVIDUAL TUBES, AS WELL AS CHANGE IN CHARACTERISTICS DUE TO HEATER PHASING. GRID-#1 RESISTOR (OHMS) = 0. COND.-MERCURY TEMPERATURE =  $40^\circ\text{C}$

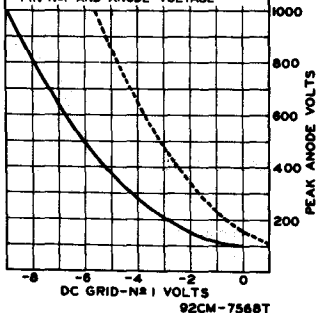


## SHIFT OF AVERAGE CONTROL CHARACTERISTIC WITH CHANGE IN HEATER PHASING

**TYPE 5560**  $E_f = 5$  VOLTS AC  
 GRID-#2 (SHIELD) VOLTS = 0  
 CONDENSED-MERCURY TEMPERATURE =  $40^\circ\text{C}$   
 GRID-#1 RESISTOR (OHMS) = 0

CURVE	PHASE ANGLE DEGREES <sup>a</sup>	CIRCUIT RETURN
—	$180^\circ$	PIN #2
- - - -	$0^\circ$	PIN #2

<sup>a</sup>BETWEEN HEATER VOLTAGE AT PIN #1 AND ANODE VOLTAGE



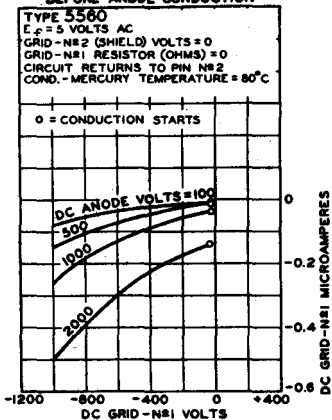
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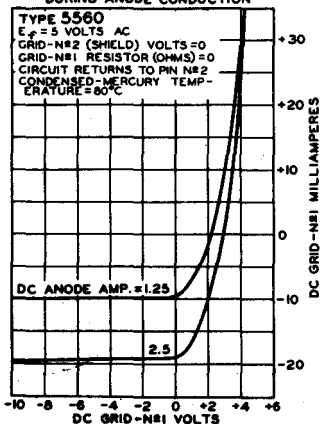
THYRATRON

AVERAGE GRID CHARACTERISTICS BEFORE ANODE CONDUCTION



92CM-7556T

AVERAGE GRID CHARACTERISTICS DURING ANODE CONDUCTION



92CM-7570T