



# 5552-A IGNITRON

5552-A

WATER-COOLED, STEEL-JACKETED, MERCURY-POOL-CATHODE  
TYPE HAVING MOUNTING PLATE FOR THERMOSTATIC CONTROL  
*for resistance-welding control*

## GENERAL DATA

### Electrical:

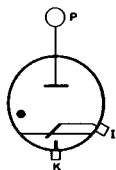
Cathode Excitation . . . . .	Cyclic
Cathode-Spot Starting . . . . .	By Ignitor
Minimum Requirements for Cathode Excitation:	
Peak ignitor voltage required to fire. . . . .	200 volts
Peak ignitor current required to fire. . . . .	30 amp
Starting time at required voltage or current . . . . .	100 $\mu$ sec
Tube Voltage Drop:	
At peak anode current of 6800 amperes. . . . .	28 volts
At peak anode current of 440 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 ( <i>See Dimensional Outline</i> ):	

P - Anode  
Terminal  
(Flexible  
lead)

K - Cathode  
Terminal  
(Bar oppo-  
site anode  
terminal)



I - Ignitor  
Terminal  
(Within  
jacket  
skirt at  
cathode  
end)

### Cooling:

Type . . . . .	Water
Minimum inlet water temperature. . . . .	10 $^{\circ}$ C
Maximum outlet water temperature . . . . .	40 $^{\circ}$ C
Minimum water flow . . . . .	1.5 gpm
Maximum water-temperature rise . . . . .	6 $^{\circ}$ 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



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## ANODE CURRENT:

Peak . . . . .	1600 max.	amp
Average (Averaged over any interval of 6 seconds maximum) . . . . .	100 max.	amp
Fault, for duration of 0.15 sec- ond 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) With-  
out Water-Saving Thermostat, or (2) With Water-  
Saving Thermostat Shunted by Auxiliary Contactor

### RATING I-A

	Column 1*	Column 2*	
SUPPLY VOLTAGE (RMS) . . . . .	250 max.	250 max.	volts
DEMAND POWER (During con- duction) . . . . .	400 max.	1200 max.	kva
DUTY† . . . . .	19 max.	3.5 max.	%
ANODE CURRENT (Per tube):			
Peak . . . . .	2260 max.	6800 max.	amp
Demand (RMS, during con- duction)* . . . . .	1600 max.	4800 max.	amp
Average (Averaged over any interval of 14 sec- onds maximum)* . . . . .	140 max.	75.6 max.	amp
Fault, for duration of 0.15 second maximum. . . . .	13450 max.	13450 max.	amp

### RATING I-B

	Column 1*	Column 2*	
SUPPLY VOLTAGE (RMS) . . . . .	600 max.	600 max.	volts
DEMAND POWER (During con- duction) . . . . .	400 max.	1200 max.	kva
DUTY† . . . . .	47 max.	8.5 max.	%
ANODE CURRENT (Per tube):			
Peak . . . . .	945 max.	2830 max.	amp
Demand (RMS, during con- duction)* . . . . .	666 max.	2000 max.	amp
Average (Averaged over any interval of 5.8 sec- onds maximum)* . . . . .	140 max.	75.6 max.	amp
Fault, for duration of 0.15 second maximum. . . . .	5600 max.	5600 max.	amp

®, †, \*, #: See next page.



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Ratings II-A and II-B Apply to Operation with Water-Saving Thermostat Not Shunted by Auxiliary Contactor

## RATING II-A

	Column 1*	Column 2*	
SUPPLY VOLTAGE (RMS) . . . . .	250 max.	250 max.	volts
DEMAND POWER (During con- duction) . . . . .	400 max.	1200 max.	kva
DUTY† . . . . .	11 max.	2 max.	%
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 23.5 sec- onds maximum)* . . . . .	80 max.	43 max.	amp
Fault, for duration of 0.15 second maximum. . . . .	13450 max.	13450 max.	amp

## RATING II-B

	Column 1*	Column 2*	
SUPPLY VOLTAGE (RMS) . . . . .	600 max.	600 max.	volts
DEMAND POWER (During con- duction) . . . . .	400 max.	1200 max.	kva
DUTY† . . . . .	26 max.	4.8 max.	%
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 10 sec- onds maximum)* . . . . .	80 max.	43 max.	amp
Fault, for duration of 0.15 second maximum. . . . .	5600 max.	5600 max.	amp

## 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.



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- 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  $(\text{cycles "on"}) / (\text{cycles "on"} + \text{cycles "off"})$  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







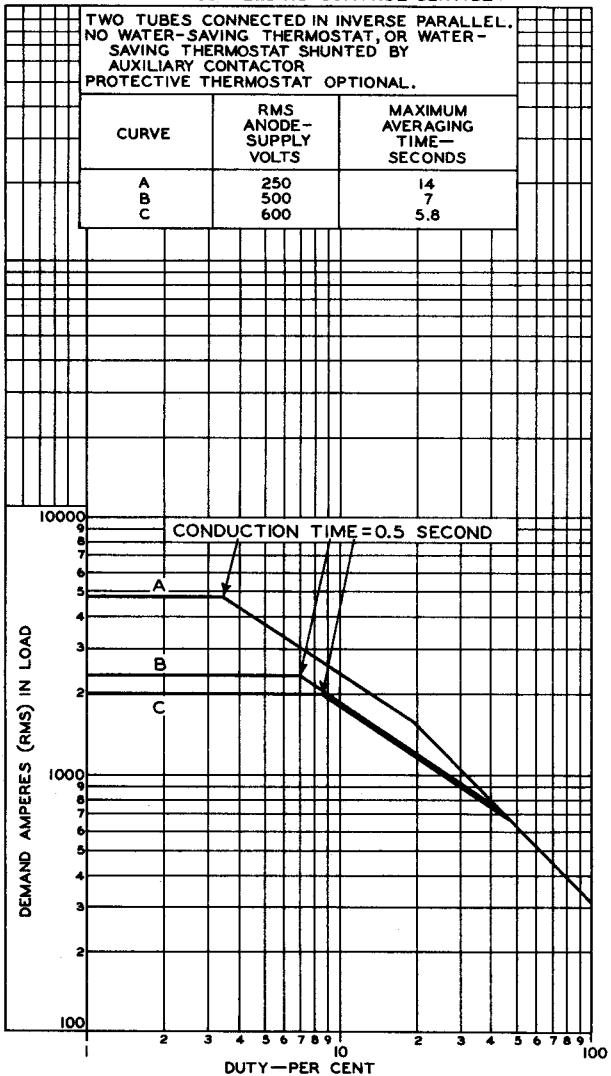
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### RATING CHART RESISTANCE-WELDING-CONTROL SERVICE

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

CURVE	RMS ANODE-SUPPLY VOLTS	MAXIMUM AVERAGING TIME—SECONDS
A	250	14
B	500	7
C	600	5.8



ELECTRON TUBE DIVISION

92CM-9710

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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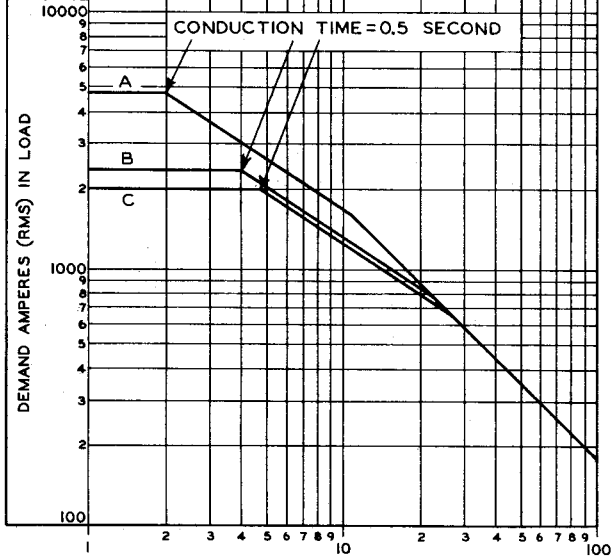


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**RATING CHART  
RESISTANCE-WELDING-CONTROL SERVICE**

TWO TUBES CONNECTED IN INVERSE PARALLEL.  
WATER-SAVING THERMOSTAT WITHOUT  
AUXILIARY CONTACTOR.  
PROTECTIVE THERMOSTAT OPTIONAL.

CURVE	RMS ANODE-SUPPLY VOLTS	MAXIMUM AVERAGING TIME—SECONDS
A	250	23.5
B	500	11.8
C	600	10



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