



893-A

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TRANSMITTING TRIODE

WATER & FORCED-AIR COOLED

GENERAL DATA

Electrical:

Filament: Tungsten, Three-Section Type
 Excitation . . . 1 ϕ AC, 3 ϕ AC, 6 ϕ AC, or DC
 Voltage per strand 10 volts
 Current per terminal 61 amp.
 (See **FILAMENT CONNECTIONS AND EXCITATION CIRCUITS** under this type)
 Starting - The current per terminal must never exceed 120 amperes, even momentarily.

Amplification Factor 36

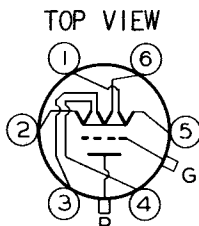
Direct Interelectrode Capacitances (Approx.):

Grid to Plate	33	μ f
Grid to Filament	48	μ f
Plate to Filament	3.2	μ f

Physical:

Terminal Connections:

Term.1 - Fil. No.3
 Term.2 - Fil. No.2
 Term.3 - Fil. No.1
 Term.4 - Fil. No.2
 Term.5 - Fil. No.3
 Term.6 - Fil. No.1



G - Grid Cap
 Terminal

P - Water-cooled
 Plate
 Terminal

TERMINAL NO.5 IS ABOVE GRID ARM

Mounting Position Vertical only, glass end up
 Overall Length 25-5/8" $\pm$ 1-1/8"
 Greatest Radius 6" $\pm$ 3/8"
 Cap. No.3935
 Base (with nozzle for air-cooling of filament seal) No.6628
 Water Jacket Type UT-1290-A
 Gasket RCA Stock No.17880

Cooling - Water flow of 8 to 15 gallons per minute must start before application of any voltages and continue for at least 2 minutes after removal of voltages. Water temperature must not exceed 70°C under any conditions of operation.
 Air flow of 2 cubic feet per minute in nozzle of filament base before application of any voltages is required to limit temperature of filament seal to 150°C.

This tube can often be operated at reduced filament voltage as explained on sheet TYPES OF CATHODES in General Section.

A-F POWER AMPLIFIER & MODULATOR - Class B

Maximum Ratings, Absolute Values:

D-C PLATE VOLTAGE	20000 max.	volts
MAX.-SIGNAL D-C PLATE CURRENT*	4 max.	amp.
MAX.-SIGNAL PLATE INPUT*	60 max.	kw
PLATE DISSIPATION*	20 max.	kw

Typical Operation:

Unless otherwise specified, values are for 2 tubes

D-C Plate Voltage 12000 15000 18000 volts

* Averaged over any audio-frequency cycle of sine-wave form.

MAR. 30, 1945

RCA VICTOR DIVISION
 RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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(continued from preceding page)

D-C Grid Voltage	-260	-350	-450	. . . volts
Peak A-F Grid-to-Grid Voltage.	1480	1560	1720	. . . volts
Zero-Sig. D-C Plate Cur. . .	0.8	0.8	0.8	. . . amp.
Max.-Sig. D-C Plate Cur. . .	7.0	6.0	5.5	. . . amp.
Effective Load Res. (plate-to-plate)	4000	6000	8000	. . . ohms
Max.-Signal Driving Power. . .	220	190	140	approx. watts
Max.-Signal Power Output . . .	52	60	70	approx. kw

R-F POWER AMPLIFIER - Class B Telephony

Carrier conditions per tube for use with a max. modulation factor of 1.0

Maximum Ratings, Absolute Values:

D-C PLATE VOLTAGE.	20000 max.	. . . volts
D-C PLATE CURRENT.	2 max.	. . . amp.
PLATE INPUT.	32 max.	. . . kw
PLATE DISSIPATION.	20 max.	. . . kw

Typical Operation:

D-C Plate Voltage.	12000	15000	15000	. . . volts
D-C Grid Voltage	-250	-340	-340	. . . volts
Peak R-F Grid Voltage.	350	395	450	. . . volts
D-C Plate Current.	1.5	1.5	2.0	. . . amp.
Driving Power # **.	130	150	200	approx. watts
Power Output #	6	7.5	10	approx. kw

**At crest of a-f cycle with modulation factor of 1.0.

PLATE-MODULATED R-F POWER AMPLIFIER - Class C Telephony

Carrier conditions per tube for use with a max. modulation factor of 1.0

Maximum Ratings, Absolute Values:

D-C PLATE VOLTAGE.	12000 max.	. . . volts
D-C GRID VOLTAGE	-3000 max.	. . . volts
D-C PLATE CURRENT.	2 max.	. . . amp.
D-C GRID CURRENT	0.4 max.	. . . amp.
PLATE INPUT.	24 max.	. . . kw
PLATE DISSIPATION.	12 max.	. . . kw

Typical Operation:

D-C Plate Voltage.	10000	10000	12000	. . . volts
D-C Grid Voltage	-800	-800	-1000	. . . volts
Peak R-F Grid Voltage.	1200	1280	1500	. . . volts
D-C Plate Current.	1.5	2.0	2.0	. . . amp.
D-C Grid Current #	0.10	0.16	0.14	approx. amp.
Driving Power #	120	210	210	approx. watts
Power Output	11	15	18	approx. kw

: See next page.

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(continued from preceding page)

R-F POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy*Key-down conditions per tube without modulation*****Maximum Ratings, Absolute Values:**

D-C PLATE VOLTAGE.	20000 max. . .	volts
D-C GRID VOLTAGE	-3000 max. . .	volts
D-C PLATE CURRENT.	4 max. . .	amp.
D-C GRID CURRENT	0.4 max. . .	amp.
PLATE INPUT.	70 max. . .	kw
PLATE DISSIPATION.	20 max. . .	kw

Typical Operation:

D-C Plate Voltage.	12000	15000	18000	. . .	volts
D-C Grid Voltage	-800	-900	-1000	. . .	volts
Peak R-F Grid Voltage. . .	1430	1520	1630	. . .	volts
D-C Plate Current.	3.5	3.6	3.6	. . .	amp.
D-C Grid Current #	0.26	0.25	0.21	approx.	amp.
Driving Power #	360	370	340	approx.	watts
Power Output	30	40	50		approx. kw

Subject to wide variations as explained on sheet TUBE RATINGS in General Section.

**Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

Data on operating frequencies for the 893-A are given on the sheet TRANS.TUBE RATINGS vs FREQUENCY.

CURVES

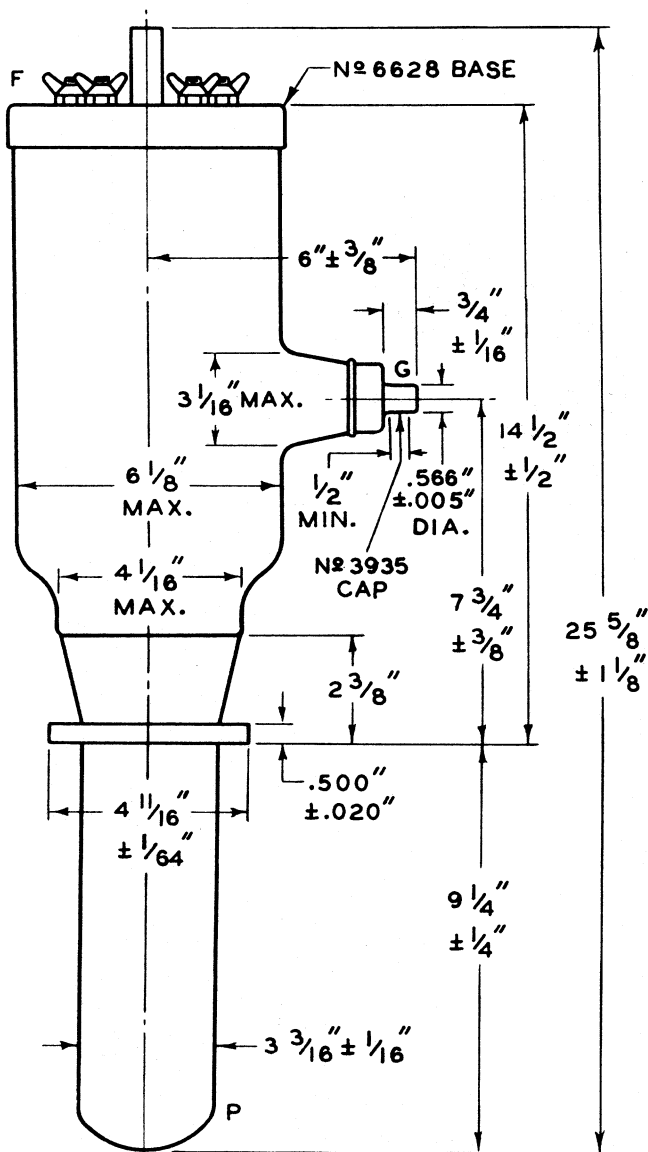
FOR THE 893-A ARE THE SAME AS
THOSE FOR TYPE 893A-R

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TRANSMITTING TRIODE



92CM-6016R2

FOR CONNECTIONS OF
FILAMENT TERMINALS
SEE DRAWING FILAMENT
CONNECTIONS AND
EXCITATION CIRCUITS

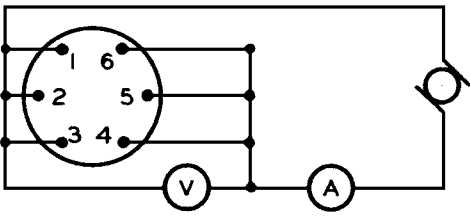
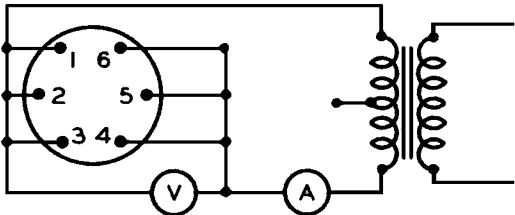
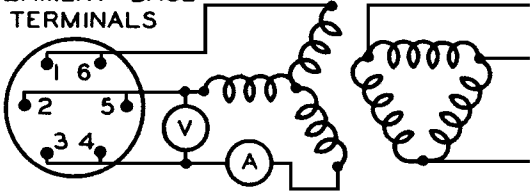
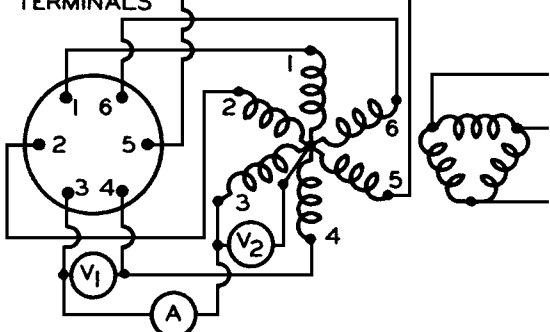
F = FILAMENT
P = PLATE
G = GRID



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FILAMENT CONNECTIONS AND EXCITATION CIRCUITS

D-C FILAMENT EXCITATION	FILAMENT BASE TERMINALS  V = 20 VOLTS A = 183 AMP.
SINGLE-PHASE A-C FILAMENT EXCITATION	FILAMENT BASE TERMINALS  V = 20 VOLTS A = 183 AMP.
THREE-PHASE A-C FILAMENT EXCITATION	FILAMENT BASE TERMINALS  V = 17.3 VOLTS A = 122 AMP.
SIX-PHASE A-C FILAMENT EXCITATION NOTE: TERMINALS MUST BE CONNECTED IN CORRECT PHASE RELATION AS SHOWN	FILAMENT BASE TERMINALS  V₁ = 10 VOLTS V₂ = 10 VOLTS A = 61 AMP.