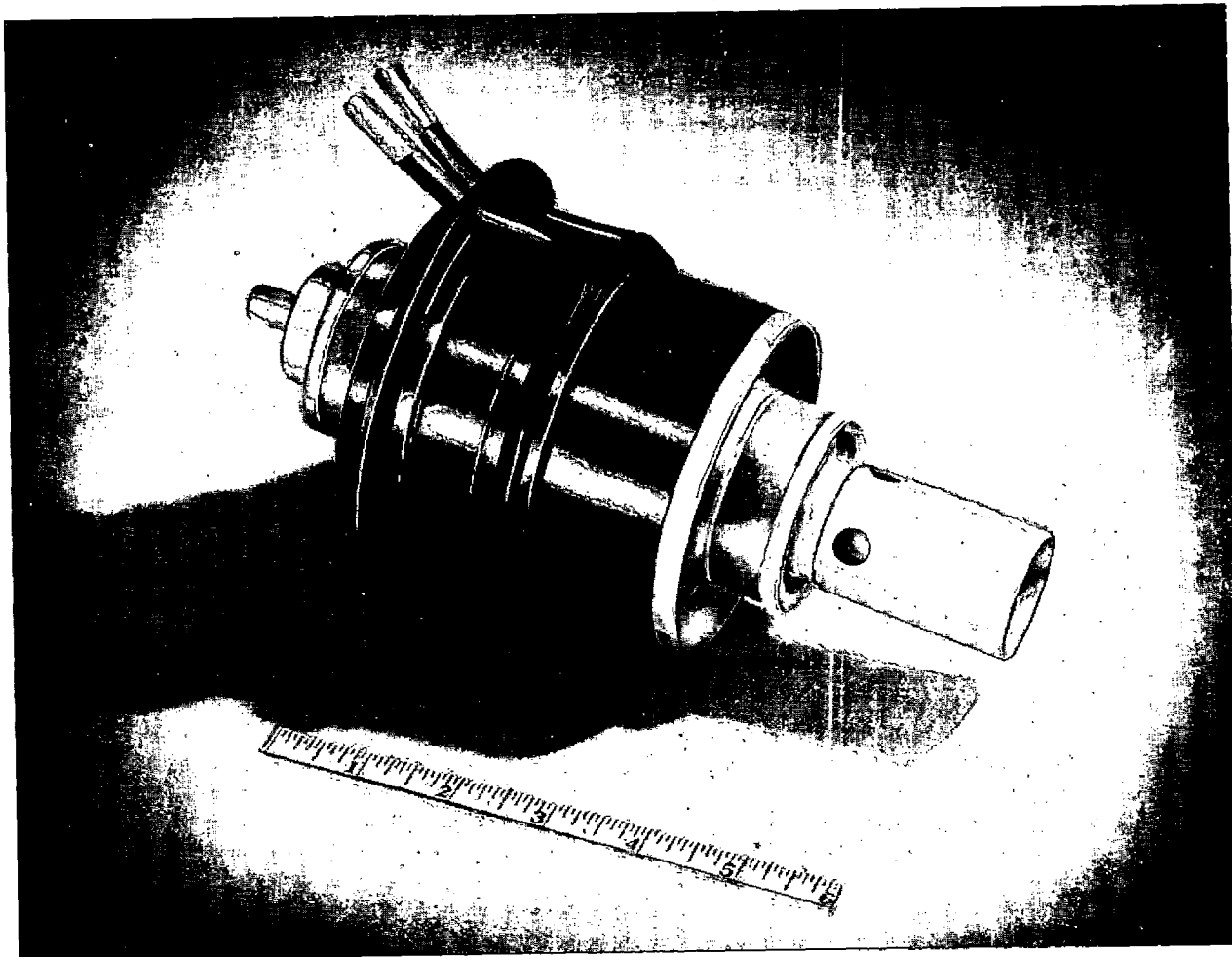




CW MAGNETRON

METAL AND CERAMIC

2.5 KILOWATTS OF CW POWER

FOR DIELECTRIC HEATING

915 MEGACYCLES

TUNGSTEN FILAMENT

HIGH EFFICIENCY

The GL-6787 is a water and forced-air-cooled CW magnetron designed for use as a power source in dielectric heating. It can produce 2.5 kilowatts of useful power and operates at a fixed frequency be-

tween 890 and 940 megacycles. The magnetic field is supplied externally, and may be an electro-magnet connected in series with the plate current.

TECHNICAL INFORMATION

GENERAL

Electrical

Preheat Filament Voltage*	12 ± 1.2	Volts
Preheat Filament Current at 12 Volts	56 ± 5	Amperes
Minimum Preheat Time	.20	Seconds
Filament Cold Resistance	0.018	Ohms
Anode-Cathode Capacitance	14	μf

GENERAL  ELECTRIC

from JETEC release #1572, Jan. 23, 1956

TECHNICAL INFORMATION (CONT'D)

Mechanical

Mounting Position—Tube Axis Vertical—Cathode Up or Down
Mounting Support and Tube Connections—See K-69087-72A732 on page six for details.
Net Weight.....4.6 Pounds

Thermal

Type of Cooling—Forced Air and Water
Water Flow through Tube, minimum.....2 Quarts per Minute
Outgoing Water Temperature.....70 Max C
Air Flow on Output Seal.....10 Cubic Feet per Minute
Air Flow on Cathode Structure.....10 Cubic Feet per Minute

Provision must be made to prevent application of filament or plate power to the tube before water and air cooling is applied, and to remove power in the case of cooling-system failure.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Maximum Ratings, Absolute Values

Filament Voltage*.....13.2 Volts
Filament Current......61 Amperes
Filament Surge Current......85 Amperes
Anode Voltage.....4100 Volts
Anode Current.....1.5 Amperes
Plate Input.....6000 Watts
Plate Dissipation.....3500 Watts
Outgoing Anode Cooling Water.....70 Max C
Cathode Stem Temperature.....200 Max C
(See Outline K-69087-72A731 on page seven for details)
Voltage Standing Wave Ratio—Presented by the Load.....3:1

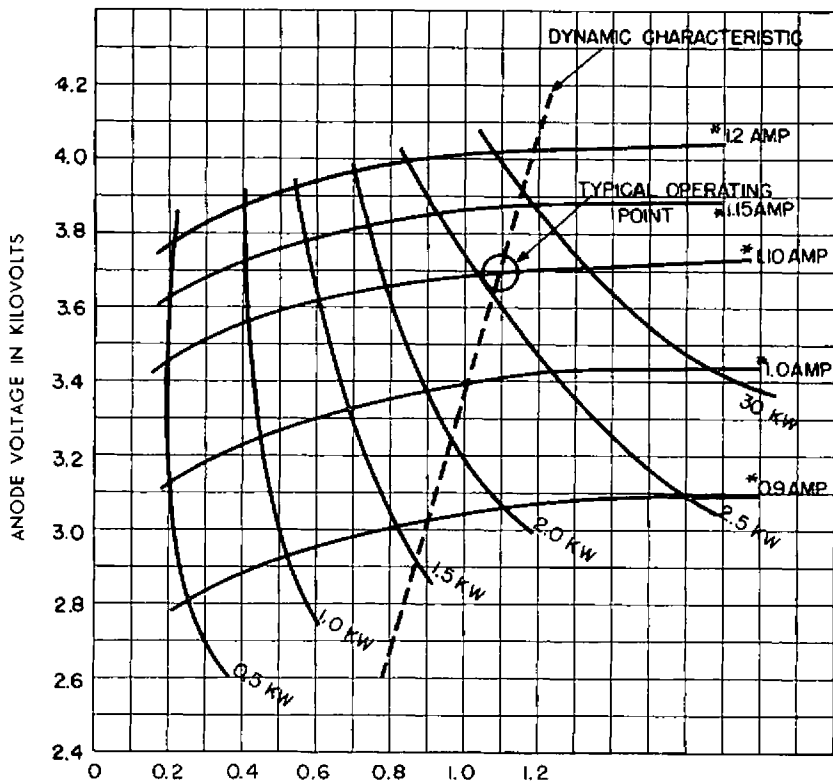
Typical Operating Conditions

Filament Voltage*.....12.0 Volts
Filament Current......55 Amperes
Frequency.....890 to 940 Megacycles
Anode Voltage.....3700 Volts
Anode Current.....1.10 Amperes
Power Output, minimum.....2.5 Kilowatts
Pulling Factor, VSWR 1.5:1.....2 Megacycles
Pushing Factor, I_b from 0.3 to 1.0 ampere.....2.6 Megacycles per Second
per Ampere
Thermal Coefficient of Temperature.....-0.07 Megacycles per Second
per C

Magnetic Field—See K-69087-71A286 on page five for details.

* While the magnetron is oscillating, a portion of the input plate power (depending on load conditions) will cause the filament to overheat. Maximum life will be obtained by reducing the filament power during oscillation; if the loading changes rapidly, this reduction can best be done by an automatic control, otherwise, a manual correction may be used. The required reduction of power can be ascertained by decreasing the filament voltage until the hot filament resistance during oscillation is the same as that when the magnetron is not oscillating.

TYPICAL PERFORMANCE CHART

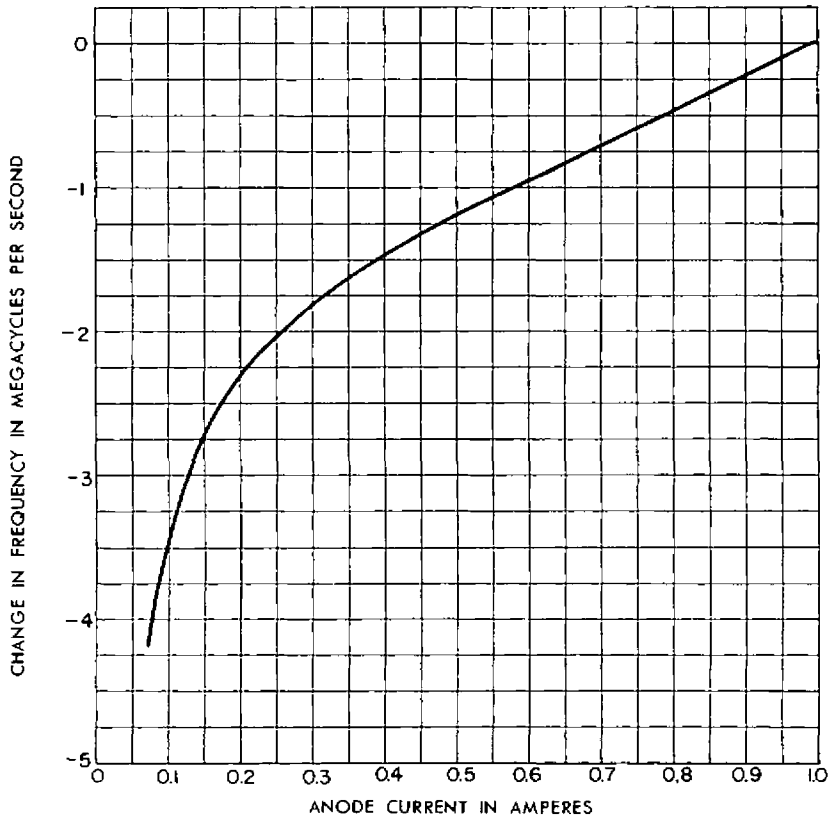


ANODE CURRENT IN AMPERES
*CURRENT THROUGH ELECTROMAGNET. SEE OUTLINE K-69037-71A286
ON PAGE FIVE.

K-69087-72A734

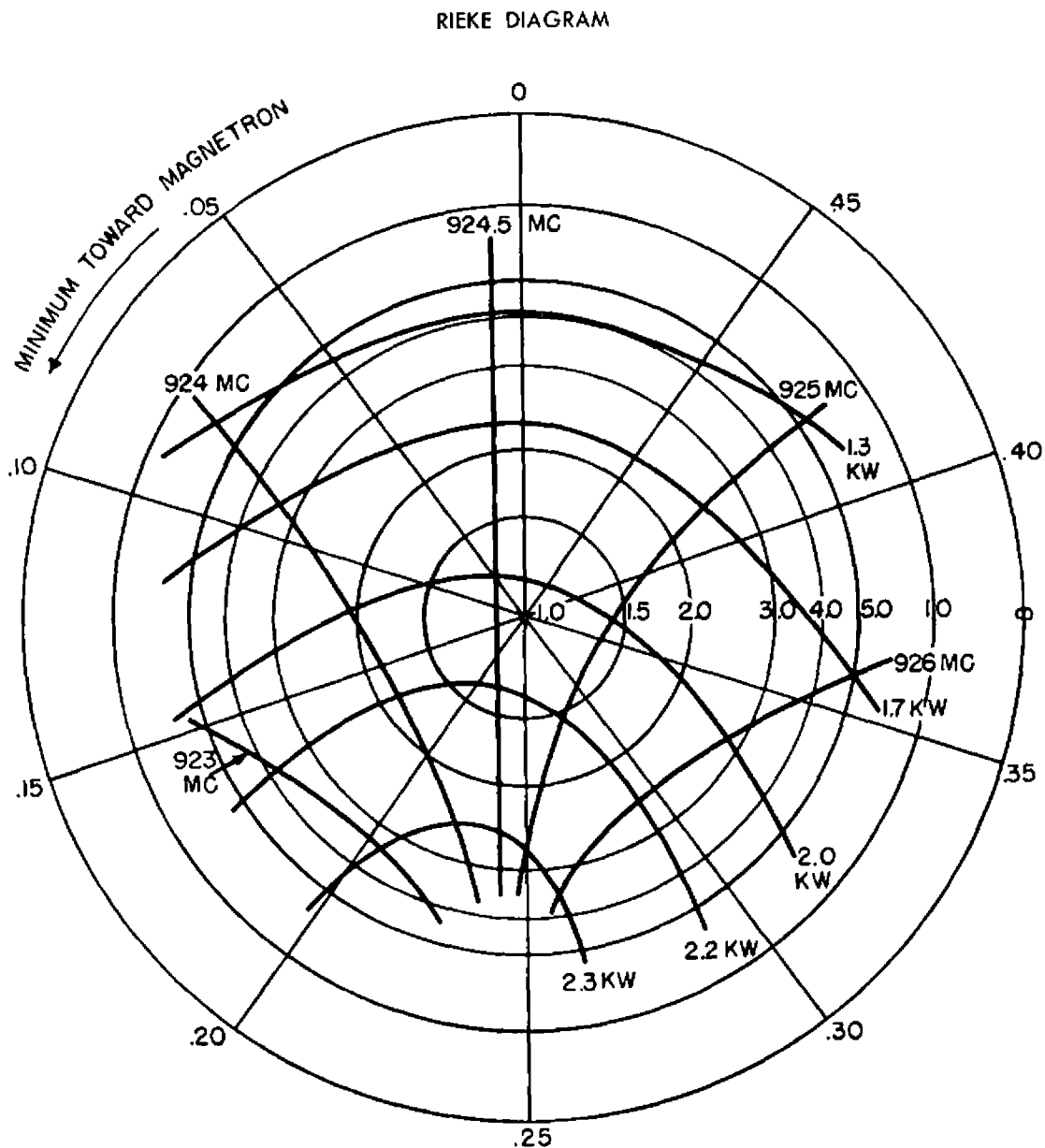
12-20-55

TYPICAL PUSHING CURVE



K-69087-72A735

11-9-55



CONSTANT ANODE VOLTAGE = 3.3 KILOVOLTS.

ELECTROMAGNET—SEE OUTLINE K-69087-71A286 ON PAGE FIVE FOR DETAILS.

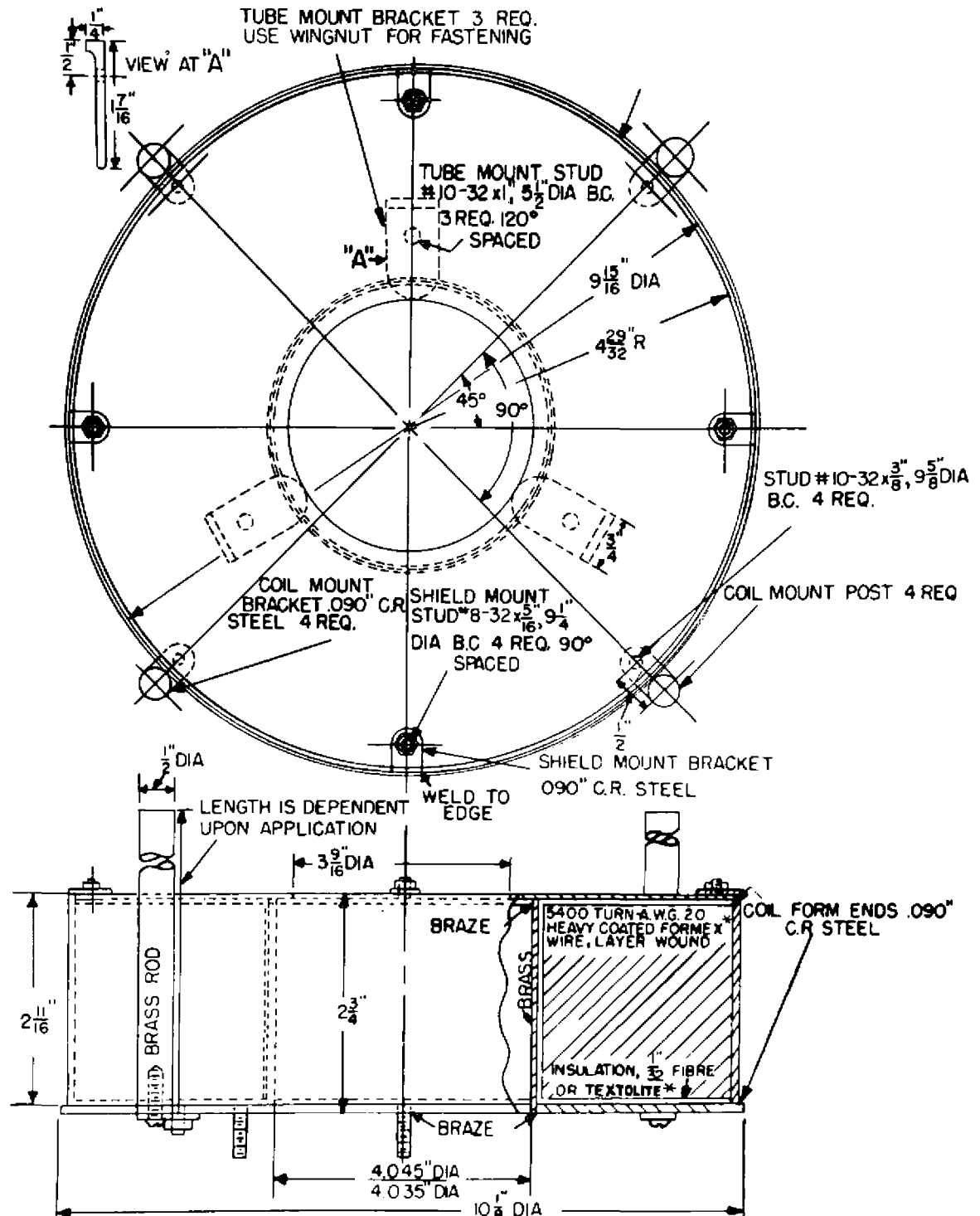
REFERENCE POINT IS $1\frac{3}{4}$ " BELOW MOUNTING FLANGE (CENTER OF THE ANODE).

FIELD SHUNT RESISTANCE = 5 KILOHMS.

K-69087-72A733

11-7-55

ELECTROMAGNET FOR GL-6787

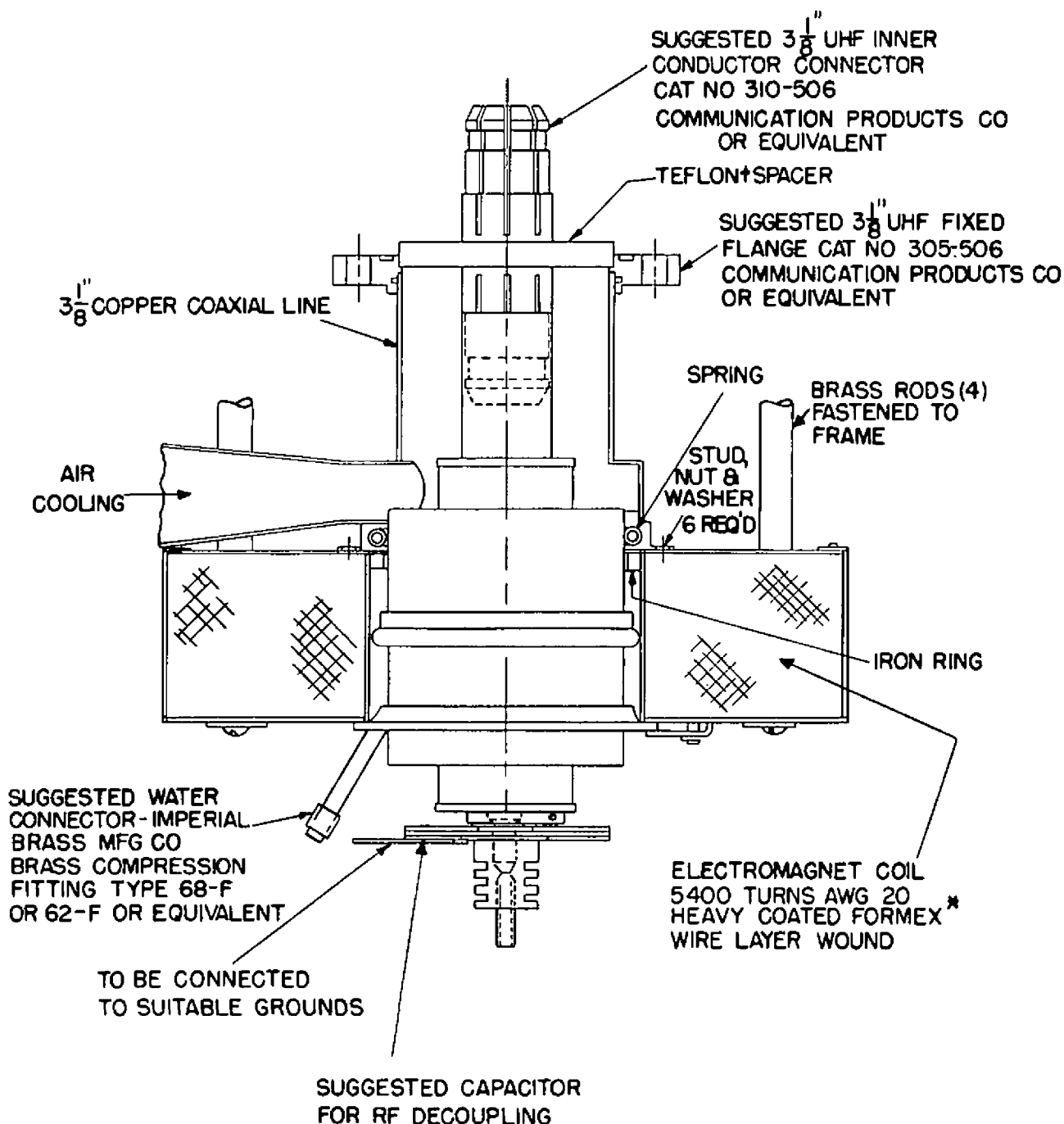


NOTES:

1. ALL STUDS PROTRUDING FROM COIL FORM ARE SET INTO TAPPED HOLES, BRAZED, AND THEN GROUND FLUSH ON INSIDE OF FORM.

*REGISTERED TRADEMARK OF GENERAL ELECTRIC COMPANY.

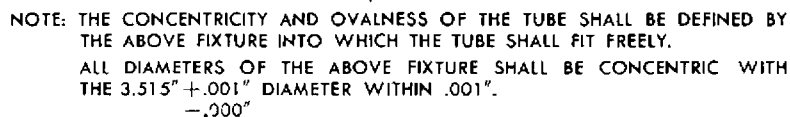
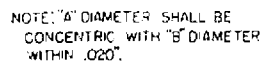
MOUNTING FOR GL-6787



*REGISTERED TRADEMARK OF GENERAL ELECTRIC COMPANY.

†REGISTERED TRADEMARK OF E. I. du PONT de NEMOURS AND COMPANY, INC.

11-55



March 18, 1957

Release No. 1572C

Type No. 6787

<u>ITEM</u>	<u>AS REGISTERED</u>	<u>AS PROPOSED</u>
Thermal		
Water Flow through Tube, minimum	2	3 Quarts per Minute
Typical Operating Conditions		
Frequency	890 to 940	910 to 928 Megacycles with footnote reference**

**Variations in operating parameters within maximum specified ratings may cause the frequency to deviate beyond the specified limits. The maximum deviation however, will not exceed 890 to 940 megacycles.

Rieke Diagram

Change:	924.5 to	0 Megacycles
	925 to	+0.5 Megacycles
	926 to	+1.5 Megacycles
	923 to	-1.5 Megacycles
	924 to	-0.5 Megacycles

Add Footnote: Frequency stated in megacycles deviation from center frequency.

Electromagnet

Change:	9 15/16" Diameter	11 7/16 Inches
	4 29/32" Radius	5 21/32 Inches

Mounting

Remove capacitors and delete the two notes referenced to them

Outline

change - Water, Connections, 2 Pipes	1/4	3/8 Inch OD
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