



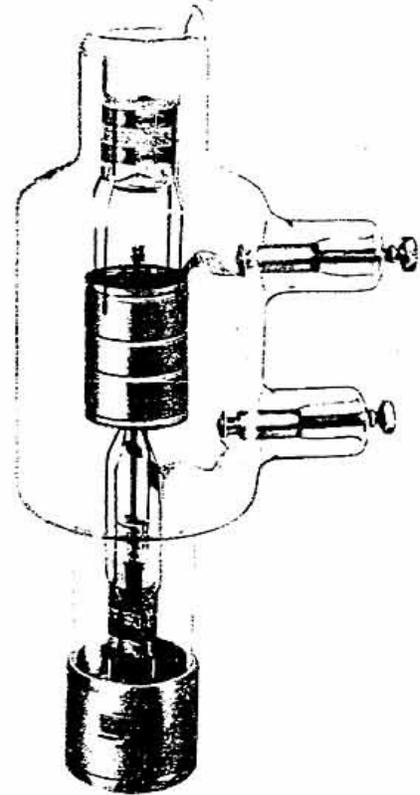
TYPE GR-1
OSCILLATOR
ENGINEERING INFORMATION

GENERAL RATINGS

Number of Electrodes	3
Filament Voltage	22.0 volts
Current	13.0 amperes
Type	Tungsten
Amplification Factor	50
Plate Resistance	21000 ohms
Mutual Conductance	2400 micromhos
Average Direct Interelectrode Capacities:	
Grid to Plate	5.5 uuf
Grid to Filament	10.5 uuf
Plate to Filament	0.55 uuf
Maximum Overall Dimensions:	
Length	16 $\frac{1}{2}$ \pm $\frac{1}{4}$ inches
Diameter	See outline
Base	Special
Type of Cooling	Air
Net Weight	39 oz.

MAXIMUM RATINGS

Maximum D-C Plate Voltage	5000 volts
Maximum A-C Peak Voltage	4200 volts
Maximum Plate Dissipation	500 watts



UNITED TYPE GR-1

Type GR-1 is a direct replacement for the oscillator tube in the Siemens Ultratherm Diathermy Machine.

INSTALLATION

UNITED type GR-1 is especially designed for strenuous service as a diathermy oscillator. This tube may be used as a direct replacement for the oscillator tube in the SIEMENS ULTRATHERM DIATHERMY MACHINE.

To install the GR-1, remove the thumbscrews from the plate and grid connections. Place the tube into the machine with the two horizontal glass projections aligned to the right when viewed from the rear of the machine. The three filament contacts which are inserted in the metal base should slide over the three prongs which are located in the bottom of the tube compartment of this machine. Apply pressure to the metal base (not to the glass bulb or bulb connections) in order to force the tube upon the filament connector prongs.

Plate and grid connections are made by two thumbscrews furnished with the tube. The plate lead is fastened to the copper shank which extends through the upper sidearm by means of one thumbscrew and the grid lead is connected to the lower copper shank by means of the other thumbscrew. The thumbscrew connections should be **HAND TIGHT** only. Under no conditions should pliers or a screw driver be used to tighten these screws as damage to the glass seals supporting the connection will result.

To remove the tube from the machine, loosen the plate and grid thumbscrew connections and lift the tube gently by its base until the filament connector prongs are disengaged.

OPERATION

When the GR-1 is used as a replacement in the Siemens Ultratherm Diathermy Machine the same instructions and precautions are to be observed as specified for the original equipment.

To obtain the same output with type GR-1 as with the Siemens tube, 1.0 volt must be added to the filament setting. Hence if a machine has been giving the required output with a Siemens tube at a filament setting of 20.0 volts, the same output will be obtained at a filament setting for the GR-1 of 21.0 volts. The filament design for the GR-1 is such as to give the required life at a slightly higher filament voltage.

