

TYPES VVC 60-20 VVC2-60-20 VVC4-60-20

GENERAL

Eimac variable vacuum capacitors are intended principally for use as plate tank capacitors in radio frequency amplifiers and oscillators. The use of vacuum for the dielectric permits close spacing of the electrodes giving concentrated capacitance at high voltage. The variable vacuum capacitors are compact, lightweight, and eliminate the effects of dust and atmospheric conditions.

The basic capacitor unit (VVC60-20) has an RF peak voltage rating of 20,000 volts and a maximum current rating of 40 amperes RMS. Ganged multiple unit capacitors are available using two units (VVC2-60-20) or four units (VVC4-60-20). These multiple unit capacitors include a single mounting plate, gear train, and single tuning shaft. One end of each unit capacitor mounts on the common plate and one end is free. Thus the multiple capacitor may be connected with the units in parallel, as two series capacitors for "split-stator" work, or as multiple capacitors with one terminal common.

The capacitors may be operated at the maximum voltage rating at any frequency provided the current rating is not exceeded. Above a particular frequency the maximum current rating becomes the limitation and voltage values less than the maximum must be used. Curves are given for each capacitor showing maximum allowable current (RMS) vs frequency.

MOUNTING

The VVC60-20 is provided with a mounting plate on one end, which also serves as an electrical connection. If the circuit is such that one side of the capacitor is grounded, the mounting plate can be fastened directly to the panel or chassis. Four eyelets are provided on the mounting plate that accommodate No. 8-32 screws. If the unit is to be ungrounded the mounting should be on insulators and the tuning shaft broken with an insulating coupling and the dial portion of the shaft grounded.

The other end of the capacitor is provided with a large terminal that permits the use of a simple clamp or collet connector. This connector should be mounted flexibly to prevent undue mechanical strain being put on the capacitor seals. The connector must be kept clean and must at all times make a firm and positive contact with the capacitor terminal. Failure to maintain a low resistance contact to the capacitor terminal may result in excessive heating and permanent damage to the capacitor seals.

The multiple unit capacitor is designed so that it may be mounted readily on the chassis or from a panel. The mounting plate serves as one electrical connection and can be mounted directly at ground potential or insulated above ground. If the unit is ungrounded the tuning shaft should be broken with an insulating coupling and the dial portion of the shaft grounded.

The capacitors require normal circulation of air to keep the metal-to-glass seals below the maximum permissible temperature when carrying large values of current. In cases where the air flow is restricted or the ambient temperature is above room temperature a measurement of the seal temperature be made. Adequate cooling must be provided to keep the metal of the metal-to-glass seals below 150° centigrade.

The capacitance variation is linear with respect to shaft rotation, with the complete range being covered in seventeen revolutions of the shaft. Reference should be made to the tuning curve for each capacitor. A return to previously indexed settings is positive. The low-torque tuning mechanism provides easy hand operation of a dial directly on the shaft of either the single or multiple unit capacitors.

The variable vacuum capacitors have a low temperature coefficient resulting in a negligible change in capacitance due to variation in temperature. The actual coefficient values are given for each capacitor combination.

VVC 60-20
VARIABLE
VACUUM
CAPACITOR

Eimac
EITEL-McCULLOUGH, INC.
 SAN BRUNO, CALIFORNIA



The VVC60-20 is a single unit variable vacuum capacitor.

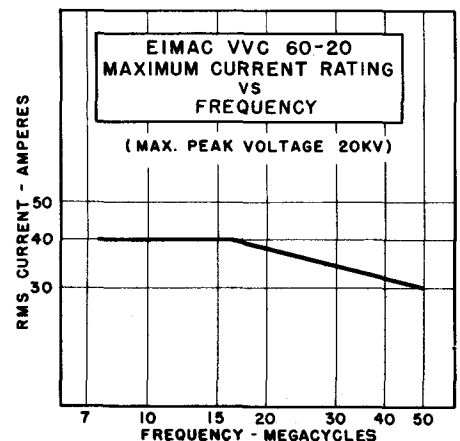
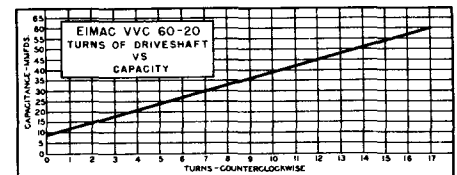
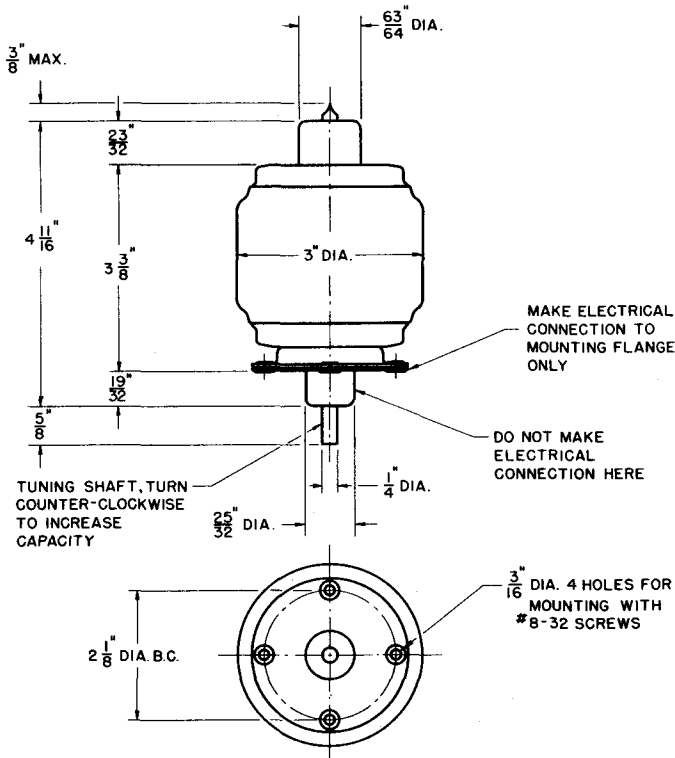
CHARACTERISTICS

ELECTRICAL

Capacitance	
Maximum	60 mmfd
Minimum	10 mmfd
Number of revolutions (See Curve)	17 turns
Maximum Peak R.F. Voltage	20 kilovolts
Maximum Current (RMS)	40 amperes
(See derating curve vs frequency)	
Temperature Coefficient	+ .004 mmfd/°C

MECHANICAL

Mounting	See Outline Drawing
Cooling	Air Convection
Maximum Seal Temperature	150°C.
Maximum Overall Dimensions	
Length	5-11/16"
Diameter	3- 1/16"
Net Weight	1 lb. 6 oz.
Shipping Weight (average)	2 lb.



The VVC2-60-20 is a dual unit variable vacuum capacitor consisting of two VVC60-20 units in a convenient gang-tuned mounting.

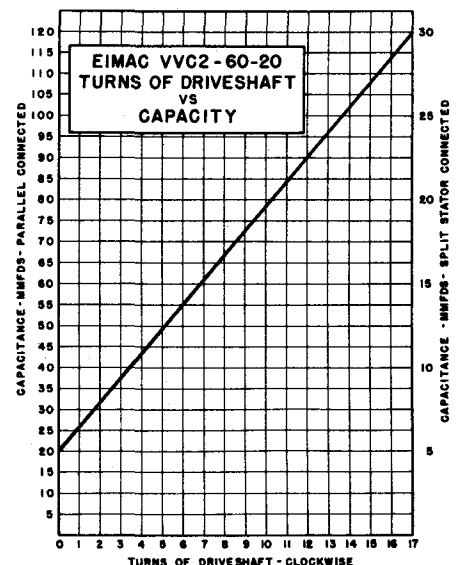
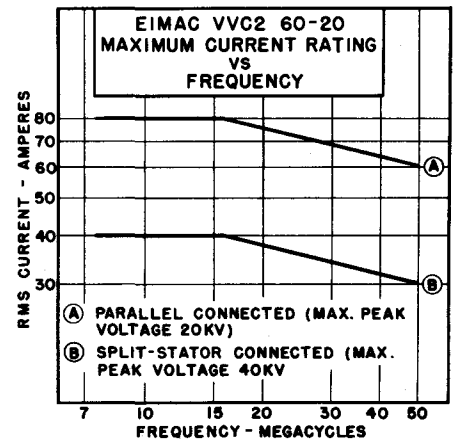
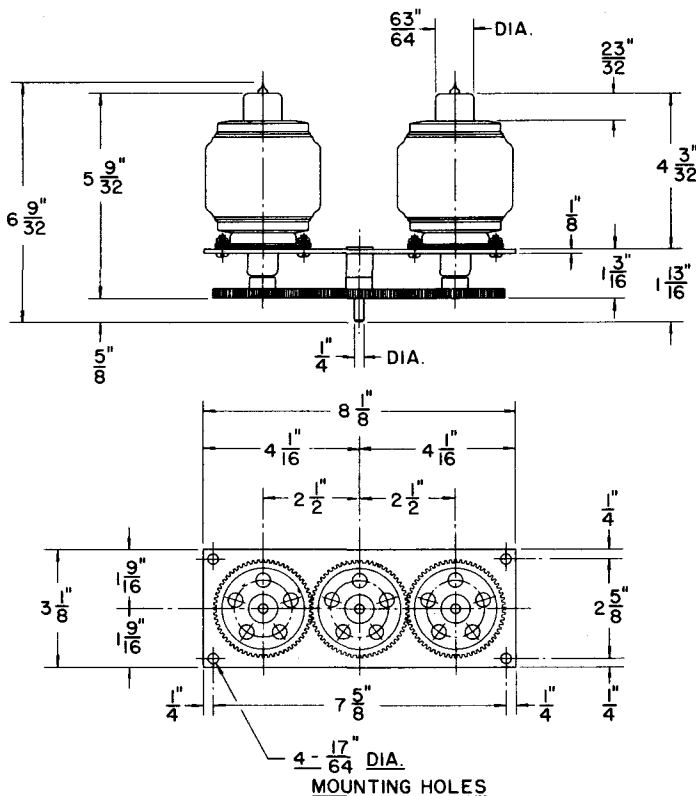
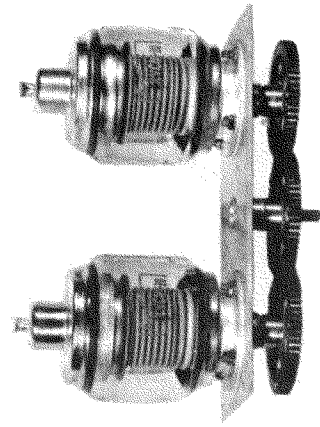
CHARACTERISTICS

ELECTRICAL

	Parallel	Split Stator	
Capacitance			
Maximum	120	30	mmfd
Minimum	20	5	mmfd
Number of revolutions (See Curves)	17	17	turns
Maximum Peak R.F. Voltage.....	20	40	kilovolts
Maximum Current (RMS)	80	40	amperes
(See derating vs frequency)			
Temperature Coefficient	+0.008	+0.002	mmfd/°C

MECHANICAL

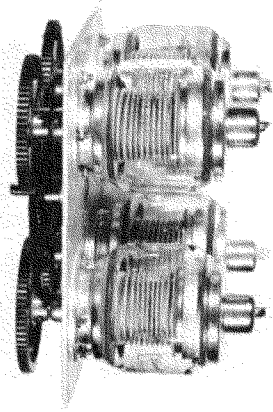
Mounting	See Outline Drawing
Cooling	Air Convection
Maximum Seal Temperature.....	150° C
Maximum Overall Dimensions	
Depth	6-9/32"
Height	3-1/8"
Width	8-1/8"
Net Weight	4 lbs.
Shipping Weight (approx.)	8 lbs.



VVC4-60-20

VARIABLE
VACUUM
CAPACITOR

EITEL-McCULLOUGH, INC.
SAN BRUNO, CALIFORNIA



The VVC4-60-20 is a four unit variable vacuum capacitor consisting of four VVC60-20 units in a convenient gang-tuned unit.

CHARACTERISTICS

ELECTRICAL

	Parallel	Split Stator	
Capacitance			
Maximum	240	60	mmfd
Minimum	40	10	mmfd
Number of revolutions (See Curves)	17	17	turns
Maximum Peak R.F. Voltage.....	20	40	kilovolts
Maximum Current (RMS).....	160	80	amperes
(See derating curve vs frequency)			
Temperature Coefficient	+0.016	+0.004	mmfd/°C

MECHANICAL

Mounting	See Outline Drawing
Cooling	Air Convection
Maximum Seal Temperature.....	150°C
Maximum Overall Dimensions	
Depth	6- 9/32"
Height	7-13/16"
Width	7-13/16"
Net Weight	8 lbs.
Shipping Weight (approx.)	14 lbs.

