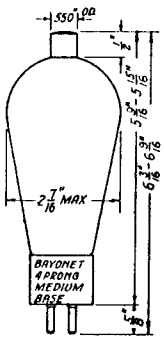
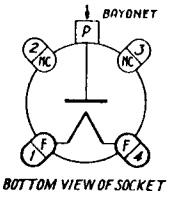
MERCURY VAPOR TYPE HALF-WAVE RECTIFIER



The 866A is a half-wave, shielded filament type mercury vapor rectifier tube particularly suited for high voltage d-c power supplies. Two type 866A tubes in a full wave rectifier circuit with a choke input filter will supply a maximum of 3000 volts d.c. at a drain of 500 milliamperes.



BOTTOM VIEW OF SOCKET

FILAMENT RATING

Filament Volt.	2.5	volts
Filament Cur.	5.0	amp

MAXIMUM RATINGS—TEMP. RANGE 25°—60° C.

Peak Inverse Voltage	10000	volts
Peak Plate Current	1.0	amp
Average Plate Current	0.25	amp
Tube Voltage Drop	10 approx.	volts

TYPICAL OPERATION

Circuit	A-C Input Voltage RMS Volts	Maximum D-C Output Volts To Filter	One Section Filter Minimum Choke Henries (L)	One Section Filter Maximum Condenser Mfds. (C)	Maximum D-C Output Current Amperes
Single-phase Full-Wave Two Tubes Choke Input	3535 per tube	3180	8.0	1.25	0.5
	3000 " "	2700	6.8	1.50	0.5
	2000 " "	1800	4.5	2.1	0.5
	1500 " "	1350	3.4	2.8	0.5
Single-phase Full-Wave Two Tubes Condenser Input	3535 " "	3950	—	—	0.25
	3000 " "	3390	—	—	0.25
	2000 " "	2260	—	—	0.25
	1500 " "	1700	—	—	0.25
Single-phase Full-Wave Bridge Circuit Four Tubes Choke Input	7070 total	6360	16.0	0.6	0.5
	6000 "	5400	13.5	0.7	0.5
	5000 "	4500	11.0	0.9	0.5
	4000 "	3600	8.9	1.1	0.5

OPERATING NOTES

Values of L and C given under "Typical Operation" are selected to hold the peak surge current within the maximum rating. If a larger value of L is used the capacity may be increased in proportion to the increase in L. L and C of a two section filter are determined as shown above. If two unequal chokes are used, place the larger choke nearer the tube. With a two section filter and the minimum L and the maximum C shown above, the total ripple will be less than 5%.

CAUTION

In shipment drops of mercury may be shaken onto the filament. Before the plate voltage is applied to a new tube the filament should be burned at normal voltage for at least 15 minutes. The filament should be allowed to come up to operating temperature before plate voltage is applied. For average conditions the delay is approximately 30 seconds.

The tube should always be mounted vertically with the top cap up.

A socket with heavy, tight prongs should be used and the filament voltage should measure exactly 2.5 volts at the socket in order to insure long life.

866

MERCURY VAPOR TYPE HALF-WAVE RECTIFIER

The 866 is a half-wave filament type mercury vapor rectifier tube particularly suited for medium drain d-c power supplies and linear amplifier bias packs. Two types 866 tubes in a full-wave rectifier circuit with a choke input filter will supply a maximum of 2000 d.c. at a drain of 500 ma.

FILAMENT RATING

Filament Voltage	2.5	volts
Filament Current	5.0	amp

MAXIMUM RATINGS—TEMP. RANGE 10°—60° C.

Peak Inverse Voltage	7500	volts
Peak Plate Current	1.0	amp
Average Plate Current	0.25	amp
Tube Voltage Drop (approximate)	15	volts

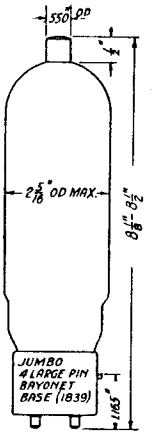
TYPICAL OPERATION

Circuit	A-C Input Voltage RMS Volts	Maximum D-C Output Volts To Filter	One Section Filter Minimum Choke Henries (L)	One Section Filter Maximum Condenser Mfds. (C)	Maximum D-C Output Current Amperes
Single-phase Full-Wave Two Tubes Choke Input	2650 per Tube	2385	2.0	1.6	0.5
	2000 " "	1800	4.9	1.8	0.5
	1500 " "	1350	3.3	2.8	0.5
	1000 " "	900	2.1	4.2	0.5
Single-phase Full-Wave Two Tubes Condenser Input	2650 " "	3000	—	—	0.25
	2000 " "	2260	—	—	0.25
	1500 " "	1700	—	—	0.25
	1000 " "	1150	—	—	0.25
Single-phase Full-Wave Bridge Circuit Four Tubes Choke Input	5000 total	4770	12.0	0.8	0.5
	4500 "	4050	10.0	1.0	0.5
	4000 "	3600	8.4	1.2	0.5
	3500 "	2700	6.8	1.5	0.5

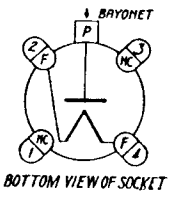
For tube outline, basing view and operating notes see type 866A.

872A

MERCURY VAPOR TYPE HALF-WAVE RECTIFIER



The 872A is a half-wave, shielded filament type mercury vapor rectifier tube designed for heavy current, high voltage power supplies. Two type 872A tubes in a full-wave rectifier circuit with a choke input filter will supply a maximum of 2.5 amperes at 5000 volts d.c.



BOTTOM VIEW OF SOCKET

FILAMENT RATING

Filament Volt.	5.0	volts.
Filament Cur.	6.75	amp

MAXIMUM RATINGS—TEMP. RANGE 20°—60° C.

Peak Inverse Voltage	1000	volts
Peak Plate Current	5.0	amp
Average Plate Current	1.25	amp
Tube Voltage Drop (approx.)	10	volts

TYPICAL OPERATION

Circuit	Maximum A-C Input Volts (RMS)	Approx. D-C Output Volts To Filter	Maximum D-C Output Current—Amp.
Single-phase Full-Wave Two Tubes	3535 per tube	3180	2.5
Single-phase Full-Wave Bridge Circuit Four Tubes	7070 total	6360	2.5

The values given above are for a sine wave input voltage and with a suitable choke before the first filter condenser.

CAUTION

In shipment drops of mercury may be shaken onto the filament. Before the plate voltage is applied to a new tube the filament should be burned at normal voltage for at least 15 minutes.

In normal operation the filament should be brought up to operating temperature at least 30 seconds before the plate voltage is applied.

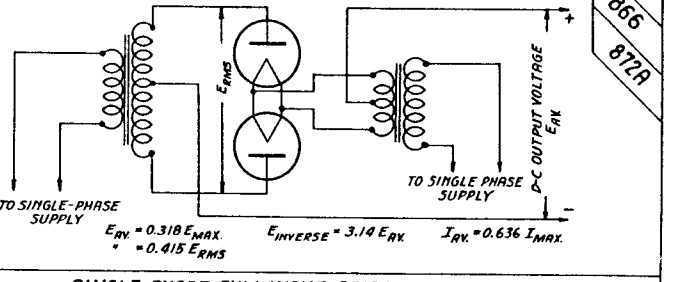
The tube should always be mounted vertically with the top cap up.

A socket with tight, heavy prongs should be used and the filament voltage should measure exactly 5.0 volts at the socket to insure long life.

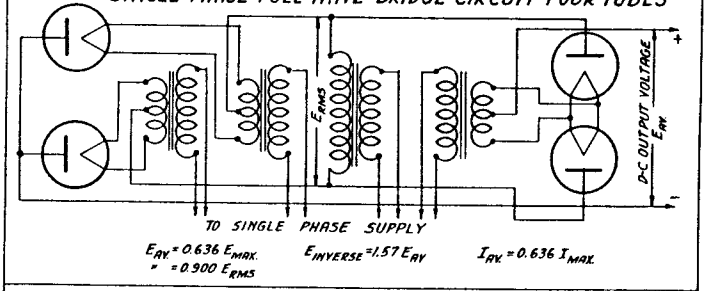
CIRCUITS FOR MERCURY-VAPOR RECTIFIER TUBES

866A 866 872A

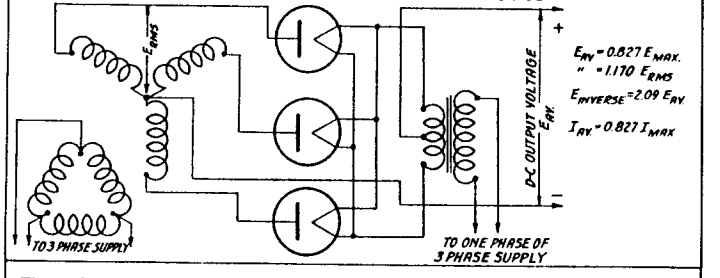
SINGLE-PHASE FULL WAVE TWO TUBES



SINGLE-PHASE FULL WAVE BRIDGE CIRCUIT FOUR TUBES



THREE PHASE HALF WAVE THREE TUBES



The values of E_{av}, $E_{inverse}$, and I_{av} are based on

1. Sine Wave Supply Voltage
2. Equal Phase Voltages
3. Zero Tube Voltage Drop
4. Pure Resistance Load—No Filter