

War Department Technical Manual

TM 11-310

PE-104-A

TM 11-275 Parts List

SCHEMATIC DIAGRAMS FOR

MAINTENANCE OF GROUND RADIO

COMMUNICATION SETS

k4che

WAR DEPARTMENT • OCTOBER 1943



RESTRICTED

DISSEMINATION OF RESTRICTED MATTER. The information contained in restricted documents and the essential characteristics of restricted material may be given to any person known to be in the service of the United States and to persons of undoubted loyalty and discretion who are cooperating in Government work, but will not be communicated to the public or to the press except by authorized Military public relations agencies. (See also par. 18b, AR 380-5, 28 Sep 1942.)

United States Government Printing Office

Washington : 1943

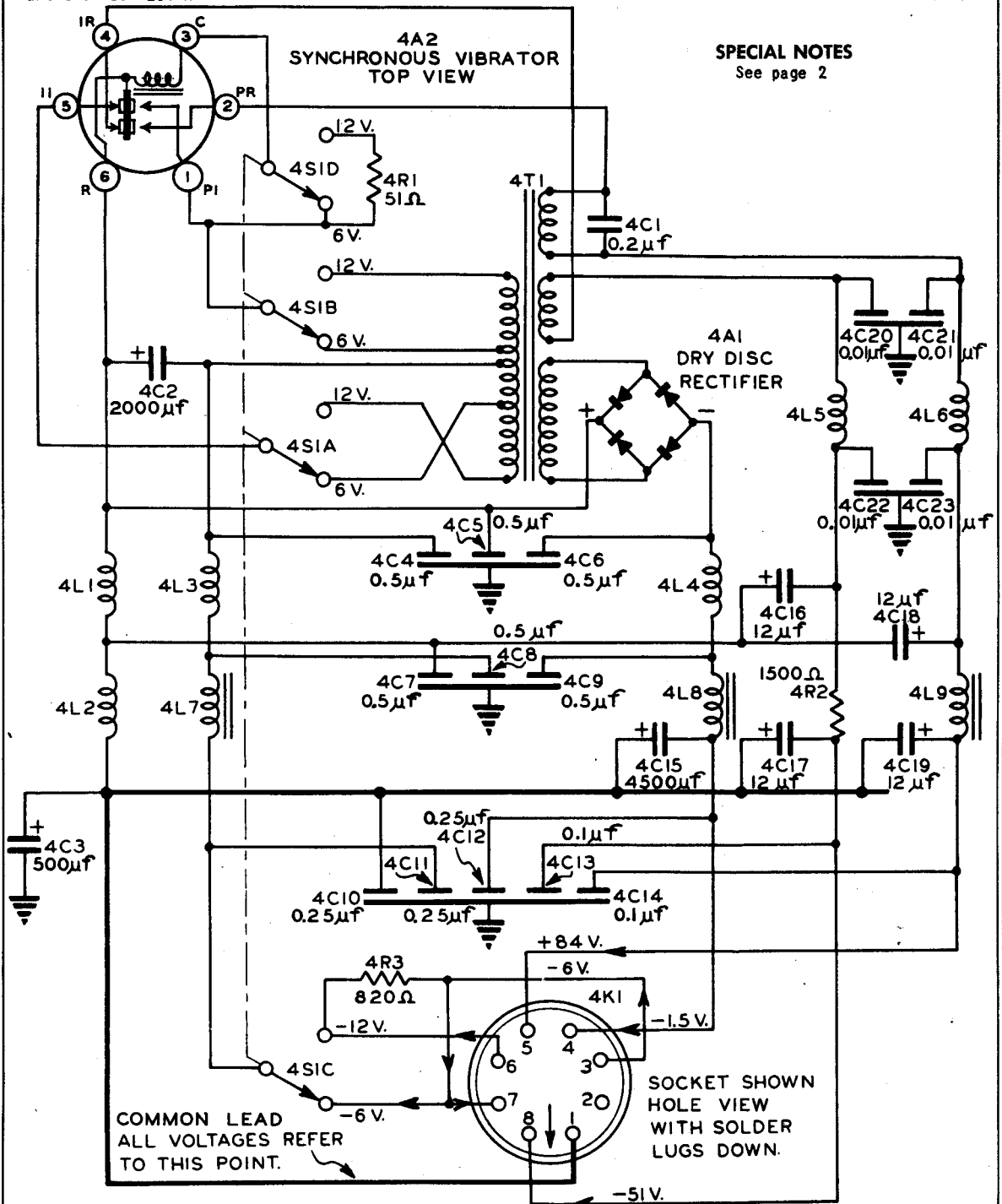
POWER CONVERTER UNIT PE-104-A

SCHEMATIC

Part of: SCR-284-A

Reference:
TM 11-275

SPECIAL NOTES
See page 2



POWER CONVERTER UNIT PE-104-A

SCHEMATIC (Alternate)

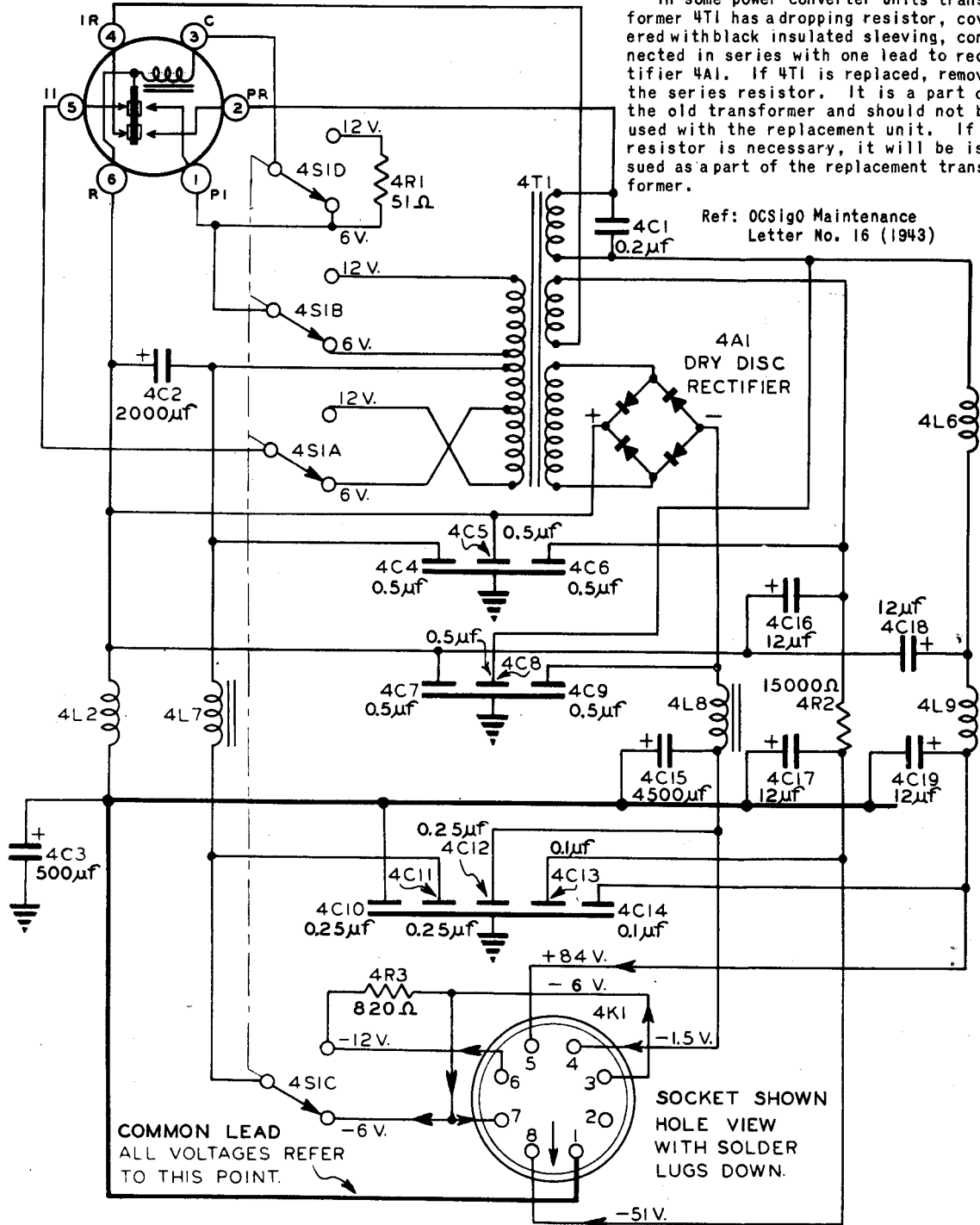
As supplied with some Radio Sets SCR-284-A.

4A2 SYNCHRONOUS VIBRATOR (TOP VIEW)

SPECIAL NOTES

In some power converter units transformer 4T1 has a dropping resistor, covered with black insulated sleeving, connected in series with one lead to rectifier 4A1. If 4T1 is replaced, remove the series resistor. It is a part of the old transformer and should not be used with the replacement unit. If a resistor is necessary, it will be issued as a part of the replacement transformer.

Ref: OCSigO Maintenance Letter No. 16 (1943)



COMMON LEAD
ALL VOLTAGES REFER
TO THIS POINT.

SOCKET SHOWN
HOLE VIEW
WITH SOLDER
LUGS DOWN.

45. REPLACEABLE PARTS FOR POWER CONVERTER PE-104-A
ORDER BY SIGNAL CORPS STOCK NO., NAME OF PART AND DESCRIPTION

<i>Quan.</i>	<i>Symbol</i>	<i>Stock No.</i>	<i>Name of Part and Description</i>	<i>Function</i>
CAPACITORS (Fixed)				
1	4-C-1	3DA200-6	Fixed (Special), .2 μf $\pm 10\%$, 100 v.d.c., case, brass tube $\frac{3}{4}$ " dia. x $1\frac{5}{8}$ ". Wire leads.	Buffer across high voltage
1	4-C-2	3DB2000-4	Fixed (Standard), electrolytic, 2000 μf $+100\%$ -20% , 15 v.d.c., solder lug terminals. Positive terminal marked red. Approx. size $1\frac{3}{8}$ " dia. x 3", metal can.	A supply filter, 6-12 volts
1	4-C-3	3DB500-6	Fixed (Standard), electrolytic, 500 μf $+100\%$ -20% , solder lug connection. Positive terminal marked red. Approx. size 1" dia. x $2\frac{3}{16}$ ", metal can.	A supply filter
1	$\left. \begin{array}{l} 4-C-4 \\ 4-C-5 \\ 4-C-6 \end{array} \right\}$	3DA500-87	Fixed (Special), paper dielectric, triple section, .5 μf $\pm 15\%$, 100 v.d.c., solder lug terminals. Sealed metal case $\frac{3}{4}$ " x $1\frac{1}{4}$ " x $2\frac{1}{8}$ ", (2) $\frac{3}{16}$ " dia. mtg. holes spaced $2\frac{1}{8}$ ".	Hash filter
1	$\left. \begin{array}{l} 4-C-7 \\ 4-C-8 \\ 4-C-9 \end{array} \right\}$	3DA500-87	Fixed (Special), paper dielectric, triple section, .5 μf $\pm 15\%$, 100 v.d.c., solder lug terminals. Sealed metal case $\frac{3}{4}$ " x $1\frac{1}{4}$ " x $2\frac{1}{8}$ ". (2) $\frac{3}{16}$ " dia. mtg. holes spaced $2\frac{1}{8}$ ".	Hash filter
1	$\left. \begin{array}{l} 4-C-10 \\ 4-C-11 \\ 4-C-12 \\ 4-C-13 \\ 4-C-14 \end{array} \right\}$	3DE250	Fixed (Special), paper dielectric, 5-section, three .25 μf . 35 v.d.c., two .1 μf , 100 v.d.c., $+50\%$ -10% , solder lug terminals. Sealed metal case, approx. size $1\frac{7}{32}$ " x 1" x $2\frac{3}{4}$ ".	By-pass
1	4-C-15	3DB4500	Fixed (Special), 4500 μf $+100\%$ -20% , 2 v.d.c., tubular fibre case, wax impregnated, size $1\frac{1}{16}$ " dia. x 3". Solder lug terminal. Positive terminal marked red.	Filter for $1\frac{1}{2}$ -volt supply
1	4-C-16	3DB12-15	Fixed (Standard), electrolytic, 12 μf $+100\%$ -20% , tubular fibre case, wax impregnated, size $\frac{3}{4}$ " dia. x $2\frac{1}{16}$ ". Solder lug terminals.	C filter
1	4-C-17	3DB12-15	Fixed (Standard), electrolytic, 12 μf $+100\%$ -20% , tubular fibre case, wax impregnated, size $\frac{3}{4}$ " dia. x $2\frac{1}{16}$ ". Solder lug terminals.	C filter
1	4-C-18	3DB12-15	Fixed (Standard), electrolytic, 12 μf $+100\%$ -20% , fibre case, wax impregnated, approx. overall size $\frac{3}{4}$ " dia. x $2\frac{1}{16}$ ". Solder lug terminals.	B filter

REPLACEABLE PARTS FOR POWER CONVERTER PE-104-A (Continued)
ORDER BY SIGNAL CORPS STOCK NO., NAME OF PART AND DESCRIPTION

<i>Quan.</i>	<i>Symbol</i>	<i>Stock No.</i>	<i>Name of Part and Description</i>	<i>Function</i>
CAPACITORS (Fixed) Continued				
1	4-C-19	3DB12-15	Fixed (Standard), electrolytic, 12 μ f +100% —20%, fibre case, wax impregnated, size $\frac{3}{4}$ " dia. x $2\frac{1}{16}$ ". Solder lug terminals.	B filter
1	{4-C-20 4-C-21}		Fixed (Special), dual .01 μ f +50% —10%, 200 v.d.c., solder lug terminals. Approx. size $\frac{3}{4}$ " x $\frac{3}{4}$ " x $2\frac{1}{16}$ ". Mtg. holes $\frac{1}{64}$ " dia. spaced $2\frac{5}{16}$ ".	By-pass —51 and +84 volt supply (Used only in packs with serial numbers below 12001)
1	4-C-22 4-C-23		Fixed (Special), dual .01 μ f +50% —10%, 200 v.d.c., solder lug terminals. Approx. size $\frac{3}{4}$ " x 1" x $1\frac{13}{32}$ ". Mtg. holes .156" dia. spaced $\frac{1}{2}$ ".	By-pass —51 and +84 volt supply (Used only in packs with serial numbers below 12001)
CHOKES				
1	4-L-1	3C337-1	(Special), iron core, min. inductance 75 μ h, max. coil resistance .15 ohms. Approx. size $1\frac{13}{16}$ " dia. x $1\frac{1}{16}$ ". Leads 6" long.	Filter in +1.5 volt lead (Used only in packs with serial numbers below 12001)
1	4-L-2	3C337-1	(Special), iron core, min. inductance 75 μ h, max. coil resistance .15 ohms. Approx. size $1\frac{13}{16}$ " dia. x $1\frac{1}{16}$ ". Leads 6" long.	Filter in +1.5 volt lead
1	4-L-3	3C337-1	(Special), iron core, min. inductance 75 μ h, max. coil resistance .15 ohms. Approx. size $1\frac{13}{16}$ " dia. x $1\frac{1}{16}$ ". Leads 6" long.	Filter in input voltage lead (Used only in packs with serial numbers below 12001)
1	4-L-4	3C337-1	(Special), iron core, min. inductance 75 μ h, max. coil resistance .15 ohms. Approx. size $1\frac{13}{16}$ " dia. x $1\frac{1}{16}$ ". Leads 6" long.	Filter in —A $1\frac{1}{2}$ volt lead (Used only in packs with serial numbers below 12001)
1	4-L-5	3C337	(Special), inductance 1 mh, coil resistance 15 ohms $\pm 20\%$. Approx. size $1\frac{13}{16}$ " dia. x $\frac{3}{8}$ ". Leads 1" long.	Filter in —51 volt lead (Used only in packs with serial numbers below 12001)
1	4-L-6	3C337	(Special), inductance 1 mh, coil resistance 15 ohms $\pm 20\%$. Approx. size $1\frac{13}{16}$ " dia. x $\frac{3}{8}$ ". Leads 1" long.	Filter in +84 volt lead
1	{4-L-7 4-L-8 4-L-9}	3C337-2	(Special), iron core, three chokes in metal container, 4-L-7 inductance 3.5 mh, and max. coil resistance .25 ohms. 4-L-8 inductance 35 mh, and max. coil resistance .8 ohm. 4-L-9 inductance 5.0 henries and max. coil resistance 600 ohms. Approx. size $1\frac{5}{16}$ " x 2" x $2\frac{7}{8}$ ". Wire leads.	4-L-7 filter in negative input voltage lead 4-L-8 filter in negative 1.5 volt 'A' lead 4-L-9 filter in positive 84 volt lead

REPLACEABLE PARTS FOR POWER CONVERTER PE-104-A (Continued)

ORDER BY SIGNAL CORPS STOCK NO., NAME OF PART AND DESCRIPTION

<i>Quan.</i>	<i>Symbol</i>	<i>Stock No.</i>	<i>Name of Part and Description</i>	<i>Function</i>
COVER ASSEMBLIES				
2		2Z3401.9	Bottom (Special), .042" c.r.s. 3 $\frac{3}{4}$ " x 7", connection diagram inside; .010" paper base bakelite insulator 3 $\frac{1}{2}$ " x 6 $\frac{5}{8}$ ".	Bottom cover PE-104-A
2		2Z3401.7	Top (Special), .042" c.r.s. 3 $\frac{3}{4}$ " x 7", $\frac{3}{8}$ " i.d. adjustment hole in cover; .010" paper base bakelite insulator 3 $\frac{1}{2}$ " x 6 $\frac{5}{8}$ ".	Top cover PE-104-A
GROUND STRIP ASSEMBLIES				
2		2Z3003.3	(Special), (long), .010" phosphor bronze 1" x 6 $\frac{3}{4}$ ", 24 teeth, riveted to .010" fish paper $\frac{3}{4}$ " x 5 $\frac{1}{2}$ ".	Ground top cover to case
2		2Z3003.1	(Special), (short), .010" phosphor bronze 1" x 4 $\frac{3}{4}$ ", 17 teeth, riveted to fish paper .010", $\frac{3}{4}$ " x 3 $\frac{3}{4}$ ".	Ground top cover to case
PLUG BUTTON				
2		2Z1480-1	(Standard), 6-section snap cover, $1\frac{3}{32}$ " dia.	Cover hole in case of PE-104-A
POWER CONVERTER PE-104-A				
1		3H4600-104A	(Standard), Signal Corps PE-104-A 3 $\frac{7}{8}$ " x 4" x 7", octal socket in front.	Alternate source of power for receiver A and B voltages and transmitter bias
RECTIFIER				
1	4-A-1	3H4845-3	(Special), MG-CU-Sulphide, max. output voltage 1.8 volts d.c. Solder lug terminals. Approx. size $\frac{5}{8}$ " dia. x 1 $\frac{1}{8}$ ". Mtg. screw No. 10-32.	Rectify 'A' supply
RESISTORS				
1	4-R-1	3Z6005A1-3	(Standard), composition, 50 ohms $\pm 5\%$, 1 watt, $\frac{1}{4}$ " dia. x $\frac{3}{4}$ ". Wire leads.	Reduce 12 to 6 volts
1	4-R-2	3Z6150-48	(Standard), composition, 1500 ohms $\pm 10\%$, $\frac{1}{2}$ watt, $\frac{1}{4}$ " dia. x $\frac{1}{16}$ ". Wire leads.	Bias
1	4-R-3	3Z6082	(Standard), composition, 820 ohms $\pm 5\%$, $\frac{1}{2}$ watt, $\frac{1}{4}$ " dia. x $\frac{5}{8}$ ". Wire leads.	Reduce 12 to 6 volts for vibrator coil
SOCKETS				
1	4-K-1	2Z8678.6	(Special), bakelite octal socket.	Output voltage connector
1	4-V-1	2Z8676	Socket (Standard), 6 contacts, bakelite, $\frac{5}{32}$ " dia. mtg. holes spaced 1 $\frac{1}{2}$ ".	Vibrator socket

REPLACEABLE PARTS FOR POWER CONVERTER PE-104-A (Continued)
ORDER BY SIGNAL CORPS STOCK NO., NAME OF PART AND DESCRIPTION

<i>Quan.</i>	<i>Symbol</i>	<i>Stock No.</i>	<i>Name of Part and Description</i>	<i>Function</i>
SWITCHES				
1	Part of 4-S-1	3Z9825-63.7	(Special), half-section, wafer, paper base bakelite, impregnated. Lugs and rotor contacts silver or silver alloy. Contacts, non-shortening type. Mtg. holes .130" to .145" dia., spaced 1.031". Approx. size of wafer 1 $\frac{3}{64}$ " x 1 $\frac{3}{8}$ ".	Part of 4-S-1 voltage change switch
1	Part of 4-S-1		(Special), full-section, wafer, paper base bakelite, impregnated. Lugs and rotor contacts silver or silver alloy. Contacts, non-shortening type. Mtg. holes .130" x .145" dia., spaced 1.031". Approx. overall size of wafer 1 $\frac{5}{8}$ " x 1 $\frac{3}{8}$ ".	Part of 4-S-1 voltage change switch
1	Part of 4-S-1		Index (Special), two position. Shaft slotted on one end. Approx. overall size 1 $\frac{1}{4}$ " x 1 $\frac{3}{8}$ " x 1 $\frac{7}{32}$ ".	Part of 4-S-1 voltage change switch
TERMINAL BOARD ASSEMBLY				
2		2Z9402.11	(Special), 2 eyelets mounted in laminated phenolic $\frac{1}{16}$ " x $\frac{3}{4}$ " x $\frac{13}{16}$ ".	Junction block for plate voltage choke
TRANSFORMER				
1	4-T-1	2Z9625-1	(Special), 6 and 12-volt primary, 3 secondaries furnish approx. 84, 51 and 1 $\frac{1}{2}$ volts d.c. when rectified. Wire leads. Approx. overall size 1 $\frac{7}{8}$ " x 2 $\frac{3}{32}$ " x 2 $\frac{9}{16}$ ".	Power transformer
VIBRATOR				
1	4-A-2	3H6690	(Standard), 6-prong synchronous, enclosed in metal can. Fits standard 6-contact socket. Approx. size 1 $\frac{1}{2}$ " dia. x 3 $\frac{5}{8}$ ".	Convert d.c. to a.c.