RINGING GENERATOR
VIBRATOR-TYPE
KS-5815
REQUIREMENTS AND ADJUSTING PROCEDURES

1. GENERAL

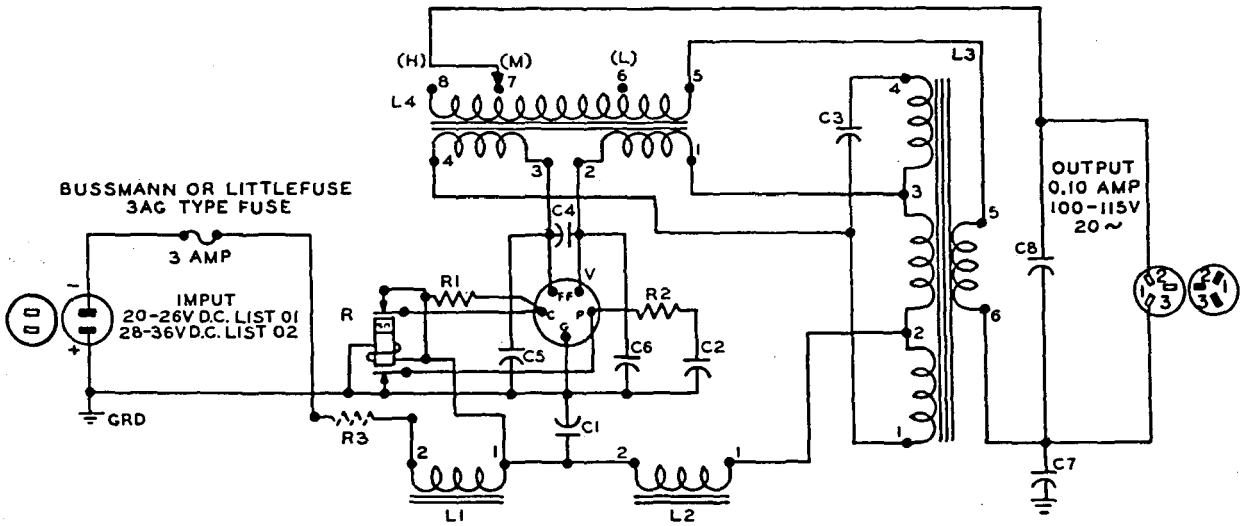
1.01 This section covers the KS-5815 20-cycle vibrator-type ringing generator which converts battery power to alternating current for ringing.

1.02 It is reissued to bring the section generally up to date, to add temperature requirements, to add a tool list, to expand the paragraph on checking output, and to add Figs. 1, 2, and 3.

1.03 Reference shall be made to Section 020-010-711 covering General Requirements and Definitions for additional information necessary for the proper application of the requirements listed herein.

1.04 Requirements and associated procedures marked with a number sign (#) need not be checked by the installer unless it is thought that the requirement is not being met or performance indicates that such a check is advisable.

1.05 Requirements and associated procedures marked with an asterisk (*) need not be checked during maintenance unless the apparatus or part is made accessible for other reasons, or performance indicates that such a check is advisable.



C 1 - 200 MFD. 60 V.D.C. ELECTROLYTIC CAPACITOR (8118)
C 2 - 0.5 MFD. 110V. PAPER CAPACITOR
C 3 - 4.0 MFD. OIL CAPACITOR
C 4 - 4.0 MFD. OIL CAPACITOR
C 5, C6, C7, C8 - 0.05 MFD. 110V. PAPER CAPACITOR

R - SLOW OPERATING RELAY (G-35097)
R 1 - 300 OHM 1 WATT RES.
R 2 - 250 OHM 1/2 WATT RES.
R 3 - 40 OHM RES. (LIST 02 ONLY)

L 1 - BATTERY NOISE FILTER CHOKE
L 2 - OUTPUT NOISE FILTER CHOKE
L 3 - SATURABLE OUTPUT TRANSFORMER
L 4 - VOLTAGE REGULATING SERIES INDUCTANCE (TONE COIL)

V - VIBRATOR UNIT (ED-162-06)

VIBRATOR CONNECTIONS

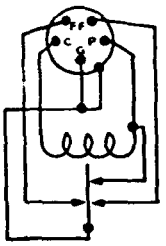
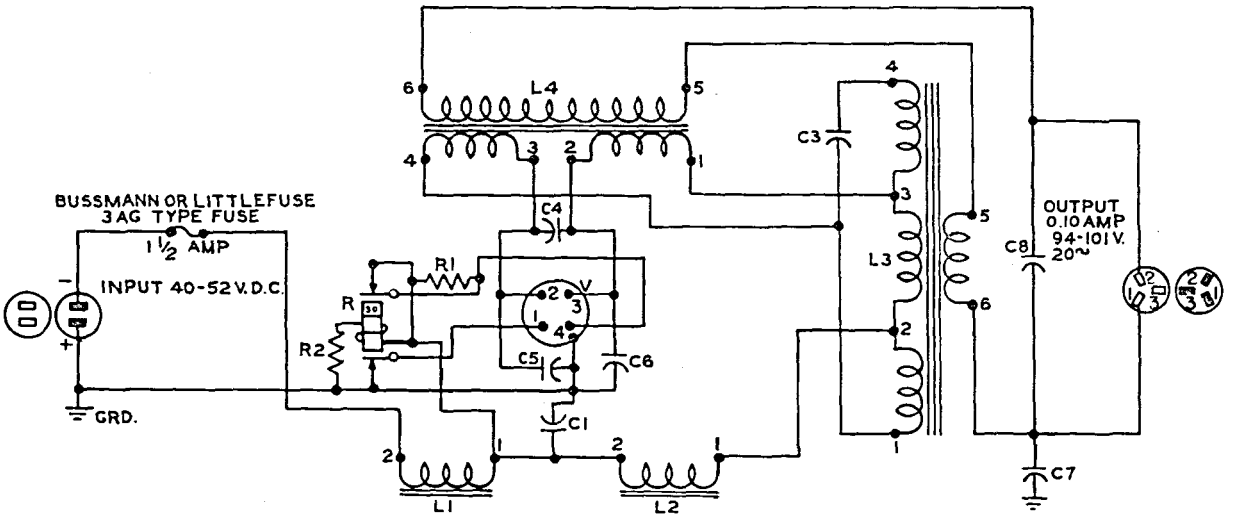


Fig. 1 - KS-5815, L01 and L02 Ringing Generator



C1 - 200 MFD. 60 V D.C. ELECTROLYTIC CAPACITOR (8118)
C2 - 0.5 MFD. 110 V. PAPER CAPACITOR
C3 - 4.0 MFD. OIL CAPACITOR
C4 - 1.0 MFD. OIL CAPACITOR
C5, C6, C7, C8 - 0.05 MFD. 110 V. PAPER CAPACITOR
R1 - 500 OHM 1 WATT
R2 - 300 OHM 5 WATT
L1 - BATTERY NOISE FILTER CHOKE
L2 - OUTPUT NOISE FILTER CHOKE
L3 - SATURABLE OUTPUT TRANSFORMER
L4 - VOLTAGE REGULATING SERIES INDUCTANCE
R - SLOW OPERATING RELAY 300 OHMS
V - VIBRATOR UNIT V-6260

VIBRATOR CONNECTIONS
BOTTOM VIEW

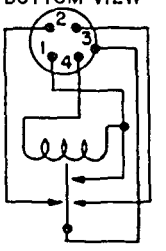
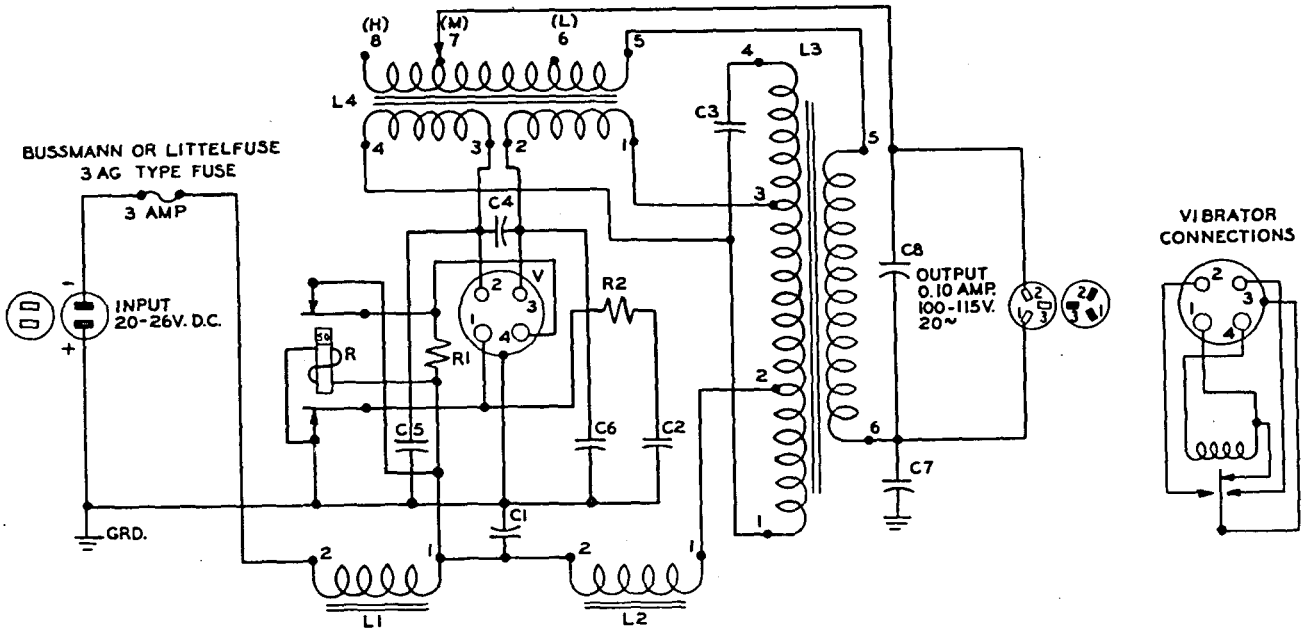


Fig. 2 - KS-5815, L04 Ringing Generator



C1 - 200 MFD. 60V. D.C. ELECTROLYTIC CAPACITOR (8118)
C2 - 0.5 MFD. 110V. PAPER CAPACITOR
C3 - 4.0 MFD. OIL CAPACITOR
C4 - 4.0 MFD. OIL CAPACITOR
C5, C6, C7, C8 - 0.05 MFD. 110V. PAPER CAPACITOR

R1 - 300 OHM 1 WATT RES.
R2 - 250 OHM 1/2 WATT RES.

L1 - TR-2814B FILTER CHOKE
L2 - TR-2810B OUTPUT FILTER CHOKE

L3 - TR-2816 OUTPUT TRANSFORMER
L4 - TR-2815 SERIES INDUCTANCE (TONE COIL)

R - SLOW OPERATING RELAY G-35097

V - VIBRATOR UNIT V-6260

Fig. 3 - KS-5815, L05 Ringing Generator

2. REQUIREMENTS

*2.01 Starting Relay

(a) The relay contacts shall be clean.

(b) The relay armature and pole-piece face shall be clean.

2.02 The generator shall start automatically when connected to a power supply having the correct voltage and polarity.

#*2.03 The frequency of the output is designed to be between 18.5 and 20.5 cycles. As there is no adjustment, if other requirements are met, and if the ringers operate satisfactorily, the frequency shall be assumed to be within limits.

*2.04 Capacity and Voltage: These generators are designed to give the output voltages listed below when a generator is hot and delivering not more than 100 milliamperes with the input voltage between the limits shown.

List No.	Input Volts	Output Volts
01 & 05	20 to 26	100 to 115
02	28 to 36	100 to 115 ←
04	40 to 52	94 to 101

If the ringers operate satisfactorily the voltage shall be assumed to be within limits.

*2.05 Audible Ringing Tone: The audible ringing tone is fixed in the design of the list 04 generator and is adjustable on the lists 01, 02, and 05 designs. The tone shall be adjusted to give the best results for each installation.

*2.06 Temperature: Temperatures shall not exceed the following:

Part	Max Temperature
Reactor, transformer and tone coil windings	95C(203F)
Relay Coil	105C(221F)

Caution: Under trouble conditions the generator temperature may exceed that shown above. Do not use the fingers to estimate temperature.

3. ADJUSTING PROCEDURES

3.001 Tools, Gauges, and Materials (Equivalents may be substituted)

Burnisher, No. 265C
Pad, felt

Resistor, loading, 1250 ohms, 25 watts, such as Ward Leonard "Adjustohm" type 25A (obtain locally)

Spirits, petroleum, KS-7860

Thermometer, 0°C to 200C, R1032

Volt-ohm-milliammeter, KS-14510

*3.01 Starting Relay (Rq. 2.01)

(1) When necessary, relay contacts should be cleaned in accordance with the standard method for cleaning relay contacts. See Section 069-306-801.

(2) To clean armature and face of pole piece, draw a strip of bond paper between them while applying pressure to the armature with the fingers.

3.02 Automatic Starting (Rq. 2.02)
#*3.03 Frequency (Rq. 2.03)
*3.04 Capacity and Voltage (Rq. 2.04)

(1) Failure to meet these requirements suggests replacement of the vibrator unit, if the input voltage is within design limits, if there are no open or loose connections, if the relay coil winding and contacts are satisfactory, and if the fuse inside the case is not blown.

(2) If ringing load is not available or if it is suspected that the connected load is too high, set the 25A resistor to the value shown below and connect it to the output terminals after first disconnecting the regular load. If the generator operates on test load but not on regular connected load, the connected load is too high.

List No.	Test Load (Ohms)
01 & 05	1150
02	1150
04	1010

(3) Replace the generator if a check of the above items shows no defect and changing the vibrator unit does not correct the trouble.

*3.05 Audible Ringing Tone (Rq. 2.05)

(1) Adjustment of the audible ringing tone for the lists 01, 02, and 05 generators is made by shifting the connection on the tone coil L4 to the tap (H, M, or L) which is best suited to the particular installation. Once adjusted at the time of installation, no change is anticipated during the life of the equipment.

*3.06 Temperature (Rq. 2.06)

(1) If practicable, disconnect the generator before making temperature measurements. With the generator disconnected, hold the bulb of the thermometer against the part in question covering the part of the bulb which is not in contact with the part by a piece of felt or the equivalent. Readings should be taken as soon as possible after stopping the generator.