LAFAYETTE

V.F.O. For 6 Meter Transmitters and Transceivers

MODEL HE-61A

OPERATING AND INSTALLATION INSTRUCTIONS

SPECIFICATIONS

This deluxe variable frequency oscillator has been designed to cover the complete six meter amateur band. Completely shielded, a high "Q" clapp oscillator circuit assures dependable performance. An OA2 voltage regulator tube further eliminates any undesirable effects due to line voltage variation. The HE-61A can be used with most 6 meter units that utilize a standard 8 Mc. crystal.

POWER SWITCH:

Sliding power button to "ON" position will illuminate the tuning dial, indicating power has been applied to the unit.

TUNING CONTROL:

The tuning control knob operates the illuminated dial scale and tuning condenser through a precision planetary drive mechanism of 180 degree rotation. Dial is calibrated from 50-54 megacycles.

V.F.O. OUTPUT:

The cable supplied is terminated at one end with a standard crystal plug. This plug should be connected to the matching VFO socket on the transceiver. When inserting this plug keep red dot on top.

POWER SOURCE:

The power cable supplied is terminated at one end with an 5-prong plug. The 5-prong plug should be connected to the matching VFO 5-prong power input socket on the transceiver.

For units not equipped with a 5-prong VFO power socket, such as Lafayette HE-45, connect unit as follows: (See schematic)

MODIFICATIONS

1. Either remove the 5-prong power plug, or install a matching socket

2. Connect wires from cable or wires on socket as follows:

   Black wire: (Pin #3) — Ground. (On HE-45 connect to ground lug of meter adj. pot.)

   Yellow wire: (Pin #4) — 12 volts A.C. or D.C. (On HE-45 connect to pin 3 of octal power input plug on chassis.)

   Red wire: (Pin #5) — 225 to 275 V.D.C. (On HE-45 connect to junction of 47 ohm 1 watt and 1k 2 watt on electrolytic filter capacitor)

   Brown wire: (Pin #1) — Connected to —50 to —100 volts d.c. when receiving, grounded when transmitting or spotting. (On HE-45, connect to center lug of spotting switch.)

   NOTE: If the transmitter to be used does not have a built-in bias supply to disable the V.F.O. when receiving, then construct the bias supply as shown on the schematic diagram on the following pages.

3. When only 6 volts instead of 12 are available for the heater supply, replace the 12BA6 with a type 6BA6 and the #1891 pilot lamp with a type #47.

NOTE: If a negative bias supply is not available, remove ground lead from prong # 2 of receptacle and place same on prong # 1 of receptacle.

The low end of the R.F. choke should then be switched by a remote relay or switch operating or disabling the V.F.O.

OPERATION

Be sure that the power supply cable has been connected properly to the transceiver as instructed earlier, and that the unit has an adequate ground (if not mounted to a metal surface). Jumper wire connected between both units will suffice.

1. Turn the transceiver on, and set the tuning control to the frequency on which you desire to operate.

2. Turn the V.F.O. on, and plug-in the VFO crystal into the VFO socket of the trunsceiver. Set crystal selector switch of transceiver to the VFO position.

3. If you desire to transmit on the same frequency that is being received, carefully adjust the transceiver tuning control and RF peaking control, with the spot switch in the OFF position, for maximum gain on the "S" meter. Set spot switch to "ON" position and adjust the VFO TUNING CONTROL for maximum gain on transceiver "S" meter. An internal generated frequency will be heard in the transceiver's speaker.

The transmitter is now set up for transmitting on the same frequency that is being received. When transmitting, the spot switch should be in the "OFF" position.

TUBE REPLACEMENT

If tube replacement becomes necessary, all tubes can be made accessible by removing the cabinet. Remove the two screws from the top of the front panel and then remove the bottom screws, holding chassis. Slide cabinet toward rear to remove chassis. Do not remove any other screws from front panel. The replacement tube must have the same type number as the original. A tube location diagram can be found on the license label on the inside of the cabinet. Replace cabinet, bottom mounting screws and front panel screws.

MOBILE INSTALLATION

Before installing the V.F.O. in a car, truck, boat, etc., be sure to choose a location which is convenient to the operating controls, and will not interfere with the normal functions of the driver.

The V.F.O. may then be mounted to the underside of the instrument panel or dashboard of a car, truck, etc., by means of the 2 supplied brackets and 8 self-threading screws.

RE-CALIBRATION OF THE V.F.O. TUNING DIAL

1. Connect a signal generator that has the 6 meter band 50 to 54 Mc spread out so that the peaking frequencies may be directly read. If possible, a crystal controlled generator is more desirable. The signal generator is to have a 52 OHM output impedance and is to be connected to the antenna input receptacle, of the transceiver.

2. The signal generator, unmodulated, should have an output as low as possible when making these adjustments. After turning units on, wait at least 30 minutes before starting alignment procedure to allow oscillator frequencies to stabilize.

3. Adjust signal generator to 50 Mc. Carefully adjust the transceiver tuning control and RF peaking control, with the spot switch in the "OFF" position, for maximum gain on the "S" meter. Set spot switch to "ON" position and adjust the V.F.O. tuning control for maximum deflection on "S" meter of transceiver. (Zero beat).

4. If calibration has slightly shifted re-adjust the slug in the VFO grid coil L1 for maximum reading on the transceiver's "S" meter, after having first adjusted the VFO dial scale to the 50 Mc calibration square. (Zero beat).

5. Set the V.F.O. tuning dial to 54 Mc. Tune in this signal on the transceiver dial. If this signal does not line up with the calibration square of the transceiver dial re-adjust trimmer condenser C2. See license label for location. (Zero beat).

The RF peaking variable condenser of the transceiver is to be rocked at the same time for maximum deflection on "S" meter.

REPLACEMENT PARTS

L2 — OUTPUT COIL	C-190A-9
L1 — OSC. COIL	C-190A-8
C1 — VARIABLE CONDENSER	V-252B-1
C2 — TRIMMER CONDENSER	CT254
L3 — 500 uH RF CHOKE COIL	C-185-12
DIAL SCALE	DS-622A-1
½ WATT RESISTORS	3029
7 WATT RESISTORS	W328
POWER CABLE & PLUG	PC-529
TUNING KNOB	K-4005-11

TUBE COMPLEMENT

12BA6	OSCILLATOR-DOUBLER
OA2	VOLTAGE REGULATOR

#1891 PILOT LAMP

SHIPPING INSTRUCTIONS

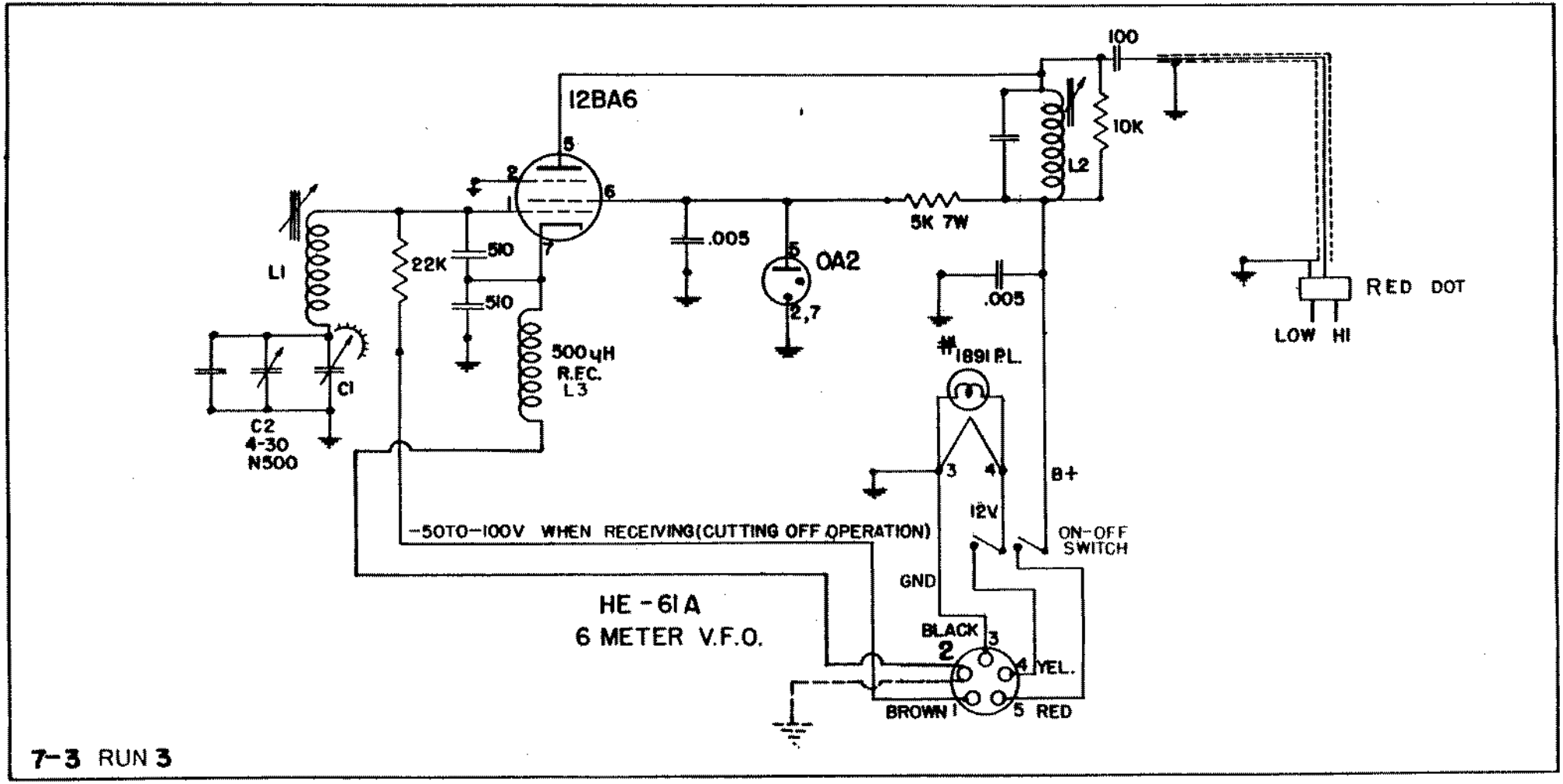
If the unit must be returned for adjustment or service, attach a tag to the unit bearing your name and complete address. Include, either in a letter or on the tag itself, the reason for returning the unit and a brief description of the difficulties encountered.

Wrap the unit in heavy paper before placing into the carton which should be large enough to permit the use of at least three inches of shredded paper or excelsior between all sides of the unit and the carton. Mark the carton FRAGILE and clearly address it as follows:—

TO:

LAFAYETTE RADIO ELECTRONICS CORP.
111 JERICHO TURNPIKE
SYOSSET, L. I., N. Y.

Include your own name and address on the carton and ship by prepaid express. The unit will be returned to you by express collect. Bear in mind that the carrier will disclaim responsibility for damage if, in his opinion, it was caused by improper packing.


12BA6
100
10K
L2
5K 7W
.005
0A2
.005
RED DOT
LOW HI
L1
22K
510
510
500μH
R.F.C.
L3
C1
C2
4-30
N500
#1891 P.L.
B+
12V
ON-OFF
SWITCH
-50TO-100V WHEN RECEIVING(CUTTING OFF OPERATION)
GND
HE-61A
6 METER V.F.O.
BLACK
YEL.
BROWN
RED

7-3 RUN 3