



IMPROVE PERFORMANCE

WITH THE

HAMMARLUND

CRYSTAL CALIBRATOR



The new XC-100 Crystal Calibrator provides check points every 100 KCS within the range of the receiver. The XC-100 employs stable low-drift 100 KCS quartz crystal and 6BZ6 pentode. Trimmer capacitor provides adjustment for zero beat against primary frequency standard (WWV).

Price:

PL-38657-G1 General usage — **\$15.95**

PL-38657-G2

for HQ-129-X and HQ-140-X — **\$17.95**

PL-38657-G4 for SP-600 — **\$17.95**

INSTRUCTIONS FOR INSTALLATION OF HAMMARLUND XC-100 CALIBRATOR IN HAMMARLUND HQ AND SP-600 SERIES COMMUNICATIONS RECEIVERS AND GENERAL COMMUNICATIONS RECEIVERS

GENERAL COMMUNICATIONS RECEIVERS

The XC-100 Calibrator Unit measures 1 $\frac{3}{8}$ " x 2" x 3 $\frac{1}{8}$ " high overall including tube and crystal. It may be mounted in any position or location where space is available on the receiver chassis. Avoid locations close to hot tubes.

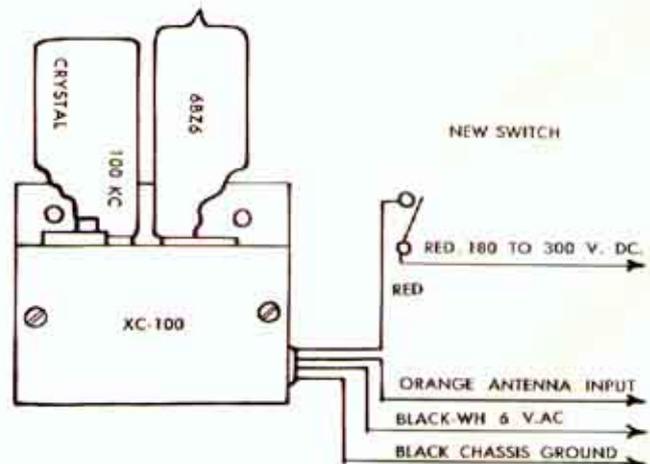
Two mounting holes, 1 $\frac{3}{8}$ " on centers, are provided in the flange of the calibrator shield cover. These holes will accommodate #6 machine screws.

Remove the receiver from its cabinet or rack and assemble the calibrator unit to the chassis. Locate and install the toggle switch furnished with the unit and its indicator switch plate on the front panel, or wherever desired.

Dress the wire leads of the unit to the correct length, strip and tin the ends to provide for connections as shown in the accompanying sketch. The portion cut from the red wire may be used to connect from the switch to the nearest point in the chassis where B+ potential is available. The toggle switch will mount in a 15/32 inch or 1/2 inch diameter hole.

Allow the normal warm-up time for the receiver and tune for a signal of known frequency, such as WWV at 5.0 mcs. and with the beat frequency oscillator of the receiver turned off, adjust the trimmer on the XC-100 calibrator for zero beat against the 5.0 mcs. signal. This should be done while the tone modulation of the standard frequency signal is off.

Replace the receiver in its cabinet or rack. No further adjustment of the XC-100 unit should be required under normal service conditions.



The calibrator in conjunction with the beat oscillator of the receiver should provide good signal strength at every 100 kcs. interval within the tuning range of the receiver.

The orange antenna lead wire from the calibrator is isolated within the unit by a series 8 mmf. capacitor and may be permanently connected to the antenna input of the receiver without affecting its normal performance.

HQ SERIES RECEIVERS

The XC-100 Calibrator Unit is designed so that it may be easily installed on the top of the tuning unit shield cover employing the mounting plate adaptor provided with the calibrator kit.

To install same in the HQ type receiver, remove the three screws at each side of the front panel and the three screws at the rear of the cabinet, then removing the receiver from the cabinet or rack.

Remove the two rear screws of the tuning unit shield cover. Assemble the calibrator unit to the mounting plate adaptor provided with the kit, using the flat head screws, nuts and washers supplied.

Secure the assembly of the calibrator and adaptor bracket to the top of the tuning unit shield using the previously removed screws and with the lead wires turned toward the left side of the receiver viewed from the front.

Pass the four lead wires of the calibrator through the hole in the rear skirt of the chassis. Unsolder the two leads of the send-recv switch and remove this switch from the front panel of the receiver. Replace same with the new switch supplied with the calibrator kit, securing the new three position plate under the nut on the front panel.

Dress the wire leads of the unit to the correct length, strip and tin the ends to provide for connections as shown in the accompanying sketch. Make the electrical connections indicated in the sketch. Unsolder the lead wires of the receiver from the original send-recv switch and transfer the lead wires to the new switch installed. Make certain the switch is connected as shown, including the two jumper connections, which may be made with a portion of the wire cut off from the calibrator lead wires.

Replace the receiver in the cabinet or rack and replace the front panel screws. Note that the rear center screw should be omitted to avoid crushing of the calibrator lead wires. The two other back-side screws should be replaced.

SP-600 SERIES RECEIVERS

The XC-100 Calibrator Unit is designed to mount under the two rear screws on the right side of the RF tube plate adjacent to the power transformer in all SP-600 receivers.

The crystal used in the calibrator has an operating temperature range of from minus 40 to plus 70 degrees C.

Assemble the calibrator unit to the mounting plate, employing the flat head screws, lock washers and nuts supplied with the kit. Carefully remove the 6BZ6 tube and crystal from the calibrator unit and remove the two screws from the RF tube plate. Secure the unit in position, using these same screws.

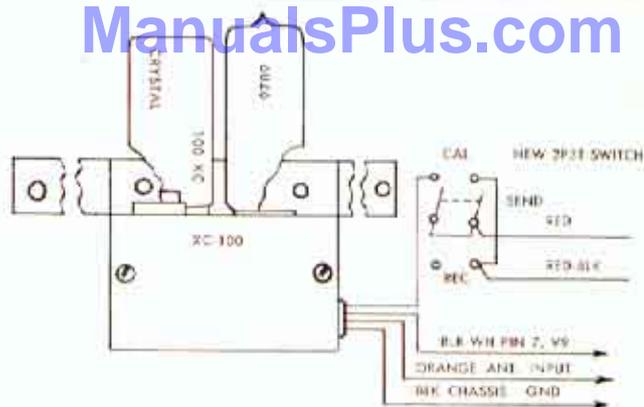
Pass the black-white, black and red wires of the unit down between the tuning unit and the chassis to the underside of the chassis. Keep the orange lead wire up and to the rear of the chassis for direct connection to the antenna input of the receiver.

Dress the wire leads of the unit to the required lengths, strip and tin the ends and solder the connections as follows:

Connect the black-white lead to Pin 7 of Socket V17, and the black lead to chassis ground. Connect the orange lead to the ungrounded side of the antenna input. This lead is isolated by a series 8 mmf. capacitor within the unit and may be left permanently connected to the antenna input without affecting the normal performance of the receiver.

Remove the send-recv switch, S9, from the front panel and carefully unsolder the two leads connected to it. Using these same leads and the red lead wire from the calibrator, connect the new two-pole, three position switch provided with the kit, as shown in the accompanying diagram. Note that for wiring this switch, the terminals are reversed in direction with respect to the switch handle. The red lead should be connected to the terminal on the opposite end from the keyway slot. After wiring the switch, install same with the new three-position switch plate under the nut on the front panel. Replace the tube and crystal in the calibrator.

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Allow the normal warm-up time for the receiver and tune for a signal of known frequency, such as WWV at 5.0 mcs. and with the beat frequency oscillator of the receiver turned off, adjust the trimmer on the XC-100 calibrator for zero beat against the 5.0 mcs. signal. This should be done while the tone modulation of the standard frequency signal is off. No further adjustment of the XC-100 unit should be required under normal service conditions.

The calibrator in conjunction with the beat oscillator of the receiver should provide good signal strength at every 100 kcs. interval within the tuning range of the receiver.

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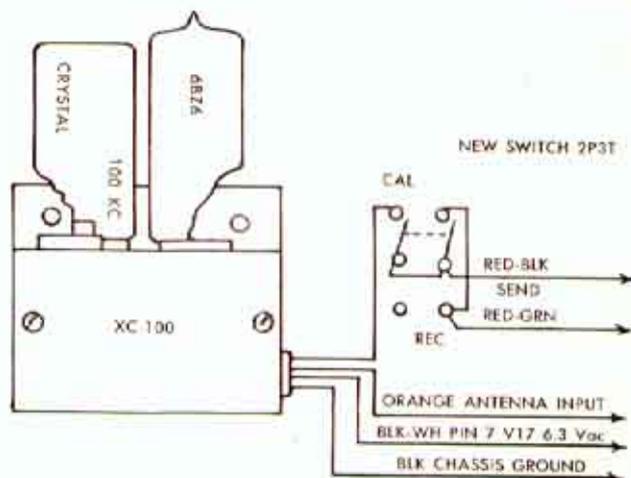
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Allow the normal warm-up time for the receiver and tune for a signal of known frequency, such as WWV at 5 mcs. and with the beat frequency oscillator turned off, adjust the trimmer on the XC-100 calibrator for zero beat against the 5.0 mcs. signal. This should be done while the tone modulation of the standard frequency signal is off.

Replace the receiver in its cabinet or rack. No further adjustment of the XC-100 unit should be required under normal service conditions.

The calibrator in conjunction with the beat oscillator of the receiver should provide good signal strength at every 100 kcs. interval within the tuning range of the receiver.

 **HAMMARLUND**

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