

TECHNICAL SPECIFICATIONS

FREQUENCY COVERAGE..... 80M 3.5- 4.00 Mc.
 40M 7.0- 7.30 Mc.
 20M 14.0-14.35 Mc.
 15M 21.0-21.45 Mc.
 10M 28.0-29.70 Mc.
 6M 50.0-54.00 Mc.

FUNDAMENTAL OSCILLATOR FREQUENCY 3.5 -4.0 Mc for 80M and 10M bands.
 3.5 -3.65 Mc for 40M, 20M and 15M bands
 4.16-4.50 Mc for 6M band.

OUTPUT FREQUENCY 80M band: 3,5 -4.00 Mc.
 40M band: 7,0 -7.30 Mc.
 20M band: 7,0 -7.175 Mc.
 15M band: 7,0 -7.15 Mc.
 10M band: 7,0 -7.425 Mc.
 6M band: 8.333-9.00 Mc.

OUTPUT POWER 10-30 volts RMS

OUTPUT IMPEDANCE..... LOW 52 ohms, HIGH 50K ohms.

TUBE COMPLEMENT V1 6BA6 Series-tuned Clapp Oscillator.
 V2 6BA6 Broad-Band Buffer-Amplifier.
 V3 6AQ5 Output Amplifier.
 V4 VR150MT/OA2 Voltage Regulator

POWER SOURCE..... 117 volts 50-60 cps AC.

POWER CONSUMPTION 66 VA.

DIMENSIONS..... Height 7-3/4"; Width 8-3/4"; Depth 10".

WEIGHT (Net)..... 13-1/4 lbs.

GENERAL DESCRIPTION

The HE-74 is a rugged Variable Frequency Oscillator designed for dependable, stable operation on all bands from 80 through 6 meters, with sufficient output to drive any multi-stage transmitter of modern design.

For high stability, the VFO employs a series-tuned Clapp oscillator, incorporating special temperature-compensating capacitors. The oscillator uses three fundamental tuning ranges to provide suitable outputs for the six amateur bands. The fundamental tuning ranges are as follows:

(1) 3.50 - 4.00 Mc.

(2) 3.50 - 3.65 Mc.

(3) 4.16 - 4.50 Mc.

The chart below shows how these basic tuning ranges are used:-

FUNDAMENTAL OSCILLATOR TUNING	BAND	VFO OUTPUT
(1) 3.50 - 4.00 Mc	80 M	3.50 - 4.00 Mc (Fundamental used)
(2) 3.50 - 3.65 Mc	40 M	7.00 - 7.30 Mc (2nd Harmonic used)
(2) 3.50 - 3.65 Mc	20 M	7.00 - 7.175 Mc (2nd Harmonic used)
(2) 3.50 - 3.65 Mc	15 M	7.00 - 7.15 Mc (2nd Harmonic used)
(1) 3.50 - 4.00 Mc	10 M	7.00 - 7.425 Mc (2nd Harmonic used)
(3) 4.16 - 4.50 Mc	6 M	8.333 - 9.00 Mc (2nd Harmonic used)

The second stage performs as a broad-band buffer-amplifier on 80 through 6 meters. It offers good isolation between the output and the oscillator and thus prevents any frequency shift due to load variations. A special switch position also permits this stage to function as a crystal oscillator to provide an output for calibrating purposes.

The output stage operates as an amplifier to provide a high output signal level for connection to the transmitter. The plate circuit is arranged to provide optimum tuning to the fundamental oscillator frequency on 80 meters and to the second harmonic on 40 through 6 meters (see table above). The output terminates in two coaxial connectors -- one providing a low impedance output, the other a high impedance output.

The power supply uses a low-heat silicon rectifier in a half-wave circuit with good filtering. A voltage regulator tube maintains stability by eliminating any effect on the oscillator due to line voltage variations.

Rigid mechanical construction has been employed throughout. Double-bearing construction is used on the tuning capacitor. All frequency determining components are enclosed in a separate compartment to maintain rigidity, shielding, and provide isolation from heat-producing elements in the circuit.

Although the HE-74 is compatible with most amateur transmitters having a VFO input, it was designed primarily to match the LAFAYETTE KT-390 Transmitter, both electrically and in styling. Any questions regarding the compatibility of this VFO with units which do not have a VFO input should be directed to the transmitter manufacturer, who is best qualified to give such information.

INSTALLATION

POWER

The VFO operates from 105-120 volts, 50-60 cycles AC. Do not use on any other power source.

OUTPUT CONNECTIONS

The VFO is equipped with two outputs. One is a high impedance output, while the other is a low impedance output. In cases where it is necessary to use a connecting cable longer than 36 inches between the VFO and transmitter, use the low impedance output. For cable lengths of 36 inches or less, use the high impedance output. Note, however, that when using the low impedance output, it will be necessary to add a decoupling capacitor of about 2000 μf in series with the VFO input on the transmitter.