Knight V-107 VFO for Six and Two Meters

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Just finished the Knight-kit V-107 VFO and it took me one hour to do it. Would you believe two hours? Honestly it took me three hours by my stop watch to assemble, wire and calibrate this VFO. Time was not essential, but I was anxious to see how long it would take to complete the kit and have it operating.

Assembling the Knight-kit V-107 VFO is so simple that any previous experience is not necessary. The instructions in the manual make every step of construction easy to follow. The text and pictures show exactly where each wire or component fits in. Yes, the wires are even cut to length, stripped and ready for soldering. If you are not an expert on soldering now, there are some excellent lessons in the construction manual which will make you one.

The V-107 VFO is usually sold as an accessory for the TR-106 and TR-108 Knight-kit Transceivers but it can be used with any 2 or 6 meter transceiver or transmitter. It uses the Clapp oscillator (sometimes known as Colpitts) for maximum stability and has a high L/C ratio in the tank circuit, resulting in less drift. The output of the VFO has a minimum of 20 volts RMS which is enough to drive most any transmitter for the 2 and 6 meter bands. A high-gain pentode, 12BK6, is used for the oscillator tube and a voltage regulator tube, OA2, is used to stabilize the voltage on the screen of the 12DK6.

Calibrating the V-107 is no problem if the step-by-step instructions are followed in the construction manual. You will find it just takes three important adjustments, L-1, L-2 and C-2, to calibrate the VFO for either 2 or 6 meters. With these adjustments finished you are ready to work anybody on these bands and be on frequency of any station. It might be suggested that these calibration adjustments be made after a thirty-minute warm up to make sure they are correct.

Power requirements are 200 volts DC at 30 ma and 12.6 volts AC at 150 ma for the 12DK6 oscillator tube and can be supplied from the TR-106 or TR-108 Knight-kit Transceivers. Should the VFO be purchased separately, power can be taken from the transmitter or transceiver of your choice. An outboard power supply with the same voltages will do as well.

When the V-107 VFO was finished, "on the air" workouts were done to check drift, temperature and mechanical stability. On drift it was minor and in line with the specifications of the manufacturer, Allied Radio Corporation. For temperature, it was cool as cucumber and this is due to power levels kept at a minimum allowing for very little heat dissipation. The mechanical stability can be said that the V-107 is rugged and designed like the well known expression . . . "just like a battleship."

Two different 2 meter transmitters were used for checks on this VFO and in each case there was plenty of drive and it operated the "rigs" satisfactorily. Much of this was due to keeping the output cable of the VFO short, as recommended in the construction manual.

For the ham that has just a few crystals to operate on the 2 or 6 meter band, the Knight-kit V-107 VFO just cannot be beat at the price of $24.95.

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Technical Specifications

Frequency coverage: 8.333 to 8.666 mhz for 6M; 8.000 to 8.222 mhz for 2M.
Frequency stability: +/-500 cycles per hour after 30 minutes.
RF output: 20 volts rms minimum into 47K/30 pf.
Power requirements: 200 vdc @ 30 ma; 12.6 vac @ 0.15 amp.
Tube compliment: 12DK6 oscillator; OA2 voltage regulator.
Cabinet size: 5½" x 4-5/16" x 6½".