



## 7000 TUNE Control

An accessory for the  
Icom IC-7000 radio.

by The BetterRF Co.  
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Congratulations on your purchase of the 7000 TUNE Control. It will make operation of your IC-7000 radio more convenient. The key features are:

- ☛ Makes the Icom IC-7000 TUNE/CALL button functional
- ☛ Displays the SWR as you tune an antenna or an external tuner
- ☛ Two Modes: constant 30 Watts out or pulsed output at normal power.
- ☛ Senses the voltage on a screwdriver antenna motor for automatic initiation of the tune mode
- ☛ Field upgradeable to a completely automatic screwdriver antenna controller.

### IC-7000 Menu Settings

Select the DEFAULT settings for menu Items:

- ☛ #18 (PTT Start = OFF)
- ☛ #48 (CI-V Baud Rate = AUTO)
- ☛ #49 (CI-V Address = 70h)

To check these, PRESS the AF(Set) knob momentarily to bring up the Set Mode. PRESS F-4, OTH (Others) to display the OTHERS SET. PRESS either F-1 or F-2 to display the proper menu items. Rotate the main tuning knob to select the value desired.

To return to the original screen display, PRESS the AF(Set) knob momentarily twice.

### Installation of the 7000 TUNE Control

Turn OFF the IC-7000.

Insert the 3.5 mm (1/8 inch) phono plug into the CI-V jack. The CI-V jack is the second jack from the left of the four jacks immediately below the 4-pin MOLEX connector on the IC-7000.

Insert the 3.5 mm phono plug at the other end of the CI-V cable into the 3.5 mm jack on the TUNE Control.

Insert the male Molex connector on the TUNE Control into the female Molex connector on the rear of the IC-7000.



### **Installing Screwdriver Antenna Motor Voltage Detection**

Trim back the shielding on the stereo cable (if it not already trimmed back). The shield is NOT connected to the motor wiring nor is it grounded to the vehicle. Connect the RED wire to one of the screwdriver motor leads. This must be connected to the wiring after the direction switch and before any resistor used in the motor wiring.

Connect the WHITE wire to the other motor lead. This must be connected to the wiring after the direction switch and before any resistor used in the motor wiring.

Insert the 2.5 mm Stereo phono plug into the 2.5 mm jack on the TUNE Control.

### **Operation of the 7000 TUNE Control WITHOUT Screwdriver Antenna Motor Voltage Detection**

Turn ON the IC-7000 and choose your band and operating mode.

PRESS the TUNE/CALL button for 1 second. The IC-7000 will switch to RTTY transmission at 30 watts. Adjust for minimum SWR while observing the SWR reading on the IC-7000. 30 watts of power is sufficient for the IC-7000 to provide accurate SWR readings.

PRESS the TUNE/CALL button again and the IC-7000 will revert to your original mode and power setting.

### **Operation of the 7000 TUNE Control WITH Screwdriver Antenna Motor Voltage Detection**

Turn ON the IC-7000, choose your band, operating mode and do one of the following:

1. PRESS the TUNE/CALL button momentarily to check the SWR. If the SWR is low enough, then PRESS the TUNE/CALL button momentarily again and the IC-7000 will revert to the original mode and power you had selected.

If the SWR is too high, then PRESS the direction control switch on the screwdriver antenna to lower the SWR. When the SWR is low enough, RELEASE the direction control switch and the IC-7000 will revert to the original mode and power you had selected.

2. PRESS the direction control switch on the screwdriver antenna. The IC-7000 will switch to RTTY transmission at 30 watts. Adjust the screwdriver antenna by PRESSING the direction control switch up or down. Observe the SWR reading on the IC-7000.

On RELEASING the direction control switch, the IC-7000 will revert to the original mode and power you had selected.

### **Changing to Pulsed Mode or Constant Output Mode**

The Constant Output Mode is 30 watts. In the Pulsed Mode the power is pulsed between zero and the power setting you have select on the IC-7000.

Press the Reset button between two phono jacks to toggle between the modes. You will hear 1 beep when the TUNE Control is set to the Constant Output Mode and 2 beeps when the TUNE Control is set to the Pulsed Output mode. The setting is remembered by the unit.

### **Beep Level Setting**

Set the beep level for the TUNE Control by setting the Side Tone Level (CW). Use the Mode key to select the CW mode.

To set the level, PRESS the AF(Set) knob momentarily to bring up the Set Mode. PRESS F-1, QS(Quick Set) to enter the Quick Set Mode. PRESS either F-1 or F-2 to display menu item 4 (Side Tone Level). Rotate the Main Tuning Knob to select the level desired. If the TUNE Control has been installed, then pressing the TUNE/CALL button will cause IC-7000 to send a beep at the selected level.

Use the MODE key to return to your original operating mode.

To return to the original screen display, PRESS the AF(Set) knob momentarily twice.

### **Technical Details of the 7000 TUNE Control**

The 7000 TUNE Control must be installed with the IC-7000 in the off condition for the IC-7000 to recognize that TUNE Control has been connected.

The 7000 TUNE Control has a CI-V address of EEh (a hex value). It expects the IC-7000 to have a CI-V address of 70h which is the default value for the IC-7000. Additional CI-V devices may be connected to the IC-7000 and the 7000 TUNE Control by using a 3.5 mm mono splitter on the jack of the 7000 Tune Control. They may not use either of the above addresses, 70h or EEh.

A shielded cable with 3.5 mm plugs must be used for the CI-V cable (supplied). A shielded stereo cable with a 2.5 mm plug must be used for the Motor Voltage Detection Cable (supplied).

The shield of the Motor Voltage Detection Cable is not connected at the open end. It is grounded at the plug which is inserted into the 7000 TUNE Control.

**Under no circumstances connect the shield to any power lead.**

The hot leads of the Motor Voltage Detection Cable are connected, one to each of the power leads of the motor of the screwdriver antenna. These must be connected to the power leads between the direction control switch and any resistor in the motor leads.

If poor operation of the 7000 TUNE Control is caused by RF on the Motor Voltage Detection Cable, wrap several turns of the cable through a ferrite RF choke. The 7000 TUNE Control is field upgradeable to a fully Automatic Screwdriver Antenna Controller. Contact BetterRF or your dealer for further information.

The RESET button on the 7000 TUNE Control is used to toggle between the Constant Output Mode and the Pulsed Mode. In the Pulsed Mode, the IC-7000 is pulsed 5 times a second to whatever power level you have selected for normal operation. This mode is useful for tuning high powered amplifiers as the average power is approximately 50% of the peak power.

*Customer Service*

The BetterRF Company is dedicated to providing superior products to the amateur community. Please contact us if you have any problems, comments or suggestions about the operation of your 7000 TUNE Control.

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Rev b, June 2006