



## HC 5.1 Retro Conversion Kit

The new technology of the Heil HC 5.1 microphone element presented in this kit allows retro-fitting older microphones. The HC 5.1 is an improvement of the original Heil HC 5 element. The HC 5.1 exhibits a wider, smoother frequency response with the -3 dB points set at 200Hz on the low end and 10,000 Hz on the top. The traditional Heil mid range articulation rise is improved with the HC 5.1 producing great communications audio.

The dynamic elements are designed to be close talked to produce best transient response and great dynamic range. Adjust your mic gain for proper ALC action.

### INSTALLATION INSTRUCTIONS

The HC 5.1 Retro Kit contains Blue baffle foam

Black foam for windscreen

Decoupling capacitor for iCOM only

Remove the original microphone element and all of the insulation and surrounding material. We illustrate with the D 104 but the HC 5.1 can be installed in just about any microphone being extremely careful to have the baffle board and element as far forward as possible. Failure to do so will exhibit a hollow sound.



Cut the blue baffle foam to exactly fit the inside of the microphone. The baffle is very important so that when the element is installed, there is no space or air surrounding the element. The baffle insures that when you speak into the front of the HC 5.1 microphone element little or none of your voice will be able to pass around the element and enter into the back. This would cause a cancellation of your voice as that rear port is out of phase from the all-important front of the element. Cut a  $\frac{3}{4}$ " hole completely through the blue baffle foam and insert the element. The HC 5.1 element must never be mounted or glued to a flat surface. Covering up the open rear port will de-tune the element causing the element to lose its response. The element must always be suspended in the blue foam baffle board with the front and back open.

Route the two wires to the back of the element and solder to the two small pads of the element. Careful not to put too much heat on those small solder pads.

The black foam windscreen will be placed against the microphone grill. The HC 5.1 element which is in the blue baffle will mount right up against that windscreen. If you have a lot of space behind the element you will want to fill that space with some form of insulation just to help keep the HC 5.1 and baffle tight against the windscreen and grill.

### HC 5.1 SPECIFICATIONS

Nominal Impedance 600 ohm at 1 kHz.

Sensitivity - 63 dB

Pattern Uni Directional

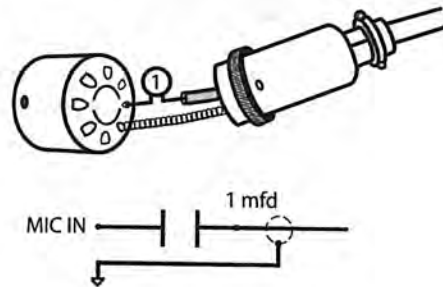
Response 200Hz - 10 kHz

### ICOM INSTALLATION

Please be aware that the early models of iCOM (720,730, 740 ) do NOT have mic preamplifiers on board. It was built inside the hand microphone and will not support this HC 5.1 or any other dynamic element.

The Heil HC 5.1 element works beautifully into all of the current new PRO models of iCOM. You will be able to adjust the equalization to tailor the response for any requirements you may desire. Narrow, screaming DX and Contest audio as well as smooth beautiful voice response for rag chew or full range broadcast.

**IMPORTANT:** All iCOM microphone inputs provide 'phantom power' which is a + 8 volt d.c. voltage superimposed on the mic audio line which is used to power small condenser elements. When using the Heil HC 5.1 DYNAMIC element, you must absolutely decouple that d.c. Voltage. A decoupling capacitor is providing in this kit and is a MUST to install in series with the audio line. You can install that in series with the + mic lead inside the microphone or in the 8 pin round mic connector. Use heat shrink tubing over the capacitor to avoid shorting to the connector casing.



Heil Sound, Ltd. Warrants their parts for one year and 90 days labor from the date of purchase. It does NOT cover accidental or intentional damage such as overheating of the solder connections. Heil Sound, Ltd. is not responsible for loss, damage or expenses that arise from the mis - use or inability to use this product.

All in or out of warranty items returned must be accompanied by a completed Heil Hospital form. [www.heilsound.com/amateur/heil\\_hospital.htm](http://www.heilsound.com/amateur/heil_hospital.htm). Print, fill out and enclose the form.

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HCRT 32911

# HC-104 Conversion Kit

## iCOM Installation Instructions

Please be aware that the early model 'zero' iCOM rigs (720, 730 and 740) do NOT have a mic preamp on board. It was built into the hand mic so you can not use a microphone element straight into these inputs.

The 735 model has minimal preamp (-10 dB short in gain). Use the compressor on at a low level, which then acts as a preamp and the dynamic HC element should work.

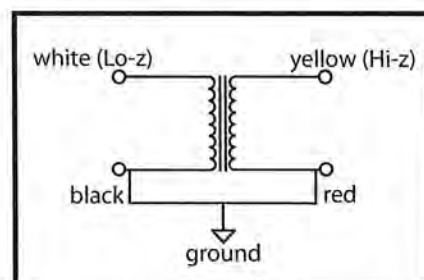
iCOM pro models: On these models iCOM raised the standard preamp level, so gain might have to be run up to about 2 or 3 o'clock. Check the ALC meter for proper deflection.

Enclosed in this package is the d.c. blocking capacitor, which must be used in series with the hot lead of the microphone, so the d.c. phantom voltage on all iCOM rigs does not get to this dynamic element. This is a polarized capacitor so + goes to radio.

## XT-1: Lo to Hi-Z Transformer

The sub miniature audio input transformer from Heil Sound is ideally suited for matching low impedance microphones to high impedance inputs found in vacuum tube transmitters (Heath, Collins, Drake, etc.)

The XT-1 transformer is small enough to be mounted inside a microphone housing, some headsets or mounted in a small metal box with appropriate connectors to mate with your microphone and transmitter.



Input Z 1,000 ohms primary white/black

Output Z 30,000 ohms secondary red/yellow

Frequency Response: 50 Hz -16 kHz @ -3 dB

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Heil Sound, Ltd. warrants these products to the original purchaser for a period of one year parts and 90 days labor from the date of purchase. It does not cover accidental or intentional damage. Heil Sound, Ltd. is not responsible for loss, damage or expenses that arise from the use or the inability to use this product.

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