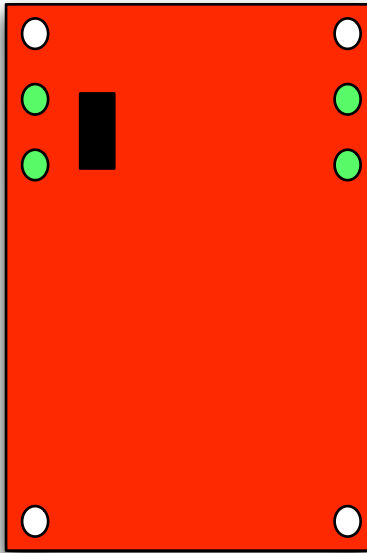


# HM1991x Piston Honda ROM Expander: Installation and Operation guide

## TOOLS NEEDED:

- 1x 3/32" hex wrench
- Included Hardware bag (four standoffs and eight socket screws)

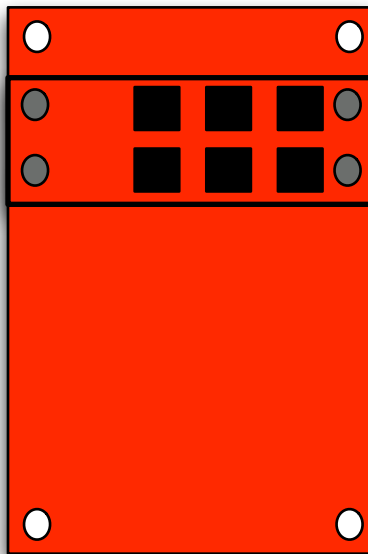


1. Use the hex wrench to remove the four socket screws from the rear of your Piston Honda.

2. Carefully pull the rear circuit board away from the module assembly.

3. Now, find the four holes on the circuit board that were NOT used by those screws (marked green in the diagram). Take the included hardware kit and install four standoffs, facing outwards from the back of the board.

fig. 1: rear view of Piston Honda main board removed from module (green holes are for the new standoffs)



4. Take the Piston Honda expander board and place it onto the "ROMEXP" header as shown, so the four holes in the corners of the board align with the standoffs installed in step 3. Use four more screws to secure the expander to these standoffs.

5. Now, carefully re-attach the Piston Honda board to the rest of the module assembly, making sure that all pins on the long connector are aligned, and the screw holes line up with the standoffs. Re-install the four screws removed in step 1 and reconnect the module to the rest of your instrument.

fig. 2: rear view of Piston Honda main board with expander card successfully installed

## HOW TO ACCESS THE NEW WAVEFORMS:

With the ROM Expander installed, the ROM Select button on the front panel has an additional function. If you hold the button down for two seconds, the numerical displays will change to show a letter from A to H. Use the large Hither and Yon knobs (or CV inputs) to select letters. Each letter represents a chip either on the factory waveform set included with the Piston Honda, or on sockets on the Expander board. The data selected with the left "HITHER" knob and display will appear on the "A" slot shown near the "ROM SELECT" button, and the right "YON" selection will appear on the "B" slot. When you are done selecting chip destinations, release the button and continue normal use of the Piston.

- A - factory waveform set A (rough)
- B - factory waveform set B (smooth)
- C - Classic Waveforms V (socket IC3 on expander)
- D - M. Davidson Bosch Gardens B (socket IC4)
- E - blank (socket IC5)
- F - blank (socket IC6)
- G - blank (socket IC7)
- H - blank (socket IC8)

## HOW TO WRITE NEW WAVEFORMS:

1. Obtain the "wave256" software from the support page of Wiard Synthesizer Company, [www.wiard.com](http://www.wiard.com) (windows only)
2. Use this software to design a set of waveforms. "Bank" waves are swept by the "HITHER" control, and "WAVE" waves are swept by the "YON" control. Save your work as a ".256" file. Make sure that everything is correct according to your design.
3. Contact [waveforms@theharvestman.org](mailto:waveforms@theharvestman.org) . The charge for burning your .256 file onto a chip is \$13 USD, postage paid (\$15 world).