

Hua Sheng 142F Air Intake



Illustration 1: 35mm Air Filter modification

With the H-S 142F mounted in the frame of my 2012 Schwinn Drifter the stock air-box intake was so close to the seat post that it was very difficult to service or access the carburetor without removing the engine from the frame. Even the sponge filter could not be cleaned while the engine was mounted without extreme effort.



Illustration 2: Compact Intake with 3-D printed flange

After thinking about this for some time, I developed a solution that used a standard 35mm conical air filter, some 3/4" PVC sprinkler parts, and some inexpensive 3-D printed flanges. Together these parts are light weight and compact providing good clearance to permitting access and service to be performed with the engine in-place.

Parts List

1ea 3/4" PVC pipe about 1" length locally available at Home Depot/Lowes, etc.

1ea 3/4" PVC 90-degree elbow locally available at Home Depot/Lowes, etc.

Notes: on one end of the elbow carefully trim about off 1/8" of the length shortening that side. The 1" length of pipe is then inserted and glued in this shortened end of the elbow. The protruding pipe is trimmed so that about 1/8" remains sticking out of the elbow. This step provides the clearance needed for the carburetor cap screws. By itself, the diameter of the elbow is larger than the bolt circle for the carburetor attachment bolts.

1ea ManifoldCollar3 This is an STL model for the flange which slips over the loosened carburetor bolts allowing removal of the elbow and air cleaner without having to remove the carburetor bolts. It is available at: <http://cubify.com/store/design/5JUKO2632F> Notes: You can download the model for free and print it on your 3-D printer or, if you prefer you can order it to be printed for you { } and shipped to you ready to go in about 1-week. Cost is about \$7.00 + S&H

1ea Manifold Flange2 This is an STL model for a flange that attaches to the carburetor. It acts as a spacer and bolt retainer keeping the bolts in place when loosened to allow the manifold collar assembly to be slipped into place. It is available at: <http://cubify.com/store/design/J6R9159H3F> Notes: You can download the model for free and print it on your 3-D printer or, if you prefer you can order it to be printed for you { } and shipped to you ready to go in about 1-week. Cost is about \$6.00 + S&H When ordered together with the Manifold Collar3 (above), both items will ship for \$3.00.

1ea 2 part Epoxy Glue (J B Weld or equal) Used to glue the Manifold Collar to the 3/4" PVC pipe completing the intake manifold assembly.

1ea 35mm Air Filter Like: http://www.ebay.com/itm/140910744483?_trksid=p2060353.m1438.l2649&ssPageName=STRK%3AMEBIDX%3AIT ...or equivalent. This one is under \$7.00 including S&H charges.



Illustration 3: 35mm AIR FILTER HONDA XR50 CRF50 XR or HS142F

As an alternative, you can order a completed intake manifold which includes the 3-D printed pieces, Air Filter and PVC parts needed to make the manifold. The cost, including US domestic priority mail is \$35.00. You will only need PVC glue, JB Weld Epoxy and basic hand tools to complete.

Finished result

The finished manifold is both compact and light weight. It provides more than one inch of clearance between the manifold and seat tube. It also provides visual inspection and physical access to other carburetor adjustment and maintenance. For minimus cost, the modification offers improved performance, convenience and appearance over the standard air box.



Illustration 4: Right side engine - note clearance with seat tube.