

HOW TO MAKE AN INEXPENSIVE NON RETURN VALVE FOR STATIONARY ENGINES

Most of us that own stationary engines have at some time or other had problems with non return valves and mostly when we are at a rally or fair. This entails in sometimes dismantling a carby and or removing the fuel tank on site and all the time we get frustrated and bad tempered while trying to rectify the problem.

I have had this problem and think that, after experimenting in numerous trials of making non return valves that work, I now have a cheap and easy method in making such a valve.

To make this non return valve, you don't need a lathe or a drill, just a hack saw.

Firstly you need to purchase a brass male standard compression fitting from any good hardware store. For this exercise I bought four fittings vis, 1/8 BSP X 1/4 copper tube, 1/4 BSP X 1/4 tube, 1/4 BSP X 5/16 tube and 1/4 BSP X 3/8 tube. Also required are steel or S/S balls in sizes 5, 7 and 9 mm dia. These come from CBC. The cost of the fittings is \$3.35 for the 1/4 tube, \$3.50 for the 5/16 tube and \$3.75 for the 3/8 tube. The balls cost about 5 cents each.



For the demonstration for this article I will use the 1/4 X 1/4 fitting. Remove the nut and olive from the fitting and cut two slots in the BSP end of the fitting. This will always let fuel into the tube even if the non return valve is sitting on the tank bottom.



Next, the balls for the different size non return valve are; 5 mm dia for the 1/4 , 7 mm dia for the 5/16, and 9 mm dia for the 3/8.

Place the ball into the compression fitting, place on a flat steel plate and with a pin punch and small hammer, give a light tap down on the ball. This will give a good seal between the ball and fitting.



All that needs now is to insert the nut and olive onto the copper tube and put into the compression fitting. You will need to make sure that you do not bottom out on the ball with the tube but leave a gap so the ball can float to get the fuel pass.



The non return valve is now ready to be used. Easy !!!!!

I have used these non return valves on my Headless Witte, 'Engine', and Fairbanks Morse horizontals with great success.

Shown below is a valve that you can make to replace anon return valve if the sliding part of the valve does not seal even after trying to fix. An example is the in line non return valve used on Rosebery vertical engines and others. All that is needed is the valve described above plus a brass socket and another standard compression fitting and just join them together.



Hope this is of interest to you.

Warwick Ward 23/5/2012