

CARBURETTOR ICING

From Roy Beaumont:

In the March/April 'FLAT OUT', Lloyd Edwards was asking for solutions to the problem of carburettor icing. This was a problem that I had encountered with a Mini that I modified for rallying and racing - this suffered from icing after a period of wide open throttle driving.

The cause of the problem was that I had mounted the carburettor on the end of a long inlet manifold, and separate from the exhaust system. The original layout had a combined inlet/exhaust manifold and was provided with a hot-spot similar to the idea used on the 2CV.

My successful solution was to wind several turns of copper wire alternately between the exhaust and the inlet manifold, thereby creating a heat path. I never suffered from the dreadful problem again! A refined version of this would be to use a copper braided earth strap, and attach the ends to the exhaust and inlet mounting bolts. This arrangement shouldn't look out of place, and should provide sufficient heat transfer to cure the problem.

Whilst on the subject of extracting more power from the 2CV engine, may I recommend a book which I have discovered: 'Motorcycle Tuning (Four Stroke)' by John Robinson (who is the editor of 'Performance Bikes'). It explains how various stages of engine tune are reached, and describes a typical development programme. For those of us with computers, there are a few 'BASIC' programs which can be run to see what effect various alterations would have, e.g. larger valves or a different cam etc.

From Roger Irwin:

In reply to the article on carburettor icing by Lloyd Edwards in this latest issue (No. 33), my answer is just visible on the photo of the supercharged Lomax 223, 'Old Blower'. My answer comes in the form of easily obtainable VW parts, and expert welding. This answer was given to me by Dennis Priddle of D.P.R. Racing of Yeovil, and actually installed onto the 'Old Blower' because superchargers and some turbo installations can cause terrible problems.

Obtain a V.W. induction manifold from: Santana 1.8, Audi 80, or Scirocco 1.6 at approx £15 (cost, used). These contain the VW heater element inside the manifold. The heater is known as a 'Hedgehog' and is an approximately 3 Kilowatt electric heater. This should be treated much the same as an electric choke ie: ON/OFF in short spells etc. when cold or when misfire occurs. Most usually on a warm, damp summer morning.

How it's done:

Undo screws and remove hedgehog. Bandsaw etc. all around the 4" diam. machined face so that you are left with a machined, 4" diam. ring.

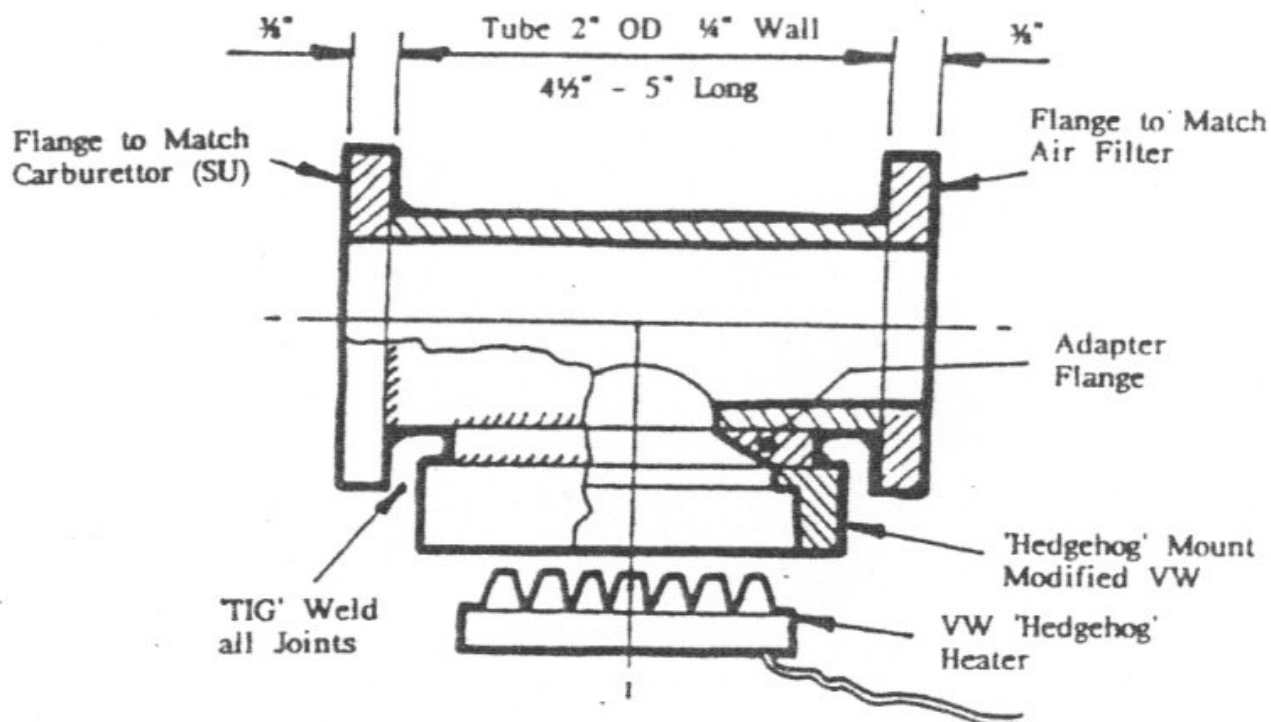
Source the following parts :-

1. An aluminium tube of the approximate dimensions, 2" outside dia. x approx $\frac{3}{8}$ " to $\frac{1}{4}$ " wall thickness x 4 $\frac{1}{2}$ " to 5" long.
2. An aluminium plate 6" x 6" x $\frac{3}{8}$ " thick, large enough to make the two flanges required.

What Next ?

Cut away a mid-section of the tube, to allow for rough matching to the ring.

Fashion yourself two flanges, one for each end of this tube, i.e. : one to fit your carb., and one to fit your air filter etc. You now require the services of an enthusiastic, intelligent and cheap welder who is proficient in aluminium welding. Don't go for a gas welder, go for a TIG welder. The ring must now be built up and flanged onto the tube like so :-



This will require some cleaning* up of the welds inside and outside of the structure. Also weld the flanges onto the tube ends. N.B. protect the machined face of hedgehog ring with a dummy plate, screwed into place.

Clean and polish your Hot Induction Port. You can leave it polished, plastic-coat it or try high temperature engine paints (but don't paint onto a polished surface !!). Total cost in the order of £25.00 to £30.00.

Lastly, connected to a switch in the cab, you now have the definitive answer to carburettor icing problems. Use a switch with a bright indicator light to warn that this item is in operation, otherwise our meagre alternators may not cope with a 3 Kilowatt drain.

One last point: on my S.U. carb there is a requirement for air-balance passageways to interconnect with the air filter. This was simply done by drilling extra holes into the flanges and having two balance pipes TIG welded into place.