

BETTER FUEL HOSE CLAMPS

(Revised)

by Graeme Dennes

What attributes should a good hose clamp possess to ensure proper sealing and security of the rubber fuel hoses in your vehicle, including the clamps fitted to the carburettor, fuel pump, fuel filter, fuel tank, etc? In my experience, (1) the metal band should *not* be of the commonly available perforated (ie slotted) type, otherwise the multiple razor sharp edges of the slots act like scalpel blades, cutting into the hose rubber during tightening; (2) the metal edges of the clamp should be rolled (ie smoothly rounded) so as to prevent the otherwise sharp edges from cutting into the hose during tightening; (3) the clamp should tighten in a fully circular manner so as to ensure an even, uniform pressure is applied all the way around the circumference of the hose, to ensure its proper sealing on the fuel fittings without excessive deformation force being applied, further damaging the hose rubber, and (4) the clamp must be able to be used with small diameter hoses, including the 5.5mm inside diameter hoses used in the 2CV fuel supply line.

In my experience, most commonly available hose clamps fail one or more of the above requirements, usually in the cause of lowering the manufacturing costs! Have you had a good look recently at the surface of rubber fuel hoses after the common, poorly designed clamps have been removed? You will usually find multiple cuts in the rubber hose surface resulting from the sharp edges of the worm drive slots, as well as damage from the sharp band edges cutting into the rubber. This damage to the rubber fuel hose is permanent. It occurs the *very first time* the commonly used clamps are tightened onto a new hose! Well, that's now been relegated to the past. A supplier of a hose clamp which meets the above requirements has been found. It is sold under the ABA brand. Details follow.

I've included two photos which illustrate two of the key attributes noted above. I've included an ABA clamp and a commonly available clamp in the photos, and the clamp sizes chosen would be typical of the size used to secure a 12mm (when fitted) outside diameter fuel hose, as in my 2CV fuel fittings.



Photo 1

Photo 1 shows the (good) ABA hose clamp at the left, and a common (not so good!) hose clamp at the right. Both clamps have been appropriately sized for the task, and tightened to fit around a 12mm diameter hose. It's clear that the ABA clamp (left) has remained nominally circular, ensuring it will tighten evenly around the circumference of the fuel hose, properly sealing the hose onto the fitting, and with the least compressive force on the rubber. Meanwhile, the common clamp, shown at the right, has tightened into an obvious oval-shape, and has in fact started to deform (ie permanently bend) at the left side of the band, and the right side is on the verge of deforming. This clamp will definitely *not* tighten evenly around the circumference of the hose, and so will not guarantee proper sealing of the fuel fitting, even though the clamp may feel securely tightened. By the way, if you *do* manage to stop the fitting from leaking fuel when using the common clamp, the hose rubber will be compressed so brutally in places that its premature failure is essentially guaranteed!



Photo 2

Photo 2 shows the bands of the two clamps. The clamp on the left is the ABA clamp with the non-perforated band, while the clamp on the right is the commonly available clamp with the perforated band. If you look carefully, you can see the multiple sharp edges of the worm drive slots in the common clamp, waiting to slice into your fuel hose on its very first fitting, and those steel edges are indeed sharp.

Where do you obtain the stainless steel ABA clamps? They are sold by Auto Parts Wholesalers in South Australia, phone 08 8523 5888, as Small Bore Hose Clips in packs of 10. They are sold under the ABA brand, are made in Sweden, and may be ordered online. (They may be available from other sources as well.) Refer to the following web link for the details:

<https://www.autopartswholesalers.com.au/products/hose-clamps/aba-clamps/aba-small-bore-hose-clips/small-bore-hose-clips-packs-of-10->

Scroll down the page to see the range of small diameter clamps available. The default listing is for Mild Steel clamps, so click the W4-304 S/S tab for the preferred Stainless Steel variety. These are ideal for automotive and marine use on small diameter fuel, emissions and EFI hose applications, both high and low pressure. The present range fits fuel hoses of outside diameters 7.5mm to 17mm.

The part number of the ABA clamp I use for my 2CV fuel fittings is **Mini 12/9W4**, a stainless steel hose clamp which fits over hoses with outside diameters in the range of 11.5 to 13mm. Problem solved. No more fuel leaks and no more hose damage, so the rubber hose should last a long time.