

Here are the editors' choices for this month's **Tech Tips**. Each of these contributors will receive a copy of 1987-89 *Technical Service Bulletins* manual for import vehicles, compliments of **Motor Publications**.

Our congratulations to the winners and our thanks to all of you who take time from your busy schedules to share your experience and knowledge. Looks like a bunch of our old regulars got together with tips on everything from Porsche turbos to greasing wheel bearings.

## NEW LIFE FOR AN OLD WOODEN RULER

**When I started doing brake jobs, I was constantly annoyed at the greasy mess, and at the way the smaller bearings would always stick in our air-powered bearing packer. I needed a tool to pry them loose that wouldn't harm the bearings. And I also needed some way to put new grease inside the hubs without greasing me too!**

I found that an old flat wooden ruler does both jobs very nicely. Not only does it help me retrieve that bearing, but I can use the ruler to apply a small amount of grease to the inside of the hub with the flick of a wrist.

But the biggest benefit is that I've turned that 12 shop rag mess into a three shop rag breeze.

Trish Lloyd  
Lloyd's Professional Auto Repair  
Lake Panasoffkee, FL

## JAGUAR FLOODING PROBLEM

**Jaguar XJ6 models with two fuel tanks and fuel injection may experience a very rich (or even flooding) condition, although the problem may not be in the fuel injection system.**

The dual fuel tank system controls fuel supply from the two tanks

with a switching valve that is normally open (NO) to the left tank. There are also two fuel shutoff valves, one for each of the return lines to the tanks. The valve on the return line to the left tank is also normally open (NO). The switch on the return line to the right tank is normally closed (NC). All three valves are controlled by a dash mounted switch.

When the driver side tank is in use, none of the valves is energized. That means fuel is drawn through the NO line from the left tank, and excess fuel is returned through the NO left side return line valve.

When the dash switch is switched to pull fuel from the right tank, all three valves are energized. The switching valve closes off the left tank, and allows fuel to pass from the right tank. At this time, the NO return line switch on the left side closes, and the right side return line opens.

The more common problem starts when the left side return line switching valve fails, and stays open when the driver selects the right side fuel tank. Excess fuel can return to both tanks since both returns are open. Since no fuel is being drawn from the left tank, however, it can cause the left side tank to overfill. This extra fuel flows into the canister purge system, causing an over-rich or flooding condition.

A similar (although less common) problem occurs when the passenger side return line valve fails to open when the right tank is selected. The left side valve closes, the right side fails to open, and excess fuel pressure has no way to return to either tank. This can also cause an over-rich condition, but for a different reason.

The return line valves are located in the rear wheel wells, one per side. Some cars have a shield over the valve.

Always check the wiring before condemning a valve.

Denny Bitacher  
J&H Jaguar  
Akron, OH

# TECH TIPS

## PORSCHE TURBO REPLACEMENT

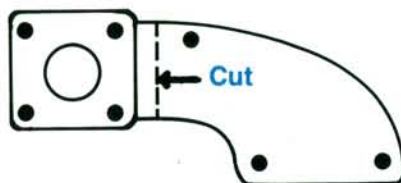
Porsche 911 Turbo (930) turbocharger replacements usually use the more modern K-27 high performance turbine instead of the original (and normally more expen-

sive) K-26 turbine. One problem with this change is that the K-27 is wider than the K-26 by about 10 mm. Since the turbine is bolted to the exhaust system in three different locations, this extra width means that some modification must be made so the K-27 will fit properly. Most techs recommend milling 10 mm off the

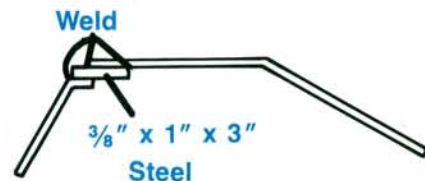
exhaust hot housing to make the K-27 fit as it should.

Unfortunately, reducing the thickness of the hot housing severely weakens the stud depth for the stud used to mount the exhaust muffler. An alternative is to modify the turbine/muffler hanger. This can be done with tools normally available to the average shop.

### Illustration Number 1



### Illustration Number 2



Cut the hanger as shown in illustration number 1. Make the cut in the middle of the bend before the first hole that mounts on the engine block. Obtain a piece of steel  $\frac{3}{8}$  inch by 1 inch by 3 inches, and position it on the bracket as shown in illustration number 2. Weld the offset bracket as shown. Since the  $\frac{3}{8}$ -inch thick steel is almost 10 mm thick, it offsets the bracket far enough to make up for the added thickness of the K-27. This moves the exhaust muffler 10 mm to the right, and it clears the body nicely.

On some turbos, you may need to slightly trim the lower valence to provide enough clearance for the dual-outlet pipe muffler.

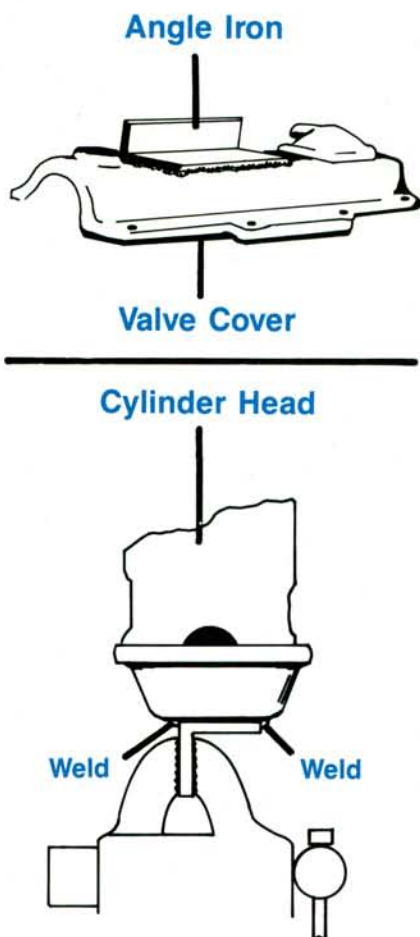
Since most replacements use the K-27 turbine, this cut and weld offset bracket allows for a neat installation, and doesn't sacrifice any of the strength of the original system.

Marvin Besmer  
Sportwagens  
Reno, NV

## VW CYLINDER HEAD HOLDER/AXLE BOOT INSTALLER

Here's a handy cylinder head holding fixture you can make to hold those VW water-cooled cylinder heads for cleaning and head gasket removal. Take an old valve cover from one of these engines and weld a piece of angle iron to it as shown. Bolt the cover to the cylinder head. Then flip the assembly over and tighten the angle iron in your shop vice.

Sure beats chasing that cylinder head all over your work bench.



And if you're tired of fighting those new outer CV joint boots over the lip on the front axle shaft, here's the solution:

- Find a piece of tubing that just fits over the splines on the axle shaft. (The oil filler tube from an

old junked VW type III engine works well.)

- Cut off a piece of tubing about four inches long. Using a hacksaw or die grinder, make several one inch slits in the tubing. Remove any burrs left by the cutting process.

- Bend the individual segments

over to form a pointed tip on the tube. Slip the tool onto the splined shaft until it bottoms on the CV joint stop. Now you can grease the starter tube and use it to guide the CV boot in place.

Frank Yancey  
Yancey's VW Specialists  
Washington, IN