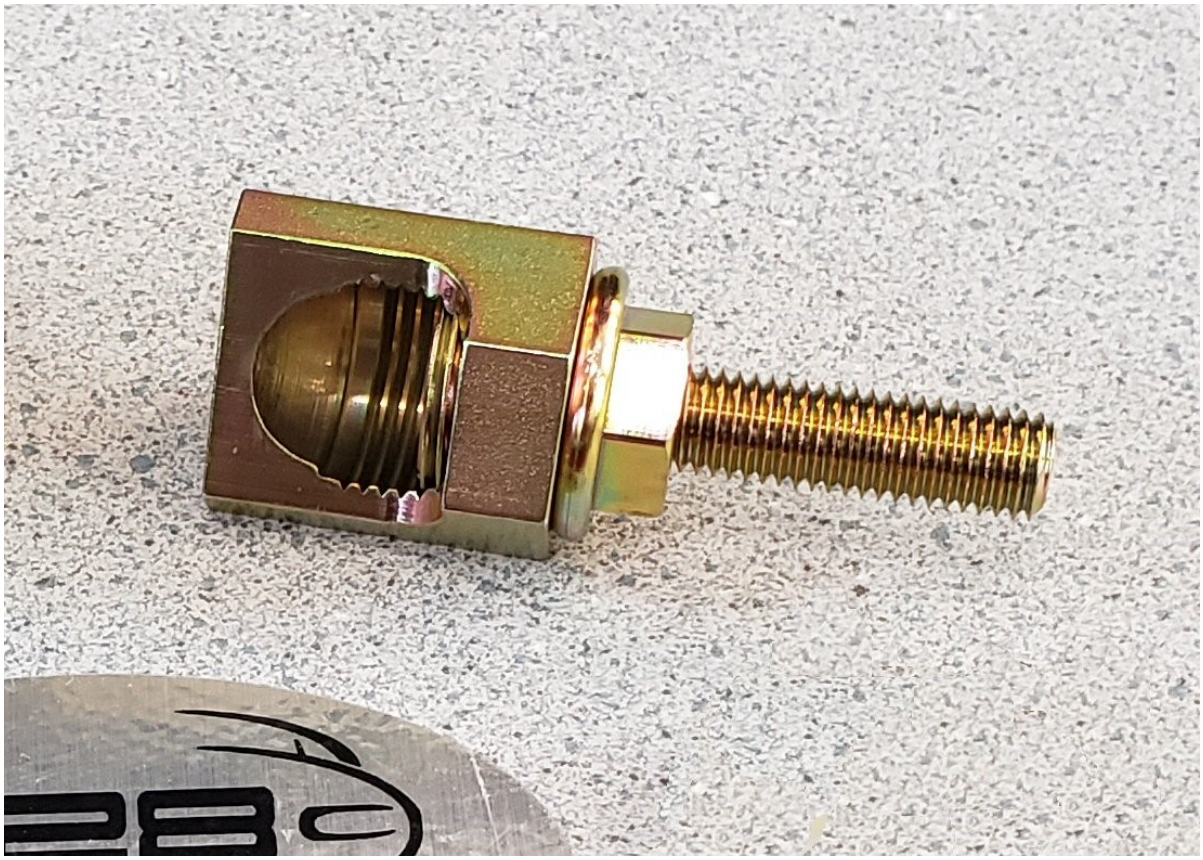
How to Install the 928 Motorsports, LLC

Precision Shifter Ball Cup

for the Porsche 928



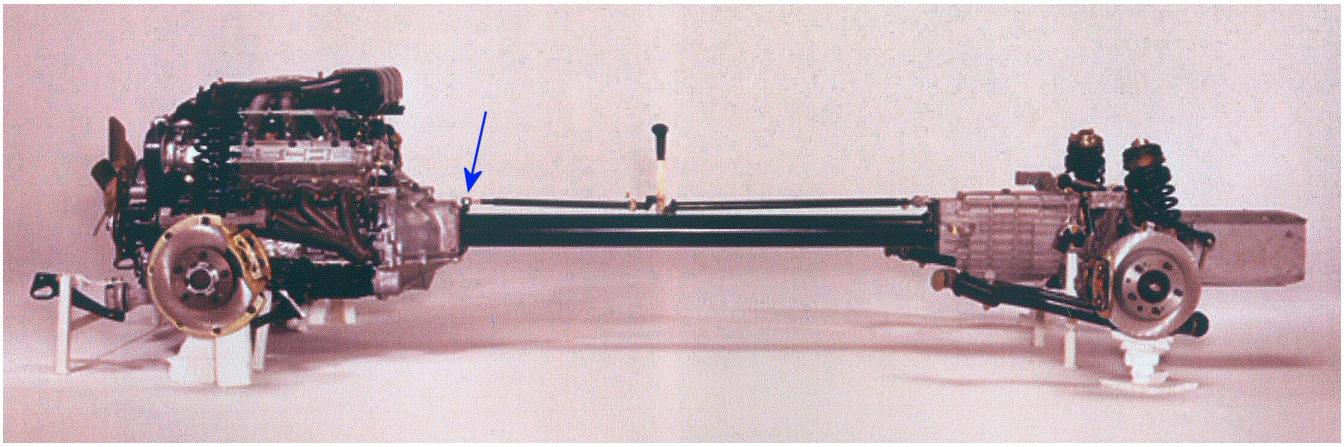
Questions? Call 920-485-0928

Or send an email to info@928motorsports.com

Why your shifter ball cup wore out.

The 928 was designed without catalytic converters. When emissions laws went into place, catalytic converters were added to the car to help make them emissions compliant. Unfortunately, they were installed right *below* the shifter ball cup which has a nylon liner within it. The heat from the cat softens the nylon, and the nylon liner dripped out or wore out. We have seen both.

This is why your new shifter ball cup from 928 Motorsports is designed with no nylon parts in it. It will not be affected by heat, and will be the last shifter ball cup you will ever need.



How to Access Your Shifter Ball Cup

We can't tell you that the shifter ball cup is easy to get at. It isn't. But it CAN be gotten to and serviced. Pictures from the Stuttgart manufacturing plant show the shifter ball cup was installed on the torque tube before the body was lowered onto the drivetrain. And that's where you will find it today, between the body and the torque tube, at the very front of the torque tube where it meats the bell housing. See the blue arrow in the picture above.

On the next page, we will tell you three different ways to get at it, and how to get the room you need to work on it.

Method 1: This method involves lowering the motor to get more room between the torque tube and the body of the car so you can work. Use a crane or a chain hoist to lift the engine off the motor mounts, and remove the motor mounts. Loosen or remove the transaxle mounting bolts. Then lower the motor down to work on the shifter ball cup. You will have to move or remove the exhaust heat shields, and be careful not to allow the belt driven fan (if so equipped) to tip into the radiator. Sometimes we like to remove the air filter box and get at the ball cup over the back of the engine too.

This method is a good one if you want to replace the motor mounts also, because you will already have them disconnected.

Method 2: This method involves lowering the nose of the torque tube so you can work on it. You will have to remove the exhaust and the exhaust shields. Then remove the lower bell housing, and disconnect the driveshaft from the stub shaft by sliding the slip connector back. Remove the four fasteners that hold the front of the torque tube to the rear of the bell housing, and remove the transaxle mounting bolts. Now the whole transaxle and torque tube can be lifted and slid rearward several inches. This will allow the torque tube to come off of the locating pins on the rear of the bell housing and swing down so you can work on the shifter ball cup.

This method is a good one if you want to replace the clutch at the same time, because you will have already removed the lower bell housing and disconnected the driveshaft.

Method 3: This method involves removing the torque tube from the car and servicing it on the shop floor. Instructions for this are provided in the 928 workshop manual. We suggest that removing the transaxle and rear suspension together as one unit is easier than removing them singly, but both works.

This method is best if you also want to replace the torque tube bearings while you are at it.

Note: for picture clarity, all the following photographs have been taken with the torque tube out on a workbench. However, the Precision Shifter Ball Cup is designed to be installed with the torque tube in the car.

We recommend that you read all the instructions before beginning.

1. Put car high on a hoist or high on jack-stands. Tires can remain on. Depending on your model, you may find that you can perform this task with the exhaust in place, others report it is easier with it removed.

2. Select an installation method from the previous page, and do what is necessary to gain access to the shifter ball cup.

We recommend that you place the transmission in neutral before beginning to remove the old shifter ball cup.

Be sure to remove the thin jam nut from the old shifter ball cup and install it on the new SBC as shown in Step 1.

3. Follow the sequence in the photos to install the new SBK and adjust it.

Threading the forward shifter rod on to the new ball cup is made easier if you pull the shift knob off, the shifter boot, and disconnect the forward shifter rod from the bottom of the shifter.

Then you can rotate the forward shifter rod from the driver's seat, and thread it easily on to the SBC.

This is also an excellent time to replace the little white nylon shifter bushings, or install a new short-throw shifter from 928 Motorsports for optimum performance.

In steps 5 and 6, you adjust the shifter so that it is nearly straight up and down when in neutral as it was before, and then tighten the thin jam nut to hold that adjustment.

If you put the transmission in neutral as recommended when you started, then its easy to adjust it right.

Simply reach into the shifter hole from the driver's seat and turn the forward shifter rod onto the new SBC until the pivot pin in the shifter rod lines up with the bottom of the shifter again. Then you know it's right, and securing it there with the thin jam nut is all you need to do.

Do not be concerned if you must turn the forward rod a half-turn this way or that to get the pin into the shifter hole. The length is not that critical.

Now re-install your shift boot and shifter, and take it for a test drive!