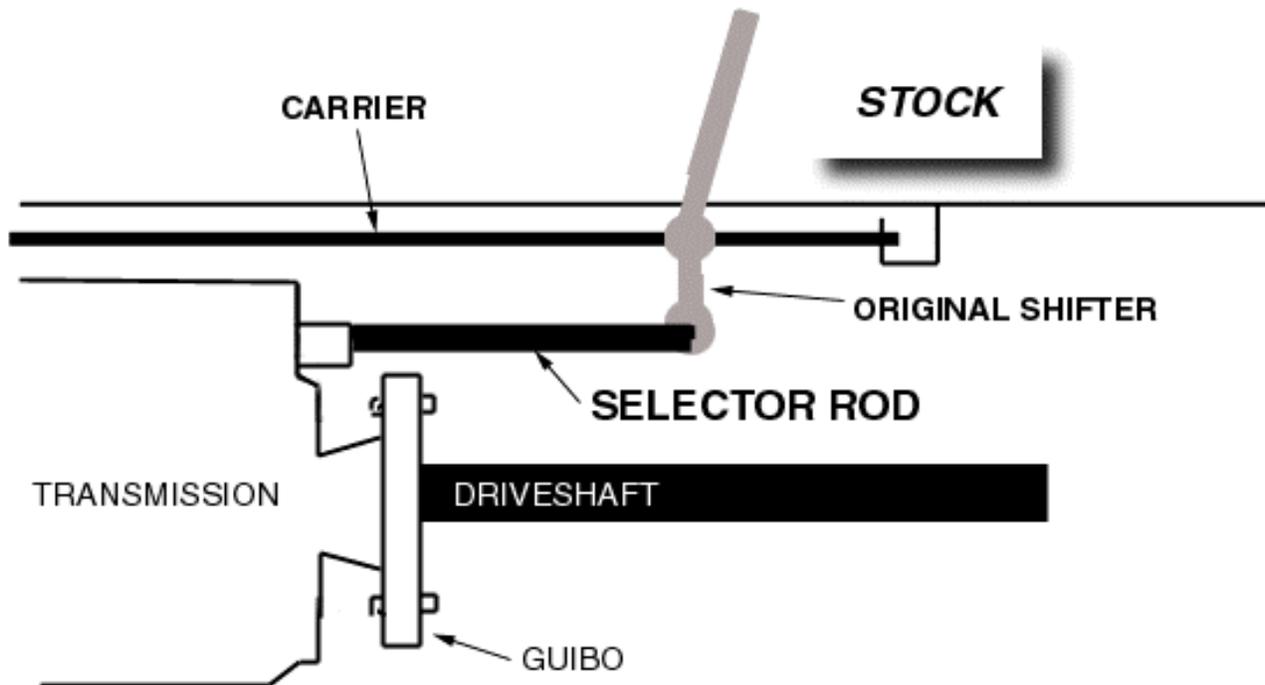




## Selector Rod Modification Directions

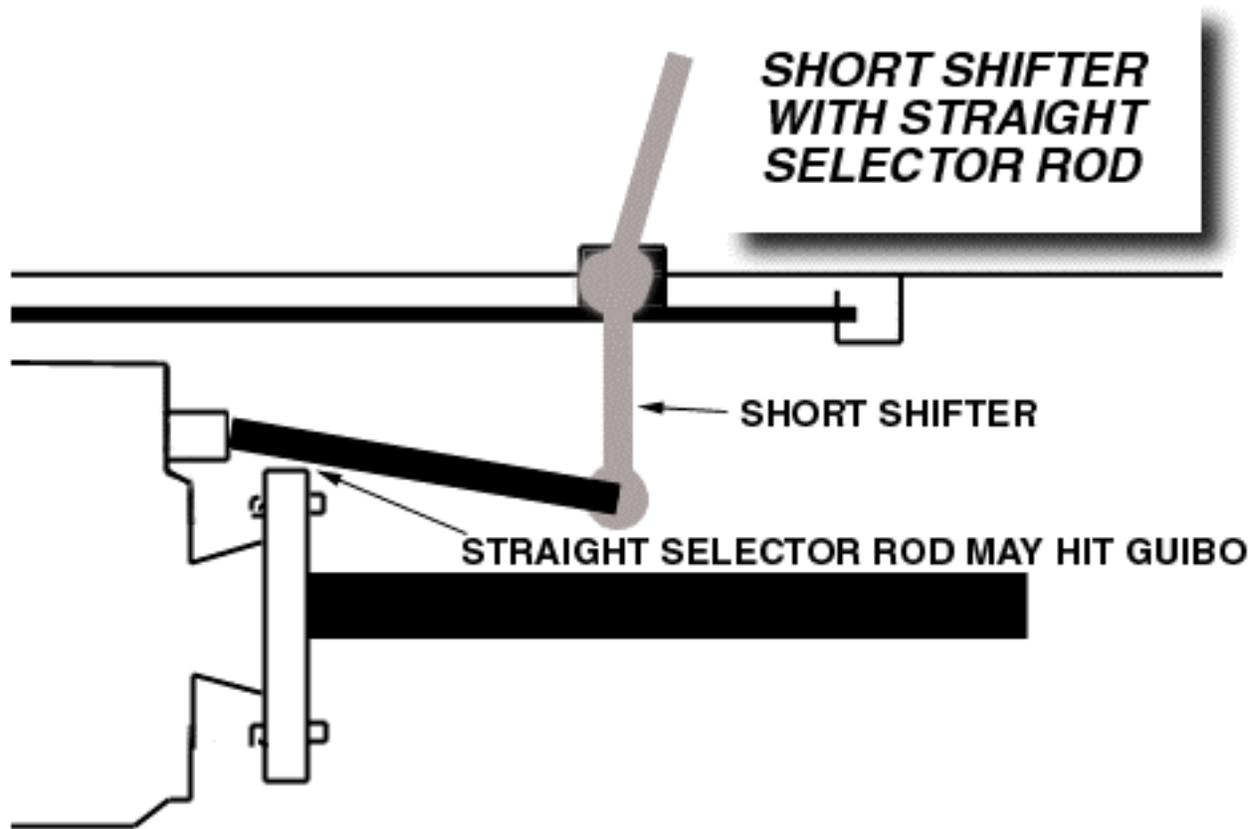
These directions are designed to be used when installing the Ultimate Short Shifter in BMWs which have guibos with harmonic balance rings and other models which experience slight rubbing under normal conditions.

In certain model year BMWs, such as the 87-91 E30 325i/is, there may be the instance where the stock selector rod may make contact with the stock guibo with the Ultimate Short Shifter lever in place. In certain model years, BMW included a metal, harmonic balance ring, located around the guibo.



When the Ultimate Short Shifter is installed, the additional leverage now introduces some new dimensions which did not normally exist.

As the picture depicts, the Ultimate Short Shifter re-orientates the geometry of the selector rod, causing it to become close to the guibo (hence the rubbing).



Starting with the E36 328/M3 introduced in the mid 90's, BMW started supplying certain cars with ***bent selector rods installed from the factory***. It was much easier to install a bent selector rod than re-engineer and retool new drivetrain components which correctly align all of the parts of the shifter. By using these bent selector rods, there were no issues of clearance nor strength as the same steel selector rods were being modified for use in the new cars.

By emulating the factory bent selector rod, installing the Ultimate Short Shifter may be possible on cars that require the additional clearance. Modifying the selector rod is a very easy and straightforward procedure which can be done in a number of methods, but we will illustrate one effective one here.

### **Removing the Selector Rod**

Since the portion of the selector rod connected to the shifter has already been removed, disconnecting only the front (where it attaches to the selector rod joint) remains. The front disconnects in a similar fashion as the rear by simply removing the circlip. Depending on the model year, it may contain a yellow washer or rubber o-ring.

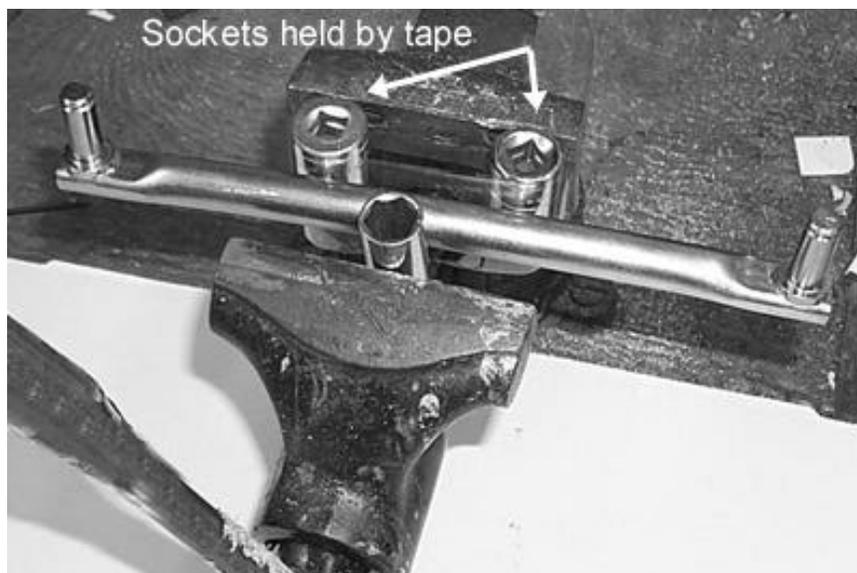
Before you completely remove the selector rod, using a magic marker, make a small mark where the selector rod finally clears the guibo. This will be your guide as to where to modify the selector rod.

Be sure to make note of what was removed for reinstallation, as these parts will be reused.

### **Modifying the Selector Rod**

Using three (3) sockets and a bench mounted vise, you can modify the selector rod with finesse and accuracy.

First, mount two (2) of the sockets on one side of the jaws in the vise. You may hold them in place with duct tape. Mount them approximately 4-6 inches apart from each other.



Second, open the jaws wide enough to slip the selector rod into place, with the third socket in the middle of the selector rod, on your small magic marker indicator.



Slowly close the jaws of the vice and the selector rod will bend with a nice smooth radius of the socket. Be sure that the "pins" of the selector rod are pointed straight up so that it bends straight.



The newly modified lever now has the proper clearance for the Ultimate Short Shifter.