

P9-MS02 Adjustable Pivot Clamp

Foreword

The Project Nine P9-MS02 Pivot Clamp is the first front shift-rod delete kit, for all years of the Porsche 928, with height adjustment to compensate for short throw shifter geometry misalignment. It mounts using a heavy-duty clamp attached to the torque tube, replacing the problematic ball cup, guide bushing, and front-rod. A special-order double-row angular contact Enduro bearing has been shrunk-fit into the bearing housing for a lifetime of slop-free shifting. The high-precision stainless shoulder bolt used to hold the pivot screw has also been shrunk fit to the inner race of the bearing, and pivot arm threadlocked onto the bolt to eliminate any potential sources of shifter play.

Shift Link Geometry

When implementing a short shifter, the increased pivot distance causes the rear selector linkage to change its intended original geometry. This increases the force required for gear selection, and places additional stress on the transmission coupler, input seal, and other transaxle components. Increasing the height of the front pivot by using commonly available 13mm OD spacers for M6 screws (stocked by McMaster and other hardware suppliers) allows customization of the rear shift-link angle. 10mm spacers have been provided in your kit. When selecting spacers for your bearing housing, please consider that there is a 2mm counterbore on the Upper Clamp, and a 4mm counter bore on the Bearing Housing to provide added stability with longer spacers. Thus:

10mm Spacer – 2mm (Clamp counter bore) – 4mm (Bearing counter bore) = 4mm height adjustment

With no spacers installed, the front pivot point will be identical to the stock selector rod height, and ideal for the stock 25mm pivot spacing. It is recommended to run 6mm spacers in this application, which will not increase the pivot height but provide additional stability.

Contents

1x	Assembled Bearing Housing with Pivot Arm
1x	Upper Clamp
2x	Clamp Arms
1x	Stainless Tie-Plate
1x	M10x30 precision shoulder screw
2x	M8x90 cap screws
2x	M8x50 cap screws
4x	M8 locknuts
2x	M6x50 cap screws
3x	10mm spacers
2x	M6x12 round-head screws
2x	M6 locknuts

Assembly

Note The P9-MS02 Pivot Clamp has been designed in three parts to allow for installation in tight spaces. It may be possible to install the clamp with the torque tube still in the chassis, however all installation and support information is only provided for assembly with the torque tube removed.

With the Torque Tube Removed

1. Remove the shift lever
2. Remove the front guide bushing from its mount
3. Remove the front shift-link by prying near the ball cup with prybar or large screwdriver
4. Remove the factory foam insulation block
5. Place the Upper Clamp on the torque tube behind the guide bushing mount.
6. Install the Tie Plate to the Upper Clamp using the two M6x12 round-head screws, and to the guide bushing mount with the two M6 locknuts. (there is some fore/aft adjustability in the Tie Plate for your shifter location preference)
7. Attach the Left and Right Clamp arms to the Upper Clamp with the M8x90 going through the Upper Clamp and the M8x50 through the Clamp Arms in the lower locations with the M8 locknuts.
(Note – The upper locknuts will require the use of threadlocker, the 90mm bolt is not long enough to engage the nylon patch)
8. Install the pre-assembled Bearing Housing to the Upper Clamp, using any optional spacers, with M6x50 cap screws to rear M6 threaded holes
(Note – The forward holes (towards engine) and counter bores on the Upper Clamp are for future use and not for use with the provided Bearing Housing. When using spacers longer than the included 10mm, a longer M6 cap screw should be used for assembly. It is also recommended to install these screws with a small amount of threadlocker once the final spacer selection has been made.)
9. Install the shift lever to the Pivot Arm using the M10x30 precision shoulder screw
 - a. When using the P9-MS02 Pivot Clamp with the P9-MS01 Shift Lever, no additional hardware is required, pass the shoulder screw through the upper shift lever bushing and into 10mm hole of the shifter arm using threadlocker.
 - b. When using a stock or third party shift lever, shims may be required to remove play
10. Modify the original insulation foam block to fit around the shifter assembly. This will require material removal to allow the upper clamp to pass through and not interfere with the swing of the pivot arm.

Troubleshooting

The P9-MS02 has been designed to remove as much play from the shifter assembly as possible. When used in conjunction with the P9-MS01 Shift Lever, the pivot arm has been designed for a tight fit. The Iglas bushings used in the Shift Lever are very high quality, but like all injected parts, will have some deviation in tolerance. To keep play to a minimum, the parts have been machined for the narrowest assembled width. Installing the shoulder screw will compress the bushing slightly, resulting in some frictional resistance. There is an expected break-in period for the bushings to run-in for a zero-play fit. If this initial friction is too high for personal preference, the use of .001" shoulder screw shims (available from McMaster) will allow for customization of this interference fit.

Any questions can be directed to info@projectninellc.com