

***Underdog Racing Development
www.URDUSA.com***



***URD Short Shifter Installation
2007+ FJ Cruiser 6 speed***

Introduction:

URD purchased a 2005 Tacoma X-Runner for product development. We love the truck, but we dislike the OEM shifter. The throws of the stock shifter are just too long for our taste and set out to improve it. We wanted more of the “sport truck” feel to match the trucks exiting styling and handling.

We tested other brands of short shifters in our other test trucks. Although these other brands have a nice crisp short shift, there is a lot of noise and vibration that is transmitted through the shift lever into the cab.

This is because the other designs replace the entire shift lever. The stock shifter is really two parts bonded together with a rubber-like material. This deadens sound as well as vibration. It was clear that we wanted to retain this very important feature.

Another problem with the other designs is an unnecessary complex installation requiring grinding and disassembly of the shifter pivot ball (while fighting a stiff spring in the process). URD's short throw shifter is very simple to install.

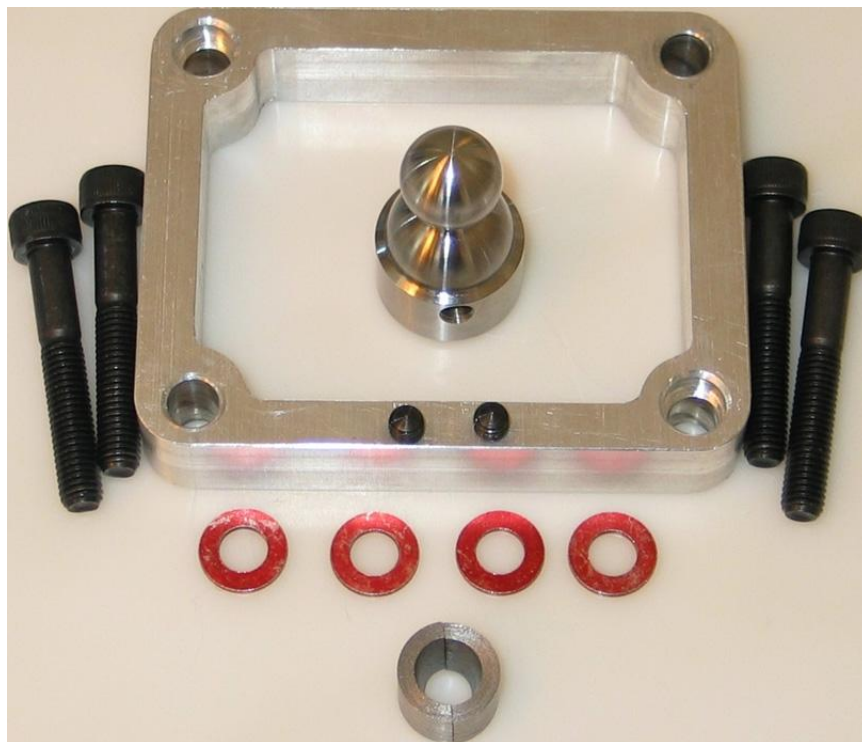
This simple approach has an extension that slips over the end of the stock shifter and a spacer plate that easily installs between the transmission and shifter assembly. The whole installation process can be completed in about 15 minutes.

Shifts are short throws; about 44% less. Gear engagement is improved. There is no known downside here. URD has adapted the design to fit the FJ Cruiser. This is the serious improvement that you have wanted since the first time you drove the FJ Cruiser.

Any questions, comments, or ideas, please mail URD Tech Support at Support@URDUSA.com.

Parts list:

Examine the parts you received from URD and make sure you have all of them before you start your installation:



1. One (1) Transmission spacer plate
2. One (1) URD Short shifter extension
3. Two (2) setscrews
4. Two (2) clamshell spacers
5. Four (4) replacement socket head cap screws
6. Four (4) 8mm washers

Tools needed:

1. 10 and 12mm socket, extension and ratchet
2. 6mm Allen wrench attachment for socket wrench for spacer plate bolts.

3. 1/8" Allen wrench for setscrews.
4. Red lock-tight thread locker
5. RTV silicone sealant or FIPG sealant suitable for transmission gear oil.
6. Block of wood, hammer or a plastic mallet.
7. Center punch for staking the setscrews.
8. Torque wrench.

Removal of Stock Shift Lever:

1. Unscrew the shift knob(s) by hand and remove it.



2. Grab a hold of the cup holder and lift straight up to disengage the holding clips and set it aside.



3. Remove the 2 black screws that hold the console to the brackets.



4. Remove the rubber divider from the rear bin. This exposes two bolts. Use a 10mm socket and remove them.
5. Remove the console by lifting up slightly on the rear and pulling it backwards. This will disengage the holding clips where it joins the dash. Once the clips are disengaged lift the whole assembly up and over the shifter lever. Set it aside out of the way.



6. Remove the rubber sound dampener from around the shifter boot assembly.



7. Remove the rubber shifter boot by removing the bolts. Remove the front plastic rivets by pushing in on the center. Then pull them out. You can now remove the rubber boot. When you reinstall the rivets later, pull the center of the rivet out, and then once inserted back into position, push the center into place to lock it.



8. Remove the 4 bolts that hold the shifter assembly to the transmission with a 12mm socket.
9. Peel back the small rubber boot from the shifter plate so it will not get cut by the block of wood or mallet. Using a block of wood and a hammer or a plastic mallet, tap it from the side on the tower portion to unseal the RTV and release the shifter assembly from the transmission. Once it is loose, pull the whole assembly from the transmission and out of the vehicle.



10. Using a hook tool or your thumbs to push it off, remove the plastic bushing from the shifter tip ball. It is common for the bushing take off like a champagne cork, so keep an eye on where it goes. Take care not to damage it, as it will be reused later.

Installation of the URD Short Shifter:



1. Place the two clamshell spacers around the tapered portion of the shaft above the tip ball. Note the taper, as they will only fit in one direction.



2. Slide the URD Short Shifter extension over the tip of the stock shifter and make sure it is seated all the way down on the ball of the stock shifter.
3. Use **RED** Lock-Tight on the setscrews and tighten them down snugly.



4. Use a center punch to stake the setscrews. This is done by placing the shifter extension flat in a vice or on an anvil and tap the metal just outside of the threaded hole that the setscrew goes into. Take care not to damage the tip ball. This will peen the opening over and permanently lock the setscrews into the shifter so they cannot back out.

There is a lot of high frequency vibration in the transmission from the gears and other rotating assemblies. Staking the setscrews will make certain that the setscrews cannot back out and fall into the transmission.



5. Grease the ball of the URD shifter ball and pop the plastic bushing on to the ball.
6. Test fit the spacer plate to the transmission. Note the orientation of the dowel pins on the tranny and shifter.

Once you are sure you have the alignment proper, clean all the old Form In Place Gasket (FIPG or RTV Silicone) material and oil from the spacer plate, transmission surface and shifter assembly. Put a very light coat of RTV on each side of the spacer plate. More is not better here. Use a very light coat. Place it back on the transmission.

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7. Install the shifter assembly on the transmission carefully inserting the tip bushing into the socket in the transmission.
8. Install the four supplied bolts and torque to 13 lb-ft with a 6mm Allen wrench attachment.
9. Test the shifter and make certain that you can properly engage all gears including reverse.
10. Reinstall the rubber shifter boot and console parts in the reverse order of removal.
11. Again test the shifter making certain that all gears can be properly engaged before driving the vehicle.
12. ENJOY!!