

Underdog Racing Development
www.URDUSA.com



URD Short Shifter Installation
2016+ Tacoma V6

Introduction:

URD introduced our first short throw shifter for the 05+ Tacoma 6 speed transmission. This unit became extremely popular and was featured in the February 2006 issue of Sport Truck Magazine. This exposure resulted in a demand from customers for us to offer the same type of design for the other Toyota Truck applications.

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 Tacoma short shifter is quite 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, and gear engagement is improved. There is no known Downside. This is the serious improvement that will bring you, the driver, more enjoyment every time you shift your transmission.

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. Two (2) replacement socket head cap screws
6. Two (2) 8mm studs
7. Two (2) 8mm flanged nuts

Tools needed:

1. 10mm 12mm socket, extension, and ratchet in 1/4" drive.
12mm flex type socket in 1/4" is preferred.

2. 13mm boxed end wrench. Ratcheting type preferred.
3. 6mm Allen wrench attachment for socket wrench for spacer plate bolts.
4. 1/8" Allen wrench for setscrews.
5. Red lock-tight thread locker
6. RTV silicone sealant or FIPG sealant suitable for transmission gear oil. Permatex RightStuff recommended.
7. Center punch for staking the setscrews.

Removal of The Center Console:



- 1 Remove the shift knob.

Underdog Racing Development
www.URDUSA.com

- A. Hold the shift knob firmly while turning the chrome bezel clockwise. Once the bezel unlocks from the shift knob, pull it down and away from the shift knob.
- B. Unscrew the shift knob by turning the shift knob counterclockwise to unthread it from the shifter lever.



- C. Release the parking bracket boot. Pull the hand brake all the way up. Where the hand brake boot wraps around the hand brake there is an elastic band built into the boot that sits in a groove on the hand brake lever. Grab the boot about 1-2" below this band on both sides and pull up gently while turning the boot back and forth to work the band over groove. Once the boot is released, pull the boot over the hand brake lever until the boot is fully extended.



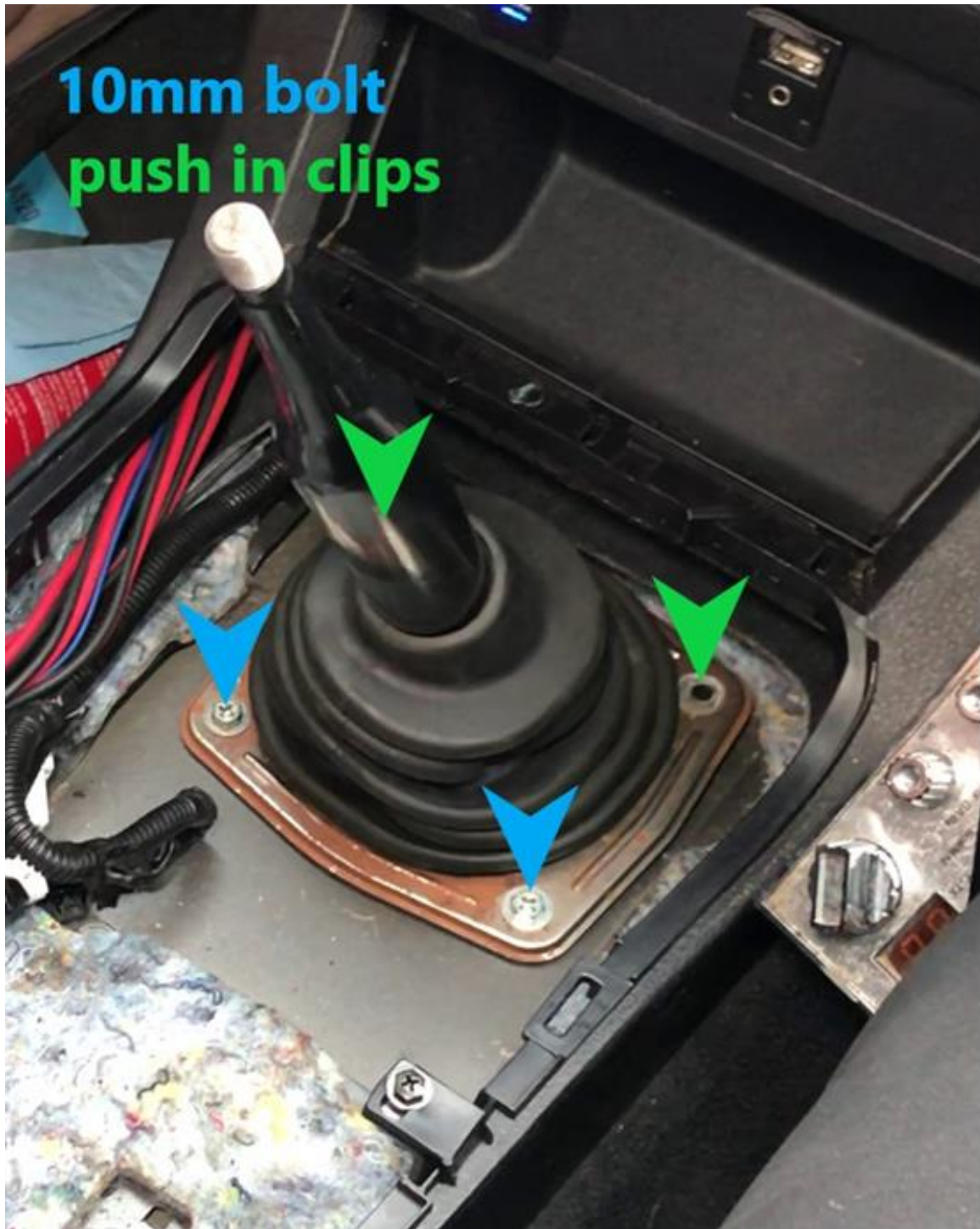
- D. The center console is secured into position with a series of retaining tabs around its perimeter. Open the arm rest and take a note of where

the retaining tabs are from the image below. Began to pull up on the center console to start unsnapping the retaining clips.



- E. Continue forward until you have unsnapped all the retaining clips.
- F. Lift the center console up and off of the gear shift and parking brake levers. Check to see that all of the red retaining clips are still attached to the center console you have removed. If not pluck then free of the main part and reattach them to the their spot on the center console and set it aside.

Removal of the shift lever:



1. Remove the rubber boot

- A. Mark the metal part of the rubber boot so you will know which side faces forward for reinstallation later.
- B. Remove the two screws in the rear position with a screw driver or 10mm socket.
- C. Remove the front plastic retaining pins by using a hook tool and pressing the center part down until it clicks and then remove the plastic pins
- D. Remove rubber boot assembly and set it aside.

Remove the stock lever.



- 1. Peel back the small rubber boot from the shifter tower. You will see the metal retainer.
 - A. With a thumb on each side push down on the retainer and rotate it counterclockwise until it releases and springs up.

- B. Pull the shifter lever from the tower and set it aside.

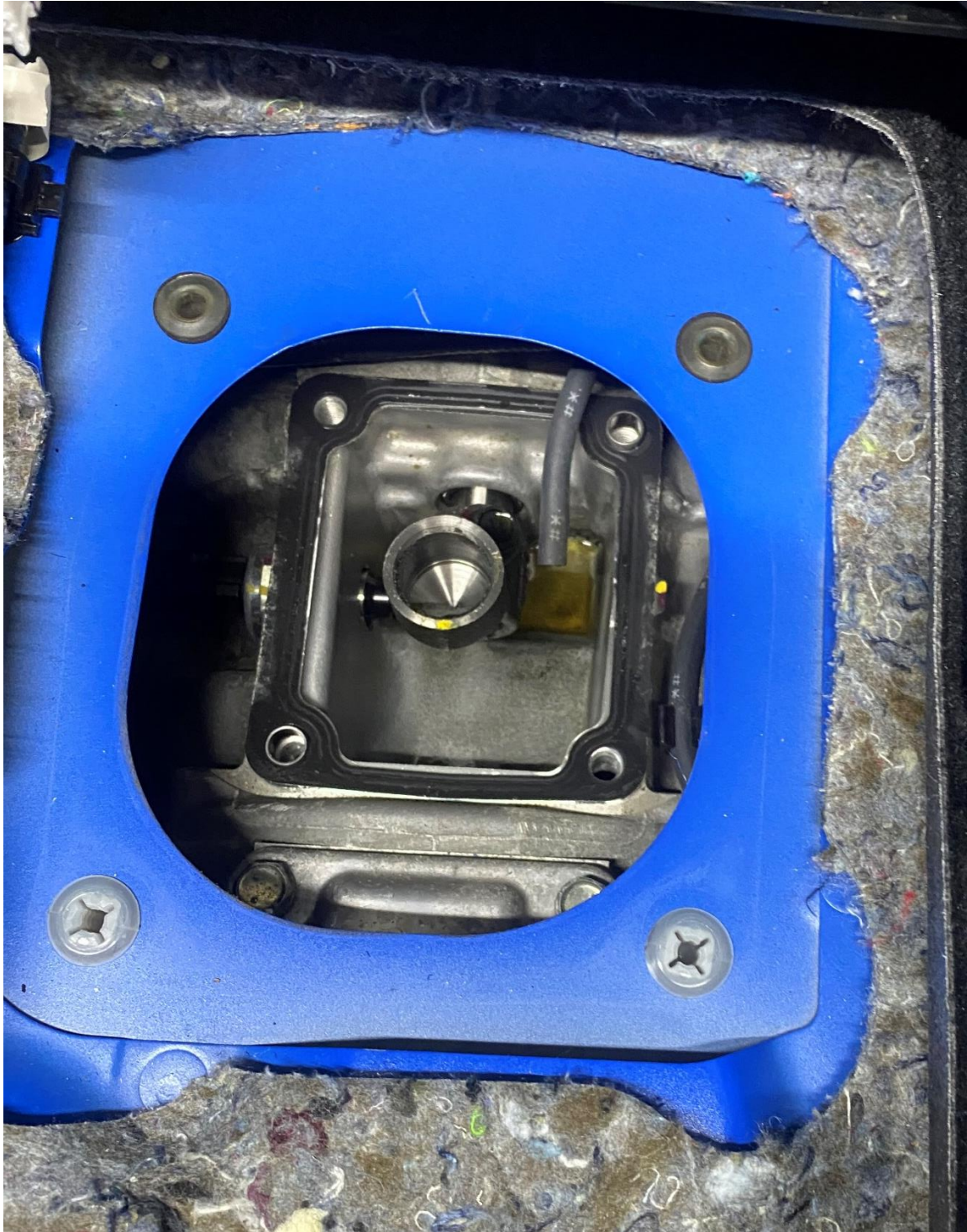
Remove the shifter tower:



1. Remove the forward retaining bolts.
 - A. The forward bolts are under the floor of the vehicle and can be hard to reach. There are options for this. In this picture the forward bolt are removed using a 12mm flex socket on a ¼ drive extension. You can also use a short socket on a ¼" ratchet fitting the whole ratchet under the floor.
 - B. Remove the rear bolts.



A. Disconnect the vent line.

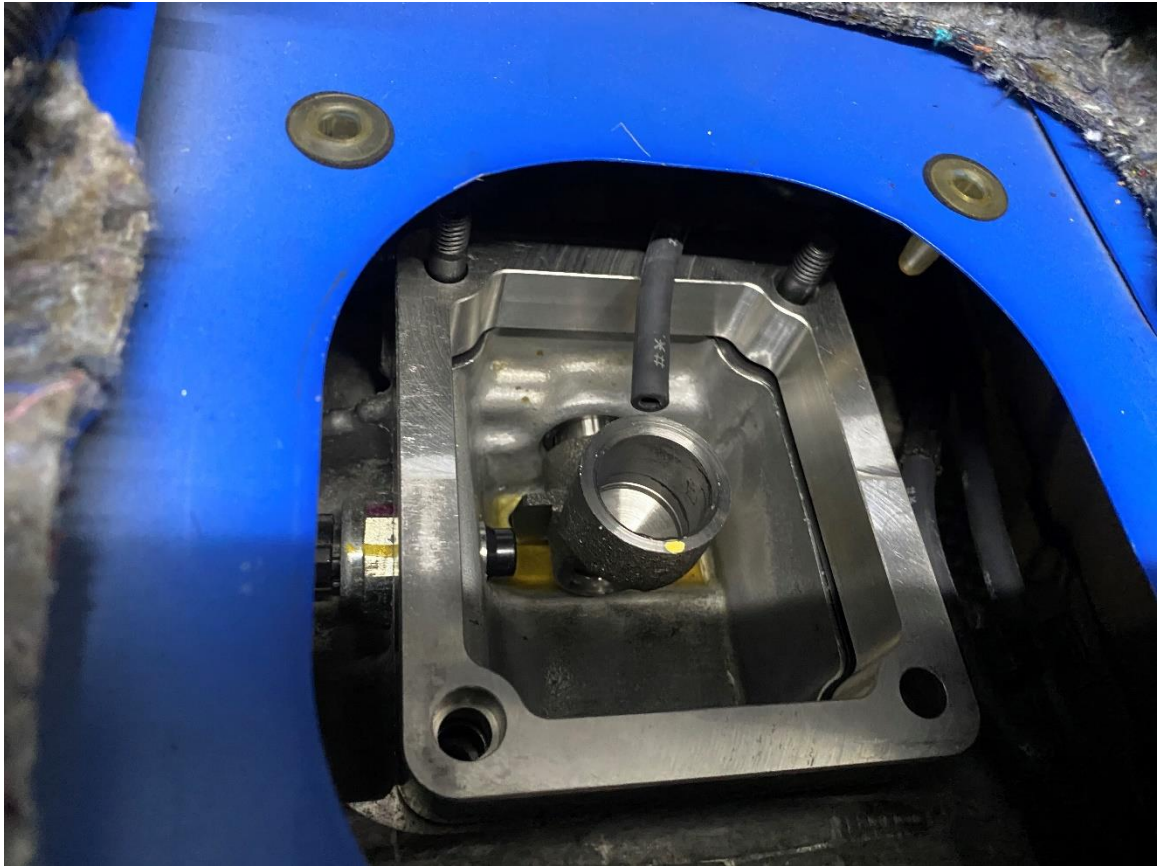


- B. Lift the shifter tower from the transmission. There is a gasket under it, note the orientation of it so you can reinstall it correctly.

Install the spacer plate:



1. Screw the studs into the forward bolt hole with the longer thread portion going into the transmission. Screw them in just far enough so you can fit the spacer plate between the floor and onto the studs.



2. Install the gasket and then the spacer plate. Note there are recesses bored into two of the bolt holes on the plate on each side. Orient the plate so they match and slide it into position. Sometime the dowel pins will stick in the shifter tower. If that happens, do not worry about it, there are reassess on the top of the spacer plate for them as well.

Install the shifter tower:



1. Put some RTV silicone sealant on the shifter tower to seal it to the spacer plate.



2. Move it into position but give yourself enough room to reattach the vent hose.
3. Slide the shifter tower over the studs and onto the spacer plate
4. Loosely install the provided socket headed cap screws in the rear position.
5. Install the M8 flanged nuts onto the studs, Small fingers are the best here, but you can use a long needle nose plyer or a magnetic tool to get them into position.



6. You can the best tool we have found to tighten up the flange nuts is a 13mm ratcheting boxed end wrench.
7. Tighten up the rear cap screws.

Install the shifter extension:

1. Remove the plastic bushing from the end of the stock shifter ball. The best way we have found to do this is to cover it with a rag, so it does not go flying, and use two thumbs to push it off like a champagne cork. Do not lose it because you will need to reinstall it later.



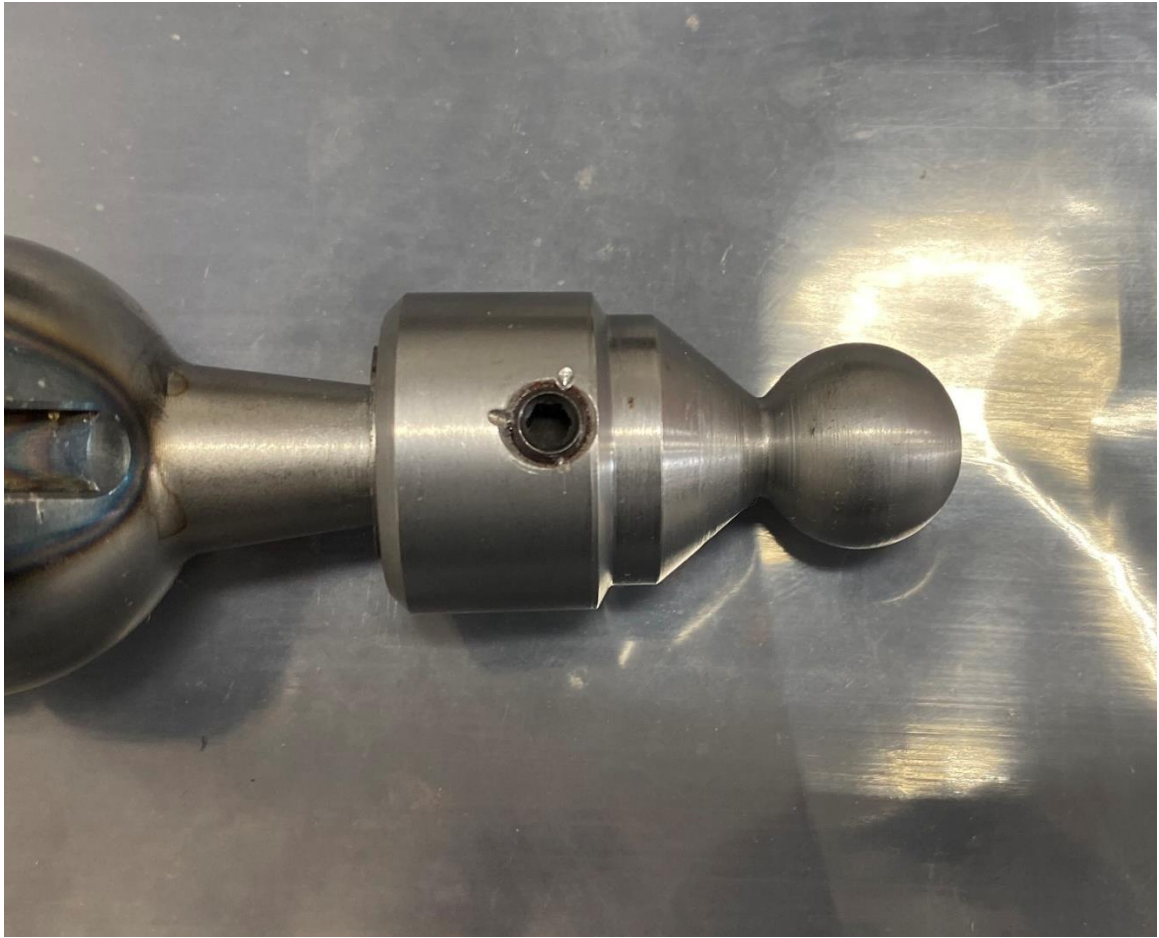
2. Place the two shims onto the stock shifter above the ball with the beveled edge facing the ball.
 - A. Slide the extension onto the stock lever and make certain it is all the way down and firmly seated on the stock ball. It must be all the way into the pocket of the extension.



- B. Orient the shims so that the holes for the set screws are in the center of the shim and not near the gap between them.



- C. Use **RED Loctite** on the set screws and tighten them down securely with an 1/8" Allen wrench. As you tighten the set screws, it will press on the rear side of the ball driving the ball into the pocket and the beveled edge of the shim driving it away from the ball and it will wedge everything up nice and tight.



- D. Use the center punch and peen the metal of the extension over the threads to give good mechanical interference so the set screws can never back out on their own. **THIS IS VERY IMPORTANT – DO NOT SKIP THIS STEP.**



E. Snap the plastic shifter bushing into the extension ball tip.

Install the shifter lever:



1. It will be a tight fit to get the shifter extension past the pivot bushing in the shifter tower, but it will push through that bushing.
 - A. You will have to fish around until you can get the tip bushing to line up and drop into the pocket of the shifter rod. Might take a little while of wiggling things back and forth until it lines up and drops in.
2. Press the retaining ring down and rotation it clockwise to engage the retaining pins and reinstall the small rubber boot.
3. Now test all gear positions before proceeding further. If you cannot get all gear positions trouble shoot now and correct whatever issue you find.
 - A. Note- it will take more effort to override the detent spring to be able to access reverse. This is normal due to the reduced mechanical leverage. The trick is to put the lever in the neutral position all the way to the right and briskly move it to the left and let the momentum carry it through the detent spring.

Reinstall the center console:

1. Place the large rubber boot onto the shifter lever and start the rear screws.



2. To install the front plastic pins, push the inner part of the pin so it pops up from the main part. Insert it into the forward holes and once in position, push the center pin down flush to lock it.
3. Reinstall the rest of the interior parts in the reverse order they were removed.

Underdog Racing Development
www.URDUSA.com

Final:

1. Again, double check that all gear positions can be engaged and then go for a short test drive in a safe place to verify proper operation.

If you find any part of the guide that is not clear or have any recommendations on how to improve it for the next customer, please email those recommendations and pictures to Support@URDUSA.com