



Factory Pro Shift Star M109R Install

By CBR1000DUDE from the M109Riders.com website.

This is how to install the Factory Pro Shift star kit into a Suzuki M109R Boulevard. The shift star is known as the “Gearshift cam stopper plate” in the Suzuki service manual.

Quote: “CBR1000DUDE - I took the beast apart and here's what I did”.

Editor's Note: Some comments have been added to further enhance this information found in this document.

STEP 1 – First drain the oil, then take off the chrome cover and you'll see this gear shift cover.

Take off the linkage (10 mm bolt) and let it hang. Place the transmission in the NEUTRAL position. The star gear and detent arm are in the neutral position as seen in Figure #2

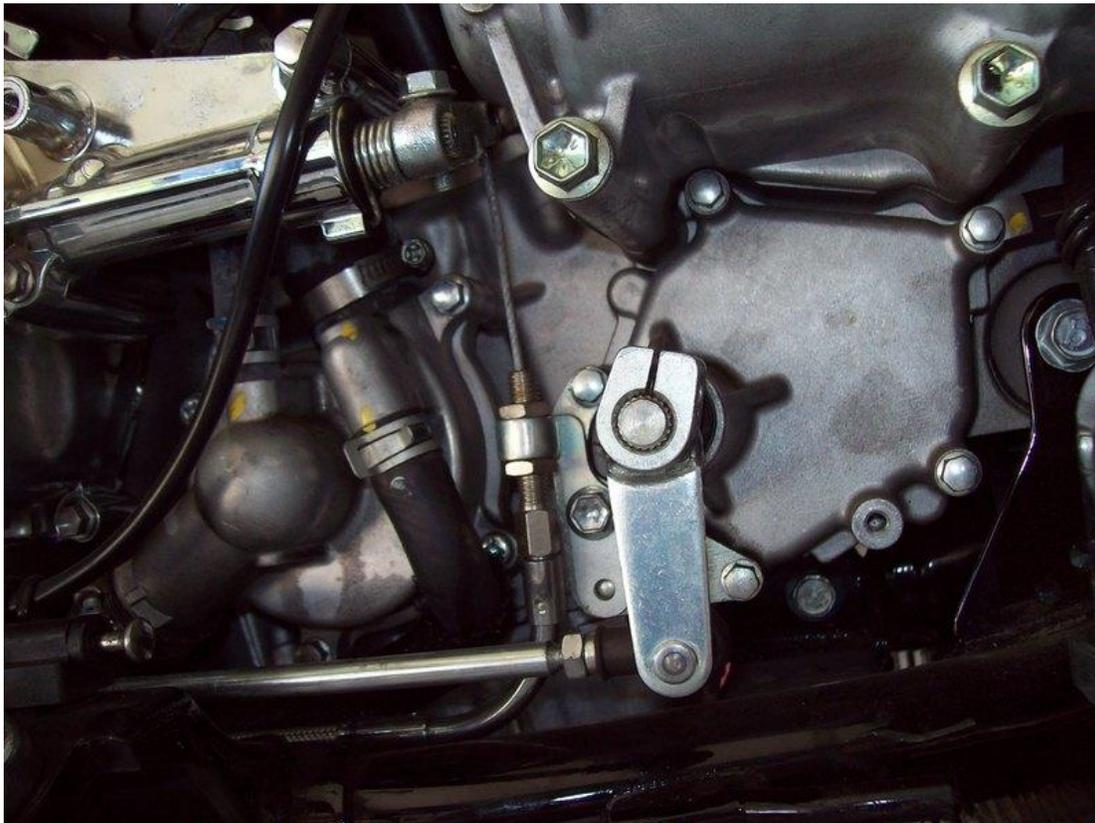


Figure 1 - Shift Star Cover



STEP 2 - Take out the 5 bolts (8mm head), they're all the same. Pull off the gear shift cover and shaft and you'll see this.

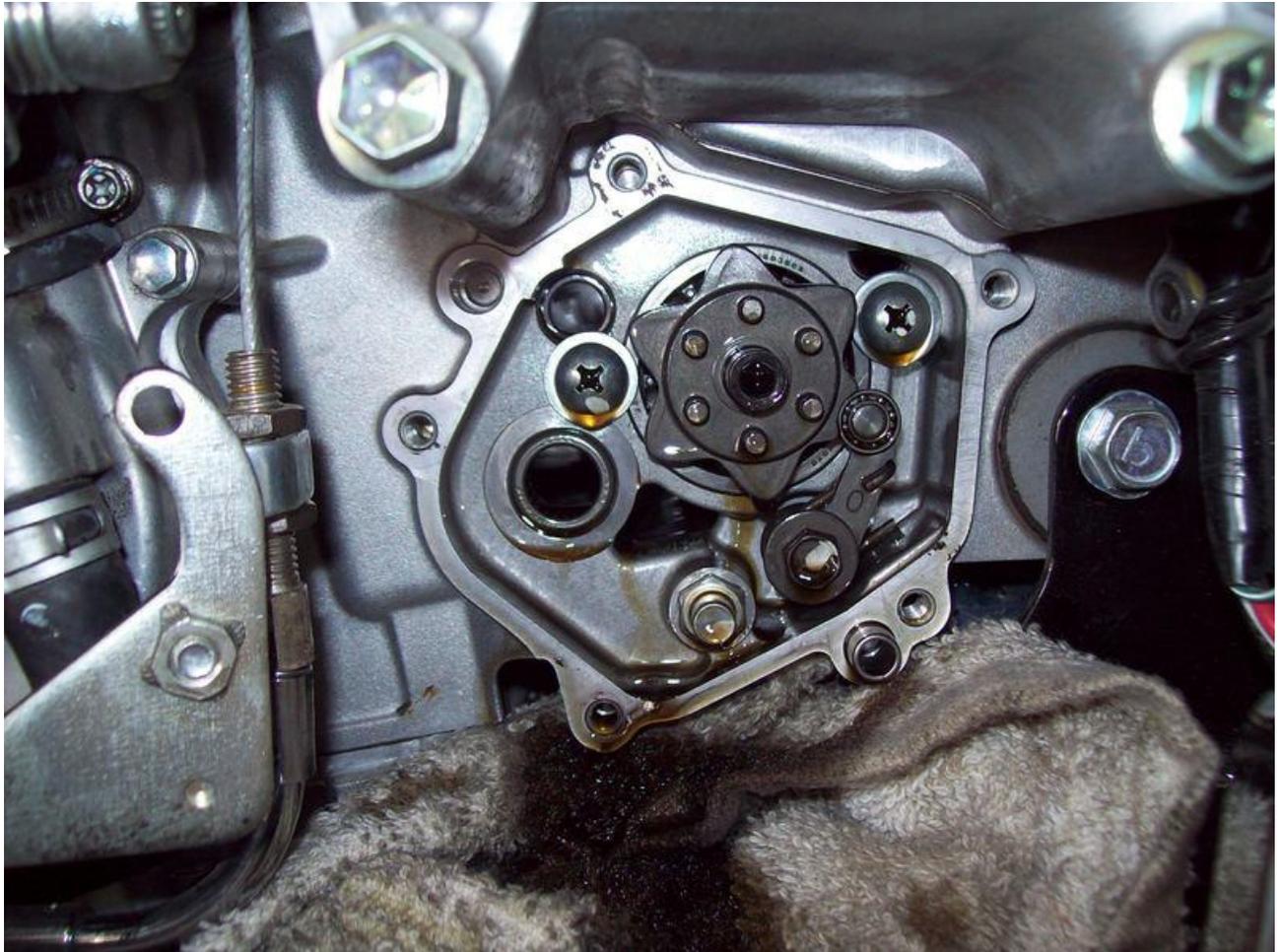


Figure 2 - Shift Star in Neutral Position

Editor's Note: The Factory Pro shift kit should have a new gasket included. If NO, try to remove the cover without destroying the gasket. It can be reused until a new gasket is purchased from the dealer.



STEP 3 - Remove the 10 mm bolt that holds the arm, and take out the spring.



Figure 3 - Detent Lever, Spring, and Retaining Screw

Editor's Note: Inspect these parts for excessive wear on the bearings. Set these aside since they will be re-installed with the new shift star. In this document, the original spring was used. The Factory Pro kit comes with a replacement spring.



STEP 4 - Either replace the spring with one from Factory Pro or do as I did. I squashed a spacer on the end of the straight part of the spring to act as a spacer. Crimp it real good. It can't go anywhere once assembled anyway.



Figure 4 - OEM Spring with Spacer attached



STEP 5 - Put it back together. It takes a little while to figure out how to hold the spring just so you can get it back in there. I used a flat blade screwdriver, and needle nose pliers. There is several thin washers that must go back in the same place you found them.

A little wriggling and bending and you have this: You can see the end of the spring is now 2-3 mm away from the case, putting a preload on it. I couldn't get it back together until I took out the spring and hooked the J part over the arm, pushed the bolt through, and pushed it all in there as a unit, putting pressure on the end of the bolt, and easing the spring in with a screwdriver. This is the hardest part; I struggled with it for 15 minutes.

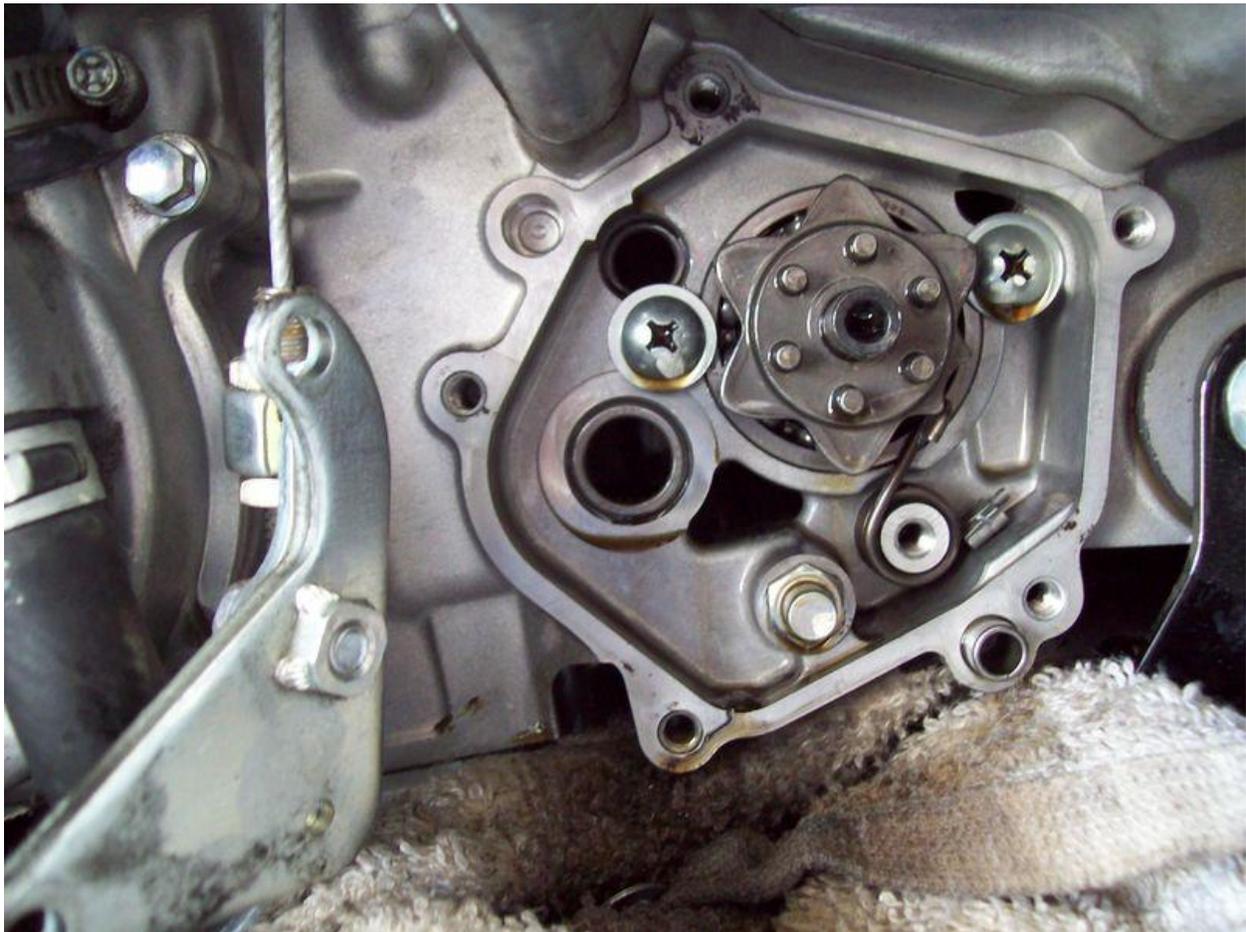


Figure 5 - Shift Star Spring Install

Editor's Note: Apply a small quantity of THREAD LOCK to the gearshift cam stopper plate bolt and tighten it to the specified torque: 13 N·m (1.3 kgf-m, 9.5 lb-ft).



Then this:

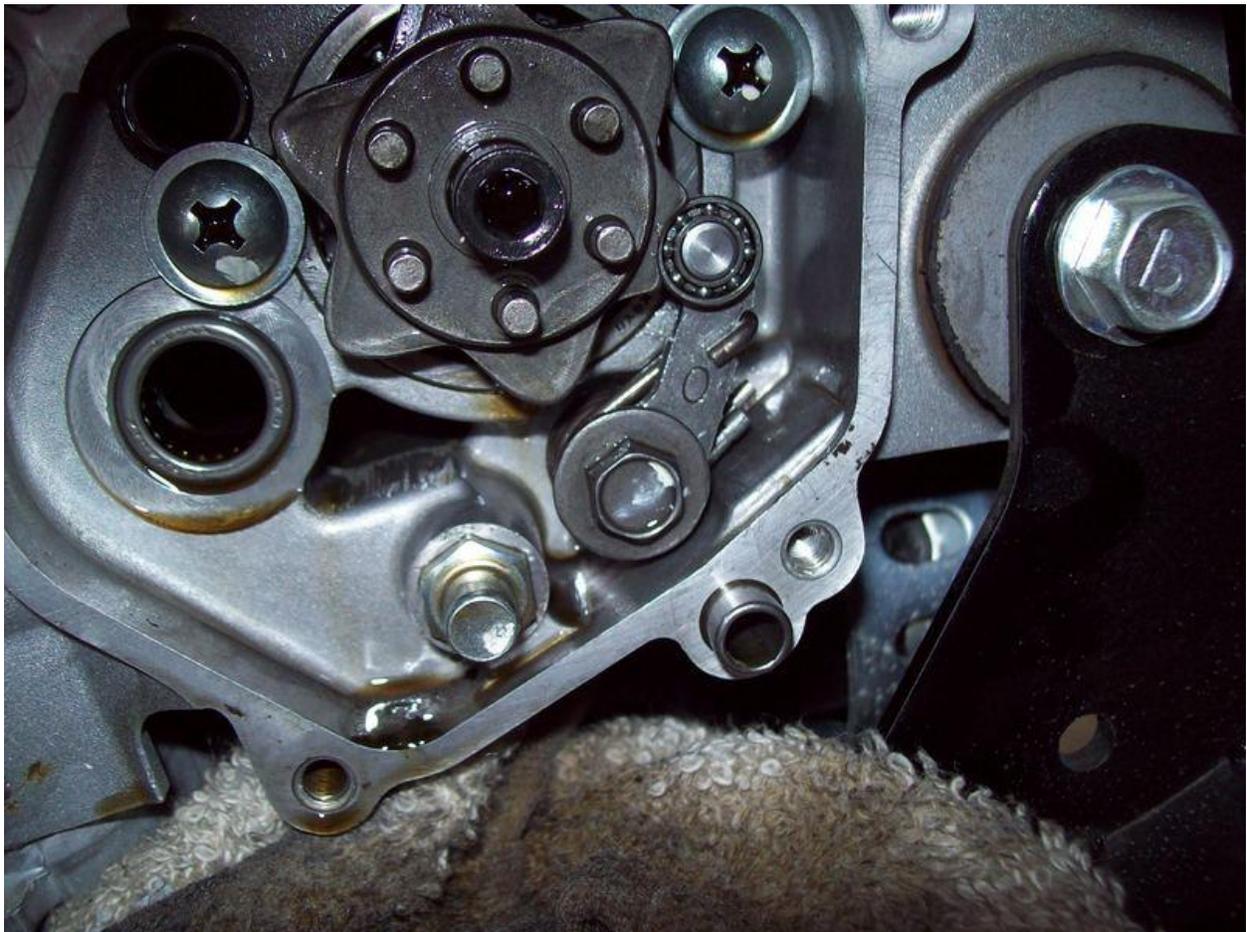


Figure 6 – Detent Lever Installed

Editor's Note: Apply a small quantity of THREAD LOCK to the gearshift cam stopper bolt and tighten it to the specified torque. Gearshift cam stopper bolt: 10 N·m (1.0 kgf-m, 7.0 lb-ft)



STEP 6 - There is a thin washer on the inside of the arm, very important so it does not bind. Assemble the detent mechanism without the case, 2 thin washers to watch out for, one sticks to the case when you pull out the shaft, the other is the first thing on the shaft. It fits into the 1/2 inch hole in the case, can't miss it. I hooked up the shift linkage without the case to make sure it shifted before I bolted it on. I used a flat bladed screwdriver the spread the "legs" of the big detent spring, they go on either side of the fixed peg.

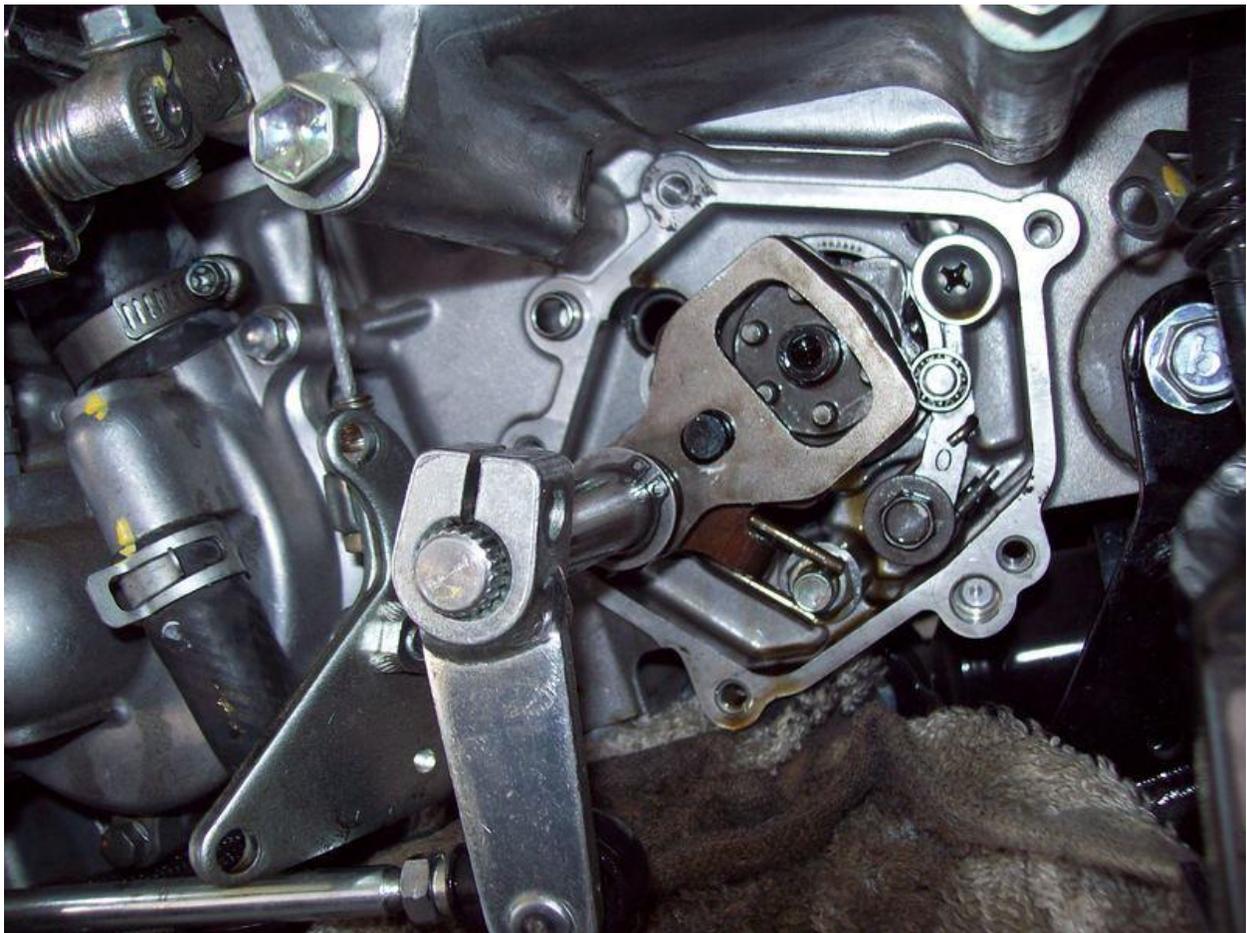


Figure 7 - Installing the Gearshift Shaft Assembly



STEP 7 - Now just push the case back on and tighten the 5 bolts. My gasket looked fine and did not leak. Hook up your linkage pointing straight down. Use Loctite on the 10 mm bolt.

Please use Blue Loctite on all the bolts! Did I mention Loctite? I used a 1/4 in ratchet with a short handle so I can't strip the bolts. Add oil and go for a ride.

Mine shifts much better now, especially from 2nd to neutral or first, no more bang/dang sound. I can downshift into first at 20-25 mph, snick, snick. It was hit and miss before. I went from 2nd to neutral at 30 mph, silence. Before it would clang into neutral as it was eating my shifting dogs. Too much of this will bend a shift fork (inside the cases) if you get unlucky.

I only have 4100 miles on mine, so I hope I fixed it before too much wear occurred. This works for me, I hope it helps you too. I did something similar on my 1500 Intruder and rode it for 5 years after, so I'm confident in this fix.