



Suzuki M109R Clutch Replacement

Special thanks to **Listan1** from [M109RIDERS](http://M109RIDERS.com) forums for this info.

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Begin:

1. Place bike on jack or kickstand (you will be working on the right side)
NOTE: Oil will leak out if bike is vertical and not if it's on the kickstand)
2. A jack will allow you to spin the back wheel which may prove useful later





Remove the Exhaust System:

1. Instructions for this can be found under link for the Scorpion exhaust.
(http://mym109.homestead.com/files/HOWTOS/M109R_Scorpion_Tips_Instalation.pdf)





Remove the side-cover bolts:

1. Make note of each bolt that comes out:
2. There are 3 bolts with washers (2 at the top and 1 at the bottom) Be sure to put these back in the right place or you will have an oil leak.
3. There are two long bolts in the top left.

NOTE: When retighten, go easy on these bolts (about **10-14 ft lbs max**) you don't want to strip the aluminum treads or break any bolts.

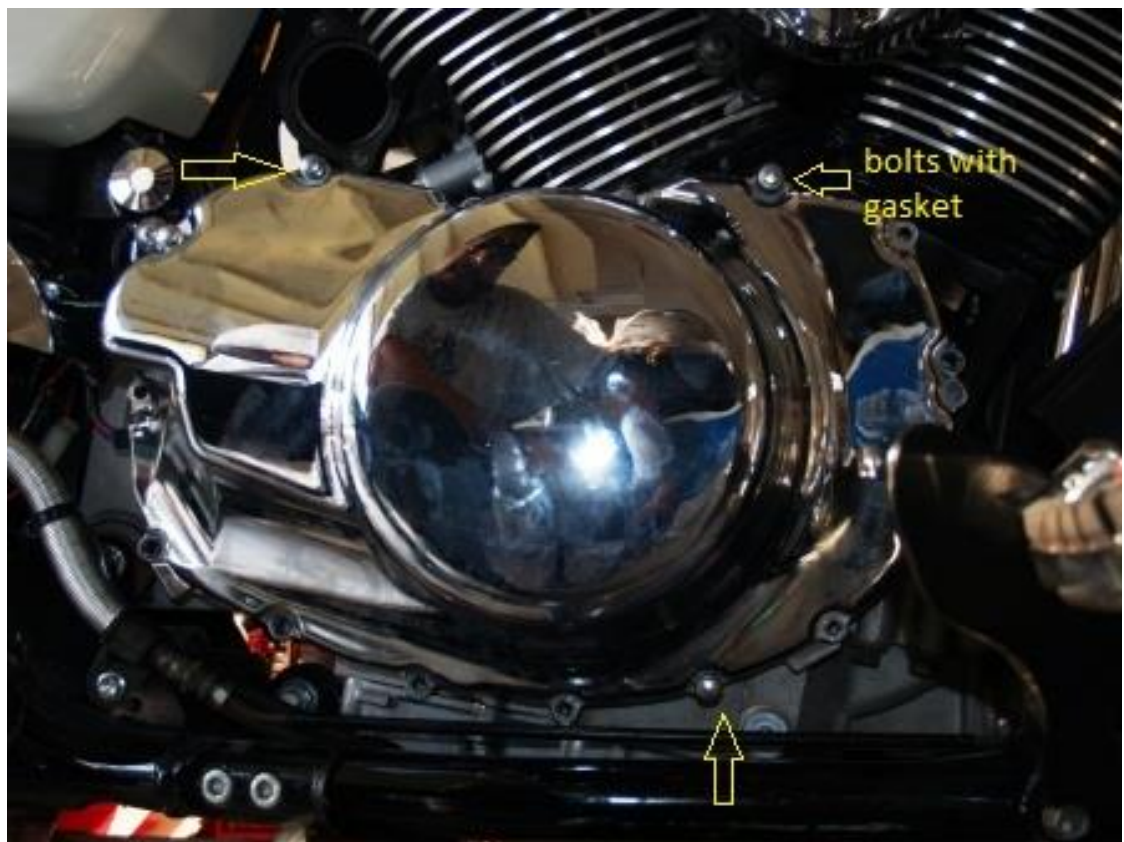


Figure 1 Bottom side-cover bolt with the washer





Remove the side-cover:

- Use a rubber mallet to lightly tap the side cover loose
- Try not to rip the gasket by carefully removing the cover
(NOTE: The gasket will probably stick to the block and cover. Carefully use a small screwdriver, etc. to peel it off the bike. Slow and steady)
- You should be able to re-use your gasket (if damaged, replace gasket)
- Must be oil free and clean when reinstalling or you may have oil leak

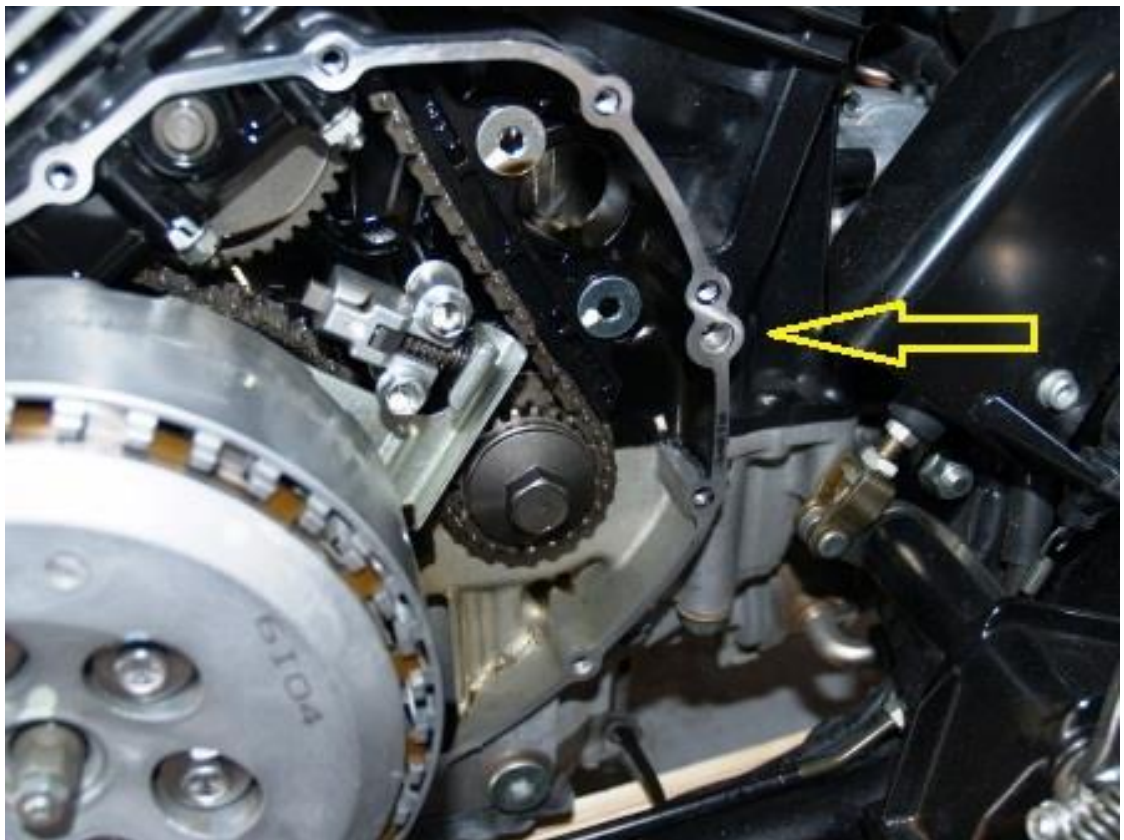


Figure 2 There are 2 dowels on the cover



- Must be oil free and clean when reinstalling or you may have an oil leak
- Clean and inspect



Figure 3 Dowels on the side-cover



PRIMARY DRIVE GEAR

1. With the transmission in gear hold the clutch lever and spin the rear wheel...
the PRIMARY DRIVE GEAR should spin freely
2. If not, move on to the next step

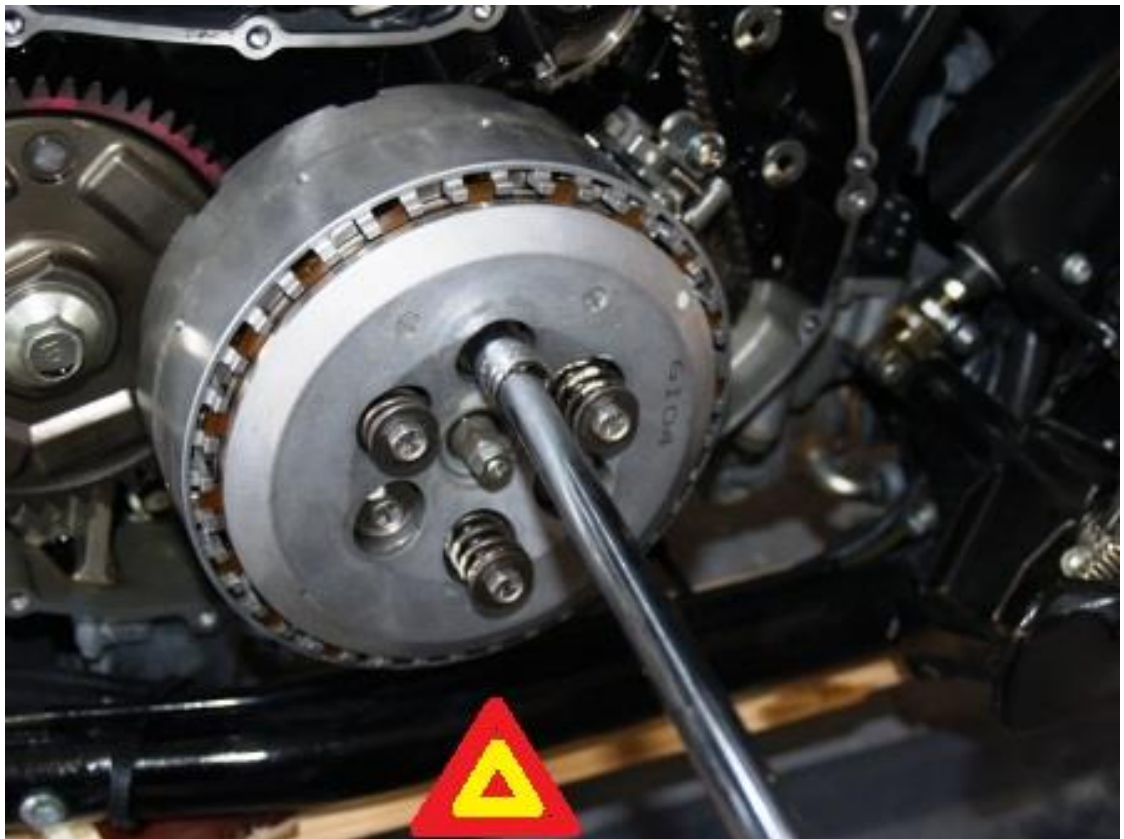




CLUTCH PRESSURE DISC

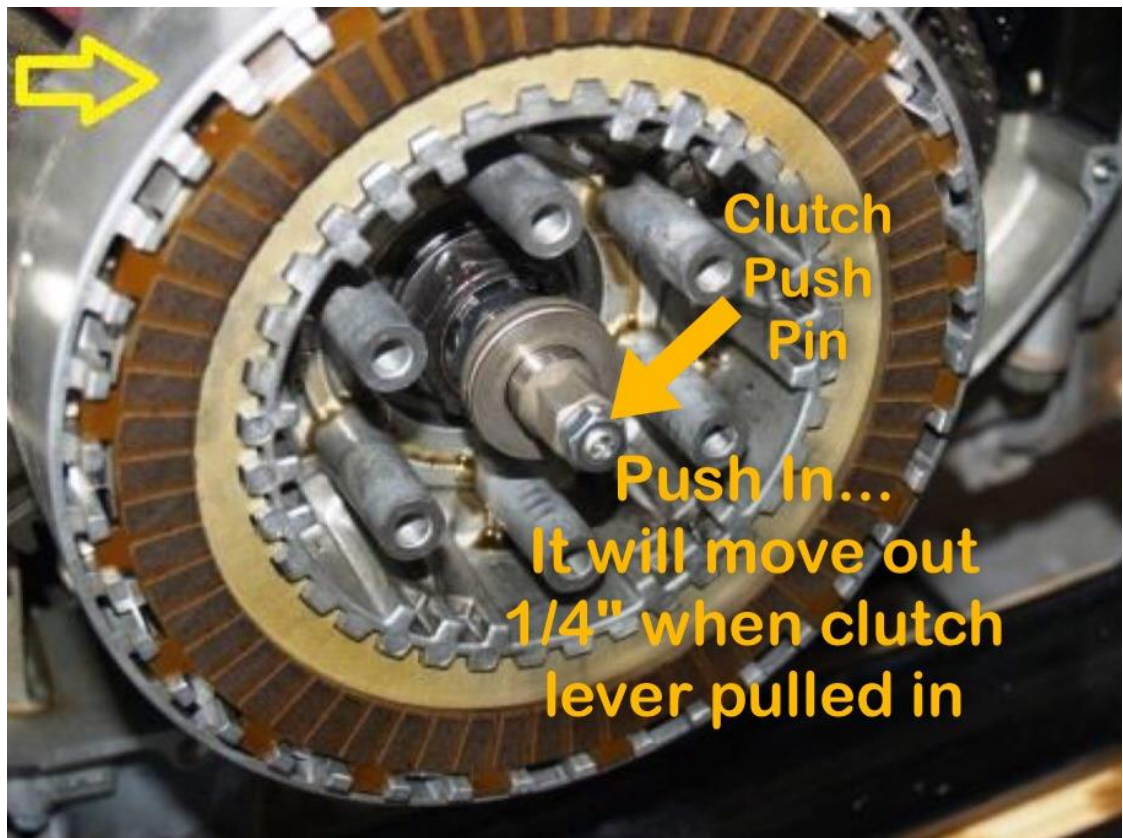
1. Remove the 6 bolts (10 mm socket) and springs
2. Remove CLUTCH PRESSURE DISC and inspect for damage

NOTE: When retightening, go easy on these bolts (*about 6 to 8 ft lbs*) you don't want to strip the aluminum





1. For testing for other issues:
 - Spin rear wheel to see if the PRIMARY DRIVE GEAR spins freely
 - Push the CLUTCH PUSH PIECE in and then press the clutch lever
 - The piece should move out about 1/4 inch
2. If so then move on to next step





1. Remove the CLUTCH PUSH PIECE by pulling it out
2. There is washers and a bearing here
3. Inspect





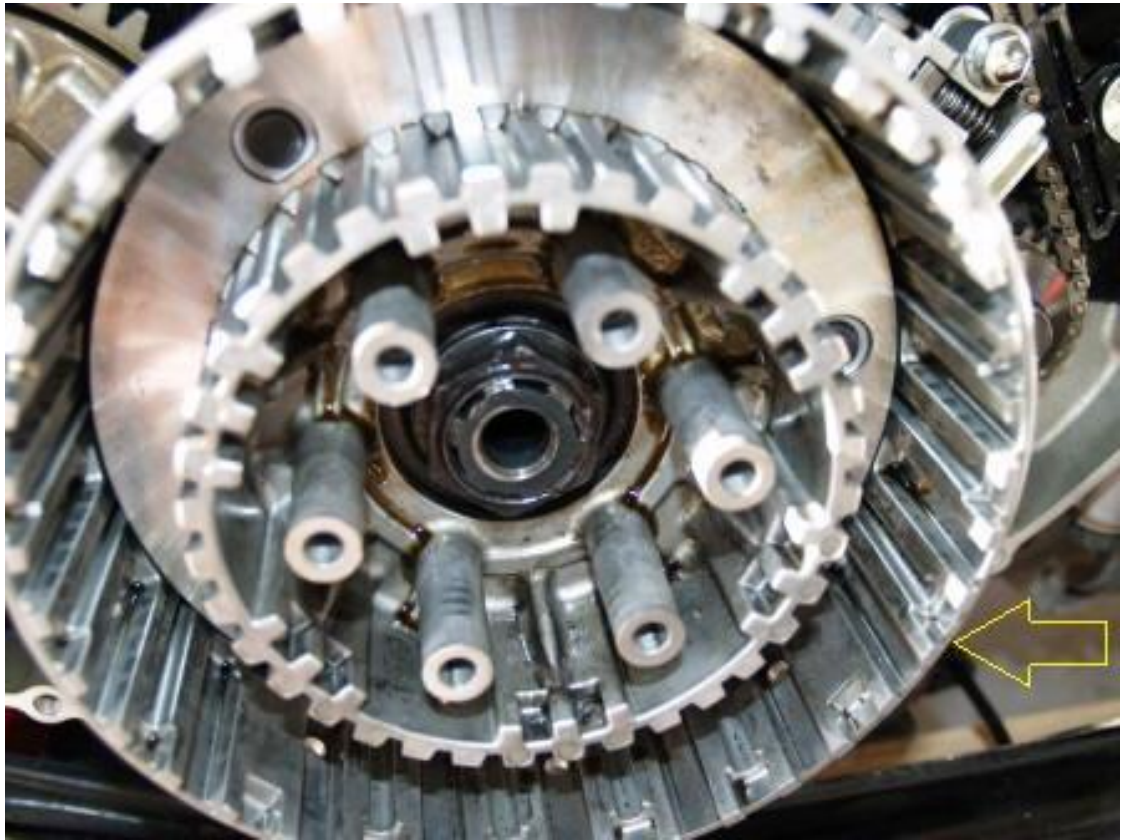
Remove CLUTCH DRIVE PLATES:

1. Clean and inspect each plates and set them down in the order and position they are remove
2. Will also be a good time to order any damage or worn clutch drive plates





1. Spin rear wheel to see if the PRIMARY DRIVE GEAR spins freely



stop here if you are only replacing the clutch



CLUTCH SLEEVE HUB NUT

1. To remove, you can either pry / tap the notch on the nut back to its original shape or simply hit it with the impact gun. It will come off w/out much effort.
2. When reinstalling, this nut has to be retighten at about 80 ft lbs.... I just use the impact gun and get it nice and tight.

NOTE: You must re-bend the nut to lock the nut back in place. (hit the notch with a center punch and brass hammer to re-notch it)





1. Remove clean and inspect nut
2. Use an impact gun with a 30 mm socket (6 point socket preferable) and remove the hub nut
3. An electric impact gun works good as it is not too powerful to cause damage





- remove clean and inspect washer





CLUTCH HUB:

1. Remove clean and inspect clutch hub





The CLUTCH HUB





1. Now spin rear wheel to see if the PRIMARY DRIVE GEAR spins freely
2. Clean and inspect



Tubular Nut:

1. There is a nut that look like a gear in the center of the PRIMARY DRIVE GEAR... check to see if it is loose
2. *if you can turn it by hand, you found a BIG problem*
3. Remove the nut and inspect



1. Clean and inspect





Tubular Nut Tool:

Honda Socket / Spanner for the VTX works.

Part Number:

07910-4630100

Cost: \$90.00

read that Honda Socket / Spanner for the VTX works.
Part Number:
07910-4630100
Cost: \$55.75



07910-4630100



1. Clean and inspect



1. Clean Tubular Nut with electrical contact cleaner or a solvent that those not leave any residue
2. Apply **RED** Loctite when installing nut
3. Tighten to 100-105 ft lbs



1. Remove washer and **PRIMARY DRIVE GEAR** clean and inspect



1. Clean and inspect



1. Clean, inspect and apply loctite when installing
2. The gear is not listed separately in the parts manual and may be sold as part of the **PRIMARY DRIVE GEAR**
3. Clean and inspect





1. Clean and inspect gear, washers and bearings





1. Clean and inspect **PRIMARY DRIVE GEAR SPACER**





1. Now you have everything clean inspected
 2. Order all necessary parts
-
1. Clean everything before installing.
 2. Reverse to install everything following torque specs included.
 3. After a short test drive, it's recommended you perform an oil & filter change as your engine was exposed to dust, dirt and lint.

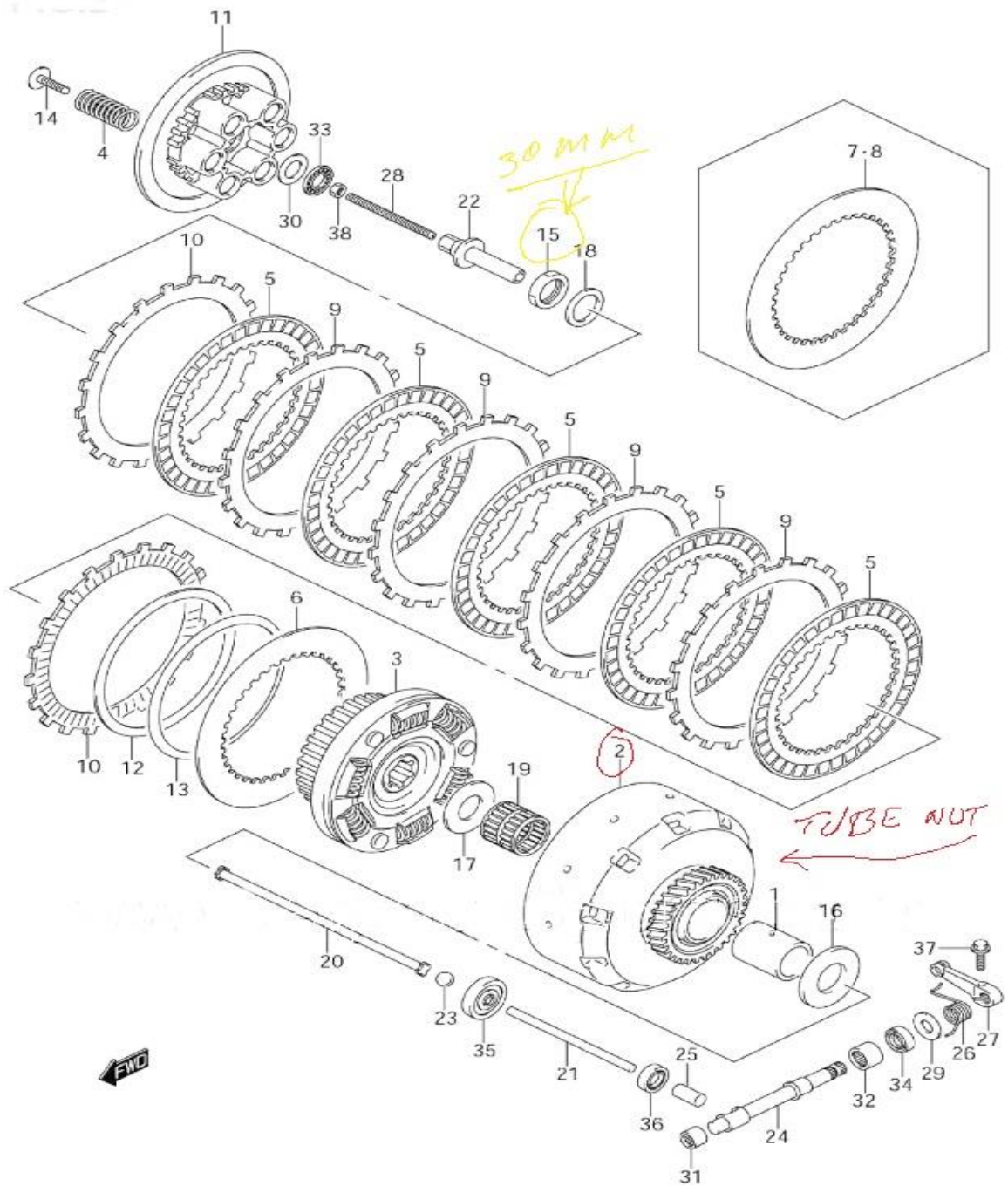


Figure 4 Factory Diagram



Clutch parts name & part Number

1. 21151-48G00 SPACER, PRIMARY DRIVE GEAR 1
2. 21100-48G00 GEAR ASSY, PRIMARY DRIVE 1
3. 21410-48G00 HUB, CLUTCH 1
4. 21413-48G00 SPRING, CLUTCH 6
5. 21441-48G00 PLATE, CLUTCH DRIVE NO.1
6. 21441-48G10 PLATE, CLUTCH DRIVE NO.2
7. 21441-48G20 PLATE, CLUTCH DRIVE NO.3
8. 21441-48G30 PLATE, CLUTCH DRIVE NO.4
9. 21451-48G00 PLATE, CLUTCH DRIVEN NO.1
10. 21451-48G10 PLATE, CLUTCH DRIVEN NO.2
11. 21462-48G00 DISC, CLUTCH PRESSURE 1
12. 21471-48G00 SEAT, WAVE WASHER 1 109X124X1.6
13. 21472-48G00 WASHER, CLUTCH PLATE 1
14. 21482-41G00 BOLT, CLUTCH SPRING 6
15. 09159-24010 NUT, CLUTCH SLEEVE HUB 1
16. 09160-25056 WASHER, CLUTCH SLEEVE HUB THR 1 25X50X2.50
17. 09160-25056 WASHER, PRIMARY DRIVE 1 25X50X2.50
18. 09164-24006 WASHER, CLUTCH SLEEVE HUB WAV 1
19. 09263-32020 BEARING, PRIMARY DRIVE 1 32X37X38.3
20. 23110-24F00 ROD, CLUTCH 1
21. 23111-48G00 ROD, CLUTCH PUSH, L 1
22. 23121-41G00 PIECE, CLUTCH PUSH 1



23. 23122-02FR0 BALL, CLUTCH PUSH 1
24. 23122-48G00-A05 CAMSHAFT, CLUTCH RELEASE 1
25. 23123-41G00-A05 CAP, CLUTCH PUSH ROD 1
26. 23125-48G00-A05 SPRING, CLUTCH RELEASE RETURN 1
27. 23271-48G00-A05 ARM, CLUTCH RELEASE 1
28. 09134-06015-A05 SCREW, CLUTCH PUSH ROD 1
29. 09160-10020-A05 WASHER, CLUTCH RELEASE 1 10.5X24X1.0
30. 09160-15045 WASHER, CLUTCH PUSH PIECE 1 15.5X28X1.0
31. 09263-10014 BEARING, CL RLSE CAM LOWER 1 10X14X10
32. 09263-12027 BEARING, CL RLSE CAM UPPER 1 12X18X12
33. 09263-15003 BEARING, CLUTCH PUSH PIECE 1 15X28X2.0
34. 09282-10012 SEAL, CL RLSE CAMSHAFT OIL 1
35. 09283-06010 SEAL, CLUTCH PUSH ROD OIL 1
36. 09285-10004 SEAL, CLUTCH PUSH ROD CAP 1
37. 01550-0620A BOLT, CL RELEASE ARM 1
38. 08310-0006A NUT, CLUTCH RELEASE ADJ 1



Clutch Plate Install Order:



Figure 5

Install 1st: (direction doesn't matter)

Plate #6 21441-48G10



Figure 6

Install 2nd: (direction doesn't matter)

#13 - WASHER, CLUTCH PLATE 21472-48G00 (new)



Figure 7

Install 3rd: (much debate if direction matters, but general consensus is wide side toward bike..this pic shows the opposite of that)

#12, SEAT, WAVE WASHER 21471-48G00 (new)



Figure 8

Install 4th:

Plate #10 21441-48G00



Figure 9

Install 5th:

Plate #5 21451-48G00



Figure 10

Install 6th:

Plate #9 21441-48G00



Figure 11

Install 7th:

Plate #5 21451-48G00

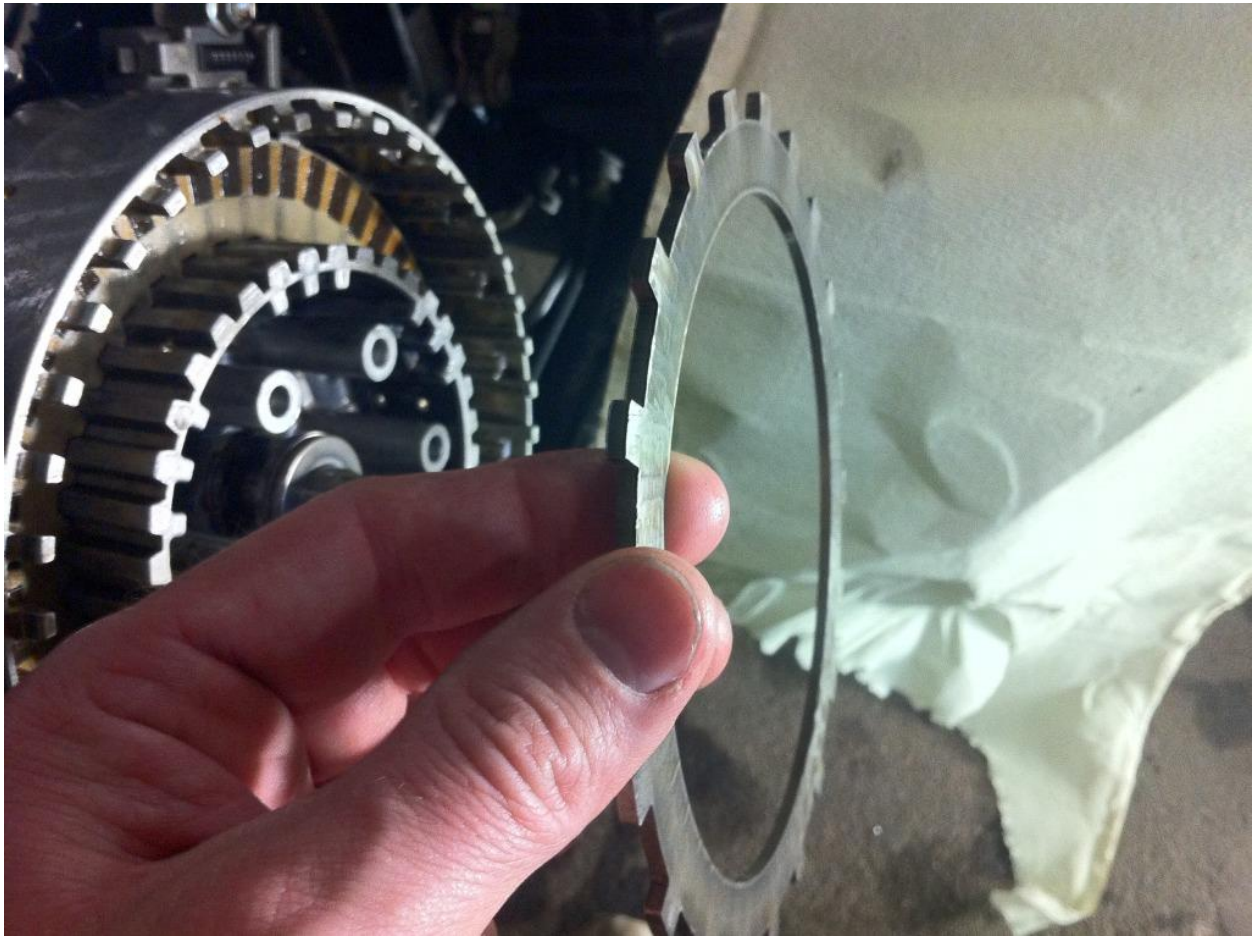


Figure 12

Install 8th:

Plate #9 21441-48G00



Figure 13

Install 9th:

Plate #5 21451-48G00



Figure 14

Install 10th:

Plate #9 21441-48G00



Figure 15

Install 11th:

Plate #5 21451-48G00



Figure 16

Install 12th:

Plate #9 21441-48G00



Figure 17

Install 13th:

Plate #5 21451-48G00



Figure 18

Install Last Plate: (make sure it's facing away from the bike)

Plate #10 21451-48G10