Thank you for purchasing your new GMPP 19212712 clutch kit
Read these instructions carefully before you install your clutch kit.

Due to the high failure rate of cylinders we have composed these instructions to help you with your clutch install.

We will not warranty any GM Clutch or Slave Cylinder (TOB) not installed by a GM Dealer

Your clutch and slave cylinder have been inspected before we shipped it out to you. Your slave cylinder should look just like the images below.
Please note that the black seal that the arrow is pointing to in **image 1** is only showing that much. Any more of the seal showing means the cylinder has been extended beyond its normal length of travel and should not be used.

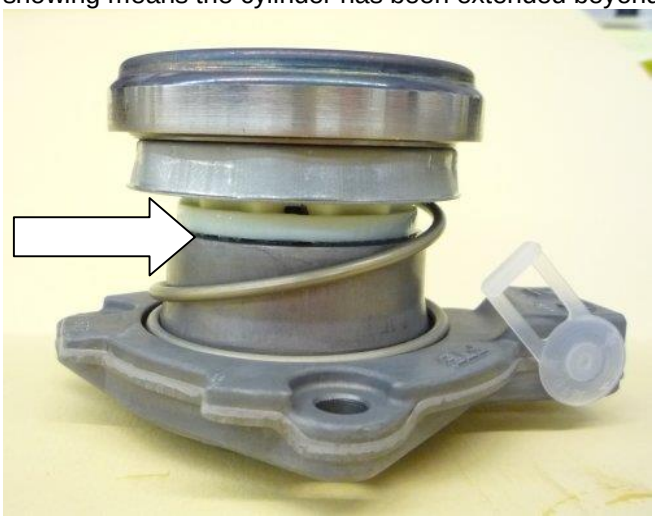


Image 1:
New Slave Cylinder (Throw out bearing)
Note: arrow pointing to seal (we will discuss this later in more detail, but this is the maximum amount of seal that should ever been seen)

Image 2:
New Slave Cylinder Top view
Note: the top retaining ring (light grey in color) as shown in the two images one above and one below. The top edge of it should be smooth and with out any ripples

.

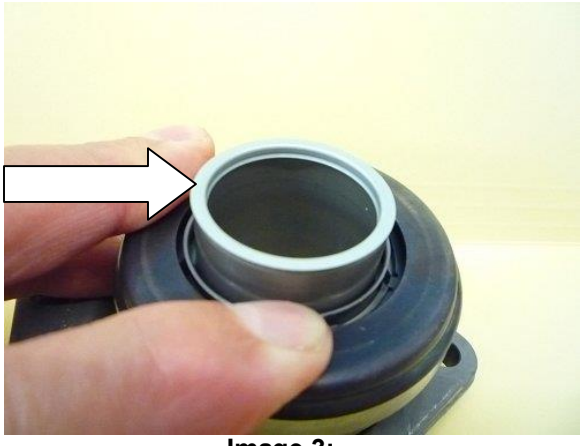


Image 3:
Top of slave cylinder compressed to show retaining ring. Note how smooth and flat the retaining ring is the arrow is pointing to

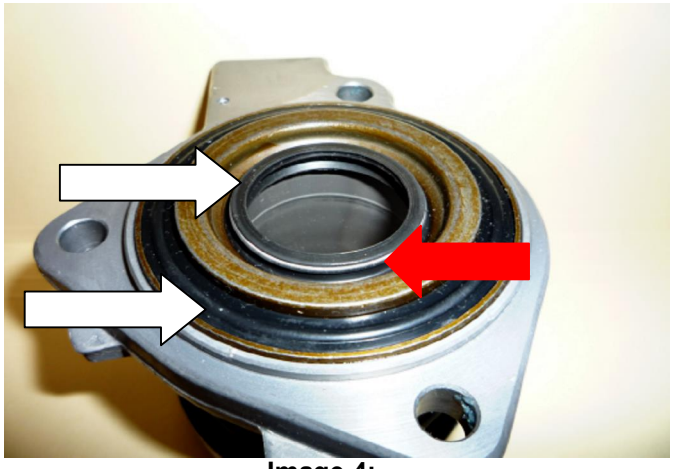


Image 4:
Bottom view of the new Cylinder
Inspect to see that both seals (White arrows) and seal spring (shown in red) are installed and are clean and free of any cuts or dirt.

Everything shown here were also inspected before we shipped your kit.
We will only warranty slave cylinders that match the criteria mentioned above.
| We will not warranty any GM Clutch or Slave Cylinder (TOB) not installed by a GM Dealer

We do not recommend cutting the old flywheel as this may cause the slave cylinder to have to travel further than its normal intended amount.
If the old flywheel needs to be cut you should replace it with a new flywheel Part number 12584343.

Do not try to pre bleed your cylinder before you install it as any excessive pressure used on the cylinder will cause it to bend the retaining ring and let the bearing assembly travel too far causing the seal to leak. Bleeding instructions are also included with the kit.

The following images are from cylinders that have come back leaking
We will not warranty any cylinders that come back to us in this condition.
We will not warranty any GM Clutch or Slave Cylinder (TOB) not installed by a GM Dealer

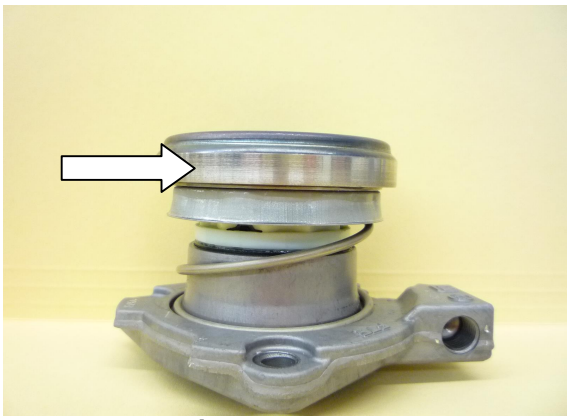


Image 5:
This cylinder has been damaged from being bench bled. Note how much more of the seal that is exposed than the one in image 1, it may seem like there isn't much more seal showing but that's all it takes for it to leak.

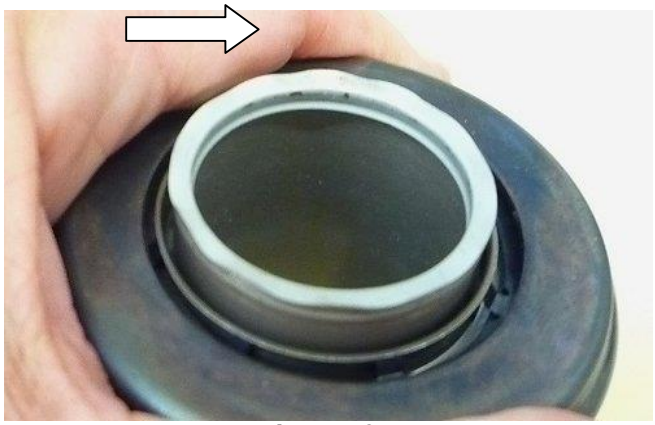


Image 6:
Note how to retaining ring is distorted and rippled. What happened here is the bearing section of the cylinder has been forced beyond its normal stopping point bending the retaining ring. Notice the ripple effect caused by the white piston shoulder. To help explain this look at the next image

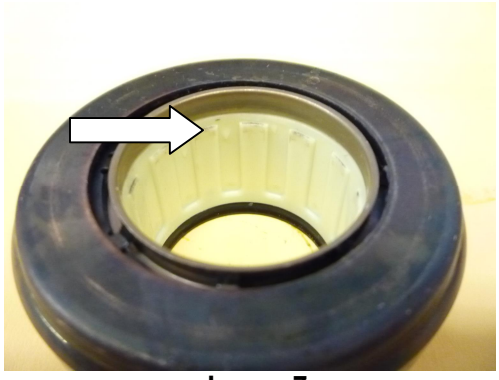


Image 7:
These shoulders that the arrow is pointing to are what the retaining ring sits against when fully extended. The only time the cylinder would ever be extended to the retaining ring is when not installed in a vehicle.
If the piston part of the cylinder is forced beyond the normal travel the retaining ring will distort as it did in image 6. When that happens the seal extends too far out from the cylinder and you get a leak, see image 5 for a seal that is has traveled too far.

In this case because the cylinder was not installed when they pressurized it, the bearing section pushed against the retaining ring distorting it and letting the seal travel beyond the normal accepted travel area.

This may also be happening to customers who have had there flywheel cut and machined causing the TOB to have to travel beyond its normal accepted travel area.

We will not warranty any cylinders that come back to us in this condition.
We will not warranty any GM Clutch or Slave Cylinder (TOB) not installed by a GM Dealer

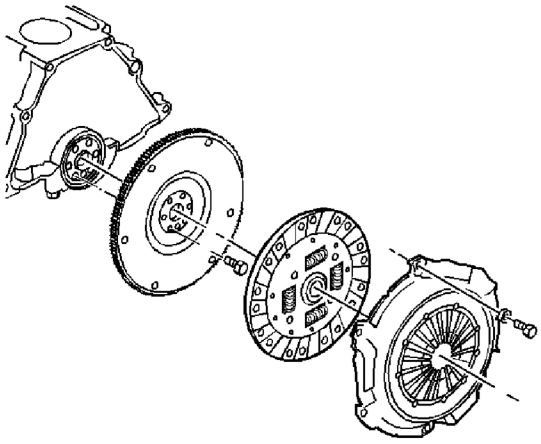
Clutch Pressure and Driven Plate Replacement (MU3)

Special Tools

J 43482 Clutch Alignment Arbor or CED # 14534 Pilot tool 

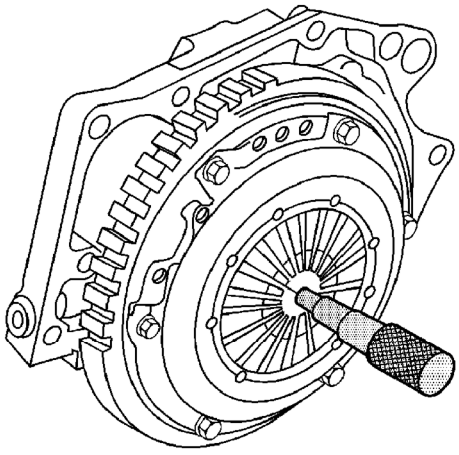
Removal Procedure

1.



2. Remove the clutch cover bolts one turn at a time, until spring pressure is relieved.
3. Remove the clutch cover and the clutch disc.

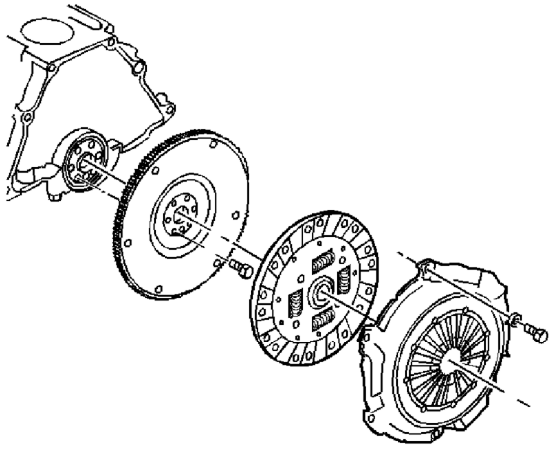
3.



3. Install the Pilot tool in order to support the clutch cover to flywheel assembly.

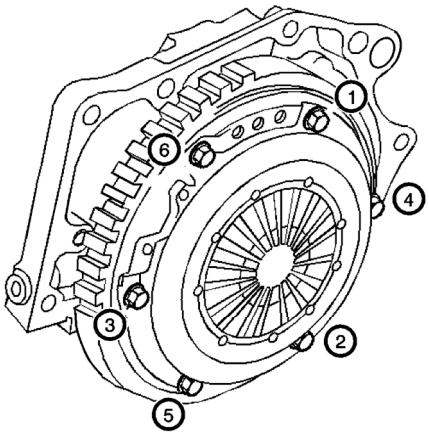
Installation Procedure

2.



1. Install the clutch disc and the clutch cover.
2. Hand start the clutch cover to flywheel bolts, leaving the clutch cover loose enough to reposition for alignment.

4.



4. Tighten the clutch cover to flywheel bolts in the sequence shown. Tighten the bolts to 30 Y (22 lb ft).
5. Recheck each bolt torque using the tightening sequence.
6. Remove the pilot tool.
7. Install the transmission.
8. Bleed the hydraulic system. (Refer to bleeding instructions sheet)

Hydraulic Clutch System Bleeding

Special Tools

• **J-35555** Metal Mityvac
• **J 43485** Power Steering Bleeder Adapter

1. Verify that all the lines and fittings are dry and secure.
2. Clean the dirt and grease from the reservoir cap in order to ensure that no foreign substances enter the system.
3. Remove the reservoir cap.
4. Fill the reservoir to the proper level with the required fluid.

Some manual transmission equipped vehicles have a combined brake and clutch fluid reservoir.

5. Attach the **J 43485** to the **J-35555**, or equivalent.

Important: Brake fluid will deteriorate the rubber on the J 43485. Use a clean shop cloth to wipe away the fluid after each use.

6. Place and hold the adapter on the reservoir filler neck to ensure a tight fit. In some cases, the adapter will fit into the reservoir opening.
7. Apply a vacuum of 51–68 kPa (15–20 hg) and remove the adapter.
8. Refill the reservoir to the proper level.
9. Repeat steps 6 and 7.
10. If needed, refill the reservoir and continue to pull a vacuum until no more bubbles can be seen in the reservoir or until the fluid level no longer drops.

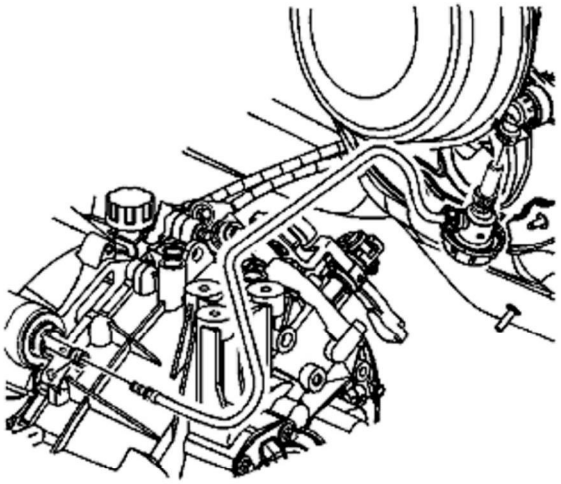
Caution: The vehicle will move if started in gear before the Actuator Cylinder is refilled and operational. Start the vehicle the first time in neutral to help prevent personal injury from vehicle movement and see if the transmission will shift easily into gear.

11. Pump the clutch pedal until firm (to refill actuator cylinder).
12. Add additional fluid if needed.
13. Test drive the vehicle to ensure proper operation.

Clutch Actuator Cylinder Replacement

Removal Procedure

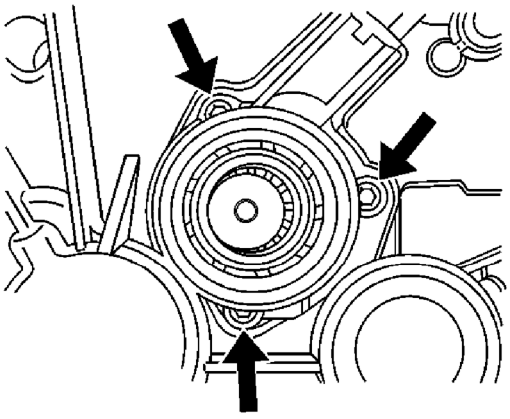
1.



1. Disconnect the clutch actuator cylinder line.
2. Remove the transmission.

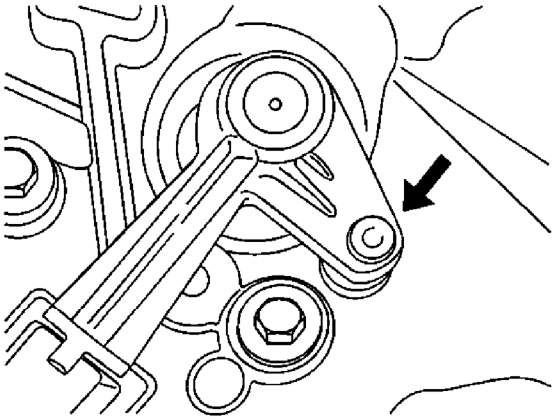
Refer to Transmission Replacement.

2.



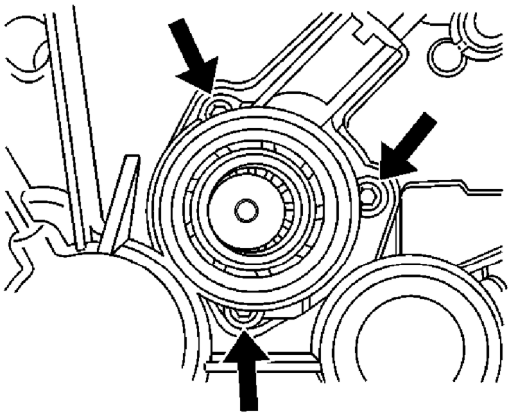
3. Remove the clutch actuator cylinder bolts from the transmission.

3.



4. Remove the following components from the transmission:
   - The upper bolt
   - The clutch actuator cylinder

4.

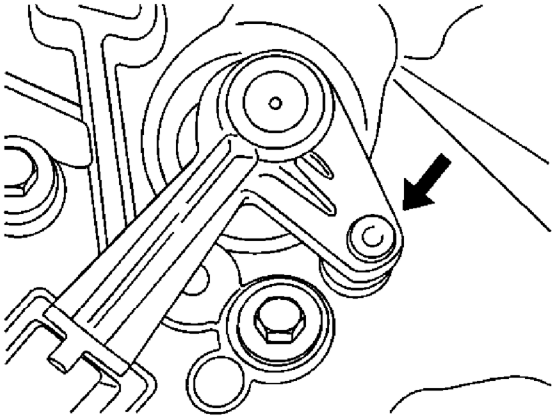


Installation Procedure

Important: Excessive amounts of lubricant on the input shaft splines can contaminate the clutch disc and cause clutch shudder.

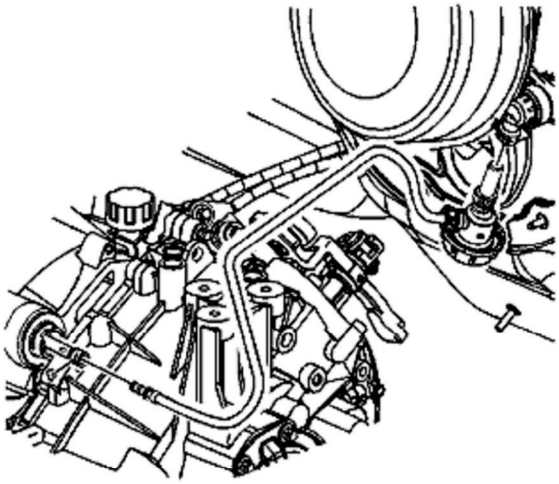
1. Lubricate the inside diameter of the bearing.
2. Install the clutch actuator cylinder to the transmission.
3. Install the clutch actuator cylinder bolts
   Tighten the bolts to 10 Y (89 lb in).

5.



4. Install the upper line release bolt.
   Tighten the bolt to 10 Y (89 lb in).
5. Install the transmission.

6.



6. Connect the clutch actuator cylinder line.
7. Bleed the hydraulic system.
   Refer to **Hydraulic Clutch System Bleeding page 1**