This bearing is a O.E.M. self aligning design

NOTICE:

Bearing may appear to be off-center, however this is part of the feature, and will center during use

I98MI005

IMPORTANT

Please follow these instructions to maintain the warranty of your Centerforce® product!

Flywheels: All Centerforce® clutches need to be installed on a clean, properly resurfaced or brand new flywheel. Flywheels must be within original equipment specifications. Centerforce clutches are designed to be used on flywheels made of cast iron, steel, or aluminum with steel inserts.

Break-In: All Centerforce clutches require a break-in period of 450-500 miles of stop-and-go street driving before applying full engine power. This period is required to properly seat the disc with the pressure plate and flywheel.

Balance: All Centerforce clutches are balanced from the factory to meet or exceed Original Equipment (O.E.) specifications. Balancing with the Centerforce weights installed on the clutch assembly may cause an out-of-balance condition. Removing the weights without permission from Centerforce may void the warranty.

Centrifugal Weight System: If your new Centerforce clutch is equipped with the patented centrifugal weight system, do not remove the ring, weights, or spring wire retaining the weight system to the diaphragm fingers. If your Centerforce clutch does not include the centrifugal weight system, it is because there is not sufficient clearance for Centerforce to safely & effectively install the centrifugal weight system.

Aftermarket Hydraulic Release Bearings: When using an aftermarket hydraulic release bearing it is important to check for proper clearance between the bearing and the centrifugal weight system. Some aftermarket hydraulic bearings have an anti-rotator pin that may come into contact with the centrifugal weight system.

Failure to follow the above procedures will void your warranty and may result in decreased performance and/or premature wear!

Questions? Please contact the Tech Department at Centerforce

CENTERFORCE THE PERFORMANCE CLUTCH®

CENTERFORCE DUAL FRICTION®

"NOTE" Centerforce tip sheets are for general reference only. Please refer to your owners manual for vehicle specifications.

3/8" Pressure Plate Bolts

A small amount of threadlocking compound is recommended on all clutch fasteners.

DO NOT use a washer with this pressure plate bolt.

Tighten all bolts evenly, ¼ turn at a time in a crisscross pattern until pressure plate is completely drawn-up to the flywheel.

Final torque to: 35 - 38 ft/lbs.

Note: These specifications apply only to the fasteners supplied by Centerforce.

IMPORTANT

Jeeps with the STOP/START Feature

Jeeps with the STOP/START feature will have TWO, 12 volt batteries - the main battery is located in the engine compartment, passenger side, front. The smaller, secondary battery is located below the engine compartment fuse box. This battery is NOT visible and cannot be easily accessed without some vehicle disassembly. Please be advised that BOTH batteries MUST be disconnected prior to clutch replacement. Failure to disconnect BOTH batteries can result in an electrical short and/or vehicle damage.

STEP 1: BEFORE ANY WORK IS STARTED, remove the 13mm nut and disconnect the secondary NEGATIVE battery cable at the main battery terminal as shown:

STEP 2: Once the secondary battery negative cable has been completely disconnected from the main negative terminal, take steps to ensure this terminal DOES NOT touch any part of the vehicle or otherwise contact the vehicle ground. Securely wrap the secondary battery negative cable with electrical tape or other suitable insulation method.

STEP 3: Loosen the 10mm nut and disconnect the NEGATIVE battery cable at the main battery as shown:

Now you may proceed with the normal clutch removal and installation process. Once the transmission has been reinstalled, reverse the steps above to connect both batteries.

NOTE: This information is offered as a courtesy only. Your vehicle design and/or configuration may differ from the information and pictures shown above. Please consult your factory service manual for further information and procedure verification.

Please contact our Tech Line at (928) 771-8422 for any questions or concerns you may have.

NOTE: Centerforce tip sheets are for general reference only. Please refer to your owners manual for vehicle specifications.

CENTERFORCE THE PERFORMANCE CLUTCH®

IMPORTANT

Clutch Disc Fitment and Lubrication Procedure

IMPORTANT: Handle your new Centerforce clutch disc and clutch parts very carefully. DO NOT drop or bend the clutch disc assembly. DO NOT contaminate the friction material or friction surfaces with any grease or oil. Be sure your hands are clean before working with your new clutch parts.

1. Once the transmission has been removed from your vehicle, remove the old clutch release bearing. Then, using a wire brush, thoroughly clean the transmission input shaft splines and release bearing sleeve. Rinse with brake cleaner or similar product and allow the splines to dry. Repeat this step as needed.

2. Test fit the new Centerforce clutch disc onto your transmission input shaft splines. Ensure the disc moves freely fore and aft.

3. Remove the clutch disc from transmission splines.

4. Install your new clutch release bearing. Applications that use a plastic release bearing collar or insert, DO NOT use any grease between the plastic collar and the metal transmission sleeve. Install dry. A release bearing with a metal collar on a metal transmission sleeve needs a small amount of grease.

5. Using the enclosed grease packet, spread a thin film of grease on the transmission input shaft splines. A small nylon brush may be helpful in order to apply the grease completely and evenly on the transmission splines.

6. Slide the new disc on the greased transmission input shaft splines to help transfer and distribute grease to the splines of the clutch disc.

7. Remove the clutch disc from the transmission input shaft splines.

8. WIPE OFF any grease that is outside of the clutch disc splines or on the clutch disc hub. Any excessive grease on the clutch disc hub will be slung outward with engine RPM and can contaminate the clutch disc friction material. Again, you only need a thin film of grease on the transmission input shaft!

Should you have questions or if you need further information, please call our tech line at (928) 771-8422 or visit us at www.centerforce.com

IMPORTANT

Hydraulic clutch system vacuum bleed procedure

NOTE: You will need a hand held vacuum pump and fresh high quality DOT 3 or 4 brake fluid for this procedure.

1) Remove clutch fluid reservoir cap. Be sure the fluid level is at normal as marked.
2) Use athe enclosed round rubber reservoir gasket to create a temporary seal against the clutch master cylinder reservoir.
3) Using the enclosed vacuum line cup, attach the vacuum hand pump to the rubber gasket and introduce 10 to 15 in/Hg negative pressure to the clutch hydraulic system. IMPORTANT: you will be drawing a vacuum from the air gap above the fluid within the reservoir… DO NOT draw any fluid into the vacuum pump! If the system is sealed and done correctly, the negative pressure should hold for several minutes. This procedure will draw out any air contained within the hydraulic system. DO NOT depress the clutch pedal while there is a vacuum applied to the hydraulic clutch system.

4) Release vacuum pressure from the system and top off fluid as needed. Repeat step 3 several times. Then remove the vacuum pump and rubber reservoir gasket.
5) Top off the fluid reservoir as needed and check the hydraulic system for leaks.
6) Replace the reservoir cap.
7) Once the clutch hydraulic vacuum bleed procedure is complete, the clutch should engage and start to move the vehicle at approximately half of the clutch pedal travel up from the floor.

<u>Note</u>: It's common for small air bubbles to remain aerated within the clutch fluid for several hours. The clutch vacuum bleed procedure may need to be repeated after the vehicle sits overnight.

IMPORTANT

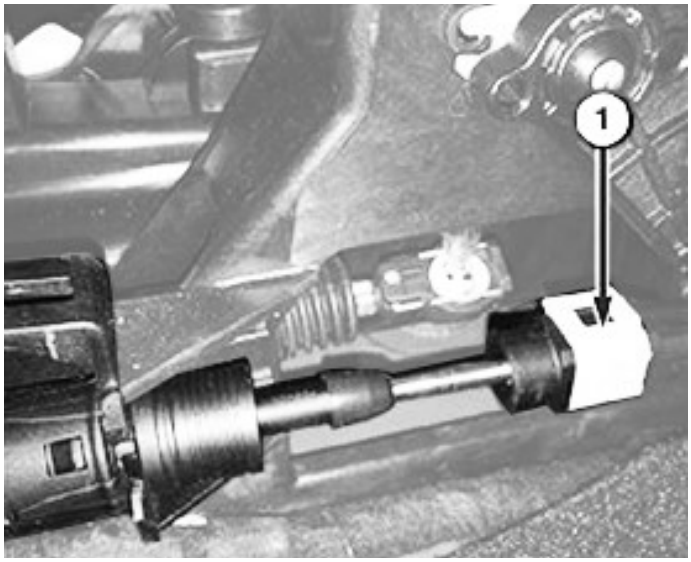
JEEP JL/JT GEARSHIFT CABLE ADJUSTMENTS – IF NEEDED

CAUTION: When replacing the clutch, it is recommended to leave the shift cables and bracket attached to the transmission – please read ALL instructions prior to clutch replacement. The Shift cable bracket should not be removed from the transmission unless rebuilding of transmission and access to the detent plugs is required. IF the shift cable bracket has been removed from the transmission, you MUST perform the shift cable reset procedure as outlined below: This step is critical. If not set correctly, hard shifting and/or transmission damage is possible.

NOTE: The shift cable adjustment device is located under the center console at the shifter

If the shift cables and bracket remain in place during the clutch installation, the shift cable reset procedure is usually not necessary, however this procedure can be performed at any time as needed if gear selection becomes difficult.

1. THE ENGINE MUST BE OFF for the duration of this procedure.
2. Remove shift cable access door from the passenger side of the center console.
3. From the driver's seat, depress the clutch pedal and then move the shift lever to the 3rd gear position. Leave the transmission in 3rd gear, Jiggle the shifter side to side and then release the shift knob, letting the shifter spring center the shift lever.
4. Re-engage the clutch. DO NOT bump or move the shifter.
5. Locate the shifter cable adjuster under the console just to the right side of the shifter assembly.
6. Release the adjuster by pushing the locking tab (1) outward.
7. The cable will automatically reposition. Next depress the locking tab (1) to lock the adjuster in place.
8. Verify that the shifter operates properly.
9. Reinstall the shift cable access door and test drive vehicle.



Should you have questions or if you need further information, please call our tech line at (928) 771-8422 or visit us at www.centerforce.com

IMPORTANT

Jeep JL/JT Internal Hydraulics Installation

Original equipment Jeep JL/JT with manual transmission uses a hydraulic/mechanical combination clutch release system. This new Centerforce internal hydraulic kit converts your JL/JT clutch release system to full hydraulic operation. By utilizing a fully hydraulic system, this will eliminate mechanical wear points, improving clutch pedal feel and restore smooth, quiet clutch operation. IMPORTANT, you must use ALL the components from this kit in order for the system to work properly; Clutch master cylinder, stainless steel braded pressure hose and clutch release cylinder bearing. NOTE: you will be working in tight spaces under the dashboard and in the engine compartment. It is recommended to have at least 2 people available for the install process. Please read through these instructions entirely before starting. If you have questions, please contact our Tech Line (928) 771-8422 during regular business hours or see our website www.centerforce.com for installation videos.

Caution, the shift cable bracket should not be removed from the side of the transmission during the clutch change procedure. Centerforce recommends removing the shift cable retainer, made from heavy gauge wire located at the top rear of the transmission. Remove the single nut with a 10mm wrench or socket, remove the cable retainer and save everything for reinstallation. By removing the rear cable retainer, you will have enough slack in the shift cables to move the transmission back and down. Again, DO NOT remove the shifter cables from the transmission shift levers. DO NOT remove the shifter cable bracket from the side of the transmission. Once the transmission has been removed from the engine, properly support, block or otherwise secure the transmission in place and proceed with the clutch/flywheel removal. DO NOT allow the transmission to hang on the shift cables. DO NOT kink or bend the shift cables. If the shift cables have been distributed and/or you are having shifting issues, please see the enclosed tip sheet regarding the factory shift cable reset procedure or contact the Centerforce tech line at (928) 771-8422.

Jeep JL/JT uses a shared brake and clutch fluid reservoir. The reservoir features a single fill point – however there is an internal partition that keeps fluid separate from each system. Changing the clutch hydraulics will not affect the vehicle braking system.

You MUST use only fresh, clean factory Original Equipment (OE) or equivalent high-quality DOT 3 or 4 brake fluid in your Jeep. The use of any other fluid is NOT recommended and will void the clutch system warranty. Remember that brake fluid can harm painted surfaces, take steps to cover or otherwise protect any surface that might get damaged by splashed or spilled fluid. Immediately clean-up any brake fluid that is outside of the hydraulic system.

To help retain fluid in the brake/clutch reservoir, it is recommended to keep the fill cap tightly sealed on reservoir until the new clutch hydraulic system has been completely installed.

Installation of the upgraded hydraulic clutch components can be performed at any point of the clutch installation process.

CENTERFORCE
THE PERFORMANCE CLUTCH ®

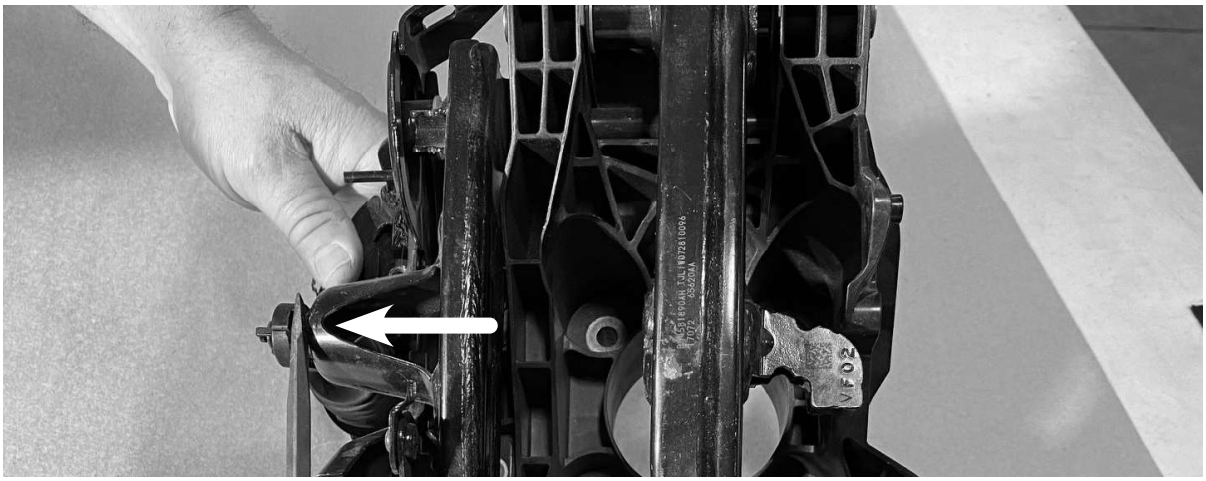
IMPORTANT

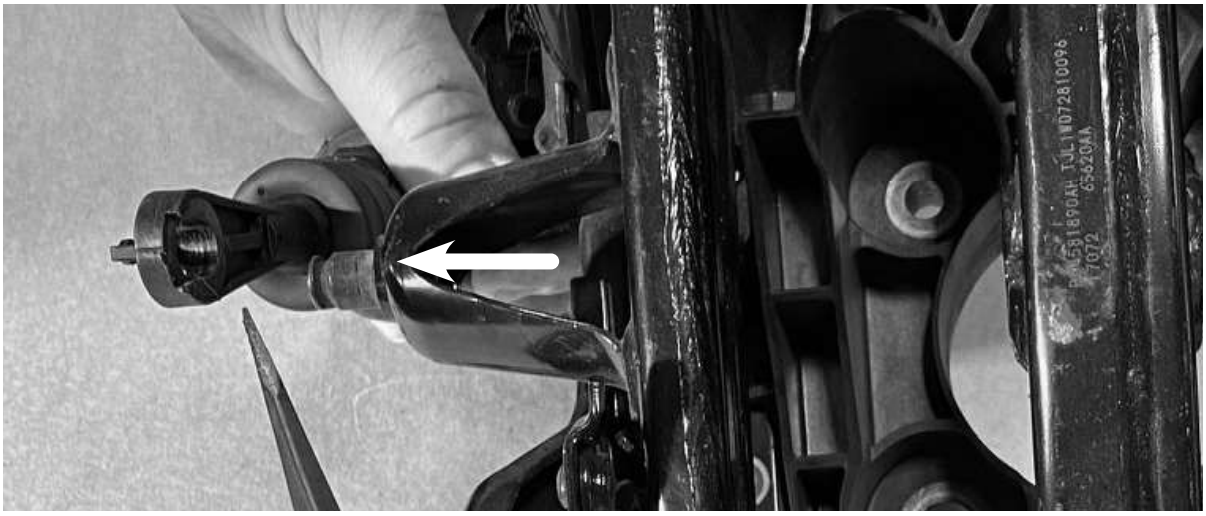
Jeep JL/JT Internal Hydraulics Installation

Step 1

Move the driver seat as far back as possible. From under the dashboard, locate where the Clutch Master Cylinder push rod attaches to the clutch pedal arm. This is a snap lock connector. Insert a medium length screwdriver, pry bar or forked tool (such as a trim removal tool) between the push rod and the clutch pedal arm at the snap connection. Twist the tool and push the connector away from the clutch pedal (towards to outside of the vehicle). NOTE: Examining the snap connector on your new Clutch Master Cylinder push rod may help you understand how it is connected to the clutch pedal arm. DO NOT operate the clutch pedal with the Clutch Master Cylinder disconnected. Leave the pedal in the full UP position.

NOTE: Pedal assembly shown removed from vehicle for demonstration only. DO NOT remove the pedal assembly from your Jeep!



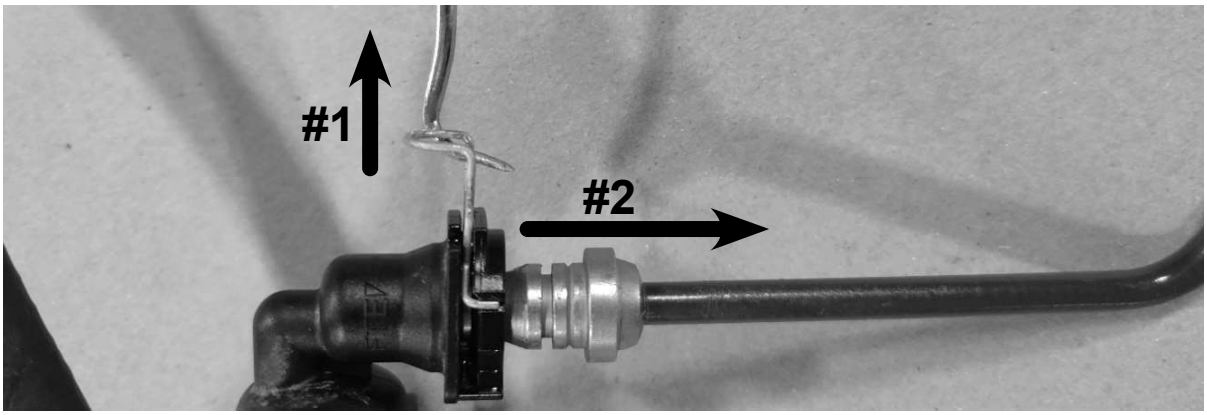


Step 2

From under the hood, remove the clutch safety switch wire connector from the Clutch Master Cylinder. The switch and connector are facing the driver side inner fender well. Press the connector lock tab and pull forward. Once disconnected, place the connector out of the way until it is reinstalled later.

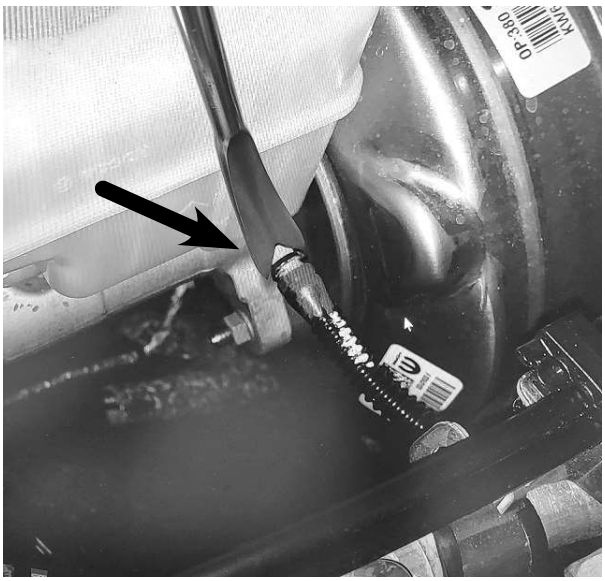
Step 3

Remove the stock OE pressure hose from the Clutch Master Cylinder. Using a small screwdriver or pick tool, pull the hose connection quick release lock wire towards the front of the vehicle (#1). It will move about a quarter inch and then stop. Push the pressure hose downward and out of the Master Cylinder (#2).



Step 4

Remove fluid supply hose from the reservoir. Remove clamp from rubber hose if applicable. Some Jeeps may have a factory corrugated plastic supply hose without a clamp. Twist the hose on the reservoir nipple to loosen the seal. The reservoir is plastic, so use gentle prying action to remove the hose from the reservoir. A forked tool, such as an automotive trim removal tool, works very well for this process. If your Jeep has the factory corrugated plastic hose, be sure to remove the rubber gasket sleeve from the reservoir nipple after the hose has been removed. Once the hose has been removed, immediately install the included rubber cap over the reservoir nipple to prevent fluid loss during the Clutch Master Cylinder installation.

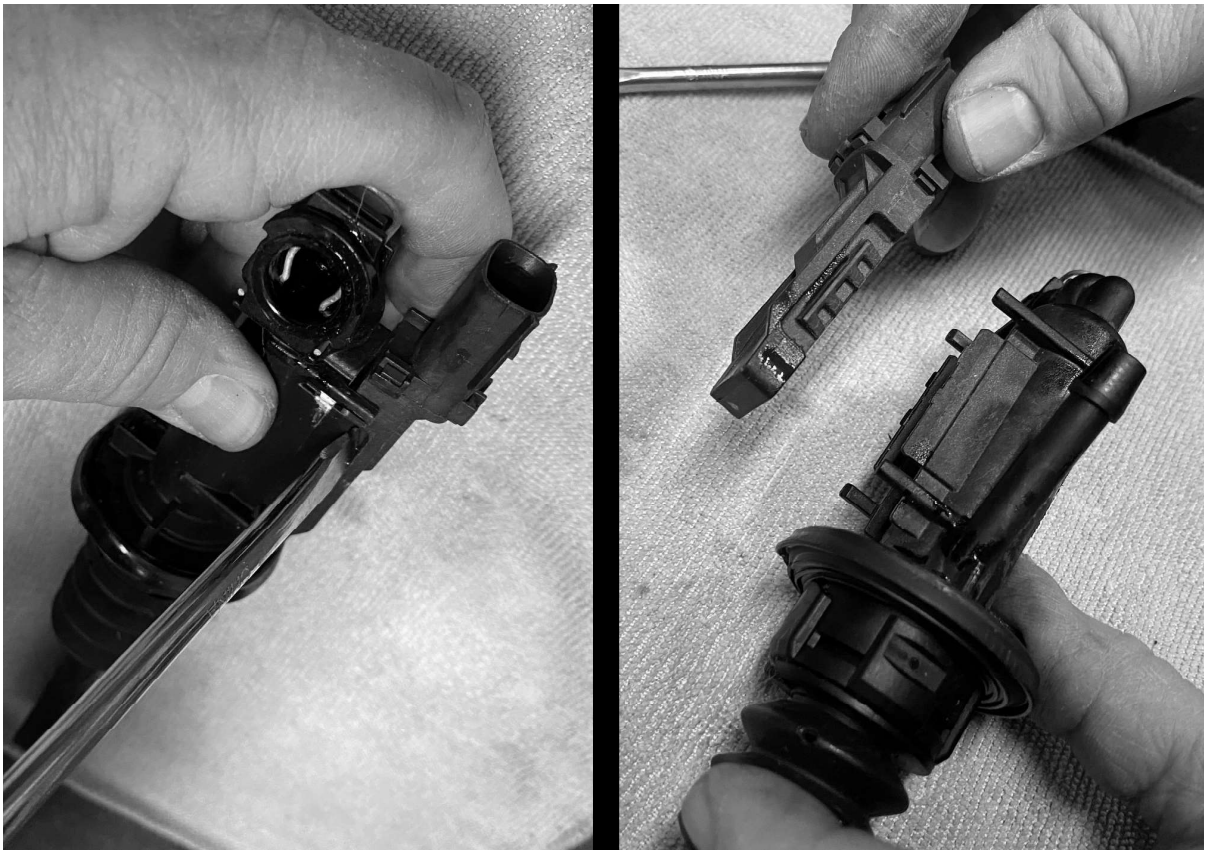


Step 5

From under the hood, facing the firewall, turn the Clutch Master Cylinder approximately one-eighth turn CLOCKWISE. This will release the Clutch Master Cylinder twist lock connection at the firewall. Remove the Clutch Master Cylinder from the vehicle. NOTE: It is helpful to have a second person under the dashboard to guide the Clutch Master Cylinder push rod out through the firewall.

Step 6

On a work bench, remove the clutch safety switch from the old Clutch Master Cylinder. Using a small screwdriver, gently pry the switch from the Clutch Master Cylinder.



Step 7

Install the clutch safety switch onto the new Clutch Master Cylinder. With the wire connector pointing forward, set the switch inside the 4 locator pins and snap into place.

Step 8

At the transmission, remove the old Clutch Release Cylinder and pressure hose together from the transmission. Remove the pressure hose from the transmission bracket and then the plastic retention clip(s) on the firewall, below the Master Cylinder. Be careful to not break the retention clip(s) as they will be reused to hold the new pressure line.

Step 9

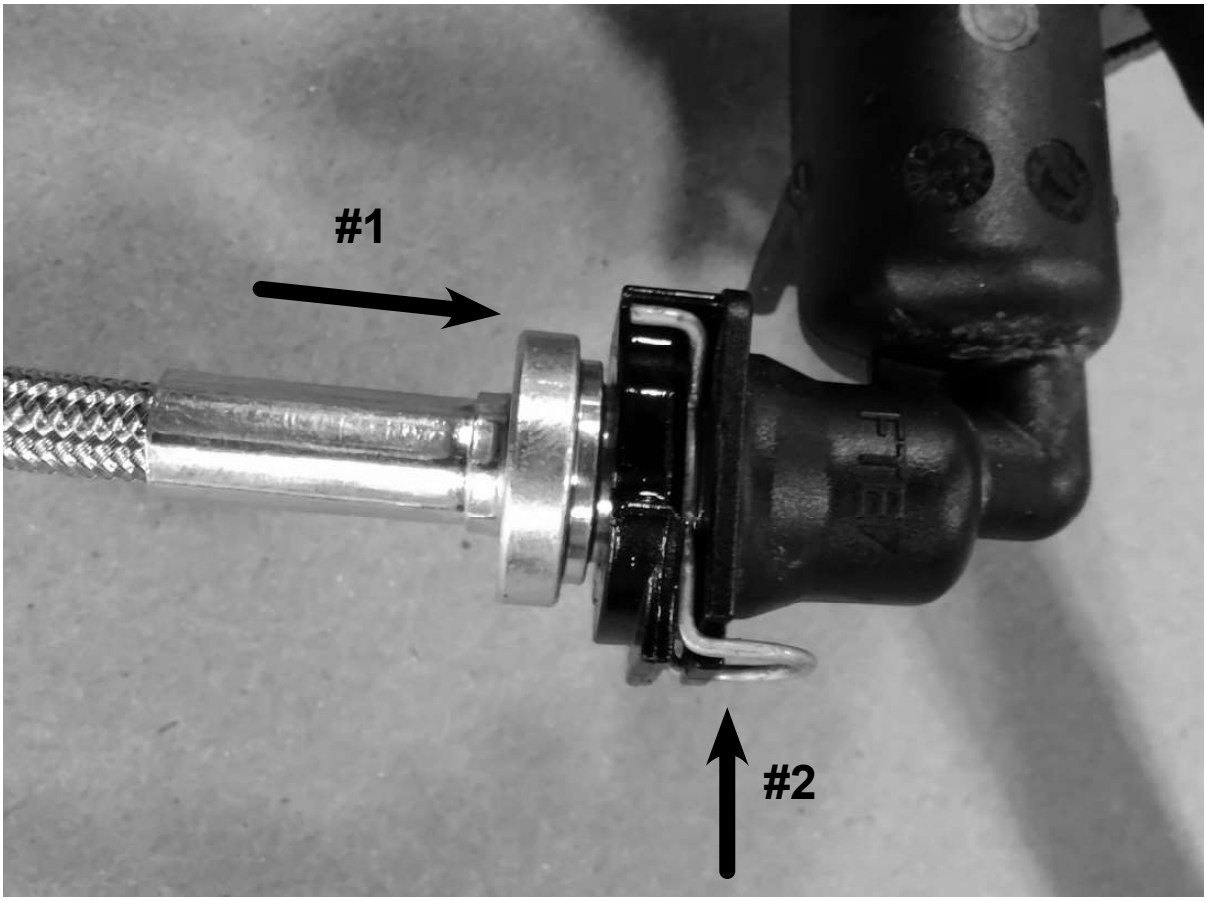
Install the new Clutch Master Cylinder. Apply a small amount of lubricant (such as WD-40) to the Clutch Master Cylinder rubber gasket where it meets the firewall. From under the hood, slide the new Clutch Master Cylinder into the firewall. Have a second person under the dashboard to help orient and guide the Clutch Master Cylinder push rod into position, but DO NOT connect the push rod to the clutch pedal arm at this time. Start with the reservoir hose at approximately the 1 o'clock position. Align the 4 slots on the Clutch Master Cylinder with the firewall twist lock tabs. Once the Clutch Master Cylinder rubber gasket is fully seated against the firewall, push rearward and twist lock the Master Cylinder into the firewall by turning approximately one-eighth turn COUNTER-CLOCKWISE until the reservoir hose is at the 12 o'clock position.

Step 10

From under the dashboard, snap lock the Clutch Master Cylinder push rod to the clutch pedal arm. DO NOT operate the clutch pedal at this time.

Step 11

Install the new pressure hose. Pull the Clutch Master Cylinder hose connection quick release lock wire towards the front of the vehicle. It will move about a quarter inch and then stop. The hose insulation sleeve will need to be positioned at the lower portion of the pressure hose around/near the exhaust system. Using a small amount of clean brake fluid, lubricate the pressure hose O-Ring and install the fitting into the Clutch Master Cylinder (#1). Once the fitting is fully seated into the Clutch Master Cylinder, push the lock wire in to retain the pressure hose (#2). Pull gently downward to check the connection.



Step 12

Install fluid supply hose on to reservoir. Remove rubber cap from the reservoir nipple and install the Clutch Master Cylinder rubber hose on to the reservoir nipple and then clamp the hose in place with the supplied clamp.

Step 13

Install the clutch safety switch wire connector on to the Clutch Master Cylinder. Push the connector until it clicks in place on the switch. Double-check the safety switch to ensure it is properly locked in place on the Clutch Master Cylinder and that it has not come loose during the installation process.

Step 14

Attach the new hydraulic pressure hose into the firewall retention clips. NOTE: Additional zip ties may be used to properly route the new pressure hose to the Clutch Release Cylinder. Avoid looping, sharp bends, kinks and heat sources.

IMPORTANT

15. Remove transmission.
16. Remove O.E. release bearing and release bearing arm from the Bellhousing.
NOTE: These components will not be used (Fig 1).
17. Remove 4 bolts holding the Release Bearing collar on the transmission.
NOTE: the clutch arm pivot ball stud can remain in place – no need to remove the ball stud.

Fig 1

18. Be sure surfaces within the Bellhousing are clean and then install the Centerforce Aluminum Bearing to Transmission Adapter usingthe 4 flat head screws included with this kit (Fig 2).
Be sure to orient the adapter so the release bearing hydraulic hose points towards the bellhousing slave cylinder opening (Fig 3). Tighten the adapter bolts snug using HAND TOOLS only….. torque specifications are 60 inch/lbs. DO NOT over tighten.

Fig 2

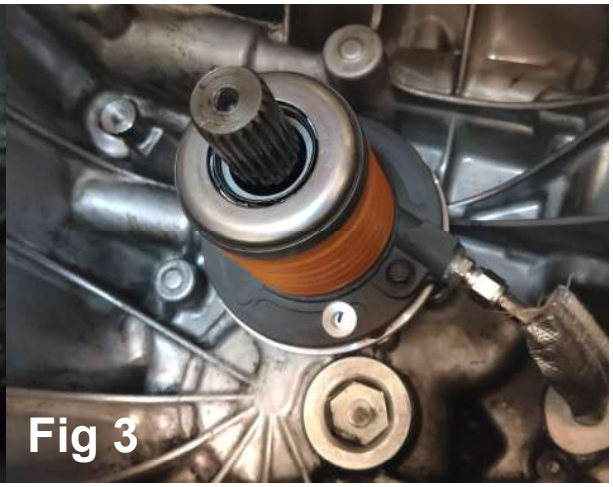


Fig 3

IMPORTANT

19. Remove the short hydraulic hose from the Release Bearing Cylinder. Install the Centerforce Hydraulic Release Cylinder and Bearing Assembly using the TWO included 6mm bolts. Again, be sure the release bearing hose fitting points to the outside of the bellhousing. Tighten the Bearing Assembly bolts snug using HAND TOOLS only….. torque specifications are 60 inch/lbs. DO NOT over tighten.
20. Install the short hydraulic hose from outside the bellhousing – the straight fitting goes inside to the release bearing base as shown (Fig 3). Tighten the fittings inside the bellhousing. The bellhousing cover plate located on the short hydraulic line installs over 2 studs where the OE external slave cylinder mounts. Use the 2 nuts from the OE external slave cylinder and secure in place as shown (Fig 4).


Fig 4

Note: Keep the Hydraulic Quick Disconnect fittings coupled together as shown until the transmission is installed. Doing so will allow the release cylinder to compress and air to escape during the transmission installation.

21. Once the transmission has been installed, tighten all external hydraulic fittings using suitable line wrenches and then securely couple the quick fittings to each other. Route the pressure hose from the clutch master cylinder away from the exhaust system and secure with additional zip ties as needed.
22. Using a hand-held vacuum pump, follow the enclosed Hydraulic Clutch Vacuum bleed procedure instructions.
23. Once the clutch hydraulic system has been purged of air, pump the clutch pedal 50 times with the engine off to ensure proper operation. Check for fluid leaks and top off the reservoir as needed. Do not overfill.
24. Test clutch release with the engine off and wheels off the ground. With the transmission in gear fully depress the clutch pedal while a helper turns the rear driveshaft. The driveshaft should turn freely. Slowly let up on the clutch pedal until the driveshaft no longer turns. This static clutch engagement point should be at or just below the clutch pedal travel mid-point. If not, the vacuum bleed procedure should be repeated until all of the air is purged from the clutch hydraulic system. Test drive the vehicle.

Jeep Flywheel Installation Tips

1) The crankshaft to flywheel bolt pattern is not symmetrical. The flywheel bolt holes will only line up in ONE position. It is helpful to measure and mark the one offset bolt hole within the crankshaft and the flywheel prior to installation.

2) Your new Centerforce flywheel is designed to fit tightly over the crankshaft register. It may be necessary to "draw-up" the flywheel to the crankshaft using the 8 enclosed flywheel bolts. Install the flywheel in the proper position and then tighten the bolts, using hand tools, 1/4 turn at a time in a crisscross pattern until the flywheel is fully seated on the crankshaft flange. NOTE: A small amount of Threadlocking compound is recommended on the enclosed flywheel bolts. DO NOT use a washer with this flywheel bolt.

3) Once the flywheel is fully drawn-up to the crankshaft flange, torque all 8 eight bolts in 3 steps.

First to 25 ft/lbs, then to 50 ft/lbs

FINAL TORQUE to 70-72 ft/lbs

Note: M10 x 1.00 Threads
