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MD-910-0605 Ford Truck 57-60 Hydraulic Clutch Master Cylinder Installation Instructions



Read These Instructions Completely Before Beginning

These instructions are for hydraulic master cylinder installations using an external slave cylinder or an internal hydraulic throw-out bearing. If your vehicle has been modified from a stock configuration, certain steps may not apply. Existing alterations to your vehicle are your responsibility.

1.0 Tools and Notes

- 1.1 Drill motor, 7/16" drill bit, 1/2", 12mm, wrenches and/or socket/ratchet, silicone sealant, a second person.
- 1.2 This Hydraulic Master Cylinder Kit does utilize the stock clutch push-rod hole location in the firewall replacing the existing hydraulic master cylinder.
- 1.3 Safety Equipment – Always wear approved ANSI approved safety goggles/glasses when working with metal and fluids. Wear proper gloves when working with hot surfaces and corrosive fluids.
- 1.4 A ground strap from the engine to the body, and body to frame, must be used.
Failure to install a ground strap from the engine to the body and frame will result in braided line failure. The braided line cannot be used as a ground strap.

2.0 Disassembly - If your vehicle is already disassembled, verify all dis-assembly steps have been performed and skip to the Assembly Instructions. If you are converting an automatic vehicle, some disassembly steps do not apply.

- 2.1 Read all instruction steps before disassembly. Position parts prior to disassembly to confirm necessary steps apply, based on tool selection and accessibility.
- 2.2 Remove brake master cylinder and brake booster as required.
- 2.3 Remove all clutch linkage, lines, clutch master cylinder, or automatic linkage from engine, transmission, frame and clutch pedal. The clutch pedal will be removed for modification and re-installed. **DO NOT remove the clutch pedal at this time.**
- 2.4 Warning: If equipped, clutch pedal spring is under pressure. Use caution when removing spring. Remove the clutch pedal spring and all associated hardware. Do not remove the clutch pedal up-stop. The spring and spring attaching hardware will not be reinstalled. **If you have a spring installed and do not remove it the clutch pedal may stick to the floor when pressed.**

3.0 Assembly

- 3.1 Note: our mock-up vehicle has certain items removed for clarity. Leave room for carpet and pad if not installed. Pedal should be free to move all the way up from pedal stop, down to toe-board. From the existing hole in the clutch pedal it should move horizontally 1.4". **If you are unable to get 1.4" of travel as instructed, contact Modern Driveline with dimension.** Remove the clutch pedal and open up the existing 3/8" hole using a 7/16" drill bit. De-burr hole, insert the red spacer, and re-install clutch pedal.



Shown is the Original Equipment clutch master cylinder bolted to the firewall and the original rod and adjusting bolt. These components will be removed and not re-used. The clutch pedal up-stop and clutch pedal will be maintained.

- 3.2 Clean surfaces of firewall and clutch master cylinder block. Apply a thin layer of silicone sealant around edges of firewall and clutch master cylinder block. Install clutch master cylinder block using (4) existing fasteners. Tighten (4) existing fasteners 15-18 ft/lbs (wrist tight).
- 3.3 Attach the new clutch master cylinder to the block using (2) supplied nylok nuts and silicone sealant. Tighten (2) fasteners 12-15 ft/lbs (wrist tight).
- 3.4 Re-install brake master cylinder, booster, brake lines and distribution block as required following manufacturers recommended procedures and torque specifications.
- 3.5 Reset your insulation and carpeting, trimming to clear the new clutch master cylinder location as required.

- 3.6 Install the rod-end onto the clutch master cylinder rod and install the bolt thru the hole. Use (1) washer on each side of the red spacer that was inserted into the clutch pedal. Additional 5/16" washers are provided for front/back alignment.
- 3.7 Adjust clutch pedal placement against the up-stop by threading/un-threading the clutch master cylinder rod into the rod-end. **Do not preload the clutch master cylinder rod. If you preload the actuation system it will not bleed properly.**
- 3.8 Tighten the rod-end to the clutch pedal using a 1/2" wrench 12-15 ft/lbs. (wrist tight).
- 3.9 Tighten the 12mm gold nut on the clutch master cylinder rod 12-15 ft/lbs. (wrist tight).
- 3.10 Verify actuation **BY HAND** – the clutch pedal should bottom out on the carpeting at the same time the master cylinder bottoms out. If you have no carpeting or insulation under the clutch pedal, a stop block is recommended so the master cylinder will not be damaged. If the pedal bottoms out on the carpeting without bottoming out the master cylinder no further adjustments are necessary until the hydraulic system is activated with the clutch. Verify no binding of rod-end. Verify parallel alignment of all the components. Actuation should be smooth. Verify the master cylinder rod travels the full stroke of 1.35" to 1.4" for proper clutch release. The clutch master cylinder rod will have a natural up/down arc motion. If you hear scraping when actuating the pedal inspect the clutch master cylinder rod for contact. Invert the rubber boot to inspect.
- 3.11 Do not over tighten fittings – this will cause damage to the seat of the hose end and fittings. Attach the steel braided line to the 90-degree elbow on the master cylinder and slave cylinder or hydraulic throw out bearing making sure line has clearance to exhaust system and will not interfere with any moving parts. Once the steel braided line is positioned for routing and clearance, tighten jam nut on the 90-degree fitting in the master cylinder 12-15 ft/lbs (wrist tight). Note: There is an o-ring under the jamb nut. **Do not adjust 90-degree elbow more than 1/2 turn in either direction.**
- 3.12 Tighten all braided line ends to their respective fittings. Support must be provided for all fitting connections, Failure to do so may result in damage to components. Torque to 20-25 ft/lbs.



4.0 The Bleed Procedure

- 4.1 In the master cylinder kit is a Bleeder Kit. Follow the *bleeder kit* instructions. If you have lost the bleeder kit instructions, they can be found on our web site modern driveline.com.

5.0 Driveway Test and Test Drive

- 5.1 Position rear wheels on jack stands (free to rotate). With transmission in neutral, start vehicle. Push in clutch pedal and apply brake pressure. Transmission should go into 1st gear easily. Slowly release clutch pedal. Pedal should start to engage the clutch at a comfortable level of the pedal travel (about 1.0"-1.5" from floor). **It is okay if the clutch pedal releases close to the floor while on jack stands. It will release higher when the vehicle is on the ground.** A new or rebuilt transmission should have all the gears run thru (in the driveway, partially releasing clutch) before road testing the new hydraulic clutch.
- 5.2 Remove jack stands and test drive. Upon return, verify steel braided line clearance and support. The hydraulic lines must be kept away from the exhaust and rotating clutch assembly.
- 5.3 If the clutch feels spongy or releases too close to the floor, repeat the bleed procedure. FYI – micro bubbles may be present in the system due to actuation, accumulation on rubber parts, and machining marks within the system.
- 5.4 Further assistance and tech support is available by calling Modern Driveline at 208-453-9800 M-F 8-5 Mountain time or E-mail Tech@modern driveline.com
- 5.5 Enjoy your new hydraulic system and Thank You for “Making it Modern” We appreciate your business.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	991-0012	Hyd. Type 2 Master sub-Kit, Integral, LF Series	1
2	992-0006	Block Assy-57-50 Ford Truck	1
3	M8F-5	Rod End 5/16-24 Female, Steel	1
4	48218	Bolt, hex, 5/16-24 x 1.25	1
5	312	Lock Nut-5/16-24 nylock	3
6	88436	5/16" flat washer	3
7	M/DL Bleeder Kit	M/DL Bleeder Kit	1
8	R81-0507-04	Bushing, 5/16 ID, 7/16 OD, 1/4 Long	1

