



# MD-910-0082 Ford Galaxie 65-66 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, drill bit set, Sharpie marker, SAE wrenches and/or socket/ratchet, silicone sealant, a second person.
- 1.2 This Hydraulic Master Cylinder Kit uses the stock clutch push-rod hole location in the firewall.
- 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 or automatic linkage from engine, transmission, frame, and clutch pedal. **DO NOT remove the clutch pedal.**
- 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.**
- 2.5 Remove any/all insulation where the firewall bracket will be installed. If equipped, remove the doubler plate (orange arrow).



- 2.6 Remove the steering column support from the engine compartment side and trim as shown. This will be re-installed later.



### 3.0 Assembly

- 3.1 Note: our mock-up vehicle has certain items removed for clarity. Certain pictures will use mock-up parts. With everything disconnected from the clutch pedal, the pedal should be free to move all the way up from pedal stop, down to toe-board. Below, from the engine compartment side, the left picture shows the original hole on the outboard side of the elongated opening. Open this hole to  $2\frac{1}{64}$ " (5/16").



Master cylinder slotted hole.

- 3.2 Position the master cylinder block to sit flat on the firewall. Position a fastener thru hole #1. Make the bottom of the master cylinder block level. DO NOT drill hole #2; Hole #2 only supports the master cylinder and will not be drilled thru the firewall. Mark two remaining holes with a sharpie. Remove the master cylinder block and drill (2) 21/64" holes in the firewall. Deburr all holes.
- 3.3 Apply fay surface silicone to master cylinder block. **Lock washers are used on the bottom two fasteners only.** Install and snug block with master cylinder to firewall using supplied fasteners. The wedge spacers are for the upper two holes only and are installed under the head of the fasteners, under the dash. The summary photo on the last page shows how to position them. The master cylinder has a slotted hole on the upper-outboard side. Rotate for best fit and alignment to clutch pedal. **If the master cylinder block is not positioned correctly it will affect clutch master cylinder alignment.** Tighten all fasteners on the clutch master cylinder and block to 12-15 ft/lbs. (wrist tight). Apply additional fillet seal as needed for a complete environmental seal.

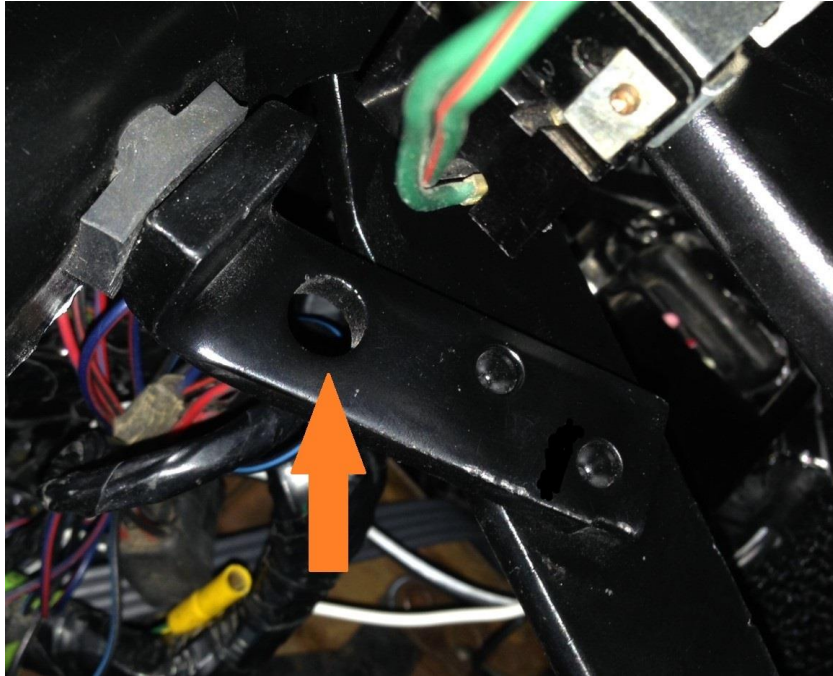


**Master cylinder block**



**Mock-up parts shown.**

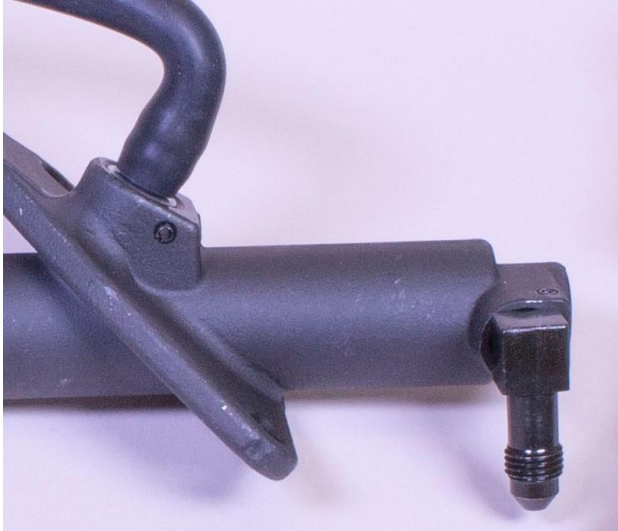
- 3.4 Install the RED spacer in the clutch pedal hole as shown by the ORANGE arrow below. Assemble jamb-nut, BLUE arrow location, and rod-end onto master cylinder rod. Holding the pedal in the UP position with the pedal against the up-stop... adjust the rod-end to align with hole in the clutch pedal. Use one washer on each side of the clutch pedal and install fastener and nylok nut. Fine-tune adjust master cylinder rod so clutch pedal barely contacts the pedal stop and tighten jamb nut 12-15 ft/lbs. (wrist tight). **Do not preload the clutch master cylinder rod.**



**Temporary hardware shown.**

- 3.5 Re-install the trimmed steering column support using existing fasteners.
- 3.6 Re-install brake master cylinder, booster, brake lines and distribution block as required following manufacturers recommended procedures and torque specifications.
- 3.7 Reset your insulation and carpeting, trimming to clear the new clutch master cylinder location as required.
- 3.8 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, and clutch pedal. 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.
- 3.9 Locate and mount the reservoir anywhere above the master cylinder. You may shorten the reservoir hose as required. Mark the hole locations with a Sharpie. Using 1/4" sheet metal screws, pre-drill holes using a #7 drill bit prior to attaching reservoir. Install reservoir using 3/8" wrench or socket/ratchet. Do not over-tighten. Make sure reservoir line does not interfere with any moving parts.

- 3.10 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.
- 3.11 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](http://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 1<sup>st</sup> 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](mailto: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	MD-900-0427	Master Cylinder, GM .75 bore	1
2	950-3008	Block, Master Cylinder, Galaxie 65-66	1
3	MSF-5	Rod End 5/16-24 Female, Steel	1
4	65216	BOLT, 5/16-24 X 3/4 LONG	2
5	65218	Bolt, hex, 5/16-24 x 1.25	2
6	88436	5/16" flat washer	3
7	312	Lock Nut-5/16-24 nylock	3
8	SU-4-5	Ladder adapter, 1/4-28 female, 5/16-24 male, 2.125" long	1
9	65217	Bolt, Hex, 5/16-24 x 1"	1
10	6ga10	Square beveled washer, M8	2
11	RSI-0507-04	Bushing, 5/16 ID, 7/16 OD, 1/4 Long	1

