



**319-911 Hydraulic Clutch Conversion Kit  
Installation Guide**



**1970-1981 Chevrolet Camaro/Pontiac Firebird**

Thank you for purchasing your Holley Hydraulic Clutch Conversion Kit! Your system is composed of the highest quality components available. It should provide many miles of trouble-free performance when used correctly. If you have any questions regarding the performance of your system, call Holley Technical Service at 1-866-464-6553 or for online help, refer to the Tech Service section of our website: [www.holley.com](http://www.holley.com).

**NOTICE:** The installation of Holley Performance Products signifies that you have read this document and have agreed to the terms stated within. It is the purchaser's responsibility to follow all installation instruction guidelines and safety procedures supplied with the product as it is received by the purchaser to determine the compatibility of the product with the vehicle or the device the purchaser intends to install the product on.

Holley Performance Products Inc. assumes no responsibility for damages occurring from accident, misuse, abuse, improper installation, improper operation, lack of reasonable care, or all previously stated reasons resulting from incompatibility with other manufacturers' products.

Holley Performance Products Inc. assumes no responsibility or liability for damages incurred by the use of products manufactured or sold by Holley Performance Products Inc. on vehicles used for competition or racing.

## **HAZARDS DEFINED**

This manual presents step-by-step instructions that describe the process of installing your hydraulic clutch conversion kit. These procedures provide a framework for the installation and operation of this kit. Within the instructions, you are advised of potential hazards, pitfalls, and problems to avoid. The following examples explain the various hazard levels:

**WARNING! Failure to comply with instructions may result in injury or death.**

**CAUTION! Failure to comply with instructions may result in damage to equipment.**

## Contents

Chapter 1 Introduction to Your Kit.....	2
<b>Table 1 – Kit Parts List</b> .....	3
Chapter 2 – Kit Installation.....	5
Chapter 3 – Bleeding Procedure.....	11
Chapter 4 – Testing Procedure.....	11

## Chapter 1 Introduction to Your Kit

### 1.1 General Information

These instructions will cover the installation and use of your hydraulic clutch conversion kit 319-911. This system was designed to work with vehicles that utilize an external slave cylinder or a hydraulic throw out bearing. If your vehicle has been modified from its OEM configuration, some of the following steps may not apply.

**NOTE:** Although this system is designed to utilize the OEM firewall passage, cutting of the firewall will be required for proper installation.

**CAUTION: Alignment of the clutch master cylinder mount, master cylinder, and clutch pedal is critical to the proper operation and longevity of this system. Failure to properly align will result in poor pedal feel, possible disengagement issues, and premature system failures.**

### 1.2 Kit Requirements

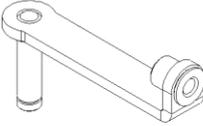
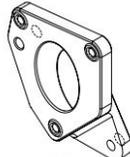
- **Manual car brake pedal & pedal pad if vehicle was originally an automatic.**
- Drill, Drill Bits, Drum Sander or Grinder Tip, Marker, Wrenches or sockets/ratchet, RTV, blue thread locker, & a second person.
- DOT 3 or 4 brake fluid

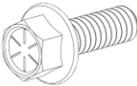
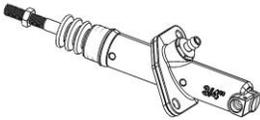
- Safety Equipment – Always wear approved ANSI safety goggles/glasses when working with metals and/or fluids. Also wear effective gloves when working with hot surfaces, corrosive fluids, and sharp objects.

### 1.3 Kit Components

Before beginning the installation of your kit, compare the components in your kit with those listed in Table 1. If any components are missing, please contact Technical Support at 1-866-464-6553.

**Table 1 – Kit Parts List**

Image	QTY	Description
	1	CLUTCH PEDAL ASSEMBLY
	1	CLUTCH ROD ASSEMBLY
	1	CLUTCH MASTER CYLINDER MOUNT
	1	CLUTCH MASTER CYLINDER REINFORCEMENT PLATE
	1	CLUTCH MASTER CYLINDER RESERVOIR BRACKET
	1	CLUTCH PEDAL PIVOT BUSHING

	4	5/8" DRY RUNNING FLANGED SLEEVE BEARING
	2	PTFE DRY-RUNNING SLEEVE BEARING
	1	M10 NYLON PLASTIC WASHER
	1	10MM CLIP-ON EXTERNAL RETAINING RING
	1	3/8 WAVE WASHER
	2	5/16-18 X 3/4" FLANGED HEX HEAD SCREW 8.8 GRADE
	3	1/4-20 X 3/4" FLANGED HEX HEAD SCREW 8.8 GRADE
	1	5/16-18 THIN HEX NUT
	1	7/16-14 X 4.5" LONG GRADE 8 HEX HEAD BOLT
	1	7/16-14 STEEL NYLON-INSERT FLANGE LOCK NUT
	1	7/16 FLAT WASHER
	1	CLUTCH MASTER CYLINDER
	1	CLUTCH PEDAL PAD
	1	CLUTCH MASTER CYLINDER RESERVOIR KIT

## Chapter 2 – Kit Installation

1. To begin the installation of your hydraulic clutch conversion kit, disconnect the negative side terminal of the battery.
2. Moving under the dash, disconnect the brake booster/brake master cylinder linkage at the brake pedal.
3. In the engine bay, disconnect the brake lines at the brake master cylinder. If your vehicle is equipped with a brake proportioning valve, disconnect the brake lines from that instead.

**NOTE:** Brake fluid will leak from the brake lines. Brake fluid is corrosive, so protect surfaces from direct contact. If brake fluid does leak on other parts, or painted areas simply wash it off with water.

4. Remove the master cylinder/brake booster (if equipped) by unscrewing the (x4) bolts holding it to the firewall and set aside.
5. Remove all factory manual clutch linkage (if equipped).
6. Disconnect any switches (neutral safety switch, brake light switch, etc.).
7. Remove the factory pedal box. There are (x6) fasteners in total which hold the pedal box to the vehicle. The (x4) nuts were already removed for the master/booster. The others (x2) are under the dashboard.
8. Once the pedal box is loose, wiggle it out from under the dash taking attention not to damage the body or any wiring and set the box aside for now.
9. Remove the carpet guard and set aside.
10. Pull the carpet back or any padding that may be present to gain access to the bare firewall.
11. There will be a cover over a hole in the firewall if the vehicle is an automatic and a boot where the factory clutch linkage passed through if the vehicle is a manual. This passage will be used for the new mount. Two small holes are present on either side of this large hole (shown below). Using the firewall reinforcement plate, position it over the hole aligning the two smaller holes with the holes in the plate. Using the preexisting screws, secure it to the firewall.

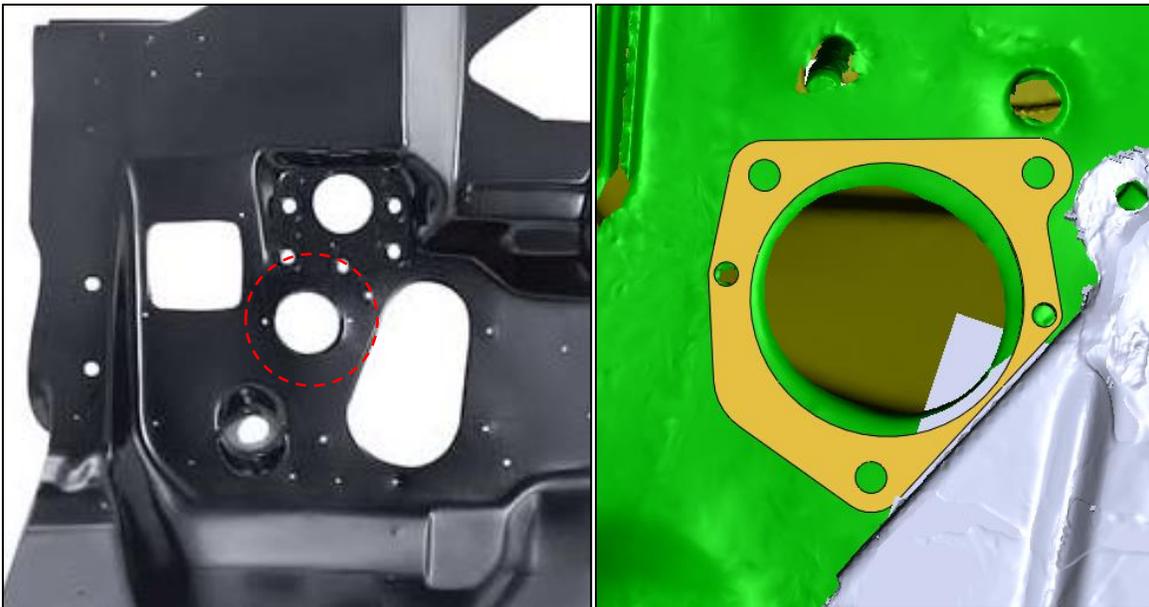


Figure 1: Firewall Mounting Hole

12. Using a 17/64 drill bit, drill three holes through the firewall, using the firewall reinforcement plate as a guide and deburr the holes.
13. Next, assemble the clutch master cylinder onto the mount and torque the two 5/16-18 bolts to 15 ft./lbs.
14. Clean all mating surfaces where the master cylinder will mount to the firewall. Apply RTV to outside of the firewall where the master cylinder mount will bolt to.
15. Guide the assembled clutch master cylinder/mount assembly through the passage in the firewall from the engine bay side. From the inside of the vehicle align the mounting holes to one another and secure using the three 1/4-20 bolts. Do not fully tighten the bolts to allow for later adjustment.

16. Next, disassemble the pedal box by removing the 7/16-14 bolt and nut. Slide out the bolt and remove the brake pedal. Replace the 5/8 plastic bushings on the brake pedal (if needed) and set the brake pedal aside.
17. Assemble the clutch pedal as shown below. **NOTE:** The bearings are to be installed on both sides of the pedal.

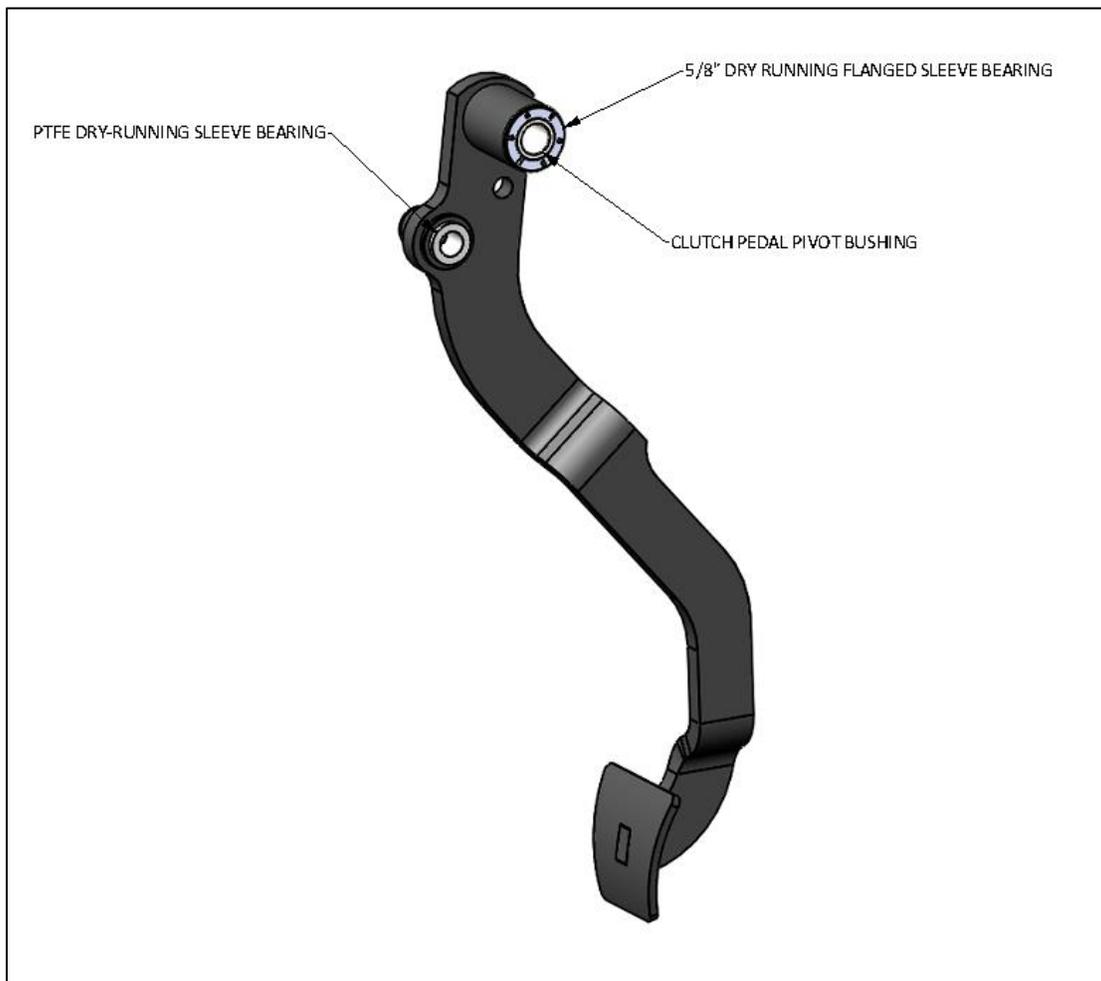


Figure 2: Clutch Pedal Assembly

18. Using the supplied 7/16-14 bolt, nylon locking nut, and washer install the clutch pedal assembly as shown in Figure 3 onto the pedal box and torque to 20 ft./lbs.

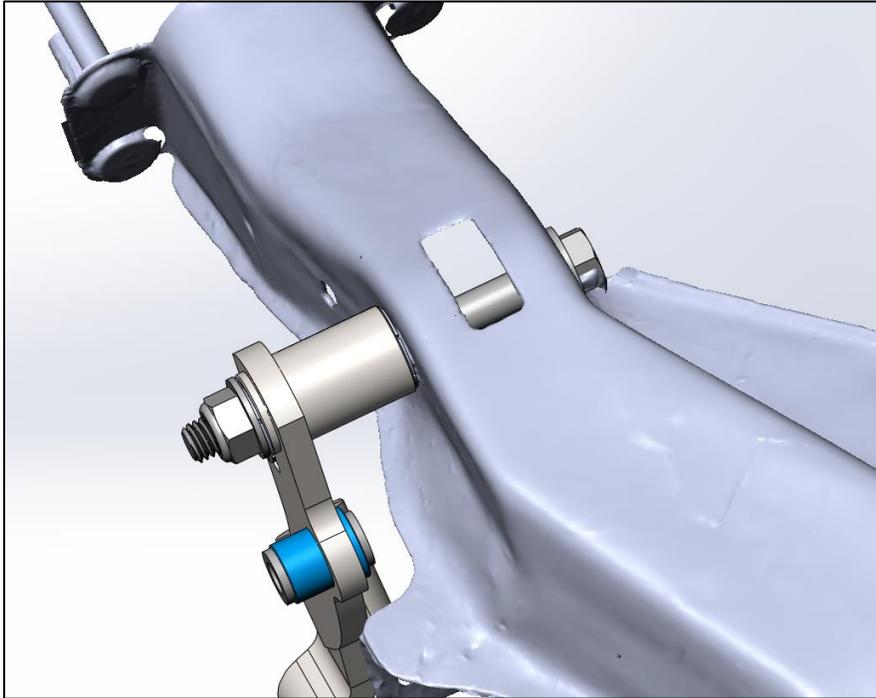


Figure 3: Installed Clutch Pedal

19. Install the 5/16 thin hex nut and clutch pedal linkage onto the clutch master cylinder as shown in Figure 4.

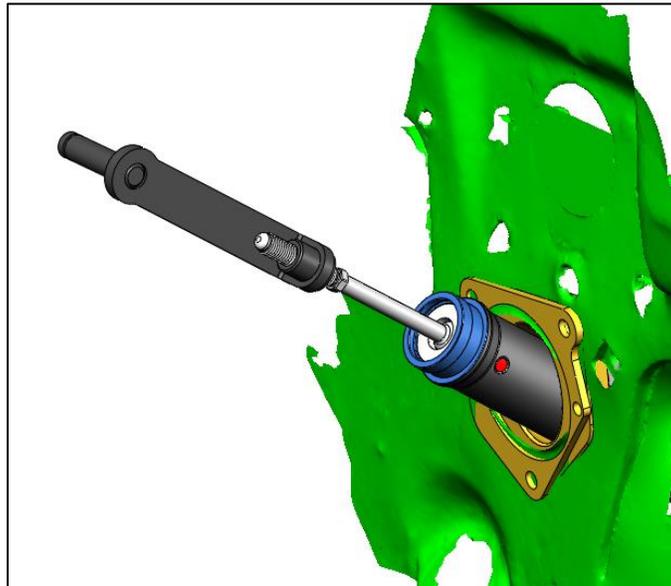


Figure 4: Clutch Rod Linkage Assembly

20. Install the assembled pedal box back into the vehicle and torque all bolts and nuts to their appropriate specifications.

21. Adjust the linkage to align with the hole in the clutch pedal. Install the wave washer, then M10 nylon washer and clip as shown in Figure 5.

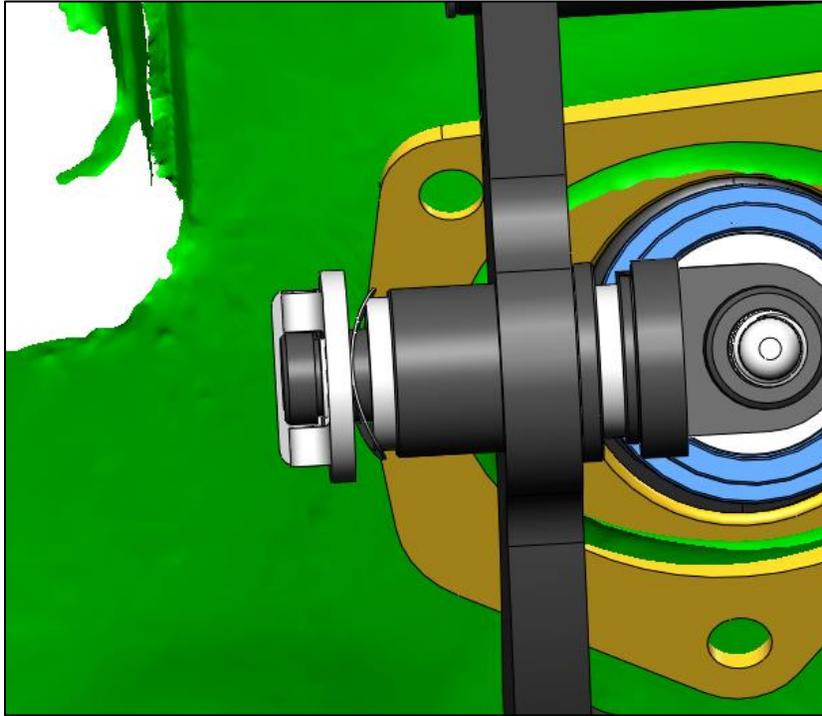


Figure 5: Clutch Rod Linkage Bushings

22. Reinstall the brake booster/master cylinder assembly and all brake lines.
23. The clutch master cylinder reservoir will mount to the back of the booster mount as shown in Figure 6.

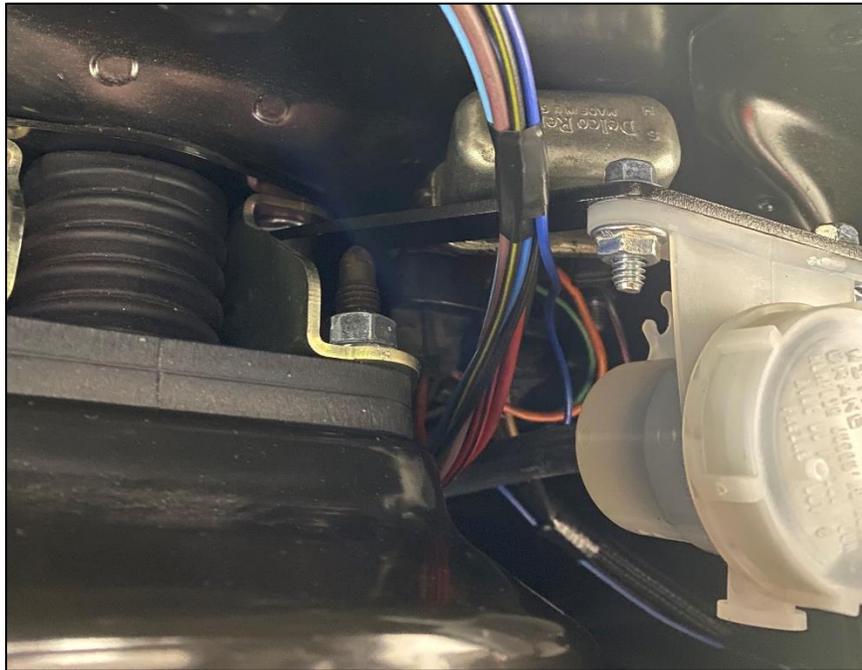


Figure 6: Clutch Master Cylinder Reservoir Mount Location

24. Reconnect the brake master cylinder/booster assembly linkage to the brake pedal.
25. Adjust the clutch pedal height to match the brake pedal by rotating the clutch push rod clockwise to raise the pedal or counterclockwise to lower the pedal. **NOTE:** Using a 5/16" wrench will greatly aid in this process. Once satisfied with the pedal position, tighten the 5/16 thin hex nut.

26. Looking at the clutch master cylinder and linkage position, adjust the master cylinder mounting location until the linkage and the clutch master cylinder are in-line with one another as shown in Figure 8. Torque the 1/4-20 bolts to 15 ft./lbs.

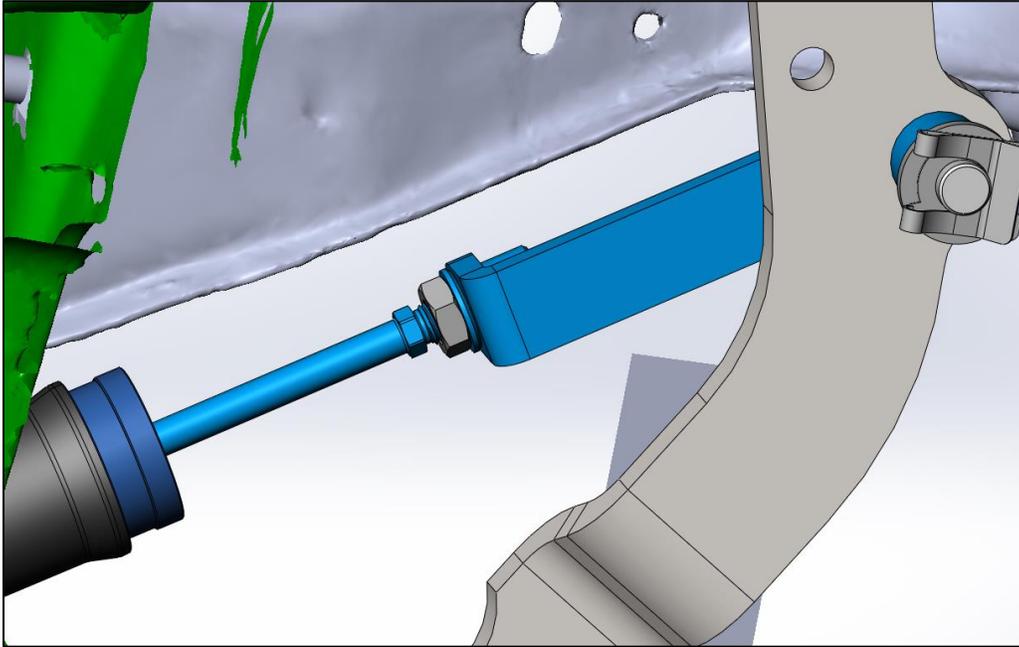


Figure 7: Clutch Pedal Linkage Adjustment

27. Cycle the pedal by hand to ensure no binding is occurring. If binding does occur readjust the master cylinder mount until no binding is present.

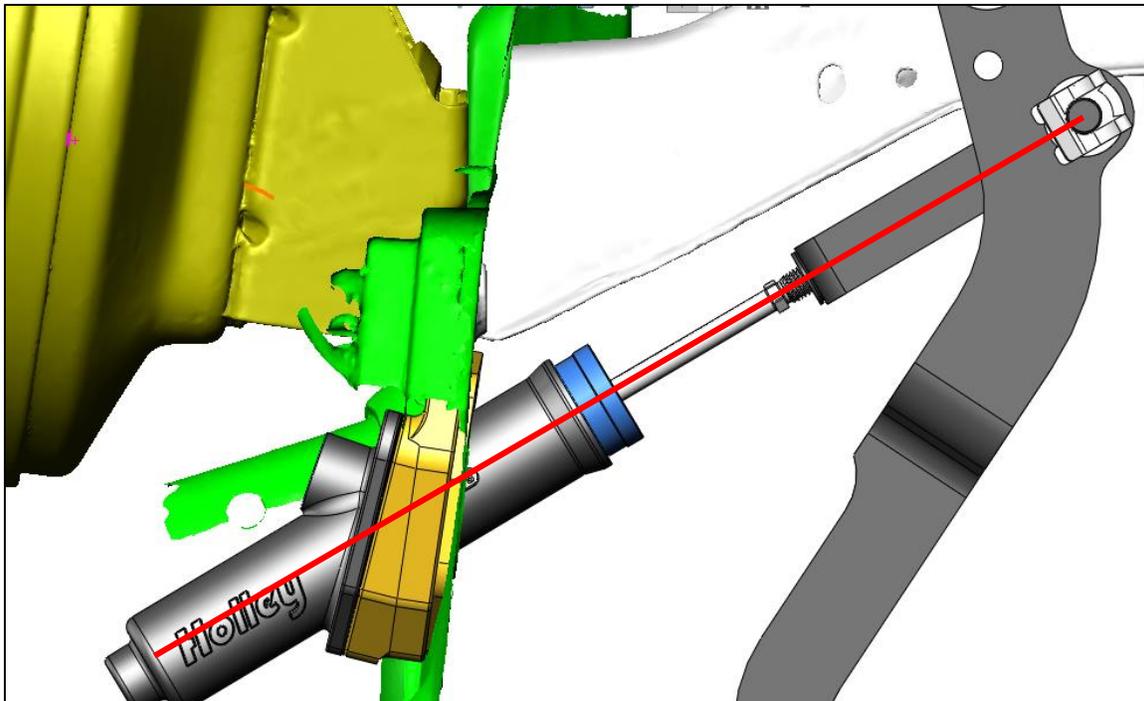


Figure 8: Clutch Linkage Positioning

28. Check that all hardware is properly torqued. Place the carpet back in place and reinstall the carpet guard.
29. Reinstall all previously disconnected switches and the negative battery terminal.

30. Next, plumb your hydraulic system using the appropriate hoses, adapters, and hardware for your application. Holley recommends using a pressure switch teed into your hydraulic system to enable the neutral safety switch.

Appropriate switches can be found in the following link:

[https://www.holley.com/products/plumbing\\_an\\_fittings\\_and\\_hose/adapters/brake\\_system\\_adapters/brake\\_light\\_switch/](https://www.holley.com/products/plumbing_an_fittings_and_hose/adapters/brake_system_adapters/brake_light_switch/) Figure 9 shows how this should be plumbed.



Figure 9: Neutral Safety Switch

## Chapter 3 – Bleeding Procedure

Follow the following steps to properly bleed your hydraulic clutch system. Note: this information is based off of a Tremec T56 transmission/slave cylinder combination.

**NOTE:** DO NOT use fluid which has been bled from a hydraulic clutch system, in order to fill the clutch master cylinder reservoir; due to the possibility that the fluid may be aerated, have too much moisture content or be contaminated and may cause system or vehicle damage.

1. Ensure the reservoir is filled to the fill line with new hydraulic clutch fluid. Add fluid if required. Use GM P/N 12345347 or equivalent.
2. Press the clutch pedal all the way down to the floor.
3. Open the bleeder on the actuator cylinder to purge the air.
4. Close the bleeder and release the clutch pedal.

**IMPORTANT:** Ensure no air is drawn into the clutch system.

5. Repeat steps 2, 3, and 4 until all air is out of the clutch system.
  - Check and refill the reservoir as needed while bleeding.
  - After bleeding, pump the clutch pedal several times. If the clutch engagement is not satisfactory, repeat the bleed procedure.
6. If the previous procedures are unsuccessful, perform the following steps.
  - Pump the clutch pedal very fast for 30 seconds.
  - Stop pumping and let the air escape into the reservoir.
  - Repeat this procedure as necessary.

## Chapter 4 – Testing Procedure

Once you've successfully bled the clutch and have proper clutch pedal feel the next step is to test your clutch engagement/disengagement points for correct operation.

1. **Do this on flat ground!** Raise the rear of the vehicle so that the rear tires are off of the ground. And secure with jack stands. **CAUTION: ensure both tires are off of the ground completely, secured with jack stands, and the front wheels are chocked to keep the vehicle from moving.**
2. Depress the clutch pedal and place the vehicle into first gear. The shifter should go into gear with ease.
3. Start the vehicle.
4. Slowly release the clutch pedal and observe the wheels turning. Run through the series of gears with no added throttle each time taking note of where the clutch is releasing (should be about 1.0"-1.5" from the floor pan).
5. Place the vehicle in neutral and let go of the clutch. The wheels should not spin. If they do, you have the master cylinder preloaded and the clutch rod will require adjustment. On the other hand, if the wheels do not stop spinning when you depress the clutch pedal while in gear then there is not enough pedal travel and the clutch linkage will need to be lengthened.
6. Once clutch operation has been verified, remove the vehicle from the jack stands and take it for a drive.

**Holley Performance Products**  
**Toll Free Technical Service: 1-866-464-6553**  
**Technical Service: 1-270-781-9741**

**For online help, please refer to the Technical Information section of our website: [www.holley.com](http://www.holley.com)**

© 2023 Holley Performance Products, Inc. All rights reserved. Tous Droits Réservés.

**199R12400**  
**Date: 4-10-23**