



SILVER SPORT Transmissions



FTE Style Bearing

GM C/K SERIES TRUCK 1973-91

HYDRAULIC MOUNT INSTALLATION INSTRUCTIONS

Mechanical pedal setup (1973-84) go to page 3

Hydraulic pedal setup (1985-91) go to page 6

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SYSTEM DESCRIPTION:

These instructions cover ONLY the installation of hydraulic master cylinder assembly and mount for the GM C/K series truck for both the factory manual and factory automatic applications.

Refer to **MAG-00402 (FTE style) HYDRAULIC KIT INSTRUCTIONS FOR GM TKO, T56, MAGNUM, AND LGT700** for complete instructions on installation of the hydraulic concentric slave cylinder (CSC) and hydraulic release system operation.

KIT CONTENTS

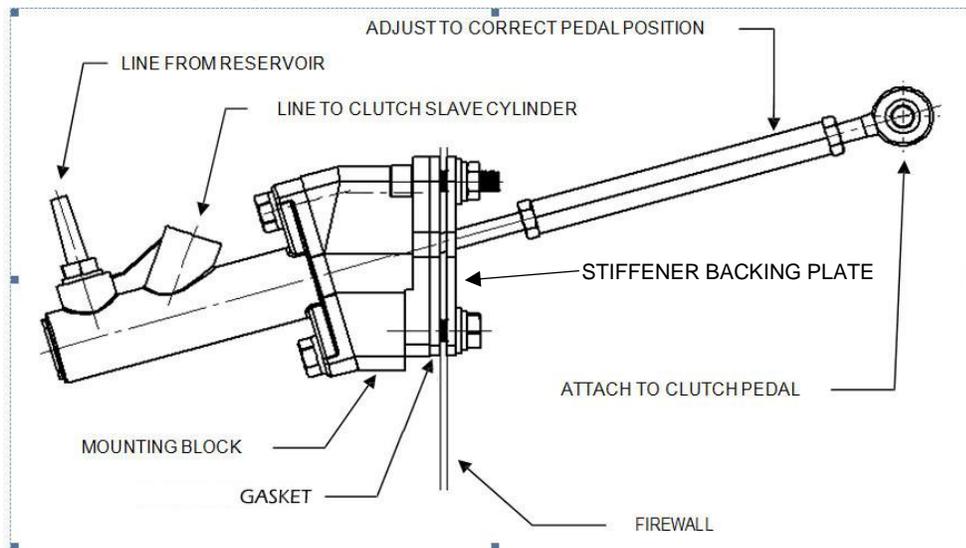
Please confirm that all parts have been received. The parts contained in your Master Cylinder kit will include:

- hydraulic mount, gasket, and hardware
- fluid reservoir, mount bracket, hose, and fittings
- rod end, attachment hardware
- master cylinder
- braided steel hose with bleeder
- bellhousing boot, 4 spd clutch linkage hole cover

If the hydraulic kit was ordered at the same time as the transmission, then your CSC will already be mounted on the front of the transmission.



Typical Master Cylinder Assembly:



DISASSEMBLY

Remove original clutch linkages, transmission and bellhousing components:

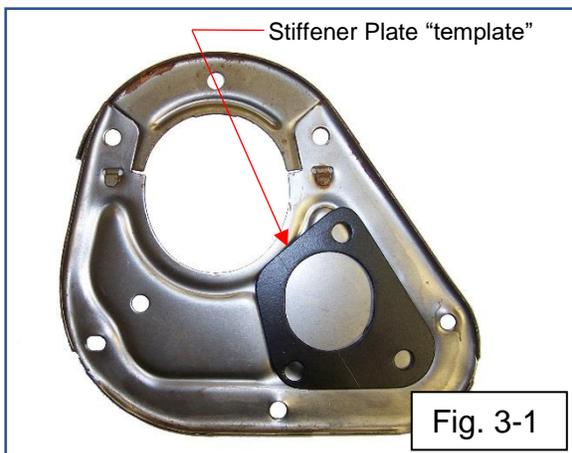
- Fork push rod, clutch pedal push rod assembly
- Z-bar retaining clip, Z-bar, ball stud and bracket assembly
- Fork boot
- Transmission and bellhousing

- Throw-out bearing, clutch fork and fork pivot
- Clutch pedal (must be modified for SST hydraulic system)

NOTE: If you are changing from a three (3) finger style pressure plate to a diaphragm style pressure plate you should also remove the clutch pedal over center spring, if so equipped. Failure to remove the over center spring could result in the spring holding the clutch pedal down during normal operation. The over center spring will also tend to hold the pedal down while performing the bleeding operation, until the system is bled enough to return the pedal. An over center spring is not recommended for use with a diaphragm-style pressure plate, and the hydraulic system is not compatible with some three-finger style clutches. We strongly recommend a diaphragm-style pressure plate.

Master Cylinder Mounting for Mechanical Pedals

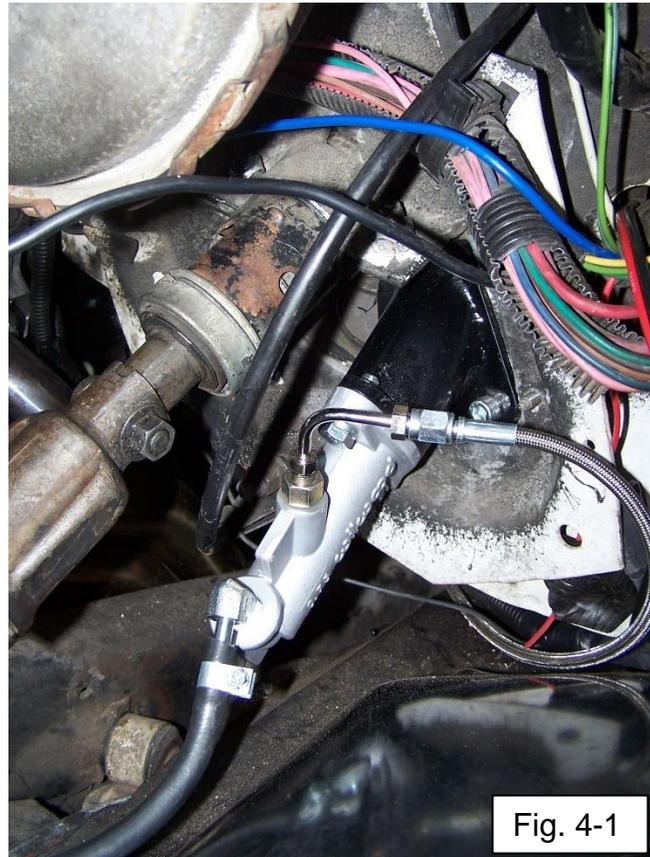
1. Remove steering column seal cover plate for easiest access to hole saw large center hole for master cylinder and drill (3) attachment bolt bores in the cover. You can also modify the cover plate without removing from firewall – but you will need to remove clutch pedal and shaft assembly for working access to firewall.
2. The master cylinder mount block mounting position will be located on the steering column cover plate using the firewall stiffener plate as a template. (See Fig. 3-1).
3. Mark the location for the (3) bolt holes and the center hole. Cut and deburr the holes. (See Fig. 3-2). Reinstall cover to firewall if removed in step 1.



4. Assemble mount block gasket to mount block, then insert the master cylinder and mount block assembly to the firewall.
5. From the engine compartment, assemble (2) 5/16"-18 bolts through the assembly, the firewall and thru the stiffener plate mounted on interior side. Install flat washers, lock washers, and nuts. Align master cylinder, then tighten nuts to 15 ft.-lbs.
6. Assemble the 90° end of the braided steel line to master cylinder port closest to firewall.

7. Assemble barb fitting to master cylinder at port located furthest from firewall.
(See Fig.4-1).

Use caution not to over tighten and break fittings.

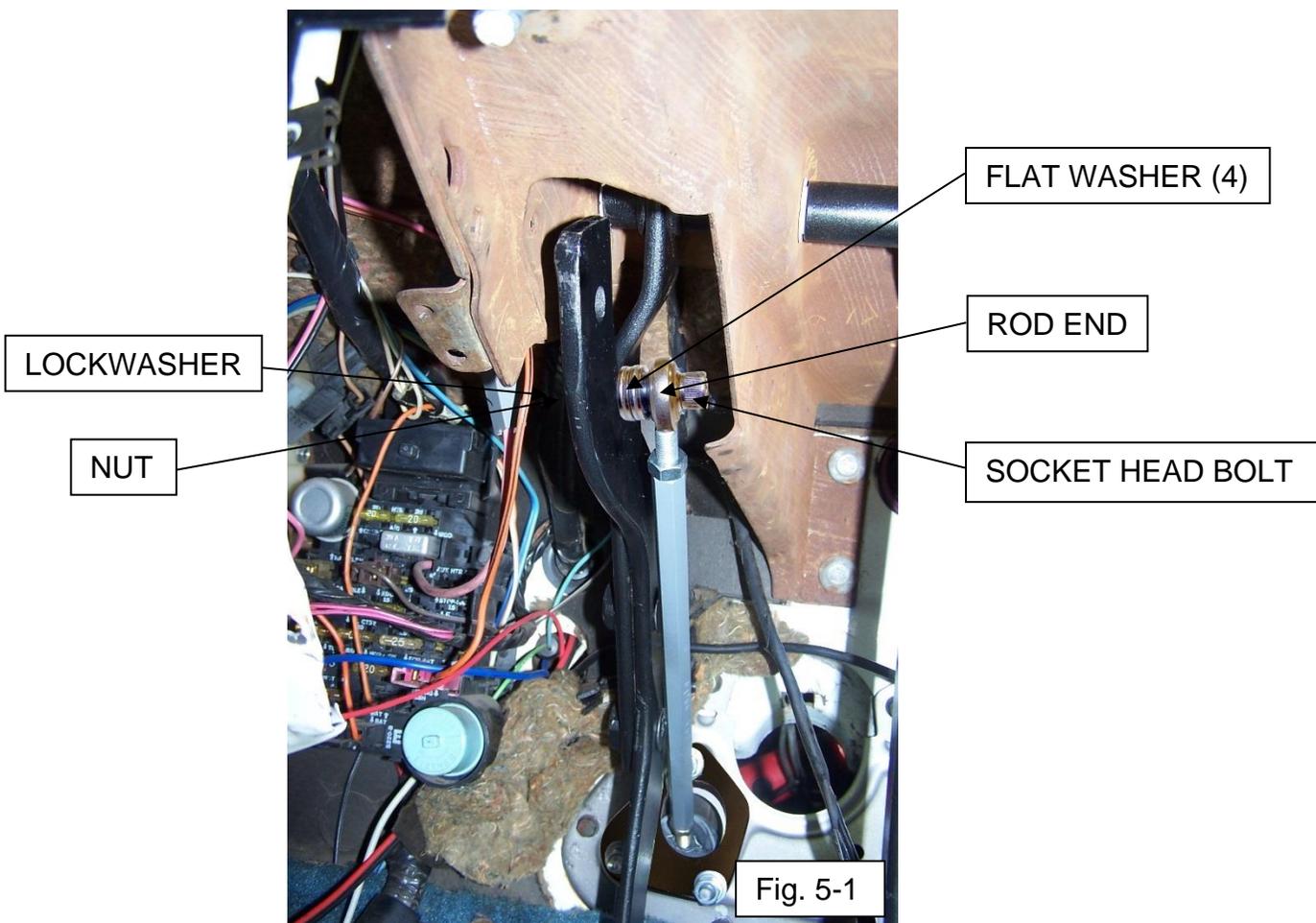


Pedal Attachment for Mechanical Pedals

1. Remove (2) flat head bolts attaching lower section of clutch pedal. Upper section of pedal pivots on pedal shaft in pedal hanger and does not require removal. Drill 0.32" dia hole thru lower section of clutch pedal arm located on 5.28" radius from center of the upper csk hole . See page 7 for pedal drawing and dimensions.
2. Assemble 5/16-18" x 1-1/2" socket head bolt provided with kit through rod end on master cylinder pushrod. Add (1) spacer, then install bolt with the spacer thru right (passenger) side of pedal arm hole on lower pedal section. Install lock washer and nut finger tight. See Fig. 5-1.
3. Rotate pedal up and push on extension rod to compress master cylinder enough to allow rod to clear underdash and allow lower section of clutch pedal to align with (2) holes in upper section. Re-install (2) flat head bolts and securely tighten.

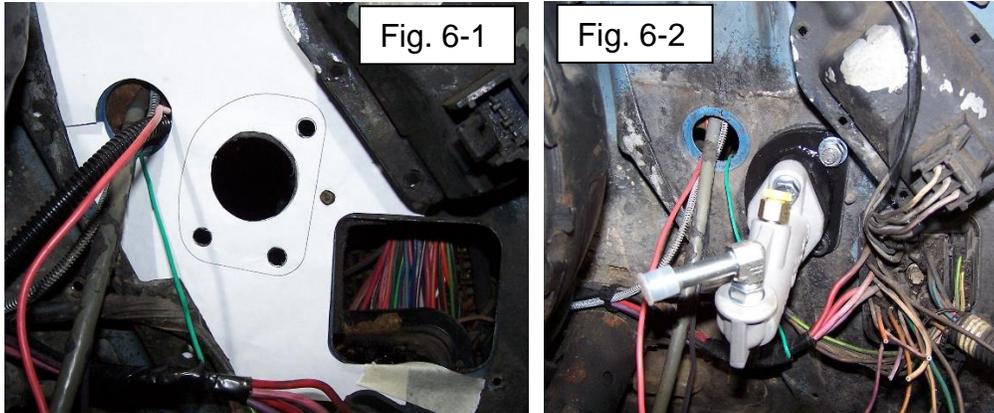
4. Adjust rod end position to achieve proper pedal height with master cylinder pushrod **EXTENDED ALL THE WAY OUT**. If the master cylinder is not fully extended when the pedal is at rest, the master cylinder can be difficult to bleed **and can overextend the CSC and cause it to fail**. Make sure the pushrod travels in and out of the master cylinder in a straight line and does not contact the firewall or mount block at any point during its travel.
5. The master cylinder will not tolerate a side load, and will wear out very quickly if the pushrod is going in at an angle. **Make sure the pushrod is straight in line with the master cylinder!** When desired pedal height is achieved, tighten locknuts on pushrod. Tighten nut on clutch pedal arm rod end bolt to 6 ft.-lbs.

DO NOT depress the pedal any more than necessary before fluid is added to the system.



Master Cylinder Mounting for Hydraulic Pedals

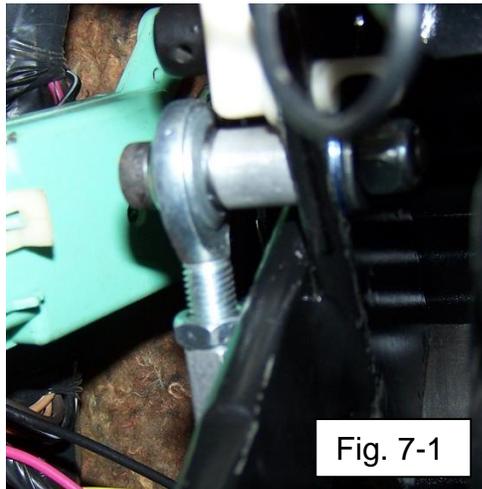
1. From under the hood, locate the wiring bulkhead under the wiper motor. Cut out the template TMG-04400 and line it up with the wiring bulkhead and the speedometer hole in the firewall.



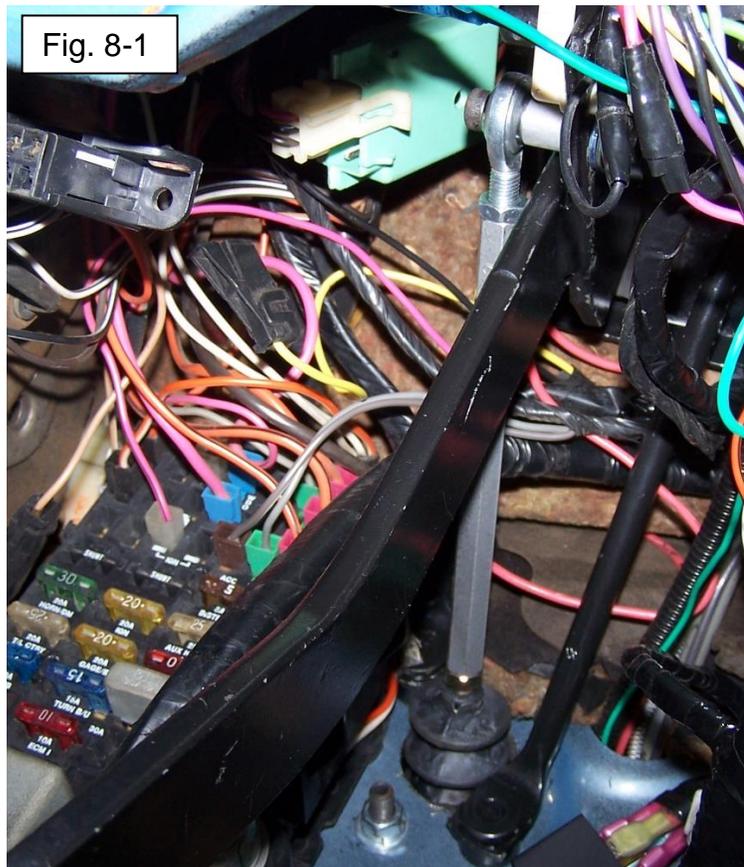
2. Using the template as a guide mark the center of each of the holes.
3. Drill a 3/8" diameter hole through the firewall for each marked location.
4. Drill a 1.5" diameter hole through the firewall in the marked location.
5. Assemble mount block gasket to mount block, then insert the master cylinder and mount block assembly to the firewall.
6. From the engine compartment, assemble (2) 5/16"-18 bolts through the assembly, the firewall and thru the stiffener plate mounted on interior side. Install flat washers, lock washers, and nuts. Align master cylinder, then tighten nuts to 15 ft.-lbs.
7. Assemble the 90° end of the braided steel line to master cylinder port closest to firewall.
8. Assemble barb fitting to master cylinder at port located furthest from firewall (See Fig.4-1).

Pedal Attachment for Hydraulic Pedals

1. Remove clutch pedal. Cut out template TMG-04401, place it on the clutch pedal, and mark the center for drilling. Drill 0.32" dia hole in the marked location. Reinstall clutch pedal.
2. Adjust rod end position to achieve proper pedal height with master cylinder pushrod **EXTENDED ALL THE WAY OUT**. If the master cylinder is not fully extended when the pedal is at rest, the master cylinder can be difficult to bleed **and can overextend the CSC and cause it to fail**. Make sure the pushrod travels in and out of the master cylinder in a straight line and does not contact the firewall, mount block, or backing plate at any point during its travel. When desired pedal height is achieved, tighten locknuts on pushrod and rod end.
3. Assemble shoulder bolt provided with kit through rod end on master cylinder pushrod. Add (1) spacer, then install bolt with the spacer thru left (driver) side of pedal arm hole. Attach with washer and lock nut. Tighten to 6 ft.-lbs.



4. Rotate pedal up and push on extension rod to compress master cylinder enough to allow rod to clear underdash and allow lower section of clutch pedal to align with (2) holes in upper section. Re-install (2) flat head bolts and securely tighten.
5. **DO NOT** depress the pedal any more than necessary before fluid is added to the system. **DOT 4 BRAKE FLUID STRONGLY RECOMMENDED.**



FLUID RESERVOIR MOUNTING

1. Remove the studs or nuts on the left hand (driver) side of the brake master cylinder.
2. Place reservoir bracket over the two holes or studs in the brake master cylinder, replace the original studs or nuts and tighten completely. Alternatively, the reservoir may be attached directly to firewall or cabin sidewall.
3. Assemble reservoir to the bracket using hardware supplied (part # CAA-PACK A).

HYDRAULIC LOW PRESSURE HOSE MOUNTING

1. Run the rubber supply hose from the bottom of the reservoir nipple to the barb fitting in the clutch master cylinder, and determine the exact length for the supply hose. The hose should be neither tight nor excessively loose, and should clear all moving steering gear and exhaust components. Take care to prevent foreign debris from entering hose.
2. Cut the line to desired length, ensure that no foreign matter is in the hose. Then, loosely assemble hose clamps.
3. Install hose to the master cylinder, then to the reservoir. When installing hose to the reservoir, hold the top of the reservoir to prevent overloading and damaging the mounting ears.

HYDRAULIC HIGH PRESSURE HOSE MOUNTING

1. After bolting the transmission/bellhousing unit to the engine, attach the remaining end of the braided steel line to the clutch master cylinder and tighten. Use caution not to over tighten and break the fitting.
2. Final tighten all transmission mounting bolts (4 pcs).
3. Inspect the supply line inside bellhousing and confirm the hoses have ample clearance to the rotating clutch plate. It is extremely important that the hydraulic clutch hose **DOES NOT** come into contact with the clutch plate, as serious damage could result.

SYSTEM SPECIFICATIONS

Master cylinder: Bore = 0.750"
Stroke = 1.400"

CSC: Stroke = 0.910" total
available travel

CONTACT INFORMATION

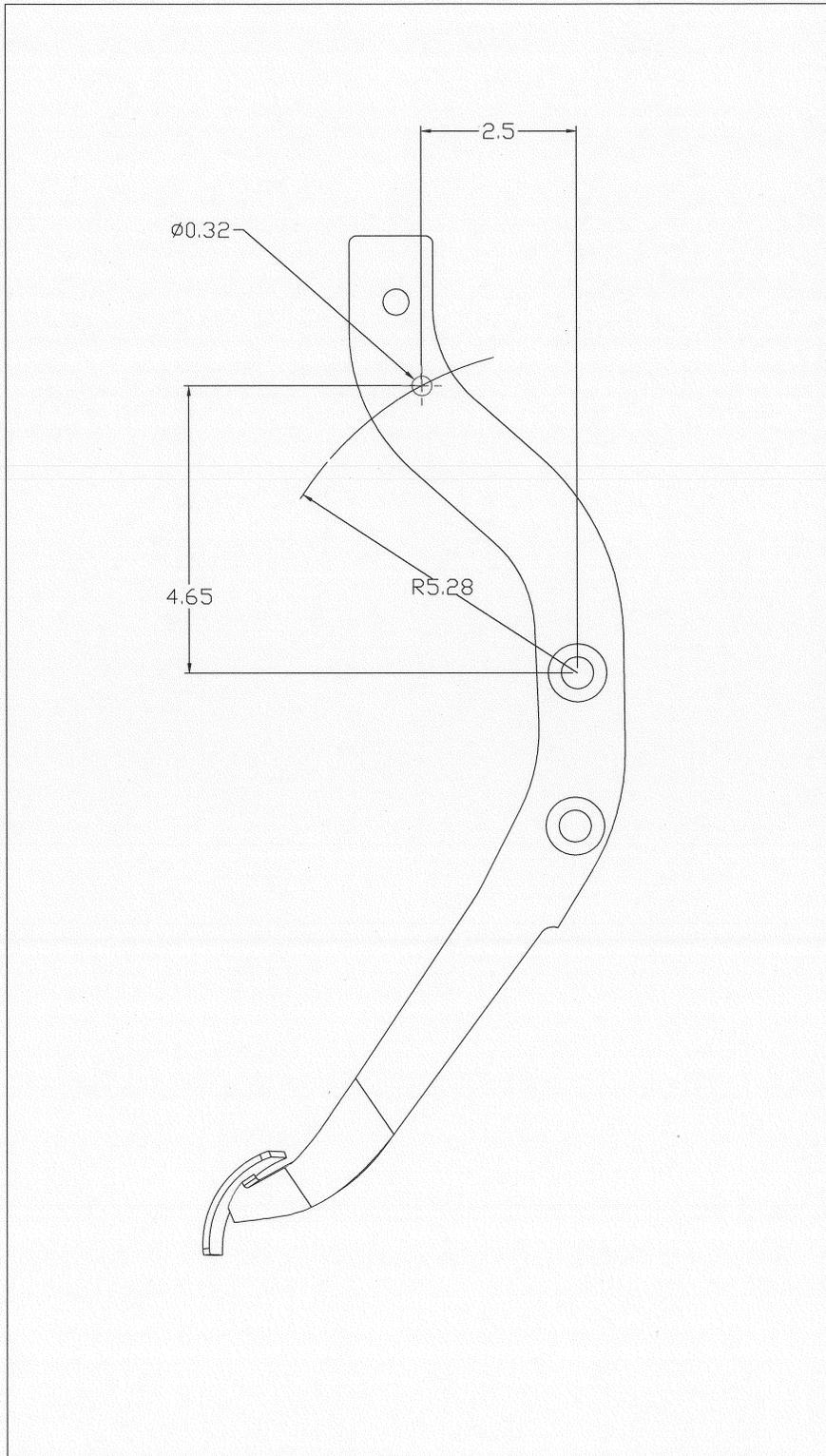
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Clutch Pedal Lower Section Drawing

Dimensions for pedal attachment 0.32" dia hole for mechanical pedal connection (1973-84).