

IB253

# Clutch Master Cylinder Pushrod and Clutch Pedal Adjustment

## Pushrod Adjustment

This application uses an adjustable length master cylinder pushrod. The correct adjustment of the pushrod length and clutch pedal travel is critical for proper clutch release and to prevent premature clutch failure.

We recommend using the specifications from your vehicles factory service manual to correctly adjust the pushrod length and clutch pedal travel. If the factory service manuals are not available, the following are general guidelines to follow.

The adjustable master cylinder pushrod is correctly adjusted when the clutch can be released (clutch pedal depressed) to select a gear and while engaged (clutch pedal up) the pushrod is not applying pressure to the hydraulic system.

LOCATE THE MASTER CYLINDER PUSHROD; REFER TO Fig. 1 & 2.

1. Loosen the lock nut on the pushrod.
2. Extend the length of the pushrod by rotating until it just makes initial firm contact at both ends, refer to Figure 1.
3. Rotate the pushrod the opposite direction one half turn. Then tighten the jam nut.

CHECK THE ADJUSTMENT AS FOLLOWS.

1. Push the clutch pedal to release the clutch, select first or reverse gear. Test for complete clutch release.
2. Check for an overextended pushrod. With the engine off, use a suitable method (they can easily be compressed by hand) to compress the slave cylinder completely. As you compress the slave cylinder you are transferring fluid from the slave cylinder to the master cylinder reservoir and compressing the spring inside the slave cylinder. If you are unable to compress the slave cylinder, shorten the length of the pushrod and recheck.

OVER ADJUSTED PUSHROD SYMPTOMS.

1. Some systems can easily be over adjusted and can force the diaphragm spring tips to make contact with the clutch disc. This will cause difficult shifting and may make a ticking noise as the pedal approaches the floorboard. Review the adjustment and slave cylinder compression check procedure. Over adjustment will also cause premature clutch failure typically from slipping and overheating the clutch system.

ADDITIONAL INSPECTION POINTS.

1. Total pedal stroke adjustment. Many clutch pedals have adjustable pedal travel limiters. It will be necessary to consult factory service manuals for correct adjustment.
2. Clutch pedal bump stops. If the bump stops are missing and replaced, we suggest adjusting the total pedal travel per factory service manual specifications.



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## Clutch Pedal Adjustment

Vehicles with adjustable clutch master cylinder pushrods may also have an adjustable clutch pedal. If the clutch pedal is incorrectly adjusted it can cause incomplete clutch release, premature clutch system failure and damage to the clutch master cylinder. These are frequently incorrectly adjusted trying to make a release system work that very likely still has an air bubble in it.

In general most systems have a stop for the pedal in the up position clutch engaged and in the down position clutch released.

The master cylinder in almost all designs is not designed to act as a clutch pedal stop, pedal up or pedal down.

If the up pedal stop is not functioning then the master cylinder piston and pushrod act as a pedal stop and this will damage the master cylinder pushrod retaining washer or clip and possibly the pushrod and clevis.

Typical observations of incorrect adjustment:

1. Pushrod has physically popped out of the master cylinder piston. The piston stop washer may be concave or convex from the damage. See Fig. 3 top.
2. Pushrod is rubbing on the piston travel stop washer. See Fig. 3 bottom.
3. Weeping or leaking of fluid from the piston at the pushrod. See Fig. 4.

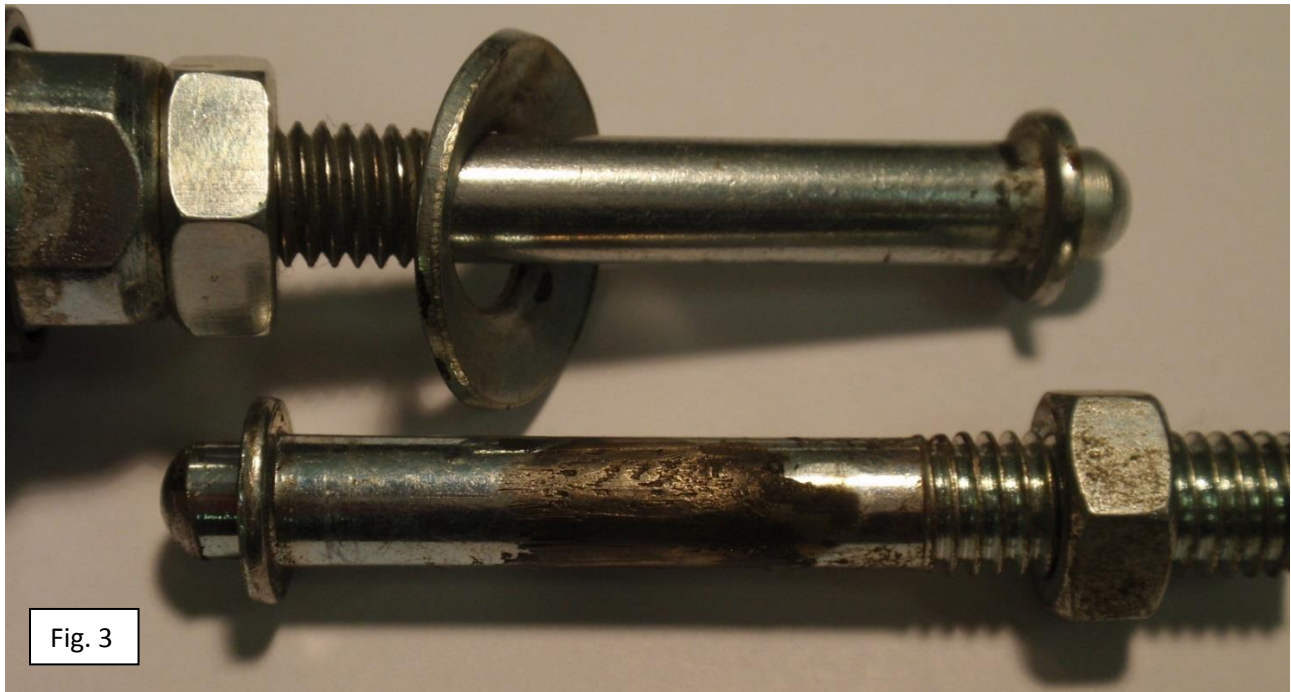
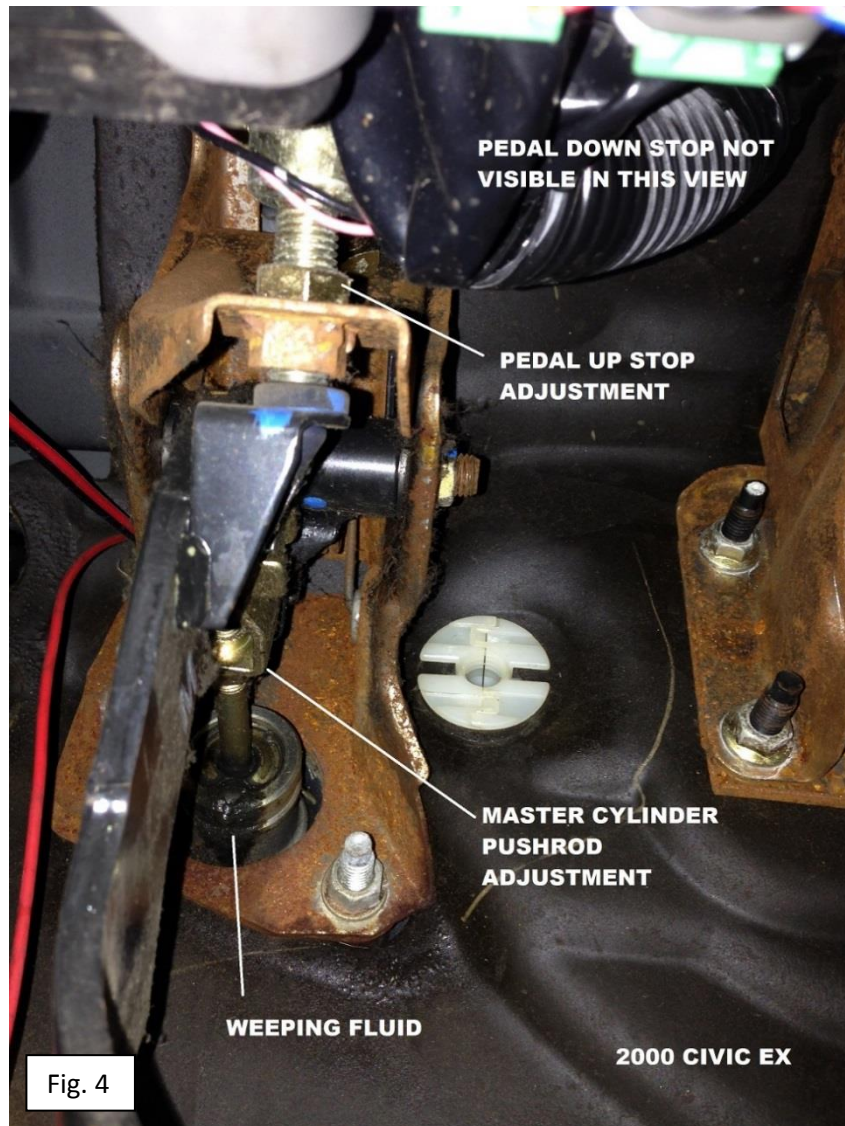


Fig. 3

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Typical clutch pedal adjustment component identification.



Correct adjustment uses measurements from specific points to restore the clutch pedal position, restoring correct clutch operation and preventing damage to the clutch and clutch master cylinder.

PLEASE REFER TO FACTORY SERVICE MANUALS FOR DETAILED APPLICATION SPECIFIC PROCEDURES.

This bulletin is to assist in the safe and effective servicing of this application. Transmissions, transaxles and transfer cases are heavy and their safe removal and replacement requires the use of proper tools, equipment and procedures to prevent injury and damage. Always read and follow instruction bulletins and factory service manuals for detailed clutch servicing procedures.

Bulletins and any additional information.

[www.clutchtechsupport.com](http://www.clutchtechsupport.com)