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SUPPORT

Subject: Heavy-Duty Solo Clutch - Low Stabilized Bearing Position with Hydraulic Release Systems

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Issue Description:

Customer vehicles equipped with clutch pedal hydraulic release systems and neutral start switches integrated with the Eaton Heavy-Duty (HD) Solo clutch may have issues with either:

- No-start Condition
- Hard-to-Start Condition

Low stabilized release bearing position can be a contributor to the above customer complaints. As the HD Solo is operated, the release bearing travel may stabilize below the minimum published service specification of 0.490". However, most vehicles will not experience complaints with less than 0.490" of release bearing travel.

Affected Models/Population:

All Heavy-Duty Solo clutches in manual transmissions are affected. Bearing travel stabilization will occur within the first 12 months in service (MIS). If the vehicle is equipped with a start switch, then low bearing travel could impair the ability to start the vehicle due to low clutch pedal stroke before contacting the clutch brake. If this failure mode has not presented itself within 12 MIS it will not occur for the remainder of clutch life. Most HD Solo clutches will not experience a complaint associated with a low stabilized bearing travel condition.

Field Strategy:



Important: Reference OEM bulletins for hydraulic release systems and hard-to-start conditions. In vehicles with hydraulic release systems, first identify that the neutral start switch is properly functioning and free pedal travel is properly adjusted.

If the hydraulic release system start switch and pedal travel is functioning properly per the OEM service strategy then diagnose the clutch.

1. Measure the release bearing travel using the defined procedure attached and equipment with preferred measurement resolution of 0.001".
2. If bearing travel is found to be **between 0.490" and 0.410"**, replace the clutch.

3. If the bearing travel is found to be **less than 0.410"**, perform a clutch reset per Service Bulletin CLIB0026, *Heavy-Duty Solo Clutch In-vehicle Resetting Procedure*. When bearing travel is below 0.410" this indicates an over adjust condition and is not associated with the low bearing travel concern. An over adjust can occur while hitting a loading dock hard with the clutch pedal depressed. During the resetting process the release bearing travel should reset greater than 0.490".
 - a. Measure the bearing travel after the reset to confirm bearing position.
 - b. If the issue was not resolved after performing the clutch reset, then replace the clutch.

For clutch replacement, the dealer/repair facility **must** call the Roadranger Help Line: 1-800-826-4357 Option: 2, 1 for Clutch technical support and warranty authorization.

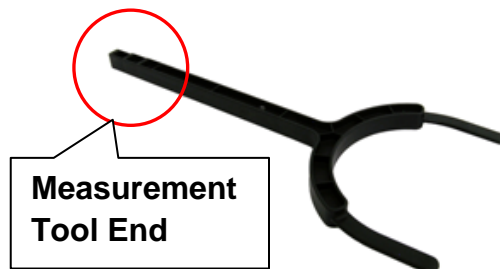
It is recommend that when removing any HD Solo clutch, to install the 4 shipping bolts—(4) 7/16" X 14 X 1-3/4" UNC. This will prevent the cam tab from moving during removal and shipping.

Procedure for Measuring Release Bearing Travel

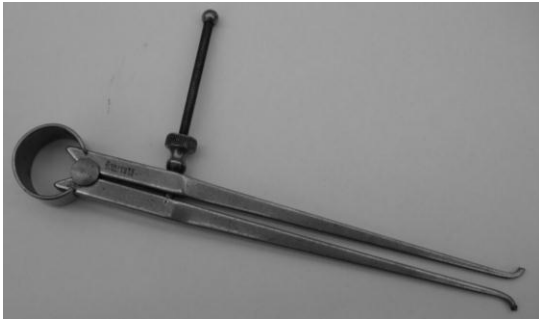
Tools required:

- Telescoping gauge
- Digital Vernier calipers
- Transfer calipers
- Optional Quick Check Tool: K-Line tool *Clutch Adjustment/Free-Pedal Measuring Tool*

Note: The K-Line tool is acceptable for a quick check to see if the HD Solo clutch release bearing travel is within the 0.490" to 0.560" specification. Measure the distance at the bottom of the release bearing, if the gauge does not fit, then the clutch bearing travel is less than 0.490 inches.



For measuring release bearing travels that are outside of the 0.490" to 0.560" specification, either a transfer caliper or telescoping gauge and digital Vernier calipers are the preferred tools to use.



Transfer Caliper



Telescoping Gauge

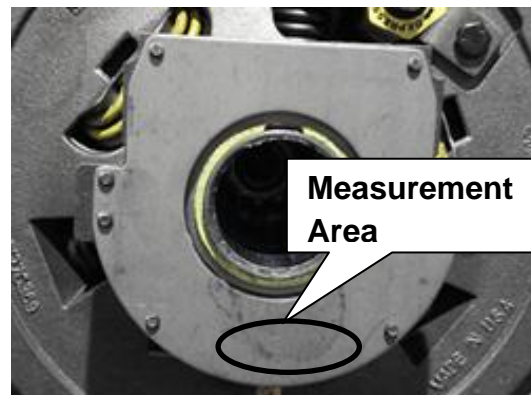
Vehicle Preparation:

1. If cab is air ride equipped, ensure that cab height is to OEM specifications. Not required for vehicles with hydraulic clutch release systems
2. Release clutch 2 times to the full extent of the clutch pedal stroke. Let up on the clutch pedal slowly to aid in keeping the release bearing housing from moving forward on the release bearing. This is also a check for any air in hydraulic release system.

Measuring Release Bearing Position:

Specification for Solo clutches: 0.490" to 0.560"

1. Recommended Approach: Use appropriate telescoping gauge or transfer caliper to measure the distance between release bearing and clutch brake.
 - **Note 1:** Measure gap at the bottom of the release bearing and verify that a light drag is felt while sliding the telescoping gauge or transfer caliper from side to side.
 - **Note 2:** Be sure the clutch brake is contacting the bearing cover on the transmission.



2. Measure the telescoping gauge or transfer caliper with the digital Vernier caliper to see what the gap is between the release bearing and the clutch brake.



Warranty Information:



Important: For clutch replacement, the dealer/repair facility **must** call the Roadranger Help Line: 1-800-826-4357 Option: 2, 1 for Clutch technical support and warranty authorization.

- Roadranger Help Line hours of operation Monday – Friday, 8am–8pm Eastern Time.
- Warranty pre-approval is required for all associated complaints.
- If clutch is replaced after hours or weekends, the dealer/repair facility must call at next available business day for authorization.
- Warranty coverage criteria:
 1. The vehicle has a hydraulic release system with a neutral start switch.
 2. Vehicle meets complaint criteria: No Start or Hard to Start Condition
 3. Bearing travel measurement is less than 0.490"
- Labor required to perform a heavy-duty Solo clutch reset procedure is covered under warranty if the initial clutch bearing travel measurements are below 0.410".
- Parts and labor is covered if the clutch needs to be replaced because the release bearing stabilized below 0.490".
- Return clutch hardware to Warranty Return Center

Warranty Parts:

- Clutch only—if clutch replacement is necessary

Warranty Labor:

- Clutch replacement per OEM SRTs
- In-vehicle reset:
 - Basic reset 0.5 hours
 - If it is required to separate the transmission and engine, 3 hours maximum can be approved.

Warranty Coverage:

Within OEM published warranty or Eaton Extended Warranty

The material contained in this bulletin is product improvement information. Eaton is not committed to, or liable for, canvassing existing products.

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