



Subject: Clutch Release System Wear/Damage – Endurant and PACCAR Transmissions

Document Number: TAIB-0889

Date: February 1, 2021

Issue Description:

Over repair/under repair of the Clutch Release System (and/or clutch) due to a lack of troubleshooting wear measurement criteria. For scenarios other than customers experiencing an illuminated transmission service lamp and Fault Code 511 (SPN 5614) or Fault Code 512 (SPN 5615) with FMI 16 which is covered in TAIB0885.

Containment/Corrective Action:

Document Clutch Release System and/or Clutch Diaphragm Spring wear troubleshooting measurement criteria and Clutch Release System damage to look for per this TAIB.

Affected Models/Population:

- Endurant Transmissions
- PACCAR Transmissions

Field Strategy:

If the transmission is removed from the vehicle and the technician notices wear to the clutch diaphragm spring fingers and/or clutch release bearing, perform the clutch system inspection detailed in the Service Strategy section.

Service Strategy:

Reference *Endurant HD Automated Transmission Service Manual TRSM0950* for all service procedures.

1. Inspect Input Shaft Pilot Bearing Wear Sleeve for excessive wear.
 - If excessive wear is found, inspect the pilot bearing for wear and/or failure.
 - If pilot bearing wear and/or failure is found, replace pilot bearing per OEM guidelines
Note: Pilot bearing replacement is non-warrantable.
 - If Input Shaft Pilot Bearing Wear Sleeve wear and/or damage is found, replace Input Shaft Pilot Bearing Wear Sleeve.
Note: Input Shaft Pilot Bearing Wear Sleeve wear and/or damage is non-warrantable
 - Go to Step 2.

- If no excessive wear is found, go to Step 2.
- 2. Inspect Release Bearing for wear and/or “divots” on wear pads from rollers. Document the wear measurements in the warranty claim notes. (Reference Image A.)
 - If wear is found, measure wear with a caliper.
 - If wear and/or “divot” measurement exceeds 0.5 mm in depth, replace the Release Bearing assembly and the Release Yoke. Go to Step 5.
 - If wear and/or “divot” measurement is less than 0.5 mm, go to Step 3.
 - If no wear is found, go to Step 3.

Image A:

Release Bearing “Divot” Example:



“Divot” Measurement with caliper.



3. Inspect Release Bearing assembly face for wear. (Reference Image B.)
 - If wear is found, measure wear with a caliper (Reference Image C). Document the wear measurements in the warranty claim notes. If the outside chamfered edge is worn off (reference Image B), then no need to measure the wear, but document “outside chamfered edge is worn off” in the warranty claim notes.
 - If wear measurement exceeds 0.75 mm or if the outside chamfered edge is worn off (reference Image B), replace the Release Bearing Assembly. Go to Step 5.
 - If wear measurement is less than 0.75 mm, go to Step 4.

- If no wear is found, go to Step 4.

Image B: Release Bearing Assembly Face Inspection




Wear present		No wear present
Chamfered edge is worn off (“circumferential” wear)	“Trapezoidal” wear	New
		

Image C: Release Bearing Face Wear Measurement:
“Circumferential” wear



4. Rotate the Release Bearing by hand.
 - If the Release Bearing is hard to turn (seized or partially seized), or has evidence of lack of lubrication, replace the Release Bearing Assembly. Go to Step 5.
 - If the Release Bear rotates freely, go to Step 5.

5. Inspect the Clutch Diaphragm Spring for wear. Document the finger thickness measurements in the warranty claim notes. (Reference Image D.)
 - If wear is found, measure wear with a micrometer.
 - If the thinnest finger thickness measurement is less than 4.0 mm, replace the clutch assembly, release bearing and pilot bearing wear sleeve (clutch kit).
 - If the thinnest finger thickness measurement is greater than 4.0 mm, go to Step 6.
 - If no wear is found, go to Step 6.

Image D: Diaphragm Spring Wear

Worn (Less than 4.0mm)

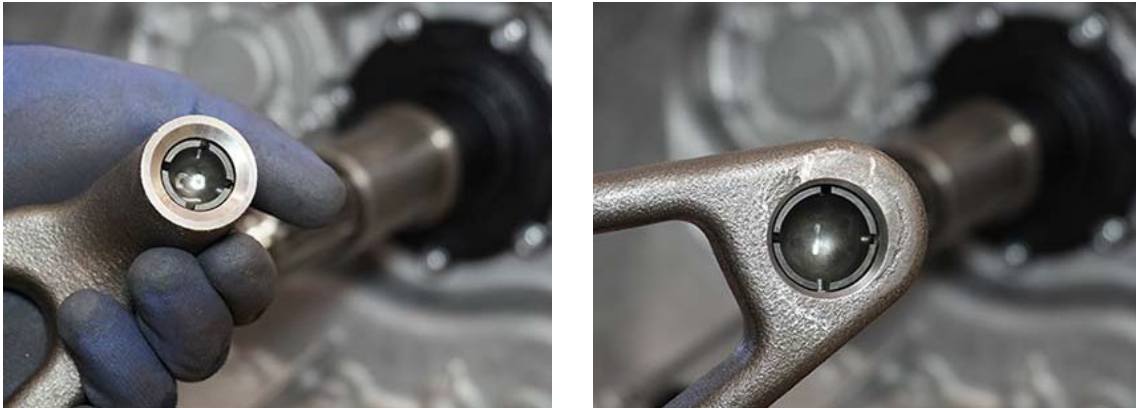


No wear (New)



6. Inspect the Release Yoke Pivot Pin, Release Yoke assembly and the plastic sockets for damage. (Reference Image E.)
 - If Release Yoke Pivot Pin and/or Release Yoke and/or plastic sockets are damaged, replace Release Yoke Assembly and Release Yoke Pivot Pin.
 - If no wear is observed, reuse Release Yoke Pivot Pin.

IMAGE E: Release Yoke and Plastic Sockets Inspection



7. If no observed Clutch Release System and/or Clutch Diaphragm Spring damage or wear is within the acceptable limits in this TAIB-0889, continue with troubleshooting as appropriate.

Warranty Information:

Warranty Parts (if warrantable):

- K-4379 / K-4379-PAC / K-4488CL Clutch Service Kit (PACCAR X15 / Paccar MX / Navistar X15 / Navistar A26)
- K-4437 / K-4494CL (Volvo X15)
- K-4496CL (DTNA)
- K-4489CL (DT 12 Aftermarket)
- K-4380 Release Yoke Assembly Kit
- 10001949 Release Yoke Pivot Pin
- 125968CL Release Bearing (Volvo X15, DTNA)
- 125969CL Release Bearing (PACCAR X15 / PACCAR MX / Navistar X15 / Navistar A26)

Warranty Labor (if warrantable):

- Diagnostics (1.0 hour)
- Software Update (0.5 hour)
- Clutch R&R – Includes transmission R&R (OEM SRTs)
- Release Yoke R&R (0.1 hour)
- Release Yoke Pivot Pin R&R (0.1 hour)
- Clutch Calibration (0.5 hour)
- Test Drive (0.5 hour)