Subject: Advantage Automated Series 430MM Clutch Cover Inspection and Fault Code 706 – Endurant HD/XD and PACCAR TX-12/TX-18

Service Bulletin: CLIB-0040

Date: April 2, 2024 **Updated:** July 31, 2024

Issue Description:
Guidelines to properly inspect 430MM clutch cover assembly when fault code 706 has been recently logged as Active or Inactive in the Transmission Control Module (TCM).

Containment/Corrective Action:
Follow the Field Inspection Strategy below.

Affected Models/Population:
All 430MM clutch cover assemblies for Endurant HD and PACCAR TX12 model transmissions.

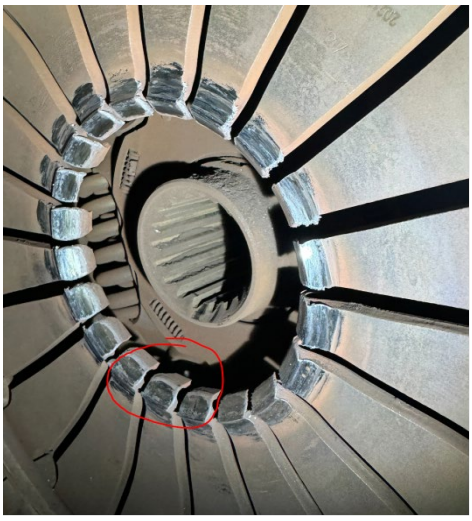
Field Strategy:
The following cover assembly inspection process should be used when fault code (FC) 706 has recently been logged as Active or Inactive in the Transmission Control Module (TCM).

1. Key on with engine off.
2. Connect ServiceRanger.
3. Create a Service Activity Report (SAR).
4. Select “Send to Eaton” – an internet connection is required.
5. Review SAR to confirm FC 706 has been recently logged Active or Inactive.

Notice: Steps 6 through 8 do not require the clutch to be removed from the flywheel.

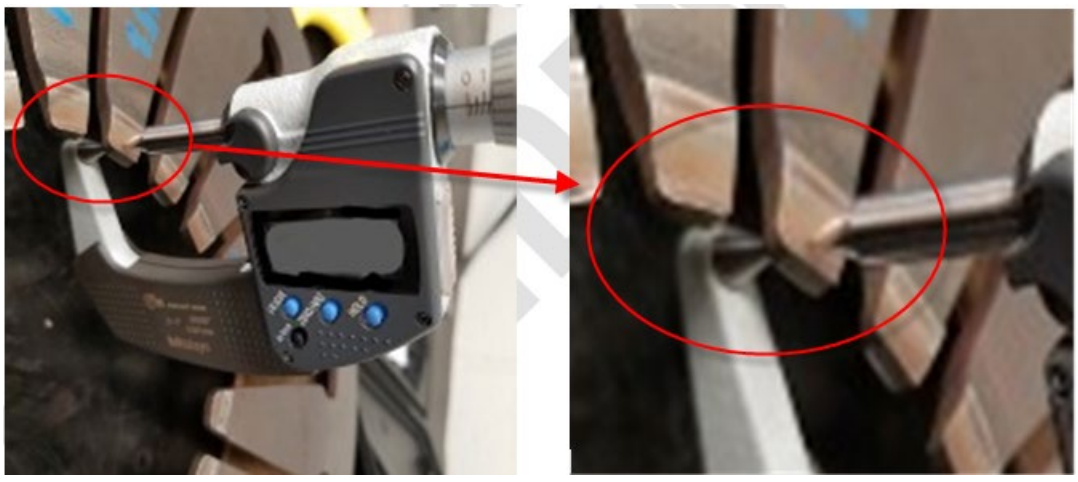
6. Inspect clutch diaphragm spring fingers for heat traces (bluing), deformation. or missing fingers with heat traces. See examples below.
    - If heat traces, deformation or missing fingers with heat traces exists, take pictures, replace the clutch, and proceed to 2020-FSUD-4226/TAIB-0889 for Transmission clutch actuation system inspection..
    - If no heat traces, deformation, or missing fingers with heat traces exists, go to **Step 7**.





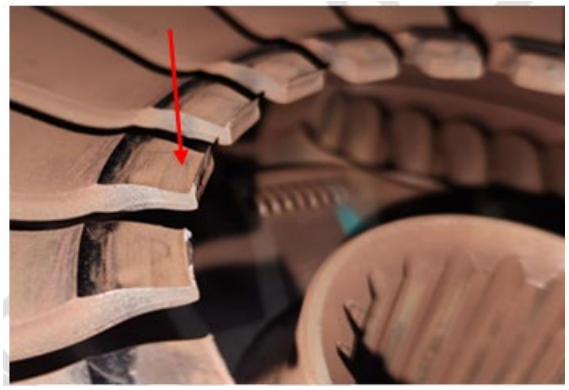

7. Use a digital pointed-tip micrometer to measure all the clutch diaphragm spring fingers for wear - record measurements.

   Note: Measurement must be taken just inside the fingertip as shown.



- If **a** clutch diaphragm finger thickness is less than (<) 3mm, take pictures of the measurement, replace the clutch, and proceed to 2020-FSUD-4226/TAIB-0889 for transmission clutch actuation system inspection..
- If **all** clutch diaphragm finger thicknesses are 3mm or greater (>), go to **Step 8**.

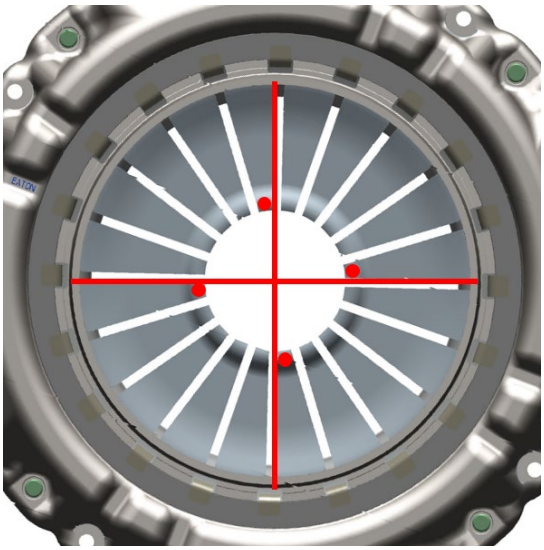
Notice: If the clutch diaphragm spring finger has a “hook”, take finger measurements as indicated in the pictures below and above.



Note: If “Hook” diaphragm spring fingers thicknesses are 3mm or greater (>) the clutch is still considered satisfactory for use.

Note: Do not measure the hook height, measure behind the hook as shown above.

8. Using digital Vernier calipers, measure the heights of the clutch diaphragm spring fingers at minimum in the four positions indicated below and take pictures of measurements. Reference TRSM0950 – Clutch Section.



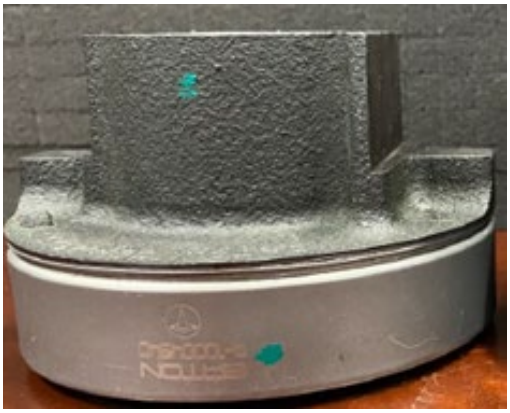
- If **a** diaphragm spring finger does **not** meet the height measurement criteria in the table below, record and take a picture of the measurement, replace the clutch, and proceed to 2020-FSUD-4226/TAIB-0889 for transmission clutch actuation system inspection..
- If **all** diaphragm spring fingers meet the appropriate height measurement criteria in the table below, go to **Step 9**.

Clutch Condition	Finger Height
New Install	17mm - 21mm (0.669 – 0.827 inch)
Less than 100K miles / 160,934 km	Maximum 22mm (0.866 inch)
Greater than 100K miles / 160,934 km	Maximum 24mm (0.944 inch)

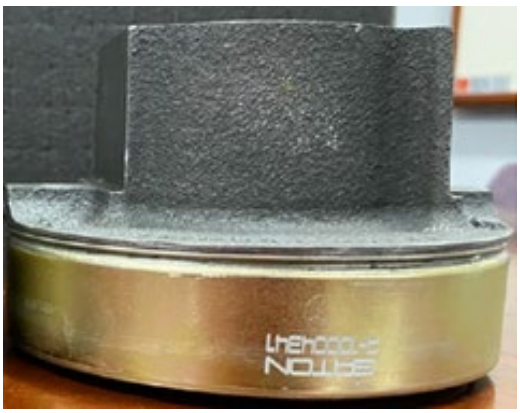
9. Verify the correct release bearing is installed. Reference TRPB0950 for application details (Service Parts and Kits section).

   - If the correct release bearing is installed, go to 2020-FSUD-4226/TAIB-0889 for transmission clutch actuation system inspection.
   - If the correct release bearing is not installed, take a picture of the bearing and replace with the correct release bearing, and go to **Step 10**.

ISO Fitment (Metallic Color)



SAE Fitment (Gold Color)



10. Remove the transmission Linear Clutch Actuator (LCA), reset it to the locked position, and reinstall it per TRSM0950.
11. Install clutch per TRSM0950 and transmission into vehicle per OEM guidelines.

12. Perform the Transmission TCM Auto- Clutch Calibration:

- Key on with engine running.
- Allow engine to idle for 15 minutes.

Note: Idling the engine for 15 minutes is required to allow the TCM to automatically run the transmission calibrations.

NOTICE: Failure to complete this step results in transmission fault code(s) setting and improper transmission operation.

- Key off and wait 1 minute.
- Key on with engine off.
- Go To “Fault Codes”.
    i. If active fault code(s) is set, refer to Endurant HD Troubleshooting Guide TRTS0950.
    ii. If no active fault codes, select “Clear Eaton Faults” and follow on-screen prompts.

- Disconnect ServiceRanger.
- Key off.

13. Perform 0.5hr road test.

14. Use ServiceRanger to verify FC 706 has not logged in TCM.

- If FC 706 has not logged, process complete.
- If FC 706 has logged, contact Roadranger Call Center for assistance at 800-826-4357 and escalate to Tech Service.

Warranty Information:

- Diaphragm Clutch Spring Fingers with heat traces, smeared metal at the finger / release bearing contact point, deformation, or missing fingers at the release bearing contact surface (with heat traces or deformation) is considered NOT warrantable for the clutch.
- Do not file a warranty claim for clutches with these conditions as this is progressive damage from a transmission component failure.

Claim Evidence:

- Pictures of components in Steps 6 through 9 that did not meet the criteria.

AND

- Pictures of measurements using digital measurement tools.

AND

- Service Activity Report (SAR) with FC 706 logged.

Claim Inclusion: (If Warrantable)

- If the installed original clutch is still within OEM Warranty, a clutch claim must be filed through the OEM.
    - Warranty consideration will not include the clutch release system parts of the transmission.
- All clutch parts must be returned to Eaton Warranty Return Center (Anderson, IN.) “Collect” by LTL Carrier listed per TMIB0129. Follow packaging instructions per TCWY0600.

<u>Warranty Parts:</u> (Clutch Only If Warrantable)

- K-4488CL Clutch Service Kit (PACCAR X15 / PACCAR MX / Navistar X15 & A26 w/260mm Flywheel Bore Opening)
- K-4494CL Clutch Serviced Kit (DTNA/Volvo w/Cummins X15 260mm Flywheel Bore)
- K-4496CL Clutch Service Kit (DTNA w/Detroit Diesel Engines w/290mm Flywheel Bore)
- K-4512CL (Cummins CNG Engines)
- K-4514CL (PACCAR MX Engines w/290MM Flywheel Bore)

Only warrantable if incorrect release bearing was supplied in clutch kit.

- A-10004341 Release Bearing (SAE)
- A-10004340 Release Bearing (ISO)

Warranty Labor: (If Warrantable)

- Diagnostics: (1.0 hour)
- Clutch R&R – Includes transmission R&R: (OEM SRTs)
- Reset LCA: (.4 hour)
- Road Test: (.3 hour)

General Claim Coding:

Use the following link to claim coding: Clutch

RMA Claim Coding:

- Failure Mode Description: TBD
- RMA SCP#: TBD
- SCP Failure Mode: TBD

Warranty Coverage:

OE published coverage or extended coverage through Eaton

Keyword Index:

1. **430MM Clutch**
2. **Fault Code 706**

Change Log

Date	Description
4-2-2024	Creation of Service Bulletin
4-4-2024	Updated verbiage Criteria for Warranty Section and added correct claim coding.
6-17-2024	Updated Step 6,7&8. Changed Warranty Parts List to include the “W” parts.
6-18-2024	Update Warranty Parts Section / Reformat Warranty Labor
7-31-2024	Updated Step 6