

Failure Diagnosis

Clutches for Commercial Vehicles



Burst Lining



CAUSE

- The speed of the clutch disc was higher than the burst speed of the lining. This can occur when the vehicle is coasting whilst the clutch is disengaged if the speed of the vehicle is higher than the corresponding maximum speed of the engaged gear.
- This damage is not related to the engine speed — the decisive factor is the speed of the main transmission shaft

IMPACT

- Clutch slips and/or clutch will not engage

REMEDY

- Replace the clutch

Damaged hub spline profile



CAUSE

- Installation error
 - › Force was applied when the transmission shaft was threaded into the hub splines of the disc (disc was not centred during installation)
- Incorrect disc

IMPACT

- Problems disengaging because the clutch disc may no longer be able to slide freely on the transmission input shaft

REMEDY

- Check the transmission input shaft
- Replace the clutch

Rust and/or corrosion on the hub splines



CAUSE

- Hub splines not greased

IMPACT

- Clutch grabs and does not disengage correctly

REMEDY

- Remove rust from the hub splines and apply grease
- Replace the clutch if necessary

Broken pressure plate



CAUSE

- Pressure plate overheats as a result of the clutch being allowed to slip for too long (driving error)
- Release system stiff
- Slave cylinder faulty

IMPACT

- Clutch slips and/or clutch fails to disengage

REMEDY

- Replace the clutch, flywheel and slave cylinder as necessary

Deformed /compressed tangential straps



CAUSE

- Excessive play within the powertrain
- Operating error
 - › Gearshift errors
 - › Improper "tow start" of the vehicle
- Improper storage/transport
 - › Clutch dropped before or during installation

IMPACT

- Clutch does not disengage and/or clutch grabs

REMEDY

- Replace the clutch

Worn diaphragm spring fingers



CAUSE

- Incorrect release bearing pre-load
 - › Faulty release bearing
 - › Release bearing seized

IMPACT

- Clutch grabs, slips and/or makes noise

REMEDY

- Check the release system (pre-load spring)

Broken cam



CAUSE

- Clutch dropped
- Shipping damage

IMPACT

- Clutch does not disengage

REMEDY

- Replace the clutch

Release system/ transmission shaft



CAUSE

- Faulty release system
 - › Faulty guide sleeve
 - › Faulty bearing arrangement on the release shaft

IMPACT

- Clutch noise

REMEDY

- Replace faulty parts

Worn release bearing fork carrier



CAUSE

- Release fork worn
 - › Bearing arrangement on the release shaft worn
 - › Guide sleeve worn

IMPACT

- Clutch noise

REMEDY

- Check the release system
- Replace faulty parts

Visible signs of wear on release bearing guide sleeve



CAUSE

- Guide sleeve worn
- Release bearing sleeve not greased or greased incorrectly

IMPACT

- Clutch grabs

REMEDY

- Replace the guide sleeve and release bearing