> Recreational Vehicle
> School Bus
> Shuttle Bus
> Walk-In Van
> S2

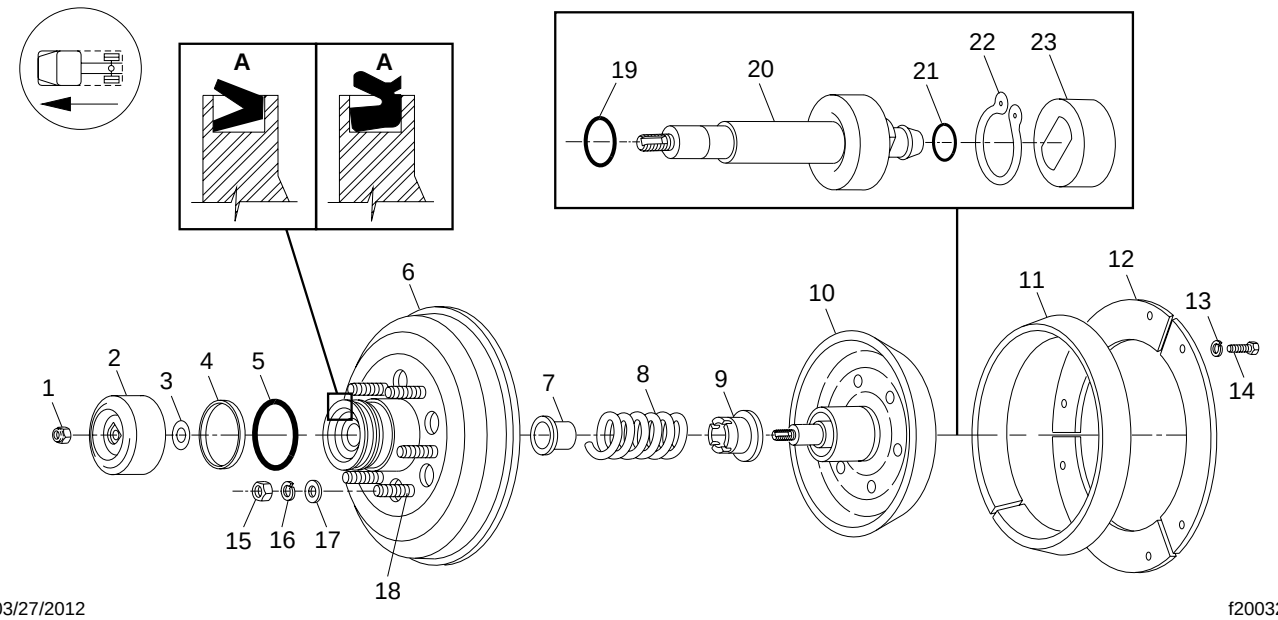
Freightliner Custom Chassis Service Bulletin

General Information

If a Kysor fan clutch is sticking and will not disengage, first attempt to reline the fan clutch. See "Fan Clutch Relining". If this does not correct the issue, replace the fan clutch with a new one. See "Fan Clutch Replacement".

Fan Clutch Relining

Refer to **Fig. 1** for this procedure.



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If a lip seal is used, install it so that it faces away from the fan studs.

A. Lip Seal (may vary)

1. Cylinder Nut
2. Cylinder Assembly
3. Piston Rod Seal Washer
4. Lip Seal (may be O-Ring)
5. Dust Seal (not used in newer units)
6. Housing Assembly
7. Engagement Spring End Cap
8. Engagement Spring
9. Engagement Spring Carrier
10. Shaft Assembly
11. Lining
12. Lining Retaining Plates
13. Lockwasher
14. Screw
15. Fan Nut
16. Lockwasher
17. Flatwasher
18. Fan Stud
19. O-Ring
20. Piston Rod Assembly
21. O-Ring
22. Snap Ring
23. Coupling

Fig. 1, Kysor K26RA Fan Clutch (K30 similar)

1. Park the vehicle on a level surface, shut down the engine, and apply the parking brake. Chock the tires.

⚠ WARNING

Wear safety goggles when draining the air system or loosening an air line, because dirt or sludge could fly out at high speeds. Don't direct the airstreams at anyone. Don't disconnect pressurized hoses, since they may whip as air escapes. Failure to take all necessary precautions could result in personal injury.

2. Bleed all the air from the primary and secondary tanks.

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⚠ WARNING

If the fan clutch engages during the next step, it could cause personal injury. Keep the fan clutch disengaged throughout this procedure by maintaining between 90 and 120 psi (620 and 827 kPa) of air pressure.

NOTE: The fan clutch may not disengage when air pressure is applied.

3. Disconnect the air line from the fan drive, and apply 90 to 120 psi (620 to 827 kPa) shop air pressure to the fan drive.
4. Remove the six lining retaining-plate screws, and remove the three lining retaining plates. See **Fig. 1**. The clutch may break free at this time.
5. Remove the old lining. If the lining sticks, use a hammer and a screwdriver to free it by tapping on the dividing cut in the lining.
6. Verify that the fan will freewheel. If the fan will not freewheel, proceed to "Fan Clutch Replacement."
7. Inspect the clutch shaft. If lining residue is present, or if the surface appears glazed over (non-metallic), temporarily release the air pressure from the clutch to allow shaft to protrude, and use a ScotchBrite to break the glaze.

NOTE: Some applications may be too tight to spread the lining and slip it over the pulley. If necessary, the lining can be cut in half with a hacksaw for installation.

8. Apply air pressure to the clutch again, and install the new lining. See **Fig. 2**.

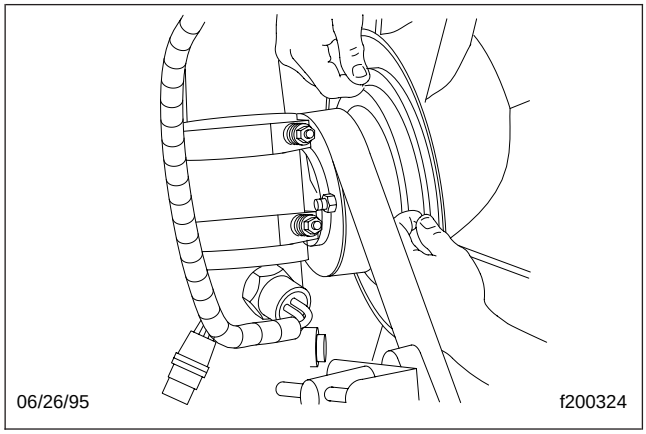

Fig. 2, Fan Clutch Lining Plate Installation

9. Install the new lining retaining plates. Tighten the screws 30 lbf·in (340 N·cm).
10. Remove the air pressure from the fan clutch, and allow the fan to engage.
11. Disconnect the shop air, and connect the air line to the fan drive.

Fan Clutch Replacement

1. Park the vehicle on a level surface, shut down the engine, and apply the parking brake. Chock the tires.

⚠ WARNING

Wear safety goggles when draining the air system or loosening an air line, because dirt or sludge could fly out at high speeds. Don't direct the airstreams at anyone. Don't disconnect pressurized hoses, since they may whip as air escapes. Failure to take all necessary precautions could result in personal injury.

2. Drain the air tanks.
3. Disconnect the air line from the fan clutch.
4. Remove the upper fan shroud as follows.
   - 4.1 Place alignment marks on the upper and lower fan shrouds, and mark the shroud-to-channel positions, so the shroud can be installed in the same position on the radiator.
   - 4.2 Remove the four fasteners that connect the upper and lower fan shrouds.
   - 4.3 Remove the fasteners that hold the upper fan shrouds to the radiator.
   - 4.4 Remove the upper fan shroud from the vehicle.
5. Remove the fasteners that hold the fan to the fan clutch, then remove the fan.

⚠ WARNING

If the fan clutch engages during the next step, it could cause personal injury. Keep the fan clutch disengaged throughout this procedure by maintaining between 90 and 120 psi (620 and 827 kPa) of air pressure.

NOTE: The fan clutch may not disengage when air pressure is applied.

6. Using shop air and a suitable nozzle attachment, apply between 90 and 120 psi (620 and 827 kPa) of air pressure to the fan clutch to disengage the clutch.
7. If the fan will not freewheel, and the lining retaining plates have not already been removed, remove the six lining retaining-plate screws, and remove the three retaining lining plates. See **Fig. 1**. The clutch may break free at this time.
8. Align the access holes in the fan clutch with the allen screws on the fan hub. See **Fig. 3**.

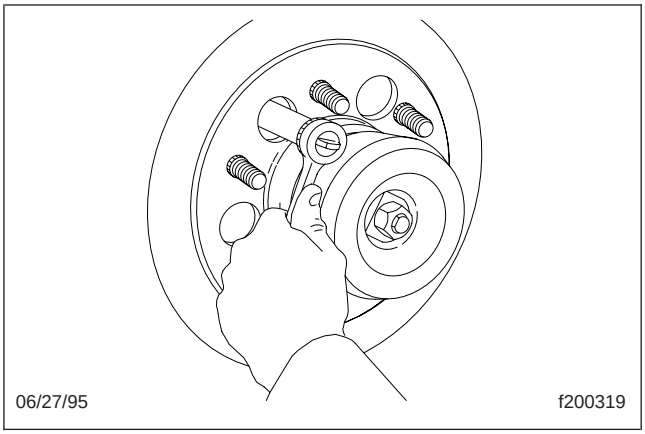

Fig. 3, Line Up the Access Holes

9. Remove the air pressure from the fan clutch, and allow the fan to engage.

10. Remove the allen screws holding the fan clutch to the fan hub.
11. Remove the fan clutch from the fan clutch hub. It may be necessary to gently pry the clutch from the hub.

IMPORTANT: A new coupler must be used when installing the clutch on the hub.

12. Install the new fan clutch on the fan clutch hub as follows.
    - 12.1 Install a new coupler on the fan hub.
    - 12.2 Position the fan clutch on the fan hub, then push it toward the rear of the vehicle and rotate the clutch until the flats of the coupler engage the fan clutch.
    - 12.3 Line up the access holes in the clutch with the holes for the allen screws in the fan hub.
    - 12.4 Install the allen screws, and tighten them 50 lbf·ft (68 N·m).
13. Install the fan.
14. Connect the air line to the fan clutch.
15. Position the upper fan shroud on the radiator; align the marks, then install the fasteners that hold it to the radiator and the lower fan shroud.

Warranty

This procedure is warrantable only if the described condition exists and the repair is performed within the applicable base or extended coverage warranty period. If a failure is not found, this procedure is considered preventive and warranty does not apply.

Normal warranty applies. See **Table 1** for QuickClaim damage code and labor allowance information. Refer to this service bulletin by number at the beginning of the claim comments. See **Table 2** for OWL VMRS codes and labor allowance information. Enter this service bulletin number in the *Service Bulletin #:* field.

NOTE: As there are several part numbers covered in this bulletin, under "Primary Failed Part" in the OWL VMRS table, include the part number for either the clutch kit used if relining corrects the problem, or the part number for the failed clutch when replacing the fan clutch assembly.

QuickClaim Damage Code and Labor Allowance			
Damage Code	**SRT Code**	**Description**	**Time: Hours**
273-002337200	273-5016A	Borg Warner/Kysor Clutch, Reline Clutch	1.1
273-002337200	273-5016B	Borg Warner/Kysor Clutch Stuck Clutch, RR	2.1

Table 1, QuickClaim Damage Codes and Labor Allowance

OWL VMRS Codes and Labor Allowance					
Primary Failed Part	**Component Code**	**Cause Code**	**SRT Code**	**Description**	**Time: Hours**
Fan Clutch Lining	042-003-104	11	273-5016A	Borg Warner/Kysor Clutch, Reline Clutch	1.1
Fan Clutch	042-003-131	11	273-5016B	Borg Warner/Kysor Clutch Stuck Clutch, RR	2.1

Table 2, OWL VMRS Codes and Labor Allowance