Eaton 6-Speed Synchronized Transmissions
TRDR0073
February 2008

FS(O) 4106
FS(O) 5206
Read the entire driver instruction before operating this transmission.

Set the park brakes before starting the vehicle, always be seated in the driver’s seat, move the shift lever to neutral, and depress the master clutch fully.

If engine cranks in any gear other than neutral or without the master clutch depressed fully, service your vehicle neutral safety start circuit immediately (where a safety start circuit is fitted).

Before working on a vehicle, parking the vehicle, or leaving the cab with the engine running, place the transmission in neutral, set the parking brakes, and block the wheels.

Do not release the parking brake or attempt to select a gear until the air pressure is at the correct level.

**TOWING:** To avoid damage to the transmission during towing, place the transmission in neutral and lift the drive wheels off the ground or disconnect the driveline.
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Tag Information

Transmission model designation and other transmission identification information are stamped on the transmission tag. To identify the transmission model designation and serial number, locate the tag on the transmission and then locate the numbers as shown.

IMPORTANT: DO NOT REMOVE OR DESTROY THE TRANSMISSION IDENTIFICATION TAG.

Record the Transmission Model and Serial Number below. Have these reference numbers handy when ordering replacement parts or requesting service information:

Transmission Model:

Transmission Serial Number:

Every effort has been made to ensure the accuracy of all information in this manual. However, Eaton Truck Components Operations makes no expressed or implied warranty or representation based on the enclosed information.

Any errors or omissions may be reported to Eaton Corporation, Truck Components, Global Marketing Services, P.O.Box 4013, Kalamazoo, Michigan, 49003.
Operation

Nomenclature

F
Fuller
S
Synchronized
O
Overdrive

Shift Pattern

Note: The shift lever will rest naturally in one of the cross gate positions. Ensure you are familiar with this before driving the vehicle.
General Information

6-Speed

Models in this series provide six forward speeds and one reverse speed.

Shift Pattern Diagrams

A shift pattern diagram / etched shift knob should be in your vehicle (depending on vehicle manufacture).

If you are unsure of how to operate the transmission seek advice before commencing your journey.

Driving Tips

- Always use the clutch when making upshifts or downshifts. Premature synchronizer failure can result from not using the clutch.
- Always select an initial starting gear that provides sufficient reduction for load and terrain.
- Never slam or jerk the shift lever to complete gear engagement.
- Never coast with the shift lever in the neutral position.
- Never downshift at too high of a road speed.
- Never select reverse gear while the vehicle is moving.
Initial Start-Up

**WARNING**

Before starting the vehicle, always be seated in the drivers seat, move the shift lever to neutral, and depress the master clutch fully.

**CAUTION**

Before moving a vehicle, make sure you understand your shift pattern configuration.

1. Make sure the shift lever is in neutral and the parking brakes are set.
2. Turn on the key switch. Start the engine.
3. Build up the air pressure to cut off.
4. Apply the service brakes.
5. Depress the clutch pedal fully to the floor.
6. Move the shift lever to the desired initial gear.
7. Release the parking brakes.
8. Slowly release the clutch pedal and apply accelerator.

In the following instructions it is assumed that the driver is familiar with operating a commercial vehicle and can coordinate the shift lever movement and clutch pedal to make a smooth gear engagement while upshifting and downshifting.

**Upshift**

1. Fully depress the clutch pedal. Move the shift lever to the next desired speed.
2. Release the clutch pedal.
3. Accelerate the vehicle.
4. Continue upshifting to 6th speed.
Operation

Downshift

1. Fully depress the clutch pedal and move the shift lever to the next desired speed.
2. Release the clutch pedal.
3. Slow the vehicle and continue downshifting.
Proper Lubrication

Proper lubrication procedures are key to a good all-around maintenance program. If the lubricant level is ignored, all the maintenance procedures in the world are not going to keep the transmission running or assure long transmission life.

Eaton transmissions are designed so that the internal parts operate in an oil circulating bath created by the motion of the gears and shafts.

All parts will be lubricated if these procedures are closely followed:

- Maintain oil level and inspect regularly.
- Follow maintenance plan.
- Use correct grade and type of oil. Prolonged oil change will cause internal damage.
- Do not overfill as this causes overheating and effects fuel economy.
- Buy from a reputable dealer.

Mixing Oil Types

CAUTION

Never mix engine oils and gear oils in the same transmission.

Note: Additives and friction modifiers must not be introduced. Engine oils and gear oils may not be compatible; mixing can cause breakdown of the lubricant and affect component performance. When switching between types of lubricants, all areas of each affected component must be thoroughly flushed.
Proper Transmission Lubrication Levels

- Make sure the transmission lubricant is level with the bottom of the fill opening.
- Always check the oil on level ground
Lubricant Change Intervals

- Lubricant change intervals will be included in the vehicle operating handbook and will be defined based on the type of oil used and the operating conditions.
- As a base rule the following should be followed:

Mineral Oils

* On Highway Use

<table>
<thead>
<tr>
<th>Interval</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial oil change</td>
<td>At the operator's discretion.</td>
</tr>
<tr>
<td>Every 20,000 km</td>
<td>Inspect oil level and check for leaks.</td>
</tr>
<tr>
<td>Every 100,000 km (or annually)</td>
<td>Change oil (See Note)</td>
</tr>
</tbody>
</table>

Note: Whichever comes first.

* Off Highway Use

<table>
<thead>
<tr>
<th>Interval</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial oil change</td>
<td>At the operator's discretion.</td>
</tr>
<tr>
<td>Every 40 hours</td>
<td>Inspect oil level and check for leaks.</td>
</tr>
<tr>
<td>Every 500 hours</td>
<td>Change oil (See Note 1)</td>
</tr>
<tr>
<td>Every 1000 hours</td>
<td>Change oil (See Note 2)</td>
</tr>
</tbody>
</table>

Note 1: Where severe dirt conditions exist.
Note 2: Where normal conditions exist.
Service & Maintenance

Synthetic / Semi-Synthetic Oils

* On Highway Use
- Every 20,000 km - Inspect oil level and check for leaks.
- Every 300,000 km / 3 years - Change oil (See Note)

Note: Whichever comes first.

* Off Highway Use
- Every 40 hours - Inspect oil level and check for leaks.
- Every 500 hours - Change oil (See Note 1)
- Every 1000 hours - Change oil (See Note 2)

Note 1: Where severe dirt conditions exist.
Note 2: Where normal conditions exist.

Operating Temperatures

Transmissions must not be allowed to operate at temperatures above 120°C (250°F). Operating above this temperature causes loaded gear tooth temperatures to exceed 177°C (350°F), which will ultimately destroy the heat treatment of the gears. If the elevated temperature is associated with an unusual operating condition that will recur seek advice from your vehicle manufacturer.
Lubricant Change

Draining Oil

⚠ CAUTION

Hot oil may be present during this activity.

- Drain the transmission when the oil is warm.
- Remove the drain plug from the transmission.
- Clean the oil strainer before replacing it.
- Replace copper washer / o-ring as required.

Re-filling

- Fill transmission to the level of the filler opening.
- Do not inter mix different types of brands of oil.
- Do not use additives i.e. friction modifiers.
- Do not overfill the transmission, as this will cause overheating and may cause oil leaks through the input and output shaft oil seals.
Service & Maintenance

Maintenance Checks

Conduct regular maintenance checks where possible regarding:

- Clutch mechanism
- Lubricant
- Filler and drain plug
- Cap screws and gaskets
- LRC / Shift tower
- General operation
- Correct level
- Correct tightness / damage to washers
- Loose / oil leaks
- Secure / free play / wear