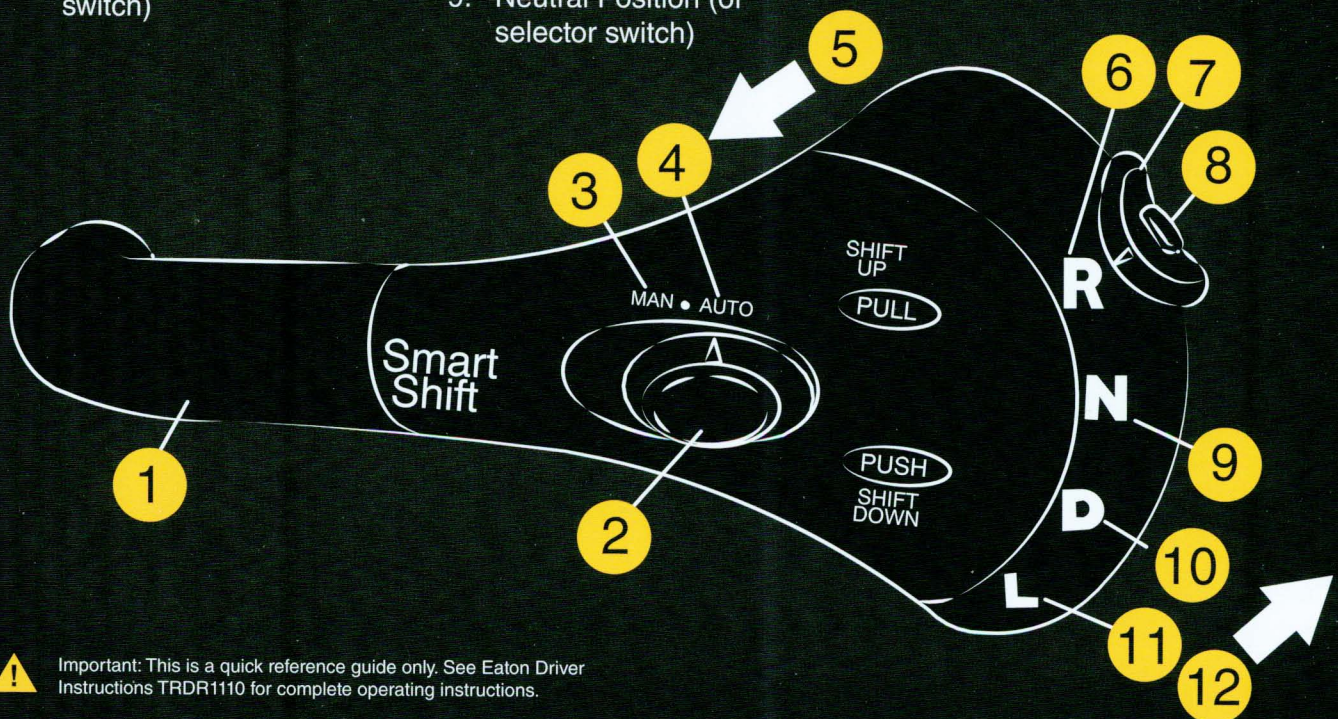




SmartShift Control:

The features of the gear selector are listed below:

- | | | |
|---|--|---|
| 1. SmartShift Control Lever | 5. Upshift Direction | 10. Drive Position (of selector switch) |
| 2. Slide Switch (forward driving mode switch) | 6. Reverse Position (of selector switch) | 11. Low Position (of selector switch) |
| 3. MAN Mode (of slide switch) | 7. Selector Switch | 12. Downshift Direction |
| 4. AUTO Mode (of slide switch) | 8. Neutral Lock Button | |
| | 9. Neutral Position (of selector switch) | |



Important: This is a quick reference guide only. See Eaton Driver Instructions TRDR1110 for complete operating instructions.

ABF
Freight

FREIGHTLINER

Freightliner tractors purchased in 2015 will be equipped with Eaton's AMT, UltraShift PLUS. This AMT could also appear in other makes and models in the future.

How to Operate the Eaton UltraShift PLUS

UltraShift *PLUS* is a 10-speed automated manual transmission (AMT). There is no clutch pedal and the gear shifting is automatically controlled by sophisticated electronics.

Gear Engagement

1. Turn the ignition key to "ON" and allow the system to power-up.

Note: Engine cranking is delayed until the transmission power-up is complete and the gear display shows a solid "N."

2. Start the engine.

3. Apply service brake.

Note: if the service brake is not applied while selecting a starting gear, the initial start gear will not engage, requiring the driver to select Neutral and apply the brake while selecting the desired mode.

4. Select the desired mode and starting gear on the shift console.

Note: The transmission overrides inappropriate start gear selections to avoid driveline damage.

5. Release vehicle parking brake.

6. Release service brake and apply accelerator.

⚠ Important: If the driver presses and holds both pedals (even if done accidentally), the launch will be abrupt, and the engine and brake forces may rock and bounce the vehicle, which could damage the driveline. Releasing either pedal will stop this immediately.

Bring Vehicle to Complete Stop

1. Select "Neutral" on the shift control
2. Set the vehicle parking brake

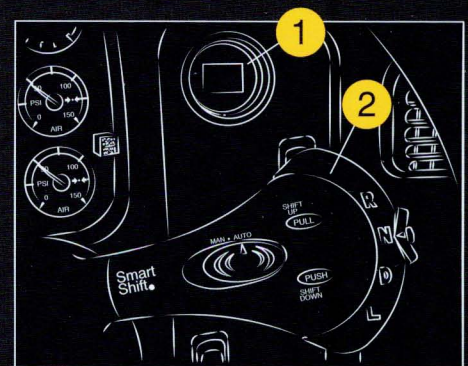
Auto Neutral

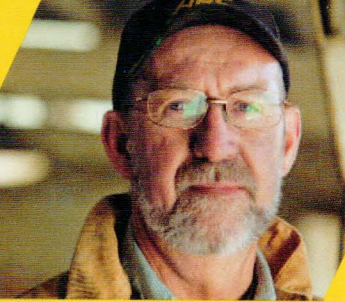
- The system will automatically shift into Neutral if the vehicle is left in Drive and the parking brake is set
- "AN" will appear in the gear display. Driver must select Neutral and then select the desired forward or reverse mode with the service brake applied.

Shift Controls and Indicators

To know what gear the transmission is in, look at the current gear indicator.

1. Current Gear Indicator
2. SmartShift Control





Features

“D” - Drive Mode

- Automatically selects the default start gear. The selected start gear will vary depending on several vehicle inputs like load, grade, and axle/transmission ratio. The transmission will override inappropriate selections to prevent driveline damage.
- Automatically performs all upshifts and downshifts in all gears.
- A shift can be advanced by pressing the upshift/downshift buttons when the transmission is near the shift point (condition permitting).

“MANUAL” Mode

- The mode to select if the driver wants to “hold current gear” in order to prevent upshifting on slick road surfaces or when the driver wants to prevent normal upshifting due to traffic or other driving conditions.
- System holds current gear.
- System automatically shifts to prevent engine overspeed or underspeed.

Note: For optimal performance, it is recommended the vehicle be operated in “D” Drive mode.

“R” - Reverse Mode

- Selects Reverse gear.
- 10-speed models have only one reverse speed by default.

“LOW” Mode

- Use LOW mode to maximize engine braking and minimize use of the brake pedal. For example, when driving down long grades or coming to a stop.
- System automatically shifts to prevent engine overspeed.

Hill Start Aid (HSA)

- Prevents vehicle from rolling in an unintended direction for up to 3 seconds when launching vehicle on a grade.
- Hill Start Aid defaults to the “On” position. It can be turned “Off” for a single launch by pressing and releasing the Hill Start Aid switch.

Vehicle Facing Uphill -

Forward Mode

- Vehicle must be on incline greater than 1% and in a Forward mode
- Bring vehicle to a stop and press the service brakes, then release the service brakes.

Note: Vehicle will begin to move after 3 seconds. Driver must either press brake pedal or apply the throttle.

Continued next page >>

Vehicle Facing Downhill -

Reverse Mode

- Vehicle must be on a decline greater than 1% and in Reverse mode.
- Bring vehicle to a stop and press the service brakes, then release the service brakes.

Note: Vehicle will begin to move after 3 seconds. Driver must either press brake pedal or apply the throttle.

Clutch Abuse Protection

- This vehicle uses an Electric Clutch Actuator (ECA) for launching the vehicle; however the clutch can still overheat and slip with improper use.
- If the clutch starts to overheat, "CA" appears in the driver display with a warning tone. Full clutch actuation must be completed quickly. If not, the system will either open the clutch if throttle is not applied or close the clutch if throttle is applied. If the abuse continues, the system will open the clutch and remove throttle control briefly to allow the clutch to cool down.

Engine Overspeed

Protection

The transmission system upshifts if necessary to prevent engine overspeed in Drive, MANUAL and LOW modes.

Shuttle Shifting

Shuttle shifting from Reverse to any forward mode is only allowed if vehicle speed is at or near zero.

Skip Shifting

When appropriate, the system may skip shift in Drive mode.

ABS/ATC Interaction

See Driver Instructions manual TRDR1110 for detailed information.

Creep Mode Operation

The transmission system will maintain the current gear and operate at idle.

1. Select MANUAL or LOW mode. (Default setting for Drive is disabled.)
2. Apply throttle until you feel the clutch engage, then slowly release throttle pedal.
3. Remove foot from throttle and allow the vehicle to idle in gear.
4. To exit Creep mode, apply the throttle or press the service brake.

Trailer Connecting

- Prior to backing under the trailer, ensure proper trailer height. Use Low mode (1st gear) for forward direction and Reverse (R1) for reverse direction.

Adapted from source material provided by:



An **ArcBest** Company



Powering Business Worldwide

BACKED BY
Roadranger
SUPPORT