Detroit™ DT12™ Transmission has 12 forward gears and two standard reverse gears that can be shifted automatically or manually. Shifting and clutch actuation are computer controlled and there is no clutch pedal needed to operate the vehicle.

Automatic shifts are selected for fuel economy or engine power. The DT12 will not automatically shift gears in reverse but requires the driver to manually shift.

To manually shift the transmission, push the lever away to request a downshift, or pull the lever toward you to request an upshift.

In all cases, shifts depend on the following factors: engine speed, accelerator pedal position, engine brake operation, vehicle load status, and road grade.

**Power Up and Shift into Gear**
1. With the parking brake set and Neutral (N) selected on the shifter stalk, turn the ignition switch to the ON position. Before cranking, wait for the bulb check and gauge sweep to complete.
2. Start the engine.
3. Apply the service brake.
4. Engage Drive or Reverse with the shifter stalk.
5. Release the parking brake.
6. Release the service brake and apply the accelerator.

**Gear Display Window**
The gear display window shows the current transmission gear and drive mode.

Refer to the DTNA Driver's Manual for Complete Information on all of the Vehicle Controls.

**Cruise Descent Control**
Descent Control will help control vehicle and engine speed when descending a grade.

- If cruise descent control is activated with engine brake/shifter stalk in position 1:
  - Descent control is active and all levels of engine brake are available.
  - If the engine brake/shifter stalk is moved to a higher level position, descent control is cancelled entirely.
  - Once descent control is canceled, the engine brake/shifter stalk position becomes a manual engine brake request.
  - If the engine brake/shifter stalk is rolled back to the 0 position, vehicle is not returned to cruise.

- If cruise descent control is activated with engine brake/shifter stalk in position 2 or 3:
  - Descent control is active and all levels of engine brake are available.
  - Once the engine brake/shifter stalk is moved to a lower level position, descent control remains in operation with all levels of automated engine brake shift available and any manual position is ignored.
  - If the engine brake/shifter stalk is rolled back to position 0, vehicle is returned to normal cruise.

- Cruise descent control does not utilize the CC band switch (Classic Cascadia) functionality and does not fuel the engine on descent.

**Drive Modes**
There are three drive modes:
(Available drive modes are dependent on vehicle configuration.)

The default mode is Automatic Economy. To engage Auto Performance, simply press the end of the shifter stalk towards the steering column where the A & M are shown. The transmission will automatically return to Automatic Economy from Auto Performance, once throttle demand is reduced. To select Manual drive mode, press and hold the end of the shifter stalk. You will know whether the requested drive mode change was successful based on the display in the gear display window of the instrument cluster (Cascadia) or interactive dash display (New Cascadia).

**eCoast**
eCoast is a feature that can improve fuel economy (with or without cruise control). When conditions permit, the transmission shifts to Neutral and the engine goes to idle. When the conditions listed below terminate eCoast, the transmission will automatically select and shift into the proper gear. When eCoast is active, an “E” is displayed in the gear display window on the instrument cluster (Cascadia) or in the interactive dash display (New Cascadia).

The eCoast function does not initiate when any of the following occur:
- the accelerator pedal is pressed.
- the service brake pedal is pressed.
- the engine brake is in use.
- the speed limiter is active and the maximum speed is exceeded.
- PTO (if equipped) is in use.
- eCoast is disabled if the DPF is in regeneration mode.
- Steep downhill grades
- Below 50 mph

**Suggested Shift**
In Manual mode only, a suggested shift is displayed to indicate the most economical gear available. The suggested shift is the number of up or down arrows from the current gear with a maximum of three up or down arrows.

**Creep Mode**
Creep mode allows the vehicle to be maneuvered automatically at very slow speeds. To begin using it from a parked position, shift from neutral to either drive or reverse, release the service brakes, and briefly depress and release the accelerator pedal. Creep mode will be engaged and the vehicle will begin to move.

When slowing down from higher speeds in drive or reverse, remember that Creep mode will be in effect at lower speeds. Use the service brakes to completely stop the vehicle.
TIPS FOR AVOIDING CLUTCH ABUSE

<table>
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<tr>
<th>Example</th>
<th>Tip</th>
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<tr>
<td>Holding the vehicle stationary on an uphill slope</td>
<td>Use the service brakes, not the accelerator pedal.</td>
</tr>
<tr>
<td>Starting off on an uphill slope</td>
<td>To start moving, accelerate and release the brakes as the vehicle begins to move.</td>
</tr>
<tr>
<td>Hooking up to a trailer</td>
<td>Ensure the trailer is raised high enough to back under, and use first gear reverse.</td>
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<tr>
<td>First start after attaching a trailer</td>
<td>Start in first gear.</td>
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<tr>
<td>Do not abuse Creep Mode, and deactivate it when warned. If warned, stop the vehicle or apply throttle until clutch is completely closed.</td>
<td></td>
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