



<b>SURFACE VEHICLE RECOMMENDED PRACTICE</b>	<b>J649™</b>	<b>SEP2023</b>
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Automatic Transmission Functions—Terminology		

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## 1. SCOPE

The following is a list of the most common terminology used in describing automatic transmission functions.

## 2. REFERENCES

There are no referenced publications specified herein.

## 3. DEFINITIONS

### 3.1 FRICTION LAUNCH

The use of a friction driving member in launching a vehicle from a standing position.

### 3.2 FLUID LAUNCH

The use of a hydrodynamic or hydrostatic drive unit in launching a vehicle from a standing position.

### 3.3 ELECTRIC LAUNCH

The use of an electric drive unit in launching a vehicle from a standing position.

### 3.4 BLENDED LAUNCH

The simultaneous use of any two or three of the above Launch modes.

### 3.5 CONVERTER CLUTCH ENGAGEMENT

The transition from hydrodynamic to mechanical drive normally accomplished through the application of a friction element.

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### 3.6 SHIFT

A control system actuated change in the functioning of the torque transmitting drive (this could be a gear train, a hydrodynamic or hydrostatic drive unit, electrical or friction drive mechanism, and so forth) which results in a change in torque ratio and speed ratio.

### 3.7 UPSHIFT

A shift which results in a decrease in torque ratio and an increase in speed ratio.

### 3.8 DOWNSHIFT

A shift which results in an increase in torque ratio and a decrease in speed ratio.

### 3.9 POWER SHIFT

A shift which occurs without interruption of torque.

### 3.10 TORQUE BREAK OR TORQUE INTERRUPT SHIFT

A shift which occurs while the torque is interrupted.

### 3.11 OVERLAP SHIFT

A shift when the applying element already has taken enough capacity to fully transmit the input torque and starts to move the input speed towards the on-coming gear ratio. The releasing element still has a certain capacity acting as an internal resistance load to the transmission for a short interval before reducing the capacity to zero.

### 3.12 UNDERLAP SHIFT

A shift during which the releasing clutch slips due to the torque transmitted being higher than the clutch torque capacity for a short interval before the applying element can hold the transmitted torque and move the input speed to the next gear ratio.

### 3.11 FREEWHEEL OR NON-SYNCHRONOUS SHIFT

A torque shift in which a one-way clutch is involved as an element of one of the drive ratios from which or to which a shift is made.

### 3.12 MANUAL SHIFT

A shift which results from the action of the manually operated part of the control system.

### 3.13 AUTOMATIC SHIFT

A shift which results from the action of the automatically operating part of the control system.

### 3.14 INHIBITED SHIFT

A shift which is automatically prevented under certain predetermined conditions of operation.

### 3.15 BACKOUT SHIFT

An upshift which occurs with a reduction in throttle opening with vehicle in motion.

### 3.16 COASTDOWN SHIFT

A downshift which occurs with closed throttle and vehicle decelerating.