BODY BUILDER INSTRUCTIONS

Mack Trucks

Cab, Instrument Panel
MD
Section 8

Introduction

This information provides specifications for chassis body installation for MACK vehicles.

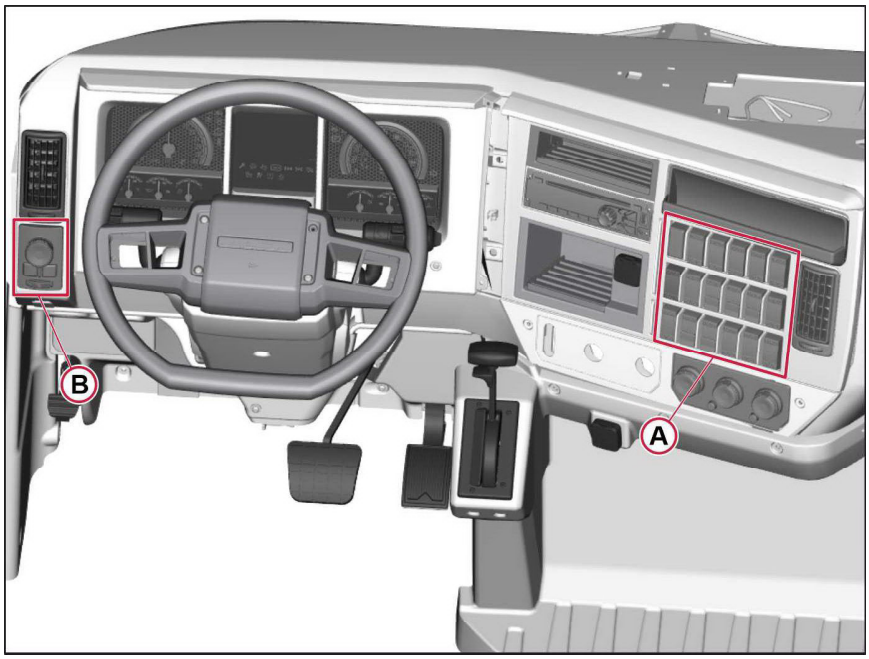
Note: We have attempted to cover as much information as possible. However, this information does not cover all the unique variations that a vehicle chassis may present. Note that illustrations are typical but may not reflect all the variations of assembly.

All data provided is based on information that was current at time of release. However, **this information is subject to change without notice.**

Contents:

Instrument Panel

Dashboard Switch Locations



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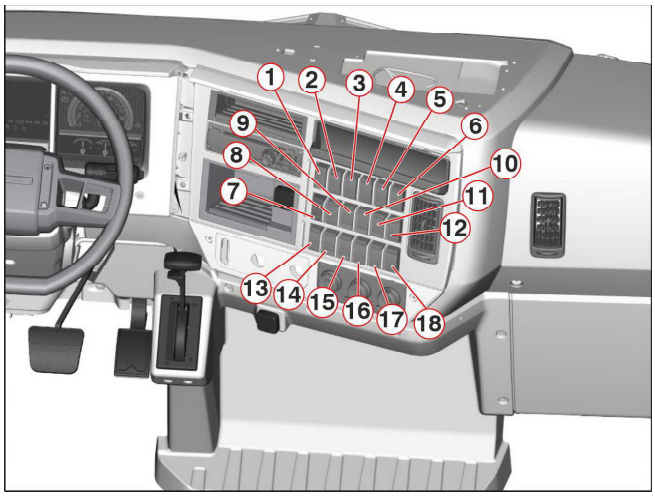
Panel Arrangement A and B



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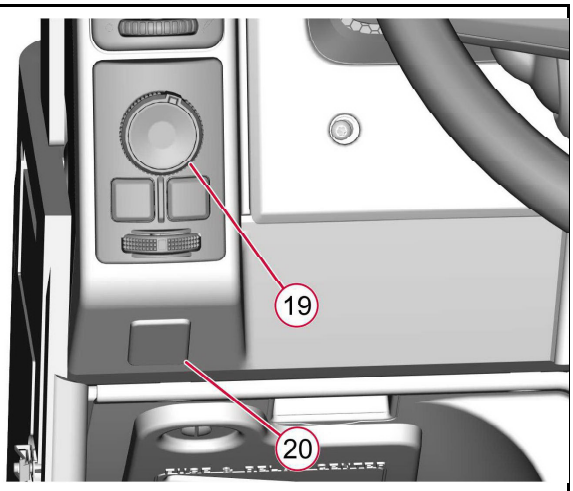
Panel A



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Panel B

Note: Some switch options may not be applicable for your vehicle.

Number	Part Number	Description
1	22392299	Cruise ON / OFF
2	22392282	Cruise SET / RESUME
3	22559210	Cummins Engine Brake
4	22392546	Grade Gripper Disable
5	22392314	ATC (MUD / SNOW)
6	22393029	Trailer AUX (CENTER PIN)
7	22396611	IGN AUX
8	22392442	DIFF LOCK (IN-TER WHEEL)
9	22846096	INTERAXLE LOCK
10	22392259	PLOW LAMPS
11	22559918	AIR SUSP (DUMP)
12	22392281	STROBE
13	22392399	BATTERY AUX
14	22846105	PTO 1
15	22846105	PTO 2
16	22559226	BEACON LIGHT
17	23229511	FAN CLUTCH OVERRIDE
18	22392285	ASSIGNABLE ON / OFF
19	82719617	HEADLAMP SWITCH
20	23006490	FLOOR LAMP SWITCH

Other Available Options

Note: Some switch options may not be applicable for your vehicle.

Part Number	Description
22572307	LDWS DISABLE
22392308	TIME GAP (ACC)
22392420	ATC
22392256	RETARDER
22392260	ASSIGNABLE ON / OFF
22392286	WINDSHIELD DEFROST
22392297	ECS RAISE / LOWER
22392311	ASSIGNABLE MOMENTARY
22396071	POWER FLOAT
22396079	LOW HYDRA OIL OVERRIDE
22396090	SPREADER LIGHTS
22396625	REAR AMBER FLASHER
22559241	SANDER LIGHT
22559244	CHAIN LIGHT
22559245	ROTATING LIGHT
22559917	BOGIE CONTROL
22846089	TAIL GATE LOCK / UNLOCK
22846090	TAIL GATE LOCK / UNLOCK
22846091	SNOW INGESTION
22846093	NEUTRAL CONTROL
22846096	INTERAXLE
22846097	SUSP HEIGHT CONTROL
22846101	5TH WHEEL
22846108	PTO CONTROL (MUNCIE)
22846121	ECS MODE
22879194	LOAD LIGHT
23053219	FORWARD LIFT AXLE
23053220	REAR LIFT AXLE
23093324	FRONT DIFF LOCK
23093325	REAR DIFF LOCK
23229509	SHUTDOWN OVERRIDE
23229510	WINDSHIELD DEFROST
23229512	ATC
23229513	INTER WHEEL LOCK
23229514	GRADE GRIPPER DISABLE
23229515	LOW HYDRA OIL OVERRIDE

Part Number	Description
23229516	LDWS DISABLE
23229517	FRONT DIFF LOCK
23229518	REAR DIFF LOCK
23239140	ASSIGNABLE MOMENTARY
23239141	IGNITION (15 AMP)
23239142	REAR AMBER FLASHER

Dash Switches

General

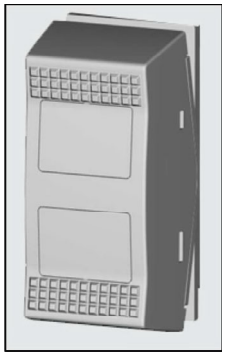
Switches that may be fitted in your vehicle are on the following pages. The available switches in your particular vehicle are dependent on the vehicle's equipment.

Movable Switches

The location of the majority of the switches can be easily adapted to your requirements. A few switches cannot be moved for safety reasons. Contact an authorized dealership for more information.

Switch Styles

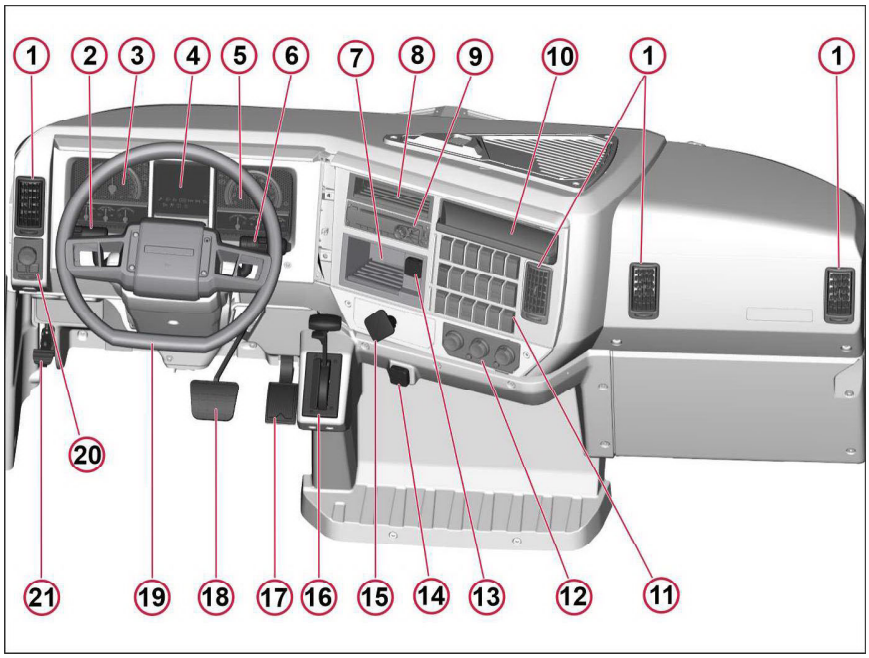
There are three types of switches that are used on the dash panel.

Locking	Standard	BodyBuilder Assignable
 W3133393	 W3133394	 W3133395

Notes

Overview of Instruments

Before driving this vehicle, locate the instruments and controls, and become thoroughly familiar with their operation. After starting and when driving, ensure that the instrument readings are normal.



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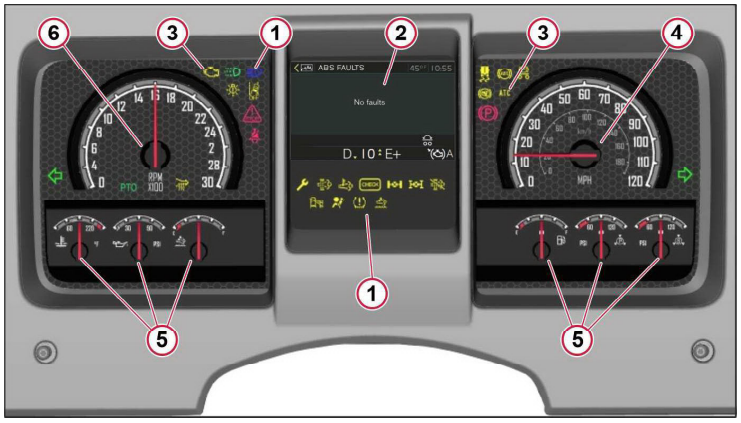
1. Air Vent	8. Storage Slot	15. Parking Brake
2. Left Stalk Control	9. Radio	16. Gear Selector
3. Tachometer	10. Storage Slot	17. Accelerator Pedal
4. Drivers Information Display (DID)	11. Dashboard Switches	18. Brake Pedal
5. Speedometer	12. Climate Control Unit	19. Steering Wheel
6. Right Stalk Control	13. Power Outlet	20. LCP (Light Control Panel)
7. Storage Slot	14. USB (Universal Serial Bus)	21. Steering Column Tilt Control Pedal

Instrument Cluster

The instrument cluster provides system/component condition information to the driver. This information is available to assist the driver in determining any necessary actions.

The instrument cluster consists of the following components: condition indicators (tell-tales), driver information display (DID), gauges, speedometer and tachometer, on board diagnostic (OBD) fault and warning indicators.



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1. Condition Indicators (Tell-tale)
2. Driver Information Display (DID)
3. On Board Diagnostic (OBD) Fault and Warning Indicators
4. Speedometer
5. Gauges
6. Tachometer

Notes

Tell-Tales

A tell-tale is a display that indicates the actuation of a device, a correct or defective condition, or a failure to function. The operator should become familiar with these symbols in order to recognize and react (if necessary) to the indicated condition. Tell-tale symbols are shown in the instrument panel cluster.

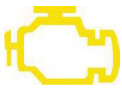
Colors

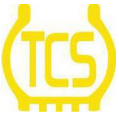
To promote visual recognition internationally, specific colors for tell-tales have been established. Unless governmental regulations (in the area where the vehicle is to be used) or engineering directives specify otherwise, the standard colors are:

- **Steady Blue** — high-beam headlights
- **Flashing Green** — turn signals
- **Flashing Red** — hazard condition involving the safety of personnel
- **Steady Green** — system in operation
- **Steady Red** — warning, immediate action required
- **Amber** — early warning, such as low fuel or Anti-Lock Brake System (ABS) malfunction

Alarm, Check and Information Symbols

Note: Some Warning Indicator Lamps may not be applicable for your vehicle.

Number	Symbols	Meaning
1	 W3133317	Malfunction Indicator Lamp
2	 W3133318	Hill Assist Indicator
3	 W3133319	Stop
4	W3133320	Interaxle lock
5	 W3133322	Turn Signal Indicator
6	 W3133324	Parking Brake engaged
7	 W3133-326	Safety Belts Reminder
8	 W3133327	Aftertreatment DPF Regeneration
90	W3133328	Aftertreatment High Exhaust System Temperature
10	 W3133330	ABS Malfunction Tractor

Number	Symbols	Meaning
11	W3133331	Preheating Active or Preheating Fault
12	 W3133333	High Beam Indicator
13	 W3133334	Aftertreatment DEF Tank Low Indicator
14	 W313333-5	Check Indicator
15	 W3133336	Light Indicator
16	 W3133337	Tractor Control System (TCS) Indicator
17	W3-133-338	Lane Departure Warning System (LDWS) Indicator
18	 W3133339	Power Take-off (PTO) Indicator
19	W31-333-40	Electronic Stability Control (ESC) Indicator
20		Daytime Running Light (DRL) Indicator

Number	Symbols	Meaning
	W3133341	
21	 W3133342	Lane Changing System (LCS) Indicator
22	W3133343	Airbag Indicator
23	 W3133344	Tire Pressure Monitoring System (TPMS) Indicator
24	W31333-45	Automatic Traction Control (ATC)

Warning Indicator Light Panel

Note: Some Warning Indicator Lamps may not be applicable for your vehicle.

1. Malfunction Indicator Lamp

Malfunction Indicator Lamp indicates government Regulation On Board Diagnostics (OBD) faults.

2. Hill Assist Indicator

Indicates hill assist is active.

3. Stop Tell-Tale

Illuminates when conditions require the driver to stop the vehicle. This usually occurs when vehicle conditions fall below designated standards for operation.

⚠ DANGER

Failure to take necessary action when the STOP tell-tale is on can ultimately result in automatic engine shutdown and loss of power steering assist. Vehicle crash can occur, resulting in personal injury or death.

4. Interaxle Lock

Illuminates when interaxle lock is engaged.

5. Turn Signal Indicator

Flashes when turn signals are active.

6. Parking Brake Engaged

Indicates parking brake is engaged.

7. Safety Belt Reminder

Indicates safety belt needs to be fastened.

8. Aftertreatment DPF Regeneration

Indicates aftertreatments DPF regeneration is required.

9. High Exhaust System Temperature (HEST) Indicator

The HEST Indicator illuminates when the exhaust temperature reaches 300° C (572° F) and the regeneration process begins. When the regeneration process is completed, the engine should be allowed to run until the HEST indicator shuts off.

During regeneration while the vehicle is moving, the HEST indicator will only illuminate when vehicle speed is less than 8 kph (5 mph). During a parked regeneration, the HEST indicator will turn off when regeneration is complete and the exhaust temperature has returned to a normal temperature.

10. ABS Tractor Malfunction

Indicates a problem being reported by the Tractor ABS System.

11. Preheating Active

Indicates that preheating is active.

12. High Beam

Illuminates when high beam lights are engaged.

13. Aftertreatment DEF Tank Low

Illuminates when the fluid level is low. It also Flashes when the level becomes critically low.

14. Check Indicator

Illuminates when there is an engine or aftertreatment system issue.

15. Light Indicator

Illuminates when there is a lighting system error.

16. Traction Control System (TCS) Indicator

Indicates that the TCS is active.

17. Lane Departure Warning System (LDWS) Indicator

Indicates that the LDWS is off.

18. Power Take-off (PTO) Indicator

Indicates that the PTO is active.

19. Electronic Stability Control (ESC) Indicator

Indicates that the ESC system is active.

20. Daytime Running Light (DRL) Indicator

Indicates that the DRLs are active.

21. Lane Change System (LCS) Indicator

Indicates that the LCS is off or disabled.

22. Airbag Indicator

Indicates that there is an airbag error. Maintenance is required.

23. Tire Pressure Monitoring System (TPMS) Indicator

Indicates that there is an issue with the vehicle's tire pressure. Maintenance is required.

24. Automatic Traction Control (ATC) Indicator

Indicates that the vehicle is losing traction and the ATC is engaging.

Notes

Gauge Layout

Tachometer

The tachometer displays the engine’s revolutions per minute (RPMs).

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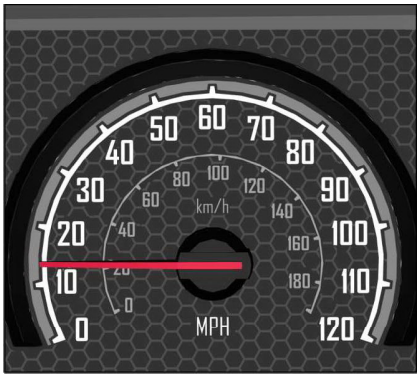
Speedometer

Indicates the speed of the vehicle. The speedometer is driven by the vehicle’s electronic system.



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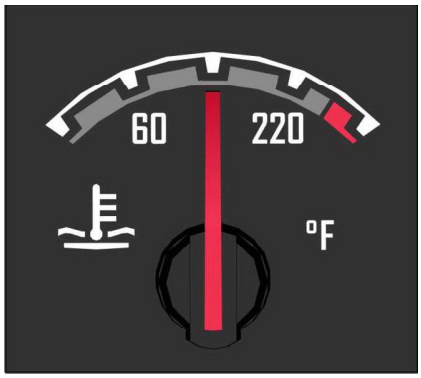
Coolant Temperature Gauge

The coolant temperature gauge indicates engine coolant temperature. The normal operating temperature for Cummins engines is 80 to 105° C (170–215° F). If the temperature remains below or exceeds the normal temperature range, the cooling system should be checked for problems by an authorized Mack Vehicle dealer. When coolant temperature is excessive, the red STOP tell-tale illuminates and the buzzer will sound. The engine is at risk and the ECM may derate the engine power. Stop at the first safe place where the problem can be checked.



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Engine Oil Pressure Gauge

Indicates engine oil pressure. When the engine oil pressure is too low, the red STOP tell-tale illuminates and the buzzer will sound. If the engine oil pressure becomes low, the engine is at risk. Bring the vehicle to a safe stop where the problem can be checked.

DANGER

Failure to take necessary action when the STOP tell-tale is on can ultimately result in automatic engine shutdown and loss of power steering assist. Vehicle crash can occur, resulting in personal injury or death.

W3133319

Stop Tell-Tale

W3133362

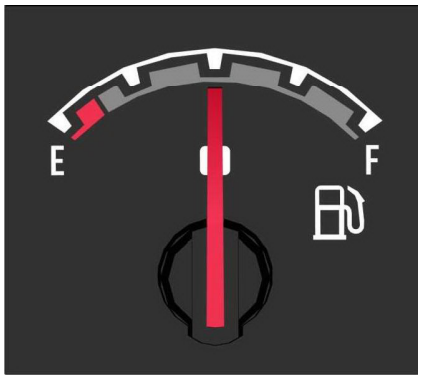
Aftertreatment DEF Gauge

Indicates the amount of Diesel Exhaust Fluid (DEF) in the tank.

W3133364

Fuel Gauge

Indicates the fuel level. The fuel gauge is connected to the fuel sensor unit in the fuel tank. There is only one sensor even if the vehicle is equipped with dual tanks.



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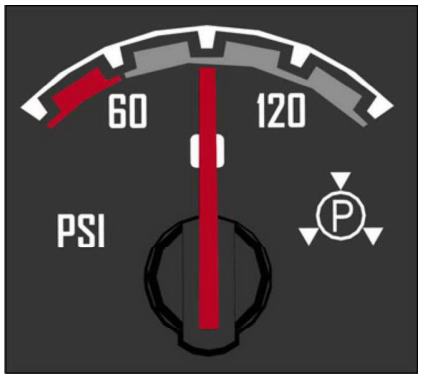
Primary Brake Air Pressure Gauge

The primary brake air pressure gauge is connected to the rear circuit tank via sensors mounted on the passthrough wall. The front and rear air gauges should register equal air pressure. By observing the gauge pointers, the operator can detect a pressure drop if an air leak develops and can readily identify the circuit affected.

DANGER

Failure to observe these precautions can result in the loss of braking performance. This can lead to a vehicle accident, which can result in personal injury or death.



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Secondary Brake Air Pressure Gauge

The secondary brake air pressure gauge is connected to the front circuit tank via sensors mounted on the passthrough wall. The front and rear air gauges should register equal air pressure. By observing the gauge pointers, the operator can detect a pressure drop if an air leak develops and can readily identify the circuit affected.

DANGER

Failure to observe these precautions can result in the loss of braking performance. This can lead to a vehicle accident, which can result in personal injury or death.

W3133366

PTO

DANGER

A Rotating PTO shaft can snag clothes, hands, etc., causing severe personal injury or death. To avoid injury or death:
• Do NOT go near rotating shafts when the engine is running.
• STOP the engine before attempting to work on a PTO, its controls or related equipment.

CAUTION

It is important to only engage the switch when the PTO is required. Leaving the PTO pump engaged when not needed can lead to poor performance and pump damage.

Note: Some PTOs can not be operated while driving the vehicle. To do so would cause component damage.
To avoid component damage, contact a certified dealer to confirm if the vehicle's PTO can be used while driving.

A Power Take-Off (PTO) is a device that transfers power from the engine to another piece of equipment attached to the vehicle. Some examples include cement mixers and the compactor on a garbage vehicle.

A maximum of two PTOs can be operated in unison. One PTO is preset as a priority component. The remaining PTOs are preset as secondary in priority. The priority settings are dependent on the PTO preset arrangement and the number of PTOs available.

There is one basic type of PTO is available: transmission-mounted.

Depending on customer specification, some transmission-mounted PTOs are not operable when driving the vehicle.

The **Split shaft PTO** consists of an additional gearbox that divides the drive shaft into two shafts. One shaft drives the vehicle's axle. The other shaft drives the PTO.

When the PTO is engaged, the PTO tell-tale illuminates in the instrument cluster.

PTO

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PTO Tell-Tale

Use the following switch to activate/deactivate the PTO.

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PTO Switch

For automatic transmissions:

1. Engage the PTO by pressing the PTO switch. Press the locking tab and at the same time depress the main part of the switch.

The PTO engages.

PTO Speed Adjustment

For the PTO speed adjustment to function, the Cruise Control and PTO must be activated. If the PTO can be activated while driving the vehicle, the vehicle speed must be under approximately 8 Km/h (5 mph).

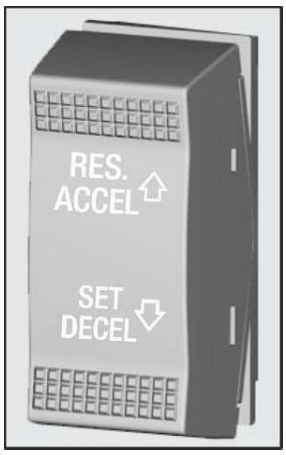
To set the engine speed:

1. Press the Cruise Control / Speed Control Switch to the ON position. This switch is located on the dash of the vehicle.

2. Press the PTO switch to the ON position.

The PTO is now active. The PTO revolutions per minute (RPM) automatically adjusts to the preset PTO speed.

3. Press and hold the RESUME / SET or ACCEL / DECEL button to increase or decrease PTO engine speed. Then press SET to have the PTO maintain the desired speed.



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1. Cruise Control Resume / Set Steering Wheel Switch
2. Cruise Control ON / OFF / Cancel Steering Wheel Switch

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Speed Control (Cruise Control) Switch