



Cab, Instrument Panel VN, VHD, VAH Section 8

Introduction

This document contains information about the cab, instrument panel in Volvo 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 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.**

Note: The VNM model will be replaced with the new VNR model, which will start production in late August or early September 2017. The VNM model and the new VNR model will share the same cab, chassis, and fuel tank dimensions.

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Instrument Panel

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 illustrations on the following pages.

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:

- **Blue** — high-beam headlights/engine maintenance
- **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

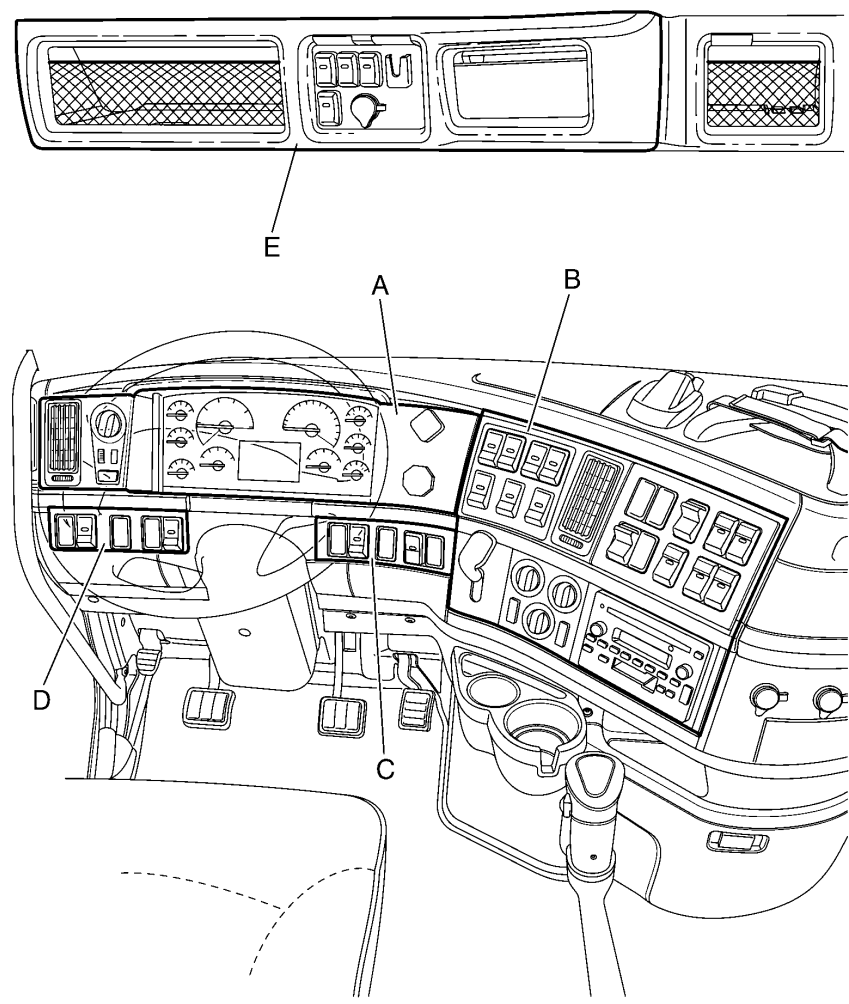
Panel Arrangement

Your view from the driver seat should look something like the illustrations shown on the next page. The layout is designed to provide the operator with a good view of the gauges and controls (which are placed so they are within easy reach). The instrument panel, as shown in the following drawing, is broken down into several main sections. For easy identification we refer to them, from left to right, as Panels A, B, C, D, and E.

Note: This section shows the instruments and controls available for this vehicle at the time of publication. However, depending on options, your vehicle may not have all the instruments and controls shown here, and they may not be in the same position.

Notes

Instrument Panel Layout - GEN I

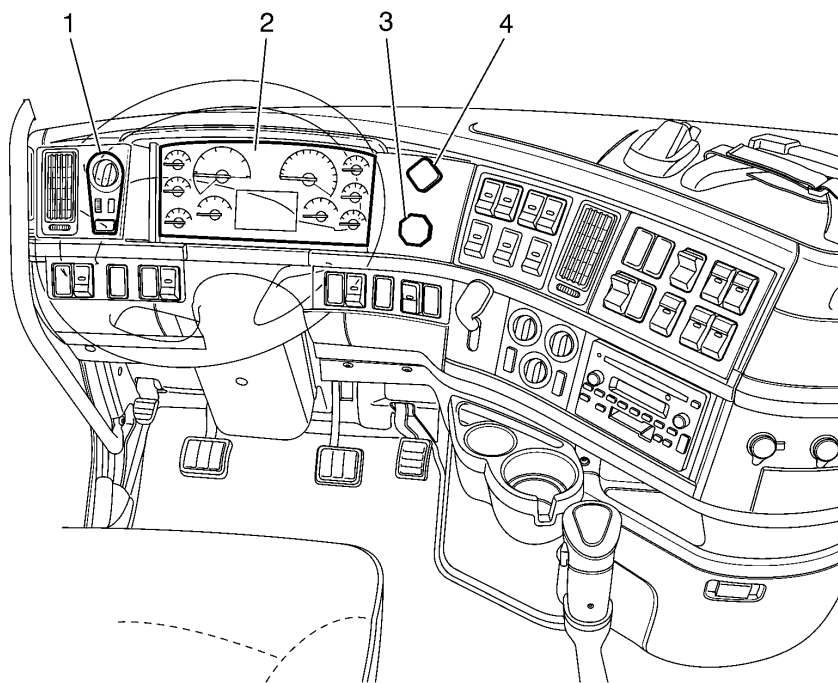


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Panel Arrangement

Notes

Panel A

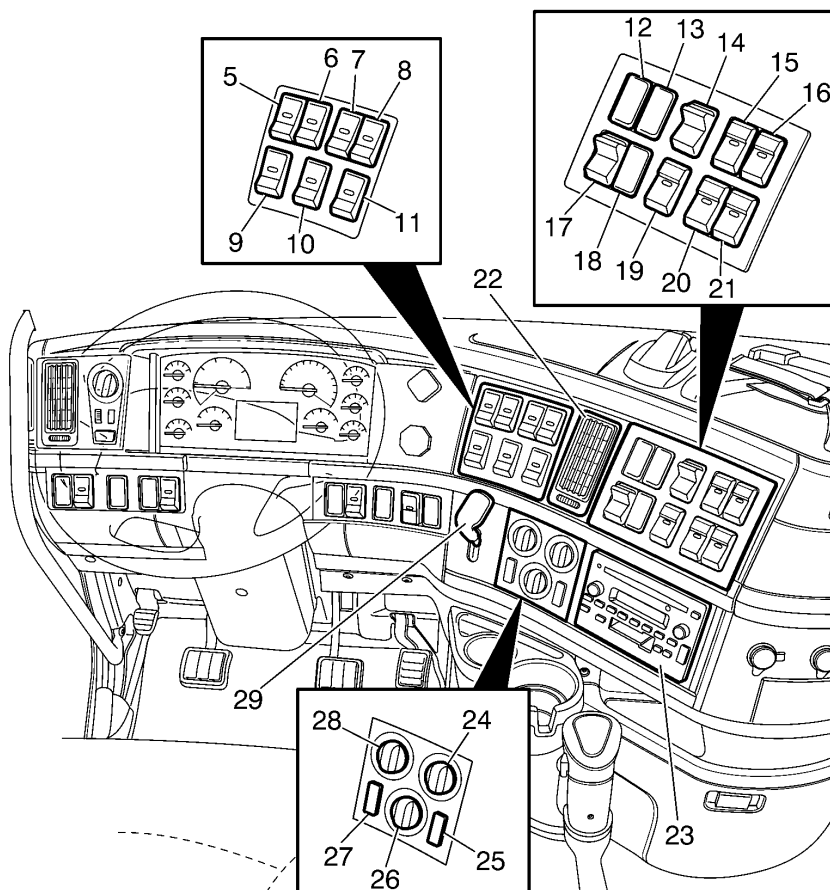


W3007469

- 1 Light Control Panel
- 2 Instrument Cluster
- 3 Trailer Air Supply
- 4 Tractor Parking Brake

Notes

Panel B

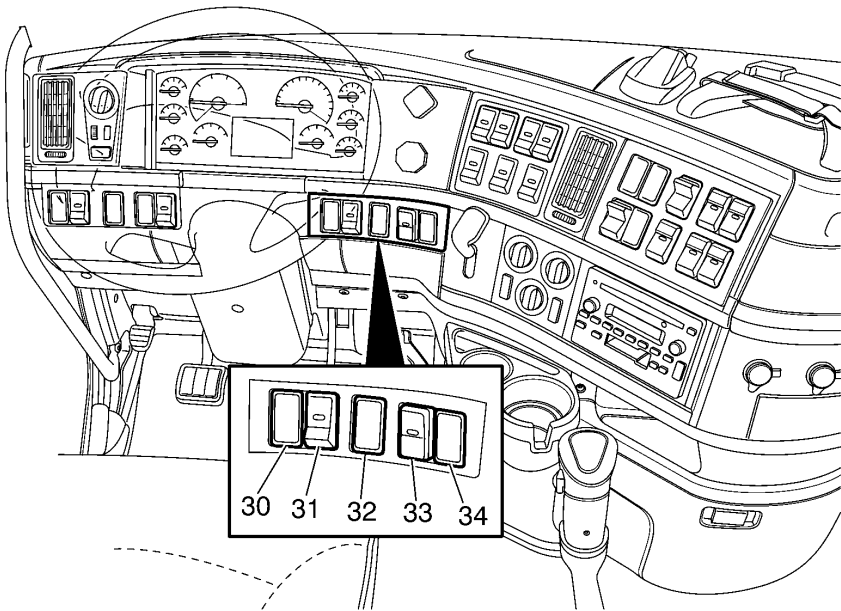


W3007470

- 5. Inter-Wheel Differential Lock
- 6. Inter-Axle Differential Lock
- 7. VN: Idle Management Indicator Lamp (ISX ICON) or Optional Switch or Electronically Controlled Suspension (ECS) On/Off or Lift Axle #1 (Pusher)
- 8. VN: Optional Switch or Electronically Controlled Suspension (ECS) Up/Down
- 9. Auxiliary #1
- 10. VN: Auxiliary #2 or Temp-A-Start (TAS) Indicator Lamps
- 11. VN: Auxiliary #3 or Temp-A-Start (TAS) On/Off
- 12. Secondary Gauge Cluster
- 13. Secondary Gauge Cluster
- 14. Engine Brake or I-Shift Eco-Roll
- 15. VN: Engine Brake Mode Select (ISX) or I-Shift Hill Start Assist
- 16. VN: 5th Wheel Touch Lock (Unlock)

- 17. Marker Interrupt or Secondary Gauge Cluster
- 18. Optional Switch or Secondary Gauge Cluster
- 19. Traction Control
- 20. Suspension Dump
- 21. 5th Wheel Slide or Engine Inside/Outside Air Control
- 22. Air Vent
- 23. Radio
- 24. Fan Speed
- 25. Recirculation
- 26. Air Distribution
- 27. AC ON/OFF
- 28. Temperature Knob
- 29. Trailer Hand Brake Control

Panel C

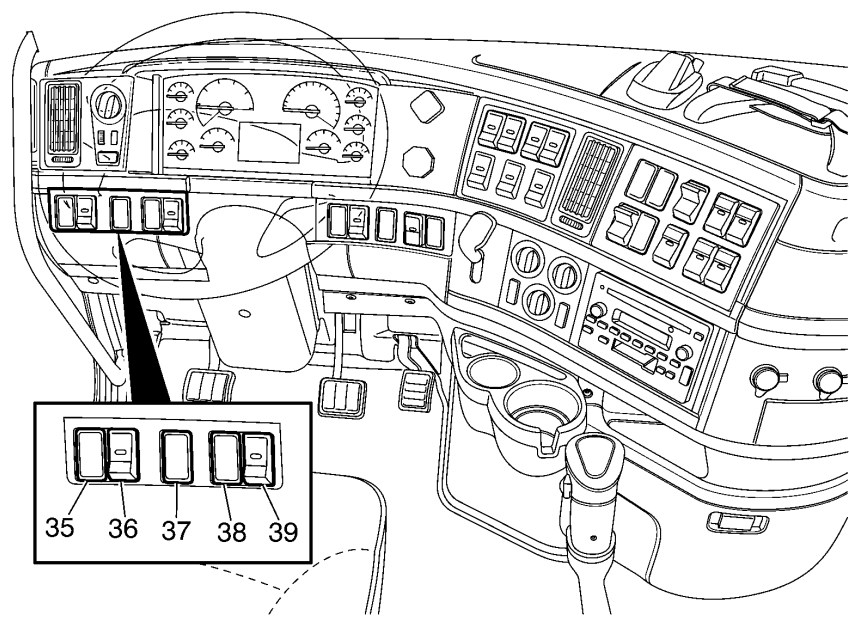


W3007471

- 30. VN: Optional Switch or Passenger Window Lift
- 31. Water in Fuel (Purge Switch)
- 32. Optional Switch or AUX/USB Port
- 33. VN: Sleeper Fan Speed
- 34. VN: Optional Switch or Beacon Lamps

Notes

Panel D



W3007472

35. Back of Cab Light

36. Optional Switch

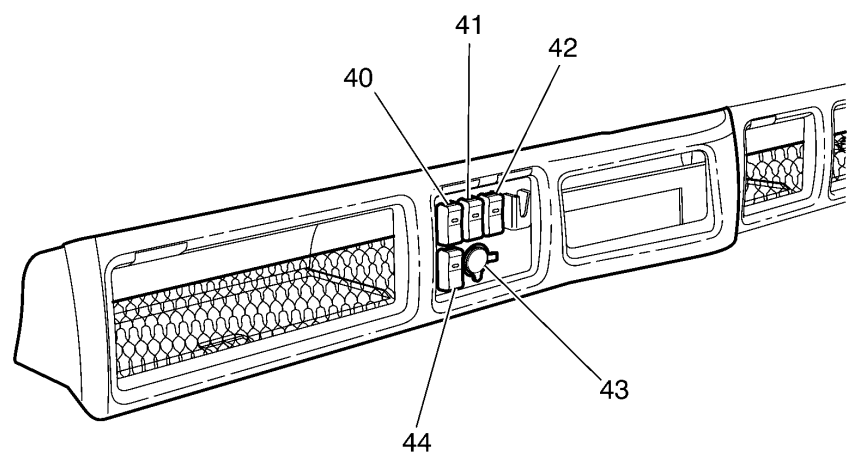
37. Optional Switch or Power Take-Off (PTO)

38. VN: Overhead Bunk Lamp or Passenger Side Mirror IN/OUT

39. VN: Side Mirror Heat or Power Take-Off (PTO),

Notes

Panel E



W3007474

- | |
|---|
| <ul style="list-style-type: none">40. AC Inverter 120 V41. Optional Switch42. Optional Switch43. Power Outlet44. Microphone |
|---|

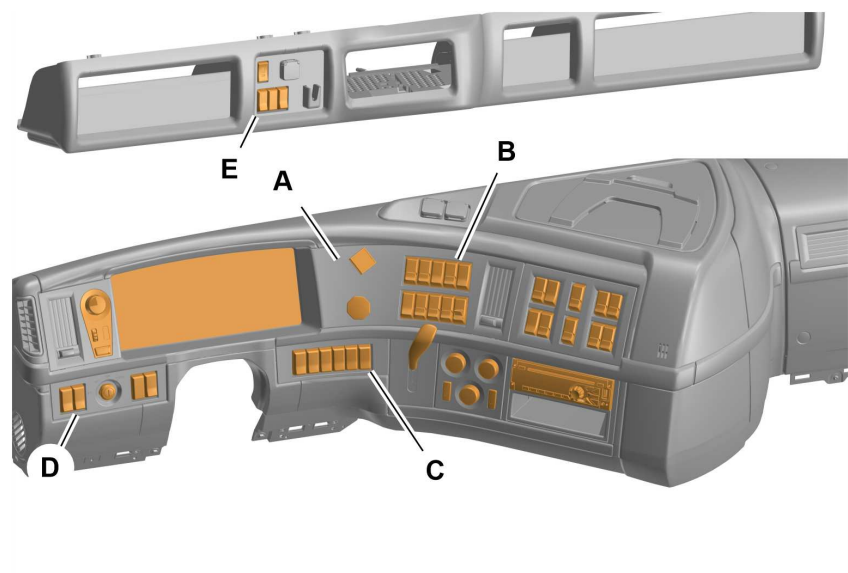
Before driving this vehicle, locate the instruments and controls, and become thoroughly familiar with their operation. After starting and when driving, ensure that the instrument readings are normal.

Note: The instruments and controls shown were available for this vehicle at the time of publication. Depending on the options selected, all gauges and tell-tales may not be used in all vehicles.

Note: The dash layout is the same for all Volvo vehicles. However, the switches and certain switch positions are different depending on vehicle options.

Notes

Instrument Panel Layout - GEN II

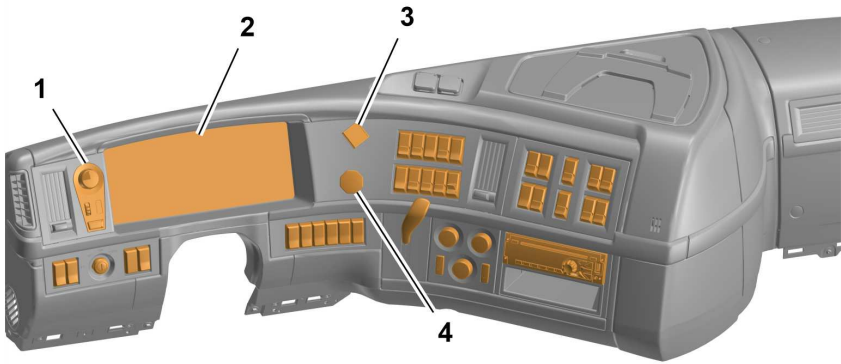


T3198248

Panel Arrangement

Notes

Panel A

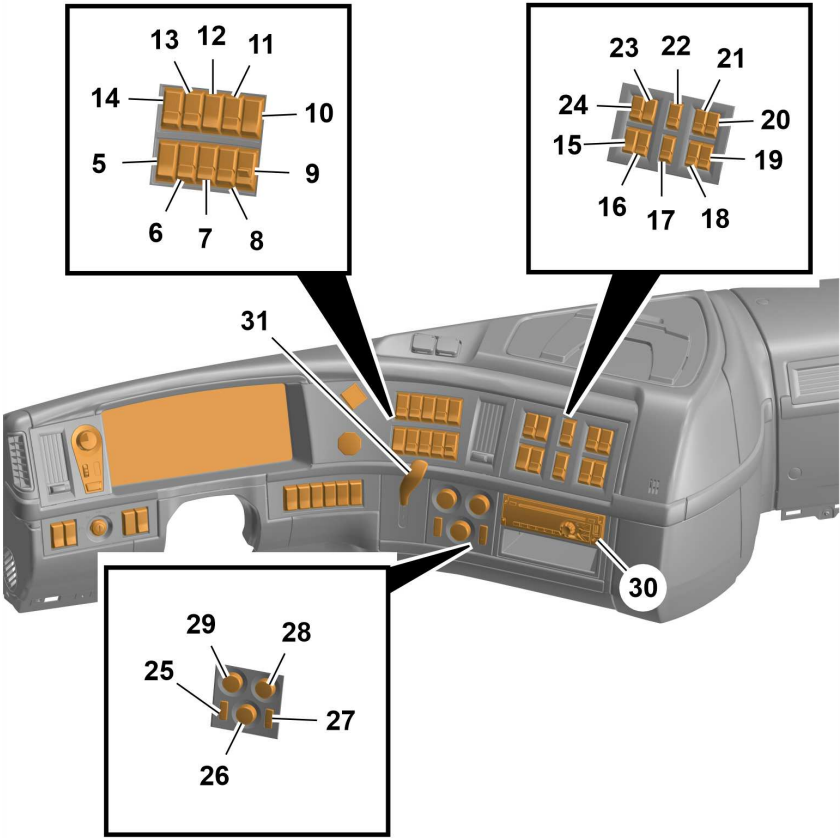


T3198249

- 1 Light Control Panel
- 2 Instrument Cluster
- 3 Trailer Air Supply
- 4 Tractor Parking Brake

Notes

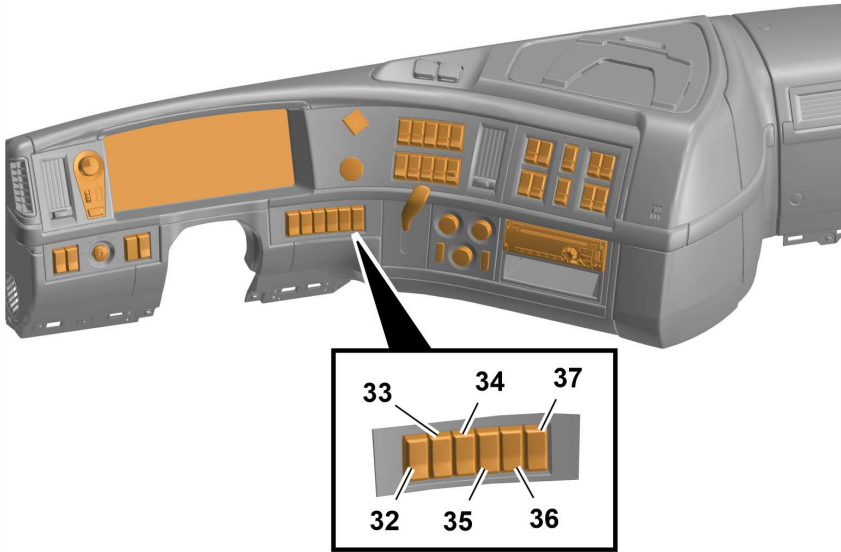
Panel B



T3198250

<div>5. Bogie control</div> <div>6. ECS ON/OFF</div> <div>7. Chassis</div> <div>8. I-Shift Eco-Roll</div> <div>9. Engine Brake</div> <div>10. Hill start assist</div> <div>11. Fifth wheel slide or inter-wheel differential lock or blank</div> <div>12. ATC (MUD/SNOW+ATC OFF)</div> <div>13. ECS UP/DOWN</div> <div>14. Inter-axle differential lock or blank</div> <div>15. Engine Inside/Outside Air Control</div> <div>16. Optional Switch (Open)</div> <div>17. Optional Switch (Open)</div> <div>18. Optional Switch (Open)</div>	<div>19. Optional Switch (Open)</div> <div>20. Optional Switch (Open)</div> <div>21. Optional Switch (Open)</div> <div>22. Optional Switch (Open)</div> <div>23. Optional Switch (Open)</div> <div>24. Optional Switch (Open)</div> <div>25. AC ON/OFF</div> <div>26. Air Distribution</div> <div>27. Recirculation</div> <div>28. Fan Speed</div> <div>29. Temperature Knob</div> <div>30. Radio</div> <div>31. Trailer Hand Brake Control</div>
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Panel C

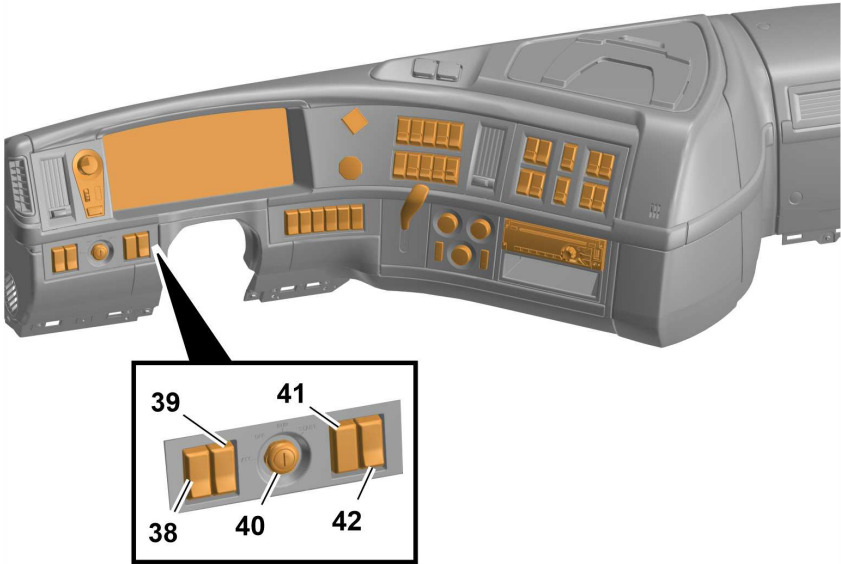


T3198251

- 32. Optional Switch (Open)
- 33. Optional Switch (Open)
- 34. AUX or blank or Optional Switch (Open)
- 35. AUX or blank or Optional Switch (Open)
- 36. AUX or Heated windshield or blank
- 37. Optional Switch (Open)

Notes

Panel D

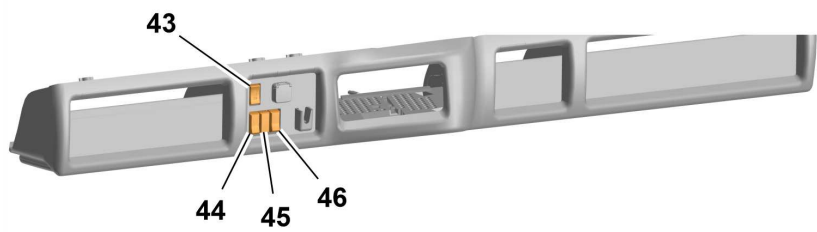


T3198252

- | |
|--|
| <p>38. Back of Cab Light</p> <p>39. Pre-trip inspection</p> <p>40. Starter switch</p> <p>41. PTO (Transmission)</p> <p>42. PTO (Transmission/Engine)</p> |
|--|

Notes

Panel E



T3198253

- | |
|---|
| <ul style="list-style-type: none">43. Microphone or blank44. DRL override switch or blank45. Optional Switch (Open)46. LDWS disable switch or data capture switch or blank |
|---|

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.

Note: The instruments and controls shown were available for this vehicle at the time of publication. Depending on the options selected, all gauges and tell-tales may not be used in all vehicles.

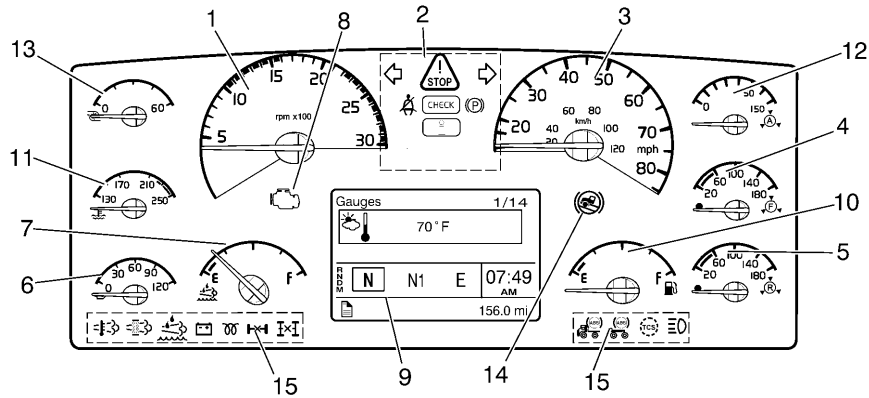
Note: The dash layout is the same for all Volvo vehicles. However, the switches and certain switch positions are different depending on vehicle options.

Notes

Instrument Cluster GEN I

Note: See owners manual for instrument cluster and Driver Information Display (DID)

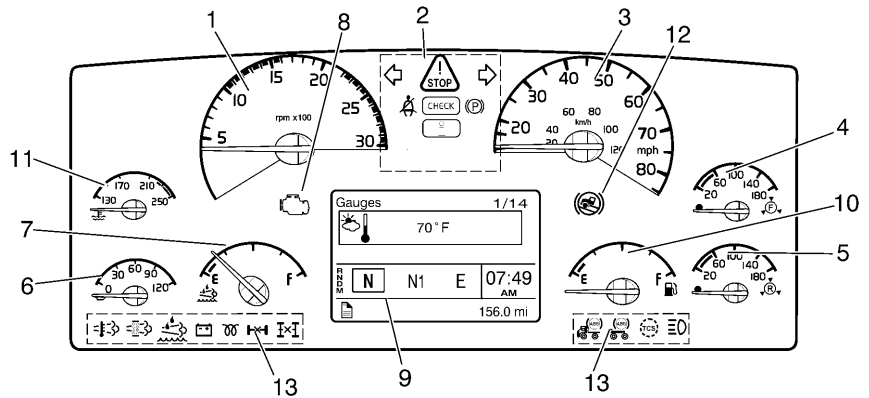
There are two instrument cluster levels available: High and Mid level.



W3034025

High Level Cluster

<ul style="list-style-type: none">1. Tachometer2. Upper Tell-Tales3. Speedometer4. Front Brake Air Pressure5. Rear Brake Air Pressure6. Oil Pressure7. Aftertreatment DEF Tank Gauge8. Malfunction Indicator Lamp (MIL)	<ul style="list-style-type: none">9. Driver Information Display (DID)10. Fuel Level11. Intake Manifold Pressure12. Application Air Pressure13. Exhaust Pyrometer14. Hill Start Assist15. Lower Tell-Tales
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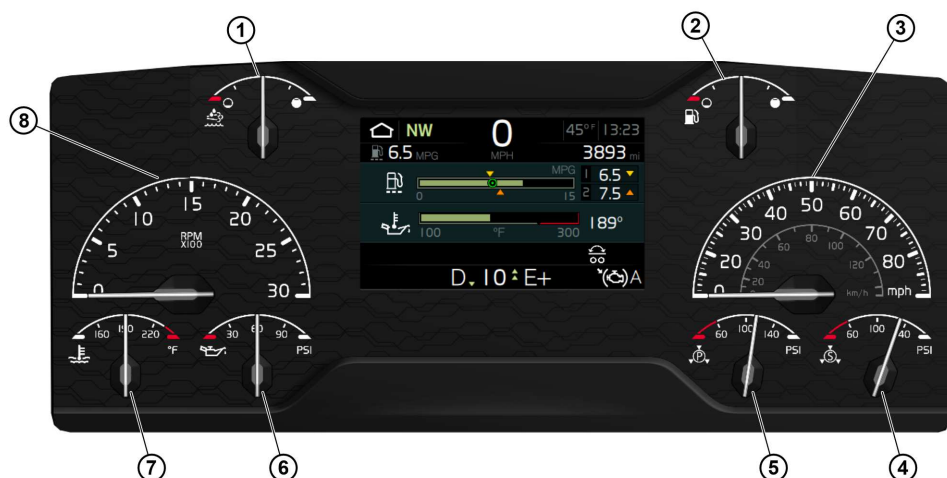
W3034026

Mid Level Cluster

<ul style="list-style-type: none">1. Tachometer2. Upper Tell-Tales3. Speedometer4. Front Brake Air Pressure5. Rear Brake Air Pressure6. Oil Pressure7. Aftertreatment DEF Tank Gauge	<ul style="list-style-type: none">8. Malfunction Indicator Lamp (MIL)9. Driver Information Display (DID)10. Fuel Level11. Intake Manifold Pressure12. Hill Start Assist13. Lower Tell-Tales
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Instrument Cluster GEN II

Note: See owners manual for instrument cluster and Driver Information Display (DID)

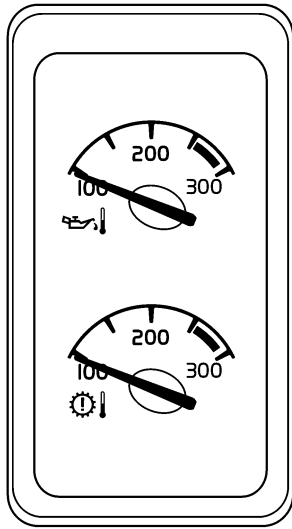


T3198327

1. Aftertreatment DEF Gauge
2. Fuel Gauge
3. Speedometer
4. Secondary Air Pressure Gauge
5. Primary Air Pressure Gauge
6. Engine Oil Pressure Gauge
7. Coolant Temperature Gauge
8. Tachometer

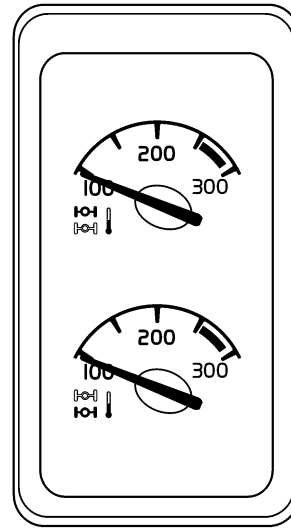
Secondary Gauge Cluster

The secondary gauge is an optional feature, which is available only with the Mid and High level instrument clusters. The instrument cluster receives temperature information from the datalink and then passes the information to the secondary gauge for viewing.



W3006081

Engine/Transmission Temperature Gauge



W3006082

Front/Rear Axle Temperature Gauge

Gauges

Tachometer

The tachometer has two colored fields: green and red. Use the green field for normal driving (1000 to 1600 rpm). Use higher engine speeds for maximum engine brake performance. Never allow the engine to go into the red field (greater than 2200 rpm).

To achieve maximum fuel economy, use the Performance Bonus Guide feature. This feature helps the driver find the most efficient operating range for the engine.

Upper Tell-Tales

The Stop, Check and Info message tell-tales are located in the upper tell-tales box on the instrument cluster. The left and right turn signal indicators, seat belt tell-tale and parking brake tell-tale are also located in the upper tell-tales box. Refer to the Driver Information Display manual for additional information about the message tell-tales.

Speedometer

The speedometer is driven by the vehicle's electronic system.

Front and Rear Brake System Air Pressure Gauges

The system air gauges are connected to the front and rear circuit tanks via sensors mounted on the pass-through wall. The two 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.

If the pressure in a brake circuit air tank drops below approximately 420 kPa (65 psi), the red LED light in the lower left corner of the gauge will come on and the STOP tell-tale warning indicator comes on. In addition, the buzzer comes on if the vehicle starts to move at speed higher than 1.6 km/h (1 mph). If the vehicle is stationary, only the STOP tell-tale warning and red LED light appear.



W3005171

Stop Tell-Tale

If the air pressure drops down below 420 kPa (65 psi) in both systems, the spring brakes will automatically engage to stop the vehicle.

Oil Pressure Gauge



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.

The oil pressure limit is dependent on the engine manufacturer's electronic program. When the oil pressure is too low, the red STOP tell-tale illuminates, the buzzer sounds, and the oil pressure symbol appears on the Driver Information Display (DID) screen. For example, if the engine is at risk, the Engine Electronic Control Unit (EECU) may derate the engine power. Bring the vehicle to a safe stop where the problem can be checked.



W3005171

Stop Tell-Tale



W3003613

Oil Pressure Symbol

Note: The engine will shut down within 30 seconds from when the red STOP tell-tale comes on. Pull off the road as soon as possible without creating a safety hazard.

Coolant Temperature Gauge

The coolant temperature gauge indicates engine coolant temperature. The normal operating temperature for Volvo engines is 80 to 105°C (170 to 215°F). Under normal driving conditions, the temperature must be below the red sector. The temperature range for the coolant will vary depending on the type of engine, load, grade, ambient air temperature and operating conditions. If the temperature remains below or exceeds the normal temperature range, the cooling system should be checked for problems by an authorized Volvo Truck dealer.

The temperature limit is dependent on the electronic program for the engine model. When coolant temperature is excessive, the red STOP tell-tale will come on and the buzzer will sound. The engine is at risk and the EECU may derate the engine power. Stop at the first safe place where the problem can be checked.



W3005171

Stop Tell-Tale

If the coolant temperature returns to normal shortly after exceeding the limit and no repair is performed, the warning messages go out, but a fault message will be logged.

Middle and Lower Tell-Tales

The middle and lower tell-tales provide vehicle and component status information. For more information, refer to the Driver Information Display manual.

Driver Information Display (DID)

The DID gives the operator necessary and important information about the vehicle and components. For more information about the DID, refer to the Driver Information Display manual.

Fuel Level Gauge

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

Intake Manifold Pressure Gauge (High Level Cluster Only)

The intake manifold pressure gauge indicates intake manifold pressure to the engine. The pressure generated by the intake manifold pressure should be the same at a given engine temperature, speed and load. Intake manifold pressure will vary for different engines and vehicle models. By monitoring the gauge, the operator can avoid engine problems.

Application Air Pressure Gauge (High Level Cluster Only)

Air gauges are connected to the air brake system via sensors. They will indicate the brake application pressure from either the front, rear or trailer circuit pressure. The gauge will not register air pressure until the foot brake pedal is depressed or the trailer hand brake is applied.

Exhaust Pyrometer Gauge (High Level Cluster Only)

The exhaust pyrometer gauge indicates the exhaust temperature, which helps the operator get the best efficiency from the engine. Variations in engine load can cause the exhaust temperature to vary. For example, high exhaust gas temperature is the result of prolonged engine lugging or over-fueling. If the pyrometer reading shows that exhaust temperature exceeds normal, reduce fuel to the engine until the exhaust temperature is reduced. Shift to a lower gear if the engine is overloaded.

Exhaust Pyrometer Gauge (High Level Cluster Only)

The exhaust pyrometer gauge indicates the exhaust temperature, which helps the operator get the best efficiency from the engine. Variations in engine load can cause the exhaust temperature to vary. For example, high exhaust gas temperature is the result of prolonged engine lugging or over-fueling. If the pyrometer reading shows that exhaust temperature exceeds normal, reduce fuel to the engine until the exhaust temperature is reduced. Shift to a lower gear if the engine is overloaded.

Trailer Air Supply Valve

The trailer air supply valve is a red octagonally-shaped knob. Pull the knob to apply the trailer emergency brakes. Push the knob to pressurize the trailer air reservoir and release the trailer emergency brakes. The trailer air supply valve should not be used for parking. .

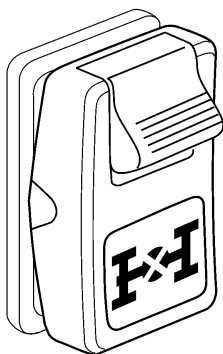
Tractor Parking Brake Valve

The tractor parking brake valve is a yellow diamond-shaped knob. Pull the knob to apply the tractor parking brakes. Push the knob to release the tractor parking brakes. The tractor parking brake valve applies the tractor parking brakes and the trailer brakes, if equipped

Switches

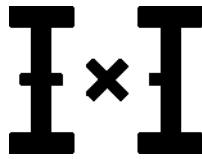
Inter-Axle Differential Lock

The inter-axle differential lock eliminates slipping between axles to improve traction. The switch has a safety latch to prevent accidental engagement.



W3028391

When the lock is engaged, a tell-tale lights up in the instrument cluster.



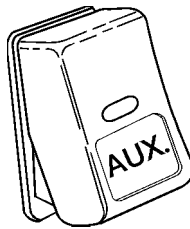
W3006119

Inter-Axle Tell-Tale

A differential lock should only be used on a slippery surface, NOT when driving on good road conditions. If a differential lock tell-tale is activated in the instrument cluster, DO NOT make turns until the tell-tale has gone out.

Auxiliary

Generic switches are available for auxiliary functions that are installed by the customer. These switches can be purchased from your authorized Volvo Truck dealer.



W3005502

Auxiliary Switch

Notes

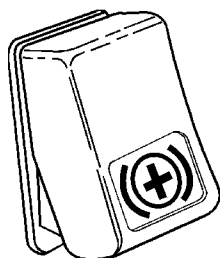
Fifth Wheel Touch Lock



DANGER

Activation of the kingpin lock release switch **ONLY** unlocks the kingpin latch mechanism. To relock the latch mechanism, you **MUST** pull forward and then back up to re-engage the kingpin lock mechanism. Failure to follow these instructions can result in separation of the trailer from the tractor causing personal injury or death.

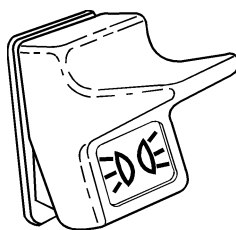
- Park the vehicle and apply the parking brake for the tractor trailer.
- Put the gearshift in neutral and chock the trailer wheels.
- Lower the trailer landing gear to the ground.
- Disconnect the air/electric lines to the trailer.
- To release the fifth wheel kingpin lock, push the switch up. This will release the locking mechanism. Once activated, the switch will not relock the fifth wheel kingpin locking mechanism.
- Release the parking brake and drive the tractor 12 inches away from the kingpin.
- Deflate the air suspension by pressing the bottom of the suspension switch. After the suspension lowers, pull clear of the trailer and reinflate the suspension.
- The fifth wheel kingpin lock will only relock if you follow the complete recoupling procedures.



W3004428

Marker Interrupt

This switch interrupts power to the marker lights when held down. When released, it springs back to the ON position and returns power to the marker lights.

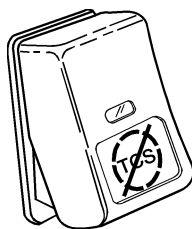


W3001352

Marker Interrupt Switch

Traction Control

If the vehicle is equipped with a Traction Control, the switch can be used to disable the traction control feature, and therefore increase wheel spin. This may be useful for decreasing the chances of getting bogged down when driving in heavy snow, slush or muddy conditions. Refer to Volvo Exhaust Brake for more information.

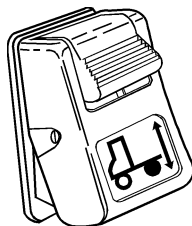


W3001336

Traction Control Switch

Suspension Dump

Vehicles with rear air suspension have a control for deflating the air springs. Use this feature when uncoupling from trailers.



W3001341

Suspension Dump Switch



CAUTION

The vehicle must never be driven with the air springs deflated. Damage to air suspension parts will occur if springs are not inflated properly.

The suspension dump switch has a safety latch to prevent accidental engagement. Depress the latch and press in the bottom part of the switch to deflate the air springs. A tell-tale in the instrument cluster will light up when the switch is in the ON position.

This switch controls a chassis-mounted electric over air solenoid valve. When the switch is rocked down to the ON position and the ignition switch is turned to the OFF position, the solenoid valve will no longer have power and the suspension will inflate.

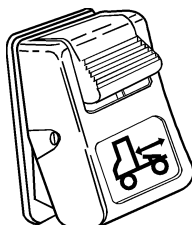
Fifth Wheel Slide



DANGER

The release must never be operated while the vehicle is operating on the road. Fifth wheel position adjustment must only be done when stationary. Damage to the fifth wheel, trailer kingpin and slider may occur if not operated properly and may lead to an accident, causing serious personal injury or death.

The sliding fifth wheel uses an air-operated release mechanism and is used for distributing loads more favorably between the front and rear axles to comply with varying state and provincial laws. Depress the latch and press in the bottom part of the switch to release the slider locks.



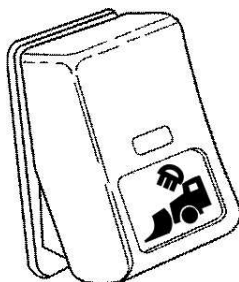
W3001346

Sliding Fifth Wheel Switch

Snow Plow Lamps

Vehicles specified with this option have the following:

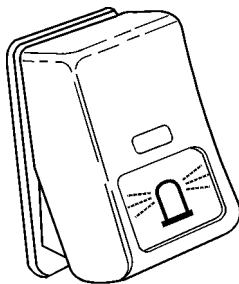
- Turn ON low beam snow plow head lamps.
- Turn OFF main head lamps, high beam, fog and driving lights.
- In driving mode, DRL remains ON.
- Snow plow direction indicators are available.



W3131464

Snow Plow Lamp Switch

Beacon Lamps

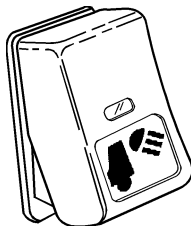


W3005428

Beacon Lamp Switch

Back of Cab Light

To activate the back of cab light, press the bottom part of the switch. The light will stay on until the switch is turned to the OFF position. Back of cab lights are available as a flush-mounted light in the middle of the cab rear wall or as a high-mounted light on the side of the cab.



W3001355

Back of Cab Light Switch


Notes

Power Take-Off (PTO)

There are two basic types of PTOs available: Engine-mounted and transmission-mounted.

The transmission-mounted PTO is clutch dependent, which means that operation can be regulated by depressing or releasing the clutch pedal. This PTO should NOT be in use while driving.

The engine-mounted PTO is directly mounted to the engine and is engaged with a bypass valve operated by the switch. This PTO can be in use while driving.

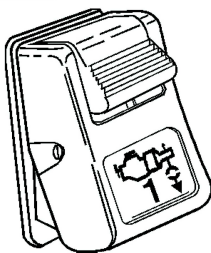
**CAUTION**

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.

Transmission-Mounted PTO

Engage the PTO by depressing the clutch pedal and pressing in the bottom part of the switch. Release the clutch pedal to start the PTO.

One or two PTOs can be run at the same time. Applications change depending on customer needs and components.



W8117313

Engine-Mounted PTO, VN

The engine should be running at low idle and the vehicle should be stopped or running at very low speed before engaging power take-off. Engage the PTO by depressing the locking tab and at the same time, depressing the main part of the switch. The PTO is now in operation and hydraulic flow can be regulated by the engine speed.

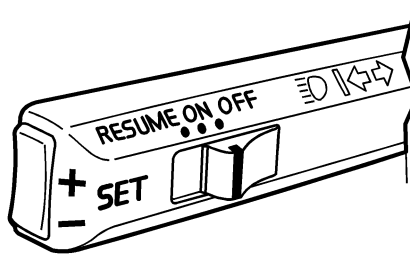
Notes

PTO Speed Adjustment

Engage the PTO before adjusting the speed. For the PTO speed adjustment to function, the Cruise Control or idle adjust cannot be active, brake and clutch pedals must be released, and vehicle speed must be under approximately 8 km/h (5 mph).

To set engine speed:

- 1 Set the PTO/CC switch in the ON position.
- 2 Depending on configuration, the engine speed may automatically be selected when the PTO dash switch is activated (Volvo engines only).
- 3 If NOT, then
 - **Volvo engines:** Press the RESUME button to achieve the preset PTO engine speed. Alternatively, the accelerator pedal can be used to achieve the desired engine speed, and press SET+ or SET- to hold that speed
 - **Cummins engines:** Press either the RESUME, SET+, or the RESUME and SET+ buttons simultaneously to achieve one of three possible preset speeds.



W3002499

To increase/decrease engine speed:

- 1 **Volvo engines:** Press and release the SET+ or SET- toggle switch to increase/decrease speed in increments (increment size depends on programmed value).
- 2 Cummins engines: Press and hold the SET+ or SET- toggle switch to increase/decrease speed. When the switch is released, the engine speed sets at current speed.

To deactivate PTO speed function. Set the PTO/CC switch to the OFF position.

or

2. Depress the service brake pedal.

or

3. Depress the clutch pedal (Programmable).

or

4. Increase vehicle speed above PTO working range (typically 8 km/h [5 mph]).

Notes

Engine Brake



DANGER

When operating your tractor bobtail (without a trailer) or on slippery roads, the engine brake switch must be in the OFF position. Failure to follow these instructions can result in loss of vehicle control, serious personal injury or death.



DANGER

A vehicle speed retarding device is not intended to replace the service brake system on your vehicle nor intended to bring your vehicle to a stop. A vehicle speed retarding device is only intended to retard the speed of your vehicle under certain conditions.

Using the retarding device as a brake could result in loss of vehicle control and personal injury or death.

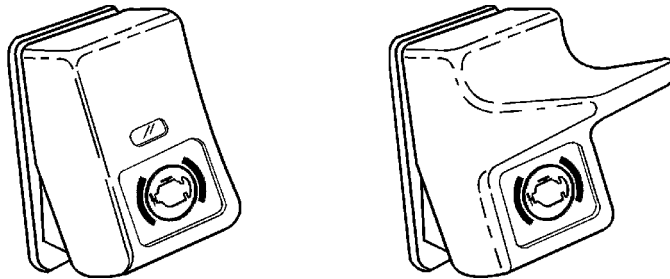
Note: It is normal for a slight delay to occur in the application of a vehicle speed retarding device. When using a device of this type, be sure to think ahead and analyze conditions in order to use the device properly.

Several types of engine brakes can be installed or are standard on certain engines. All are used to reduce wear on the vehicle brake linings.

Several types of engine brakes can be installed or are standard on certain engines. All are used to reduce wear on the vehicle brake linings.

Volvo Variable Geometry Turbo Brake VN

The variable geometry turbo brake is standard equipment on the Volvo 11H and 13H engines. Software is used to close the variable geometry turbocharger, creating retardation. The switch for exhaust brake has two positions: ON/OFF.



W3005433

Transmission Retarder, VHD Only



DANGER

DO NOT use the retarder on wet or slippery roads. The retarder may cause vehicle to slide and cause an accident which could result in injury or death.



CAUTION

Apply the retarder only when engine is at closed throttle.

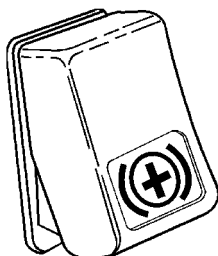


CAUTION

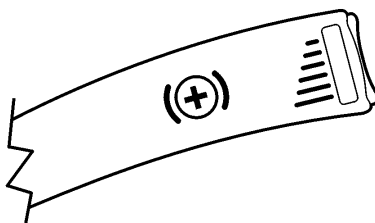
Observe transmission and engine temperatures. Select the lowest possible transmission range in order to maximize the cooling system capacity and retarding. If overheating occurs, decrease the use of the retarder and use service brakes instead. Check the retarder overtemp light.

Note: The retarder is automatically disabled when the ABS (anti-lock brake system) is active.

The Transmission Retarder is an option with Allison HD and MD transmissions. It is activated by an on/off switch in the auxiliary panel and is controlled by a stalk switch mounted in front of the wiper switch. You can set six different levels with the stalk switch.



W3004428



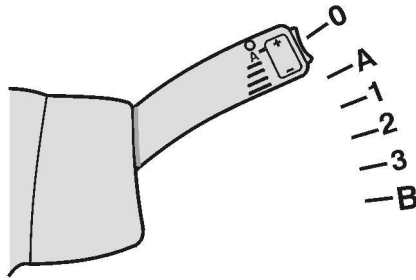
W3004405

Note: Vehicle brake lights are always on when the transmission retarder is active.

For complete warnings and instructions, refer to the Allison Transmission manual.

Volvo Engine Brake I-VEB

The Volvo Engine Brake (I-VEB) works together with the variable geometry turbocharger to provide retarding horsepower at low engine rpm. The I-VEB is standard equipment on the Volvo 16H engine and optional on the 13H and 11H engines. The I-VEB has a six position control located on the steering column, just forward of the wiper stalk.

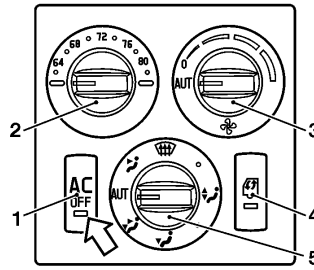


T5012243

- O = Off
- A = Engine Brake Cruise Control? In this position when the Cruise Control is enabled and the vehicle speed exceeds the set cruise speed, the I-VEB will engage with the infinite control (within the limits of the engine brake) to maintain that speed
- 1 = 40% Engine Braking
- 2 = 70% Engine Braking
- 3 = 100% Engine Braking
- B = I-Shift Brake Program — When ordered in conjunction with the Volvo I-Shift Transmission, the controls are integrated

Notes

Air Conditioning Electronic Climate Control (ECC)



W8003062

- 1 **AC OFF** button: Turns the air conditioning OFF. The arrow in the illustration shows the LED light which is AMBER or RED indicating the AC compressor is OFF. The ECC will still try to maintain the selected temperature in the cab without the compressor.
- 2 Temperature Knob
- 3 Fan Speed Knob
- 4 Recirculation Button
- 5 Air Distribution Knob

Recirculation

Press recirculation to circulate the air in the cab. Only a small amount of air is taken directly from outside. The light in the button comes on when the button is pressed for air recirculation.

Temperature Control Settings ECC

Maximum Cold Setting

The temperature knob should be set to the far left. The fan speed knob should be set to AUTO and the air distribution knob should be on AUTO.

Maximum Heat Setting

The temperature knob should be set to the far right. The fan speed knob should be set to AUTO and the air distribution knob should be on AUTO.

Normal Setting

When the temperature control is set to any temperature between 18°C and 27°C (64°F and 80°F), the ECC automatically adjusts itself close to the selected temperature, similar to a thermostat.

Fan Speed

The fan speeds are 1 through 4. The fan will not operate when "0" is selected, but air will flow when set to fresh air mode due to ram air effect when the truck is moving.

- The ECC automatically circulates air at fan speed 4 when there is a big difference between the selected temperature and the temperature measured by the in-cab sensor. However, as the temperature in the cab gets closer to the selected temperature, the fan speed begins to slow down.
- If maximum cold or maximum heat are selected, the ECC automatically circulates air at fan speed 4 when AUT is selected. At any other selected fan speed the system adjusts and conforms to the chosen speed.



DANGER

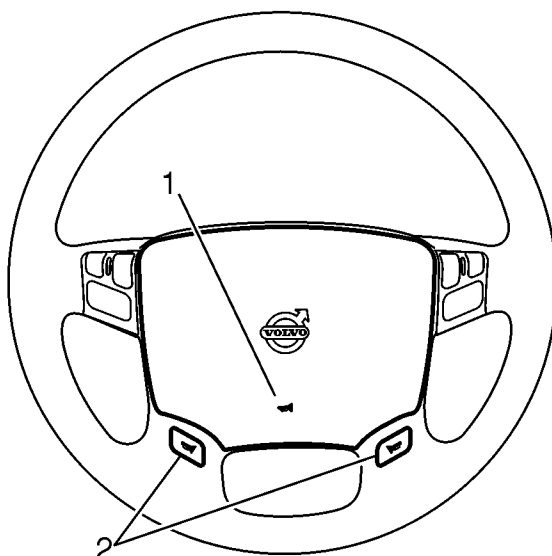
DO NOT attempt to drive with the windshield covered by mist, or fog or frost. The visibility is reduced, which could lead to an accident causing severe personal injury or death.

- 1 Turn the knob to defrost.
- 2 Rotate the temperature knob to add heat as necessary.
- 3 Set the fan speed knob to maximum (the extreme right).

Use these instructions to keep the windshield clear at all times. Maximum heat output for fast defrosting can only happen after the engine has reached operating temperature. While driving in extreme cold, adding heat to the windshield may change drifting snow to ice, in this case, setting the air distribution to floor and/or panel only may allow the drifting snow to be brushed off by the windshield wiper. Clean the inside of the window using normal window cleaner in order to minimize the risk of misting. Clean more often if a passenger smokes in the cab.

Horn

Electric and air horns are standard equipment. They are both operated from the steering wheel or center pad. The airbag can be pressed down anywhere around the edge to engage the air horn.

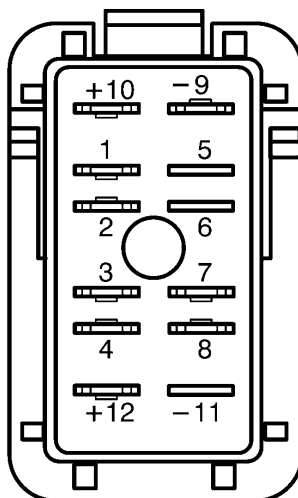


W6001503

- 1 Air Horn
- 2 Electric Horn (city horn)

Switches and Controls

Dash Switches



W3007201

The following tables list the available dash switches for the dash switch panels. Not all switches are standard and can vary from vehicle to vehicle. Extra switches and switch connectors are available through Volvo Parts NA.

Switch Handle Styles:

- 1 Normal Rocker
- 2 Rocker with Paddle Handle
- 3 Rocker with Safety Interlock
- 4 Stationary Indicator Lamps

Note: Handle styles are available with different switch functions; consult the tables for the available combinations.

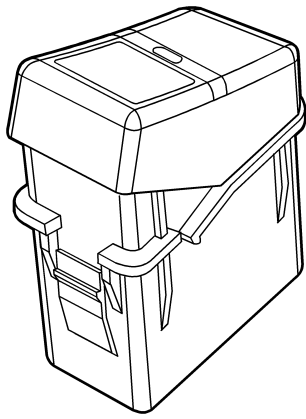
Switches have a common connector configuration and terminal identification.

All switches have LED backlighting with an internal current-limiting resistor. The backlighting is controlled by terminals 10 (+V) and 9 (Ground).

Some switches have a pilot lamp (LED) in the center of the switch. This is to indicate when the switch or load is turned “ON”.

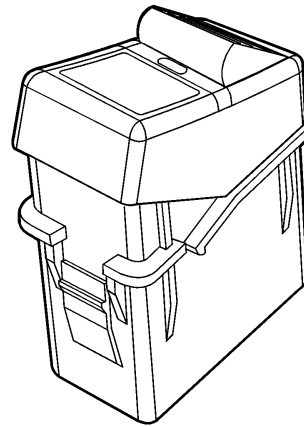
All switches mount with the switch legend towards the bottom. For most switches, the “ON” position occurs when the switch is pushed at the bottom.

Note: Pay special attention to the current ratings of switches. All switches are rated for 12V DC use. Some are rated for 'electronic' loads (100 mA maximum), meaning that they are used only as an input to an ECU and must not be used in general purpose lighting.



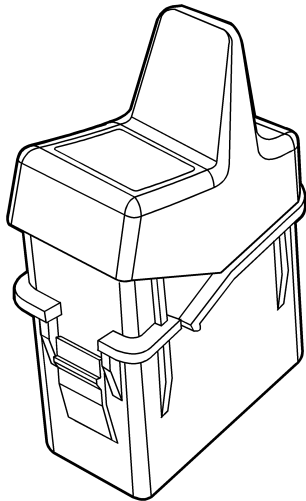
W3000579

Fig. 1 Basic Rocker Switch



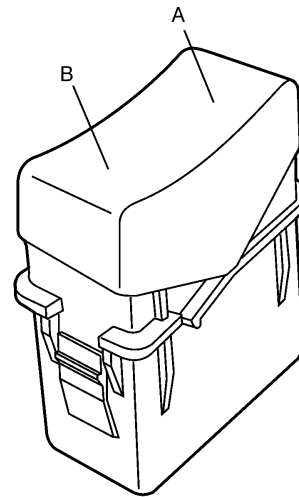
W3004415

Fig. 3 Rocker with Safety Interlock



W3000578

Fig. 2 Rocker with Paddle Handle

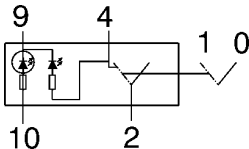
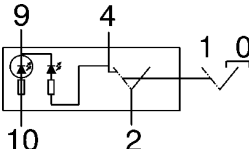
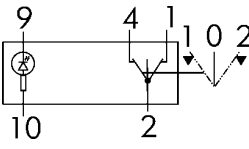
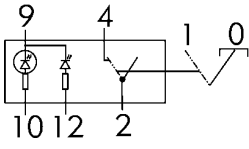
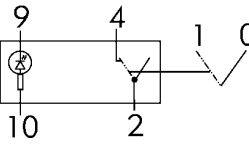
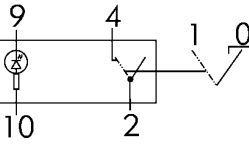
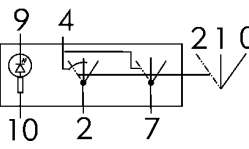
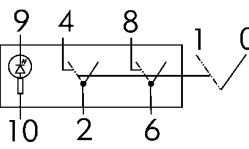
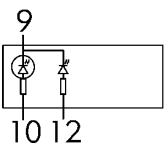


W3007202

Fig. 4 Stationary LED

A Top LED







B Bottom LED

Switch Logic	Handle Style	Switch Description
	Basic Rocker	<ul style="list-style-type: none"> AUX ("AUX") Mirror demist Beacon light
	Locking Rocker	<ul style="list-style-type: none"> Inside/outside air intake ("engine air control")
	Basic Rocker	<ul style="list-style-type: none"> Overhead fluorescent lamp Window lift; passenger side Elec. mirror arm passenger side Elec. cont. susp. 6x2 up/down Diff. lock, inter-wheel low range
	Locking Rocker	<ul style="list-style-type: none"> Power take-off, gearbox 1 Power take-off, gearbox 2 Power take-off engine Additional brake; retarder
	Basic Rocker	<ul style="list-style-type: none"> Engine brake, EPG Idle management Temp-A-Start
	Locking Rocker	<ul style="list-style-type: none"> Frame lift; air suspension dump Diff. lock; inter-wheel Diff. lock; inter-axle 5th wheel slide Elec. cont. susp. 6x2 off/on (ECS)
	Rocker with Paddle	<ul style="list-style-type: none"> Engine brake, EPG + VEB; 12V 0-1-2
	Rocker with Paddle	<ul style="list-style-type: none"> Engine brake, Cummins 12V 0-1
	Stationary LED	<ul style="list-style-type: none"> Lamp, Volvo Temp-A-Start; green and red LED's

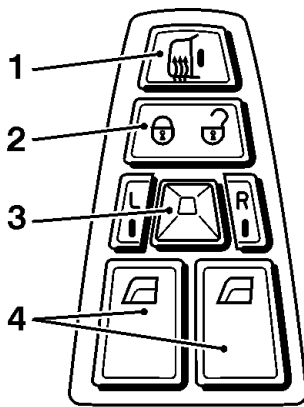
Switch Logic	Handle Style	Switch Description
	Basic Rocker	<ul style="list-style-type: none"> Engine brake, Cummins 12V 0–1–2
	Basic Rocker	<ul style="list-style-type: none"> Water drain fuel filter Heated windshield
	Basic Rocker	<ul style="list-style-type: none"> 5th wheel unlock; momentary non-locking
	Basic Rocker	<ul style="list-style-type: none"> Working light; back-of-cab/5th wheel Inverter, 120V AC
	Basic Rocker	<ul style="list-style-type: none"> Sleeper HVAC mode select
	Basic Rocker	<ul style="list-style-type: none"> Traction control system; shut-off I-Shift hill start assist
	Rocker with Paddle	<ul style="list-style-type: none"> Marker lamps interrupter
	Locking Rocker	<ul style="list-style-type: none"> 5th wheel unlock; momentary
	Locking Rocker	<ul style="list-style-type: none"> Plow light
	Locking Rocker	<ul style="list-style-type: none"> Pusher axle lift Axle lifting, tag axle
	Basic Rocker	<ul style="list-style-type: none"> I-Shift ECO-Roll

Switch Functionality Legend

Reference the table below to identify switch functionality.

 W3007476	On/Off Maintained
 W3007477	On/Off (Momentary On)
 W3007704	On/Off (Momentary Off)
 W3007479	On/Off Locking
 W3007480	On/Off Locking (Momentary On)
 W3007478	On/Off/On (Momentary, With Center Off Position)

Door Switches GEN I

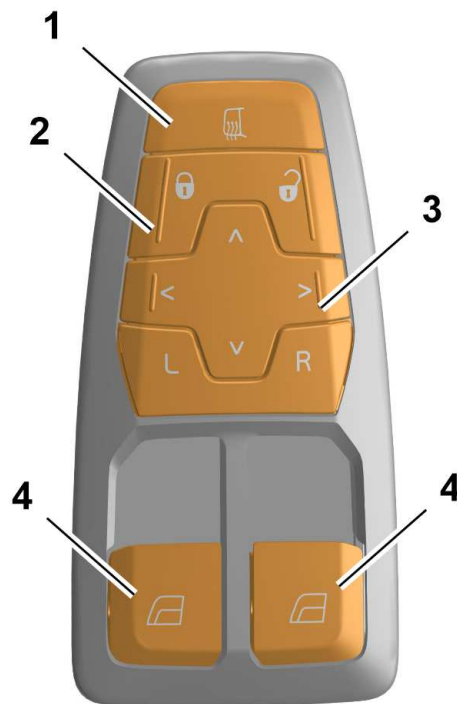


W8003087

Fig. 5 Switch on Driver's Door

- 1 Mirror Heat Switch
- 2 Door Lock/Unlock Switch
- 3 Mirror Control Switch
- 4 Power Window Switches

Door Switches GEN II



T3198256

Fig. 6 Switch on Driver's Door

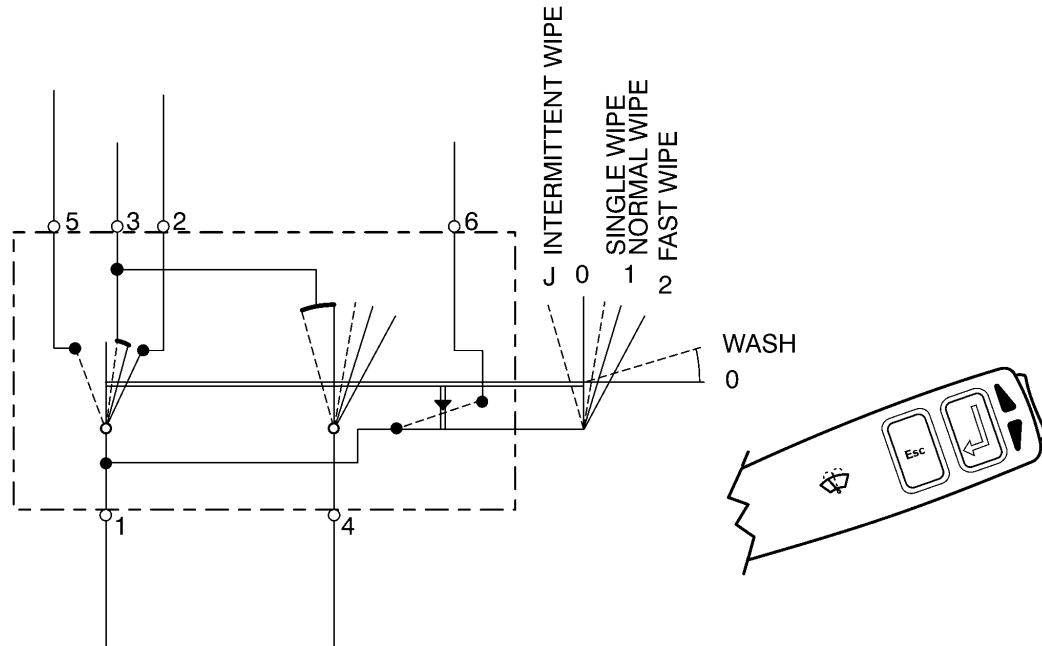
- 1 Mirror Heat Switch
- 2 Door Lock/Unlock Switch

- 3 Mirror Control Switch
- 4 Power Window Switches

The passenger side may only include a window switch to control the right window.

Stalk Switches GEN I

Wiper/Washer Switch



W3056867

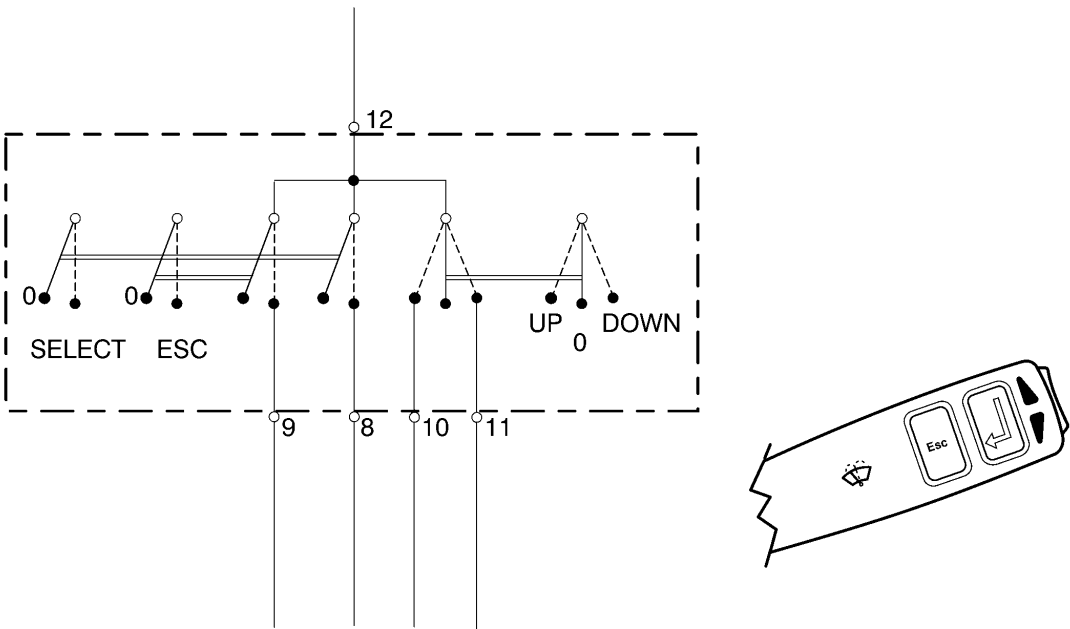
Fig. 7 Wiper/Washer Switch

Controls for the windshield wiper/washer are on the stalk on the right-hand side of the steering column.

Intermittent wipers are preset to make a single sweep every 10 seconds. The interval can be set to between 1 and 10 seconds by moving the wiper stalk to the intermittent position, then to off, then to intermittent again when another sweep is desired.

Wiper/washer Switch Connector	
Pin	Description
1	12V Supply to Wiper Switch
2	High Speed Wiper
3	Low Speed Wiper (Normal)
4	LCM Input Signal (wiper motor active)
5	12V Input to LCM (intermittent function)
6	12V Supply to Washer Motor

Graphic Display Switch



W3056868

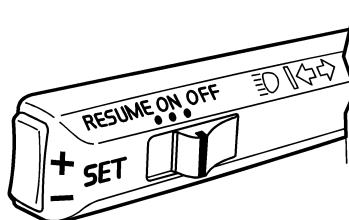
Fig. 8 Graphic Display Esc/Select Switch

Note: Numbers inside parenthesis are circuit numbers

Controls for the instrument cluster's graphic display window are located on the stalk switch to the right of the steering column. The Esc and Select buttons allow for different vehicle information to be displayed. The up and down buttons at the end of the stalk are used to scroll through the various display menus.

Graphic Display Switch Connector	
Pin	Description
8	"SELECT" Input
9	"ESCAPE" Input
10	"UP" Input
11	"DOWN" Input
12	Common 12V Supply

Cruise Control, Turn Signal and Headlamp Dimmer Switch



W3002499

Fig. 9 Cruise Control Switch

The controls for turn signals, cruise control, and high beam/low beam selection are on the stalk switch on the left-hand side of the steering column.

The high beam/low beam switch works by pulling back on the stalk. This switch includes a "flash to pass" feature.

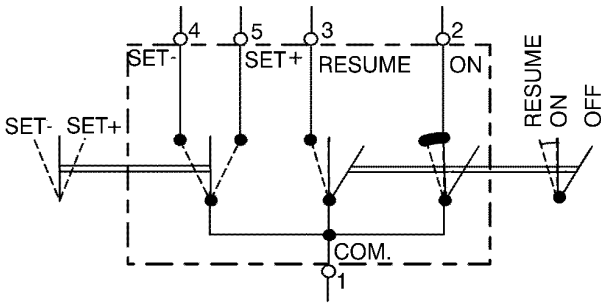
Increase or decrease the engine speed by pressing the button at the end of the stalk. Pressing the top of the button, toward the + sign, will increase vehicle speed while pressing the lower part of the button, the – sign, will decrease speed. To return to the set speed, move the switch on the stalk toward "Resume".

The cruise control switch may also be used to control engine speed on vehicles equipped with PTOs.

Vehicles equipped with SmartCruise are capable of applying the Volvo Engine Brake (I-VEB) and throttle back the engine to slow the vehicle when deemed necessary by the appropriate control modules. With the engine brake stalk in the "A" position, the I-VEB may be engaged to control over speed when rolling down a hill. This is an automated feature and no drive input is necessary once the desired cruise over speed is set.

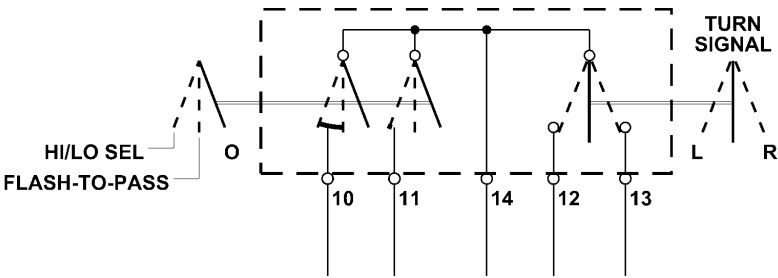
Left Hand Stalk Switch Connector (14-way)	
Pin	Description
1	Common
2	Cruise control On
3	Cruise control Resume
4	Cruise control Set –
5	Cruise control Set +
6	Not used

Left Hand Stalk Switch Connector (14-way)	
7	Not used
8	Not used
9	Not used
10	Flash-to-pass to LCM
11	Hi/Low select to LCM
12	Left turn to LCM
13	Right turn to LCM
14	Common ground



W3056869

Fig. 10 Cruise Control Switch Logic Diagram



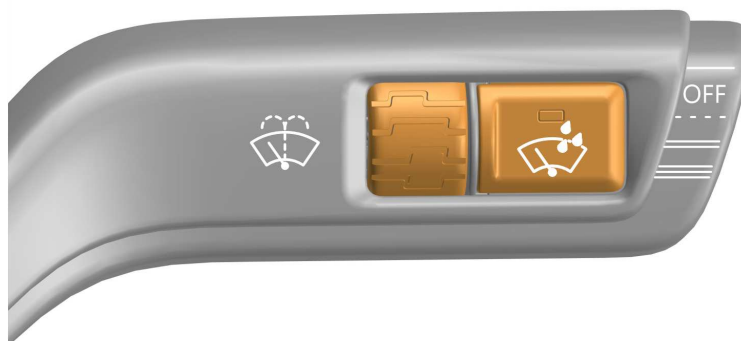
W3056870

Fig. 11 Turn Signal and High/Low Beam Switch Logic Diagram

Note: The turn signal and hi/lo beam switches are logic switch inputs to the Light Control Module (LCM). They do not carry any significant current load (approximately 0.1 Amp or less).

Stalk Switches GEN II

Wiper/Washer Switch



T3198254

Fig. 12 Wiper/Washer Switch

Controls for the windshield wiper/washer are on the stalk on the right-hand side of the steering column.

Intermittent wipers are preset to make a single sweep every 10 seconds. The interval can be set to between 1 and 10 seconds by moving the wiper stalk to the intermittent position, then to off, then to intermittent again when another sweep is desired.

Wiper/washer Switch Connector	
Pin	Description
1	Rain sensor button
2	scroll wheel
3	scroll wheel
4	LED rain sensor
5	GND
6	GND

Turn Signal and Headlamp Dimmer Switch

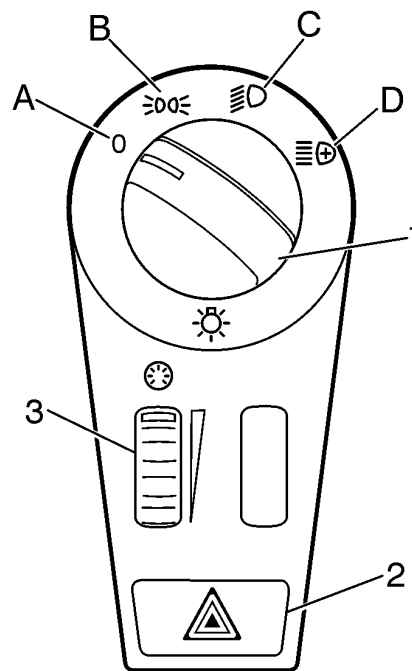


T3198255

The controls for turn signals and high beam/low beam selection are on the stalk switch on the left-hand side of the steering column.

The high beam/low beam switch works by pulling back on the stalk. This switch includes a “flash to pass” feature.

Light Switch



W3005653

The illustration shows the premium version of the switch. The other option does not have the “Drive +” position.

External lighting functions are controlled via the Light Control Panel (LCP). The switch has three controls and three indicator lights (hazard warning lights are indicated by a flashing signal in the switch and turn signal flashing in the cluster).

When the selected function is activated an input on the LCM is grounded.

Indicator lights are supplied with power by the LCM when the relevant function is active.

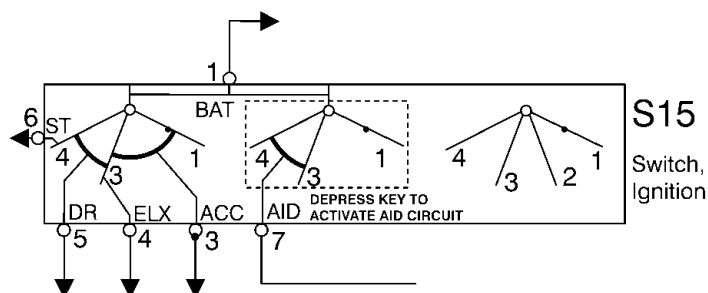
1 Light switch

- A "Off" -position
- B "Park" -position
- C "Drive" -position
- D "Drive +" -position (optional fog/driving lights)

2 Hazard warning lights switch/Hazard warning light indicator light

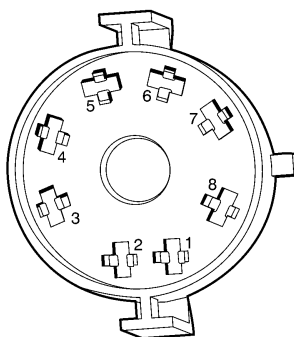
3 Rheostat for dash lighting

Ignition Switch



W3056871

Fig. 13 Ignition Switch Logic Diagram



W3006747

Fig. 14 Ignition Switch Connector Detail

The chart below gives the pin and circuit description.

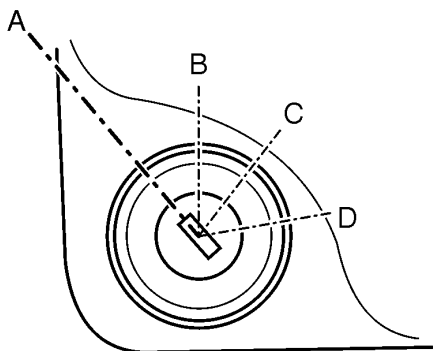
Note: The ignition switch and door locks use the same key. Replacement keys can be ordered from Volvo by key code or cut by a local key cutter if desired.

Pin	Description	Switch Label
1	+12V Battery Power Supply	(BAT)
2	Not Connected	(BAT)
3	Accessory Power Feed	(ACC)
4	Ignition / Auxiliary Power Feed	(ELX)
5	Ignition (Drive) Feed	(IGN)
6	Starter Relay Feed	(ST)
7	Preheat Request	(AID)
8	Not Connected	

Switch Position

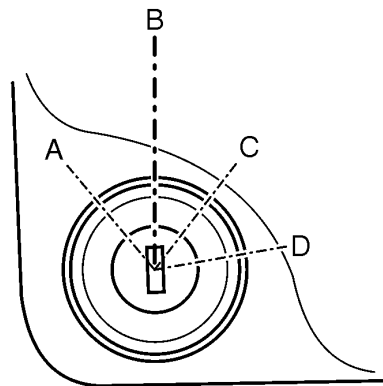
The following illustrations detail the new switch position layout. **The new switch does not detail the positions on the switch itself. Use these illustrations as a reference when servicing the vehicle.**

Note: For preheat, turn to Position C and push inward on the key.



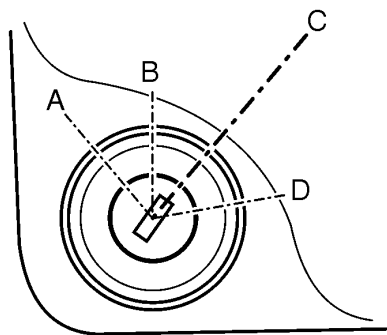
W3006726

Switch Position A = Radio/Accessories



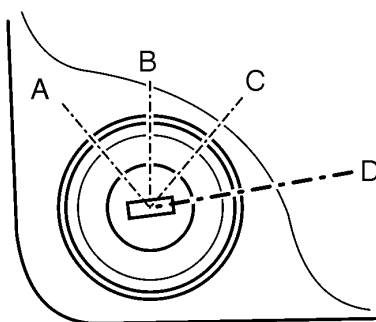
W3006727

Switch Position B = OFF



W3006728

Switch Position C = Drive + Preheat (Volvo Engine Only)



W3006724

Switch Position D = Start

V O L V O

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