TABLE OF CONTENTS – SECTION C – VEHICLE CONTROLS

SUPPLEMENT TO SECTION C – VEHICLE CONTROLS

INTRODUCTION

The vehicle controls enable the driver to manage the operation of the majority of the vehicle's functions. This section describes the switches, controls, and adjustments that are located in the cab header, overhead console, instrument panel, and elsewhere within the vehicle's cab.

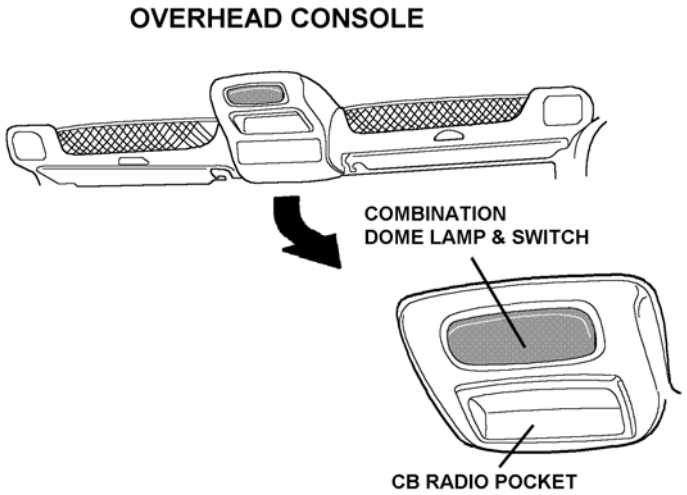
CAB HEADER AND OVERHEAD CONSOLE

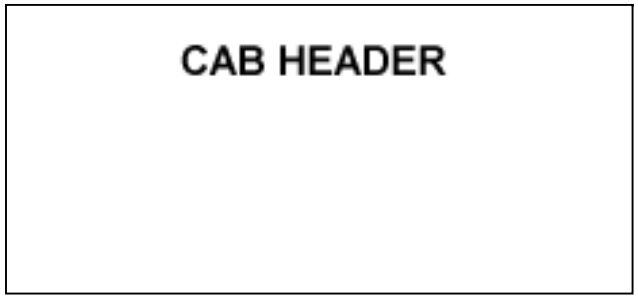
OVERHEAD CONSOLE

The overhead console provides storage, interior lighting, and optional compass and temperature monitoring functions.

CAB HEADER

The monitor for the Rear Vision camera is mounted in the cab header.

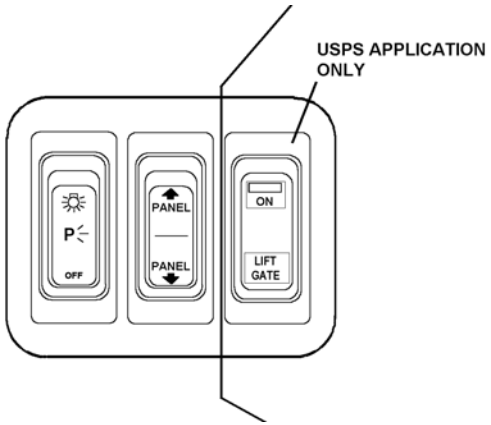




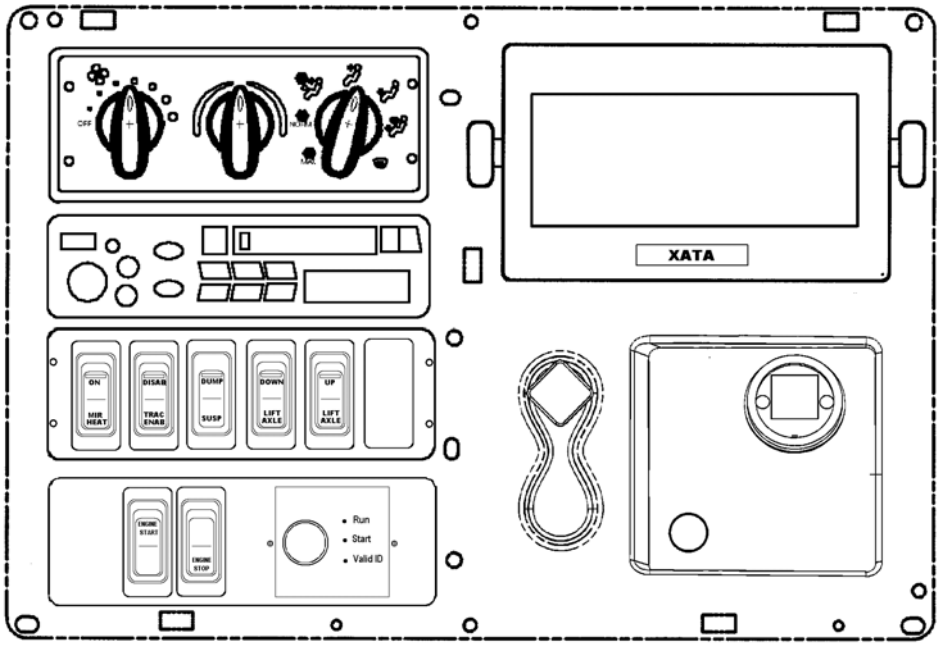
INTERIOR CAB CONTROLS

The Interior Cab Controls include the USPS center panel switches, and lower panel controls.

LOWER (IP) SWITCHES (LEFT OF STEERING COLUMN) (See table on page CS-7 for explanation)

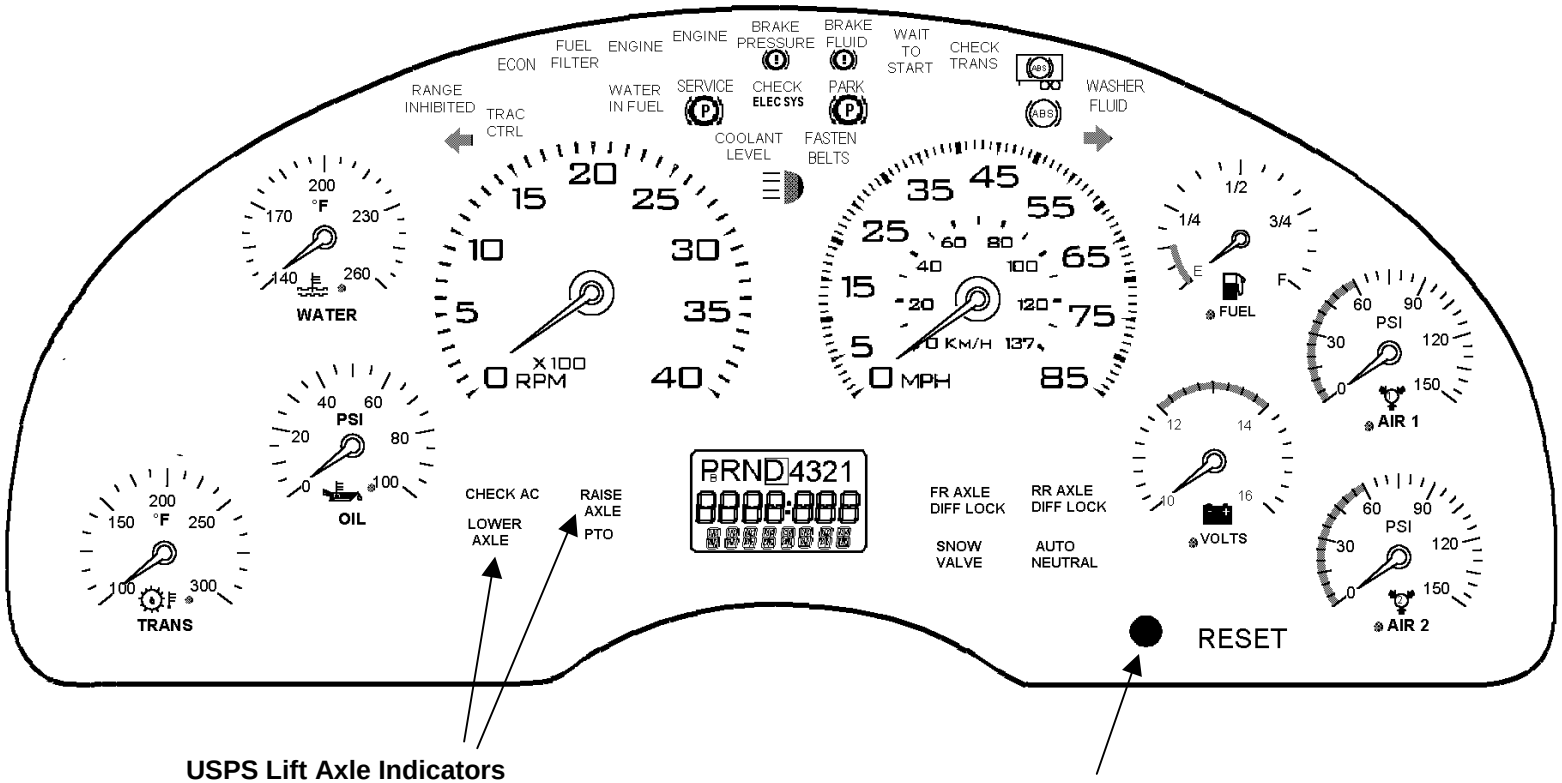


USPS CENTER CONTROL PANEL



USPS INSTRUMENT CLUSTER

The following is a description of the gauges, warning indicators, and LED display options.



USPS Lift Axle Indicators

NOTE: See Section "D", Vehicle Operation, for MODE & SET/RESET switch-selected display functions.

WARNING INDICATORS

The following table lists the unique gauge cluster Warning indicators that apply to the USPS vehicle operation.

WARNING INDICATOR TABLE

WARNING LIGHT NAME	COLOR
LOWER AXLE	RED
RAISE AXLE	RED
PTO	RED

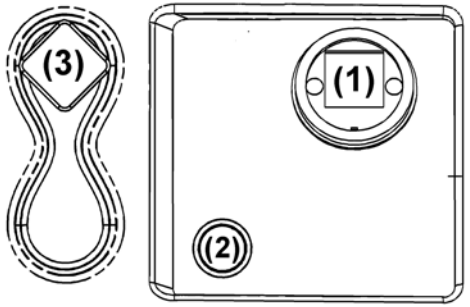
LOWER (IP) LEFT SWITCH BANK

SWITCH NAME	SWITCH FUNCTION	SWITCH INDICATOR STATUS
PARK LIGHT – OFF/PARK/HEADLAMP SWITCH	A three-position switch that selects, in turn, the cluster backlights and Park/Running/Marker lights in the “P” (Park) position, then the headlamps along with all the above lights in the “☼” (Headlamp) position.	
PANEL DIMMER SWITCH	A momentary switch in both up and down position; holding the switch in either position adjusts cluster and panel backlighting a maximum of eight brightness or dimming steps.	
LIFT GATE/ON	A momentary switch that raises or lowers the cargo area door.	Indicator lit when in ON position.

CENTER CONTROL SWITCH PANEL COMPONENTS

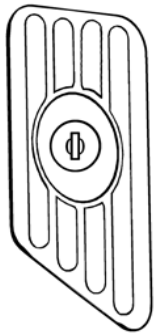
PANEL COMPONENTS

1. **Filter Minder**
2. **Cigar Lighter**
3. **Air Park Brake**

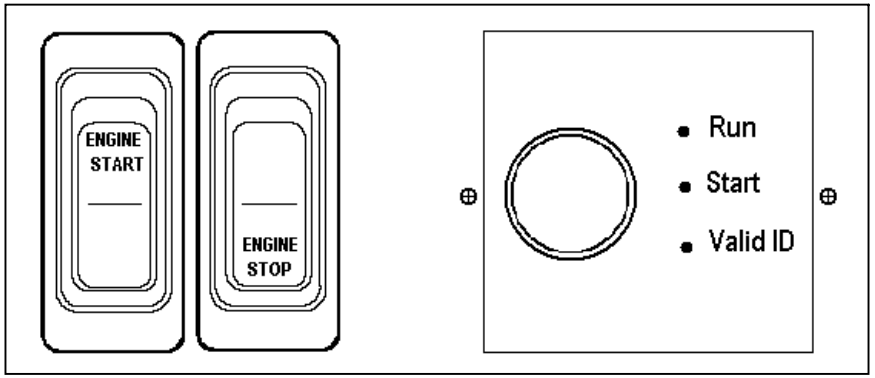


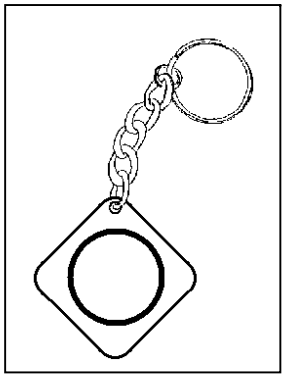
CENTER CONTROL SWITCH PANEL COMPONENTS - CONT.

KEYED IGNITION (START) SWITCH



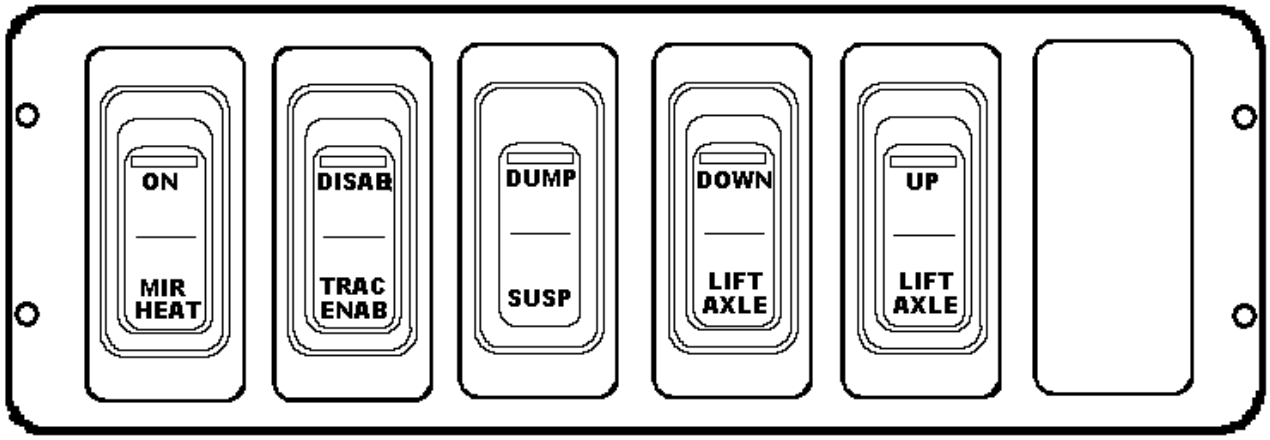
KEYLESS START PANEL WITH START/STOP SWIITCHES AND KEYLESS START FOB





CENTER CONTROL SWITCH PANEL COMPONENTS - CONT.

SWITCH PANEL SWITCHES



SWITCH PANEL SWITCH FUNCTIONS

SWITCH NAME	SWITCH FUNCTION	SWITCH INDICATOR STATUS
HEATED MIRROR– ON/OFF	A momentary switch that, when pushed and released, turns on the mirror heating element - “On/Off”.	The indicator is lit when the switch is turned to the ON position.
TRACTION DISABLE– ON/OFF	This switch disables the ABS traction feature.	The indicator is lit when the switch is turned to the DISAB position.
AIR SUSPENSION DUMP- DUMP/SUSP	This switch allows the operator to release the air from the air bags in an air suspension system when the vehicle’s speed is less than a predetermined speed.	The indicator is lit when the switch is turned to the DUMP position.
ENGINE START	A momentary switch that, when pushed and held, will crank the engine as long as it’s held	The indicator is lit when the switch is in the ENGINE START position.
ENGINE STOP	A momentary switch that, when pushed turns off the engine.	The indicator is lit when the switch is in the ENGINE STOP position.
LIFTAXLE/UP	A momentary switch that is pushed when the RAISE AXLE warning light is lit.	The indicator is lit when the switch is in the UP position.
LIFT AXLE/DOWN	A momentary switch that is pushed when the LOWER AXLE warning light is lit.	The indicator is lit when the switch is in the DOWN position.

TABLE OF CONTENTS – SECTION D – VEHICLE OPERATION

SUPPLEMENT TO SECTION D - VEHICLE OPERATION

ENGINE STARTING

▲ WARNING

To avoid accidental movement, which could possibly result in property damage and personal injury, never start the engine unless you're sure the transmission selector is in neutral and the park brake is applied.

NOTE: When starting the vehicle, automatic transmissions must be in neutral before the starter will engage, and manual transmissions require the clutch pedal to be depressed before the starter will engage.

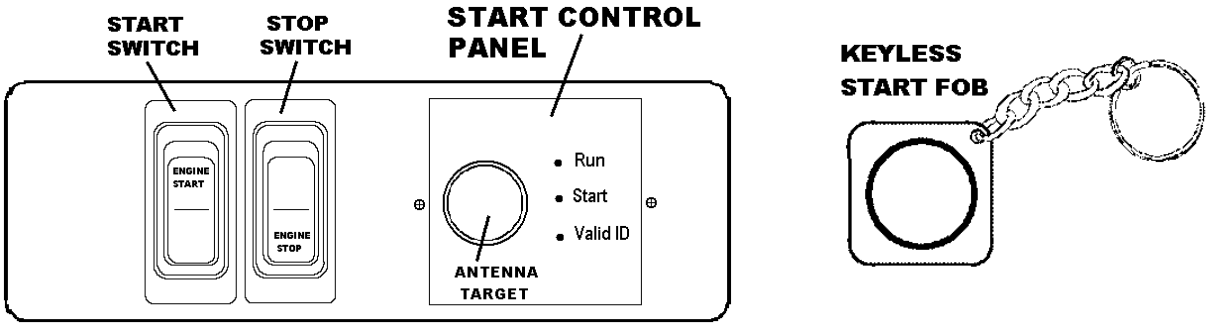
CAUTION

Do not attempt to use the conventional keyed ignition switch when the keyless starting system has been used to start the vehicle. To do so will cause damage to vehicle equipment.

The vehicle may be started using either the conventional keyed ignition switch or the keyless starting system. See the existing 4200, 4300, and 4400 Operator manual for the standard keyed ignition switch starting procedure. The following paragraphs describe the keyless starting system.

Keyless Starting System

The keyless starting system consists of the blue keyless start FOB**,** ENGINE START switch, ENGINE STOP switch, and the Start Control Panel.



a. Place the FOB in front of the Antenna target on the start control panel to turn on the vehicle electrical system. The vehicle will then perform its ESC controlled cluster warning indicator and gauge power up sequences, and at the same time turns on all of the Start Control Panel lights.

   NOTE: If the FOB code is not recognized, the Start Control Panel red Valid ID will be lit and therefore, will not turn the vehicle's systems on.

b. To engage the air starter, press and hold the ENGINE START switch until the engine turns over. The green ENGINE START switch indicator and the yellow Start indicator will be turned on until the engine starts.

c. Release the ENGINE START switch when the engine starts. The yellow Start indicator will turn off, and the green Run indicator will turn on and remain on as long as the engine is running.

d. To turn the engine and all vehicle systems off, press and hold the ENGINE STOP switch until the engine stops. The ENGINE STOP switch red indicator will be lit until complete system shut down.

LIFT AXLE SYSTEM

▲ WARNING

The lift axle automatically raises to the "Up" position whenever the ignition is turned "Off". Ensure that all bystanders are clear of lift axle(s) until all axle movement has stopped. Failure to observe these precautions could result in personal injury or death.

This vehicle may be equipped with a lift axle that provides increased load carrying capacity. The lift axle is designated as a "Tag" axle, due to its location, behind the drive axle. The use of the lift axle allows the vehicle to safely carry up to **XXX** pounds of cargo.

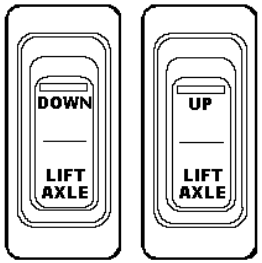
Lift Axle System Operation

The lift axle system consists of the ESC commanded cluster indicators, the load monitoring sensor, two lift axle control switches, and the lift axle itself. The lift axle system is used along with the IROS air suspension, when loading or unloading cargo (See IROS section for further details).

The lift axle system will be utilized after the vehicle has been loaded or unloaded. After the cargo has been loaded, the vehicle should be driven away from the loading dock to a flat surface. The load monitoring sensor then determines whether or not the lift axle should be raised or lowered and alerts the driver using the cluster warning lights.

Lift Axle Controls

The raising or lowering of the lift axle is done by the driver, or, depending on vehicle operational situations, can be ESC-controlled. The controls used by the driver to control the lift axle are two, 2 position, multiplexed switches (LIFT AXLE/UP, and LIFT AXLE/DOWN).



Driver Controlled Lift Axle Operation

The driver can use the LIFT AXLE/UP or LIFT AXLE/DOWN switch to the raise or lower the lift axle as long as the vehicle speed is below 5 mph. After the vehicle has been loaded or unloaded and moved away from the dock (to a flat surface) the ESC will indicate, via the RAISE AXLE or LOWER AXLE cluster indicator, whether or not to raise or lower the lift axle.

Perform the following lift axle operations, when loading or unloading cargo:

a. Maneuver the vehicle in position against loading dock, place the transmission in Neutral, and set the Park brake. *This will cause the lift axle to automatically raise, and, if the vehicle weight is above a predetermined weight value, the air suspension will Dump.* The LIFT AXLE/UP switch indicator will be on while the lift axle is being raised, and the SUSPENSION/DUMP switch indicator will be off. The LIFT AXLE/UP switch indicator will remain on while the lift axle is being raised and will go off after the lift axle is in raised position.

b. If the lift axle is not currently raised, momentarily push the LIFT AXLE/UP switch to the UP position. *If the vehicle weight is above a predetermined weight value, the air suspension will Dump.* The switch indicator will be on, and will remain on while the lift axle is being raised.

c. After cargo is loaded, release Park brake and pull vehicle away from loading dock and drive to a flat surface. Place the transmission in Neutral and ensure that the air suspension has been set to ride height (SUSP/DUMP switch to the SUSP position) and wait for 30 seconds (this allows the load sensor to determine cargo load).

d. If the Instrument cluster LOWER AXLE light comes on, momentarily push the LIFT AXLE/DOWN switch to the DOWN position. The switch indicator will be on steadily as the lift axle is being lowered, and will remain on while the lift axle is being lowered. After the lift axle is in lowered position the LOWER AXLE light will go off.

Notes: (1) The load sensor only works accurately if the lift axle is raised, which places the load completely on rear axle)
(2) Either switch indicator will flash slowly, if the ESC inhibits the driver's request to raise or lower the lift axle.
(3) Either switch indicator will flash rapidly If there is a system malfunction.
(4) The lift axle automatically raises to the "up" or resting position whenever the ignition is turned "Off".

ESC-Controlled Lift Axle Operation

The ESC, under certain conditions, will determine and control the operation of the lift axle. The following will describe the ESC-controlled lift axle operations:

a. Same as "a." above.

b. After loading/unloading, move the vehicle to a flat surface and wait for 30 seconds for the ESC to determine cargo weight.

c. If the load monitoring sensor determines the cargo weight is equal to or greater than a predetermined weight value, the ESC will turn on the Lower Axle cluster indicator. If the driver doesn't push the LIFT AXLE/DOWN switch, the ESC will automatically lower the lift axle whenever the speed of the vehicle reaches 5 mph. The Lower Axle cluster light and the LIFT AXLE/DOWN switch indicator will be on steadily while the lift axle is being lowered, and then will go off when the lift axle is in the lowered position.

d. If, at a vehicle speed less than 5 mph, the driver places the SUSP/DUMP switch in the DUMP position, the lift axle will automatically be raised. The SUSP/DUMP switch and the LIFT AXLE/UP switch indicators will be on while the lift axle is being raised and will turn off when the lift axle is in its raised position. (See the Air Suspension section for details of the Air Suspension/Dump switch).

AIR SUSPENSIONS

The United States Postal Service (USPS) vehicle is equipped with either the International Ride Optimized Suspension (IROS) suspension or the Hendrickson Air Suspension (HAS-230). The Hendrickson Air Suspension is only used when the vehicle is equipped with a lift axle. All other vehicles with air suspensions will use the IROS.

Both suspensions utilize the same switch to release air from or filling the air suspensions. The following description of the IROS system also applies to the Hendrickson Air Suspension, and any references to lift axle operation will be assumed as applying to the Hendrickson Air Suspension.

INTERNATIONAL RIDE OPTIMIZED SUSPENSION (IROS) (OPTIONAL)

▲ CAUTION

The vehicle must not be operated on the road before the suspension air springs are inflated. This will prevent suspension damage and ride degradation. Failure to observe this may result in property damage.

The International Ride Optimized Suspension (IROS) is a variable rate suspension system that automatically adjusts to different loads to maintain constant frame height. The system provides improved vehicle ride and increased driver comfort. This feature also allows the rear of the vehicle to lower several inches for cargo loading and unloading.

The system is controlled by the two position DUMP/SUSP switch with an indicator light in the DUMP position. This switch controls solenoids, which directs air to the suspension dump and height valve.

When the DUMP/SUSP switch is in the DUMP position and the vehicle speed is below 5 mph, air supplied to the air suspension is released, lowering the frame for loading. Placing the switch is the SUSP position causes air to fill or remain in the air suspension for proper operating ride height.

The DUMP/SUSP switch will operate the IROS system only if the ignition switch is in either ACC(essory) or ON positions and the air tanks have sufficient pressure to fill the suspension. When the ignition switch is turned off, power to the solenoid will be removed, therefore, the suspension will remain in the state last set by the DUMP/SUSP switch.

NOTE: The suspension will dump when the ignition switch is in the either ACC(essory) or ON position, but will only fill when the ignition switch is in the ON position.

Air Suspension Dump Switch

Notes: (1) To lower the suspension (SUSP/DUMP switch to DUMP), the vehicle speed must be less than 5 mph.
(2) The SUSP/DUMP switch functions will be inhibited by either a Traction Control or ABS event. When either of these events occur, the SUSP/DUMP switch will have to be manually recycled after the event has passed in order to complete the operation.

The following is the operation of the Air Suspension Dump (SUSP/DUMP) switch in controlling the vehicle ride height:

a. When the SUSP/DUMP switch is pushed to the DUMP position, the ESC releases air from the air suspension bag. The switch indicator comes on and remains while the suspension is being lowered.

b. When the SUSP/DUMP switch is pushed to the SUSP position, the driver is requesting the ESC to fill the air suspension bag, and the switch indicator will be off.

ESC-Controlled Air Suspension Operation

The following lists the circumstances that require ESC control of ride height.

a. The ESC will automatically switch from DUMP to SUSP if, while the ESC is commanding a DUMP operation, the vehicle speed exceeds 5 mph. Once this occurs, the only means to deflate the suspension will be to recycle the SUSP/DUMP switch to the DUMP position.

b. On vehicles equipped with a lift axle, the suspension will automatically dump if the vehicle's lift axle is raised by the driver, and the vehicle weight is greater than a predetermined weight value.

c. When the Park brake is set, and the cargo weight is above a predetermined value, the suspension will automatically Dump.

Air Suspension Dump System Faults

a. The cluster will issue an audible 10 beep alarm whenever the driver pushes the DUMP position of the SUSP/DUMP switch, and the vehicle exceeds 5 mph.

b. The SUSP/DUMP switch indicator will blink rapidly in the event of a system component failure or a bad system signal status, when the SUSP/DUMP switch is in the DUMP position.

c. The SUSP/DUMP switch indicator will blink slowly in the event of an ESC command fault, regardless of the position of the SUSP/DUMP switch.