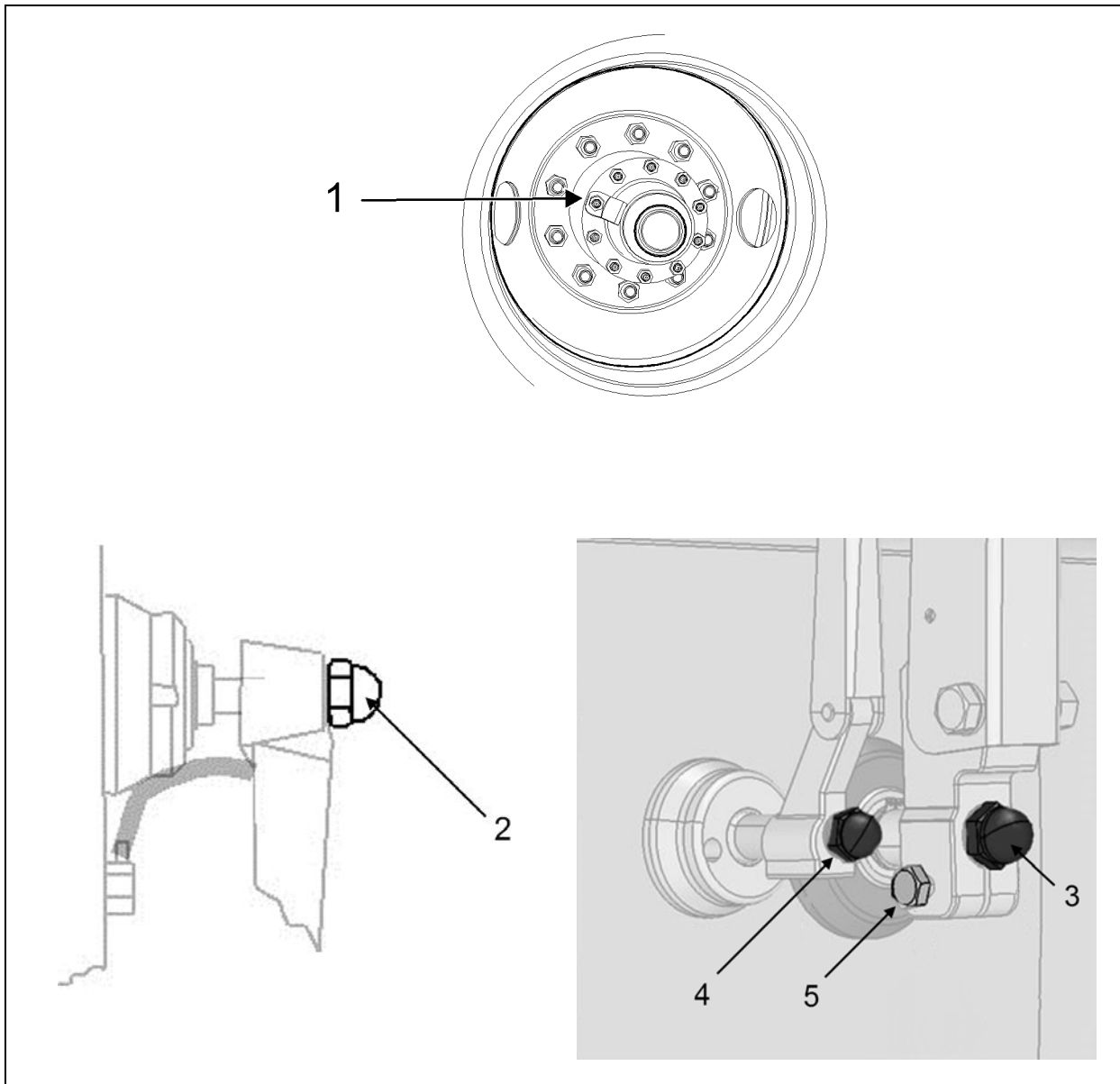


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1. TORQUE TABLES



| MISCELLANEOUS |                                     |                            |
|---------------|-------------------------------------|----------------------------|
| No            | DESCRIPTION                         | TORQUE                     |
| 1             | Hubodometer mounting bolts          | 110-165 lb-ft (149-224 Nm) |
| 2             | Upper wiper arm cap nut             | 20-24 lb-in (2.26-2.71 Nm) |
| 3             | Lower wiper arm cap nut (drive arm) | 20-24 lb-in (2.26-2.71 Nm) |
| 4             | Lower wiper arm cap nut (idler arm) | 90-110 lb-in (10-12 Nm)    |
| 5             | Lower wiper arm clamping screw      | 155-165 lb-in (18-19 Nm)   |

## AUDIO AND VIDEO SYSTEM DESCRIPTION

The rack mounted components are gathered on the audio-video panel which is located in the first driver's side overhead compartment (Figure 1). In addition to the 400 watts power amplifier, an E-HDMI (automotive grade) switch provides options for systems such as TV, DVD, customer provided media player, scenic view and back-up cameras, GPS navigation system and wireless microphones. Options for AM/FM radio, satellite radio, karaoke, and other's entertainments systems may also be featured.

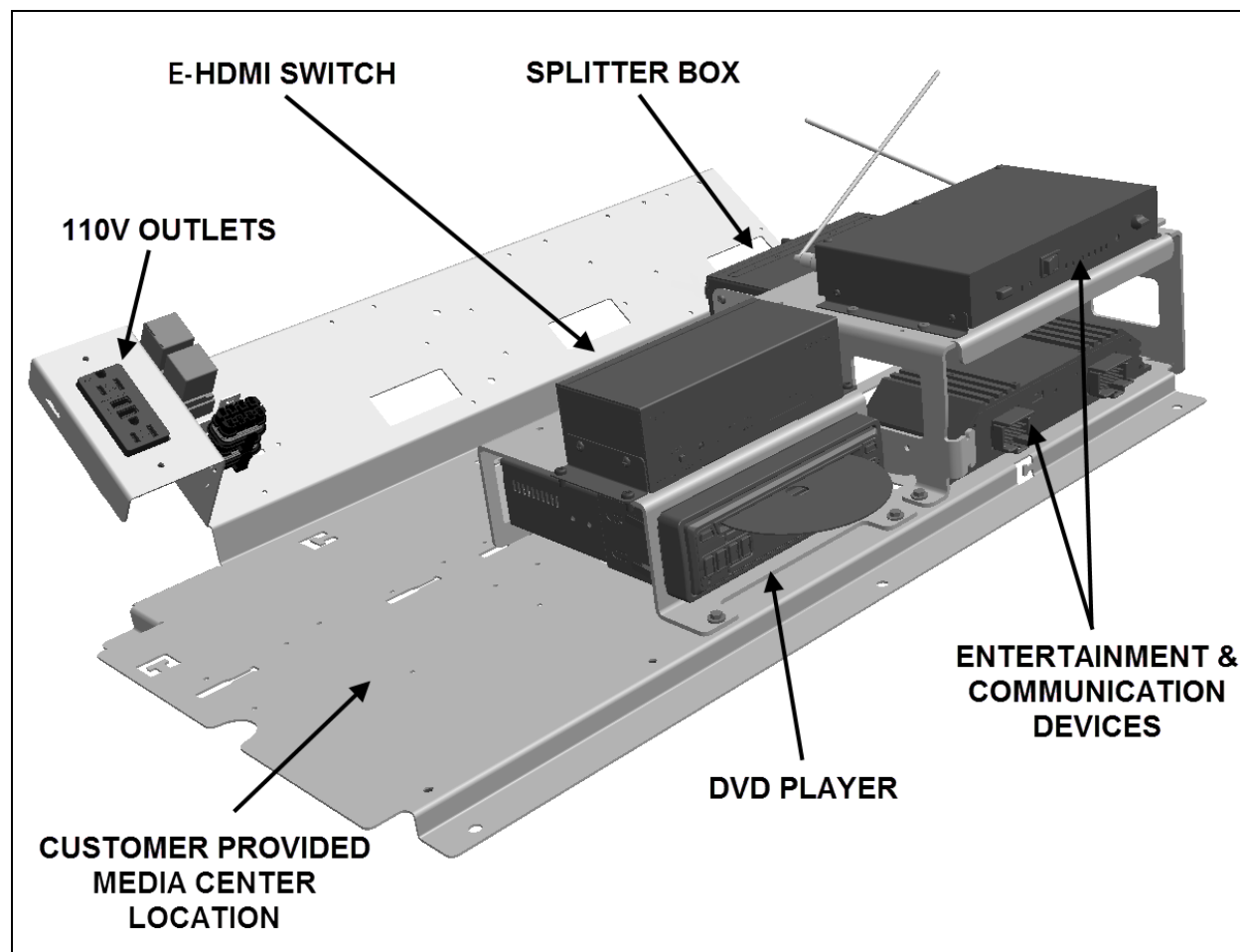


FIGURE 1: AUDIO-VIDEO PANEL IN PARCEL RACK

A splitter box is also mounted on the audio/video panel and provides connection for four LCD screens. On some vehicles, a second splitter box mounted in the first curb side overhead compartment will allow the use of a total of six LCD screens.

Each passenger's overhead console mounted to the underside of the parcel racks contains a 20-watt coaxial 10cm speaker. Powered by the amplifier, the speakers (24 in H3-41 or 28 in H3-45) are wired in stereo and arranged in a delta configuration.

A microphone outlet mounted in the driver's area is also provided as standard equipment.

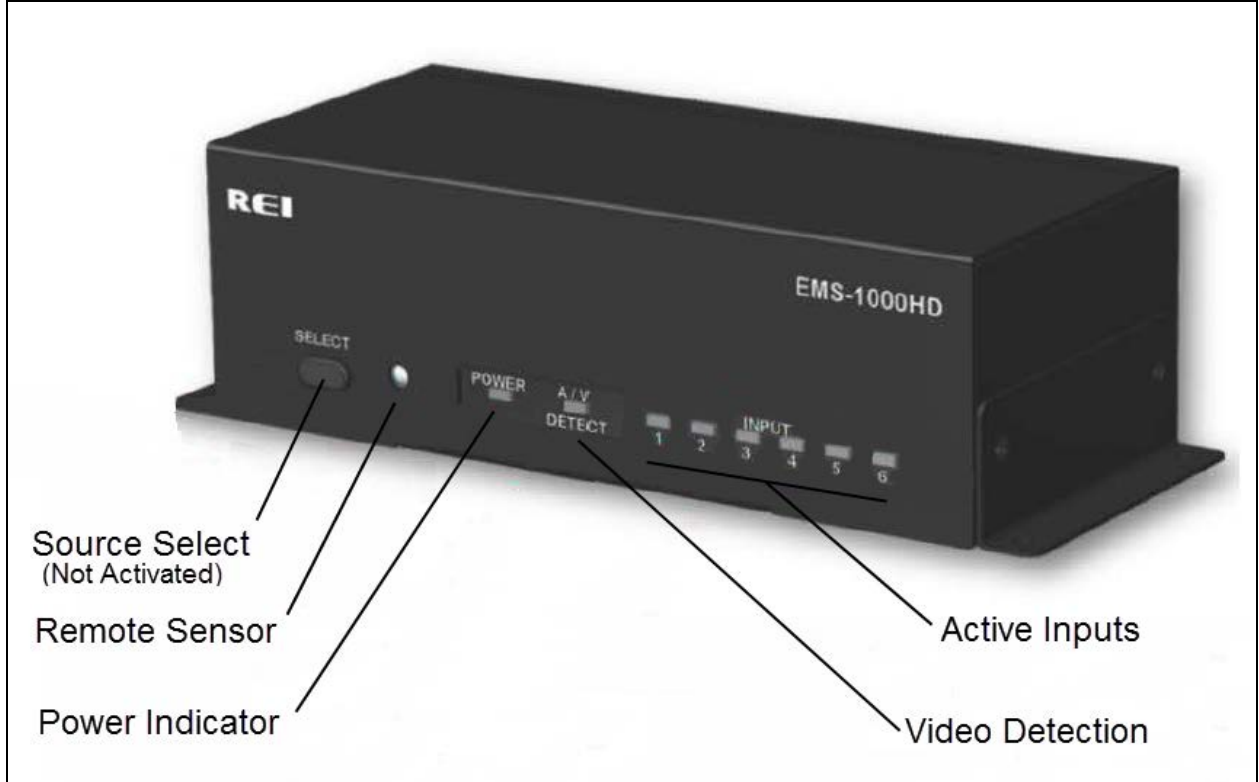


FIGURE 2: AUDIO-VIDEO CONTROLS AND INDICATORS ON THE FRONT FACE OF THE E-HDMI SWITCH

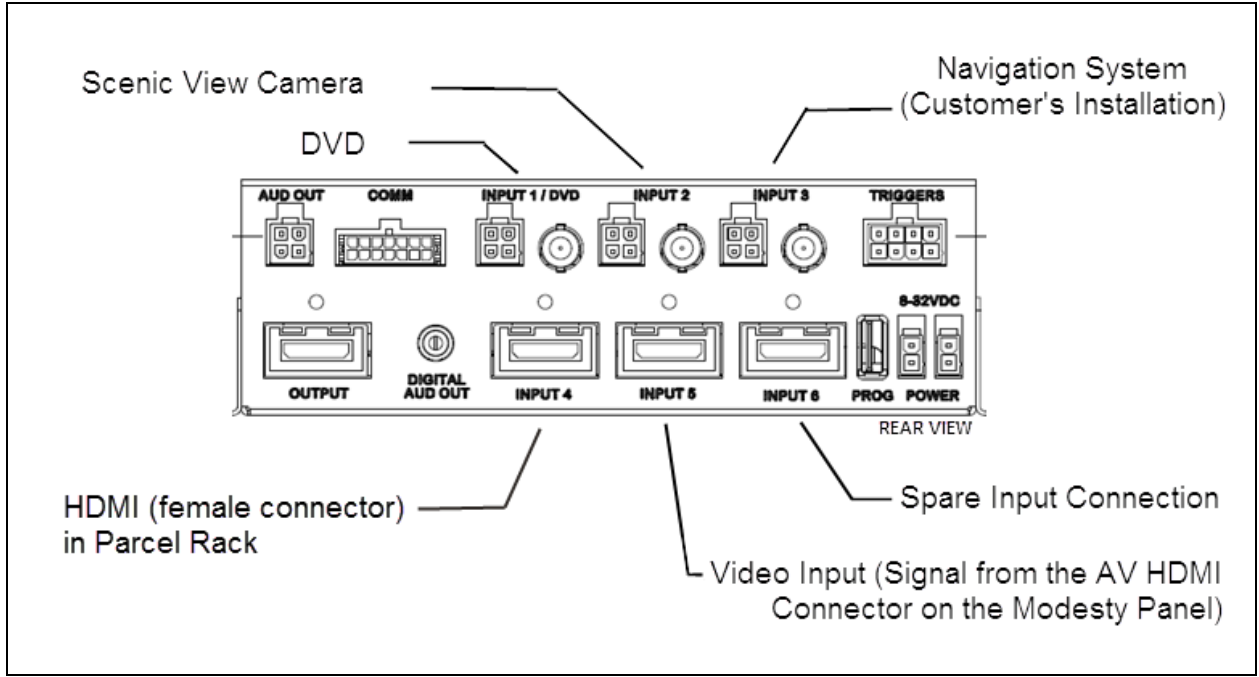


FIGURE 3: AUDIO-VIDEO CONNECTIONS AT THE BACK OF THE E-HDMI SWITCH

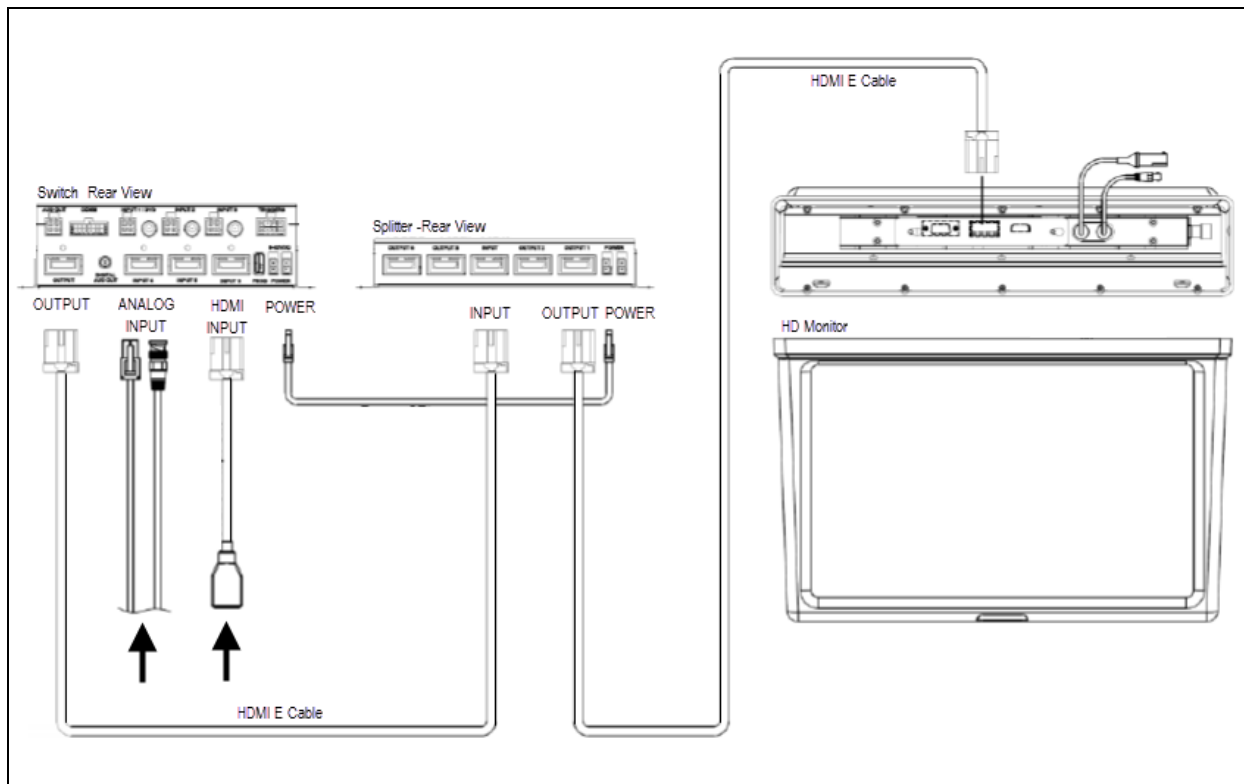


FIGURE 4: TYPICAL AUDIO-VIDEO CONNECTIONS USING FOUR OUTPUT SPLITTER BOX

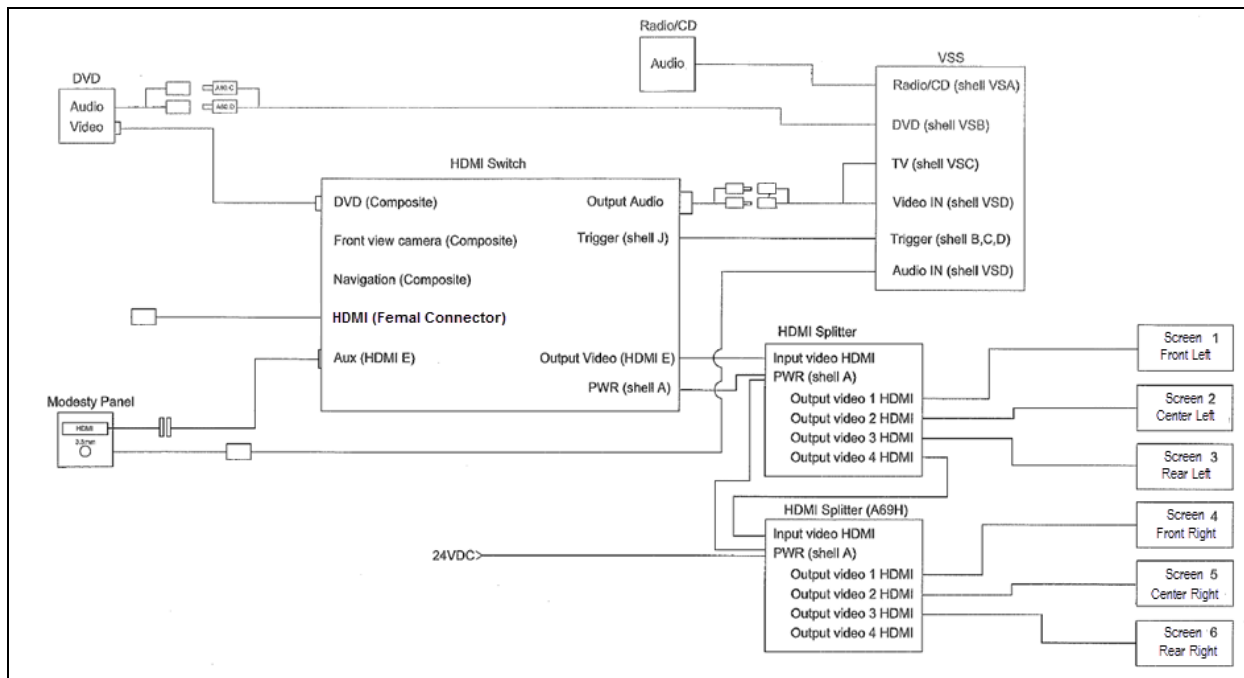


FIGURE 5: AUDIO-VIDEO CONNECTIONS USING TWO SPLITTER BOXES TO ALLOW THE USE OF SIX LCD MONITORS

## 1.1 TROUBLESHOOTING

| Symptom                    | Possible Causes / Solutions  |
|----------------------------|--|
| No picture, no sound       | Check for proper voltage supply and correct cable connections. Ensure that the desired input is selected.  |
| No picture                 | Check whether AV cable is properly connected.<br>Check whether HDMI cables are properly connected.<br>Verify that HDMI source is connected to "INPUT" connector and devices to "OUTPUT".<br>Verify power connection and voltage. |
| No sound                   | Check for proper cable connections. Verify that the source volume level is properly set.   |
| Remote control not working | Check that remote control is pointed toward device sensor. Verify remote batteries.  |

## 1.2 HOW TO RECEIVE SERVICE FOR YOUR REI AUDIO AND VIDEO PRODUCTS

For assistance in obtaining service for REI products call toll free 877-726-4617 (Continental United States and Canada) between the hours of 7:00 A.M. - 5:00 P.M. CST Monday thru Friday (excluding Holidays).

For assistance in obtaining service for REI products call toll free 877-726-4617 (Continental United States and Canada only) between the hours of 7:00 A.M. - 5:00 P.M. CST Monday thru Friday (excluding Holidays).

Prior to calling REI, please have the part number, serial number, VIN number and detailed description of the problem ready to provide to the REI service representative. After providing information to REI, customers will be issued a return authorization number. When the REI service representative provides the return authorization number, they will also give instructions for returning the item. Any discrepancies in following this procedure may cause delays in the process.

**24/7** Tech Support

**CALL 1-877-726-4617**

E-Mail to [technicalsupport@radioeng.com](mailto:technicalsupport@radioeng.com)

## REI Authorized Repair Facilities

REI  
6534 L Street  
Omaha, Nebraska 68117

REI  
1376 Bennett Drive, Unit 126  
Longwood, Florida 32750

REI products that may be installed in your coach:

MONITOR, COLOR BACK-UP CAMERA  
 MONITOR, LCD 15.6"  
 MONITOR, CENTRAL LCD 15.6"  
 MONITOR, FLIP19"  
 MONITOR, 16:9 CENTRAL LCD 19"  
 INDIVIDUAL ENTERTAINMENT SYSTEM  
 AMPLIFIER, 8-CHANNEL  
 DVD PLAYER

DVD REMOTE CONTROL  
 CAMERA, COLOR BACK-UP  
 CAMERA, COLOR PANORAMIC  
 MICROPHONE, 10" CB TYPE  
 MICROPHONE, WIRELESS  
 RECEIVER, WIRELESS MIC 16-CHANNEL  
 ENHANCED MEDIA SWITCH (E-HDMI)  
 E-HDMI SPLITTER BOX

### 1.3 DASHBOARD RADIO



FIGURE 6: DASHBOARD RADIO

**NOTE**

*Before attempting to solve an electrical problem on the sound system, refer to the wiring diagrams.*

The radio operating instructions manual is included at the end of this.

#### 1.3.1 Removal/Installation

To remove the radio from its location, proceed as follows:

1. Place the ignition switch in the "OFF" position.
2. Remove the dashboard cover.
3. Unplug the connectors from the radio and unfasten back plate securing nuts/screws.
4. On the front side of the unit, insert the removal tool #20584494 in the holes found each side in order to separate the unit from the support.
5. From behind, push the unit through the front dashboard panel.
6. Installation of a new unit is the same as removal but in reverse order.

### 1.4 VSS-05 SOUND SELECTOR



FIGURE 7: VSS-05 SOUND SELECTOR

#### 1.4.1 Removal/Installation

To remove the Sound Selector from its location, proceed as follows:

4. Place the ignition switch in the "OFF" position.
5. Remove the dashboard cover.
6. Unplug the connectors from the radio and unfasten back plate securing nuts/screws.
4. On the front side of the unit, insert the removal tool #20584494 in the holes found each side in order to separate the unit from the support.
5. From behind, push the unit through the front dashboard panel.
6. Installation of a new unit is the same as removal but in reverse order.

The operating instructions are included in the Operator's Manual.



### 1.5 400W DSP POWER AMPLIFIER

This 400-watt, 8 channels digital amplifier brings an added dimension to your stereo equipment and increases the total output of the system.

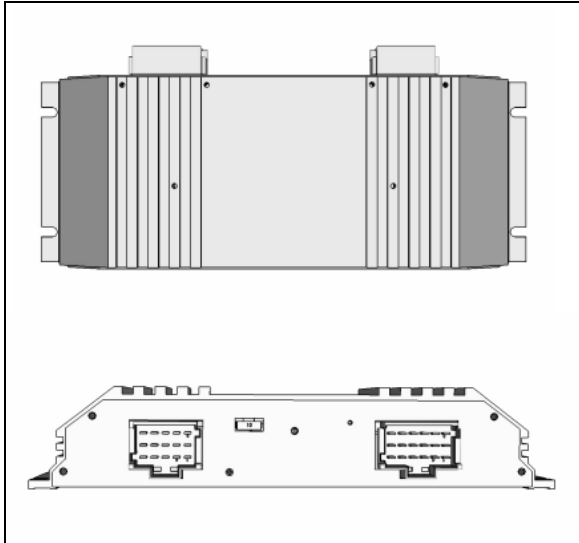


FIGURE 8: MULTICHANNEL 400W POWER AMPLIFIER

| CONNECTOR 9-966140-2 PINOUT |            |          |            |
|-----------------------------|------------|----------|------------|
| Terminal                    | Function   | Terminal | Function   |
| 1                           | R-DOOR (-) | 9        | L-DASH (-) |
| 2                           | R-DASH (+) | 10       | GROUND     |
| 3                           | R-DASH (-) | 11       | GROUND     |
| 4                           | R-DOOR (+) | 12       | GROUND     |
| 5                           | L-DOOR (+) | 13       | +24V       |
| 6                           | L-DOOR (-) | 14       | +24V       |
| 7                           | REMOTE     | 15       | +24V       |
| 8                           | L-DASH (+) | 16       |            |

| CONNECTOR 9-966140-1 PINOUT |                |          |              |
|-----------------------------|----------------|----------|--------------|
| Terminal                    | Function       | Terminal | Function     |
| 1                           | R-BUNK (-)     | 10       | INPUT-RR (+) |
| 2                           | WOOFER (1) (-) | 11       | INPUT-RR (-) |
| 3                           | WOOFER (1) (+) | 12       |              |
| 4                           | R-BUNK (+)     | 13       | INPUT-LR (-) |
| 5                           | L-BUNK (-)     | 14       | INPUT-LR (+) |
| 6                           | L-BUNK (+)     | 15       | INPUT-LF (+) |
| 7                           |                | 16       | INPUT-RF (+) |
| 8                           | WOOFER (2) (-) | 17       | INPUT-RF (-) |
| 9                           | WOOFER (2) (+) | 18       | INPUT-LF (-) |

FIGURE 9: AMPLIFIER CONNECTORS PINOUT

### 1.6 SPEAKERS

Each passenger's overhead console mounted to the underside of the parcel racks contains a 20-watt coaxial 10cm speaker. The speakers (24 in H3-41 or 28 in H3-45) in the passenger's

section, wired in stereo and arranged in a delta configuration are powered by the amplifier.

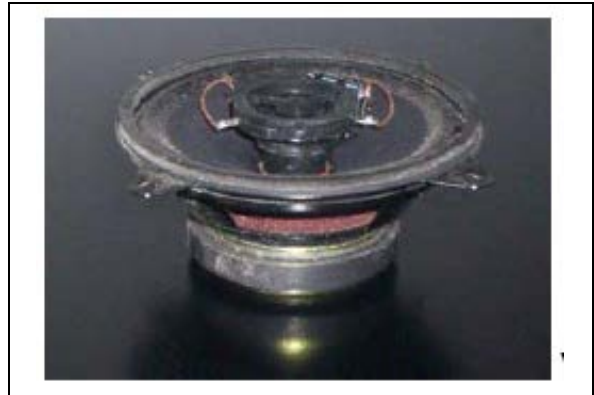


FIGURE 10: 10CM COAXIAL SPEAKER

The vehicle may be equipped with two additional Hi-Fi speakers in the driver's area, mounted one on each side. This arrangement provides the driver with clear stereo sound. Controls for the driver's audio are performed through the dashboard radio.

Two specially designed subwoofers are fixed under a passenger seat with anti-vibration supports.

### 1.7 BOOM-TYPE MICROPHONE

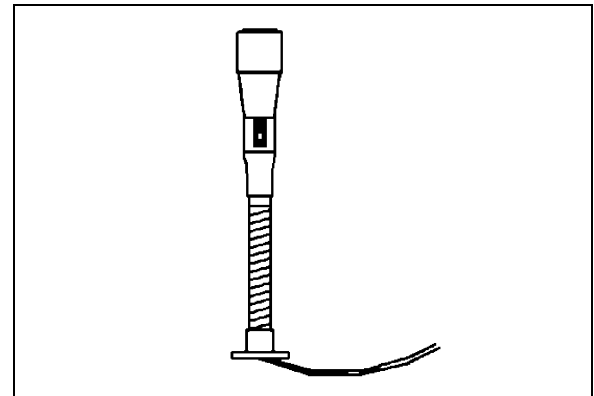


FIGURE 11: BOOM-TYPE MICROPHONE 23083

#### 1.7.1 Removal

1. Place the ignition switch in the "OFF" position.
2. Remove the mounting screws at mounting flange.
3. Disconnect wiring.

#### 1.7.2 Installation

1. Reconnect wiring.

2. Align mounting flange with holes and install screws.
3. Remove spacer block mounting screws.
4. Insert spacer block and install mounting screws.
5. Place the battery master switch in the "ON" position.

### 1.8 HANDHELD PRIORITY MICROPHONE

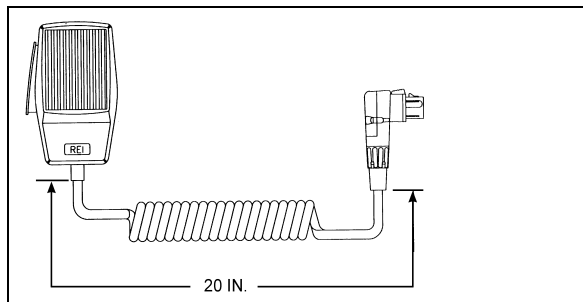


FIGURE 12: HANDHELD PRIORITY MICROPHONE 23216

### 1.9 WIRELESS MICROPHONE

The System 2000 16 channel wireless microphone, Receiver and Charging Cradle are custom designed units that allow for wireless PA communication from anywhere on the coach. The unit consists of a receiver mounted in the parcel area directly behind the driver, and a rechargeable hand-held microphone and charging unit. Instructions for proper use of the microphone are included in the "REI Operating Manual" which is provided in the technical publications box delivered with the vehicle.

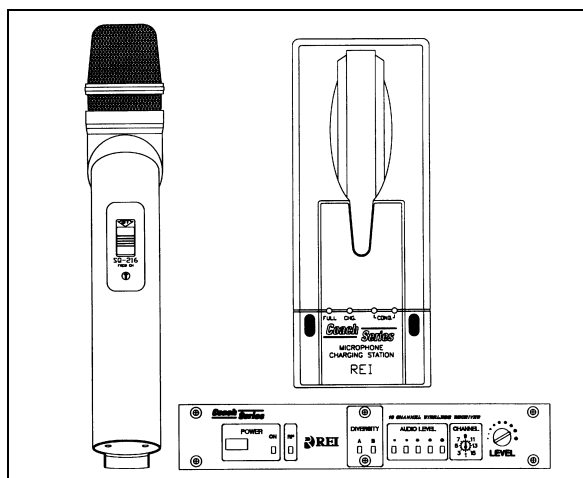


FIGURE 13: WIRELESS MICROPHONE

### 1.10 TV TUNER

For TV tuner control descriptions, refer to Figure 14.

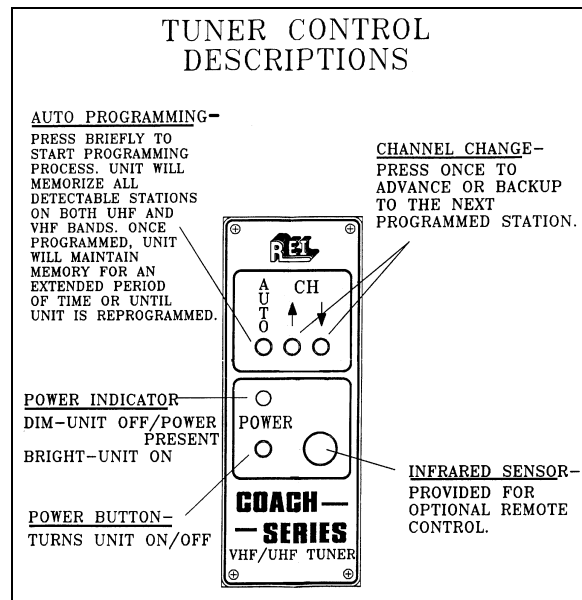


FIGURE 14: TUNER CONTROLS DESCRIPTION

### 1.11 DRIVER'S SPEAKERS

The driver's speakers are mounted one on each side. This arrangement provides the driver with clear stereo sound. Controls for the driver's audio allow selection between the radio and the auxiliary audio (independent of the passenger's speakers) or muting the speakers.

### 1.12 MONITOR

1. Place the ignition switch in the "OFF" position.
2. Unfasten the retaining screw located on the monitor R.H. side.
3. Slide the monitor to the right to release it from the mounting bracket.

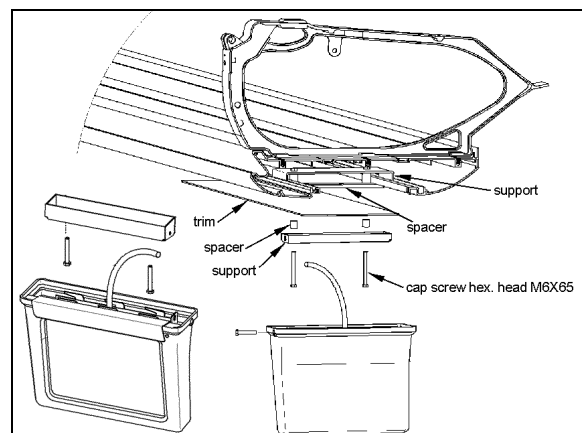


FIGURE 15: MONITOR MOUNTING

23221

## 1.13 SCENIC VIEWING SYSTEM

The scenic viewing system enables the passengers to view the road ahead of the vehicle. This system is composed of a camera, a dashboard mounted ON/OFF switch and the video switcher located on the audio-video panel

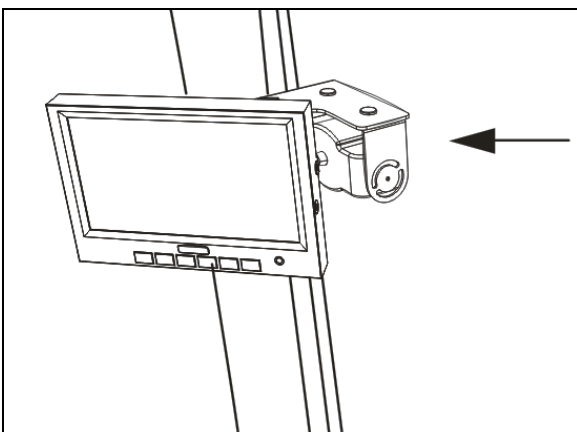


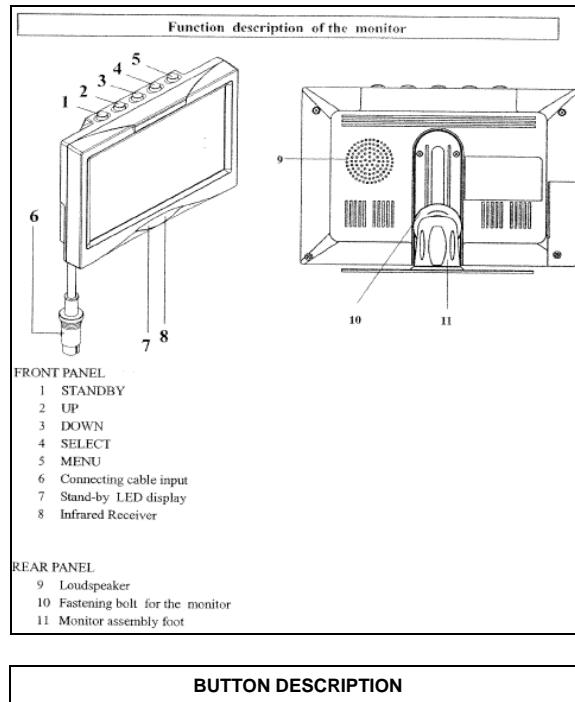
FIGURE 16: SCENIC VIEW CAMERA

## 1.14 ROOF ANTENNA INSTALLATION

1. Find the desire location and drill a hole according to specification.
2. To remove dirt and grease, wash hole edge with alcohol.
3. If so equipped, remove foam padding ring from antenna to free the metal surface (foam can produce air bulbs in new rubber seal).
4. With SIKA 205, wash the vehicle hole edge and the antenna base surface, wait at least two (2) minutes for chemical evaporation.
5. Apply new seal SIKA 221 on both, vehicle hole edge and antenna base.
6. Fix the antenna in place.
7. Remove excess seal and complete a finishing joint all around the antenna base.

## 2. BACK-UP CAMERA AND MONITOR

An optional back-up camera is available which provides the driver with visual assistance when backing-up. The camera is automatically activated when the transmission is put in reverse gear and the ignition switch is "ON".



**1) STANDBY** On/Off switch

**2) UP** This key has 3 functions

- Increase of the volume during normal operation;
- Modification of the setting within a function e.g. contrast (after calling up the menu);
- By pressing this key when putting in the reverse gear, the distance markings move upwards;

**3) DOWN** This key has 3 functions

- Decrease of the volume during normal operation;
- Modification of the setting within a function e.g. contrast (after calling up the menu);
- By pressing this key when putting in the reverse gear, the distance markings move downwards;

**4) SELECT** This key has 3 functions

- Selection of the video sources (CA1 → CA2 → AV → CA1). Press less than 1.5 seconds;
- Selection of the functions e.g. picture setting (after calling up the menu);
- Deleting and calling OSD letters of title & time (press longer than 1.5 seconds) during normal operation;

**5) MENU** This key has 2 functions

- Activation of the dimmer function (press less than 1.5 seconds) during normal operation;
- Calling up the menu (press longer than 1.5 seconds, four menus can be called up). Press the key once again to call up the individual menus;
  - a) PICTURE= Functions for the image setting;
  - b) USER= Selection of the system function;
  - c) TIME= Setting time and date;
  - d) INSTALL= Setting the camera function (e.g. mirror function);

**6) BUSH FOR THE MONITOR CABLE OF THE CONNECTION BOX**

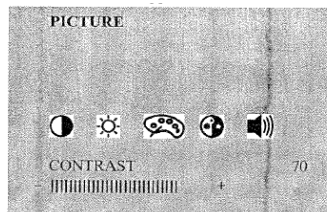
**7) STANDBY DISPLAY**

8) INFRARED RECEIVER

MONITOR MENU DISPLAY

The monitor (RV59 HD) is equipped with an On-Screen Display (OSD) function which displays date, camera, channel, mirror mode and distance markings. These functions can be selected on MENU. To calling up the menu, press longer than 1.5 seconds. Four menus can be called up. Press the key once again to call up the individual menus.

For calling up the menu PICTURE press the key **MENU** longer than 1.5 seconds. The menu PICTURE appears.



Graphic means the followings.

- CONTRAST
- BRIGHTNESS
- COLOR
- TINT
- VOLUME

Select the function (e.g. contrast) by pressing the key **SELECT** repeatedly. The setting within the function can be modified with the keys **UP** and **DOWN**.

For calling up the menu USER press the key **MENU** once again. The menu USER appears. Select the function (e.g. SELECTION) by pressing the key **SELECT** repeatedly as necessary. The setting within the function can be modified with the keys **UP** and **DOWN**.

| USER   |      |
|--------|------|
| LANGUE | ENG  |
| SCREEN | WIDE |
| TITLE  | ON   |
| TIME   | ON   |

POSSIBLE SETTINGS:  
 LANGUAGE: ENGLISH/GERMAN (ENG/DEUT)  
 SCREEN FORMAT: NOR 4:3, picture format 4:3  
 WIDE, picture format 16:9  
 FULL, picture format 16:9  
 middle enlarge  
 TITLE: CAMERA TITLE DISPLAY ON/OFF  
 TIME: TIME DISPLAY ON/OFF

For calling up the menu TIME press the key **MENU** once again. The menu TIME appears. Select the function (e.g. DATE) by pressing the key **SELECT** repeatedly as necessary. The setting within the function can be modified with the keys **UP** and **DOWN**.

| TIME |       | - Hour-Month adjustable by UP BUTTON    |
|------|-------|---|
| TIME | 08:25 | - Minute/Date adjustable by DOWN BUTTON |
| DATE | MAY01 | - Year adjustable by UP/DOWN BUTTON     |
| YEAR | 2005  |   |

For calling up the menu INSTALL press the key **MENU** once again. The menu TIME appears. Select the function (e.g. SELECTION) by pressing the key **SELECT** repeatedly as necessary. The setting within the function can be modified with the keys **UP** and **DOWN**.

| INSTALL |      |
|---------|------|
| REAR    | CAM1 |
| CAM1    | MIR  |
| CAM2    | NOR  |

POSSIBLE SETTINGS:  
 REAR: Selection of priority camera (CAM1 or CAM2) which is triggered by rear gear.  
 CAM1: Selection of real picture or mirrored picture for camera 1  
 CAM2: Selection of real picture or mirrored picture for camera 2

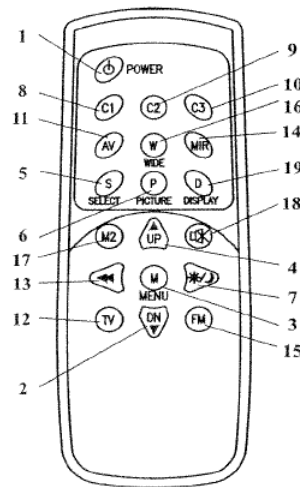
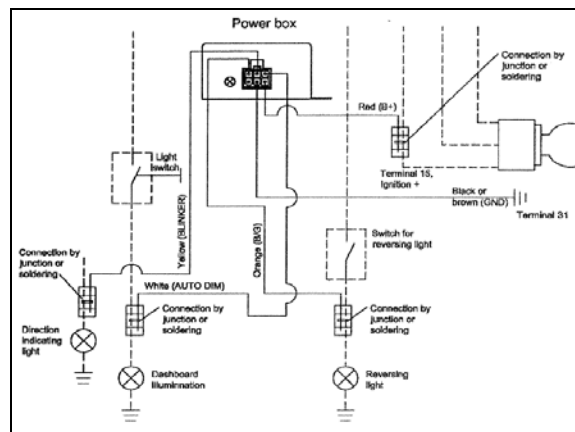
NOTE1 The distance mark will appear on the picture of camera which set as MIR (mirrored).

NOTE2 Engaging the reverse gear, only distance mark will appear on the mirrored camera picture without any OSD. At the moment, no keys are available except UP/DOWN key for moving distance bar.

BACK-UP CAMERA MODULE (Power box)

The connection line consists of 6 branch lines as below:

|             |   |
|-------------|---|
| RED         | Voltage supply 12-volt to 24-volt (max. 32-volt)  |
| BLACK/BROWN | Earth cable   |
| WHITE       | Control wire for switching on the dimmer function (night operation)                                     |
| YELLOW      | Control wire for switching on the side camera. The connection is to be made at the INDICATOR            |
| ORANGE      | Control wire for switching on the reversing camera. The connection is to be made at the reversing light |



| No | Key      | Description  |
|----|----------|--|
| 1  | STANDBY  | On/Off switch  |
| 2  | DOWN ▼   | This key has 3 functions.<br>– Decrease of the volume during normal operation.<br>– Modification of the setting within a function e. g. brightness (after calling up the menu).<br>– By pressing this key when putting in the reverse gear the distance markings move downwards. |
| 3  | MENU     | Calling up the menu on the screen. Three menus can be called up :<br>a: PICTURE = Functions for the image setting<br>b: USER = Selection of the system function<br>c: TIME = Setting time and date<br>d: INSTALL = Setting the camera function (e.g. mirror function)            |
| 4  | UP ▲     | This key has 3 functions.<br>– Increase the volume during normal operation<br>– Modification of the settings within a function e. g. contrast (after calling up the menu)<br>– By pressing this key when putting in the reverse gear the distance markings move upwards.         |
| 5  | SELECT   | This key has 2 functions<br>Selection of the video sources (CA1→CA2→AV)<br>Selection of the functions e.g. picture setting (after calling up the menu)   |
| 6  | PICTURER | Calls up the functions CONTRAST, BRIGHTNESS etc. directly for the picture setting. Carry out the setting with the key UP or DOWN.  |
| 7  | DIMMER   | Regulates the brightness to night operation temporarily  |
| 8  | C1       | Selection of the camera 1  |
| 9  | C2       | Selection of the camera 2  |
| 10 | C3       | Selection of the camera 3 (camera input 3 is not available))   |
| 11 | AV       | Selection of the video input (RCA)   |
| 12 | TV       | Not available  |
| 13 | SEARCH   | Not available  |
| 14 | MIRROR   | Reversing left and right of picture temporarily  |
| 15 | FM       | Not available  |
| 16 | WIDE     | Setting of the screen format<br>NOR/NOR: 4:3, picture format 4:3<br>WIDE/WEIT, picture format 16:9<br>FULL/BREIT, picture format 16:9 middle enlarged  |
| 17 | MONITOR2 | Not available  |
| 18 | MUTE     | Switches off the tone temporarily  |
| 19 | DISPLAY  | This key has 2 functions<br>– Deleting or calling OSD letters of Tile & Time temporarily<br>– Leaving the menu   |

### 3. HUB ODOMETER

#### 3.1 DESCRIPTION

An optional wheel hub odometer (Figure 17) may have been installed on the R.H. side of the drive axle. It indicates the total distance in miles or kilometers covered by the coach since it has left the factory, including road testing.

##### 3.1.1 REMOVAL

To remove the unit, remove the two lock nuts and washers securing it to the wheel hub, and pull the unit off the studs.

##### 3.1.2 INSTALLATION

Place the hub odometer unit over the wheel hub studs. Replace the lock washers and nuts. Torque stud nuts.

**TORQUE: 110-165 lb-ft (149-224 Nm)**

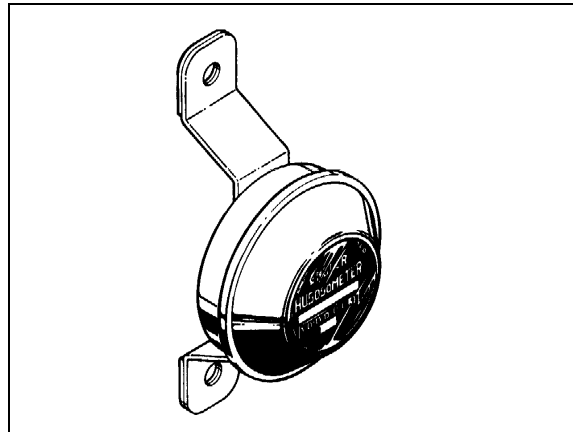


FIGURE 17: HUB ODOMETER

23027

#### 3.2 OPERATION

The hub odometer is calibrated for a specific wheel size (diameter). Wheel rotation causes a mechanism inside the hub odometer to record distance after a predetermined number of rotations. The unit should be serviced at a competent speedometer repair facility.

**Note:** Do not use paint, solvent or thinner on hub odometer face or on plastic hubcaps. Do not weld on hub odometer.

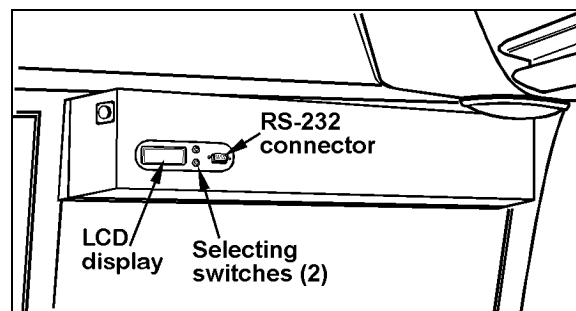
### 4. DESTINATION SIGN

#### 4.1 DESCRIPTION

The destination sign is located at upper front of the vehicle.

**ELECTRONIC DESTINATION SIGN (Optional)**

To change the destination, depress the selecting switches until the desired destination appears in the LCD display.



**FIGURE 18: DESTINATION SIGN – ELECTRONIC**  
23123

**Note:** The destination sign must be programmed with a computer connected to the RS-232 connector prior to first use. Follow the instructions on the computer disk to install and run the software.

**Note:** All destination sign models are equipped with lights (bulb light or fluorescent) which illuminates automatically when the headlight or fog light switch is activated.

## 5. SUNSHADES

### 5.1 WINDSHIELD SUNSHADES

Two electrically-operated sunshades are installed in the driver's area at the top of the windshields. Two control buttons located on the steering wheel and two on the dashboard operate each sunshade individually. Refer to Operator's Manual: "Controls and Instruments" chapter for more information.

**Caution:** The electric sunshades should only be operated electrically. Pulling down manually may damage the mechanism.

#### 5.1.1 End of Stroke Adjustment

The sunshades end positions are pre-adjusted at factory. If an adjustment is required, proceed as follows:

1. Place the ignition key to the ON position.
2. Insert a small nail or similar thin object into sunshade adjustment button access hole and press the appropriate sunshade DOWN button **simultaneously** and hold them until a beeping tone sounds. Release both buttons.

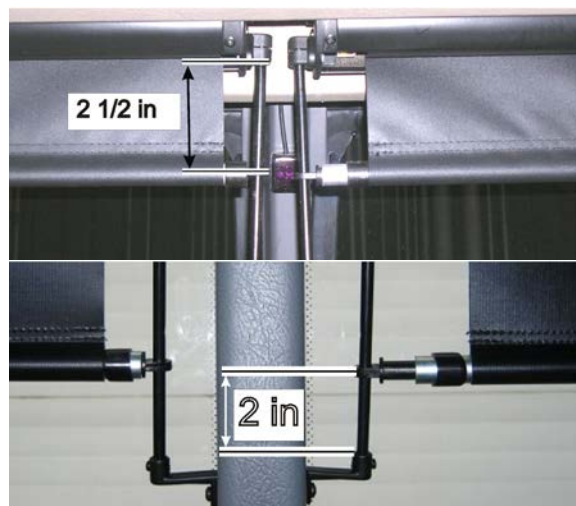


**FIGURE 19: DRIVER'S SUNSHADE**



**FIGURE 20: L.H. SUNSHADES CONTROL BUTTON**

3. Move the sunshade to the desired lower end of stroke position using the control button (never move sunshade by hand) and then release button.
4. Proceed to fine adjustment of lower end position by pressing the DOWN button repeatedly.
5. Press the sunshade UP (opposite direction) button to save #1 end position. The confirmation tone will sound.
6. Move the sunshade to the desired upper end of stroke position using the control button (never move sunshade by hand) and then release button.
7. Proceed to fine adjustment of upper end position by pressing the UP button repeatedly.
8. Press the sunshade DOWN (opposite direction) button to save #2 end position. The confirmation tone will sound. The adjustment mode is then deactivated.



**FIGURE 21: FACTORY ADJUSTMENT OF UPPER AND LOWER END POSITION**

## 5.2 PASSENGER SUNSHADES

Manually operated passenger sunshades are factory installed on some vehicles. The sunshades are pulled down and can be locked in the window side moldings at half or full close position.

To release, simply disengage the sunshade from the moldings and release. Spring tension will pull back the sunshade to the full open position.

Correct spring tension is set at the factory and should not need further adjustment.

However, if for any reason a sunshade has to be removed from the vehicle, preloading of the recoil mechanism will be required before re-installation to ensure that the sunshade returns to the full open position when released.

**Caution:** A special tool is required to remove the sunshade from the window support. Failure to use the special tool will result in permanent damage to the sunshade and/or window support.

The special tool can be ordered from your Prevest part center under part # 685594

### 5.2.1 Preload Adjustment

Using the chart below, preload the sunshade mechanism before installing the sunshade in the window support.

**Note:** When installed, lower the sunshade 6po (15cm) and release. The sunshade should retract freely to the full open position. Re-adjust preload as needed.

| Sunshade Type              | Req. Preload |
|----------------------------|--------------|
| Std Sunshade               | 10 turns     |
| Rear Sunshade              | 10 turns     |
| Small Rear Sunshade        | 8 turns      |
| Large WCL Sunshade         | 12 turns     |
| Small Trapezoidal Sunshade | 8 turns      |

## 6. LAVATORY

### 6.1 DESCRIPTION

The lavatory is located in the rear R.H. corner of the coach. It is equipped with a chemical flush toilet, bathroom tissue dispenser, washbasin, towel dispenser, waste container, mirror,

ashtray, and a cleaning cabinet. A liquid soap dispenser and moist towel dispenser are optional.

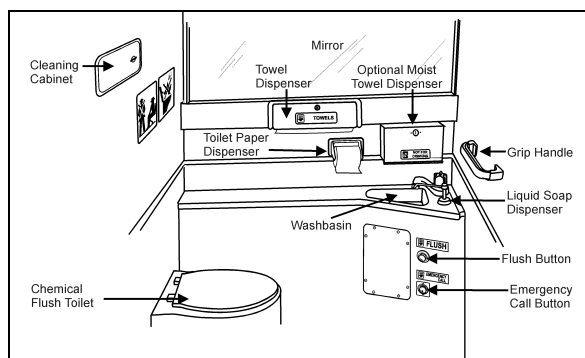


FIGURE 22: LAVATORY

Locking the lavatory door from the inside will illuminate a fluorescent light in the lavatory and two outside signs to indicate occupation. One sign is located on the outer wall of the lavatory and another sign is located over the windshield. An indicator light on the dashboard will illuminate to inform the driver when the lavatory is occupied. A night-light is permanently lit in the lavatory when the ignition switch is in the ON position.

### 6.2 MAINTENANCE

The servicing procedure for the lavatory is described in the "Operator's Manual" included in the technical publications box delivered with the vehicle.

### 6.3 VENTILATION FAN

#### 6.3.1 Description

The lavatory ventilation fan, mounted in engine compartment over the oil reserve tank (Figure 23), serves two purposes. It exhausts objectionable odors and provides a constant air circulation in the lavatory compartment by heating or cooling the lavatory with the vehicle ambient air. Air flows in the lavatory compartment through a vent grill located in the upper section of the lavatory door and exhausts through a grill located next to the toilet.

**Note:** This fan runs constantly when the ignition switch located on the dashboard is in the "ON" position.

#### 6.3.2 Maintenance

The frequency of preventive maintenance should be determined according to vehicle mileage and operating conditions. However, it is recommended to check this item every 50,000 miles (80 000 km) or once a year, whichever comes first.

Remove fan and motor assembly. Check for fan housing wheel and motor free operation. When defective motor occurs, new motor must be installed.

### 6.3.3 Removal and Installation

1. With the engine compartment rear door opened, remove hose clamp securing duct to ventilation fan inlet, and disconnect duct.
2. Disconnect the ventilation motor wiring connector.
3. Remove the two bolts retaining the ventilation fan housing support to the square tubing. Remove the ventilation fan assembly from its location.
4. The unit can now be disassembled and motor replaced.
5. Reverse previous steps to reinstall ventilation fan assembly on vehicle.

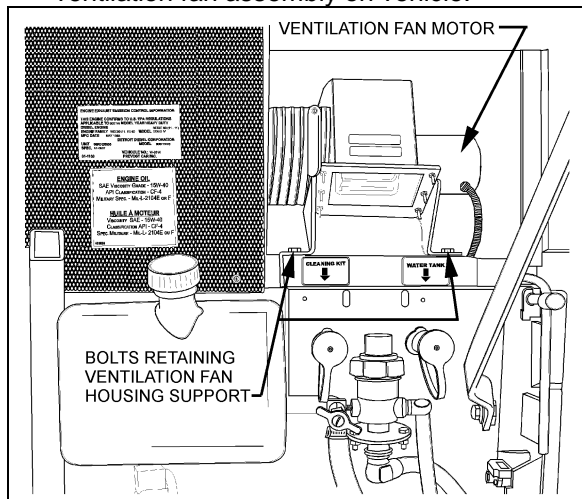


FIGURE 23: VENTILATION FAN INSTALLATION

### 6.4 DOOR LOCK

Lavatory door lock has inside and outside handles, as well as an inside latch to lock door from inside the compartment. If the lock fails to release, the door can be opened from the outside using a special key which is supplied to the driver. Lock assembly can be removed from the door, and then readily disassembled and parts replaced, if necessary. A thin coat of

lubricant on all moving parts will ensure trouble-free operation.

### 6.5 LAVATORY LIGHT WITH MOTION SENSOR

The lavatory light, when dimmed, serves as a night-light and is illuminated as soon as the ignition switch is set to the "ON" position. A motion sensor will activate full light intensity whenever motion is detected in the lavatory compartment. The motion sensor will dim the light after a delay of 8 seconds when no additional motion is detected.

#### NOTE

*The lavatory light motion sensor has a warm-up period of approximately 2 minutes after the ignition switch is set to the "ON". During that warm-up period, the motion sensor will not detect motion and will not activate the lavatory light to full intensity.*

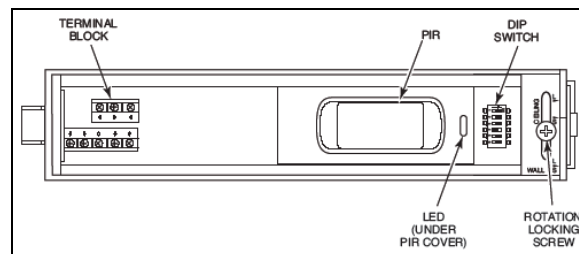


FIGURE 24: LAVATORY LIGHT MOTION SENSOR

#### 6.5.1 Removal and Installation

1. Open the sensor housing by pressing on the latch with a screwdriver. The latch is located on the side of the sensor nearest the lens. Pull the cover up away from the sensor's base.
2. Loosen rotation locking screw two (2) turns (do not remove). Then, remove PCB assembly from the back plate of the sensor.
3. Insert the wiring into one of the wire channels on the sensor's back plate.
4. Securely affix the sensor's back plate to the wall using #6X3/4 screws.
5. Reinstall the PCB assembly and then, tighten rotation locking screw.

#### 6.5.2 Dip Switch Settings



Adjust DIP switches as follows:

|       |       |       |
|-------|-------|-------|
| 1=off | 2=off | 3=off |
| 4=on  | 5=off | 6=off |

## 6.6 EMERGENCY BUZZER

The lavatory emergency buzzer is mounted on the alarm junction box in the front service compartment and sounds when the emergency call push-button switch in the lavatory compartment is activated. For specific wiring information, refer to wiring diagrams. To remove the emergency call push-button switch, proceed as follows:

1. Remove both Phillips-head screws retaining pushbutton switch plate to wall.
2. Remove steel plate located on L.H. side of pushbutton switch.
3. Remove switch through this opening, taking care to disconnect electric wires.

## 6.7 FRESH WATER TANK

The fresh water tank located at rear of lavatory wall (over cleaning cabinet), supplies water to the washbasin by gravity. Two tubes are connected in the upper section of tank (Figure 27). One serves as overflow as well as vent tube and runs along the wall to the underside of the lavatory close to the engine air filter housing, while the other tube is connected to the fresh water fill valve which is mounted besides the engine oil reserve tank.

A third tube connected in the lower section of fresh water tank is provided with a T-connector and allows fresh water to flow to the washbasin faucet and to the low temperature water safety valve for automatic or manual draining. An access panel, located at rear of last R.H. side row of seats and secured in place using 6 Phillips-head screws, allow access to the cleaning cabinet and fresh water tank tubing, fresh water tank heater and different wiring connectors.

### 6.7.1 Fresh Water Tank Heater (Optional)

75 watts, 110 volts AC immersion-type water heater may have been installed in the bottom of the fresh water tank. The heated portion of element must be immersed at all times to ensure proper heater life. The 110-120 volts in-station connector mounted on the engine compartment rear door provides the water heater power source.

### 6.7.2 Fresh Water Tank Draining

The fresh water tank can be drained by simply opening the fresh water drain cock (Figure 27). Don't forget to close cock when draining is done.

**Caution:** If fresh water tank heater is inoperative or not installed on your vehicle, water should be drained from reservoir under cold weather conditions since it might freeze and damage both reservoir and connecting links.

### 6.7.3 Fresh Water Tank Filling

Plug the fresh water supply hose to the fresh water tank fill connection (Figure 27); fill the tank until the overflow tube leaks, signaling that tank is full.

**Warning:** Never put antifreeze in fresh water tank; antifreeze is toxic.

**Warning:** If tank has not been drained for an extended period of time, draining and filling operations must be repeated three (3) times in order to clean tank and eliminate contaminated water.

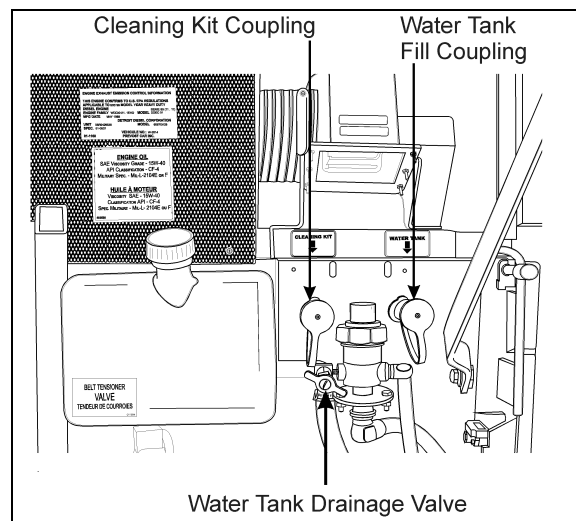


FIGURE 25: FRESH WATER TANK SERVICE VALVES

## 6.8 LIQUID SOAP DISPENSER

A liquid soap dispenser may have been installed as optional equipment. To refill dispenser, proceed as follows:

1. Turn cover slightly clockwise until it stops.

2. Insert projection at end of "BOBRICK" key into rectangular hole in cover (Figure 25). Push straight in. While holding "BOBRICK" key in, turn cover counterclockwise about 1/8 turn.

**Caution:** Do not use "BOBRICK" key to turn cover.

3. Lift out piston and spout, cover and supply tube.
4. Fill dispenser with soap. This model can dispense vegetable oil soaps, synthetic detergents, and lotion soaps.

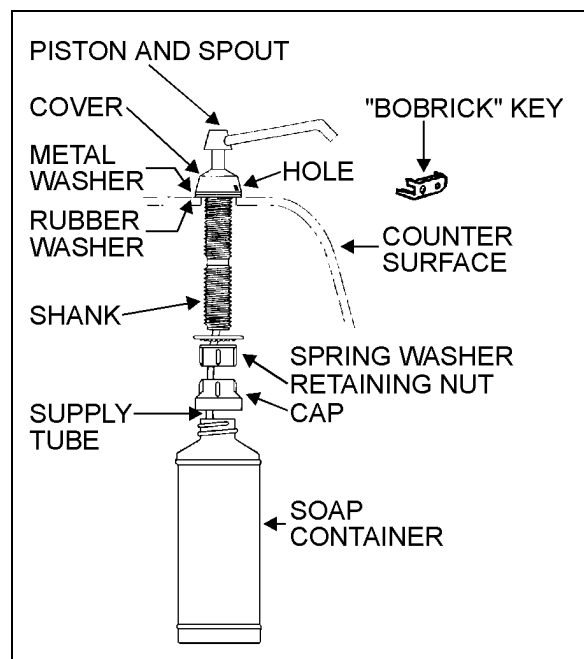


FIGURE 26: LIQUID SOAP DISPENSER

23039

**Caution:** Never use abrasive cleaners.

5. Replace supply tube, piston, and spout mechanism reversing the steps above.
6. Secure the cover by turning clockwise until lock snaps into position.

**Note:** The dispenser requires priming when extremely viscous lotion soaps are used. Remove piston and spout, cover and supply tube assembly. Pump water into assembly, then replace into dispenser.

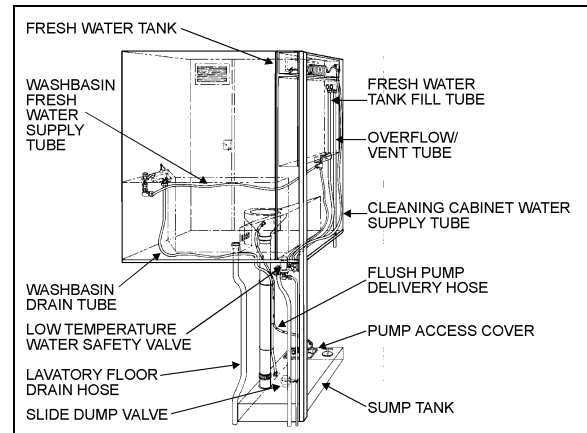


FIGURE 27: FUNCTIONING OF LAVATORY

23038

## 6.9 FLUSH PUSH-BUTTON

The green flush push-button is located near the toilet. Press on push-button to actuate a pneumatic timer located on the other side of wall. This timer allows an electric current flow during a preset time to a pump into the sump tank.

### 6.9.1 Pneumatic Timer Removal and Installation

1. Unscrew and remove the flush push-button locking ring.
2. Remove steel plate located on L.H. side of pushbutton switch.
3. Remove pneumatic timer through this opening, taking care to disconnect electric wires.

**Note:** Care must be taken to avoid losing the spacers installed on the mounting sleeve.

4. Reverse the above procedure to reinstall timer. Tighten lock nut:

### 6.9.2 Timer Adjustment

Timer can be adjusted from 0.2 second to 3 minutes by turning the time adjustment screw clockwise to increase time, and counterclockwise to decrease time. To gain access to the time adjustment screw, repeat steps 1, 2 and 3 in the previous paragraph "6.10.1 Pneumatic Timer Removal and Installation".

## 6.10 FLUSH PUMP

The submersible-type flush pump is mounted inside an enclosure in the sump tank (Figure 28). The enclosure is provided with a screened side which,

serves as a strainer to prevent solid matters from entering the pump.

The pump requires no periodic maintenance other than cleaning of the strainer side using a water jet introduced through the circular cap opening, once the sump tank is completely drained. The pump can run dry periodically without damage. However, for maximum seal life, the run dry periods should be kept to a minimum.

**Caution:** *If vehicle is stored for an extended period of time, make sure to clean the strainer as solid matter will tend to pack, and will necessitate replacement of strainer.*

#### 6.10.1 Flush Pump Pressure Adjustment

The flush pump is provided with a manually-adjustable control valve mounted on the flush pump enclosure cover and serves to limit the flush pump output pressure. To adjust, ask an assistant to activate the flush pushbutton and check the liquid projection while you manually adjust the control valve

### 6.11 SUMP TANK

#### 6.11.1 Sump Tank Draining

To drain sump tank, unscrew cap a few turns then turn drain valve handle CCW. Flush tank and pump cage with clean water. Close drain valve by turning handle CW.

**Caution:** *The lavatory should be serviced by maintenance personnel after emergency draining. Lavatory tanks should be serviced only at suitably equipped stations.*

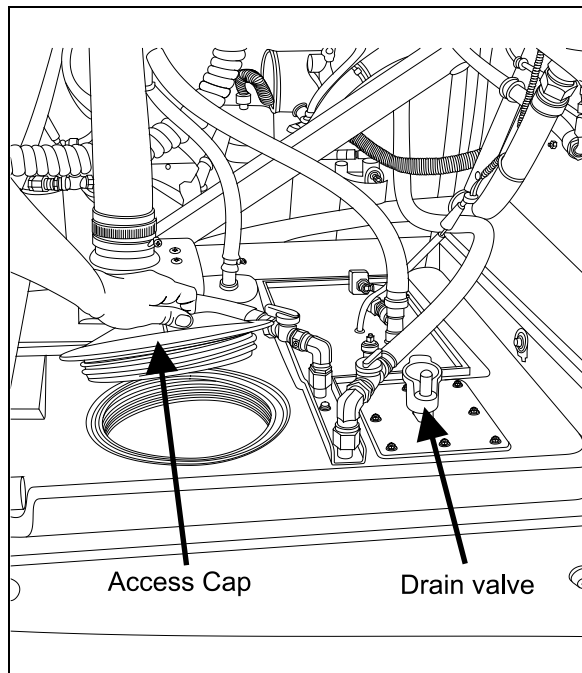


FIGURE 28: SUMP TANK

23294

#### 6.11.2 Sump Tank Filling

Remove cap on sump tank. Fill Tank with 2 gallons (9 liters) of antifreeze and two gallons of water.

**Caution:** *Do not overfill sump tank.*

**Note:** *The antifreeze solution in the sump tank will be diluted by fresh water coming from the lavatory sink. Regular maintenance of the sump tank is required to prevent freezing.*

### 6.12 CLEANING CABINET

A coiled hose located in the cleaning cabinet above the toilet can be used during lavatory cleaning. To use, connect a fresh water supply to the "Hansen" quick-release coupling, identified as "Cleaning Kit", located besides the engine oil reserve tank (Figure 27). To prevent freezing during cold weather, drain the hose after every use. To drain the hose, uncoil and open the nozzle near the lavatory floor drain. Have an assistant push on the spring ball of the quick-release coupling to allow air into the system.

## 7. AIR HORN VALVE

The air horn valve is located in the front service compartment and the air horn valve button is on the steering wheel center.

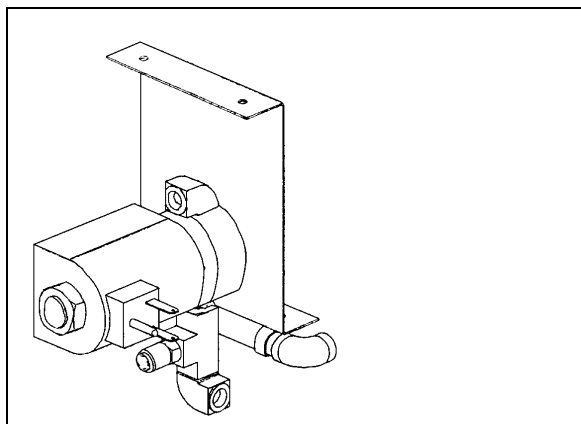


FIGURE 29: AIR HORN VALVE

23230

### 7.1 AIR HORN VALVE MAINTENANCE

When needed, the air horn valve can be serviced or replaced using the following procedure:

1. Unplug the cable connector;
2. Disconnect the air tubes;
3. Loosen the retaining bolts;
5. Service or replace the air horn valve;
6. Reinstall by reversing procedure.

## 8. HEADLIGHTS CLEANING SYSTEM

### 8.1 GENERAL DESCRIPTION

**Note:** When inspecting the headlights cleaning system, check the washer fluid hoses, fittings and connectors to be sure they are properly connected and seal with no restriction to the flow of washer fluid. Check that the washer nozzles are properly aimed.

The headlights cleaning system is independent from the windshield washer system and has its own washer fluid reservoir located in the front electrical and service compartment. However, this system shares the same switch than the upper windshield washer (refer to Operator or Owner's manual for operation). Each pressing of this switch produces 2 successive 0.7 seconds jets.

**CAUTION**

**Do not operate the headlights washer while the washer fluid reservoir is empty.**

**This may damage the washer fluid pump.**

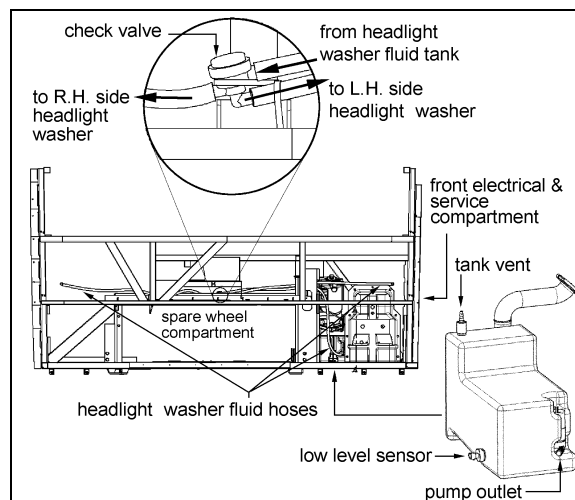


FIGURE 30: HEADLIGHT CLEANING SYSTEM

23361

### 8.2 WASHER FLUID REFILLING

Open the filler neck cap and add regular windshield washer fluid as required. The tank has a capacity of 10 liters (2.6 US gallons). You may use water or windshield washer fluid as well but, during cold weather days, use windshield washer fluid suitable for freezing temperature only.

### 8.3 WASHER NOZZLES ADJUSTMENT

To avoid waste of washer fluid, assure the fluid jets are properly aimed. Adjust nozzles so they aim as described in figure 31. Align the jet adjustment tool #800377 with the reference line shown on the front view detail. As seen on the side view, position the adjustment tool vertically for proper aiming.

**CAUTION**

**Because they are made of plastic, firmly tighten nozzle and bulkhead fittings by hand only.**

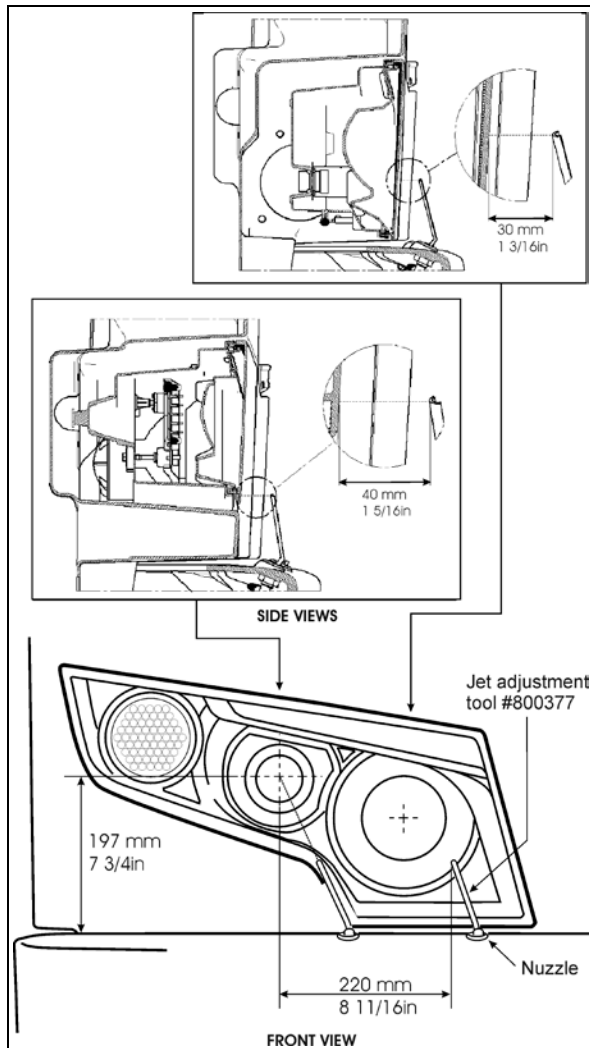


FIGURE 31: WASHER NOZZLES ADJUSTMENT 23386

## 9. WINDSHIELD WIPERS AND WASHERS

### 9.1 GENERAL DESCRIPTION

**Note:** When installing a wiper motor, arm or blade, follow recommended procedures to prevent misalignment, binding or malfunction. Check the windshield washer liquid hoses, fittings and connectors to be sure they are properly connected and seal with no restriction to the flow of washer liquid. Check that wiper arms have the proper sweep position and the washer nozzles are aimed so that spray is within the proper wiper pattern.

The windshield wipers are controlled by two electric wiper motors that are accessible for maintenance after raising the appropriate access panel at the front of the coach (refer to figure 32).

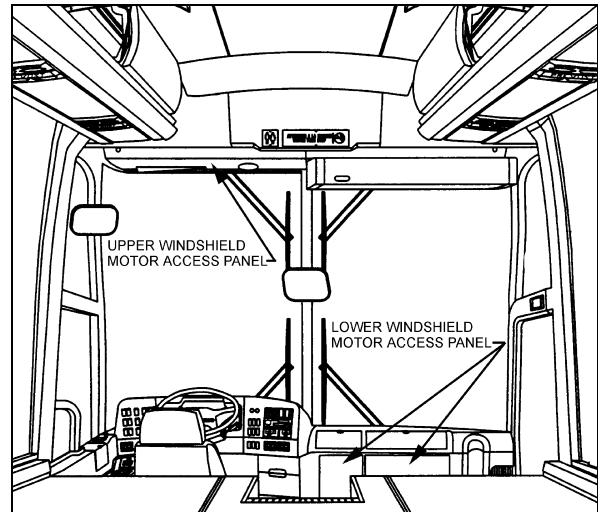


FIGURE 32: WIPER MOTORS LOCATION 23319

Each wiper motor is independently operated:

Depress the upper windshield wiper switch located on the dashboard L.H. side to the first position for intermittent wiping, and to the second position for continuous wiping (Figure 33).

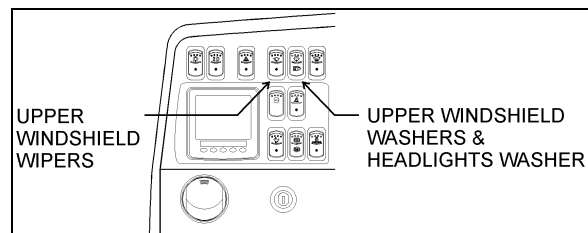


FIGURE 33: DASHBOARD

Rotate the multifunction lever forward to activate lower windshield wipers (arrow 2, Figure 34). The first position operates the wipers at low speed and the second position operates the wipers at high speed. Turning the lever backwards will operate the wipers in the intermittent mode.

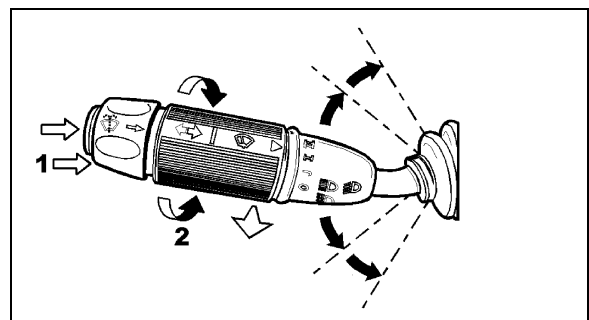


FIGURE 34: MULTIFUNCTION LEVER 23133

Each windshield washer pump is independently operated:

To activate the upper windshield washer pump, depress and hold the top of the rocker switch on dashboard L.H. side (Figure 33). The upper wipers will come on automatically and will shut off a few seconds after releasing the rocker switch. The lower windshield washer pump is electrically operated and is controlled by a washer control ring on the multifunction lever (item 1, Figure 34).

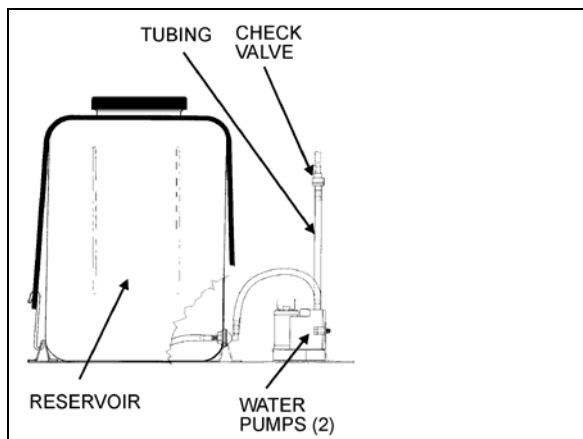


FIGURE 35: WINDSHIELD WASHER RESERVOIR  
23085

The windshield washer reservoir is located in the front service compartment (Figure 35). This unit pumps the washer liquid to the spray nozzles where it is dispersed across the windshield. Adjust nozzles with a flat tip screwdriver as needed to get proper spray coverage.

## 9.2 WIPER ARM

Check operation of the wipers for proper blade sweep and angle.

**Caution:** Do not attempt to manually move the wiper arms to make wiper blade sweep adjustments as damage to the wiper linkage or motor may occur. If it is necessary to adjust the sweep of blades, remove the arms and make adjustment by positioning the arms using serration on the wiper arm pivot shafts.

### 9.2.1 Sweep Adjustment

On a dry windshield, to avoid possible damage to the arm assembly or wiper motors, hold the wiper arms away from the windshield by inserting a small nail, or other such object, through the holes at the base of each wiper arm specially drilled for this purpose.

Sweep adjustment is a rough adjustment. It must be followed by lower and upper linkage adjustment. See paragraph 10.3 and 10.4.

In order to obtain the sweep adjustment, it may be necessary to remove and reposition the wiper arms, proceed as follows:

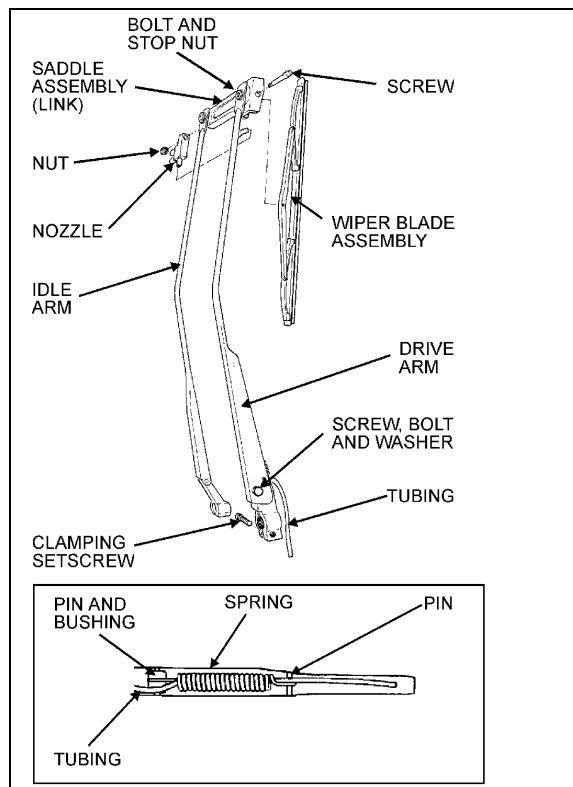


FIGURE 36: LOWER WINDSHIELD WIPER  
23086

1. Remove the cap nuts from the wiper arm pivot shafts (Figure 36 & Figure 37);
2. Disconnect the windshield washer tubing at the base of the wiper arm;
3. Lower windshield wiper: loosen the clamping set screw securing the drive arm to the knurled arm pivot shaft;
4. Remove the drive and idler arms or arm assembly;
5. Relocate the drive arm or arm assembly on its knurled pivot shaft to obtain the desired position;
6. Lower windshield wiper. Tighten the clamping set screw to secure the drive arm to the knurled shaft. Fit the idler arm onto the idler pivot shaft.

**TORQUE: 120-130 lb-ft (163-176 Nm)**

7. Install the pivot shafts cap nuts.

Drive arm pivot nut:

**TORQUE: 20-24 lb-in (2.26-2.71 Nm)**

Idler arm pivot nut :

**TORQUE: 90-110 lb-in (10-12 Nm)**

8. Connect the windshield washer tubing at the base of the wiper arm;
9. Check the adjustment on a wet windshield.

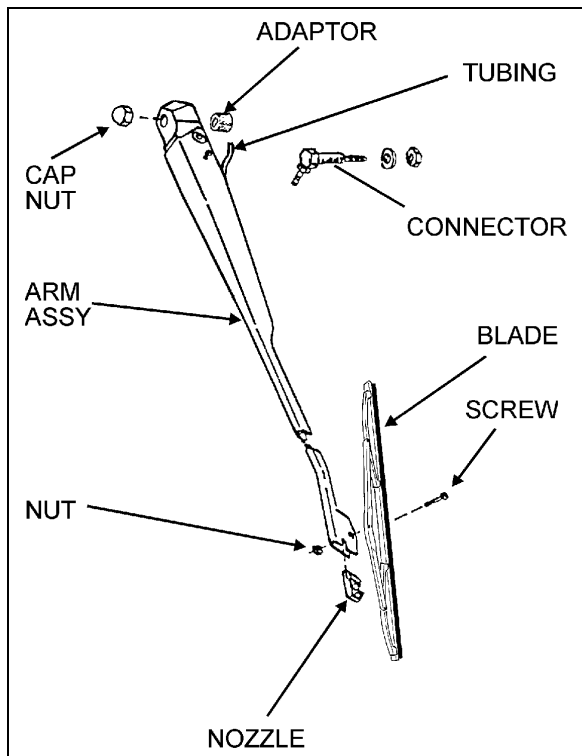


FIGURE 37: UPPER WINDSHIELD WIPER

23087

### 9.2.2 Removal

1. Remove the cap nuts from;
2. Disconnect the windshield washer tubing at the base of the wiper arm;
3. Mark the relationship of the arm head to the end of the knurled drive shaft to ensure the original position if the arm is to be reinstalled;
4. Lower windshield wiper: loosen the clamping set screw on the base of the drive arm;
5. Remove the wiper arm assembly.

### 9.2.3 Installation

1. Make sure the wiper motor is in the stop position. Lower windshield wiper: position the wiper arm on the knurled drive shaft and idler arm on the pivot shaft. Upper windshield wiper: position the wiper arm assembly on the knurled drive shaft;

2. If the original arm is reinstalled, align the marks made during removal;
3. Operate the wipers on a wet windshield to check the wiper blade sweep and angle. Readjust as necessary;
4. Lower windshield wiper: Tighten clamping nut onto the drive arm. Install cap nuts onto the arm shafts;
5. Connect the windshield washer tubing at the base of the wiper arm;
6. Check the adjustment on a wet windshield.

### 9.3 LOWER LINKAGE ADJUSTMENT

1. Make sure the wiper motor is in the stop position prior to working on the linkage.
2. Adjust the two pivot shafts vertically.
3. Adjust the rod length of the connecting pivot shafts. During rod length adjustment, maintain the pivot shafts in the vertical position.
4. Adjust the rod located between right pivot shaft and motor to a 40.5° angle (Figure 38). The motor lever must be on the same axis as the rod.
5. Install the right wiper arm in its normal position (in the middle of the windshield). Refer to paragraph "Sweep Adjustment".
6. The right wiper arm final adjustment is made by adjusting the smallest rod length.
7. Install the left wiper arm in its normal position (in the middle of the windshield). Refer to paragraph "Sweep Adjustment".
8. The left wiper arm final adjustment is made by adjusting the longest rod length.
9. Check the adjustment on a wet windshield.

### 9.4 UPPER LINKAGE ADJUSTMENT

1. Make sure the wiper motor is in the stop position prior to working on the linkage.
2. Adjust rods length.
3. Install the left wiper arm in its normal position (in the middle of the windshield). Refer to paragraph "Sweep Adjustment".
4. The left wiper arm final adjustment is made by adjusting the rod length to 8.46 inches (215 mm).

5. Install the right wiper arm in its normal position (in the middle of the windshield). Refer to paragraph "Sweep Adjustment".
6. The right wiper arm final adjustment is made by adjusting the rod length to 23.54 inches (598 mm).
7. Check the adjustment on a wet windshield

**Warning:** Park vehicle safely, apply parking brake, stop engine and set battery master switch to the "OFF" position prior to working on the vehicle.

## 9.5 WINDSHIELD WIPER MOTORS

### 9.5.1 Lower Windshield Wiper Motor Replacement

The lower windshield wiper motor is located at lower front of the vehicle, behind the defroster panel. Refer to figure 32 for motor location.

1. Remove the two Phillips-head screws retaining the defroster panel, and remove panel.
2. Disconnect wiring connector from the windshield wiper motor.
3. Loosen clamping screw retaining the lever at the end of the motor driving shaft.
4. Remove the three bolts holding the motor to the steel plate.
5. Remove the windshield wiper motor (Prevost #800304), reverse removal procedure to reinstall.

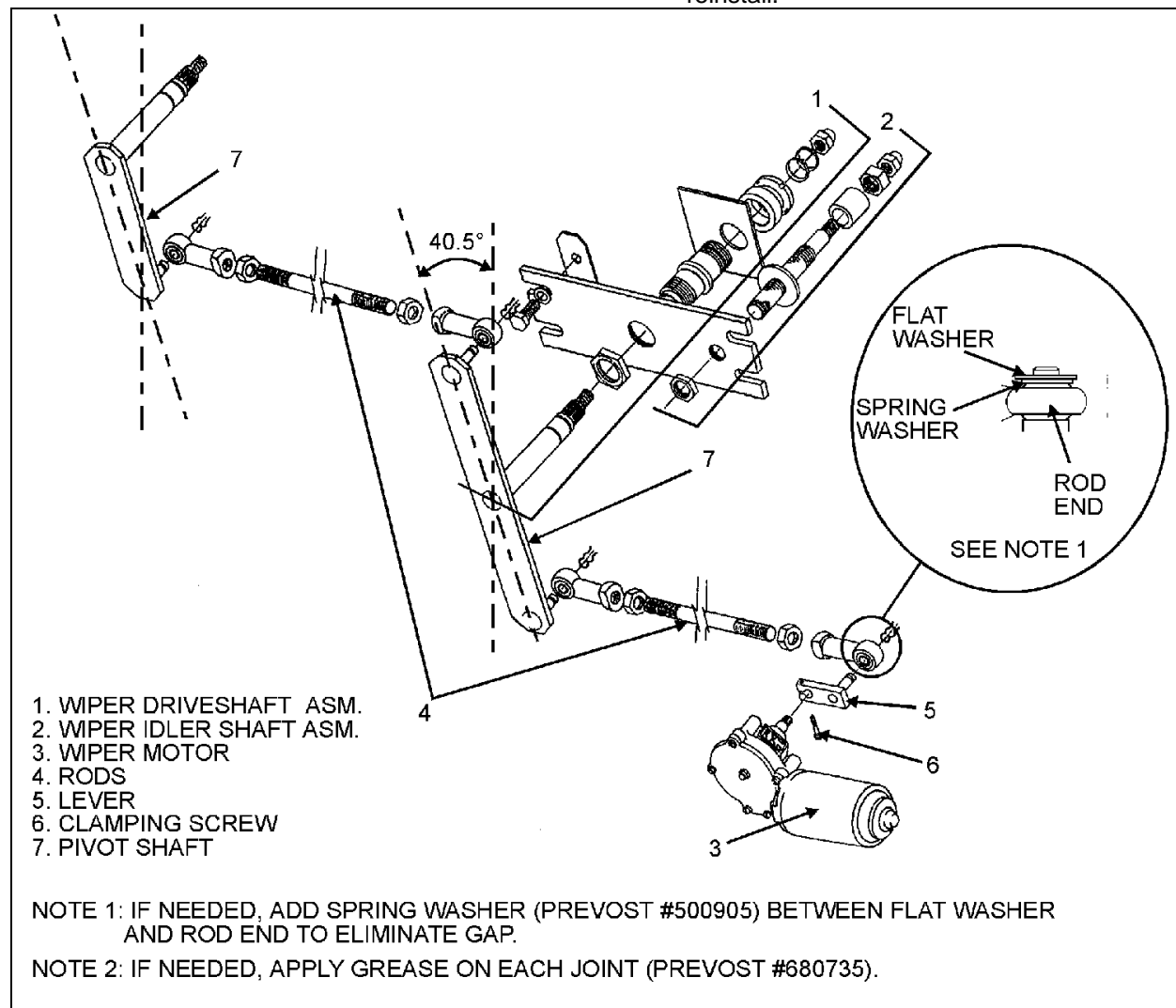


FIGURE 38: LOWER WINDSHIELD WIPER INSTALLATION

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## 9.5.2 Upper Windshield Wiper Motor Replacement

The upper windshield wiper motor is located above L.H. upper windshield panel. To remove the motor, it is necessary to remove left sun visor and upper windshield panel.

**Warning:** Park vehicle safely, apply parking brake, stop engine and set battery master switch to the "OFF" position prior to working on the vehicle.

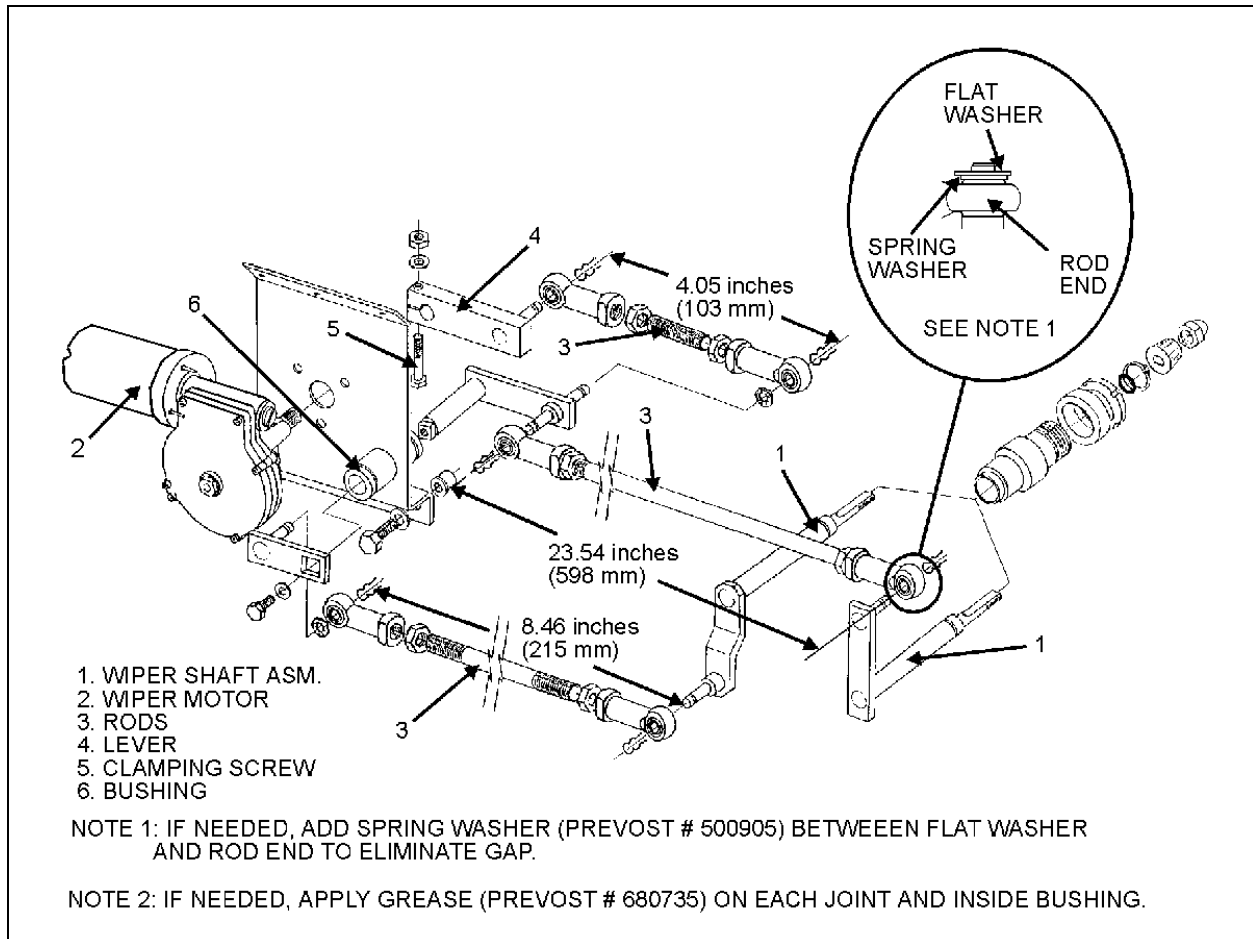


FIGURE 39: UPPER WINDSHIELD WIPER INSTALLATION

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1. Pull out the wiring connector (black and red wires) located on sun visor L.H. side and disconnect.
2. Remove the two Phillips-head screws at the bottom end of the sun visor arms.
3. Remove the two Phillips-head screws on each roller side, pull out the sun visor.
4. Remove the Phillips-head screws retaining the upper windshield panel.
5. If equipped with blower defroster, loosen hose clamp to remove air duct from hose.
6. Disconnect wiring connector from the windshield wiper motor.
7. Loosen the bolt retaining the lever at the end of the motor driving shaft (Figure 39).
8. Remove the three bolts holding the motor to the steel plate.
9. Remove the windshield wiper motor (Prevost #800304), reverse removal procedure to reinstall.

## 10. AUTOMATIC FIRE SUPPRESSION SYSTEM (AFSS) (OPTIONAL)

This optional system is used to shut down the engine and to extinguish a fire in the engine compartment or in the vicinity of the preheating system if so equipped.

The system operation is fully automatic and does not require assistance from the operator, however if required, the system can be manually activated by the operator at any time.

Refer to Prevost Operator's Manual or Owner's Manual for system operation and operational sequence (fire).

If more information is needed on the system, please refer to Kidde Dual Spectrum "Operation & Maintenance Manual annexed at the end of this section.

### 10.1 STARTING THE VEHICLE AFTER TRIGGERING OF A FIRE ALARM

The vehicle may be started after a fire alarm without resetting the system. Refer to ignition switch sequence below. This will not reset the system, rather it will instruct the vehicle's multiplex system to ignore vehicle interface outputs from the protection panel. This feature is intended to be used only in emergency situations that require the vehicle to be restarted and

moved a short distance prior to system reset. It should not be performed if the cause of the fire has not been clearly identified and corrected.

To start the vehicle, perform this ignition switch (key) sequence:

1. From the on position;
2. Turn to **OFF**, return to **ON** and **START** vehicle within 2 seconds.

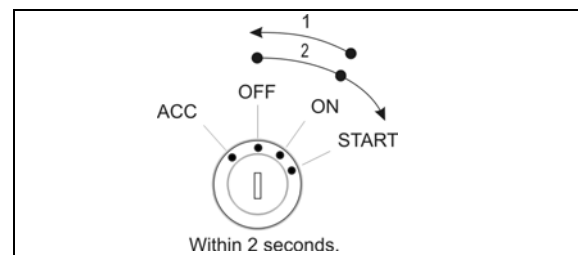


FIGURE 40: IGNITION SWITCH SEQUENCE

## 10.2 PERIODIC MAINTENANCE

### PRE-TRIP

- Verify that the Protection Panel "SYSTEM OK" lamp is on solid green.

### EVERY 3000 MILES OR MONTHLY (whichever comes first)

#### General

- Verify that neither the protected equipment nor the hazard has changed.
- Verify that no obvious physical damage or condition exists that might prevent system operation.

#### Protection Panel

- Verify that all warning lamps and the audible alarm are operational by pressing the "TEST/RESET" button.

#### Manual Activation Switch

- Verify that the tamper seal is intact and access to the switch is unobstructed.

#### Fire Detectors

- Optical
  - Verify that the status lamp on the detector face is on solid green.
  - Verify that nothing is blocking the detector's field of view.

- Verify that the windows on the face of the detector are free of excess contamination (dirt, oil, grease, etc.) – if necessary, clean using a water soaked non-abrasive towel.
- Linear Thermal
  - Verify that there is no obvious physical damage and that the unit is free of excess contamination (dirt, oil, grease, etc.) – if necessary, clean using a water soaked non-abrasive towel.
  - Verify that mounting is secure and taught.

**Electrical Harness**


- Verify that electrical connectors and electrical wiring have no visible damage and all connectors are securely seated.

**Extinguisher & Distribution System**

- Verify that the extinguisher pressure gauge pointer is in the green arc at room temperature.
- Verify that distribution piping and nozzles are intact and unobstructed and that nozzle blow-off caps are in place.

**EVERY 18000 MILES OR SEMI-ANNUALLY**  
(whichever comes first)

- Perform a comprehensive fire system test using a Kidde Dual Spectrum System Test Set (Optical Test Kit P/N 420871-2).
- Service the extinguisher in accordance with KDS Document 160296, “KDS Pre-Engineered Fire Suppression System: Installation, Operation and Maintenance Manual”.




## MAINTENANCE

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**EVERY SIX YEARS**

Have the fire extinguisher rebuilt by a qualified fire protection equipment company familiar with Kidde Dual Spectrum equipment and in accordance with KDS Document 160296, “KDS Pre-Engineered Fire Suppression System: Installation, Operation and Maintenance Manual”. Rebuilt shall include actuator, O-ring seals and dry chemical replacement.



## MAINTENANCE

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**EVERY TWELVE YEARS**

Have the Extinguisher cylinder hydrostatically tested by a qualified fire protection equipment company familiar with Kidde Dual Spectrum equipment and in accordance with KDS Document 160296, “KDS Pre-Engineered Fire Suppression System: Installation, Operation and Maintenance Manual”.

**11. TIRE PRESSURE MONITORING SYSTEM (TPMS)**

The optional active tire pressure and temperature monitoring system is a sensing device designed to identify and display tire operating data and activate an alert or warning when pressure or temperature irregularities are detected.

For more information on the operation and troubleshooting of the system, refer to the Operator’s Manual, chapters “Controls and Instruments” and “Safety Features and Equipment”.

