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## SECTION 26A: H3 SERIES SLIDE-OUT

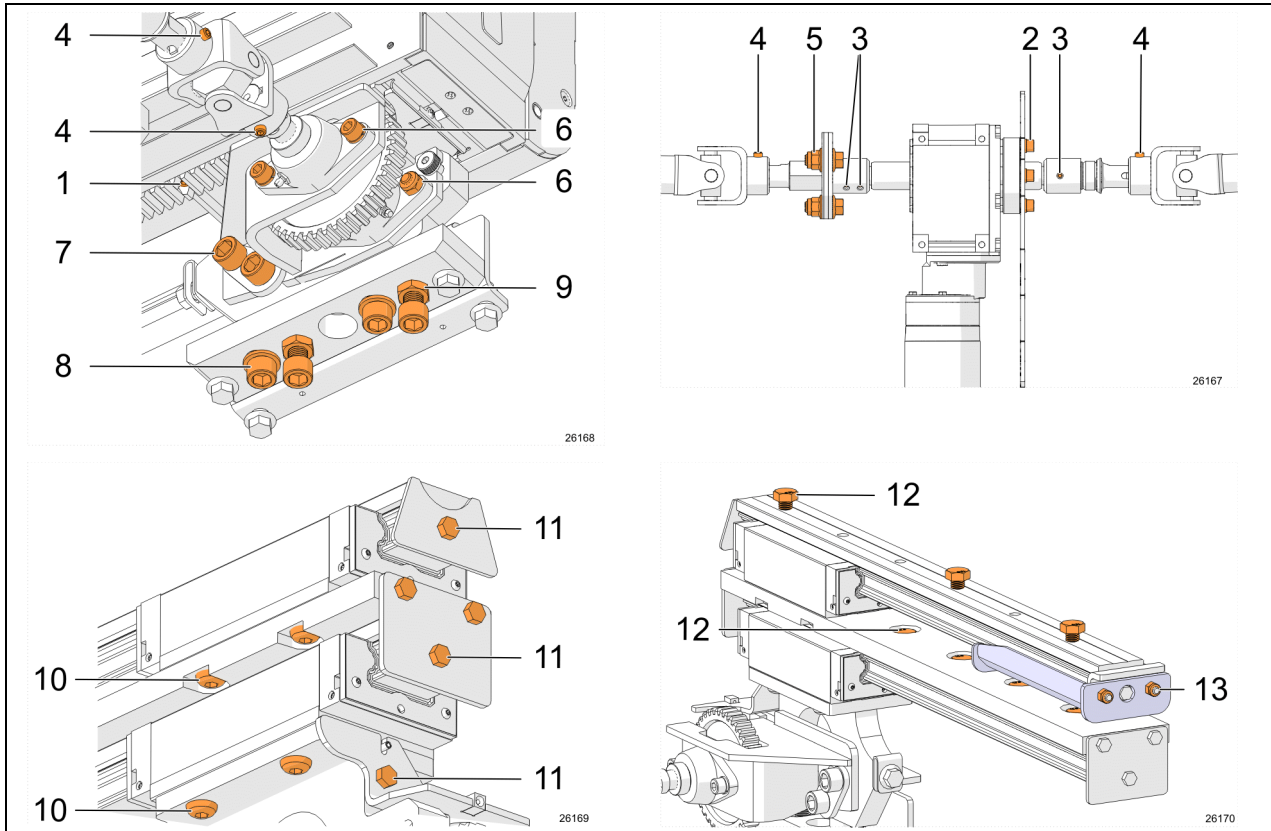
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**SECTION CHANGE LOG**

|   | DESCRIPTION  | DATE       |
|---|--|------------|
| 1 | From K-0295. General revision. Slide out seal and mechanical update                  | 2018 03 26 |
| 2 | Modifications following MI18-31  | 2018 09 12 |
| 3 | Changed "Overview" ;"Slide-out 2" inside retraction"; Seal pressure was 11 is 15 psi | 2018 11 29 |
| 4 |  |            |
| 5 |  |            |
| 6 |  |            |

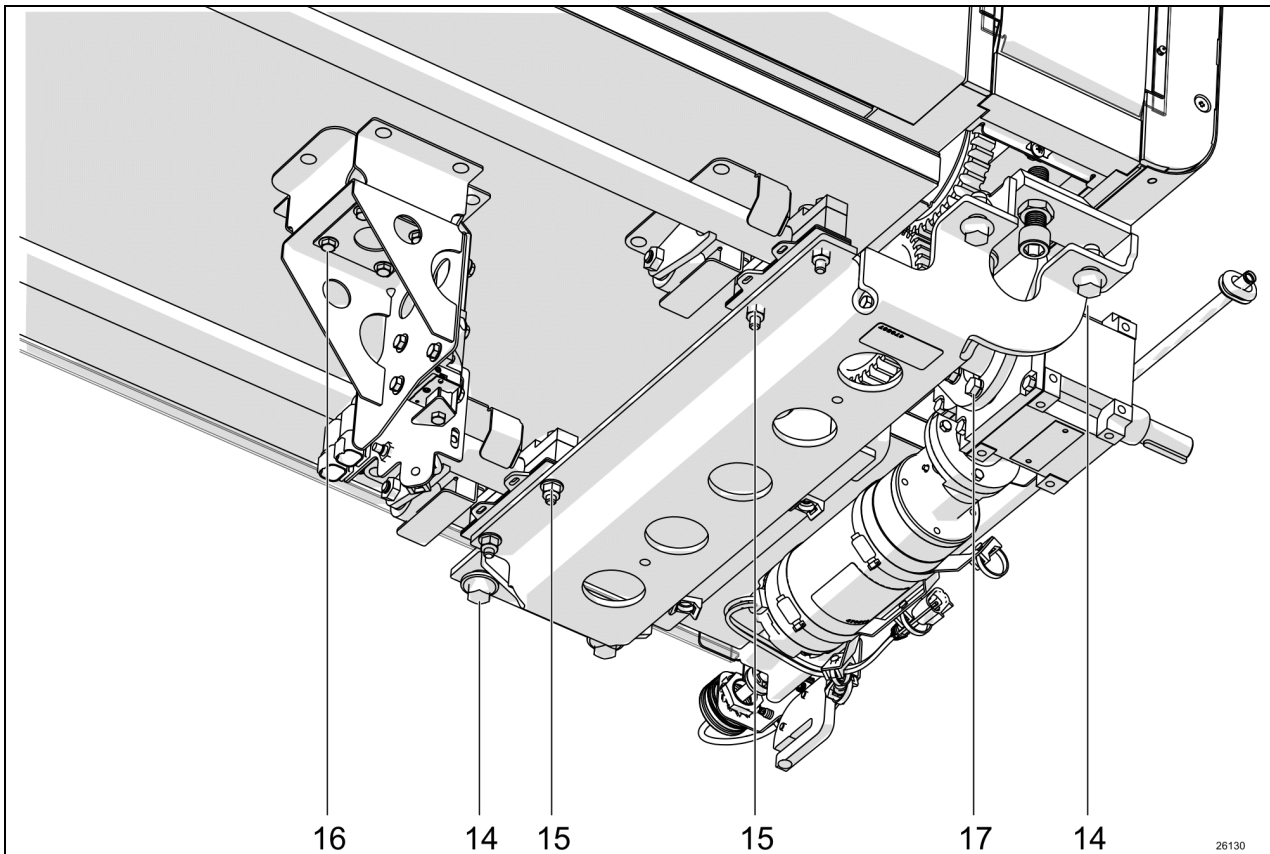
1 TORQUE TABLES



**STANDARD PREVOST SLIDE-OUT (Front left shown)**

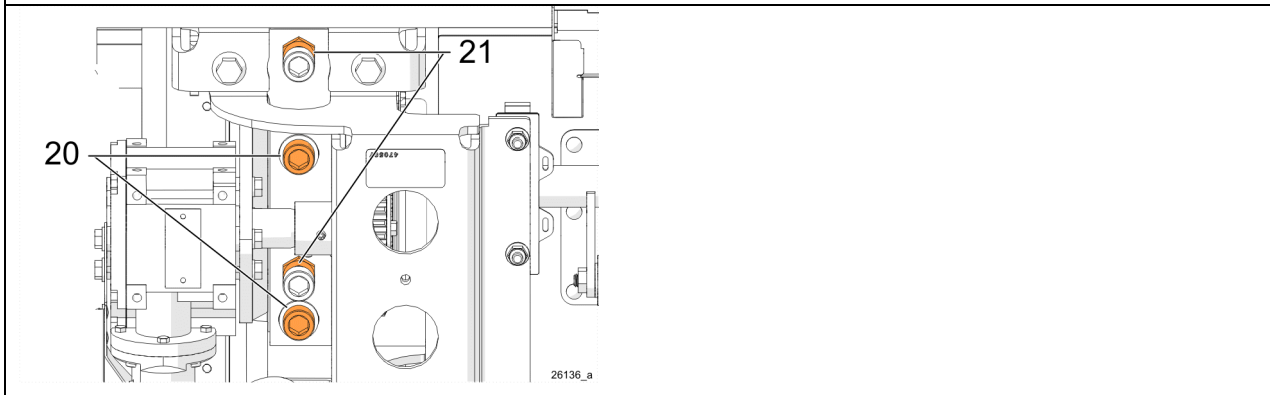
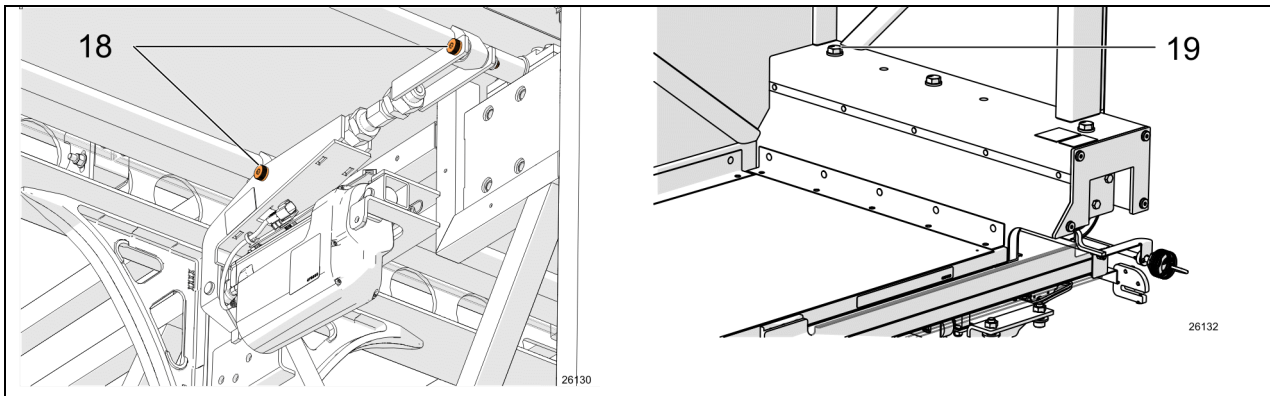
| No | DESCRIPTION (quantity for one slide-out)                | TORQUE                                  |
|----|---|---|
| 1  | Rack gear mounting screws                               | 1.9-2.1 lb-ft (2.58-2.85 Nm) <i>max</i> |
| 2  | Drive motor/gearbox assembly mounting bolts (4)         | 16-20 lb-ft (22-27 Nm)                  |
| 3  | Shaft extension set screw (6)                           | 7 lb-ft (10 Nm)                         |
| 4  | Drive shaft yoke set screws (8)                         | 27 lb-ft (37 Nm)                        |
| 5  | Adjustable flange screws (3)                            | 59 lb-ft (80 Nm)                        |
| 6  | Flange bearing mounting screws                          | 48 lb-ft (65 Nm)                        |
| 7  | Pinion gear support mounting screws (4)                 | 198 lb-ft (268 Nm)                      |
| 8  | Tilting and leveling support retaining screws (4)       | 55-65 lb-ft (75-88 Nm)                  |
| 9  | Tilting and leveling support leveling screw jam nut (4) | 43-53 lb-ft (58-72 Nm)                  |
| 10 | Linear bearing mounting screws (16)                     | 59 lb-ft (80 Nm)                        |
| 11 | Rail end screw (16)                                     | 17 lb-ft (23 Nm)                        |
| 12 | Rail mounting screw (18)                                | 130 lb-ft (176 Nm)                      |
| 13 | Removable stopper nuts (4)                              | 94 lb-ft (128 Nm)                       |

**SECTION 26A: H3 SERIES SLIDE-OUT**



**PREVOST SLIDE-OUT WITH FLUSH FLOOR (Front right)**

| No | DESCRIPTION                                     | TORQUE                 |
|----|---|------------------------|
| 14 | Stacked bearing assembly mounting bolts (8)     | 59 lb-ft (80 Nm)       |
| 15 | Floor lift shaft bearing clamp screws(16)       | 13.7 lb-ft (18.6 Nm)   |
| 16 | Floor to linear bearing bracket screws (8)      | 7 lb-ft (10 Nm)        |
| 17 | Drive motor/gearbox assembly mounting bolts (8) | 16-20 lb-ft (22-27 Nm) |



**PREVOST SLIDE-OUT WITH FLUSH FLOOR (Front right)**

| No | DESCRIPTION   | TORQUE                 |
|----|---|------------------------|
| 18 | Transfer arm to lift shaft screws (2)                   | 35 lb-ft (47 Nm)       |
| 19 | Slide-out room to rail mounting bolts (6)               | 130 lb-ft (176 Nm)     |
| 20 | Tilting and leveling support retaining screws (4)       | 55-65 lb-ft (75-88 Nm) |
| 21 | Tilting and leveling support leveling screw jam nut (4) | 43-53 lb-ft (58-72 Nm) |

## 2 OVERVIEW

H3-45 VIP vehicles can accommodate up to four (4) Prevost slide-outs units.

### 2.1 STANDARD PREVOST SLIDE-OUTS

Slide-outs in the front left, rear left and rear right position all share operation, design features and maintenance requirements.

Rear right slide-out is shallower than the other slide-outs. Maintenance can be performed by moving the slide-out inwards. Refer to SLIDE-OUT 2" INSIDE RETRACTION.

### 2.2 PREVOST FLUSH FLOOR SLIDE-OUT

Exclusive to the H3-45 VIP in the front right (curb side) position you will find a Prevost designed slide-out with a mobile floor providing a flush floor surface when deployed. This subject is covered separately in paragraph 13.

### 2.3 OPERATION

Room operation is on a "first in, first served" basis due to the high current demand and safety requirements. Only one slide-out unit may be operated at a time.

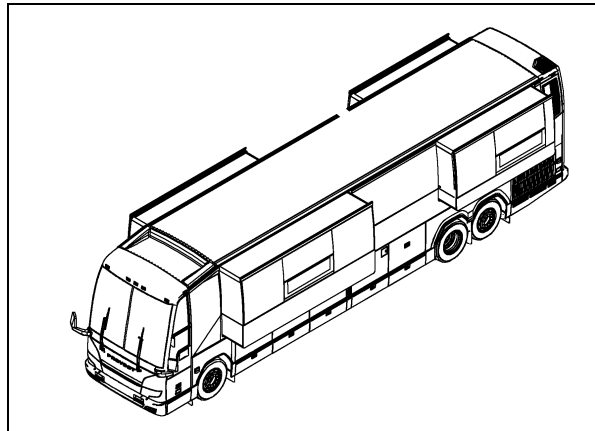


FIGURE 1: H3-45 VIP TYPICAL CONFIGURATION



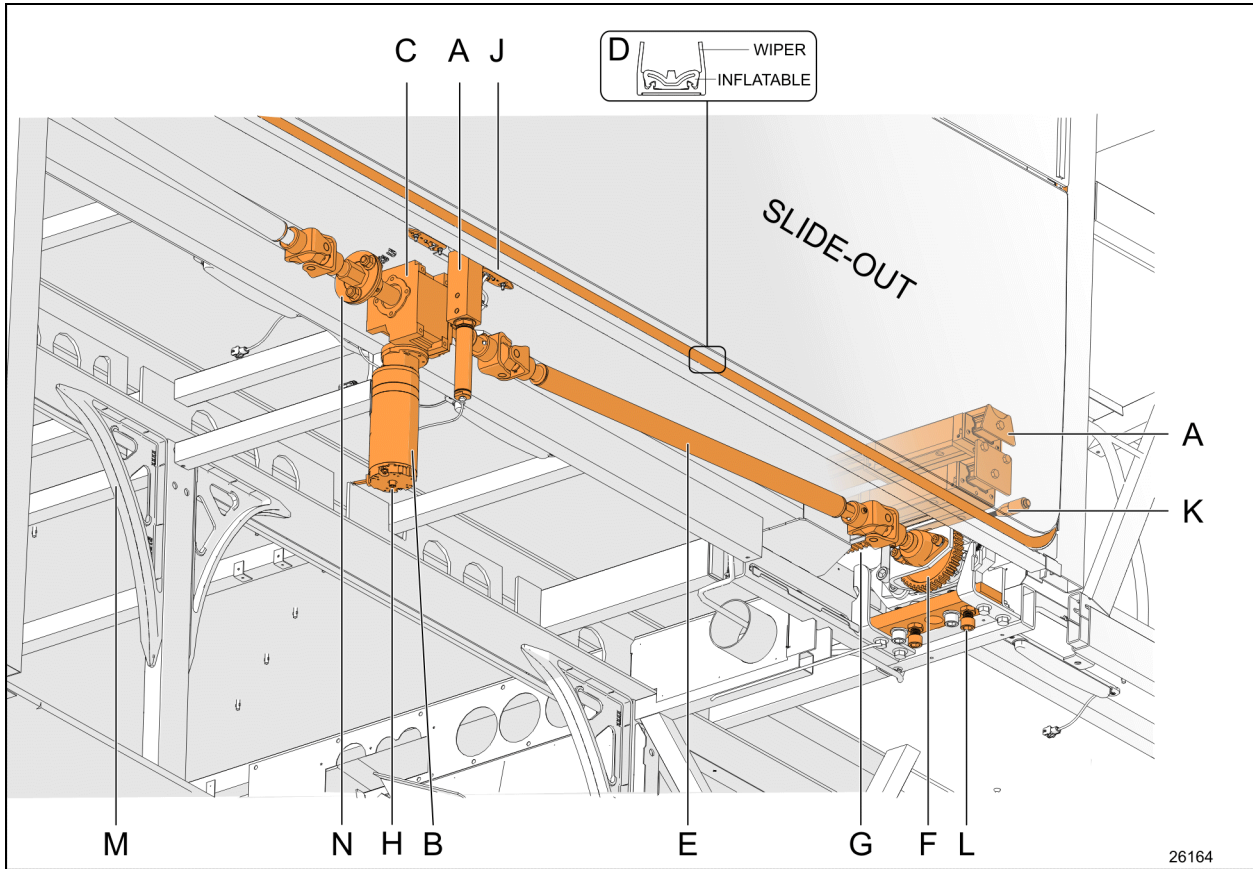


FIGURE 2: TYPICAL SLIDE-OUT MECHANISM OVERVIEW (FRONT LEFT SYSTEM SHOWN)

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## SLIDE-OUT MECHANISM OVERVIEW

Refer to Figure 2. Each slide-out is moved in and out on stacked linear bearings, **(A)**. Power comes from one electrical motor **(B)**. It is either oriented vertically or horizontally. The motor drives a right angle speed reducing gearbox **(C)**.

Water tightness of the slide-out is ensured by a wiper seal and an inflatable seal **(D)**.

The gearbox is coupled to drive shafts **(E)** and two pinion gears **(F)**. An adjustable flange **(N)** allows pinion gear synchronization. Rack gears **(G)** transform pinion gear rotation into horizontal motion.

Manual extension or retraction is possible by the motor shaft extension **(H)**. Closely follow instructions provided further in this manual to perform this procedure.

To limit rail extension, the system includes two proximity sensors **(J)** and in case of proximity sensor failure, two factory adjusted rail stoppers (one per rail) **(K)**. An additional inner stopper along the top edge of the slide-out limits room extension. Refer to Figure 25 and Figure 26.

Slide-out room tilt and leveling adjustment is carried-out by the adjustment plate and screws **(L)**.

Structural integrity of the vehicle platform is ensured with stainless steel casting corner reinforcements **(M)** in the luggage bays.

A security pin **(N)** locks the slide-out in the retracted or "in" position for road travel.

A flexible rail cover (Figure 22) protects the linear bearing assembly from the elements. As the room moves out, it is pulled under the linear bearing and rack gear assembly. It is pushed back and curls up over the assembly as the room moves in.

For more information on the various mechanical components, refer to paragraph 7, MAIN COMPONENTS.

## 2.4 SLIDE OUT CONTROL SYSTEM OVERVIEW

Slide out operation is controlled electrically and pneumatically. The control panel is located in the first road side luggage bay, fixed to the ceiling (Figure 51). It controls all slide-outs installed on the vehicle.

The control panel includes multiplex modules, power relays and pneumatic control valves. Logic control and operation is achieved by using the same Volvo multiplex modules found on the vehicle chassis.

A Control Pad provides the input command for extension and retraction of the slide-out room. One control pad per room is provided from factory. Final location and type of control may vary from one vehicle to another depending on interior layout and vehicle converter.

Troubleshooting is performed through the DID. For more information on slide-out control systems, refer to paragraphs 8 SLIDE-OUT PNEUMATIC SYSTEM and 9 SLIDE-OUT ELECTRICAL SYSTEM.

For more information on troubleshooting, refer to paragraph 15 TROUBLESHOOTING.

## 2.5 REPLACEMENT PARTS

Refer to the Prevost parts manual for the latest information to order replacement parts.

## 2.6 MAXIMUM LOADS

**NOTE**

Maximum load includes occupant weight and equipment added by the converters in the slide-out

**Front slide-outs:**

Maximum load with vehicle at stand still  
(retracted or extended) **1500 lb**

Maximum load with vehicle or slide-out moving **1200 lb<sup>1</sup>**

**Rear slide-outs:**

Maximum load with vehicle at stand still  
(retracted or extended) **1500 lb**

Maximum load with vehicle or slide-out moving **1000 lb<sup>1</sup>**

**WARNING**

Overloading may damage the seal, interfere with slide-out operation and may cause the system to malfunction.

Do not exceed 1/4" deflection. (Figure 3)

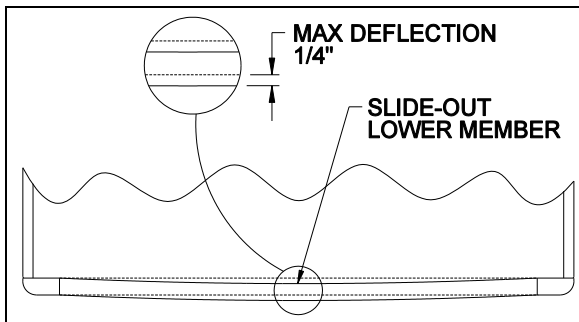


FIGURE 3: FRONT SLIDE-OUT DEFLECTION

<sup>1</sup> Value is for an equally distributed load to prevent seal damage by excessive deflection.

### 3 LEVEL & TILT ADJUSTMENT

Tilt and leveling adjustment is carried-out by the adjustment plate and screws located under each linear bearing assembly. (Figure 4).

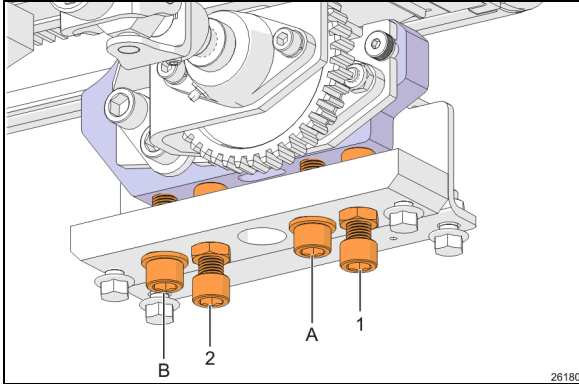


FIGURE 4: LEVELING & TILTING SCREWS

**A & B TORQUE: 55-65 lb-ft (75-88 Nm)**

**1 & 2 NUT TORQUE: 43-53 lb-ft (58-72 Nm)**

#### 3.1 HEIGHT ADJUSTMENT VALUE

The desired height level is 13/16" (21mm) from the bottom (Figure 5)



### WARNING

A height under 17mm may damage the seal

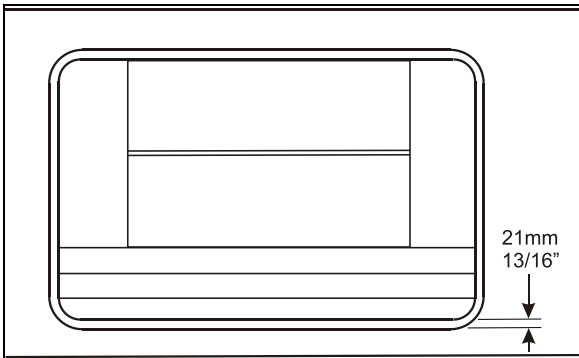


FIGURE 5: SLIDE-OUT LEVEL ADJUSTMENT

When proper level is reached (Figure 5) retaining screws A & B maintain the support seated on the leveling screws.

#### 3.2 LATERAL ADJUSTMENT

The desired gap on each side is 13/16" (21mm) (Figure 5)



### WARNING

A gap under 17mm may damage the seal

#### 3.3 TILT ADJUSTMENT VALUES

The desired tilt adjustment is one where the top of the slide-out is slightly more recessed (inside) than the bottom. (Figure 6)

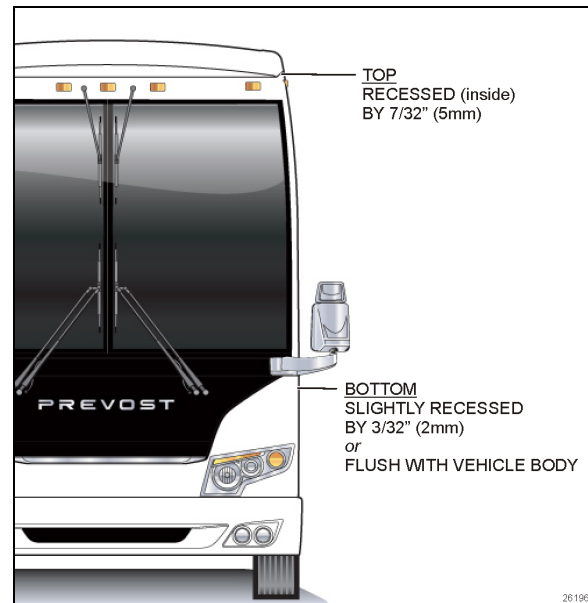


FIGURE 6: TILT ADJUSTMENT VALUES

Tilt adjustment is done by changing the linear bearing support inclination using leveling screws 1 & 2 to adjust the angle (Figure 4).

#### 3.4 STOPPER SEQUENCE

When retracting, the upper "in limit" stoppers should touch the vehicle structure first, followed by the lower "in limit" stoppers.

#### 3.5 TILT ADJUSTMENT SEQUENCE

Before proceeding with the level and tilt adjustment, check the following conditions:

- The slide-out is retracted;
- The 2 lower "in limit" stoppers are perfectly adjusted, that means that the lower edge of the slide-out outer panel is flush or slightly in by 2mm (3/32") with the vehicle body when retracted;(Figure 6)
- The 2 upper "in limit" stoppers are removed from the slide-out (see paragraph 7.3).

**WARNING**

Leveling and tilting adjustment must be performed with a retracted (fully in) slide-out.

**WARNING**

Never unscrew completely retaining screw A and B (Figure 4) or the slide-out may tip inside.

1. With the lower edge of the slide-out outer panel flush with the vehicle body, adjust the slide-out level. (Figure 5) The distance between the top of the horizontal member under the slide-out and the slide-out under panel must be 21mm (13/16" approximately).

**To raise the linear bearing support plate**, turn levelling screw 1 & 2 clockwise. Slightly and gradually, loosen the retaining screws A & B as the support plate elevates, but keep the retaining screws tight.

**To lower the linear bearing support plate**, turn screw 1 & 2 counter clockwise. As the support plate goes down, maintain the retaining screw A & B tight.

2. Tighten retaining screws A & B (Figure 4)

**TORQUE: 55-65 lb-ft (75-88 Nm)**

3. Ensure that leveling screw 1 & 2, are firmly leaning on the support plate and then firmly tighten the jam nuts.

**TORQUE: 43-53 lb-ft (58-72 Nm)**

4. Verify that the tilt is still properly adjusted (7/32").

#### 4 ROOM EXTENSION FOR MAINTENANCE

It is possible to extend the room further out for maintenance operations.



### CAUTION

Prepare a scissor lift or a set of jack stands to support the slide-out room while it is extended for maintenance.

From the inside of the vehicle, remove any capping or trims hiding linear bearings at the bottom of the slide-out on both sides.

Then remove the room extrusion end caps. (Figure 7)

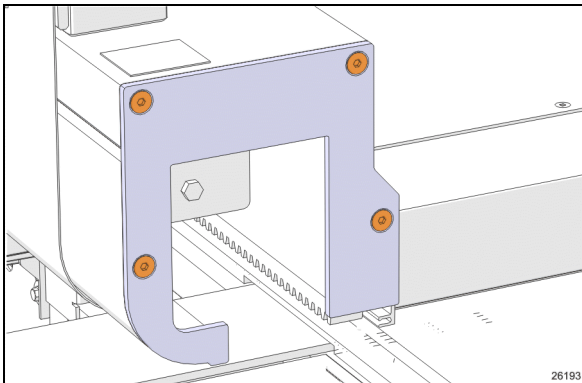


FIGURE 7: EXTRUSION END CAP

Once the room is fully extended, remove the screw and tab holding the flexible plastic rail cover in place. (Figure 8) *Perform this on both sides.*

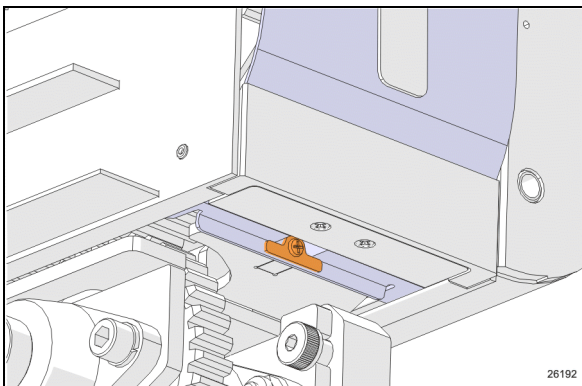


FIGURE 8: TAB AND MOUNTING SCREW

Remove the upper inner stopper (Figure 9).

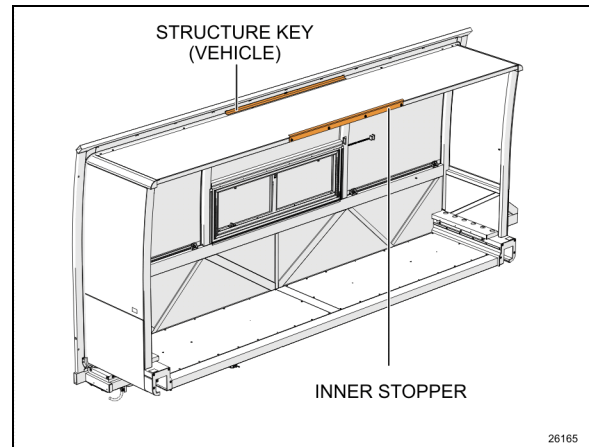


FIGURE 9: UPPER INNER STOPPER

Remove the two nuts holding the extension stopper (perform both sides). (Figure 10)

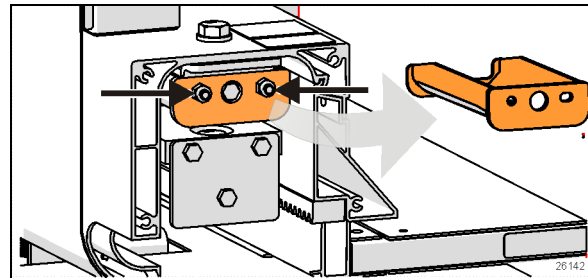


FIGURE 10 EXTENSION STOPPER REMOVAL

The room can now be extended further.

Do not remove any additional stoppers.  
Heed the safety warning below.

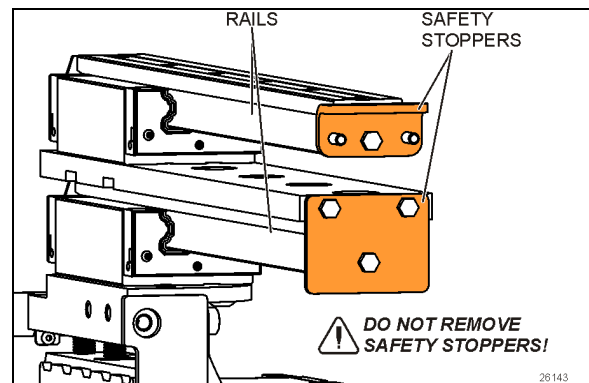


FIGURE 11: SAFETY STOPPERS ON RAILS

**DANGER**

Safety stoppers are bolted to the rail ends.  
(Figure 70 )

Never remove these stoppers.

These prevent the room from sliding out of the bearings.

Without these stoppers, the room could slide completely out of the bearings, therefore posing a risk of serious injury or death and significant damage to the vehicle's components

Deflate the seal by using the relieving shut-off valve located on the pneumatic component panel. Confirm by the pressure gage.

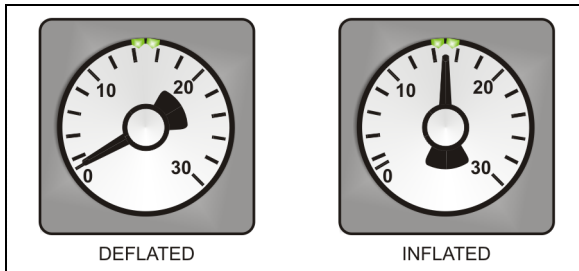


FIGURE 12: INFLATABLE SEAL PRESSURE GAGE

**CAUTION**

Failure to deflate the seal may result in seal damage. Refer to Paragraph 7.5 "SEAL" for further details

Prepare the supports under the room.

Using a cordless drill with a 10 mm hexagonal socket, drive the motor extension to further extend the slide-out room until the gears leave the rack gear.

Finish by pushing out the room by hand. A minimum of two persons are required.

Raise the supports in place

## 5 SLIDE-OUT MANUAL OVERRIDE PROCEDURES



### CAUTION

Never use an impact wrench to manually operate the slide-out. Doing so would damage the various mechanical components of the slide-out.

In case of power retracting system failure, it is possible to use the manual override procedure to retract or extend the slide-out.

The manual override procedures consist in rotating the slide-out motor shaft extension using a cordless power drill with a 10 mm hexagonal socket.

Follow all instructions carefully to avoid damaging the inflatable seal or the retraction mechanism.

### 5.1 PRELIMINARY CONDITIONS FOR MANUAL OVERRIDE PROCEDURE

Before using the slide-out manual override procedures, make sure that the problem cannot be solved by one of the following simple checks:

- Check the fuses. See paragraph 9.2.
- Make sure the parking brake is applied and that transmission is in the "NEUTRAL" position.

#### NOTE

*The slide-out control system inhibits transmission range selection to prevent the vehicle from moving if the slide-out is not in its full "IN" position.*

- Make sure the voltage is high enough by running the engine at fast idle or having a battery charger connected.



### CAUTION

Before extending or retracting the slide-out, always open a window to avoid movement restriction and to prevent the motor from stopping in overcurrent because of a vacuum or pressure build up inside the vehicle.

### 5.1.1 Manual retracting procedure – Front and rear slide-out

1. Turn the ignition switch to the "OFF" position, and remove the ignition key for more safety.
2. Deflate the seal by using the relieving shut-off valve located on the pneumatic component panel (Item 1, Figure 50).
3. Turn the handle clockwise to deflate the seal. Make sure the pressure indicator reading is "0 psi".



### CAUTION

The pressure in the inflatable seal must be completely relieved to prevent any damage to the seal.

#### NOTE

*When air pressure is relieved using the shut-off valve, the normal extending and retracting operation cycle is disabled, for that reason the slide-out cannot be moved using the control pad.*

4. To move the slide-out, use a cordless power drill with a 10 mm hexagonal socket on the shaft extension of the slide-out motor.
5. Rotate the slide-out motor shaft extension with the power drill until the slide-out comes to its closed position. (Figure 13)

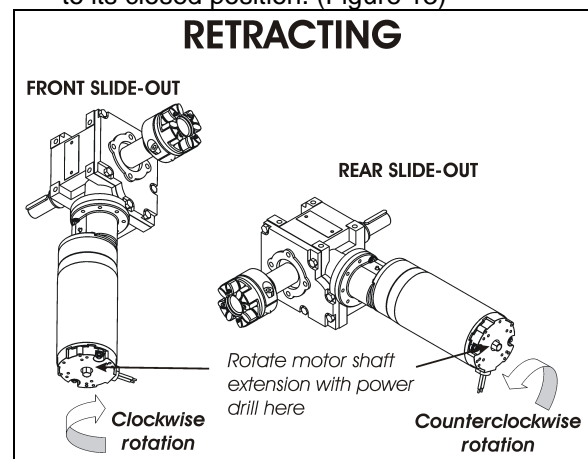


FIGURE 13: SLIDE-OUT MOTOR ROTATION

6. Once the slide-out room is lined up to its closed position, remove the tool from the motor.



**CAUTION**

Slow down the closing speed as the slide-out approaches its closed position. As soon as the "in limit" stoppers come in contact with their bearing surface, stop immediately the power drill rotating movement. Not doing so could overload the drive mechanism and cause damage to the reduction gearbox.

4. Finally, the inflatable seal can be re-inflated by turning the shut-off valve handle counterclockwise. Check the pressure gage on the inflatable seal regulator to see if the pressure increases to around 15 psi (Figure 14). Needle should be pointing between the two small green marks on the dial.

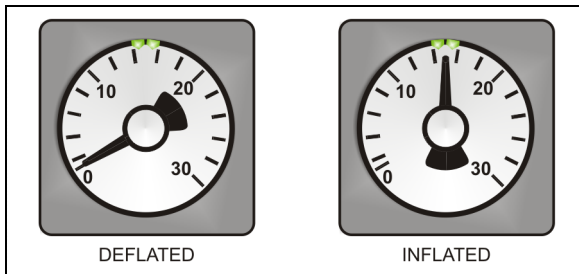


FIGURE 14: INFLATABLE SEAL PRESSURE GAGE

#### 5.1.2 Manual extending procedure – Front and rear slide-out

1. Apply parking brake to disengage the security pin from the receptacle.
2. Turn the ignition switch to the "OFF" position, and remove the ignition key for more safety.
3. Deflate the seal by using the relieving shut-off valve located on the pneumatic component panel (Figure 50, Item 1). Turn the handle clockwise to deflate the seal. Make sure the pressure indicator reading is "0 psi".

**CAUTION**

The pressure in the seal must be completely relieved to prevent any damage to the seal.

**NOTE**

The slide-out cannot be moved with the control pad when seal air pressure is relieved.

4. To move the slide-out, use a cordless power drill with a 10 mm hexagonal socket on the shaft extension of the slide-out motor.
5. Rotate the slide-out motor shaft extension with the power drill until the slide-out comes to its opened position.
6. Once the slide-out is lined up to its opened position, remove the tool from the motor.

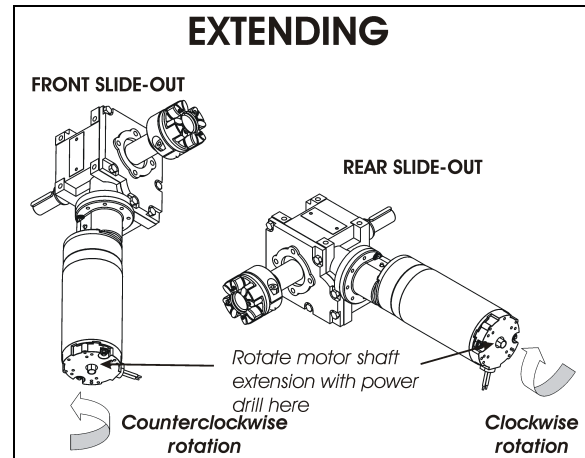


FIGURE 15: SLIDE-OUT MOTOR ROTATION

**NOTE**

The **front slide-out motor** is located inside the 2<sup>nd</sup> baggage compartment while the **rear slide-out motor** is accessible from inside the vehicle, under the bed structure.

**CAUTION**

Slow down on the closing speed as the slide-out approaches its extended position. As soon as the "out limit" stoppers come in contact with their bearing surface, stop immediately the power drill rotating movement. Not doing so could overload the drive mechanism and cause damage to the reduction gearbox.

7. Finally, the inflatable seal can be re-inflated by turning the shut-off valve handle counterclockwise. Check the pressure gage on the inflatable seal regulator to see if the pressure is increasing to 15 psi (Figure 14).

**6 SLIDE-OUT 2" INSIDE RETRACTION**

Use this procedure to change a damage seal or for maintenance of the rear right slide-out.

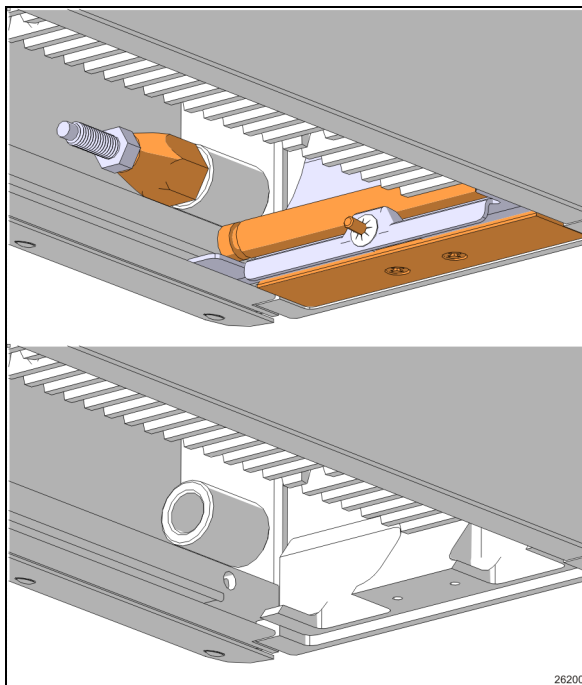
**CAUTION**

Do not retract slide-out room too far in. Retract just past the wiper seal. (Figure 21)

**CAUTION**

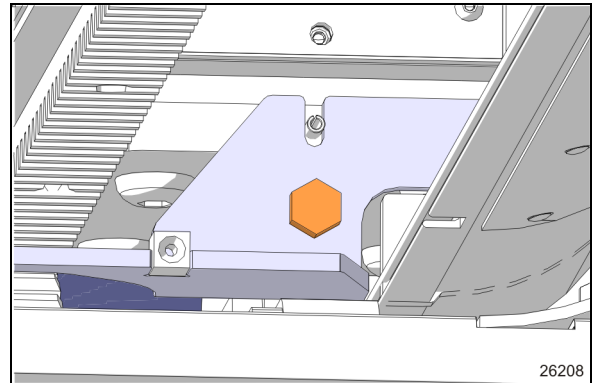
*Avoid using the slide-out control pad to move the slide-out inwards. The limits are not recognized over the closed position. The slide-out will not stop and damage may occur.*

1. Fully deflate the air seal by turning the shut-off valve clockwise (Item 1, Figure 50). Make sure the pressure indicator is at "0 psi".
2. Turn the ignition to the off position. Using the manual override procedure (Paragraph 5), extend the slide-out a few inches so the exterior extrusion screws located on the top of the slide-out are accessible from outside (Figure 30).
3. Some items need to be removed to provide clearance for the pinion. (Figure 16, top image)



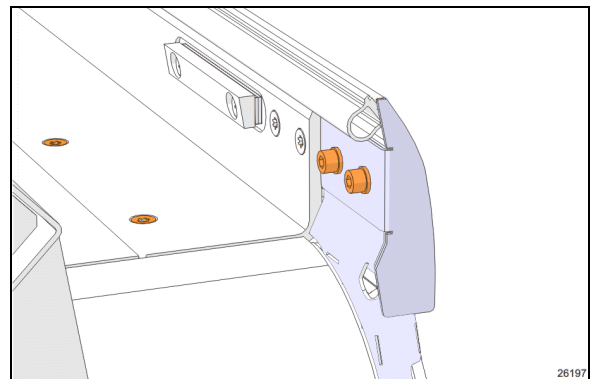
**FIGURE 16: REMOVAL FOR PINION CLEARANCE.**

4. Remove the two countersunk screws holding protective plate to reveal the notched flexible cover guide
5. Remove the flexible rail cover, refer to 7.1.2
6. Mark and remove the in limit stoppers, refer to 7.3.2. Once the procedure is completed, they should be returned in their original location to preserve room adjustment.



**FIGURE 17: FLEX COVER ANCHOR PLATE**

7. Remove the flexible cover anchor plate to provide clearance moving in. (Figure 17).
8. Using a knife, cut the sealant between the Top extrusion and the roof. (Figure 19, Figure 30)
9. Remove the top exterior extrusion screws and the two end caps (Figure 19)



**FIGURE 18: EXTRUSION END CAP**

10. Carefully remove the top extrusion

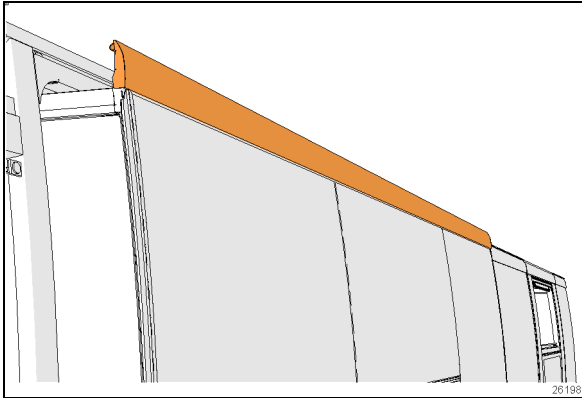


FIGURE 19 TOP EXTRUSION

11. Optionally you may disengage the pinion, see PINION GEAR DISENGAGEMENT.

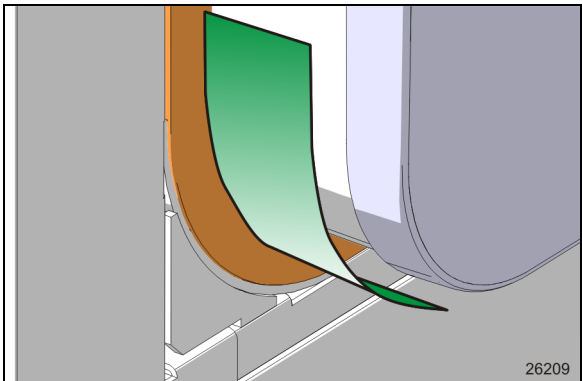


FIGURE 20: PLASTIC SHEET -WIPER SEAL PROTECTION

12. Protect the wiper seal by inserting a polypropylene plastic sheet between the room and the wiper seal. Do this on both bottom corners (Figure 20). This will distribute the compression of the wiper seal on a wider zone and prevent the room exterior panel corner from binding or pulling on the wiper seal.
13. Using the manual override procedure paragraph 5, move the slide-out 2" inside the vehicle just so the seal becomes accessible from the outside (Figure 21).

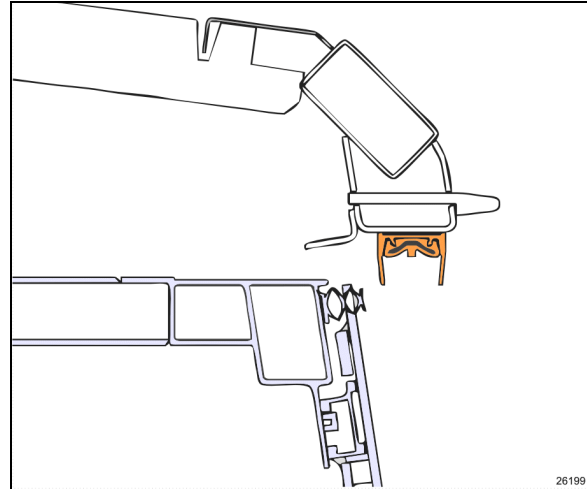


FIGURE 21: ROOM 2" INSIDE – UPPER SECTION VIEW

14. Once completed, use the manual override procedure to extend the slide-out and reinstall the exterior extrusion. Apply appropriate sealant on the exterior extrusion screws and between the extrusion, the roof and the edges to prevent water infiltration (Figure 30).
15. Re install all removed components.
16. Using the manual override procedure, retract the slide-out to its closed position.
17. Finally, the seal can be re-inflated by turning the shut-off valve handle counterclockwise. Check the pressure gage on the inflatable seal regulator to see if the pressure is increasing to around 15 psi.

## 7 MAIN COMPONENTS

### 7.1 FLEXIBLE RAIL COVER

A flexible rail cover (Figure 22) protects the linear bearing assembly from water, dust and debris. As the room moves out, it is pulled under the linear bearing and rack gear assembly. It is pushed back and curls up over the assembly or slide up in the wall as the room moves in.

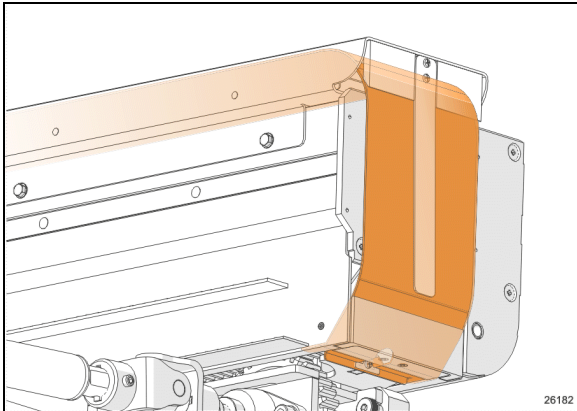


FIGURE 22: FLEXIBLE RAIL COVER (FRONT LEFT S/O SHOWN)

#### 7.1.1 Maintenance

Regular visual inspection of the rail cover will ensure the rail and bearing system is protected from debris and dust intrusion.

If it is damaged or cracked, it must be replaced. The flexible cover is fixed by a tab and mounting screw. (Figure 23)

#### 7.1.2 Removal

Deflate inflatable seal completely by turning the relief shut-off valve handle clockwise (see Figure 50, Item 1)

Push down wiper seal with a soft pry tool taking care not to damage the inflatable seal.

Unscrew the retaining screw (Figure 23)

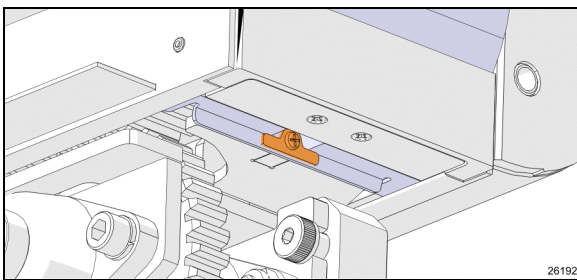


FIGURE 23: TAB AND RETAINING SCREW

Pull flexible cover towards the inside of the vehicle. Slip the cover out of the extrusion at the notch in extrusion bottom (Figure 24)

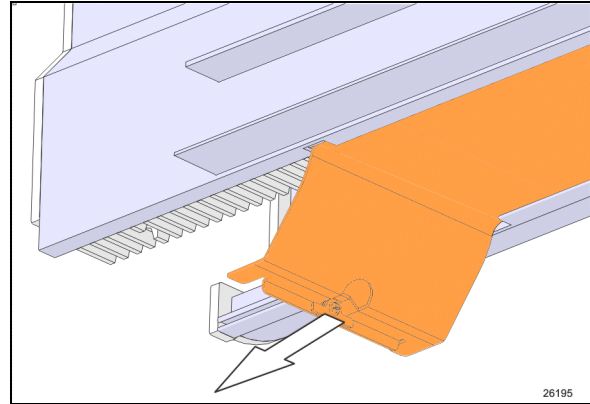


FIGURE 24: PULLING THE FLEXIBLE COVER OUT.

### 7.2 INNER STOPPER

The slide-outs are equipped with one inner stopper on the top horizontal member of the slide-out (Figure 26). The upper inner stoppers are used to provide a support to align the slide-out with the vehicle structure.

Note that when the “out limit” sensors are properly adjusted, the slide-out extension stops before the stoppers reach the structure keys (Figure 26 & Figure 25).

#### 7.2.1 Maintenance

Check that the inner stopper screws are tight and that no damage or deformation has occurred.

#### 7.2.2 Adjustment

1. Adjust the upper structure key and the inner stoppers according to Figure 27 with the seal deflated. When inflating, the seal presses the roof structure upward slightly and at that moment, the upper inner stopper comes into contact with the upper structure key.

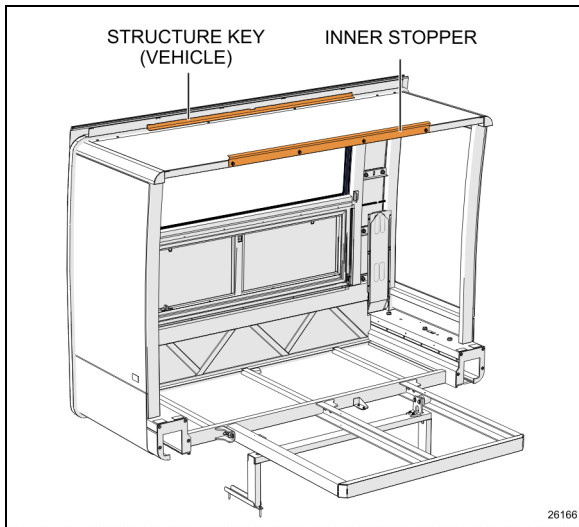


FIGURE 25: REAR LEFT SLIDE-OUT

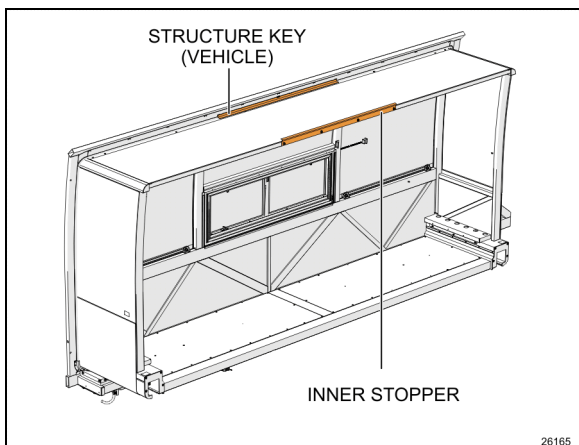


FIGURE 26: SLIDE-OUT UPPER STOPPER (FRONT LEFT SHOWN)

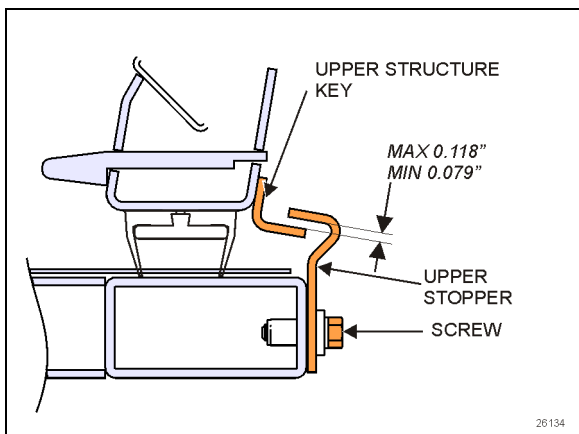


FIGURE 27: UPPER INNER STOPPERS ADJUSTMENT

### 7.3 "IN LIMIT" STOPPER

Each slide-out has four "in limit" stoppers. Two "in limit" stoppers are mounted under the slide-out, next to the rail (Figure 28) and two other "in limit" stoppers are mounted on the exterior extrusion at the top of the slide-out (Figure 29). These stoppers are used to adjust the outer face of the slide-out flush with the vehicle body when retracted.

#### 7.3.1 Maintenance

Check that the "in limit" stoppers are clean and that there is no foreign matter accumulated between the stopper and their bearing surface. Check that the screws locking the stoppers in proper position are tight.

#### 7.3.2 Removal

If removal of the lower in limit stoppers is required for maintenance, only unscrew the body. (Figure 28)

Leave the stem and jam nut in position to preserve adjustment. Adjustment may differ in fore and aft. We recommend marking the stoppers and returning them to their original position.

At reassembly, **Tighten to 7 lb-ft (10 Nm)**. (Aluminum threads)

#### 7.3.3 Adjustment

##### **NOTE**

*To properly adjust the "in limit" stoppers, the slide-out system must be turned off to prevent the "in limit" sensors from stopping the slide-out movement before having the "in limit" stoppers contacting their bearing surface.*

1. Extend the slide-out partially.
2. Set the ignition switch to the OFF position.
3. Unscrew the flexible cover retaining screw (Figure 23)
4. Slide the flexible cover fully towards the outside to gain access to the stopper.
5. To adjust the lower "in limit" stoppers, loosen the jam nut, then rotate the stem CW or CCW to move it back or forward depending on the required adjustment. **Tighten to 7 lb-ft (10 Nm)**.
6. To adjust the upper "in limit" stoppers, add or remove shims as required between the stopper and the extrusion.

## SECTION 26A: H3 SERIES SLIDE-OUT

- Using the manual override procedure (paragraph 5), move the slide-out to its full "in" position.
- With the stoppers contacting their bearing surface, check the outer face of the slide-out using a straight edge. Confirm it is flush with the vehicle body. Readjust the stoppers if required
- Readjust the "in limit" sensor.

### NOTE

To make sure that the lower "in limit" stoppers are contacting their bearing surface when the slide-out is closed, put white paint on the "in limit" stopper before and check if the surfaces are marked with paint.

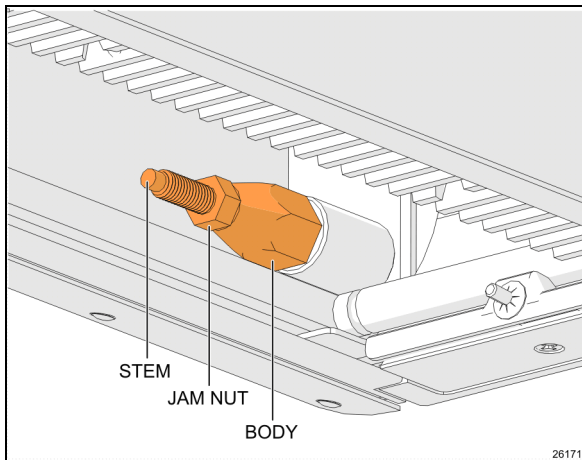


FIGURE 28: LOWER "IN LIMIT" STOPPER

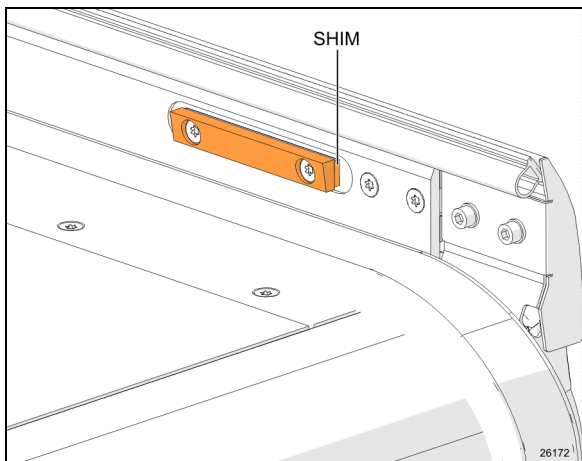


FIGURE 29: UPPER "IN LIMIT" STOPPER

### 7.4 EXTERIOR EXTRUSION

The exterior extrusion provides a support for the upper in limit stoppers and the upper guide pocket.

The upper guide pocket is reversible, mark orientation before disassembly.

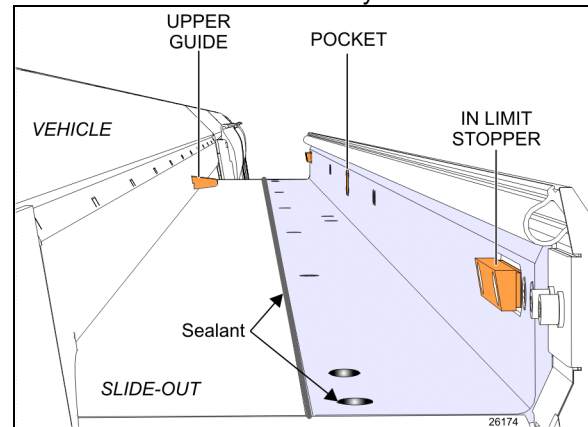


FIGURE 30: EXTERIOR EXTRUSION

#### 7.4.1 Maintenance

Inspect the exterior extrusion for any deformation or deterioration. Check that the screws are tight. Inspect sealant condition on screw heads and between the extrusion and the structure, and also at both ends of the extrusion. If needed, clean old sealant and replace with Sika 221 sealant or equivalent product.

Also inspect the condition of the upper guide and pocket to make sure they are clean and free of debris.

### 7.5 INFLATABLE SEAL ASSEMBLY

An inflatable seal is used to prevent any type of infiltration that may occur between the vehicle body and the slide-out itself.

It is composed of an inflatable seal which is used as the *primary* sealing measure for both the retracted and extended slide-out position. There is also a wiper seal acting as a *secondary* sealing measure used to wipe water out and to ensure sealing during slide-out movement.

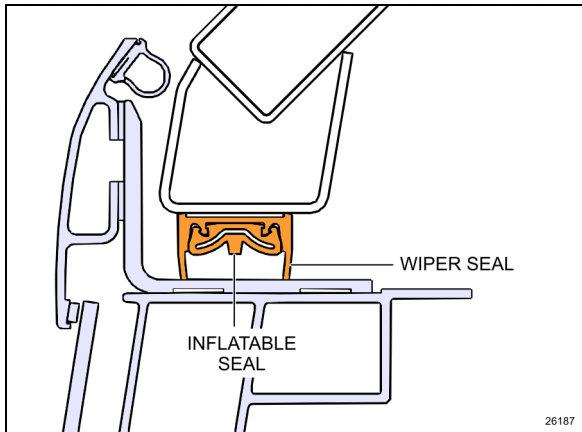


FIGURE 31: INFLATABLE SEAL ASSEMBLY

Seal is deflated automatically each time the slide-out is moved. The deflating valve solenoid is activated before and during slide-out movement. The deflating solenoid is deactivated upon reaching the retracted or extended position. Then the inflating solenoid is activated to re-inflate the seal.



#### CAUTION

Make sure the inflatable seal is deflated when manually moving the slide-out during service maintenance. Deflate inflatable seals completely by turning the relief shut-off valve handle clockwise (see Figure 50, Item 1).



#### CAUTION

Check before using any cleaning or adhesive product on seal, panel or glass to prevent alteration or damage.

#### 7.5.1 Maintenance

The inflatable seal pressure must be set between 10 and 12 psi with the pressure

regulator. It is recommended to check the inflatable seal pressure once a month to ensure sealing efficiency and prevent any infiltration from outside. Check both seals for air leaks or cracks. Check the sealant between the inflatable seal and the exterior panels and glasses. Add sealant if necessary.

#### 7.5.2 Seal assembly removal



#### DANGER

Always wear the appropriate safety equipment. Maintain adequate ventilation at all time.

1. Retract the slide-out 2" inside the vehicle (paragraph 6).  
*Heed the cautionary notes before retracting.*
2. Unplug the nylon tubing from the compression fitting (Figure 33).
3. Unstick and remove the wiper seal from the structure.
4. Scrape remaining tape from the structure. Remove old sealant that was between the wiper seal and the exterior panels and glasses.

#### 7.5.3 Wiper seal installation

##### NOTE

*This procedure is to install the adhesive backed wiper seal (Figure 31) on the structure.*

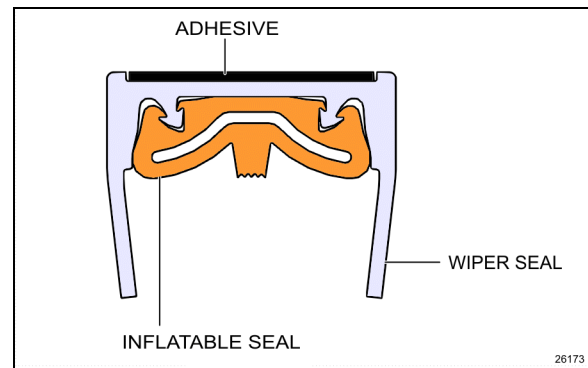


FIGURE 32: SEAL ASSEMBLY



#### CAUTION

Ensure bonding surface cleanliness by always applying product in the same direction to prevent dirt from being brought back.

**CAUTION**

Check before using any cleaning or adhesive product on seal, panel or glass to prevent alteration or damage.

**NOTE**

Refer to the product specification for drying time.

1. Retract the slide-out 2" inside the vehicle (paragraph 6). *Heed the cautionary notes before retracting.*
2. Clean the part of the structure that will receive the inflatable seal and also the back of the exterior panel with a chix cloth and thinner. Use another cloth to dry the surfaces. Wait at least 2 minutes for drying.
3. Rub the structure and also the back of the exterior panel with a Scotch Brite (or equivalent product).
4. Clean another time the structure and the back of the exterior panel with a chix cloth and thinner. Use another cloth to dry the surfaces. Wait at least 2 minutes for drying.
5. Clean the structure and the back of the exterior panel with appropriate cleaner. Wait until the product is dry before proceeding.
6. Seal any gap between the exterior panels and the wiper seal.
7. Install the wiper seal on the structure, placing it as close as possible from the exterior side of the structure.
8. Position the air inlet aligned with the provision on the structure
9. Then locally remove the adhesive tape protection in an upper corner, press the on the structure and hold them in place for 90 to 120 seconds. Use the roller tool to ensure good adhesion on the structure. Proceed to second upper corner.
10. Install the lower corners next.
11. Then the straight section. Press for at least 15 seconds. Use the roller tool to ensure good adhesion on the structure.

## 7.5.4 Inflatable seal installation

**NOTE**

*This procedure is to install the inflatable seal (Figure 31) on the wiper seal.*

*Prepare a soapy water spray bottle to ease the clipping, and repositioning process.*

**NOTE**

*Prepare a soapy water spray bottle. Use soapy water throughout the procedure to ease the clipping, and repositioning process.*

1. Position the air inlet tube first.
2. Then clip in the upper corners in place with using the appropriate roller tool.
3. Next, press in the lower corners.
4. Then clip in the straight sections
5. Connect the air inlet.

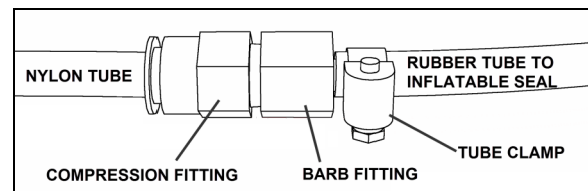


FIGURE 33: TYPICAL INFLATABLE SEAL AIR INLET



## 7.6 SECURITY PIN

During normal ride, the slide-out cannot extend by itself because the 740:1 ratio speed reduction worm gear type gearbox system is not reversible, the output shafts are self-locking. The security pin purpose is to lock the slide-out in retracted position if an accident occurs. It is built to withstand any resulting lateral acceleration of the slide-out.

The system consists of a stainless steel pin connected to a single action/spring return pneumatic cylinder (Figure 34). The pin engages in the slide-out receptacle with releasing of the parking brake. A knocking sound may be heard at this moment. An O-ring is located at the base of the pin housing to reduce knocking when the pin retracts. The lower hole on the pin housing permits water to drain. The upper hole allows inserting a small screwdriver to prevent pin rotation on air cylinder removal.

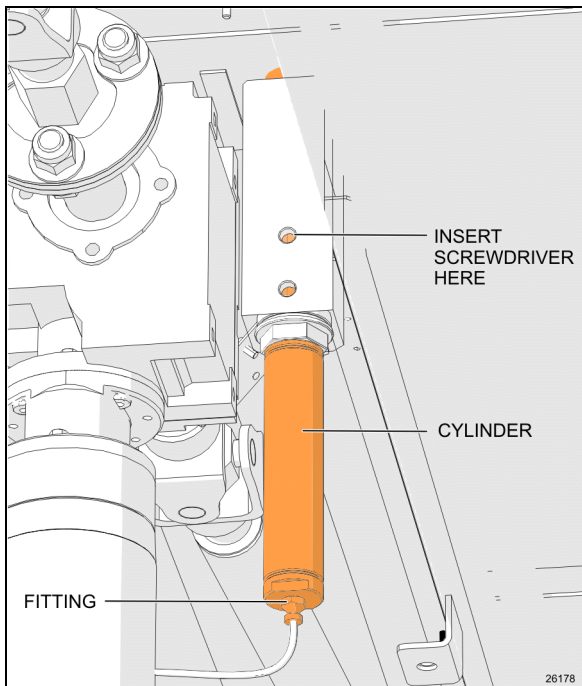


FIGURE 34: SECURITY PIN AIR CYLINDER REMOVAL

### 7.6.1 MAINTENANCE

Inspect air cylinder and fitting for air leaks. Periodically, check that the pin retracts and engages in the receptacle as it should when the parking brake is applied or released.

To extend the slide-out, it must be at full "IN" position with the engine running. If the pin produces excessive knocking when it engages

on parking brake release, reduce air cylinder speed by adjusting the air flow regulator on the pneumatic control panel (Figure 50, item 5).

### 7.6.2 AIR CYLINDER REPLACEMENT

1. Ensure the parking brake is applied.
2. Disconnect the fitting from the cylinder base. (Figure 34).
3. Using a wrench at its lower end, unscrew the air cylinder from the pin housing.
4. Insert a small screwdriver through pin and housing to prevent pin rotation. Unscrew the cylinder rod from the pin.
5. Transfer the fitting on the new cylinder. Apply Teflon paste on threads.
6. Cylinder installation is like removal but in reverse order.

## 7.7 RACK GEAR

Slide-out movement is made by a system of racks and pinions. There are two racks on each slide-out.

### 7.7.1 MAINTENANCE

Once a year, check the rack gears for broken or worn tooth, especially the front slide-out racks. Also, check the rack fastening hole teeth that are weaker and might break (Figure 35). Replace the racks if excessive wear is present. Clean racks from sand or other debris. Check that the racks are properly secured. Check the backlash between the gear and the rack. Excessive backlash indicates rack wear.

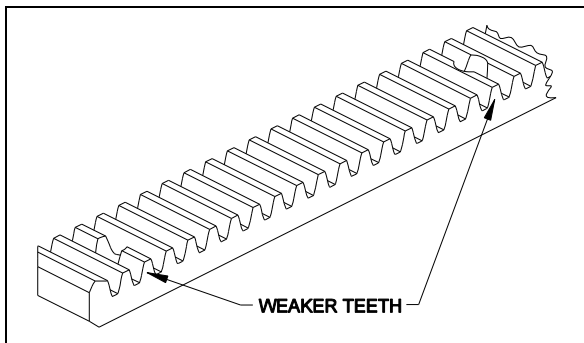


FIGURE 35: RACK GEAR

### 7.7.2 FRONT SLIDE-OUT RACK GEAR REPLACEMENT

1. Remove the slide-out from the vehicle (removal must be performed according to [MI18-31](#)).
2. From under the slide-out, unscrew all the rack screws and remove the rack.
3. Install a new rack and tighten the screws. Use Loctite™ 242 or equivalent product on threads.

**TORQUE: 1.9-2.1 lb-ft (2.58-2.85 Nm)  
MAX**

4. Reinstall the front slide-out inside the vehicle.

### 7.7.3 REAR SLIDE-OUT RACK GEAR REPLACEMENT

1. Using the slide-out control pad, extend the slide-out about one foot.
2. If using the manual override procedure, paragraph 12, do not forget to deflate the inflatable seal completely
3. From outside, unscrew and remove only the first two screws of the rack to be changed.

4. Using the manual override procedure (paragraph 5) only, retract the slide-out to its fully closed position.
5. Rotate the pinion assembly away from the rack as described in 7.8.1
6. From under the slide-out, unscrew all the rack screws and remove the rack.
7. Install a new rack between the slide out structural rack seat and the pinion and tighten the screws. Use Loctite™ 242 or equivalent product.

**TORQUE: 1.9-2.1 lb-ft (2.58-2.85 Nm)**

8. Rotate the pinion assembly back in place. As described in 7.8.1
9. Using the slide-out manual override procedure only, extend the slide-out about one foot.
10. Tighten the two remaining screws. Use Loctite™ 242 or equivalent product.

**TORQUE: 1.9-2.1 lb-ft (2.58-2.85 Nm)  
MAX**

11. Using the slide-out control pad key or the manual override procedure, retract the slide-out to its fully closed position.
12. Re-inflate the air seal and confirm pressure is around 15 psi on the pressure gage. (Item 7, Figure 50)

## 7.8 PINION GEAR

A pinion gear is located on each side of the slide-out. It is used to move the slide out inward and outward.

The gear is mounted on a keyed shaft supported by two flange bearings. (Figure 36).

The *pinion assembly* (Figure 36) includes flange bearings, shaft, pinion and a mounting bracket. The bracket rotates around a socket head shoulder screw.

This screw serves as a locating pin only and does not provide clamping.

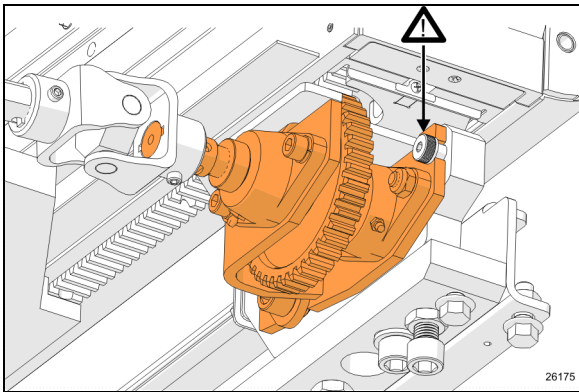


FIGURE 36: PINION ASSEMBLY



### CAUTION

In normal maintenance the socket head shoulder screw should not be tampered with or removed.

If it is removed by error, apply thread locker and hand tighten.

### 7.8.1 PINION GEAR DISENGAGEMENT

Pinion disengagement can be achieved by rotating the pinion assembly.

The pinion assembly rotates around a socket head shoulder screw. (Figure 36) This screw serves as a locating pin only.

1. Remove upper screw as shown in Figure 37

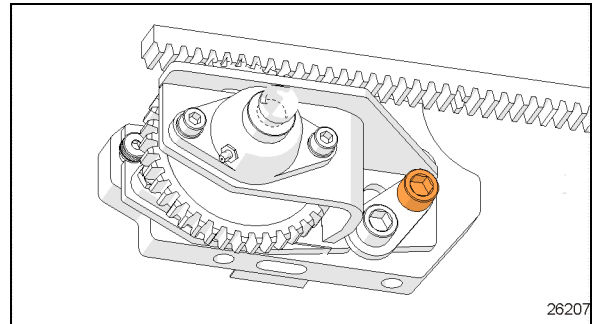


FIGURE 37: REMOVE UPPER SCREW

2. Slightly unscrew the lower screw to remove tension on tab. (Figure 38)

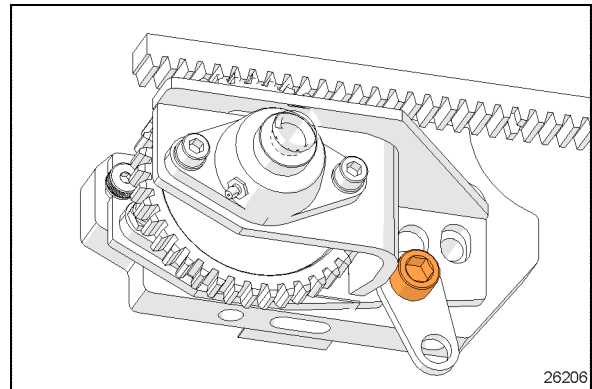


FIGURE 38: LOWER SCREW, TENSION RELIEVED

3. Rotate pinion assembly down. (Figure 39)

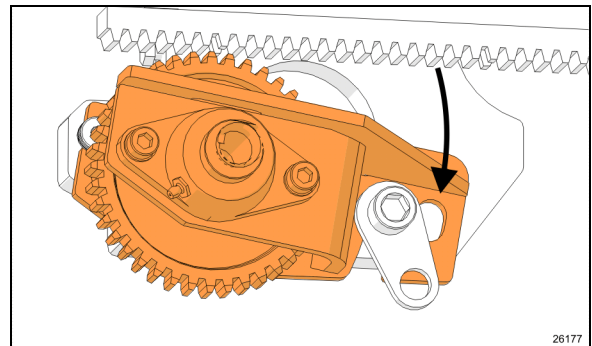


FIGURE 39: PINION ASSEMBLY ROTATION

4. Reverse steps to return the pinion assembly in position.
5. Tighten upper and lower screws to:  
**198 lb-ft (268 Nm)**

### 7.8.2 PINION GEAR SYNCHRONIZATION

To synchronize the pinion gears, use the adjustable flange.

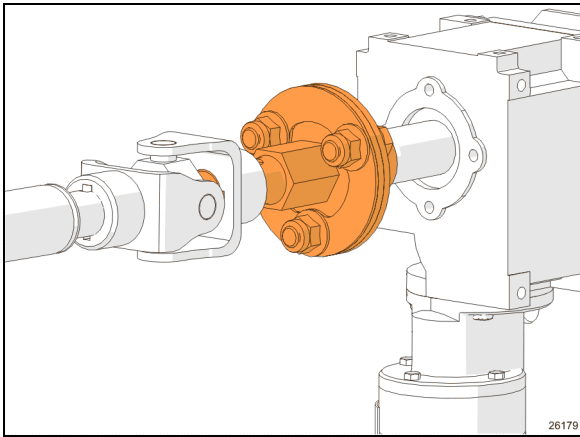


FIGURE 40: ADJUSTABLE FLANGE

1. Loosen flange screws. This disconnects the right angle gearbox and allows rotating the driveshaft leading to the pinion.
2. Rotate until pinion gears are synchronized.
3. The flange mating surfaces should be clean and dry to have proper friction.
4. Tighten screws to **59 lb-ft (80 Nm)**

### 7.8.3 FRONT SLIDE-OUT PINION REPLACEMENT

1. Unscrew all set screws on the drive shaft yokes (item 4 in TORQUE TABLES). Slide drive shaft towards gearbox to disengage the yoke from the pinion shaft (item 1 in Figure 41).
2. Disengage the pinion assembly. See 7.8.1.
3. Completely remove the pinion assembly. Place on a workbench.

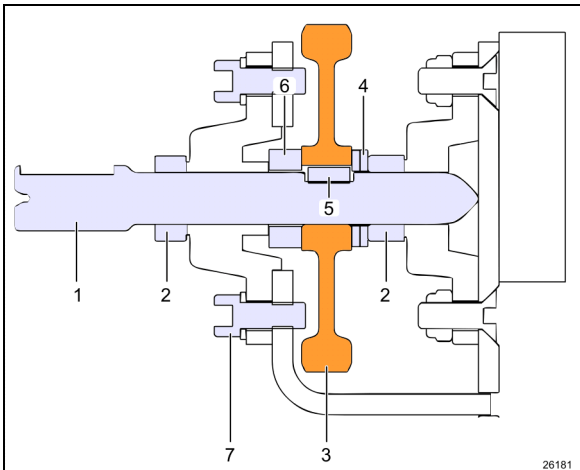


FIGURE 41: PINION ASSEMBLY SECTION VIEW.

- 1) Pinion shaft
- 2) Locking collars (2)

- 3) Pinion gear
- 4) Thrust washers (2)
- 5) Pinion key
- 6) Thrust bushing
- 7) Mounting screw, top pillow block bearing

4. Release both locking collars (2) by backing out the set screws and turning the collar.
5. Unscrew and remove the top pillow block mounting screws (7). Keep hardware.
6. Pull shaft (1) out
7. Remove old pinion gear (3). If key is damaged, replace with new.
8. On shaft (1), install thrust bushing (6), key (5), new pinion (3) and thrust washers (4).
9. Push shaft through bottom locking collar (2) and bottom pillow bearing until the shaft end contacts the bottom mounting plate.
10. Maintain shaft in contact with plate and lock bottom collar (2).
11. Using a drift and hammer, tension the eccentric locking collar (2) by means of one or two strong blows. There is a cavity on the collar made for that purpose.
12. Apply blue loctite 243 threadlocker to set screws and hand tighten.
13. Re-install the top pillow block hardware **Tighten to 48 lb-ft (65 Nm)**
14. Re-install pinion assembly.
15. On the pinion assembly, tighten upper and lower screws (Figure 37, Figure 38) to: **198 lb-ft (268 Nm)**
16. Slide driveshaft back in place  
Tighten drive shaft yokes set screws to **27 lb-ft (37 Nm)**

### 7.8.4 REAR SLIDE-OUT PINION REPLACEMENT

The procedure is similar to the front slide-out shaft pinion replacement. Gain access to the mechanism from inside the vehicle under the bed structure or from the outside by removing the right (curb side) fender and protective covers.

### 7.9 ELECTRIC MOTOR

The power is supplied by a 24V, 1/3 HP electric motor coupled with a speed reduction gearbox.

Opposite to the gearbox, the motor is equipped with a 10 mm hexagonal shaft extension allowing slide-out movement without the control pad.

This shaft extension is used to move the slide-out at low speed during the inner stoppers adjustment, the tilt adjustment or the 2" inside retraction.

See paragraph 5 for the manual override procedures.



#### CAUTION

When moving the slide-out with a cordless power drill as described in the manual override procedure, be careful as the slide-out approaches the open or closed position, in order not to overload the mechanism.

#### 7.9.1 MAINTENANCE

Inspect the electrical connections and water seal condition. Check that the mounting bolts are tight (Figure 43).

#### 7.9.2 REPLACEMENT

1. The slide-out must be retracted half way in.

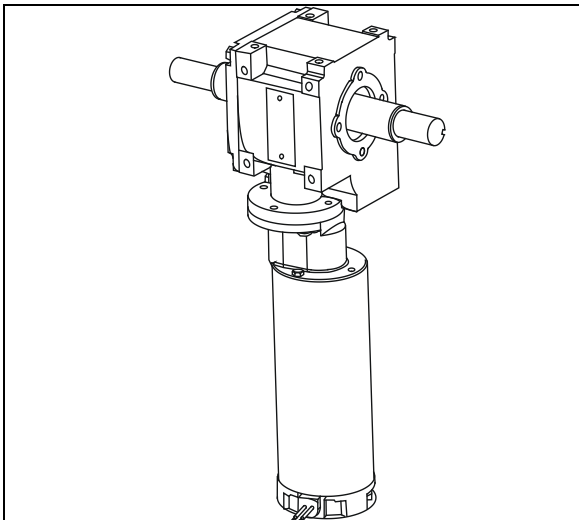


FIGURE 42: ELECTRIC MOTOR AND SPEED REDUCTION GEARBOX

2. Unplug the electric cable connector.

3. Remove the motor from the gearbox.
4. Fasten the new motor to the gearbox using screws.
5. Re-connect the electric cable connector.

## 7.10 SPEED REDUCTION GEARBOX

The speed reduction gearbox used is a helical worm gear type. This gearbox has a 2-stage 740:1 ratio and the output shafts are self-locking. Keys on output shafts are glued into keyseats.

### 7.10.1 MAINTENANCE

Inspect the gearbox to check if there is any leakage or backlash in the box. Replace the gearbox if excessive wear is present. Check that all bolts are tight.

The gearbox is lubricated for life and the oil should not have to be changed.

### 7.10.2 GEARBOX REPLACEMENT

1. The slide-out must be retracted half way in.
2. Disengage the drive shafts
3. Remove the 4 cap screws securing the drive motor/gearbox assembly and dismount the assembly.
4. Remove the gearbox from the motor and install the new one.
5. Reinstall the drive motor/gearbox assembly on the vehicle mounting bracket. Tighten mounting bolts in a crisscross pattern.

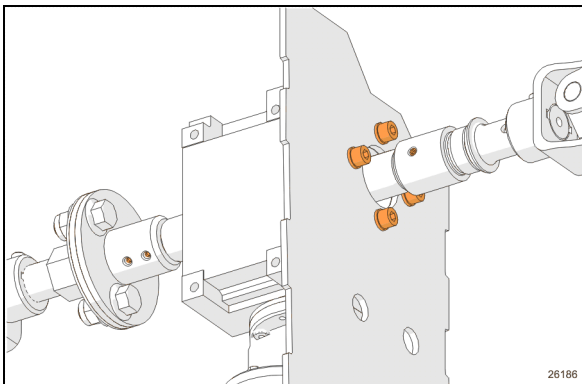
**TORQUE: 16-20 lb-ft (22-27 Nm)**



### CAUTION

To prevent damaging threads, use your fingers to drive the bolts into the aluminum gearbox housing mounting holes.

6. Reinstall the drive shafts.



**FIGURE 43: DRIVE MOTOR/GEARBOX ASSEMBLY MOUNTING BOLTS**

### 7.11 DRIVE SHAFT

A driveshaft transmits the rotation from the gearbox to the pinion.

#### 7.11.1 MAINTENANCE

Due to the low speed and low duty cycle of slide-out operation, the drive shafts do not require any maintenance or additional greasing. In

#### 7.11.2 REPLACEMENT

1. The slide-out must be retracted.
2. Disengage the yokes by unscrewing the set screws and sliding out of the pinion and gearbox shafts.
3. Install the new drive shaft.
4. Tighten the yoke set screws to **27 lb-ft (37 Nm)**

### 7.12 FLANGE BEARINGS

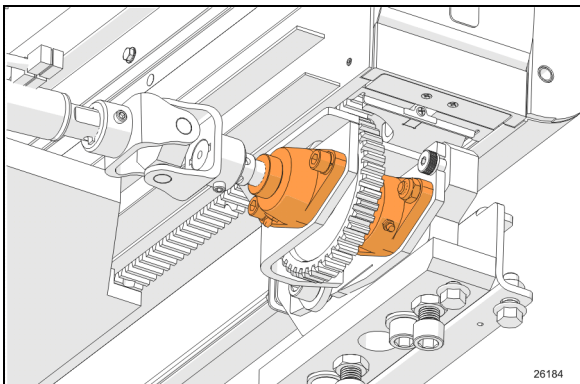


FIGURE 44: FLANGE BEARINGS

The flange bearings are pre-lubricated and no subsequent lubrication is required due to the very low extending and retracting speed of the slide-out system.

### 7.13 LOCKING COLLAR

The locking collar secures the shaft and the flange bearing together using friction. Once locked, it prevents axial translation and rotation of the shaft in the flange bearing bore.

#### 7.13.1 INSTALLATION

Slide the locking collar along the shaft up to the flange bearing. Turn the locking collar clockwise while maintaining it pressed against the bearing.

Using a drift and hammer, tension the eccentric locking collar by means of one or two strong

blows. There is a cavity on the collar made for that purpose.

Apply Loctite 243 blue thread locker and tighten the set screw to **4.4 lb-ft (6 Nm)**.

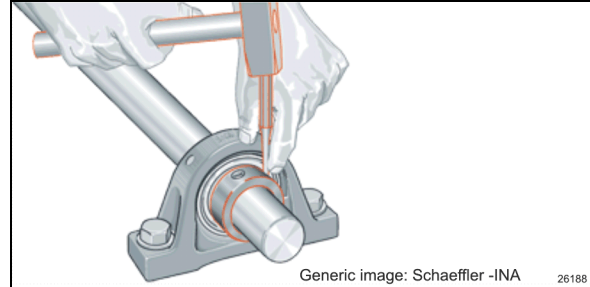


FIGURE 45: ECCENTRIC COLLAR TENSION APPLICATION

To remove the collar, loosen the set screw and strike with a drift and hammer in the opposite direction.

### 7.14 LINEAR BEARING AND RAIL

Rail and linear bearing system provide precise frictionless linear movement together with high load carrying capacity and high stiffness. This standardized equipment is fully interchangeable.

To prevent corrosion, an electrolytic black film treatment is performed to the rail. Do not strike the rail with metal tools, this could damage the treatment.

A flexible rail cover (Figure 22) protects the linear bearing assembly from water, dust and debris.

#### 7.14.1 DUMMY RAIL

The bearing carriages are sold with a dummy rail. It prevents damage to the rolling element set if the carriage is removed from the main rail.

Additional dummy rails are useful for carriage replacement.

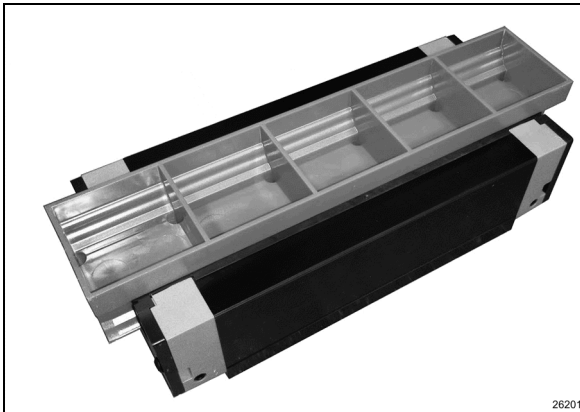


FIGURE 46: BEARING CARRIAGE AND DUMMY RAIL

#### 7.14.2 BEARING CARRIAGE MAINTENANCE

Make every effort not to allow dust and foreign objects to enter inside the linear bearing. Regularly inspect and clean the flexible rail cover to make sure it is in good condition.

The linear bearings are pre-lubricated and no subsequent lubrication is required.

#### 7.14.3 BEARING REPLACEMENT

##### **NOTE**

Before starting procedure, we recommend having at least one dummy rail in hand.

The procedure allows replacement of the bearings with minimal impact on the adjusted position of the slide-out room. Perform the procedure on one side at a time.

1. Extend the room for maintenance. See paragraph 3
2. Remove the top rail screws (3) on one side.

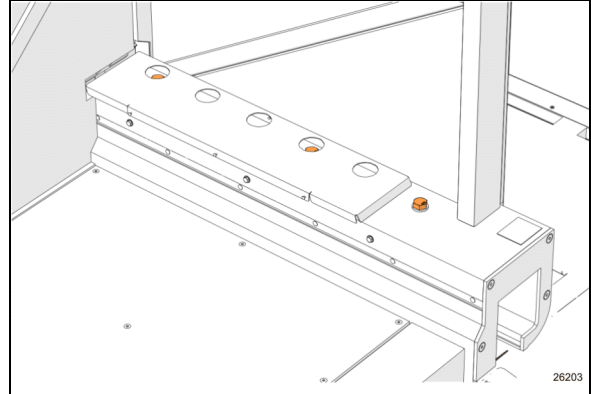


FIGURE 47: TOP RAIL SCREWS

3. On the same side, remove retaining screws A & B, (Figure 4).
4. Remove the lower carriage mounting screws. (Figure 48)

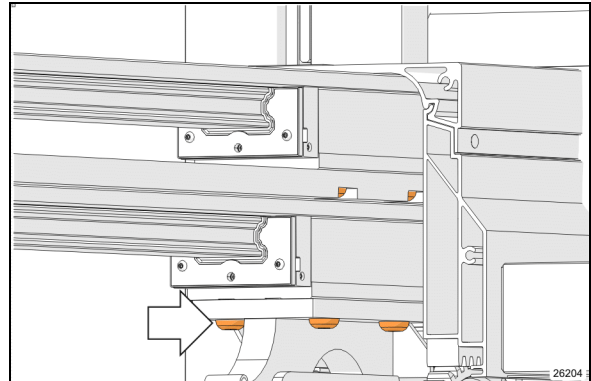
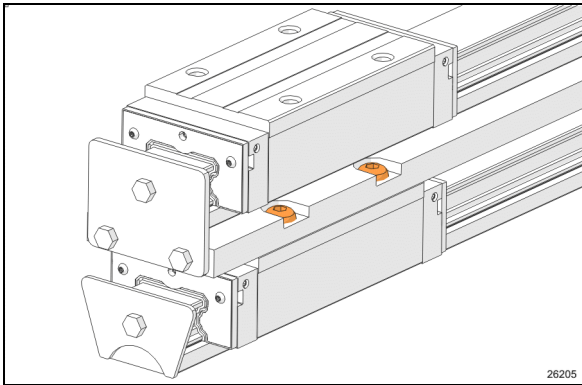


FIGURE 48: LOWER CARRIAGE MOUNTING SCREWS

5. Pull out bearing and rail sub-assembly. Place on a work table.
6. Turn the assembly upside down to access and remove the bearing mounting screws (Figure 49).





**FIGURE 49: BEARING CARRIAGE MOUNTING SCREWS**

7. Remove rail end plates.
8. Place the dummy rail at the end of the rail.
9. Dismount one of the two linear bearing carriages onto the dummy rail. Proceed similarly for second carriage.



### **WARNING**

Always push the bearing carriage directly from the slide-out rail onto the dummy rail.  
Leave dummy rail in the carriage until ready to reassemble.

10. Slip new carriages onto the slide-out rail.
11. Tighten the mounting bolts in a crisscross pattern.  
**TORQUE: 59 lb-ft (80 Nm)**
12. Reinstall end plates  
**TORQUE: 17 lb-ft (23 Nm)**
13. Re install the lower carriage mounting screws. (Figure 48).  
**TORQUE: 59 lb-ft (80 Nm)**
14. Re-install retaining screws A & B, (Figure 4).  
**TORQUE: 55-65 lb-ft (75-88 Nm)**
15. Proceed to bearing assembly on the remaining side and re-start procedure.

## 8 SLIDE-OUT PNEUMATIC SYSTEM

The slide-out is controlled by a pneumatic and electrical system. The pneumatic system consists of electrically controlled valves that operate slide-out components and control safety operations.

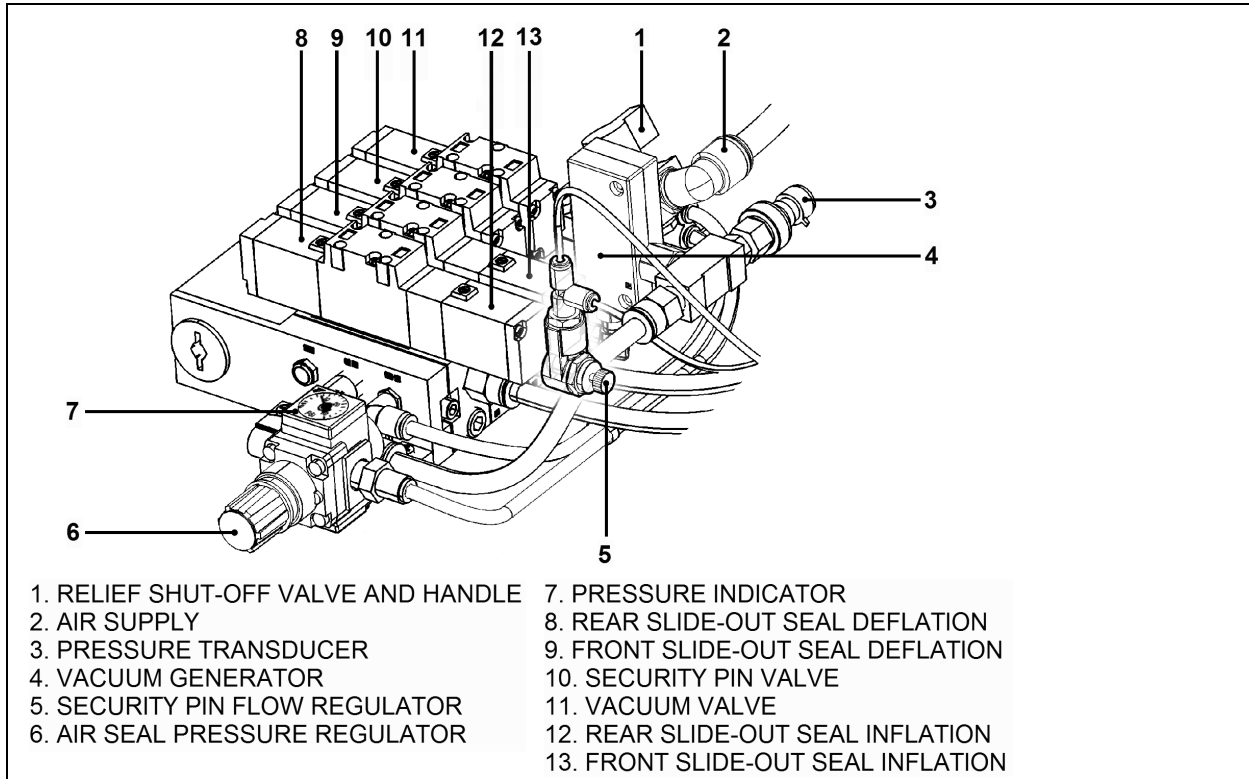


FIGURE 50: PNEUMATIC COMPONENT PANEL

### 8.1 DESCRIPTION

#### AIR PRESSURE INLET VALVE

The slide-out air supply comes from the accessory tank.

The supply line for the pneumatic component panel (Item 2, Figure 50) is connected to the air pressure inlet valve on the pneumatic panel in the front service compartment.

#### INFLATABLE SEAL VALVE

Seal inflation and deflation is done using a 5-port 2-position manifold valve with two solenoids. One solenoid is used for inflating of the seal and the other for deflating of the seal. When one of the solenoids is activated (seal deflating valve for example), the valve will keep its state even if the solenoid is deactivated. The inflating valve solenoid is activated to re-inflate the seal when

the slide-out reaches its inner or outer limit. The inflatable seal pressure is set to between 10-12 psi. In full "IN" or full "OUT" position, this pressure is continuously applied to the seal as long as the accessory air tank (which supplies the slide-out) is not empty.

#### VACUUM GENERATOR

A vacuum generator using Venturi principle is controlled by a 5-port 2-position manifold valve and is used to evacuate the air faster from the seal and to ensure that the seal surface does not stay in contact with the slide-out.

The vacuum generator valve is activated simultaneously with seal deflating valve solenoid for 10 seconds. A pressure transducer will detect a seal, vacuum valve or generator failure if -5 psig is not reached after the 10 seconds delay. In that situation, an error code will be stored in the DID. In normal operating condition, -5 psig is

a necessary condition to consider the seal as deflated.

**NOTE**

*When air pressure is relieved using the shut-off valve, the normal extending and retracting operation cycle is disabled. This is due to the pressure transducer reading 0 psig and that is higher than -5 psig (vacuum). For that reason the slide-out cannot be moved with the control pad.*

## 8.2 MAINTENANCE

### COMPRESSED AIR LINE

Inspect all compressed air line tubing for cuts, swelling, kinks or other damage or deterioration. Inspect the pneumatic fittings and components for any leak.

The slide-out air supply comes from the accessory air tank. For maintenance information, refer to Section 12, "Brake and air system".

### INFLATABLE SEAL CIRCUIT

The efficiency of the seal could be affected by impurities, such as white powder in the pneumatic control valve. It is recommended to inspect the inflatable seal control components once a year to prevent malfunction. In this case, remove the seal valves and clean the interior valve components using a compressed air nozzle. Do the same thing with the vacuum generators.

The inflatable seal pressure must be set between 10 to 12 psi maximum. It is recommended to check the inflatable seal pressure once a month to ensure sealing efficiency and prevent any infiltration from outside. The needle on the pressure gage should indicate between the two small green arrows on the dial (Figure 14).

## 9 SLIDE-OUT ELECTRICAL SYSTEM



### DANGER

Never modify the slide-out electrical wiring. Any modifications may cause an unexpected slide-out action and could result in personal injuries.

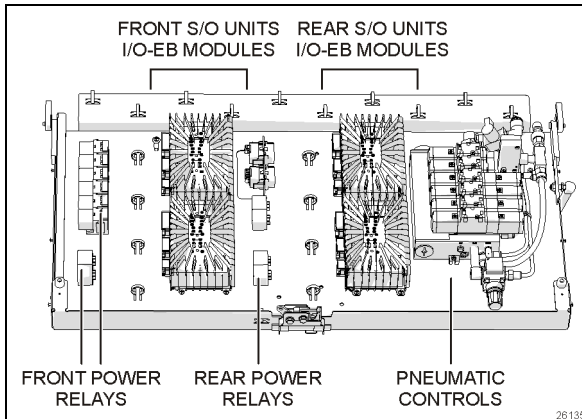


FIGURE 51: SLIDE-OUT CONTROL PANEL

The multiplexed slide-out electrical system is mainly composed of the MCM module, the VEC module and one I/O-EB module per installed slide-out.

For standard Prevest slide-outs, each I/O-EB module has two power relays assigned.

For Prevest slide-outs with flush floor, the I/O-EB module has six power relays assigned.

I/O-EB modules analyze the input signal conditions and activate outputs like pneumatic valves, retraction and extension sequence, etc. The power relays are used to supply power coming from the I/O-EB module to the electric motor and to change polarity to reverse motor rotation.

I/O-EB modules input signals are:

- Control pad switch IN;
- Control pad switch OUT;

Also, the following input signals are required for a safe operation of the slide-out:

- Pressure transducer;
- Parking brake;
- “in limit” sensor;
- “out limit” sensor;

I/O-EB modules output signals are:

- Control pad green indicator light;
- Power relay current reversing;
- Seal valve inflating solenoid;
- Seal valve deflating solenoid;
- Vacuum generator valve solenoid;
- Security pin valve solenoid;
- Electric motor, output 16 amps; one per motor



### DANGER

Before working on the slide-out electrical system, turn the ignition key to the “OFF” position.

### 9.1 ELECTRICAL INTERCONNECTION WITH PREVOST VEHICLE

The slide-out power supply comes from the 24-volt circuit breaker in the rear electrical compartment. The other interconnections are located on the pneumatic panel and the electrical panel in the front service compartment. All the interconnections are shown on the electrical diagrams of your vehicle.

A blinking green light on the control pad means that an error condition or a missing operation condition is present on a slide-out.

### 9.2 SLIDE-OUT FUSES

The main fuse for the slide-out electrical system is F136. It is located in the rear electrical compartment

#### 9.2.1 Multiplex fuses

The multiplex module outputs are protected in current by an internal “soft-fuse”. Each output is programmed to specific maximum amperage. When an output is shorted, the current gets above the limit and the soft-fuse intervenes to

turn the output OFF. The output stays OFF until the "soft-fuse" is reset.

Turn the ignition key to the OFF position and turn to the ON position again. This resets all "soft-fuses".



## CAUTION

Never put grease, Cortec VCI-238 or other product on the multiplex modules connector terminals.

### 9.3 PROBING VOLTAGE ON THE MULTIPLEX CIRCUITS

Multiplex modules are supplied by 24 volts.

Inactive Multiplex output = Residual voltage of 18% to 33% of supply voltage.

Inactive Multiplex input = Residual voltage of 50% of supply voltage.

#### NOTE

*For a 24V module: an active voltage would be 24V or 0V but not in between. If you measure the intermediate tensions (ex. 12V, 4V, or 8V) this must be interpreted as if the input or the output is inactive.*

### 9.4 MODULE REPLACEMENT

I/O-EB modules can be replaced and reprogrammed without having to connect a computer to the vehicle.

Refer to Section 06 under heading "MULTIPLEX MODULES REPLACEMENT" for the detailed procedure.

### 9.5 SLIDE-OUT LIMIT SENSORS

Two Hall-Effect sensors are used on each slide-out to define end limit positions. The "in limit" and "out limit" sensors detect two pairs of permanent magnets fixed on the slide-out underbody.

#### 9.5.1 Maintenance and adjustment

The front slide-out sensors can be reached from the baggage compartment (Figure 52). The rear slide-out sensors are accessible from inside of the vehicle, under the bed structure.

#### 9.5.2 To adjust the "in limit" sensor:

Before adjusting the "in limit" sensor, ensure that the "in limit" stoppers are perfectly adjusted (see paragraph 7.3.3).

1. Retract the slide-out to its full "IN" position with the "in limit" stoppers in contact with their bearing surface.
2. Loosen the "in limit" sensor mounting bracket screws and move back the sensor completely (toward the inside of the vehicle).
3. Bring slowly the sensor toward the outside of the vehicle until the LED turns on. When it does, move it 0.079" (2mm) further in the same direction and tighten the mounting bracket screws.
4. Check if the "in limit" sensor is properly adjusted. At the moment when the slide-out stops during normal retraction, the "in limit" stoppers must contact their bearing surface. Put white grease on the "in limit" stopper beforehand to visually confirm the system stops the motion before hitting the surface. There should be a grease mark on the surface.

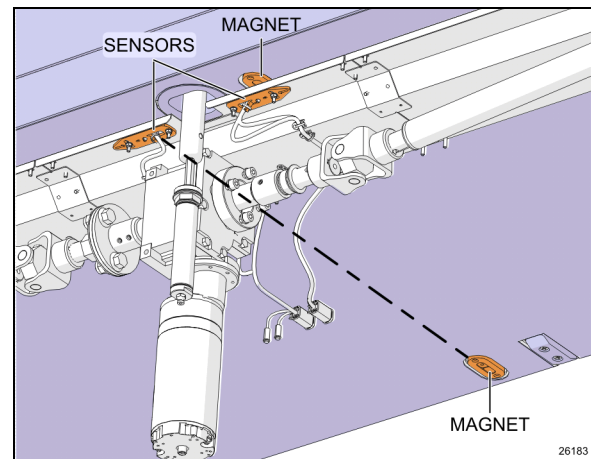


FIGURE 52: SENSORS & MAGNETS (FRONT)

#### 9.5.3 To adjust the "out limit" sensor:

Before adjusting the "out limit" sensor, ensure that the inner stoppers are perfectly adjusted (see paragraph 3).

1. The slide-out is slightly tilted except when it is in its full "IN" or "OUT" position. Extend the slide-out near its full "OUT" position. When the slide-out straightens up and is perpendicular with the vehicle body, stop the slide-out.

## SECTION 26A: H3 SERIES SLIDE-OUT

2. Loosen the “out limit” sensor mounting bracket screws and move back the sensor completely (toward the inside of the vehicle).
3. Bring slowly the sensor toward the outside of the vehicle until the led turns on. When it does, tighten the mounting bracket screws.

### NOTE

When the “out limit” sensor is properly adjusted, the slide-out extension stops before the side inner stoppers reach the vehicle structure.

## 10 SLIDE-OUT EXTERIOR FINISHING PANELS & WINDOWS

### NOTE

The removal and installation procedures are all based on standard service methods described in section 18: BODY. Refer to this manual for procedures, tools, cleaner, adhesives and other product needed.

## 11 WELDING PRECAUTIONS



### CAUTION

Prior to arc welding on the vehicle, refer to the Welding Precautions Procedure Prior To Welding” in section 00 GENERAL of this manual to avoid serious damage to the vehicle components.

## 12 FINISHING PRECAUTIONS FOR CONVERTERS

No drilling is allowed in the zones identified by Figure 53, Figure 54 and Figure 55. This applies on both sides of the slide-out room.

This precaution is to avoid drilling through the flexible rail cover (Figure 22) which slides inside the slide out wall or rail housing when the slide-out is closed

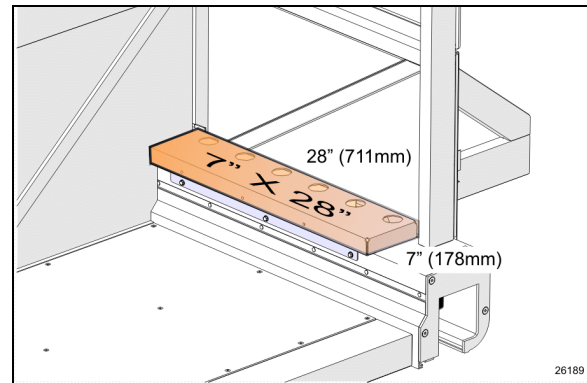


FIGURE 53: FRONT LEFT SLIDE-OUT “NO DRILLING” ZONE

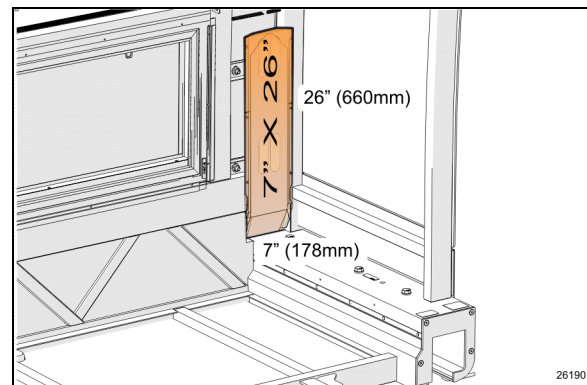


FIGURE 54: REAR LEFT SLIDE-OUT “NO DRILLING” ZONE

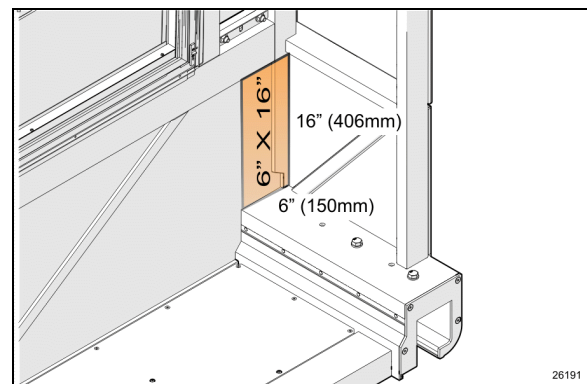
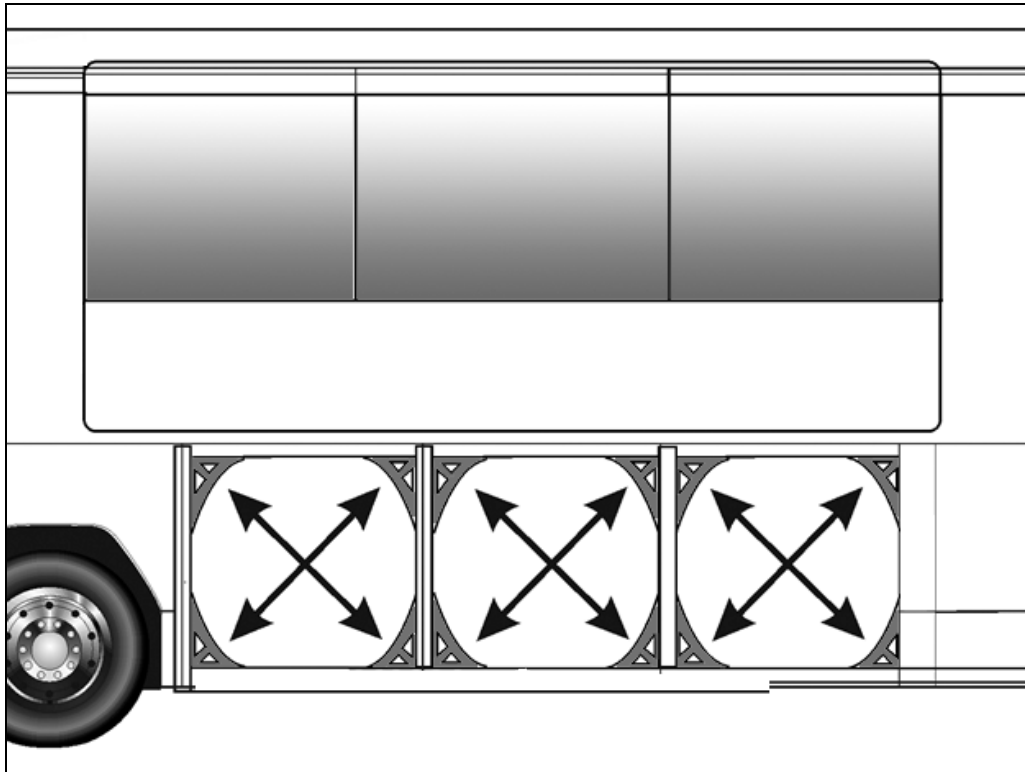


FIGURE 55: REAR RIGHT SLIDE-OUT “NO DRILLING” ZONE

**CAUTION**

Never remove the structural reinforcement angle brackets inside the baggage compartments. Doing so could lead to termination of the warranty coverage concerning the structural integrity.



### 13 PREVOST SLIDE-OUT WITH FLUSH FLOOR

A flush floor slide-out is available in the front right position on H3-45 VIP vehicles. The double rail compact slide mechanism provides improved aisle width when retracted. It features a mobile floor providing a continuous, flush floor surface when extended. There are no security pins required in this slide-out configuration.

Synchronization of the two extension motors is realized through the MUX program. The associated MUX program uses PID (Proportional, Integral, Derivative.) control to achieve precise and fail-safe operation of the slide-out.



#### CAUTION

Manual operation of the Prevost slide-out with flush floor differs significantly from standard Prevost slide-outs and should not be attempted unless you are familiar with the procedure.

#### 13.1 MECHANISM OVERVIEW

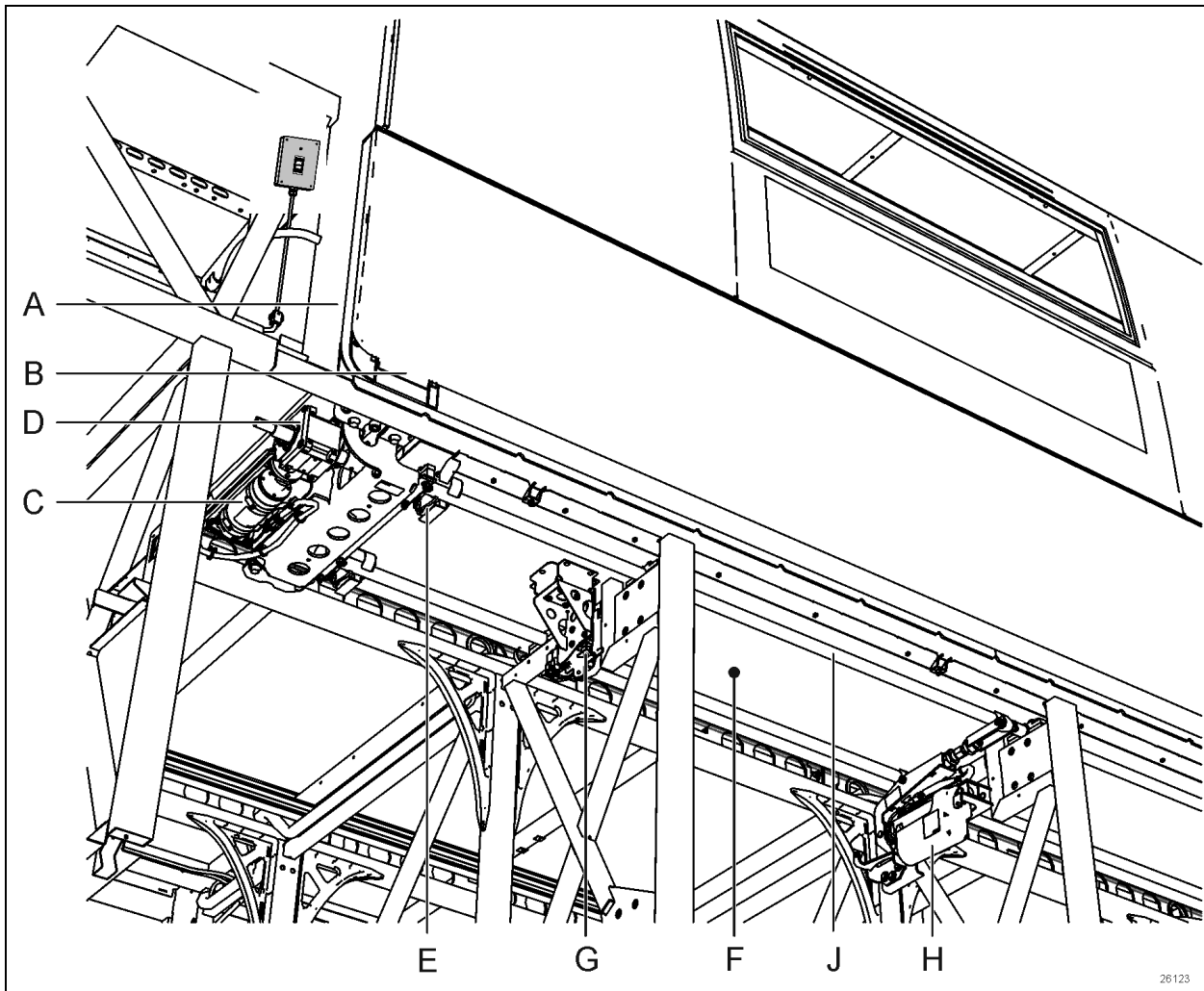


FIGURE 56: FLUSH FLOOR SLIDE-OUT MECHANISM OVERVIEW

26123



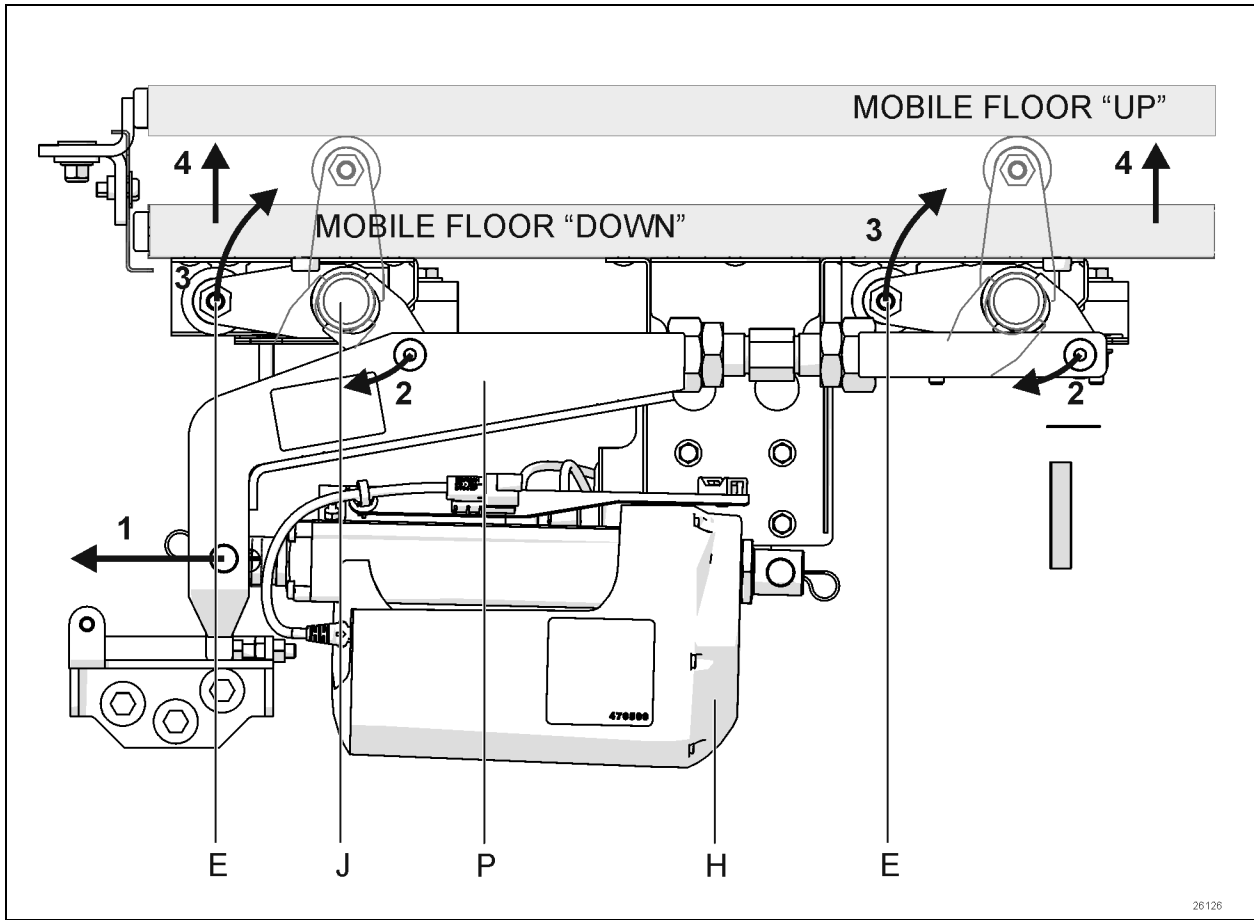


FIGURE 57: FLUSH FLOOR LIFTING

26126

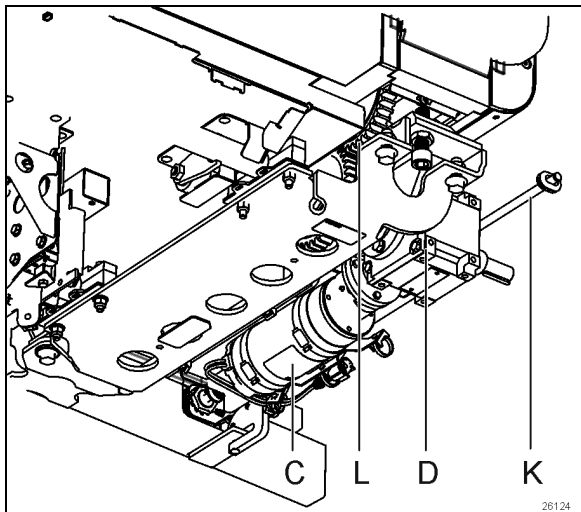


FIGURE 58: EXTENSION MOTOR (FORE SHOWN)

26124

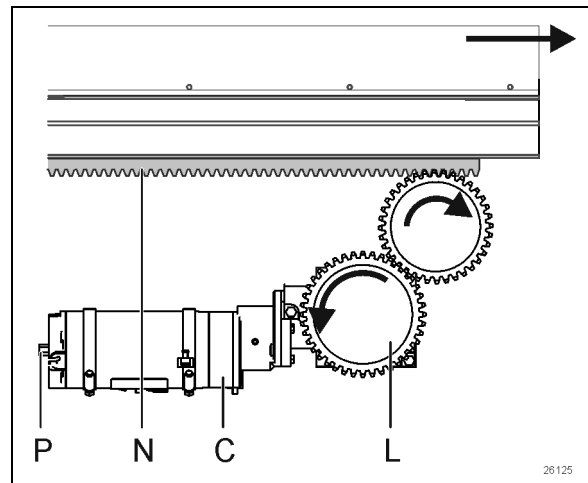


FIGURE 59 EXTENSION MOTOR GEARS (FORE SHOWN)

26125

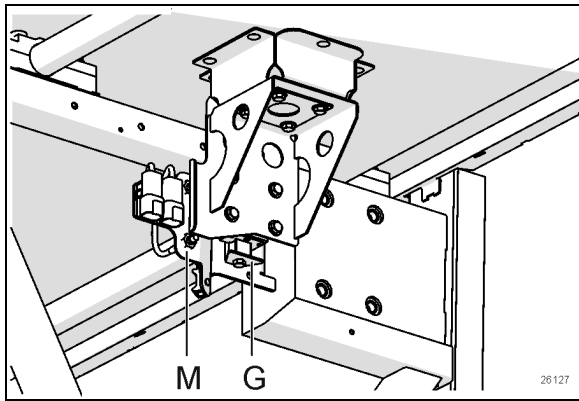


FIGURE 60: FLOOR BEARING &amp; PROXIMITY SWITCHES

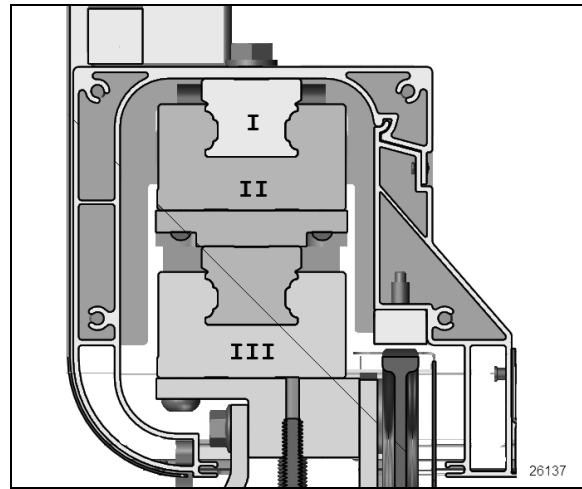


FIGURE 61 LINEAR BEARINGS

Refer to images Figure 56 to Figure 61 above for the following descriptions.

The slide-out room is moved in and out on a pair of stacked linear bearings (Figure 61, Items I and III). Power comes from two synchronized electrical motor (C) oriented horizontally under each linear bearing assembly. The motor drives a right angle speed reducing gearbox (D).

The electric motor and gearbox used are the same 24V, 1/3 HP motors with speed reduction gearbox as the standard Prevost slide-outs.

As the room reaches its fully extended position, the mobile floor (F) is lifted in position on a pair of vertical linear bearings (G). Once the mobile floor is in place, the room retracts slightly to secure and fit the floor in position.

Water tightness of the slide-out is ensured by a wiper seal and an inflatable seal (A).

Extension bearings and rail assemblies are stacked in pairs (Figure 61). The slide-out room structure is attached to the top rail (I). The top bearing is attached to the bottom rail (II). The bottom bearing is attached to the vehicle structure (III).

Each motor (C) is coupled to pinion gears (L) connected to a rack gear (N) linked to the slide-out room structure to provide extension and retraction motion. Manual extension or retraction is possible by driving both motor shafts (H) simultaneously but with extra care as room extension is not synchronized left and right in the case of a double motor failure.. Closely follow instructions provided further in this manual to perform this procedure.

On the floor lifting mechanism, the electric linear actuator (H) is attached to a transfer arm (P) linked to two floor lift shafts (J) having eccentric rollers (E).

When the linear actuator extends (Figure 57, 1), the transfer arm rotates the floor lift shaft links inward (2), rotating at the same time the eccentric rollers upward (3), effectively lifting the mobile floor (4) The vertical movement of the floor is guided by a pair of vertical linear bearings (G).

Note: If the mobile floor fails to reach its final position, manual operation is possible. Closely follow instructions provided further in this manual to perform this procedure.

Structural integrity of the vehicle platform is ensured with stainless steel casting corner reinforcements in the luggage bays.

### 13.1.1 Control system overview

Extension and retraction of the slide-out room is performed using the Control Pad (N). Final location of the control pad may vary from one vehicle to another depending on interior layout and vehicle converter.

Logic control and operation is achieved by using Volvo multiplex modules. Troubleshooting is performed through the DID.

The flip-down control panel is typically located in the first road side luggage bay, attached to the ceiling.

The position of the room is provided by two absolute position sensors (**K**), one on each side of the room. On the mobile floor system, four proximity switches (**M**), (two aft, two fore) are used to provide the system with "upper" and "lower" floor positions.

Current draw of the linear actuator and extension motors is continuously monitored and several conditions are managed proactively by the MUX program to ensure improved reliability of the slide-out system. Refer to "Troubleshooting" for details. End of travel physical stoppers will increase the current draw when they are hit and provide the ultimate end of course signal for the program.

**NOTE**

During room extension, if one side "binds", this condition will be detected by the PID control algorithm in the program. The faster motor may stop to wait for the slower overloaded motor to limit side to side offset. This could be noticeable by slower or irregular room movement. It may be a sign of an underlying problem detected by the program and should be investigated.

### 13.2 INNER STOPPERS

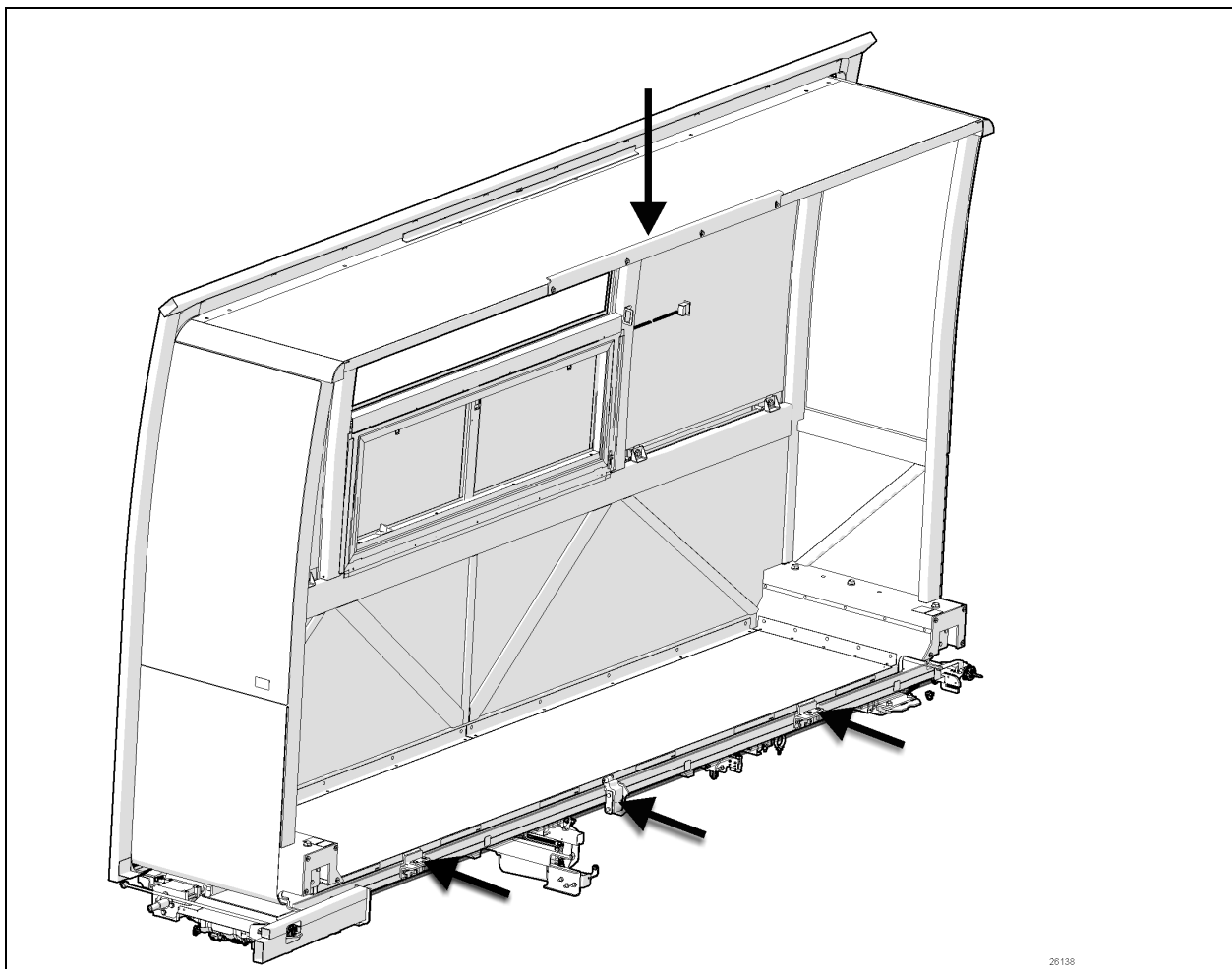


FIGURE 62: PHYSICAL STOPPERS

## SECTION 26A: H3 SERIES SLIDE-OUT

The front right slide-out is equipped with four inner stoppers. One is located on the top horizontal member of the slide-out, and three stoppers for the slide-out floor (Figure 62).

### 13.2.1 Maintenance

Check that the stopper screws are tight and that no deformation can be visible.

### 13.2.2 Adjustment

Adjust the upper structure key and the upper inner stoppers according to figure below with the seal deflated. When inflating, the seal presses the roof structure upward and at that moment, the upper inner stopper comes into contact with the upper structure key

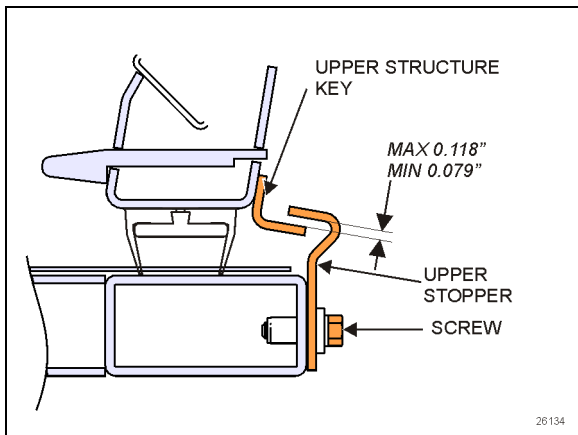


FIGURE 63: UPPER INNER STOPPERS ADJUSTMENT

### 13.3 TILT AND LEVELING

Tilt and leveling adjustment is carried-out by the adjustment plate and screws located under each linear bearing assembly. Aft adjustment screws are accessible by the luggage bay.

Screws "A" adjust level and tilt. Screws "B" are used to lock the adjustment.

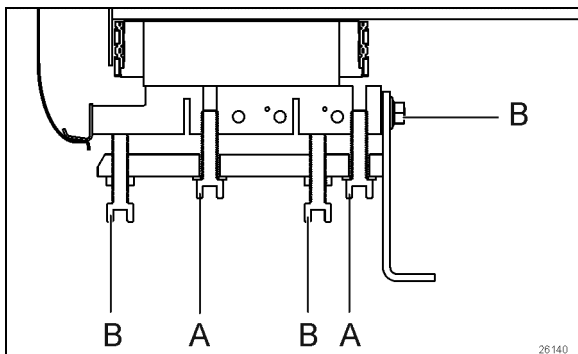


FIGURE 64: TILT AND LEVELING SCREWS

Adjustment screws on the fore rail assembly can be reached by an access hatch in the vehicle's side wall (Figure 65). Remove the front curbside fender to access the hatch.

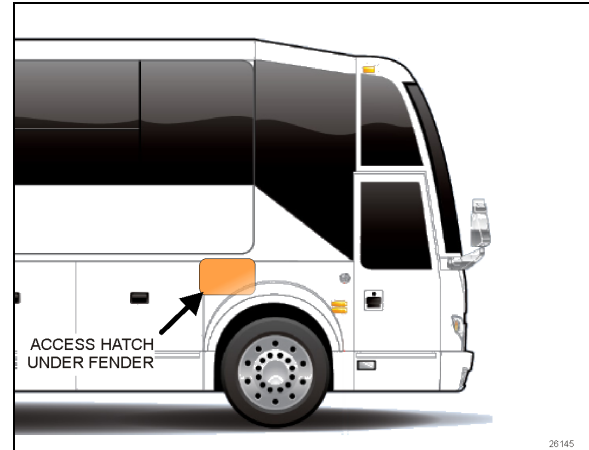


FIGURE 65: ACCESS TO LEVELING SCREWS, FORE

### 13.4 ROOM EXTENSION FOR MAINTENANCE

It is possible to extend the room ten inches (10in.) further out for maintenance operations, like inflatable seal replacement.

#### CAUTION

Prepare a scissor lift or a set of jack stands to support the slide-out room while it is extended for maintenance.

From the inside of the vehicle, remove any capping or trims hiding linear bearings at the bottom of the slide-out on both sides.

Then remove the room extrusion end caps. (Figure 66)

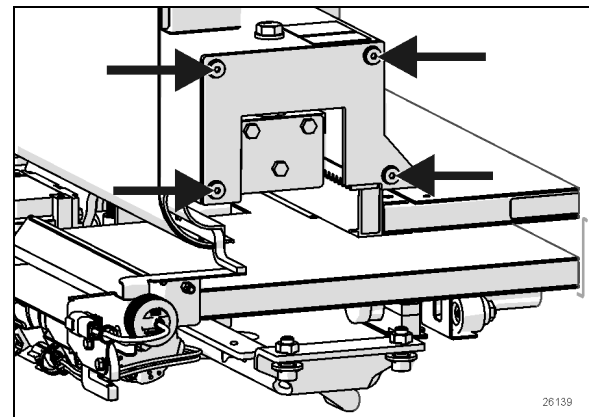


FIGURE 66: EXTRUSION END CAP

Once the room is fully extended, remove the screw holding the flexible plastic rail cover in place. You will notice a notch in the plastic cover's inner end, indicating the screw position. (Figure 67) *Perform this on both sides.*

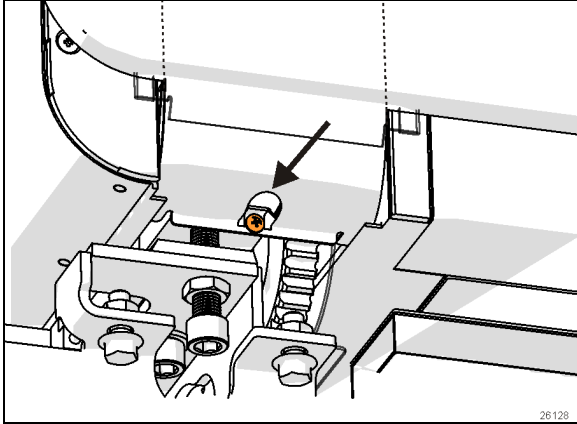



FIGURE 67: FLEXIBLE RAIL COVER

From the baggage compartment, remove the screw holding the fork connected to the position ring of the sensor. *Perform this on both sides.* (Figure 68) Pull the sensor ring assemblies back inboard.

|   |                |
|---|----------------|
|        | <b>CAUTION</b> |
| <p>Be sure to release both position sensors or they may be damaged on room extension.</p> |                |

Remove the upper inner stopper (Figure 62).

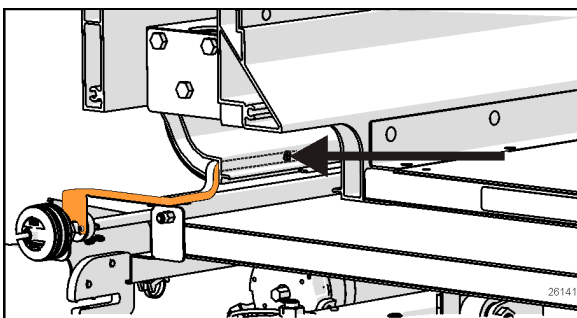


FIGURE 68: POSITION RING PUSH-PULL TAB REMOVAL.

Remove the two nuts holding the extension stopper (perform both sides). (Figure 69)

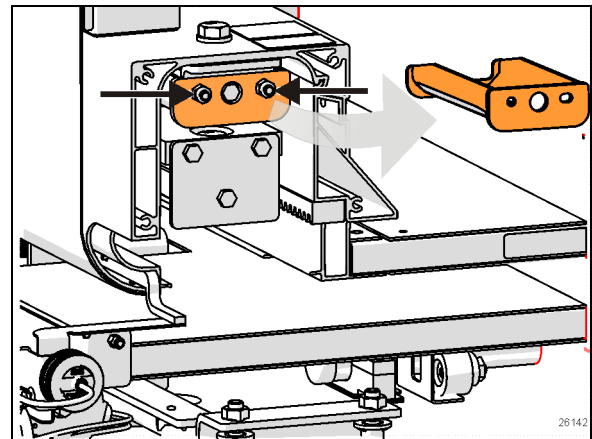


FIGURE 69 STOPPER MOUNTING NUTS

The room can now be extended further.

Do not remove any additional stoppers. Heed the safety warning below.

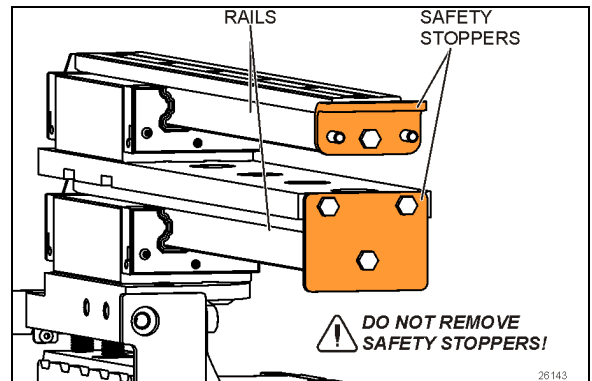


FIGURE 70: SAFETY STOPPERS ON RAILS

## **DANGER**

Safety stoppers are bolted to the rail ends. (Figure 70)

Never remove these stoppers.

These prevent the room from sliding out of the bearings.

Without these stoppers, the room could slide completely out of the bearings, therefore posing a risk of death and significant damage to the vehicle's components

Deflate the seal by using the relieving shut-off valve located on the pneumatic component panel. Confirm by the pressure gage.

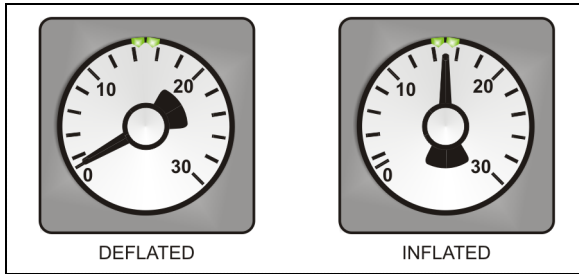


FIGURE 71: INFLATABLE SEAL PRESSURE GAGE



**CAUTION**

Failure to deflate the seal may result in seal damage. Refer to Paragraph 7.5 "SEAL" for further details

Using two cordless drills with 10 mm hexagonal socket and drive both extension motors *simultaneously* to further extend the slide-out room until the gears leave the rack gear.



**CAUTION**

Extra care should be taken to ensure the room extends evenly on each side. Stay within one inch (1") side to side to avoid stressing the components.

Finish by pushing out the room by hand. A minimum of two persons are required

**SLIDE-OUT REMOVAL**

Removal must be performed according to MI18-31.

**13.5 SLIDE-OUT INSTALLATION**

Installation must be performed according to the Slide-Out Installation Procedure. Ask your Prevost service representative.

**13.6 LINEAR SENSOR ADJUSTMENT**

The linear sensors are factory adjusted to give the same absolute position signal. They should not be tampered with. If they become out of adjustment, contact your Prevost service representative.

**13.7 MANUAL EXTENSION OF THE SLIDE-OUT**

Manual extension or retraction of the slide-out is possible by driving the extension motors simultaneously by the shaft extension "P", (Figure 59 EXTENSION MOTOR GEARS (FORE SHOWN)).

To move the slide-out, use a cordless power drill with a 10 mm hexagonal socket on the shaft extension of the slide-out motor. Refer to decal near motor to know if rotation is CW or CCW. Make sure seal is deflated.

Make sure the mobile floor is fully down on room retraction or extension.



**CAUTION**

Extra care should be taken to ensure the room extends evenly on each side. Stay within an inch (1") side to side to avoid stressing the components.



**WARNING**

Keep hands and feet away from slide-out moving parts. Make sure there are no objects or persons around the slide-out.

The fore motor can be reached by the access panel located on the riser portion of the step behind the navigator's seat.

**13.7.1 Manual extension on failure of only one motor**

Two persons are required for this procedure.

If only one of the two motors is defective, unplug the defective motor and drive it with a cordless power drill while having a second person depress the control pad button.

The slide-out MUX program will synchronize the remaining motor to follow the hand driven side.



**WARNING**

Keep hands and feet away from slide-out moving parts. Make sure there are no objects or persons around the slide-out.

### 13.8 MOBILE FLOOR HAND CRANK PROCEDURE

The *floor lifting* mechanism of the slide-out can be manually operated in the event of a power failure. You will need a 6mm (1/4") Allen key to operate the actuator (Figure 72).



#### CAUTION

Do not use an electric drill or other similar tool to operate mobile floor linear actuator. Permanent damage to the unit may result.

As a safety measure, unplug the unit before attempting to hand crank the unit.

#### NOTE

*If the actuator is operated by hand, it must only be operated by hand, otherwise there is a potential risk of overloading and hereby damaging the actuator.*

Hand Crank Torque: 6-8 Nm.  
Hand Crank Max Speed: 65 rpm

The actuator is located under the floor in the second right baggage compartment.

After removing the cover (4 screws), locate the hand crank 6 mm hexagonal socket on the actuator (arrow below)

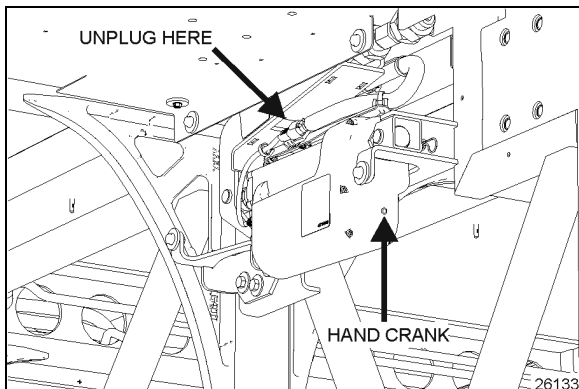


FIGURE 72: MOBILE FLOOR HAND CRANK HEX SOCKET LOCATION

The cover over the Allen Key socket must be unscrewed before the 6mm Allen Key can be inserted and the Hand Crank operated.



#### WARNING

**Make sure there are no objects or persons on the or around the floor while hand cranking.**

Slowly operate the actuator at the indicated speed and torque.

### 13.9 FLOOR LIFT COMPONENT MAINTENANCE

No greasing is required on the floor lift shaft bushings or rollers for the complete life of the slide-out.

### 13.10 INFLATABLE SEAL

Refer to Paragraph 7.5 "SEAL"

### 13.11 FINISHING PRECAUTIONS FOR CONVERTERS

Observe these precautions when designing the finishing wall inside the slide-out room.

No drilling is allowed in the zone identified by Figure 73. This applies to fore and aft sides of the outer wall.

Area is 7" wide x 26" high and starts from the unfinished floor up to the bottom of the transverse horizontal tubing and 7 inches in from the inside of the room corner tubing.

This precaution is to avoid drilling through the flexible rail cover which slides up inside the wall when the slide-out is closed.

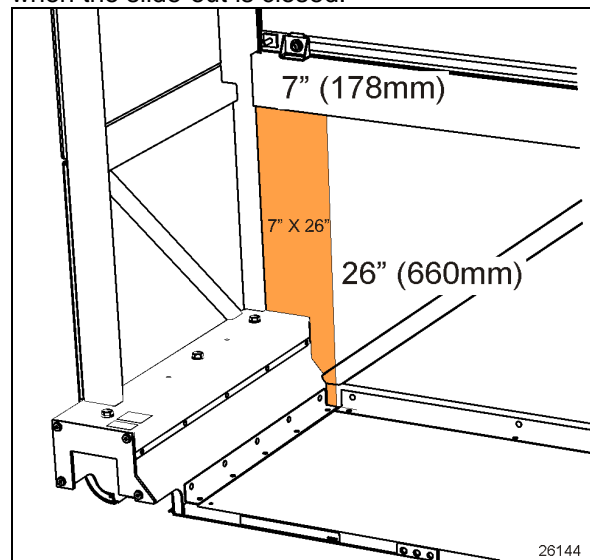


FIGURE 73: "NO DRILLING" ZONE (FORE AND AFT)



## 14 CONVERSION CHECKLIST

The converter should check these points before closing the walls covering the roof reinforcing rod and the pinions:

1. Check that the front slide-out exterior panels are parallel with the vehicle panels when retracted. If not, readjust the tilt.
2. Check that the slide-out is straight when completely extended, and that it leans against all inner stoppers.
3. Slide-out lower member deflection should be within 1/4". If not, redistribute the load.
4. Check slide-out operation. The slide-out should retract and extend smoothly without vibration.

Final check:

- Make sure the slide-out air pressure inlet valve is completely opened.
- Check the inflatable seal air pressure on the pressure regulator. The pressure should be 15 psi.

## 15 TROUBLESHOOTING

### 15.1 ERROR CONDITION OR MISSING OPERATION CONDITION

When an error condition or a missing operation condition is detected on a slide-out being operated, the green indicator light will blink on the control pad.

Turning the ignition OFF and ON again, will stop the blinking and reset the fault. If the error condition or a missing operation condition is still present, the blinking will start again the next time that the slide-out is operated.

To initiate fault diagnostic, use the DID right after operating the slide-out without cycling the ignition switch.

**NOTE**

*The DID is the main tool for troubleshooting a multiplex vehicle. It is essential to have it in working condition.*

#### Fault diagnostic

To get detailed information about the error condition or the missing operation condition, request a diagnostic using the dashboard Driver's Info Display (DID). Check if there are active errors in the slide-out electrical system. Highlight the DIAGNOSTICS menu and click Enter, highlight the VIEW ACTIVE FAULTS menu and click Enter, then highlight the ELECTRICAL SYSTEM menu and click Enter to request a diagnostic of the electrical system from the MCM.

Press the enter key. If applicable, the DID shows the device ID, the fault messages or fault codes recorded. When more than one fault is recorded, an arrow pointing down appears on the right of the display. Use the down arrow to see all the fault messages.

Once the problem is corrected, the DID will still shows the fault as being active. Leave VIEW ACTIVE FAULTS up to the main menu. Then return to DIAGNOSTICS, VIEW ACTIVE FAULTS, and then ELECTRICAL SYSTEM. The DID should not display any faults

## TROUBLESHOOTING – OPERATING CONDITIONS, CONTROL &amp; MECHANICAL COMPONENTS

| PROBLEM  | CAUSE   | CORRECTIVE ACTION  |
|--|---|--|
| <p>The slide-out functions normally but the handheld control green indicator light blinks</p>  | <p>Something is defective and may eventually create an issue if not repaired. The problem may be:</p> <ul style="list-style-type: none"> <li>A. Faulty limit sensor causing the slide-out to stop in overcurrent;</li> <li>B. CAN network problem causing the transmission inhibit safety to be non-operational;</li> <li>C. Vacuum pressure transducer disconnected or damaged (vacuum is applied for a fixed time of 7 seconds);</li> <li>D. Seal inflating valve solenoid open circuit (the seal is not re-inflated and water can penetrate in the vehicle);</li> <li>E. Security pin valve solenoid open circuit (the security pin is not extended while vehicle is riding).</li> </ul> | <p>Request a diagnostic from the DIAGNOSTIC menu using the DID.</p>  |
| <p><b>FLUSH FLOOR S/O ONLY</b></p> <p>Problem: The slide-out stops extending/retracting and the green indicator light flashes rapidly 3 times then one long flash (cycle repeats).</p> | <p>At least one of the mobile floor position switches is defective and the system requires operator's input to resume normal operation. The floor might also be out of level.</p>   | <p>Depress the handheld control in the desired direction 3 times rapidly and hold it the fourth time until the slide out has reached the desired position.</p> |
| <p><b>FLUSH FLOOR S/O ONLY</b></p> <p>Problem: Slide out does not extend/retract.</p>  | <p>The slide out stopped moving due to an obstruction.</p>  | <p>Clear the path of the S/O and /or mechanism and resume operation.</p>   |
| <p><b>FLUSH FLOOR S/O ONLY</b></p> <p>Problem: The slide-out does not extend / retract</p>   | <p>At least one of the motors is defective.</p>   | <p>Refer to manual override procedure</p>  |

**SECTION 26A: H3 SERIES SLIDE-OUT**

| <b>PROBLEM</b>   | <b>CAUSE</b>   | <b>CORRECTIVE ACTION</b>  |
|--|--|---|
| <p>FLUSH FLOOR S/O ONLY</p> <p>Problem: Motor stopping temporarily during extend/retract sequence.</p> | <p>The slide out motors goes out of synchronization.</p>   | <p>Make sure that load is distributed evenly across the slide out. Check for wear/obstructions in the slide out mechanism.</p>  |
| <p>The slide-out does not extend</p>   | <p>A. The parking brake is not seen by the controller as being applied;</p> <p>B. Not enough air pressure in the accessory air tank to permit proper operation of the vacuum generator;</p> <p>C. Faulty vacuum generator, connection to the vacuum generator open, seal deflating valve solenoid open circuit;</p> <p>D. I/O-B module output defective, regulated 5-volt supply to sensors shorted to ground, "out limit" sensor shorted to ground, connection to the motor negative relay solenoid open circuit;</p> | <p>A. Make sure the parking brake is applied. Confirm parking brake application with the parking brake light on the telltale panel.</p> <p>B. Run the engine at fast idle a few minutes to increase air pressure in the accessory air tank and try again.</p> <p>C. Turn the relieving shut-off valve handle clockwise to deflate the seal, disconnect the pressure transducer. Do not forget to reconnect the pressure transducer and to close the relieving shut-off valve. Failure to do so could damage the seal and lead to water infiltration;</p> <p>D. Operate the slide-out with the manual override procedures.</p> |
| <p>The slide-out does not retract</p>  | <p>A. Not enough air pressure in the accessory air tank to permit proper operation of the vacuum generator;</p> <p>B. Faulty vacuum generator, connection to the vacuum generator open, seal deflating valve solenoid open circuit;</p> <p>C. I/O-B module output defective, "in limit" sensor shorted to ground, connection to the motor positive relay solenoid open circuit;</p>  | <p>A. Run the engine at fast idle a few minutes to increase air pressure in the accessory air tank and try again.</p> <p>B. Turn the relieving shut-off valve handle clockwise to deflate the seal, disconnect the pressure transducer. CAUTION, do not forget to reconnect the pressure transducer and to close the relieving shut-off valve. Failure to do so could damage the seal and lead to water infiltration;</p> <p>C. Operate the slide-out with the manual override procedures.</p>  |
| <p>When extending, the slide-out stops after having extended by approximately 1 inch</p>               | <p>A. The security pin valve solenoid circuit is shorted to (+) 24-volt and the security pin remains engaged;</p>  | <p>A. Disconnect air supply from the security pin cylinder;</p>   |

| PROBLEM  | CAUSE   | CORRECTIVE ACTION  |
|--|---|--|
| Transmission DRIVE range or REVERSE cannot be selected (the slide-out telltale light is illuminating). | <ul style="list-style-type: none"> <li>A. Slide-out not in full "in" position;</li> <li>B. Faulty "in limit" sensor. The slide-out is retracted but the controller doesn't see it as retracted.</li> </ul>  | <ul style="list-style-type: none"> <li>A. Retract slide-out.</li> <li>B. Confirm that all slide-outs are retracted. On the slide-out control panel, disconnect the 5 pins green connector on the I/O-B module to disable the transmission inhibit. CAUTION, this is a temporary measure, the vehicle must be serviced as soon as possible.</li> </ul>  |
| Slide-out does not retract or extend when depressing the control switch.                               | <ul style="list-style-type: none"> <li>A. Electrical motor failure;</li> <li>B. Speed reduction gearbox failure;</li> <li>C. Security pin still engaged in receptacle; (Standard Prevost Slide-out)</li> </ul>  | <ul style="list-style-type: none"> <li>A. Replace motor.</li> <li>B. Inspect gearbox components, particularly: bronze wheel or first reduction stage output shaft. Replace damaged components.</li> <li>C. Disengage pin and check if air cylinder is damaged.</li> </ul>  |
| Slide-out is not straight once retracted or during retracting or extending operation.                  | <ul style="list-style-type: none"> <li>A. Broken rack tooth;</li> <li>B. Faulty rack attachment;</li> <li>C. Faulty shaft key at speed reduction gearbox; Pinion slipping,</li> <li>D. Shaft breaking;</li> <li>E. Flange bearing attachment loosen;</li> </ul> | <ul style="list-style-type: none"> <li>A. Replace rack.</li> <li>B. Tighten mounting bolts, apply proper torque and use Loctite thread locker (replace rack if necessary).</li> <li>C. Replace key or component having a damaged keyway.</li> <li>D. Replace shaft.</li> <li>E. Reposition shaft and tighten flange bearing mounting bolts.</li> </ul> |
| Slide-out moves out slightly when vehicle is traveling.  | <ul style="list-style-type: none"> <li>A. Lower "in limit" stoppers are not leaning against the structure at the moment when the "in limit" sensor detects the magnet;</li> </ul>   | <ul style="list-style-type: none"> <li>B. Adjust the sensor position in order to have contact of the stoppers against the structure at the time when the system stops the slide-out retraction.</li> </ul>   |
| Slide-out moves when vehicle is moving.  | <ul style="list-style-type: none"> <li>A. Inflatable seal not inflated</li> </ul>   | <ul style="list-style-type: none"> <li>A. Check seal condition and seal air supply system.</li> </ul>  |
| Slide-out retracts or extends difficultly.   | <ul style="list-style-type: none"> <li>A. Foreign matters accumulated in the linear bearing;</li> </ul>   | <ul style="list-style-type: none"> <li>A. Inspect the linear bearing end seals to see if they are in good condition. If not, replace the end seals and clean the inside of linear bearing.</li> </ul>  |
| Slide-out oscillates vertically when retracting or extending   | <ul style="list-style-type: none"> <li>a. Linear bearing balls hardened due to a too heavy load;</li> <li>b. Linear bearing mounting bolts loosen;</li> </ul>   | <ul style="list-style-type: none"> <li>c. If balls clearance is excessive, replace linear bearing.</li> <li>d. Tighten mounting bolts.</li> </ul>  |

**SECTION 26A: H3 SERIES SLIDE-OUT**

| <b>PROBLEM</b>   | <b>CAUSE</b>   | <b>CORRECTIVE ACTION</b>   |
|--|--|--|
| Slide-out vibrating or noisy when extending or retracting      | <ul style="list-style-type: none"> <li>A. Worn-out anti-friction coating on wiper seal around slide-out;</li> <li>B. Debris in protective flexible shield guides;</li> </ul>   | <ul style="list-style-type: none"> <li>A. Replace wiper seal.</li> <li>B. Inspect and remove debris.</li> </ul>  |
| Slide-out does not retract to its full "in" position           | <ul style="list-style-type: none"> <li>A. Interference between the exterior extrusion and the vehicle upper horizontal member above the slide-out;</li> </ul>  | <ul style="list-style-type: none"> <li>A. Check for straightness of horizontal member and adjust the roof reinforcing rod.</li> <li>B. Check for outer wiper seal lip straightness on the slide-out roof.</li> </ul>   |
| Bottom of slide-out not flush with vehicle body                | <ul style="list-style-type: none"> <li>a. Broken or misadjusted lower "in limit" stopper;</li> <li>b. Lower "in limit" stoppers are not leaning against the structure at the moment when the "in limit" sensor detects the magnet;</li> </ul>  | <ul style="list-style-type: none"> <li>a. Replace or adjust lower "in limit" stopper.</li> <li>b. Adjust the sensor position in order to have contact of the stoppers against the structure when slide-out is stopped.</li> </ul>  |
| Top of slide-out not flush with vehicle body                   | <ul style="list-style-type: none"> <li>A. Broken or misadjusted leveling or retaining screw;</li> <li>B. Faulty upper "in limit" stopper;</li> </ul>   | <ul style="list-style-type: none"> <li>A. Check and replace screw.</li> <li>B. Replace upper "in limit" stopper.</li> </ul>  |
| Lower edge of slide-out not parallel with vehicle body opening | <ul style="list-style-type: none"> <li>A. Faulty leveling and retaining screw (4 screws each side).</li> </ul>   | <ul style="list-style-type: none"> <li>C. Inspect screw, replace and adjust slide-out level.</li> </ul>  |
| Water tightness problem  | <ul style="list-style-type: none"> <li>A. Inflatable seal and/or wiper seal damaged or unstuck;</li> <li>B. Insufficient air pressure in the seal;</li> <li>C. No air pressure in the slide-out pneumatic system;</li> <li>D. Sealant missing;</li> <li>E. Wiper seal draining hole clogged;</li> <li>F. Faulty water recovery pan;</li> <li>G. Faulty internal gutter;</li> </ul> | <ul style="list-style-type: none"> <li>A. Check both seals condition.</li> <li>B. Check the pressure regulator, the relieving shut-off valve and the seal valve condition.</li> <li>C. Check the slide-out air pressure inlet valve condition and the accessory air tank pressure.</li> <li>D. Check the exterior extrusion screws, the windows and the exterior panels sealant condition.</li> <li>E. Unclog draining hole.</li> <li>F. Check the recovery pan.</li> <li>G. Check internal gutter.</li> </ul> |
| Knocking sound at end of travel when extending slide-out       | <ul style="list-style-type: none"> <li>A. Inner stoppers misadjusted;</li> </ul>   | <ul style="list-style-type: none"> <li>A. Readjust the inner stoppers.</li> </ul>  |

| PROBLEM   | CAUSE   | CORRECTIVE ACTION  |
|---|---|--|
| Knocking sound when parking brake is released                                     | A. Security pin retracts too rapidly;   | A. Adjust security pin air flow regulator.   |
| Inflatable seal damaged or removed, or wiper seal unstuck from the structure.     | A. Slide-out has been retracted or extended with the manual procedure with the inflatable seal not deflated;<br>B. Pressure transducer malfunction;<br>C. Seal valve malfunction;<br>D. Excessive load in the slide-out;<br>E. Slide-out not centered in the structure opening; | A. Always deflate the seal when manually retracting or extending the slide-out.<br>B. Check the pressure transducer condition, replace if necessary.<br>C. Check the seal valve condition.<br>D. Reduce load or distribute load evenly in order to respect the deflection criterion and slide-out load capacity.<br>E. Readjust the slide-out height and center horizontally in opening. |
| Friction at end of travel when in full OUT position or at beginning of retraction | A. Interference between upper structure key and upper inner stopper;  | A. Readjust the upper inner stopper.   |

## 15.2 SLIDE-OUT FAULT MESSAGE ON DID

| SID # | FAULT MESSAGE        | TEXT                           | PROBABLE CAUSE   | CORRECTIVE ACTION  |
|-------|----------------------|--------------------------------|--|--|
| 1     | Voltage Module AE58  | Value Too Low                  | Module AE58 sees a Voltage less than 22.0V on its power supply connector.<br>Breaker, fuse or wiring harness open.   | Check/ reset circuit breaker F136.<br>Fix wiring harness   |
| 2     | No Response Mod AE58 | Data Error                     | MCM module does not receive CAN communication from module AE58.<br>Connector J3 is disconnected or CAN wiring harness open, or module AE58 is defective.   | Check connection AE58 J3<br>Fix CAN wiring harness<br>Replace module AE58  |
| 3     | Voltage Module AE59  | Value Too Low                  | Module AE59 sees a Voltage less than 22.0V on its power supply connector.<br>Breaker, fuse or wiring harness open.   | Check/ reset circuit breaker F136.<br>Fix wiring harness   |
| 4     | No Response Mod AE59 | Data Error                     | MCM module does not receive CAN communication from module AE59.<br>Connector J3 is disconnected or CAN wiring harness open or module AE59 is defective.  | Check connection AE59 J3<br>Fix CAN wiring harness<br>Replace module   |
| 5     | SlidO Vacuum Sensor  | Open Circuit                   | Pressure transducer disconnected.<br>Faulty pressure transducer.<br>Connection or wiring harness open.   | Check/ replace vacuum transducer<br>Check/ reconnect the connector SESo1<br>Fix wiring harness   |
|       |                      | Shorted High                   | Pressure transducer is faulty<br>Wiring harness shorted to 12v or 24v  | Check/ replace vacuum transducer<br>Fix wiring harness   |
| 6     | SlidO Seal Def Vac   | Mechanical Fault               | Does not reach vacuum level (-5 PSIG).<br>Slide-out seal damaged or air leak in the seal deflating pneumatic circuit.<br>Accessories tank near empty.  | Check the seals and the pneumatic circuit.<br>Run engine at fast idle to recharge accessories tank.  |
| 7     | SlidO Motor/Limit se | Mechanical Or Electrical Fault | <b>Standard Prevost slide-outs:</b><br>Slide-Out motor is activated for more than 7 seconds and the limit sensor from the departing end is still seen as active.<br>Either the motor is defective and the slide-out is not moving or the limit sensor from the departing end is broken active. | <b>Standard Prevost slide-outs:</b><br>If the slide-Out is not moving, then check the motor and its wiring.<br>If the slide-out is moving, then check the limit sensor from the departing end, also check and clear any obstruction that might prevent the slide-out from moving. (If problem occurs when extending, check the in-limit sensor. If the problem occurred when retracting, then check the out-limit sensor). |



| SID #          | FAULT MESSAGE       | TEXT                           | PROBABLE CAUSE  | CORRECTIVE ACTION   |
|----------------|---------------------|--------------------------------|---|---|
|                |                     |                                | <b>Prevost slide-out with flush floor:</b><br>Slide-Out motor is activated for more than 2 seconds, motor current is abnormally low or slide-out hasn't moved | <b>Prevost slide-out with flush floor:</b><br>Check and clear any obstructions in the direction of travel. Either the motor or its wiring is defective, check and replace components as required. |
| 8              | SldO Park Br Signal | Mechanical Or Electrical Fault | Parking brake is not applied. Wire between parking brake switch and MCM is open.  | Make sure the parking brake is applied and the parking brake telltale illuminates. Check / replace parking brake switch. Fix wiring harness.  |
|                |                     | Shorted High                   | Wire between parking brake switch and MCM is shorted to 12v or 24v.   | Fix wiring harness.   |
| 9 <sup>2</sup> | SldO Mot SpeedA Ctr | Shorted High                   | Wiring harness shorted to 12v or 24v  | Fix wiring harness  |
|                |                     | Current Above normal           | Security pin or object stop the movement of a slide-out   | Check / fix security pin functionality. Check / remove any object around the slide-out.   |
| 10             | SldO Mot SpeedB Ctr | Shorted High                   | Wiring harness shorted to 12v or 24v  | Fix wiring harness  |
|                |                     | Current Above normal           | Security pin or object stop the movement of a slide-out   | Check / fix security pin functionality. Check / remove any object around the slide-out.   |
| 11             | SldO Remote Led     | Shorted High                   | LED or wiring harness shorted to 12v or 24v   | Fix LED or wiring harness   |
|                |                     | Shorted Low                    | Led or wiring harness shorted to ground   | Fix LED or wiring harness   |
|                |                     | Open Circuit                   | LED is broken. Bad connection on control pad. Wiring harness is cut.  | Check / fix remote LED or connection<br>Check /fix wiring harness   |
|                |                     | Current Above normal           | Led or wiring harness shorted to 12v or 24v   | Fix Led or wiring harness   |
| 12             | SldO Seal Inf Sol   | Shorted High                   | Solenoid or wiring harness shorted to 12v or 24v  | Fix solenoid or wiring harness  |
|                |                     | Shorted Low                    | Solenoid or wiring harness shorted to ground  | Fix solenoid or wiring harness  |
|                |                     | Open Circuit                   | Solenoid is broken or open. Bad connection on solenoid or bloc valve. Wiring harness is cut.  | Check / fix solenoid or connection<br>Check /fix wiring harness   |
|                |                     | Current Above normal           | Solenoid or wiring harness shorted to 12v or 24v  | Fix solenoid or wiring harness  |
| 13             | SldO Seal Def Sol   | Shorted High                   | Solenoid or wiring harness shorted to 12v or 24v  | Fix solenoid or wiring harness  |
|                |                     | Shorted Low                    | Solenoid or wiring harness shorted to ground  | Fix solenoid or wiring harness  |

<sup>2</sup> For SID items 9 & 10 (*SldO Mot SpeedX Ctr*) it should be noted that standard Prevost slide-outs are now only wired to "SpeedA Ctr output". "SpeedB Ctr output" can be used as a spare in the event output A fails. On Prevost slide-out with flush floor, the front motor is wired to "SpeedA Ctr output"; rear motor is wired to "SpeedB Ctr output". Also note that Prevost slide-out with flush floor is not equipped with a security pin.

**SECTION 26A: H3 SERIES SLIDE-OUT**

| SID #           | FAULT MESSAGE                  | TEXT                 | PROBABLE CAUSE   | CORRECTIVE ACTION   |
|-----------------|--------------------------------|----------------------|--|---|
|                 |                                | Open Circuit         | Solenoid is broken or open.<br>Bad connection on solenoid or bloc valve.<br>Wiring harness is cut. | Check / fix solenoid or connection.<br><br>Check /fix wiring harness  |
|                 |                                | Current Above normal | Solenoid or wiring harness shorted to 12v or 24v   | Fix solenoid or wiring harness  |
| 14              | SldO Vacc Gen Sol              | Shorted High         | Solenoid or wiring harness shorted to 12v or 24v   | Fix solenoid or wiring harness  |
|                 |                                | Shorted Low          | Solenoid or wiring harness Shorted to ground   | Fix solenoid or wiring harness  |
|                 |                                | Open Circuit         | Solenoid is broken or open.<br>Bad connection on solenoid or bloc valve.<br>Wiring harness is cut. | Check / fix solenoid or connection<br><br>Check / fix wiring harness  |
|                 |                                | Current Above normal | Solenoid or wiring harness shorted to 12v or 24v   | Fix Solenoid or wiring harness  |
| 15 <sup>3</sup> | SldO Mot Neg Rly               | Shorted High         | Relay coil or wiring harness shorted to 12v or 24v   | Fix relay coil or wiring harness                                      |
|                 |                                | Shorted Low          | Relay coil or wiring harness shorted to ground   | Fix relay coil or wiring harness                                      |
|                 |                                | Open Circuit         | Relay coil is broken or open.<br>Bad connection on relay.<br>Wiring harness is cut.                | Check / fix relay coil or connection<br>Check / fix wiring harness    |
|                 |                                | Current Above normal | Relay coil or wiring harness shorted to 12v or 24v   | Fix relay coil or wiring harness                                      |
| 16              | SldO Mot Pos Rly               | Shorted High         | Relay coil or wiring harness shorted to 12v or 24v   | Fix relay coil or wiring harness                                      |
|                 |                                | Shorted Low          | Relay coil or wiring harness shorted to ground   | Fix relay coil or wiring harness                                      |
|                 |                                | Open Circuit         | Relay coil is broken or open.<br>Bad connection on relay.<br>Wiring harness is cut.                | Check / fix relay coil or connection<br>Check / fix wiring harness    |
|                 |                                | Current Above normal | Relay coil or wiring harness shorted to 12v or 24v   | Fix relay coil or wiring harness                                      |
| 17              | SldO Open Sw                   | Shorted High         | Switch or wiring harness shorted to 12v or 24v   | Fix switch or wiring harness  |
| 18              | SldO Close Sw                  | Shorted High         | Switch or wiring harness shorted to 12v or 24v   | Fix switch or wiring harness  |
| 19              | SldO Limit In Se               | Shorted High         | Sensor or wiring harness shorted to 12v or 24v   | Fix sensor or wiring harness  |
| 20              | SldO Limit Out Se              | Shorted High         | Sensor or wiring harness shorted to 12v or 24v   | Fix sensor or wiring harness  |
| 21              | SldO Secu Pin Sol <sup>4</sup> | Shorted High         | Solenoid or wiring harness shorted to 12v or 24v   | Fix solenoid or wiring harness  |
|                 |                                | Shorted Low          | Solenoid or wiring Harness shorted to ground   | Fix solenoid or wiring harness  |
|                 |                                | Open Circuit         | Solenoid is broken or open.<br>Bad connection on solenoid or bloc valve.<br>Wiring harness is cut. | Check / fix solenoid or connection.<br><br>Check / fix wiring harness |
|                 |                                | Current Above normal | Solenoid or wiring harness shorted to 12v or 24v   | Fix solenoid or wiring harness  |

<sup>3</sup> Items 15 & 16 (*SldO Mot XXX Rly*) apply to standard slide outs.

<sup>4</sup> Applies to standard Prevost slide-outs only.

| SID #           | FAULT MESSAGE   | TEXT                           | PROBABLE CAUSE   | CORRECTIVE ACTION   |
|-----------------|---|--------------------------------|--|---|
| 22              | SldO Limit In Out   | Mechanical Or Electrical Fault | <b>Standard Prevost slide-out:</b><br>In Limit and Out Limit are seen at the same time.<br>In Limit or Out Limit problem.  | Check / replace in limit or out limit sensors<br>Fix wiring harness.  |
|                 |   |                                | <b>Prevost slide out with flush floor:</b><br>Indicates that a sensor returns a value which is either out of range or impossible to reach during normal operation of the slide-out | Check adjustment and functionality of sensors. Refer to "Slide-Out Sensor out of Range" and / or "Flush Floor Sensor Out of Range" sections for additional information.   |
| 23 <sup>5</sup> | Limit Sensor 5 V supply   | Shorted Low                    | 5v I/O-BE output is less than 2v. Wiring harness is open or shorted to ground.   | Check 5v output on I/O-BE / replace I/O-BE module.<br>Fix wiring harness.   |
| 94              | SldO4 Fr Sensor Out Of R Front Slide-Out Sensor out of Range    | Value Below or Above Normal    | Sensor output outside of normal operating range  | Check Fuse 104 and sensor wiring, repair as needed.   |
|                 |   | Mechanical Fault               | Slide-out is retracted or extended too far. Bad sensor adjustment.   | Make sure sensor and magnet mounting brackets are secured and haven't come loose. These are factory adjusted and normally don't require to be readjusted. In the event that a sensor would require to be readjusted, contact your Prevost service representative. |
| 95              | SldO4 Rr Sensor Out Of R Rear Slide-Out Sensor out of Range     | Value Below or Above Normal    | Sensor output outside of normal operating range  | Check Fuse 104 and sensor wiring, repair as needed.   |
|                 |   | Mechanical Fault               | Slide-out is retracted or extended too far. Bad sensor adjustment.   | Make sure sensor and magnet mounting brackets are secured and haven't come loose. These are factory adjusted and normally don't require to be readjusted. In the event that a sensor would require to be readjusted, contact your Prevost service representative. |
| 96              | FFlr4 Fr Sensors Out Of R Front Flush Floor Sensor Out of Range | Shorted Low                    | Sensor Shorted to ground   | Check Fuse 15 and sensor wiring, repair as needed.  |
|                 |   | Shorted High                   | Sensor shorted to 12V or 24V supply  |   |
|                 |   | Value Below or Above Normal    | Sensor's output outside of normal operating range  |   |
|                 |   | Mechanical Fault               | Bad sensor adjustment  | Se_FF4_XXUp should be located above SeFF4_XXDn. Make sure the sensor head is adjusted 1.5mm (0.06") away from the sliding bracket that activates it.  |
|                 |   |                                |  |   |

<sup>5</sup> Applies to standard Prevost slide-outs only

**SECTION 26A: H3 SERIES SLIDE-OUT**

| SID # | FAULT MESSAGE  | TEXT                           | PROBABLE CAUSE  | CORRECTIVE ACTION   |
|-------|--|--------------------------------|---|---|
| 97    | FFlr4 Rr Sensors Out Of R Rear Flush Floor Sensor Out of Range | Shorted Low                    | Sensor Shorted to ground  | Check Fuse 15 and sensor wiring, repair as needed.<br><br>Se_FF4_XXUp should be located above SeFF4_XXDn. Make sure the sensor head is adjusted 1.5mm (0.06") away from the sliding bracket that activates it.  |
|       |  | Shorted High                   | Sensor shorted to 12V or 24V supply   |   |
|       |  | Value Below or Above Normal    | Sensor's output outside of normal operating range   |   |
|       |  | Mechanical Fault               | Bad sensor adjustment   |   |
| 98    | Flush Floor 4 Out of Lvl<br>Flush Floor Out of Level           | Mechanical or Electrical Fault | Both sides of the flush floor (front and rear) don't (de)activate position sensors at the same time.<br><br>Floor position sensors are not triggered or deactivated at the same time. | Inspect flush floor area and remove any obstacle, resume operation.<br>Make sure that sensors are in the right order; Se_FF4_XXUp should be located above SeFF4_XXDn.<br><br>Also verify that the sensor heads are adjusted 1.5mm (0.06") away from the sliding bracket that activates them. Check sensor(s) and corresponding wiring, repair/replace as required |
| 99    | SldO4 out of Sync<br>Slide Out unsynchronized                  | Mechanical or Electrical Fault | One of the sides of the Flush floor slide-out is desynchronized more than 6mm (1/4") in relation to the other side.   | Clear any obstruction in the path of the slide-out, resume operation.<br>Make sure that mounting brackets for the sensors and magnets are still secure and undamaged. Note: These are factory adjusted and normally don't require to be readjusted. In the event that a sensor would require to be readjusted, contact your Prevost service representative..      |
| 100   | FFlr4 Mot Neg Rly  | Shorted High                   | Relay coil or wiring harness shorted to 12v or 24v  | Fix relay coil or wiring harness  |
|       |  | Shorted Low                    | Relay coil or wiring harness shorted to ground  | Fix relay coil or wiring harness  |
|       |  | Open Circuit                   | Relay coil is broken or open. Bad connection on relay. Wiring harness is cut.   | Check / fix relay coil or connection<br>Check / fix wiring harness  |
|       |  | Current Above normal           | Relay coil or wiring harness shorted to 12v or 24v  | Fix relay coil or wiring harness  |
| 101   | FFlr4 Mot Pos Rly  | Shorted High                   | Relay coil or wiring harness shorted to 12v or 24v  | Fix relay coil or wiring harness  |
|       |  | Shorted Low                    | Relay coil or wiring harness shorted to ground  | Fix relay coil or wiring harness  |
|       |  | Open Circuit                   | Relay coil is broken or open. Bad connection on relay. Wiring harness is cut.   | Check / fix relay coil or connection<br>Check / fix wiring harness  |
|       |  | Current Above normal           | Relay coil or wiring harness shorted to 12v or 24v  | Fix relay coil or wiring harness  |
|       |  |                                |   |   |

| SID # | FAULT MESSAGE     | TEXT                 | PROBABLE CAUSE  | CORRECTIVE ACTION  |
|-------|-------------------|----------------------|---|--|
| 102   | SldO4 Mot Neg Rly | Shorted High         | Relay coil or wiring harness shorted to 12v or 24v                                  | Fix relay coil or wiring harness                                   |
|       |                   | Shorted Low          | Relay coil or wiring harness shorted to ground                                      | Fix relay coil or wiring harness                                   |
|       |                   | Open Circuit         | Relay coil is broken or open.<br>Bad connection on relay.<br>Wiring harness is cut. | Check / fix relay coil or connection<br>Check / fix wiring harness |
|       |                   | Current Above normal | Relay coil or wiring harness shorted to 12v or 24v                                  | Fix relay coil or wiring harness                                   |
| 103   | SldO4 Mot Pos Rly | Shorted High         | Relay coil or wiring harness shorted to 12v or 24v                                  | Fix relay coil or wiring harness                                   |
|       |                   | Shorted Low          | Relay coil or wiring harness shorted to ground                                      | Fix relay coil or wiring harness                                   |
|       |                   | Open Circuit         | Relay coil is broken or open.<br>Bad connection on relay.<br>Wiring harness is cut. | Check / fix relay coil or connection<br>Check / fix wiring harness |
|       |                   | Current Above normal | Relay coil or wiring harness shorted to 12v or 24v                                  | Fix relay coil or wiring harness                                   |