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1 SLIDE-OUT

1.1 INNER STOPPER

The front slide-out is equipped with six inner stoppers laid out in the following way: two stoppers on the top horizontal member of the slide-out, and two stoppers on each vertical upright, while the rear slide-out is equipped with only three stoppers (FIGURE 1 and figure 2). The upper inner stoppers are used to provide a support to position the slide-out perpendicularly with the vehicle structure.

The side inner stoppers are used to block the extension of the slide-out. They act as ultimate physical limits but take note that when the "out limit" sensors are properly adjusted, the slide-out extension stops before the side inner stoppers reach the side structure keys (figure 1 & 2).

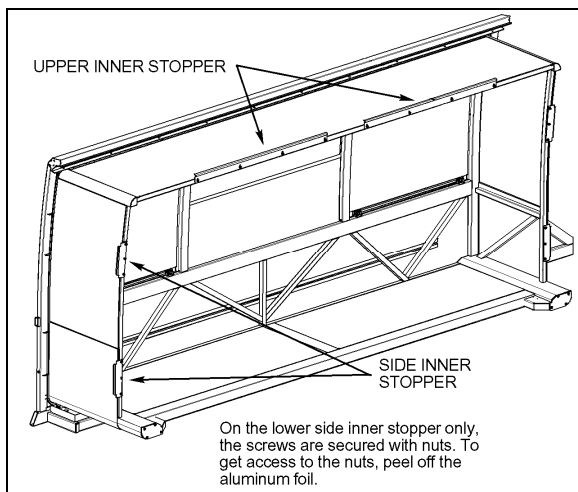


FIGURE 1 : FRONT SLIDE-OUT

1.1.1 Maintenance

Check that the inner stopper screws are tight and that no damage or deformation has taken place for both the side and the upper stoppers.

1.1.2 Adjustment

1. Adjust the side inner stoppers at 1/8" from the vehicle side structure keys, and tighten the screws. Make sure there is a minimum gap of 2mm (0.079") between the side inner stopper and the side window pane (figure 3). Use shim as required.
2. Adjust the upper inner stoppers according to FIGURE 4 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 structure key.

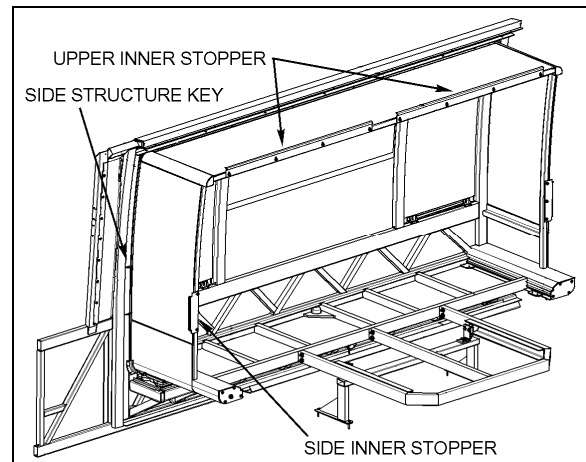


FIGURE 2 : REAR SLIDE-OUT

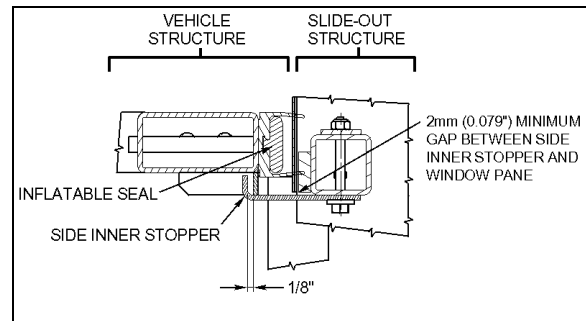


FIGURE 3 : SIDE INNER STOPPER ADJUSTMENT

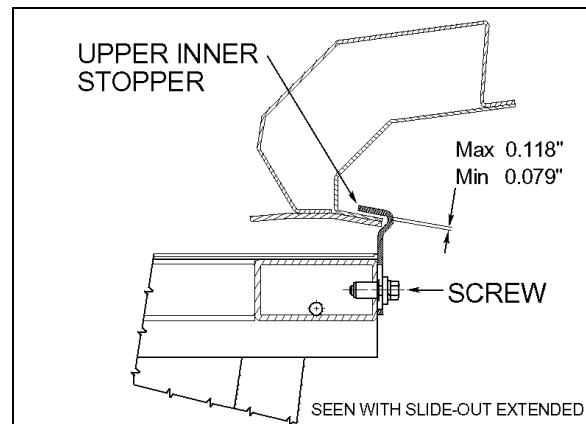


FIGURE 4 : UPPER INNER STOPPERS ADJUSTMENT

1.2 "IN LIMIT" STOPPER

Each slide-out has four "in limit" stoppers. Two "in limit" stoppers are mounted on the exterior extrusion at the top of the slide-out (FIGURE 6) and two other "in limit" stoppers are mounted under the slide-out, next to the rail (Figure 5). These stoppers are use to position the outer face of the slide-out flush with the vehicle body when retracted.

1.2.1 Maintenance

Check that the "in limit" stoppers are clean and that there is no foreign matter accumulated between the stopper and its bearing surface. Check that the screws and set screws (where applicable) locking the stoppers in proper position are tight.

1.2.2 Adjustment

<i>NOTE</i>
<i>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.</i>

1. Extend the slide-out partially.
2. Set the ignition switch to the OFF position.
3. To adjust the lower "in limit" stoppers, loosen the set screw and then rotate the stopper CW or CCW to move it back or forward depending on the required adjustment. To adjust the upper plastic "in limit" stoppers, add or remove shims as required between the stopper and the extrusion.
4. Using the manual override procedure (paragraph 18), move the slide-out up to its full "in" position.
5. Using a straight edge, check if the outer face of the slide-out is flush with the vehicle body with the stoppers contacting their bearing surface. Readjust the stoppers if necessary.
6. Readjust the "in limit" sensor.

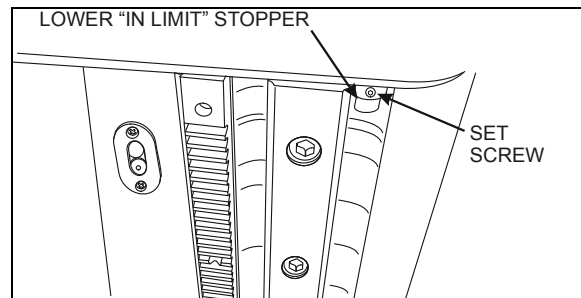


FIGURE 5: LOWER "IN LIMIT" STOPPER

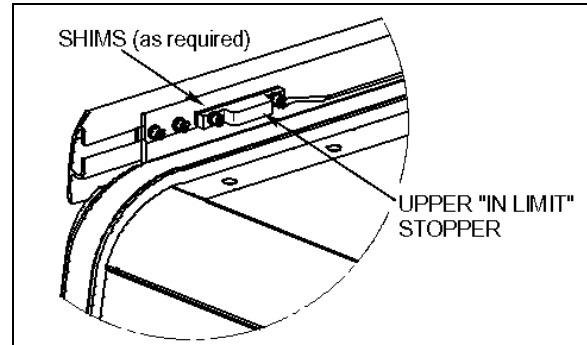


FIGURE 6: UPPER "IN LIMIT" STOPPER

<i>NOTE</i>
<i>To make sure that the lower "in limit" stoppers are contacting their bearing surface (the acetal plastic blocks) when the slide-out is closed, put white paint on the "in limit" stopper before and check if the acetal plastic blocks are marked with paint.</i>

1.3 EXTERIOR EXTRUSION

The exterior extrusion assembly function is to provide a leaning surface for the inflatable seal. When inflating, the seal presses against the extrusion support (angle), lifting the roof structure upward until it rests on the inner side of the extrusion support.

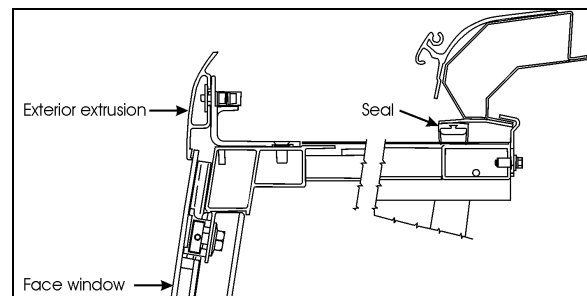


FIGURE 7 : EXTERIOR EXTRUSION

1.3.1 Maintenance

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

1.3.2 Removal

Using a knife, cut the sealant between the extrusion and the roof (figure 7). Unscrew and remove the central exterior extrusion screws and the two end extrusion screws.

2 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 stand a great lateral acceleration of the slide-out.

The system consists of a stainless steel pin connected to a single action/spring return pneumatic cylinder (FIGURE 8). 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 permits to insert a small screwdriver to prevent the pin from rotating when the air cylinder has to be removed.

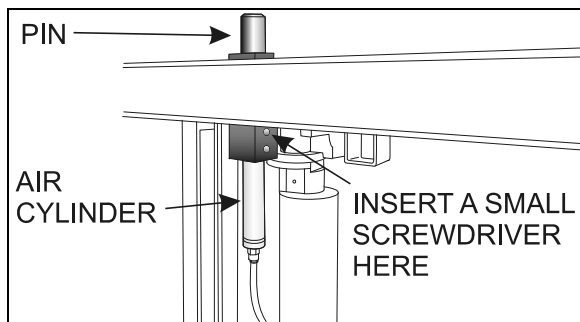


FIGURE 8: SECURITY PIN AIR CYLINDER REMOVAL

2.1 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 do so, the slide-out must be in its full "IN" position with the engine running. If the pin produces excessive knocking when it engages with releasing of the parking brake, reduce air cylinder speed by adjusting the air flow regulator on the pneumatic control module (FIGURE 30, item 11).

2.2 AIR CYLINDER REPLACEMENT

1. Assure the parking brake is applied.
2. Disconnect the cylinder air tubing from the 2nd baggage compartment (front slide-out) or under the bed structure (rear slide-out).

3. Using a wrench at its lower end, unscrew the air cylinder from the pin housing.
4. Insert a small screwdriver through the pin and housing to prevent rotation of the pin and then, unscrew the cylinder rod from the pin.
5. Transfer the fitting on the new cylinder. Place Teflon on threads.
6. Cylinder installation is the same as removal but in reverse order.

3 ROOF REINFORCING ROD

The roof reinforcing rod is located near the upper horizontal member of the front slide-out opening and is welded on the roof arches (figure 9).

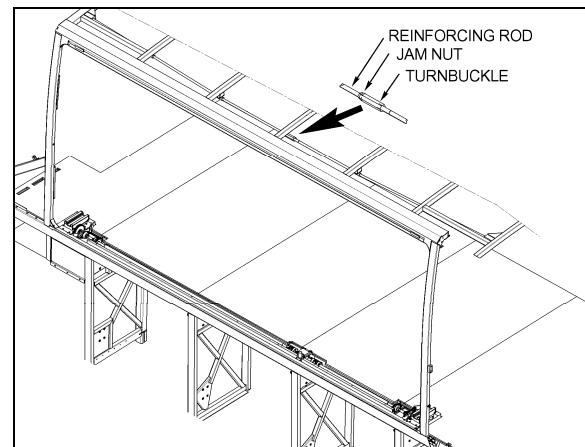


FIGURE 9 : FRONT SLIDE-OUT ROOF REINFORCING ROD

⚠ CAUTION ⚠

The maximum allowed upward shifting is 0.118" (3mm). To prevent permanent warping of the roof arches, never exceed that measurement.

The roof reinforcing rod may have already been adjusted up to the maximum shifting limit at the factory, do not attempt to move the roof any further. If an adjustment is required after a load variation inside the vehicle or on top of the vehicle, it must be done under supervision of a Prevest service representative.

4 RACK

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

4.1 MAINTENANCE

Once a year, check the racks 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 10). 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.

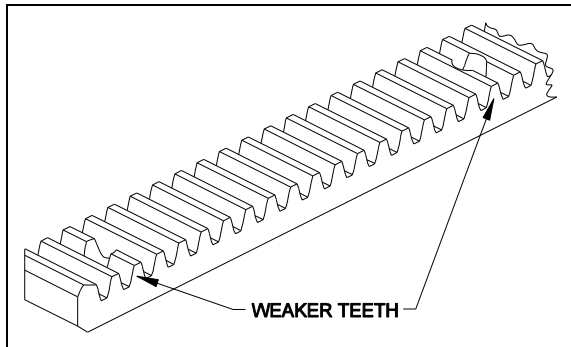


FIGURE 10 : RACK

4.2 FRONT SLIDE-OUT RACK REPLACEMENT

1. Remove the slide-out from the vehicle (removal must be performed according to the Slide-Out Removal Procedure. Ask to your Prevest service representative).
2. From under the slide-out, unscrew all the rack screws and remove the rack.
3. Install a new rack. Tighten the 2 screws located at each ends first and then the other screws to a maximum torque of 2 ft-lbs. Use Loctite™ 242 or equivalent product on threads. The clearance between rack and rail can be verified with jig #30710.



CAUTION

The counterborings required for recessed screw heads reduce plastic thickness. Do not torque higher than specified.

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

4.3 REAR SLIDE-OUT RACK REPLACEMENT

1. Using the slide-out handheld control or the manual override procedure (paragraph 18, if using the manual override procedure, do not forget to deflate the inflatable seal completely), extend the slide-out about one foot.
2. From outside, unscrew and remove only the first two screws of the rack to be changed.
3. Using the manual override procedure (paragraph 18) only, retract the slide-out to its fully closed position.
4. Loosen the pinion keyless bushing of the rack to be changed.
5. From under the slide-out, unscrew all the rack screws and remove the rack.
6. Install a new rack between the slide out structural rack seat and the pinion. Tighten the screws to a maximum torque of 2 ft-lbs. Use Loctite™ 242 or equivalent product.



CAUTION

The counterborings required for recessed screw heads reduce plastic thickness. Do not torque higher than specified.

7. Tighten the pinion keyless bushing as described in paragraph 5.4.
8. Using the slide-out manual override procedure only, extend the slide-out about one foot.
9. Tighten the two remaining crews to a maximum torque of 2 ft-lbs. Use Loctite™ 242 or equivalent product.
10. Using the slide-out handheld control switch or the manual override procedure, retract the slide-out to its fully closed position.
11. Re-inflate the air seal at 10 psi.

5 PINION

⚠ CAUTION ⚠

Make sure all keyless bushings are tightened to 125 lb-ft before moving the slide-out. Refer to paragraph 5.4 for torque wrench settings. A lower torque value may cause the bushing to slip on the shaft, and a higher torque value may break the bushing.

5.1 PINION AND KEYLESS BUSHING POSITIONING

For proper functioning, respect the positioning shown on the following figure.

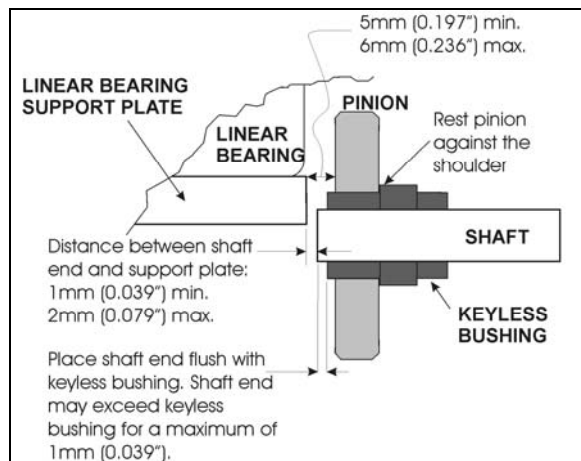


FIGURE 11: PINION AND KEYLESS BUSHING POSITIONING

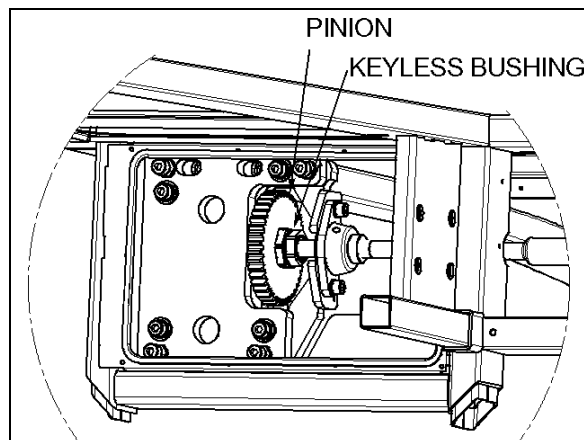


FIGURE 12: PINION AND KEYLESS BUSHING (BOTTOM VIEW)

5.2 FRONT SLIDE-OUT SHAFT PINION REPLACEMENT

⚠ CAUTION ⚠

Before reinstalling the pinion, clean the following surfaces with alcohol to prevent slippage.

- Pinion bore;
- Keyless bushing I.D. and O.D.;
- Shaft.

Before proceeding with the front slide-out shaft pinion replacement, check the following conditions:

- The locking collars located on the side of the pinion being replaced are disengaged;
- The drive motor/gearbox assembly is removed (see paragraph 7.2);

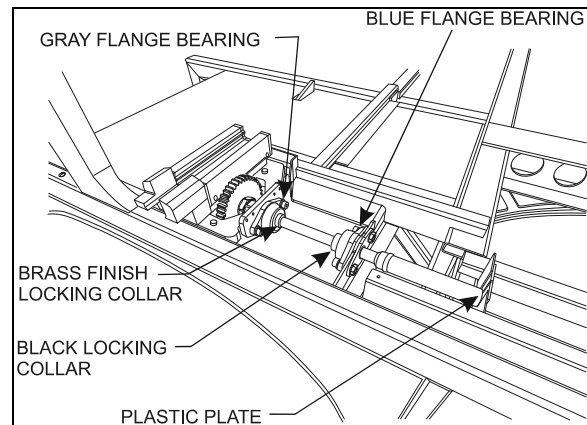


FIGURE 13: MECHANICAL COMPONENTS (TYPICAL)

1. Loosen the keyless bushing (see paragraph 5.4) of the pinion to be replaced. Slide the pinion and its bushing out of the shaft. Check the keyless bushing condition and replace if needed.

NOTE

If necessary, loosen the blue and gray flange bearing to move the pinion away from the rack.

2. Assemble new pinion on the keyless bushing and then slide on the shaft. Do not tighten the bushing at this moment.
3. Properly position the shaft end in relation to the linear bearing support plate (see FIGURE 11) and then tighten the locking collars to maintain the shaft in that position.
4. Position pinion and keyless bushing as shown on FIGURE 11 and tighten the keyless bushing as described in paragraph 5.4.

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5. Reinstall the drive motor/gearbox assembly.

⚠ CAUTION ⚠

Make sure the keyless bushing is tightened to 125 lb-ft before moving the slide-out. Refer to paragraph 5.4.1 for torque wrench settings.

5.3 REAR SLIDE-OUT SHAFT PINION REPLACEMENT

The procedure is similar to the front slide-out shaft pinion replacement. Gain access to the mechanism from under the bed structure. Refer to paragraph 5.2.

5.4 KEYLESS BUSHING

The keyless bushings need a specific tightening torque value to ensure proper pinion transmitting torque. They also need specific tools to be tightened.

To tighten or loosen the keyless bushing, use those specific tools:

- crowfoot wrench 1 ½";
- torque wrench;
- combination wrench 1 ¾";
- pipe wrench;
- drive extension 5";
- socket 1 ½".

5.4.1 Installation

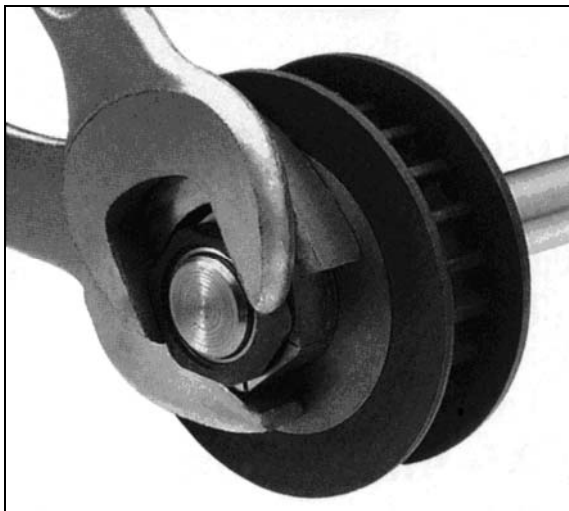


FIGURE 14 : KEYLESS BUSHING TIGHTENING

To tighten the keyless bushing, use a special open-end wrench to retain the yellow part and another wrench to tighten the black part. Figure 20 shows how to tighten the keyless bushing. When tightening, make sure the pinion does not move or rotate.

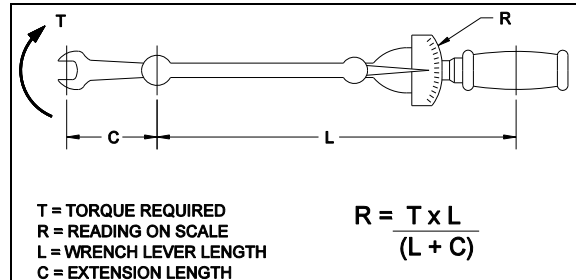


FIGURE 15 : TORQUE WRENCH FORMULA

⚠ CAUTION ⚠

Make sure all keyless bushings are tightened to 125 lb-ft before moving the slide-out. A lower torque value may cause the bushing to slip on the shaft, and a higher torque value may break the bushing. The torque may need to be recalculated depending of the wrench size. Refer to figure 15 for wrench size compensation.

Take note that when the keyless bushing nut is tightened, the pinion moves about 1/16" to 3/32" toward the slide-out center.

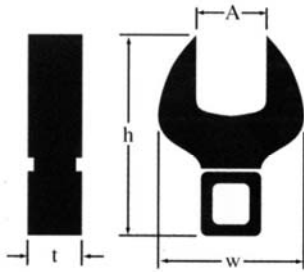
NOTE

On the front slide-out, the driver side keyless bushing is not accessible for tightening or removal unless you remove the front left wheel. If the slide-out has been removed, this keyless bushing should be tightened before reinstalling the slide-out.

WRENCHES FOR INSTALLATION

Fenner Drives offers a complete line of high-quality crowfoot wrenches for installation and to provide counter-torque. These wrenches are much narrower than earlier designs and are specifically for use with Trantorque GT units. It is recommended that both wrenches be used when installing a Trantorque GT unit.

1/2" SQUARE DRIVE



**Style C
Installation Nut**

Shaft Size	Part Number	Wrench Style	Dimensions (inches)			
			A	h	w	t
13/16 to 1	6202990024	C	1-1/2	3.44	2.75	0.75

INSTALLATION INSTRUCTIONS

A Trantorque GT Keyless Bushing offers flexible and easy installation while providing exceptional holding power. To ensure a Trantorque GT unit performs as specified, it must be installed properly.

Warning: Use no lubricants in this installation.

1. Shaft and component bore must be within $\pm 0.003"$ ($\pm 0.08\text{mm}$) [$\pm 0.0015"$ ($\pm 0.04\text{mm}$) Mini Series] of stated bore diameter and must have a surface finish of 32-125 Ra (roughness average). If the surface finish is outside these specified values, consult Fenner Drives.

2. Both shaft and component bore must be completely free of paint, grease, oil, and dirt. If necessary, clean the surfaces with a non-petroleum based solvent, such as isopropyl alcohol.

Warning: Do not lubricate the Trantorque GT bushing or shaft. The use of any lubricant on the contact surfaces could result in bushing failure and will void all warranties.

3. Insert the Trantorque GT unit into the component to be mounted, making sure the mating hub is flush against the shoulder at the hex flats.

4. Position the assembly at the desired location on the shaft and hand-tighten the nut (clockwise) until the assembly becomes snug on the shaft.

Warning: Do not hammer or use any type of impact to force the Trantorque GT assembly along the shaft.

Warning: The shaft must fully engage the shaft gripping area (Figure 1) of the Trantorque GT unit. Figure 2 illustrates minimum shaft engagement.

5. Using a torque wrench, tighten the nut to the proper installation torque. See table for torque value. (Note: Fenner Drives has available crowfoot wrenches for square drives in sizes from 1/2" to 3-1/2".) The hex flats on the outer ring are provided for counter-torque, eliminating the need to hold the component or shaft while applying installation torque.

Note: At full installation torque, the assembly will have moved approximately $\pm 0.075"$ ($\pm 1.9\text{mm}$) [$\pm 0.045"$ ($\pm 1.1\text{mm}$) Mini Series] axially along the shaft away from the nut. If axial position is critical it may be necessary to loosen the nut and reposition the assembly.

Warning: Over-tightening the nut could damage the Trantorque GT unit and/or the mounted component.

Do not use an impact wrench in the installation.

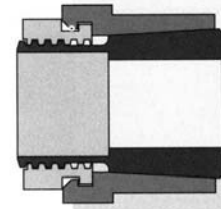


Figure 1

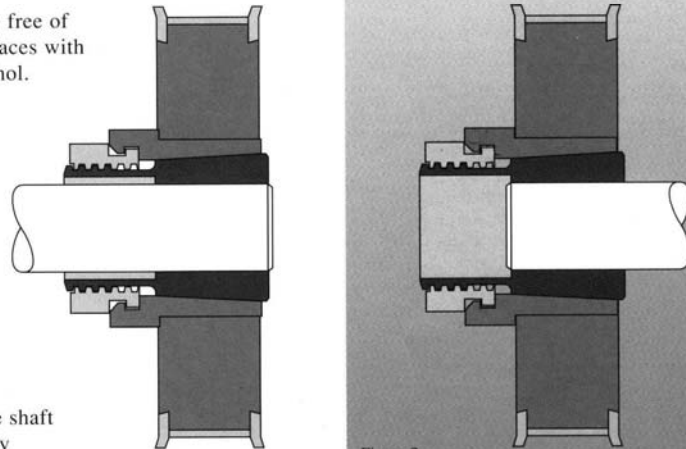


Figure 2

Installation Torque on Nut

	Inch Pound System		Metric System	
	Shaft Size	In. Lbs.	Shaft size	N-m
MINI SERIES	3/16-1/4	125	5-6mm	14.1
	5/16-3/8	150	7-9mm	17.0
	7/16-1/2	175	10-12mm	19.8
	9/16-5/8	200	14-16mm	22.6
	3/4	700	17mm	80.0
STANDARD SERIES	5/8-3/4	1200	15-19mm	136
	13/16-1	1500	20-25mm	170
	1-1/16-1-1/4	2000	28-32mm	225
	1-5/16-1-1/2	2300	34-38mm	260
	1-9/16-1-3/4	2800	40-42mm	316
LARGE SERIES	1-13/16-2	4900	45-50mm	554
	2-1/16-2-1/4	5300	55mm	600
	2-5/16-2-1/2	5600	60mm	635
	2-9/16-2-3/4	6000	65-70mm	680
	2-13/16-3	6600	75mm	750

FIGURE 16 : KEYLESS BUSHING INSTALLATION INSTRUCTION

6 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 3/8 hexagonal shaft extension permitting to move the slide-out without using the handheld control. This is very useful when moving the slide-out very slowly is required like during the inner stoppers adjustment, the tilt adjustment or the 2" inside retraction. See paragraph 18 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 its opened or closed position, in order not to overload the mechanism.

6.1 MAINTENANCE

Inspect the electrical connections for watertightness. Check that the mounting bolts are tight (FIGURE 18).

6.2 REPLACEMENT

1. The slide-out must be retracted.
2. Unplug the electric cable connector.

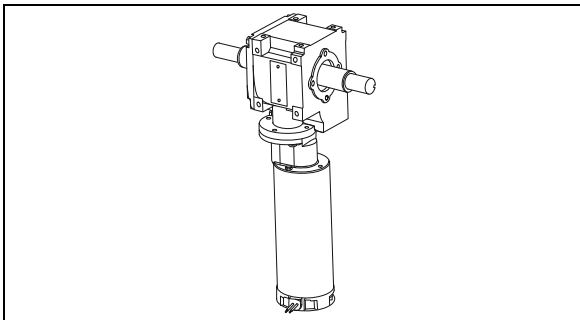


FIGURE 17: ELECTRIC MOTOR AND SPEED REDUCTION GEARBOX

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

7 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.

7.1 MAINTENANCE

Inspect the gearbox for 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.

7.2 GEARBOX REPLACEMENT

1. The slide-out must be retracted.
2. Disengage the shafts jaw couplings (refer to paragraph 8: JAW COUPLING).
3. Remove the 4 cap screws securing the motor/gearbox assembly and dismount the assembly (see FIGURE 18).
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 to a torque of 18 ± 2 lbf-ft in a criss-cross pattern.

⚠ CAUTION ⚠

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

6. Reinstall the jaw couplings.

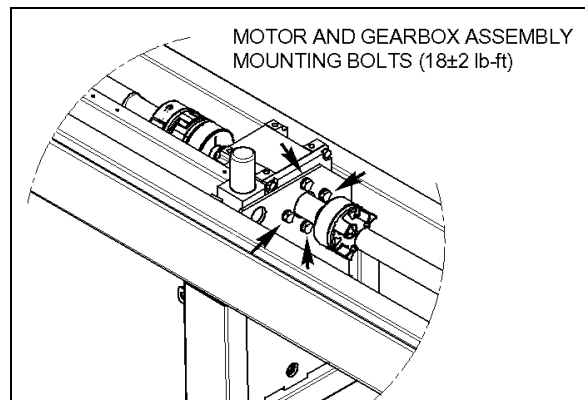


FIGURE 18: MOTOR/GEARBOX ASSEMBLY MOUNTING BOLTS

8 JAW COUPLING

8.1 MAINTENANCE

Inspect the jaw couplings for backlash between the key and the keyway. Also, check the spider condition. Check that the clamping screws are tight.

8.2 REPLACEMENT & ADJUSTMENT

1. The slide-out must be retracted.
2. Disengage the jaw coupling: loosen the clamping screw on each clamping hub. If required, rotate the motor shaft extension as described in the manual override procedure (paragraph 18) to get to the clamping screws.
3. Separate both clamping hubs.

NOTE
<i>It may be necessary to loosen the blue flange bearings to move the shaft out of the way.</i>

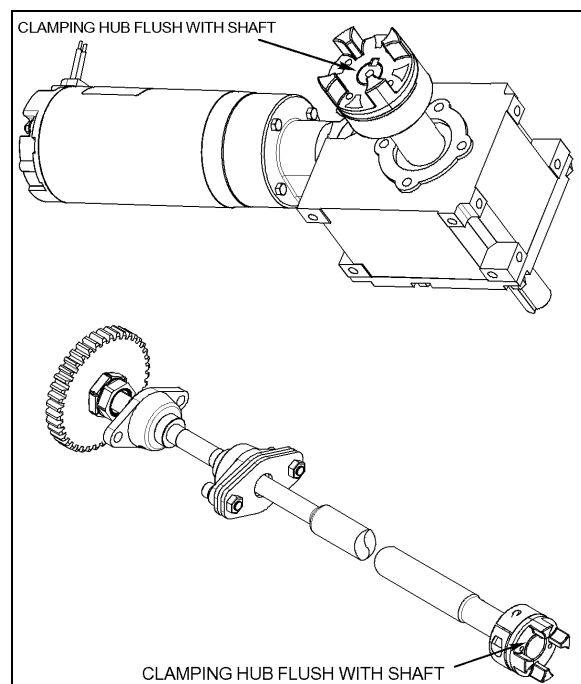


FIGURE 19: CLAMPING HUB POSITION ON SHAFTS

4. Clean and degrease the hub bore and the shaft.
5. Push the new clamping hubs onto the shaft (pinion side).
6. Install a clamping hub on one of the gearbox shaft (opposite side of gearbox mounting

bolts) flush with the shaft extremity (see FIGURE 19). Tighten the clamping screw to a torque of 18 lbf-ft.

7. Install the second clamping hub on the gearbox shaft. Position the clamping hubs so that they are flush with the shafts extremity (see FIGURE 19).
8. Reconnect the clamping hubs with the spider. Leave a gap of 20mm (0.787inch) between each clamping hubs as shown on FIGURE 20. Use the motor hexagonal output shaft to align the keyways.
9. Tighten clamping screws to a torque of 18 lbf-ft dry.

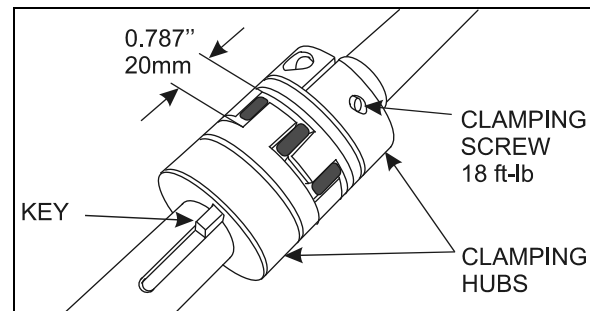


FIGURE 20: JAW COUPLING

9 FLANGE BEARING

There are two different types of flange bearing on the slide-out mechanism (FIGURE 13). Their purpose is to maintain the shaft in position while permitting rotation. The gray flange bearings are fixed to the linear bearing support plate and are not adjustable. The blue flange bearings are fixed to a support with oblong holes permitting to raise or lower the flange bearing as the linear bearing support plate level is being adjusted.

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.

10 LOCKING COLLAR

The locking collar locks the shaft and the flange bearing together using friction. Once locked, it permits no axial translation of the shaft and prevents rotation of the shaft into the flange bearing bore.

10.1 INSTALLATION

Slide the locking collar along the shaft up to the flange bearing (FIGURE 13). Turn the locking collar clockwise while maintaining it pressed against the flange bearing. Knock the collar with a punch to lock it in place, there is a cavity on the collar made for that purpose. Tighten the set screw.

To remove, loosen the set screw and release the locking collar using channellock pliers or a small pipe wrench.

11 LINEAR BEARING

11.1 MAINTENANCE

Make every effort not to allow dust and foreign objects to enter inside the linear bearing.

The linear bearings are pre-lubricated and no subsequent lubrication is required due to the very low demanding use of the slide-out system.

11.2 REPLACEMENT & ADJUSTMENT

1. Remove the slide-out from the vehicle (removal must be performed according to the Slide-Out Removal/Installation Procedure. Ask to your Prevost service representative).
2. Disconnect the jaw coupling on the side of the linear bearing being replaced (refer to paragraph 8).
3. Dismount the blue flange bearing.
4. From the mechanism access panel, remove the retaining screws A, B, C & D (see FIGURE 23).
5. Now, you have access to the linear bearing mounting bolts if you turn its support up side down. Dismount the linear bearing and install the new one.
6. Tighten the mounting bolts in a criss-cross pattern to a torque of 60 ft-lb dry.
7. Reinstall the support plate, retaining screws, blue flange bearing and reengage the jaw coupling. Refer to the specific procedures.

11.3 LEVEL & TILT ADJUSTMENT

Leveling of the slide-out is done by changing the linear bearing support plate height using the leveling screws 1, 2, 3, 4 (figure 23). When

proper level is attained, the retaining screws A, B, C & D maintain the support plate seated on the leveling screws. Also, the retaining screws prevent the slide-out from tipping inside the vehicle when it is retracted.

The slide-out is slightly tilted. When retracting, the upper "in limit" stoppers touch first the vehicle structure, followed by the lower "in limit" stoppers. Tilt adjustment is done by changing the linear bearing support plate inclination using the leveling screws 1 & 2 as pivot and 3 to adjust the angle (figure 23).

11.3.1 Procedure

NOTE

For the **front slide-out**, the front linear bearing leveling screws are accessible from the access located over the front wheel (remove the front fender first) while the rear linear bearing leveling screws are accessible from the access panel in the evaporator compartment. For the **rear slide-out**, gain access to the linear bearing from under the bed structure or the radiator compartment.

WARNING

The slide-out must be retracted when the level and tilt adjustment is performed.

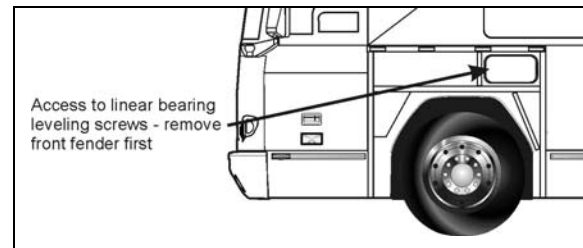


FIGURE 21: ACCESS LINEAR BEARING LEVELING SCREWS

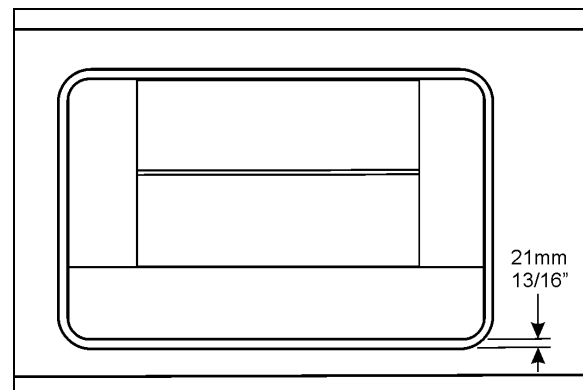


FIGURE 22: SLIDE-OUT LEVEL ADJUSTMENT

Section 26: SLIDE-OUT

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 with the vehicle body when retracted;
 - The 2 upper “in limit” stoppers are removed from the slide-out (see paragraph 1.2).
1. Loosen the blue flange bearings mounting screws (FIGURE 13).
 2. For front slide-out only, loosen the two plastic plates mounting screws along the shafts (FIGURE 13).
 3. With the lower edge of the slide-out outer panel flush with the vehicle body, adjust the slide-out level. 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).



WARNING

Never unscrew completely retaining screw A, B, C, D or the slide-out may tip inside.

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 tighten.

To lower the linear bearing support plate, turn screw 1 & 2 counterclockwise. As the support plate goes down, maintain the retaining screw A & B tighten.

4. Loosen retaining screws C & D. Unscrew levelling screw 4. Now, the support plate should be resting on levelling screw 1, 2 & 3.
5. Using levelling screw 3, adjust the tilt in order to have the top of the slide-out recessed between 5mm and 10mm (7/32” and 3/8”) (see FIGURE 24).
6. When proper tilt is attained, tighten leveling screw 4 so that it comes into contact with the support plate.
7. Loosen slightly levelling screw 3 and then tighten it so it is perfectly in contact with the support plate. Make sure screws 1, 2, 3 & 4 are in contact with the support plate.
8. Loosen retaining screw A & B.

9. Using a crisscross pattern, tighten progressively (3 rounds) the retaining screw A, B, C & D to a torque of 50±5 ft-lb dry.
10. Assure that the levelling screw 1, 2, 3 & 4 are firmly leaning on the support plate and then firmly tighten the jam nuts.
11. Verify that the tilt is still properly adjusted (between 7/32” and 3/8”).

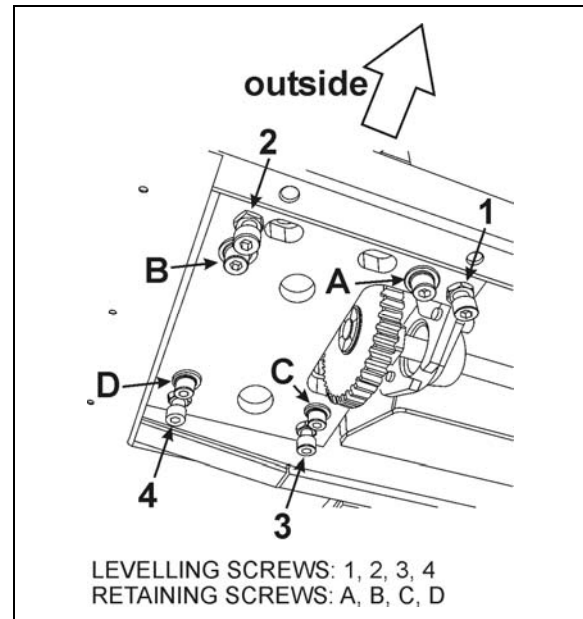


FIGURE 23 : SLIDE-OUT LEVELING

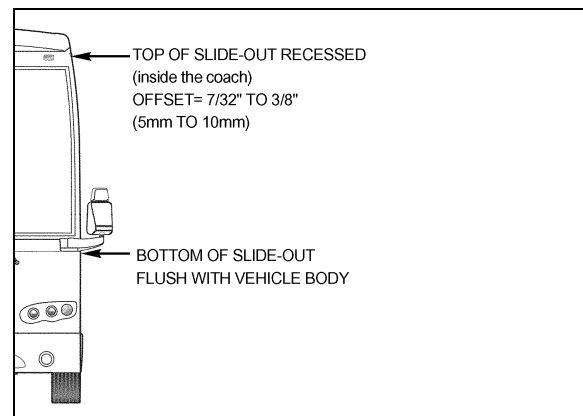


FIGURE 24: TILT ADJUSTMENT

12 RAIL

Rail and linear bearing system provide precise frictionless linear movement together with high load carrying capacity and high stiffness. These standardized equipments are fully interchangeable.

To prevent corrosion, an electrolytic film treatment is performed to the rail. Do not strike the rail with metal tools and avoid cleaning the rail surface with solvent, this could damage the treatment.

After the rail is mounted to the slide-out base, a cap is used to cover the bolt hole to prevent foreign matters from clogging up the hole or from entering into the ball slide. The cap for the bolt hole is made of synthetic resin which is superb in its resistance to oil and wear.

12.1 MAINTENANCE

Check that all the caps for the bolt hole are present. Missing caps must be replaced. To insert a cap into the rail bolt hole, use a rubber mallet. Pound the cap gradually until its height becomes flush with the rail top face.

Clean accumulated dirt from the rails with a soft cloth.

12.2 REPLACEMENT

1. Remove the slide-out from the vehicle (removal must be performed according to the Slide-Out Removal/Installation Procedure. Ask to your Prevost service representative).
2. Remove the bolt hole cap covers. To do so, pierce a hole in the center and hook them out. They will not be reusable.
3. Remove the rail mounting bolts.
4. Wipe off the rust preventive oil applied to the new rail. Remove burrs and small bumps on the slide-out mounting face with an oilstone.
5. Carefully place the rail on the bed on its mounting face.

NOTE

The rail is bolted to a flat bar on which weldnuts are mounted. The flat bar is inserted in the slide-out lower body extrusion and can be removed through the end cap (FIGURE 25).

6. Adjust the flat bar position to align the weldnuts with the rail mounting holes.
7. Temporarily tighten the bolts.
8. Adjust the rail position as per FIGURE 25. For each rail, make sure the gap is the same both side of the rail.

NOTE

Jig #30534 (2 required) can be used to properly position the rail.

9. Tighten bolts according to the following order: 1st, 6th, 2nd, 5th, 3rd and 4th. Use blue Loctite™ on threads.

10. Cap the bolt holes.

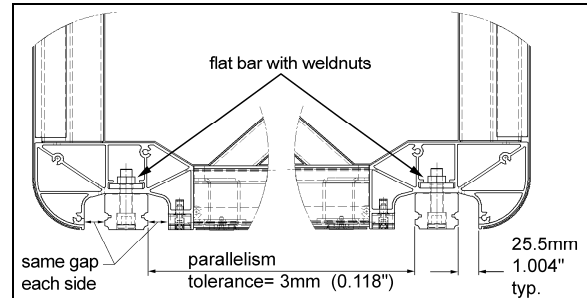


FIGURE 25 : RAIL POSITIONING

13 ACETAL PLASTIC BLOCKS

Three different acetal plastic blocks are installed next to each linear bearing to prevent dirt and foreign matter from entering inside the vehicle. They also serve as bearing surface for:

1. The inflatable seal each side of the rail.
2. The "in limit" stoppers.

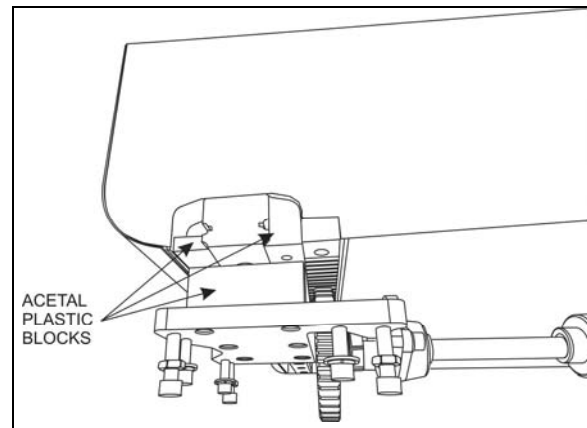


FIGURE 26: ACETAL PLASTIC BLOCKS

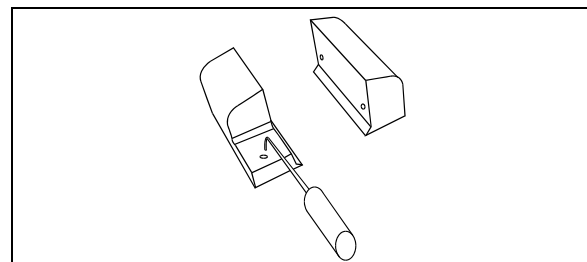


FIGURE 27: REMOVE THE UPPER ACETAL PLASTIC BLOCKS WITH A PICKING TOOL

13.1 REMOVAL / INSTALLATION

1. Gain access to the linear bearing support plate.
2. From under the support plate, remove the acetal plastic block mounting screws (see the oblong holes on figure 23).
3. Extend the slide-out just enough to gain access to the about acetal plastic blocks.
4. Remove the 2 upper acetal plastic blocks. They have holes so they can be removed with a picking tool (FIGURE 27) from outside the vehicle. If the acetal plastic blocks are too hard to reach, slightly extend the slide-out, the movement of the slide-out should bring them out.
5. To remove the lower acetal plastic block, gain access to the compartment under it. Slide the acetal plastic block toward the center of the slide-out. Proceed the same way to reinstall it.
6. Installation is the same as removal but in reverse order. When reinstalling the upper acetal plastic blocks, fold the wiper seal toward the outside with a flat tool to ease installation (FIGURE 28). Before tightening, make sure the acetal plastic blocks are leaning against the rail and the linear bearing. Tighten the mounting screws to a torque of 7 ft-lb.

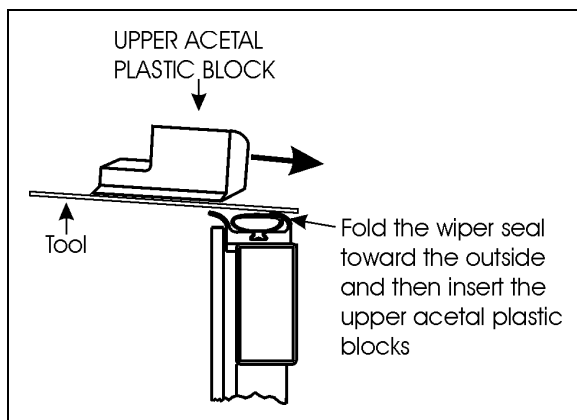


FIGURE 28: LOWER ACETAL PLASTIC BLOCK INSERTION

14 SLIDE-OUT PNEUMATIC SYSTEM

The slide-out is controlled by a pneumatic and electrical system. Mainly, the pneumatic system consists of electrically operated valves that control certain slide-out components and safety operations.

14.1 DESCRIPTION

AIR PRESSURE DELIVERY VALVE

The slide-out air pressure comes from the air pressure delivery valve on the pneumatic panel in the front service compartment (figure 29).

INFLATABLE SEAL VALVE

The inflation and the deflation of a seal are done with a 5-port 2-position valve with two solenoids. One solenoid is used for inflating of the seal and the other for deflating of the seal. When one solenoid is activated (seal deflating valve for example), the valve keeps 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 10 psi and 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 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 a 10 seconds delay. In that situation, an error code will be stored in the MCD (message center display). 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, because the pressure transducer reads 0 psig and that is higher than -5 psig (vacuum). For that reason the slide-out cannot be moved with the handheld control.

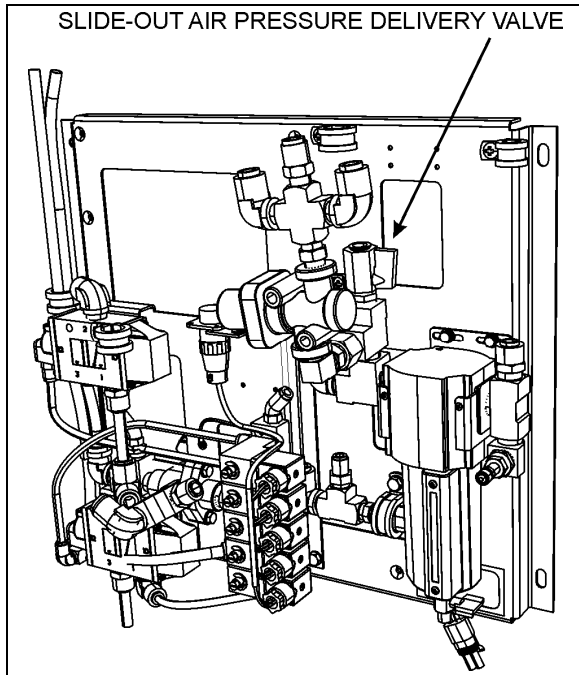


FIGURE 29 : FRONT SERVICE COMPARTMENT 12220

14.2 MAINTENANCE

COMPRESSED AIR LINE

Inspect all compressed air line tubing for cut, swelling, and kink or other damage or deterioration. Inspect the pneumatic fittings and components for any leak. The slide-out air supply is connected to the accessory air tank and the required maintenance is described in Section 12 of this manual.

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 from 7 to 10 psi maximum. It is recommended to check the inflatable seal pressure once a month to ensure sealing efficiency and prevent any infiltration from outside.

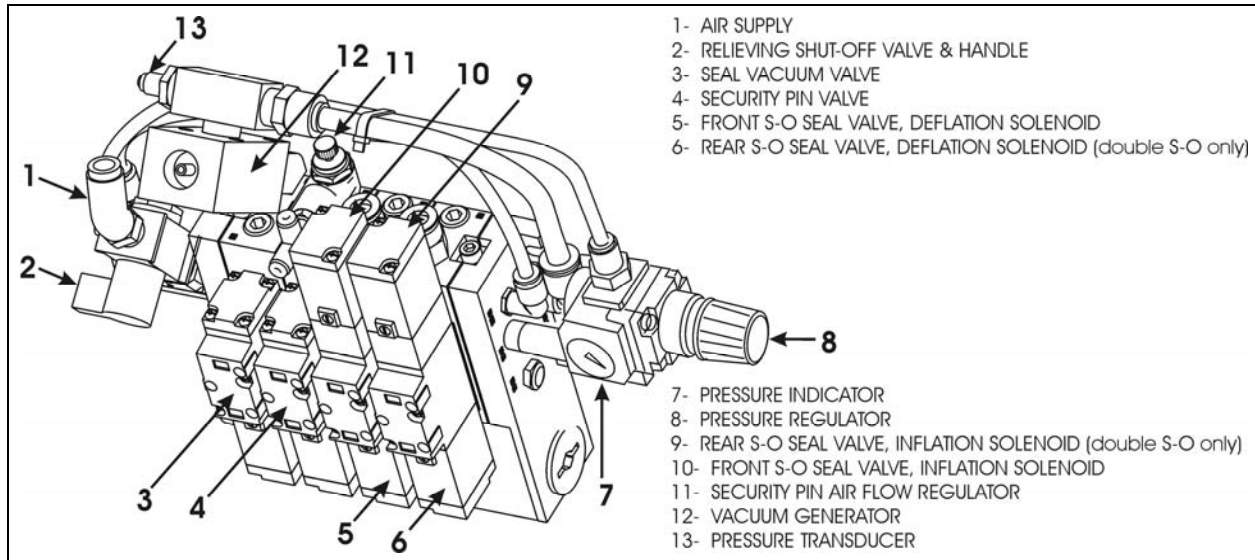


FIGURE 30: PNEUMATIC CONTROL UNIT

14.3 SEAL

NOTE

Refer to the Prevest parts manual for description of sealant and adhesives used.

The slide-out sealing device is used to prevent any type of infiltration that may occur between the body structure and the slide-out itself. It is composed of an inflatable seal which is used as a primary sealing device for both retracted and extended slide-out position and a wiper seal as a secondary sealing device which is used to wipe water out and to ensure sealing during slide-out movement.

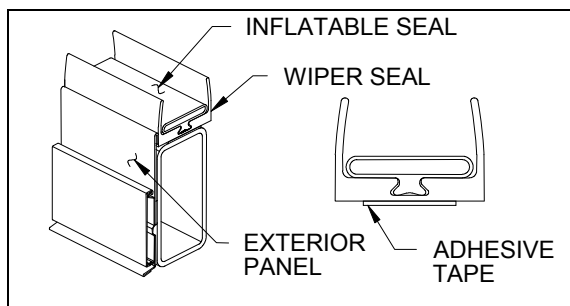


FIGURE 31 : SEAL ASSEMBLY

The seal deflation is done each time the slide-out moves. The deflating valve solenoid is activated before and during the slide-out movement. When the slide-out reaches its retracted or extended position, the deflating

solenoid is deactivated before activation of the inflating solenoid to inflate the seal.

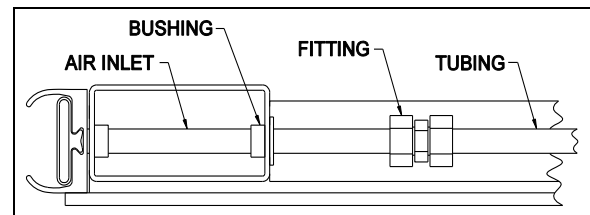


FIGURE 32: REAR SLIDE-OUT INFLATABLE SEAL AIR INLET

CAUTION

Make sure the inflatable seal is deflated when moving the slide-out manually during service maintenance. Deflate both inflatable seals completely by turning the relief shut-off valve handle clockwise (see FIGURE 30, item 2).

CAUTION

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

14.3.1 Maintenance

The inflatable seal pressure must be set to 10 psi maximum 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.

14.3.2 Seal assembly removal

⚠ WARNING ⚠

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

1. Retract the slide-out 2" inside the vehicle (paragraph 14.3.4).
2. Unplug the tubing from the inflatable seal air inlet (FIGURE 32). Keep the bushing.
3. Unstick and remove the wiper seal from the structure.
4. Scrape remaining tape from the structure and remove old sealant if applicable.

14.3.3 Seal assembly installation

NOTE

This procedure is to install the inflatable seal assembly on the structure.

⚠ CAUTION ⚠

Always apply 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 procedure PR00001 in Section 18: BODY for primer, cleaner, adhesive specifications & application.

NOTE

Refer to the product specification for drying time.

1. Retract the slide-out 2" inside the vehicle (paragraph 14.3.4).
2. Clean the area where the inflatable seal will be placed with anti-silicone. Make sure that the surface is perfectly smooth.
3. Rub the area a Scotch Brite (or equivalent product) (see PR00001paragraphe G).

4. Clean the area with anti-silicone once again.
5. Apply Sika 206 G+P on the area (see PR000001paragraphe D).
6. Insert inflatable seal air inlet tube through the hole on the frame vertical member.
7. Remove the inflatable seal adhesive tape protection in the lower corners area.
8. Press the lower corners on the frame and hold them in place for 90 to 120 seconds. Place the seal as close as possible from the exterior side of the frame.
9. Remove the inflatable seal adhesive tape protection on the rest of the lower frame area.
10. Press the seal on the frame and hold it in place for 90 to 120 seconds. Align the wiper seal drainage holes with the drainage holes on the frame. Place the seal as close as possible from the exterior side of the frame.
11. Remove the inflatable seal adhesive tape protection in the upper corners area and press the upper corners on the frame and hold them in place for 90 to 120 seconds. Place the seal as close as possible from the exterior side of the frame.
12. Install the rest of the straight upper area in the same way. Place the seal as close as possible from the exterior side of the frame.
13. Install the remaining straight inflatable seal sections on the frame. Place the seal as close as possible from the exterior side of the frame. Press for at least 15 seconds. Use a small roller to ensure a good adhesive contact on the structure.

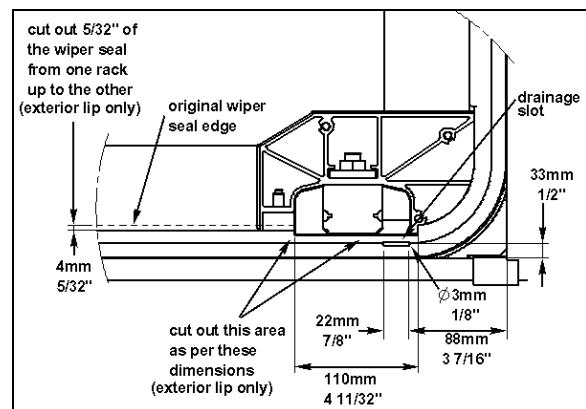


FIGURE 33: WIPER SEAL CUT-OUT

14. Cut out the exterior lip of the wiper seal as per FIGURE 33.

15. Replace the bushing and plug the pneumatic tubing on the inflatable seal air inlet (FIGURE 32).

14.3.4 Slide-out 2" inside retraction

1. For both sides of the slide-out, remove the 2 upper acetal plastic blocks shown on FIGURE 27 (refer to paragraph 13).
2. Extend the slide-out a few inches so the exterior extrusion assembly screws located on the top of the slide-out are accessible from outside (figure 7).
3. Using a knife, cut the sealant between the extrusion's support and the roof (figure 7).
4. Unscrew and remove the exterior extrusion and support.
5. Using the handheld control, retract the slide-out up to its normal "IN" position.
6. Manually deflate the seal completely by turning the relieving shut-off valve clockwise (FIGURE 30). Make sure the pressure indicator reading is "0 psi".
7. Set the ignition to the off position.
8. Using the manual override procedure (paragraph 18), move the slide-out 2" inside the vehicle, so the seal is accessible from outside (FIGURE 34).

⚠ CAUTION ⚠

Do not use the slide-out handheld control to move the slide-out 2" inside the vehicle, because the stroke limits are not recognized over the closed position. The slide-out would not stop and damage may occur.

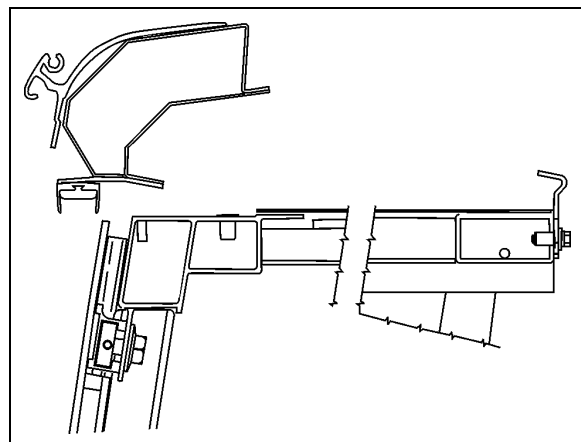


FIGURE 34: SLIDE-OUT 2" INSIDE – UPPER PART

9. Once completed, use the manual override procedure to extend the slide-out to 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.
10. Reinstall the acetal plastics blocks.
11. 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 10 psi.

15 SLIDE-OUT ELECTRICAL SYSTEM

⚠ WARNING ⚠

Never modify the slide-out electrical wiring without the Prevest Car approval. Any modifications may cause an unexpected slide-out action and could result in personal injuries.

Multiplexed slide-out electrical system is mainly composed of the current vehicle's Master ID module, CECM module and VEC module plus slide-out dedicated I/O-B modules.

Each slide-out has its own I/O-B module and two power relays. The I/O-B modules analyze the input signal conditions and activate outputs like the pneumatic valves, the retracting or extending programmed sequence, etc. The power relays are used to supply power coming from the I/O-B module to the electric motor and to change polarity to reverse motor rotation.

The I/O-B modules input signals are:

- Handheld control switch IN;
- Handheld control 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;

The I/O-B modules output signals are:

- Handheld control 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, first power output 15 amps;
- Electric motor, second power output 15 amps;

The CECM module output signals related to slide-outs are:

- Dashboard telltale light;
- Transmission inhibit;

⚠ WARNING ⚠

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

15.1 ELECTRICAL INTERCONNECTION WITH PREVOST VEHICLE

The slide-out power supply comes from the 24-volts and 12-volts circuit breakers (FIGURE 36) in the main power 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 signal is added on the dashboard telltale panel (figure 35) to indicate that an error condition or a missing operation condition is present on a slide-out. The slide-out telltale light also illuminates to indicate that at least one of the slide-outs is extended.

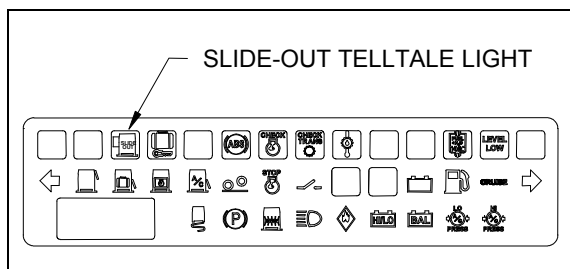


FIGURE 35 : DASHBOARD SLIDE-OUT TELLTALE LIGHT

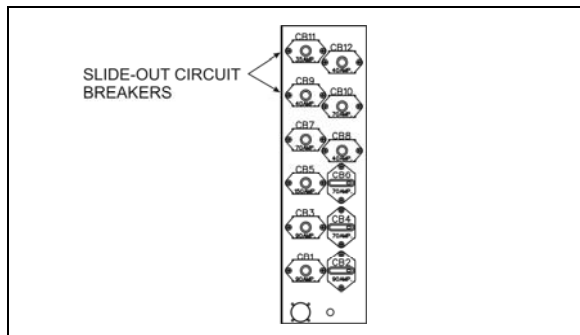


FIGURE 36: MAIN BREAKER IN MAIN POWER COMPARTMENT 26091

15.2 SLIDE-OUT BREAKERS

The 24-volts and 12-volts breakers are located in the main power compartment. Other electrical components are found on the slide-out control panel located in the first baggage compartment on the driver's side (figure 37).

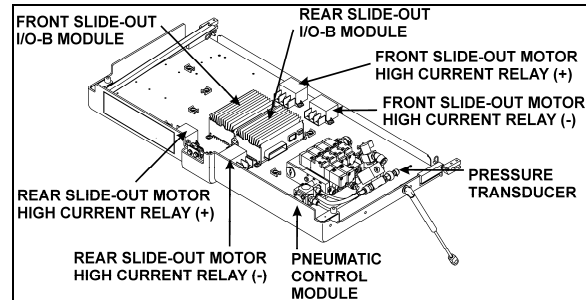


FIGURE 37 : SLIDE-OUT CONTROL PANEL

15.3 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 an intermediate voltage (ex. 12V, 4V, or 8V) this must be interpreted as if the input or the output is inactive.

⚠ CAUTION ⚠

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

15.4 MODULE REPLACEMENT

I/O-B multiplex modules can be replaced and reprogrammed as described in Section 6: Electrical of this manual.

15.5 SLIDE-OUT LIMIT SENSORS

Two Hall-effect sensors are used on each slide-out to define stroke end limit positions. The "in

limit" and "out limit" sensor detect two pairs of permanent magnets fixed on the slide-out underbody.

15.5.1 Maintenance and adjustment

The rear slide-out sensors are accessible from inside of the vehicle, under the bed structure while the front slide-out sensors can be reached from the 3rd baggage compartment access panel. To remove the sensors, unsnap them from the mounting bracket.

To adjust the "in limit" sensors:

Prior to adjust the "in limit" sensors, assure that the "in limit" stoppers are perfectly adjusted (see paragraph 1.2.2).

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 light emitting diode (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 (lower acetal plastic block). Put white paint on the "in limit" stopper before and check if the acetal plastic blocks are marked with paint.

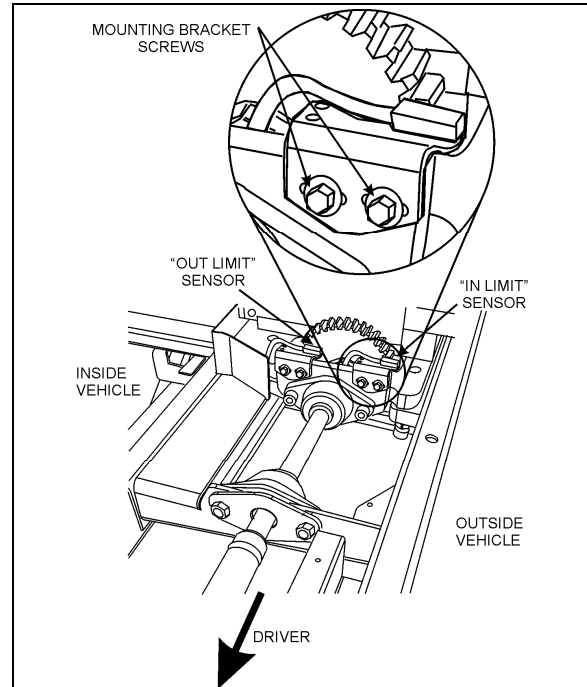


FIGURE 38: FRONT SLIDE-OUT SENSORS

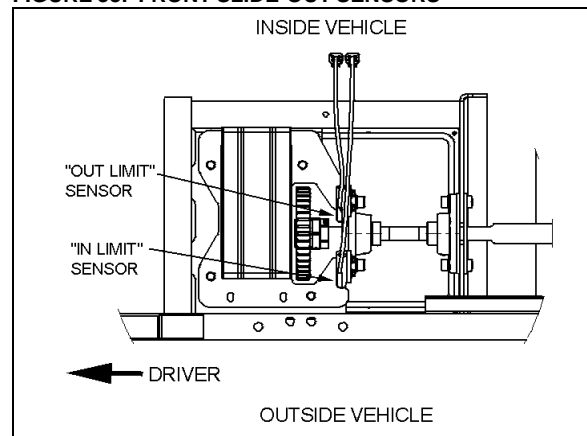


FIGURE 39: REAR SLIDE-OUT SENSORS

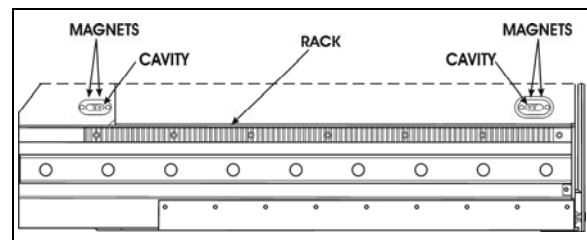


FIGURE 40 : MAGNETS ON SLIDE-OUT UNDERBODY
26097

To adjust the "out limit" sensors:

Prior to adjust the "out limit" sensors, assure that the inner stoppers are perfectly adjusted (see paragraph 1.1).

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 straitens up and that it is perpendicular with the vehicle body, stop the 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 light emitting diode (LED) turns on. When it does, tighten the mounting bracket screws.

NOTE

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

16 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.

16.1 FACE PANEL REMOVAL

Use the same procedure as described in section 18: BODY for side panel removal, and:

- Keep the slide-out retracted;
- Check where adhesive, sealant and double face adhesive tape are on the structure and the panel back side, in order to be able to stick the new panel in the same way;
- Check the tape width and thickness. Use tape with same width and thickness when installing new panels.

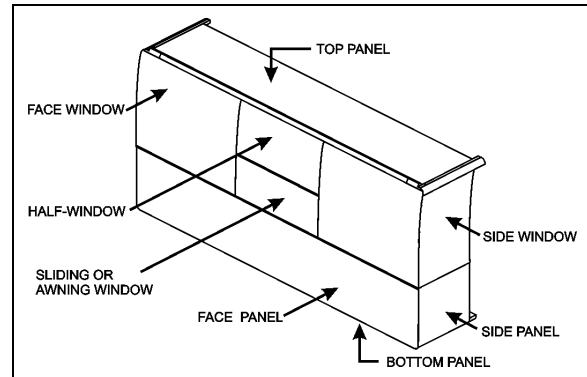


FIGURE 41 : SLIDE-OUT PANELS AND WINDOWS

16.2 FACE PANEL INSTALLATION

For surface cleaning, and preparation, panel installation and products needed, use the same procedure as the H3 or VIP “side panel installation” procedure described in section 18: BODY.

- Keep the slide-out retracted for panel alignment;
- Make sure to apply sealant between the face panels and the side panels, and also between face panel and bottom panel.

16.3 SIDE PANEL REMOVAL

Caution: Be careful not to damage the adjacent surfaces.

1. Remove the slide-out (according to the Slide-Out Removal Procedure. Ask to your Prevost service representative).
2. Drill through the rivets located at the bottom of the panel. Be careful not to let aluminum or stainless steel filings enter the corner extrusion. If necessary, remove the corner extrusion end cap to remove trapped filings.
3. Insert a flat screwdriver between the panel and the slide-out structure, in the top left and right corners of the panel, and unstick the panel from the structure.
4. Use C-clamp to peel the panel from the slide-out structure.
5. Check where adhesive, sealant and double face adhesive tape are on the structure and the panel back side, in order to be able to stick the new panel in the same way.

Section 26: SLIDE-OUT

6. Check the tape width and thickness. Use tape with same width and thickness when installing new panels.

Caution: Make sure the heat gun nozzle tip is at least 4" from surface.

7. Use a heat gun and putty knife to remove the dried off adhesive and tape residue from the structure.

Warning: Because of the adhesive toxicity, never use a buffer or other sanding method to remove it.

16.4 SIDE PANEL INSTALLATION

NOTE

The side panels are made of aluminum or stainless steel in option. Use rivet of same material as the panels.

For surface cleaning and preparation, panel installation and products needed, refer to the "side panel installation" procedure described in section 18: BODY.

1. Protect adjacent surfaces with appropriate material;
2. Refer to figure 42 for 1/4X1 (#5060038) and 3/16X1 (#506207) double face adhesive tape location on diagonal member of front slide-out only. Do not remove the tape blue protective layer;

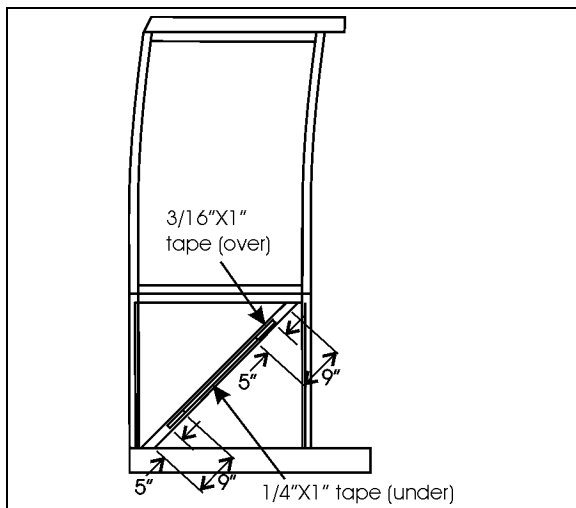


FIGURE 42 : SIDE PANEL INSTALLATION – DOUBLE FACE ADHESIVE TAPE APPLICATION ON THE SLIDE-OUT STRUCTURE (FRONT SLIDE-OUT ONLY)

NOTE

Do not remove the tape blue protective layer. The purpose of the tape is to maintain a certain gap and not to hold the panel in place.

3. Refer to figure 43 for 1/16x1/4 double face adhesive tape location on structure Do not remove the tape blue protective layer [7mm≈9/32"] [5mm≈6/32"];]
4. Inspect the Sika bead at the intersection of the corner vertical member and the flat bar as shown in FIGURE 44. if it is damaged, remove adhesive residue and apply a new 3mm diameter bead of Sika 221;
5. Inspect the Sika bead shown in FIGURE 45. If it is damaged, remove adhesive residue and apply a new 5mm diameter bead of Sika 221 or 252;
6. Clean panel with anti-silicone. Sand surface using a Scotchbrite. Clean sanded surface with anti-silicone;
7. Apply Sika 206 G+P on side panel as shown in figure 46;
8. Apply a 5mm diameter bead of Sika 221 or 252 on side panel as shown on FIGURE 47;

Apply Sika Tack+Booster (triangular bead: 9mm width X 6mm high [11/32"x1/4"]) as shown in Figure 48 and glue panel in place as shown in FIGURE 49. Do not remove the tape blue protective layer;

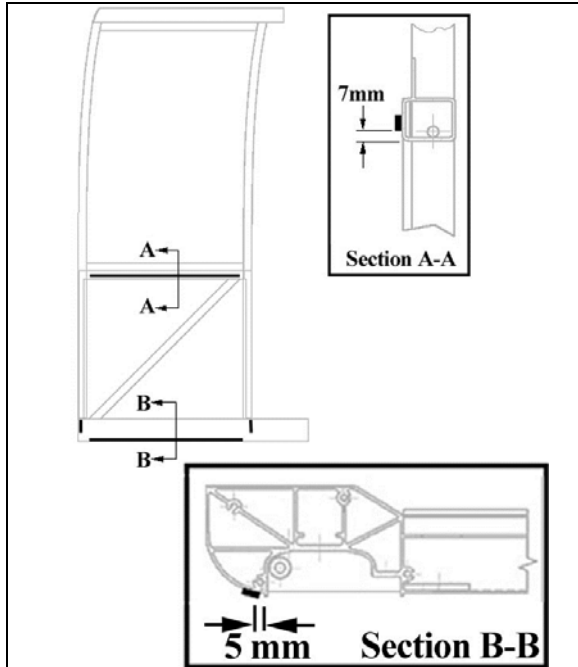


FIGURE 43 : SIDE PANEL INSTALLATION – DOUBLE FACE ADHESIVE TAPE APPLICATION ON THE SLIDE-OUT STRUCTURE

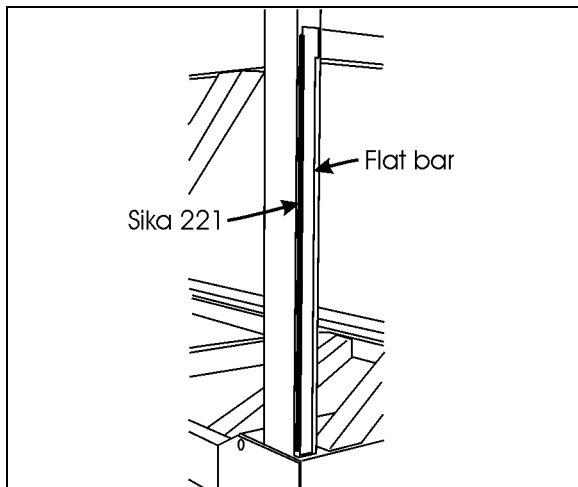


FIGURE 44 : SIDE PANEL INSTALLATION – SIKA 221 APPLICATION ON STRUCTURE

9. Exert pressure and let dry for at least 90 minutes;
10. Smooth down the joint and remove glue in excess;
11. Install rivets as per instruction sheet IS-06028 (ask to your Prevest service representative);

12. After drying, apply Sika 252 as a finishing joint. Refer to paragraph 16.12 for the finishing joint application procedure;

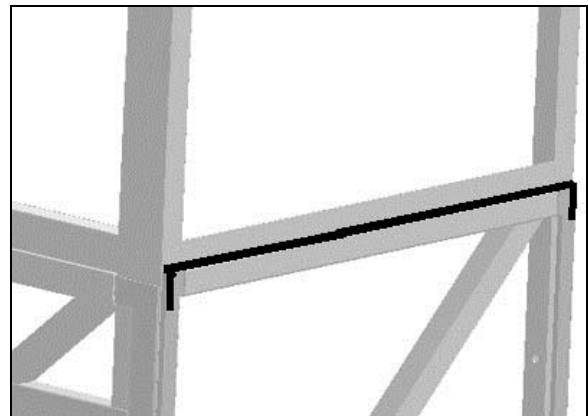


FIGURE 45 : SIDE PANEL INSTALLATION – SIKA 221 OR 252 APPLICATION ON STRUCTURE

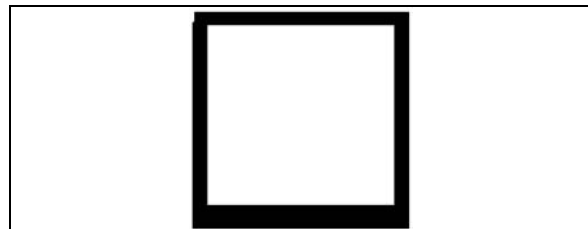


FIGURE 46 : SIDE PANEL INSTALLATION – SIKA 206 G+P APPLICATION

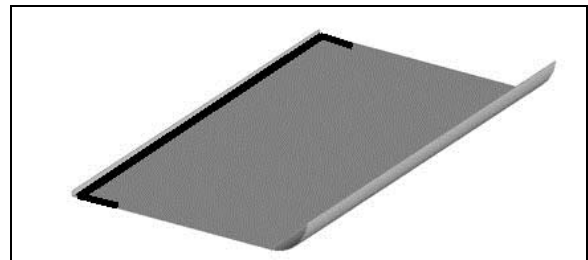


FIGURE 47 : SIDE PANEL INSTALLATION – SIKA 221 OR 252 APPLICATION ON SIDE PANEL

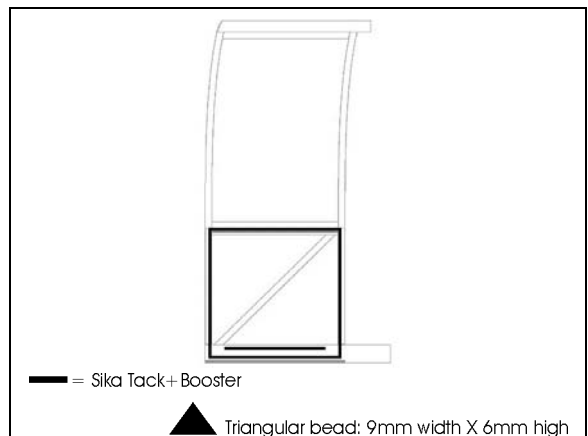


FIGURE 48 : SIDE PANEL INSTALLATION – SIKA TACK+BOOSTER APPLICATION

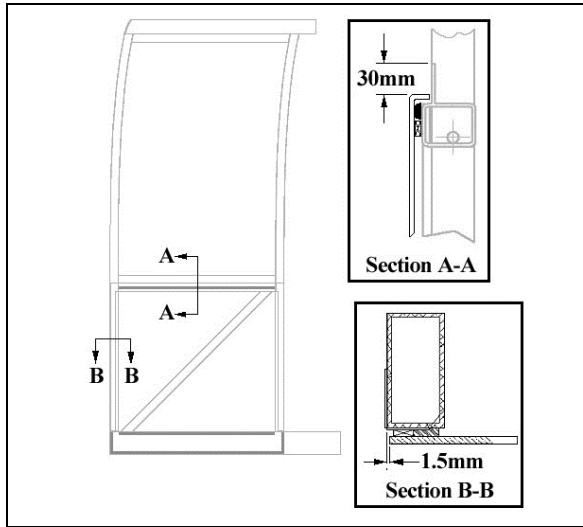


FIGURE 49 : SIDE PANEL INSTALLATION

16.5 TOP AND BOTTOM PANEL REMOVAL

NOTE

The top and bottom panels are made of aluminum sheets.

1. Remove the slide-out (as per the Slide-Out Removal/Installation Procedure. Ask to your Prevost service representative).
2. Insert a flat screwdriver between the panel and the slide-out structure and unstick the panel from the structure.
3. Use C-clamp to peel the panel from the slide-out structure.
4. Check where adhesive, sealant and double face adhesive tape are on the structure and the panel back side, in order to be able to stick the new panel in the same way.
5. Check the tape width and thickness. Use tape with same width and thickness when installing new panels.
6. Use a heat gun and putty knife to remove the dried off adhesive and tape residue from the structure.

Warning: *Because of the adhesive toxicity, never use a buffer or other sanding method to remove it.*

16.6 TOP AND BOTTOM PANEL INSTALLATION

NOTE

The top and bottom panels are made of aluminum sheets and need aluminum rivet.

For surface cleaning, preparation, panel installation and products needed, refer to the side panel installation procedure described in section 18: BODY.

1. Protect adjacent surfaces with appropriate material.
2. Refer to FIGURE 50 for 1/16x1/4 double face adhesive tape location on structure [5mm≈6/32”];

NOTE

Do not remove the tape blue protective layer. The purpose of the tape is to maintain a certain gap and not to hold the panel in place.

3. Clean panel with anti-silicone. Sand surface using a Scotchbrite. Clean sanded surface with anti-silicone;
4. Apply Sika 206 G+P on panel as shown in FIGURE 51;
5. Apply Sika Tack+Booster (triangular bead: 9mm width X 6mm high) has shown in FIGURE 52 and glue panel in place as shown in figure 53 & figure 54 ;
6. Exert pressure and let dry for at least 90 minutes;
7. Smooth down the joint and remove glue in excess;
8. After drying, apply Sika 252 as a finishing joint. Refer to paragraph 16.12 for the finishing joint application procedure.

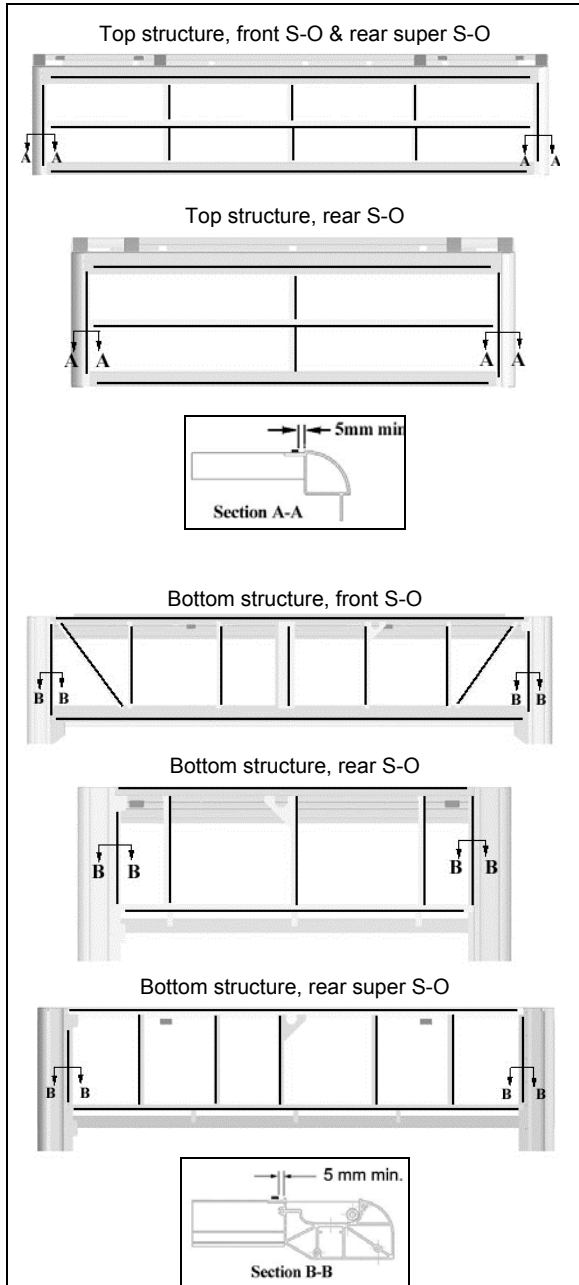


FIGURE 50 : TOP AND BOTTOM PANEL INSTALLATION - DOUBLE FACE ADHESIVE TAPE APPLICATION

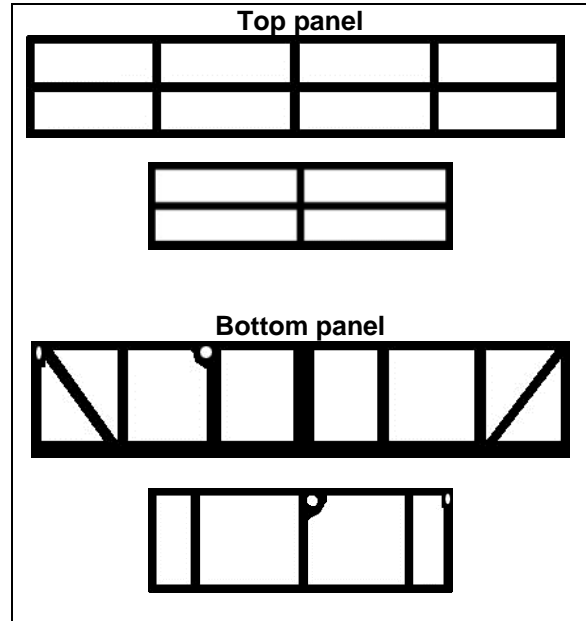


FIGURE 51 TOP AND BOTTOM PANEL INSTALLATION - SIKA 206 G+P APPLICATION

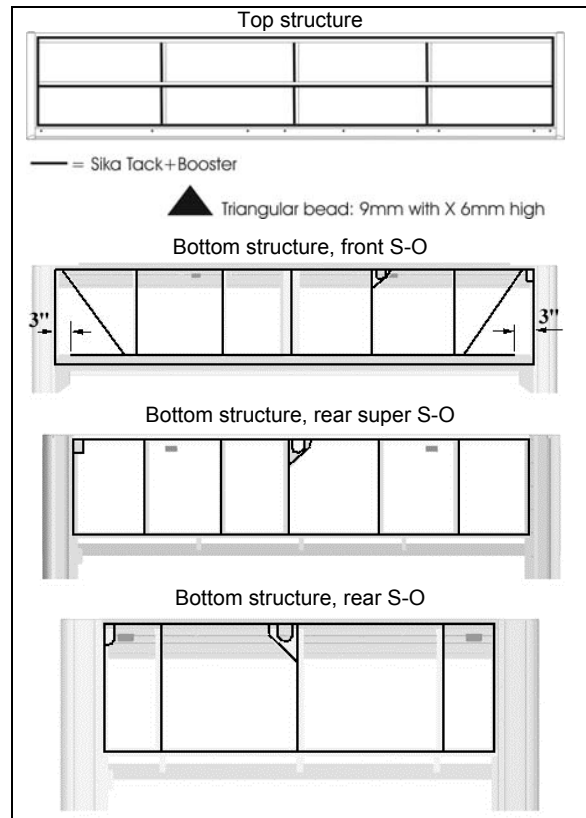


FIGURE 52 : TOP AND BOTTOM PANEL INSTALLATION - SIKA TACK+BOOSTER APPLICATION

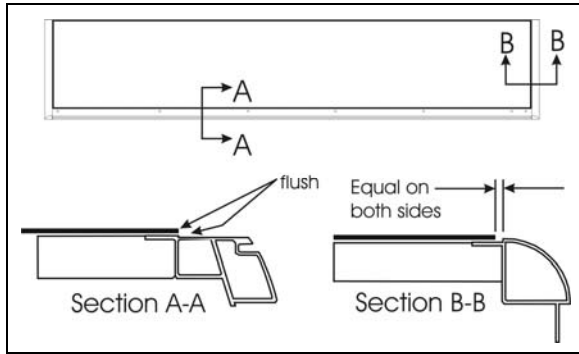


FIGURE 53 : TOP PANEL INSTALLATION

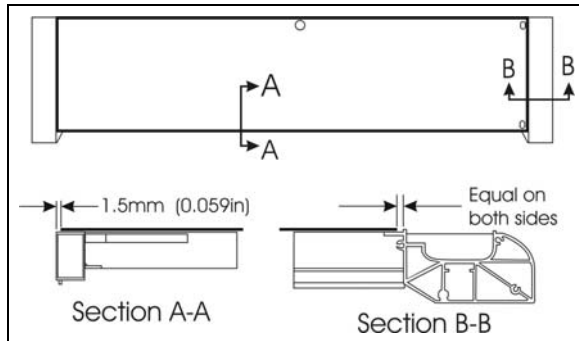


FIGURE 54 : BOTTOM PANEL INSTALLATION

NOTE

The removal and installation procedures are based on standard service methods described in section 18: BODY. Refer to these procedures for tools and adhesives specifications.

Warning: Always wear safety equipment when working with glass and chemical adhesives.

16.7 SIDE WINDOW & HALF-WINDOW REMOVAL

1. Remove the slide-out (for side window removal only).
2. If needed, remove the exterior extrusion as described in paragraph 1.3.

Caution: Be careful not to damage the adjacent surfaces.

3. With a knife or a wire, cut the sealant and the adhesive between the windows and the structure where applicable. Make sure not to damage the rubber seal between the windows.
4. With a helper, remove the window from the slide-out.

16.8 HALF-WINDOW & SIDE WINDOW INSTALLATION

Refer to procedures described in section 18: BODY of the maintenance manual for details.

1. Clean and prepare window and slide-out structure surface with appropriate cleaner, abrasives and primers [48mm≈1 7/8"];
2. If necessary, install rubber seals as per FIGURE 55. Press the seal against the structure with a roller;
3. Apply 1/4" X 1/2" double face self adhesive tape on the slide-out structure for side fixed window (see FIGURE 56) [10mm≈3/8"] [15mm≈19/32"];

NOTE

Do not remove the tape blue protective layer. The purpose of the tape is to maintain a certain gap and not to hold the panel in place.

4. Clean window with appropriate window cleaner;
5. Apply Sika Aktivator on the window pane as per FIGURE 57 (half-window) or FIGURE 58 (side window);
6. **HALF-WINDOW ONLY:** clean the sliding or awning window frame with anti-silicone and then, apply Sika Aktivator as shown on FIGURE 59;
7. **HALF-WINDOW ONLY:** place masking tape on awning or sliding window frame to protect it from smudge (see FIGURE 60);
8. **HALF-WINDOW ONLY:** On awning window, place 3 shims #790392 on frame, one at the center and the 2 other at each edge. On sliding window, place 3 shims #790392 on frame, one at the center and the 2 other at each edge in order to have a gap of 10mm between both windows (see FIGURE 60);
9. **HALF-WINDOW ONLY:** insert anchoring blocks in window extrusion (see FIGURE 64);
10. Apply Sika Tack+Booster (triangular bead: 20mm width X 15mm high) as per FIGURE 61 (side window) or FIGURE 62 (half-window) [20mm≈13/16"] [15mm≈19/32"];
11. Install side window on the slide-out structure as per FIGURE 63;
12. Install half-window centered with the awning or sliding window;

13. Press the jigs on the windows and wait for the adhesive to dry (90 minutes minimum).
14. Smooth down the joint and remove glue in excess. Clean excess adhesive with Sika 208.
15. Refer to paragraph 16.12 for the finishing joint application procedure.

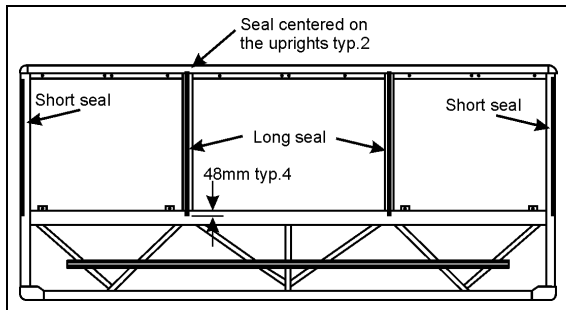


FIGURE 55 : FACE WINDOW - RUBBER SEAL INSTALLATION

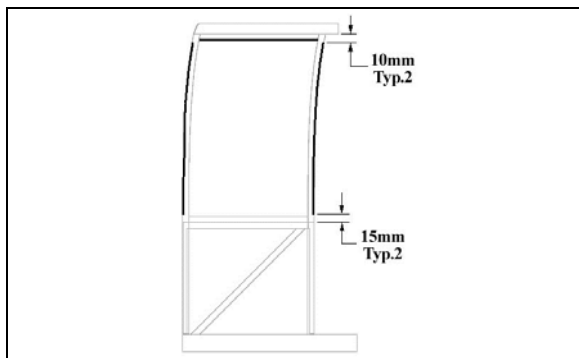


FIGURE 56 : SIDE WINDOW – ¼ X ½ DOUBLE FACE ADHESIVE TAPE INSTALLATION

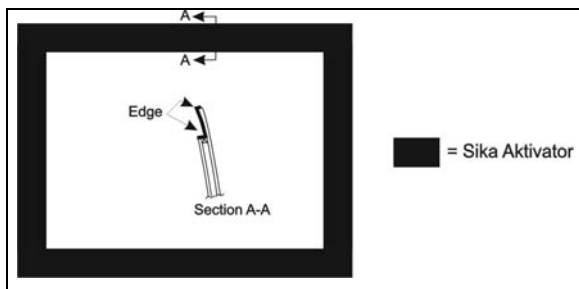


FIGURE 57 : HALF-WINDOW – SIKA AKTIVATOR

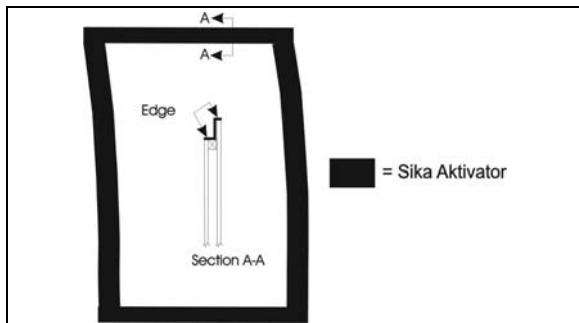


FIGURE 58 : SIDE WINDOW – SIKA AKTIVATOR

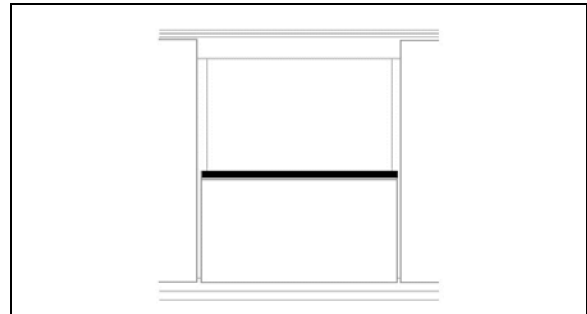


FIGURE 59 : HALF-WINDOW INSTALLATION – SIKA AKTIVATOR

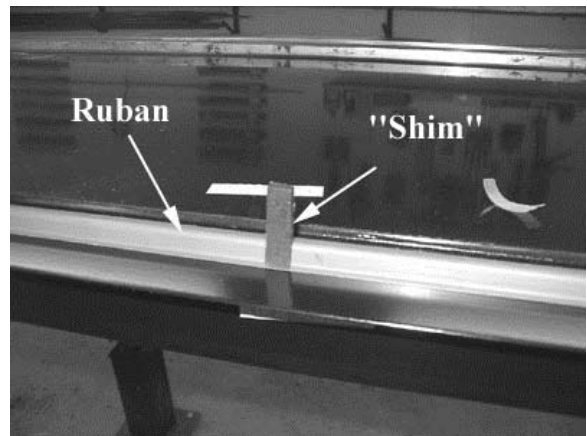


FIGURE 60 : HALF-WINDOW INSTALLATION

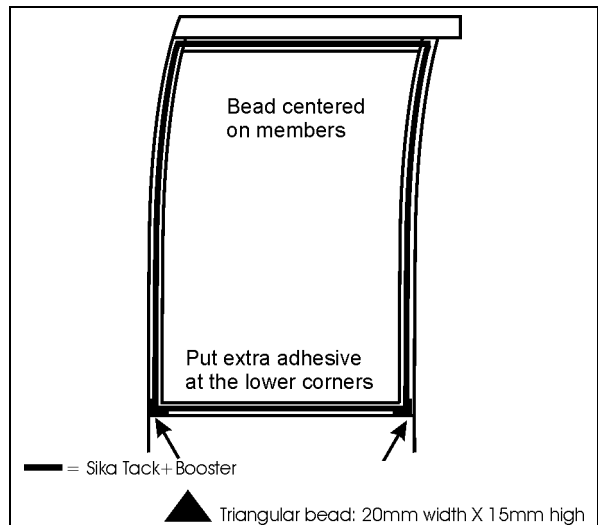


FIGURE 61 : SIDE WINDOW – SIKA TACK + BOOSTER

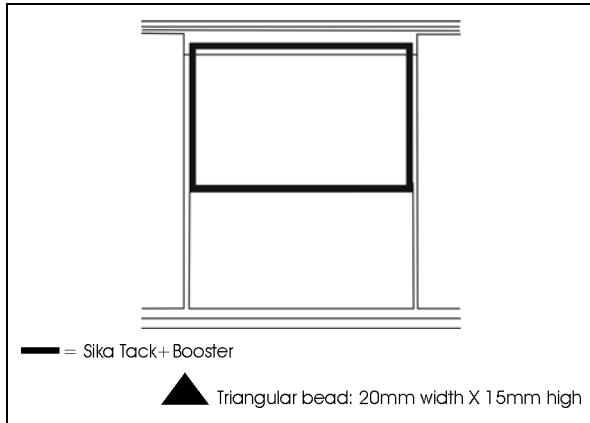


FIGURE 62 : HALF-WINDOW INSTALLATION – SIKA TACK+BOOSTER

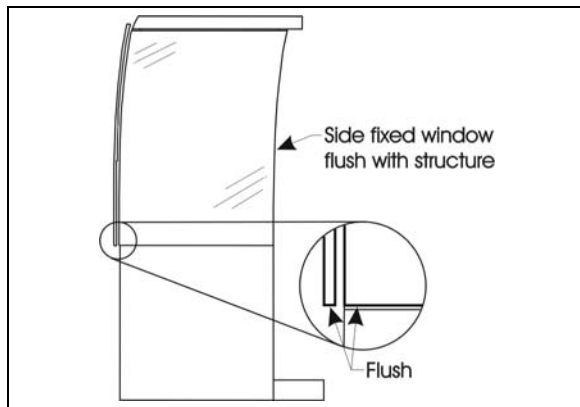


FIGURE 63 : SIDE WINDOW

16.9 FACE WINDOW INSTALLATION

Refer to procedures described in section 18: BODY of the maintenance manual for details.

1. If necessary, install the rubber seals as per FIGURE 55. Press the seal against the structure with a roller;
2. Insert anchoring blocks in window extrusion (see FIGURE 64) and install window with the lower edge flush with the sliding or awning window (see FIGURE 65);
3. Leave a gap between the face window and the sliding/awning window according to the slide-out overall length (see FIGURE 65);

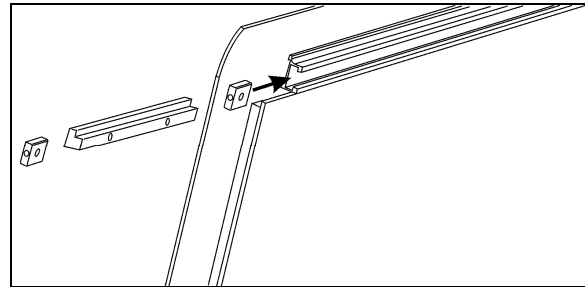


FIGURE 64 : FACE WINDOW INSTALLATION - ANCHORING BLOCKS

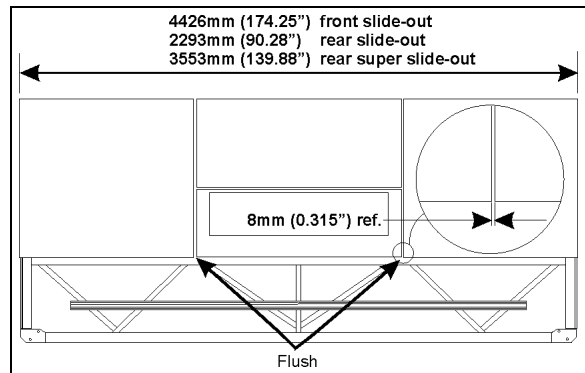


FIGURE 65 : FACE WINDOW INSTALLATION

16.10 AWNING WINDOW INSTALLATION

1. Clean and prepare window and slide-out structure surface with appropriate cleaner, abrasives and primers;
2. Glue 6 rubber bumpers (#790602) on the awning window frame as per FIGURE 66;

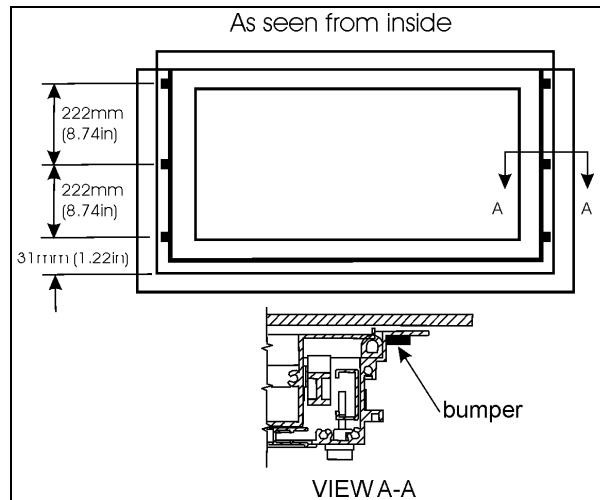


FIGURE 66: SIDE BUMPERS

3. Apply Sika 255 (or 252) at the upper and lower frame corner as per FIGURE 67.

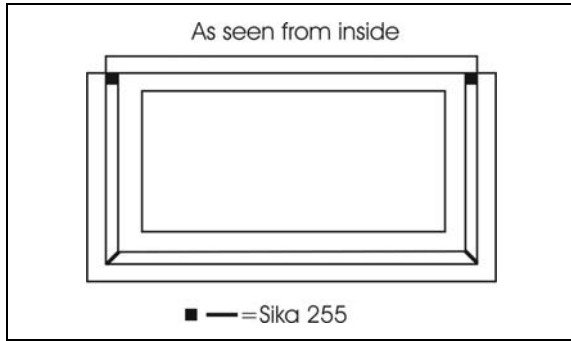


FIGURE 67: SIKa 255 APPLICATION

- Place masking tape on the inside of the window pane as per FIGURE 68 to protect it from smudge;

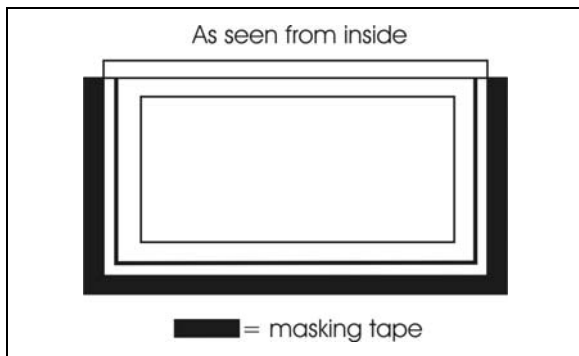


FIGURE 68: MASKING TAPE APPLICATION

- Previously clean surface with anti-silicone and then apply Sika Aktivator as per FIGURE 69;

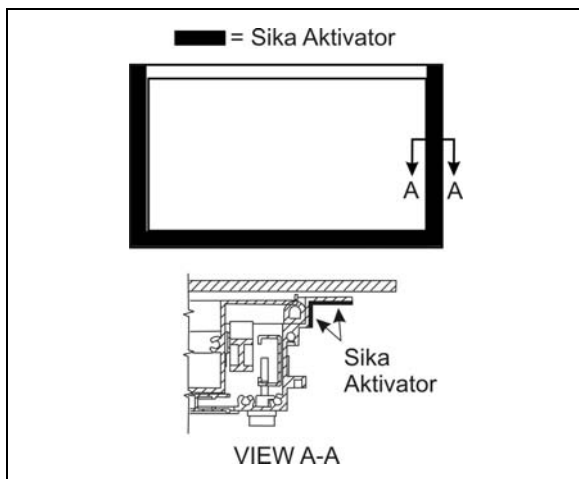


FIGURE 69 : AWNING WINDOW – SIKa AKTIVATOR

- Glue on the structure horizontal member, 3 rubber bumpers (#790597) (see FIGURE 70) [50mm≈2”].

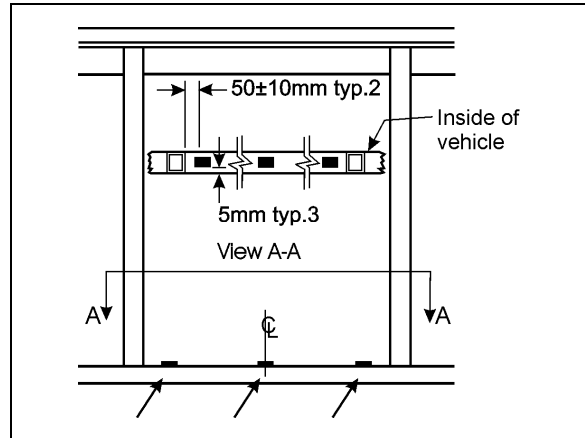


FIGURE 70: AWNING WINDOW - RUBBER BUMPER INSTALLATION

- Apply Sika 252 as per FIGURE 71 (triangular bead: 10mm width X 10mm high) [10mm≈3/8”];

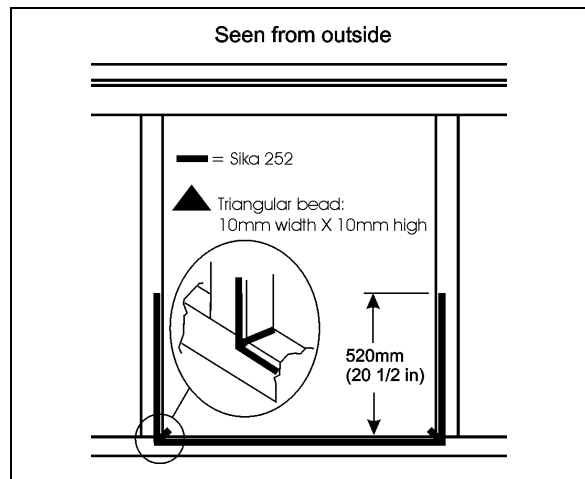


FIGURE 71: AWNING WINDOW – SIKa 252 APPLICATION

- Install the awning window centered in the opening.
- While a helper is pressing on the window from outside, install the awning window clamping frame and tighten screws according to the sequence shown in FIGURE 72;

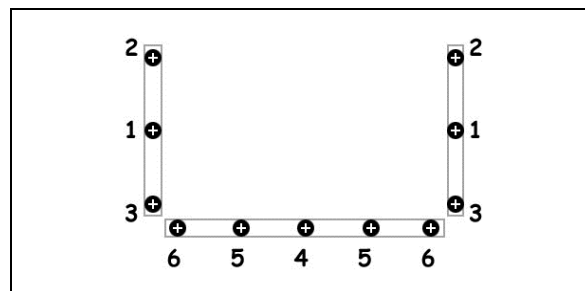


FIGURE 72 : CORRECT TIGHTENING SEQUENCE

10. Open the awning window manually and smooth down the joint (FIGURE 73) and remove glue in excess with Sika 208;

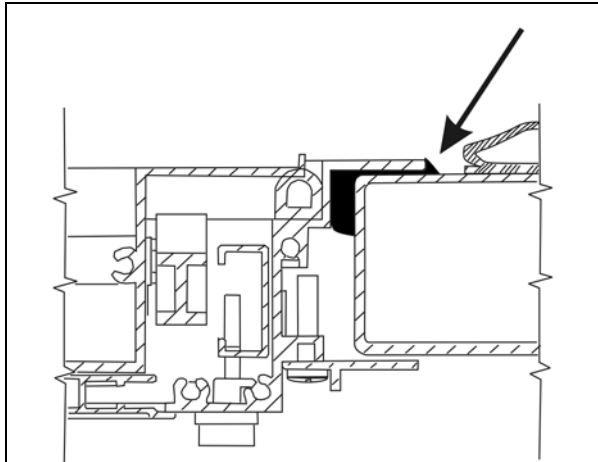


FIGURE 73 : SMOOTH DOWN THE JOINT

11. Using Sika 252 or 255, seal the upper corner of the awning window, both side (FIGURE 74);
12. Smooth down the joint from inside the vehicle;
13. Using Sika 252 or 255, seal the chink between the structure vertical member and the awning window, both side (FIGURE 75);

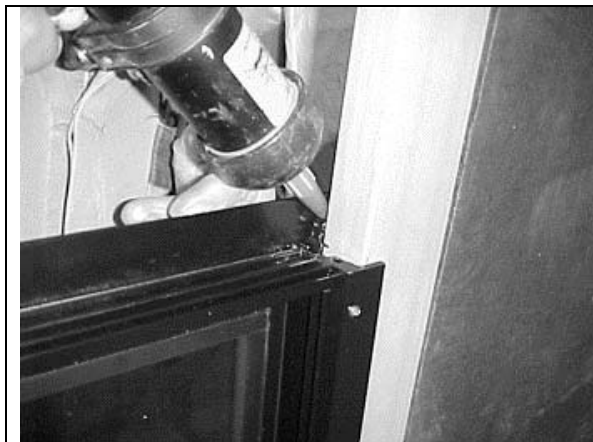


FIGURE 74 : AWNING WINDOW – SEAL THE UPPER CORNERS

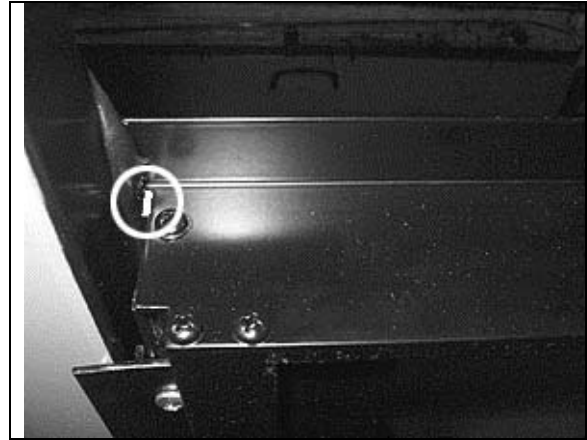


FIGURE 75 : AWNING WINDOW – SEAL THE CHINK

16.11 SLIDING WINDOW INSTALLATION

1. Clean and prepare window and slide-out structure surface with appropriate cleaner, abrasives and primers. Clean surfaces with anti-silicone;
2. Clean sliding window frame with anti-silicone and then apply Sika Aktivator as per FIGURE 76;
3. Check for presence of 1 rubber bushing at each interior corner (see FIGURE 77) and 2 other bushings under the sliding window;
4. Apply Sika 252 as per FIGURE 78 (triangular bead: 20mm width X 10mm high [13/16" X 3/8"]).
5. Install the sliding window centered in the opening;
6. While a helper is pressing on the window from outside, install the sliding window clamping frame and tighten screws according to the sequence shown in FIGURE 79;
7. Using Sika 252 or 255, seal the inside upper corner of the sliding window, both side (FIGURE 80);
8. Remove glue in excess and clean with Sika 208.

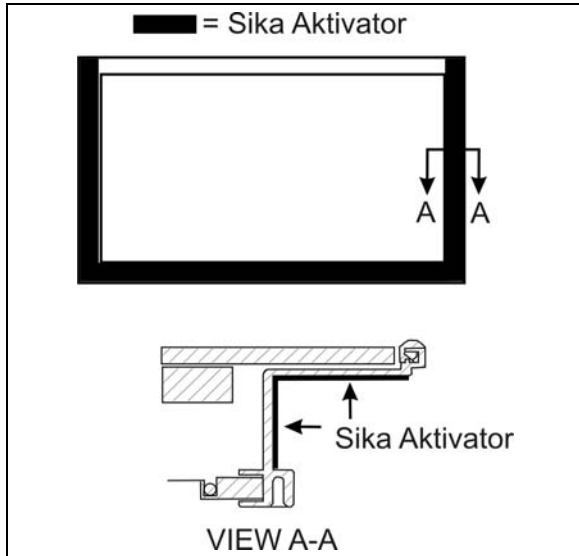


FIGURE 76 : SLIDING WINDOW - SIKA AKTIVATOR

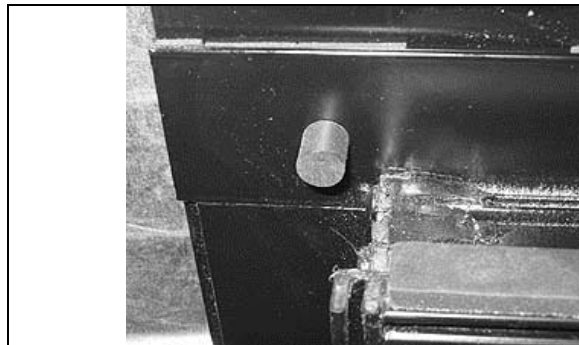


FIGURE 77 : SLIDING WINDOW - RUBBER BUSHING

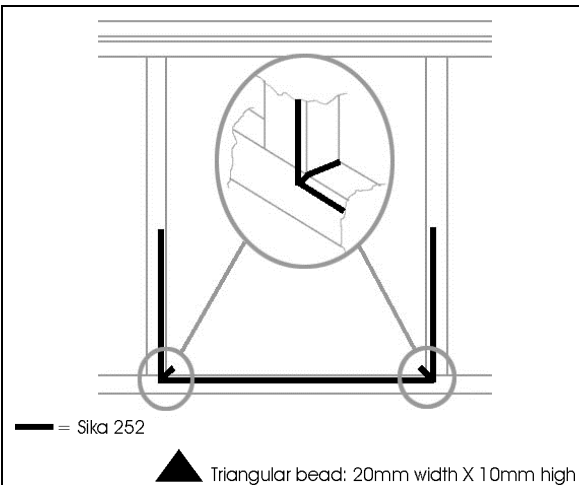


FIGURE 78 : SLIDING WINDOW - SIKA 252 APPLICATION

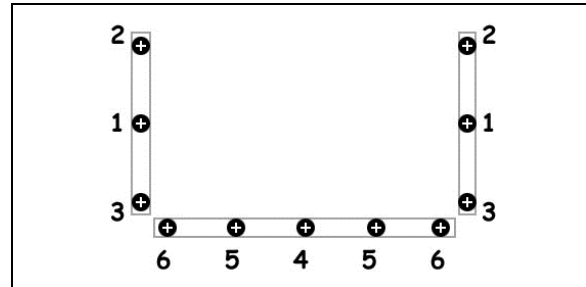


FIGURE 79 : CORRECT TIGHTENING SEQUENCE

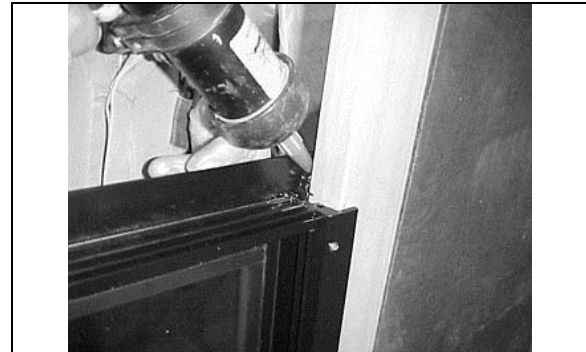


FIGURE 80 : SLIDING WINDOW – SEAL THE UPPER CORNERS

16.12 FINISHING JOINT

For surface cleaning and preparation, tools, cleaner, adhesives and other product needed, refer to the “side panel installation” procedure described in section 18: BODY.

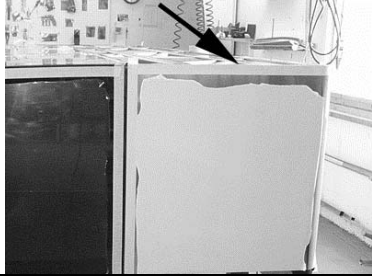
1. Place masking tape to protect surfaces from smudge.
2. Apply Sika Aktivator and then apply Sika 252 as per the following pictures.
3. Remove Sika 252 in excess. Using soapy water, smooth down the joint with your finger (wear vinyl gloves).

Section 26: SLIDE-OUT

Apply Sika Aktivator and then apply Sika 252 (black) between:

- 1- face panel & vertical structural member at the corner;
- 2- side panel & vertical structural member at the corner;

Note: as seen on the picture, protect the adjacent surface with masking tape.



Apply Sika Aktivator and then apply Sika 252 (black) between:

- 1- top of face window & upper horizontal structural member
- 2- top of half-window & upper horizontal structural member

Note: as seen on the picture, protect the adjacent surface with masking tape



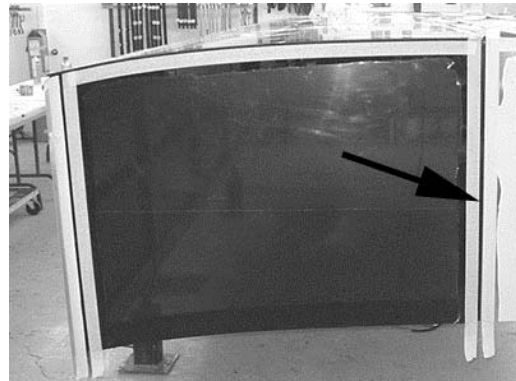
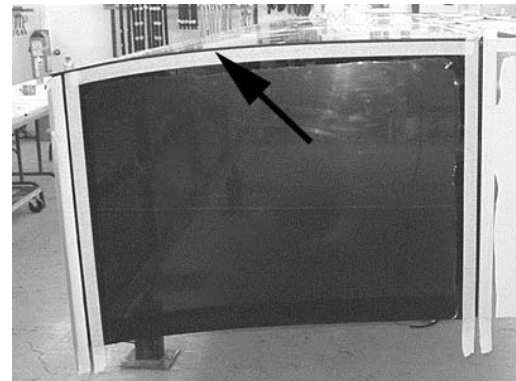
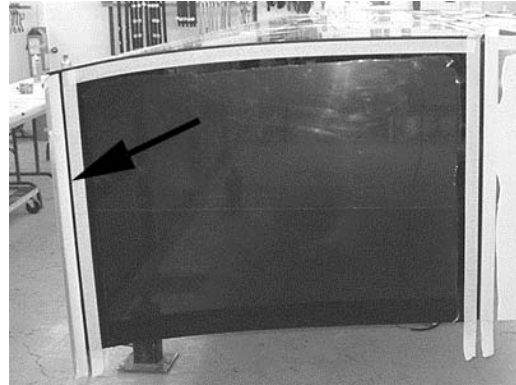
Apply Sika Aktivator and then apply Sika 252 between edge of bottom panel and structural member

Bead must overlap both surfaces about 2mm



Apply Sika Aktivator and then apply Sika 252 between side window and structural member

Bead must overlap both surfaces about 2mm

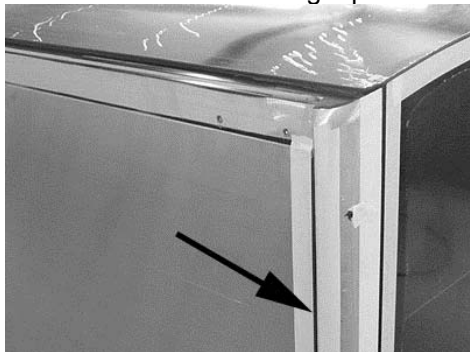


Apply Sika Aktivator and then apply Sika 252 between R.H. side edge of top panel and structural member

Apply Sika Aktivator and then apply Sika 252 between L.H. side edge of top panel and structural member

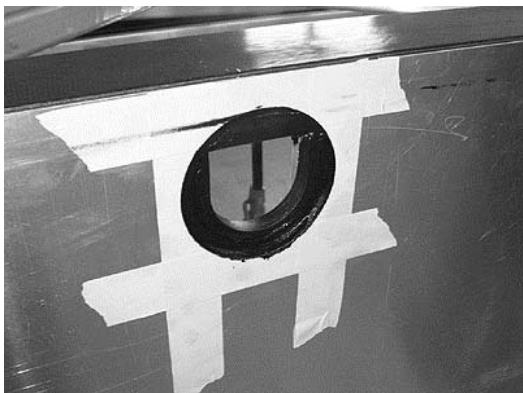
Bead must overlap both surfaces about 2mm

Note: as seen on the picture, protect the adjacent surface with masking tape



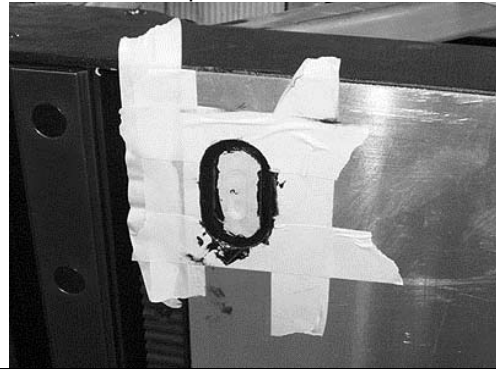
Apply Sika Aktivator and then apply Sika 252 around the security pin cavity

Bead must overlap both surfaces about 2mm



Apply Sika Aktivator and then apply Sika252 between the bottom panel and the magnets

Bead must overlap both surfaces about 2mm



17 WELDING PRECAUTION



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.

18 SLIDE-OUT MANUAL OVERRIDE PROCEDURES

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 3/8" hexagonal socket.

However, it is very important to follow all the instructions very carefully to assure that the inflatable seal or the retraction mechanisms are not damaged.

18.1 PRELIMINARY CONDITIONS FOR MANUAL OVERRIDE PROCEDURE

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

- Make sure that none of the breakers are tripped (slide-out circuit breakers CB9 & CB11 are located inside the main power compartment on the breaker panel).

Section 26: SLIDE-OUT

- Make sure the parking brake is applied and that transmission is in the "NEUTRAL" 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.

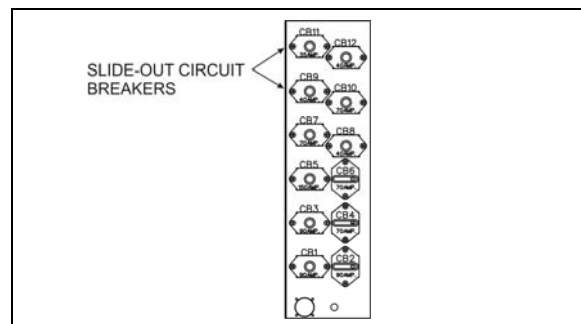


FIGURE 81 : SLIDE-OUT CIRCUIT BREAKERS CB9 & CB11 IN MAIN POWER COMPARTMENT

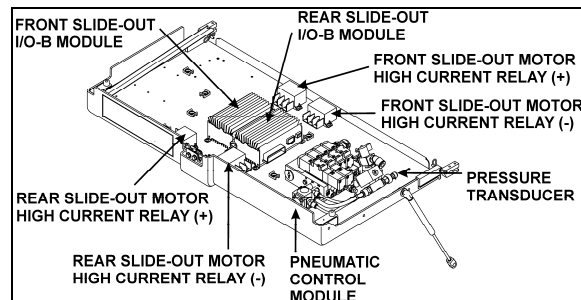


FIGURE 82 : SLIDE-OUT CONTROL PANEL IN FIRST BAGGAGE COMPARTMENT 26107

18.1.1 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 inflatable seal by using the relieving shut-off valve located on the slide-out control panel. 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. Also, check that the security pin is retracted so it does not stop slide-out movement.

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 handheld control.

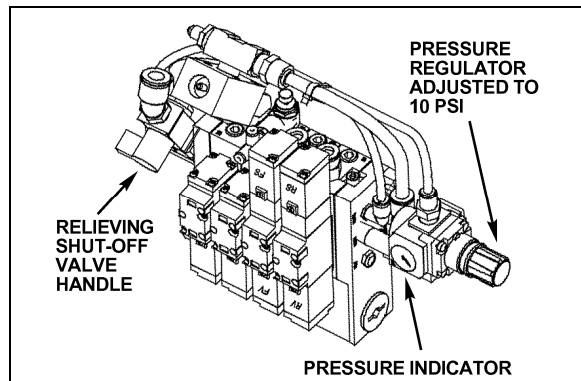


FIGURE 83 : INFLATABLE SEAL RELIEVING SHUT-OFF VALVE 26098

3. To move the slide-out, use a cordless power drill with a 3/8" hexagonal socket on the shaft extension of the slide-out motor.
4. Rotate the slide-out motor shaft extension with the cordless power drill until the slide-out comes to its closed position.
5. Once the slide-out room is lined up to its closed position, remove the tool from the motor.

NOTE

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

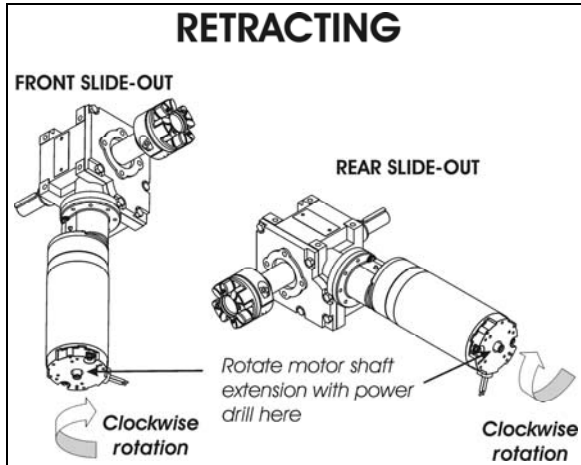


FIGURE 84 : SLIDE-OUT MOTOR ROTATION 26038

CAUTION
 Slow down on 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 cordless power drill rotating movement. Not doing so could overload the drive mechanism and cause damage to the reduction gearbox.

- 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 10 psi.

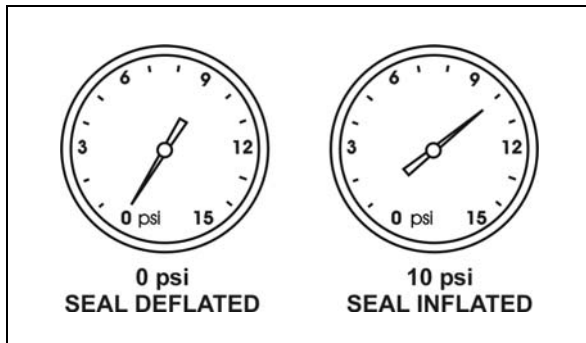


FIGURE 85 : INFLATABLE SEAL PRESSURE GAGE 26108

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.

18.1.2 Manual extending procedure – Front and rear slide-out

- Apply parking brake to disengage the security pin from the receptacle.
- Turn the ignition switch to the "OFF" position, and remove the ignition key for more safety.
- Deflate the inflatable seal by using the relieving shut-off valve located in the slide-out control panel. 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. Also, check that the security pin is disengaged from the receptacle so it does not stop slide-out movement.

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 with the handheld control.

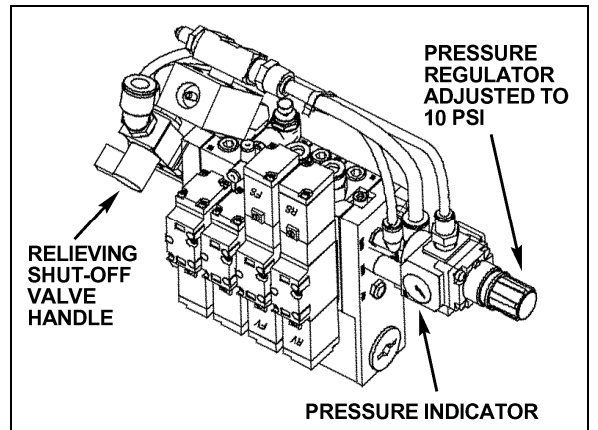


FIGURE 86 : INFLATABLE SEAL RELIEVING SHUT-OFF VALVE 26098

- To move the slide-out, use a cordless power drill with a 3/8" hexagonal socket on the shaft extension of the slide-out motor.
- Rotate the slide-out motor shaft extension with the cordless power drill until the slide-out comes to its opened position.

Section 26: SLIDE-OUT

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

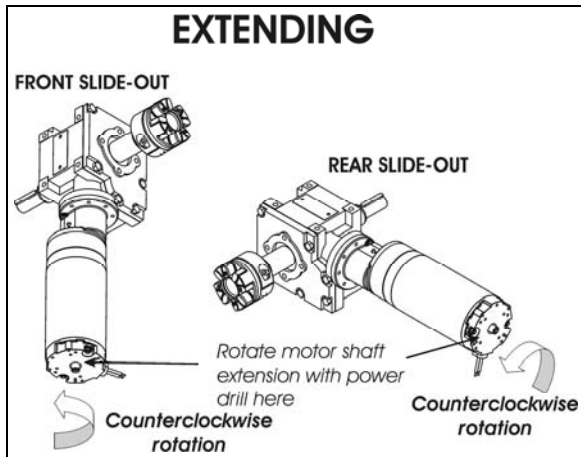


FIGURE 87 : SLIDE-OUT MOTOR ROTATION 26037

NOTE

The **front slide-out motor** is located inside the 2nd 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 cordless power drill rotating movement. Not doing so could overload the drive mechanism and cause damage to the reduction gearbox.

- 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 10 psi.

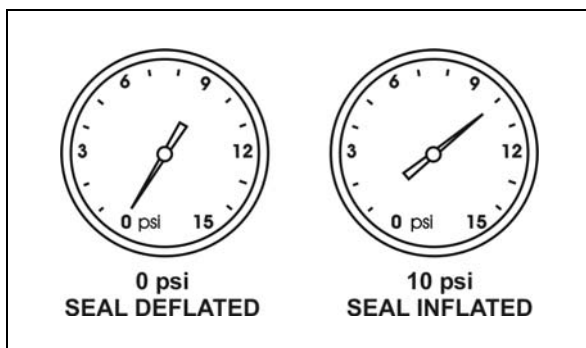


FIGURE 88 : INFLATABLE SEAL PRESSURE GAGE 26108

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.

19 SLIDE-OUT MAXIMUM LOAD

Front slide-out:

Maximum load with vehicle at stand still (retracted or extended)1500 lb
 Maximum load with vehicle moving or slide-out moving1200 lb¹

Rear slide-out:

Maximum load with vehicle at stand still (retracted or extended)1500 lb
 Maximum load with vehicle moving or slide-out moving1000 lb¹

NOTE

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

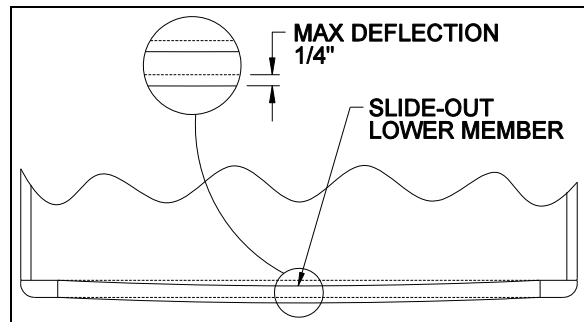
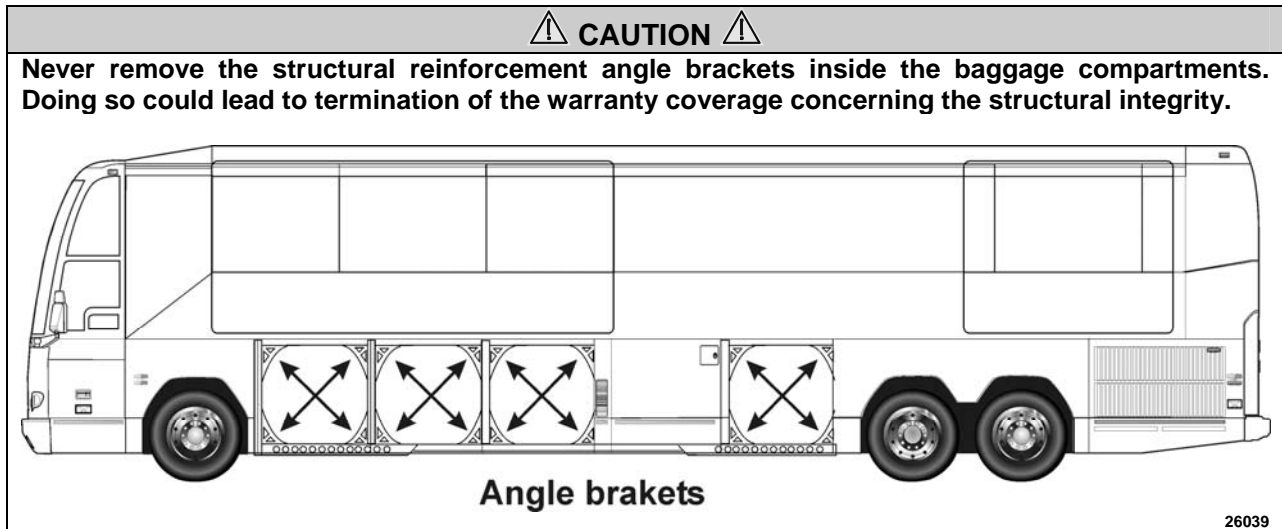


FIGURE 89 : FRONT SLIDE-OUT DEFLECTION

¹ With load distributed in the slide-out, to prevent a deflection of the inside lower member greater than 1/4" that could damage the seal.



20 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 upper inner stoppers.
3. Check if the vehicle upper member is parallel with the front slide-out structure. If not, an adjustment of the roof reinforcing rod may be required. This may be affected by the loading on the roof. See section 3 and contact your Prevest service representative.
4. Make sure the front slide-out lower member deflection is within 1/4". If not, redistribute the slide-out load.
5. Check the whole slide-out mechanism proper functioning. 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 10 psi.

21 TROUBLESHOOTING

21.1 ERROR CONDITION OR MISSING OPERATION CONDITION

When an error condition or a missing operation condition is present on a slide-out, the green indicator light on its respective handheld control starts blinking upon releasing of the IN/OUT rocker switch. 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. So, to get a fault diagnostic, use the MCD right after operating the slide-out without cycling the ignition switch.

NOTE

It is of the utmost importance to have a MCD (message center display) in working condition because it is the most important tool to achieve troubleshooting on a multiplex vehicle.

Fault diagnostic

To get more specific information about the error condition or the missing operation condition, request a diagnostic from the slide-out CECM using the dashboard message center display (MCD). Check if there are active errors in the slide-out electrical system. With the SYSTEM DIAGNOSTIC menu, highlight FAULT DIAGNOSTIC and then highlight ELECTRICAL SYSTEM to request a diagnostic of the electrical system from the CECM. Press the enter key. If applicable, the MCD 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 corrected, the MCD still shows the fault as being active. You have to leave the FAULT DIAGNOSTIC menu, wait approximately 20 to 30 seconds and then return to FAULT DIAGNOSTIC to request a new diagnostic of the ELECTRICAL SYSTEM from the CECM. The MCD should display the fault as being inactive.

21.2 TROUBLESHOOTING – OPERATING CONDITIONS & CONTROL

PROBLEM	CAUSE	CORRECTIVE ACTION
The slide-out functions normally but the handheld control green indicator light blinks	<p>Something is defective and may eventually create an issue if not repaired. The problem may be:</p> <ul style="list-style-type: none"> A. Faulty limit sensor causing the slide-out to stop in overcurrent; B. CAN network problem causing the transmission inhibit safety to be non-operational; C. Vacuum pressure transducer disconnected or damaged (vacuum is applied for a fixed time of 7 seconds); D. Seal inflating valve solenoid open circuit (the seal is not re-inflated and water can penetrate in the vehicle); E. Security pin valve solenoid open circuit (the security pin is not extended while vehicle is riding). 	Request a diagnostic from the electrical system using the MCD SYSTEM DIAGNOSTIC menu and refer to the Fault Message list in paragraph 21.4.

PROBLEM	CAUSE	CORRECTIVE ACTION
The slide-out does not extend	<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 inflatable 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>
The slide-out does not retract	<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 inflatable 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>
When extending, the slide-out stops after having extended by 1 inch	<p>A. The security pin valve solenoid circuit is shorted to (+) 24-volt and the pin remains engaged;</p>	<p>A. Disconnect air supply from the safety pin cylinder;</p>
Transmission DRIVE range or REVERSE cannot be selected (the slide-out telltale light is illuminating).	<p>A. Slide-out not in full "in" position;</p> <p>B. Faulty "in limit" sensor. The slide-out is retracted but the controller doesn't see it as retracted.</p>	<p>A. Retract slide-out.</p> <p>B. Confirm that all slide-out 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.</p>

21.3 TROUBLESHOOTING - MECHANICAL COMPONENTS

PROBLEM	CAUSE	CORRECTIVE ACTION
Slide-out does not retract or extend when depressing the control switch.	A. Electrical motor failure; B. Speed reduction gearbox failure; C. Security pin still engaged in receptacle;	A. Replace motor. B. Inspect gearbox components, particularly: bronze wheel or first reduction stage output shaft. Replace damaged components. C. Disengage pin and check if air cylinder is damaged.
Slide-out is not straight once retracted or during retracting or extending operation.	A. Broken rack tooth; B. Faulty rack attachment; C. Faulty shaft key at speed reduction gearbox or jaw coupling; D. Pinion keyless bushing slipping; E. Shaft breaking; F. Flange bearing attachment loosen;	A. Replace rack. B. Tighten mounting bolts, apply proper torque and use Loctite threadlocker (replace rack if necessary). C. Replace key or component having a damaged keyway. D. Realign slide-out and apply proper torque to keyless bushing. E. Replace shaft. F. Reposition shaft and tighten flange bearing mounting bolts.
Slide-out moves out slightly when vehicle is traveling.	A. Lower "in limit" stoppers are not leaning against the structure at the moment when the "in limit" sensor detects the magnet;	A. 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.
Slide-out moves when vehicle is moving.	A. Inflatable seal not inflated	A. Check seal condition and seal air supply system.
Slide-out retracts or extends difficultly.	A. Foreign matters accumulated in the linear bearing;	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.
Slide-out oscillates vertically when retracting or extending	A. Linear bearing balls hardened due to a too heavy load; B. Linear bearing mounting bolts loosen;	A. If balls clearance is excessive, replace linear bearing. B. Tighten mounting bolts.
Slide-out vibrating or noisy when extending or retracting	A. Acetal plastic block rubbing against the slide-out structure; B. Worn-out anti-friction coating on wiper seal around slide-out; C. Lower acetal plastic block rubbing against rail;	A. Realign acetal plastic block. B. Replace wiper seal. C. Remove lower acetal plastic block and machine down 1mm (0.039").
Top of slide-out moves sideways when vehicle is	A. Roof reinforcing rod misadjusted;	A. Readjust as per procedure.

PROBLEM	CAUSE	CORRECTIVE ACTION
moving		
Slide-out does not retract up to its full "in" position	A. Interference between the exterior extrusion and the vehicle upper horizontal member above the slide-out;	A. Check for straightness of horizontal member and adjust the roof reinforcing rod. B. Check for outer wiper seal lip straightness on the slide-out roof.
Bottom of slide-out not flush with vehicle body	A. Broken or misadjusted lower "in limit" stopper; B. Lower "in limit" stoppers are not leaning against the structure at the moment when the "in limit" sensor detects the magnet; C. Acetal plastic block serving as leaning surface for lower "in limit" stopper broken or moved;	A. Replace or adjust lower "in limit" stopper. B. Adjust the sensor position in order to have contact of the stoppers against the structure when slide-out is stopped. C. Replace or adjust acetal plastic block proper position.
Top of slide-out not flush with vehicle body	A. Broken or misadjusted leveling or retaining screw; B. Faulty upper "in limit" stopper;	A. Check and replace screw. B. Replace upper "in limit" stopper.
Lower edge of slide-out not parallel with vehicle body opening	A. Faulty leveling and retaining screw (8 screws each side).	A. Inspect screw, replace and adjust slide-out level.
Watertightness problem	A. Inflatable seal and/or wiper seal damaged or unstuck; B. Insufficient air pressure in the seal; C. No air pressure in the slide-out pneumatic system; D. Sealant missing; E. Wiper seal draining hole clogged; F. Faulty water recovery pan; G. Faulty internal gutter;	A. Check both seals condition. B. Check the pressure regulator, the relieving shut-off valve and the seal valve condition. C. Check the slide-out air pressure inlet valve condition and the accessory air tank pressure. D. Check the exterior extrusion screws, the windows and the exterior panels sealant condition. E. Unclog draining hole. F. Check the recovery pan. G. Check internal gutter.
Knocking sound at end of travel when extending slide-out	A. Inner stoppers misadjusted;	A. Readjust the inner stoppers.
Knocking sound when parking brake is released	A. Security pin retracts too rapidly;	A. Adjust security pin air flow regulator.
Inflatable seal damaged or	A. Slide-out has been retracted or extended	A. Always deflate the seal when

Section 26: SLIDE-OUT

PROBLEM	CAUSE	CORRECTIVE ACTION
removed, or wiper seal unstuck from the structure.	<p>with the manual procedure with the inflatable seal not deflated;</p> <p>B. Pressure transducer malfunction;</p> <p>C. Faulty roof reinforcing rod adjustment;</p> <p>D. Seal valve malfunction;</p> <p>E. Excessive load in the slide-out;</p> <p>F. Slide-out not centered in the structure opening;</p>	<p>manually retracting or extending the slide-out.</p> <p>B. Check the pressure transducer condition, replace if necessary.</p> <p>C. Readjust the roof reinforcing rod.</p> <p>D. Check the seal valve condition.</p> <p>E. Reduce load or distribute load evenly in order to respect the deflection criterion and slide-out load capacity.</p> <p>F. Readjust the slide-out height and center horizontally in opening.</p>
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.

21.4 SLIDE-OUT FAULT MESSAGE ON MESSAGE CENTER DISPLAY (MCD)

SID #	FAULT MESSAGE	TEXT	PROBABLE CAUSE	CORRECTIVE ACTION
1	Voltage Module A56	Value Too Low	Module A56 sees a Voltage less than 18 V on its power supply connector. Breaker, fuse or wiring harness open.	Check/ reset circuit breaker CBSo and CBSo1. Check/ replace fuse FSo5 Fix wiring harness
2	No Response Mod A56	Data Error	CECM module does not receive CAN communication from module A56. CAN connector A56 J3 Disconnected or CAN wiring harness open, or module A56 is defective.	Check connection A56 J3 Fix CAN wiring harness Replace module A56
3	Voltage Module A57	Value Too Low	Module A57 sees a voltage less than 18 V on its power supply connector. Breaker, fuse or wiring harness open.	Check/ reset circuit breaker CBSo and CBSo2. Check/ replace fuse FSo2 Fix wiring harness
4	No Response Mod A57	Data Error	CECM module does not receive CAN communication from module A57. CAN connector A57 J3 disconnected or CAN wiring harness open or module A57 is defective.	Check connection A57 J3 Fix CAN wiring harness Replace module
5	SldO Vacuum Sensor	Open Circuit	Pressure transducer disconnected. Faulty pressure transducer. Connection or wiring harness open.	Check/ replace vacuum transducer Check/ reconnect the connector SESo1 Fix wiring harness
		Shorted High	Pressure transducer is faulty Wiring harness shorted to 12v or 24v	Check/ replace vacuum transducer Fix wiring harness
6	SldO Seal Deaf Vac	Mechanical Fault	Does not reach vacuum level (-5 PSIG). Slide-out seal damaged or air leak in the seal deflating pneumatic circuit.	Check the seals and the pneumatic circuit.
7	SldO Motor/Limit se	Mechanical Or Electrical Fault	Slide-Out motor is activated for more than 5 seconds and the limit sensor from the departing end is still seen as active. Either the motor is defective and the slide-out is not moving or the limit sensor from the departing end is broken active.	If the slide-Out is not moving, then check the motor and its wiring. If the slide-out is moving, then check the limit sensor from the departing end. (If problem occurs when extending, check the in-limit sensor. If the problem occurred when retracting, then check the out-limit sensor).
8	SldO Park Br Signal	Mechanical Or Electrical Fault	Parking brake is not applied. Wire between parking brake switch and CECM 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	Fix wiring harness.

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SID #	FAULT MESSAGE	TEXT	PROBABLE CAUSE	CORRECTIVE ACTION
			switch and CECM is shorted to 12v or 24v.	
9	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 handheld control. Wiring harness is cut.	Check / fix remote LED or connection 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 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
		Open Circuit	Solenoid is broken or open. Bad connection on solenoid or bloc valve. Wiring harness is cut.	Check / fix solenoid or connection. 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. Bad connection on solenoid or bloc valve. Wiring harness is cut.	Check / fix solenoid or connection Check / fix wiring harness
		Current Above normal	Solenoid or wiring harness shorted to 12v or 24v	Fix Solenoid or wiring harness
15	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.	Check / fix relay coil or

SID #	FAULT MESSAGE	TEXT	PROBABLE CAUSE	CORRECTIVE ACTION
			Bad connection on relay. Wiring harness is cut.	connection 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. Bad connection on relay. Wiring harness is cut.	Check / fix relay coil or connection 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	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. Check / fix wiring harness
		Current Above normal	Solenoid or wiring harness shorted to 12v or 24v	Fix solenoid or wiring harness
22	SldO Limit In Out	Mechanical Or Electrical Fault	In Limit and Out Limit are seen at the same time. In Limit or Out Limit problem.	Check / replace in limit or out limit sensors Fix wiring harness.
23	Limit Sensor 5 V supply	Shorted Low	5v IO-B output is less than 2v. Wiring harness is open or shorted to ground.	Check 5v output on IO-B / replace IO-B module. Fix wiring harness.