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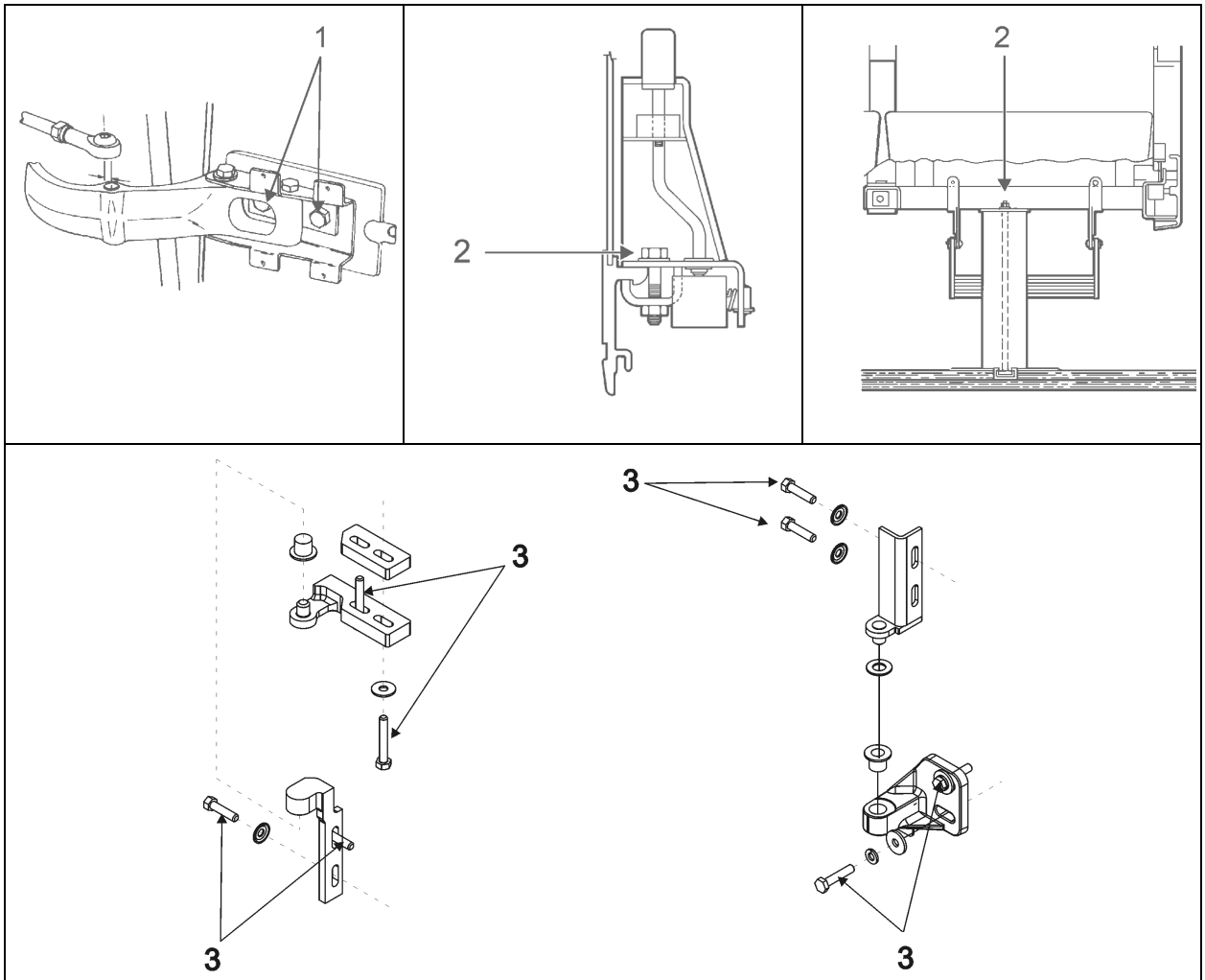
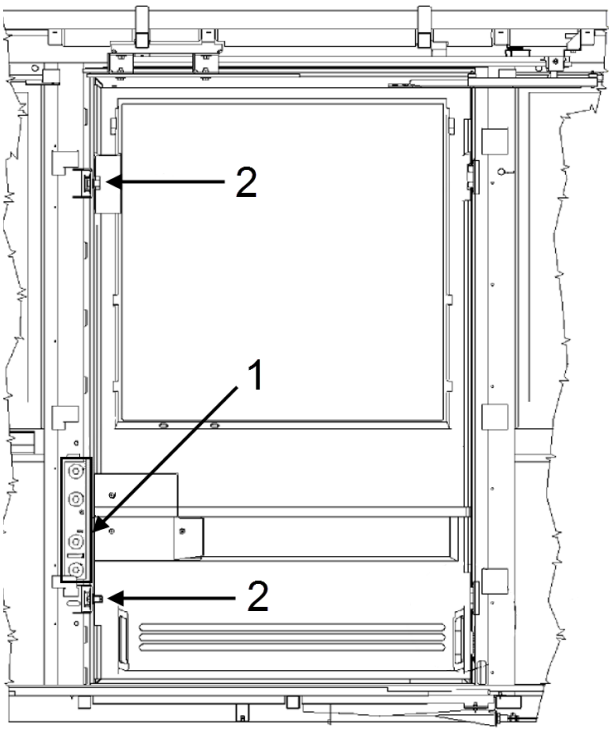
SECTION CHANGE LOG

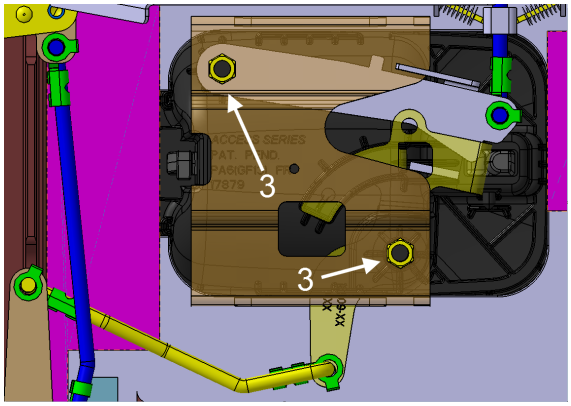
	DESCRIPTION	DATE
1	Update – new opening mechanism for emergency exit windows (Rollover)	Jan. 2025
2		
3		
4		
5		
6		

1 TORQUE TABLES



BODY		
No	DESCRIPTION	TORQUE
1	Entrance door horizontal adjusting bolts	55-65 lb-ft (75-88 Nm)
2	Passenger seat mounting nuts (to sidewall and pedestal)	27 lb-ft (37 Nm)
3	Radiator door hinges bolts	68 lb-in (8 Nm)





WHEELCHAIR LIFT DOOR		
No	DESCRIPTION	TORQUE
1	Wheelchair lift door – Center hinge bolts	31-38 lb-ft (42-52 Nm)
2	Wheelchair lift door - striker pin adjustment bolts	54-66 lb-ft (73-89 Nm)
3	Wheelchair lift door - opening mechanism nuts	2.5-3.5 lb-ft (3.39-4.75 Nm)

2 VEHICLE EXTERIOR

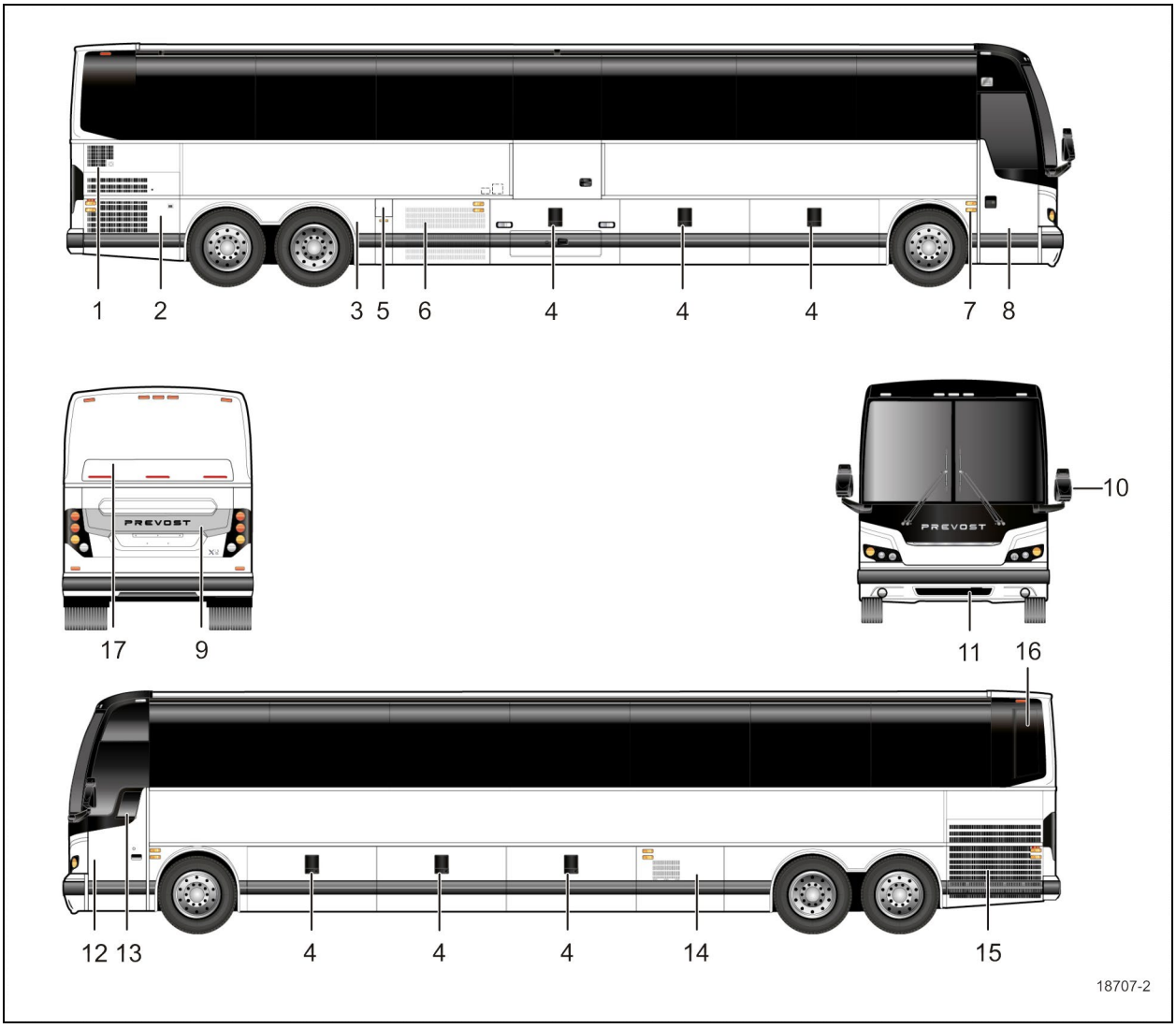


FIGURE 1: X3 COACHES EXTERIOR VIEW

1. Engine air intake
2. Engine compartment R.H. side door
3. Hinged rear fender
4. Baggage compartment
5. Fuel filler door
6. Condenser or baggage compartment
7. Entrance door switch
8. Entrance door
9. Engine compartment rear door
10. Rear-view mirror
11. Reclining bumper
12. Front electrical and service compartment
13. Driver's power window
14. Evaporator or baggage compartment
15. Radiator door
16. Catalytic Converter access door
17. Slide-Out (Optional)
18. Exhaust Aftertreatment System access door

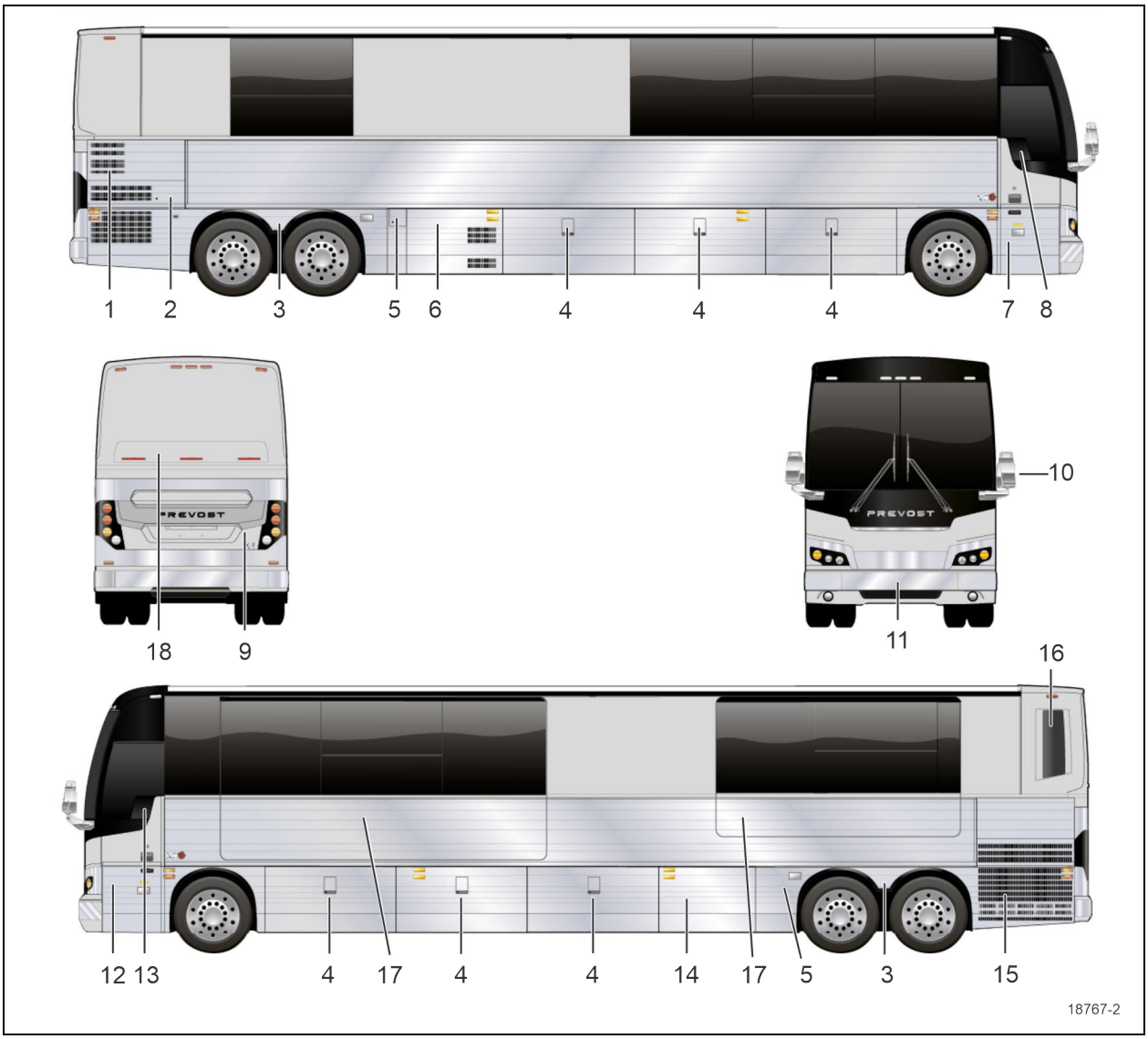


FIGURE 2: X3-45 VIP MOTORHOME EXTERIOR VIEW (TYPICAL)

1. Engine air intake
2. Engine compartment R.H. side door
3. Hinged rear fender
4. Baggage compartment
5. Fuel filler door
6. Condenser or baggage compartment
7. Entrance door
8. Entrance door power window
9. Engine compartment rear door
10. Rear-view mirror
11. Reclining bumper
12. Front electrical and service compartment
13. Driver's power window
14. Evaporator or baggage compartment
15. Radiator door
16. Catalytic Converter access door
17. Slide-Out (Optional)
18. Exhaust Aftertreatment System access door

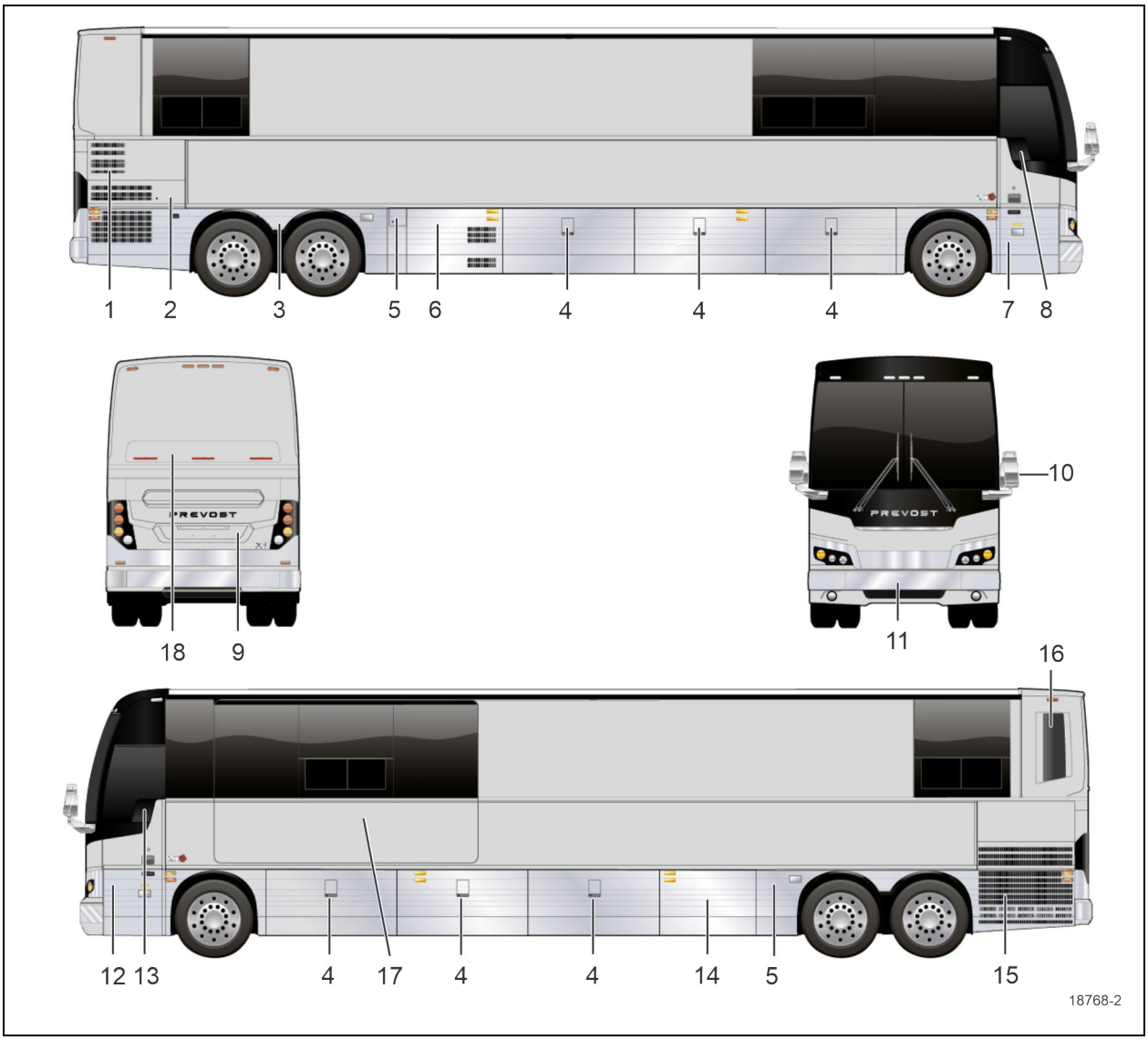


FIGURE 3: X3-45 VIP COMMERCIAL USE VEHICLE EXTERIOR VIEW (FRONT SLIDE-OUT)

1. Engine air intake
2. Engine compartment R.H. side door
3. Hinged rear fender
4. Baggage compartment
5. Fuel filler door
6. Condenser compartment
7. Entrance door
8. Entrance door power window
9. Engine compartment rear door
10. Rear-view mirror
11. Front reclining bumper
12. Front electrical and service compartment
13. Driver's power window
14. Evaporator compartment
15. Radiator door
16. Catalytic Converter access door
17. Front Slide-Out (Optional)
18. Exhaust Aftertreatment System access door

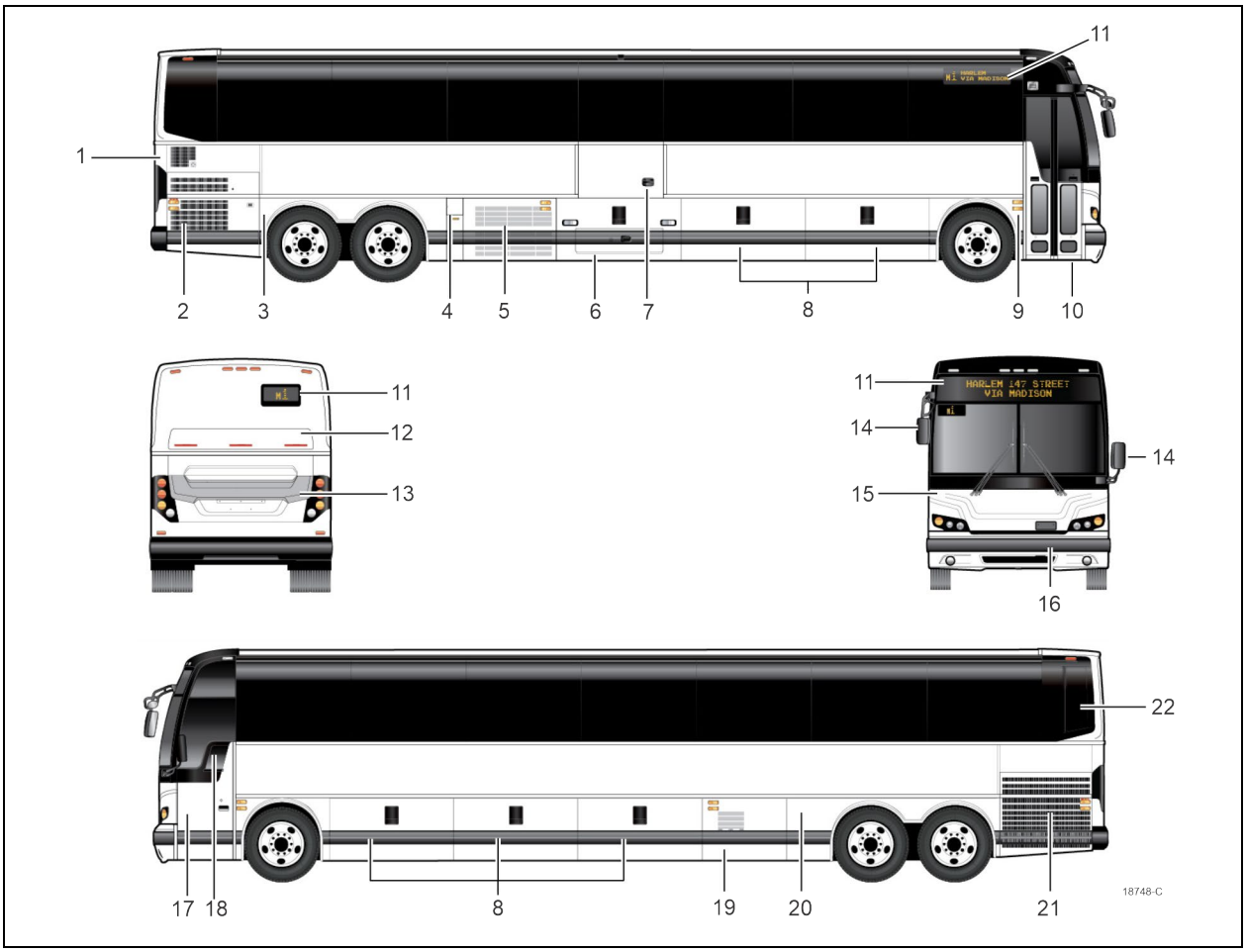


FIGURE 4: X3-45 COMMUTER EXTERIOR VIEW (TYPICAL)

1. Engine air intake
2. Engine compartment curbside door
3. Hinged rear fenders
4. Fuel filler neck & DEF filler neck door
5. Condenser compartment
6. Lift mechanism access door
7. Wheelchair access door
8. Baggage compartment
9. Entrance door control switch
10. Commuter type entrance door
11. Electronic destination sign or route number
12. Exhaust aftertreatment system access door
13. Engine compartment rear door
14. Rear-view mirrors
15. Transmission retarder off indicator light
16. Front towing air supply connectors access door and electrical receptacle.
17. Front electrical and service compartment
18. Driver's power window
19. Evaporator compartment
20. Coolant heater & air dryer compartment
21. Radiator door
22. SCR converter access door

3 VEHICLE JACKING POINTS

For detailed instructions, refer to Maintenance information MI18-18, available on the technical publications USB flash drive and website.

3.1 HYDRAULIC JACK

To raise: turn release valve clockwise. Insert handle in socket and raise vehicle by pumping.

To lower: remove handle and turn the release valve slowly counterclockwise.

Always keep ram and extension screw retracted when jack is not in use.

Service: Check oil level when jack fails to raise to full height. Lower ram completely with release valve open and jack in upright position, remove filler plug and refill to level of filler hole with hydraulic jack oil. Never use brake fluid.

DANGER

Jack is intended for lifting only. Do not get under the vehicle or load for any reason unless it is properly supported with safety stands and securely blocked.

DANGER

Do not overload jack above rated capacity. Prevent "side loading", make sure load is centered on ram. Do not push or tilt load off jack.

4 TOWING THE VEHICLE

For detailed instructions, refer to Maintenance information MI18-18, available on the technical publications USB flash drive and website.

5 VEHICLE STRUCTURE

The body of the X Series vehicles is an integral structure made of 14, 16 and 18 gauge welded and braced high tensile steel and stainless steel members. All stainless exterior panels are glued to anti-corrosion coated members. The complete structure is protected against corrosion prior to assembly. The front and rear caps are made of molded fiberglass. The main roof is made of high tensile aluminum panels riveted to the roof structure. The floor is made of 2 layers of ½" (13 mm) thick plywood separated by a 1/8" (3 mm) insulation to reduce power train and road noises.

Welding

Since welding is a procedure that may be carried out either as specific instructions from Prevost or by an independent decision of the owner, the following information pertaining to welding should be read before beginning any welding procedure. The prohibitions and requirements outlined below must be followed during welding procedure:

1. Welding must be done only by a qualified and experienced person.
2. Adequate ground contacts and shields must be positioned as required to protect components from damage due to heat, contact by weld splatter, arcing, or other potentially damaging events associated with welding.
3. The following precautions are to be taken to protect the electronic control components. Refer to section 00, paragraph 3: “PRECAUTIONS TO BE OBSERVED BEFORE WELDING” in this manual.
4. Always wear the appropriate safety equipment.
5. Weld in clean and well-ventilated area, and always have an appropriate fire extinguisher within your reach.

6 VEHICLE EXTERIOR MAINTENANCE

Regular washing to remove dust and dirt is recommended. See *"Owner's Manual"* for more details on washing and cleaning your vehicle.

6.1 CORROSION PREVENTION

Preventive maintenance is a key factor in avoiding corrosion and must be considered as part of the regular service intervals. The entire underside of the vehicle is sprayed with a heavy application of asphalt base undercoating.

The operating environment the vehicle is subjected to will largely influence the amount of dirt and corrosion that will accumulate over a given period. Corrosion is one of the most costly factors of part failure and shortened part life. It is, however, an item that can be controlled when it is conscientiously looked after and the proper steps are taken in a timely manner.

Certain areas of the coach are more vulnerable to corrosion than others, and it is these areas that should be addressed. For example, the rear baggage compartment bulkhead in the rear wheelhousing area contains many key components and should be examined regularly for corrosion. Other areas include the front wheelhousing area and the engine compartment.

Road splash will affect undercarriage, condenser coil and engine compartment. These areas must be thoroughly cleaned to remove dirt accumulations from flanges, channels and ledges. These places accumulate dirt and salt and hold it in direct contact with steel and aluminum surfaces. Use an understructure high pressure spray as part of a regular wash. Damaged undercoating or paint should be promptly repaired before corrosion can start.

Frequency of wash periods depends on operating conditions. During periods of exposure to salt, daily washing as described above is recommended. If underbody parts show evidence of rust or corrosion, treat as follows:

1. Remove dirt, grease and oil by solvent washing.
2. Remove corrosion as well as all loose coating by cleaning with a wire brush or sandblasting.

⚠ CAUTION

Sandblasting can be used for cleaning bulkheads, brackets and other structural members. It should not be used for exterior side paneling. Extreme care should be taken not to sandblast excessively.

3. Apply correct primer, paint and undercoating after removing all corrosion to prevent further damage.

6.2 PREVENTIVE MAINTENANCE SCHEDULE

NOTE

TECTYL 185 GW rust inhibitor may have been applied on your vehicle underbody as an option, if this is the case, follow this procedure thoroughly. For future application of product, refer to paragraph 3.3 in this section.

DESCRIPTION	INTERVALS		MAINTENANCE	CORRECTIVE ACTION	REFERENCE
	MONTHS	KM MILES			
BODY, EXTERNAL WINDOW FRAME	6	40 000 25 000	VISUALLY INSPECT SEALING BEADS CONDITION	REPAIR OR REPLACE SEALING BEADS IF NECESSARY	
VEHICLE UNDERBODY	12	100 000 60 000	USE A LOW PRESSURE SPRAY TO CLEAN UNDER-STRUCTURE AND VISUALLY INSPECT FOR CALCIUM DEPOSIT, CORROSION OR ANY DIRT ACCUMULATED ONTO EXPOSED SURFACES. VISUALLY INSPECT SEALING BEADS CONDITION. VISUALLY INSPECT IF UNDERFLOOR IS PEALING. VISUALLY INSPECT WHEELHOUSING COATING. MAKE SURE DISCHARGE TUBES ARE FREE FROM OBSTRUCTIONS	APPLY UNDERCOATING LOCALLY AS NECESSARY. APPLY UNDERCOATING LOCALLY AS NECESSARY REMOVE ANY OBSTRUCTION OR REPLACE DEFECTIVE TUBE	
SUSPENSION AND UNDER-STRUCTURE	12	100 000 60 000	VERIFY THE CONDITION OF ALL SUSPENSION AND UNDERSTRUCTURE FASTENERS AND CLAMPS	TIGHTEN OR REPLACE DEFECTIVE OR MISSING FASTENERS	
FLOOR COVERING	3	20 000 12 500	VISUALLY INSPECT IF FLOOR COVERING IS SHOWING SIGNS OF DETERIORATION SUCH AS CUTS, BURNS, ETC. ALSO, VISUALLY INSPECT SEALANT ALONGSIDE TRACKS. INSPECT WALL PANELS FROM BOTTOM TO WINDOWS	REPAIR OR REPLACE DEFECTIVE COVERING. MAKE SURE PROPER SEALANT IS USED.	
FLOOR CLEANING			CLEAN FLOOR COVERING AS NECESSARY		

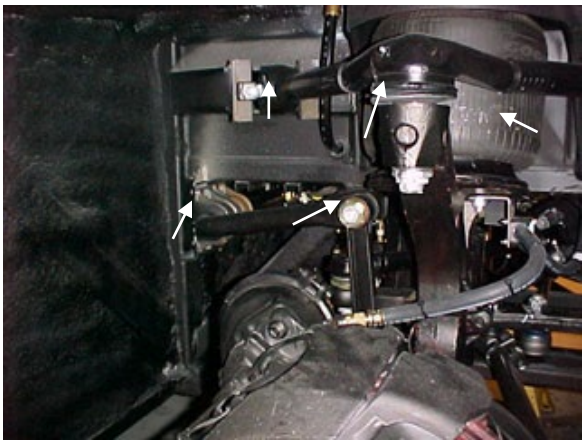
WARNING

Failure to follow this preventive maintenance schedule will result in warranty void.

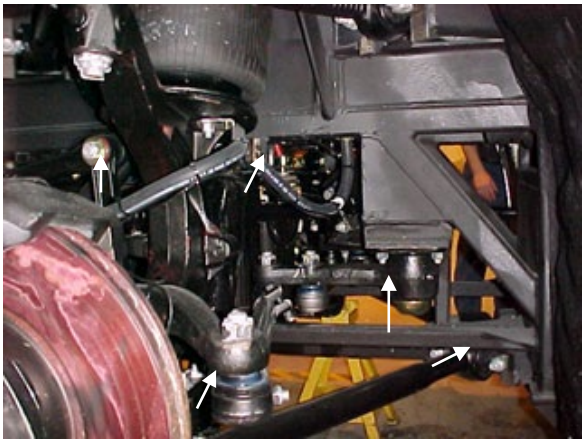
6.3 RUST INHIBITOR APPLICATION

Material: Tectyl 185 GW R1KG21

Safety Rules: Use safety glasses
Supplied air hood
Solvent-resistant rubber gloves

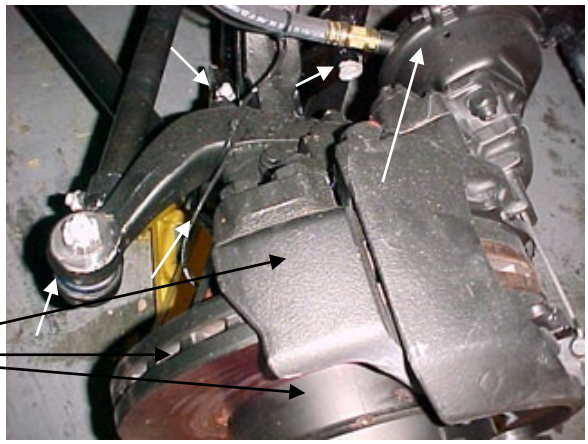
1.0 Wash both wheelhousing mechanical parts before masking.	A water-hose nozzle is recommended. Water may be hot to reduce washing time especially during winter. If parts are soiled with oil, clean using R1KG21. Avoid rubber parts.
2.0 Dry all water sprayed parts. Surface temperature and dew point must be respected before applying rust inhibitor.	Air pressure system may be used, refer to annex 1 for surface temperature and dew point.
3.0 **Front wheelhousing** a) Mask all rubber joints. Braking system must also be protected (refer to arrows). Commercial aluminum foil may be used for masking.	
3.1 **Front wheelhousing** Front view	

3.2 **Front wheelhousing**



3.3 **Front wheelhousing**

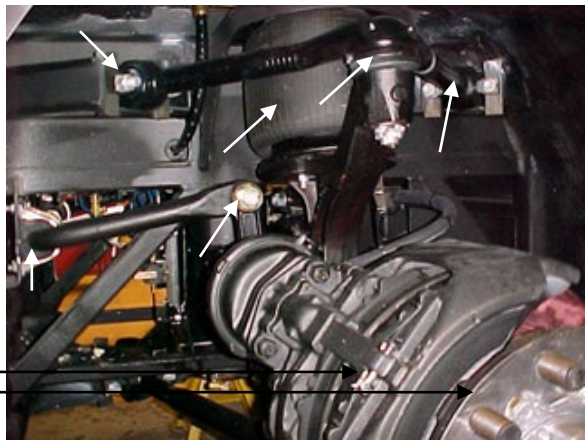
(Entire braking system)

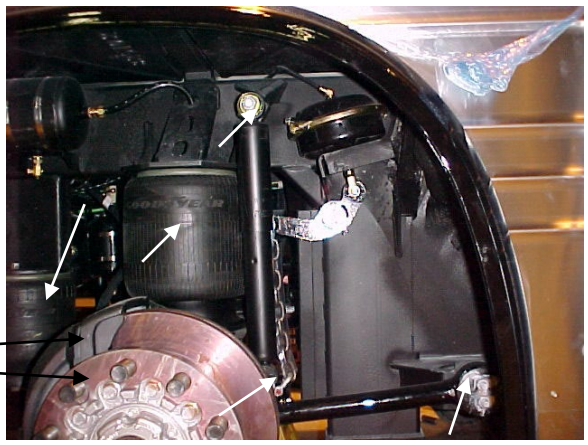
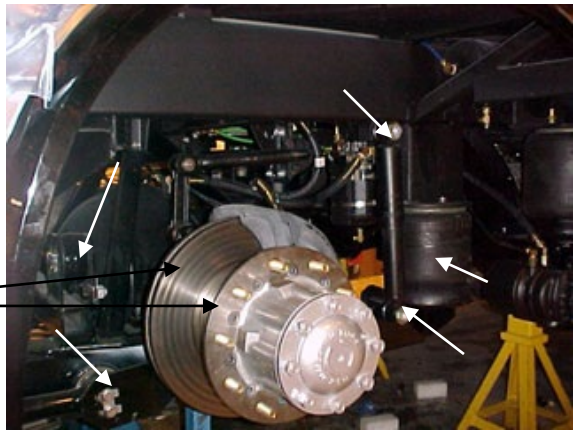
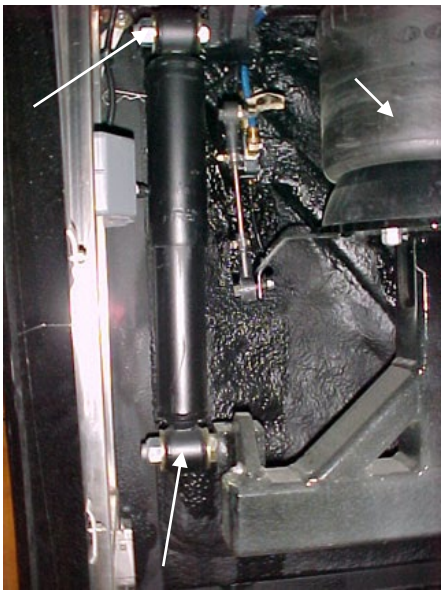


4.0 **Rear wheelhousing**

a) Mask all rubber joints. Braking system must also be protected (refer to arrows). Commercial aluminum foil may be used for masking

(Entire braking system)



4.1 **Rear wheelhousing** (Entire braking system)	
4.2 **Rear wheelhousing** (Entire braking system)	
4.3 **Rear wheelhousing**	
5.0 Close off wheelhousing using masking paper.	Prevent rust inhibitor from coming in contact with paint. To close off wheelhousing, a polythene sheet may be used.
6.0 Apply TECTYL 185 GW black rust inhibitor onto wheelhousing mechanical parts.	A spray gun and pumping system are required to apply the rust inhibitor. If the application is done inside a paint room, select high speed ventilation. **Minimum required**

	thickness is 10 mils wet or 5 mils dry.
7.0 Remove all masking material 30 minutes after application.	

ANNEX 1

1. Check and confirm that dew point and surface temperature are in accordance with the following criteria, *Use the following table to determine dew point*.:

   Surface temperature > 10°C

   Surface temperature > or = to dew point + 3°C

2. Check and confirm that TECTYL temperature is between 10°C and 35°C.

DEW POINT

	Relative Humidity (%)									
	10	20	30	40	50	60	70	80	90	100
Temp (c)										
0	---	-16	-11	-8	-5	-3	-1	0	1	3
1	---	-15	-10	-7	-5	-3	-1	1	2	4
2	---	-14	-10	-6	-4	-1	0	2	3	5
3	---	-13	-9	-5	-3	-1	1	2	4	6
4	---	-13	-8	-5	-2	0	2	4	5	7
5	---	-11	-7	-4	-1	1	3	5	6	8
6	---	-11	-8	-3	0	2	4	6	7	9
7	-18	-10	-6	-2	0	2	5	6	8	10
8	-17	-9	-5	-1	1	4	6	7	9	11
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11	-15	-7	-3	1	4	6	9	10	12	14
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13	-14	-6	-1	2	6	8	10	12	14	16
14	-13	-5	0	4	6	9	11	14	15	17
15	-12	-4	1	4	7	10	12	14	16	18
16	-11	-4	1	5	9	11	13	15	17	19
17	-10	-3	2	6	9	12	14	16	18	20
18	-10	-2	3	7	10	13	15	17	19	21
19	-9	-1	4	8	11	14	16	18	20	22
20	-9	0		5	9	12	15	17	19	21 23
21	-8	0		5	10	13	16	18	20	22 24
22	-7	1		6	11	14	16	19	21	23 25
23	-6	2		7	11	15	17	20	22	24 26
24	-6	2		8	12	16	19	21	23	25 27
25	-5	3		9	13	16	20	22	24	26 28
26	-4	4		10	14	17	20	23	25	27 29
27	-4	5		11	15	19	21	24	26	28 30
28	-3	6		11	16	19	22	25	27	29 31
29	-2	6		12	17	20	23	26	28	30 32
30	-1	7		13	17	21	24	27	29	31 33
31	-1	8		14	19	22	25	27	30	32 34
32	0	9		15	20	23	26	29	31	33 35

7 COMMON FIBERGLASS REPAIR PROCEDURE

All repairs to fiberglass parts consist of filling the damaged area with fiberglass cloth and resin or strand fiberglass and resin. The repair is allowed to harden, and then finishing operations may be performed. Use of the various materials is determined by the type of repair to be made. Large holes, torn sections and separate joints require the adhesive qualities of the resin and the reinforcing qualities of the fiberglass. Small dents, scratches or pits can be repaired using resin and strand fiberglass and filler mixed into paste. Instructions for either mix are explained under their respective headings in this section. For best results when making repairs, temperature should be between 70 and 75 °F (21-24 °C). Some people experience a skin reaction to resins. In such cases, wipe resin off with denatured alcohol or a good thinner. Use of protective hand cream is recommended.

WARNING

Always wear a respirator and goggles when grinding or sanding.

Extreme care must be taken if the sander is electrically operated, as dust from some resins is combustible when subjected to sparks or open flames. The proper tool for sanding resin is a low speed, air driven disc sander with a water attachment or a dry sander having a vacuum bag. Either will eliminate flying glass and resin dust.

The following additional tools and materials will assist in making repairs: hacksaw blade, assorted files, emery paper or cloth (150 or finer), scissors or tin snips, wax paper or cellophane sheets, a 3" (75 mm) paint roller, paint brush, putty knife, acetone and one or more heat lamps.

7.1 REPAIR USING FIBERGLASS CLOTH

Where necessary, sand paint away around damaged area and scrape away undercoating, if any, and wipe clean with solvent. Grind or file the damaged area to form a "V" at the broken or cracked portion. Sides of "V" should have a shallow pitch for maximum bonding area.

NOTE

Roughening the surface improves adhesion of resin.

If part is warped from original shape, use clamping equipment to straighten the surface. Preheat area to be repaired with one or two heat lamps placed 18 to 24 inches (450-610 mm) from repair.

CAUTION

Temperature should not exceed 140 °F (60 °C) during 30 minutes in order to avoid distortion.

Cut fiberglass cloth with scissors or tin snips, 1 to 3 inches (25-75 mm) larger than area to be repaired. Build area to desired height.

Mix resin and hardener following instructions on their containers. Saturate layers of fiberglass with mixture and place laminates over damaged area. Smooth out wrinkles and make sure general contour of area is maintained. Bubbles and wrinkles can be eliminated with a roller.

CAUTION

The pot life of the mix is approximately 15 minutes. Any accidental contamination to the skin, clothing, tools, etc. must be removed within this period. Use acetone to remove uncured resin.

Heat resin material again by placing heat lamps 18 to 24 inches (450-610 mm) from repaired area. Allow 12 to 15 minutes for repair to cure. After repair is cured, grind, file or sand to contour. Files other than body files may be more suitable. Featheredge and finish sanding.

If small pits or irregularities appear after making repair, correct by using a liberal amount of chopped strand or filler mixed with resin to form a paste. Refer to heading *"Repair using Fiberglass Paste"* in this section.

7.2 REPAIR USING FIBERGLASS PASTE

Fiberglass paste is used for repairing small dents, scratches, and pits. Paste is made by mixing resin, hardener and fiberglass strand or

filler to the consistency of putty. Where it may be necessary, sand paint away around damaged area. On underside of coach, scrape away undercoating from damaged area, and wipe clean with solvent.

Preheat the area to be repaired using heat lamps. Mix desired quantities of resin and hardener according to manufacturer's instructions. Add powdered fiberglass strand into mixture to thicken it into a putty state.

NOTE
If repair is made on a vertical surface, adding powdered filler material to mixture will reduce tendency of hot resin to flow or run.

Apply the material with a putty knife or similar object, building material up to the desired contour. For deep filling and on vertical surfaces, several layers of material may be used.

A hacksaw blade, held flat to adjacent contour and then moved in a sawing action across the repair when the resin is in a gel state, will remove excess resin from repair. Finish repair with the same procedure as when using fiberglass cloth.

7.3 TYPICAL FIBERGLASS REPAIR PROCEDURE

Remove all loose particles or damaged material using a power sander or rasp. Clean area, overlapping hole approximately 1" to 1-½" (25-40 mm) all around. Remove all dirt, grease and paint from area to ensure good bonding surface. Feather the cleaned area all around (Figure 5).

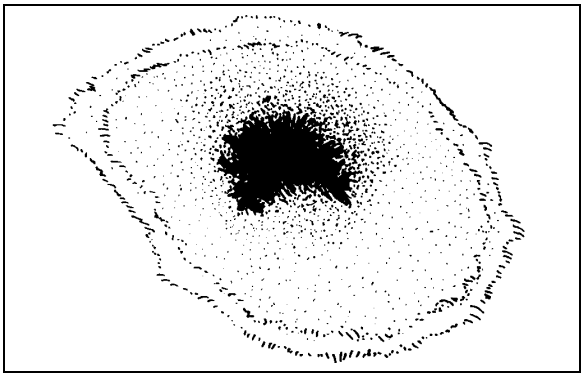


FIGURE 5: FIBERGLASS REPAIR 18089

Cut a piece of fiberglass mat slightly larger than area being repaired. Impregnate mat with general purpose polyester resin catalyzed normally. Use a clean paint brush to apply the polyester resin. Apply impregnated mat over hole and press onto surface with brush to obtain good adherence. Another coat of general purpose polyester resin can be applied at this time (Figure 6).

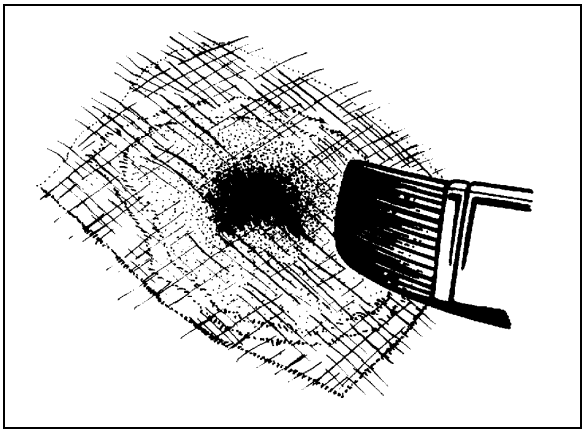


FIGURE 6: FIBERGLASS REPAIR 18090

NOTE
Remove all air between surfaces being joined. Allow area to harden and sand surface to remove any wax.

Apply another mat, followed by a cloth patch, and another mat. All layers must be thoroughly impregnated with polyester resin, brushed well and free of air. Apply more layers of mat and cloth as required until the desired strength and thickness is obtained, minimum two 1-½ oz (43 g) mats and one 9 oz (255 g) cloth (Figure 7).

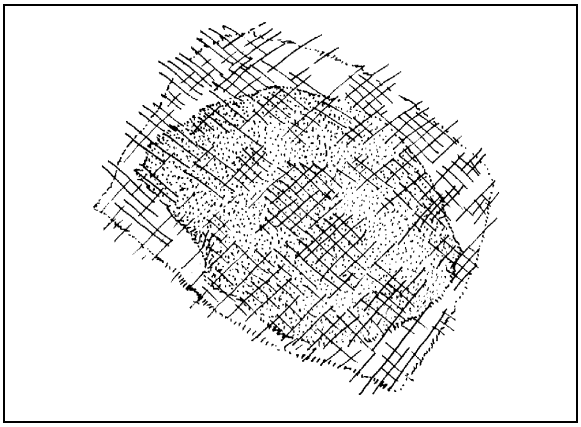


FIGURE 7: FIBERGLASS REPAIR 18091

Allow area to harden and contour the area with coarse sandpaper #100 (Figure 8).

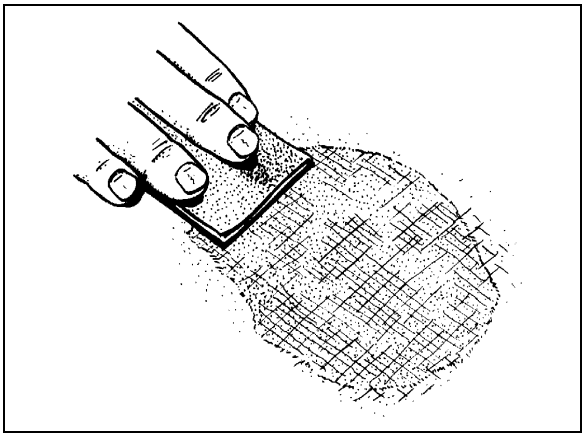


FIGURE 8: FIBERGLASS REPAIR 18092

Cover the area with a layer of resin putty and allow drying for approximately 15 to 20 minutes (Figure 9).

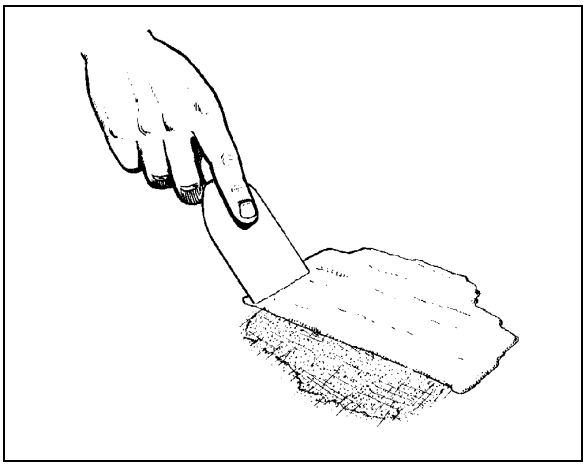


FIGURE 9: FIBERGLASS REPAIR 18093

Smooth off surface with coarse sandpaper #100 to desired shape. Further smooth surface with fine sandpaper #120 until repaired surface matches surrounding area paneling. Prime and paint the area to match surrounding paintwork.

8 COMMON PAINTING PROCEDURE

8.1 NEW PAINT CARE

Our paint supplier recommends that you follow these simple precautions the first months of your new vehicle's life.

CAUTION

Apply these recommendations after repainting vehicle.

During the first 30 days:

- Do not use a commercial bus wash. Stiff brushes or sponges could mar the finish and damage the surface. Wash the vehicle by hand only and with cool water and a very mild bus wash solution. Be careful to use only a soft cloth or sponge;
- Wash vehicle in the shade, never in direct sunlight;
- Do not "dry wipe" vehicle –always use clean water. Dry wiping could scratch the finish;
- Avoid extreme heat and cold. Park vehicle in the shade whenever possible;
- Do not park under trees which drop sap or near factories with heavy smoke fallout. Tree sap and industrial fallout may mar or spot a freshly painted surface;
- Trees are also likely to attract birds. Bird droppings are highly acidic and will damage a freshly painted surface. Bird droppings, tree sap and industrial fallout should be washed off as soon as possible;
- Do not spill oil, gasoline, antifreeze, transmission fluid or windshield solvent on new finish. IMMEDIATELY rinse off any such spill with clean water, DO NOT WIPE;
- Do not drive on gravel roads. Paint finish easily chips during the first 30 days;
- Do not scrape ice or snow from the surface. A snow scraper can act like a paint scraper if the finish is new. Brush off loose material with a soft snow brush.

During the first 90 days:

- Do not wax or polish the vehicle. This will allow the finish to dry and harden completely.

8.2 PAINT TOUCHUP

When paint touchup or partial repainting is necessary, refer to the vehicle's paint scheme for color codes and paint brand.

Prevost recommends using the original paint brand to ease color matching.

In the event you sand through to the gelcoat surface you should prime the area with Standox “Non Stop Fill Primer (ST-11000)”.

If you sand through to metal surface, first prime with Standox “Etch Primer (ST-11858)” then with Standox “Non Stop Fill Primer (ST-11000)”.

CAUTION

Be sure to heed all paint manufacturer’s recommendations, especially concerning paint dilution and application.

8.3 PAINTING

The standard paint used on the exterior of the vehicle is Standox Basislack. It is a high gloss polyurethane enamel finish designed for exposure to extreme conditions. Other types of paint may be called for as options by owner but are not dealt with in this section.

8.3.1 Safety

Care should be exercised in storing, handling, mixing, and applying paint and chemicals listed in this manual. The topcoat, primer, solvent, catalysts, accelerators, and cleaners are highly volatile and/or toxic if not properly used. Observe all safety instructions marked on the different packaging, as well as the following:

1. Do not smoke in the paint room or in adjacent area exposed to residue fumes.
2. Wear respirators approved by the governing safety and health regulations.
3. Maintain adequate ventilation at all times.
4. Dispose of any leftover paint mix properly.
5. Wear rubber gloves, rubber apron, and face shield during all phases of paint and chemical handling

8.3.2 Surface Preparation and Paint Application

	Aluminum and / or Stainless Steel	Fiberglass	Comments
Surface Preparation	Sand using P-150 grit sandpaper. It is recommended to sandblast rivets and panel edges with OLIMAG 35-70 blast media.	Sand using P-180 or P-240 sandpaper.	Do not use paint remover over aluminum or fiberglass.
Cleaning	STANDOX silicone remover ST-16203		
Priming	STANDOX Reactive Etch Primer ST-13908 * Wait 30 minutes then apply STANDOX HS primer ST-15161	STANDOX Non-Stop Füllprimer ST-11000 (68-2973)	Refer to product Technical Data sheet for proper mixing
Basecoat	Refer to paint scheme or coach record for proper color code and paint brand. We recommend using the same paint brand to ease color matching.		Refer to product Technical Data sheet for proper mixing
Clearcoat	Axalta Imron Clear 8430 S Allow 16 hours for drying		Refer to product Technical Data sheet for proper mixing

NOTE
Product listing above is based on factory applied products. Local VOC (Volatile Organic Compound) regulations may vary, consult your paint supplier and use a VOC compliant product that matches the factory recommendations if required to do so.

9 X3-45 COACHES EXTERIOR FINISHING AND BODY REPAIR

The following procedures cover repair, installation and replacement for various doors, panels and windows. The paragraph divides the vehicle into zones to facilitate the search; each zone is then sub-divided into components.

Refer to the appropriate zone and component for complete procedure.

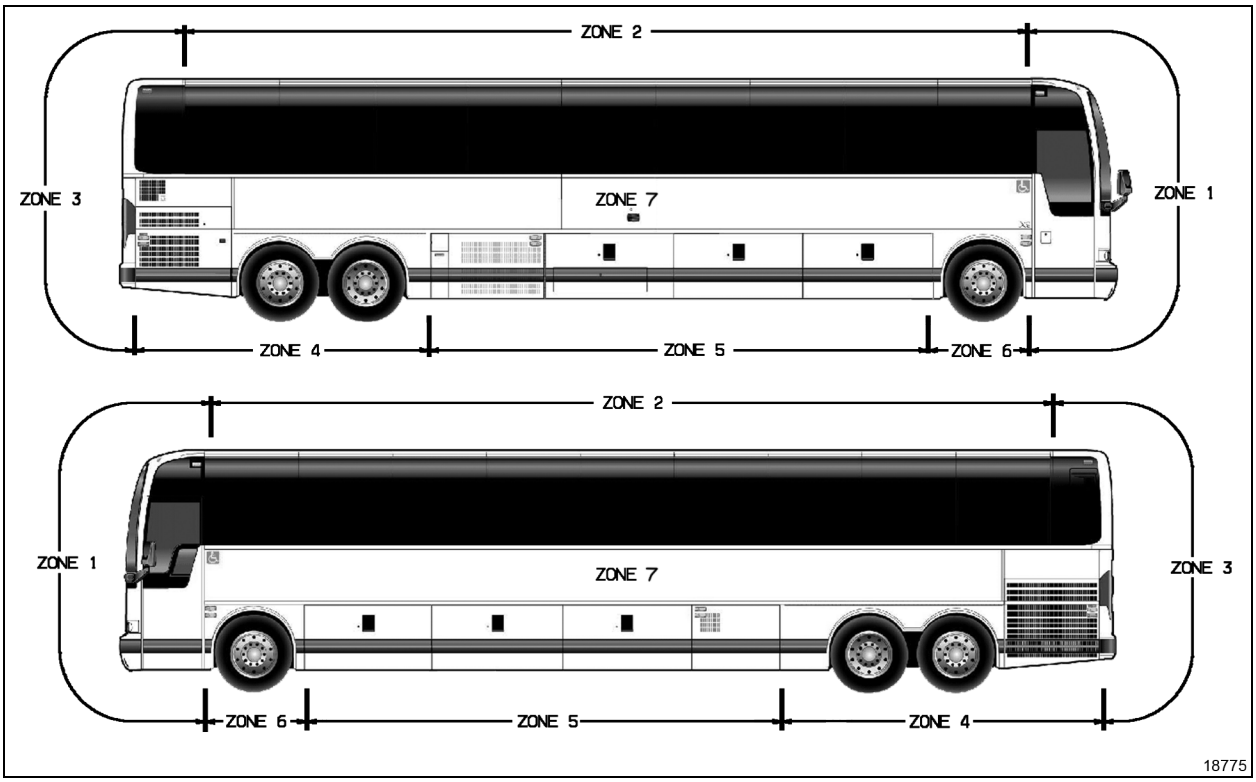


FIGURE 10: X3 COACHES ZONING

9.1 ZONE 1

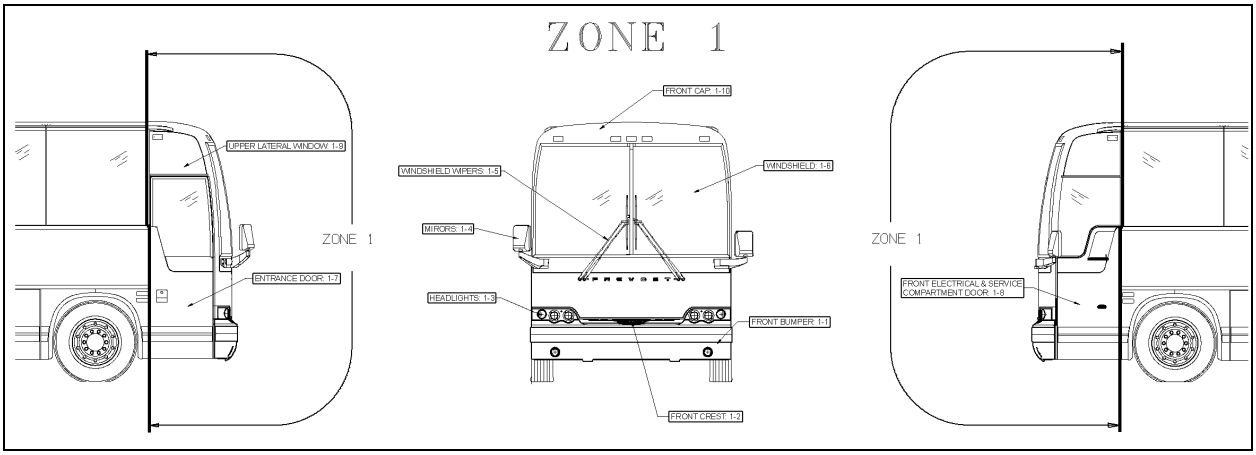


FIGURE 11: ZONE 1 **18624**

9.1.1 Front Bumper

The front bumper is hinged to give access to the spare wheel and tire compartment. Pull the handle located in the front service compartment to open the spare wheel and tire compartment. Bumper must first be tilted down before its removal. Two people are required to remove and install the front bumper. Safely support the bumper and remove the two bolts on each bumper side to separate the bumper from the spare wheel compartment door. To install bumper, reverse the removal procedure.

NOTE
On Commuter type vehicles, the front bumper is hinged to give access to the steering gear and to facilitate removal and installation. To remove the bumper, ***unscrew the top retaining bolts, located on each side next to the headlights,*** *and tilt down the bumper.*

WARNING
Front bumper is heavy. Use proper lifting equipment to support the bumper during the removal and installation operations to avoid personal injury.

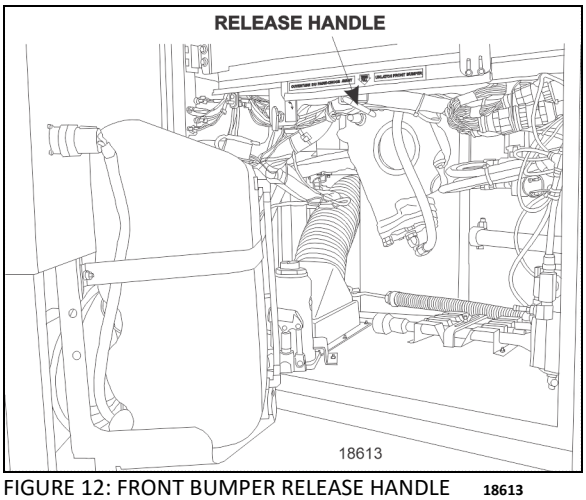


FIGURE 12: FRONT BUMPER RELEASE HANDLE **18613**

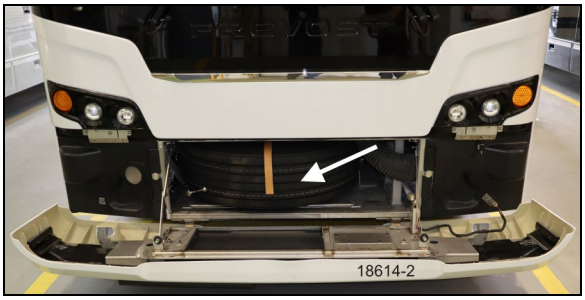


FIGURE 13: FRONT BUMPER AND SPARE TIRE

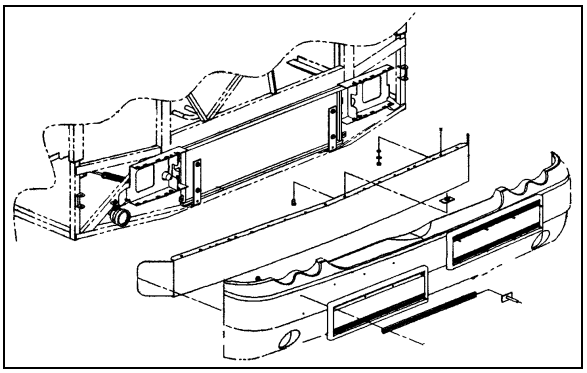


FIGURE 14: FRONT BUMPER REMOVAL **18565**

9.1.2 Headlights

Refer to Paragraph Headlights, included in Section 06: Electrical of the Maintenance Manual for complete information on headlights.

9.1.3 Rear View Mirrors (RAMCO)

Your vehicle is equipped with two exterior mirrors.

The mirrors may be equipped with an optional electric heating system which serves to minimize ice and condensation on the mirror glass in extreme weather conditions. Integral thermostats are installed in both mirrors to avoid continuous heating. Use the appropriate switch on the dashboard to activate the defroster system on both mirrors simultaneously. The mirrors can easily be adjusted by using the remote controls located on the L.H. side control panel. The mirrors have easy to replace glass in case of breakage. Remote control motors can also be replaced.

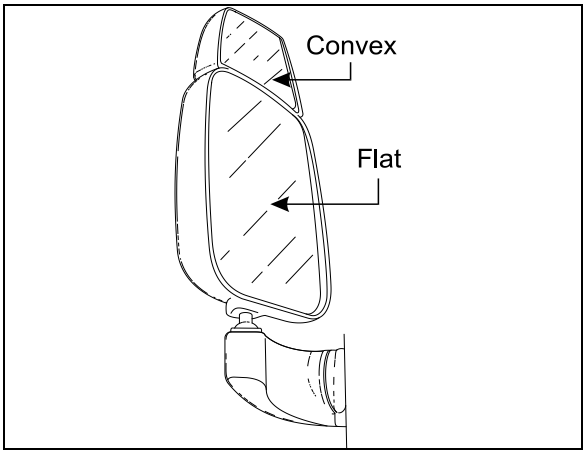


FIGURE 15: REAR VIEW MIRROR (RAMCO) 18398A

- **Adjustment**

At the base of the mirror arm, loosen the mounting bolt to swing arm in or out.
To pivot the mirror head, loosen the setscrews on each side of the ball stub at the base of the mirror head to facilitate the adjustment.

- **Disassembly**

At end of mirror arm, loosen the setscrews to relieve tension on the ball stem. Remove the ball stem from the arm.
Remove the four screws fastening the mirror arm base to the coach.

- **Assembly**

Mount the mirror arm base to the coach. Insert the ball stem into the mirror arm and tighten the socket setscrews.

NOTE

Position the ball cup halves so the joint between them lies on the centerline of the arm. Ensure that the setscrews are not on the joint between the cup halves.

- **Replacement of Mirror Glass**

Remove the broken glass.

Position new glass in mirror head and press to lock the Velcro in place.

- **Heated / Remote Controlled Rear View Mirrors**

Heated/remote controlled external rear view mirrors may be provided to prevent the mirrors from frosting up in cold weather.

The remote controlled external rear view mirrors attach to support arms using a pivot collar secured by setscrews. Loosening the setscrews allows the whole head assembly to turn on the support arm for initial adjustment. A mounting bolt and washer hold the arm support to the mounting bracket. The arm support can be moved to position the mirror head into or away from the coach body.

The mirror heat switch is located to the left of the driver on the dashboard. This switch must be activated before the mirror heating element will energize. Once energized, the mirror heating element is kept at a sustained temperature (between 60-80°F) by a thermostat. Refer to wiring diagram annexed in the technical publication box.

⚠ CAUTION

Do not attach stick-on type convex mirror accessories to the heated mirror glass. This could impede uniform heat distribution on the mirror surface which could break the mirror.

- **Mirror Control**

The remote control pointer knob(s) for the mirror(s) is (are) mounted on the L.H. side control panel. The harness to the mirror head runs through the arm support. The remote motor is mounted to the mirror head behind the mirror glass.

Turn pointer knob to the left for mirror head adjustments and to the right for convex mirror adjustment, then push down on either of the button's (4) sides to adjust the selected mirror viewing angle.

- **Disassembly**

At end of mirror arm, loosen the setscrews to relieve tension on the ball stud. Remove the ball stud. Remove the ball stud from the arm and gently pull the harness out until the connector is exposed.

Remove the four screws fastening the mirror arm base to the coach. Slide the harness free of the mirror arm base.

- **Assembly**

Attach a stiff wire (snake) to the end of the harness and insert the wire through the mirror arm base and arm, gently pull the harness through the arm and disconnect the "snake".
Connect the mirror head harness. Insert the harness connector back into the mirror arm.
Insert the ball stud into the mirror arm and tighten the socket setscrews.

NOTE
Position the ball cup halves so the joint between them lies on the centerline of the arm. Ensure that the setscrews are not on the joint between the cup halves.

- **Convex & Flat Mirror Removal**

The mirror glass assembly is mounted to the control mechanism or to mirror base with Velcro strips. Remove the mirror glass by gently pulling the lens to release the Velcro. Disconnect the heater grid at the two connectors.
Connect the connectors of the new mirror's grid to the harness. Install the lens by positioning the lens in the mirror frame and pressing to lock the Velcro in place.

9.1.4 Optional Rear View Mirrors (ROSCO)

Commuter type vehicles may be equipped with two Rosco exterior mirrors.

The mirrors can easily be adjusted by using the remote controls located on the L.H. side control panel. The mirrors have easy to replace glass in case of breakage. Remote control motors can also be replaced.

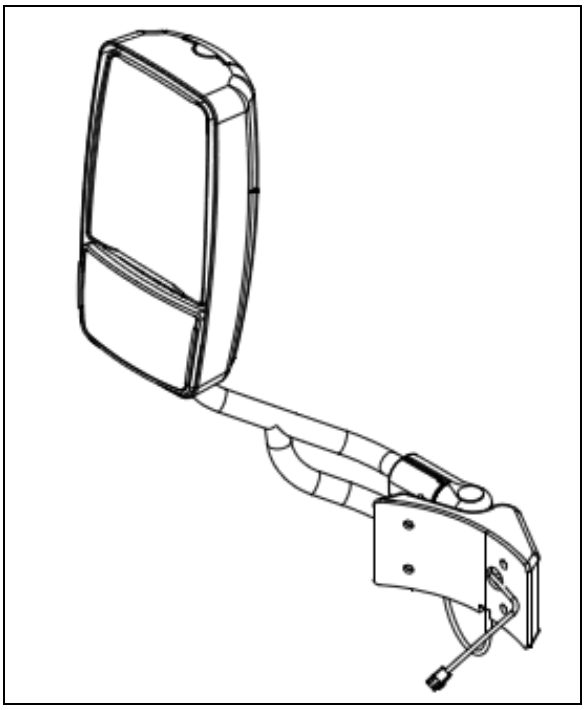


FIGURE 25: REAR VIEW MIRROR (ROSCO) 18398B

- **Adjustment**

At the base of the mirror arm, loosen the mounting bolt to swing arm in or out.

To pivot the mirror head, loosen the setscrews on each side of the ball stub at the base of the mirror head to facilitate the adjustment.

- **Disassembly**

At end of mirror arm, loosen the setscrews to relieve tension on the ball stem. Remove the ball stem from the arm.

Remove the four screws fastening the mirror arm base to the coach.

- **Assembly**

Mount the mirror arm base to the coach. Insert the ball stem into the mirror arm and tighten the socket setscrews.

NOTE
Position the ball cup halves so the joint between them lies on the centerline of the arm. Ensure that the setscrews are not on the joint between the cup halves.

- **Remote Controlled Rear View Mirrors**

The remote controlled external rear view mirrors attach to support arms using a pivot collar secured by setscrews. Loosening the setscrews allows the whole head assembly to turn on the support arm for initial adjustment. A mounting bolt and washer hold the arm support to the mounting bracket. The arm support can be moved to position the mirror head into or away from the coach body.

- **Mirror Control**

The remote control pointer knob(s) for the mirrors is (are) mounted on the L.H. side control panel. The harness to the mirror head runs through the arm support. The remote motor is mounted to the mirror head behind the mirror glass.
Choose the side to be adjusted by pressing the "L" (left) or "R" (right) button on the control pad. The flat mirror is then adjusted by pressing the "upper" button and the convex mirror by pressing the "lower" button. The selected mirror can now be adjusted left to right or up and down by using the arrow keys on the control pad. The R/H side round mirror is non-adjustable.

NOTE
The mirrors heater function (HTR button and LED indicator) is optional and not connected on this vehicle.

- **Disassembly**

At end of mirror arm, loosen the setscrews to relieve tension on the ball stud. Remove the ball stud. Remove the ball stud from the arm and gently pull the harness out until the connector is exposed.

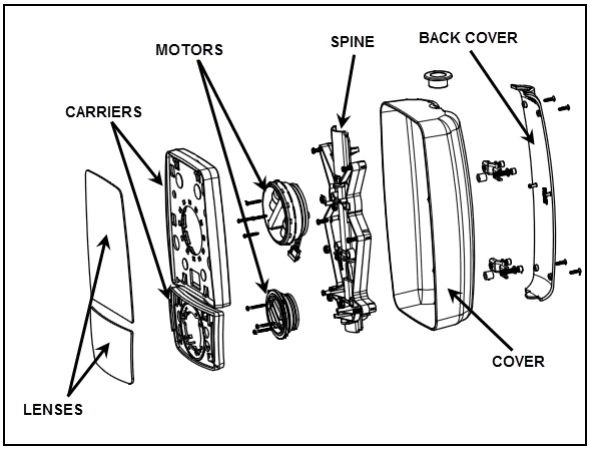


FIGURE 16: R/H OUTSIDE REAR-VIEW MIRROR 18694

Remove the four screws fastening the mirror arm base to the coach. Slide the harness free of the mirror arm base.

- **Assembly**

Attach a stiff wire (snake) to the end of the harness and insert the wire through the mirror arm base and arm, gently pull the harness through the arm and disconnect the "snake".

Connect the mirror head harness. Insert the harness connector back into the mirror arm.
Insert the ball stud into the mirror arm and tighten the socket setscrews.

NOTE
Position the ball cup halves so the joint between them lies on the centerline of the arm. Ensure that the setscrews are not on the joint between the cup halves.

- **Glass removal and installation**

Using a non-metallic flat wedge, insert the edge under the over-hang tab covering the mirror glass.

Raise the wedge to spread the over-hang tab. By continuing to raise the wedge, the glass will begin to pop out.

Do not force the glass further than half an inch outward. A secondary adhesive holds the glass. This adhesive is used to cushion the glass and dampen vibration. It is soft and can be cut fairly easily.

Slide a straight edge, such as a ruler, behind the glass and make a slicing motion back and forth. The mirror glass will come free.

Remove the glass after the adhesive has been cut. Some adhesive will remain on the mirror

carrier. These adhesive spots are soft and pressure sensitive. They will adhere again when the glass is reinserted.

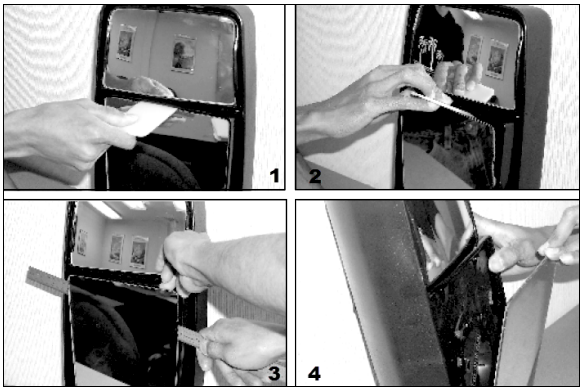


FIGURE 17: REAR VIEW MIRROR GLASS REMOVAL

To re-insert the glass, slide one side under the over-hang tab and spread the opposite over-hang tab with the wedge until the mirror glass is permitted to snap or drop in place.

9.1.5 Windshield Wipers

Refer to Paragraph “Windshield Wipers and Washers”, included in Section 23: Accessories of the Maintenance Manual for complete information on windshield wipers.

9.1.6 Windshield

The windshield is single-glazed AS-1 laminated safety glass. Each windshield is secured to a flange around the front structure opening by a one-piece black rubber extruded gasket

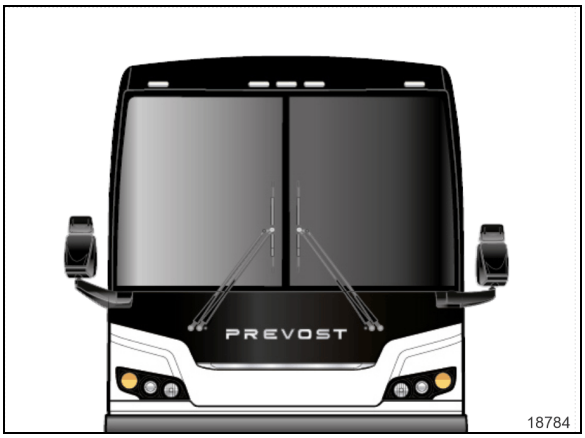


FIGURE 18: WINDSHIELD

A low profile gasket with a single locking strip is now used on our vehicles.

Proper installation of the windshield ensures watertightness. Since glass varies in fit depending on the supplier, we recommend installing a replacement windshield obtained from Prevost Parts to ensure proper fit.

NOTE
For more information on windshield removal or installation, a webinar is available from Prevost.

9.1.6.1 Hydrophobic Treatment on Side Windows

The new low profile window gasket creates an airflow that is closer to the vehicle. This reduces air drag but window soiling of the side windows becomes more likely.

A specific water repelling treatment is factory applied to the driver's and entrance door windows to counter this effect and prevent window soiling.

We suggest renewing the water repelling treatment each year or more frequently depending on operating conditions.

If you notice increased soiling on the driver's and entrance door windows after several months of operation, the water repelling treatment can be renewed by making an appointment with your nearest Prevost Service Center.

The Hydrophobic compound is specially formulated for Prevost and can only be applied by Prevost technicians in Prevost service centers.

9.1.6.2 Removal

WARNING
Removal and installation must be performed by more than one person. Wear protective gloves when handling the windshield.

1. Remove the wiper arms of the affected windshield.
2. To ease damaged windshield removal, remove the rubber locking strips from the rubber extrusion.
3. From inside of vehicle, push against the top L.H. side corner of windshield for the removal of a R.H. side windshield. If the L.H. side windshield had to be removed, you would have to push against the top R.H. side corner.

NOTE
We are referring to the L.H. and R.H. side as viewed from the inside of the vehicle.

4. At the same time, another person gradually lifts the rubber lip from the vehicle exterior using a plastic spatula from top to bottom.
5. Remove the entire damaged windshield and broken glass if applicable.
6. Clean the rubber extrusion channel with Standox anti-silicone. Refer to heading *"Windshield Installation"* in this section for instructions on how to reinstall windshield.

NOTE
If the rubber extrusion is damaged, remove and discard it, then clean the windshield opening with Standox anti-silicone. Refer to heading "Installation of Rubber Extrusion and Windshield" in this section for complete instructions.

9.1.6.3 Windshield Installation

This procedure is provided as a general guideline to install a new windshield with a new gasket on a clean structure. The method may vary depending on material aging and condition.

1. Spray rubber extrusion with soapy water to ease windshield insertion.
2. Slide windshield into rubber extrusion groove starting with the bottom curved side edge. Using a plastic spatula, move the rubber extrusion lip aside to gradually insert the windshield into the groove.

NOTE
Spray soapy water on a regular basis to ease windshield insertion.

4. Using the same type of plastic spatula, repeat the same operation from inside of vehicle, gradually inserting the windshield into the groove.

NOTE
Make sure windshield bottom edge is well inserted into the rubber extrusion groove before proceeding with the sides.

5. Then, working from both sides of windshield bottom to top, gradually move the rubber extrusion lip aside to insert the windshield into the groove. Use also soapy water on the inside of vehicle to insert the windshield into the rubber gasket groove.

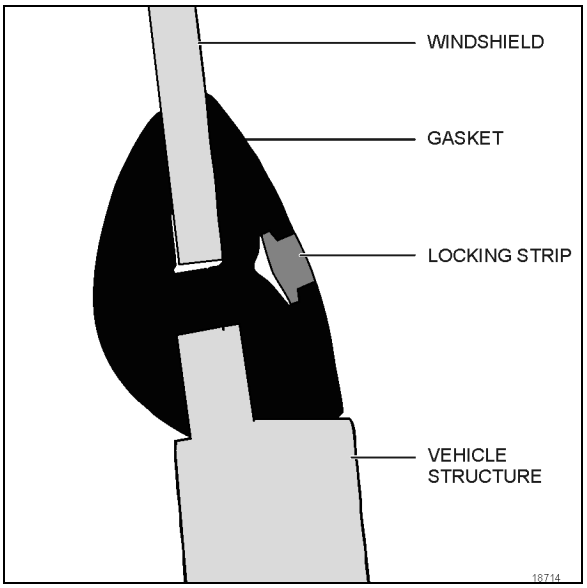
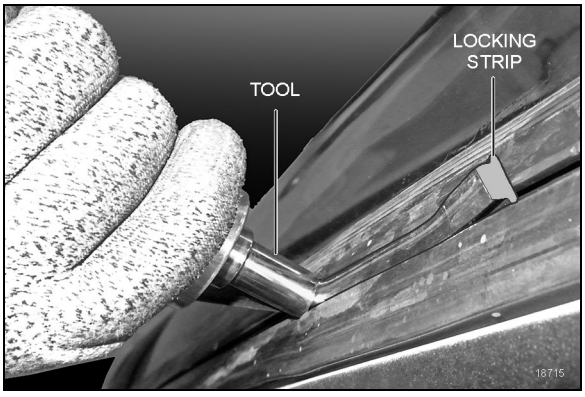


FIGURE 19: WINDSHIELD INSTALLATION SIDE VIEW

6. Insert the top curved corner then finish with the top of windshield.
9. Spray locking strip and rubber extrusion groove generously with soapy water.

NOTE
Locking strips retract with time. Install ends of locking strips as tight as possible in the V-channel.

10. Using insertion tool 680755, insert the strip into the rubber extrusion groove. Gradually insert strip making sure to leave a 2 inch excess length at the extremity.



11. IMPORTANT: Every 6 inches or so, slide backwards to compress the strip due to its tendency to contract during drying process.

12. When strip insertion is almost complete, cut end at a 45° angle leaving ¼" of excess length to prevent contraction over time then insert strip into groove.
13. Reinstall windshield wiper and destination sign if applicable.

9.1.6.4 Installation of Rubber Extrusion and Windshield

CAUTION

The black rubber extrusion securing the windshield in the opening fits correctly in only one position. Find the correct position of the rubber extrusion now, and make reference marks with a china marker to avoid searching for the correct position later in the procedure.

1. Clean the windshield opening sealing surfaces with anti-silicone and let dry.
2. Apply a 1/8" bead of black Simson adhesive #684685 to all four corner of the gasket in the groove outside corner as illustrated in Figure 20. Do this *before* placing gasket on vehicle structure to control quality and continuity of bead. This method helps achieve a watertight installation.
3. Place gasket on vehicle and secure the upper sections with tape
4. Wait for Simson adhesive to bond Install windshield as per paragraph 9.1.6.3: *"Windshield Installation"*

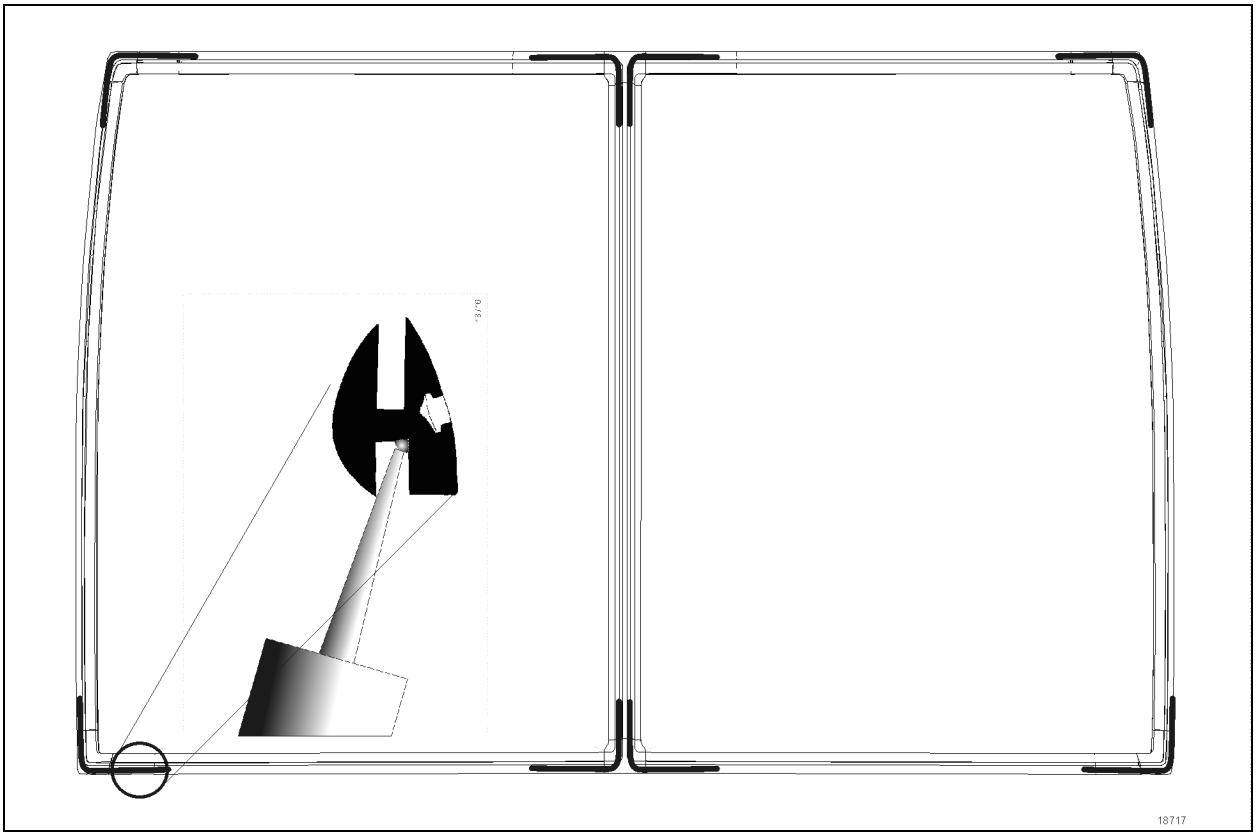


FIGURE 20: APPLICATION OF BLACK ADHESIVE

9.1.7 Regular Entrance Door (Coaches)

An air operated “sedan type” entrance door, with an air door cylinder and damper assembly are installed under the right hand dash. The opening and closing door speed cycle is adjustable by a damper mounted in parallel with the door cylinder on the door hinge. Door activation is controlled by a panel (Figure 21), located near the defroster and wiper motors. The accessory air reservoir supplies air to this system.

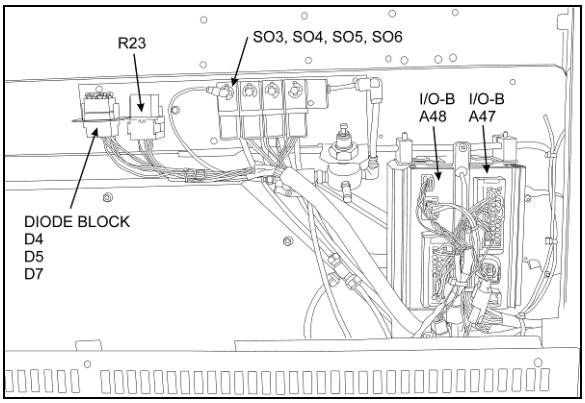


FIGURE 21: ENTRANCE DOOR & WIPER CONTROL PANEL 06619

The door is held in the closed position during coach operation by a two air cylinder locking mechanisms (Figure 23). Air cylinders with return spring in the cylinder body are used. Air cylinders are controlled by an electrically operated solenoid valve energized by a rocker switch located under the right hand dashboard.

To open the door, initial movement of the rocker switch energizes the air lock solenoid valve, venting the door locking cylinders. The return locking spring pulls the door lock away from the latch, unlocking the door. Door movement starts only when pressure in the central air door lock is below 10 psi. The “air cylinder open solenoid valve” opens and allows air to flow to the door cylinder, “the air cylinder close solenoid valve” exhausts air from the rod side of the cylinder.

To close the door, initial movement of the switch energizes the “air cylinder close solenoid valve” and air flows to the cylinder by its rod side port. The “air cylinder open solenoid valve” exhausts air from cylinder. When the reed switch signals the door as closed, the air lock solenoid valve is de-energized and loads the door lock cylinders. The cylinder moves the door lock in a position which engages a latch on the entrance door, holding the door positively closed.

Emergency exit valve, which opens the air valve circuit should be used only in emergencies, or when the door control system does not function properly.

Refer to the air system schematic diagram annexed at the end of section 12, “Brakes” and to page 22 of the wiring diagram.

- **Operation**

The air-operated door is controlled from inside the coach by two push-button switches located on the R.H. dashboard.

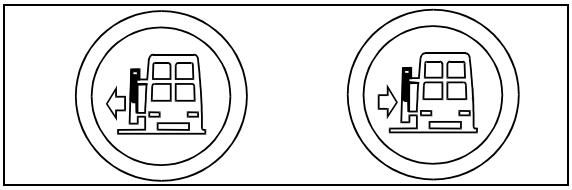


FIGURE 22: ENTRANCE DOOR OPERATING BUTTONS 06464

Opening and closing of the door from outside the coach is accomplished by a momentary toggle switch located under the front R.H. side marker light (Figure 24).

To close the door, the switch must be pushed towards the rear of the coach and held in position until the door has completed its movement.

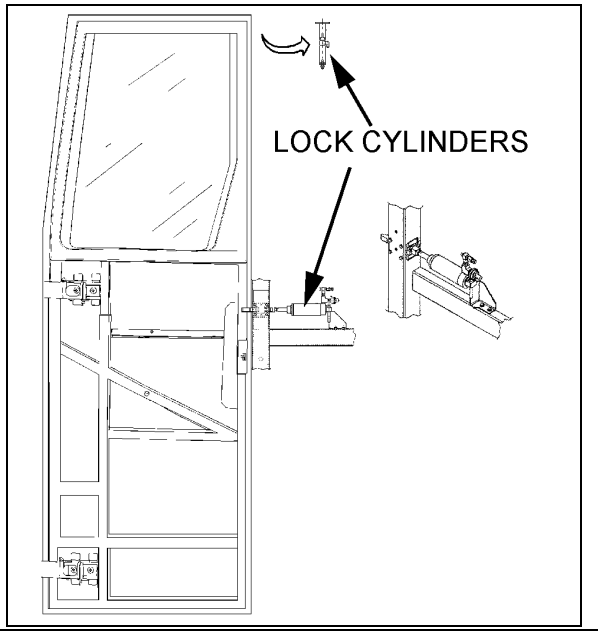


FIGURE 23: COACH ENTRANCE DOOR **18642**

To open the door, the switch must be pushed towards the front of the coach and held in position. When the door reaches the fully opened position, the system will keep pressure in the cylinder locking the door in that position. The door can be stopped in any position by releasing the switch. The door is not locked in position when not fully opened or closed.

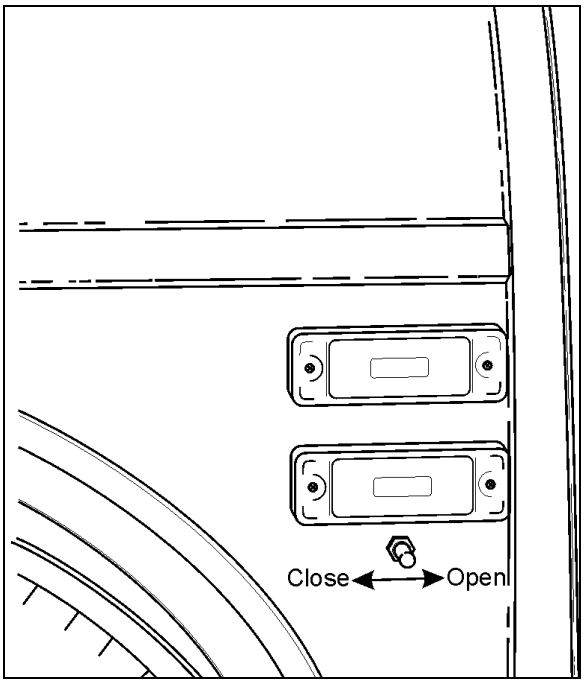


FIGURE 24: ENTRANCE DOOR CONTROL SWITCH **18599**

If the door has been locked with the key, a lever on the door can be moved to unlock.

- **Emergency Exit Valves**

From inside the vehicle, an emergency exit valve located near the door on the dash panel, releases the pressure from the lock cylinder. From the exterior, an emergency exit valve located in the front service compartment, also releases the air from the lock cylinder.

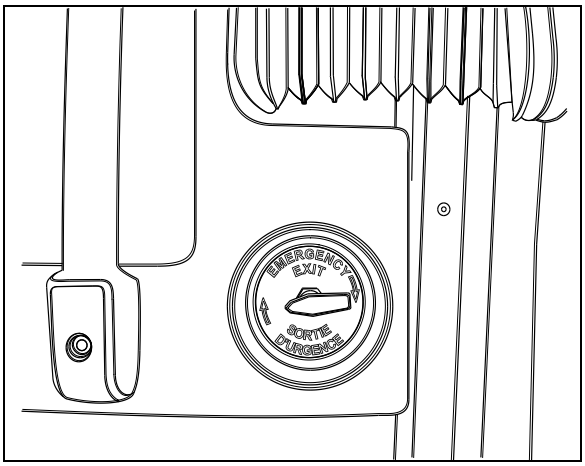


FIGURE 25: INTERIOR UNLATCH AIR VALVE **18330**

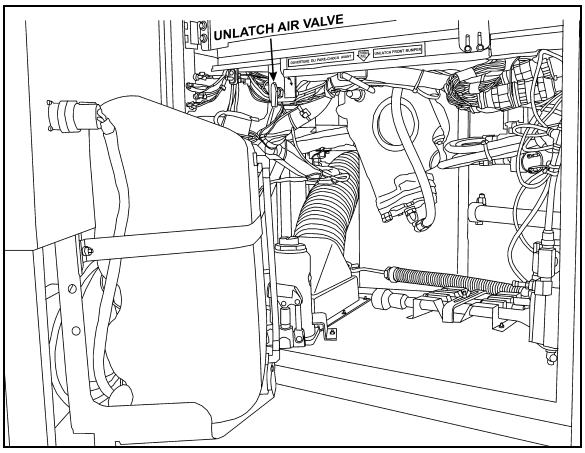


FIGURE 26: EXTERIOR UNLATCH AIR VALVE **12209**

Without Air and/or Without Electricity

If the air pressure drops while the coach has or hasn't any electricity, the spring loaded cylinders will unlatch the door. In such a case, unlock the door by moving the lever on the door or by using the key, then open the door manually.

With Air but Without Electricity

From inside the vehicle, turn the emergency exit valve to the "UNLOCK" position. Move the lever. From the exterior, turn the emergency exit valve to the "UNLOCK" position. Open the door. Close it, lock with the key and reset the outside emergency exit valve to the "NORMAL" position.

- **Door Cycle Speed Adjustment**

To do any adjustment, remove the two panels located next to the door hinge, as well as the door's upper hinge control.

CAUTION

It is important to make sure that damper does not reach end of stroke when door is completely closed or opened. The door cylinder must stop the door on opening. Screw or unscrew rod end to adjust if necessary.

To adjust opening and closing cycle speed on damper (Figure 27):

1. Remove the damper from the vehicle and hold it vertically with the lower eye or pin attachment in a vice. Use clamp plates to prevent damage.
2. Fully close the damper while turning the dust cap or piston rod slowly CCW until it is felt that the cams of the adjusting nut engage in the recesses of the foot valve assembly (Figure 27).

NOTE

In Figure 27*, if there is an indentation (B) in the dust cap (C) and the cover shows two holes (A), the damper is fitted with a bump rubber (D). If so, fully extend the damper and insert a round bar or screwdriver through the holes. Push the bump rubber down and remove. Remove the split plastic collar (E) (if fitted) from the piston rod.*

3. The damper may have already been adjusted. Therefore check whether the damper is adjusted or not by keeping it closed and gently turning further CCW, counting at the same time the half-turns until a stop is felt. Stop turning and do not force.
4. While keeping the damper closed, make two CW half-turns. In case of prior adjustment, add the number of half-turns previously counted. The total range is about five half-turns. Pull the damper out vertically without turning for at least 3/8" (1cm) to disengage the adjusting mechanism. The dust cap or piston rod may now be turned freely.
5. The damper can now be refitted in the vehicle.

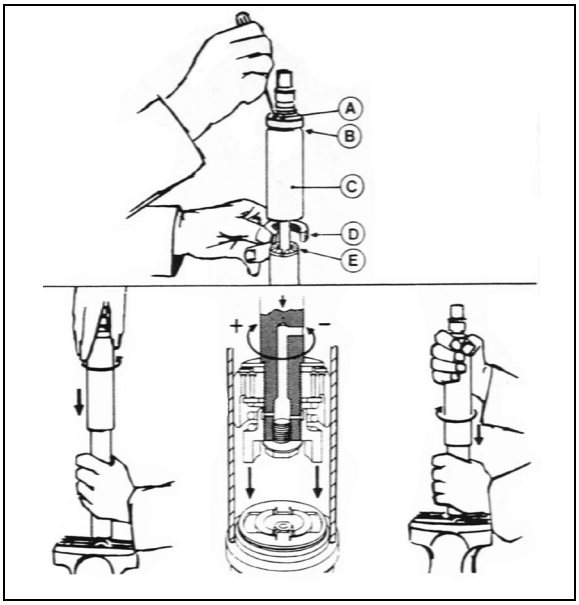


FIGURE 27: DAMPER 18643

NOTE

*Where a bump rubber was installed, refit same inside the dust cap and by fully closing the damper, the rubber will seat again at top of the dust cap. Refit the split plastic collar E (*Figure 27*).*

6. Reinstall panels and entrance door hinge cover.

- **Horizontal And Vertical Adjustment**

Before attempting to correct any door operating problem by adjusting any part of the air cylinder assembly, first perform the following mechanical checks and procedure.

Check around the perimeter of the door for binding. If any binding is found, adjust as follows:

1. Remove the screws and the plastic molding covering each of the hinges.

NOTE

Ask an assistant to help you to perform the following adjustments.

2. Remove the Allen button head screw and the washer retaining the rod end with bearing to the upper hinge. See Figure 28.
3. Support the door with a wooden block and a hydraulic jack.

4. Loosen the horizontal bolts retaining the door to the hinges. Adjust the door horizontally and vertically with the jack. Tighten the bolts.

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

Remove the jack and the wooden block.

CAUTION

Make sure the front side door does not interfere with the exterior panel.

5. Pull and fasten the rod end to the hinge with the washer and the button screw.
6. Screw the plastic moldings covering the hinges.

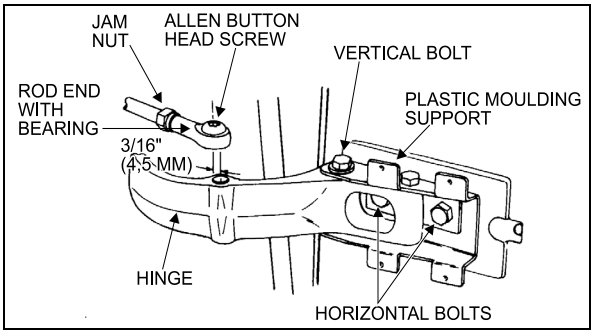


FIGURE 28: UPPER DOOR HINGE 18058

Seal Compression Adjustment

1. Turn the emergency exit valve to the "UNLOCK" position and close the door.
2. From the outside of vehicle, insert a straight edge in the gap along the door outside perimeter. Measure the distance between the door frame and the door outside surface at the door four corners (refer to Figure 29).

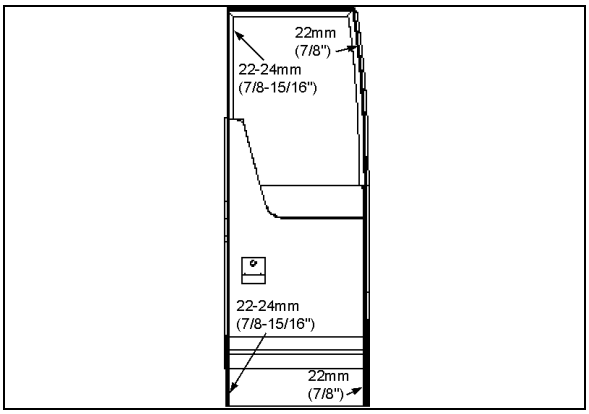


FIGURE 29: SEAL COMPRESSION ADJUSTMENT 18632

NOTE

The front measurements are the most important. If required, ask an assistant to help you to perform the following adjustments.

3. If required loosen the bolts retaining the door to the hinges. Adjust the bolts to obtain the proper seal compression.

Door Seal Replacement

1. Inspect the seal; if cracked or torn, it must be replaced:
2. Remove the old seal and with a sharp edge knife, scrape tape left on the fiberglass door surface.
3. Sand the surface of the door where a new seal will be applied with 240 grit sandpaper.
4. Clean the surface with alcohol or anti-silicone.

WARNING

Wear rubber gloves and do not smoke when cleaning.

5. Peel off protective paper from the seal. Position the seal flush with the top, sides and lower edges of the door.
6. Progress slowly all around the door.
7. Cut the seal and glue both ends with LOCTITE 414 glue.
8. To assure bonding, press a small conical roller on top of the new seal all around 3 times.

- **Troubleshooting**

SYMPTOMS	PROBABLE CAUSES	REMEDY
DOOR WILL NOT OPEN FROM EXTERIOR SWITCH.	Manual door locks engaged.	Release manual door locks.
	Upper and lower solenoid locks do not disengage.	Check voltage at solenoid locks when door is open. If the voltage is 24 volts then replace solenoid #641217. Else, check circuit power.
	Relay module do not receive current.	Reset breaker "ON" or check batteries power supply.
	Opening solenoid door does not receive current.	Check voltage at opening solenoid door. If the voltage is 24 volts then replace it. Else replace control relay.
	Switch malfunction.	Replace switch.
DOOR WILL NOT CLOSE FROM EXTERIOR SWITCH.	Switch malfunction.	Replace switch.
	Solenoid failure.	Check voltage at solenoid. If the voltage is 24 volts then replace solenoid. Else replace control relay.
DOOR WILL NOT OPEN FROM INTERIOR SWITCH.	Manual door locks engaged.	Release manual door locks (open position) from vehicle exterior.
	Upper and lower solenoid locks do not disengage.	Check voltage at solenoid locks when door is open. If the voltage is 24 volts then replace solenoid #641217. Else, check circuit power and replace control relay.
	Module relay does not receive electric current.	Reset breaker "ON" or check batteries power supply.
	Door opening solenoid does not receive current.	Check voltage at door opening solenoid. If the voltage is 24 volts then replace it. Else replace control relay.
	Switch malfunction.	Replace switch.
	Upper lock stays engaged	Lubricate upper lock assembly. Check wear and replace parts if necessary.
DOOR WILL NOT CLOSE FROM INTERIOR SWITCH.	Switch malfunction.	Replace switch.
	Door closing solenoid does not receive electric current.	Check voltage at door closing solenoid. If the voltage is 24 volts then replace it. Else replace control relay.
DOOR WILL NOT OPEN AFTER DRAINING AIR FROM SYSTEM BY EMERGENCY VALVE(S).	Manual door locks engaged.	Release manual door locks (open position) from vehicle exterior.
	Damper cylinder blocks the door.	Adjust or replace damper cylinder.
	The upper lock blocks the door.	Adjust upper lock. Lubricate upper latch bolt. Adjust upper latch height.
DOOR LOCKS STAY ENGAGED WHEN DOOR IS OPEN.	Power supply is cut at solenoid.	Place switch in open position.
	Lock solenoid does not disengage.	Check voltage at solenoid lock when door is OPEN. If the voltage is 24 volts then replace solenoid #641217. Else, check circuit power and replace control relay.

SYMPTOMS	PROBABLE CAUSES	REMEDY
DOOR LOCKS DO NOT LOCK WHEN DOOR IS CLOSED.	Emergency valve is open.	Close emergency valve.
	Lock solenoid stays electrified.	Check latch bolt ground on door frame. If needed clean locks for better contact. Check ground circuit.
	Lock solenoid works in reverse.	Reverse air hoses at solenoid locks.
	Relay does not function.	Replace relay.

- **Lubrication**

Part	Lubricant	Frequency
▪ Latches ▪ Upper door catch ▪ Door cylinder rod end with bearing grease fitting	*Low temperature grease*	Every six months
▪ Door locking mechanism	*White grease*	Every six months
▪ Key hole ▪ Damper pins ▪ Hinges	*Low viscosity oil*	Every six months

- **Entrance Door Body Panel and Window**

Window

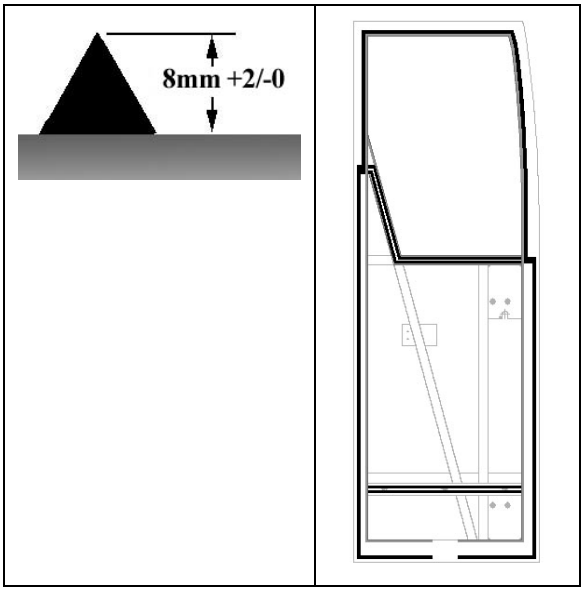
For the removal of entrance door window, you will need:

Pneumatic hammer tool (Zip Gun);
Razor sharp window scraper;
“Olfa” knife;
Face shield.

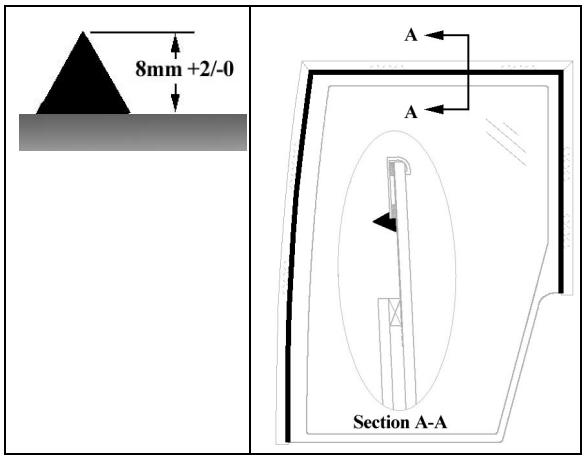
- Open entrance door.
- Mark the position of the entrance door window for future reference.
- Remove interior finishing panel.
- From inside of vehicle, cut Sika bead around window perimeter using a “Zip gun” while another person hold the window from the outside.

NOTE
Wear ear plugs during this operation.

- Then, move outside of vehicle and cut Sika bead to free window while somebody else hold the window from the inside.
- Carefully remove window from frame, ask for help if needed.
- Using a razor sharp window scraper, remove Sika bead and double-face self-adhesive tape residue from window frame.
- Clean window using window cleaner.
- Apply Sika Aktivator around window perimeter.
- Clean door frame using anti-silicone.
- Using a scratch pad “Scotch Brite”, scratch the perimeter of the window frame where the adhesive will be applied.
- Clean door frame again using anti-silicone.
- Apply some Sika 206 G+P onto door frame.
- Apply Sika 255 onto door frame structure.



- Apply Sika 255 at junction of frame and window.



- Install and center window onto door frame. Using your hands, compress window.
- Discard waste according to applicable environmental regulations, use dangerous waste containers.
- Apply masking tape before applying Sika glue to protect paint and adjacent surfaces during surface treatment

Body Panel

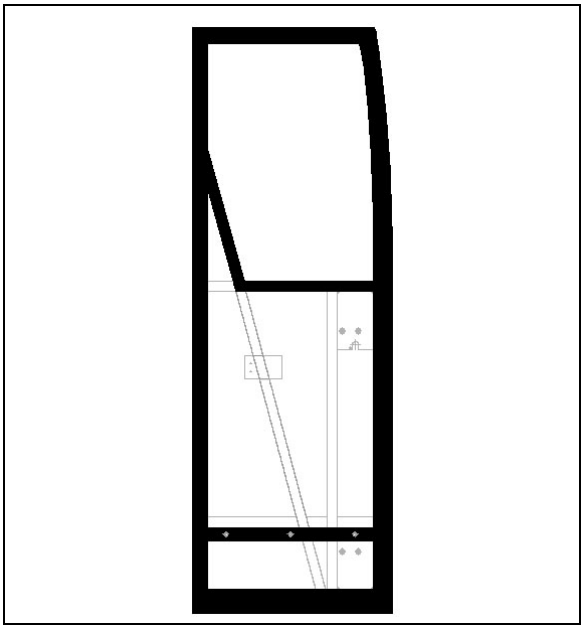
For the removal of entrance door body panel, you will need:

Pneumatic hammer tool (Zip Gun);
Razor sharp window scraper;

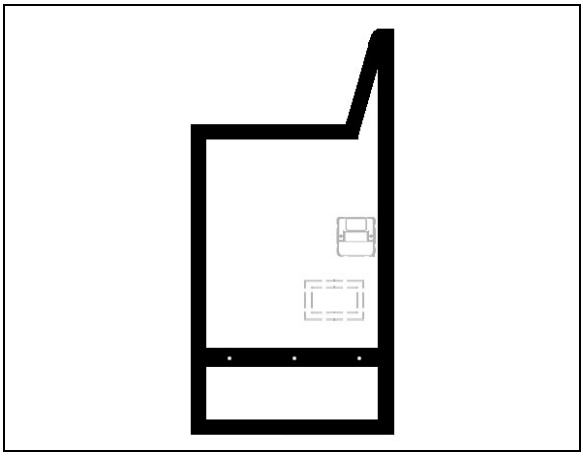
- Open entrance door.
- Remove interior finishing panels to access rub rail fixing bolts, then remove rub rail.
- Remove door lock and interior lighting.
- Using the "**Zip Gun**", cut Sika bead located ¼ inch (7-8 mm) from each body panel edge.

NOTE
Wear ear plugs during this operation.

- Separate body panel from door.
- Using a razor sharp window scraper, remove from door frame Sika bead and double-face self adhesive tape residue.
- Using a scratch pad "Scotch Brite", scratch the perimeter of the door frame where the adhesive will be applied.
- Clean door frame again using anti-silicone.
- Apply some Sika 206 G+P onto door frame.

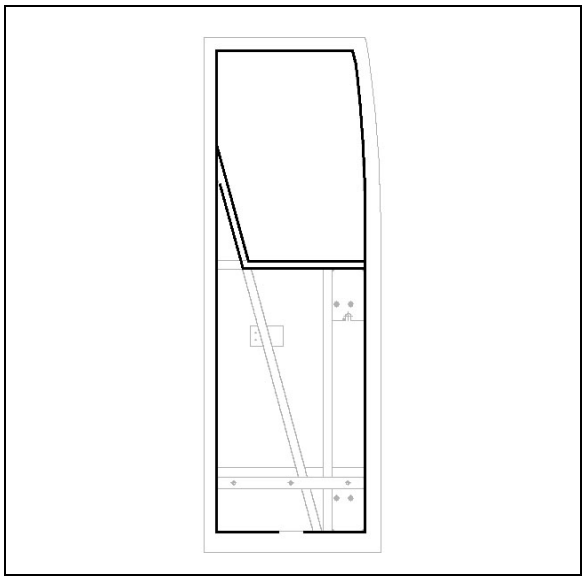


- Using a scratch pad "Scotch Brite", scratch the perimeter of the body panel where the adhesive will be applied.
- Clean body panel using anti-silicone.
- Apply some Sika 206 G+P onto body panel.

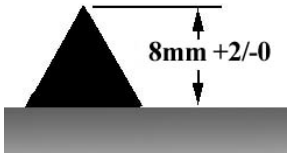


- Apply 1/8 x1/4 double face self-adhesive tape onto door frame.

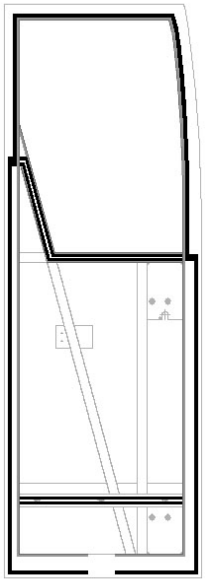
NOTE
Leave some space at the bottom (50mm) for water dripping



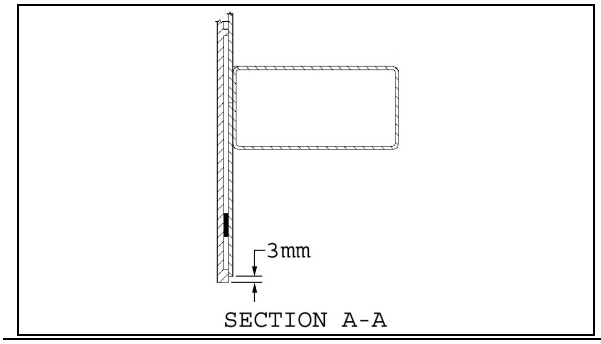
- Apply Sika 255 onto door frame structure.



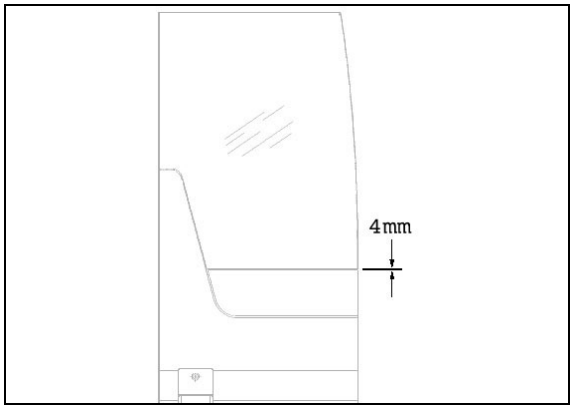
Note: Leave some space at the bottom (50mm) for water dripping.



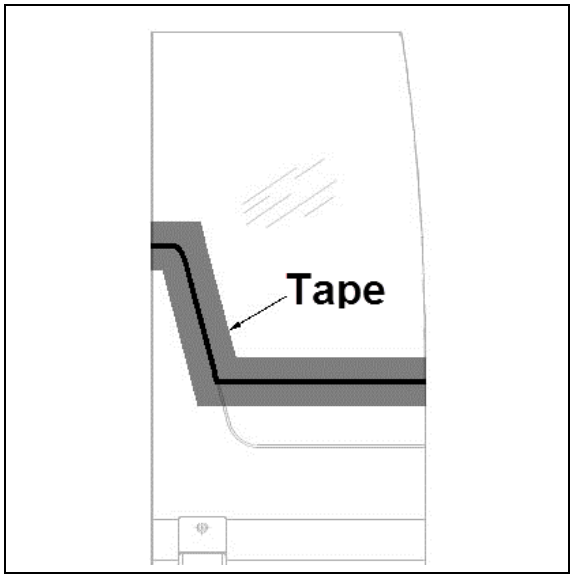
- Install and center fiber glass body panel onto door frame leaving an excess of 3mm all around the frame.



- Line-up body panel with window. There must be a gap of 4±2mm between window and body panel.



- Apply some masking tape **1mm** from window edge and body panel.
- Fill the gap between window and body panel with Sika 255.
- Smooth down the joint with a plastic scraper then remove masking tape.
- Wet Sika joint using water to accelerate the curing process and put the finishing touch with your finger.



- Discard waste according to applicable environmental regulations, use dangerous waste containers.

9.1.8 Commuter Type Entrance Door

An air operated entrance door, with an air door cylinder and damper assembly installed under the right hand dash for the R.H. door panel opening. Another air door cylinder is installed behind the wall to the right of the first curb-side passengers' seat for the L.H. door panel opening. The opening and closing door speed cycle is adjustable by a damper mounted in parallel with the R.H. door panel cylinder on the door hinge. Door activation is controlled by a panel (Figure 30), located near the defroster and wiper motors. The accessory air reservoir supplies air to this system.

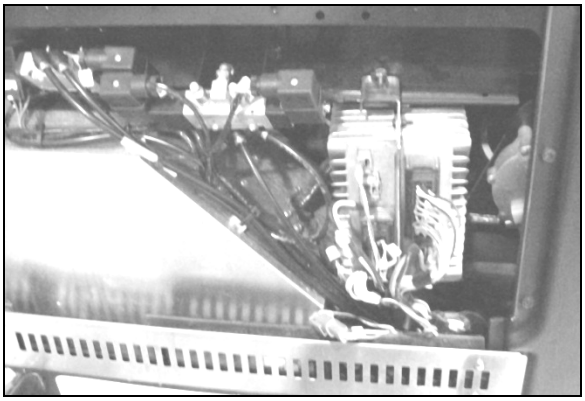


FIGURE 30: ENTRANCE DOOR & WIPER CONTROL PANEL
06619

The door is held in the closed position during coach operation by a two air cylinder locking mechanisms (Figure 31).

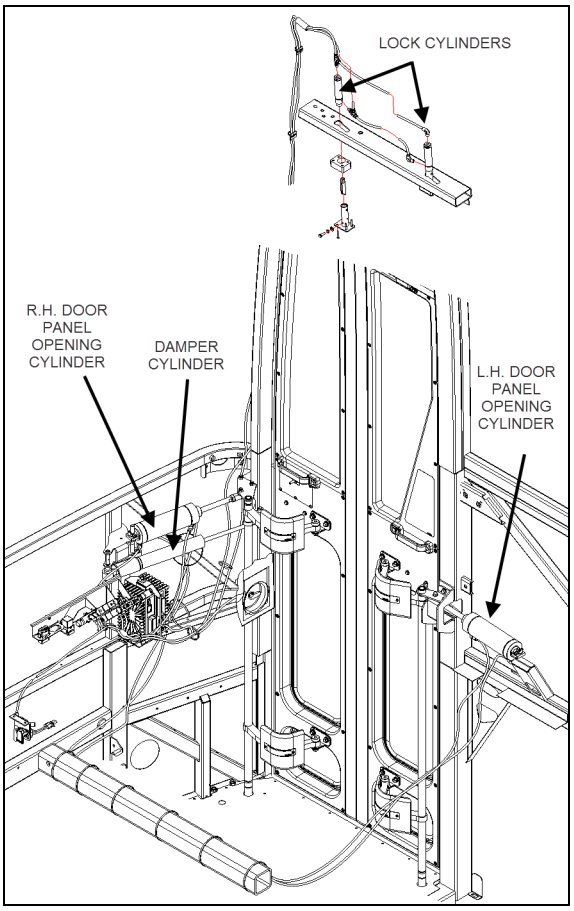


FIGURE 31: ENTRANCE DOOR - VIEW FROM INSIDE

Air cylinders with return spring in the cylinder body are used. Air cylinders are controlled by an electrically operated solenoid valve energized by a multiplex module located under the right hand dashboard.

To open the door, initial action from multiplex module output energizes the air lock solenoid valve, venting the door locking cylinders. The return locking spring pulls the door lock away from the latch, unlocking the door. Door movement starts only when pressure in the central air door lock is below 10 psi. The "air cylinder open solenoid valve" opens and allows air to flow to the door cylinders, "the air cylinder close solenoid valve" exhausts air from the rod side of the cylinders.

To close the door, initial movement of the switch energizes the "air cylinder close solenoid valve" and air flows to the cylinders by their rod side ports. The "air cylinder open solenoid valve" exhausts air from cylinders. When the sensor signals the door as closed, the air lock solenoid valve is de-energized and loads the door lock

cylinders. The cylinder moves the door lock in a position which engages a latch on the entrance door, holding the door positively closed.

Emergency exit valve, which opens the air valve circuit should be used only in emergencies, or when the door control system does not function properly.

Refer to the air system schematic diagram and to page 29.1 of the wiring diagram.

- **Operation**

Lock or unlock the entrance door from outside the vehicle by turning the key in the door lock (counterclockwise to lock, clockwise to unlock). The entrance door can be unlocked from the inside using the small lever located on the door.

The air-operated door is controlled from inside the coach by two push-button switches located on the R.H. dashboard.

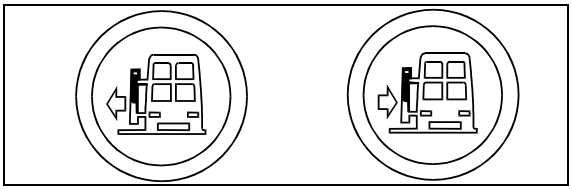


FIGURE 32: ENTRANCE DOOR OPERATING BUTTONS 06464

From the inside, open the door by pressing the door opening switch (L.H. button) on the R.H. dashboard panel. The door will open to full open position within 5 seconds.

Close by pressing and holding the door closing switch (R.H. button) on the dashboard. If the closing switch is released before the door is fully closed, the door will stop in that position.

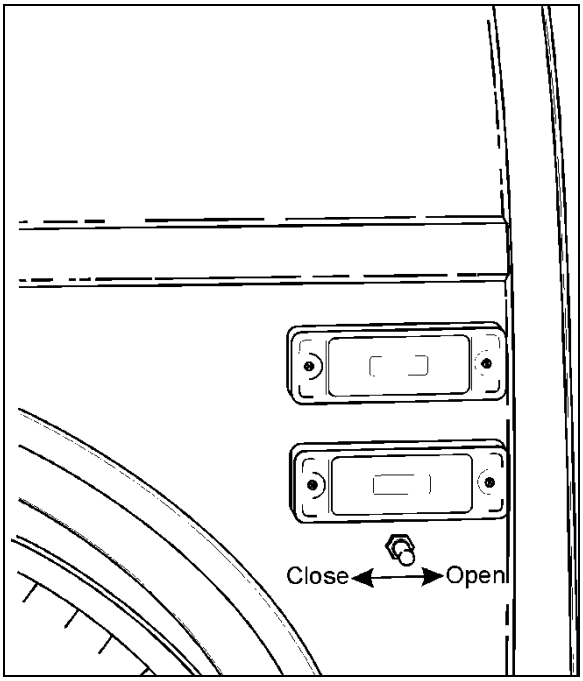


FIGURE 33: ENTRANCE DOOR CONTROL SWITCH 18599

Opening and closing of the door from outside the coach is accomplished by a momentary toggle switch located under the front R.H. side marker light (Figure 33).

To close the door, the switch must be pushed towards the rear of the coach and held in position until the door has completed its movement. The door can be closed to any position by releasing the switch (or button, if inside) when the desired position is attained. However, the door is not locked in any position other than fully closed. The door can then be closed further by pushing or pulling on the door.

To open the door, the switch must be pushed towards the front of the coach and held in position. When the door reaches the fully opened position, the system will keep pressure in the cylinder locking the door in that position.

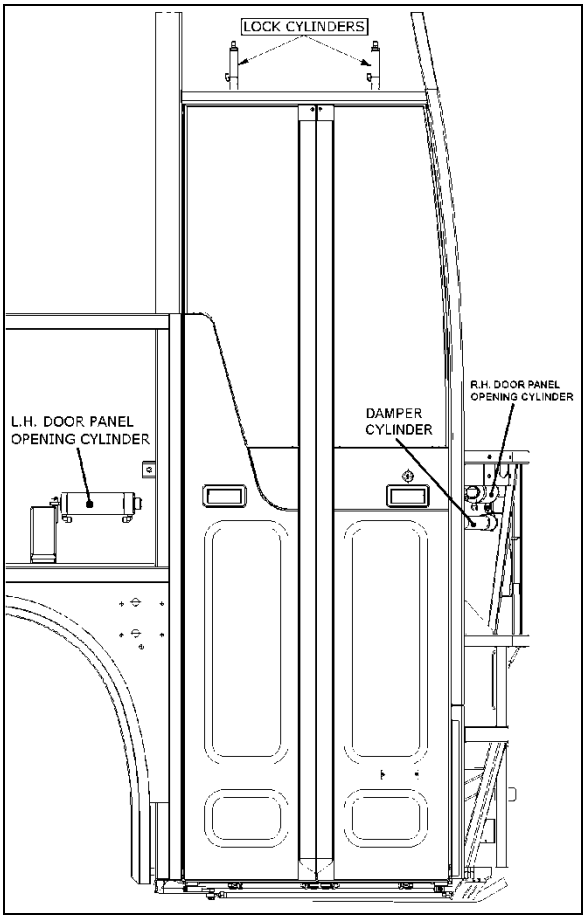


FIGURE 34: ENTRANCE DOOR - VIEW FROM OUTSIDE

- **Emergency Exit Valves**

From inside the vehicle, an emergency exit valve located on the dashboard R.H. side near the entrance door, releases the pressure from the lock cylinders. From the exterior, an emergency exit valve located in the front service compartment, also releases the air from the lock cylinders.

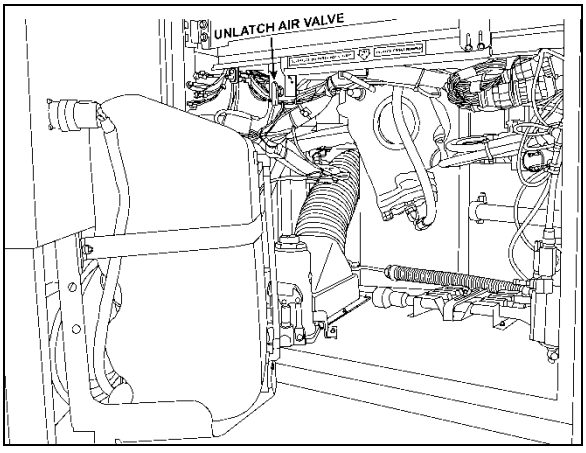


FIGURE 35: EXTERIOR UNLATCH AIR VALVE **12209**

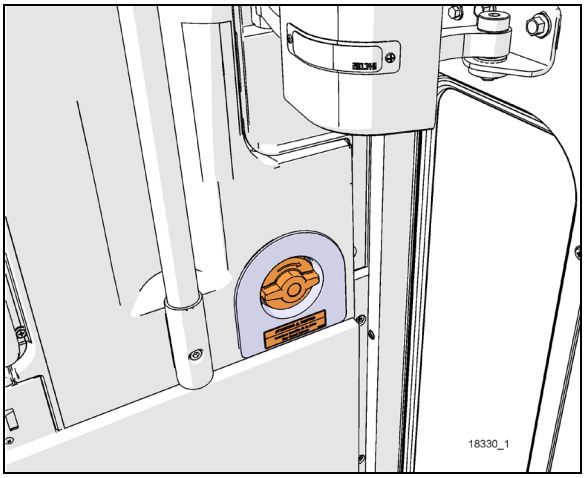


FIGURE 36: INTERIOR UNLATCH AIR VALVE **18330**

Without Air and/or Without Electricity

If the air pressure drops while the coach has or hasn't any electricity, the spring loaded cylinders will unlatch the door. In such a case, unlock the door by moving the lever on the door or by using the key, then open the door manually.

With Air but Without Electricity

From inside the vehicle, turn the emergency exit valve to the "UNLOCK" position. Move the lever. From the exterior, turn the emergency exit valve to the "UNLOCK" position. Open the door. Close it, lock with the key and reset the outside emergency exit valve to the "NORMAL" position.

- **Door Cycle Speed Adjustment**

To do any adjustment, remove the panels located next to the R.H door panel hinges.

CAUTION

It is important to make sure that damper does not reach end of stroke when entrance door is completely closed or opened. The door cylinders must stop the door on opening. Screw or unscrew rod end to adjust if necessary.

To adjust opening and closing cycle speed on damper (Figure 37):

7. Remove the damper from the vehicle and hold it vertically with the lower eye or pin attachment in a vice. Use clamp plates to prevent damage.

8. Fully close the damper while turning the dust cap or piston rod slowly CCW until it is felt that the cams of the adjusting nut engage in the recesses of the foot valve assembly (Figure 37).

NOTE
In figure 23, if there is an indentation (B) in the dust cap (C) and the cover shows two holes (A), the damper is fitted with a bump rubber (D). If so, fully extend the damper and insert a round bar or screwdriver through the holes. Push the bump rubber down and remove. Remove the split plastic collar (E) (if fitted) from the piston rod.

9. The damper may have already been adjusted. Therefore check whether the damper is adjusted or not by keeping it closed and gently turning further CCW, counting at the same time the half-turns until a stop is felt. Stop turning and do not force.
10. While keeping the damper closed, make two CW half-turns. In case of prior adjustment, add the number of half-turns previously counted. The total range is about five half-turns. Pull the damper out vertically without turning for at least 3/8" (1cm) to disengage the adjusting mechanism. The dust cap or piston rod may now be turned freely.
11. The damper can now be refitted in the vehicle.

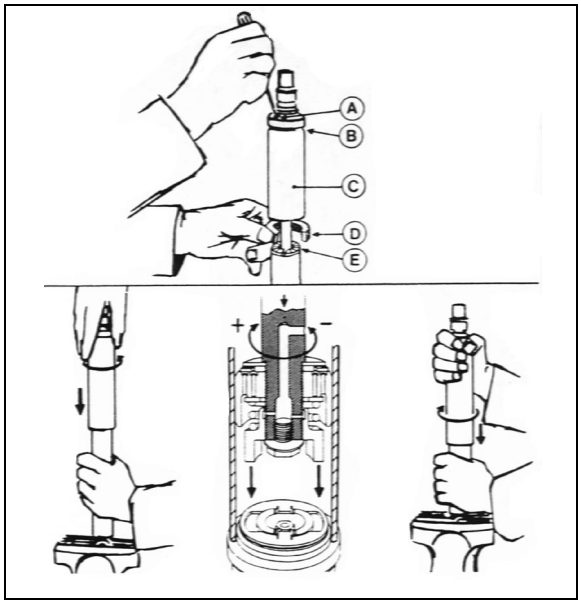


FIGURE 37: DAMPER 18643

NOTE
*Where a bump rubber was installed, refit same inside the dust cap and by fully closing the damper, the rubber will seat again at top of the dust cap. Refit the split plastic collar E (*Figure 37*).*

12. Reinstall panels and R.H. entrance door panel hinge cover.

- **Entrance Door Panel Adjustments**

Before attempting to correct any entrance door operating problem by adjusting any part of the air cylinder assembly, first perform the following mechanical checks and procedure.

Check around the perimeter of the door for binding. If any binding is found, adjust as follows:

- Horizontal and vertical adjustment

7. Support the door panel with a wooden block and a hydraulic jack.
8. Unfasten the bolts fixing the door panel plates. See figure 24

NOTE
Ask an assistant to help you to perform the following adjustments.

9. Adjust the door horizontally and vertically with the jack. Tighten the bolts. Remove the jack and the wooden block.

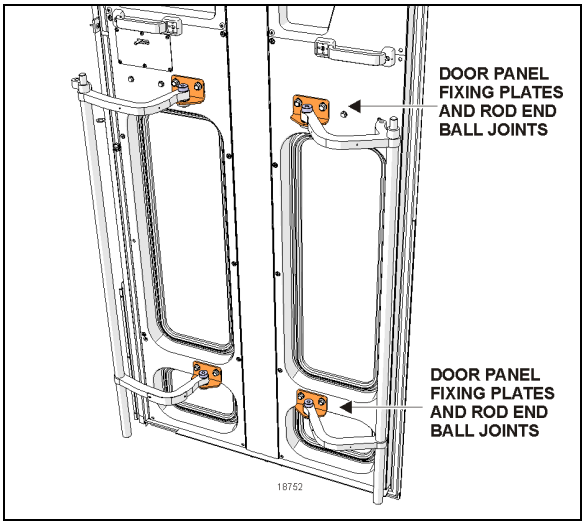


FIGURE 38: DOOR PANEL ADJUSTMENTS

- Depth adjustment

1. Support the door panel with a wooden block and a hydraulic jack.
2. Unfasten and then disconnect rod ends from door panel fixing plates. Screw or unscrew rod end in order to adjust door panel depth.
3. Tighten the bolts. Remove the jack and the wooden block

9.1.9 Front Electrical & Service Compartment Door Body Panel and Window

Door Body Panel

For the removal of front electrical & service compartment door body panel, you will need:

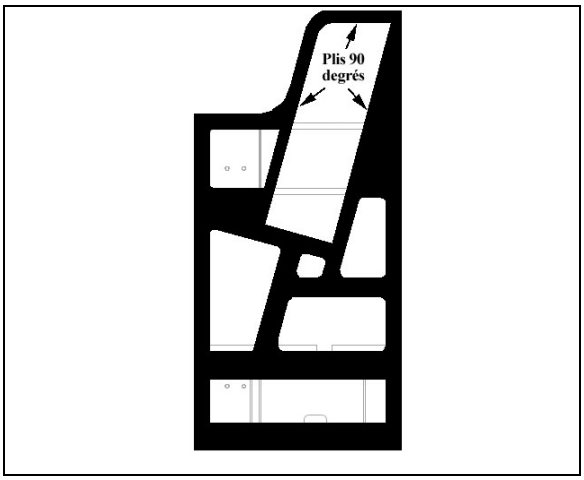
Pneumatic hammer tool (Zip Gun);

Razor sharp window scraper;

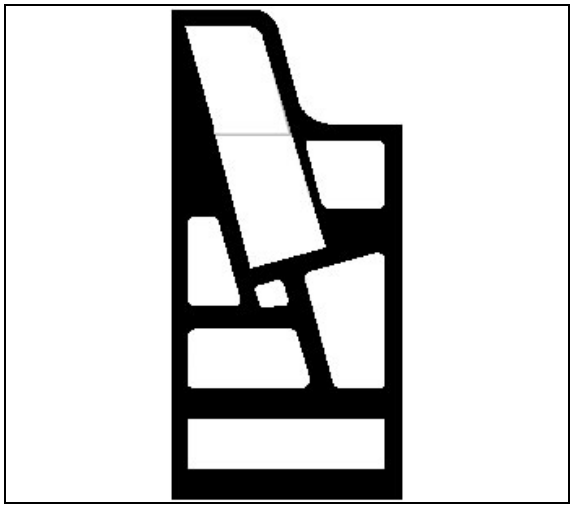
- Open service door.
- Remove interior finishing panels to access rub rail fixing bolts, then remove rub rail.
- Remove windshield washer reservoir, door lock and power window connector.
- Using the "**Zip Gun**", cut Sika bead located ¼ inch (7-8 mm) from each body panel edge.

NOTE
Wear ear plugs during this operation.

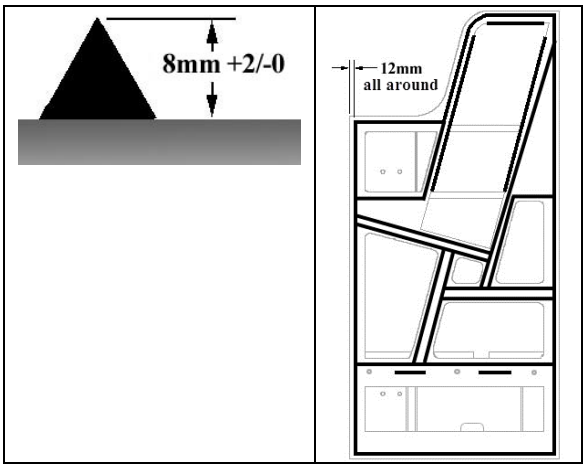
- Separate body panel from door.
- Using a razor sharp window scraper, remove from door frame Sika bead and double-face self-adhesive tape residue.
- Clean door frame using anti-silicone.
- Using a scratch pad "Scotch Brite", scratch the perimeter of the door frame where the adhesive will be applied.
- Clean door frame again using anti-silicone.
- Apply some Sika 206 G+P onto door frame.



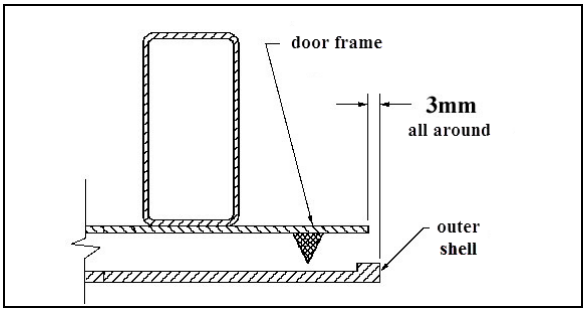
- Prepare new body panel using a scratch pad "Scotch Brite".
- Use a tack cloth to remove any dust or residue from the body panel surface.
- Clean body panel using anti-silicone.
- Apply some Sika 206 G+P onto body panel.



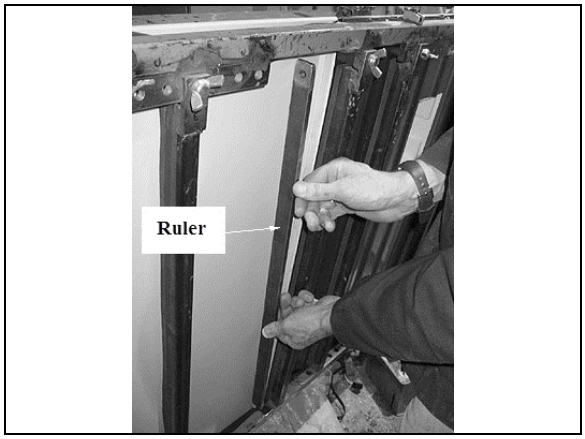
➢ Apply an even coat of Sika 255 onto the door frame.



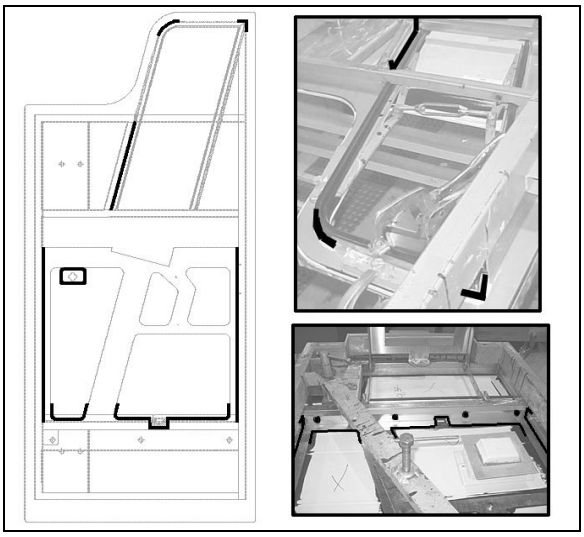
- Position body panel onto door frame and compress with your hands. Use a ruler.



- Check body panel flatness using a 2-foot ruler (must be within 2mm).

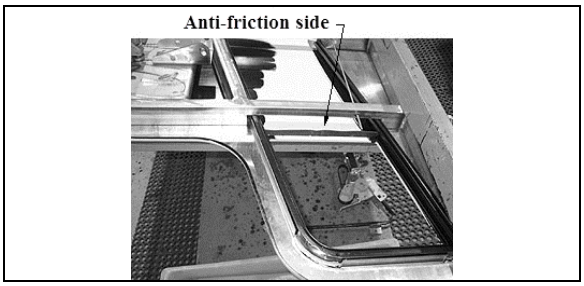


- Check proper power window sliding inside window frame.
- If applicable, remove excess of Sika adhesive all around door frame using Sika 208.
- From the inside of the door, apply some Sika 221 between door body panel and frame and on welding spots as per figure.

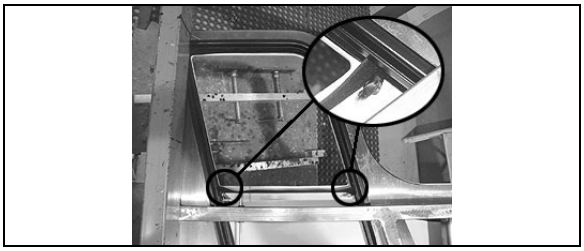


- Apply some #680066 glue inside fiber glass groove and fix power window wiper.

NOTE
Anti-friction side must be on glass side.

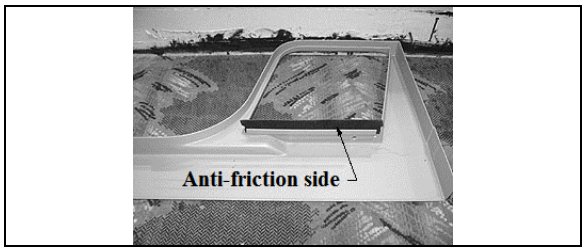


- From inside the door, apply some Sika 252 at the corners of window wiper.



- Apply some #680066 glue inside finishing panel groove and fix power window wiper.

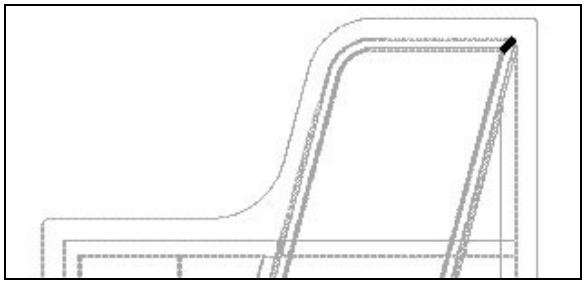
NOTE
Anti-friction side must be on glass side.



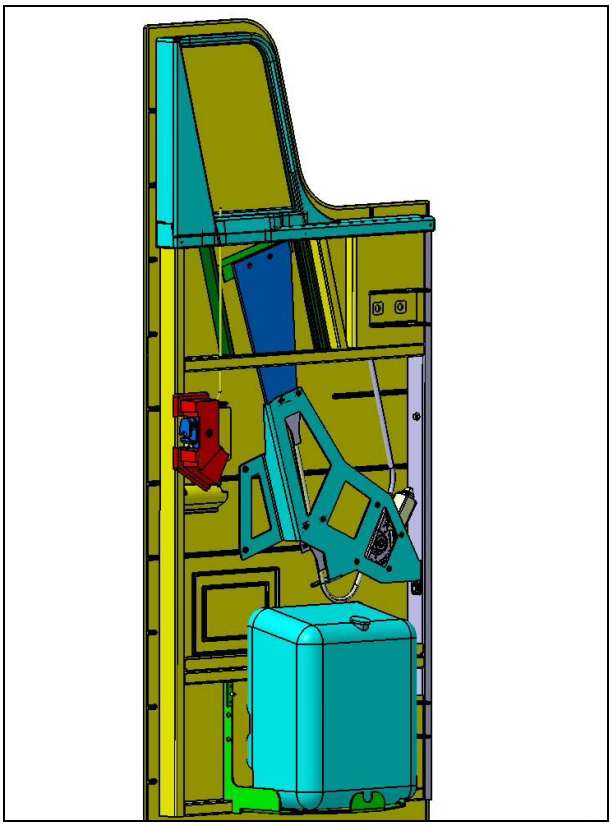
- Discard waste according to applicable environmental regulations, use dangerous waste containers.

Electrical Power Window

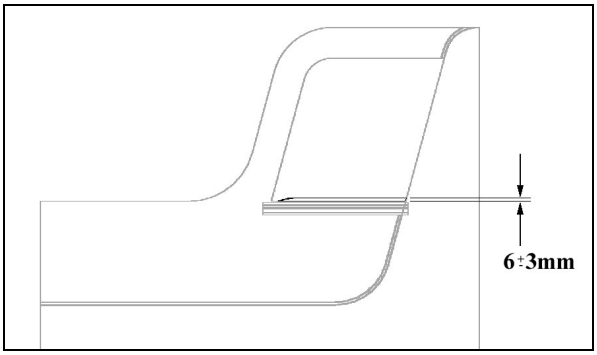
- Insert 2 seals in the window frame.
- Apply some #680066 glue at the intersection of the 2 seals and also sparingly in order to fix the seal to the window frame.



- Clean window using window cleaner.
- Insert window into frame.
- Secure window pane to raising mechanism.

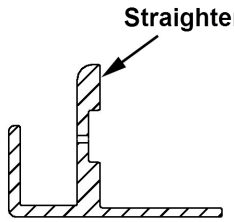


- Adjust window travel (6±3mm above window wiper).



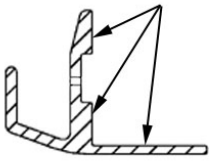
Driver's Window Gutter

- Dry fit the gutter on the vehicle. If required, straighten up gutter using a hammer and a wooden block.



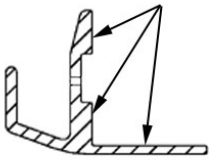
COACH

- Apply anti-silicone inside right angle.



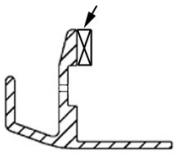
X3-45 VIP

- Apply Sika 205 inside right angle.



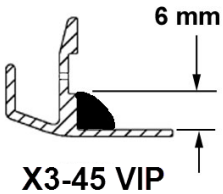
X3-45 VIP

- Apply 1/16 x1/4 double face self-adhesive tape onto gutter.



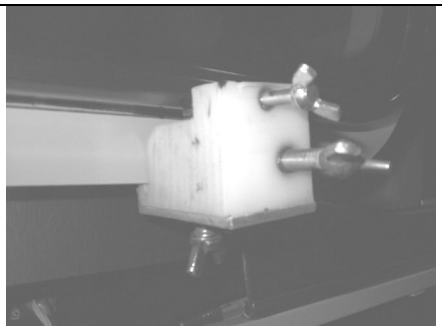
X3-45 VIP

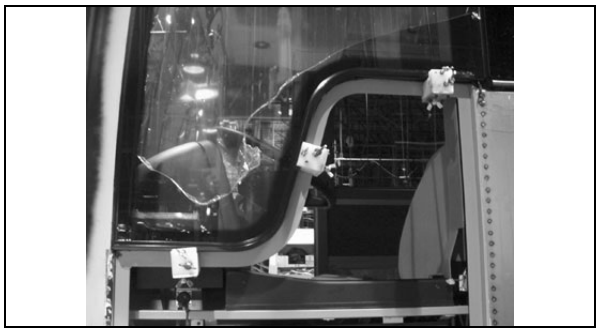
- Peel the back from double face self-adhesive tape.
- Apply Sika 252 inside right angle.



X3-45 VIP

- If applicable, remove plastic film at the bottom of driver's window.
- Remove excess of Sika underneath driver's window.
- Clean bottom of driver's window using window cleaner.
- Apply Sika Aktivator at the bottom of driver's window.
- Install gutter under driver's window then compress in order to fix double face self-adhesive tape.
- Install 3 clamps and allow curing for 4 hours.





- **Upper Lateral Window**

For the removal of driver's window or upper lateral window, you will need:

Pneumatic hammer tool (Zip Gun);
Razor sharp window scraper;
"Olfa" knife;
Face shield.

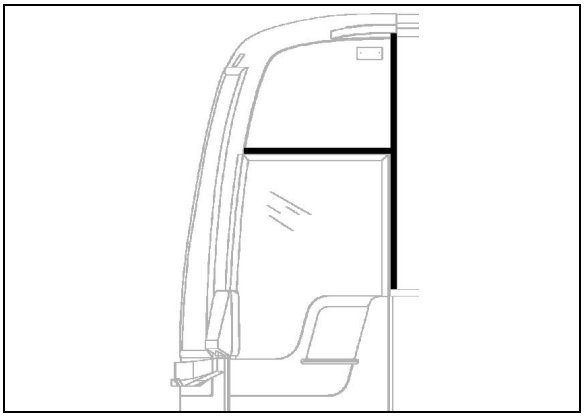
- In the case of driver's window only, open front service compartment door.
- Mark the position of the driver's window for future reference.
- From inside of vehicle, cut Sika bead around window perimeter using a "Zip gun" while another person hold the window from the outside.

NOTE
Wear ear plugs during this operation.

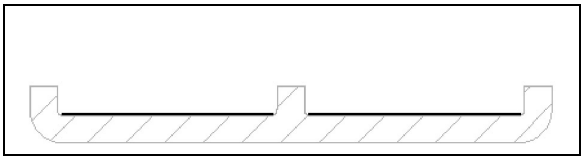
- Then, move outside of vehicle and cut Sika bead to free window while somebody else hold the window from the inside.
- Carefully remove window from frame, ask for help if needed.
- Using a razor sharp window scraper, remove from window frame Sika bead and double-face self adhesive tape residue.
- First of all, check Sika 205 cleaner expiration date.
- Before applying Sika cleaner, fold "Chix" cloth twice for proper width.
- Apply an even coat onto the inside of window frame and allow drying for 2 minutes (maximum 2 hours).
- Discard waste according to applicable environmental regulations, use dangerous waste containers.
- Apply masking tape before applying Sika glue to protect paint and adjacent window during surface treatment.

For gluing of upper lateral window, refer to procedure **SAV00632**.

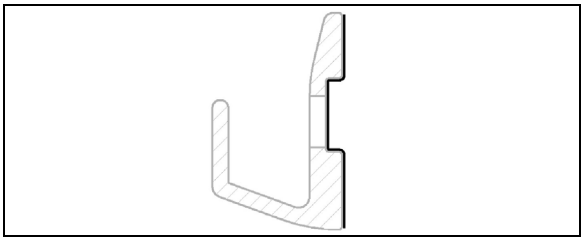
- **Glued Molding Installation**
  - Clean window gluing area using window cleaner.
  - Apply Sika Aktivator onto gluing area making sure to avoid Sika adhesive if it is not cured yet.



  - Apply anti-silicone onto molding.
  - Apply Sika 205.

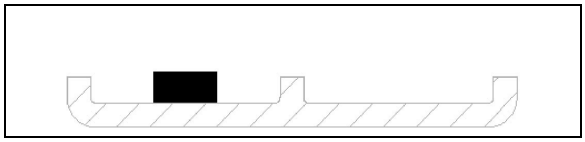


  - Clean gutter using anti-silicone.

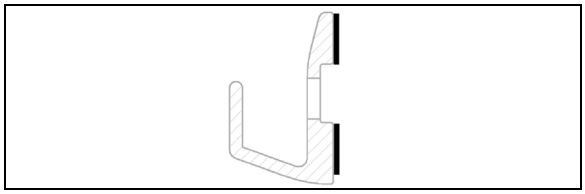


  - To seal screw holes, remove screw, apply Sika 205 inside the hole then apply Sika 252.

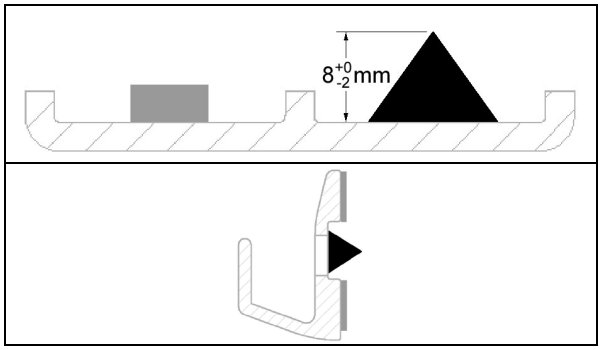
- Apply a double-face self adhesive tape 1/8 by ¼ inch inside the molding onto the whole length.



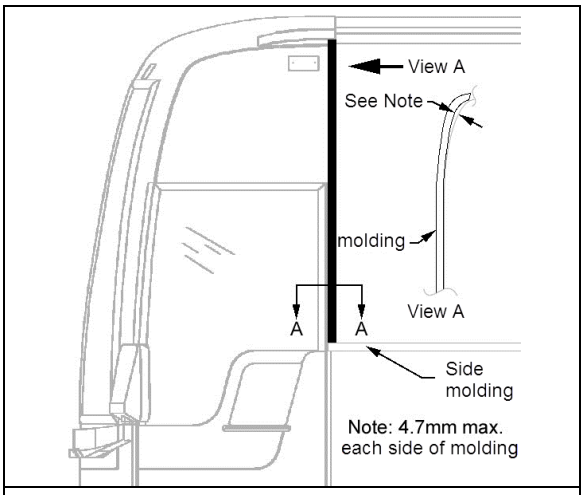
- Apply a double-face self adhesive tape 1/32 by ¼ inch onto the whole length of the gutter.



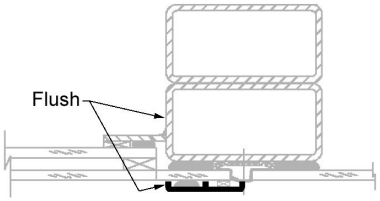
- Apply Sika 252 inside the moldings onto the whole length.



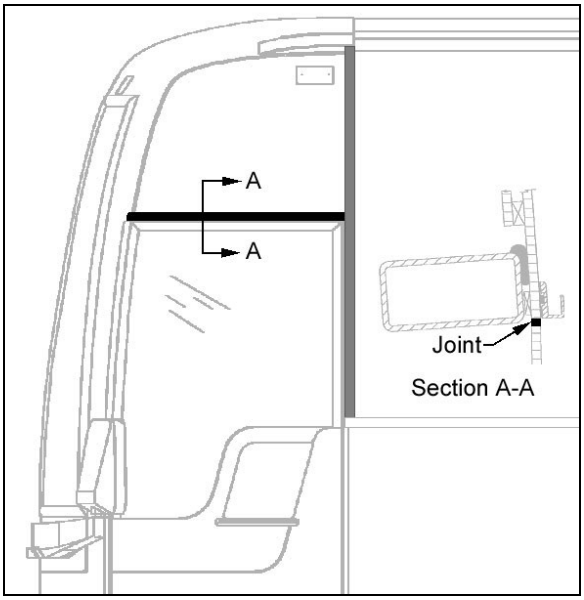
- Position and fix vertical molding. Lean vertical molding against lateral molding. Make sure vertical molding lines up with structural tubing.



SECTION VIEW A-A



- Position and fix horizontal molding (gutter). Lean gutter against vertical molding. Position gutter just above Sika finishing joint.



- Apply masking tape on each side of vertical molding. Apply Sika 252 to fill the gap between molding and windows.
- Smooth down the joint with finger.
- If required, clean surfaces using Sika 208.

9.1.10 Front Cap

The fiberglass front cap does not need any maintenance except painting as needed. It is held in place with adhesive. If ever it has to be replaced, make an appointment at a Prevost service center near you. For minor damages, refer to paragraph 7 “COMMON FIBERGLASS REPAIR PROCEDURE” and paragraph 8 “COMMON PAINTING PROCEDURE”.

9.2 ZONE 2

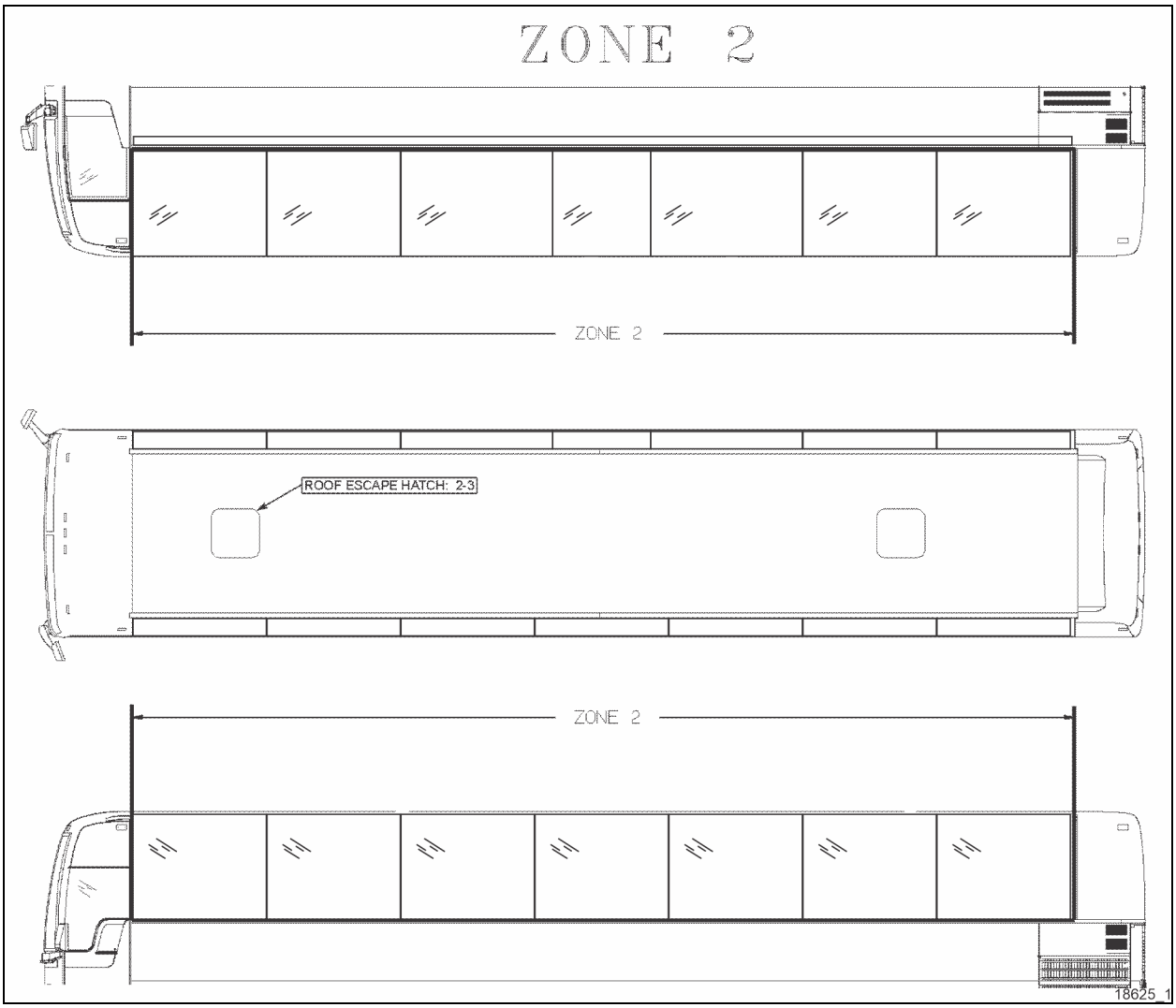


FIGURE 39: ZONE 2

9.2.1 Side Windows

Seven passenger side windows are installed on each side on X3-45. For vehicles equipped with wheelchair lift system, only six side windows are installed on the curbside. They are made, single or double-glazed, heat absorbing AS-3 glass. Windows are mounted in painted aluminum extrusions, which hold the glass in place from the top rail of the coach. The extrusion also serves as a hinge to allow the window to swing open when needed.

The single-glazed windows are made of tinted tempered safety glass, while the double-glazed windows are made of tinted tempered safety glass outside and clear tempered glass inside.

9.2.2 Emergency Exit Windows

Most of the windows of the X3-45 serve as emergency exits. The emergency exit windows arrangement is slightly different on a vehicle equipped with a wheelchair lift system (Figure 40).

Except for the top window edge, the three glass edges are unprotected. The workers must be

extra careful when manipulating or installing such windows.

In addition, when it becomes necessary to lay down the unprotected edges of the glass window, never use a steel or concrete floor as support. It is recommended to use a wooden support, or even better, a padded surface.

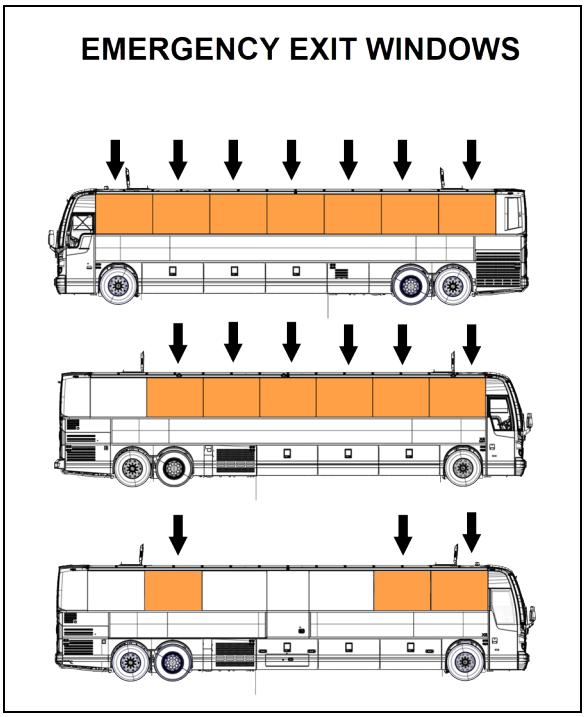


FIGURE 40: X3-45 EMERGENCY EXIT WINDOWS 18615

An emergency exit window can be opened by sliding the red button on the release bar to disengage the safety latches, and then by pushing out the window frame (Figure 41).

Emergency operating instruction decals are affixed under each emergency exit window. To close the window, pull back the window and push down the release bar.

- **Emergency Exit Release Bar**

The emergency exit release bar system is generally maintenance free. It has been designed to answer the twenty pound resistance criteria for opening the emergency window. If this handle should be replaced:

1. Remove the screws and bolts securing it to the emergency exit window;
2. Install a new release bar, reverse the procedure.

NOTE

Check the legal requirement of twenty pound maximum resistance to be sure to comply with FMVSS No 217.

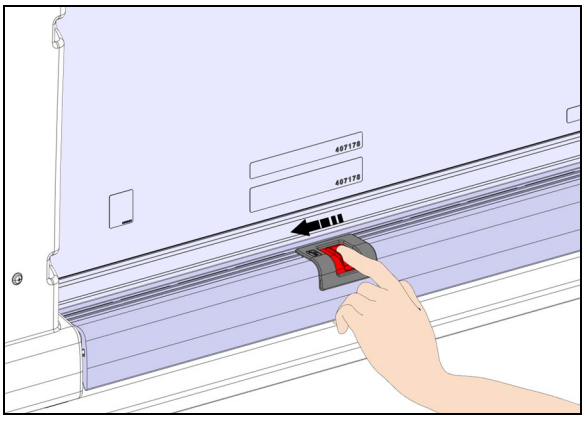


FIGURE 41: EMERGENCY EXIT WINDOW 18391

- **Emergency Exit Window Adjustment**

Emergency exit windows should be checked periodically for easy opening and closing. Sliding the red button on the release bar should disengage both locks on the window simultaneously. The tension required to release the window should not exceed twenty pounds (9 kg) of force.

The release bar mechanism itself has been designed such as no adjustments are necessary.

If too much effort is required to disengage the locks when sliding the button or if the window doesn't close tightly or rattles, check for interference by foreign objects or nearby parts into mechanism, such as the microswitch, rubber seal, wires, etc. Correct situation immediately.

NOTE
Tangs on the lock must be in a horizontal position.

- **Emergency Exit Window Replacement**

NOTE
Window is heavy and fragile. Use suction cup handles and help from teammates. Prepare a soft material surface to receive the removed window.

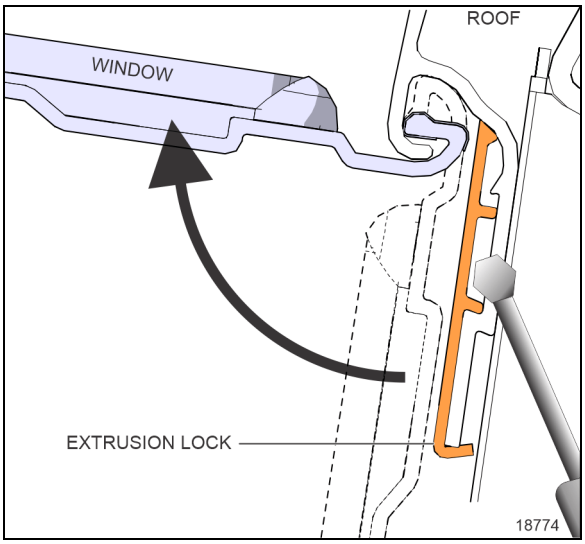


FIGURE 42: EMERGENCY EXIT WINDOW REMOVAL

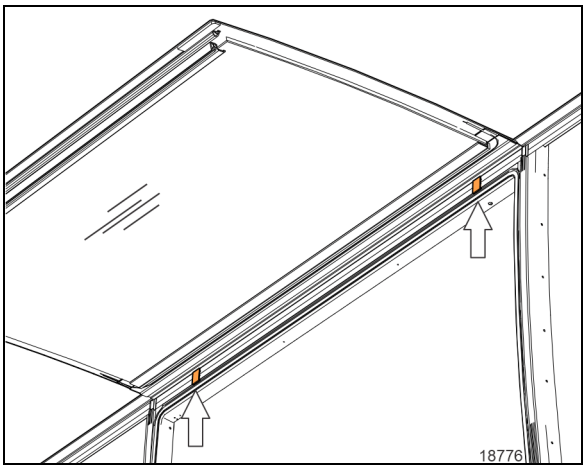


FIGURE 43: EXTRUSION LOCK LOCATION

1. Slide the red button to tilt up the release bar.
2. Partly lift the window and support it so it stays open.
3. Remove the two extrusion locks with a flat screwdriver.
4. With the help of teammates, slowly rotate the window outward ninety degrees (90°). At this angle the window can be released by slightly pushing the window inward.

WARNING

Ask teammates to support the window else it may fall out.

5. The window is free and can be unhooked.

Reverse the procedure to install a new emergency exit window.

9.2.3 Roof Escape Hatch

The vehicle can be equipped with one or two escape hatches. The escape hatch is designed to provide years of reliable service with a minimum of maintenance. All components are rust proof, and moving parts are Teflon coated to eliminate need for lubrication. Should water infiltrate the vehicle from the escape hatch, refer to the heading "Sealing" in this paragraph for procedures on how to seal this area.

CAUTION

Use of lubricants, paints, or other coatings such as graffiti deterring sprays is not recommended.

Suggested maintenance includes periodic inspection of fasteners for evidence of loosening due to tampering, and regular cleaning with mild soap and water.

Although there are other cleaning solutions available, some contain solvents and other chemicals that can attack the high strength materials used in the production of the escape hatch.

CAUTION

Ensure that cleaning solutions are compatible with the materials used on the escape hatch.

Graffiti removing cleaners often contain acetone, ether, lacquer thinner or other solvents known to destroy the high strength properties of many plastics. Use of these cleaners must be avoided. Graffiti-resisting coatings often leave a sticky residue that interferes with smooth up/down movement of the hatch mechanism. Some of these coatings also contain solvents that will reduce the strength of certain components.

CAUTION

Use of these coatings is at considerable risk and should be avoided.

- **Repair**

All components used in the production of the escape hatch are available as service parts, except for one hinge that represents a possible hazard when improperly reattached to a hidden tapping plate, itself often damaged whenever the hinge is damaged. The tapping plate is permanently laminated between the inner and outer cover assemblies, and it cannot be inspected or replaced. It is therefore necessary to replace the entire assembly following damage to the hinge. See Figure 43.

CAUTION

Hinge assembly is critical and hinge should never be removed from cover assembly. Fasteners used in this assembly are special and have critical torque requirements and tamper-resistant heads to discourage tampering.

- **Sealing**

1. Open and tilt up the escape hatch cover.
2. Join the 2 ends of the rubber seal.

CAUTION

Seal joint should be toward rear of vehicle.

3. Apply rubber adhesive CA-40 (Prevost # 681285) in the gap between the seal ends.
4. Apply Sikaflex 221 sealant (Prevost # 680532) along the outline of the escape hatch on the roof of vehicle.

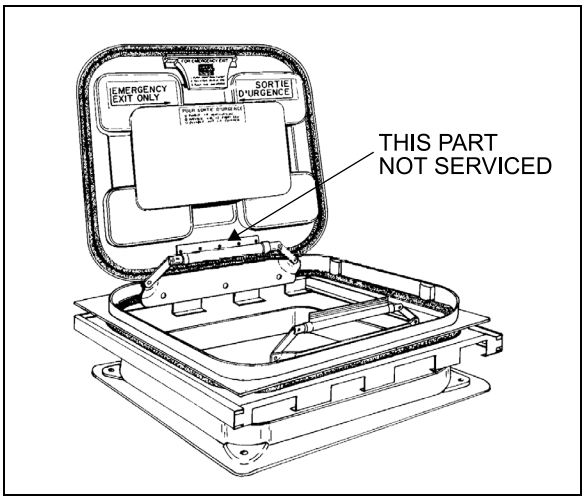


FIGURE 44: ESCAPE HATCH 18104

- **Escape Hatch Panel Assembly**

The frame of the escape hatch is riveted to the roof of the vehicle. The escape hatch panel assembly can be replaced as a unit and a new panel assembly installed in the existing frame. To remove the panel assembly, remove the 4 bolts fastening the 2 hinges to the escape hatch frame and retain the 4 flat washers. Reinstall the panel assembly by fastening the 2 hinges with the 4 bolts and flat washers removed earlier.

CAUTION

When installing, roof escape hatch's hinge must be toward the front of vehicle, to prevent the hatch from being ripped out if accidentally opened while vehicle is running.

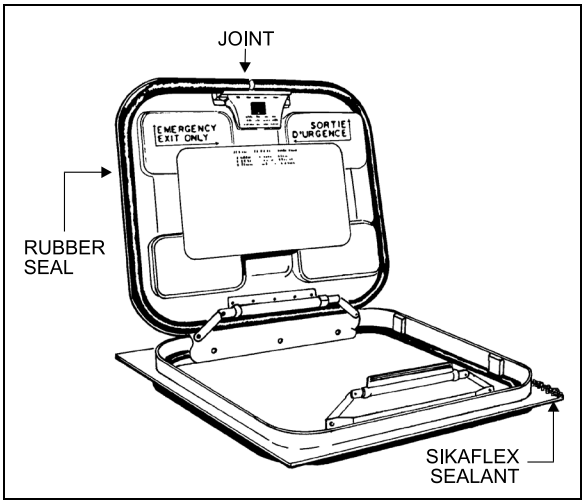


FIGURE 45: ESCAPE HATCH 18105

- **Escape Hatch Frame**

When necessary, the escape hatch frame can be removed and replaced in the following way:

1. Support the frame from inside the vehicle.
2. Remove rivets.
3. Cut the rubber seal with a sharp edge knife and remove the hatch frame.
4. On vehicle top, using the knife, remove as much as possible the remaining rubber seal.
5. Drill holes (if needed) in the new metal frame.
6. Clean both vehicle top and new hatch frame with SIKA 205.
7. Apply rubber adhesive SIKA 221 under the hatch frame surface.

8. Install the frame in place and fix it with rivets.
9. Remove excess adhesive and clean all around.

9.3 ZONE 3

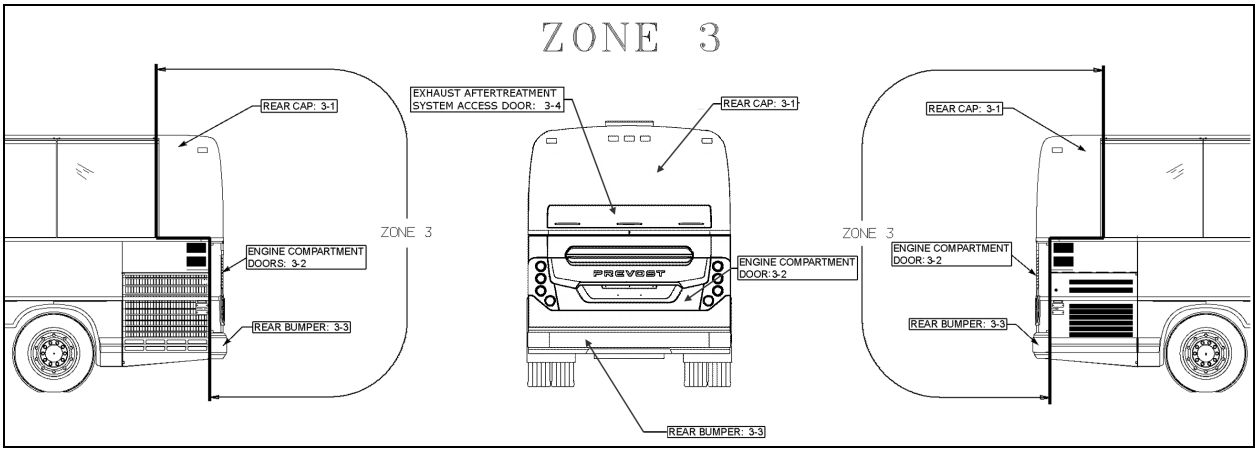


FIGURE 46: ZONE 3

18626

9.3.1 Rear Cap

The fiberglass rear cap does not need any maintenance except painting as needed. It is held in place with adhesive. If ever it has to be replaced, take an appointment at a Prevost service center near you. For minor damages, refer to Paragraph 4 "Common Fiberglass Repair Procedure" and Paragraph 5 "Common Painting Procedure".

9.3.2 Engine Compartment Door

The engine compartment door may be adjusted for proper fit by untightening support bolts:

NOTE
*Consult the "BODY PANEL AND WINDOW SPACING DIAGRAM" for proper door gaps adjustment. (*Figure 86*)*

1. To adjust the door VERTICAL position, loosen the bolts (4 on each side) holding the door supporting arm and gas springs bracket to the *vehicle structure* (Figure 46).
2. To adjust the door LATERAL position, loosen the bolts (3 on each side) holding the door supporting arm and gas springs bracket to the *door* (Figure 46).
3. Adjust the door FORE & AFT position by screwing/unscrewing the rubber door stops on each side of the door opening (Figure 46).
4. Check that the door swings freely and close properly. *It may be necessary to adjust the door latch to get proper fit and operation*.

To adjust the latch mechanism and the striker pin:

1. Open the door to access the striker pin.
2. *Slightly* loosen the striker pin.
3. Using a hammer, adjust the striker pin to center it in the door latch mechanism.
4. Tighten the striker pin.
5. Check door fit and operation.

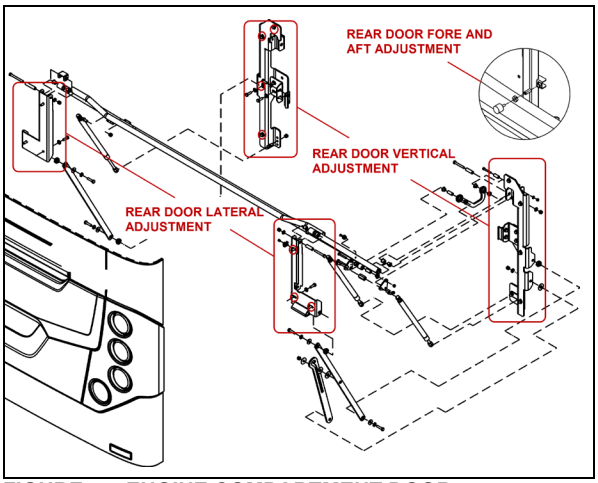


FIGURE 47: ENGINE COMPARTMENT DOOR 18633_1

9.3.3 Rear Bumper

Remove three bolts on each side holding bumper to vehicle and remove bumper.

To install bumper, reverse the procedure.

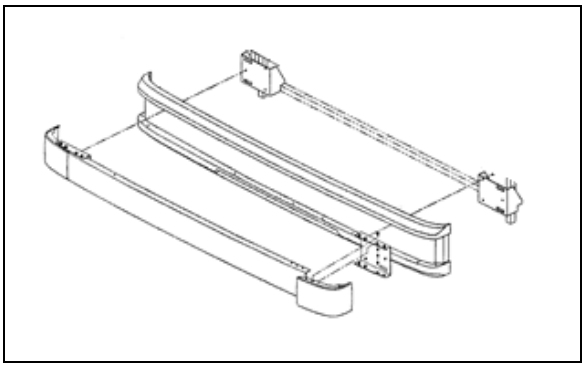


FIGURE 48: REAR BUMPER 18634

9.3.4 Exhaust Aftertreatment System Access Door

1. Open exhaust aftertreatment system access door.
2. Loosen the screws holding the panel to hinge assembly.
3. Adjust the door position according to distance required between exterior finishing parts.
4. Tighten the nuts.
5. Check that the door swings freely and closes properly.

9.4 ZONE 4

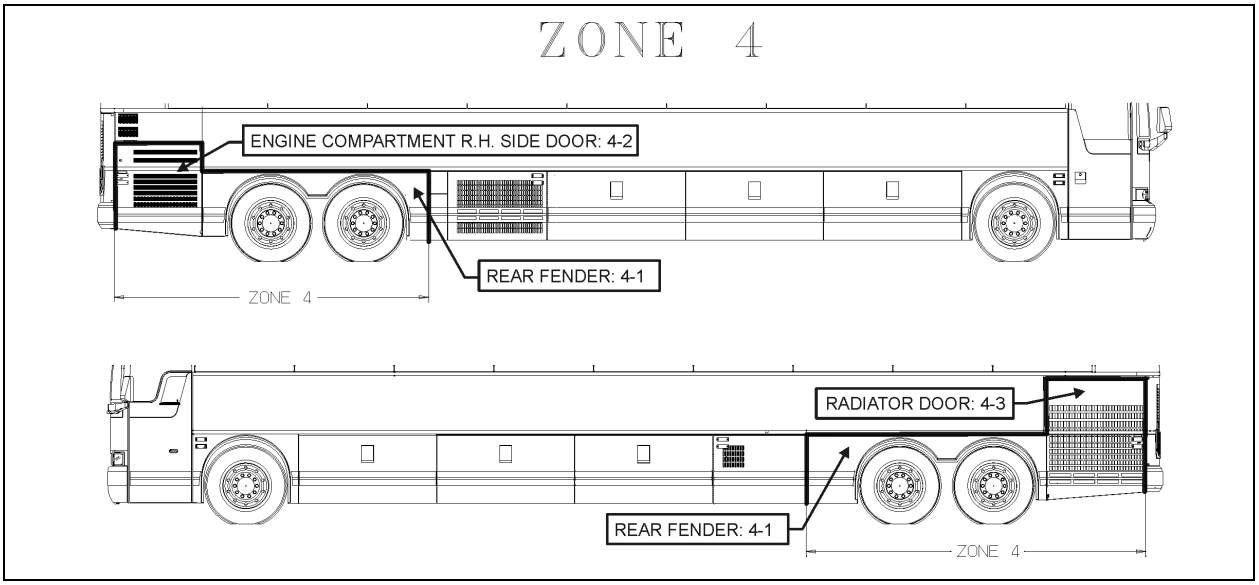


FIGURE 49: ZONE 4 18627

9.4.1 Rear Fender

Rear fenders are hinged for maintenance on brakes and suspension. Each rear fender panel has two mechanical spring loaded holding devices fixing it to the vehicle's structure. Push the spring type rod sideways to disengage the lock.

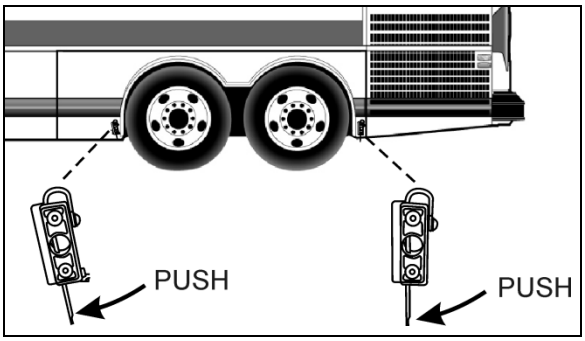
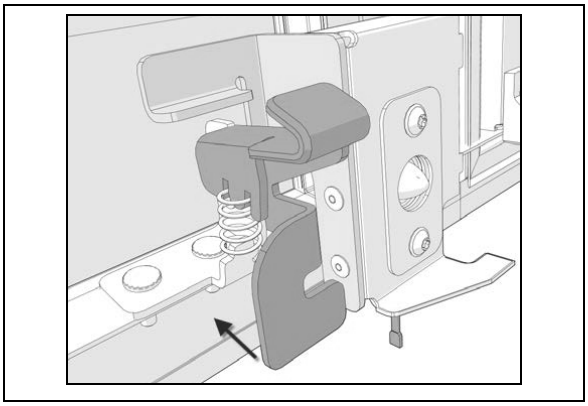


FIGURE 50: LEFT REAR FENDER

NOTE
Commuter type vehicles may be equipped with a secondary lock. Pull the handle to disengage the lock.



9.4.2 Engine R. H. Side Access Door Adjustment

Engine R. H. side access door may be adjusted for proper fit. To do so, follow the steps below:

1. To adjust the position, the door must be free to move without any restriction. For this reason, remove pin E and strike plate C (Figure 50).

   Temporarily secure the secondary lock in the depressed position with a cable tie so it does not interfere with adjustments. Remove cable tie once completed.

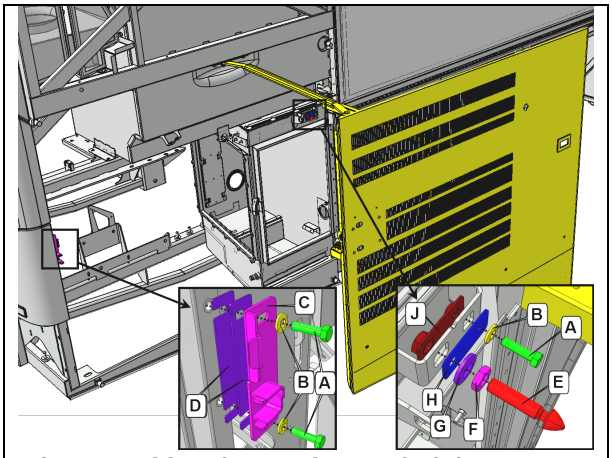


FIGURE 51: DOOR INSTALLATION – LATCH SYSTEM

A - BOLT
B - BELLEVILLE WASHER
C - STRIKE PLATE
D - SPACER
E - PIN
F – LOCK NUT
G - BELLEVILLE WASHER
H - PLATE

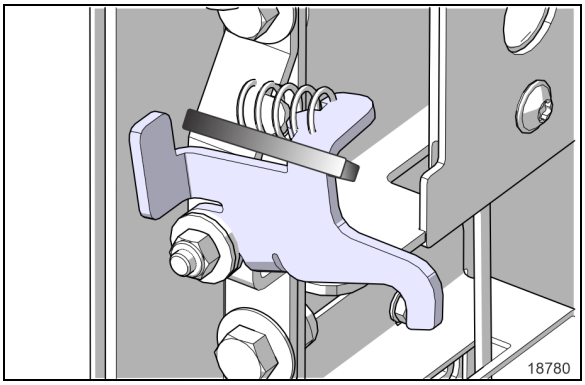


FIGURE 52: USE A CABLE TIE TO KEEP SECONDARY LOCK DEPRESSED DURING ADJUSTMENT

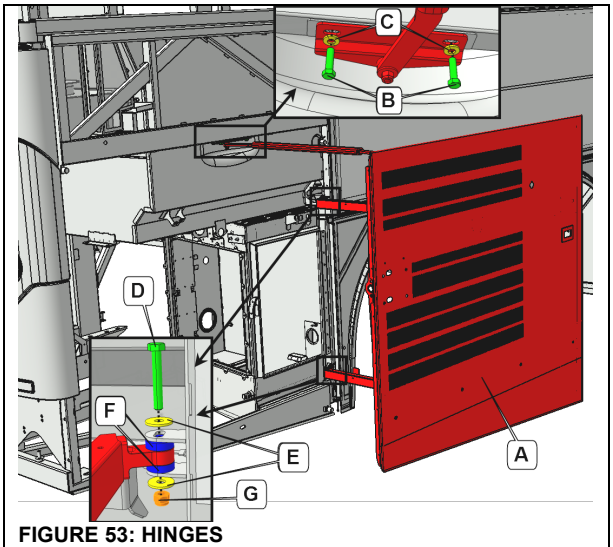


FIGURE 53: HINGES

A – ENGINE R.H. SIDE ACCESS DOOR
B - BOLT
C - BELLEVILLE WASHER
D - BOLT
E - WASHER
F –SPACER
G - NUT

Vertical adjustment

2. Make sure bolts A are tight (**FIGURE 53**).

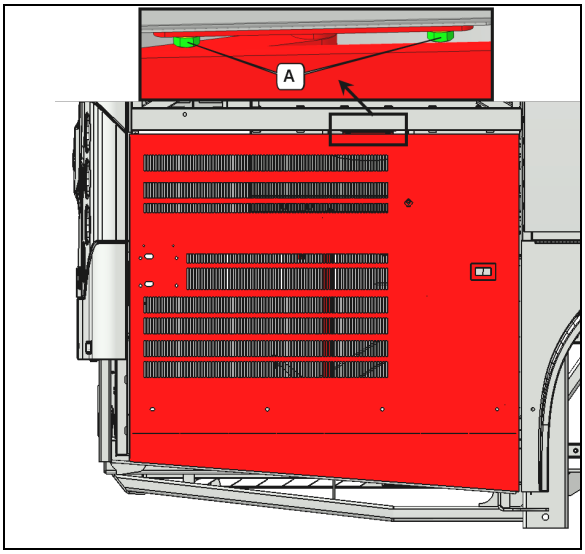


FIGURE 54

3. Compare the lower edge of the door level with the lower edge of the rear fender. The door should be flush with the fender (FIGURE 54).

   Tolerance is ± 3/32" (± 2mm)

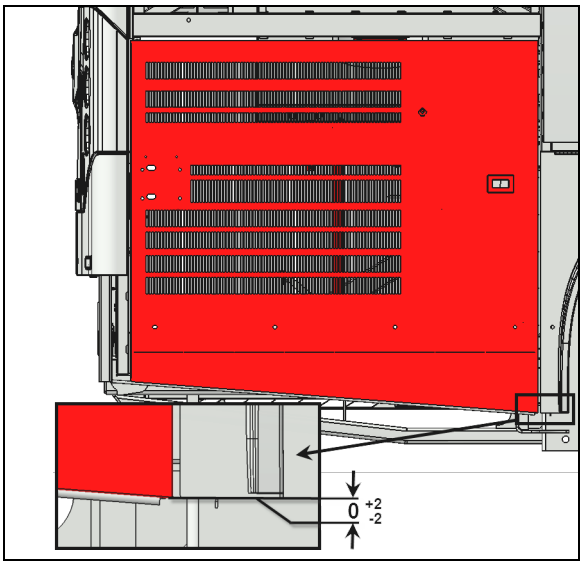


FIGURE 55

4. If the vertical position is out of tolerance, release the locking plate (Figure 56) and rotate the door using the adjustment provided on the inner side of the door, at the attachment points between the arm and the door (**FIGURE 55**).
   Tighten the locking plate nut to 14 lb-ft (19 Nm) to preserve adjustment.

   Perform the adjustment with the lower adjustment point preferably.

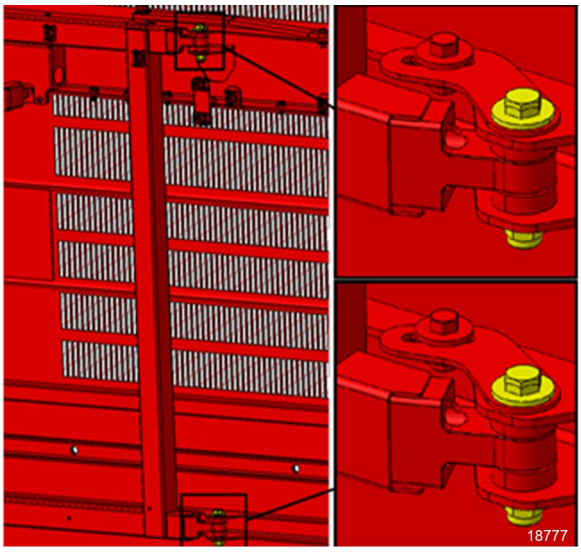


FIGURE 56

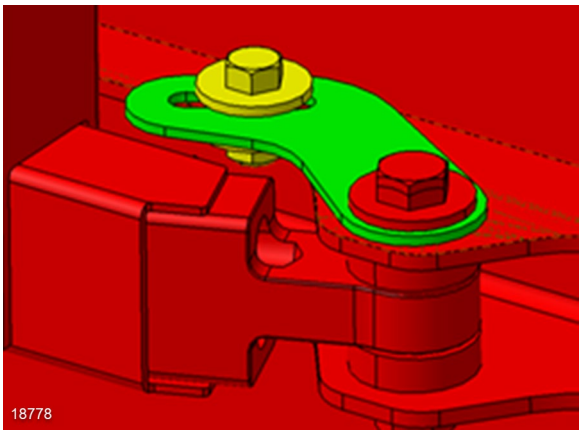


FIGURE 57: LOCKING PLATE

Longitudinal adjustment

5. Check the gap between the door and the adjacent panel at the level of the upper attachment point of the arm on the door. The gap should be ¼" (6 mm) (FIGURE 57).

   Gap 1/4" (6 mm)

   Tolerance is ± 3/64" (± 1mm)

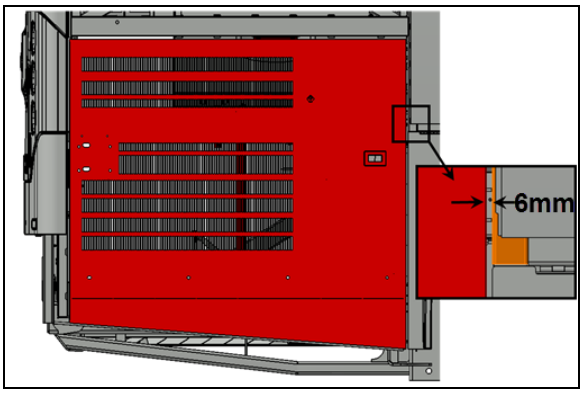


FIGURE 58

6. If the longitudinal position is out of tolerance, adjust using the adjustment provided on the inner side of the door, at the upper attachment point of the arm on the door (FIGURE 58).

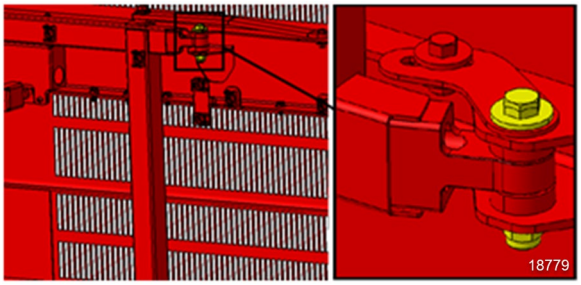


FIGURE 59

7. Check the gap between the door and the adjacent panel at the level of the lower attachment point of the arm on the door. The gap should be ¼" (6 mm) (FIGURE 59).

   Gap 1/4" (6 mm)

   Tolerance is ± 3/64" (± 1mm)

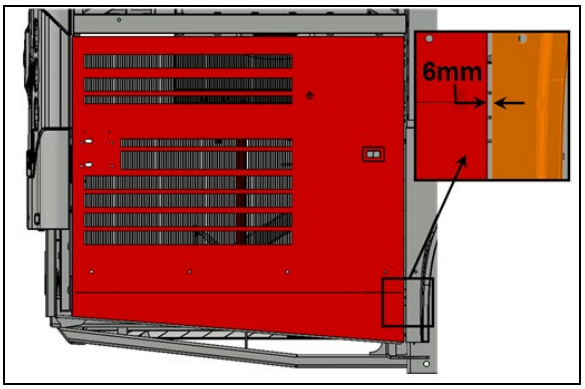


FIGURE 60

8. If the longitudinal position is out of tolerance, adjust using the adjustment provided on the lower attachment point of the arm on the vehicle chassis (FIGURE 60).

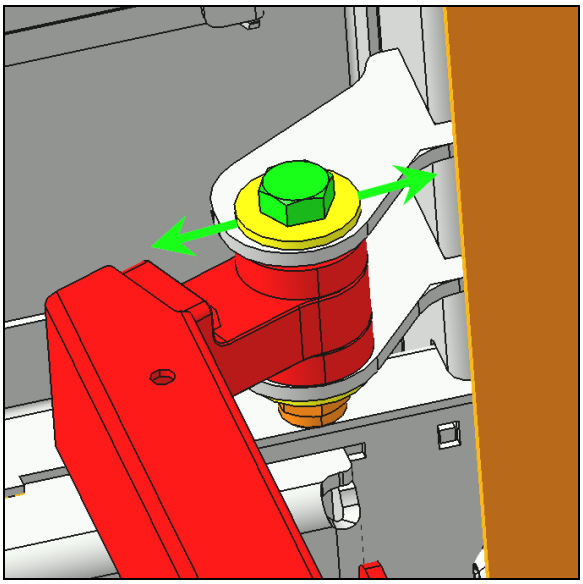


FIGURE 61

Latch installation

9. Install strike plate C and pin E centered in the available adjustment position provided by respective slotted holes (FIGURE 61). The components should be snug but not tight so that they can move when the door will be closed later on in this procedure.

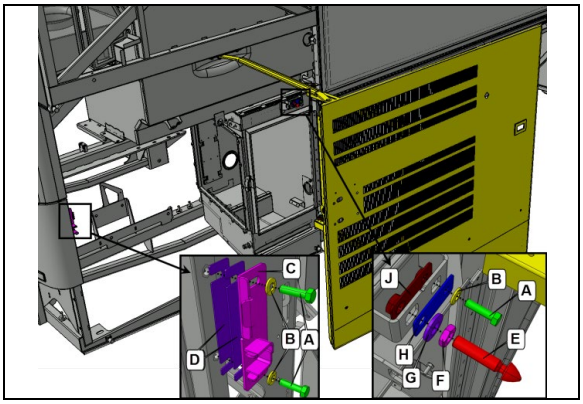


FIGURE 62

10. Check that the two items identified with arrows are snug but not tight (FIGURE 62).

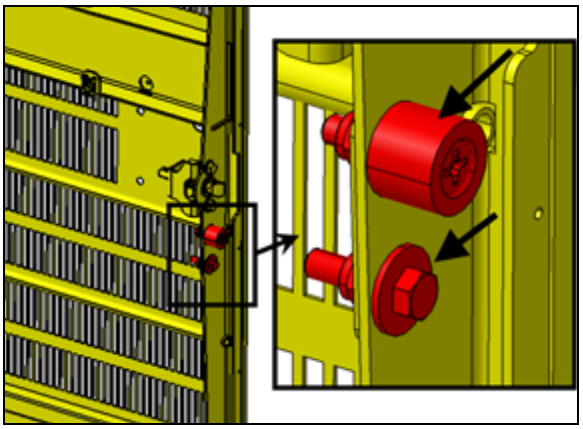


FIGURE 63

11. Before adjusting the pin, make sure that it doesn't exceed more than 2" (50mm) at the first closing of the door (FIGURE 63). Damage to the door can result if this condition is not respected.

Not more than 2" (50mm)

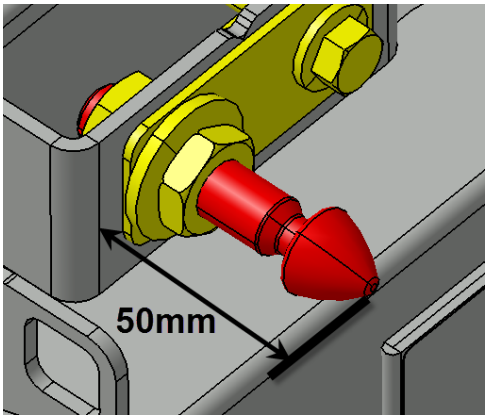


FIGURE 64

12. Close the door gently.

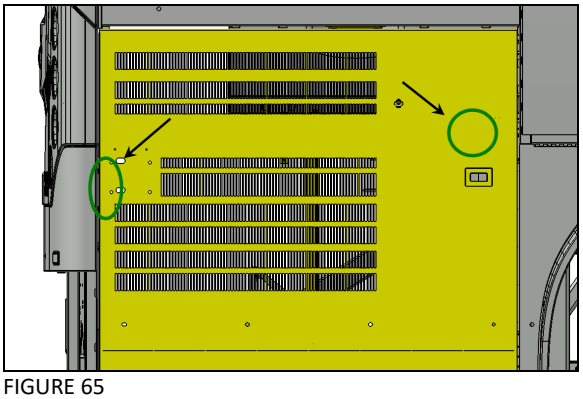


FIGURE 65

13. Open the door and perform a final tightening to the items indicated with arrows (FIGURE 65).

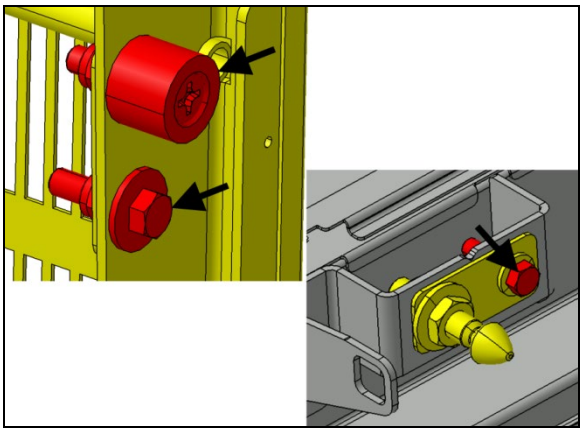


FIGURE 66

Transversal adjustment

14. Once closed, the door surface must be even with the adjacent steel panel.

Tolerance is 3/64" (1mm)

FIGURE 67: USE A RULER (SHOWN IN BLACK) TO CHECK THAT SURFACES ARE EVEN

15. Use the pin to adjust the door so it is even with the adjacent panel. Screw or unscrew the pin as required and then apply final tightening to the jam nut (FIGURE 67).

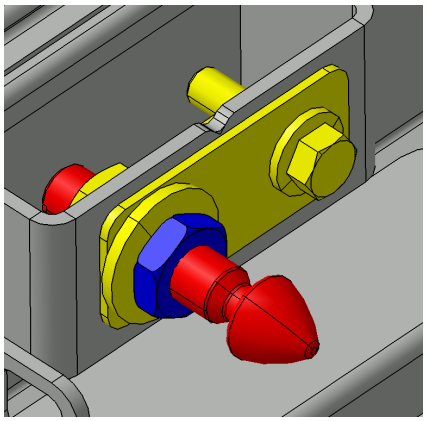


FIGURE 68

16. The R.H. side engine access door must exceed the engine compartment by 5/32" (4mm).

    Tolerance is ±3/64" (±1mm)

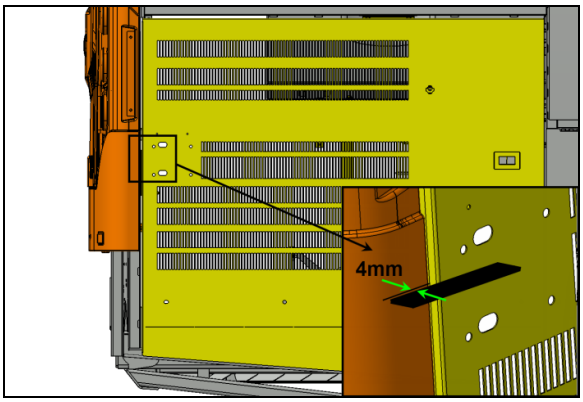


FIGURE 69

17. Perform the transversal adjustment by moving the strike plate using the slotted holes (FIGURE 69).

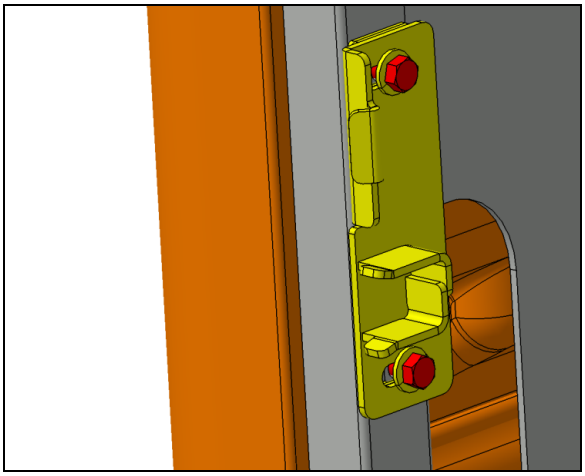


FIGURE 70

18. The latch bolt must engage not less than 13/32" (10mm) behind the strike plate.

    13/32" (10mm) min

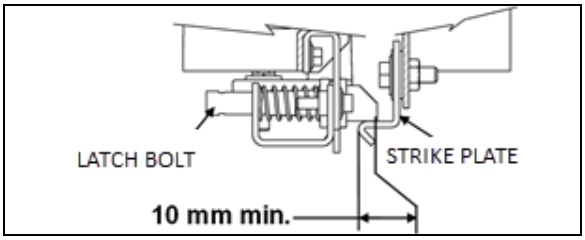


FIGURE 71

19. Screw in or out the two upper stoppers so that the upper part of the door exceeds the horizontal member by 5/32" to 3/16" (4mm to 5mm) (see FIGURE 71 & FIGURE 72).

20. Adjust the lower stopper in order to have the lower part of the door even with the fender.

    Tolerance is ± 3/64" (± 1mm)

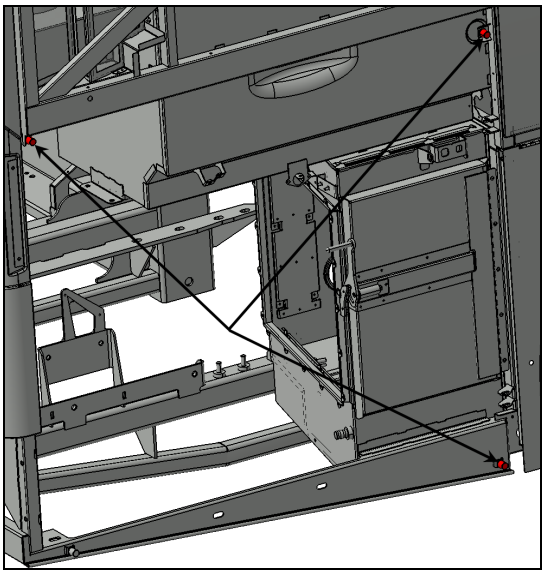


FIGURE 72

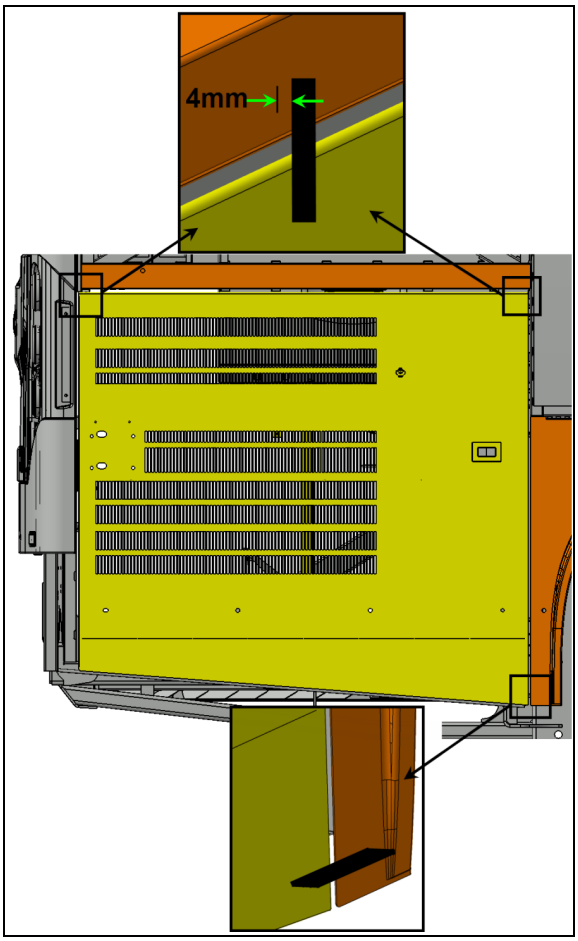


FIGURE 73

9.4.3 Engine Radiator Door

Radiator door may be adjusted for proper fit by untightening hinge bolts:

1. Loosen the bolts, (“A” & “C”, Figure 74) holding the hinge to the vehicle structure to shift the door "LEFT or RIGHT".
2. Loosening the bolts (“B” and “D”, Figure 74) allows the door to be shifted "UP or DOWN".

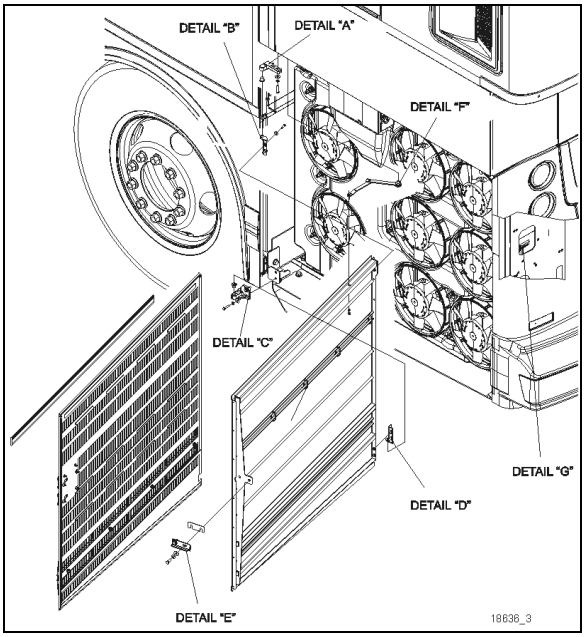


FIGURE 74: RADIATOR DOOR

3. Adjust the door position depending on the gap needed between exterior finishing panels.
4. Tighten the bolts

   Torque : 68 lb-in (8 Nm)

5. Check that the door swings freely and closes properly. It may be necessary to adjust the door latch tab to get proper fit and operation.

To adjust the latch mechanism (“E” and “G”, Figure 74) and the striker pin:

1. Open the door and slightly loosen the latch tab (“E”, Figure 74).
2. Place shims between tab and door frame to increase tab engagement length in the latch.
3. Move tab left or right to increase engagement depth in the latch.
4. Check door fit and operation.

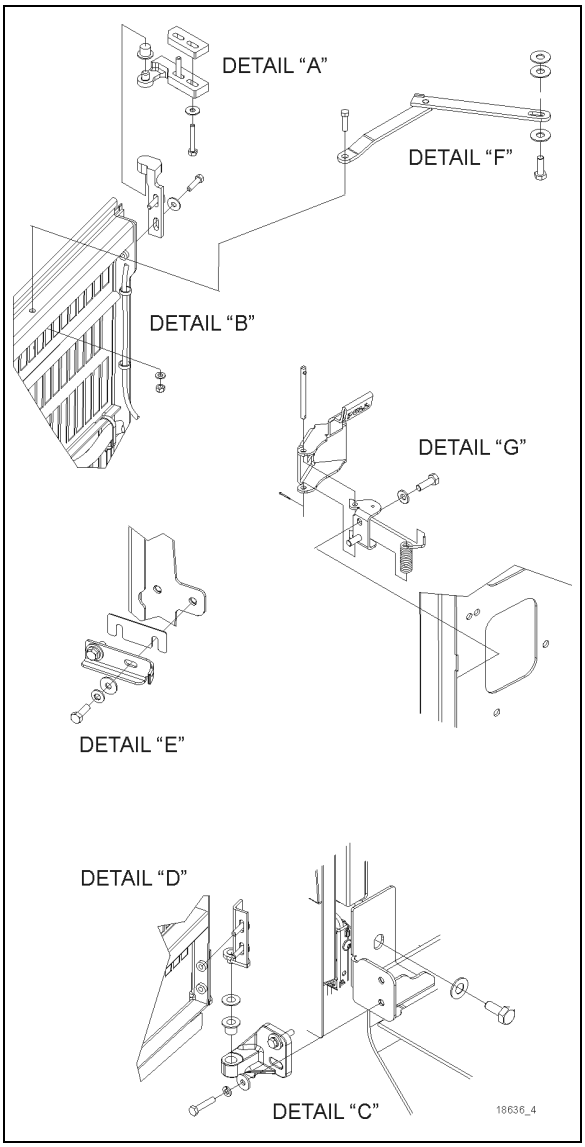
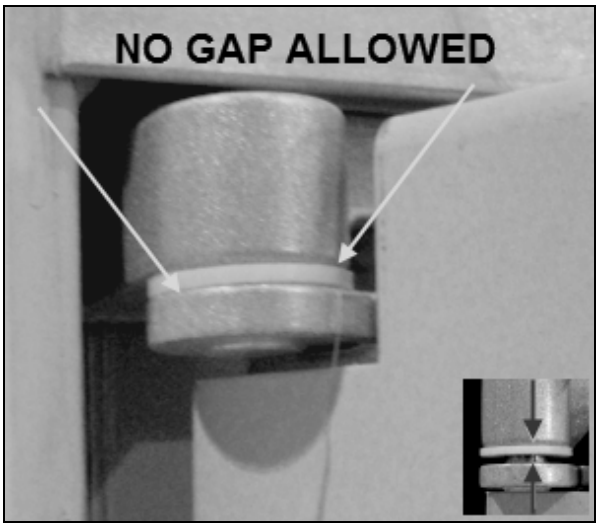


FIGURE 75: RADIATOR DOOR DETAILS



NOTE
The striker pin must engage at least 13/32” (10mm). Add spacers between the latch and the vehicle body to adjust the engagement.

NOTE
There should be no gap between the washer and the hinge upper and lower halves.

9.5 ZONE 5

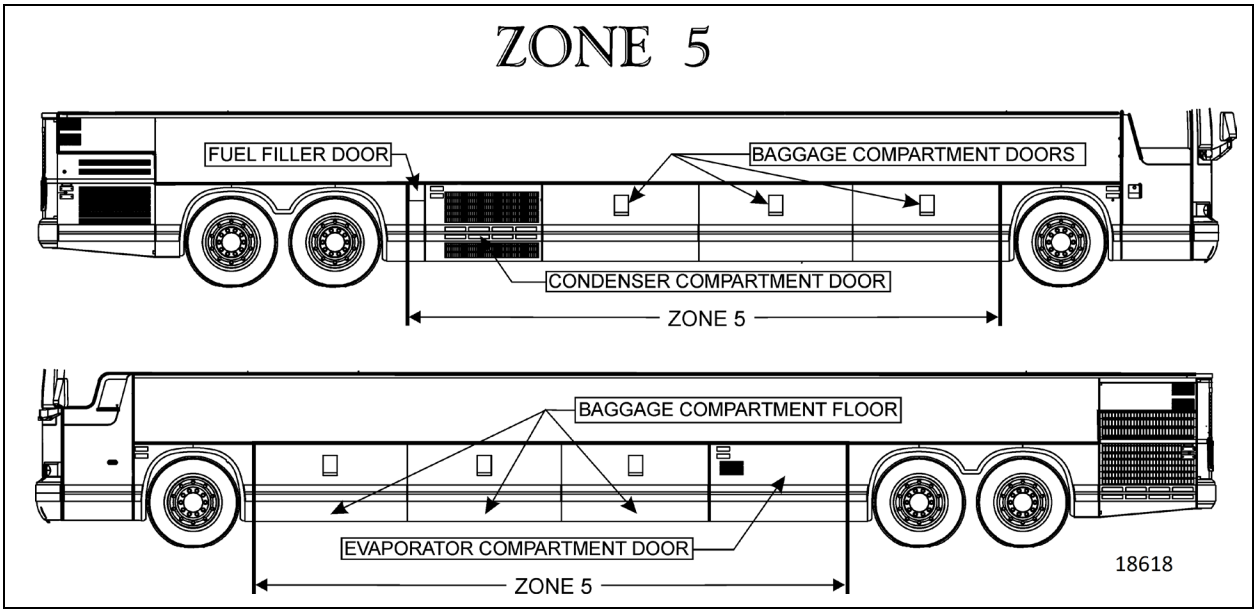
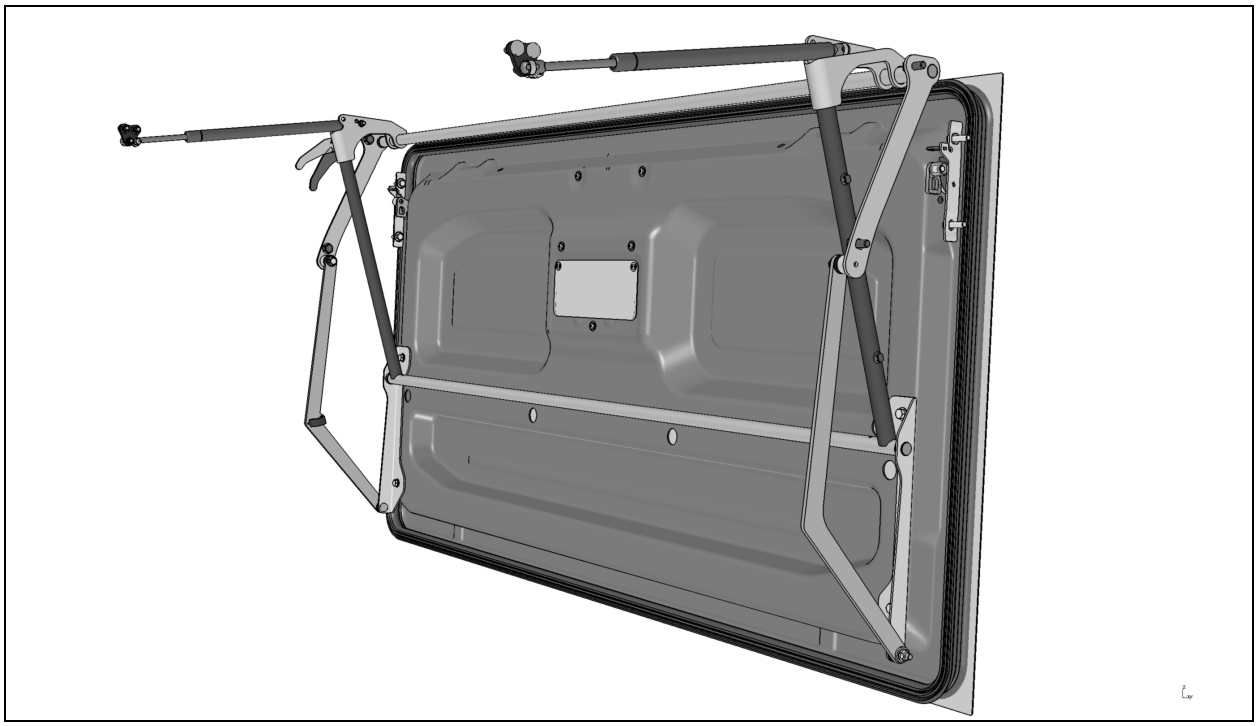


FIGURE 76: ZONE 5

9.5.1 Baggage Compartment Doors (Aluminum)



For the removal and installation of a baggage compartment door body panel, you will need:

A drill with drill bits;

Pneumatic hammer tool (Zip Gun);

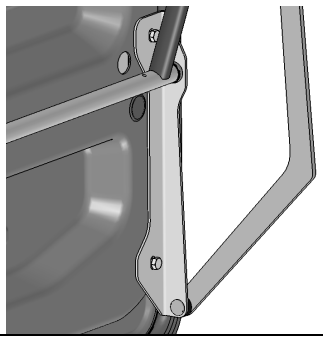
Razor sharp window scraper or putty knife;

- Open damaged compartment door and unfasten rub rail fixing bolts. Remove rub rail.
- Unfasten bolts and disconnect cable if necessary in order to remove door from vehicle.
- Preferably install the door onto a work surface where it can be solidly fixed.

- **Door Panel replacement**
  - Refer to SAV10054-67.
- **Baggage Compartment Door Adjustment**

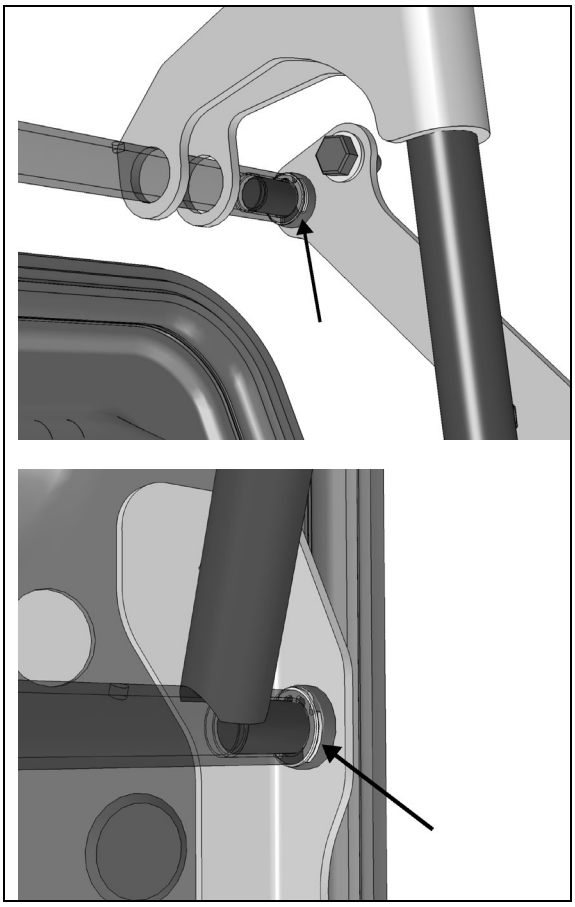
1. Adjust door to get a 6mm gap at the top.
2. All adjustments are to be made with door closed, unless specified.

NOTE
Vertical adjustment is achieved by moving the door along the mounting plate slots.



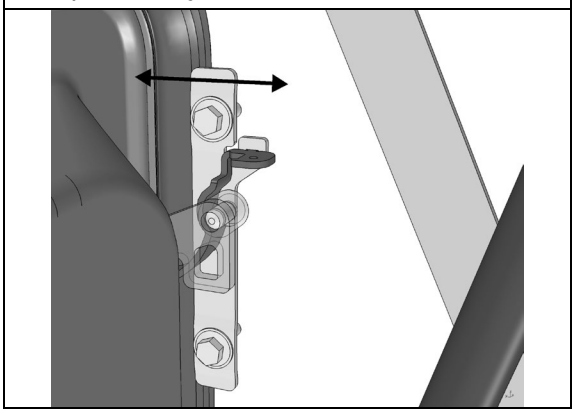
3. Center door in the opening using the retaining rings.

NOTE
Lateral adjustment is made by adding/ removing retaining rings in these locations.



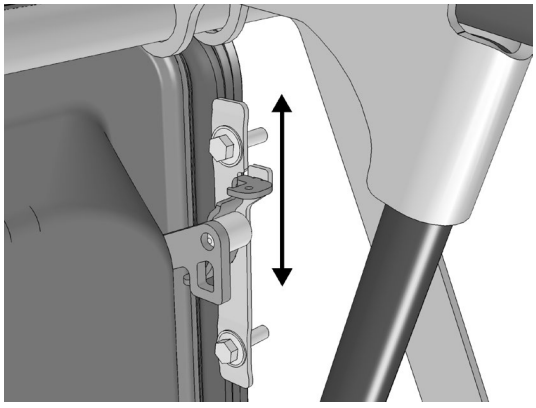
4. Adjust door position and evenness with reference to adjacent panels and doors.

NOTE
Adjustment is made by moving IN or OUT the lock plates. Adjust one corner at a time.

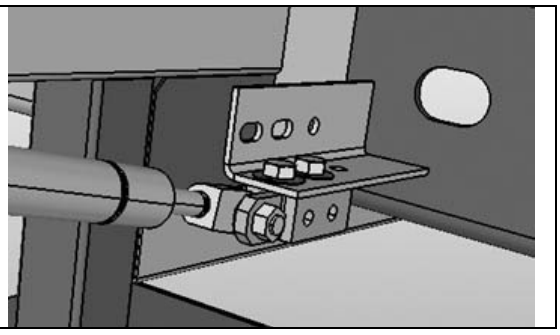


5. Check handle adjustment. Handle must remain tight against its plastic housing.

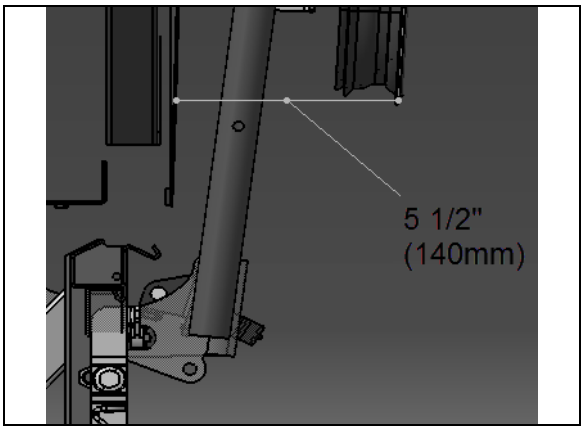
NOTE
Adjustment is made by moving UP or DOWN the lock plates.



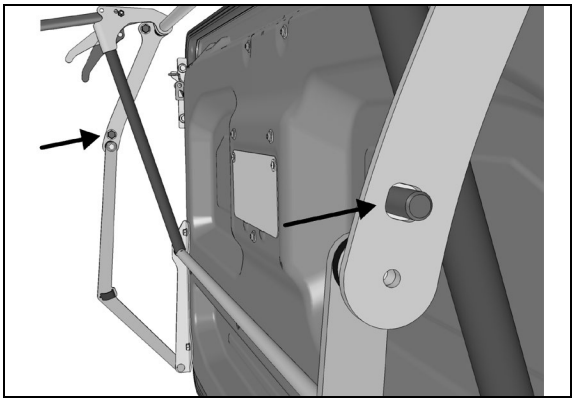
6. Open baggage compartment door and adjust using the cylinder mounting block.



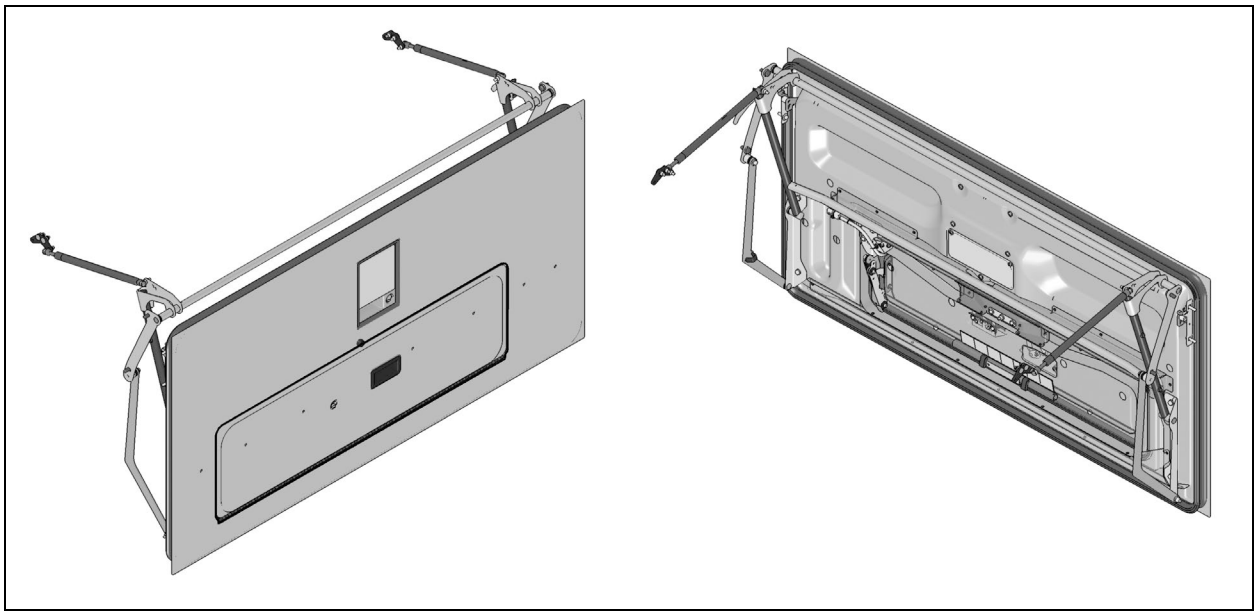
7. Door should be adjusted in reference to neighboring doors.
8. Target is to have 5 ½" (140mm) from bus body panel to door panel and +/- 2mm vertically between doors.



9. Tighten cylinder block fixing screws.
10. Door bottom edge compression can be adjusted by moving in or out the pantograph arms at this location.



9.5.2 Wheelchair Lift Cassette Compartment Door



For the removal and installation of a wheelchair lift (WCL) cassette compartment door body panel, you will need:

A drill with drill bits;

Pneumatic hammer tool (Zip Gun);

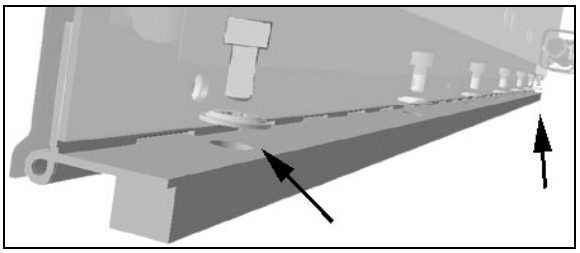
Razor sharp window scraper or putty knife;

- Open damaged compartment door and unfasten rub rail fixing bolts. Remove rub rail.
- Unfasten bolts and disconnect cable if necessary in order to remove door from vehicle.
- Preferably install the door onto a work surface where it can be solidly fixed.

- **Door Panel replacement**
  - Refer to SAV10054-67.
- **Compartment Door Adjustment**
  - Refer to baggage compartment door procedure.
- **WCL Cassette Door Adjustment**

The small door has a piano hinge on its lower edge.

1. Install only two of the mounting screws, at each end to adjust the door.

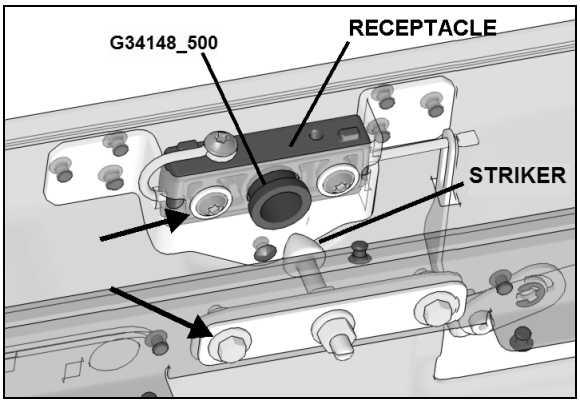


2. Close door and adjust in opening. A 1mm maximum difference between left and right measured gap is accepted.
3. Door should close flush with the larger door panel. Maximum flatness deviation within 1mm.
4. Install the remaining screws and seal with liquid Teflon #680098.

- **WCL Cassette Door latch adjustment**

To allow adjustment of the latch mechanism, lightly tighten the retaining hardware on receptacle and striker support (arrows).

1. Place centering tool G34148_500 in the receptacle cavity.



2. Close the door to center the latch mechanism.
3. Tighten screws
4. Check that the door swings freely and closes properly without interference or excessive force

9.5.3 Wheelchair Lift access door installation

> **CAUTION**
>
> Install the sliding door onto a suitable lifting device that will allow proper lifting and positioning.

1. Lift and move the sliding door near the opening.
2. Push the door into the opening making sure the positioning lugs are properly inserted into their housing then pivot the main hinge and secure the door using 4 bolts. Do not fully tighten the bolts yet.
3. Remove the lifting device from the sliding door.

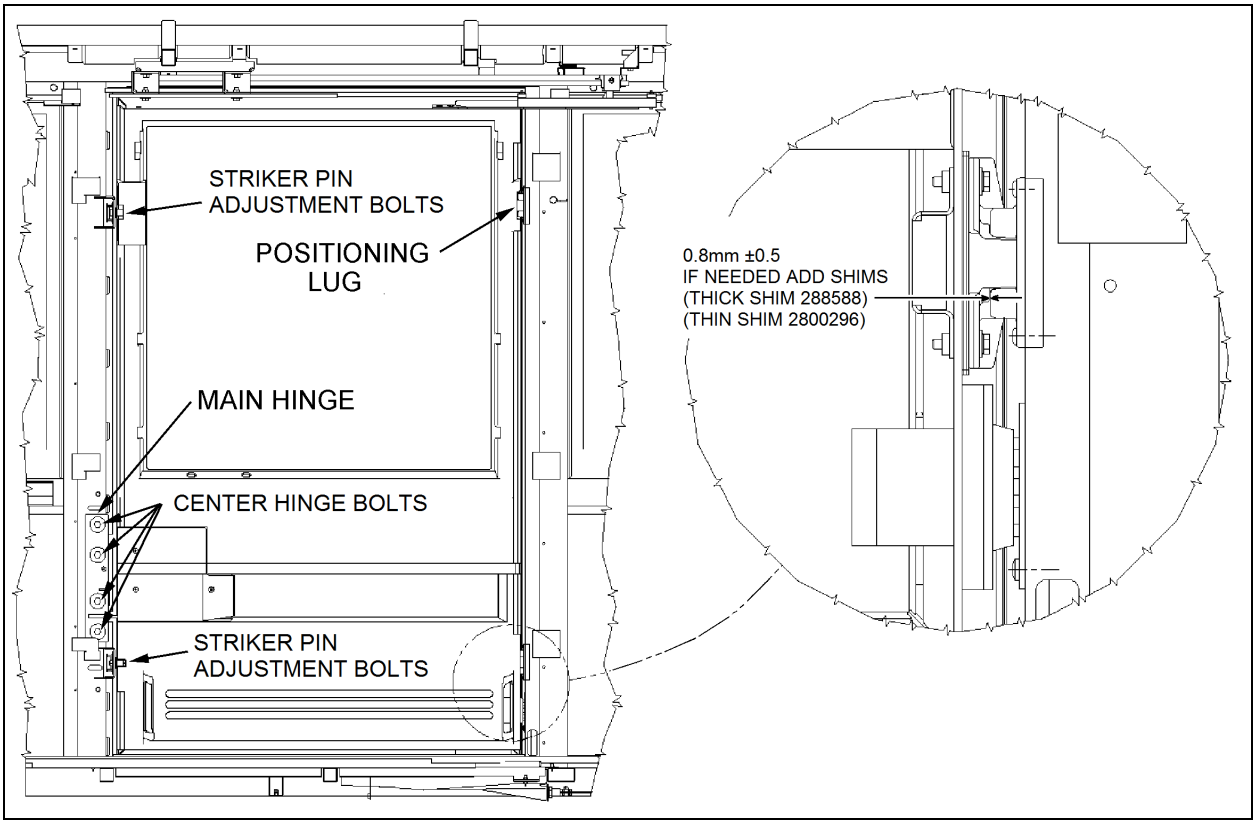


FIGURE 77: WCL SLIDING DOOR INSTALLATION 18739

Adjustment:

1. Adjust sliding door height with reference to the side panels and windows.
2. Slide the top rail into the upper arm then bolt the rail to the structure. Do not fully tighten (Refer to Figure 77).

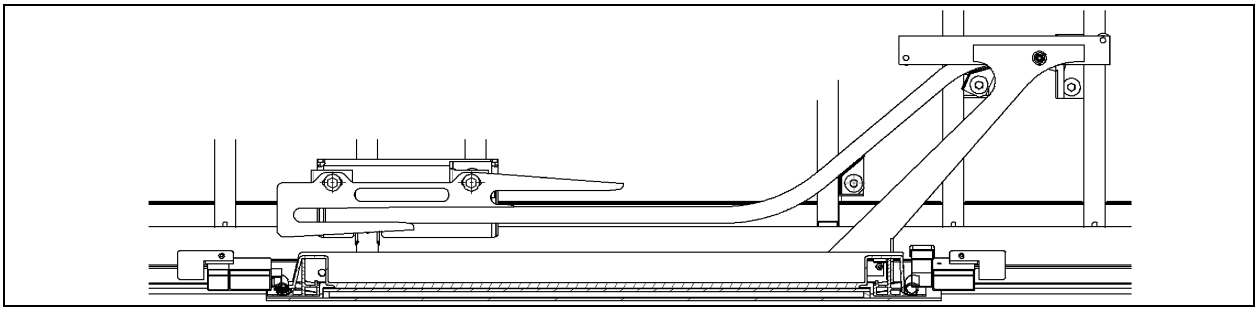


FIGURE 78: WCL UPPER ARM AND RAIL

3. Pull the door in or push from the outside to adjust the door with reference to the vehicle outside surface.
4. - Unfasten the upper arm bolt located on the door side.
   - Position the top rail at 3mm from the ceiling bracket.
   - Force the upper arm down then tighten the upper arm fixing bolt.
   - Pull the upper rail towards the inside in order to remove the play between the roller and the upper rail then tighten the rail fixing bolt at the back.
   - Push the lower rail towards the outside in order to remove the play between the roller and the lower rail then tighten the rail fixing bolt at the back.

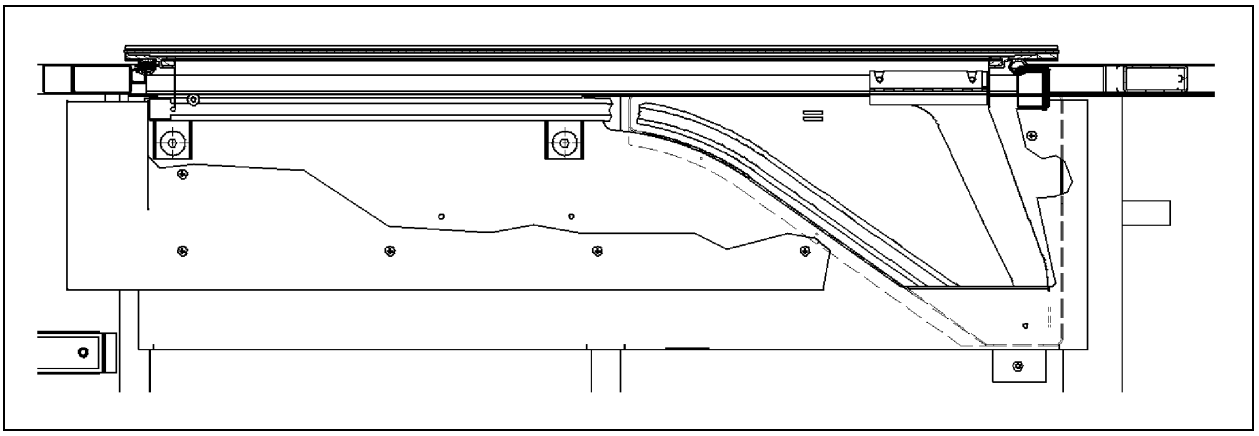


FIGURE 79: WCL LOWER RAIL INSTALLATION

5. Adjust the gap between the positioning lugs and their housing, required gap: 0.5 – 1.5mm. Add shims underneath the lugs to get the proper adjustment.
6. Take away the plays from the upper arm assembly by lifting the main hinge using a crowbar. Tighten the main hinge bolts

TORQUE: 31-38 lb-ft (42-52 Nm)

NOTE
Do not exert too much force to lift the door.

7. Open WCL sliding door completely.

8. - Pull the upper rail towards the inside in order to remove the play between the roller and rail then bolt the rail at front and center. Add some shims if necessary between the rail and the structure before tightening the bolts.

   - Push the lower rail towards the outside of the vehicle in order to remove the play between the roller and rail then bolt the rail at front and center. Make sure the rollers stay in contact with the support when starting to close the door.

9. Adjust the distance between the bottom of the guide and the roller when the door is completely open. Required distance: 2 – 3mm. Make sure the roller stay in contact with the guide.

10. Install and adjust striker pins.

TORQUE: 54-66 lb-ft (73-89 Nm)

NOTE
Make sure that a 2mm gap exists between the door structure and the striker.

11. Adjust latches releasing, the two latches must open simultaneously.

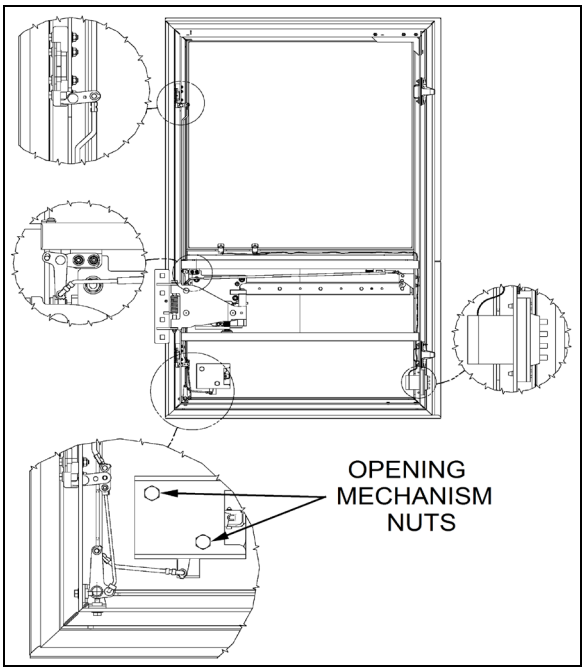


FIGURE 80: WCL SLIDING DOOR OPENING MECHANISM 18740

9.5.4 Baggage Compartment Floor

- **Repair of Mantex Urethane Covering**

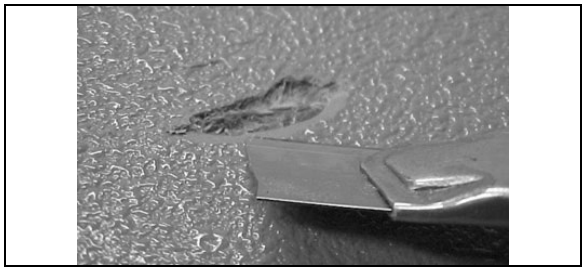
Minor Repair

Use “Dupont IMRON” paint. Apply using a paint brush or roller depending on gravity.

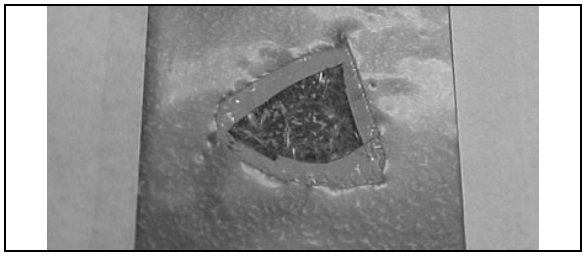
Paint Code: #J4099U

Major Repair (Hole)

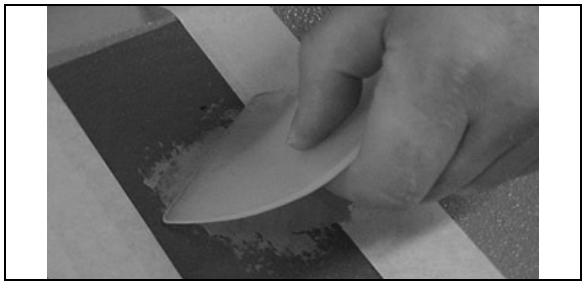
Chamfer the whole perimeter of the damaged area. If applicable, remove loose covering. Remove dust and particles.



Cover and protect damaged area surroundings.



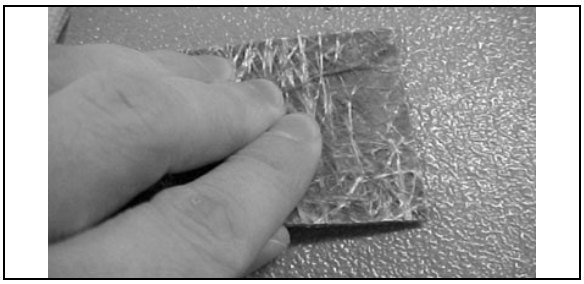
Using a plastic spatula, apply some Sika 221 grey onto the damaged area.



Remove masking tape and protection around damaged area.

Spray pure water onto Sika. Use a floor sample to create some texture onto the adhesive.

If possible spray some more water onto the adhesive to accelerate curing.

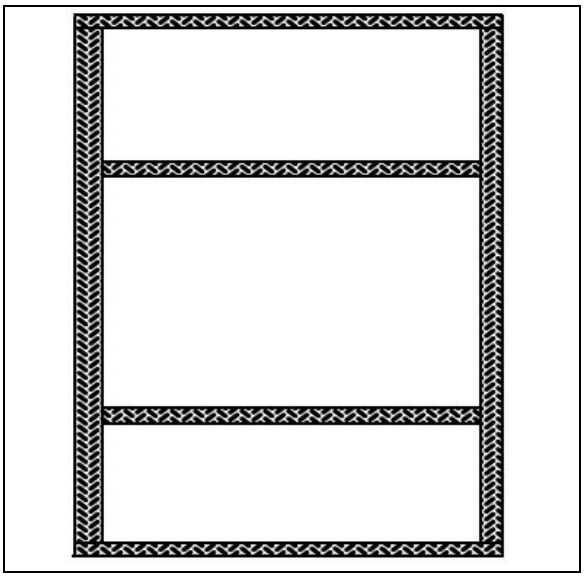


Allow drying for at least **2 hours** then repaint as per paragraph: Minor Repair.

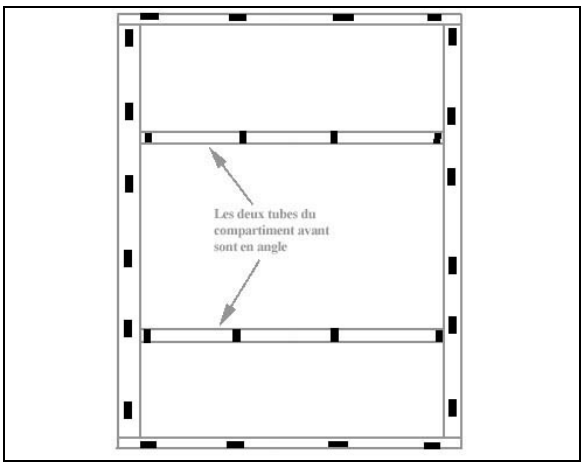
- **Baggage Compartment Floor Installation**

  Preparation and Installation

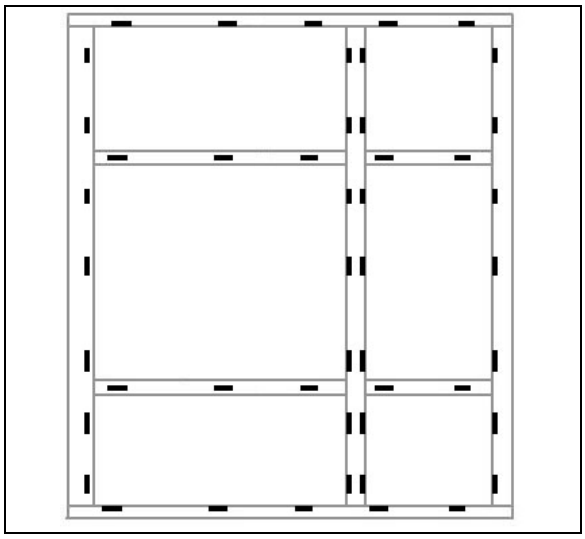
Clean baggage compartment support structure using anti-silicone.



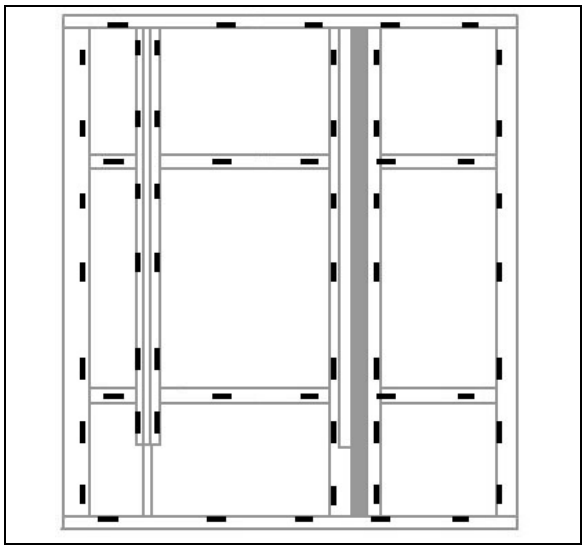
Glue spacers (790392) about 16-inch apart.



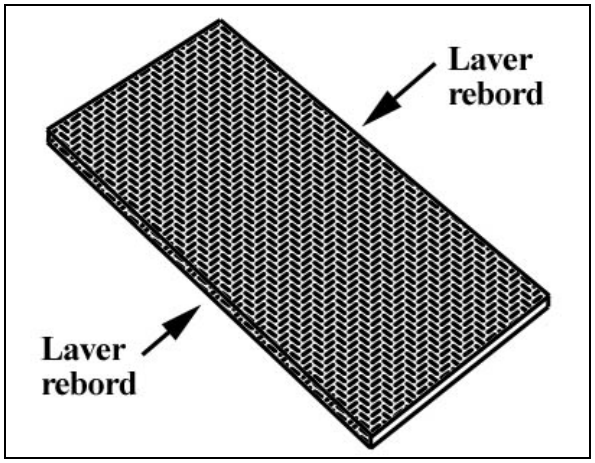
Rear baggage compartment without WCL.



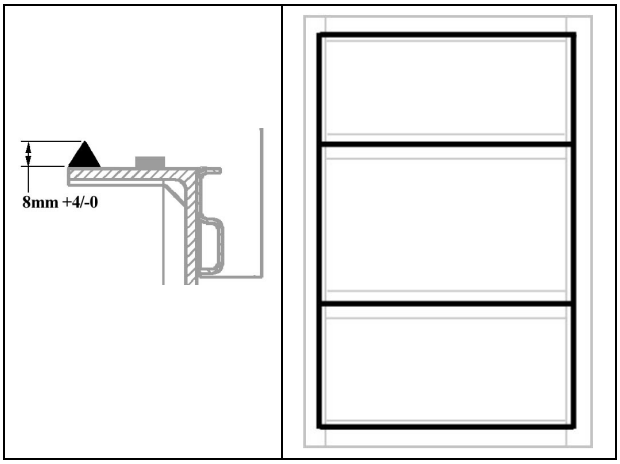
Rear baggage compartment equipped with WCL



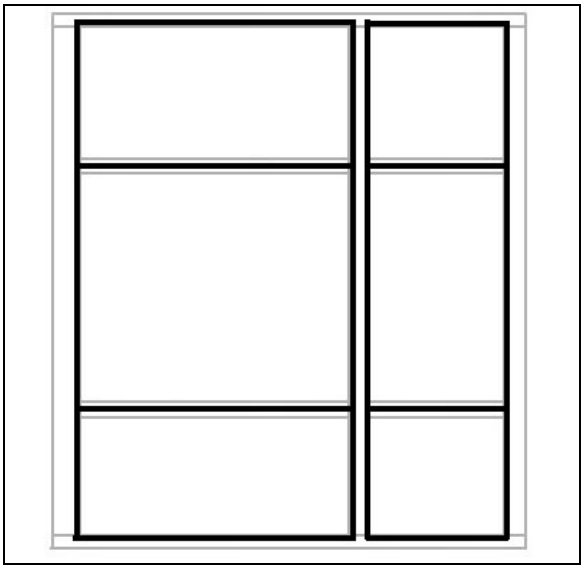
Prepare baggage compartment Mantex floor. Clean panel underside and edges.



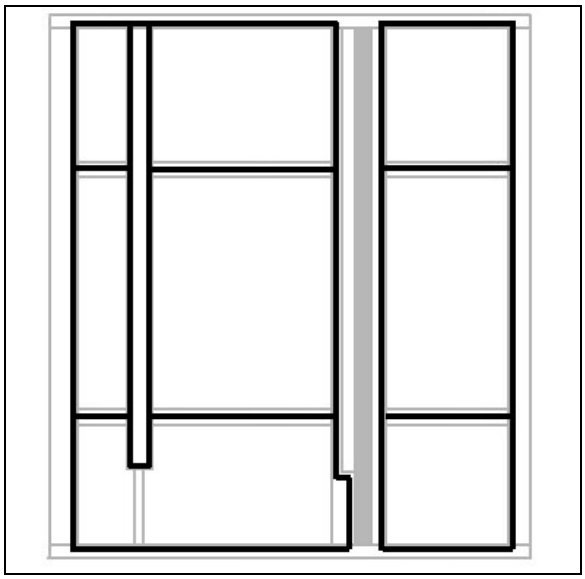
Using a triangular nozzle, apply “Simson” glue (685126) onto support structure.



Rear baggage compartment without WCL.



Rear baggage compartment equipped with WCL

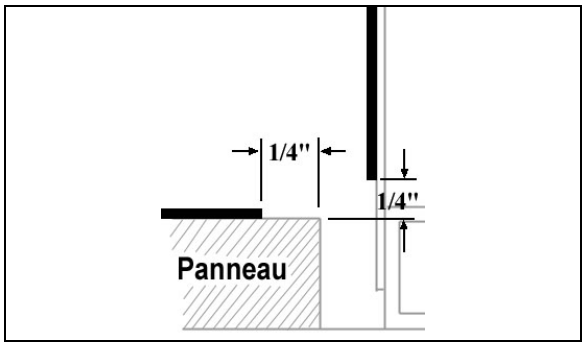


Carefully install panel onto support structure.

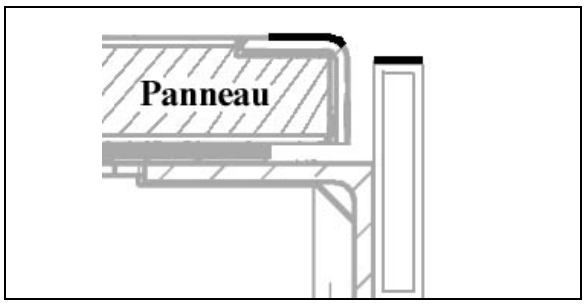
Evenly distribute and install conforming weights (6 to 8) (80 to 100 lbs **total**) onto panel for at least **4 hours**. Make sure panel does not move.

Finishing Joints

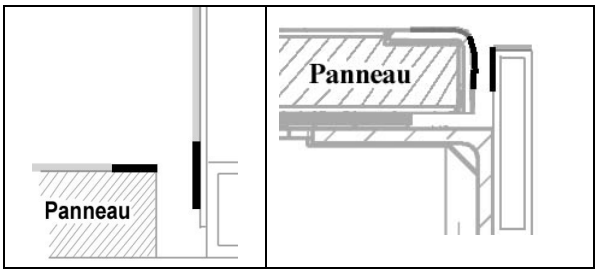
In the case of lateral finishing joint, apply some masking tape ¼“ from panel edge and ¼” above panel.



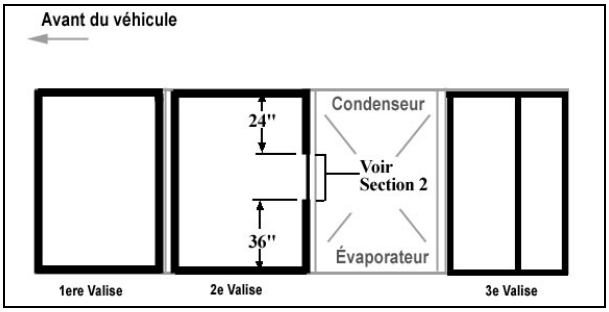
In the case of front finishing joint, apply some masking tape on each side of joint.



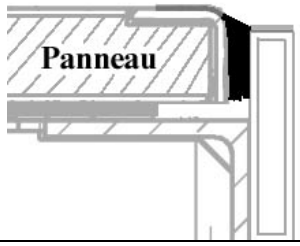
Clean with anti-silicone the area where the Simson glue will be applied.



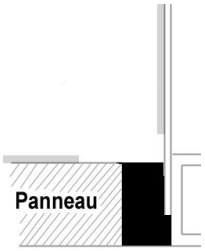
Apply some Simson glue to fill the gap.



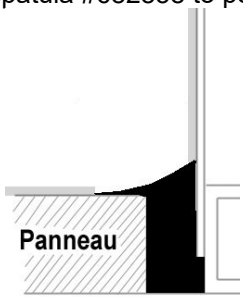
Front finishing joint



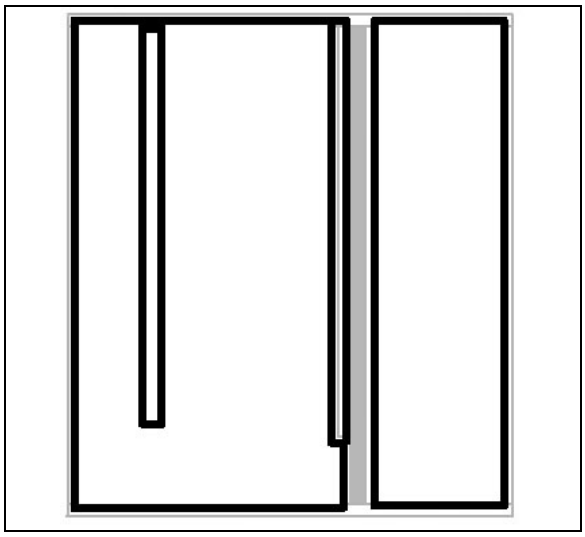
Section 2
Flat joint in front of fuel tank access panel



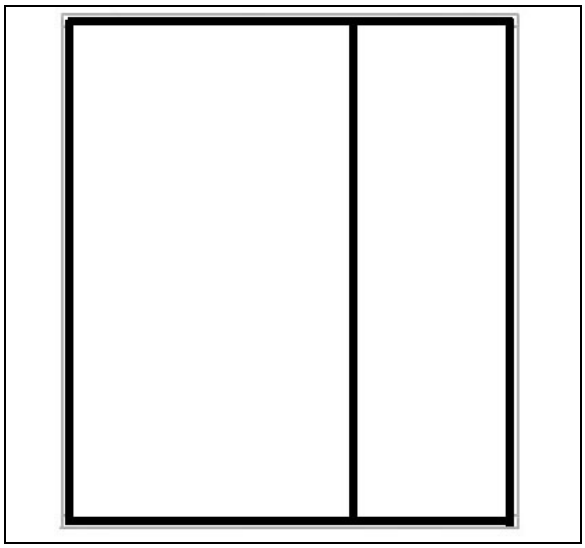
Use plastic spatula #682838 to perform radius



Rear baggage compartment equipped with WCL



Rear baggage compartment without WCL.



Remove masking tape.

Smooth down joints using soapy water.

9.5.5 Evaporator Compartment Door

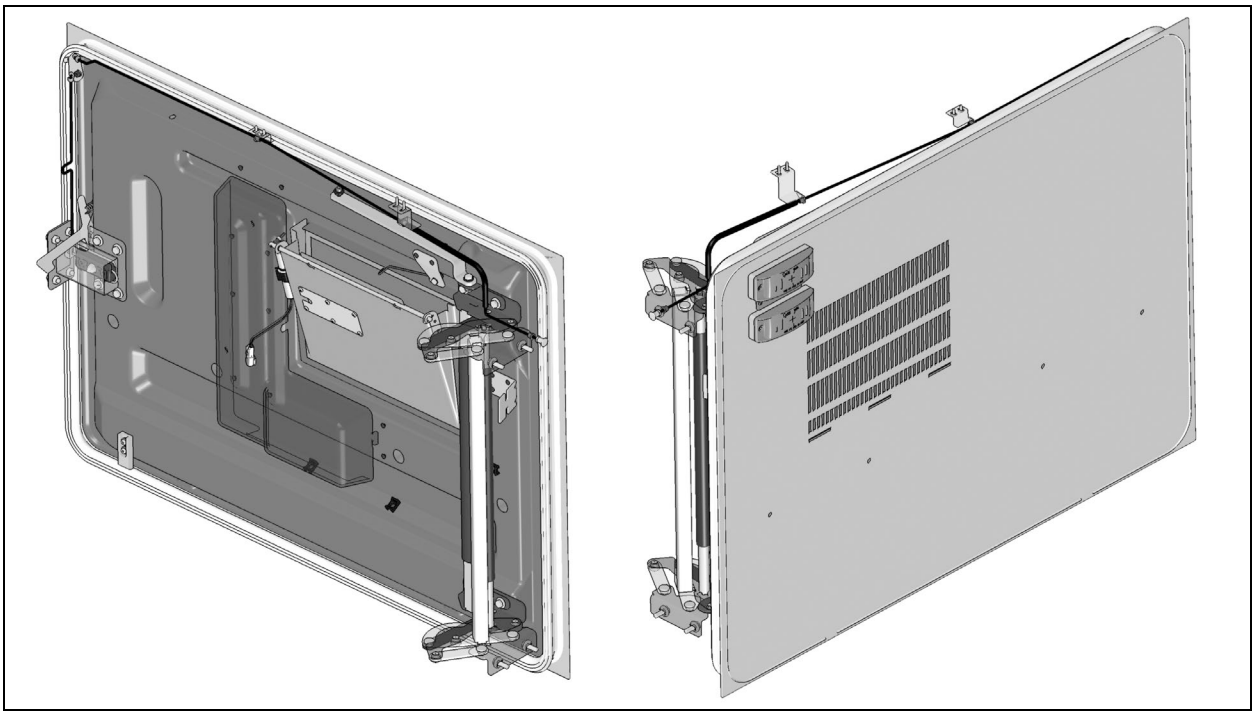


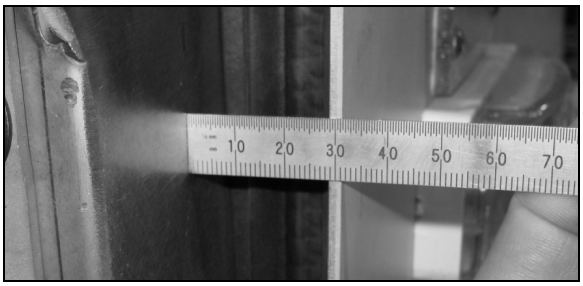
FIGURE 81: EVAPORATOR DOOR (ALUMINUM)

For the adjustment of an evaporator door, you will need:

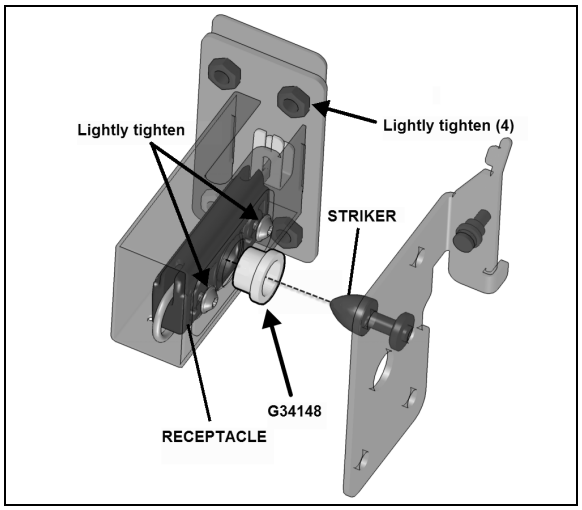
- Centering tool G34148_500

- **Door adjustment**

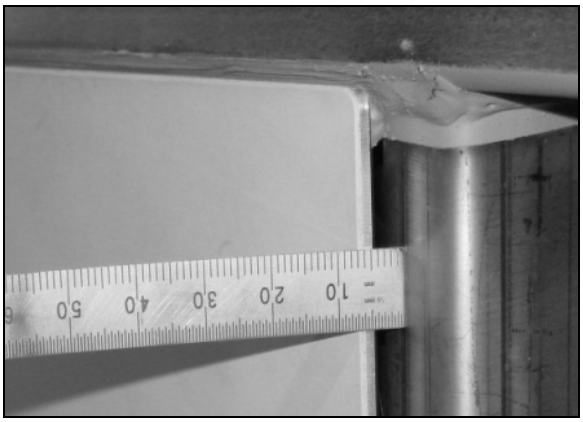
1. Open the evaporator door.
2. Loosen the screws fixing the hinge to hinge attachment or hinge to door assembly. Loosening the screws allows the evaporator door assembly to be shifted "LEFT or RIGHT" and "UP or DOWN" or “IN and OUT”.
3. Adjust evaporator door assembly position at the hinge.
4. Door exterior panel on hinge side should be positioned at 29mm +/- 2mm measured from bus frame out.

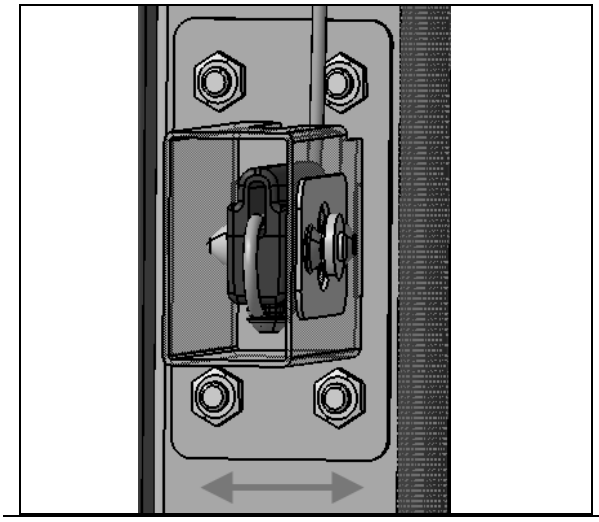


5. Respect the required gap between exterior finishing panels.
6. Tighten the hinge screws.
7. To allow adjustment of the latch mechanism, lightly tighten the retaining hardware on receptacle and receptacle support to frame.
8. Place centering tool G34148_500 in the receptacle cavity.

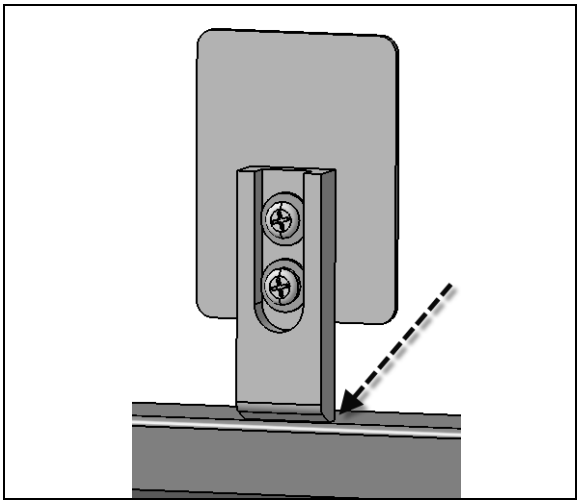


9. Close door to center the latch assembly.
10. Tighten the Receptacle screws only.
11. .Door exterior panel on latch side should be positioned at 8mm +1mm from frame. Make the adjustments by moving the receptacle support.





12. Make sure that backing plate is parallel to structure before tightening hardware
13. Make sure that skid bar only touches slightly bus structure at bottom. The door should not move up when closing.



14. Check that the door swings freely and closes properly.

- **Door release in the event of a latch failure.**

If the door release mechanism is damaged or ceases to function for any reason, the door can be released by removing these screws on the fore wall of the fender side

9.5.6 Condenser Compartment Door

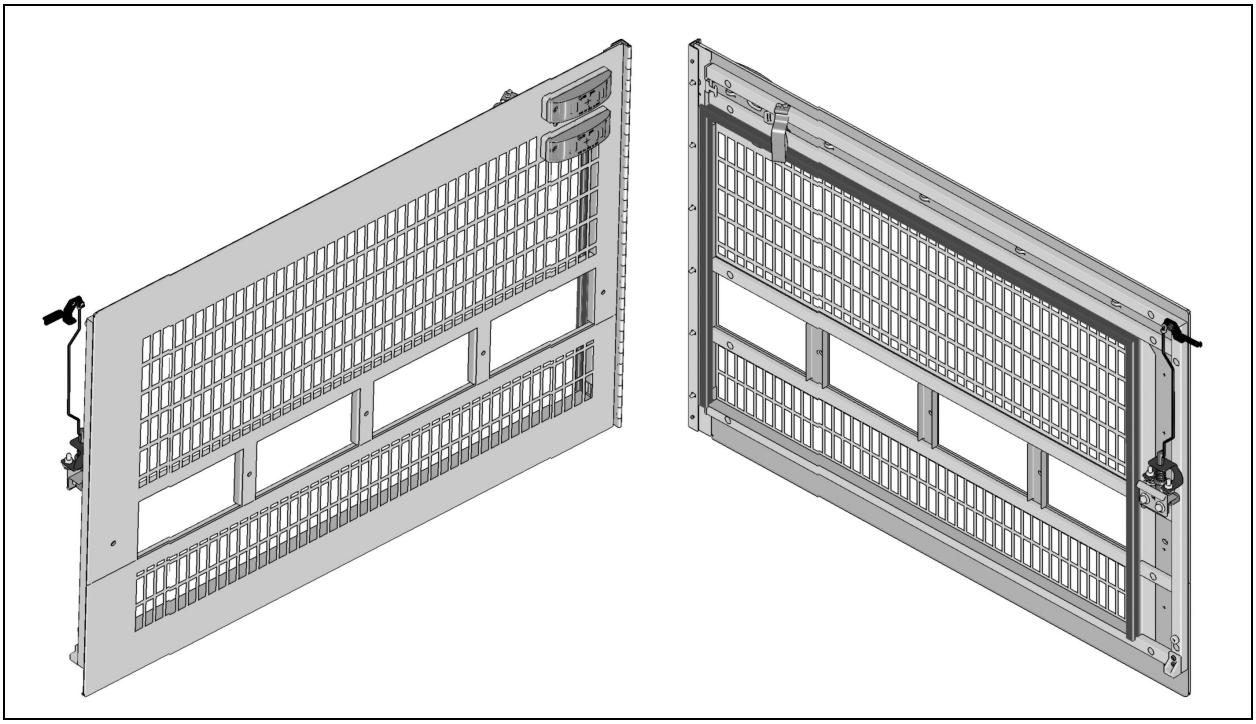


FIGURE 82: CONDENSER DOOR

1. Open the condenser door.

2. Loosen the screws fixing the hinge to hinge attachment or hinge to door assembly. Loosening the screws allows the condenser door assembly to be shifted "LEFT or RIGHT" and "UP or DOWN" or “IN and OUT”.
3. Adjust condenser door assembly position at the hinge.
4. Respect the required gap between exterior finishing panels.
5. Tighten the screws.
6. Check that the door swings freely and closes properly. It may be necessary to adjust the door latch to get proper fit and operation.

9.5.7 Fuel Filler Door

1. Open the fuel filler door.
2. Loosen the screws holding the panel to hinge assembly.
3. Adjust the fuel filler door position according to distance required between exterior finishing panels.
4. Tighten the nuts.
5. Check that the door swings freely and closes properly.

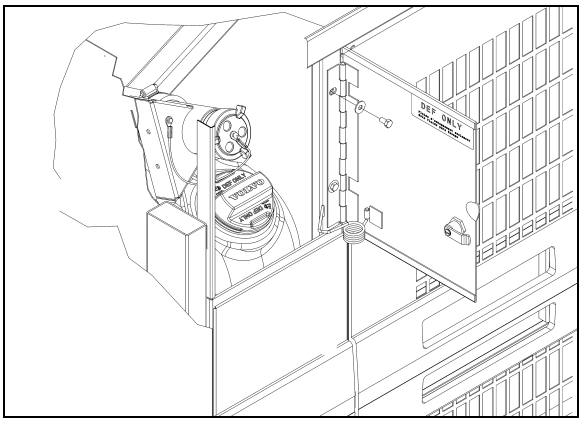


FIGURE 83: FUEL FILLER DOOR 03046

9.6 ZONE 6

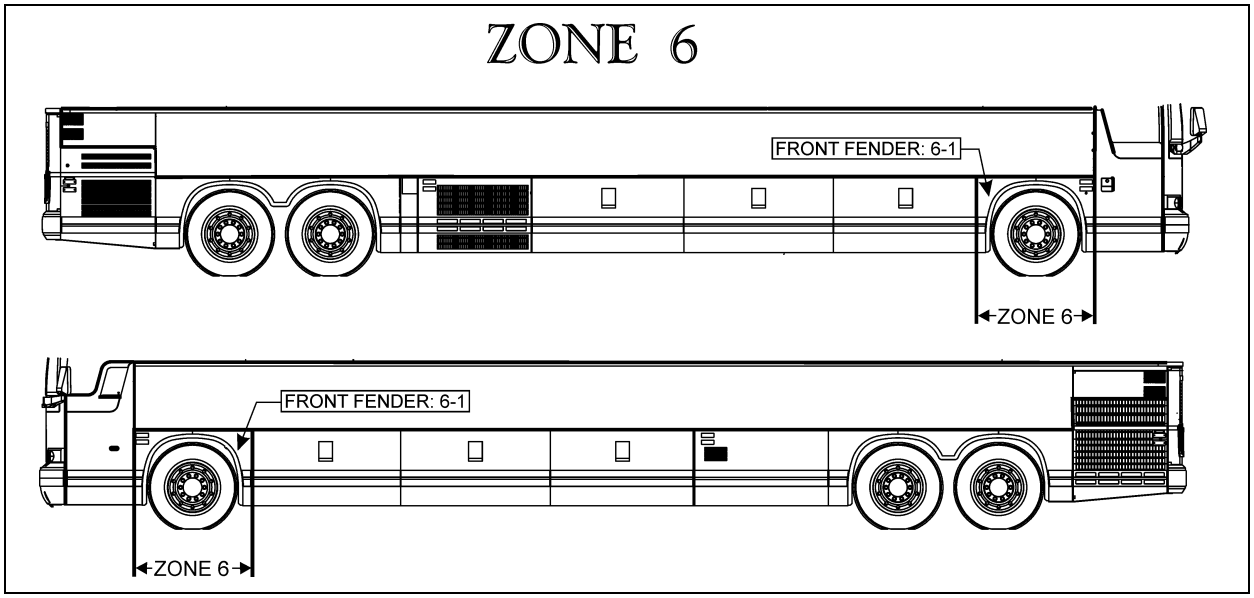


FIGURE 84: ZONE 6 **18629**

9.6.1 Front Fender

Front fender may be removed using the following procedure:

Remove the nuts on the inside of the fender. Remove the fender from the vehicle. To reinstall, reverse the procedure.

9.7 ZONE 7

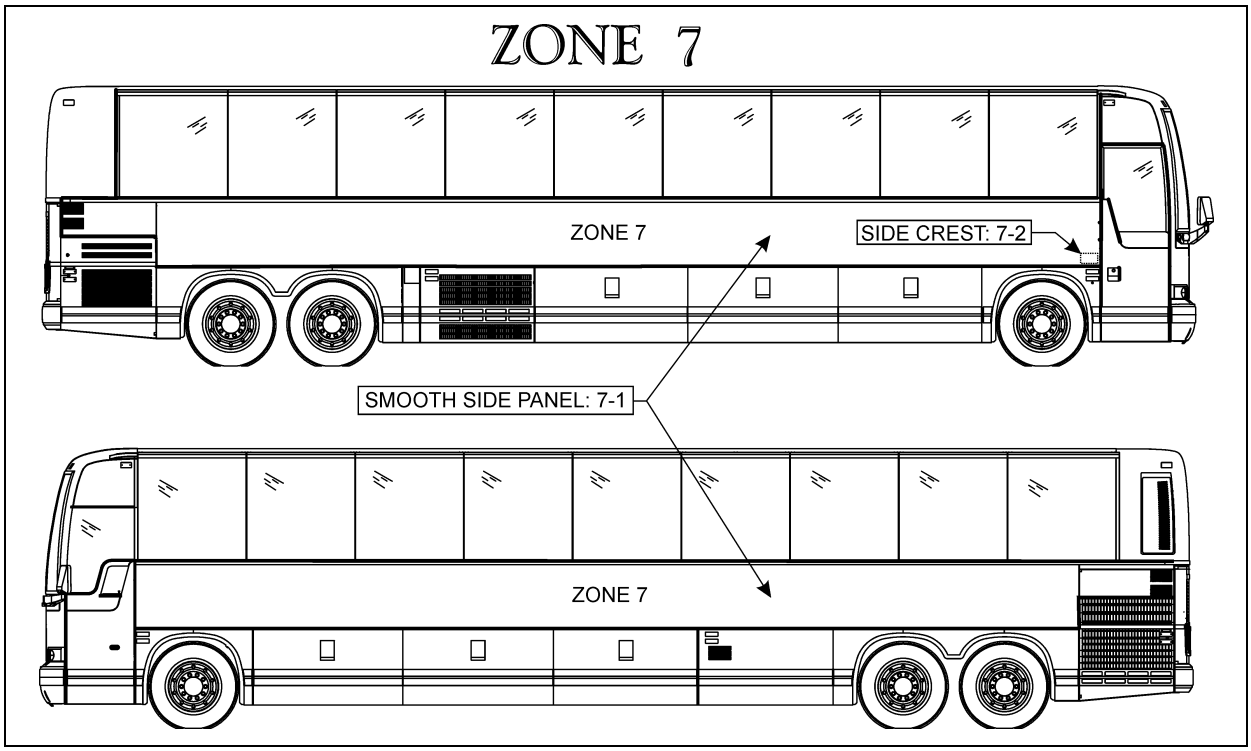


FIGURE 85: ZONE 7 **18630**

9.7.1 X3 Smooth Side Panel Replacement Procedure

Material:

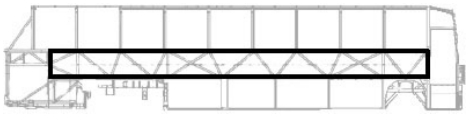
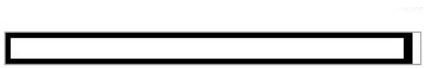
Anti-silicone (682989)	√	Scotchbrite gray (680226)	√	Sika 221 gray	√
CHIX cloth (682384)	√	Sika 205 1liter (683097)	√	Sika 252 black	√
Blue cloth (682383)	√				

Equipment:

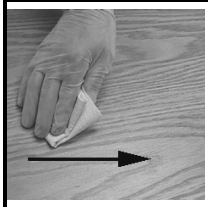
Glue gun	√		
Pencil	√		

SECTION 1 SMOOTH SIDE PANEL REMOVAL			
1.00	**REMOVAL**		
	A)	Remove finishing molding. Insert a screwdriver into snap-on finishing molding joint. Bend finishing molding enough to be able to fix a pair of locking pliers. Using the pair of locking pliers, pull the stainless steel molding and at the same time gradually cut Sika bead with a sharp knife.	Be careful not to damage the adjacent surfaces.

	B)	Using a hammer and punch, drive out rivet shanks from top and bottom and from front and rear finishing molding supports. Use a #11 titanium drill bit to remove rivet heads.	
	C)	Grind tig weld spots at each end of side panel.	
	D)	Safely support or temporary fix side panel.	**Warning: Panel weights over 200 pounds**
	E)	Insert a flat screwdriver between the side panel and the vehicle chassis, in the top left and right corners. Make sure to separate side panel from structure.	Be careful not to damage the adjacent surfaces.
	F)	Use the c-clamp to separate the side panel from the back structural panel and at the same time gradually cut Sika bead with a sharp knife.	Ideally, the hoist or chain block must be fastened to the floor while pulling from a 45º angle so as not to damage the vehicle structure
	G)	Remove as much glue as possible from the structure using a putty knife or pneumatic knife without damaging 206 G+P primer.	Never heat SikaFlex adhesive to remove.
	H)	Check panel horizontal supports for straightness using a straight edge. Take measurements with a ruler.	Tolerance : 1mm towards the outside and 1.5mm towards the inside.

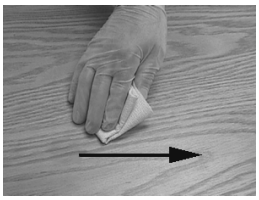
SECTION 2 PREPARATION OF SURFACES			
2.00	**VEHICLE SURFACE PREPARATION**		
	A)	Clean using "anti-silicone" until all clothes come clean. See SAV00001 section A.	
	B)	Use the belt sander (grit coarse) Use a new paper on each vehicle side.	
	C)	Clean using "anti-silicone" until all clothes come clean. See SAV00001 section A.	
	D)	Apply – Sika 205 See SAV00001 section C.	
2.05	**SIDE PANEL PREPARATION**		
	A)	Clean using “anti-silicone” until all clothes come clean. See SAV00001 section A.	
	B)	Use the belt sander (grit coarse) Use a new paper on each vehicle side panel.	
	C)	Clean using “anti-silicone” until all clothes come clean. See SAV00001 section A.	
	D)	Apply – Sika 205 See SAV00001 section C.	

SAV00001 Section A Alcohol or Anti-silicone



1. **Apply**

CHIX cloth



2. **Dry immediately**

Blue cloth

3. **Allow to dry**

Mandatory	**Minimum time : Wait for product to evaporate**
	After 2 hours: Start cleaning operation again
Before applying any other product	If surface seems dusty, greasy or with finger marks, start cleaning operation again.

Section B Sika 205

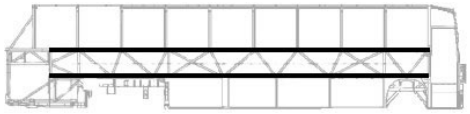
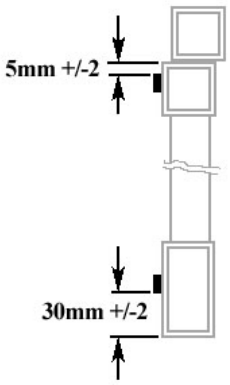
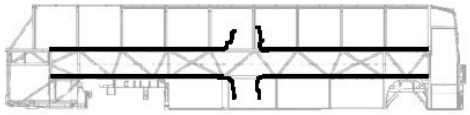
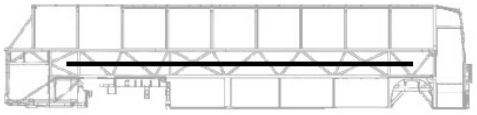
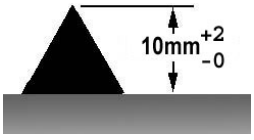
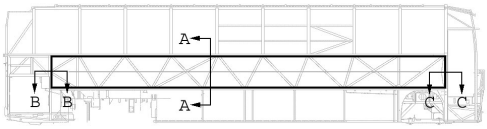
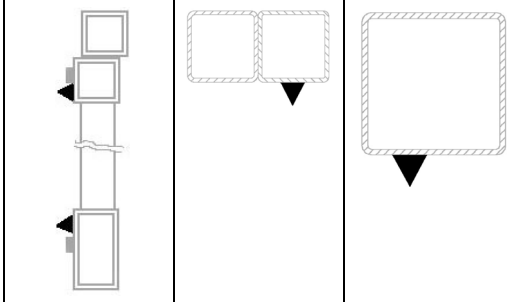
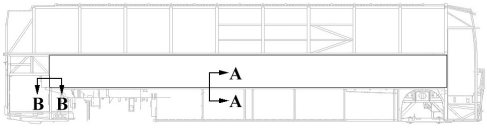
1. **Apply**

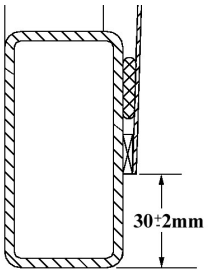
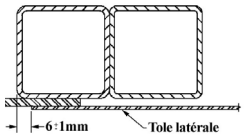
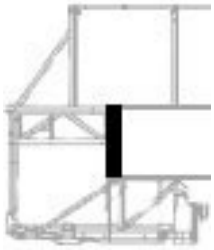
CHIX cloth

2. **Allow drying**

Mandatory	**Minimum time**	**- For a smooth surface (aluminum, stainless, steel, fiber glass (gelcoat side), etc.):**	**2 minutes**
		- Pour a porous surface (fiber glass (non gelcoat side), etc.)	**10 minutes**
	After 2 hours : Reactivate surface with Sika 205		
Before applying any other product	If surface seems dusty, greasy or with finger marks, start operation again.		

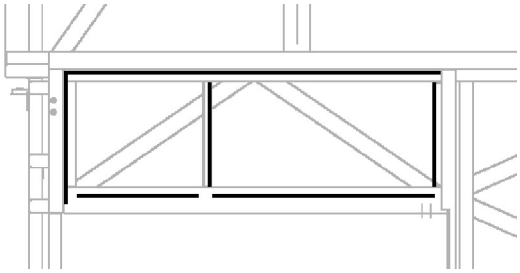
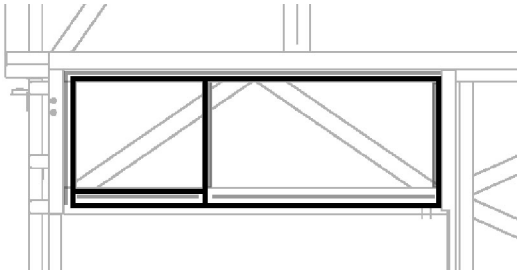
SECTION 3 SIDE PANEL INSTALLATION

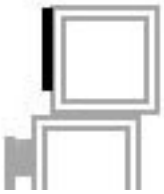
3.00	A)	Using a pencil, mark the double-face self-adhesive tape position onto vehicle side.	
	B)	Apply 1/8 X ½"double-face tape as per marking.	
	C)	Compress tape	
	D)	Remove protective film from double-face self-adhesive tape center section.	
3.05	Install 1/8 X ½" foam tape onto middle reinforcement then compress.		
3.10	Apply Sika 252  – Onto vehicle surface – Cut nozzle as per template – Use the guide for the application Bead must be continuous for the whole perimeter.		 Section A-A | Section B-B | Section C-C 
3.15	A)	Install side panel onto support jig.	

	B)	Position side panel in front of vehicle structure	**Section A-A** 	**Section B-B** 
	C)	Perform final adjustment to make sure that side panel is true and square	– 30 mm. ± 2 with reference to bottom tubing – 6 mm ± 1 with reference to vertical tubing	
	D)	Sand rear of side panel 2" wide		
	E)	Perform tig spot welding (1” apart)	Quantity of "tig spot": 30 minimum.	
3.20	A)	Install pulling equipment at the other end of side panel		
	B)	Make a final adjustment in height		
	C)	Sand front of side panel 2" wide		
	D)	Pull side panel so that panel moves 1/8”	Make sure the equipment pulls along the whole width of side panel	
	E)	Perform tig spot welding	Quantity of "tig spot": 30 minimum.	
3.30	Remove pulling equipment			
3.40	A)	Remove protective film from double-face self-adhesive tape.		

	B)	Compress top and bottom section of side panel	
3.50	A)	Cut excess of side panel. Make sure that cut is parallel with tubing.	
	B)	Grind side panel end to line up with door tubing.	
3.60	To seal each panel end, apply masking tape on each side of side panel joint. Use a caulking nozzle and grey Sikaflex 221 adhesive to fill the cavity between the panel and vehicle structure. Clean using Sika 205. Allow 5 minutes minimum for drying. Wear surgical gloves and smooth down the joint with your finger.		

SECTION 4 ENGINE AIR INTAKE PANEL INSTALLATION		
4.00	Make sure that sealing of structure has been performed properly	
4.05	Prepare vehicle surface as for side panel.	Refer to step # 2.00
4.10	Prepare air intake panel as for side panel	Refer to step # 2.05

4.15	Install foam tape 1/8" X ¼" onto structure, as shown in picture	
4.20	Install foam tape 1/16" X ¼ onto air intake panel pleat	
4.25	Apply a bead of 252 onto structure as per picture Important: Make sure bead is continuous Triangular bead: 10mm x 8mm	
4.30	Install panel onto structure	Use a jig to make sure that panel is lined up with engine door tubing.
4.40	Use a brush to compress Sika bead	

5.00 *	**Finition Joint**		
	A)	Install a protective tape onto the tubing above welding	
	B)	Apply Sika 205 Use a plastic spatula inside a Chix cloth to ensure that Sika 205 reaches as far as the corner. See SAV00001 section C.	
	C)	Apply Sika 252 black at the junction of both tubing. Smooth down the joint	
	D)	Remove protective tape	

9.7.2 Side Crest

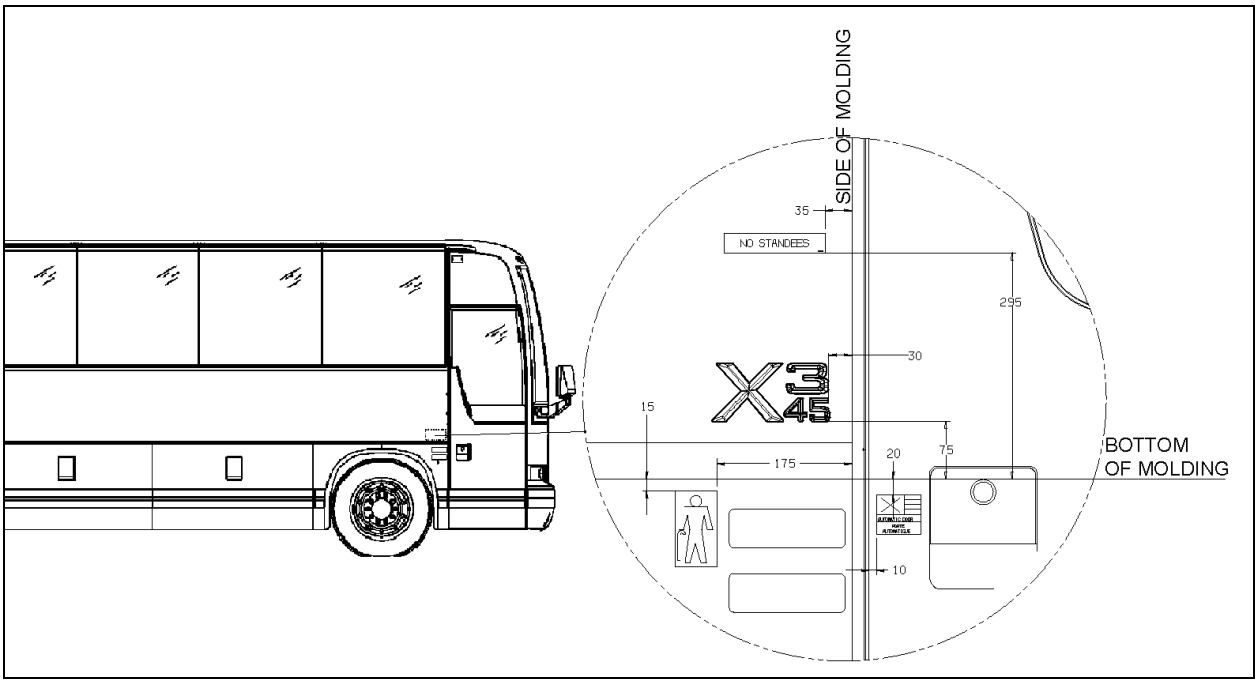


FIGURE 86: SIDE CREST POSITIONING **18639**

- Clean vehicle surface using anti-silicone where the side crest and stickers will be applied.
- Using hands apply and compress side crest.
- Apply required stickers.

9.8 BODY PANEL AND WINDOW SPACING

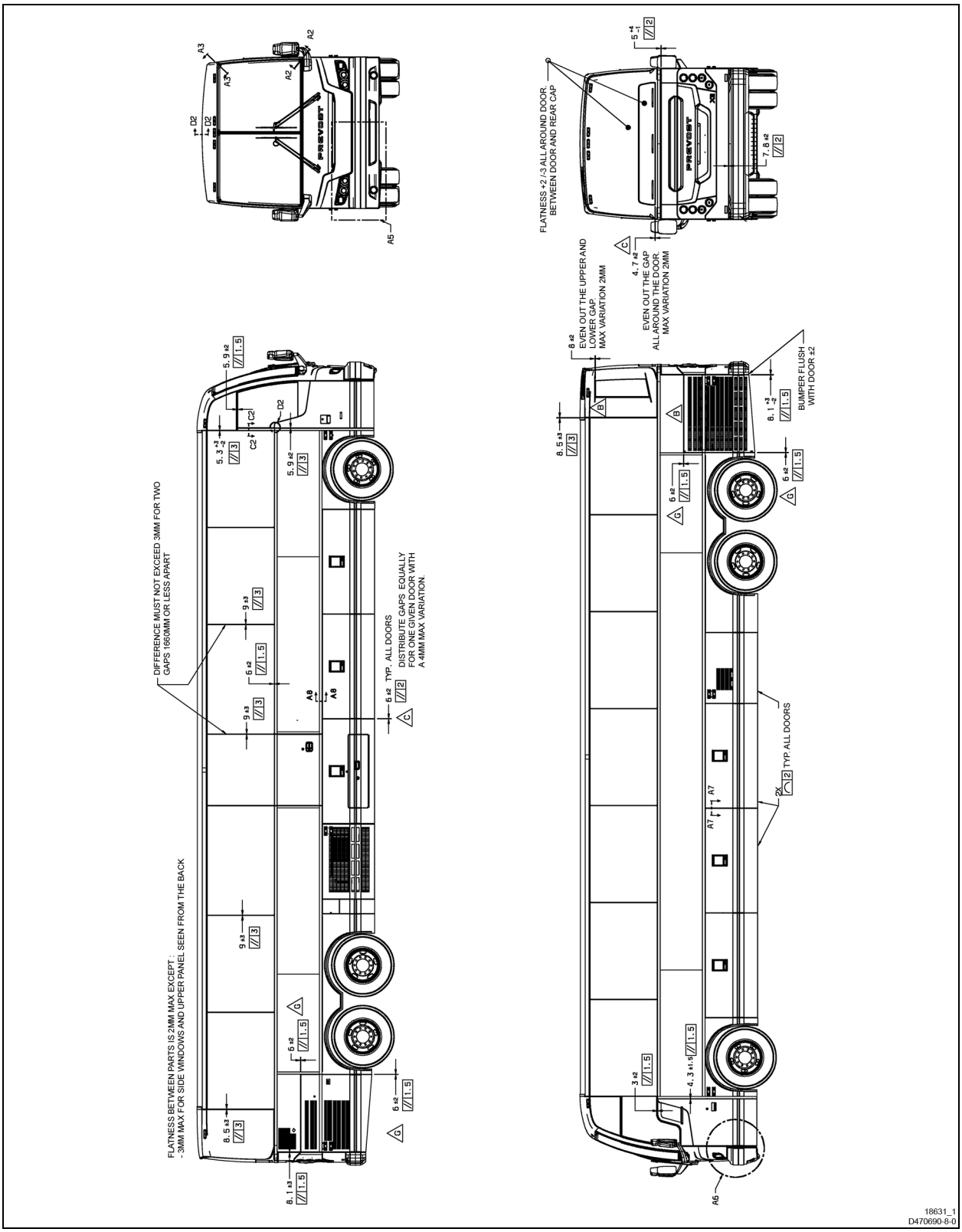


FIGURE 87: BODY PANEL AND WINDOW SPACING

9.9 PASSENGER SEATS

The vehicle can be equipped with different seat models and installed in a variety of seating arrangements:

1. For coaches, standard seating arrangement includes two card tables, which can be folded and removed, and pivoting seats ahead of each card table. Each pair of seats is built on a welded steel frame fastened to the side wall and on a track-mounted pedestal.
2. The *"V.I.P."* seat model is an optional seat. *"V.I.P."* seats are mounted on one row of paired seats built on a common frame on one side of the vehicle, and a row of single seats on the other side of the vehicle with an off-center aisle. Each *"V.I.P."* seat has its own set of armrests.

Each seat has an easily removable bottom cushion. Upholstery is clipped on the cushion frame for cleaning or replacement. To remove the fabric, simply unclip from the frame. The standard seats have three armrests. The aisle and center armrests can be folded up and down manually, while the window armrest is fixed.

9.9.1 Rotating Seats

1. Loosen completely the threaded-stud knob under the seat on the aisle side (Figure 87).

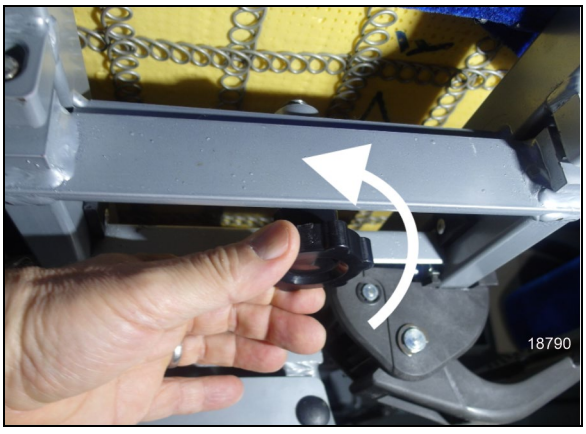


FIGURE 88: LOOSEN THE KNOB

2. Pull the seat toward the aisle to unlock the rotation (Figure 88).

FIGURE 89: PULL TO UNLOCK THE ROTATION

3. Rotate the seats until it stops (Figure 89, A) and push back toward the window to lock rotation (Figure 89, B).

FIGURE 90: FINAL POSITION

4. Fasten the threaded-stud knob under the seat on the aisle side.

9.9.2 Removing Fixed Seats

NOTE
Seats on one row are not interchangeable with seats of the other row.

To remove fixed seats, proceed as follows:

1. Remove 1 nut holding each seat bottom cushion from under the front part of the seat frame.
2. Lift front part of cushions and remove cushions.

3. Remove 4 finishing screws holding plastic cover between side wall and seat frame.
4. Remove 2 cap screws, nuts, and washers holding seat frame to side wall and retain the 2 holding brackets. See Figure 90.
5. Remove 2 nuts and washers holding seat frame to pedestal rods. See Figure 91.

NOTE
Bottom end of rod is coated with Loctite and threaded in a steel block which slides in the floor track. Removal of rod is possible if loosened from block. Otherwise, slide rod and block assembly to the front end of track after removing all seats located in front.

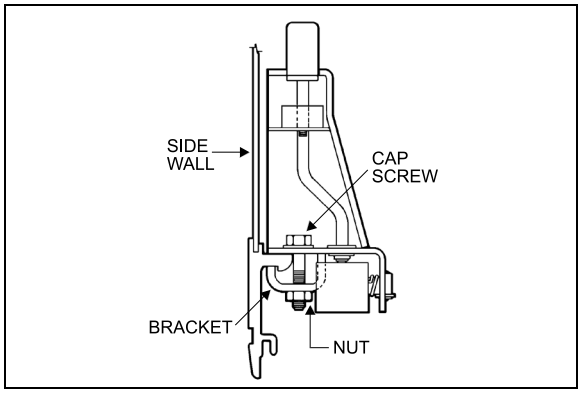


FIGURE 91: ARMREST 18106

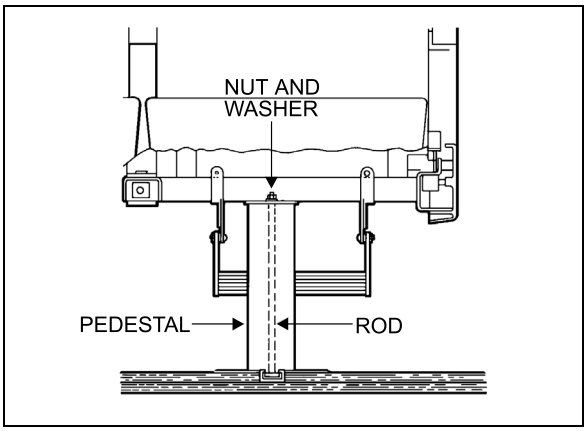


FIGURE 92: SEAT PEDESTAL ASSEMBLY 18107

6. Remove seat assembly.
7. Reverse the above procedure to install seat assembly. Tighten mounting nuts.

TORQUE: 27 lb-ft (37 Nm)

NOTE
On newer vehicles, the rod consists of a carriage bolt inserted in a square plate sliding in the floor track. Removal is possible only by the front or rear end of track.

9.9.3 Upholstery Maintenance

Coach seats are lightweight, with foam-padded backs and cushions. For both appearance and durability, best results are obtained if upholstery is cleaned at regular intervals before dirt, dust and grit have been ground into the fabric. Seat fabric is made of 50% wool, 33% cotton, 9% nylon, and 8% acrylic.

- **Routine Cleaning**

All that is required to remove the dirt is a gentle beating with the hand or the back of a brush. This will bring the dirt to the surface where it is easily removed with a vacuum or brush in the direction of the pile which can easily be recognized by running a hand lightly over the pile. If the fabric becomes excessively dirty, particles of grit will cause gradual wear, reducing the life span of the fabric.

- **Dry Cleaning**

If covers are to be removed for cleaning, dry cleaning is recommended since washing might cause some shrinkage, preventing the covers from being reapplied to the seats without damage. Other than spot cleaning the covers while they are in place, dry cleaning is not recommended, since the resulting fumes could be hazardous in the confines of the coach and the solvent could be detrimental to the foam padding of the seats.

- **Cleaning With Covers in Place**

The most effective and economical method to clean the fabric seat covers is by washing with either an approved foam upholstery cleaner or with a mild household detergent.

Thoroughly vacuum the upholstery. Remove any spots or stains before the seats are washed to avoid a cleaning ring.

Dilute household detergent or liquid foam cleaner according to directions on the container. Pour a small quantity into a flat pan and work into a thick foam with a sponge or brush.

Apply only the foam to the fabric with a sponge or brush. Clean a small area of the fabric at a time with the foam. DO NOT SOAK. Rub

vigorously. Sponge the suds from the fabric with a clean sponge or cloth moistened with water. Rinse the sponge or cloth often and change the water when it becomes dirty.

Allow the upholstery to dry completely before the coach goes back into service. To speed up drying, excess moisture can be blown off the fabric with compressed air.

CAUTION

Oil in the air line will soil the fabric. Blow the line clear and test air discharge against a plain white piece of paper. It is also effective to press the edge of a flat hardwood stick down on the cushion and slowly draw it across the fabric.

Even very soiled areas can be returned to their original appearance by a thorough cleaning, but a regular schedule of cleaning that keeps the upholstery reasonably clean at all times will greatly enhance the life span of upholstery.

9.10 TARABUS FLOOR COVERING REPAIR OR REPLACEMENT

On X3-45 coaches equipped with “Tarabus” covering, it is possible to replace or repair this covering. The purpose of this paragraph is to explain the steps to be followed to ensure the best results and adherence.

MATERIAL

Part No	Description	Qty
680028	Adhesive, Tarabus Floor Covering (White)	A/R
684655	Adhesive, Contact (3M)	3.8L
684654	Adhesive, Contact (3M)	18.9L
680532	Sikaflex 221 Gray	A/R

NOTE

Material can be obtained through regular channels.

1. Remove number of passenger seats required to perform repair.
2. Cut and remove damaged section of floor covering.

NOTE

It would be preferable to cut under two rows of seats so that repair is not as noticeable.

3. Clean plywood using a scraper.

NOTE

Make sure that no staples are sticking out beyond surface. Adjacent plywood sheets must be leveled.

4. Fill up holes and imperfections using MAPI PRP 110 then sand.
5. Remove dirt and adhesive residue.

⚠ CAUTION

Do not leave floor covering folded down except temporarily during installation.

6. Apply floor covering adhesive (680028) onto plywood using a serrated spreader with 1/8-inch serration. If required, apply contact adhesive (3M) (684655 or 684654) onto aluminum molding and also onto section of floor covering, which will be in contact with molding (refer to Figure 92).

NOTE

Allow adhesive to dry (3 to 5 minutes).

7. Compress floor covering using a roller so as to remove any trapped air bubble.
8. Apply Sikaflex 221 gray sealant (680532) alongside passenger seat fixing tracks (refer to Figure 93).

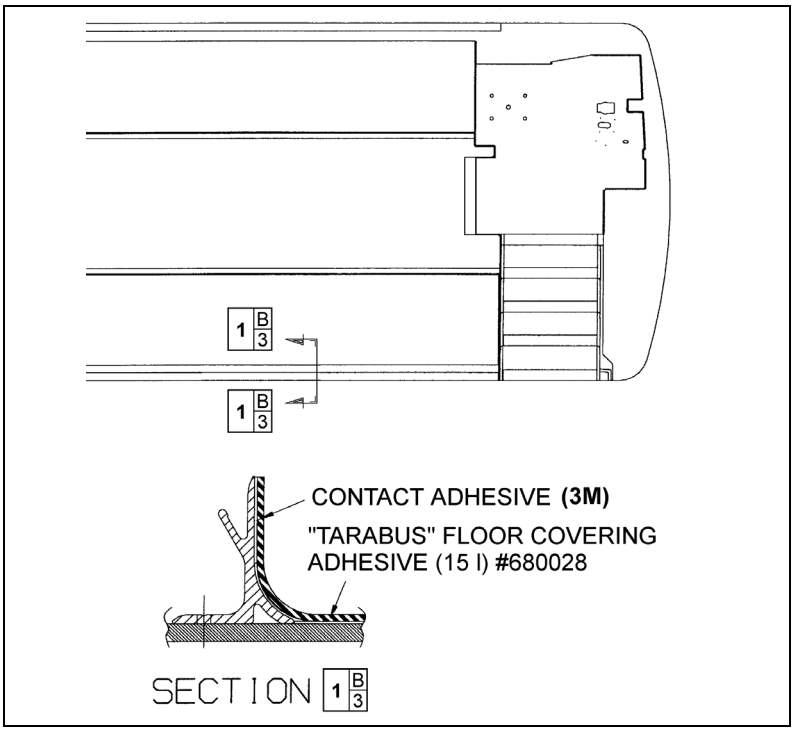


FIGURE 93: TARABUS FLOOR COVERING ADHESIVE APPLICATION 18640

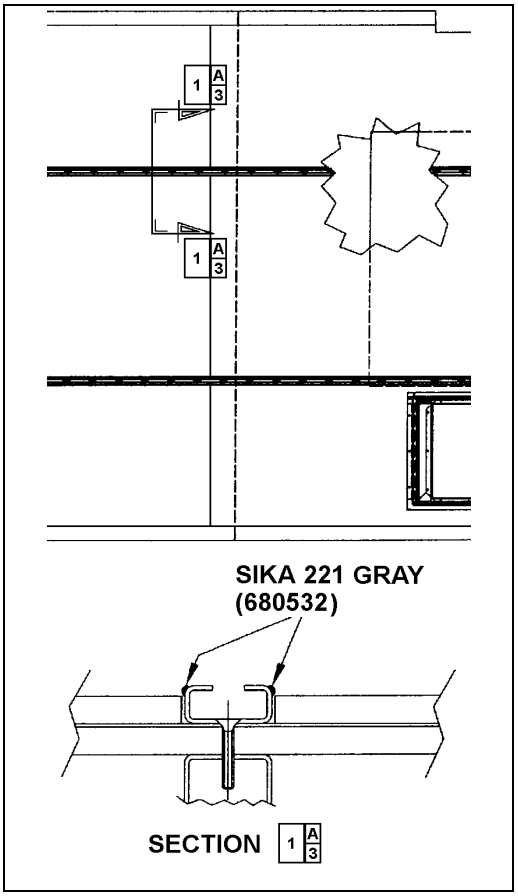


FIGURE 94: APPLICATION OF SIKA 221 GRAY 18641

9.10.1 Front Steps Replacement Procedure

MATERIAL

Part No	Description	Qty
682989	Anti-silicone	A/R
683097	Sika 205 (1 liter)	A/R
685101	Sika Remover 208	A/R
683916	Sika 215 (1 liter)	A/R

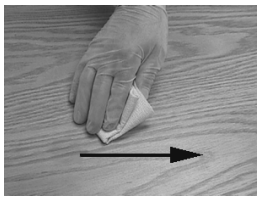
1. Cut and remove damaged step(s).
2. Remove dirt and adhesive residue.

NOTE
In wintertime, condensation and cold temperature may greatly influence bonding parameters. Working area must be at a temperature sufficient to prevent reaching condensation point. Mechanically preheat working area (heat lamp or heat gun) or wait until vehicle reaches room temperature.

PREPARATION OF "TARABUS" FLOOR COVERING

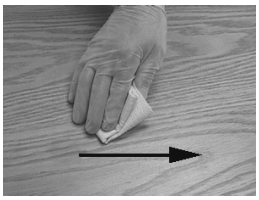
1. Sand under step using "Scotchbrite".
2. Clean using anti-silicone (refer to Section A).

Section A Alcohol or Anti-silicone



1. Apply

CHIX cloth



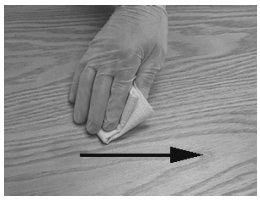
2. Dry immediately

Blue cloth

3. **Allow drying**		
Mandatory		**Minimum time : Wait for product to evaporate**
		After 2 hours: Start cleaning operation again
Before applying any other product		If surface seems dusty, greasy or with finger marks, start cleaning operation again.

3. Apply Sika Primer 215 (refer to Section D).

Section D Sika Primer 215



1. Shake bottle to mix product

2. Apply a thin layer

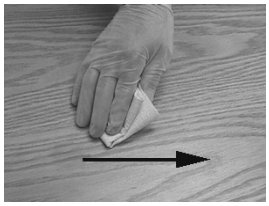
CHIX cloth

3. **Allow drying**		
Mandatory	**215**	**Minimum time : 20 minutes**
		After 2 hours : Remove dust using damp cloth (pure water)
Before applying any other product		If surface seems dusty, dust using damp cloth.
		If surface seems greasy or with finger marks, reactivate with Aktivator.

PREPARATION OF FIBERGLASS

1. Clean using anti-silicone (refer to Section A).
2. Apply Sika 205 (refer to Section B).

Section B Sika 205



1. **Apply**

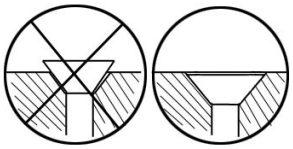
CHIX cloth

2. **Allow drying**

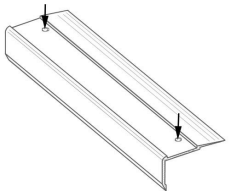
Mandatory	**Minimum time**	**- For a smooth surface (aluminum, stainless, steel, fiberglass (gelcoat side), etc.):**	**2 minutes**
		- For a porous surface (fiberglass (non gelcoat side), etc.)	**10 minutes**
	After 2 hours : Reactivate surface with Sika 205		
Before applying any other product		If surface seems dusty, greasy or with finger marks, start operation again.	

FRONT STEPS GLUING

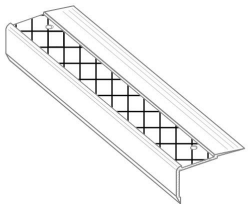
1. Use step nosing to measure and cut necessary length of white safety strip.
2. Use a screw to check depth of countersinking in step nosing. Screw top must not stick out beyond the aluminum surface. Countersink if needed.



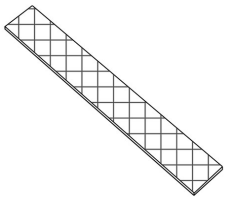
3. Apply some Sika 252 onto the step; make sure to cover the whole surface of the step. Use a serrated spreader with 1/8-inch serration to spread Sika.
4. Apply a bead of Sika 221 onto the perimeter of the step.
5. Install step and press with hands. If Sika overflows, clean with Sika 208. Repeat previous stages for each step if applicable.
6. Remove protective film from double-coated self-adhesive tape located underneath step nosing, position step nosing then press. Drill and fix using screws.



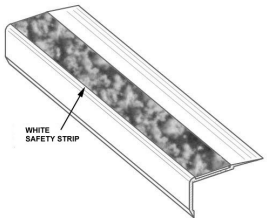
7. Clean top of step nosing using Sika 205 (refer to Section B).



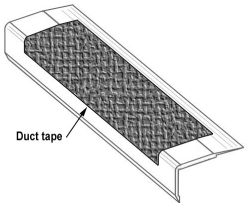
8. Apply some Sika 221 onto white safety strip, spread with a spatula to cover the whole surface.



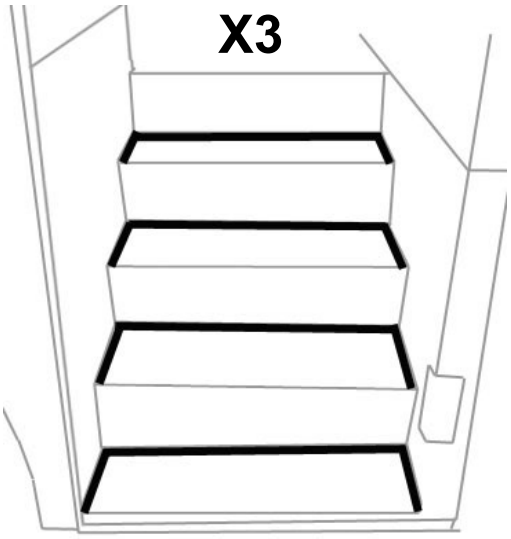
9. Position white safety strip then press using hands. If Sika overflows, clean with Sika 208.



10. Temporarily fix white safety strip with a piece of duct tape, leaving 1 to 2 inches free at each end.



11. Apply some masking tape onto the step perimeter, clean using Sika 205 (refer to Section B) then apply a bead of Sika 252 black. Smooth out the joints then remove masking tape.
12. Install weights onto the steps. Minimum waiting time: 2 hours.



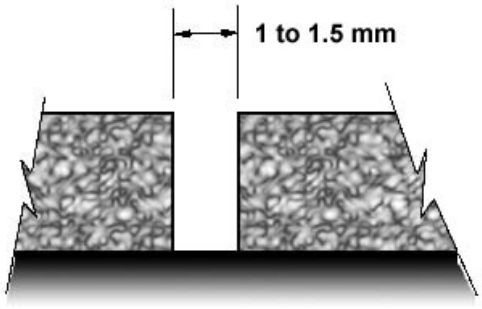
9.10.2 Welding Of Joint Between White Safety Strip And “Tarabus” Floor Covering

1. Pre-heat welding torch;

   Set welding torch to position #4.5 (temperature of 500 °C),

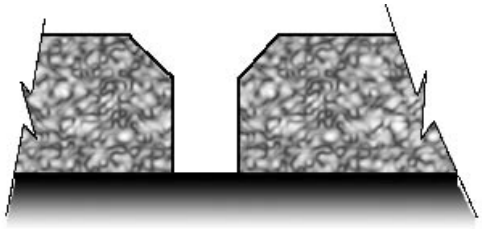
   Heating time: 5 minutes.

2. Before welding, visually ensure that a 1 to 1.5 mm gap exists between white safety strip and “Tarabus” floor covering. Use a knife if this is not the case.



NOTE
There should be no excess of adhesive on top of surfaces, clean if required using “All-Sol”.

3. Chamfer the joint.



NOTE
The chamfer width must always be less than the filler bead diameter (between 2.5 and 3 mm).

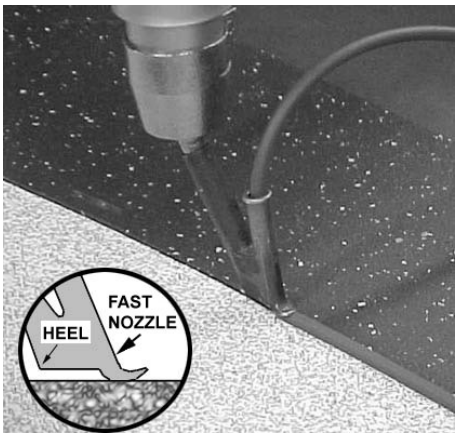
4. Use chamfer knife. **Be careful not to overcut or to cut to the side to prevent damaging “Tarabus” covering.**

5. Add (about 6 inches) some length to the required length of filler bead to make the joint then cut.

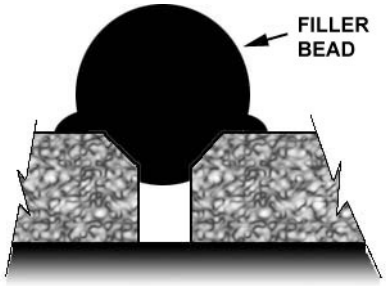
6. Take position with welding torch. The proper position is with a slight slope to the rear.

7. Once the welding torch is ready, insert the filler bead into the nozzle and immediately start welding. Move in a regular manner while pressing slightly with torch.

8. The heel of the fast nozzle must not lean against “Tarabus” covering (always parallel to the surface).

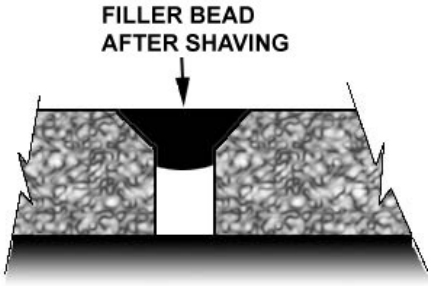


9. Allow cooling down of filler bead (about 5 minutes).



10. Shave filler bead to make it level to the floor. Use supplied knife designed for that purpose.

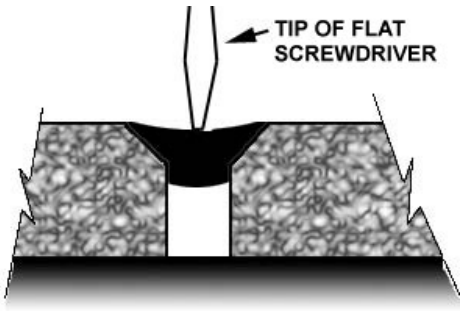
NOTE
To facilitate the cut, you can spray some soapy water onto the joint.



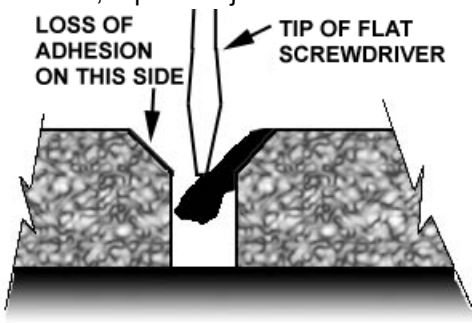
CAUTION
The procedure for turning the torch off must absolutely be followed. If this step is not taken, the element may burn.

11. Set temperature potentiometer to “0” position. Fan will evacuate residual heat. Leave the torch in operation as it is for 3 minutes.

12. Perform adhesion test using the tip of a flat screwdriver; apply a slight pressure on the joint.



13. If welding was not performed properly, there will a loss of adhesion on one side. If this is the case, repair the joint.



9.10.3 Repair Of A Welded Joint

NOTE
In wintertime, condensation and cold temperature may greatly influence bonding parameters. Working area must be at a temperature sufficient to prevent reaching condensation point. Mechanically preheat working area (heat lamp or heat gun) or wait until vehicle reaches room temperature.

1. Using a knife, remove portion of joint to be repaired.

NOTE
Loss of adhesion may be local. If this is the case, repair may also be local.

2. Chamfer the joint again as indicated in paragraph 6.10.2, Section: Welding Of Joint Between White Safety Strip And “Tarabus” Floor Covering.

3. Re-weld the joint as indicated in paragraphs 6, 7 and 8. Use your thumb to hold the filler bead end.

WARNING

Nozzle is hot.

4. Always add an extra inch of filler bead at the beginning and at the end of repair.
5. Perform steps indicated in paragraphs 9, 10 and 11.

10 X3-45 VIP EXTERIOR FINISHING AND BODY REPAIR

The following procedures cover repair, installation and replacement of various doors, panels and windows pertaining to X3-45 VIP. The paragraph divides the vehicle into zones to facilitate the search; each zone is then sub-divided into components.

Refer to the appropriate zone and component for the complete procedure.

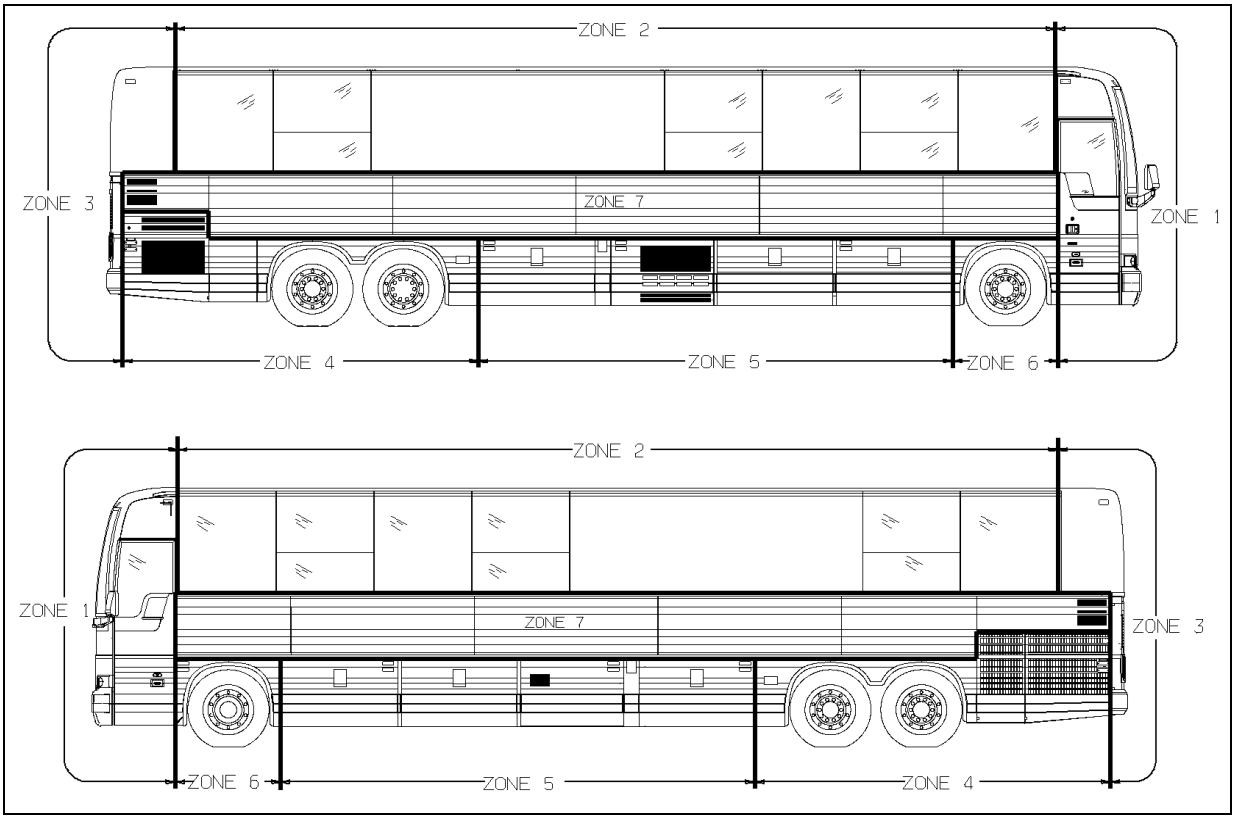


FIGURE 95: X3-45 VIP ZONES

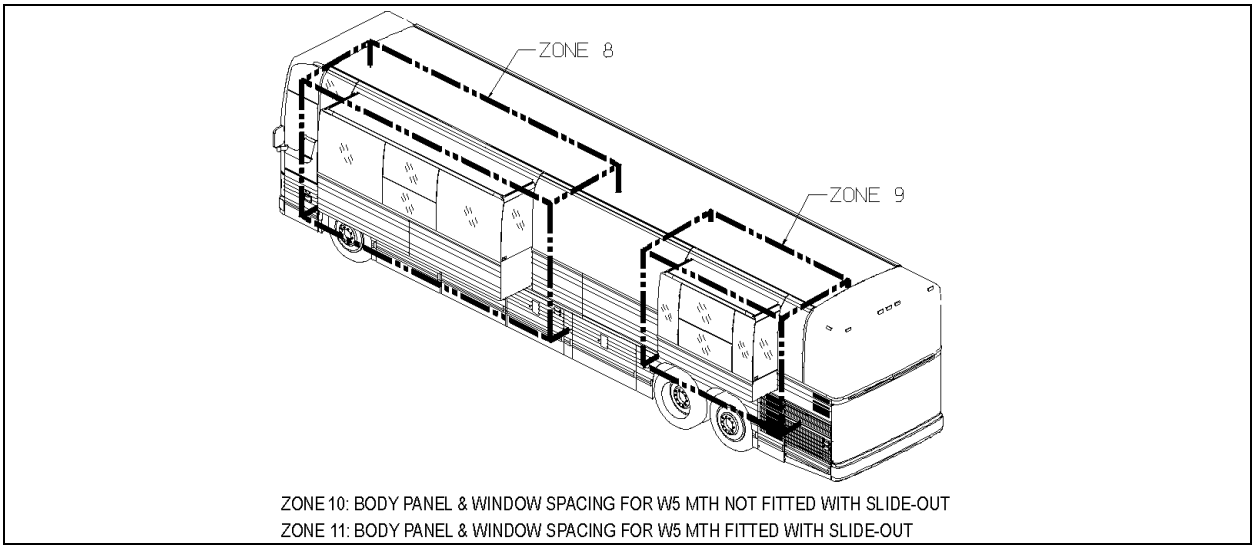


FIGURE 96: X3-45 VIP WITH SLIDE-OUTS

10.1 ZONE 1

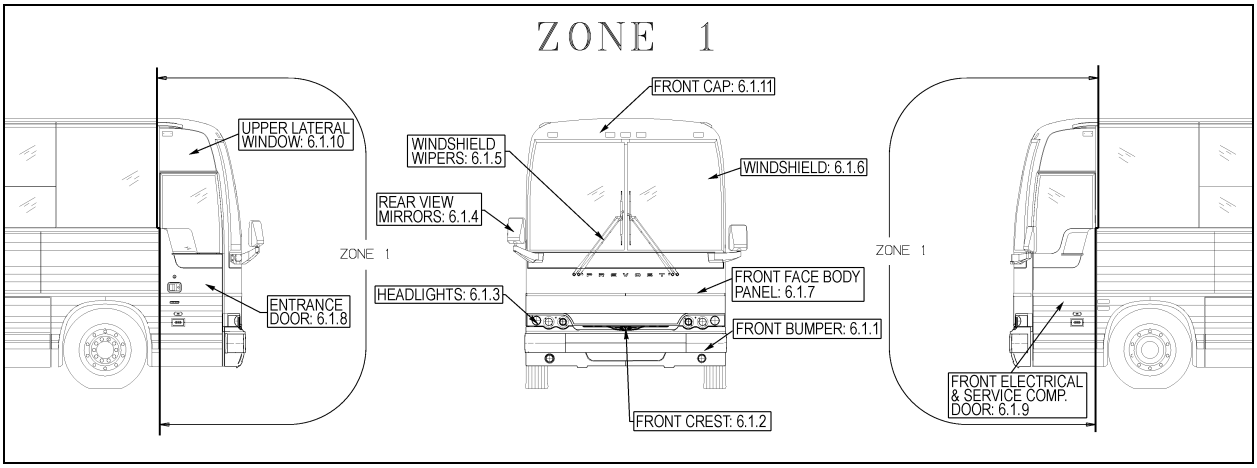


FIGURE 97: ZONE 1

10.1.1 Front Bumper

The front bumper can be tilted downward to give access to the bumper compartment. Pull the release handle located inside front service compartment to unlock. Tilt down the entire bumper assembly to access the compartment. Push the bumper back up firmly in place to lock in position.

Two people are required to remove and install the front bumper. Safely support the bumper and remove the two bolts on each bumper side to separate the bumper from the spare wheel compartment door. To install bumper, reverse the removal procedure.

WARNING

Front bumper is heavy. Use proper lifting equipment to support the bumper during the removal and installation operations to avoid personal injury.

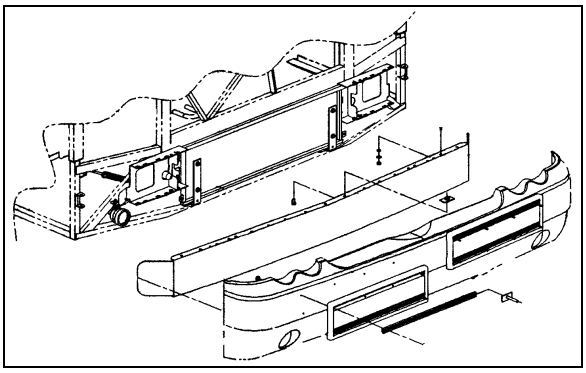


FIGURE 98: FRONT BUMPER REMOVAL

WARNING

The compartment behind the bumper is not designed for storage. Never store loose objects in this compartment since they can interfere with the steering linkage mechanism.

Use care when opening or closing the reclining bumper compartment to prevent personal injury.

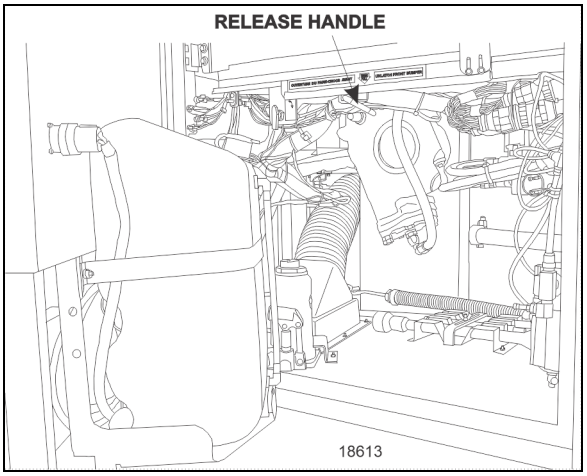


FIGURE 99: FRONT BUMPER RELEASE HANDLE

For gluing of front bumper panel refer to procedure **SAV00198** .

10.1.2 Headlights

Refer to Paragraph Headlights, included in Section 06: Electrical of the Maintenance Manual for complete information on headlights.

10.1.3 Rear View Mirrors

Your vehicle is equipped with two exterior mirrors.

The mirrors may be equipped with an optional electric heating system which serves to minimize ice and condensation on the mirror glass in extreme weather conditions. Integral thermostats are installed in both mirrors to avoid continuous heating. Use the appropriate switch on the dashboard to activate the defroster system on both mirrors simultaneously. The mirrors can easily be adjusted by using the remote controls located on the L.H. side control panel. The mirrors have easy to replace glass in case of breakage. Remote control motors can also be replaced.

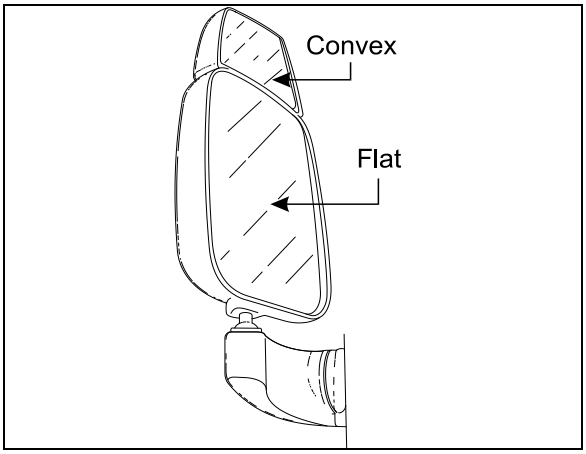


FIGURE 100: REAR VIEW MIRROR (RAMCO) 18398A

❖ **Adjustment**

At the base of the mirror arm, loosen the mounting bolt to swing arm in or out.

To pivot the mirror head, loosen the setscrews on each side of the ball stub at the base of the mirror head to facilitate the adjustment.

❖ **Disassembly**

At end of mirror arm, loosen the setscrews to relieve tension on the ball stem. Remove the ball stem from the arm.

Remove the four screws fastening the mirror arm base to the coach.

❖ **Assembly**

Mount the mirror arm base to the coach. Insert the ball stem into the mirror arm and tighten the socket setscrews.

NOTE

Position the ball cup halves so the joint between them lies on the centerline of the arm. Ensure that the setscrews are not on the joint between the cup halves.

❖ **Replacement of Mirror Glass**

Remove the broken glass.

Position new glass in mirror head and press to lock the Velcro in place.

❖ **Heated / Remote Controlled Rear View Mirrors**

Heated/remote controlled external rear view mirrors may be provided to prevent the mirrors from frosting up in cold weather.

The remote controlled external rear view mirrors attach to support arms using a pivot collar secured by setscrews. Loosening the setscrews allows the whole head assembly to turn on the support arm for initial adjustment. A mounting bolt and washer hold the arm support to the mounting bracket. The arm support can be moved to position the mirror head into or away from the coach body.

The mirror heat switch is located to the left of the driver on the dashboard. This switch must be activated before the mirror heating element will energize. Once energized, the mirror heating element is kept at a sustained temperature (between 60-80°F) by a thermostat. Refer to wiring diagram annexed in the technical publication box.

CAUTION

Do not attach stick-on type convex mirror accessories to the heated mirror glass. This could impede uniform heat distribution on the mirror surface which could break the mirror.

- Mirror Control

The remote control pointer knob(s) for the mirrors is (are) mounted on the L.H. side control panel. The harness to the mirror head runs through the arm support. The remote motor is mounted to the mirror head behind the mirror glass.

Turn pointer knob to the left for mirror head adjustments and to the right for convex mirror adjustment, then push down on either of the button's (4) sides to adjust the selected mirror viewing angle.

- Disassembly

At end of mirror arm, loosen the setscrews to relieve tension on the ball stud. Remove the ball stud. Remove the ball stud from the arm and gently pull the harness out until the connector is exposed.

Remove the four screws fastening the mirror arm base to the coach. Slide the harness free of the mirror arm base.

- Assembly

Attach a stiff wire (snake) to the end of the harness and insert the wire through the mirror

arm base and arm, gently pull the harness through the arm and disconnect the "snake".
Connect the mirror head harness. Insert the harness connector back into the mirror arm.
Insert the ball stud into the mirror arm and tighten the socket setscrews.

NOTE
Position the ball cup halves so the joint between them lies on the centerline of the arm. Ensure that the setscrews are not on the joint between the cup halves.

- Convex & Flat Mirror Removal

The mirror glass assembly is mounted to the control mechanism or to mirror base with Velcro strips. Remove the mirror glass by gently pulling the lens to release the Velcro. Disconnect the heater grid at the two connectors.

Connect the connectors of the new mirror's grid to the harness. Install the lens by positioning the lens in the mirror frame and pressing to lock the Velcro in place.

10.1.4 Windshield Wipers

Refer to Paragraph 23.7 Windshield Wipers and Washers, included in Section 23: Accessories of the Maintenance Manual for complete information on windshield wipers.

10.1.5 Windshield

The windshield is single-glazed AS-1 laminated safety glass. Each windshield is secured to a flange around the front structure opening by a one-piece black rubber extruded gasket

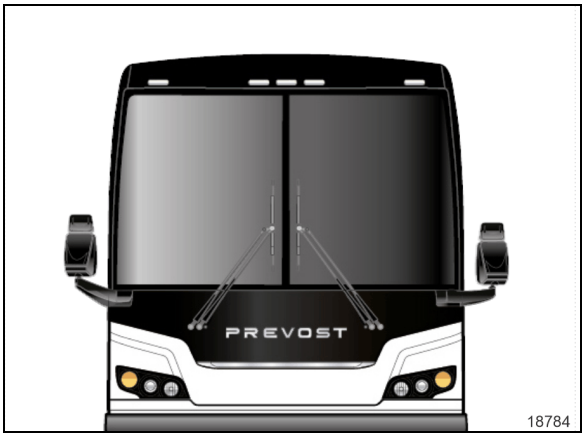


FIGURE 101: WINDSHIELD

A low profile gasket with a single locking strip is now used on our vehicles.

Proper installation of the windshield ensures watertightness. Since glass varies in fit depending on the supplier, we recommend installing a replacement windshield obtained from Prevost Parts to ensure proper fit.

NOTE
For more information on windshield removal or installation, a webinar is available from Prevost.

10.1.5.1 Hydrophobic Treatment on Side Windows

The new low profile window gasket creates an airflow that is closer to the vehicle. This reduces air drag but window soiling of the side windows becomes more likely.

A specific water repelling treatment is factory applied to the driver's and entrance door windows to counter this effect and prevent window soiling.

We suggest renewing the water repelling treatment each year or more frequently depending on operating conditions.

If you notice increased soiling on the driver's and entrance door windows after several months of operation, the water repelling treatment can be renewed by making an appointment with your nearest Prevost Service Center.

The Hydrophobic compound is specially formulated for Prevost and can only be applied by Prevost technicians in Prevost service centers.

10.1.5.2 Removal

⚠ WARNING
Removal and installation must be performed by more than one person. Wear protective gloves when handling the windshield.

7. Remove the wiper arms of the affected windshield.
8. To ease damaged windshield removal, remove the rubber locking strips from the rubber extrusion.
9. From inside of vehicle, push against the top L.H. side corner of windshield for the removal of a R.H. side windshield. If the L.H. side windshield had to be removed, you

would have to push against the top R.H. side corner.

NOTE
We are referring to the L.H. and R.H. side as viewed from the inside of the vehicle.

10. At the same time, another person gradually lifts the rubber lip from the vehicle exterior using a plastic spatula from top to bottom.
11. Remove the entire damaged windshield and broken glass if applicable.
12. Clean the rubber extrusion channel with Standox anti-silicone. Refer to heading *"Windshield Installation"* in this section for instructions on how to reinstall windshield.

NOTE
If the rubber extrusion is damaged, remove and discard it, then clean the windshield opening with Standox anti-silicone. Refer to heading "Installation of Rubber Extrusion and Windshield" in this section for complete instructions.

10.1.5.3 Windshield Installation

This procedure is provided as a general guideline to install a new windshield with a new gasket on a clean structure. The method may vary depending on material aging and condition.

3. Spray rubber extrusion with soapy water to ease windshield insertion.
4. Slide windshield into rubber extrusion groove starting with the bottom curved side edge. Using a plastic spatula, move the rubber extrusion lip aside to gradually insert the windshield into the groove.

NOTE
Spray soapy water on a regular basis to ease windshield insertion.

7. Using the same type of plastic spatula, repeat the same operation from inside of vehicle, gradually inserting the windshield into the groove.

NOTE
Make sure windshield bottom edge is well inserted into the rubber extrusion groove before proceeding with the sides.

8. Then, working from both sides of windshield bottom to top, gradually move the rubber extrusion lip aside to insert the windshield into the groove. Use also soapy water on the inside of vehicle to insert the windshield into the rubber gasket groove.

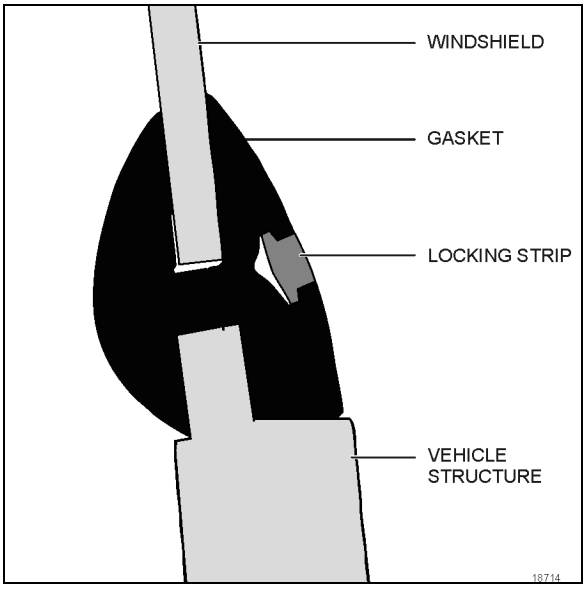
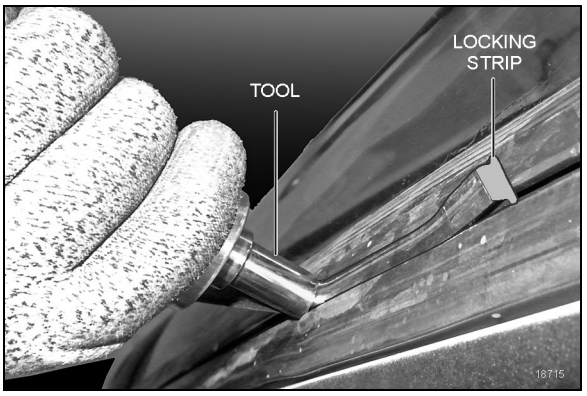


FIGURE 102: WINDSHIELD INSTALLATION SIDE VIEW

9. Insert the top curved corner then finish with the top of windshield.
14. Spray locking strip and rubber extrusion groove generously with soapy water.

NOTE
Locking strips retract with time. Install ends of locking strips as tight as possible in the V-channel.

15. Using insertion tool 680755, insert the strip into the rubber extrusion groove. Gradually insert strip making sure to leave a 2 inch excess length at the extremity.



16. IMPORTANT: Every 6 inches or so, slide backwards to compress the strip due to its tendency to contract during drying process.
17. When strip insertion is almost complete, cut end at a 45° angle leaving ¼" of excess length to prevent contraction over time then insert strip into groove.
18. Reinstall windshield wiper and destination sign if applicable.

10.1.5.4 Installation of Rubber Extrusion and Windshield

CAUTION

The black rubber extrusion securing the windshield in the opening fits correctly in only one position. Find the correct position of the rubber extrusion now, and make reference marks with a china marker to avoid searching for the correct position later in the procedure.

5. Clean the windshield opening sealing surfaces with anti-silicone and let dry.
6. Apply a 1/8" bead of black Simson adhesive #684685 to all four corner of the gasket in the groove outside corner as illustrated in Figure 20. Do this *before* placing gasket on vehicle structure to control quality and continuity of bead. This method helps achieve a watertight installation.
7. Place gasket on vehicle and secure the upper sections with tape
8. Wait for Simson adhesive to bond Install windshield as per paragraph 9.1.6.3: *"Windshield Installation"*

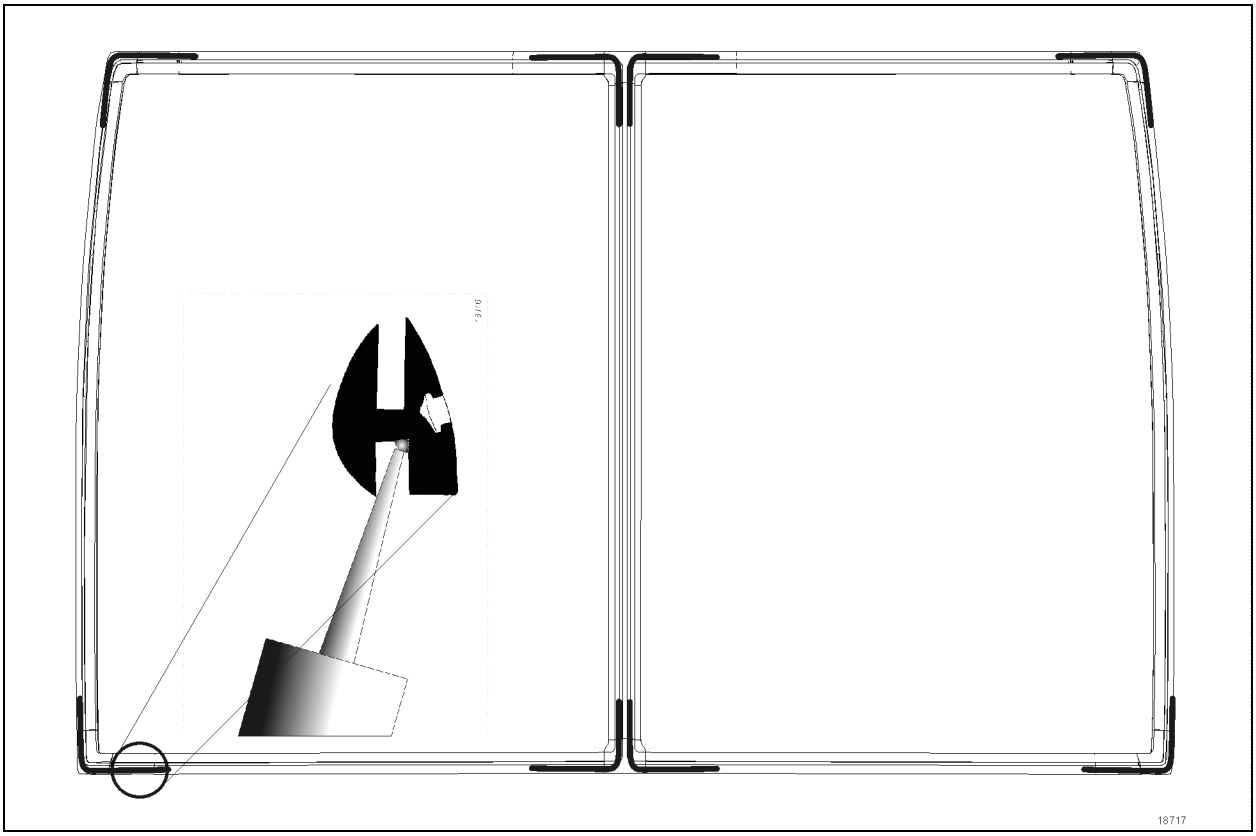


FIGURE 103: APPLICATION OF BLACK ADHESIVE

10.1.6 Entrance Door

For the removal of entrance door body panel, you will need:

Pneumatic hammer tool (Zip Gun);
Razor sharp window scraper;

- Before removing body panel, you can to ease repair uninstall entrance door from vehicle. If applicable, remove reflector, keyless system keyboard and cornering light.
- You must also remove horizontal finishing molding located underneath the window. This molding is glued and will have to be replaced because it will be damaged at removal.
- Remove interior finishing panel to access rub rail fixing bolts, then remove rub rail.
- Using the "**Zip Gun**", cut Sika bead located ¼ inch (7-8 mm) from each body panel edge and around cornering light.
- Separate body panel from door.
- Remove from door surface Sika bead and double-face self-adhesive tape residue using a razor sharp window scraper.
- Use a Chix cloth and anti-silicone to remove any dust or residue.

For assembly, gluing or finishing joints of entrance door, refer to procedure **SAV280020** .

For gluing of entrance door horizontal finishing molding, refer to procedure **SAV00213** .

For the installation of entrance door, refer to procedure **SAV280022**.

10.1.7 Front Electrical & Service Compartment Door

For the removal of front electrical & service door body panel, you will need:

Pneumatic hammer tool (Zip Gun);
Razor sharp window scraper;

- Before removing body panel, you can to ease repair uninstall front electrical & service door from vehicle. If applicable, remove reflector and cornering light.
- You must also remove horizontal finishing molding located underneath the window. This molding is glued and will have to be replaced because it will be damaged at removal.
- Remove interior finishing panel to access rub rail fixing bolts, then remove rub rail.
- Using the "**Zip Gun**", cut Sika bead located ¼ inch (7-8 mm) from each body panel edge and around cornering light.
- Separate body panel from door.
- Remove from door surface Sika bead and double-face self-adhesive tape residue using a razor sharp window scraper.
- Use a Chix cloth and anti-silicone to remove any dust or residue.

For assembly, gluing or finishing joints of front electrical & service compartment door, refer to procedure **SAV280021**.

For gluing of driver's window, refer to procedure **SAV290013**.

For gluing of front electrical & service compartment door horizontal finishing molding, refer to procedure **SAV00213**.

For the installation of front electrical & service compartment door, refer to procedure **SAV280022**.

10.1.8 Upper Lateral Window

For the removal of driver's window or upper lateral window, you will need:

Pneumatic hammer tool (Zip Gun);
Razor sharp window scraper;
"Olfa" knife;
Face shield.

- In the case of driver's window only, open front service compartment door.
- Mark the position of the driver's window for future reference.
- From inside of vehicle, cut Sika bead around window perimeter using a "Zip gun" while another person hold the window from the outside.

NOTE
Wear ear plugs during this operation.

- Then, move outside of vehicle and cut Sika bead to free window while somebody else hold the window from the inside.
- Carefully remove window from frame, ask for help if needed.
- Using a razor sharp window scraper, remove from window frame Sika bead and double-face self-adhesive tape residue.
- First of all, check Sika 205 cleaner expiration date.
- Before applying Sika cleaner, fold “Chix” cloth twice for proper width.
- Apply an even coat onto the inside of window frame and allow drying for 2 minutes (maximum 2 hours).
- Discard waste according to applicable environmental regulations, use dangerous waste containers.
- Apply masking tape before applying Sika glue to protect paint and adjacent window during surface treatment.

For gluing of upper lateral window, refer to procedure **SAV290016**.

10.1.9 Front Cap

The fiberglass front cap does not need any maintenance except painting as needed. It is held in place with adhesive. If ever it has to be replaced, make an appointment at a Prevost service center near you. For minor damages, refer to paragraph 4 "Common Fiberglass Repair procedure" and paragraph 5 "Common Painting Procedure".

10.2 ZONE 2

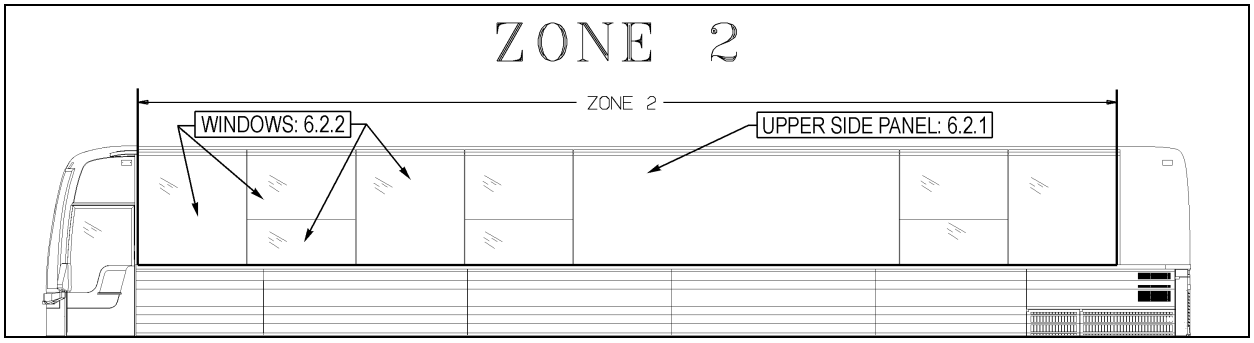


FIGURE 104: ZONE 2

10.2.1 Upper Side Panel

For structure preparation, refer to procedure **SAV00035**.

For installation of upper side panel neoprene foam tapes, refer to procedure **SAV00036**.

For installation of upper side panel, refer to procedure **SAV00041**.

10.2.2 Fixed Windows

Depending on the method chosen for fixed side window removal or installation, you may need:

* Drill equipped with a sharp pointed rod into which a small hole was drilled;
* Razor sharp window scraper;
* Braided windshield wire and a pair of handles;
* Gloves, goggles or face shield.

Fixed Window Removal

1st Method

NOTE
This method is used only in the case of a regular fixed side window. For the fixed upper portion of awning or sliding windows, you must use method number 2.

- Apply a sticky plastic film onto all of window outside surface for safety reason.
- Using a drill equipped with the special sharp pointed rod, drill through the window seal into one of the bottom corners, from a 30º angle with reference to the vehicle.
- This procedure requires accuracy and it is possible not to succeed on the first attempt. From the inside of vehicle, a second person ensures the rod passes through.
- Remove the rod; thread the wire into the small hole. Reinsert the rod and the wire into the hole far enough so that the person inside the vehicle can pull the rod using a pair of pliers.
- Attach the wire ends to the specially designed handles.
- Pull in turn from the inside and the outside of vehicle to gradually cut the Sika bead on the window perimeter.
- When you reach top corner, detach wire from the outside handle, secure it to a fish wire or rod and thread it underneath the aluminum molding behind the rivets.
- Detach wire from fish wire and continue cutting using the handle.
- Cut Sika bead until you come back to starting point, then you can remove the window by carefully pushing it out from the inside of vehicle.

2nd Method

- Apply a sticky plastic film onto all of window outside surface.
- To limit as much damage as possible, remove any interior molding in the way. Install a plastic film on the window interior surface and secure using masking tape onto all of window perimeter.

NOTE

Do not stretch plastic film and leave enough play to be able to push window out without tearing the plastic film.

- Using a ball peen hammer, hit one of the window bottom corners from the **outside**.
- Carefully push window out and lift it up sufficiently to separate it from the aluminum molding.
- Attach the windshield wire to a fish wire and thread it underneath the aluminum molding behind the rivets.
- Detach wire from fish wire and continue cutting using the handle.
- Make a notch at each window top corner to make sure you pass underneath the remaining pieces of glass.
- Remove the aluminum molding and clean up the frame using the window scraper.

For gluing of lateral fixed window behind driver, refer to procedure **SAV00046**.

For gluing of lateral fixed half-window, refer to procedure **SAV00045**.

For the installation of awning or sliding window, refer to procedure **SAV00038**.

For gluing of lateral fixed window, refer to various procedures: **SAV00037** for gluing vertical and bottom rubber seals; **SAV00043** for the installation of lateral fixed window and **SAV00044** for making the Simson joint around fixed windows.

10.2.3 Electric Awning Windows

The electric awning windows are connected directly on the batteries 24 V DC terminal block. As a result, they can be operated regardless of the state open or close of the master switch.

Window Removal

Replacement awning window does not include a new motor. If in working order, transfer the motor of the replaced window to the replacement window. If not, the motor can be bought separately. When replacing the window, keep the components in working order as spare parts.

1. Push the vertical latch handle downwards to release the track and then open the window using the horizontal latch handle.
2. Take out the screw at the lower end of the track to let free the swiveling arm roller.
3. Unplug connectors. Dismount the gas spring from the window.
4. Loosen the set screws #5 (Figure 104) (rotate the arm to get to the second set screw) and disengage the swiveling arm from the motor shaft extension.
5. Push the glass window out ninety degrees (90°).

⚠ CAUTION

The window may fall out.

6. The window is free and can be unhooked.
7. Reverse procedure to install a new one.

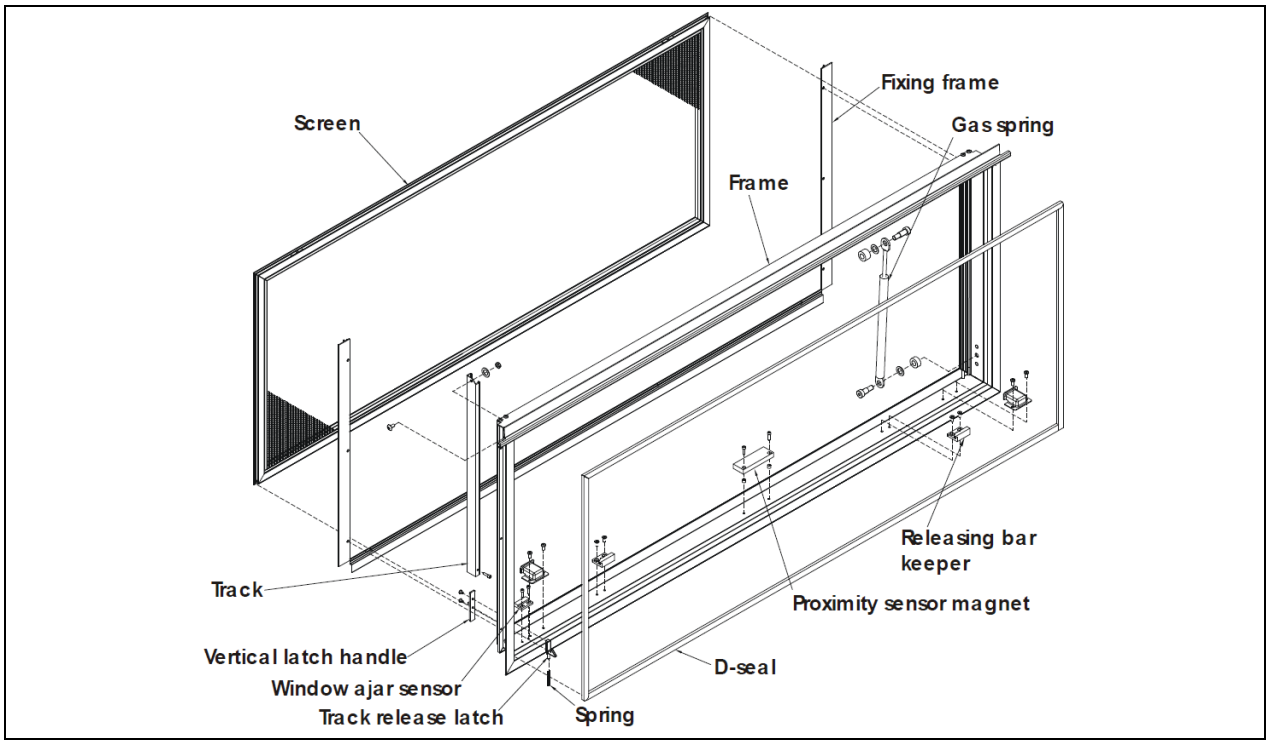


FIGURE 105: ELECTRIC AWNING WINDOW EXPLODED VIEW (FRAME) 18586

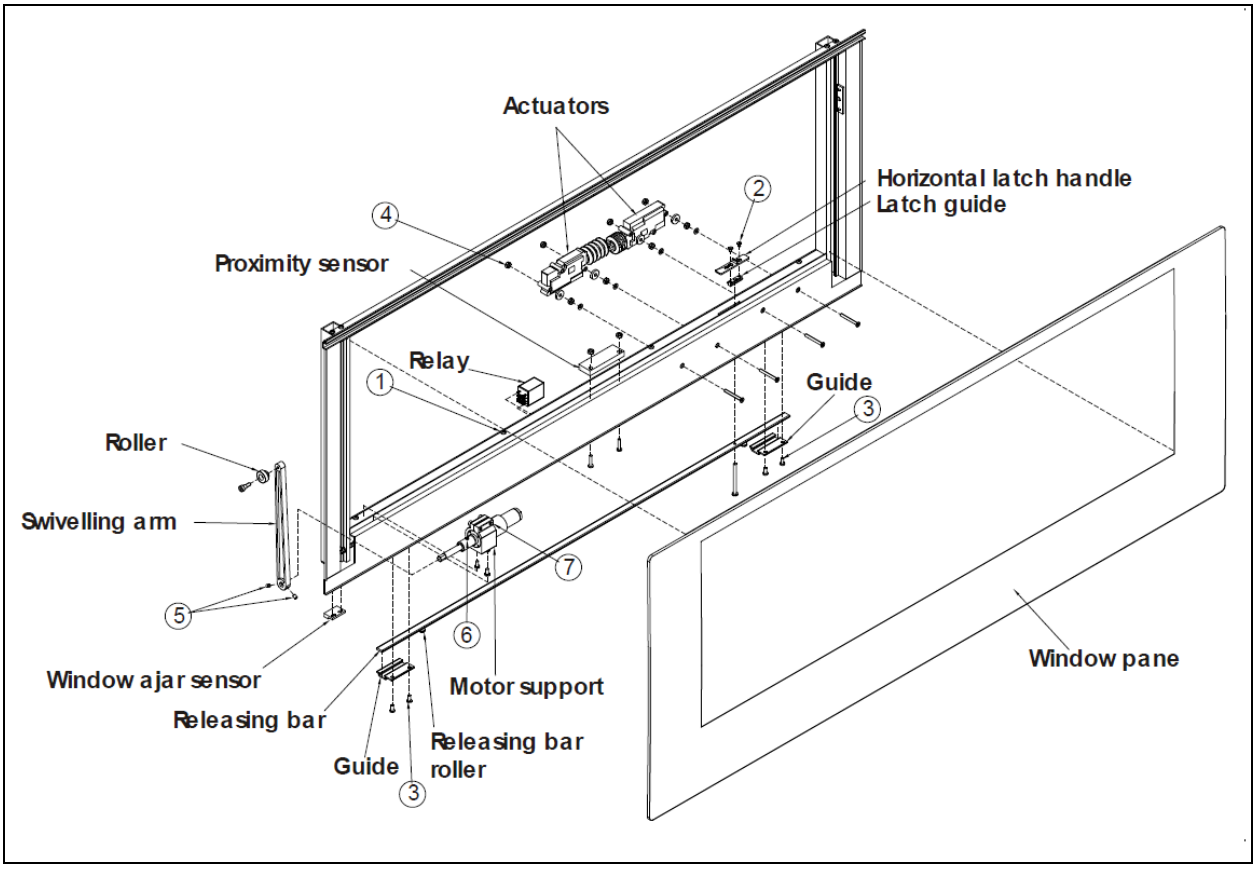


FIGURE 106: ELECTRIC AWNING WINDOW EXPLODED VIEW (SASH) 18583

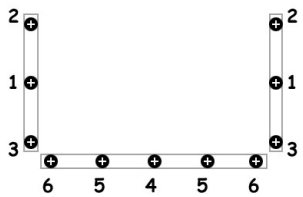
Actuator Replacement

1. Push the vertical latch handle downwards to release the track and then unlatch the window using the horizontal latch handle.
2. Remove actuator access cover by taking out screws #1 (8x).
3. Take out screws #2 (2x) and remove horizontal latch handle and guide.
4. Take out the guide screws #3 (4x) and remove releasing bar.
5. Unplug connectors from defective actuator, unscrew nuts #4 (2x) and remove the actuator.
6. Reverse operations for reinstallation.

Motor Replacement

1. Push the vertical latch handle downwards to release the track and then unlatch the window using the horizontal latch handle
2. Take out the screw at the lower end of the track to let free the swiveling arm roller.
3. Remove actuator access cover by taking out screws #1 (8x).
4. Loosen the set screws #5 (rotate the arm to get to the second set screw) and disengage the swiveling arm from the motor shaft extension.
5. Unplug motor connector and dismount motor and support assembly.
6. The shaft extension is glued to the motor shaft. It has to be heated to break the binding to permit removal. Loosen set screw #6 and remove the shaft extension. Also loosen screw #7 and remove motor from the support.

Reverse operations for reinstallation.

ELECTRIC AWNING WINDOW – CONVERTER CHECKLIST	
Check the electrical circuit & proximity sensor	A: The latching system will not operate without power. Is there electrical power to the latching circuit? The horizontal latch handle, on the sill sash will be seen to move if there is power on this circuit, or it can be checked with an electrical tester. If there is no power to this circuit when the window is closed and either rocker switch are switched "ON", there is a problem with the electrical system. B: The Proximity Sensor on the sash may not be switching power to the latching circuit if the magnet is not getting close enough to the switch OR the Proximity Sensor may be broken (or stuck in one position). Is the proximity sensor switching when the window is closed?
Check the release force required to operate the horizontal latch handle	A: If the pull force required to move the latch is more than 20lbs the window will not latch properly. Average pull force during testing by manufacturer is 12lbs -15lbs. What is the force required to release the handle? Check using a force gauge (same test done by manufacturer).
Check Installation	A: If the window is too tightly installed OR if the sequence for tightening the clamping frame screws Is incorrect the window may not close properly. Was the window installed correctly? Was the correct sequence (see below) used when tightening the clamping frame screws?  B: Removing the shipping blocks before the window is installed can create major problems.

	Were the shipping blocks in place during installation? C: Failure to remove the shipping blocks after installation can create interference between sash and frame. Have the shipping blocks been removed after installation? D: The window is misaligned or not installed squarely. Is there interference with any coach parts? Is there proper clearance between the bottom of the outer glass and the belt-line trim / seal?
Check for missing parts or misaligned parts	A: The frame and sash are misaligned. Is there any interference between the sash and frame? Is there clearance between the sash and the rocker switch covers? B: Releasing bar guides are missing. Check that the releasing bar guides are installed. There should be 4 installed on H windows, and 3 installed on X3-45 VIP windows.

10.2.4 Electric Sliding Windows

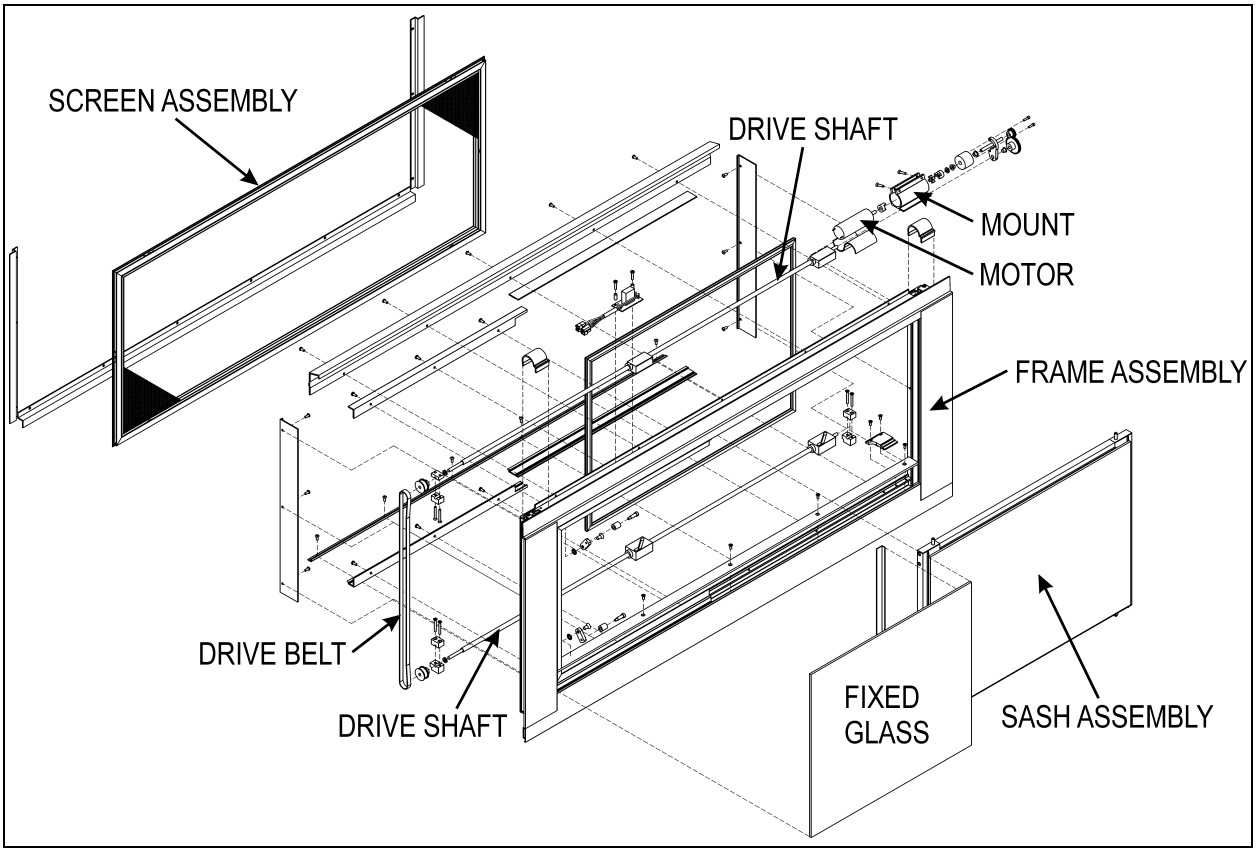


FIGURE 107: ELECTRIC SLIDING WINDOW EXPLODED VIEW

Sash Removal

1. Remove the Screen Assembly
2. Pull down on both release latches simultaneously and rotate the sash inwards approximately 10 degrees.(Figure 107)

FIGURE 108: REMOVING THE SASH

3. Lift the sash up and out to disengage the bottom of the sash from the window frame. (Figure 108)

FIGURE 109: DISENGAGING THE BOTTOM OF THE SASH

Installation

1. Align the leading edge of the slot on the lower cam follower block with the sash stop. Use the power toggle switch to obtain the correct alignment. (Figure 109)

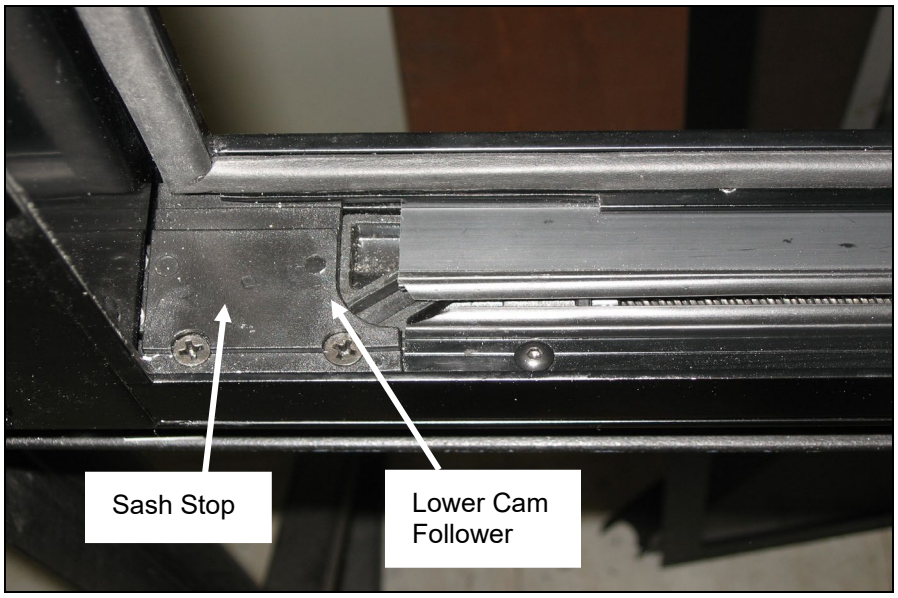


FIGURE 110: PROPER ALIGNMENT

2. Position the left hand lower corner of the sash over the front cam follower block (Figure 110)

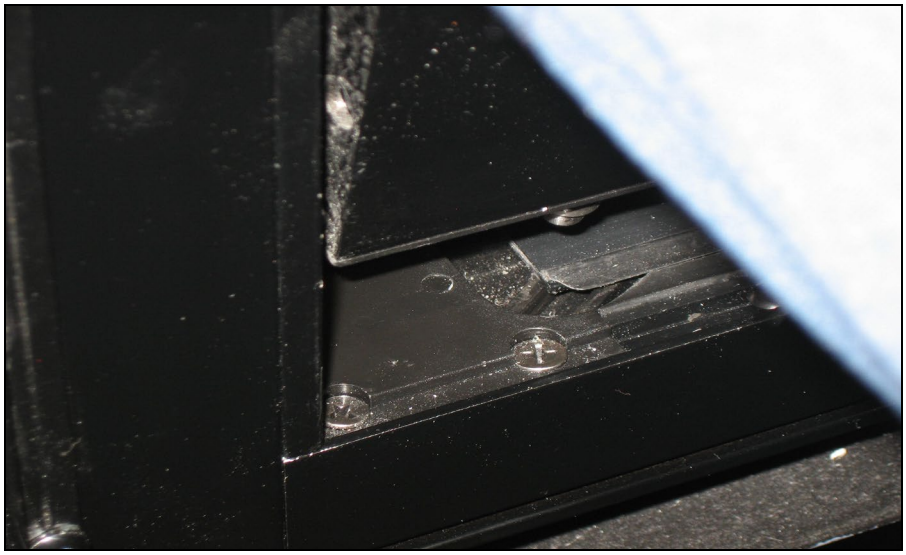


FIGURE 111: POSITIONING THE LOWER LEFT CORNER OF THE SASH

3. Engage the sash pin with the leading edge of the slot of the cam follower block. Do the same at the rear of the sash.
4. Pull down on the release latches and rotate the sash inwards until it is parallel with the window frame.
5. Release the latches to engage the latch pins with the upper cam follower blocks.

6. Confirm that both latches are in the closed (latched) position. The upper edge of the latch opening must be aligned with upper edge of the sash opening (Figure 111)

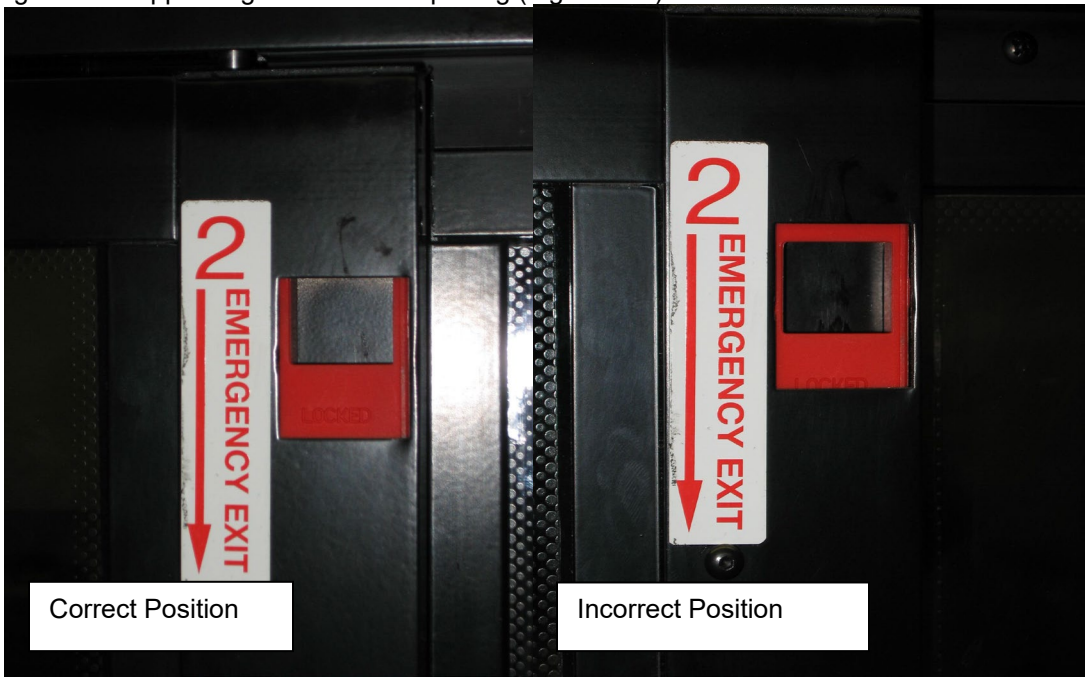


FIGURE 112: RELEASE LATCH PROPER POSITION

7. * Failure to confirm this step may lead to the sash becoming disengaged with the frame and could result in personal injury.
8. Operate the window to confirm that it opens and closes properly.
9. Install the screen assembly.

10.3 ZONE 3

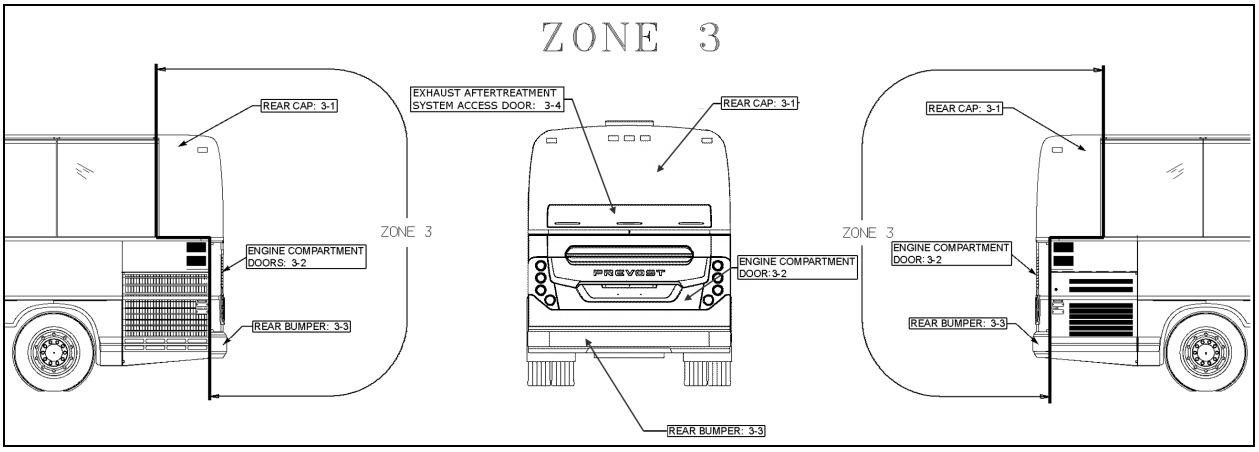


FIGURE 113: ZONE 3

10.3.1 Rear Cap

The fiberglass rear cap does not need any maintenance except painting as needed. It is held in place with adhesive. If ever it has to be replaced, make an appointment at a Prevost service center near you.

For minor damages, refer to Paragraph 4 "Common Fiberglass Repair Procedure" and Paragraph 5 "Common Painting Procedure".

10.3.2 Engine Compartment Doors

❖ **Engine Compartment Doors Adjustment**

The engine compartment door may be adjusted for proper fit by untightening support bolts:

NOTE
*Consult the "BODY PANEL AND WINDOW SPACING DIAGRAM" for proper door gaps adjustment. (*Figure 86*)*

1. To adjust the door VERTICAL position, loosen the bolts (4 on each side) holding the door supporting arm and gas springs bracket to the *vehicle structure* (Figure 113).
2. To adjust the door LATERAL position, loosen the bolts (3 on each side) holding the door supporting arm and gas springs bracket to the *door* (Figure 113).
3. Adjust the door FORE & AFT position by screwing/unscrewing the rubber door stops on each side of the door opening (Figure 113).
4. Check that the door swings freely and close properly. *It may be necessary to adjust the door latch to get proper fit and operation*.

To adjust the latch mechanism and the striker pin:

1. Open the door to access the striker pin.
2. *Slightly* loosen the striker pin.
3. Using a hammer, adjust the striker pin to center it in the door latch mechanism.
4. Tighten the striker pin.
5. Check door fit and operation.

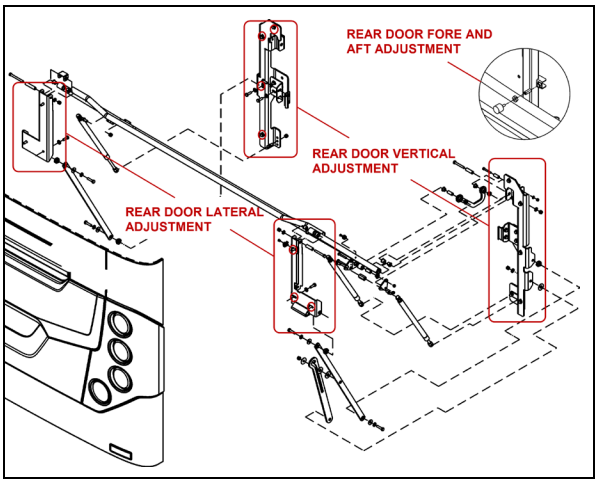


FIGURE 114: ENGINE COMPARTMENT DOOR18633_1

❖ **Engine Compartment Door Body Panel Removal**

For the removal of engine compartment door body panel, you will need:

Pneumatic hammer tool (Zip Gun);
Razor sharp window scraper;
A pair of locking pliers;
Isopropyl alcohol.

- Remove damaged engine compartment door from vehicle.
- Install the damaged door onto an appropriate support.
- Wearing gloves, goggles and ear plugs, pry loose body panel using a “Zip gun” or lever starting from the edge opposite the curved side.
- Use the “Zip gun” to detach completely the stainless steel body panel from door frame.

CAUTION

Do not damage painted surface.

- Use a second person equipped with a pair of locking pliers to pull the body panel as you cut the Sika bead.

WARNING

Be very careful when pulling the body panel, somebody could get hurt if the body panel suddenly detach from the door surface without notice.

- Using the window scraper, remove any Sika bead or self-adhesive tape residue left on the fiber glass surface.

For gluing of engine compartment doors molding, refer to procedure **SAV00211**.

For engine compartment door body panel installation, refer to procedure **SAV280032**.

10.3.3 Rear Bumper

Remove three bolts on each side holding bumper to vehicle and remove bumper.

To install bumper, reverse the procedure.

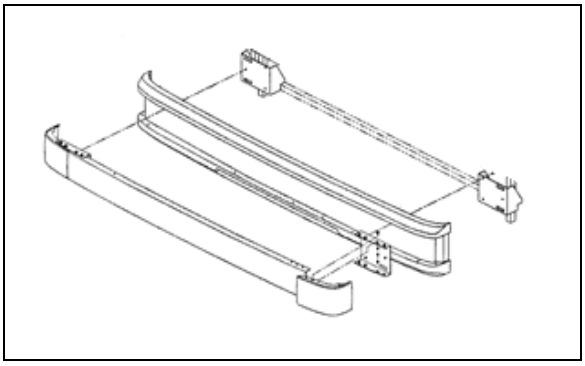


FIGURE 115: REAR BUMPER

10.4 ZONE 4

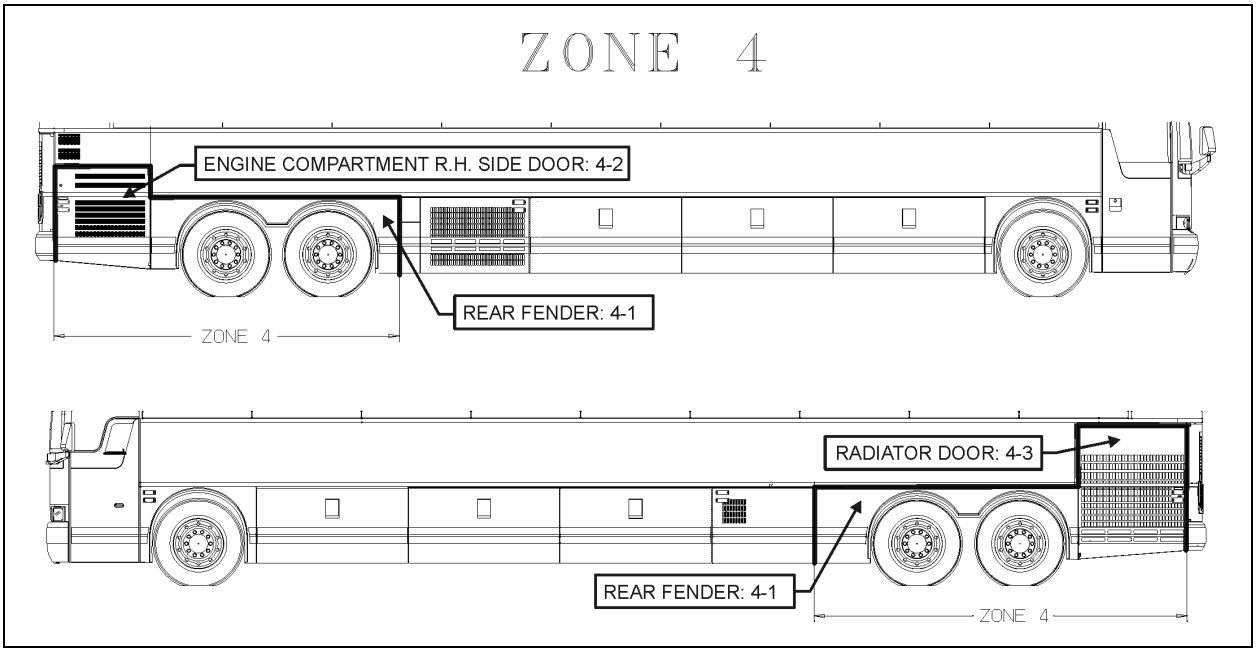


FIGURE 116: ZONE 4

10.4.1 Rear Fender

On X3-45 VIP vehicles, rear fenders are hinged for maintenance on brakes and suspension. Each rear fender panel has two mechanical spring loaded holding devices fixing it to the vehicle's structure. Push the spring type rod sideways to disengage the lock.

For the installation of rear fender body panel, refer to procedure **SAV470046**.

10.4.2 Engine R. H. Side Access Door

Engine R. H. side access door may be adjusted for proper fit. To do so, follow the steps below:

21. To adjust the position, the door must be free to move without any restriction. For this reason, remove pin E and strike plate C (Figure 50).

    Temporarily secure the secondary lock in the depressed position with a cable tie so it does not interfere with adjustments. Remove cable tie once completed.

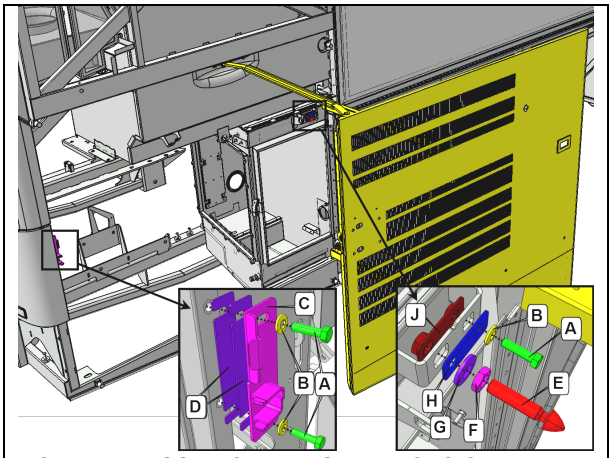


FIGURE 117: DOOR INSTALLATION – LATCH SYSTEM

A - BOLT
B - BELLEVILLE WASHER
C - STRIKE PLATE
D - SPACER
E - PIN
F – LOCK NUT
G - BELLEVILLE WASHER
H - PLATE

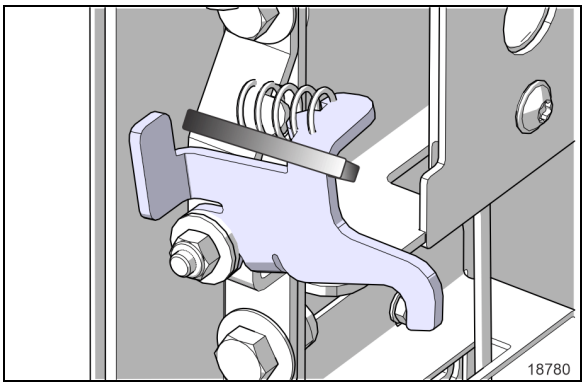


FIGURE 118: USE A CABLE TIE TO KEEP SECONDARY LOCK DEPRESSED DURING ADJUSTMENT

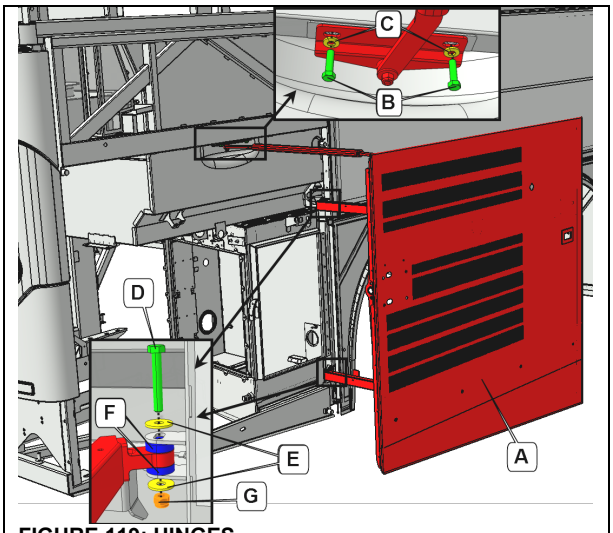


FIGURE 119: HINGES

A – ENGINE R.H. SIDE ACCESS DOOR
B - BOLT
C - BELLEVILLE WASHER
D - BOLT
E - WASHER
F –SPACER
G - NUT

Vertical adjustment

22. Make sure bolts A are tight (**FIGURE 53**).

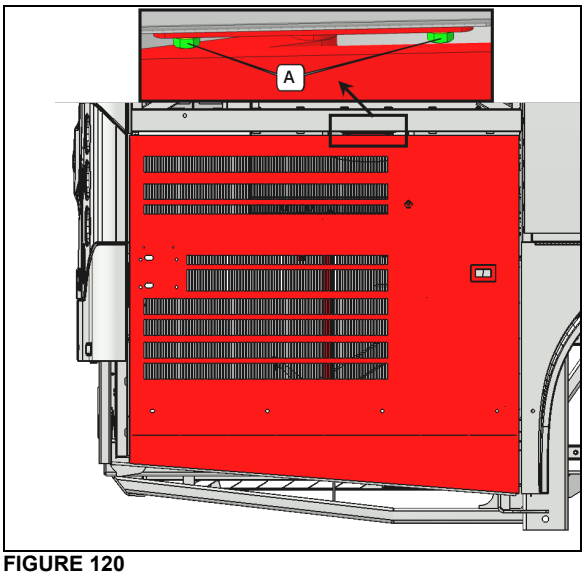


FIGURE 120

23. Compare the lower edge of the door level with the lower edge of the rear fender. The door should be flush with the fender (FIGURE 54).

Tolerance is ± 3/32" (± 2mm)

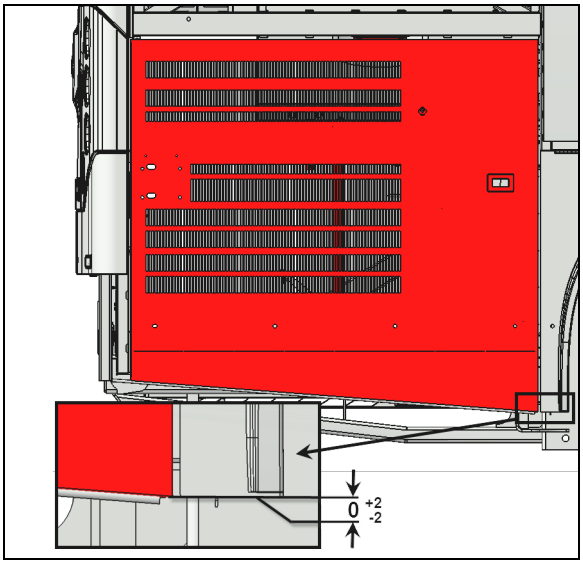


FIGURE 121

24. If the vertical position is out of tolerance, release the locking plate (Figure 56) and rotate the door using the adjustment provided on the inner side of the door, at the attachment points between the arm and the door (**FIGURE 55**).
Tighten the locking plate nut to 14 lb-ft (19 Nm) to preserve adjustment.

Perform the adjustment with the lower adjustment point preferably.

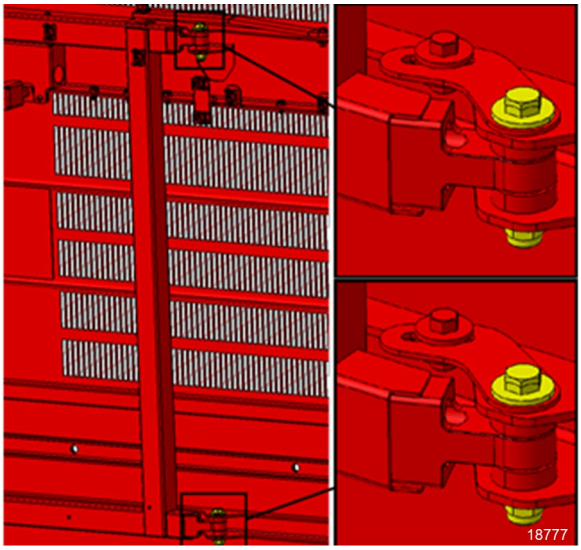


FIGURE 122

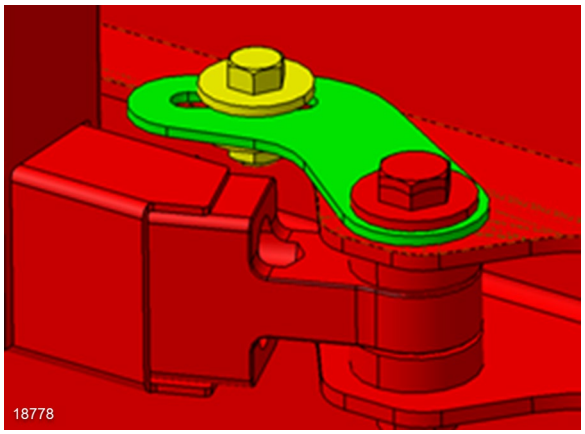


FIGURE 123: LOCKING PLATE

Longitudinal adjustment

25. Check the gap between the door and the adjacent panel at the level of the upper attachment point of the arm on the door. The gap should be ¼" (6 mm) (FIGURE 57).

    Gap 1/4" (6 mm)

    Tolerance is ± 3/64" (± 1mm)

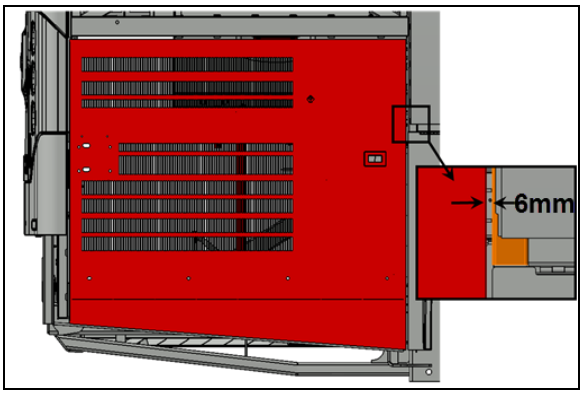


FIGURE 124

26. If the longitudinal position is out of tolerance, adjust using the adjustment provided on the inner side of the door, at the upper attachment point of the arm on the door (FIGURE 58).

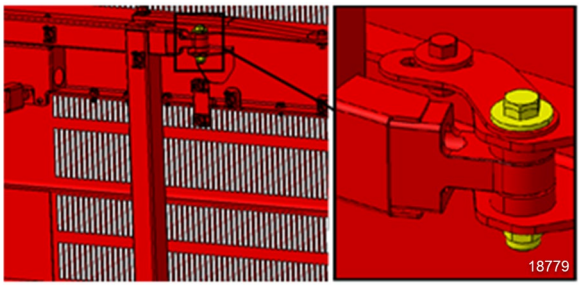


FIGURE 125

27. Check the gap between the door and the adjacent panel at the level of the lower attachment point of the arm on the door. The gap should be ¼" (6 mm) (FIGURE 59).

    Gap 1/4" (6 mm)

    Tolerance is ± 3/64" (± 1mm)

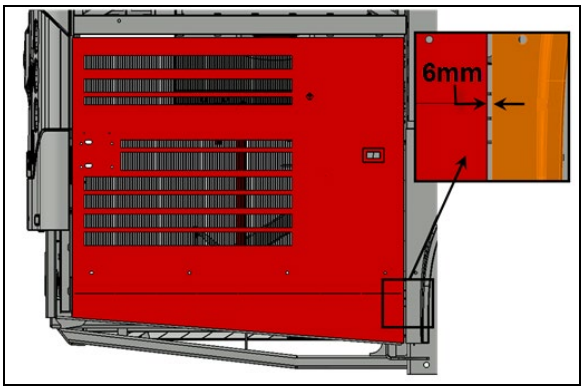


FIGURE 126

28. If the longitudinal position is out of tolerance, adjust using the adjustment provided on the

lower attachment point of the arm on the vehicle chassis (FIGURE 60).

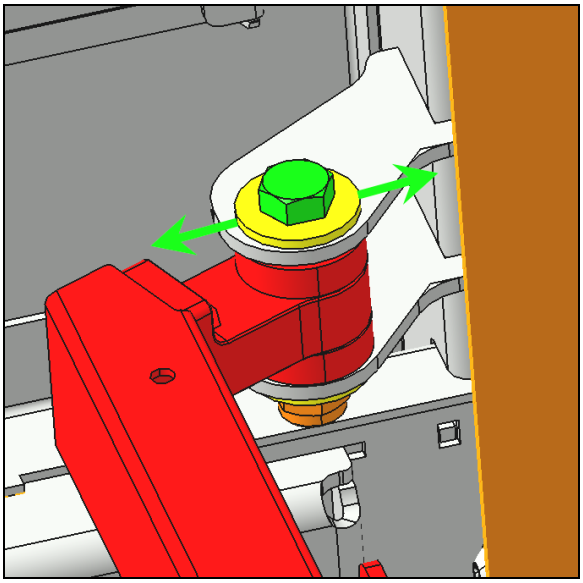


FIGURE 127

Latch installation

1. Install strike plate C and pin E centered in the available adjustment position provided by respective slotted holes (FIGURE 127). The components should be snug but not tight so that they can move when the door will be closed later on in this procedure.

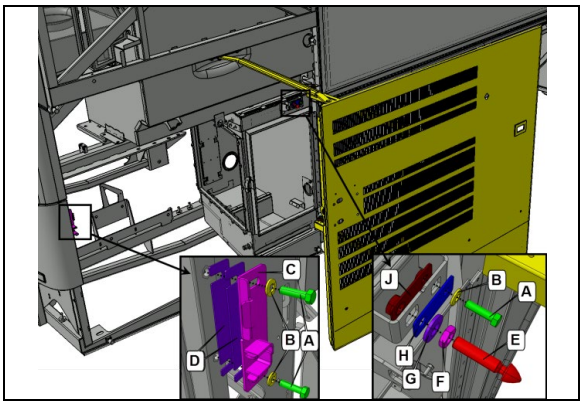


FIGURE 128

2. Check that the two items identified with arrows are snug but not tight (FIGURE 128).

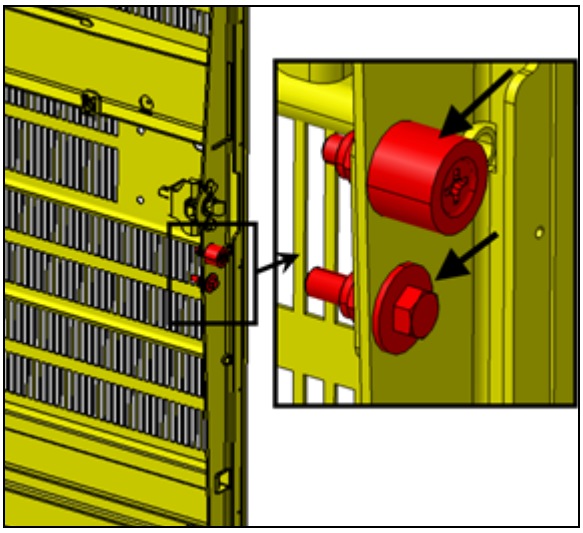


FIGURE 129

3. Before adjusting the pin, make sure that it doesn't exceed more than 2" (50mm) at the first closing of the door (FIGURE 129). Damage to the door can result if this condition is not respected.

   Not more than 2" (50mm)

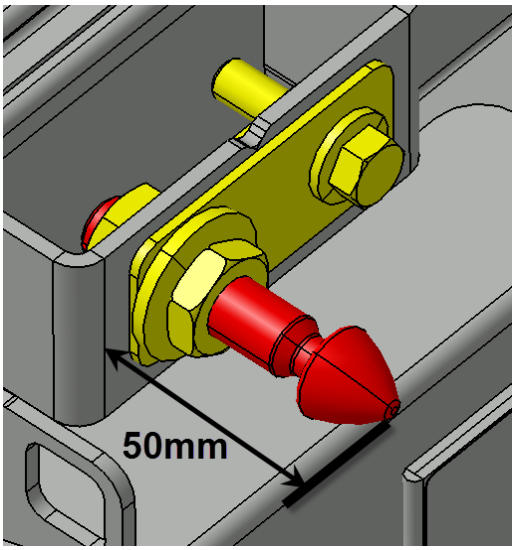


FIGURE 130

4. Close the door gently.

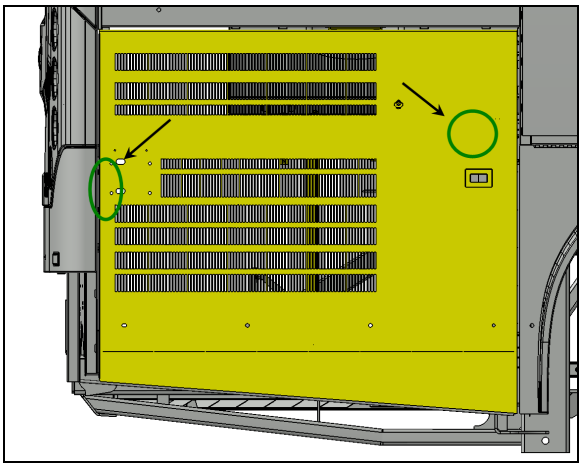


FIGURE 131

5. Open the door and perform a final tightening to the items indicated with arrows (FIGURE 131).

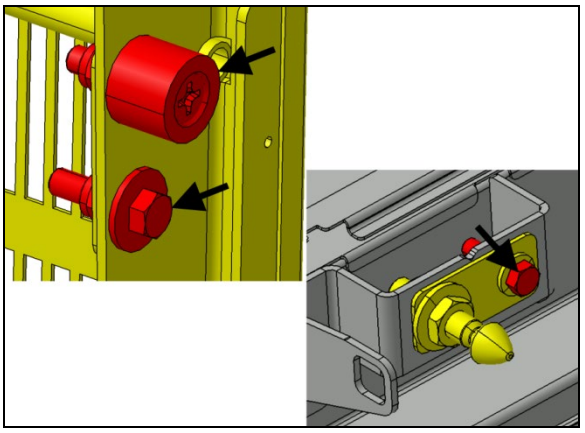


FIGURE 132

Transversal adjustment

6. Once closed, the door surface must be even with the adjacent steel panel.

   Tolerance is 3/64" (1mm)

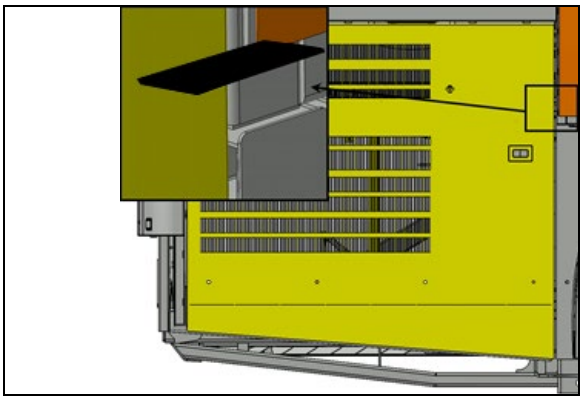


FIGURE 133: USE A RULER (SHOWN IN BLACK) TO CHECK THAT SURFACES ARE EVEN

7. Use the pin to adjust the door so it is even with the adjacent steel sheet. Screw or unscrew the pin as required and then apply final tightening to the jam nut (FIGURE 133).

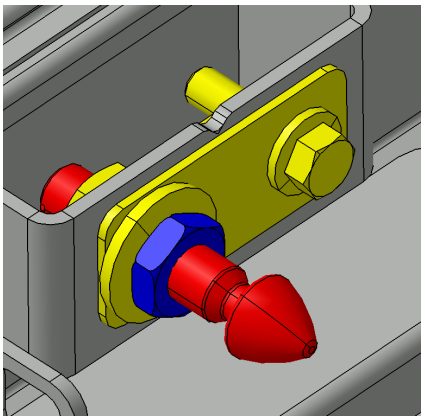


FIGURE 134

8. The R.H. side engine access door must exceed the engine compartment by 5/32" (4mm).

   Tolerance is ±3/64" (±1mm)

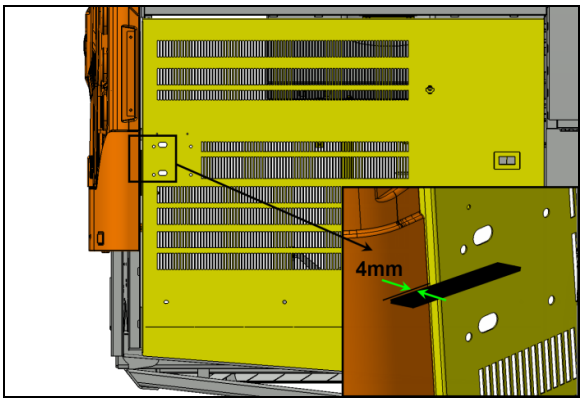


FIGURE 135

14. Perform the transversal adjustment by moving the strike plate using the slotted holes (FIGURE 135).

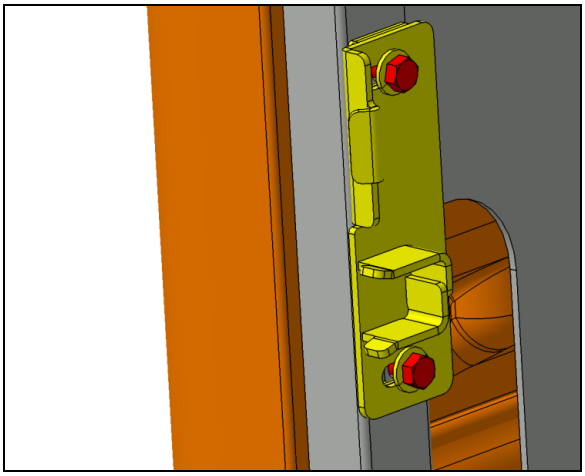


FIGURE 136

9. The latch bolt must engage not less than 13/32” (10mm) behind the strike plate.

13/32” (10mm) min

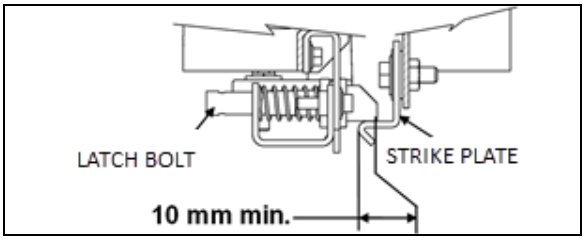


FIGURE 137

10. Screw in or out the two upper stoppers so that the upper part of the door exceeds the horizontal member by 5/32" to 3/16" (4mm to 5mm) (see FIGURE 137 & FIGURE 138).

11. Adjust the lower stopper in order to have the lower part of the door even with the fender.

Tolerance is ± 3/64" (± 1mm)

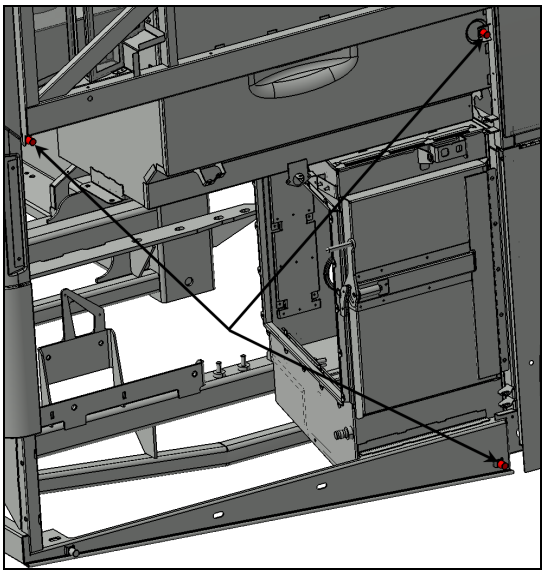


FIGURE 138

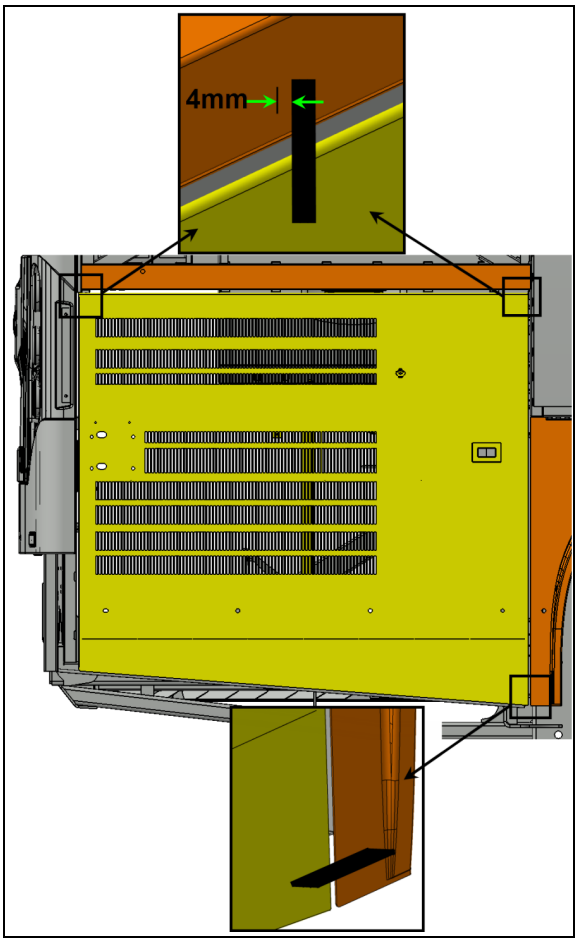


FIGURE 139

10.4.3 Engine Radiator Door

Radiator door may be adjusted for proper fit by untightening hinge bolts:

6. Loosen the bolts, (details “A” & “C”, Figure 139) holding the hinge to the vehicle structure to shift the door "LEFT or RIGHT".
7. Loosening the bolts (details “B” and “D”, Figure 139) allows the door to be shifted "UP or DOWN".

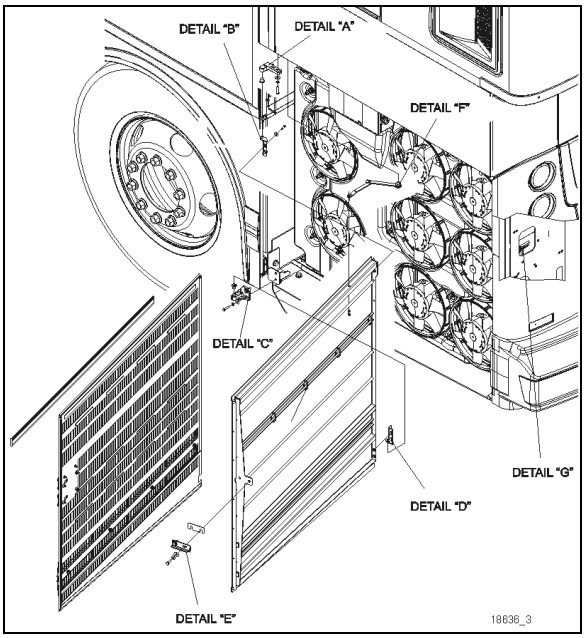


FIGURE 140: RADIATOR DOOR

8. Adjust the door position depending on the gap needed between exterior finishing panels.
9. Tighten the bolts.
10. Check that the door swings freely and closes properly. It may be necessary to adjust the door latch tab to get proper fit and operation.

To adjust the latch mechanism (details “E” and “G”, Figure 140) and the striker pin:

5. Open the door and slightly loosen the latch tab (detail “E”, Figure 140).
6. Place shims between tab and door frame to increase tab engagement length in the latch.
7. Move tab left or right to increase engagement depth in the latch.
8. Check door fit and operation.

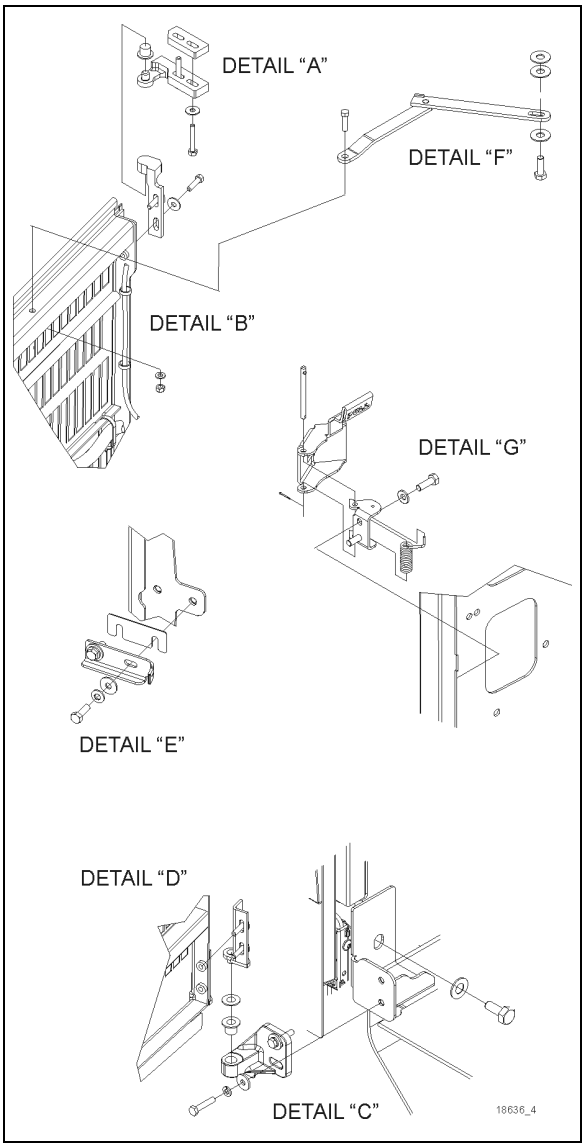
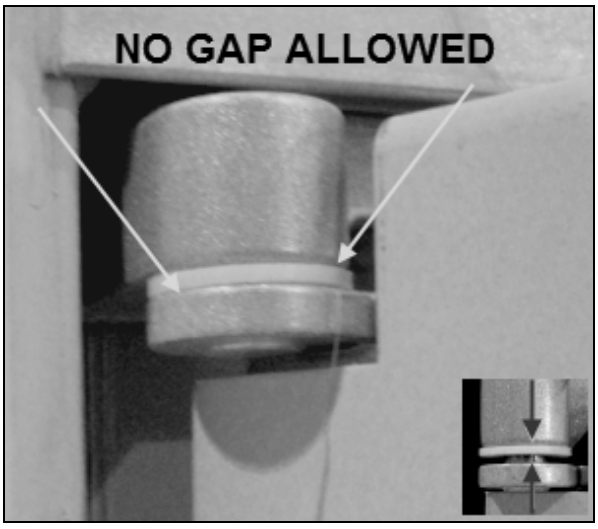


FIGURE 141: RADIATOR DOOR DETAILS

NOTE
The striker pin must engage at least 13/32” (10mm). Add spacers between the latch and the vehicle body to adjust the engagement.

NOTE
There should be no gap between the washer and the hinge upper and lower halves.


NO GAP ALLOWED

10.5 ZONE 5

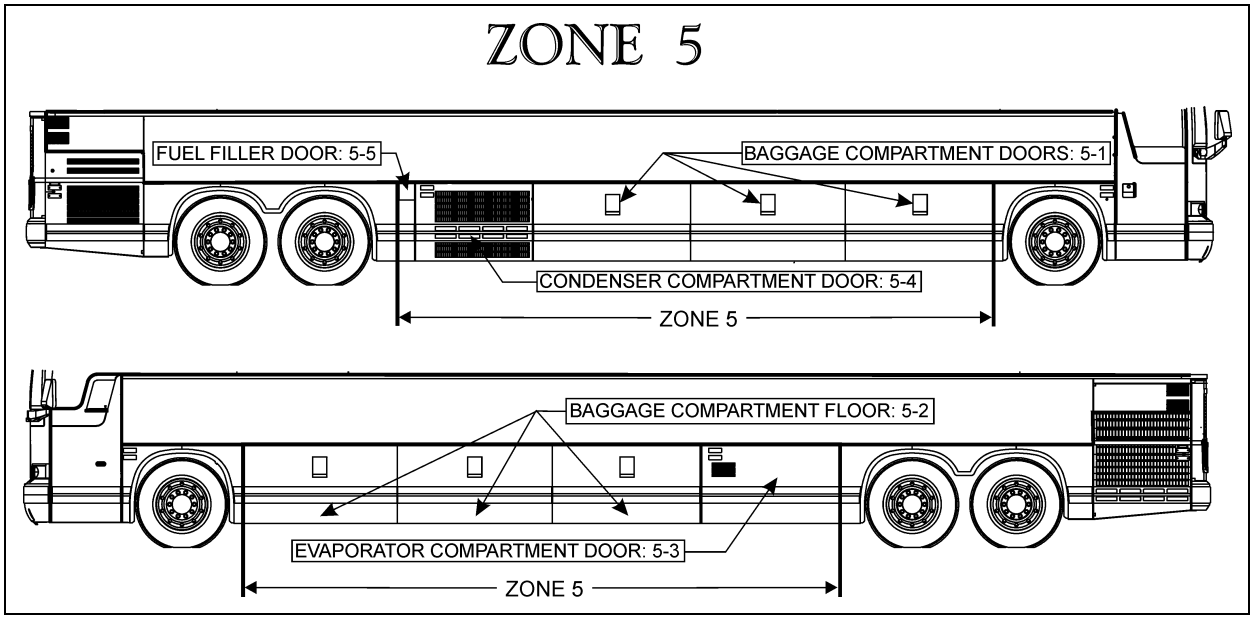
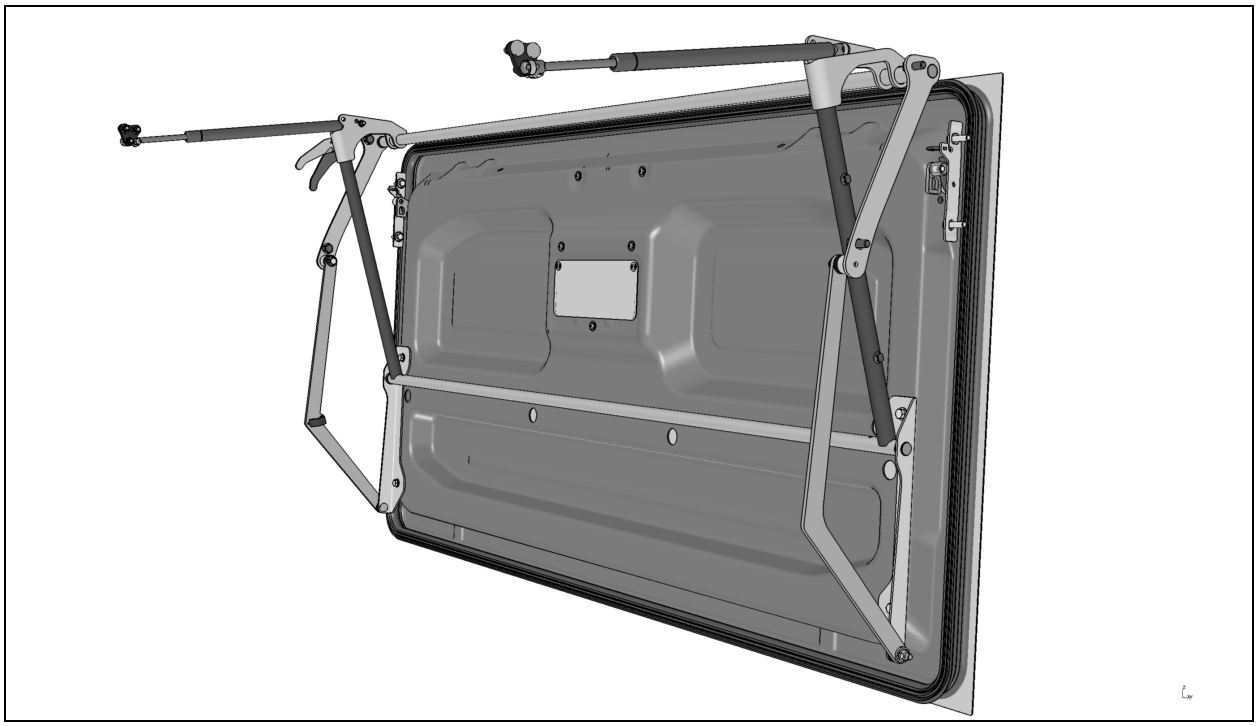


FIGURE 142: ZONE 5

10.5.1 Pantograph Baggage Compartment Doors (Aluminum)



For the removal and installation of a baggage compartment door body panel, you will need:

- A drill with drill bits;
- Pneumatic hammer tool (Zip Gun);
- Razor sharp window scraper or putty knife;

➢ Open damaged compartment door and unfasten rub rail fixing bolts. Remove rub rail.

➢ Unfasten bolts and disconnect cable if necessary in order to remove door from vehicle.

➢ Preferably install the door onto a work surface where it can be solidly fixed.

- **Door Panel replacement**

➢ Refer to SAV10054-67.

- **Baggage Compartment Door Adjustment**

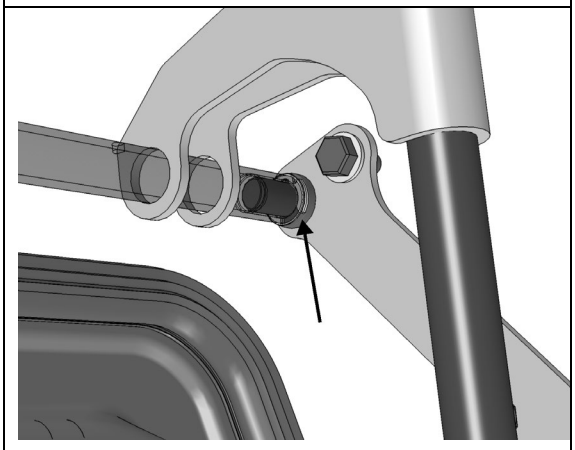
11. Adjust door to get a 6mm gap at the top.

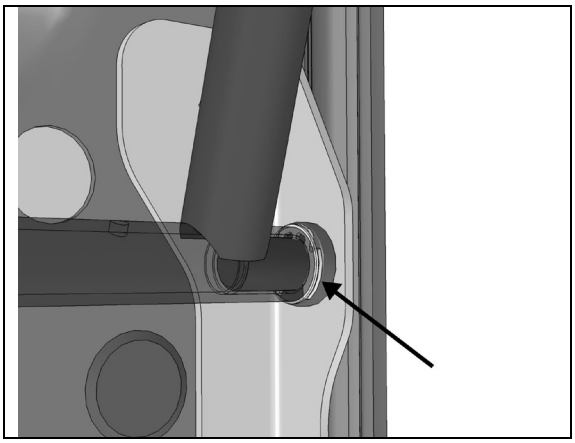
12. All adjustments are to be made with door closed, unless specified.

13. Center door in the opening using the retaining rings.

NOTE

Lateral adjustment is made by adding/ removing retaining rings in these locations.

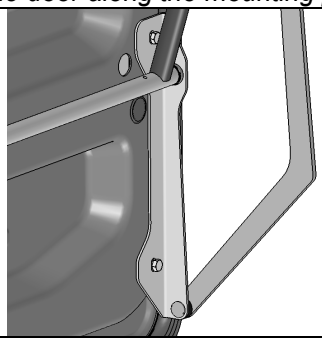




14. Adjust door position and evenness with reference to adjacent panels and doors.

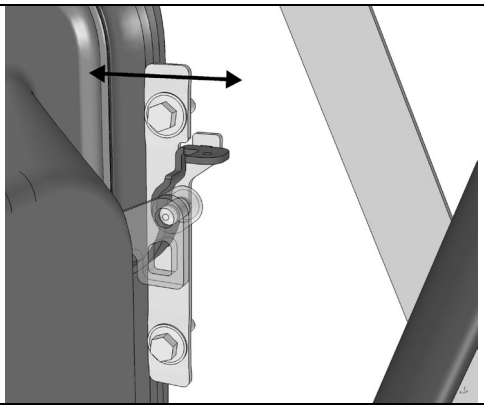
NOTE

Vertical adjustment is achieved by moving the door along the mounting plates slots.



NOTE

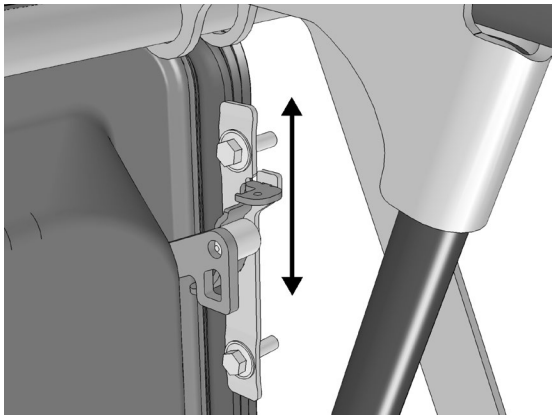
Adjustment is made by moving IN or OUT the lock plates. Adjust one corner at a time.



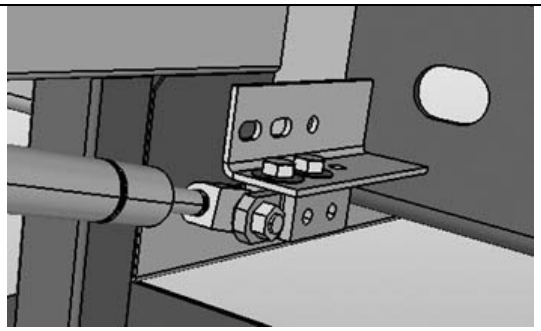
15. Check handle adjustment. Handle must remain tight against its plastic housing.

NOTE

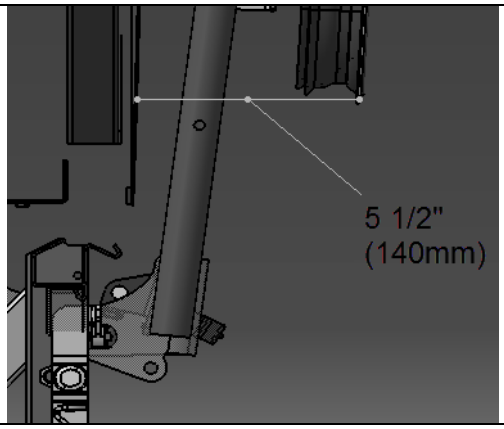
Adjustment is made by moving UP or DOWN the lock plates.



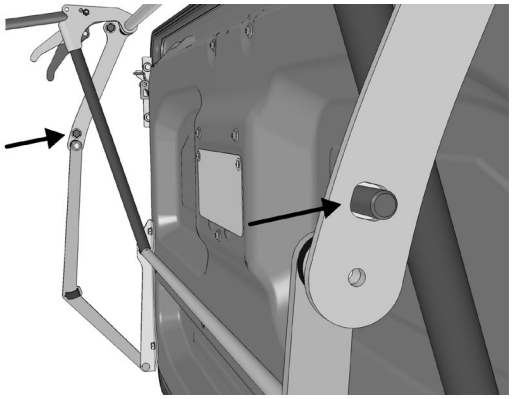
16. Open baggage compartment door and adjust using the cylinder mounting block.



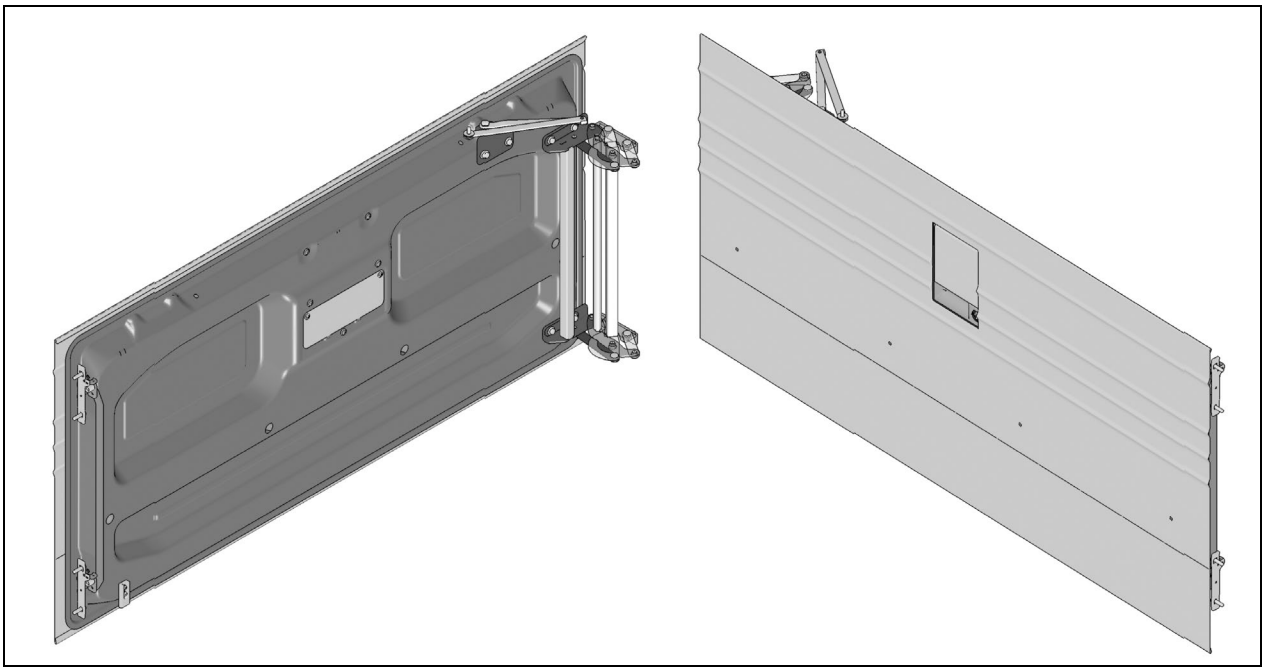
17. Door should be adjusted in reference to neighboring doors.
18. Target is to have 5 ½" (140mm) from bus body panel to door panel and +/- 2mm vertically between doors.



19. Tighten cylinder block fixing screws.
20. Door bottom edge compression can be adjusted by moving in or out the pantograph arms at this location.

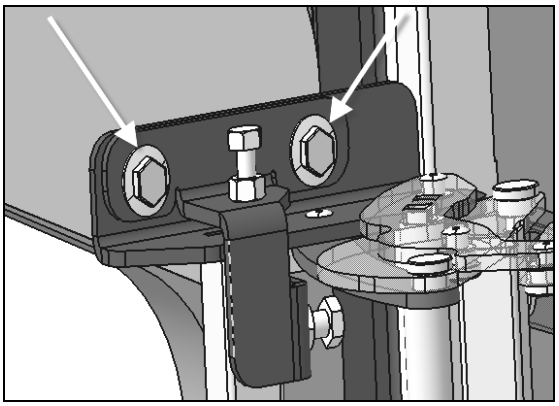


10.5.2 Hinged Baggage Compartment Doors (Aluminum)

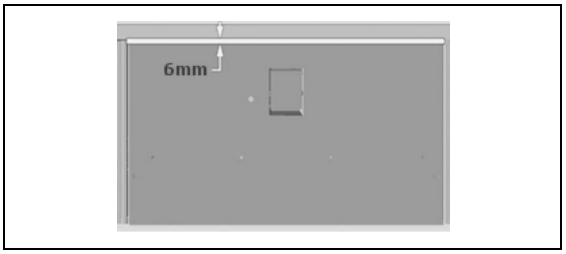


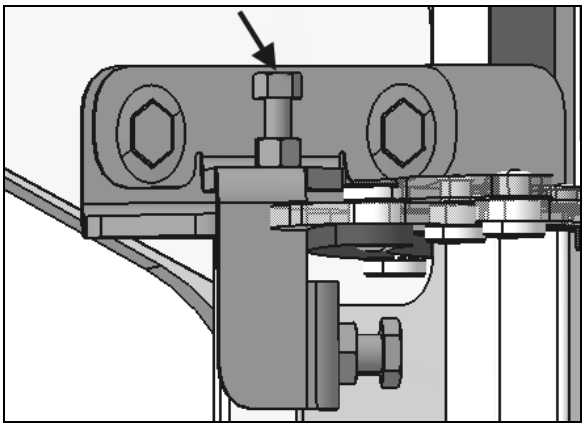
- **Door Adjustment**

1. Open the door.
2. Loosen the screws fixing the hinge to door assembly. Loosening the screws allows the door assembly to be shifted "LEFT or RIGHT" and "UP or DOWN".

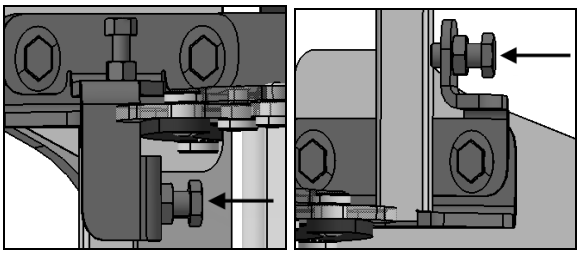


3. Using the top adjusting screws, adjust door to get a 6mm gap at the top.





4. Using the 2 side adjusting screws (top and bottom), adjust door to get a 6mm to 8mm lateral gap (gap must be equal on both side).



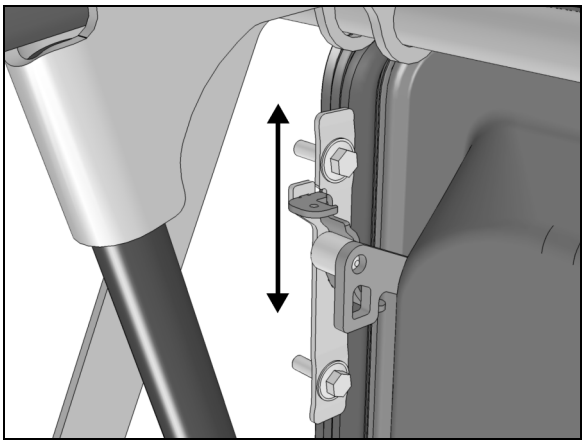
5. To adjust door depth, loosen the screws fixing the hinge to frame assembly and slide the hinge horizontally to move the door in or out. Depth should be calculated at 29mm +/- 2mm measured from bus frame out **or** 5mm +1mm if measurement is taken from small square tube on frame.

6. Tighten the hinge screws.

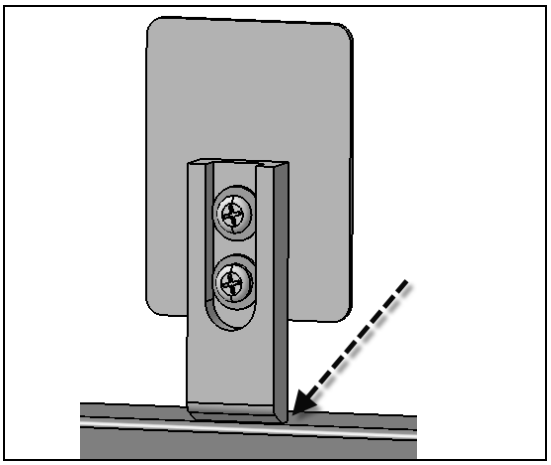
7. Make final adjustment of door position and evenness with reference to adjacent panels and doors as required.

8. Checks handle adjustment. Handle must remain tight against its plastic housing.

NOTE
Adjustment is made by moving UP or DOWN the lock plates.



9. Make sure that skid bar only touches slightly bus structure at bottom. The door should not move up when closing.



10.5.3 Condenser Compartment Door

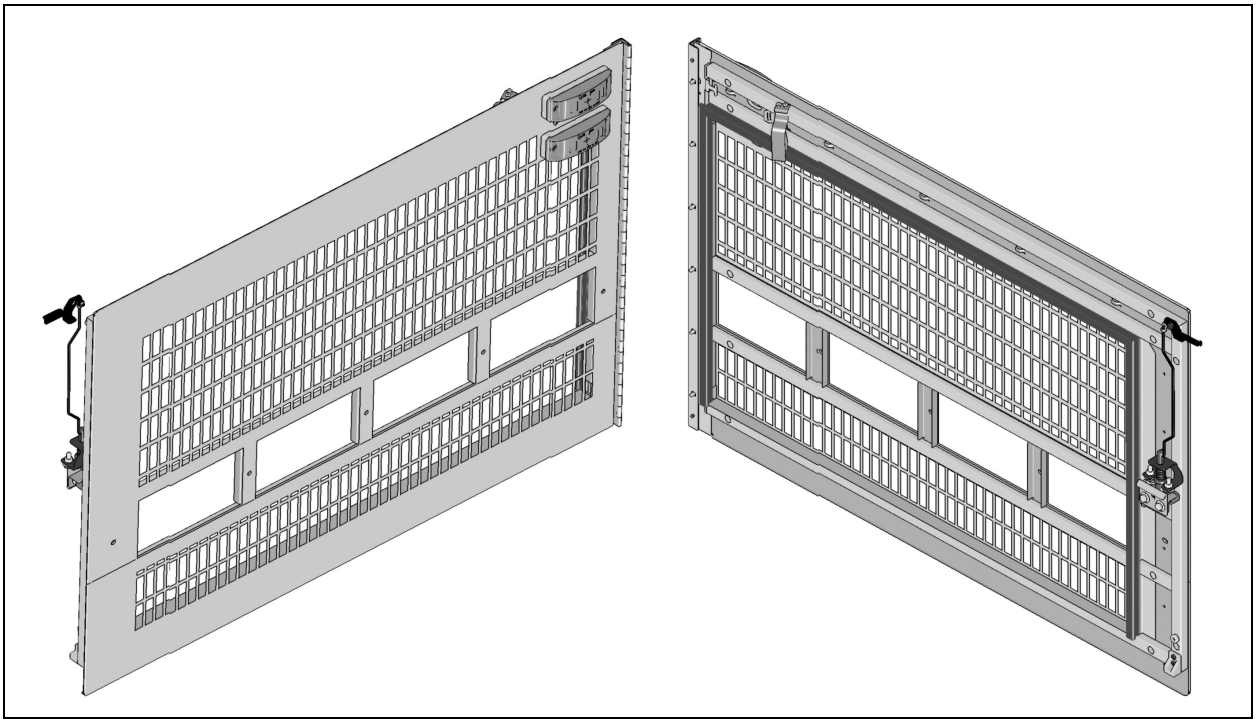


FIGURE 143: CONDENSER DOOR

- **Door Adjustment**

1. Open the condenser door.
2. Loosen the screws fixing the hinge to hinge attachment or hinge to door assembly. Loosening the screws allows the condenser door assembly to be shifted "LEFT or RIGHT" and "UP or DOWN" or “IN and OUT”.
3. Adjust condenser door assembly position at the hinge.
4. Respect the required gap between exterior finishing panels.
5. Tighten the screws.
6. Check that the door swings freely and closes properly. It may be necessary to adjust the door latch to get proper fit and operation.

10.5.4 Evaporator Compartment Door (Aluminum)

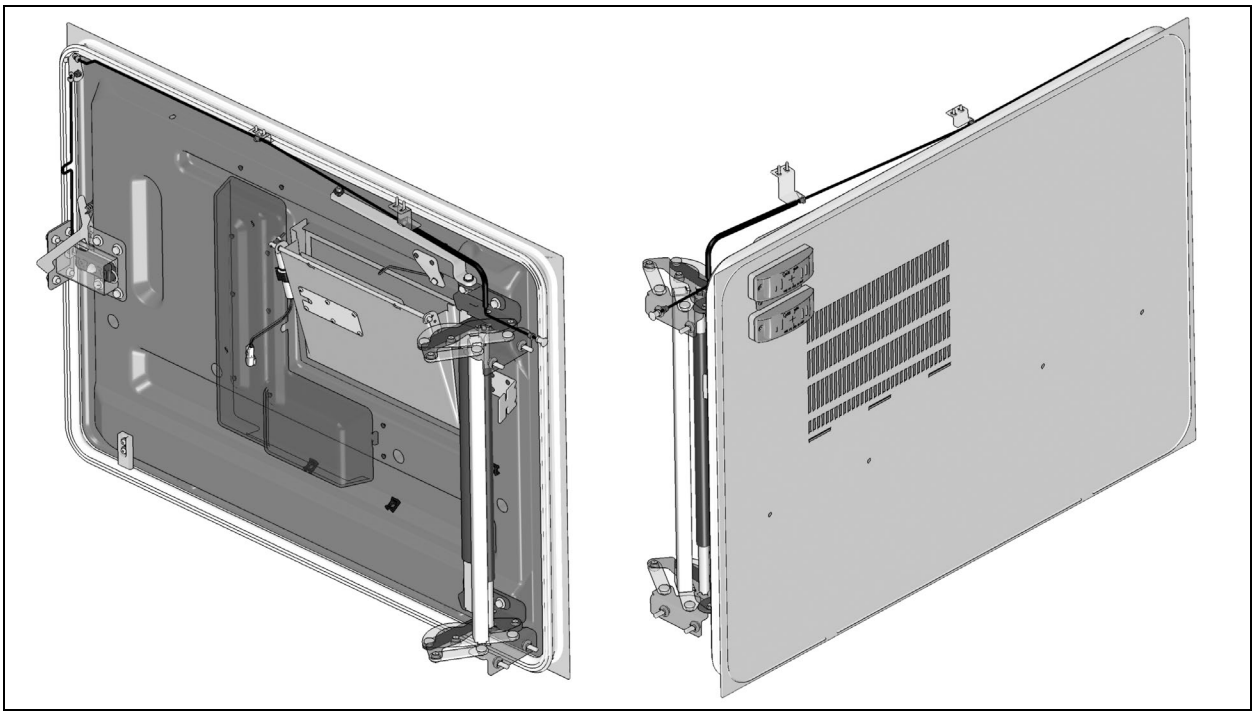


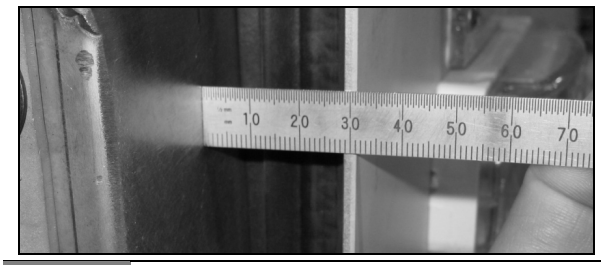
FIGURE 144: EVAPORATOR DOOR (ALUMINUM)

For the adjustment of an evaporator door, you will need:

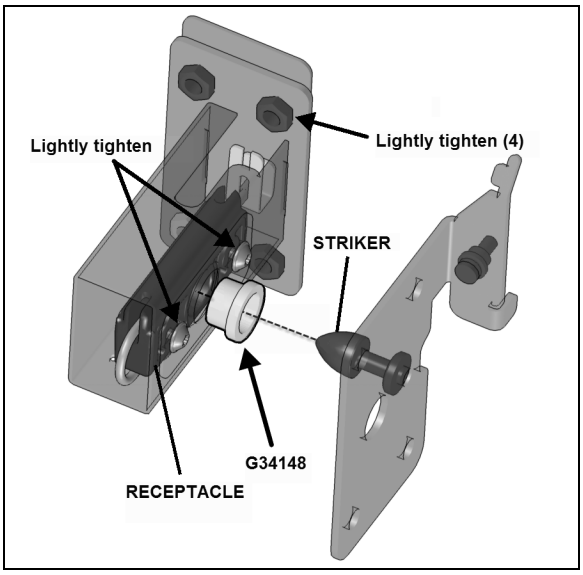
- Centering tool G34148_500

- **Door Adjustment**

1. Open the evaporator door.
2. Loosen the screws fixing the hinge to hinge attachment or hinge to door assembly. Loosening the screws allows the evaporator door assembly to be shifted "LEFT or RIGHT" and "UP or DOWN" or “IN and OUT”.
3. Adjust evaporator door assembly position at the hinge.
4. Door exterior panel on hinge side should be positioned at 29mm +/- 2mm measured from bus frame out.



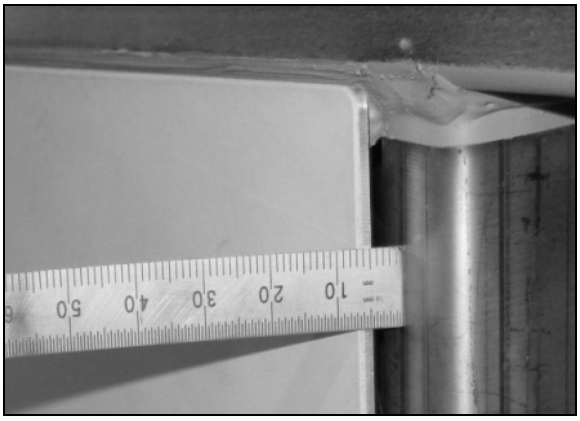
5. Respect the required gap between exterior finishing panels.
6. Tighten the hinge screws.
7. To allow adjustment of the latch mechanism, lightly tighten the retaining hardware on receptacle and receptacle support to frame.
8. Place centering tool G34148_500 in the receptacle cavity.

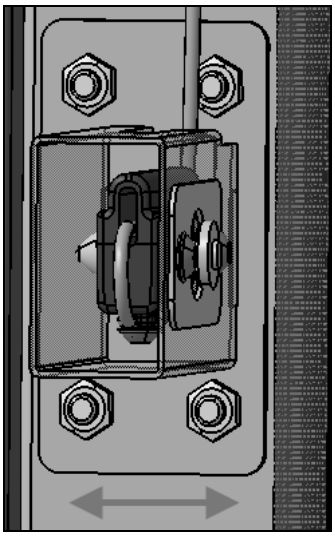


9. Close door to center the latch assembly.

10. Tighten the receptacle screws only.

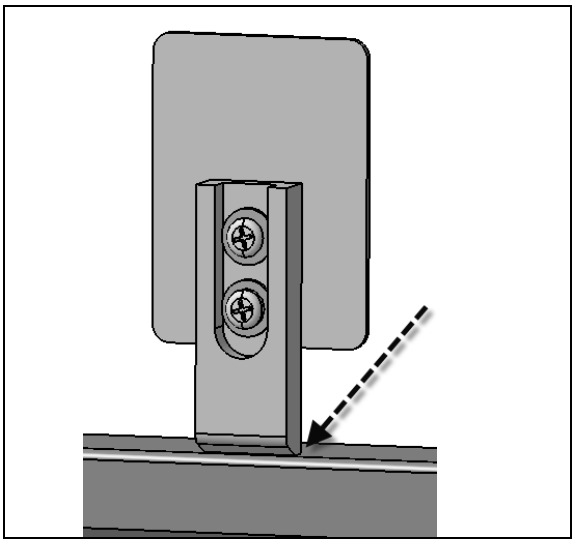
11. .Door exterior panel on latch side should be positioned at 8mm +1mm from frame. Make the adjustments by moving the receptacle support.





12. Make sure that backing plate is parallel to structure before tightening the retainer support hardware

13. Make sure that skid bar only touches slightly bus structure at bottom. The door should not move up when closing.



14. Check that the door swings freely and closes properly.

- **Door release in the event of a latch failure.**

If the door release mechanism is damaged or ceases to function for any reason, the door can be released by removing these screws on the fore wall of the rear fender side

10.5.5 Fuel Filler Door

- Open the fuel filler door.
- Loosen the screws holding the panel to hinge assembly.
- Adjust the fuel filler door position according to distance required between exterior finishing panels.
- Tighten the nuts.
- Check that the door swings freely and closes properly.

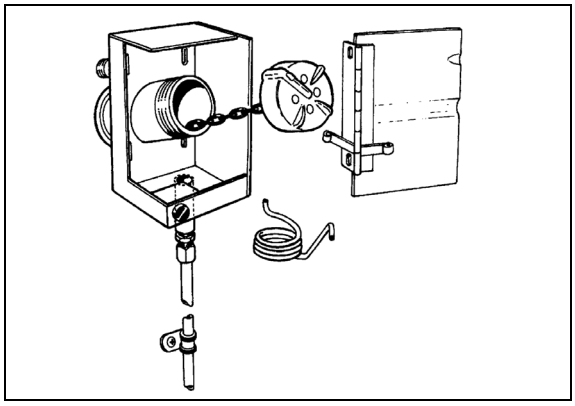


FIGURE 145: FUEL FILLER DOOR 03046

10.6 ZONE 6

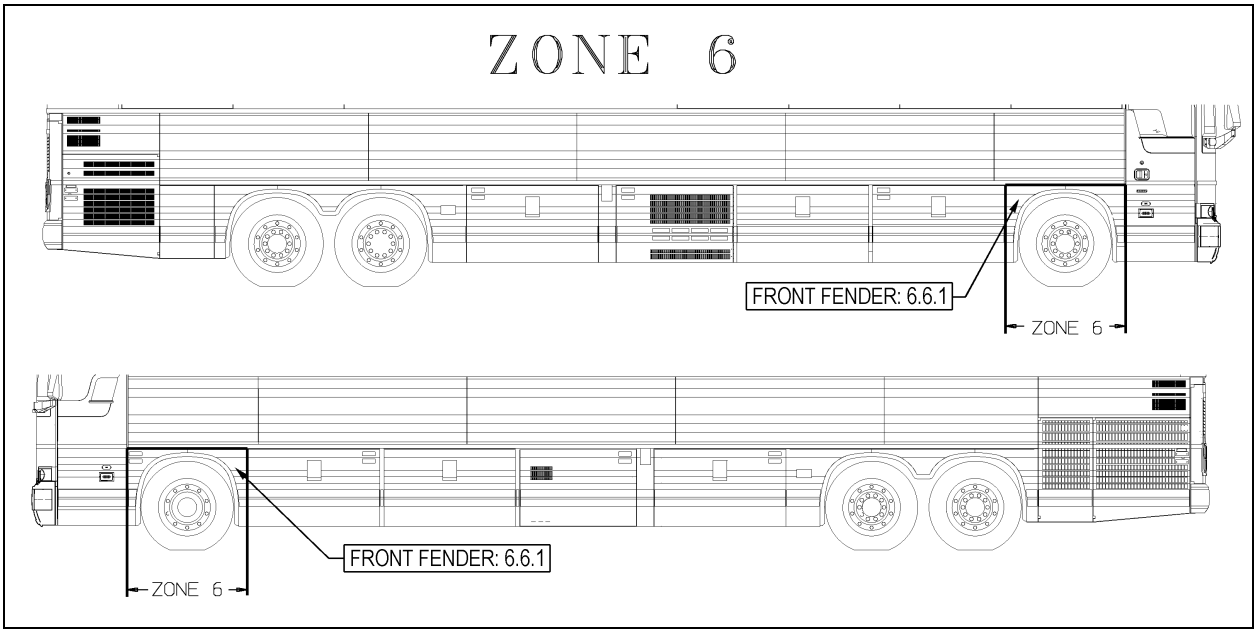


FIGURE 146: ZONE 6

10.6.1 Front Fender

Front fender may be removed using the following procedure:

Remove the nuts on the inside of the fender. Remove the fender from the vehicle. To reinstall, reverse the procedure.

For the installation of front fender body panel, refer to procedure **SAV470024**.

10.7 ZONE 7

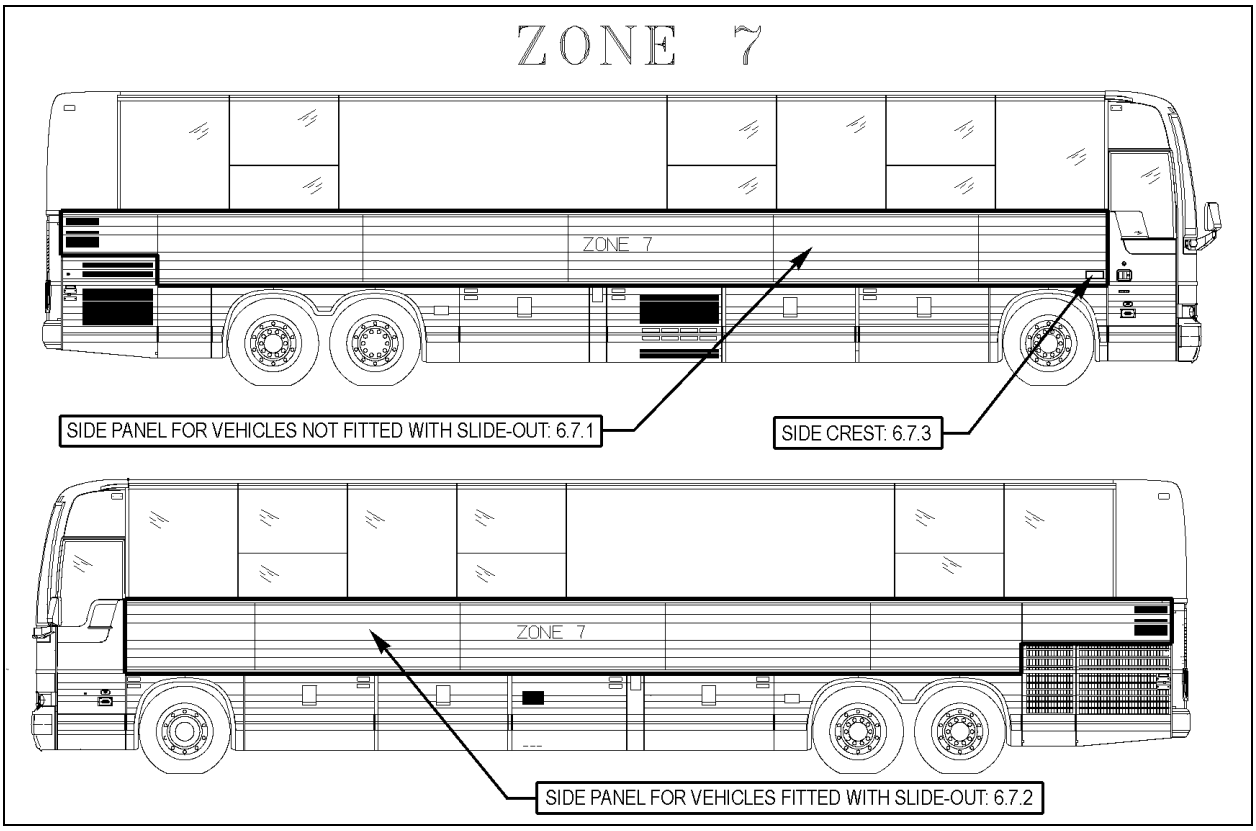


FIGURE 147: ZONE 7

10.7.1 Side Panel for Vehicles Not Fitted With Slide-Out

❖ **Removal**

Remove top and bottom finishing moldings. Insert a screwdriver into snap-on finishing molding joint. Bend finishing molding enough to be able to fix a pair of locking pliers. Using the pair of locking pliers, pull the stainless steel molding and at the same time gradually cut Sika bead with a sharp knife.	Be careful not to damage the adjacent surfaces You need to remove the finishing molding support and rivets in the case of engine air intake panel.
Insert a flat screwdriver between the side panel and the vehicle chassis, in the top left and right corners.	
Use the c-clamp to peel the side panel from the back structural panel as far as the middle and at the same time gradually cut Sika bead with a sharp knife. Do the same for the other corner.	Ideally, the hoist or chain block must be fastened to the floor while pulling from a 45º angle so as not to damage the vehicle structure
Remove as much glue as possible from the structure using a putty knife or pneumatic knife without damaging 206 G+P primer.	Never heat SikaFlex adhesive to remove.

Check panel horizontal supports for straightness using a straight edge. Take measurements with a ruler.	Tolerance: 1mm towards the outside and 1.5mm towards the inside.

For the structure preparation before the installation of a ridged side panel, refer to procedure **SAV00027**.

For gluing of ridged side panels, refer to procedure **SAV00028**.

For sealing the side panels' upper portion, refer to procedure **SAV00030**.

For gluing of horizontal finishing molding, refer to procedure **SAV00208**.

10.7.2 Side Panel for Vehicles Fitted With Slide-Out

❖ **Removal**

Refer to paragraph 7.7.1 for procedure.

CAUTION

Because most junction panels are only riveted and not spot welded, be careful when removing a side panel not to damage adjacent panels.

For the slide-out junction panel preparation before the installation of a ridged side panel, refer to procedure **SAV00031**.

For gluing of ridged side panels on vehicles fitted with slide-out, refer to procedure **SAV00029**.

10.7.3 Side Crest

- Clean vehicle surface using anti-silicone where the side crest and stickers will be applied.
- Using hands apply and compress side crest.
- Apply required stickers.

10.8 ZONE 8

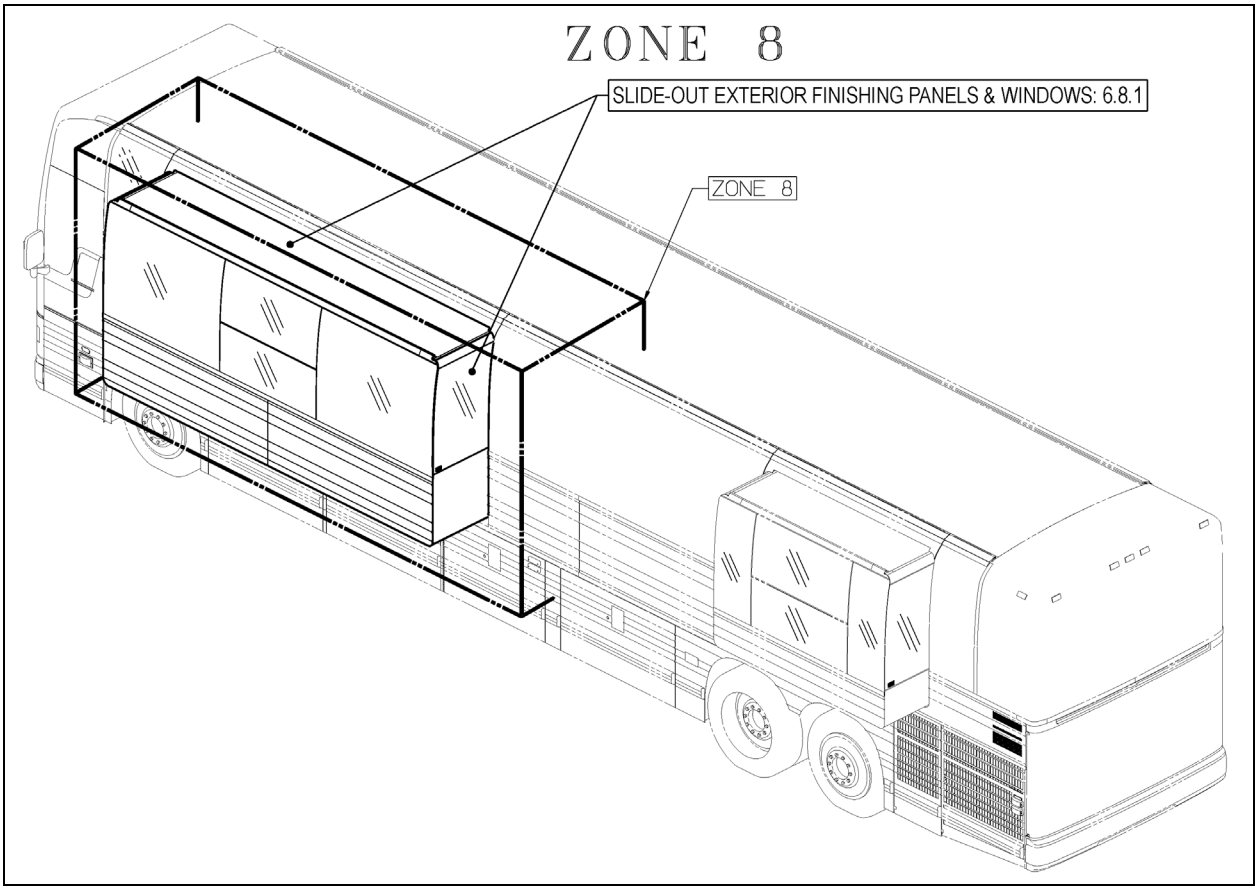


FIGURE 148: ZONE 8

10.8.1 Slide-Out Exterior Finishing Panels & Windows

For maintenance and procedures, refer to paragraphs on the vehicle's finishing panels and windows.

Methods, procedures, tools, cleaning products, adhesives and other products are the same as those used for the vehicle body.

10.9 ZONE 9

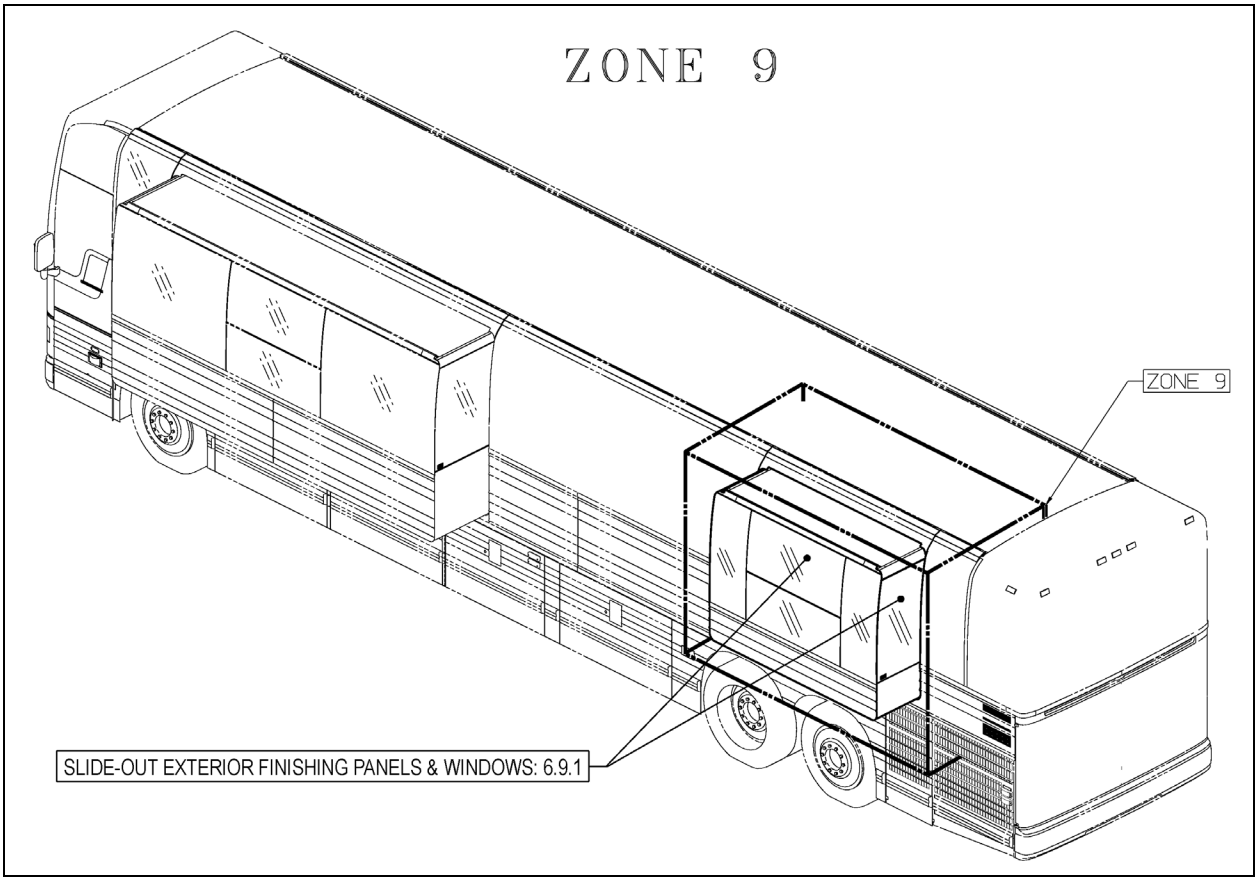


FIGURE 149: ZONE 9

10.9.1 Slide-Out Exterior Finishing Panels & Windows

For maintenance and procedures, refer to paragraphs on the vehicle's finishing panels and windows.

Methods, procedures, tools, cleaning products, adhesives and other products are the same as those used for the vehicle body.

10.10 BODY PANEL AND WINDOW SPACING FOR X3-45 VIP NOT FITTED WITH SLIDE-OUT

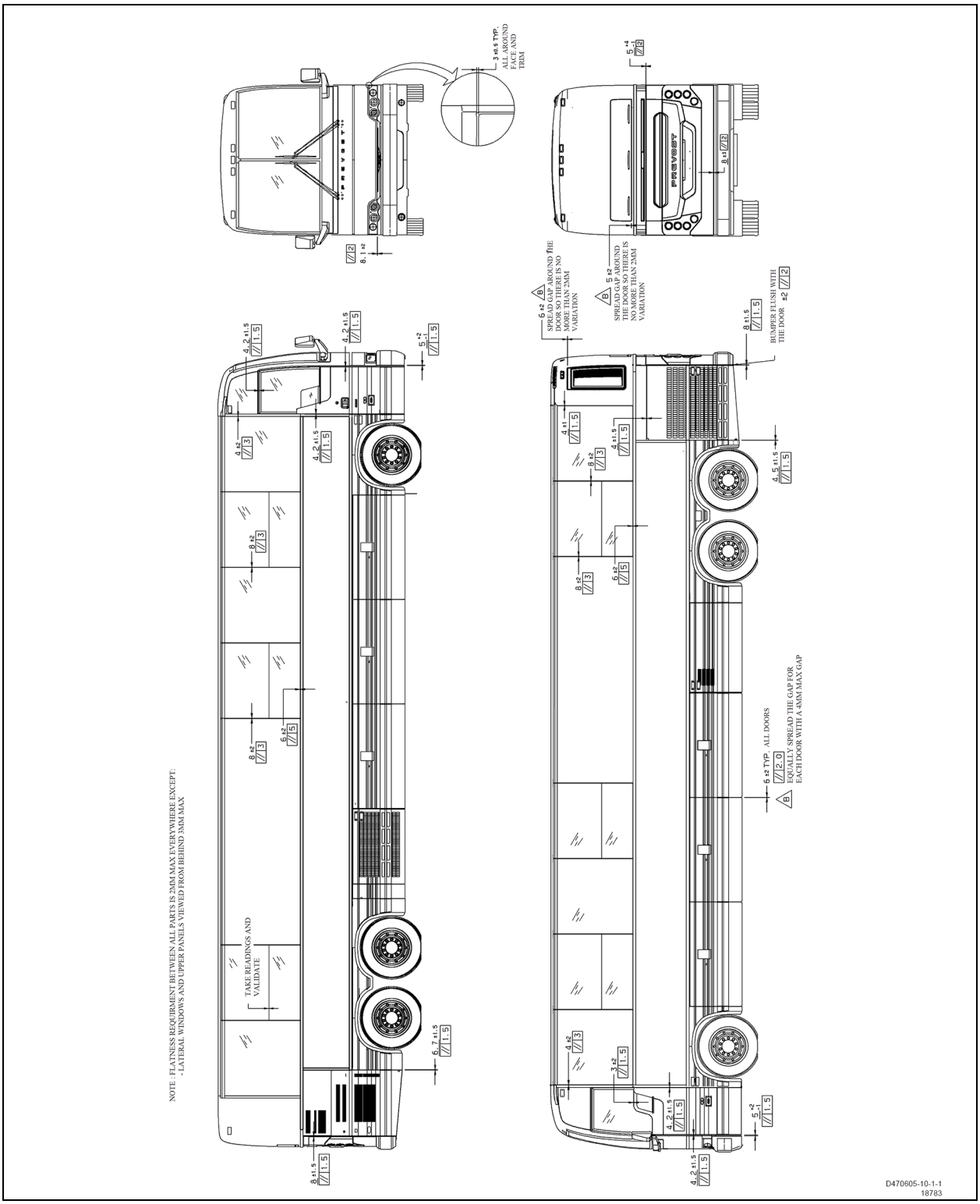


FIGURE 150: BODY PANEL & WINDOW SPACING FOR X3-45 VIP NOT FITTED WITH SLIDE-OUT

10.11 BODY PANEL AND WINDOW SPACING FOR X3-45 VIP WITH FRONT AND REAR SLIDE-OUT

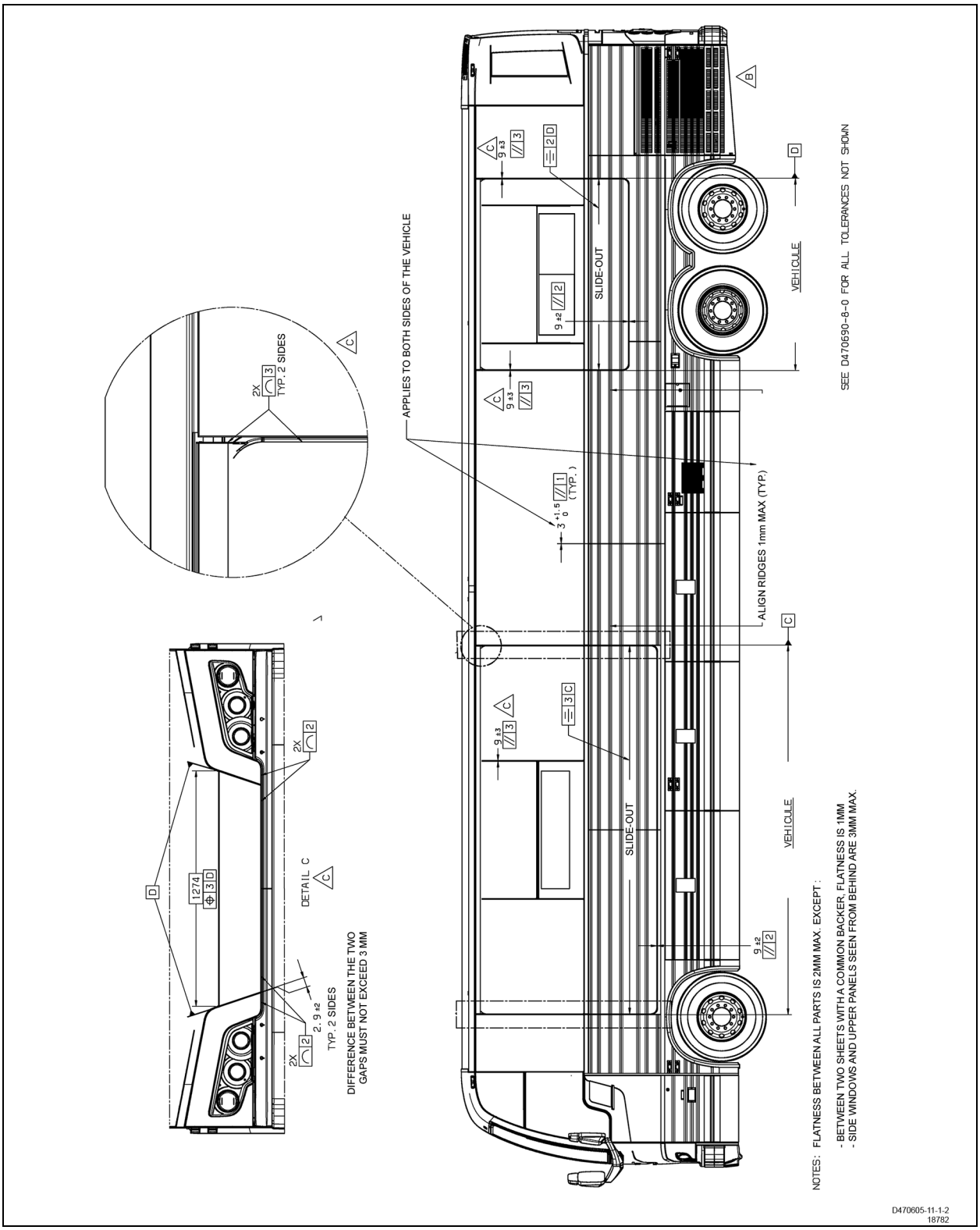


FIGURE 151: BODY PANEL & WINDOW SPACING FOR X3-45 VIP WITH SLIDE-OUT, FRONT AND REAR

10.12 BODY PANEL AND WINDOW SPACING FOR X3-45 VIP FITTED WITH FRONT SLIDE-OUT

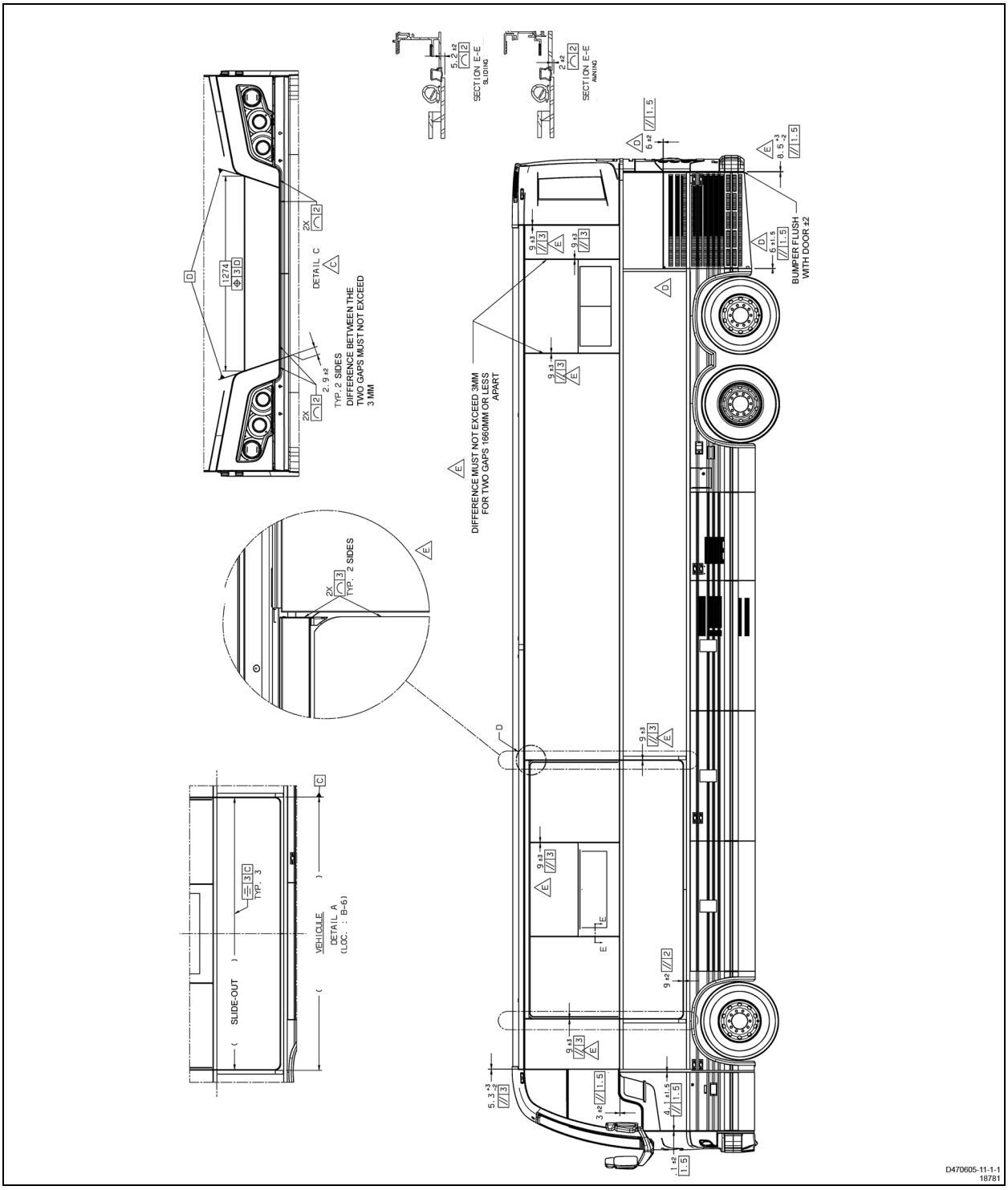


FIGURE 152: BODY PANEL & WINDOW SPACING FOR X3-45 VIP WITH SLIDE-OUT, FRONT

11 SPECIFICATIONS

Door cylinder

Manufacturer	Bimba
Type	Pneumatic
I.D.	1½" (mm)
Stroke	8" (mm)
Prevost number	780595

Damper

Manufacturer	Koni
Prevost number	780565

Lock cylinder (upper)

Manufacturer	Bimba
Type	Air, single action, 1/8 NPT, hexagonal rod
I.D.	7/8" (22 mm)
Stroke	1" (25 mm)
Prevost number	641392

Lock cylinder (central)

Manufacturer	Bimba
Type	Air, single action, ¼ NPT
I.D.	1¾" (45 mm)
Stroke	1" (25 mm)
Prevost number	641209

Manifold solenoid

Manufacturer	Norgren
Type	4 ports, 1/8 NPT
Voltage	24 VDC
Power consumption	6 watts
Maximum pressure	150 psi (1035 kPa)
Prevost number	641448

Solenoid valve (Latching valve)

Manufacturer	Humphrey
Model	310
Operating range	0 to 125 psi (0 to 860 kPa)
Voltage	24 VDC
Voltage tolerance	+10%, -15% of rated voltage
Power consumption	4 watts
Leak rate (max allowed)	0.245 in3/min @ 100 psi (4cc/min @ 690 kPa)
Type of operation	Direct solenoid
Lubrication	Not required (factory pre-lubed)
Filtration	40 micron recommended
Prevost number	641412

PREVOST

MAINTENANCE INFORMATION

MI15-18

DATE :	MAY 2015	SECTION : 18 - Body
SUBJECT :	**STRUCTURE INSPECTION FOR CORROSION - HOW TO PREVENT CORROSION**	

IMPORTANT NOTICE
This maintenance is recommended by Prevost to increase your vehicle's performance. Note that no reimbursement will be awarded for carrying out this maintenance.

APPLICATION

Model	VIN
All Prevost models	

DESCRIPTION

This procedure was made in order to support Prevost customers who are worried about their vehicle structure behavior due to corrosion.

Five year old vehicles and older should be subjected to a thorough structural inspection; especially if clear signs of moderate or deep corrosion are visible. The inspection can be conducted as described in the following procedure.

In this procedure, you will find information about:

1) The important areas that should be inspected

2) When a structural inspection should be carried out

3) How to perform the inspection

4) What can be done to optimize corrosion protection during your vehicle's life

STRUCTURE INSPECTION – CORROSION	
DESCRIPTION	**INTERVAL**
Perform structural inspection for corrosion as described in this document	**Normal duty cycle vehicles and normal environment operation** Every 5 years starting from the 5th year in service
	Severe duty cycle vehicles and harsh environment operation Every 2 years starting from the 5th year in service
	Whenever a *visual inspection* discloses that corrosion seems to have caused damages to the structure such as perforation, flaking, separation of metal layers, loss of material, etc.

CAUTION

Reject member, chassis component, axle, etc. if:

Cracked, broken, separated by corrosion or corroded to a depth as to weaken member so as to affect the safety and structural integrity of the vehicle.

DANGER

Park vehicle safely, apply parking brake, stop engine. Prior to working on the vehicle, set the ignition switch to the OFF position and trip the main circuit breakers equipped with a trip button. On Commuter type vehicles, set the battery master switch (master cut-out) to the OFF position.

THE IMPORTANT AREAS THAT SHOULD BE INSPECTED

Front & rear sub-frames, drive axle cradle and tag axle (FIGURE 1) on Prevost structures are made of high strength steel. Although the structure on a Prevost vehicle receives a beneficial corrosion preventive compound application at the end of the manufacturing process, after many years of service with exposure to harsh environments (winter, frequent rains, road salt, stone projection, sand accumulation, etc.), the carbon steel can be subject to severe corrosion. The use of high strength steel remains a requirement to withstand peak loads.

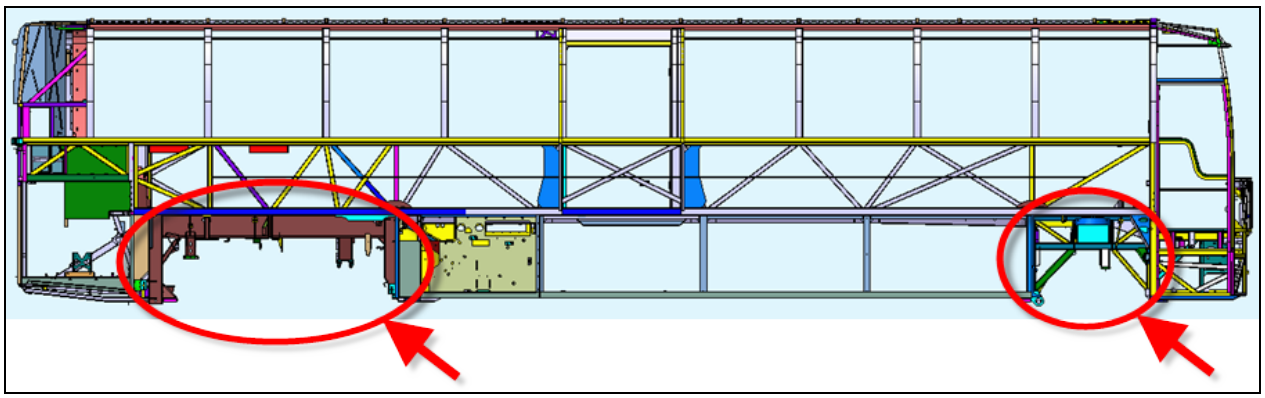


FIGURE 1 – CRITICAL AREAS: FRONT SUB-FRAME, REAR SUB-FRAME, DRIVE AXLE CRADLE AND TAG AXLE

WHEN SHOULD A STRUCTURE INSPECTION BE CARRIED OUT?

Vehicles operating in harsh environments without an appropriate corrosion protection compound applied to the front and rear sub-frames, drive axle cradle and tag axle could be subject to corrosion. If parts of the tag axle or front and rear sub-frames structures present metal flaking, separation of metal layers, loss of material, perforation, etc. then they should be inspected in order to confirm that the minimum wall thickness remains (FIGURE 2 to FIGURE 5).

FIGURE 2: METAL FLAKING. ACCUMULATED SAND AS SHOWN ON THE IMAGE SHOULD NOT BE LEFT IN PLACE

FIGURE 3: METAL FLAKING AND ACCUMULATED SAND

FIGURE 4: METAL FLAKING ON TAG AXLE - ACCUMULATED MATTER WILL RETAIN WATER THUS CREATING CONDITIONS PROMOTING ADDITIONAL CORROSION

FIGURE 5: HEAVILY CORRODED COACH WITH BROKEN TAG AXLE. THIS IMAGE SHOWS THE SPINDLE MOUNTING PLATE SEPARATED FROM THE REST OF THE TAG AXLE

STRUCTURE INSPECTION PROCEDURE

The thickness of main carbon steel parts on rear & front sub-frames, drive axle cradle and tag axle beam must be **at least 1/8 inch (0.125") (3mm)**. There are two options to properly monitor the wall thicknesses:

1- Using an ultrasonic wall thickness gauge.

2- Drilling holes and measuring wall thickness.

1- Structural Inspection Procedure Using Ultrasonic Wall Thickness Gauge

The ultrasonic wall thickness gauge has to be used on bare metal. The surface where the gauge will be put on has to be cleaned of rust, paint or other material. If the thickness is more than 1/8 inch (3mm), repaint the cleaned surface to prevent corrosion from occurring on this spot.

Use a grinder or another tool to remove rust or paint on the spot to check. The gauge has to be placed on the center of the cleaned spot. The gauge has to be perpendicular to the surface to get an accurate measure.

Inspection using ultrasonic wall thickness gauge is recommended over drilling holes because it minimize risk of altering the vehicle structure.

FIGURE 6: CLEANED SPOT ON STRUCTURAL MEMBER

2- Structural Inspection Procedure Using Drilled Holes

Drill a ¼ inch (6 mm) diameter hole in the most corroded wall of the part being checked. Use a caliper to measure the thickness of the drilled metal. Wall thickness should be at least 1/8 inch (0.125") (3mm). Drilled hole must then be welded (filled with metal) and repainted after measurement to prevent water infiltration and corrosion from occurring around the hole.

Clean/remove flaking rust on frame. Drill hole in the most corroded wall. The hole must be welded after to prevent corrosion and water infiltration. Filled hole must be painted to prevent corrosion.

CAUTION

Holes and welding can increase the risk of crack initiation. **Ultrasonic wall thickness gauge method is recommended.**

FIGURE 7: HOLE DRILLED IN STRUCTURAL MEMBER

CORROSION PROTECTION ON OLD AND CORRODED FRAME

To maximize corrosion resistance on older frame exposed to harsh environment:

1) Clean rust on frame. If available, use sand blasting.

2) Apply a zinc-rich primer on cleaned surfaces.

3) Cover carbon steel parts with corrosion preventive compound Tectyl 185GW.

CAUTION

Avoid primer, paint, and corrosion preventive compounds on pneumatic valves and rubber bushings.

FIGURE 8: CLEAN RUST

PROTECTION TO PREVENT CORROSION

Tectyl 185GW should be used to prevent corrosion propagation on frame.

1) Clean rust and dirt on the frame.
2) Apply Tectyl following the manufacturer's recommendation.
3) Apply Tectyl every year or as needed.

CAUTION

Avoid primer, paint, and corrosion preventive compounds on pneumatic valves and rubber bushings.

FIGURE 9: TECTYL 185GW BLACK APPLICATION

For more details on Tectyl 185GW, see QC Lubricants web site:

http://www.qclubricants.com/TECTYL185GWBlack.htm

Tectyl 185GW Black

QC Lubricants carries Tectyl 185GW Black in pails and drums.

TECTYL® 185GW Black is a solvent cutback, thixotropic corrosion preventive compound. The dry film is semi-firm and has a semi-gloss appearance. TECTYL® 185GW Black provides outstanding protection in marine, tropical, and industrial environments, and is widely used for transportation equipment. TECTYL® 185GW Black possesses dielectric strength of 800 volts per dry mil of coating. TECTYL® 185GW Black provides galvanic corrosion protection and can be applied on battery terminals for insulating purposes.

PARTS / WASTE DISPOSAL

Discard according to applicable environmental regulations (Municipal/State[Prov.]/ Federal)

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MAINTENANCE INFORMATION

MI15-41

DATE : AUGUST 2015	SECTION : 18 - Body
SUBJECT :	CRACKING OF POLYCARBONATE TAILLIGHTS CAUSED BY INAPPROPRIATE CLEANING PRODUCTS

APPLICATION

Model	VIN
ALL MODELS	

DESCRIPTION

Prevost would like to remind its customers that only **cleaning products designed for external washing of vehicles** should be used for exterior vehicle wash and in particular, for the washing of polycarbonate taillights.

POLYCARBONATE CRACKING

Degreasers designed to clean motors **must not be used** to clean the engine compartment door. These products are not compatible with polycarbonate. They cause cracking of the polycarbonate taillights housing and cracking of the bosses in which the mounting threaded rods are inserted (figures 2 & 3).

CLEANING PRODUCT COMPATIBLE WITH POLYCARBONATE

Cleaning products designed for external washing of vehicles shall be used to clean your vehicle. Prevost suggests a high PH cleaner compatible with polycarbonate. See the description of the product in the following table

Part No	Description	Qty
686037	EXTERIOR CLEANER (BODY)	1 gallon / 4 liters
686036	EXTERIOR CLEANER (BODY)	5.28 gallons / 20 liters
685841	EXTERIOR CLEANER (BODY)	55 gallons / 210 liters

NOTE
Material can be obtained through regular channels.

High PH cleaning product compatible with polycarbonate - product sheet

Traffic film remover

Will not make plastics crack

Perfect for trucks, cars, trains, buses and machinery. Safe for all types of plastics including polycarbonate. Designed for automatic or pressure washing.

ADVANTAGES

- Easily removes traffic film, insects and grease.
- Safe for car and truck paint.
- Safe for use on metal, rubber, chrome, glass and plastic surfaces.
- Does not leave any deposit.
- Concentrated.
- Eco-friendly.
- Easy to rinse.
- Dries evenly.

DIRECTIONS

Pressure washing :
1. Use product accordingly to dilution ratio.
2. Spray evenly on vehicle surface starting by the bottom.
3. Rinse thoroughly with cold or lukewarm water.

MORE DETAILS

Do not wash in direct sunlight. Do not allow product to dry on surface.

DILUTION RATIO

DIRT	RATIO
Mild	1 oz / 20 oz 50 ml / L
Average	1 oz / 10 oz 100 ml / L
Strong	1 oz / 6.67 oz 150 ml / L

PRECAUTIONS

Avoid all contact with eyes.
Avoid all contact with skin.
Wash hands with soap and water after handling.

FIRST AID

- Skin: Wash contaminated skin with soap and water.
- Eyes: Flush immediately with running water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical help.
- Ingestion: Do not induce vomiting. If the person is conscious, have them drink several glasses of water or milk. Seek medical help.

PHYSICAL ATTIBUTE

PHYSICAL STATE:	Liquid
APPEARANCE:	Clear
COLOR:	Transparent
SCENT:	Chemical
PH:	13.1
DENSITY (25°C):	1.1

SECURITY

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PERSONAL ROTECTION	B

0 =	NEGLIGIBLE
1 =	LOW
2 =	MODERATE
3 =	HIGHT
4 =	EXTREME

FIGURE 1: PRODUCT SHEET

IMAGES SHOWING THE CRACKING ISSUE

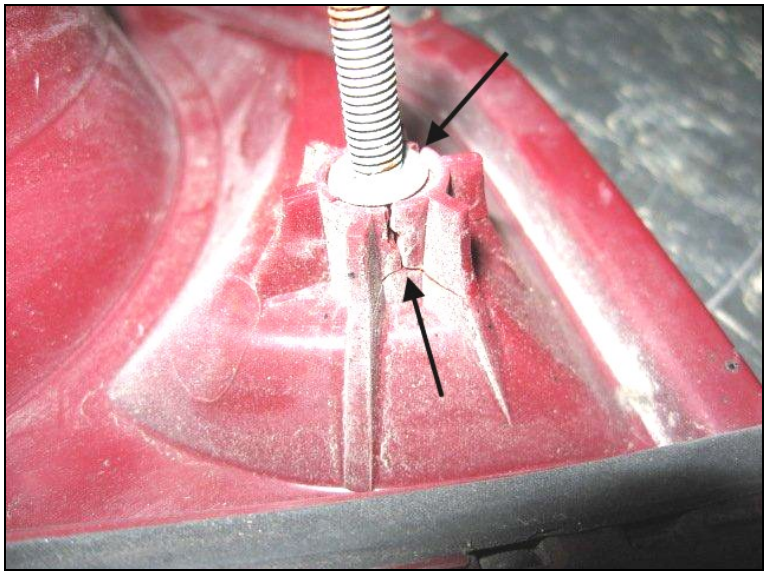

FIGURE 2: Cracks at the boss and ribs due to the use of engine degreaser

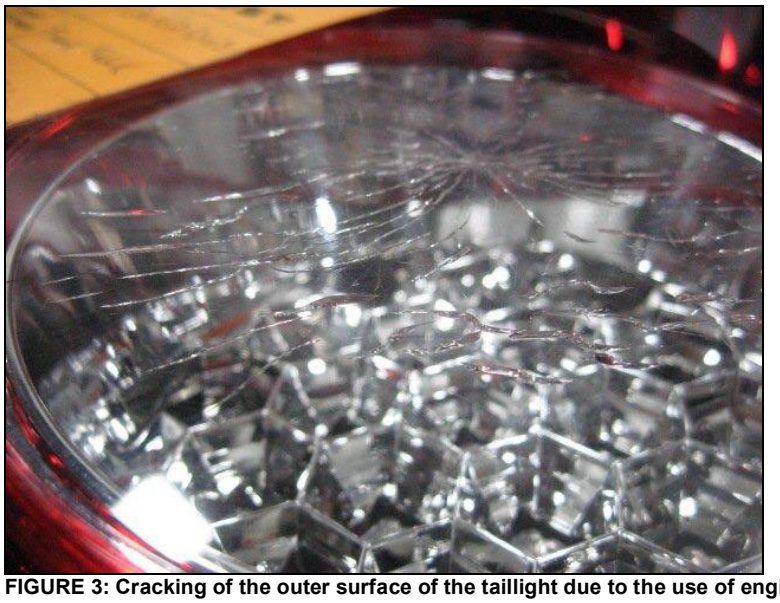

FIGURE 3: Cracking of the outer surface of the taillight due to the use of engine degreaser

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MAINTENANCE INFORMATION

MI18-18C

DATE :	June 2018	SECTION : 18 BODY
SUBJECT :	**GENERAL HOISTING AND TOWING PROCEDURES**	

Revision: C — Updated for new IFS design. — 2025-01-01

APPLICATION

All Prevost vehicles models
Model Year : 2014 - Current

DESCRIPTION

This maintenance information is for towing and hoisting Prevost vehicles.

Tower experience, local rules and regulations apply in conjunction with the procedures outlined in this document.

Images are for representation purpose only, actual vehicles may differ.

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1. HOISTING AND TOWING POINTS

As much as possible, use the wheels as the preferred lifting points. If lifting by the wheels is not possible or appropriate, there are several hoisting and towing points under the vehicle.

Lifting should be performed without passengers and no luggage remaining in the vehicle.

Use these points exclusively for hoisting and towing operations (Figure 1, Figure 2).

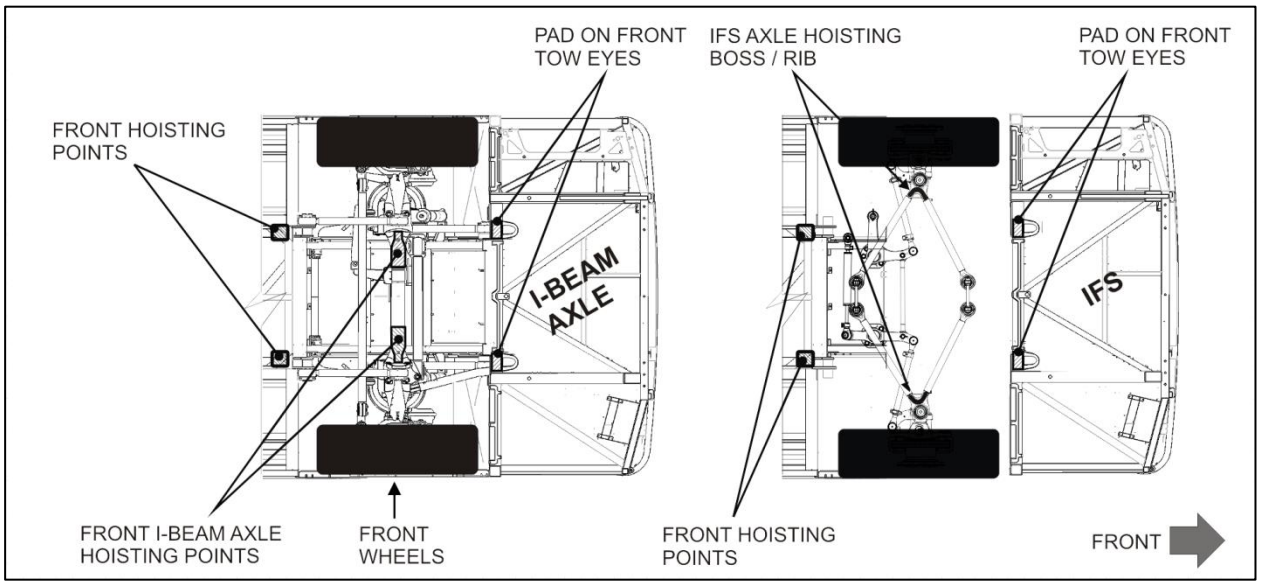


FIGURE 1 *FRONT* HOISTING AND LIFTING POINTS DIAGRAM

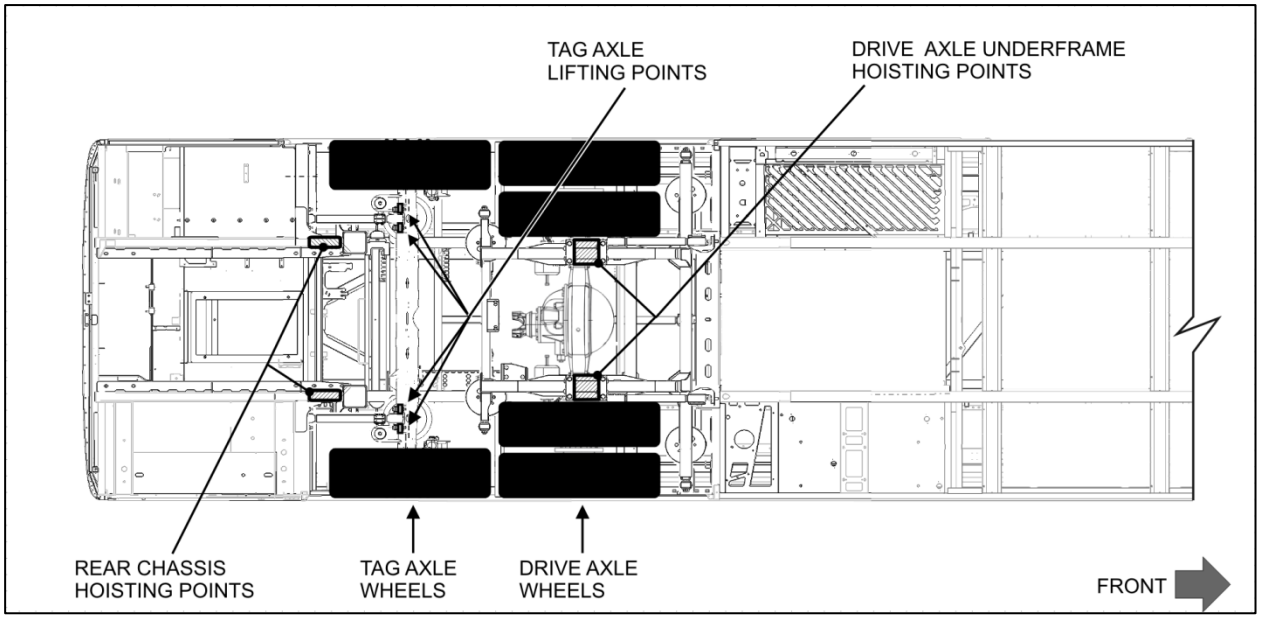


FIGURE 2 *REAR* HOISTING AND LIFTING POINTS DIAGRAM

The vehicle is provided with four standard chassis hoisting points. When axles or wheels are serviced, use the chassis hoisting points.

When using the chassis hoisting points to support the vehicle, **the tag axle must be unloaded at all times**. To prevent damage to the suspension, **always support the drive and front axles using jack stands** when using chassis hoisting points.

CHASSIS HOISTING POINTS
2 hoisting points located aft of the tag axle (Figure 3)
2 hoisting points or optional hoisting pads with receptacles located aft of the front axle (Figure 4)

FIGURE 3 : CHASSIS HOISTING POINTS - AFT OF TAG AXLE (BOTH SIDES)

FIGURE 4 : JACK STAND AT CHASSIS HOISTING POINT - AFT OF FRONT AXLE (BOTH SIDES)

1.1 JACK STANDS

As a general recommendation, the minimum safe working load (SWL) for any jack stand should be 10 US tons (20 000 lb; 9072 kg). Figure 5, Figure 6 and Figure 7 show general examples of this type of jack stand.

The vehicle can be supported at the chassis hoisting points (refer to HOISTING AND LIFTING POINTS diagram). Use a jack stand of 10 US tons (20 000 lb; 9072 kg) capacity at each of the four standard chassis hoisting points.

WARNING
Hydraulic jacks are intended for lifting only. Do not get under the vehicle while using hydraulic jacks unless it is properly supported with safety jack stands.

FIGURE 5 : 20 000 LB (10 US TON) CAPACITY JACK STAND

FIGURE 6 : 16500 LBF CAPACITY

FIGURE 7 : 40 000 LB (20 US TON) CAPACITY JACK STAND

1.2 AXLE HOISTING POINTS

AXLE HOISTING POINTS
2 front axle hoisting points (Figure 8, Figure 9, Figure 10)
2 drive axle sub frame hoisting points (Figure 12)
2 hoisting points under the tag axle (tag axle must be unloaded) (Figure 13)

To ensure stability, always use the two hoisting points under a specific axle simultaneously.

WARNING
Two hoisting points are located under the tag axle. Using the tag axle as rear hoisting points for the vehicle should be avoided. When possible, use the drive axle as hoisting point.

The vehicle can be lifted from the front axle and the drive axle sub frame using lifting equipment of appropriate capacity.

APPROXIMATE WEIGHT PER AXLE	
COACHES	**MOTORHOMES / SPECIALTY VEHICLES**
Front axle: 12,000 lb. (5 443 kg) Drive axle: 26,500 lb. (12 020 kg)	Contact the owner of the vehicle. The Gross Axle Weight Rating (GAWR) for the front and rear axle should not be exceeded. GAWR values for a particular vehicle appear on the vehicle's certification plate installed on the driver's left-hand console.

WARNING
The suspension must be in the normal ride position before hoisting. To prevent damage to suspension components, always unload the tag axle before hoisting the vehicle.

FRONT AXLE HOISTING POINTS

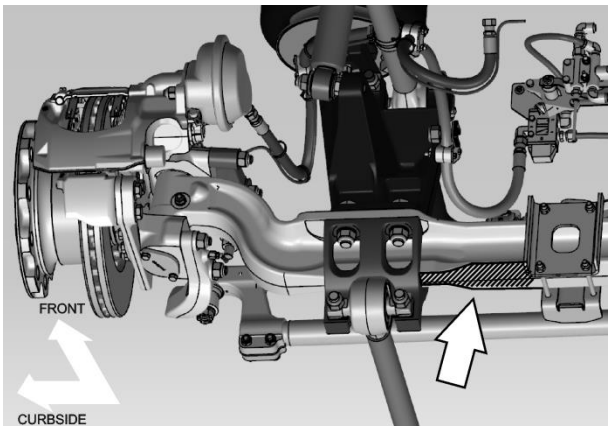


FIGURE 8 : I-BEAM AXLE HOISTING POINT - CURBSIDE

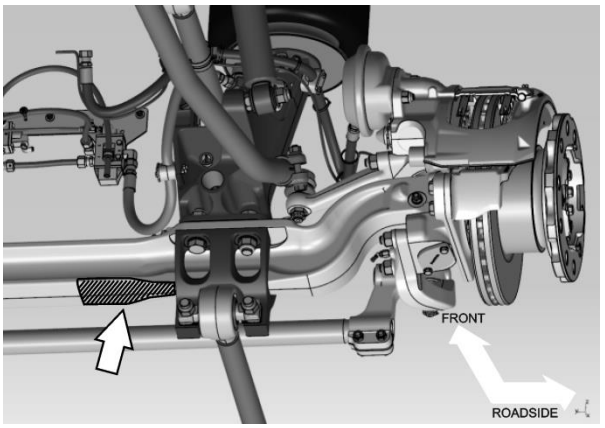


FIGURE 9 : I-BEAM AXLE HOISTING POINT – ROAD SIDE

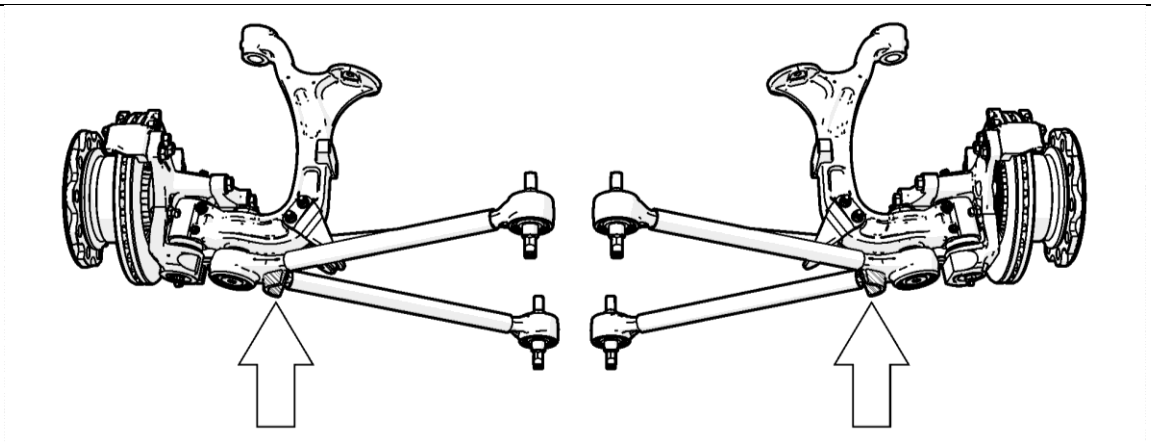
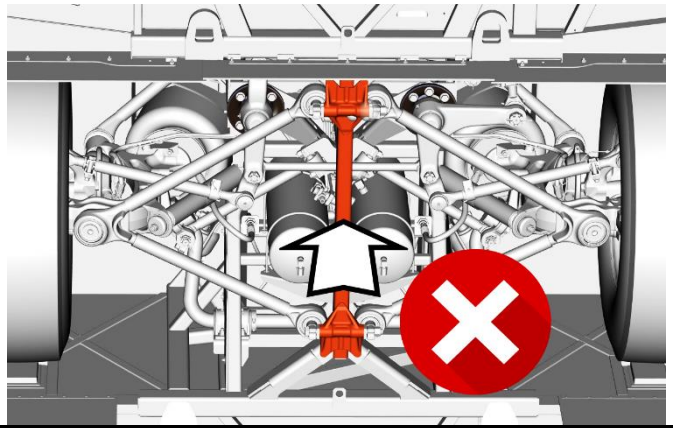


FIGURE 10 : INDEPENDENT FRONT SUSPENSION (IFS) PREVIOUS DESIGN - HOISTING POINTS

CAUTION

NEVER USE THE CENTRAL BEAM AS LIFTING POINT ON THE INDEPENDENT SUSPENSION



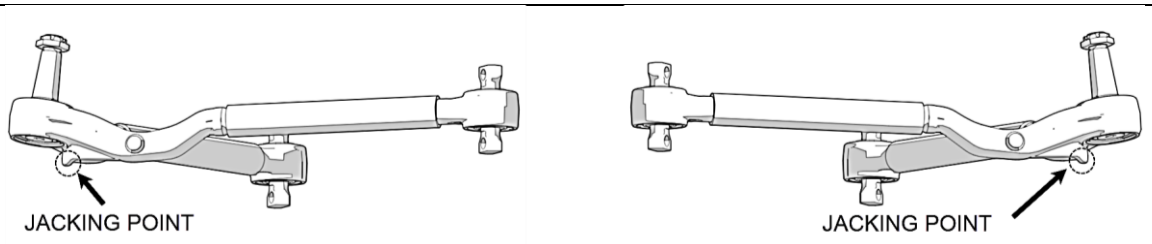
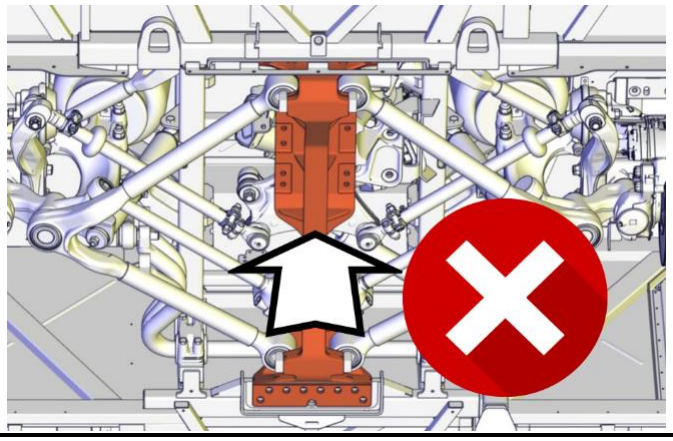


FIGURE 11: INDEPENDENT FRONT SUSPENSION (IFS) NEW DESIGN - HOISTING POINTS

CAUTION

NEVER USE THE BACKBONE AS LIFTING POINT



DRIVE AXLE SUB FRAME HOISTING POINTS

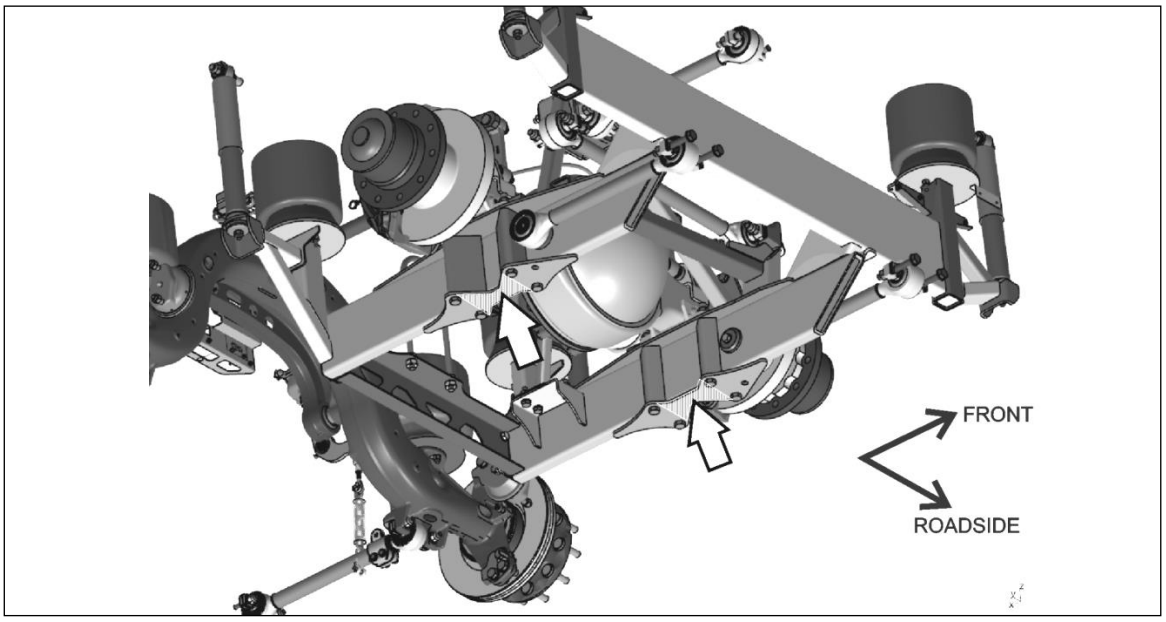


FIGURE 12 : DRIVE AXLE SUB FRAME HOISTING POINTS.

TAG AXLE HOISTING POINTS

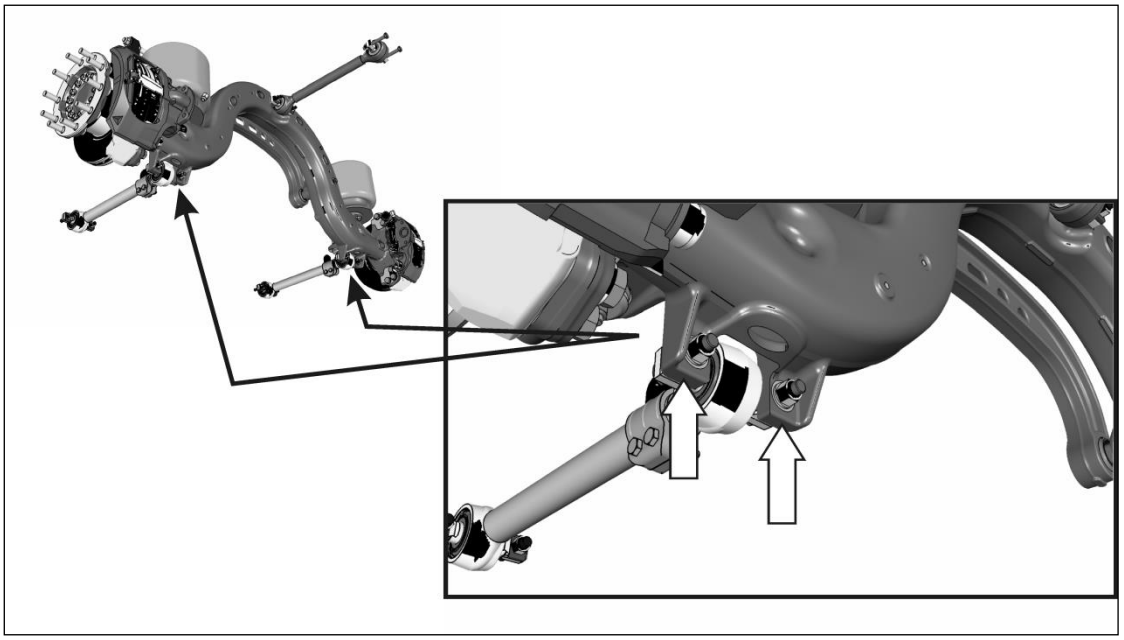


FIGURE 13 : TAG AXLE HOISTING POINTS (USE ONLY TO SUPPORT THE TAG AXLE)

1.3 USING WHEELS AS LIFTING POINTS

Use the front and drive axle wheels to lift the vehicle when using mobile column lifts. When doing so, the tag axle must be unloaded at all time.

Avoid using the tag axle wheels as the only lifting point for the rear of the vehicle. However, if the rear of the vehicle has to be lifted using the tag axle wheels, the tag axle must be unloaded at all times.

1.4 X-SERIES COMMUTER OPTIONAL CHASSIS HOISTING POINTS

On certain vehicles, lifting pads and rear emergency recovery toe eyes may be added on the chassis. When axles or wheels are serviced, use the chassis hoisting points.

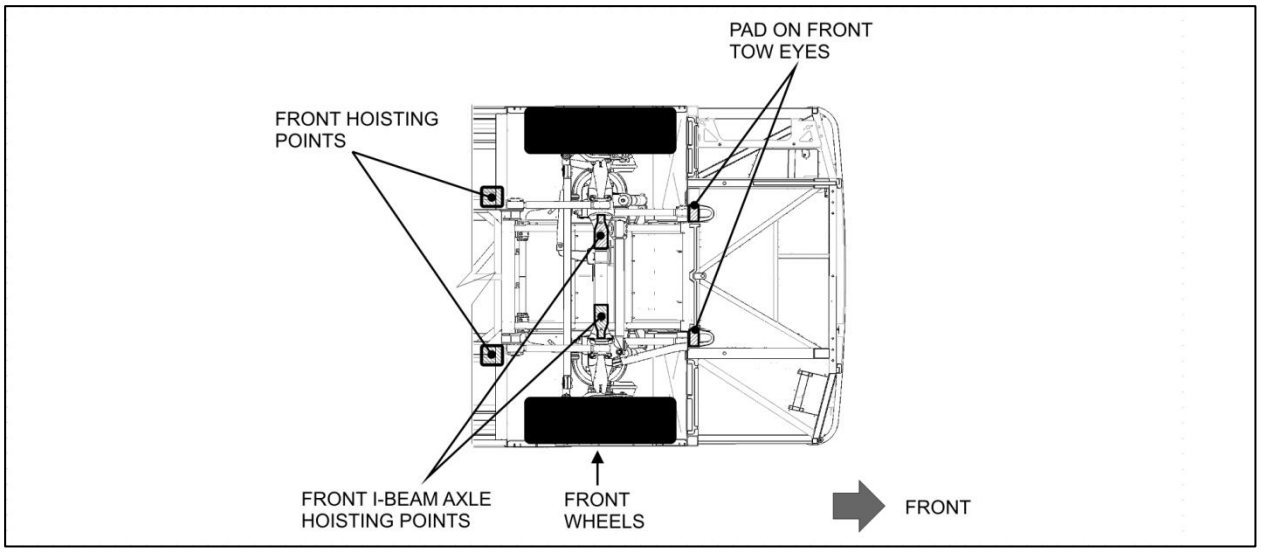


FIGURE 14 : OPTIONAL FRONT CHASSIS HOISTING POINTS

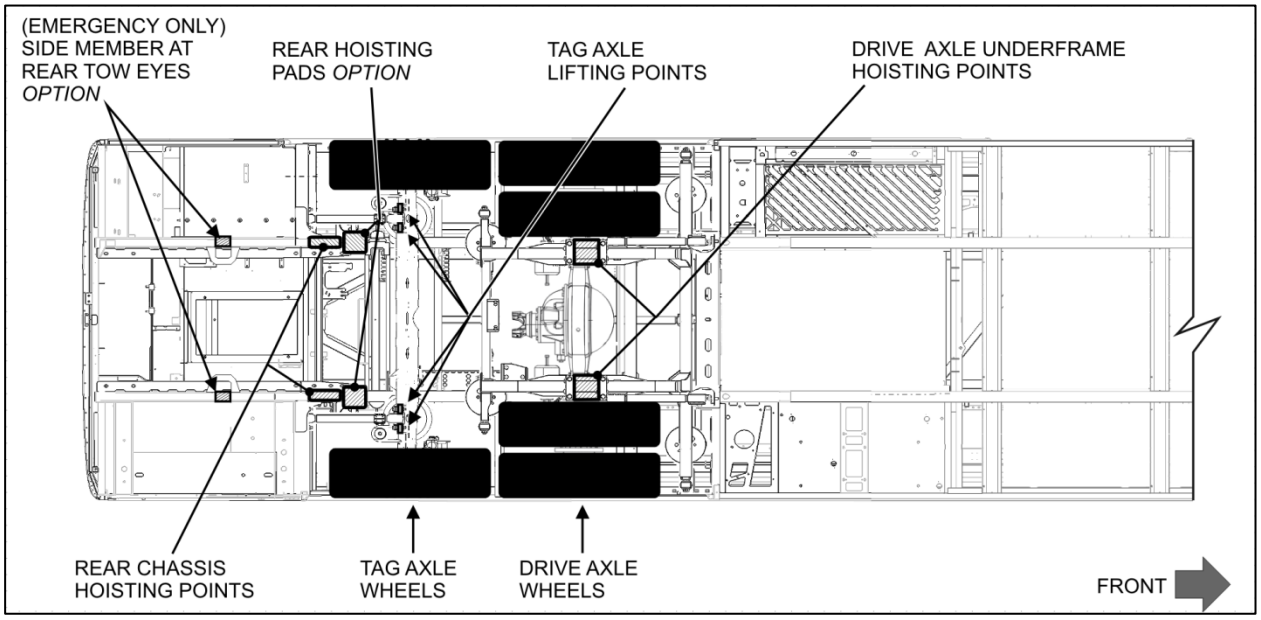


FIGURE 15 : X-SERIES OPTIONAL REAR CHASSIS HOISTING POINTS

When using the chassis hoisting points to support the vehicle, the tag axle must be unloaded at all times. To prevent damage to the suspension, always support the drive and front axles using jack stands when using chassis hoisting points.

X-SERIES OPTIONAL CHASSIS HOISTING POINTS
2 optional hoisting pads with receptacles located aft of the front axle (Figure 17)
2 optional hoisting pads with receptacles located aft of the tag axle (Figure 16)

FIGURE 16 : OPTIONAL CHASSIS HOISTING RECEPTACLES - AFT OF TAG AXLE

FIGURE 17 : OPTIONAL CHASSIS HOISTING RECEPTACLES - AFT OF FRONT AXLE

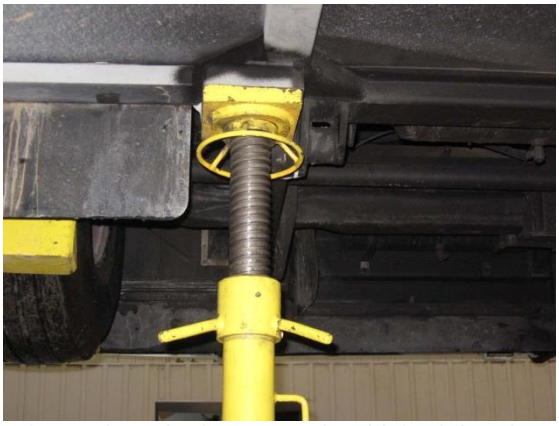


FIGURE 18 : JACK STAND AT CHASSIS HOISTING RECEPTACLE - AFT OF FRONT AXLE, ROAD SIDE

FIGURE 19 : JACK STAND AT CHASSIS HOISTING RECEPTACLE - AFT OF FRONT AXLE, CURB SIDE

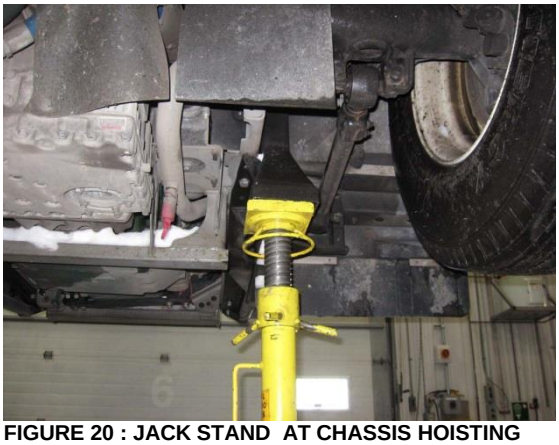


FIGURE 20 : JACK STAND AT CHASSIS HOISTING RECEPTACLE – AFT OF TAG AXLE, ROAD SIDE

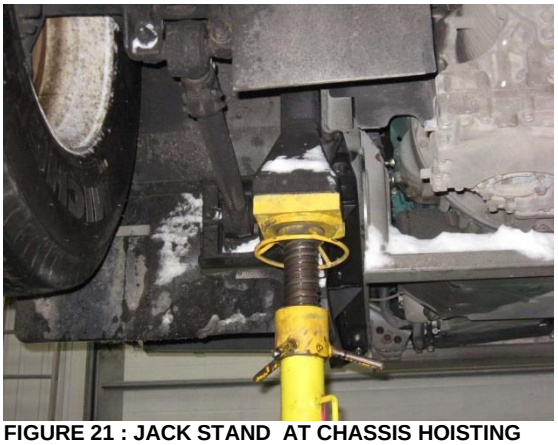


FIGURE 21 : JACK STAND AT CHASSIS HOISTING RECEPTACLE – AFT OF TAG AXLE, CURB SIDE

2. TOWING

Towing from the front is the recommended method. Prevost does not recommend towing from the rear using unapproved hoisting points as the vehicle may sustain structural damage.

Observe normal precautions including, but not limited to list below:

- Make sure the parking brake or the emergency brake is released at time of towing.
- Do not allow passengers to ride on board.
- Tow the vehicle at a safe speed.
- Accelerate and decelerate slowly and cautiously.
- Avoid sharp turns where possible.

WARNING

Do not carry passengers while the vehicle is being towed.

CAUTION

Avoid towing the vehicle from the rear using hoisting points that are not approved as this will cause structural damage. In case of damage to the drive train components use a low-bed semi-trailer.

WARNING

Engage the parking brake to prevent the vehicle from moving before you begin maintenance or service procedures that require you to be under the vehicle. Serious personal injury can result.

CAUTION

Lift the vehicle at the minimal height required for the vehicle to trail the tow truck.

2.1 PREPARATION BEFORE TOWING

WARNING

Prior to hoisting, park the vehicle on a level surface and apply parking brake.

Chock the *front and rear* wheels to prevent the vehicle from moving at time of releasing the parking brake during the towing preparation.

On the L.H. dashboard panel, turn on the hazard warning flashers. Preferably, use a towing light bar.

FIGURE 22 CHOCK THE FRONT AND REAR WHEELS

Place the front wheels in a straight-ahead position and keep the steering wheel from turning. To do so, slide the driver's seat close to the steering wheel. Wrap the safety belt around and through the steering wheel and then fasten safety belts.

This will ensure the vehicle rolls in straight direction to be stopped by the tow truck in case of mechanical failure of the lifting equipment.

FIGURE 23

2.1.1 Engine compartment emergency air-fill valve

Use the emergency fill valve to supply air to the system when the engine cannot be operated. This valve is located in the engine compartment (Figure 24) and supplies air for all systems (brakes, suspension and accessories).

FIGURE 24 : ENGINE COMPARTMENT EMERGENCY AIR-FILL VALVE

> **CAUTION**
>
> Do not tow the vehicle without external air pressure applied to the emergency fill valve if the engine does not operate. Without brake system air pressure, the emergency spring brakes may apply automatically. If failure prevents releasing the parking brakes with air pressure, disengage the parking brakes mechanically.

2.1.2 X Series Optional Front Air Supply Connections

Operate the engine when towing to maintain brake system air pressure. If the engine cannot be operated, connect external air pressure lines from the tow truck.

"Brake" quick connect fitting

Flip down the access door located on the front bumper, connect an auxiliary air supply from the tow truck to the quick connect fitting identified BRAKE in order to supply air for operation of the vehicle **service brake** from the tow truck (Figure 25, Figure 26).

"Air supply" quick connect fitting

While the vehicle is being towed, connect an auxiliary air supply from the tow truck to the quick connect fitting identified AIR SUPPLY to supply air for all systems (brakes, suspension, accessories) through the air dryer (Figure 25, Figure 26).

FIGURE 25

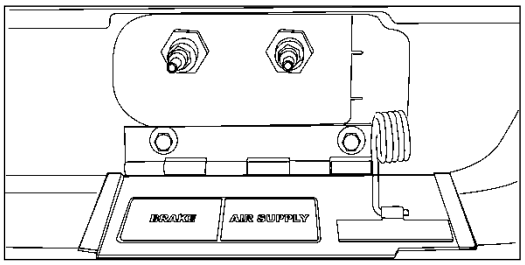


FIGURE 26 : FRONT TOWING AIR SUPPLY ACCESS PANEL QUICK CONNECT FITTINGS

2.1.3 Drive Axle Flange Shaft Removal

1. Apply the parking brake.
2. Remove the stud nuts and the washers (with Meritor drive axle) or cap screws (with ZF drive axle) from the flange shaft.

   NOTE: there is oil behind the flange shaft which comes out during disassembly

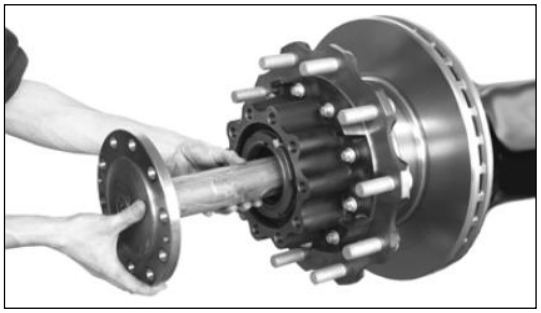
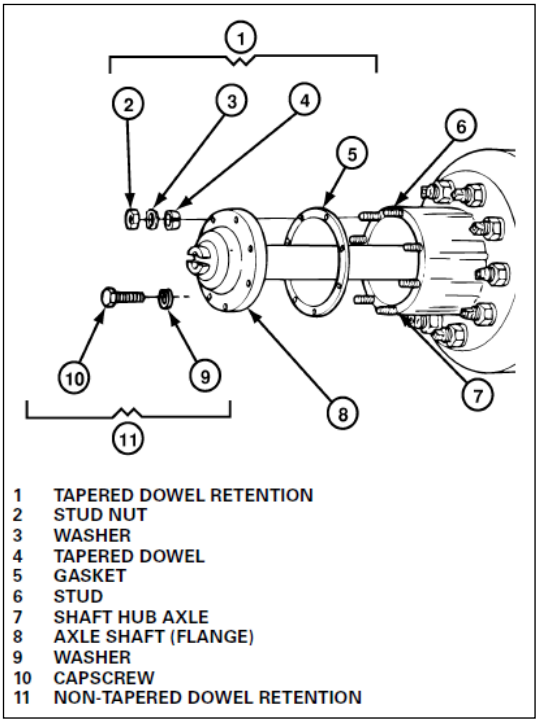


FIGURE 27 : ZF A-132 AXLE



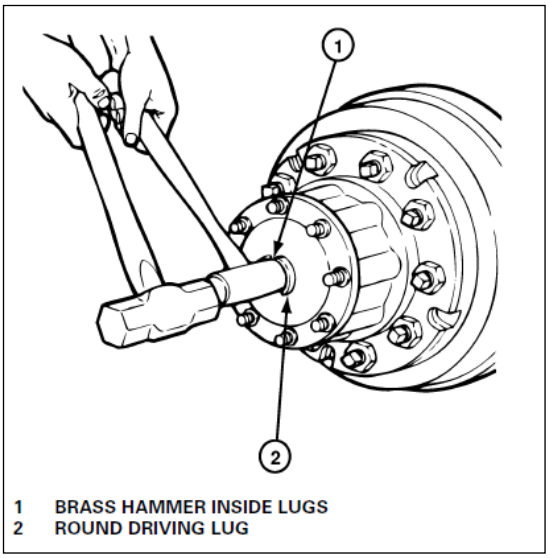
1 TAPERED DOWEL RETENTION
2 STUD NUT
3 WASHER
4 TAPERED DOWEL
5 GASKET
6 STUD
7 SHAFT HUB AXLE
8 AXLE SHAFT (FLANGE)
9 WASHER
10 CAPSCREW
11 NON-TAPERED DOWEL RETENTION

FIGURE 28: MERITOR RC23-165 AXLE

CAUTION

Do not use a chisel or wedge to loosen the axle flange shaft and tapered dowels. Using a chisel or edge can result in damage to the axle shaft, the gasket and seal, and/or the axle hub.

3. Meritor axle: Loosen the tapered dowels in the flange of the axle shaft using the following methods.
   a) Do not strike the round driving lugs on the flange of an axle shaft. Pieces can break off and cause serious personal injury. A 1.5-inch (38.1 mm) diameter brass hammer can be used as a drift.
   b) Hold a 1.5-inch (38.1 mm) diameter brass drift against the center of the axle shaft flange, **inside the round driving lugs.**
   c) Hit the end of the drift with a large hammer (5 to 6 lbs.') to loosen the axle shaft and tapered dowels from the hub.
4. Identify each axle shaft that is removed from the axle assembly so they can be installed in the same location after transporting or repair is completed. (Example: Match mark a mating axle shaft and hub).



1 BRASS HAMMER INSIDE LUGS
2 ROUND DRIVING LUG

FIGURE 29: MERITOR RC23-165 AXLE

5. Remove the tapered dowels (if used), gasket or O-ring and the axle shaft from the axle assembly. Use a container to recover the oil.
6. Remove opposite flange shaft similarly.
7. Install a temporary cover over the open end of each hub where an axle shaft was removed. This will prevent dirt from entering the bearing cavity and loss of lubricant.

2.1.4 After Towing

1. Remove the covers from the hubs.
2. Install the gasket or O-ring, and axle shaft into the axle housing and carrier in the same location it was removed from. The gasket and flange of the axle shaft must be flat against the hub. Rotate the axle shaft and/or the driveline as necessary to align the splines and the holes in the flange with the studs or holes in the hub.
3. **Meritor axle only:** Install the dowels over each stud and into the tapered holes of the flange.
4. Install the washers and stud nuts or cap screws.

MERITOR RC23-165 AXLE	ZF A-132 AXLE
Determine the size of the fasteners and tighten the nuts to the corresponding torque value shown below. • 9/16-18 plain nuts: **110 - 165 lbf-ft** (149-224 Nm) • 5/8-18 plain nuts: **150 - 230 lbf-ft** (203-312 Nm)	Tightening torque M18x1.5 G10.9 screw **325 lbf-ft** (440 Nm)

5. Mount opposite flange shaft similarly.
6. Inspect the lubricant level in the axles and hubs where the axle shafts were removed. Add the correct type and amount of lubricant if necessary.

CAUTION

Make sure axle shafts or driveshaft are installed correctly after towing. Tighten axle shaft and driveshaft nuts to the correct torque settings. Do not invert shafts.

2.2 TOWING FROM THE FRONT

The towed vehicle must be lifted from the front with front wheels off the ground. The tow truck must be equipped with the proper lifting equipment i.e. tow bar, axle forks and holders to reach under the ***front axle*** or the ***front tow eye pads***. No other lifting points are recommended for towing.

Lifting and towing from any other point is not authorized as it may cause structural damage. **To prevent overloading the drive axle, do not unload or raise the tag axle when towing the vehicle**.

To prevent damage to the vehicle, use the ***front tow eye pads*** fixed to the vehicle chassis between the front axle and the front bumper. Only use a solid link tow bar and safety chains to tow the vehicle.

1. Block the wheels to prevent the vehicle from moving.
2. Perform the PREPARATION BEFORE TOWING. Refer to paragraph 2.1.
3. Disconnect both drive axle shafts to prevent damage to the transmission. Plug axle tubes to prevent oil loss. Refer to 2.1.3 DRIVE AXLE FLANGE SHAFT REMOVAL.

CAUTION

The axle shafts must be disconnected to avoid serious damage to the Allison transmission. Lubrication is inadequate when towing.

To prevent damage to the drive train components, disconnect drive axle shafts before towing. Do not attempt to push or pull start a vehicle equipped with an automatic transmission.

Failure to disconnect the propeller shaft, remove the drive axle shafts or lift the drive wheels off the ground before towing can cause serious transmission damage and void the warranty.

2.2.1 First Lift

To allow lifting equipment fitted with axle forks to reach under the front axle or tow eyes, it is necessary to perform a first lift of the front of the vehicle using the tow eye pads as lifting points. This first lift will allow tow cans or blocks to be placed underneath front tires.

1. Retract the tow truck stinger arm.
2. On the first lift, position the tow bar fork holders under the front tow eye pads (Figure 31 and Figure 32) to lift the vehicle in order to place the front wheels firmly on the tow cans or blocks.

*Center to center measurement between tow eyes= 37 inches (*Figure 30*)*

Note: No axle forks are needed for this first lift

FIGURE 30

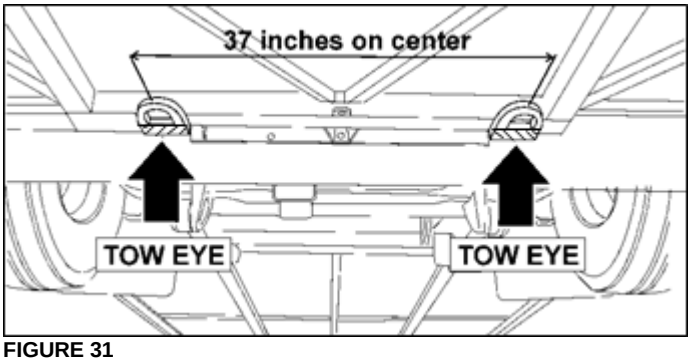


FIGURE 31

FIGURE 32: TOW EYE

3. Deploy the tow truck stinger arm, placing the axle fork holders under the tow eye pads (Figure 33).

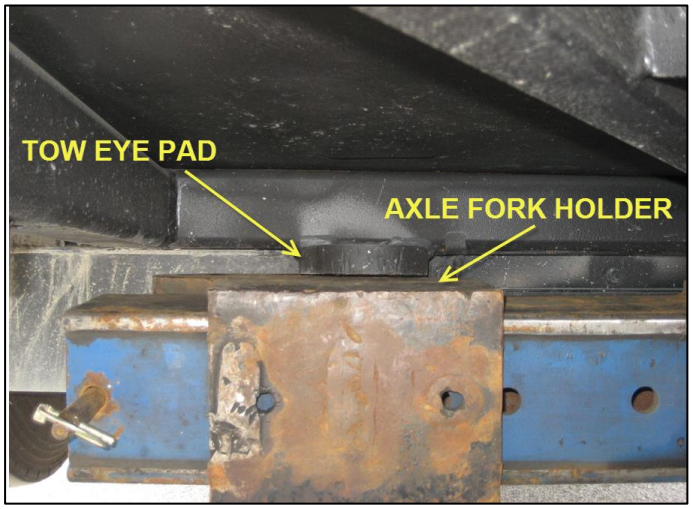


FIGURE 33

4. Lift the front end of the vehicle high enough to allow installation of tow cans or blocks. Place the tow cans or blocks perfectly centered underneath each front wheel (Figure 34).
5. With precaution, lower the front of the vehicle

FIGURE 34

2.2.2 Second Lift- Front Tow Eye Pads as Lifting Point for Towing

The tow eye pads are fixed to the vehicle chassis, fore of the front axle will be used as front end lifting points for towing.

1. Perform the first lift as instructed in paragraph 2.2.1 if not already done.

2. Place the axle forks on the tow bar fork holders (Figure 35).

Use 3" to 4 ½" mouth axle forks preferably

REGULAR

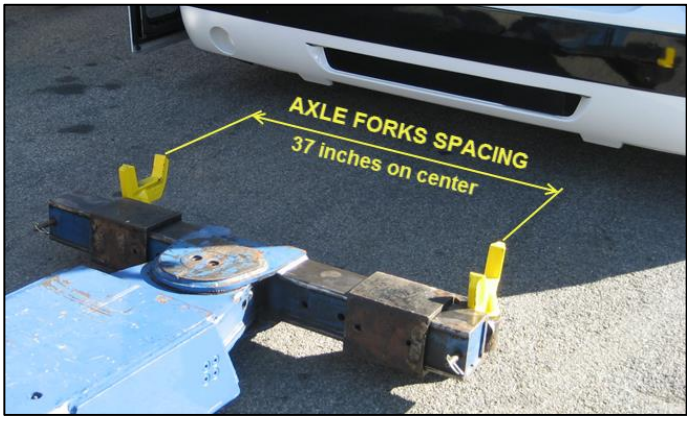


FIGURE 35

Pre-adjust spacing between axle forks to = 37 inches

3. Lower the tow bar and position under the front tow eye pads.

4. Adjust fork holder's position and hand guide the forks into each front tow eye. (Figure 36)

5. Lift the tow bar until the axle forks fit snugly into the front tow eyes (Figure 36).

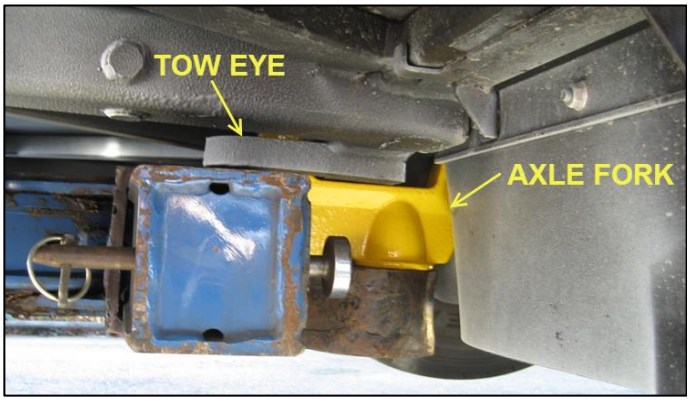


FIGURE 36

6. Raise the front of the vehicle.

7. Install a jack stand under the stinger arm for support and safety purposes and then lower the stinger arm so it rests on the jack stand (Figure 37). The tow cans or blocks can be removed from under the front axle wheels.

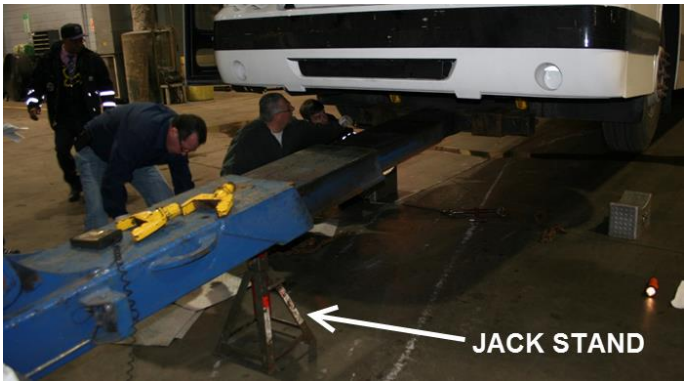


FIGURE 37

8. Tie the two choke chains together to secure the tow eyes to the tow bar attachment (Figure 39).

FIGURE 38

9. Attach the two tow truck safety chains from each of the two front lower radius rods (Figure 39) of the vehicle to the truck's tow eyes (Figure 39).

FIGURE 39

10. Confirm air is supplied to the vehicle. See 2.1 PREPARATION BEFORE TOWING

FIGURE 40

11. Raise the stinger arm and remove the support jack stand.
12. Lower the vehicle. The front tires should be 7″ to 8″ above the ground before the tow can proceed.
13. Use bungee cords to support the safety chains (Figure 41).

FIGURE 41

14. If required, use the appropriate jig to assure that the highest point on the vehicle **does not exceed** the maximum allowable height for towing (Figure 42).
15. Make sure the **parking brake** is released before moving the vehicle.
16. Observe safety precautions when towing.

FIGURE 42

Avoid sharp turns where possible as safety chains may rub and damage the front bumper (Figure 43***)***

FIGURE 43

2.2.3 Second Lift- Using I-Beam Front Axle as Lifting Point for Towing

This method uses the I-beam axle as lifting points for towing (Figure 8 and Figure 9).

1. Perform the first lift as instructed in paragraph 2.2.1 if not already done.

2. Install regular axle forks onto tow bar fork holders.

TALL **REGULAR**

Pre-adjust spacing between axle forks

Minimum spacing: 25 inches

Maximum spacing: 33 inches

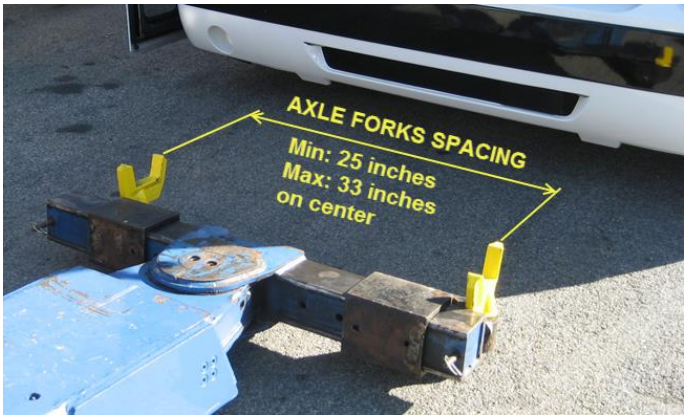


FIGURE 44

3. Lower the stinger arm to position the axle forks under the front axle hoisting points (Figure 8 and Figure 9).

4. Lift the tow bar until the axle forks grab the front axle I-beam at the hoisting points (Figure 45).

5. Raise the front of the vehicle.

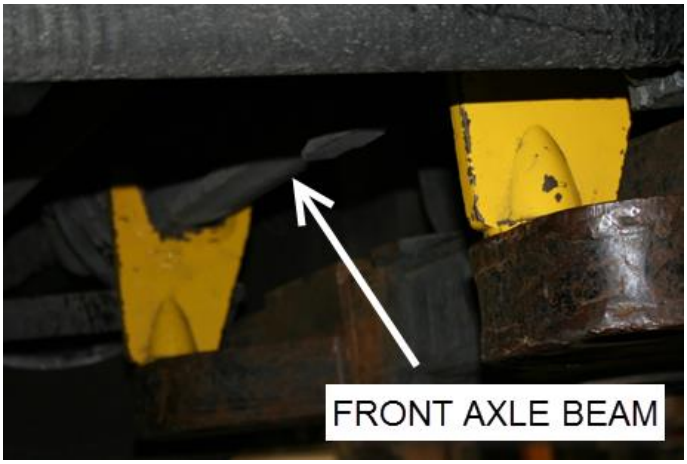


FIGURE 45

FIGURE 46

6. Install a jack stand under the stinger arm for support and safety purposes and then lower the stinger arm so it rests on the jack stand (Figure 48). The tow cans or blocks can be removed from under the front axle wheels.
7. Tie the two choke chains together to secure the front axle to the tow bar. Take up any slack that may remain and maintain proper tension on chains.

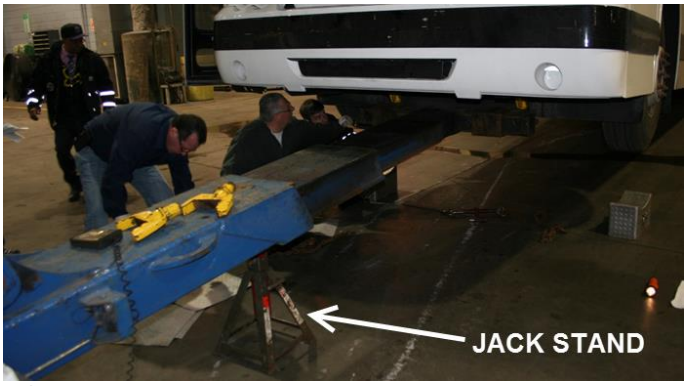


FIGURE 47

8. Attach the two tow truck safety chains from each of the two front tow eyes of the vehicle to the truck's tow eyes (Figure 48 and Figure 49).
9. Confirm air is supplied to the vehicle. See 2.1 PREPARATION BEFORE TOWING.

FIGURE 48

10. Raise the tow bar in order to remove the jack stand from under the stinger arm.
11. Lower the vehicle. The front tire should be about 7″ to 8″ above the ground before the tow can proceed.

FIGURE 49

12. Use bungee cords to support the safety chains (Figure 50).

FIGURE 50

13. Make sure that the **parking brake** is released before moving the vehicle.
14. Observe safety precautions when towing.

FIGURE 51

Avoid sharp turns where possible as safety chains may rub and damage the front bumper (Figure 52***)***

FIGURE 52

CAUTION

Make sure a safe distance is kept between the front of the vehicle and the tow truck. This space ensures that vehicle does not suffer damages when being towed.

CAUTION

Make sure axle shafts or driveshaft are installed correctly after towing. Tighten axle shaft and driveshaft nuts to the correct torque settings. Do not invert shafts.

DANGER

Do not carry passengers while the vehicle is being towed.

2.3 X-SERIES RECOVERY USING OPTIONAL REAR TOW EYES

Optional rear tow eyes allow recovery of a vehicle that is no longer on a drivable surface. Chains can be looped around or hooked to these rear tow eyes.

CAUTION

This recovery method should be used only for a short distance with all vehicle wheels on the ground

After the vehicle has been brought back on a drivable surface, it should be lifted and towed from the front, with front wheels off the ground.

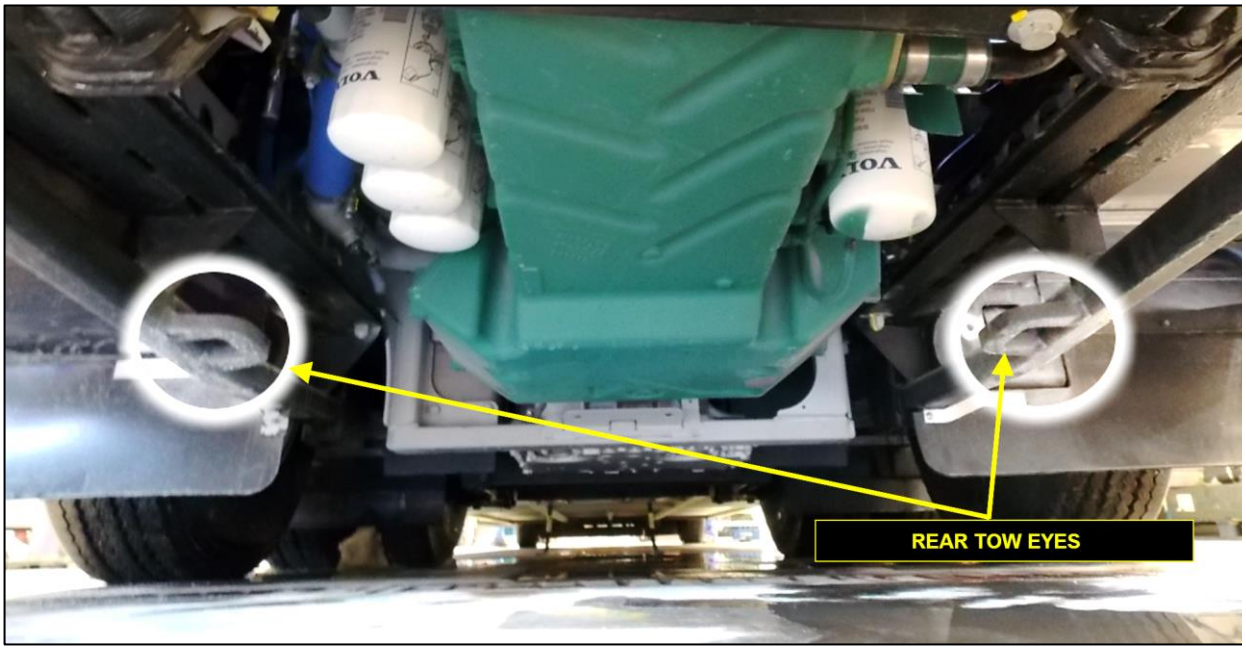


FIGURE 53 : OPTIONAL REAR TOW EYES ON SIDE MEMBERS UNDER ENGINE CRADLE SUPPORT RAILS

3. EMERGENCY TOWING

If the vehicle must be moved and standard towing procedures cannot be used, follow the alternate towing procedures below.

3.1 REAR TOW USING NON-APPROVED LIFTING POINTS - *EMERGENCY ONLY*

CAUTION

The vehicle should **NOT** be lifted and towed from the rear in normal situations.

In an emergency, however, it can be moved from the rear over a very short distance such as in a parking lot or to place the vehicle back on pavement.

Lifting the rear end from the engine cradle or from the side members located under the engine cradle support rails should be avoided. Doing so may cause structural damage (see image further in this document).

3.1.1 PRECAUTIONS

In an emergency or if the vehicle has to be moved over a short distance, the side members may be used as lifting point. Try to lift from the strongest location along the side members which is near the rear sub-frame vertical member (Figure 54**).**

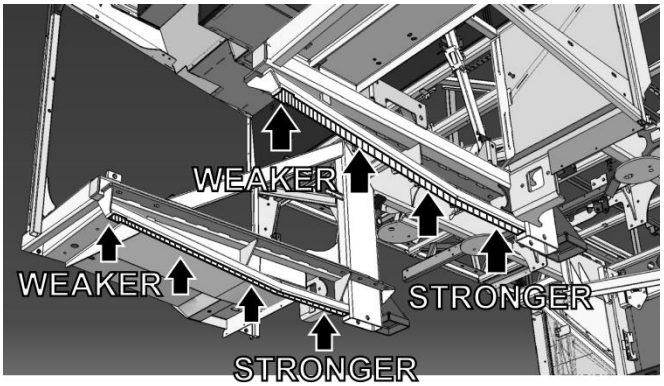


FIGURE 54: UNAPPROVED LIFTING POINTS FOR REAR END TOWING – SIDE MEMBERS LOCATED UNDER THE ENGINE CRADLE SUPPORT RAILS

Lift with precautions as the vehicle may sustain structural damage at the vertical structure shown on the image at right (Figure 55).

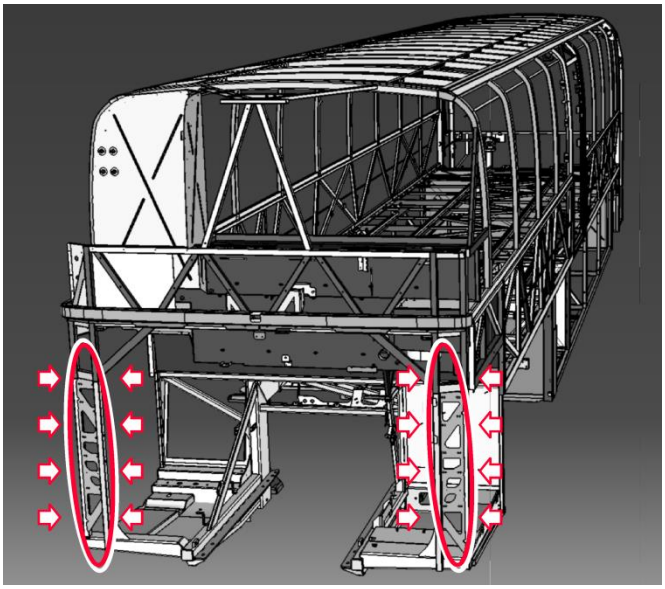


FIGURE 55: VEHICLE MAY SUSTAIN STRUCTURAL DAMAGE WHERE INDICATED WITH ARROWS DURING TOWING FROM THE REAR

DANGER

Do not carry passengers while the vehicle is being towed.

3.1.2 FIRST LIFT

A first lift of the vehicle is required. This first lift will allow tow cans or blocks to be placed underneath the drive axle tires.

1. Prepare the vehicle for towing as instructed in paragraphs 2.1 and 2.1.1
2. If not already done, chock the front wheels.
3. Retract the tow truck stinger arm (Figure 56).
4. Pre-adjust spacing between the axle fork holders. The spacing between the most distant edges of the folk holders should be **30 inches** (Figure 56).

   No axle forks will be used for this first lift

TALL **REGULAR**

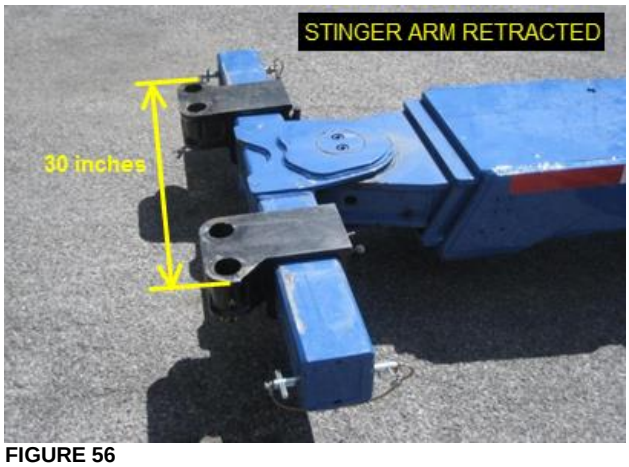


FIGURE 56

5. Deploy the tow truck stinger arm. Place the fork holders under the engine cradle transverse beam as shown on Figure 57. Lift the tow bar until the fork holders come into contact with the cradle transverse beam.

   Lifting from the engine cradle is the least preferred option and should be done only if lifting from under the side members shown on Figure 54 ***cannot be achieved***

CAUTION

Remember, lifting the rear end from the side members located under the engine cradle or by the engine cradle itself may cause structural damage.

CAUTION

Use caution when lifting from the engine cradle transverse beam. Maintain the vehicle in that situation during the shortest period of time.

FIGURE 57

6. Raise the tag axle to prevent it from hanging unsupported.

7. On X-Series commuter vehicles only, the tag axle air valve lever is located in the front service compartment. Move it forward as shown on Figure 58.

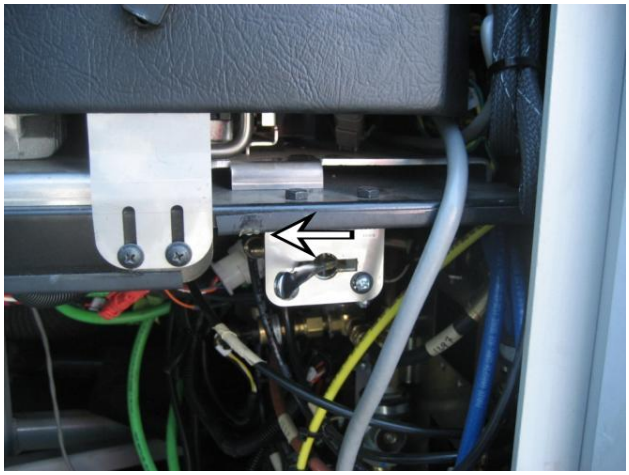


FIGURE 58:LOCATION OF COMMUTER TAG AXLE AIR VALVE

8. Lift the rear end of the vehicle high enough to allow installation of tow cans or blocks underneath the drive axle wheels (Figure 59).
9. With precautions, lower the rear of the vehicle.

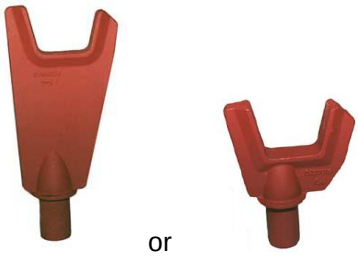
FIGURE 59: TOW CAN

3.1.3 SECOND LIFT

1. Perform the first lift as instructed in paragraph 3.2 if not already done.
2. Retract the tow truck stinger arm.
3. Pre-adjust spacing between the axle fork holders to **43 inches**.

FIGURE 60

4. Install either long or short axle forks into fork holders.



TALL or **REGULAR**

5. Deploy the tow truck stinger arm. Place the axle forks under the rear tow eyes if equipped or under the side members (Figure 61).

   Place the forks in a transversal position i.e. perpendicularly to the side members (Figure 62).

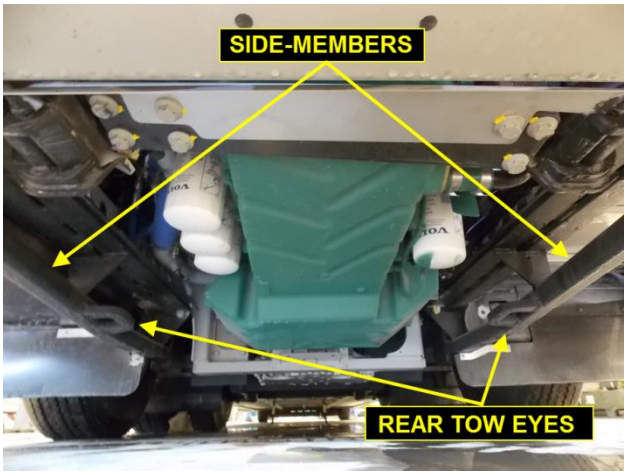


FIGURE 61: REAR TOW EYES ON SIDE MEMBERS LOCATED UNDER ENGINE CRADLE SUPPORT RAILS

6. Lift the tow bar until the axle forks grab the side members (Figure 62).

   If equipped with rear tow eyes, lift the tow bar until the axle forks fit snuggly into the side-members tow eyes.

   Avoid lifting at the side-members further toward the rear of the vehicle (close to the bumper)

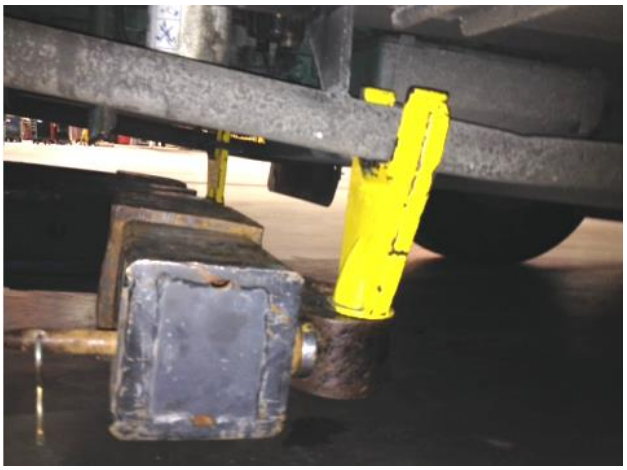


FIGURE 62 : PROPER LOCATION WHEN LIFTING THE SIDE MEMBERS

7. Place the fork's shorter finger outboard for better clearance (see Figure 63).

FIGURE 63 : PROPER LOCATION WHEN LIFTING THE SIDE MEMBERS – VEHICLE EQUIPPED WITH REAR TOW EYES

8. Raise the rear of the vehicle.
9. Install a jack stand under the stinger arm for support and safety purposes and then lower the stinger arm so it rests on the jack stand (Figure 64). The tow cans or blocks can be removed from under the drive axle wheels.

FIGURE 64

10. Install the choke chains. Tie the two choke chains together to secure the side members to the tow bar (Figure 65 and Figure 66). Take up any slack that may remain and maintain proper tension on chains.

FIGURE 65

11. Shorten the stinger arm to the safest minimum distance between the vehicle and the tow truck to allow the towed vehicle to be as close as possible to the truck yet allowing enough room for the vehicle to avoid collision with the tow truck during turns.

    Stinger to the rear bumper: Between 59″ and 63″

FIGURE 66

12. Attach the two tow truck safety chains from the vehicle engine cradle cross-member to the truck's tow eyes (Figure 67).
13. Raise the stinger arm and remove the support jack stand.
14. Lower the vehicle. The drive axle tires should be 5″ to 6″ above the ground before the short distance tow can proceed.

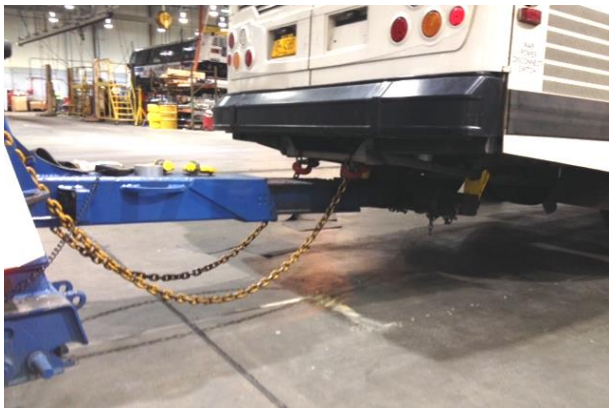


FIGURE 67

3.2 VOLVO *I-SHIFT* TRANSMISSION *TOWING MODE*

The procedure will activate "*tow mode"* on the transmission and will allow the vehicle to be towed flat on all wheels without having to remove the driveshaft.

CAUTION
Check vehicle **VIN** before starting. Earlier vehicles do not have the proper software.

This special procedure applies to:

Model	VIN
All X Series Vehicles Model Year : 2014 -	*With I-shift gearbox* From 2PCG33497**E**C73**5459** up to Current Vehicles
All H Series Vehicles Model Year : 2013 -	*With I-shift gearbox* From 2PCH33499**D**C71**2364** up to Current Vehicles

CAUTION
Forward towing only! Reverse towing (backing-up) is not allowed with this procedure or damage to the gearbox will occur.

CAUTION
This procedure should be used in emergency only. This procedure does not have any visual indicator, therefore, make sure all steps of the procedure are fulfilled, or transmission damage may occur.

Towing gear **3 HR** will be engaged if conditions below are fulfilled in the following sequence:

- **A.** *Ignition key must be in the "**ON**" position*
- **B.** *Engine not running*
- **C.** *Adequate **air pressure to the gearbox**/ Vehicle must have **electrical power***
- **D.** *Shift pad must be in **neutral***
- **E.** *Vehicle must be towed FORWARD only*

PARTS / WASTE DISPOSAL

Discard according to applicable environmental regulations (Municipal/State[Prov.]/ Federal)

Access all our Service Bulletins on http://techpub.prevostcar.com/en/
Or scan the QR-Code with your smart phone
.

Are you a vehicle owner?

*E-mail us at **technicalpublications_prev@volvo.com** and type "ADD" in the subject to receive warranty bulletins applicable to your vehicle(s) by e-mail.*

PREVOST

MAINTENANCE INFORMATION

MI23-03

DATE :	May 2023	SECTION : 18 BODY	
SUBJECT :	**DASHBOARD PROCEDURE**	**COVERS**	**REMOVAL**

First Release 05-31-2023

APPLICATION

Model	VIN
H3-45 coaches Model Year: 2024 - …	From 2PCH3349X***R***C72***1453***
H3-45 VIP motorhomes Model Year: 2023 - …	From 2PCVS3499***P***C72***1348***

DESCRIPTION

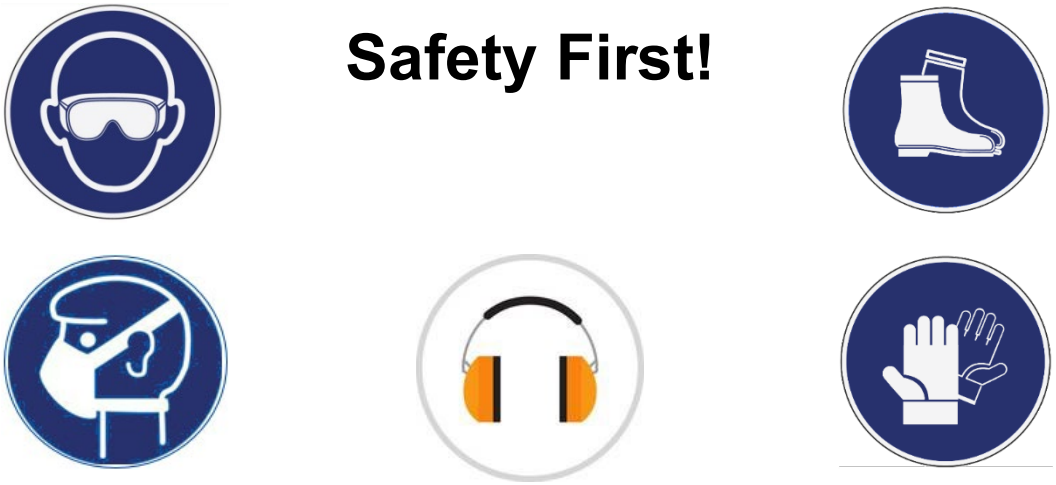
Perform the following procedure to remove the dashboard covers. Reinstallation is similar to removal but in reverse order.

Table of contents

SAFETY PRECAUTIONS....2
PART 1 - INSTRUMENT PANEL COVER REMOVAL....3
PART 2 - DASHBOARD COVER REMOVAL....5
PART 3 - RIGHT SIDE OF THE DASHBOARD – ACCESS PANEL REMOVAL....7
PART 4 - RIGHT SIDE OF DASHBOARD REMOVAL....9

SAFETY PRECAUTIONS

- Eye protection should always be worn when working in a shop.
- Rules for Personal Protection Equipment should always be respected. Wear your PPE including but not limited to the following:



DANGER

Park vehicle safely, apply parking brake, stop the engine. Prior to working on the vehicle, set the ignition switch to the OFF position and trip the main circuit breakers equipped with a trip button. On Commuter type vehicles, set the battery master switch (master cut-out) to the OFF position.

Lockout & Tag out (LOTO) must be performed during set-up, maintenance or repair activities. Refer to your local procedure for detailed information regarding the control of hazardous energy.

PART 1 - INSTRUMENT PANEL COVER REMOVAL

1. From underneath the instrument panel cover, unscrew two (2) socket hex screws.

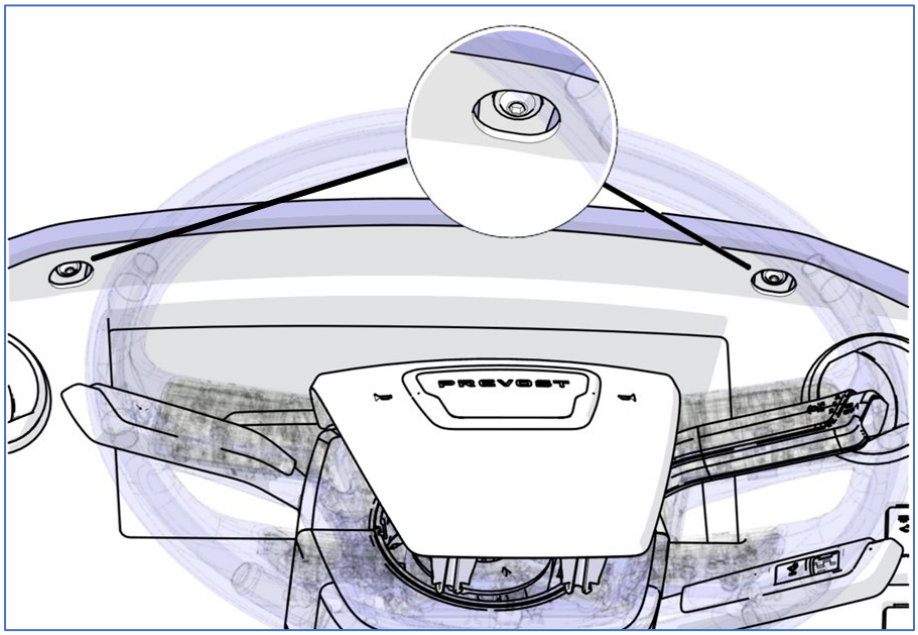


FIGURE 1

2. Look at the following image to understand how the instrument panel cover is held in place with flexible tabs close to the windshield.

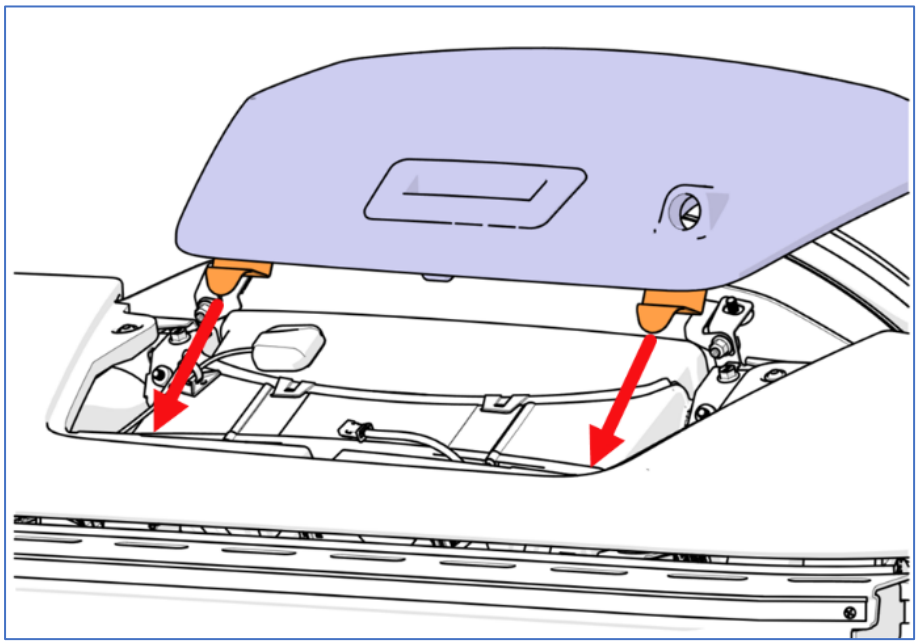


FIGURE 2

3. Lift the edge of the instrument panel cover with a light force then pull the cover toward you.

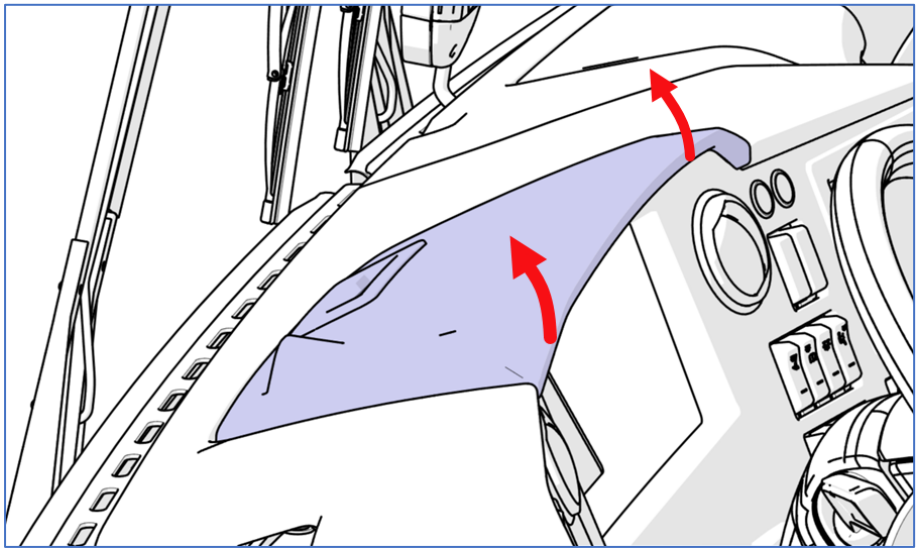


FIGURE 3

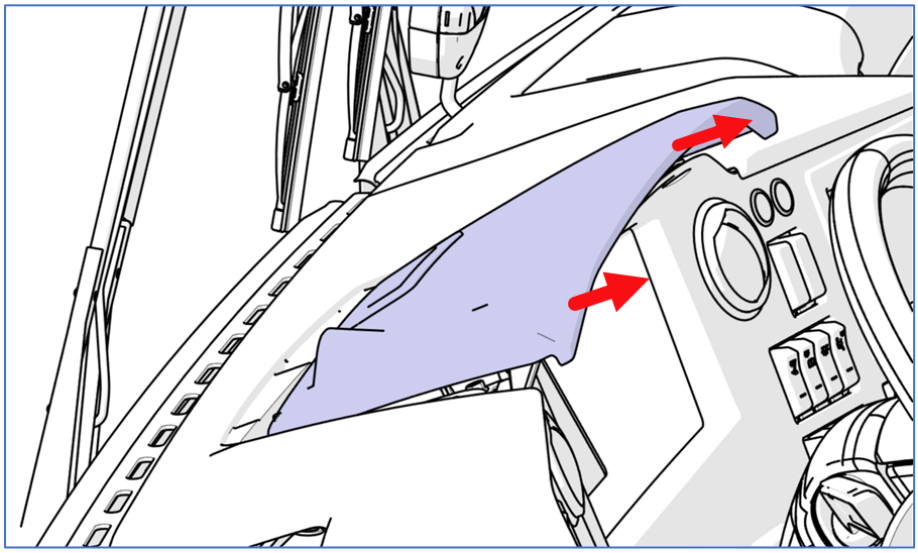


FIGURE 4

PART 2 - DASHBOARD COVER REMOVAL

1. Remove the three (3) screws shown on the image below.

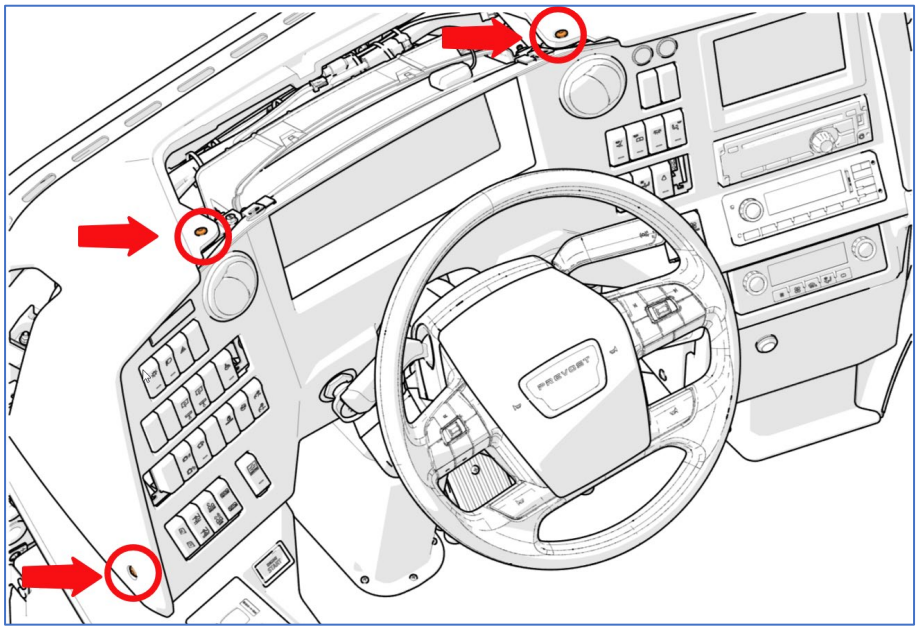


FIGURE 5

2. Unsnap the dashboard cover at the five (5) points identified on the image below.

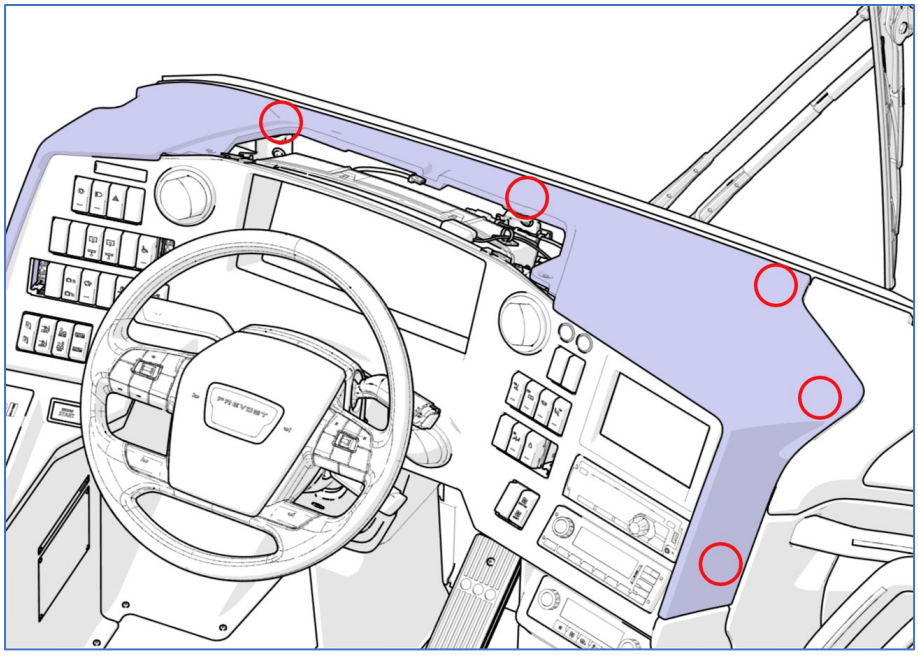


FIGURE 6

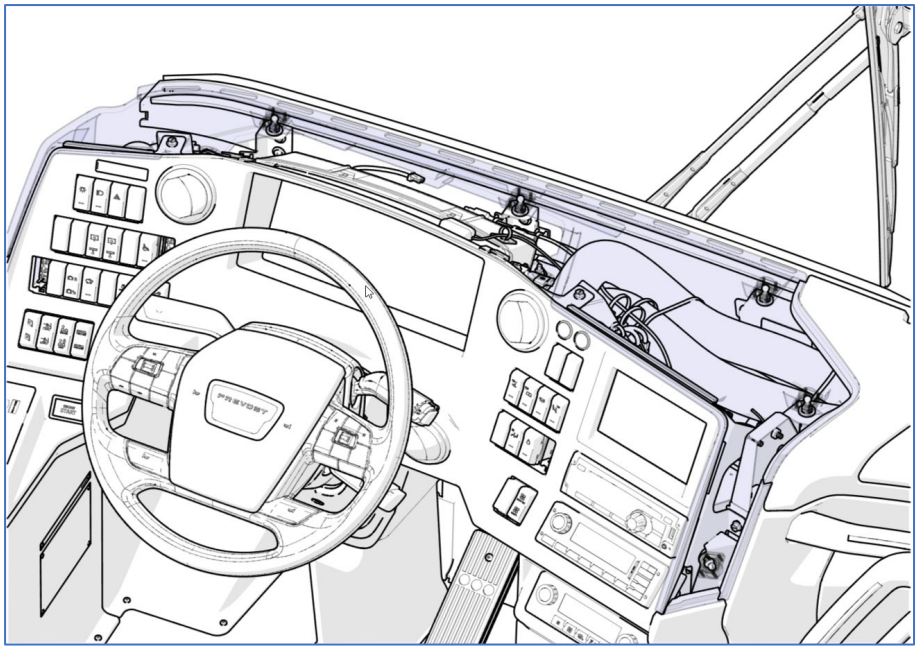


FIGURE 7

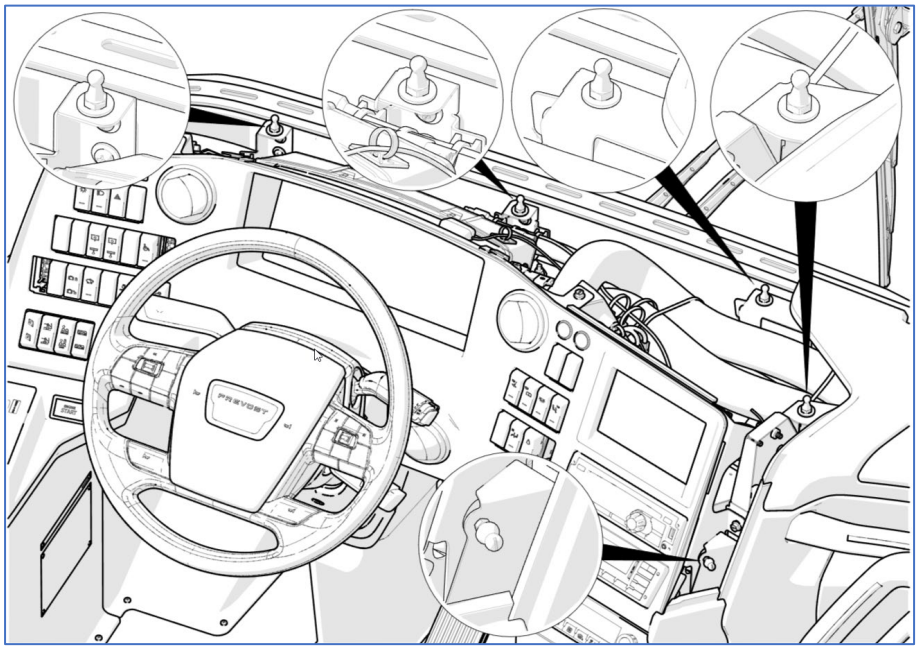


FIGURE 8

PART 3 - RIGHT SIDE OF THE DASHBOARD – ACCESS PANEL REMOVAL

1. The panel on the right side of the dashboard is secured with fasteners as seen on the images below.

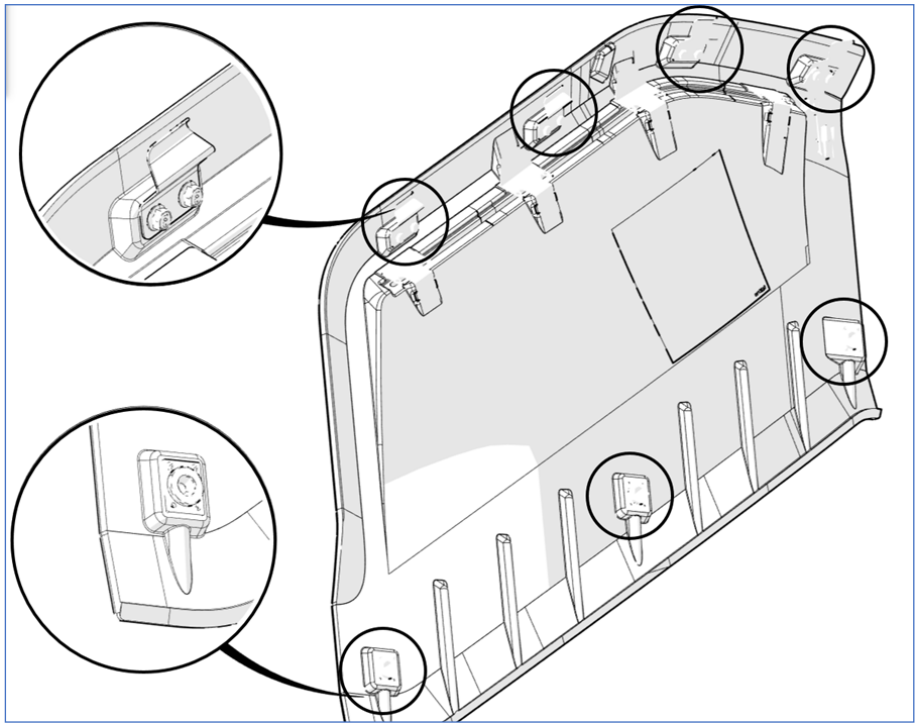


FIGURE 9: ATTACHMENT POINTS AT THE BACK OF THE PANEL

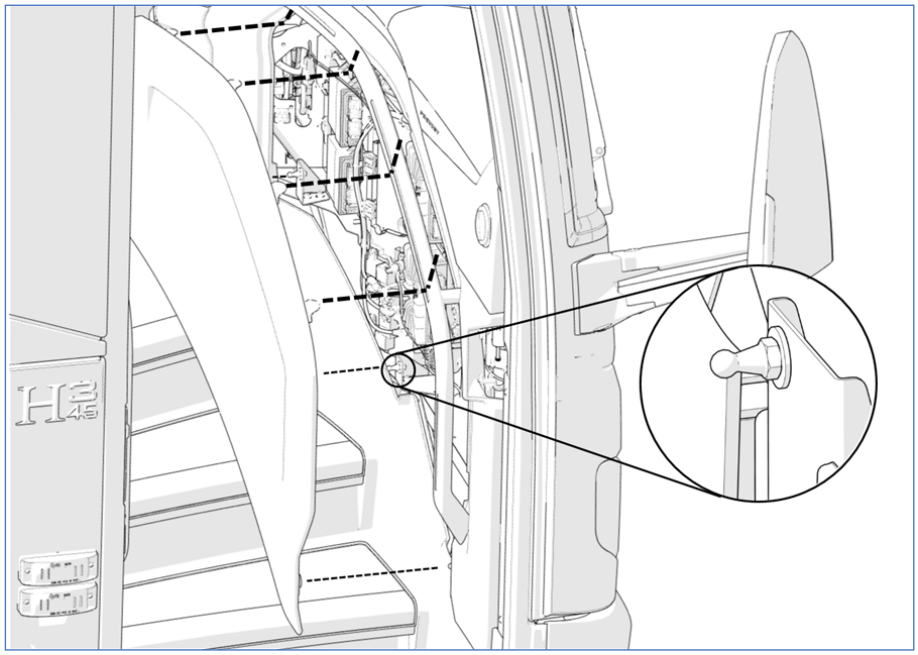


FIGURE 10

2. To remove the panel, pull (unsnap) the bottom of the panel in three (3) places by pulling toward you and then pull the panel down to disengage the top.

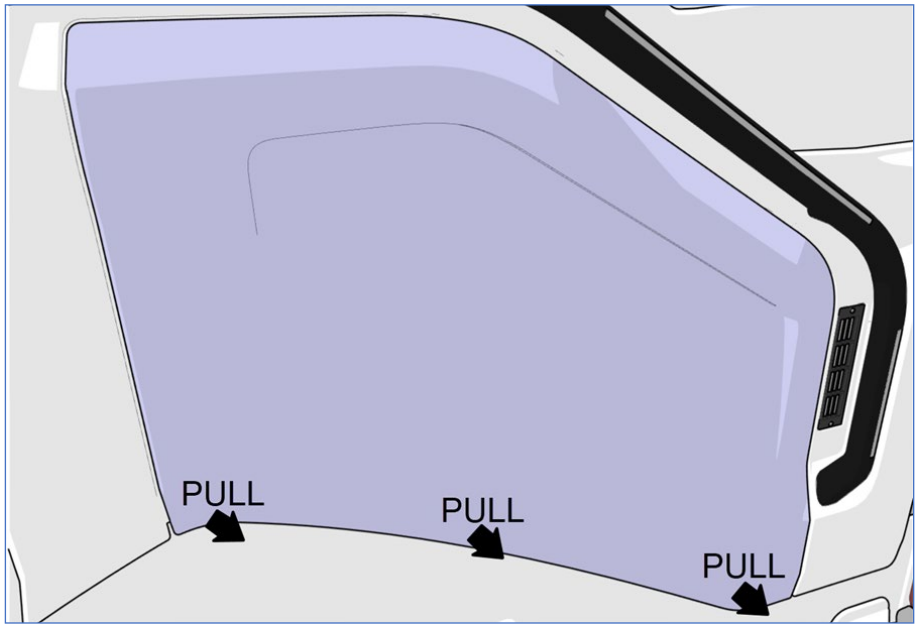


FIGURE 11

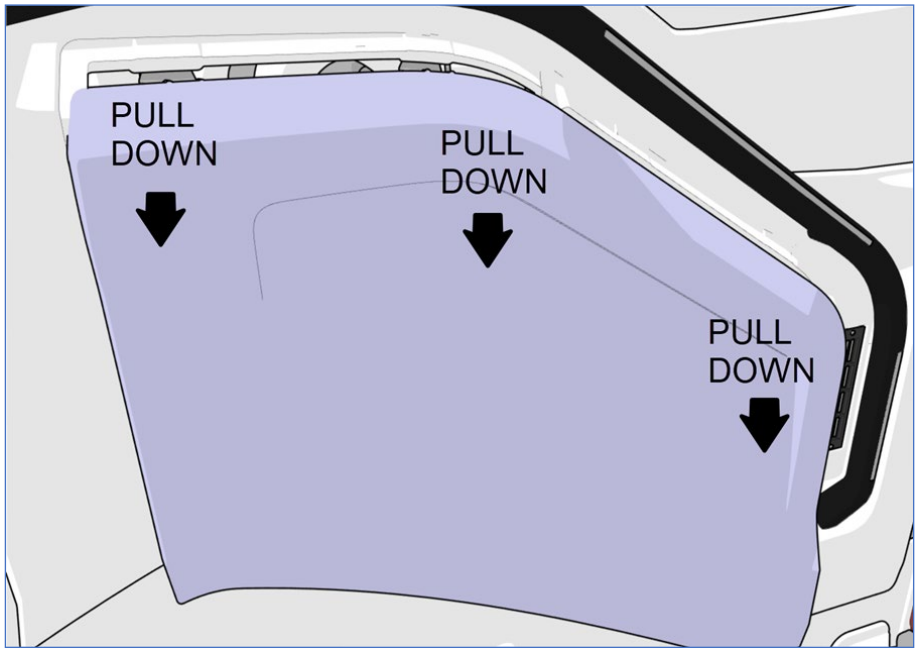


FIGURE 12

PART 4 - RIGHT SIDE OF DASHBOARD REMOVAL

1. Perform Part 1, 2 & 3.
2. Remove the three (3) screws shown on the image below.

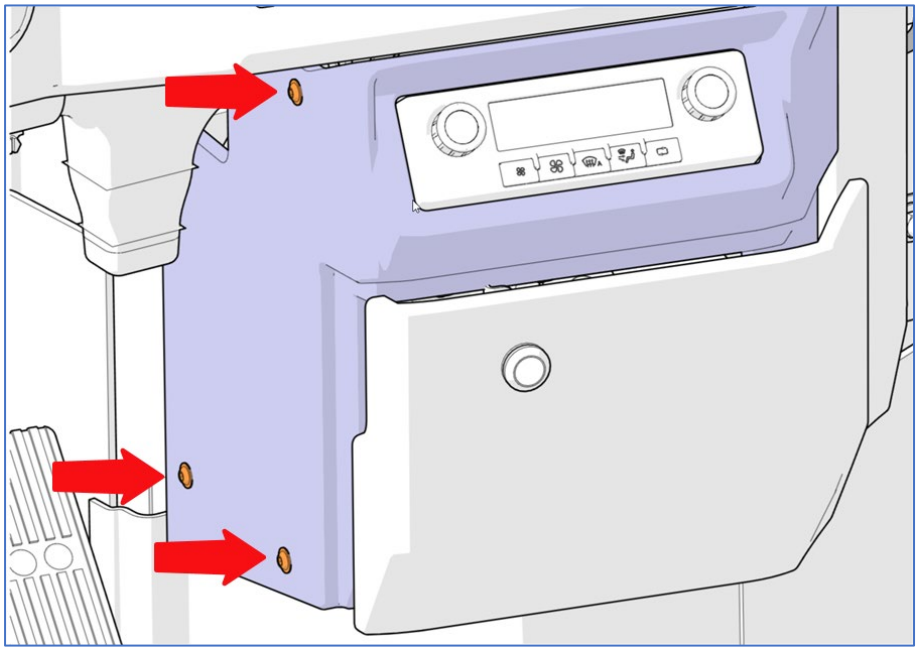


FIGURE 13

3. Remove the screw shown on the image below.

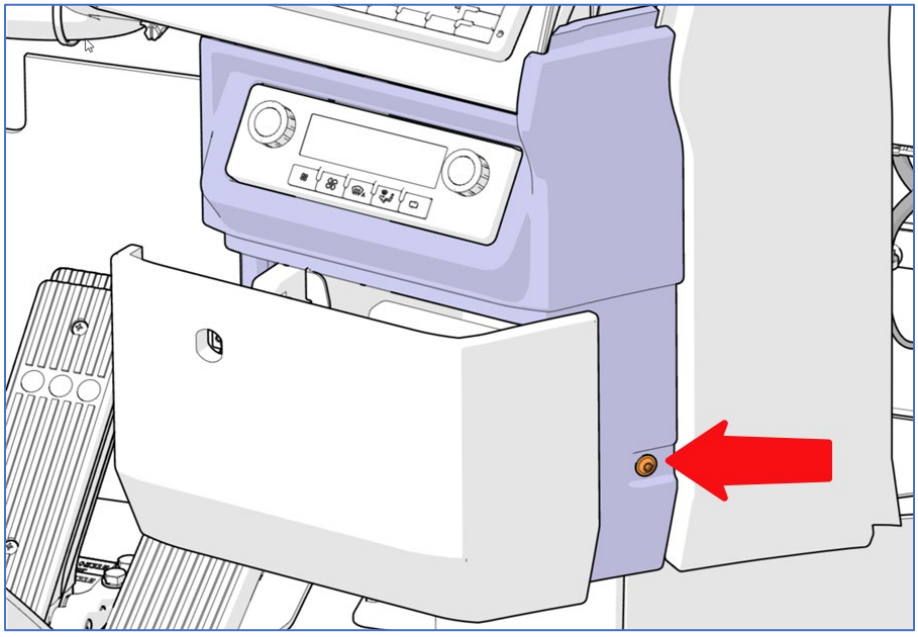


FIGURE 14

4. Open the utility compartment.

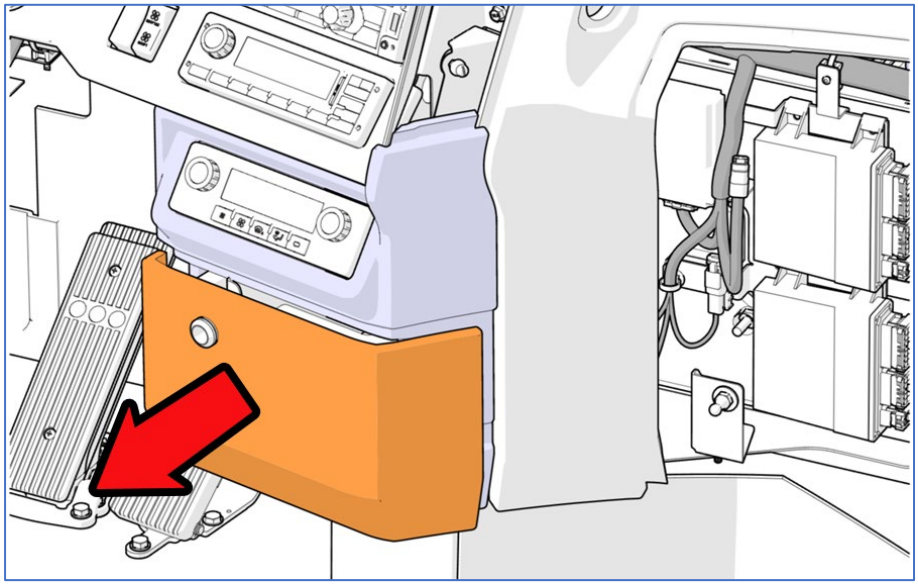


FIGURE 15

3. Unsnap the trim at the attachment point identified on the images below.

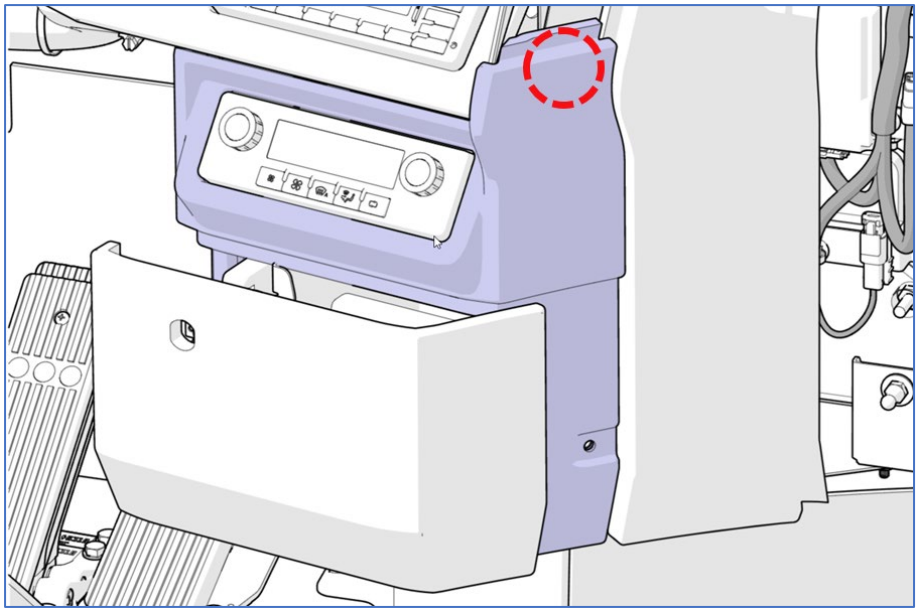


FIGURE 16

FIGURE 17

5. Pull the trim to uncover the circled area shown on the image below.

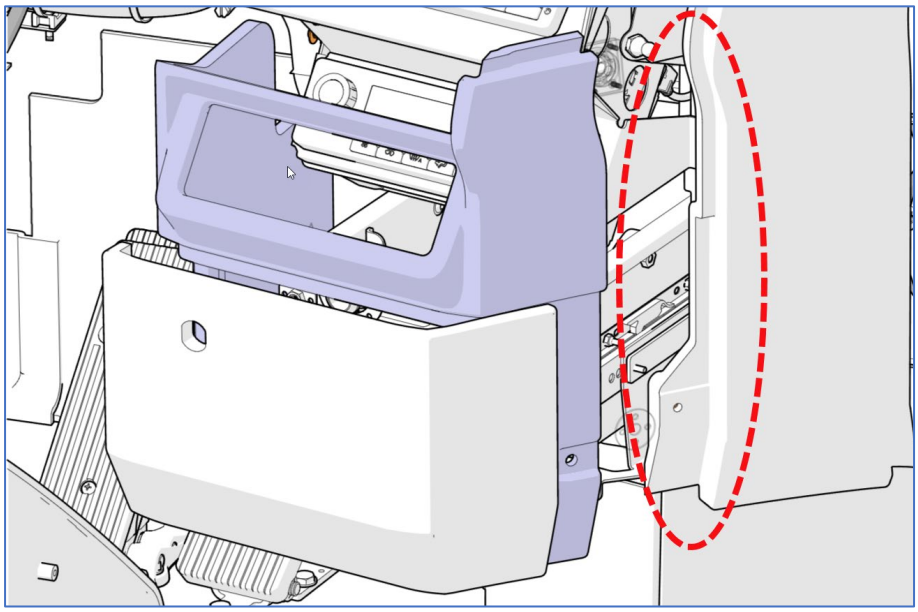


FIGURE 18

6. Disconnect the hose shown on the image below.

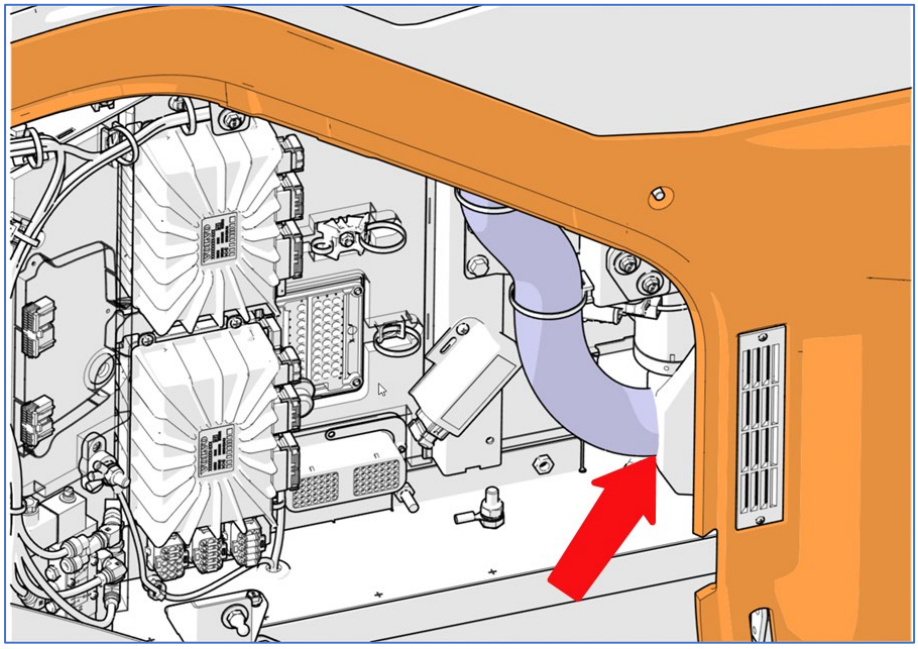


FIGURE 19

7. Remove the handrail. To do so, remove the three (3) cap screws shown on the image below.

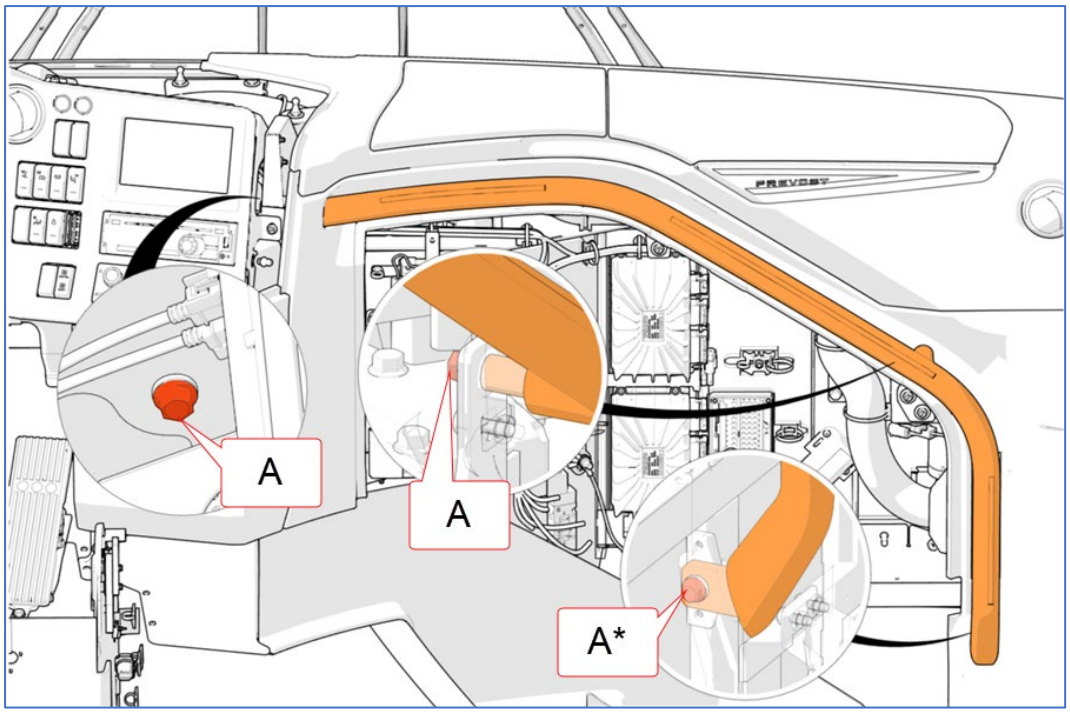


FIGURE 20

A= cap screw + washer TORQUE 14 lb-ft

A*= cap screw + washer + square plate TORQUE 14 lb-ft

8. Remove the panel shown on the image below. To do so, perform the following steps.

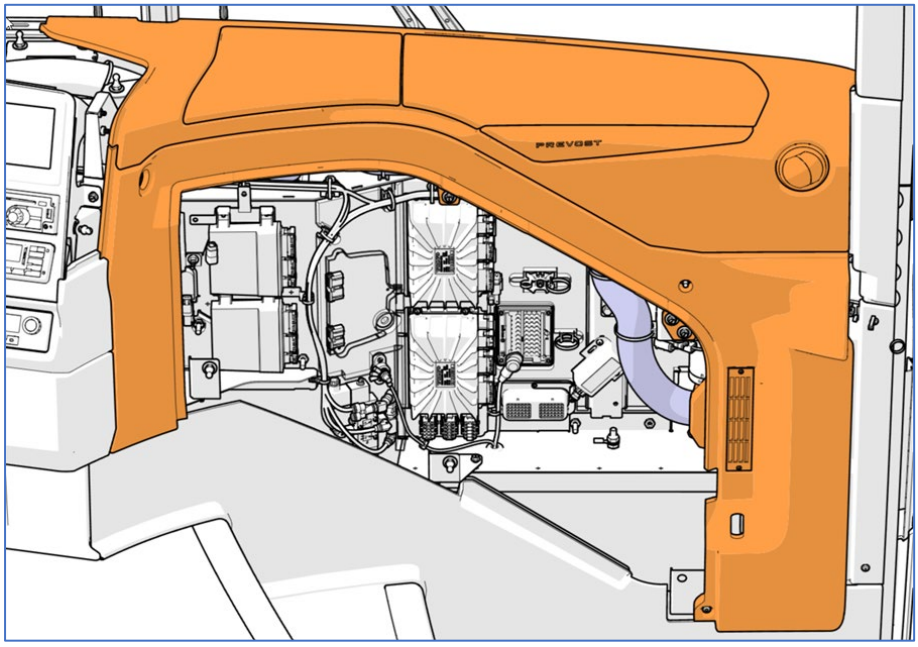


FIGURE 21

9. Remove the four (4) fasteners shown on the image below.

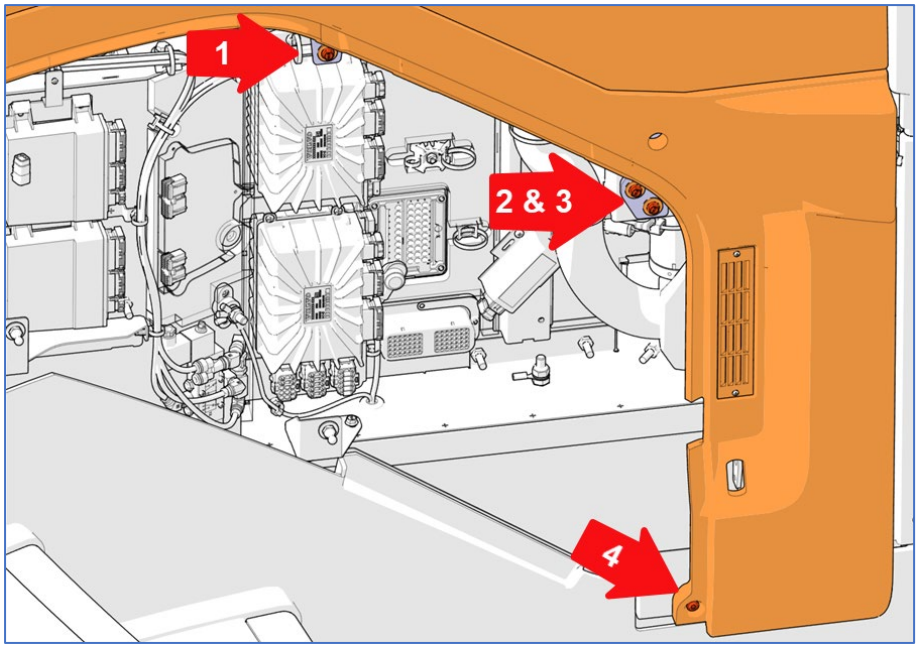


FIGURE 22

10. To remove the panel, first, remove the screw shown on the image below. ***NOTE: The panel is shown "ghosted" on the image to allow localization of the screw.***

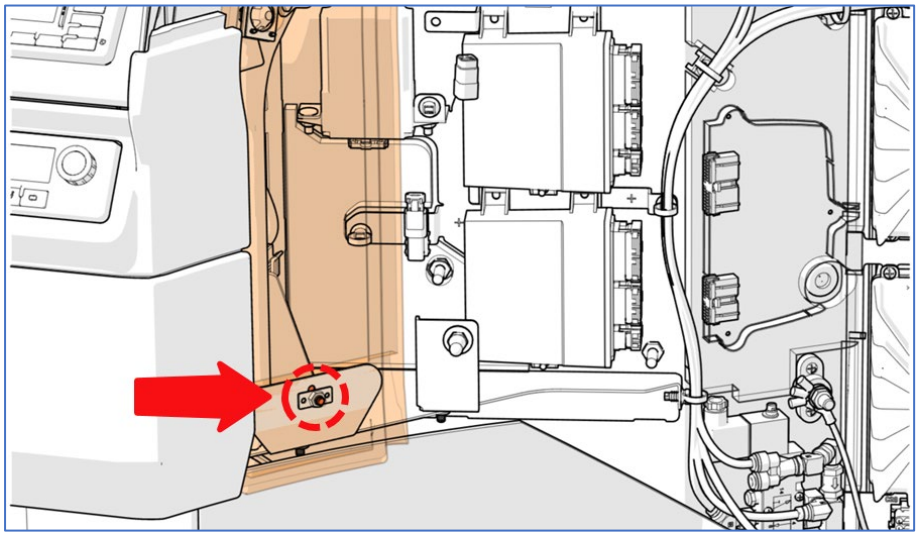


FIGURE 23

11. To remove the panel, first, remove the two (2) screws identified on the images below.

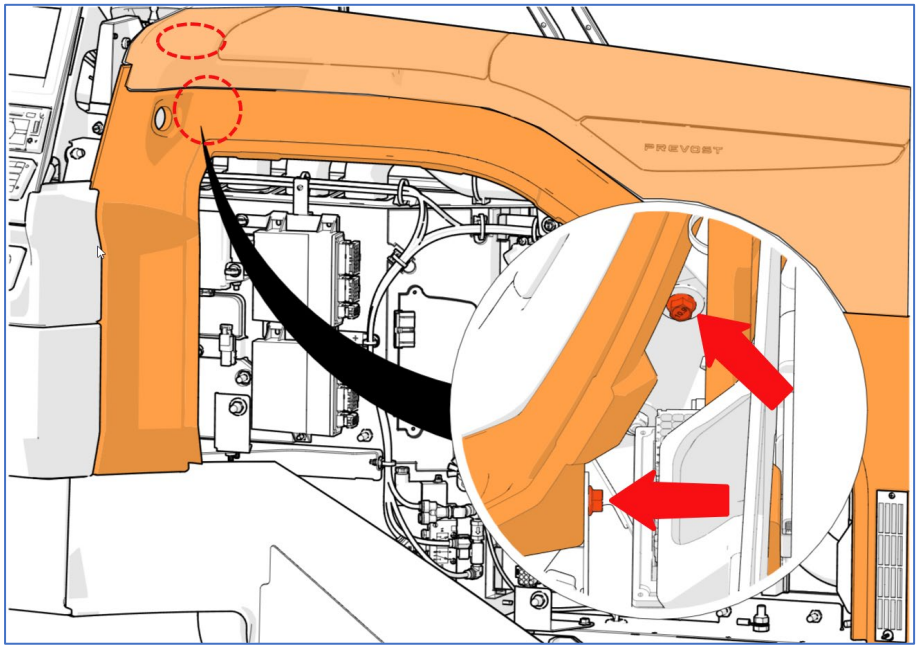


FIGURE 24

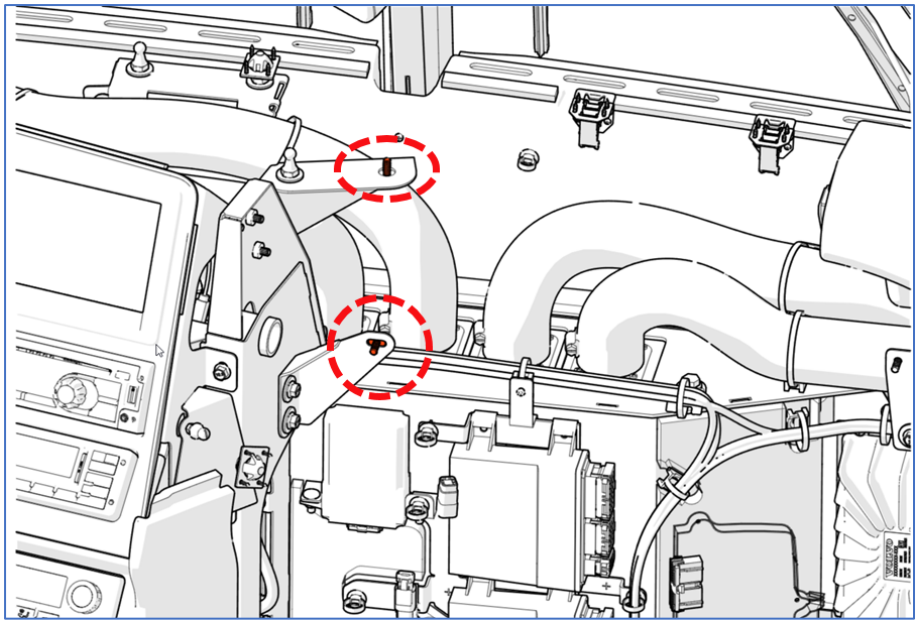


FIGURE 25: WITH PANEL GHOSTED TO HELP LOCATE THE POSITION OF THE SCREWS

12. To remove the panel, pull (unsnap) at the six (6) locations identified on the image below.

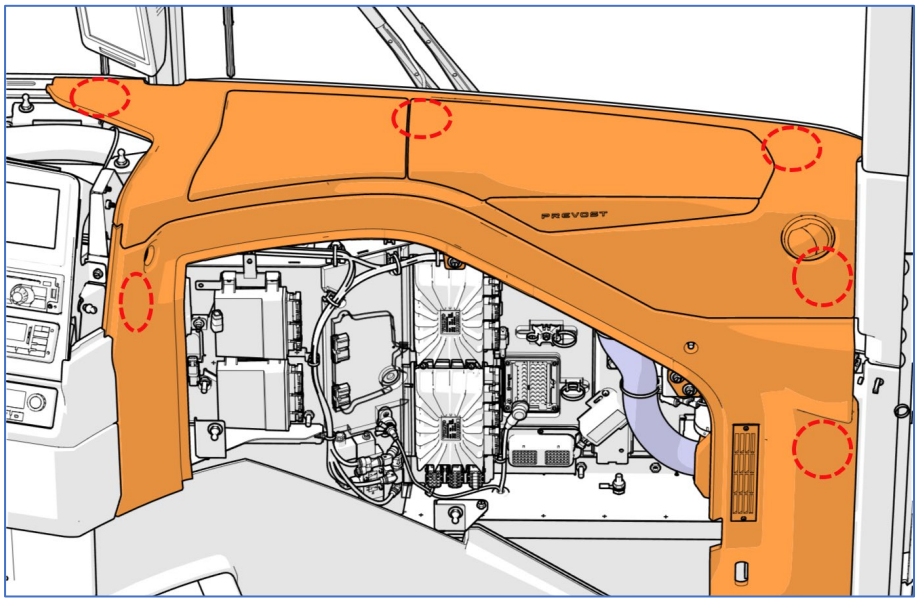


FIGURE 26

13. Once unsnap, pull with a light force to detach the panel.
14. Disconnect the register hose and the daylight sensor connector from the R.H. side of the panel.

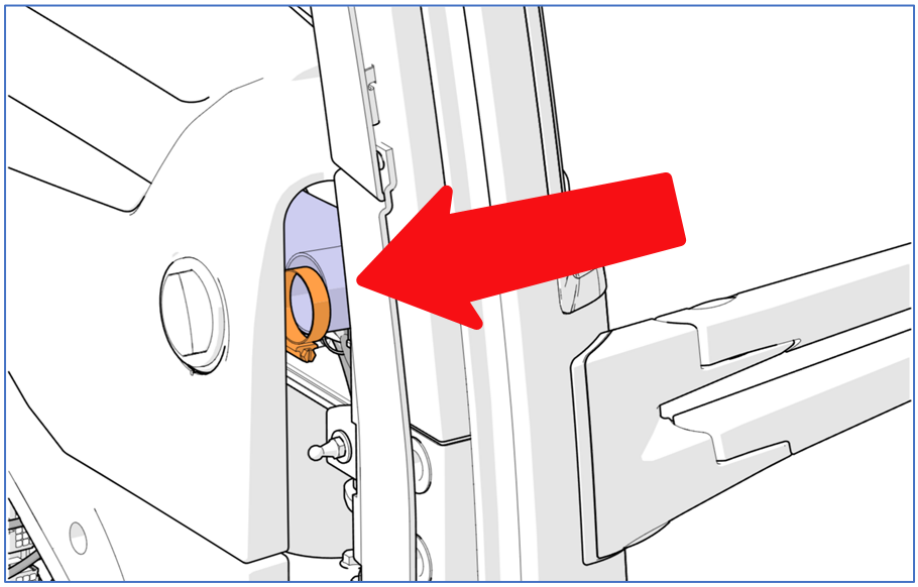


FIGURE 27

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