

SECTION 18: BODY

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1. EXTERIOR COMPARTMENT DOORS

The following figures identify all exterior compartments and access doors.

1.1 XL-40 Converted Vehicle

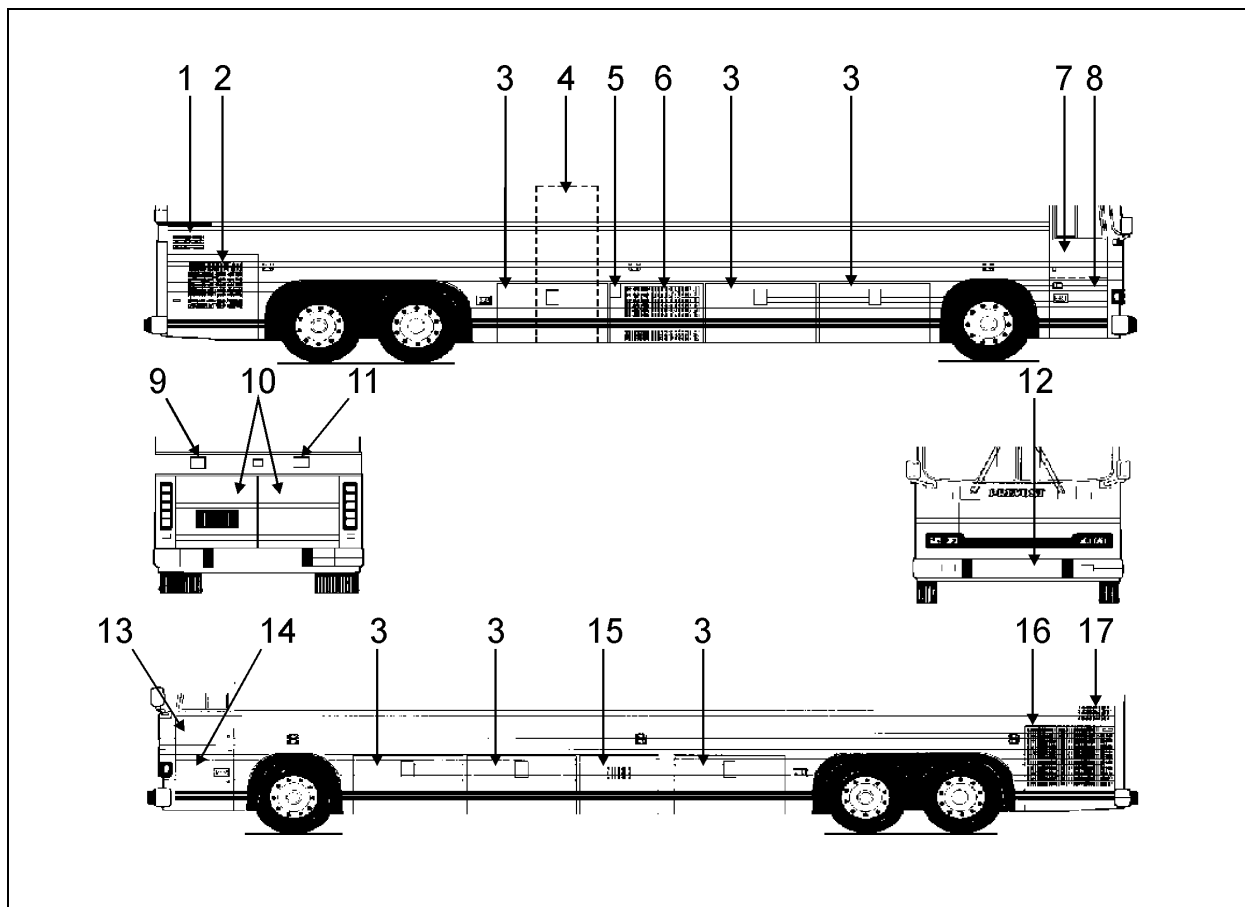


FIGURE 1: EXTERIOR COMPARTMENT DOORS (XL-40 CONVERTED VEHICLE)

18030

- | | |
|--------------------------------------|---|
| 1. Engine air intake duct | 10. Engine rear doors |
| 2. Engine compartment R.H. side door | 11. Engine oil reserve tank filling (block heater plug) |
| 3. Baggage compartment | 12. Reclining bumper compartment |
| 4. Central door (Optional) | 13. Front electrical compartment |
| 5. Fuel tank filling door | 14. Steering compartment |
| 6. Condenser or Baggage compartment | 15. A/C & heating or Baggage compartment |
| 7. Front entrance door | 16. Engine L.H. side door |
| 8. Right front storage compartment * | 17. Engine air intake duct |
| 9. Coolant surge tank filling door | |

* - (Optional) - Only on vehicles equipped with a central door and no entrance door.

1.2 XL-45 Converted Vehicle

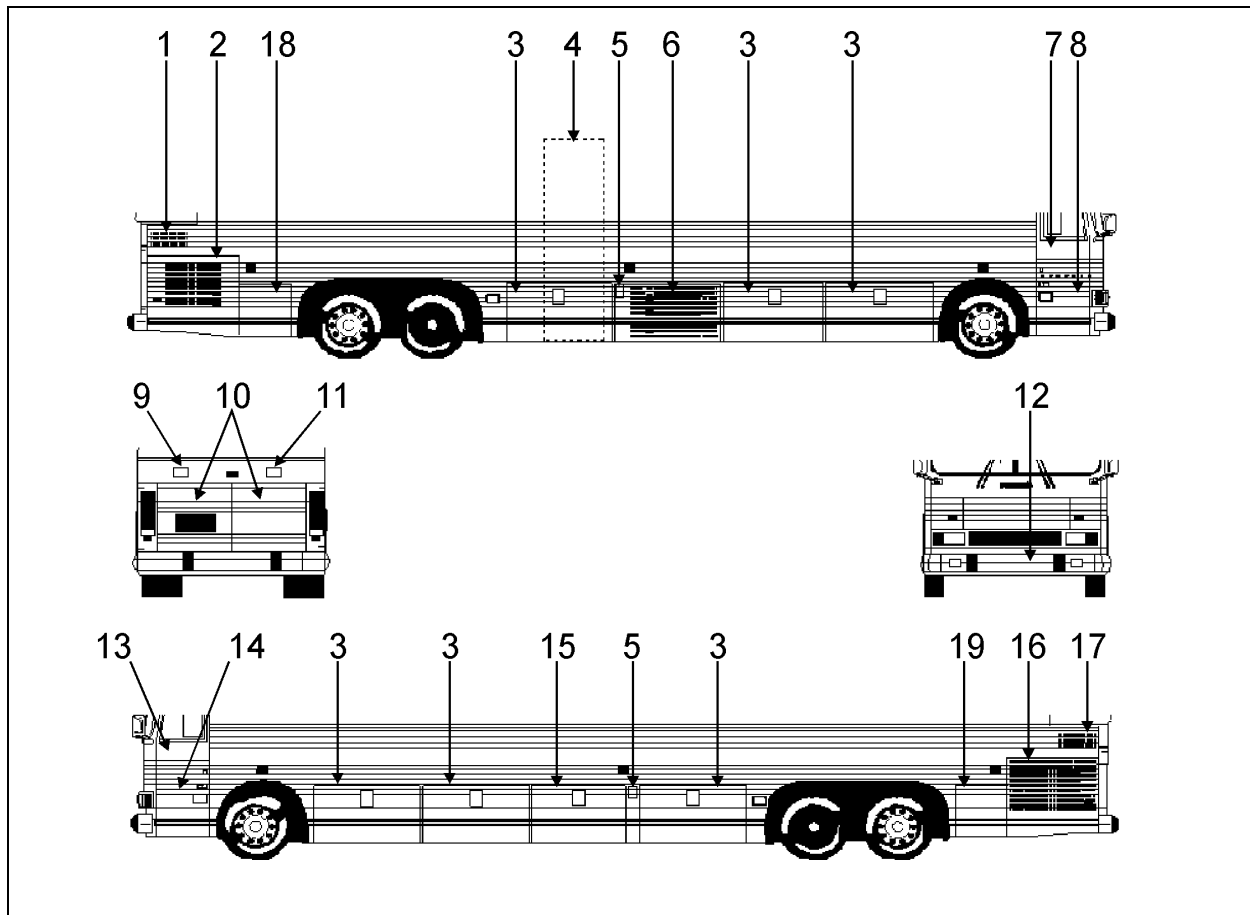


FIGURE 2: EXTERIOR COMPARTMENT DOORS (XL-45 CONVERTED VEHICLE)

18031

- | | |
|---|---|
| <ul style="list-style-type: none"> 1. Engine air intake duct 2. Engine R.H. side door 3. Baggage compartment 4. Central door (Optional) 5. Fuel tank filling door 6. Condenser or baggage compartment 7. Front entrance door 8. Right front storage compartment * 9. Coolant surge tank filling door | <ul style="list-style-type: none"> 10. Engine rear doors 11. Engine oil reserve tank filling (block heater plug) 12. Reclining bumper compartment 13. Front electrical compartment 14. Steering compartment 15. A/C & heating or baggage compartment 16. Engine L.H. side door 17. Engine air intake duct 18. R.H. side rear service compartment 19. L.H. side rear service compartment |
|---|---|

* - (Optional) - Only on vehicles equipped with a central door and no entrance door.

1.3 XL-45E Converted Vehicle

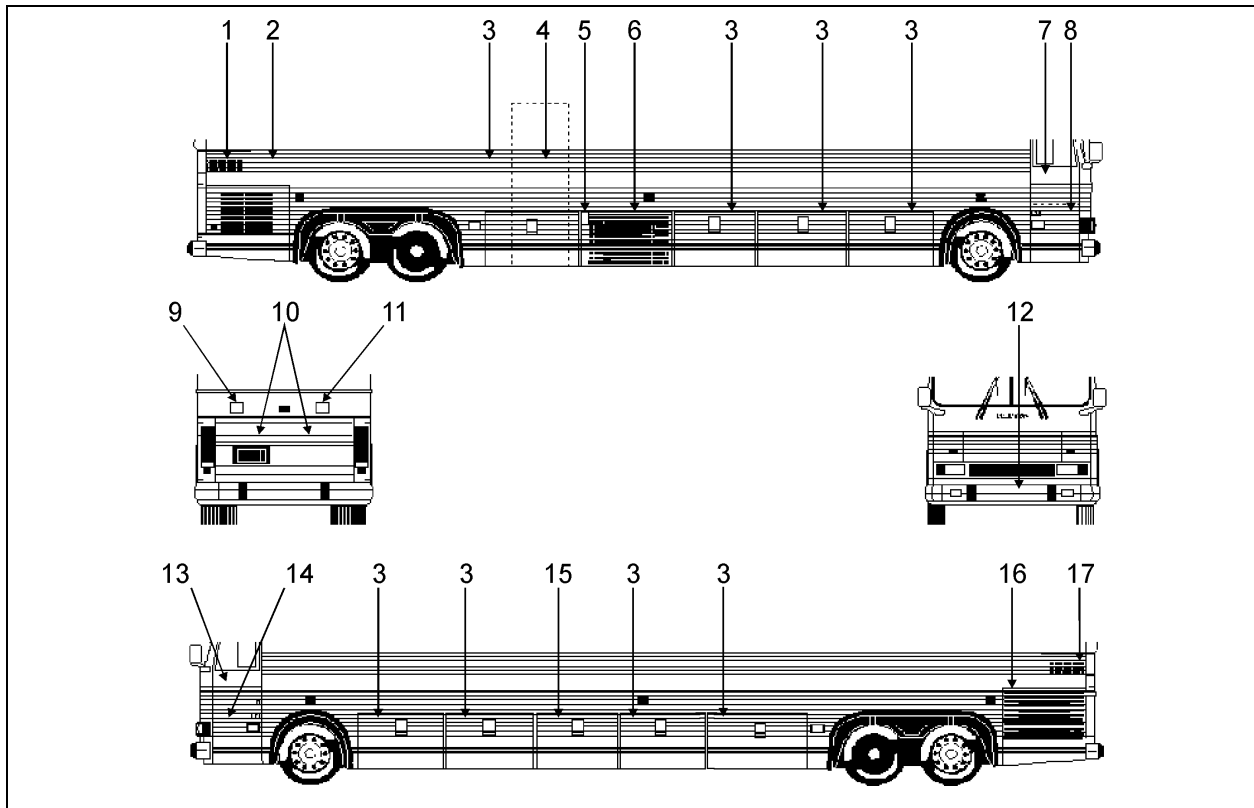


FIGURE 3: EXTERIOR COMPARTMENT DOORS (XL-45E CONVERTED VEHICLE)

18032

- | | |
|---|---|
| <ul style="list-style-type: none"> 1. Engine air intake duct 2. Engine R.H. side door 3. Baggage compartment 4. Central door (Optional) 5. Fuel tank filling door 6. Condenser or baggage compartment 7. Front entrance door 8. Right front storage compartment * 9. Coolant surge tank filling door | <ul style="list-style-type: none"> 10. Engine rear doors 11. Engine oil reserve tank filling
(block heater plug) 12. Reclining bumper compartment 13. Front electrical compartment 14. Steering compartment 15. A/C & heating or baggage compartment 16. Engine L.H. side door 17. Engine air intake duct |
|---|---|

* - (Optional) - Only on vehicles equipped with a central door and no entrance door.

1.4 XL-40 Coach

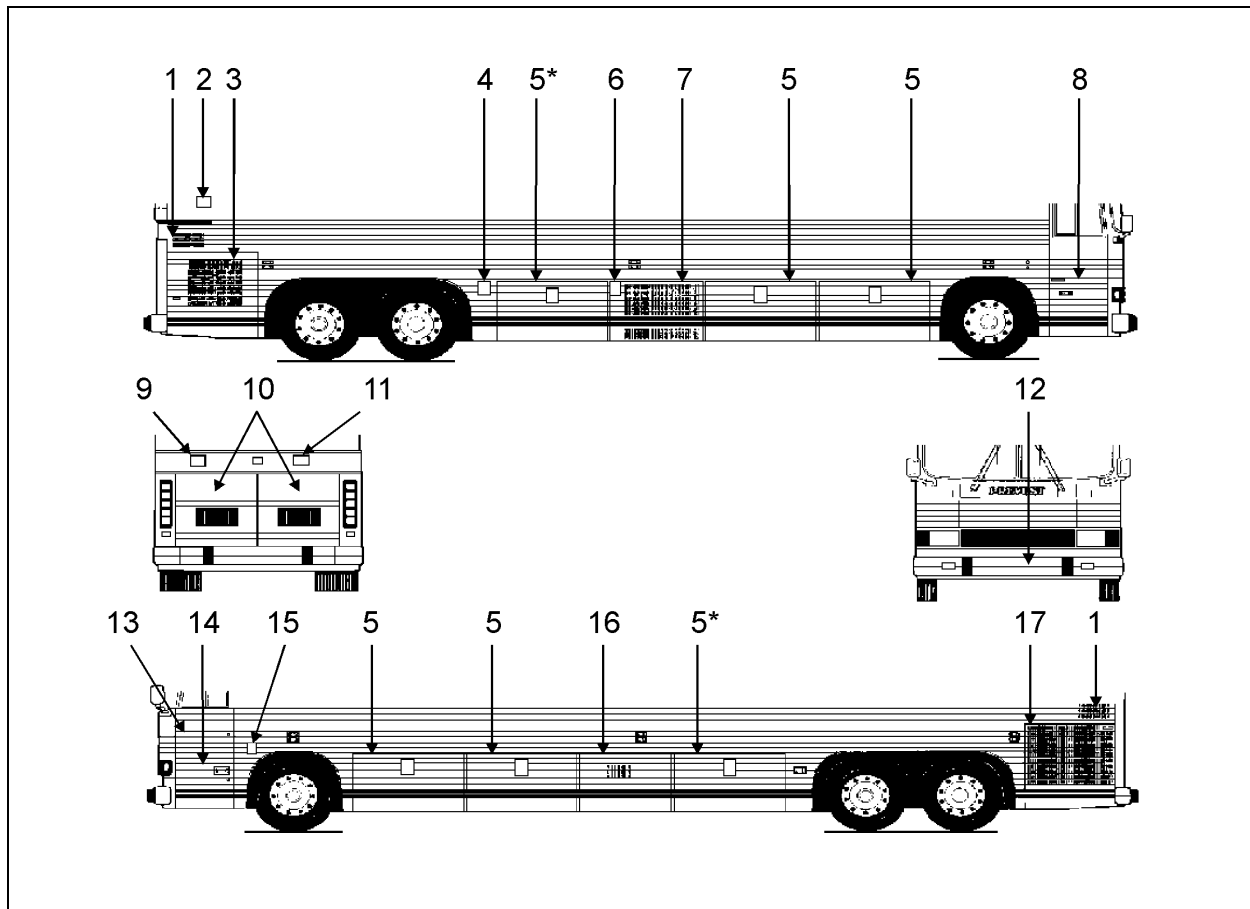


FIGURE 4: EXTERIOR COMPARTMENT DOORS (XL-40 COACH)

18030A

- | | |
|--|--|
| <ul style="list-style-type: none"> 1. Engine air intake duct 2. Lavatory access door 3. Engine R.H. side door 4. Main battery disconnect switch door 5. Baggage compartment
(* = Access to battery compartment) 6. Fuel tank filling door 7. Condenser or baggage compartment 8. Entrance door 9. Coolant surge tank filling door | <ul style="list-style-type: none"> 10. Engine rear doors 11. Engine oil reserve tank filling (block heater plug & water heater plug (optional)) 12. Spare wheel & tire compartment 13. Front electrical compartment 14. Steering compartment 15. 100 volts interior lighting (Optional) 16. A/C & Heating or baggage compartment 17. Engine L.H. side door |
|--|--|

1.5 XL-45 Coach

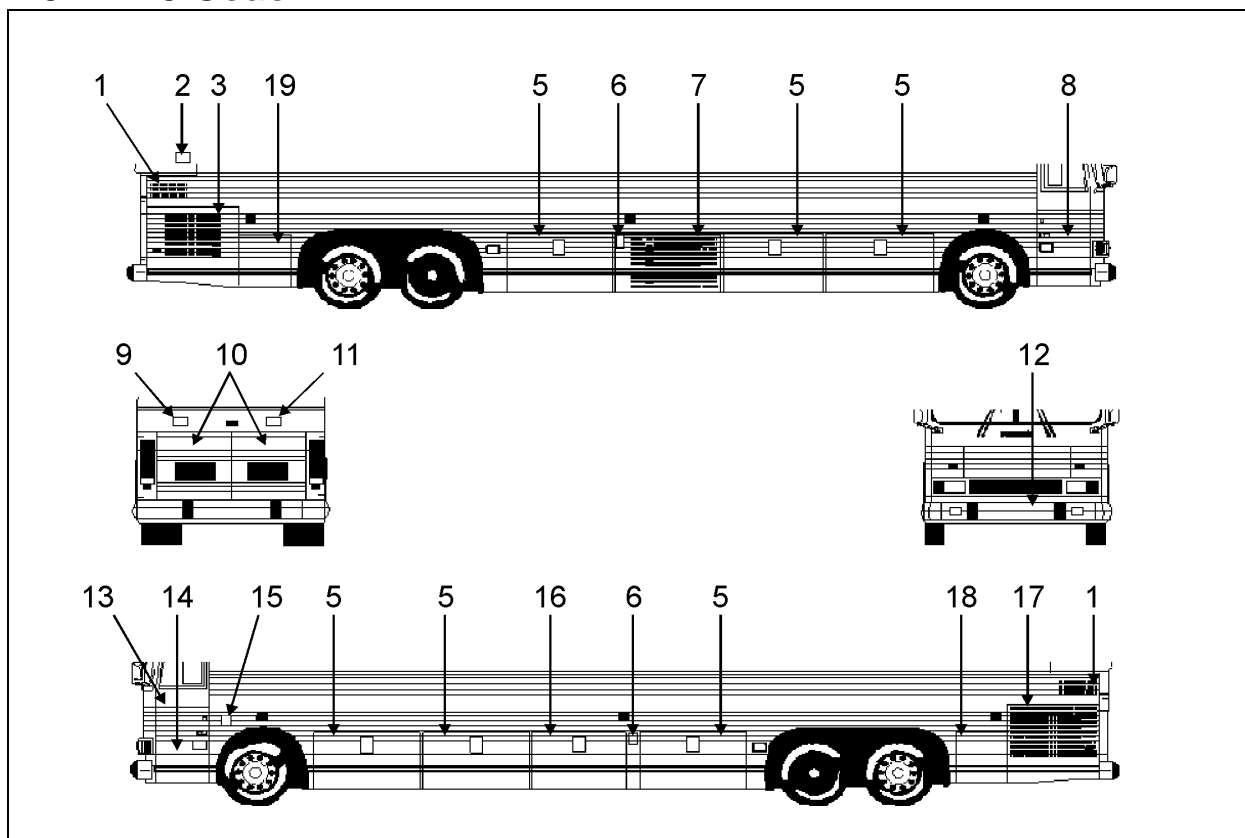


FIGURE 5: EXTERIOR COMPARTMENT DOORS (XL-45 COACH)

18031A

- | | |
|--|--|
| <ul style="list-style-type: none"> 1. Engine air intake duct 2. Lavatory access door 3. Engine R.H. side door 4. N/A 5. Baggage compartment 6. Fuel tank filling door 7. Condenser or baggage compartment 8. Entrance door 9. Coolant surge tank filling door | <ul style="list-style-type: none"> 10. Engine rear doors 11. Engine oil reserve tank filling (block heater plug & water heater plug (optional)) 12. Spare wheel & tire compartment 13. Front electric compartment 14. Steering compartment 15. 100 volts interior lighting (Optional) 16. A/C & Heating or baggage compartment 17. Engine L.H. side door 18. L.H. side rear service compartment 19. Main power compartment |
|--|--|

2. STRUCTURE

2.1 Description

The body of all XL 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 riveted 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 1/2" (13 mm) thick plywood separated by a 1/8" (3 mm) insulation to reduce power train and road noises.

2.2 Welding

The following welding rods should be used when making welding repairs to the structure:

Application	Diameter	A.W.S.
Stainless steel to stainless steel or Corten, light gauge	3/32" (2,4 mm)	No 308
Stainless steel to stainless steel or Corten, heavy gauge	1/8-5/32" (3,2-4 mm)	No 308
Corten to Corten, light gauge	3/32-1/8" (2,4-3,2 mm)	No 6011
Corten to Corten, heavy gauge	3/32-5/32" (2,4-4 mm)	No 7018

Since welding is a procedure that may be carried out either as specific instructions from Prévost 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. Set to the "Off" position the:
 - main battery disconnect switch (XL-40 coach);
 - Toggles switch and the battery master switch (XL-45 coach);
 - 12 and 24 volts main battery disconnect switch (XL-40, XL-45E and XL-45 converted vehicles).
4. Disconnect DDEC, ABS, electronically controlled transmission, and optional preheater control modules in order to protect these systems from voltage surges.
5. Always wear the appropriate safety equipment.
6. Weld in clean and well-ventilated area, and always have an appropriate fire extinguisher within your reach.

3. EXTERIOR MAINTENANCE

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

3.1 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 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 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 sanding 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.

4. FIBERGLASS REPAIR

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 the finishing operations are 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 skin 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.

4.1 Repair With 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 12 to 15 inches (305-380 mm) from repair.

Caution: Temperature should not exceed 200 °F (93 °C) 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 12 to 15 inches (305-380 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 with Fiberglass Paste" in this section.

4.2 Repair With 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 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.

4.3 Typical Fiberglass Repair Procedure

Remove all loose particles or damaged material using a power sander or rasp. Clean area, overlapping hole approximately 1" to 1-1/2" (25-40 mm) all around. Remove all dirt, grease and paint

from area to ensure good bonding surface. Feather the cleaned area all around (Fig. 6).

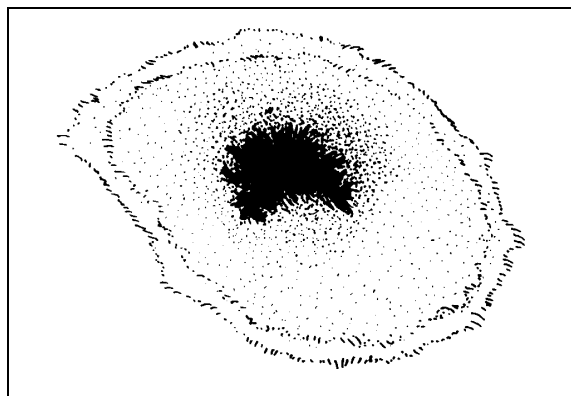


FIGURE 6: FIBERGLASS REPAIR

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 (Fig. 7).

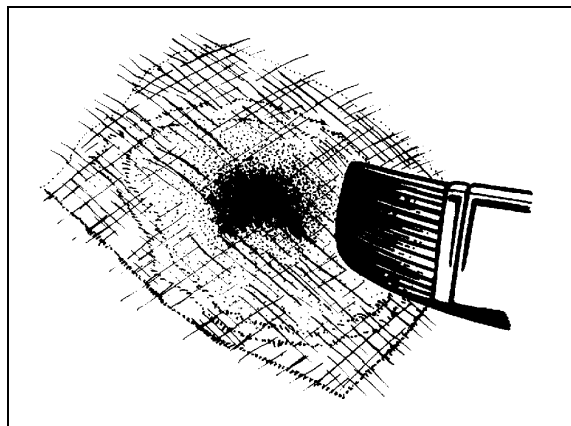


FIGURE 7: FIBERGLASS REPAIR

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 1-1/2 oz (43 g) mats and one 9 oz (255 g) cloth (Fig. 8).

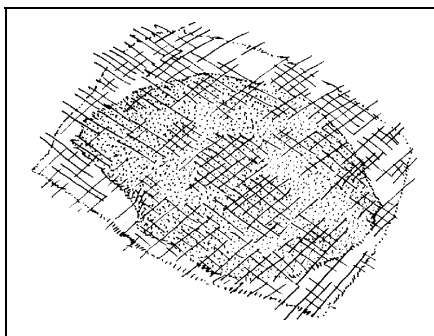


FIGURE 8: FIBERGLASS REPAIR 18091

Allow area to harden and contour the area with coarse sandpaper #100 (Fig. 9).

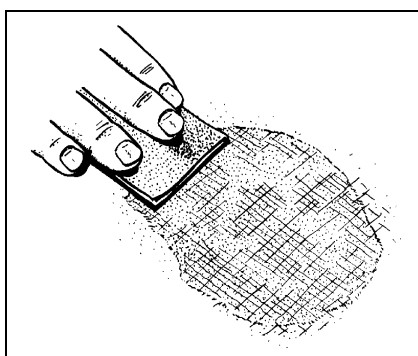


FIGURE 9: FIBERGLASS REPAIR 18092

Cover the area with a layer of resin putty and allow to dry for approximately 15 to 20 minutes (Fig. 10).

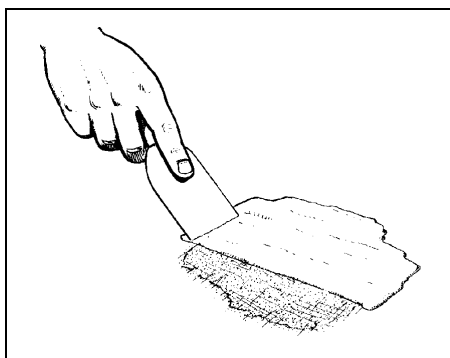


FIGURE 10: FIBERGLASS REPAIR 18093

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.

5. PAINTING

The standard paint used on the exterior of the vehicle is Deltron PPG. 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.

5.1 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 packagings, 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.

5.2 Surface Preparation

5.2.1 Aluminum and Stainless Steel Surfaces

Sand large surfaces with P150 grit sandpaper and other surfaces with "Scotch-Brite" or similar abrasive pad.

Note: It is recommended to sandblast stainless steel rivets and panels overlap with Olimag # 35-70. Do not sandblast with steel abrasive.

5.2.2 Fiberglass Surface

Sand large surfaces with P180 grit sandpaper and other surfaces with "Scotch-Brite" or similar abrasive pad.

5.2.3 Washing

1. With an air pressure jet, clean the surface from top to bottom and from front to back.
2. Clean the entire surface with a tag rag.
3. Wash the entire surface with a mix of thinner (2 parts) and isopropyl alcohol (1 part). Wash small zones and wipe before the surface dries by itself.

5.3 Primer Application

Warning: Always prepare primer in well ventilated area.

5.3.1 Aluminum and Stainless Steel Surfaces

1. Stir primer for two minutes.
2. Mix: 1 part PPG epoxy primer DP-40 (Prévost part no 681078).
1 part PPG epoxy activator DP-401 (Prévost part no 681079).
3. Wait 30 minutes before application.
4. Adjust gun pressure to 45 psi (310 kPa).
5. Spray a wet coat uniformly while holding gun at 8" (20 cm) and perpendicular to the surface.
6. Allow 1 hour to dry, and not more than a week before painting.

5.3.2 Fiberglass Surface

1. Stir primer during 2 minutes.
2. Mix: 5 parts PPG high solid primer K-36 (Prévost part no 681927).
1 part PPG activator K-201 (Prévost part no 681928).
1 part PPG thinner DT-895 (Prévost part no 681926).
3. Adjust gun pressure to 45 psi (310 kPa).
4. Spray a wet coat uniformly while holding gun at 8" (20 cm) and perpendicular to the surface.
5. Allow 1 to 2 hours to dry.

5.4 Painting

Sand the entire surface with P320 grit sandpaper. Wash the surface in accordance with the washing procedure described in the surface preparation section.

5.4.1 PPG Paint Application

1. Clean the entire surface with a tag rag.
2. Using a paint gun, apply PPG anti-static DX-103 (Prévost part no 682003) while holding the gun at 12" to 15" (30 to 38 cm) from the surface.
3. Mix: 1 part PPG base color DBU.
1 3/4 parts PPG reactive thinner DRR-1185 (681931).
4. Adjust gun pressure to 45 psi (310 kPa) for solid color or to 55 psi (380 kPa) for metallic color.
5. Spray color uniformly while holding gun 8" to 12" (20 to 30 cm) and perpendicular to the surface. Repeat until you have a good color coverage (3 to 5 coats). Wait 5 to 10 minutes between each coat.
6. Allow 1 hour to dry.

5.4.2 PPG Clear Application

1. Wash the surface with rags and a solution of water (3 parts) and isopropyl alcohol (2 parts).
2. Apply PPG anti-static DX-103 (Prévost part no 682003) while holding the gun at 12" to 15" (30 to 38 cm) from the surface.
3. Clean entire surface with a tag rag.
4. Mix: 2 parts PPG clear DCU-2001 (Prévost part no 681929).
1 part PPG thinner DT-885 (Prévost part no 681925).
1 part PPG activator DU-6 (Prévost part no 681930).
5. Adjust gun pressure to 55 psi (380 kPa).
6. Spray a coat uniformly while holding the gun at 8" (20 cm) and perpendicular to the surface. Wait 5 to 10 minutes and spray a second clear coat.
7. Allow 16 hours to dry.

6. DECAL APPLICATION

Allow paint to dry 3 to 4 days before performing decal application, to prevent blistering when applying decals over new paint. Remove wax and grease over the surface before the application of decals. Apply decals at a temperature between 15 - 30 °C.

7. EXTERIOR REAR VIEW MIRRORS

The standard vehicle is equipped with two manually adjustable exterior rear view mirrors, one on each side of the vehicle (Fig. 11).

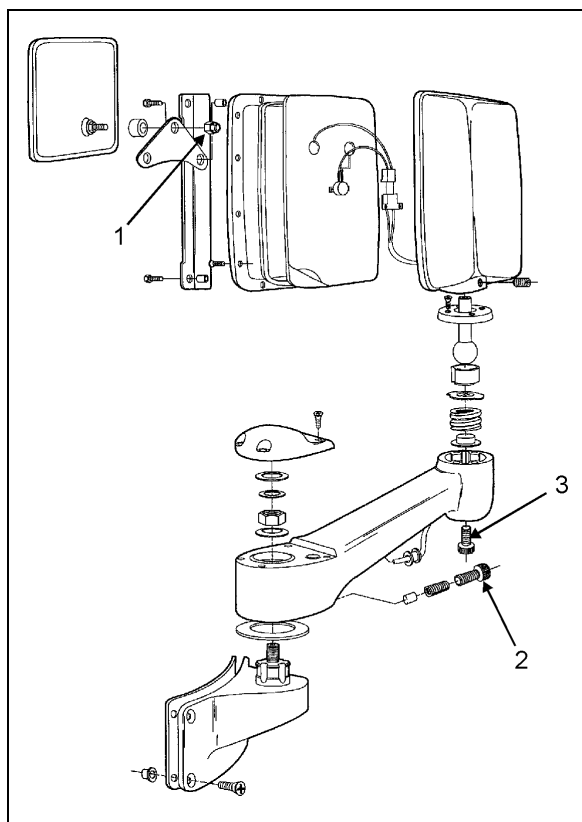


FIGURE 11: STANDARD MIRROR

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The mirrors have a replaceable glass which can easily be replaced if damaged or broken, and are equipped with an electric heating element to prevent snow and ice build-up in freezing weather conditions. The heating elements of both mirrors are turned on and off simultaneously by a switch located on the L.H. side control panel and are controlled by thermostats behind the mirror glass.

The vehicle may also be equipped with optional electrically adjustable, dual-glass mirrors (Fig.12).

Convex mirror head can be rotated and/or tilted by loosening the adjusting nut (1, Fig. 11) located at the rear of mirror. Adjust to desired position, then tighten adjusting nut.

The optional "RAMCO" mirrors can easily be adjusted by using the remote controls located on L.H. lateral console.

Caution: Do not overtighten. Do not install a convex mirror on the heated mirror glass. This prevents even distribution of heat in the heated mirror and could cause the glass to break.

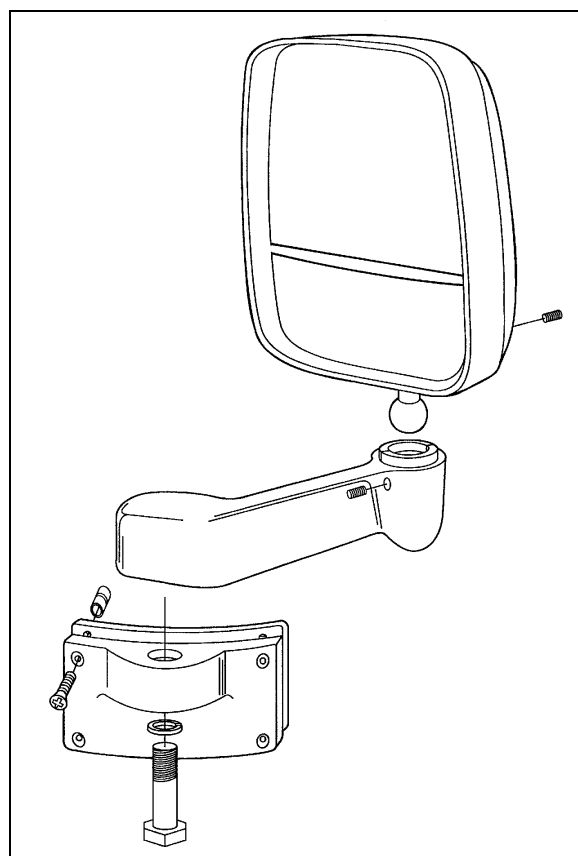


FIGURE 12: OPTIONAL "RAMCO" MIRROR

18138

7.1 Cleaning

Clean the mirrors with a soft cloth and mild detergent and water, or a quality glass cleaner. Do not clean the mirrors with a dry cloth or abrasive materials. Be careful when removing ice from mirrors to avoid damaging the reflective surface.

7.2 Manual Mirror Adjustment

Mirror arm can be moved to a different angle by manually moving the arm to the desired detented position.

Note: A clicking sound may be heard when pin falls in a detent .

The arm must move with relative ease. If arm is hard to move, loosen hex socket cap screw (2, Fig. 11) at the body end of the mirror arm to relieve tension on spring. If arm moves too easily, tighten the hex socket cap screw to increase pressure on the tension spring.

Caution: Do not overtighten hex socket cap screw or spring failure may result. Do not leave the arm between 2 detents (Fig. 13).

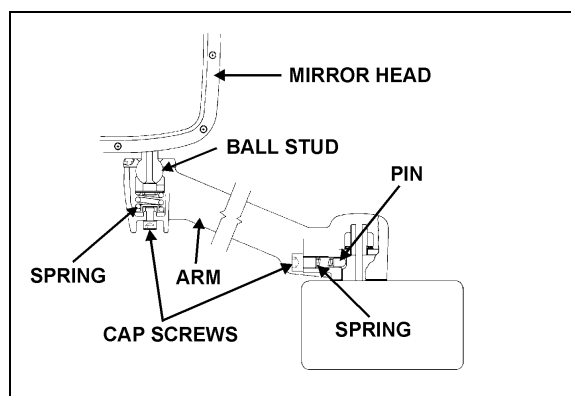


FIGURE 13: MIRROR ASSEMBLY

18139

Change the angle of the mirror head or tilt up or down by manually moving the mirror head with both hands. The hex socket cap screw (3, Fig. 11) at mirror end of arm under the ball stud assembly on the mirror arm can be loosened or tightened to adjust the resistance of the mirror head movement.

Caution: Do not overtighten hex socket cap screw to prevent spring and/or ball stud failure.

8. ENTRANCE DOOR

8.1 Coach Entrance Door

8.1.1 Operation

The major components of the entrance door opening/closing, and locking system are:

- door panel;
- door opening handle;
- 3-way air valve;
- rod assembly;
- door lock cylinder assembly.

The sedan-type entrance door is manually operated. The door is held in the closed position during coach operation by a locking mechanism actuated by a single-acting, spring-loaded pneumatic cylinder. Air flow to the cylinder is controlled by a 3-way air valve located under the dash. The 3-way air valve is actuated by a plate mounted on the rod assembly. The plate moves with the rod assembly as the door is opened or closed, and acts upon a lever on the 3-way valve (Fig. 14).

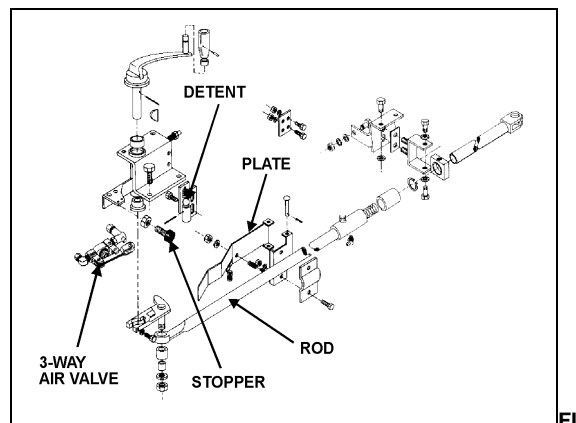


FIGURE 14: DOOR OPENING HANDLE

18140

From the door open position, pulling the door operating handle pulls the rod assembly in and closes the door. When the handle reaches the end of its closing stroke, the plate slides on the roller of the 3-way valve lever and pushes the plunger in the valve to divert air pressure to the piston end of the door lock cylinder. The cylinder extends and pushes the latch in the opening of the door frame to lock the door.

Pulling the operating handle to open the door moves the rod assembly out, and releases the 3-way valve lever allowing the air cylinder to vent through the piston end port. The return spring on the cylinder retracts the rod and releases the latch from the door allowing it to open (Fig. 15).

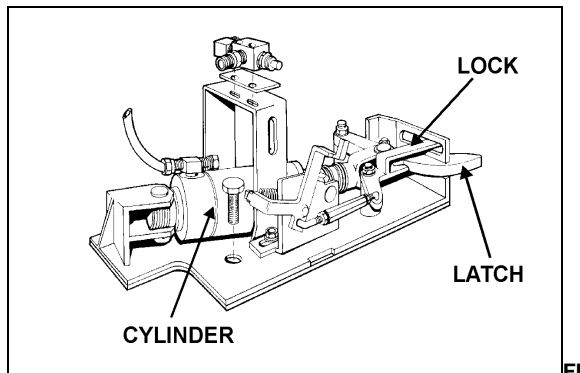


FIGURE 15: DOOR LOCK CYLINDER

18141

A switch located on the R.H. side lateral console allows bypass of the 3-way air valve and opens the control valve circuit to vent the door lock cylinder. It can be used in case of emergency when the door control system does not operate properly.

The door can be locked with the air cylinder from outside the vehicle by simply pushing the door in its portal. The button outside the vehicle next to the door is linked to a valve on top of the lock cylinder. Pushing the button moves the valve to vent the cylinder and releases the door which can then be opened. The outside key lock moves a mechanical stopper mounted on the lock cylinder assembly, which prevents the cylinder rod to retract even if the cylinder is permitted to vent. The stopper can also be accessed from inside the vehicle (Fig. 16).

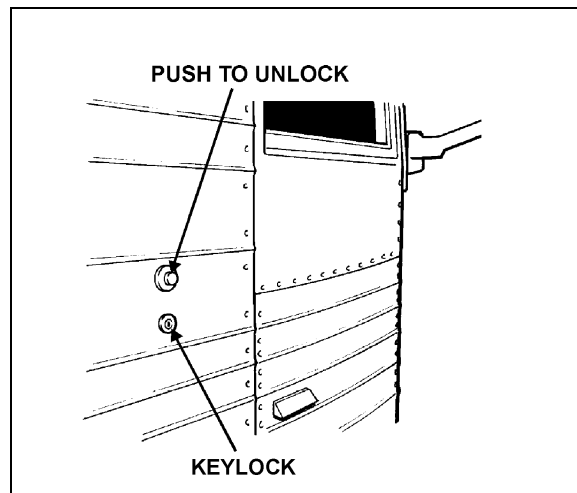


FIGURE 16: ENTRANCE DOOR

18142

8.1.2 Adjustments

The various components of the door opening/closing mechanism can be accessed by removing the dash panel above the entrance door steps. Remove the panel by turning the two fasteners counterclockwise, then lift and remove the panel.

8.1.3 3-Way Air Valve

Proper actuation timing of the 3-way air valve is important for proper operation. Timing is correctly adjusted when the plate seats the plunger fully in the valve body when door is entered in the portal and the door handle detent lever has yet to go over the detent ball.

Caution: *The 3-way air valve must be actuated only when door is fully closed. If the valve actuates too soon, the door lock cylinder will actuate before the door fully closes. If the valve does not actuate when the door closes, the cylinder will not operate to lock the door.*

8.1.4 Door Control Rod

The door control rod links the door to control handle. The larger diameter portion of the rod acts as a cylinder in which the smaller diameter rod can retract approximately 5/8" (16 mm). The cylinder is filled with grease and has a spring that applies pressure to extend the rod out. The cylinder absorbs shock loads on the door opening/closing mechanism when the door is operated.

The entrance door operating control rod is factory adjusted on the vehicle. Field adjustment should not be part of the regular entrance door maintenance schedule. If the control rod is replaced, the length of new control rod can be adjusted by turning the rod in the cylinder to shorten, or out to lengthen. The control rod adjustment should not be altered to compensate for wear of the various pivot points on the assembly.

8.1.5 Door Control Handle

The stroke of the door control handle is adjusted with 2 rubber stoppers on which the handle lever bottoms at the end of each stroke. To adjust, loosen the nut behind the mounting plate, turn the stopper in or out as desired and tighten the nut.

8.1.6 Door Adjustment

The entrance door can be adjusted vertically and laterally, and can be moved in or out. Modifying the height or lateral adjustment of the door can be made by loosening 3 cap screws fastening each of the upper and lower hinges to the door and repositioning the door as desired. Vertical and horizontal adjustments can be made by adding or removing shims between the upper or lower hinge plates and the door accordingly (Fig. 17).

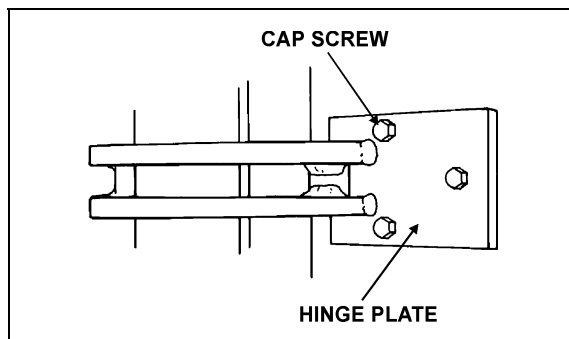


FIGURE 17: HINGE

18143

8.2 Converted Vehicle Entrance Door

8.2.1 Operation

The converted coach entrance door is manually operated with interior door handles controlling a single latch. The door is securely held closed during operation of the vehicle by a single-acting, spring-loaded air cylinder and locking device (Fig. 18).

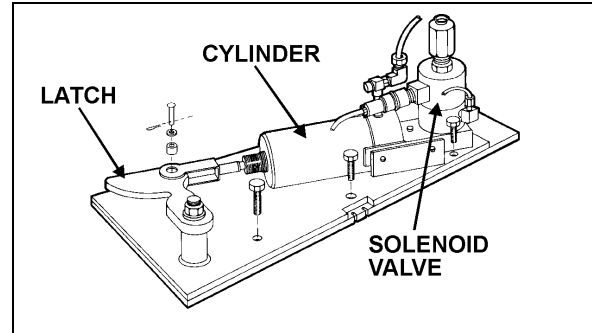


FIGURE 18: DOOR LOCK CYLINDER

18144

The cylinder is operated by a switch on the R.H. lower switch panel. Push down on the switch to lock the door and up to unlock. Pushing down on the switch actuates a 24 volts solenoid valve mounted on the air cylinder, which allows air to enter cylinder and lock the door. Pushing up on the switch allows the cylinder to vent and an internal spring to retract the rod and unlock the door. The door can also be key-locked from outside the vehicle and with the swivel lock from inside the vehicle.

Caution: It is strongly recommended to secure the door closed with the air cylinder locking mechanism when traveling.

8.2.2 Door Adjustment

The entrance door can be adjusted vertically and laterally, and can be moved in or out. Modifying the height or lateral adjustment of the door can be made by loosening 3 cap screws fastening each of the upper and lower hinges to the door and repositioning the door as desired. Vertical and horizontal adjustments can be made by adding or removing shims between the upper or lower hinge plates and the door accordingly (Fig. 17).

9. BAGGAGE COMPARTMENT DOORS

The baggage compartment doors on the vehicle are of identical design. The doors are pantograph, vertical-lift type and are fully sealed. Each door has a flush-mounted latch handle. To open, lift latch handle, then pull door outward and up. The door is held open by 2 gas-charged cylinders. To close, leave latch handle in the open position, pull downward on door and push down on latch to secure door. The door lower arm is spring loaded

to secure effort required to close the door (Fig. 19).

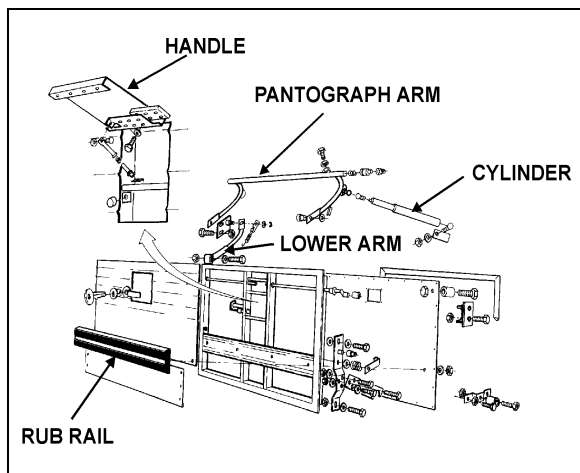


FIGURE 19: BAGGAGE COMPARTMENT 18145

If a door does not remain in the fully open position, one or both cylinders on that door is (are) defective. To test the cylinders, first support the door in the open position with proper equipment. Disconnect the rod end of one cylinder and retract the rod. If strong resistance is felt, the cylinder is in good condition and can be reinstalled. If the rod retracts with little effort, the cylinder is defective and should be replaced at once. Use the same procedure to test the other cylinder on that door.

9.1 Door Removal

Caution: Two people are required to remove the baggage compartment doors.

1. Maintain the door halfway open by placing a wooden block between one of the pantograph arms and the upper frame.
2. Remove cap screw, lock washer and flat washer retaining lower arm to door
3. Remove spring pins and lock washers fastening the pantograph arms to the door.

Warning: Support the door properly to prevent it from falling.

4. Spread the pantograph arms away from the door and remove door.
5. Inspect all pivot points and bushings for wear and damage. Check tension of gas-charged cylinders and replace if necessary.

9.2 Pantograph Arms Removal and Installation

1. Disconnect rod end of gas-charged cylinders from the pantograph arms.
2. Loosen jam nut and cap screw locking the horizontal member of the pantograph to the pivot pin.
3. Slide pantograph assembly to the right and remove assembly from the vehicle.
4. To install, perform the removal instructions in reverse.

9.3 Door Installation

1. Use a wooden block to support the pantograph arms horizontally.
2. Support the door and insert each pantograph arm into the pivot pins on the side of the door.
3. Install washer and spring pin to fasten each arm to its pivot pin.
4. Fasten lower arm to the door with flat washer, lock washer and cap screw.
5. Remove wooden block and close baggage compartment door.

Door should be adjusted to leave a gap of 3/16" (5 cm) above the top edge of the door. To adjust, loosen the bolts retaining lock plate support and position the door correctly. Tighten the bolts after the adjustment.

If the baggage door locks to tightly or too loosely, the position of the catch striker is misadjusted. To adjust, loosen the catch striker retaining bolts, position the striker correctly and tighten the retaining bolts.

If the lower part of the baggage door does not close evenly with the side of the vehicle, adjust the lock plates by loosening their retaining bolts and positioning the locking plates correctly (Fig. 20).

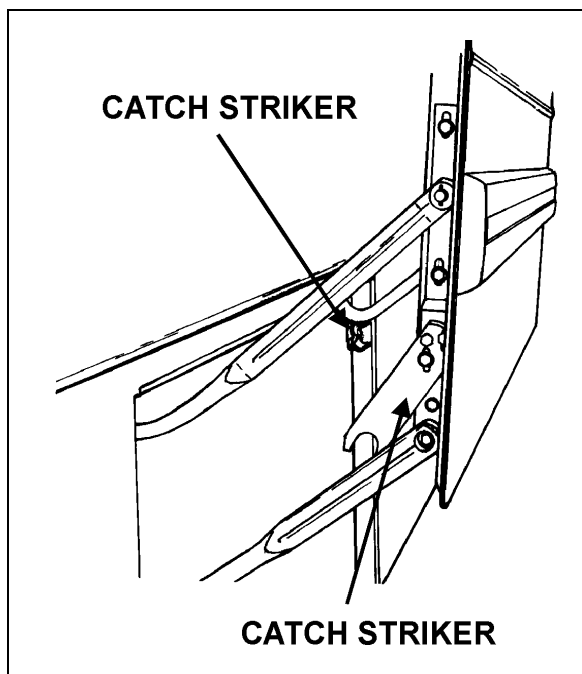


FIGURE 20: BAGGAGE COMPARTMENT DOOR 18146

10. SIDE WINDOWS

10.1 Adjustment of Emergency Exit Windows (Coach)

Some side passenger windows can be opened from the inside for emergency escape purposes (XL-40 = 4 on driver side and 3 on curb side -XL-45 = 4 on driver side and 4 on curb side). A decal indicating location of nearest emergency exit window is affixed at bottom of each side window. The upper section of each emergency side window is equipped with two blue lights that are activated by exterior lighting switch located on R.H. lower switch panel.

Warning: Decals can be ordered separately. Replace any missing or damage decals.

Caution: All emergency exit windows must be kept closed during normal operation. Do not slam the windows closed to avoid impairment of the emergency exit systems.

To open window, slide fingers under release bar, then push out bottom of window. Instruction decals are affixed to the release bar of each emergency exit window.

To close window, lift window release bar and pull window toward you.

Emergency exit windows should be checked periodically for ease of opening and closing. Pulling the release bar with both hands should release both locking mechanisms simultaneously and allow the window to swing out. The maximum effort required to release the window must not exceed 20 lb. (9 kg). Test and adjust as follows.

Note: A pulling bracket similar to the one shown in figure 21 is helpful when testing emergency window release mechanism.

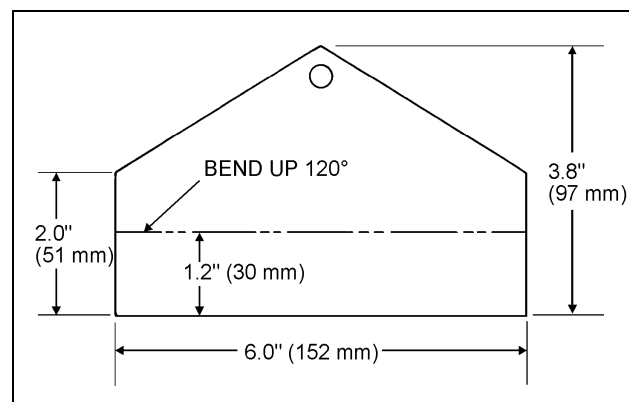


FIGURE 21: PULLING BRACKET 18147

1. Hook up the pulling bracket to the release bar and measure the effort required to release the window with a calibrated tensiometer while holding at 30° angle from horizontal (Fig. 22).

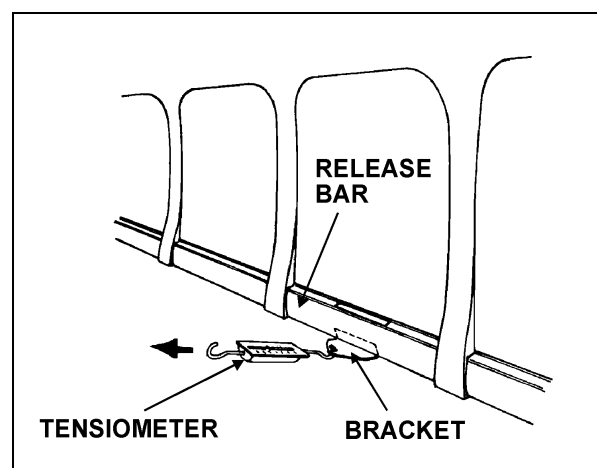


FIGURE 22: EMERGENCY EXIT WINDOW 18148

2. If the effort measured is over 20 lb. (9 kg), go to step 3. If within specification, test the next emergency opening window.

3. Open the window and bend latch and roller assembly out to decrease window release effort.
4. Test adjustment and correct if necessary.

Note: Latch and roller assembly may have to be realigned with the recess in the release bar after changing angle. Loosen 2 cap screws, adjust latch up or down and tighten cap screws (Fig. 23).

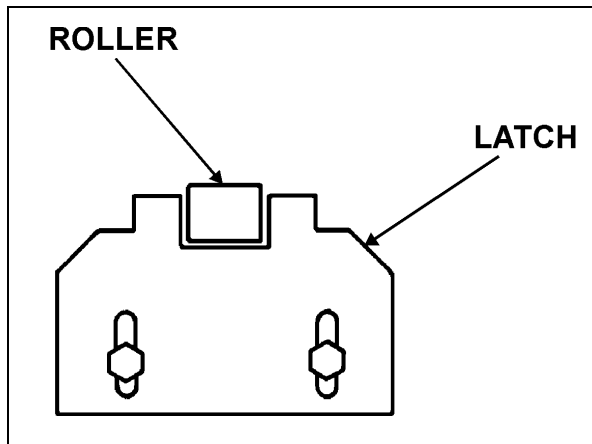


FIGURE 23: LATCH AND ROLLER ASSEMBLY 18149

10.2 Glass Replacement (Converted Vehicle)

Same procedures as windshield removal and installation.

10.3 Glass Replacement (Coach)

Each side window is laced to a fiberglass frame by means of a one-piece black rubber extrusion and fillerstrip, and sealed with Tremshield liquid butyl sealant. Proper installation of the side window glass is important to insure watertightness. Since glass varies in fit depending on the supplier, we recommend installing side window glasses obtained from Prevost Car Inc. to insure proper fit. Window panes obtained from other sources should be checked for proper size and curvature. See the following removal and installation procedure.

10.3.1 Removal

1. Remove interior trim around window. Remove 2 cap screws, brackets and washers from outside the window frame (Fig. 24).

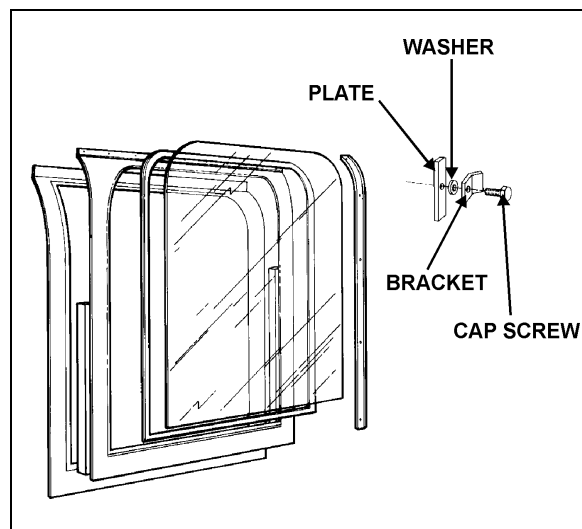


FIGURE 24: SIDE WINDOW GLASS ASSEMBLY 18150

Note: Cap screws are threaded in small plates accessible from inside the vehicle once the trim has been removed. Retain the plates for reinstallation of the brackets.

2. Remove filler strip from rubber extrusion around the window.
3. Remove the window pane and rubber extrusion.
4. Scrape off any remaining material around the window opening.

10.3.2 Installation

1. Clean the rubber extrusion with wiping towels soaked with isopropyl alcohol. Wipe with dry wiping towels and let dry 1 to 2 minutes.
2. Apply Tremshield liquid butyl sealant for single-glass and Sikaflex 255 for double glass, in the outside channel around the rubber extrusion and insert extrusion in the window opening.

Note: Apply sealant on small portions of extrusion at a time and work progressively around the opening.

3. Spray liquid soap and water solution in the channel of the extrusion where the window pane will be installed.
4. Install the glass in the extrusion, bottom first, and work up the sides to the top using a thin and rounded wooden or plastic instrument to force the window in its channel.

Note: *Two persons should be working both sides of the window simultaneously.*

5. Apply Tremshield liquid butyl sealant generously between the glass and extrusion. Scrape excess adhesive from windshield and clean with klene-sol or equivalent solvent.
6. Spray liquid soap and water solution in the V-channel for the filler strip on the rubber extrusion. Cut a single length of filler strip material and install it on the extrusion.

Note: *Filler strips retract with time. Both ends of filler strip should fit as tight as possible.*

7. Install holding brackets with washer and cap screws. Install interior trim.
8. Let dry overnight or at least 8 hours before putting vehicle back into service.

11. WINDSHIELD

The windshields are made of tinted AS-1 laminated safety glass. Each windshield is laced to a flange around an opening in the front structure by means of a one-piece black rubber extrusion and sealed with Tremshield liquid butyl sealant (Fig. 25).

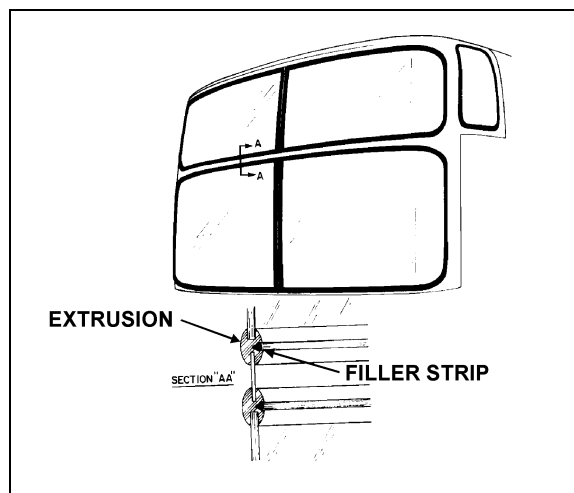


FIGURE 25: WINDSHIELD

18151

The upper and lower windshields and rubber extrusions are interchangeable from side to side. Since glass varies in fit from one supplier to another, we recommend installing replacement windshields obtained from Prevost Car Inc. to insure proper fit. Windshields obtained from other sources should be checked for proper size and curvature. Remove wiper arms of affected windshield when replacing one of the lower windshields. Remove destination sign when replacing upper R.H. side windshield.

11.1 Removal

Warning: *To avoid personal injury, wear protective gloves when handling the windshield glass.*

1. Remove interior trim around the affected windshield.
2. Remove filler strip from the rubber extrusion around the windshield.
3. Pry out the windshield from the extrusion and remove windshield and extrusion.
4. Scrape off any remaining material from the opening and clean with isopropyl alcohol.

11.2 Installation

Warning: *Wear gloves during the procedure. Do not smoke. Dispose of unused toxic material properly. Heed all warnings on containers of the different products used in this procedure.*

1. Clean the new rubber extrusion with wiping towels soaked with isopropyl alcohol. Wipe with dry wiping towels and let dry 1 to 2 minutes.

Note: *Force the soaked towels to the bottom of the channels for good cleaning.*

2. Apply Tremshield liquid butyl sealant, or equivalent, in the outside channel around the rubber extrusion and insert extrusion in the window opening.

Note: *Apply sealant on small portions of extrusion at a time and work progressively around the opening.*

3. Spray liquid soap and water solution in the channel of the extrusion where the window pane will be installed.
4. Install the glass in the extrusion, bottom first, and working up the sides to the top using a thin and rounded wooden or plastic instrument to force the windshield in its channel.
5. Apply Tremshield liquid butyl sealant generously between the glass and extrusion. Scrape excess adhesive from windshield and clean with Klene-Sol or equivalent solvent.
6. Spray liquid soap and water solution in the V-channel for the filler strip in the rubber extrusion.

Note: Filler strips retract with time. Ends of filler strip should fit as tight as possible.

7. Install interior trim. Install windshield wiper arms and destination sign, if applicable.
8. Let dry overnight or at least 8 hours before putting vehicle back into service.

12. ADHESIVE MOUNTED WINDOWS (DRIVER'S & ENTRANCE DOOR WINDOW - CONVERTED VEHICLE)

12.1 Replacement

Items Needed:

Scraper with new blade; Disposable vinyl gloves; Isopropyl alcohol or enamel reducer or NAPA 6383 surface cleaner; Masking tape; Clean rag; Heavy hydrotreated naphta (vanishing oil) (680102); Tremthane Primer (681091); Tremshield Tape (68-1089); Sikaflex 255FC (681092)

Warning: Wear disposable vinyl gloves during the procedure. Do not smoke. Dispose of unused toxic material properly. Heed all warnings on containers of the different products.

1. Remove previous window glass and scrape off all remaining material around the opening.

Note: Hardened adhesive will not remove easily. A new blade works best to remove all adhesive residue using care not to damage the fiber structure.

2. Place the new window glass in the opening and center it to leave an even gap top and bottom, and from side to side.

Note: Use small shims to raise the glass in proper position. Shims can be cut from the tremshield tape (Fig. 26).

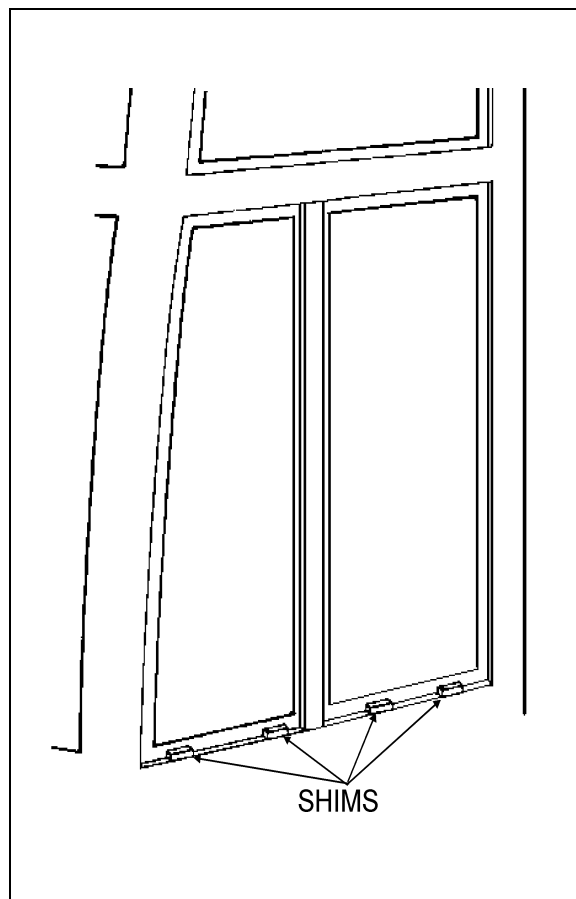


FIGURE 26: DRIVER'S & ENTRANCE DOOR WINDOWS (CONVERTED VEHICLE)

18152

3. Hold the window glass centered and have an assistant mark the inside contour of the opening on the glass with a china pencil. Remove glass and place it on a table with the pencil mark facing up.
4. Place masking tape on the inside surface of the glass to just cover the china pencil mark, leaving the outer surface exposed for the adhesive. This will make cleanup much easier. For ease of removal, do not overlap the tape at corners (Fig. 27).

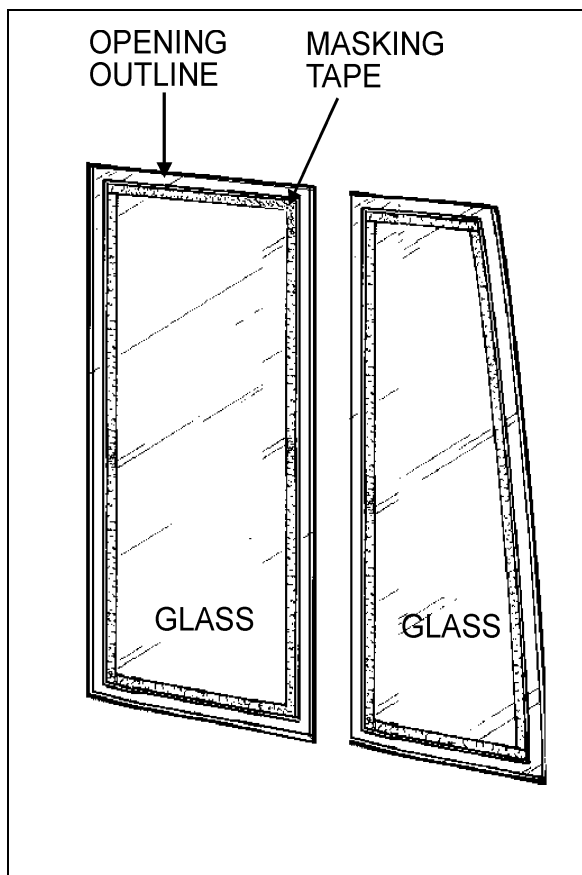


FIGURE 27: DRIVER'S & ENTRANCE DOOR WINDOWS (CONVERTED VEHICLE) 18153

5. Clean all around the window opening and the window glass edge with isopropyl alcohol, enamel reducer or NAPA 6383 surface cleaner. Let dry 1 to 2 minutes.

Note: There must be absolutely no silicone on glass or channel or Sikaflex 255 FC will not stick.

6. Put masking tape on the inner and outer contour of the window opening on the structure, approximately 1/16" (1,5 mm) from the edges of the contour.
7. Apply Tremthane primer (Prévost part no 681091) all around the window opening and the window glass edge.
8. Install Tremshield tape (Prévost part no 681089) around the sealing surface of the window opening (Fig. 28).
9. Apply a generous bead of Sikaflex-255 FC polyurethane adhesive (681092) on the sealing surface around the window opening from outside the vehicle.

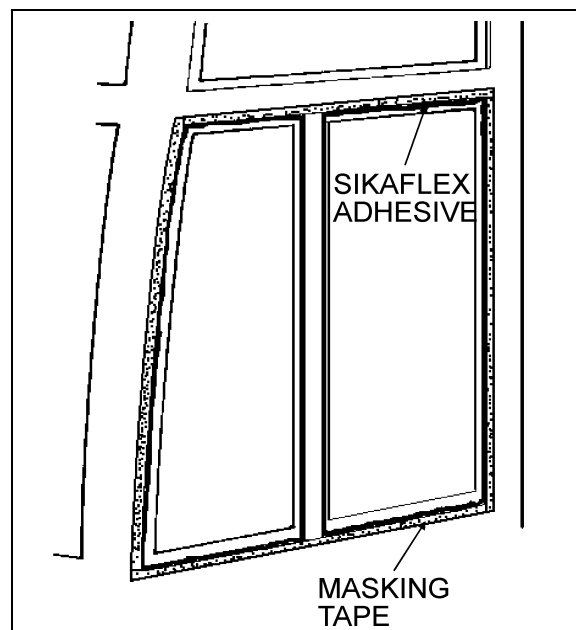


FIGURE 28: DRIVER'S & ENTRANCE DOOR WINDOWS (CONVERTED VEHICLE) 18154

Note: To ease applying of Sikaflex 255 FC, it may be heated to 175 °F (80 °C).

Note: Bead should touch the side surface of the window opening.

10. Place shims correctly, and position window glass in the opening. Press firmly and evenly. Excess adhesive should flow out from behind glass.

Note: Add adhesive in areas where overflow is minimal or if air bubbles are present.

11. Smooth the adhesive joint using the plastic glove on your finger. Remove excess material around both sides of the window as soon as possible before adhesive dries.

Note: Remove most of the adhesive from the scraper or trowel with a rag, and then dip tool in heavy hydrotreated naphtha (vanishing oil) after each use for cleaning.

Caution: Never use solvent to clean excess adhesive.

12. Remove masking tape at once, clamp window glass suitably and let dry overnight or at least 8 hours.

13. ROOF ESCAPE HATCH

13.1 Maintenance

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 section for procedures on how to seal this area.

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

Suggested maintenance includes periodic inspection of attaching 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.

13.2 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 that is 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 (Fig. 29).

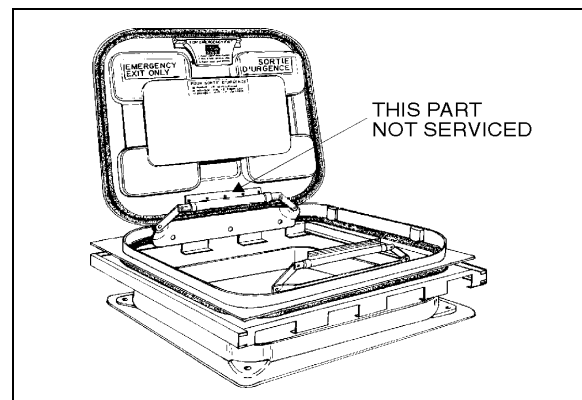


FIGURE 29: ROOF ESCAPE HATCH

18104

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.

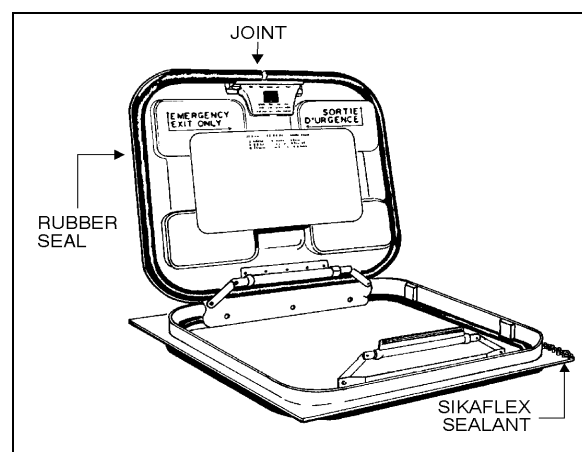


FIGURE 30: ROOF ESCAPE HATCH

18105

13.3 Sealing

1. Open and tilt up the escape hatch cover.
2. Join the 2 ends of the rubber seal (Fig. 30).

Caution: Seal joint should be toward rear of vehicle.

3. Apply rubber adhesive CA-40 (Prévost part no 681285) in the gap between the seal ends.

4. Apply Sikaflex 221 sealant (Prévost part no 680532) along the outline of the escape hatch on the roof of vehicle (Fig. 30).

13.4 Removal and Installation

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.*

14. PASSENGER SEATS

The XL-40 and XL-45 coaches can be equipped with any of 4 basic seat models and installed in a variety of seating arrangements:

- The "Tourismo 2" and "Ultra" seat is the base model and is available in heights of 40" (102 cm) and 42" (107 cm). Seating arrangement includes 2 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.
- The "Silhouette" seat is an optional model with each pair also built on a welded steel frame and mounted the same way as the "Tourismo 2" and "Ultra" seat. Standard seating arrangement with the "Silhouette" seat includes 2 card tables and 2 pivoting seats. Seating capacity is the same as with the "Tourismo 2" seat.
- The "VIP" 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 a removable bottom cushion with snapped-on upholstery for cleaning or replacement. The "Tourismo 2", "Ultra" and "Silhouette" seats have 3 armrests. The aisle armrest is spring loaded to return to its down position when released. The center armrest can be folded up and down manually, while the window armrest is fixed.

14.1 Rotating Seats

1. Remove 1 wing nut holding each seat bottom cushion from under the seat frame.
2. Lift front part of cushions and remove cushions.
3. Remove 4 wing screws fastening seat assembly to seat frame.
4. Pull seat toward aisle and rotate.
5. Align mounting holes and reinstall 4 wing screws.
6. Reinstall seat bottom cushions with wing nuts.

14.2 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) elastic stop 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 (Fig. 31).

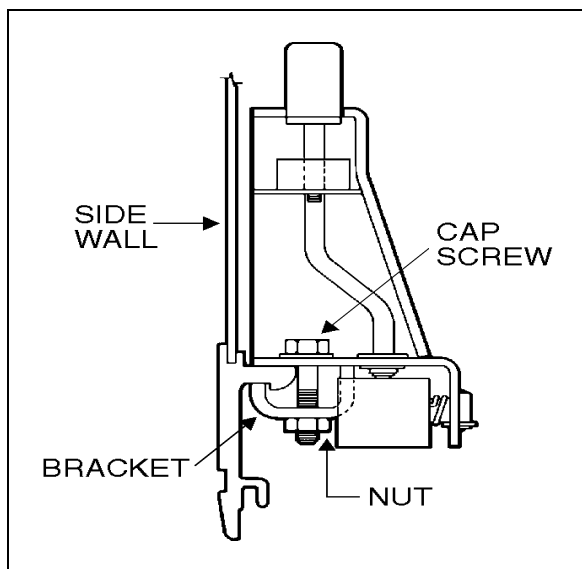


FIGURE 31: PASSENGER SEAT FRAME HOLDING 18106

5. Remove (2) nuts and washers holding seat frame to pedestal rods (Fig. 32).

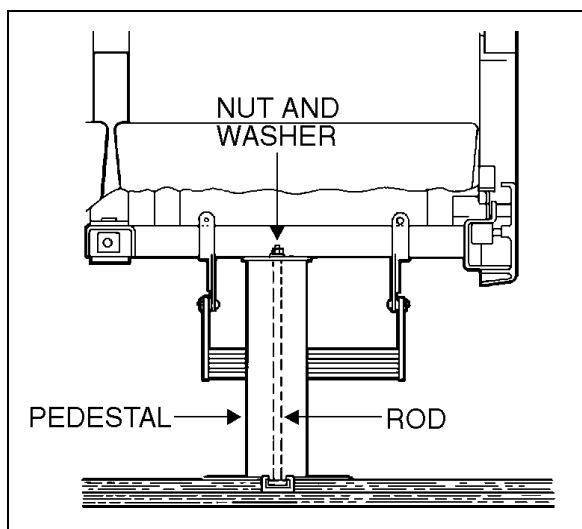


FIGURE 32: PASSENGER SEAT FRAME 18107

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 other interfering seats.

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

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 end of track.

15. UPHOLSTERY MAINTENANCE

15.1 Routine Cleaning

Coach seats are lightweight, with foam-padded backs and cushions. For both appearance and wearability, 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.

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 become excessively dirty, particles of grit will cause gradual wear, reducing the life span of the fabric.

15.2 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.

15.3 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.

1. Thoroughly vacuum the upholstery. Remove any spots or stains before the seats are washed to avoid a cleaning ring.
2. 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.
3. 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.
4. 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.
5. 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.

Note: *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 add months to the service life of coach upholstery.

16. VEHICLE JACKING POINTS

The vehicle can be jacked by applying pressure under body jacking points or front, drive and tag axles jacking points (Fig. 34, 35 and 36). Equipment for lifting the front of the vehicle must have a combined lifting capacity of 13,000 lb. (5 900 kg). Equipment for lifting the rear of the vehicle must have a combined lifting capacity of 25,000 lb. (11 400 kg).

Warning: *When it is necessary to raise the vehicle, care should be taken to ensure that pressure is applied only at the points indicated in figure 33, 34, 35 and 36.*

Warning: *Extra lift capacity may be required if luggage or any other type of load (e.g. conversion equipment) are onboard the vehicle.*

16.1 Body Jacking Points

Body jacking points are recommended to be use for axle removal. Otherwise use axle jacking points.

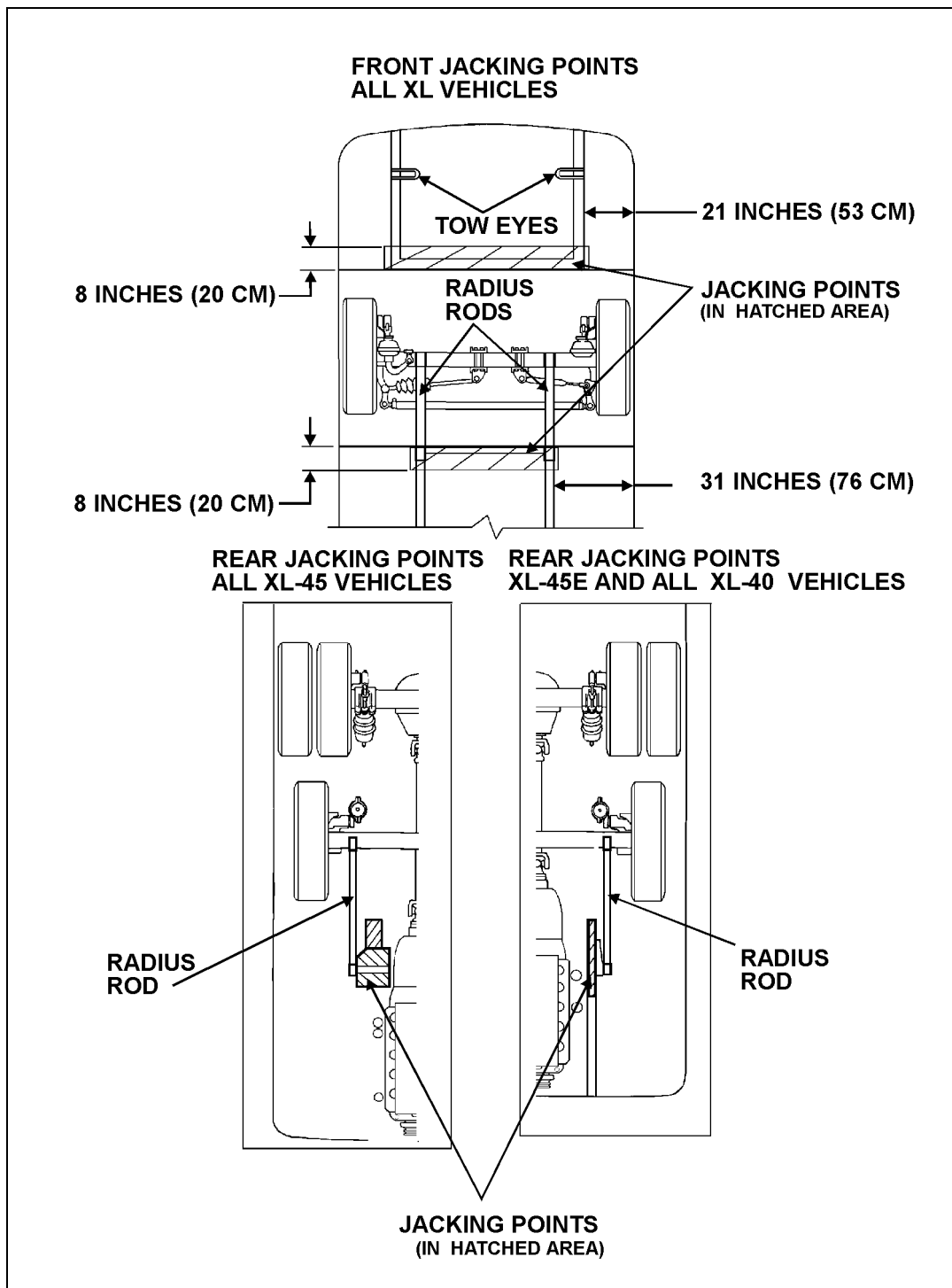


FIGURE 33: BODY JACKING POINTS (UNDER VEHICLE VIEW)

18155

Warning: The suspension of the vehicle must be in the normal ride position before jacking. The "Level Low" system on a motorcoach must be in the "DRIVE" position prior to turning the ignition key "OFF".

16.2 Axle Jacking Points

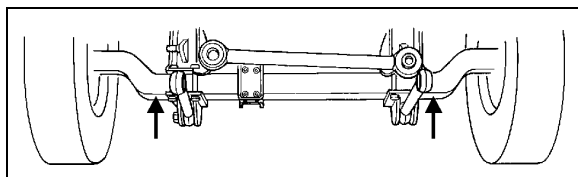


FIGURE 34: FRONT AXLE

18084

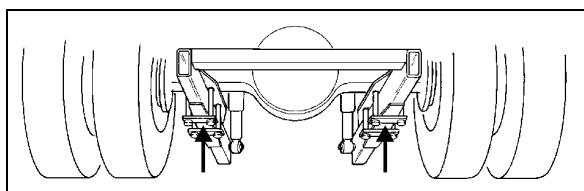


FIGURE 35: DRIVE AXLE

18085

Warning: Always unload or retract the tag axle before jacking the vehicle from the front and drive axle jacking points to prevent damage to suspension components.

16.3 Jacking the Tag Axle

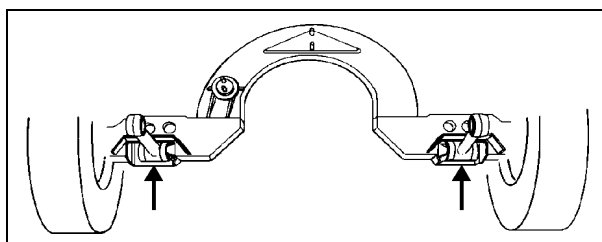


FIGURE 36: TAG AXLE

18086

Warning: The jacking points on the tag axle must be used for raising the tag axle only.

17. TOWING THE VEHICLE

The vehicle can be transported on a low bed semi-trailer of adequate gross axle weight capacity. When transporting a vehicle, apply parking brake and shut down the engine. Block all wheels and secure vehicle with tie-downs. Check that overall height will clear obstacles on the route to follow, and obtain required permits as required.

The vehicle can also be towed by lifting under the front axle or by towing from the front with all wheels on the ground. These 2 methods are described below under their respective headings. Whatever the method used, the vehicle should be towed by truck operators authorized and experienced in towing intercity coaches.

Observe normal precautions including, but not limited to, the ones listed below when towing the vehicle:

1. Make sure the parking brake is released before towing.
2. Do not allow passengers to ride inside the towed vehicle.
3. Tow the vehicle at a safe speed as dictated by road and weather conditions.
4. Accelerate and decelerate slowly with caution.

17.1 Lifting and Towing

The towed vehicle must be lifted from under the front axle only. The tow truck must be equipped with the proper lifting equipment to reach under the front axle since no other lifting points are recommended. Lifting and towing from any other point are unauthorized as it may cause serious damage to the structure. **Do not unload or raise the tag axle when lifting and towing to prevent overloading the drive axle.**

1. Remove both drive axle shafts to prevent damage to the transmission. Plug axle tube to prevent oil loss. Refer to Rockwell's "Maintenance manual no.5" annexed at the end of Section 11, Rear axle, in this manual for correct procedure.

Caution: Transmission lubrication is inadequate when towing. With either automatic or manual transmission, the drive axle shafts must be removed to avoid serious damage to the transmission.

2. Operate the engine of the vehicle when towing to maintain brake system air pressure. If the engine cannot be operated, connect an external air pressure line from the tow truck to the emergency fill valve in the engine compartment. The emergency fill valve in the front service compartment does not supply air pressure to the brake system. The air pressure must be a minimum of 75 psi (520 kPa), and the line should be attached to the air line with a clip-on chuck.

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 brakes may apply automatically if system air drops below 40 psi (275 kPa). If failure prevents releasing the parking brakes with air pressure, disengage the parking brakes mechanically.*

3. Lift the vehicle from under the front axle, and adequately secure the underside to the tow vehicle lifting attachment with chains.
4. Observe safety precautions when towing.

17.2 Towing Without Lifting

Caution: *When towing without lifting vehicle, use only a tow truck with a solid link tow bar and related equipment. All other means of towing are unauthorized. Tow only from the front of the vehicle.*

1. Remove both drive axle shafts to prevent damage to the transmission. Plug axle tube to prevent oil loss. Refer to Rockwell's "Maintenance manual no.5" annexed at the end of Section 11, Rear axle, in this manual for correct procedure.

Caution: *Transmission lubrication is inadequate when towing. With either automatic or manual transmission, the drive axle shafts must be removed to avoid serious damage to the transmission.*

2. Operate the engine of the vehicle when towing to maintain brake system air pressure. If the engine cannot be operated, connect an external air pressure line from the tow truck to the emergency fill valve in the engine compartment. The emergency fill valve in the front service compartment does not supply air pressure to the brake system. The air pressure must be a minimum of 75 psi (520 kPa), and the line should be attached to the air line with a clip-on chuck.

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 brakes may apply automatically if system air drops below 40 psi (275 kPa). If failure prevents releasing the parking brakes with air pressure, disengage the parking brakes mechanically.*

3. Position the tow truck so that the tow bar contacts the front bumper of the vehicle.
4. Attach the tow truck chains in the tow eyes of the vehicle under the bumper and take up all the slack (Fig. 37).
5. Attach safety chains as applicable.
6. Observe safety precautions when towing.