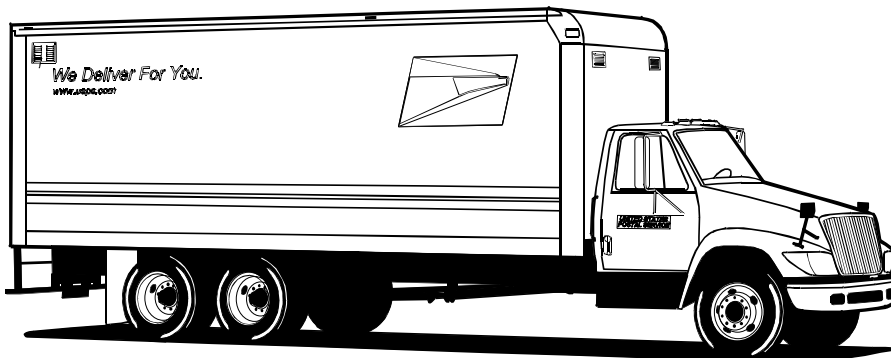




Body Service Manual



USPS Cargo Vans

Read First: Top Tips on Using This Online Manual

Browse pages with Bookmarks (hyperlinks) or thumbnails

A **bookmark**, at the left of the screen, is a hyperlink to a page. From any page in this document, you can use bookmarks to jump to any section heading.

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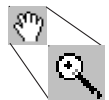


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- The Fit Width button scales the page *width* to display within the main window.



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1. Click the Text Selection tool.
2. Click and drag over the text you want to select. When you release the mouse button, the selected text stays highlighted.
3. Hold down the Ctrl key and press C on the keyboard to copy the selected text to the Clipboard.



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Use the Find tool to search for a fragment of a word, a complete word, or multiple words in the active document. To **find** a word (e.g., a part name):

1. Click the Find tool.
2. In the Find What text box, enter the text to be found and click Find. When the program finds the text, the Find dialog box closes and the page containing the text is displayed with the text highlighted.
3. To find the **next occurrence** of the word, press F3, press Ctrl + G, or reopen the Find dialog box and click Find Again.



Revision Control

Revision

April 2004

Important Notices

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Title: *USPS Cargo Vans—Body Service Manual*

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Utilimaster
Attn: Designer of Technical Publications
65906 State Road 19, P.O. Box 585
Wakarusa, Indiana, 46573-0585, U.S.A.

NOTE: When phoning Utilimaster, be aware that our 219 telephone area code changed to 574 in January 2002. The 800 numbers were unaffected.

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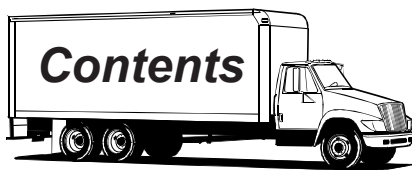
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Introduction

This manual provides **service, maintenance, warranty, and flat rate** information for the United States Postal Service Cargo Van bodies built by Utilimaster® Corporation (on Freightliner cab-over-engine and International conventional cab chassis beginning in 2004). This manual contains drawings, charts, and photos to aid in servicing the vehicles.

Refer to the Contents pages for general information sections and the Index pages for particular (alphabetized) topics.

This manual also contains information about filing **warranty claims** for various repairs to Utilimaster® truck bodies, including **allowed (typical) labor times**. The labor times have been established to promote fair and impartial treatment in the processing of all warranty claims. The policies and procedures are designed to improve communication in processing warranty claims and to minimize customer inconvenience concerning repairs.

It also includes maintenance information on some items installed but not manufactured by Utilimaster Corporation. Information provide here is intended to assist Utilimaster customers and is no way meant to replace or supercede instructions provided by other suppliers of their products.

For service information on the chassis and drive trains, see the separate chassis service manuals supplied by the chassis manufacturer. For exploded-view parts diagrams and lists, see the *USPS Cargo Vans—Body Parts Manual* supplied by Utilimaster for these vehicles.

All information, specifications, and illustrations contained in this manual are based on the latest product information available at the time of publication. However, because of Utilimaster’s policy of continual product improvement, the information contained in this document is subject to change without notice.



WARNING: Unauthorized alteration or improper maintenance or repair can result in possible dangerous driving conditions.

Body (or Unit) Serial Number

The 15-digit **Utilimaster Body (or Unit) Serial Number** is recorded on the **Federal Certification Label**. (See Illustration LA-5.) This label is a plastic decal (about 11" long and 2" high) that contains a variety of manufacturing information (including the VIN and Work Order Number). This label is below the latch on the driver’s door. Open the door to see it.

| | | | | | | | | | | | |
|---|--|--------------------------|--|--------------|--|-------|--|-------------------------|--|--|--|
| MANUFACTURED BY: | | GVWR 5216 KG (11500 LB) | | TIRES | | RIMS | | COLD INFLATION PRESSURE | | THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN. | |
| 65906 STATE ROAD 19 P.O. BOX 585 WAKARUSA, INDIANA 46573-0585 | | FRONT 1995 KG (4400 LB) | | LT225/75R16E | | 16X6K | | 44B KPA (65 PSI) | | VEHICLE ID. NO.: | |
| DATE OF MANUFACTURE: APRIL 2000 | | INTERM(N/A KG (N/A LB) | | N/A | | N/A | | N/A KPA (N/A PSI) | | XXXXXXXXXXXXXXXXXX | |
| INCOMPLETE VEHICLE MANUFACTURED BY: | | REAR 3538 KG (7800 LB) | | LT225/75R16E | | 16X6K | | 44B KPA (65 PSI) | | VEHICLE TYPE: TRUCK | |
| DATE INC. VEH. MFD.: FEBRUARY 2000 | | | | | | | | | | UNIT SERIAL NO.: | |
| | | | | | | | | | | XXXXXXXXXXXXXXXXXX | |

LA-5
Federal Certification Label



Vehicle Identification Number (VIN)

The 17-digit chassis **Vehicle Identification Number (VIN)** is the legal identifier for this vehicle and is the number recorded in a license plate registration. The VIN appears below the catch on the driver's door post or above the latch on the driver's door. Open the door to see it. (See Illustration LA-10.)

The number is also recorded on the Federal Certification Label. (See Illustrations LA-5.)

Work Order Numbers

On the Federal Certification Label, below the Body Serial Number, is the vehicle's 7-digit **Work Order Number** (beginning with a W). (See Illustrations LA-5.)

Part Numbers

This manual lists some parts and kit numbers that can be ordered directly from the Utilimaster Customer Service Department. For more comprehensive illustrations and parts lists, see the *USPS Cargo Vans—Body Parts Manual*.

Some parts or procedures may be dependent on which side of the vehicle they are located. **Right Hand (RH)** or **Left Hand (LH)** is **based upon the position of the driver while facing forward**. Right Hand is also sometimes called *Curb Side*, and Left Hand is sometimes called *Road Side*. (See Illustration LA-15.)

Ordering Parts

See the *USPS Cargo Vans—Body Parts Manual* for complete information on ordering parts.



LA-10
VIN Plates

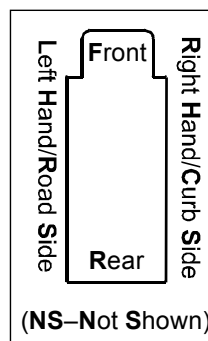


Illustration LA-15
Vehicle Orientation

Filing Warranty Claims

If a problem on the Utilimaster body is caused by a defect in materials or workmanship during the warranty period, it will be covered by our Limited Warranty. Chassis, engine, tires, and battery failures are covered by the individual manufacturers.

Claims must meet the requirements listed below. Failure to meet these requirements may result in a denied or delayed claim.

To complete a claim, you have a number of options. You may customize a template on our web site (www.utilimaster.com) to be used at your location. You can then print it out for mailing or faxing, or you may email the completed form as an attachment. For mailing or faxing, you may also use a VMAS VMF Work Order. You may also fill in an online warranty claim form on our web site.

Complete a repair order with the following information:

- **Chassis VIN, Utilimaster Body Serial Number, or USPS Vehicle Number** (see pages 8–9).
- **Year and model of vehicle** (200_ USPS Cargo Van).
- **Service facility's name and complete address.**
- **Service center representative's signature** (or name).
- **Date vehicle was repaired.**
- **Mileage at time of failure.**
- **Itemized description of the problem, including complaint, cause of failure** (if known), **and correction** (describe in detail).
- **Service center labor rate and total time of repair.**
- **Total claim amount, including cost of parts** (include Utilimaster P/Ns), **labor, miscellaneous charges, and sales tax** (if applicable).

- **Your claim or repair order number.**

NOTE: The claim or repair order number is the number used to match Utilimaster payment with the work done. It will be noted on your payment.

- **Utilimaster authorization number** (repairs costing over \$500 U.S. or for structural warranty require prior authorization from Utilimaster).

Other claim requirements:

- Any repairs **over \$500 U.S. or for structural warranty require prior authorization** from Utilimaster, and that number must appear on the repair order. Contact the Warranty Department.
- Any claim that is not **legible and complete** will be returned for completion.
- **All paint claims** require pictures, estimates, and prior authorization.
- **Shipping damage claims** also require pictures, estimates, and prior authorization. The damage must also be noted on the Delivery Acceptance form. This form requires the signature of the carrier driver.
- **Sublet work** must have the sublet repair order attached to the service facility's repair order that is being submitted.
- Claims must be **submitted within 30 days** after the repair is completed.

The claim can be mailed, faxed, emailed, or performed on-line on our web site (assuming all required information is included).

- Warranty claims should be **mailed to:**

**Utilimaster
Attn: Warranty Department
65528 State Road 19
P.O. Box 585
Wakarusa, IN 46573-0585
U.S.A.**

- Alternately, you can **fax** your claim (if no photographs are involved) with the above information to **574-862-7637**. (The resolution of the received copies must be acceptable, or you will be asked to mail your hard copies.)
- Or you can **email** your claim with the above information to **Warranty@Utilimaster.com**. (You can download a customizable **Warranty Claim Form template** from the Utilimaster web site **www.utilimaster.com**. The template has a header that you can customize with your name and address. Then, to file a claim, you only have to enter the specific information about the vehicle—saving retyping the same address information repeatedly. After completing the form information, the file can be emailed as an attachment. This form can also be used for mailing or faxing.)

Claims are paid semimonthly. Utilimaster generally does not pay sales tax on claims. If you do not have our tax exemption number on file, please call 800-528-3454 or 574-862-4561 and ask for the accounting department to obtain the number.

Before returning any parts, contact a Utilimaster Warranty representative.

NOTE: When phoning Utilimaster, be aware that our 219 telephone area code changed to 574 in January 2002. The 800 numbers were unaffected.



CAUTION: Utilimaster vehicles are built to designed specifications. Improper use or overloading can cause damage to the equipment and void the warranty.

Reporting Safety Defects

If you believe that your vehicle has a defect that could cause a crash, injury, or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA), in addition to notifying Utilimaster.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Utilimaster.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at **800-424-9393** (or **202-366-0123** in the Washington, D.C., area) or write to:

NHTSA
U.S. Department of Transportation
400 Seventh Street
Washington, DC 20590

You can also obtain other information about motor vehicle safety from the Hotline.

Flat Rates (Time and Labor Standards)

Allowed time is the average or typical time (in hours) needed to make a given repair. In some cases, because of the complexity or unpredictable nature of the task, **straight time** (ST), the actual repair time recorded, is used in a warranty claim. For example, repairing a translucent panel in the roof is straight time, but resealing a complete roof is allowed 4.0 hours. Warranty claims for labor are the number of allowed-time hours (or number of actual straight-time hours) multiplied by the labor rate of the repair facility at which the job was done.



Even though a repair has been assigned an allowed time, this does not mean that any such repair is automatically covered under warranty. These times may be used as guidelines and reference only.

| DESCRIPTION | TIME | DESCRIPTION | TIME |
|--------------------------------------|------|---------------------------------|------|
| Front Wall Assembly | | Roof | |
| Front Roof Cap—Reseal | 1.0 | Complete Roof—Reseal | 4.0 |
| Front Corner Post—Reseal | 0.5 | Complete Roof Structure—Replace | ST |
| DuraPlate Panel—Repair | ST | Translucent Panel—Repair | ST |
| DuraPlate Panel—Replace | ST | Translucent Panel—Replace | ST |
| Floor Assembly | | Roof Bows—Tighten | 0.2 |
| Body Mounting Bolt—Tighten Fasteners | 0.1 | Cargo Light Bracket—Replace | 0.2 |
| Body Mounting Bolt—Replace | 0.3 | Sidewall | |
| Floor Corner Seal, Top—Replace | 0.2 | E-track—Repair | 0.2 |
| Hardwood Floor—Complete Replacement | 16.0 | Scuff Plate—Replace | 1.0 |
| Mud Flap Bracket—Replace | 0.7 | Baserail—Replace | 7.0 |
| Mud Flap—Replace | 0.4 | DuraPlate Panel—Repair | ST |
| | | DuraPlate Panel—Replace | ST |
| | | Reflectors—Replace | 0.1 |

| DESCRIPTION | TIME |
|--|------|
| Rear Structure | |
| Grab Handle—Replace | 0.2 |
| Rear Corner Post—Reseal | 0.5 |
| Rear Roll-up Door | |
| Roll-up Door—Adjust | 0.5 |
| Door Cable—Replace | 0.5 |
| Door Side Seal—Replace | 0.5 |
| Door Bottom Seal—Replace | 1.0 |
| Door Latch—Replace | 1.0 |
| Counterbalance Shaft—Replace | 1.5 |
| Electrical | |
| Light, Cargo Dome—Replace | 0.3 |
| Light, Clearance—Replace | 0.2 |
| Light, Marker—Replace | 0.2 |
| Light, Stop/Turn/Tail/Back-up—Replace | 0.2 |
| Switch, Cargo Off/On—Replace | 0.5 |
| Harness, Cargo Light—Replace | 0.5 |
| Harness, Rear Clearance Lights—Replace | 0.5 |
| Harness, Taillight—Replace | 0.5 |

Contacting Utilimaster

Browse our site for more information about Utilimaster and its products or contact Utilimaster Customer Service by using one of the following methods:

- Call 800-237-7806 (or 574-862-3219).
- Fax to 574-862-7637.
- Email to CustSvc@Utilimaster.com.
- Mail to the following address:

Utilimaster
Attn: Customer Service Department
65528 State Road 19
P.O. Box 585
Wakarusa, IN 46573-0585
U.S.A.

NOTE: When phoning Utilimaster, be aware that our 219 telephone area code changed to 574 in January 2002. The 800 numbers were unaffected.

Safety Considerations

Notes, Cautions, and Warnings

As you read through the procedures, you will come across NOTES, CAUTIONS, and WARNINGS. Each one is there for a specific purpose.



- **NOTES** give you additional information that will help you to complete the procedure.
- **CAUTIONS** warn you against making an error that could damage the vehicle.
- **WARNINGS** remind you to be careful when there is a risk of personal injury.

Below are some basic WARNINGS that you should heed when you work on the vehicle's body. They are not all inclusive, however, and common sense must be used when servicing vehicles.

- Always wear safety glasses.
- Use safety stands and/or wheel blocks whenever you are underneath the vehicle.
- Be sure that the ignition switch is Off unless otherwise required by the procedure.
- Put the transmission in Park and set the parking brake before working on the vehicle.
- Operate the engine only in a well-ventilated area.
- Keep yourself and your clothing away from the radiator fan, belts, and any moving parts when the engine is running.
- Avoid contact with hot metal parts, such as the radiator or exhaust system.
- Do NOT smoke while working on the vehicle.
- Always remove rings, watches, hanging jewelry, and loose clothing before working on a vehicle. Tie long hair securely behind your head.
- Become familiar with all warning labels.
- Always maintain firm footing and control of tools.
- Always wear proper protective equipment when appropriate to the process.

Towing and Emergency Repairs

Problems with the Utilimaster body are unlikely to disable a vehicle enough to make it undrivable. **See the chassis operator's manual and the engine service manual for emergency information.**

See the chassis operator's manual for information on towing procedures. Utilimaster recommends the following:

- A wheel lift or flatbed equipment is the preferred method of towing.
- Unload the vehicle when possible to reduce stress on the chassis during towing.
- Be sure to place the transmission in Neutral and fully release the parking brake if towing.



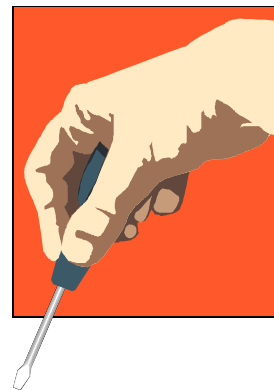
Service Information

Manufacturers' Recommendations

Safety, application, and operation instructions provided by the manufacturer with sealants, adhesives, cleaners, accessories, and other equipment should always supersede information provided by Utilimaster.

Body Maintenance Checklist

By design, the Utilimaster body is low-maintenance. However, Utilimaster recommends the following items should be checked every three to four months, unless otherwise stated. For more detailed information, check the relevant sections of the manual.



Pre-Trip Inspection (daily)

The driver should check the following items on the body each day:

- ☐ Inspect operation of rear vision camera system. See the Rear Vision (Back-up) Camera System section.
- ☐ Check all exterior and interior lights.
- ☐ Check that the rear door opens easily and closes securely.

Routine Body Maintenance (every three to four months)

Utilimaster recommends that a technician do the above pre-trip inspection before performing the following body maintenance checks:

Bumpers

- ☐ Check for loose fasteners on the bumper and brackets.
- ☐ Check for damaged or bent components.

Door, Rear Roll-up

Inspection

Check the condition of the door and strap:

- ☐ Check that the door opens easily and closes securely.
- ☐ Check for loose fasteners or other components.
- ☐ Check operation of the lock.
- ☐ Inspect and clean rubber seals around door edges.
- ☐ Check the condition of the pull-down strap for fraying or wear.
- ☐ Check that the rear door is centered in the opening.

Lubrication

Lubricate the following rear roll-up door parts with a (Utilimaster P/N 04202540, or equivalent) light oil (see Illustration MC-5):

- ☐ Roller drums and shafts—wipe off excess oil (#1, #3).
- ☐ Springs—lubricate both springs along their entire length to prevent rusting (#2).
- ☐ Hinges (center and end)—wipe off excess oil (#5).
- ☐ Rollers (#6, #7).
- ☐ Clean and lubricate track (#4).

For the lock cylinder:

- ☐ Lubricate the lock cylinder with a light oil (such as Exxon Hydraulic oil type NUTO® 68, or equivalent).
- ☐ If the lock cylinder becomes dirty, use ZEP® 45 penetrating lubricant to clean the cylinders before applying the NUTO® 68.



CAUTION: Do NOT use grease on doors. Do NOT get oil on rubber seals. Wipe up any drips immediately.

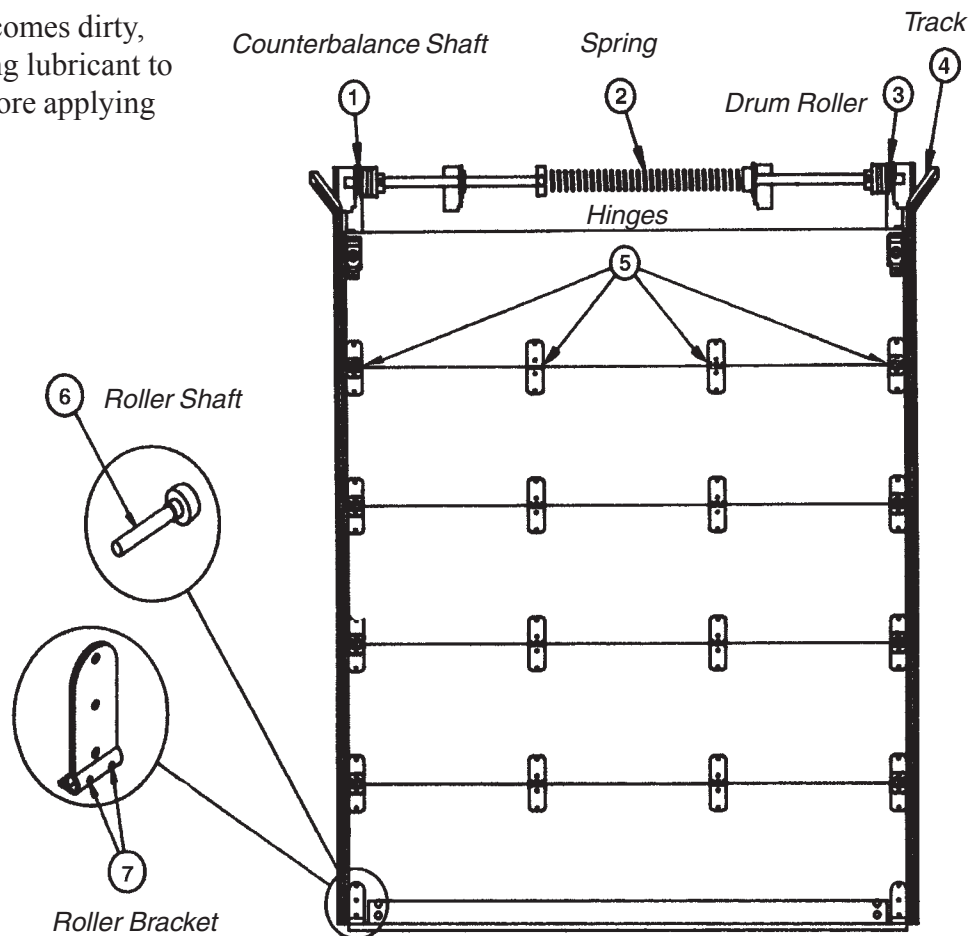
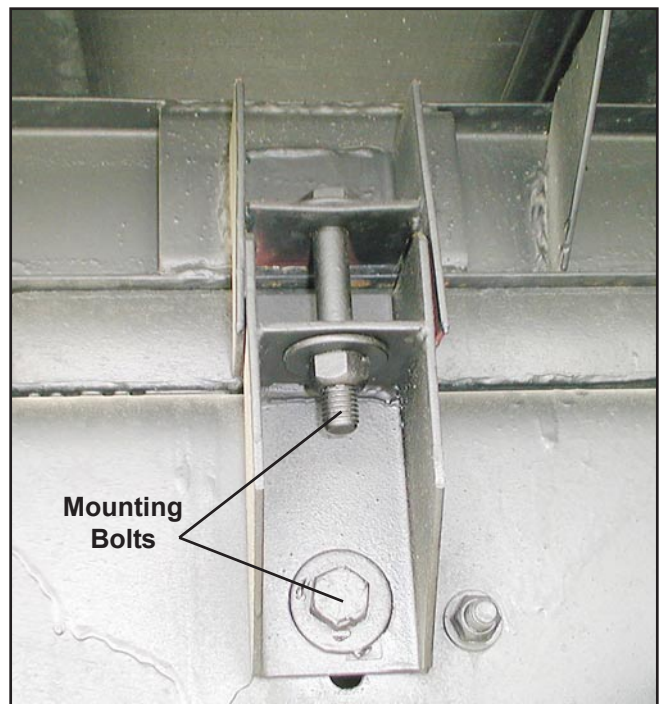


Illustration MC-5
Lubrication Points on Rear Roll-Up Door

Other Body Parts

- ☐ Check the alignment of body mounting spacers and tighten mounting bolts after the first 30, 60, and 90 days of operation and every six months after that. (See Illustration MC-10 and the Body Mounting Bolts section.)
- ☐ Sweep debris from floor surface.
- ☐ Do NOT wash down wooden floors since this can cause wood to warp.
- ☐ Check that all reflectors are securely attached.
- ☐ Clean rear threshold drains. (See also the Drains section.)
- ☐ Check grab handle mounting bolts for tightness. (See also the Grab Handle section.)



*Illustration MC-10
Body Mounting Bolt*



CAUTION: Do NOT power-wash for the first 90 days. Wash and wax the body periodically to preserve the body finish, but avoid harsh cleaning solutions and high-pressure washes.

Tools and Fasteners

Common Tools

Below are tools, including recommended brands and models, commonly used in vehicle body repairs.

- Phillips and flat-blade screwdriver set including Torx® bit
- Metric and standard box and open-end wrench set
- Metric and standard socket sets
- Torque wrenches (any quality sets with in•lb and ft•lb [or N•m] measurements)
- 3/8" drill (Dewalt® DW221 recommended)
- 1/2" drill (Dewalt® DW231 recommended)
- Drill stop
- Drill bit set (including 1/4" or F-bit and 3/16" or #11 bit)
- Screw gun (Dewalt® DW281 recommended)
- POP® riveter (Emhart® PRG 540 for both POP® rivet and MONOBOLT® installation)
- Monobolter (Emhart® PRG 540 with 1/4" nose assembly—this nose assembly consists of Jaws PRG 540-44, Jaw Pusher PRG 740-7A, and 1/4" Nose Tip BRN-811)
- Huck® riveter (Huck 2025-L) with:
 - Hucktainer nose assembly 99-3464, for Hucktainer fasteners
 - 1/4" nose assembly 99-3305, for Magna-Locks and Magna-Bulbs
- Nutsert insert tool (Sioux 02107TL recommended)
- Hand punch or an air hammer with a punch attachment
- Air hammer with a buck riveter attachment (Sioux 270 with 3/16" Ajax rivet set #1620) and buck bar
- Disk air sander with 220-, 320-, and 600-grit sandpaper
- Saber saw (Porter Cable 548)
- Die grinder with blade
- DVOM (Digital Voltmeter)
- Terminal tool kit (Snap-On TT600 recommended)
- Needle-nose pliers
- Locking pliers (VISE-GRIP® recommended, 9" or 10" [23 or 25 cm] long)
- Multigrips pliers (any standard model about 9" or 10" [23 or 25 cm] long)
- Tape measure
- Fine-pointed marker
- Rubber mallet
- Razor knife
- Pry bar or large screwdriver
- Caulking gun
- Safety glasses

Fastener Replacement

Hucktainers

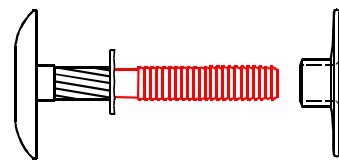
Note: Hucktainers have a rubber-covered head and are used on panels.

Removal

1. With a punch (or an air hammer with a punch attachment), knock the stems out of the fasteners from the collar side. (See Illustration FR-5.)
2. If the fastener sections don't fall out, pry them out with a screwdriver.

Replacement

Use a Huck® riveter to replace it. (The rubber-covered head should be positioned on the exterior side.)



*Illustration FR-5
Hucktainer Fastener*

Locknuts

Removal

Locknuts can be removed with an appropriate open-end or box-end wrench.

Replacement

Utilimaster commonly uses center-lock type locknuts, which distort the threads. These locknuts **and** the bolts should always be discarded and replaced with **new**. Nylon insert nuts and KEPS® nuts are reusable. If locknuts are not available, use lock washers and a thread adhesive like Loctite.® Flange head nuts and bolts can be used in place of flat washers. Always use flat washers against aluminum surfaces.

Slowly torque the new bolt to the appropriate value. (Using a power tool to spin the fastener quickly may lower its effectiveness.)



CAUTION: Utilimaster uses center-lock-type locknuts, which distort the threads of the nut and bolt. This type, should NOT be reused after disassembly. Always replace the locknut and bolt with new.

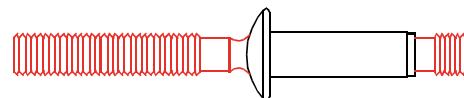
MONOBOLT®, Magna-Bulb®, and Magna-Lok® Rivets

Removal

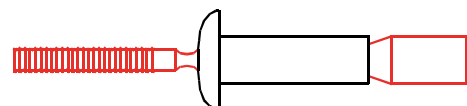
1. With a punch (or an air hammer with a punch attachment), knock the stems out of the fasteners. (See Illustrations FR-10 and FR-15.)
2. Drill off the head of the rivet using a #11 (or 3/16" [5 mm]) or F (or 1/4" [6 mm]) drill bit (depending on fastener size). The back stem should fall off.

Replacement

Use a MONOBOLT rivet gun to replace it.



*Illustration FR-10
Magna-Bulb*



*Illustration FR-15
Magna-Lok*

Nutserts

NOTE: A nutsert is a threaded insert that is crimped into place. A nutsert need only to be removed if it is damaged and the threads cannot be retapped.



CAUTION: Do NOT use Loctite® thread locker on the threads of a nutsert.

Removal

Cut off with a die grinder or drill off the outside lip with a larger drill bit. (See Illustration FR-20.)

Replacement

Using a nutsert insert tool, replace the nutsert with one meeting original specifications. Do NOT use Loctite® thread locker on the threads of a nutsert.

If a nutsert of original specifications or the tool to install nutserts is not available, the nutsert may be replaced with another form of threaded insert or a nut and bolt. This depends upon application and should be approved by Utilimaster Customer Service. If it is to be replaced with a nut and bolt, it is important to use flat washers on both sides of the material.

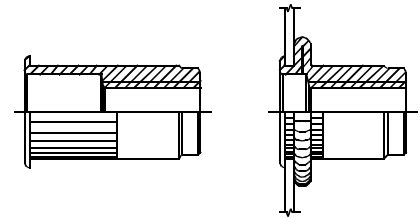


Illustration FR-20
Nutsert

Pierce-and-Roll (Self-Piercing) Rivets

These hardened steel fasteners (attaching the translucent roof panel to the roof rails) crimp parts together by driving through the top material and mushrooming out into the bottom part without penetrating the lower surface. (See Illustration FR-25.)

Removal

The rivet heads can be ground or drilled off. Use a 4" angle grinder to grind off the rivet heads. Or use a **solid carbide or cobalt steel** 1/4" [6 mm] drill bit to drill off the head of the rivet, starting at the dimple located in the center. Use a variable-speed drill, **drilling as slowly as possible** and periodically dipping the drill bit in Mer*Lube 829 lubricant (cut 50/50 with water). You do not need to drill all the way through the rivet—just enough to remove the head.

After the roof panel is removed, use a 4" angle grinder to grind down all rivet stems and rough areas until they are flush with the rail surface. Be careful not to grind off excess metal.

Replacement

Drill 3/16" [5 mm] new holes through the panel and rails, staggered from the old rivets. Use an air hammer with a buck-riveter attachment and bucking bar to install a 3/16" diameter by 1/2" long soft buck rivet (P/N 11600108-0308S). (See Illustration FR-30.)

Alternately, drill 1/4" [6 mm] new holes through the panel and rails, staggered from the old rivets. Use a MONOBOLT rivet gun and 1/4" Magna-Loks (P/N 11400026).

Do NOT replace with POP rivets.

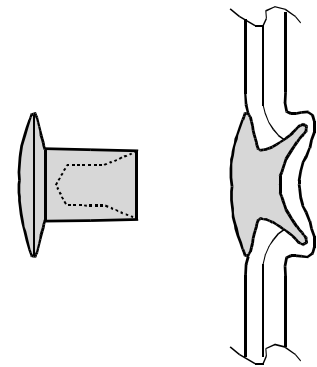


Illustration FR-25
Pierce-and-Roll Rivet

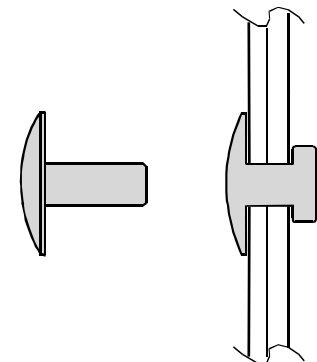


Illustration FR-30
Buck Rivet



Illustration FR-40
POP Rivet

POP® Rivet

Removal

Drill off the head of the rivet using a #11 or 3/16" [5 mm] drill bit. The back stem should fall off. (See Illustration FR-40.)

Replacement

Use a POP rivet gun to replace it.

Tape, Double-Faced Adhesive

Removal

With a razor knife, cut along the length of the tape while pulling apart the joined flat surfaces. Scrape off remnants as much as possible. Clean with a solvent.

Replacement

Apply to one surface from a fresh roll. Do **NOT** remove the tape paper until the other surface is in the proper position. Once the tape sticks to a surface, you will **not** be able to reposition it without starting over.

Tape, Vinyl Barrier

White vinyl tape is used wherever steel and aluminum surfaces mate in order to prevent corrosion of the surfaces.

Removal

Peel or scrape off.

Replacement

Apply to mating surfaces from a fresh roll.

NOTE: Tape rolls can be ordered with the following part numbers:
1" [25.4 mm]-wide roll.....P/N 12303707
2" [50.8 mm]-wide roll.....P/N 12303706
3" [76.2 mm]-wide roll.....P/N 12303705
4" [101.6 mm]-wide roll.....P/N 12605947

Thread Adhesive

Removal

Bolts with thread adhesive cannot be reused. After the bolt is removed, if any residue from the seal is present on a reusable surface, scrape off the residue.

Replacement

Slowly torque the new bolt to the appropriate value. (Using a power tool to spin the fastener quickly may lower the effectiveness of the seal.)

Torque Seal

The torque seal appears as a small painted line across a bolt thread and nut or across a bolt and washer seam. If the seal line is broken (out of alignment), the fastener has loosened.

*NOTE: Torque seal **indicates** a fastener has loosened but does not prevent it.*

Removal

After the bolt is removed, if any residue from the seal is present on a reusable surface, scrape off the residue.

Replacement

When the fastener installation is complete, apply a small bead of torque seal or paint stick across the new bolt threads, nut, head, and/or washer.

Sealants



WARNING: Always wear proper protective equipment when appropriate for the process.



WARNING: Safety and application instructions provided with sealants, adhesives, and other products should always supersede information provided by Utilimaster.

The one-compound polyurethanes Utilimaster uses are very effective sealants. They remain permanently elastic (less cracking due to shrinkage), they can be painted, and they require no mixing. They bond as well as seal, thus reducing the number of mechanical fasteners needed, and they also reduce noise and corrosion.

The following statements provide an overview of what to look for when working with polyurethane sealants:

1. **Manufacturer's Recommendations:** Always follow manufacturer's cautions and recommendations for protective equipment, application, and cleanup.
2. **Conditions:** Recommended application temperatures are 40° [5° C] to 100° F [37° C]. For cold-weather applications, store sealants at approximately 70° F [21° C] and remove them just prior to using. Make sure joint is frost-free.
3. **Surface:** Clean the surface with a strong jet of compressed air, sandblast, or solvent. Remove all loose particles and old sealant. The surface must be clean, dry, free of grease or rust, and of sound quality.
4. **Priming:** Usually no priming is required. Since substrate type and uniformity can vary, a pretest is recommended. Sealant manufacturers have primers when substrates require them. Since compatibility among manufacturers is in question, do not mix and match different manufacturers' primers and sealants.
5. **Application:** Cut the tip of the plastic nozzle to joint size. Puncture the airtight seal. Install with a hand- or power-operated caulking gun. For best performance, sealant should be gunned in the joint where the joint slot is at the midpoint of its designed expansion and contraction. Dip the Poly-stick in a soapy solution to ease spreading the adhesive to seal any gaps.

Limitations:

- For curing, permit sufficient exposure to air.
- Do NOT apply over silicones or in the presence of curing silicones.
- During cure, avoid contact with alcohol and alcohol-containing solvents.
- For best results, use open cartridges in the same day.

Service Procedures

Battery, Disconnecting

NOTE: Check the chassis-supplied operation or service information for additional recommendations.

1. Make sure the ignition switch is Off.
2. Disconnect the **Negative (Black)** battery cable(s) **first**.
3. Tuck the battery cable away from the terminal to prevent accidental contact.
4. When servicing the vehicle is finished, reconnect the cable.



WARNING: To avoid accidental shock or damage to the vehicle, disconnect the battery before servicing an electrical component. Check your chassis-supplied operation or service information for specific recommendations.



WARNING: Always remove the Negative (Black) cable first and connect it last.

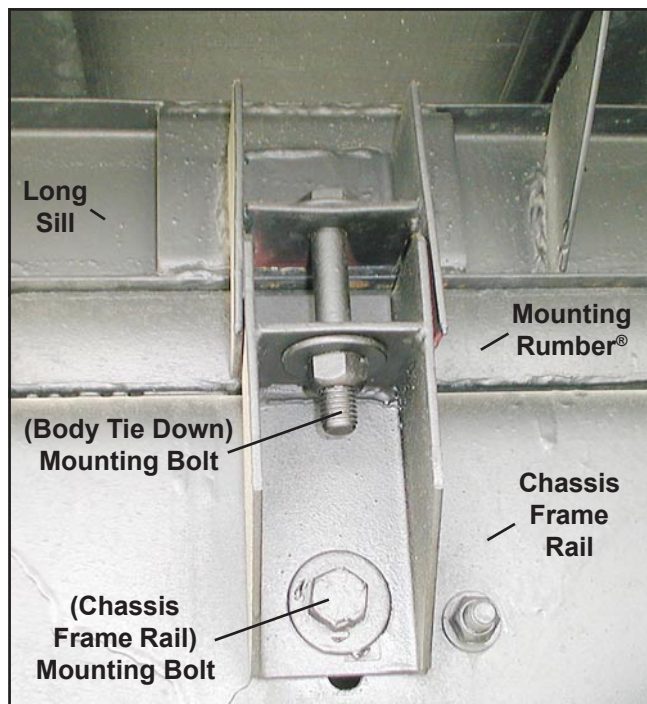
Body Mounting Bolts

Check the alignment of body mounting spacers and tighten the mounting bolts after the first 30, 60, and 90 days of operation and every six months after that. (See Illustration BM-5.)

| Description and Application | Torque (ft•lb) |
|---|----------------|
| 5/8 bolt in body tie-down angle | 80–110 |
| 5/8 bolt at chassis frame rail for body mounting angle | 90–120 |



CAUTION: Check the alignment of body mounting spacers and tighten the mounting bolts after the first 30, 60, and 90 days of operation and every six months after that.



*Illustration BM-5
Body Mounting Bolt*

Bumper, Rear

For bumper rubber impact strips, remove the bolt attaching the strip to the bumper. Replace with a new strip as well as **new stainless-steel** bolts and nuts. (See Illustration BU-5.)

The bumper is bolted to the vehicle. Remove the various bolts to replace the bumper. Replace with a new bumper as well as **new stainless-steel** bolts and nuts.



WARNING: When replacing a bumper, always support the bumper to keep it from falling.



CAUTION: Always use **new** bolts and two-way Grade 8 locknuts. Do **NOT** reuse locknuts or bolts when replacing bumpers.



*Illustration BU-5
Rubber Impact Strip and Fasteners*

Cable Retainment Track

Removal

1. With a Torx bit, unscrew the fasteners. (If the exterior encapsulated T-nut starts to spin, hold it while unscrewing the bolt.)
2. Remove the track from the sidewall.

Installation

1. Position the track in place and screw in the fasteners with a Torx bit. (If the exterior encapsulated T-nut starts to spin, hold it while unscrewing the bolt.)
2. If a new T-nut is required, punch out the old T-nut, and pound in the new one before screwing in the bolt.



*Illustration CR-5
Cable Retainment Track (Middle) and E-track*

Decals

NOTE: See also the Paint Repair section.

Removal

1. Use a heat gun to soften the adhesive under the decal.
2. With a razor knife, carefully peel the edge back.
3. Continue to heat evenly while manually pulling the decal off.

Installation

1. Before reapplying decals over fresh paint, wait 24 hours for nonreflective decals or 72 hours for reflective decals.
2. Clean the surface with DuPont 2319S Cleaner.
3. Align the decal into position.
4. Smooth the decal from the center to the edges.
5. Squeegee the edges to ensure a proper seal.

Deflector Plate

Removal

1. Remove the cargo light switch. (See the Switch, Cargo Light section and Illustration DE-5.)
2. Remove the fasteners holding the plate to the sidewall.
3. Remove the plate.

Installation

1. Using the fastener holes in the sidewall, drill holes in the new deflector plate from the outside.
2. Insert Hucktainer fasteners into the holes.
3. Reinstall the cargo light switch.



*Illustration DE-5
Switch and Hucktainer Fasteners on a Deflector Plate*

Door—Rear Roll-up



WARNING: Read all instructions before starting repair. Always maintain firm footing and control of tools.

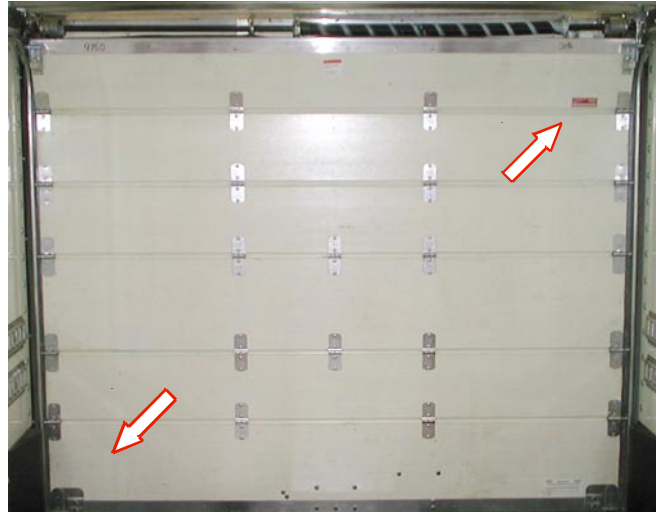
NOTE: When ordering parts for a rear door, specify the serial number of the door. (See Illustration DR-25.) The serial number can be found on the metal tag attached to the inside of the door.

NOTE: After replacement of any part, check relevant adjustments and proper operation of the door.

***NOTE:** The vehicle may have a Todco fiberglass (“hollow-core” or actually “foam-core”) door or a Diamond (“solid-core”) DuraPlate door. On “hollow-core” doors, although some fasteners extend all the way through the door, most brackets are fastened **ONLY** to the inner panel. In those cases, do **NOT** drill through the outside panel. Solid-core doors have most fasteners through the entire door. When drilling holes in the door, be sure to drill only to the appropriate depth. Follow the appropriate instructions where the differ.*



WARNING: Do **NOT** use the rear door pull strap to support yourself when entering or exiting. The strap can break or pull the door down upon you. Use a grab handle for assistance when getting in and out of the back of the truck.



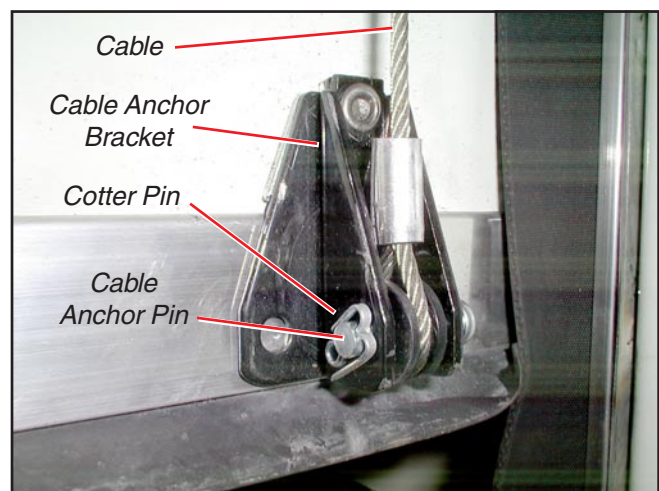
*Illustration DR-25
Locations of Serial Number Plates on Roll-up Doors*



WARNING: The counterbalance spring is wound under high tension. This high-tension spring can cause severe injury or death.

Installation, repairs, and adjustments must be made by trained service personnel using proper tools and instructions.

Use two winding bars that are 1/2" in diameter and 18" long. **DO NOT USE** bent winding bars, screwdrivers, or punches for spring winding.



*Illustration DR-30
Cable Anchor*

Cable Replacement (with Tension on Spring)

Removal

NOTE: If only one cable is frayed or damaged, Utilimaster still recommends that both cables be replaced at the same time.

1. Close the door from the inside. Release the spring tension from the cables by fully inserting a winding bar that is 1/2" in diameter and 18" long into one of the spring-winding plug holes. (See Illustration DR-35.)
2. Raise the bar enough to allow insertion of a second winding bar into the lower hole, and then release the tension enough to let the second bar rest against the top panel of the door.
3. Loosen the two setscrews on the cable drum, releasing the cable drum from the shaft, and remove the cable from the cable drum.
4. Remove the cable from the door bottom panel by removing the anchor and cotter pins. (See Illustration DR-30.)



WARNING: Do NOT raise the door with the winding bar in place. Raising the door at this point can cause injury or damage to equipment.

Installation

1. Mount the new cable at the base of the bottom panel by slipping the cable anchor pin through the cable anchor bracket and the eye at the end of the cable.
2. Insert the cotter pin into the cable anchor pin to secure the cable.
3. Bring the other cable end to the top of the door and thread it over the top of the door to the inside.
4. Temporarily tape the cable to the outside top panel of the door.

5. From inside the cargo area, insert the cable end into the cable drum slot. Thread the cable into the groove nearest the slot and turn the cable drum toward you until all slack is taken out, making sure the cable is following in its proper groove.

NOTE: The cable must be wound from the outermost groove toward the inside of the drum.

6. Maintaining tension on the cable, slide the cable drum on the counterbalance shaft against the bearing and tighten the two setscrews on the drum.
7. Clamp the counterbalance shaft with a locking pliers, handle against the ceiling, to keep the cables tight. (See Illustration DR-35.)



CAUTION: Protect the translucent roof from the pliers with a piece of plywood or sheet metal.

8. Release the spring tension by rotating the spring winding plug just far enough to allow removal of the winding bar against the top of the door.
9. Remove the clamp and tape, and then check the operation of the door.

NOTE: A properly adjusted door should open easily and, when stopped, should remain at any given location. (See the Door—Spring Winding and Adjustment section.)



CAUTION: Make sure the drums are against the counterbalance shaft bearings, the setscrews are properly tightened, and the cables have equal tension. Rotating the counterbalance assembly too far may cause cables to jump off the cable drum.

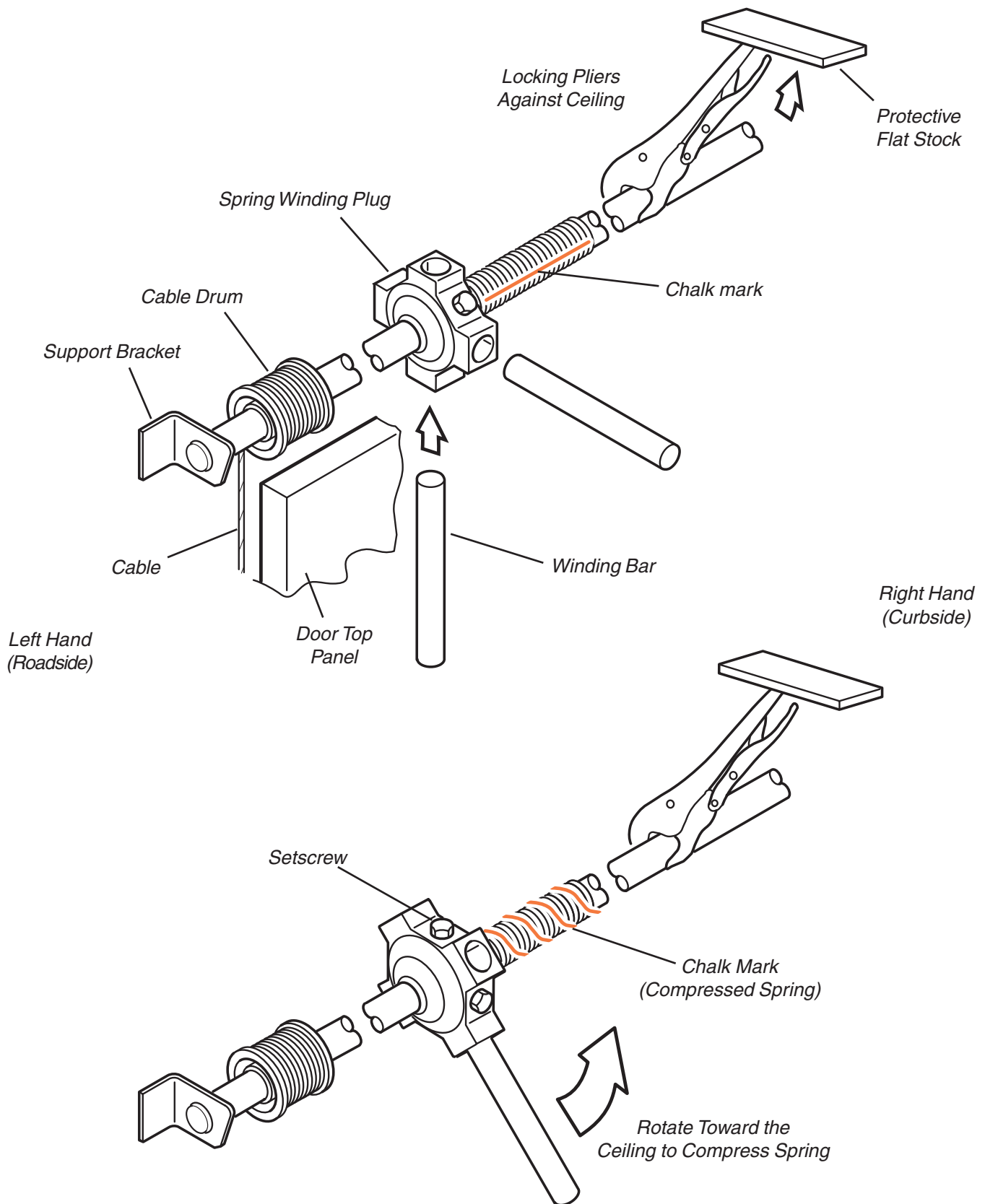


Illustration DR-35
Winding the Counterbalance Spring

Spring Winding and Adjustment

NOTE: A properly counterbalanced door should, when stopped, remain at any given location. If the door leaves the floor by itself, the spring is wound too tightly, and a few quarter turns should be released. If the door has a tendency to drop when stopped, a few more quarter turns should be added.

1. Close the door and, on the inside, clamp the counterbalance shaft with the handle of the locking pliers against the ceiling to keep the cables tight. (See Illustration DR-35.)



CAUTION: Protect the translucent roof from the pliers with a piece of flat stock (plywood or sheet metal).

2. Run a chalk mark the full length of the counterbalance spring.
3. Insert a winding bar that is 1/2" in diameter and 18" long into one of the spring-winding plug holes.
4. Loosen the setscrews on the spring-winding plug.
5. Wind the spring by lifting the bar. While holding the first bar, place a second bar in the next hole and lift in the same manner after removing the first bar. Repeat for about 10-1/2 turns (for a new door or as many needed to adjust). Turns are counted by using the chalk marks, which show up as stripes as the spring is wound.



WARNING: The counterbalance spring is wound under high tension. This high-tension spring can cause severe injury or death. Only qualified technicians should adjust this spring.

Installation, repairs, and adjustments must be made by trained service personnel using proper tools and instructions.

Use two winding bars that are 1/2" in diameter by 18" long. **DO NOT USE** bent winding bars, screwdrivers, or punches for spring winding.



CAUTION: Rotating the counterbalance assembly too far may cause cables to jump off the cable drum.

6. After adjusting the spring tension, tighten both setscrews on the spring-winding plug and remove the locking pliers from the counterbalance shaft.
7. Check the operation of the door by opening and closing the door.
8. If further adjustment is needed, repeat Steps 1, 3, and 4. Then raise the winding bar to add spring tension (door lifts more easily) or lower the winding bar to remove spring tension (door lifts less easily). Then repeat Steps 6 and 7.

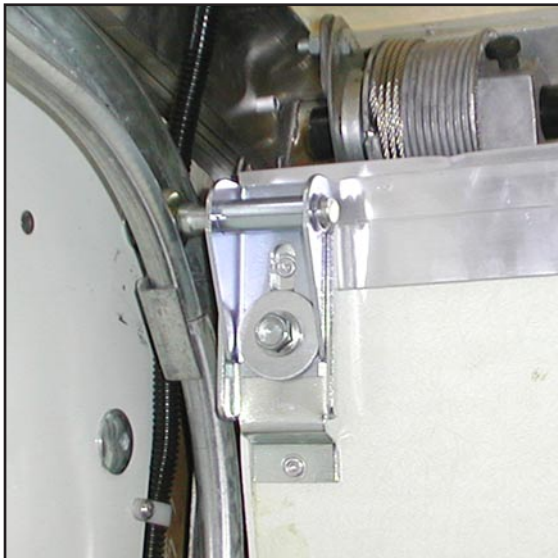
Top Panel Replacement



CAUTION: On hollow-core (fiberglass) doors, although some fasteners extend all the way through the door, most brackets are fastened **ONLY** to the inner panel. In those cases, do **NOT** drill through the outside panel. Solid-core doors (DuraPlate) have most fasteners through the entire door. When drilling holes in the door, be sure to drill only to the appropriate depth.

Removal

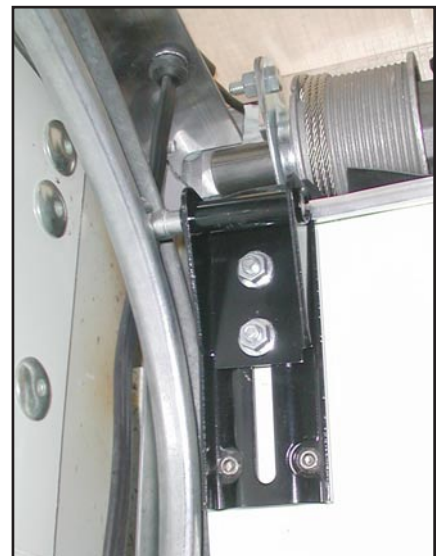
1. With the door closed, clamp the track below the top panel to prevent the door from raising.
2. Drill out the rivet heads in the center hinges on the top panel and the rivet heads on the joint roller bracket in the lower half of the top panel. (See Illustrations DR-45 and DR-50.)
3. Punch out the rivets and, in at least one of the hinges, insert a punch in one of the rivet holes to stabilize the door panel while detaching the remaining rivets and bolts.
4. Using a wrench and socket, remove the roller brackets and rollers at the top of the panel. (See Illustration DR-40.)
5. Remove the punch and lift out the old panel.



**Move roller UP
to move panel IN**



**Move roller DOWN
to move panel OUT**



*Illustration DR-40
Top Roller Brackets and Adjustments (Todco and Diamond)*

Installation

NOTE: If you are unable to secure the hinges with the original type of rivets that extend completely through the door, use carriage bolts or rib-neck carriage bolts to attach them. (The bolt head must be on the exterior side of the door, and the nut must be on the interior!)

1. Using a wrench and socket, attach the roller brackets and rollers to the top of the new panel while putting the rollers in the tracks. (See Illustration DR-40.)
2. Line up the new top panel with the panel below it (making sure they align for a close fit at the joint) and (using the hinge holes as a guide) drill all of the hinge holes on the **bottom** of the new panel:
 - 2a. For a **solid-core** door, drill through the entire panel with an F (or 1/4") bit. Tip the panel toward you to insert carriage bolts through the outside of the panel. Install the hinges over the bolts and tighten the nuts.
 - 2b. For a **hollow-core** door, **drill through the interior panel only** with an F (or 1/4") bit and install Magna-Lok fasteners through the hinges.



CAUTION: Do NOT drill through the outside panel of a hollow core door.

3. Check the door operation by opening and closing the door.

NOTE: A properly adjusted door should open easily and, when stopped, it should remain at any given location. (See Door—Spring Winding and Adjustment section.)

4. Also check the seal gap on the outside top of the roll-up door and adjust as necessary. (See the following Adjustment section.)
5. If paint repair is necessary, see the Paint Repair section.

Adjustment

1. Close the door.
2. Loosen the nuts slightly on the top roller bracket. (See Illustration DR-40.)
3. Position the top roller brackets so that the top panel is nearly vertical and seals both along the top and at the sides.

*NOTE: Moving the roller bracket **up** moves the panel **in** (toward the interior); moving the roller bracket **down** moves the panel **out** (toward the exterior).*

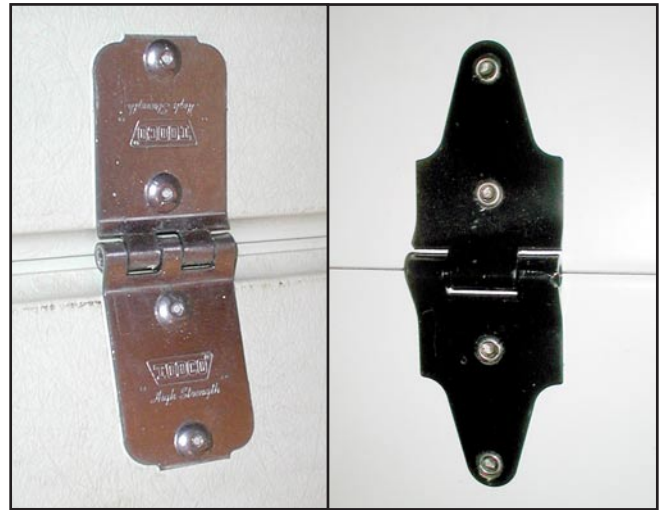
NOTE: Adjusting the panel too tightly may cause the door to jam before it latches.

4. Tighten the nuts with a wrench.
5. Check the operation of the door and readjust as necessary.

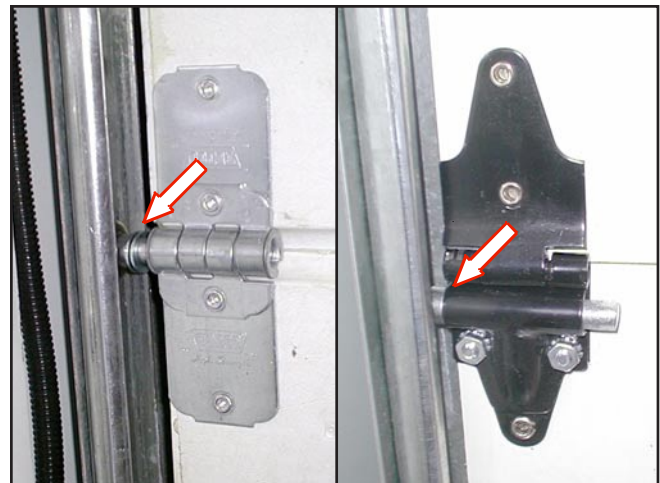
Intermediate Panel Replacement

Removal

1. With the door closed, clamp the track below the panel to be replaced (to prevent the door from rising).
2. Drill off the rivet heads in the **center hinges** on the panel to be removed. (See Illustration DR-45.)
3. Punch out the rivets and, in at least one of the hinges, insert a punch into one of the rivet holes to stabilize the door panel while detaching the remaining rivets and bolts.
4. Using a wrench and socket, (if applicable) remove both roller brackets and rollers of the joint roller brackets (at the top of the panel). (See Illustration DR-50.)
5. Drill off the rivet heads of the joint roller bracket hinges attached to the **bottom** of the panel.
6. Punch out the rivets and, in at least one of the hinges, insert a punch into one of the rivet holes to stabilize the door panel while detaching the remaining rivets and bolts.
7. Lift the door panels (above the panel to be replaced) into the horizontal track and secure them with a locking pliers clamped on the horizontal track.
8. Remove the punches and lift out the old panel.



*Illustration DR-45
Center Hinges (Todco, Diamond)*



*Illustration DR-50 Joint Roller Brackets
and Alignment Washers (Todco, Diamond)*



CAUTION: On hollow-core (fiberglass) doors, although some fasteners extend all the way through the door, most brackets are fastened **ONLY** to the inner panel. In those cases, do **NOT** drill through the outside panel. Solid-core doors (DuraPlate) have most fasteners through the entire door. When drilling holes in the door, be sure to drill only to the appropriate depth.

Installation

NOTE: If you are unable to secure the hinges with the original type of rivets that extend completely through the door, use carriage bolts or rib-neck carriage bolts to attach the handle. (The bolt head must be on the exterior side of the door, and the nut must be on the interior!)

1. Line up the new panel with the panel **below** it (making sure they align for a close fit at the joint) and (using the hinge holes as a guide) drill all of the hinge holes on the **bottom** of the new panel:
 - 1a. For a **solid-core** door, drill through the entire panel with an F (or 1/4") bit. Tip the panel toward you to insert carriage bolts through the outside of the panel. Install the hinges over the bolts and tighten the nuts.
 - 1b. For a **hollow-core** door, **drill through the interior panel only** with an F (or 1/4") bit and install Magna-Lok fasteners through the hinges.



CAUTION: Do **NOT** drill through the outside panel of a hollow core door.

2. Swing the new panel upright and clamp into position.
3. Lower the door from the horizontal tracks.
4. Line up the new panel with the panel **above** it (making sure they align for a close fit at the joint) and (using the hinge holes as a guide) drill all of the hinge holes on the **top** of the new panel:
 - 4a. For a **solid-core** door, drill through the entire panel with an F (or 1/4") bit. Tip the panel toward you to insert carriage bolts through the outside of the panel. Install the hinges over the bolts and tighten the nuts.
 - 4b. For a **hollow-core** door, **drill through the interior panel only** with an F (or 1/4") bit and install Magna-Lok fasteners through the hinges.
5. Using a wrench and socket, (if applicable) attach the roller brackets and rollers to the top of the new panel while putting the rollers in the tracks. (See Illustration DR–50.)

NOTE: The roller brackets on the bottom of the top panel and on the top of the bottom panel play an important part in maintaining proper door alignment within the track. (See the Door—Roller Play Adjustment section and Illustration DR–50.)
6. Remove the clamps and check the door operation by opening and closing the door.

NOTE: A properly adjusted door should open easily and, when stopped, should remain at any given location. (See the Door—Spring Winding and Adjustment section.)
7. If a load bar is installed on the old panel, remove it and install on the new panel. See the Door—Protective Beam (Load Bar) Assembly section and Illustration DR–60.
8. If paint repair is necessary, see the Paint Repair section.

Bottom Panel Replacement



CAUTION: On hollow-core (fiberglass) doors, although some fasteners extend all the way through the door, most brackets are fastened **ONLY** to the inner panel. In those cases, do **NOT** drill through the outside panel. Solid-core doors (DuraPlate) have most fasteners through the entire door. When drilling holes in the door, be sure to drill only to the appropriate depth.

Removal

1. Push open the door until the bottom of the door is about 16" [40 cm] from the header at the top of the door opening.
2. Place a clamp in the horizontal tracks, on each side, below the bottom rollers.
3. Place a clamp on one of the cables, near the eye of the cable.
4. Grasping the clamp with one hand, release the cable from the bottom of the door by pulling the cotter pin out of the cable anchor pin (or other fastener) and removing the anchor pin. (See Illustration DR-30.)
5. Allow the spring to wind the cable onto the drum until the clamp stops it by contacting the drum.
6. Repeat on the opposite cable.
7. Drill out the rivet heads in the center hinges attached to the **bottom** panel. (See Illustration DR-45.) Punch out the rivets and, in at least one of the hinges, insert a punch into one of the rivet holes to stabilize the door panel while detaching the remaining rivets and bolts.
8. Using a wrench and socket, (if applicable) remove both roller brackets located at the bottom of the bottom panel and remove the rollers. (See Illustration DR-55.)
9. Using a wrench and socket, (if applicable) remove both roller brackets and rollers of the joint roller brackets (at the top of the panel). (See Illustration DR-50.)
10. Drill out the rivet heads in the joint roller brackets attached to the bottom panel. Punch out the rivets and, in at least one of the hinges, insert a punch into one of the rivet holes to stabilize the door panel while detaching the remaining rivets and bolts.
11. Remove the panel from the tracks and push the remainder of the door slightly up and toward the front of the truck.
12. Place a (fourth) clamp in the track to prevent the door from rolling back down.
13. If the new bottom panel does not have a bottom roller bracket attached, drill off the rivets holding the bottom brackets on the old panel and remove the brackets.



CAUTION: Protect the translucent roof from the clamp with a piece of flat stock (plywood or sheet metal) if necessary.



*Illustration DR-55
Bottom Roller Brackets (Todco, Diamond)*

Installation

1. If the new bottom panel does not have a bottom roller bracket attached, attach the bottom brackets taken from the old panel.

NOTE: If you are unable to secure the hinges with the original type of rivets that extend completely through the door, use carriage bolts or rib-neck carriage bolts to attach them. (The bolt head must be on the exterior side of the door, and the nut must be on the interior!)

2. Using a wrench and socket, (if applicable) attach the roller brackets and rollers to the bottom of the new panel while putting the rollers in the tracks. (See Illustration DR–55.)
3. Line up the new bottom panel with the panel above it (making sure they align for a close fit at the joint) and (using the hinge holes as a guide) drill all of the hinge holes on the top of the new panel:
 - 3a. For a **solid-core** door, drill through the entire panel with an F (or 1/4") bit. Tip the panel toward you to insert carriage bolts through the outside of the panel. Install the hinges over the bolts and tighten the nuts.
 - 3b. For a **hollow-core** door, **drill through the interior panel only** with an F (or 1/4") bit and install Magna-Lok fasteners through the hinges.



CAUTION: Do NOT drill through the outside panel of a hollow core door.

4. Install the rollers in the bracket at the top of the panel, as well as any spacer washers on the roller shafts. (See Illustration DR–50.)

NOTE: The roller brackets on the top of the bottom panel and on the bottom of the top panel play an important part in maintaining proper door alignment within the track. (See the Door—Roller Play Adjustment section and Illustration DR–50.)

5. Reconnect each cable by drawing it by the clamp to the outside of the bottom door panel.
6. Insert the cable anchor pin through the cable eye and the cable anchor bracket. (See Illustration DR–30.)
7. Secure the cable anchor pin with the cotter pin.
8. Remove the clamps and check the door operation by opening and closing the door.

NOTE: A properly adjusted door should open easily and, when stopped, it should remain at any given location. (See the Door—Spring Winding and Adjustment section.)
9. If paint repair is necessary, see the Paint Repair section.
10. See also the Door—Pull Strap Replacement section.

Protective Beam (Load Bar) Assembly

Removal

1. Remove the fasteners.
2. Remove the load bar assembly.

Installation

1. Place the new load bar assembly in position.
2. Install new fasteners.

NOTE: If you are unable to secure the assembly with the original type of fasteners, use carriage bolts or rib-neck carriage bolts. (The bolt head must be on the exterior side of the door, and the nut must be on the interior!)

3. Adjust the latches on both sides.

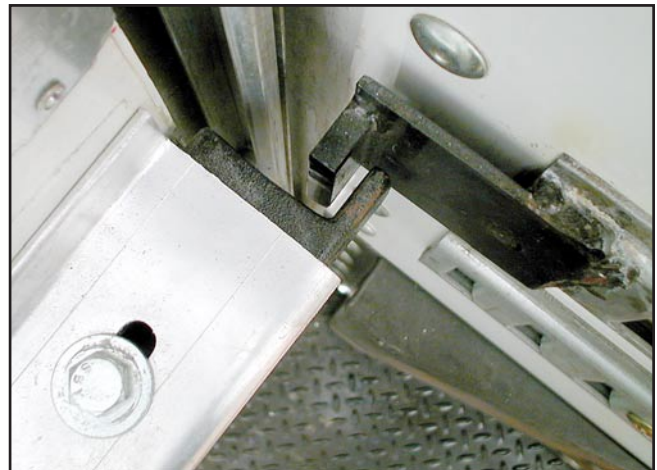
Latch Adjustment

1. Close the door from the inside.
2. Loosen the bolts on the ends just enough to be able to slide the latches in and out. (See Illustration DR-60.)
3. Position each latch so that the metal “finger” is in front of the catch’s “finger” but not touching.
4. Tighten the bolts.
5. Raise and lower the door several times to ensure the latch and catch do not hit each other.

Roller Play Adjustment

NOTE: The roller brackets on the bottom of the top panel and on the top of the bottom panel play an important part in maintaining proper door alignment within the track.

1. Check that the door has some but not excessive side play (1/4" maximum) and is centered in opening. There should be some slight play so that the door does not bind in the track. Approximately three to five spacer washers should be at the second-from-top joint roller and the second-from-bottom joint roller on each side. (See Illustration DR-50.)
2. Add or subtract spacer washers on roller shafts, if necessary, to achieve proper play. Equal numbers of washers should be used on each side to ensure that the door remains centered. (See the Door—Roller Replacement section for removing rollers.)



*Illustration DR-60
Protective Beam Latch and Catch*

Roller Replacement

1. Open the door.
2. If the roller cover is held in place with nuts, use a wrench and socket to remove the nuts that secure the roller cover. (See Illustrations DR-40, DR-50, and DR-55.) If the roller cover is held in place by rivets, drill out the rivets.



CAUTION: On hollow-core (some aluminum and fiberglass) doors, although some fasteners extend all the way through the door, most brackets are fastened **ONLY** to the inner panel. In those cases, do **NOT** drill through the outside panel. Solid-core doors (FRP and DuraPlate) have most fasteners through the entire door. When drilling holes in the door, be sure to drill only to the appropriate depth.

3. Remove the roller from the track.
4. Install a new roller in the track.
5. If the roller cover was held by nuts, replace the roller cover on the hinge and tighten the nuts. If it was held by rivets:
 - 5a. For a **solid-core** door, insert carriage bolts through the outside of the panel. Install the roller cover over the bolts and tighten the nuts.
 - 5b. For a **hollow-core** door, install the roller cover with Magna-Lok fasteners.

MSL (“Banana Lock”) Replacement

NOTE: There is no adjustment on a Master Security Lock. If the handle becomes worn to the point that the door no longer closes tightly as it should, replace the handle.

1. Remove the fasteners holding the handle. (See Fasteners Replacement section and Illustration DR-65.)
2. Remove the handle.
3. Align the holes in the new handle with those in the door and fasten the handle into place.

NOTE: If you are unable to secure the lock with the original type of rivets, use carriage bolts or rib-neck carriage bolts to attach the handle. (The bolt head must be on the exterior side of the door, and the nut must be on the interior!)

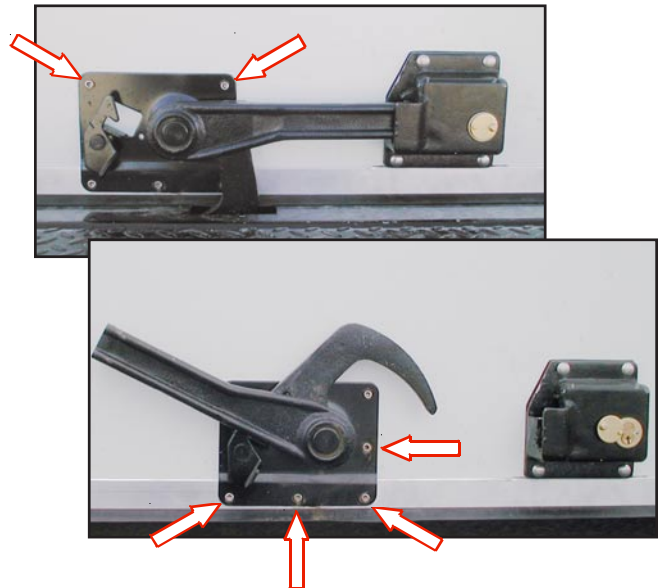


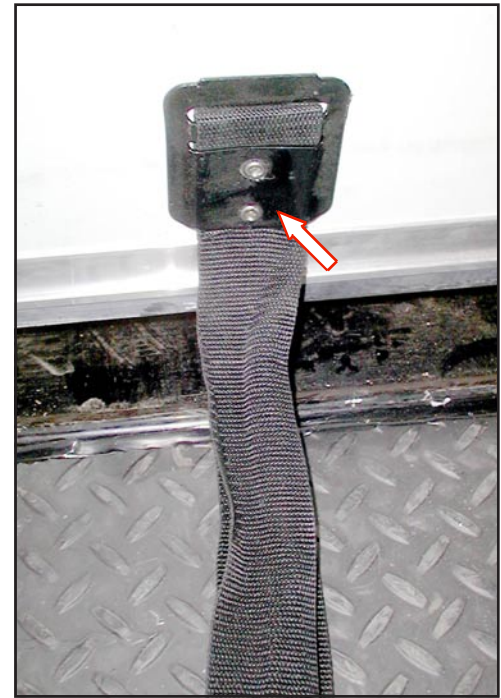
Illustration DR-65
Master Security (“Banana”) Lock and Fasteners

Pull Strap Replacement

NOTE: Be sure to order a new pull strap that is long enough to reach when the door is open but short enough so that the strap does not drag on the ground when the door is closed.

NOTE: If you are unable to secure the strap with the original type of rivets, use carriage bolts or rib-neck carriage bolts to attach them. (The bolt head must be on the exterior side of the door; and the nut must be on the interior!)

1. Open the door enough to allow for comfort while working, then clamp the track to prevent the door from opening or closing.
2. Drill out the rivets holding the pull strap to the bottom panel of the roll-up door. (See Illustration DR-100.)
3. Attach the end of the new strap to the bottom panel of the roll-up door with rivets or carriage bolts.
4. Remove the clamp and test the strap while opening and closing the door.



*Illustration DR-100
Pull Strap*

Door Seal Replacement

Side Seal

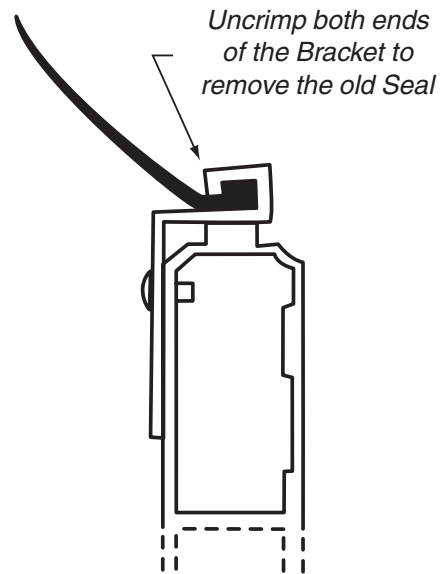
1. Open the roll-up door.
2. Drill out the rivets that hold the seal's aluminum extrusion in place. (See Illustration DR-105.)
3. Uncrimp both ends of the seal extrusion.
4. Remove the seal from the extrusion.
5. Cut the new seal to the proper length with bolt cutters.
6. Insert the new seal into the extrusion and crimp the ends.
7. Reattach the extrusion using aluminum fasteners or stainless-steel sheet-metal screws.
8. Close the door and check the seals.



*Illustration DR-105
Side Seal on Roll-Up Door*

Top and Bottom Vinyl Seals

1. Fully open the roll-up door and clamp the track below the bottom panel to prevent the door from moving.
2. Uncrimp both ends of the desired seal extrusion. (See Illustrations DR-110 and DR-115.)
3. Use a locking pliers to extract the old seal.
4. Slide the new seal into the extrusion and crimp the ends to secure the seal.
5. Remove the clamp, close the door, and check the seal.



*Illustration DR-110
Top Seal on Roll-up Door*



*Illustration DR-115
Vinyl Seal Crimped on Bottom of Rear Roll-Up Door*

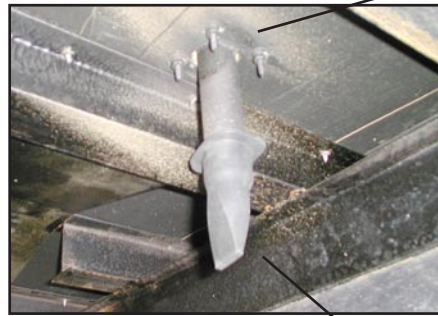
Drains

Cargo Floor Drains

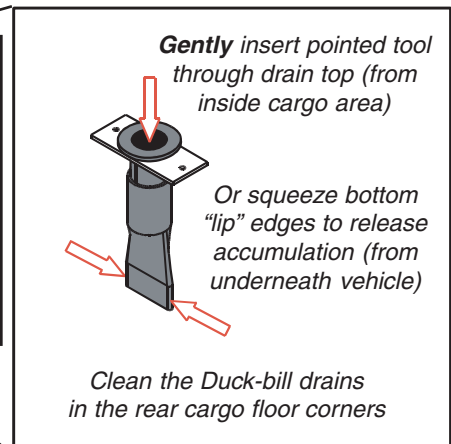
Cleaning

The rubber “duck-bill” or “kazoo” drain valves are designed to let the water out without allowing water to siphon into the cargo area in a negative pressure condition.

Clean the drains periodically to ensure that they are not blocked by debris or dirt and are able to drain properly. (See Illustration DN-5.)



*Illustration DN-5
Cleaning a Duck-bill Drain*



- From the interior of the vehicle, use a small pointed tool, such as a pen or small screwdriver, to **gently** poke down through the drain.
- **Or** from underneath the vehicle, squeeze the wide section on the bottom to open the “lips” and release any accumulation that did not drain normally.

Replacement

1. Remove the fasteners.
2. Remove drain valve assembly.
3. Position the new drain valve assembly.
4. Fasten into place.



*Illustration DN-10
Vent Drain*

Vent Drains

The vents have small formed drains to allow water to escape. To ensure they have not gotten plugged with dirt, run a short piece of wire up into the openings. (See Illustration DN-10.)

E-track

Removal

1. Use a die grinder to grind off the weld between the front corner brace and the E-track. (See Illustration ET-5.) Stop periodically and allow the panel to cool.
2. Remove the Hucktainer fasteners. (See the Fasteners section.)
3. Remove the E-track.

Installation

1. Cut the new E-track to length, noting where the prepunched holes must align with the holes in the sidewall panels.
2. Hold the new E-track in position and install new Hucktainer fasteners.
3. Reweld the front corner brace and the new E-track. Weld quickly and stop periodically to allow the panel to cool. You may also spray water on the exterior DuraPlate surface to cool it.

Grab Handle

1. While holding the handle, remove the four stainless-steel Phillips-head fasteners from the handle. (See Illustration GH-5.)
2. The handle should release into your hand.
3. While holding the new handle in place, attach it using four stainless-steel fasteners.

Liftgate (Optional)

If the vehicle is supplied with an optional aftermarket liftgate installation, see the documentation supplied by the liftgate manufacturer for operation and service information. To order replacement liftgate component parts, contact an authorized liftgate distributor.



CAUTION: When welding or cutting next to a DuraPlate panel, be very careful to not overheat the DuraPlate panel (and melting the plastic core).

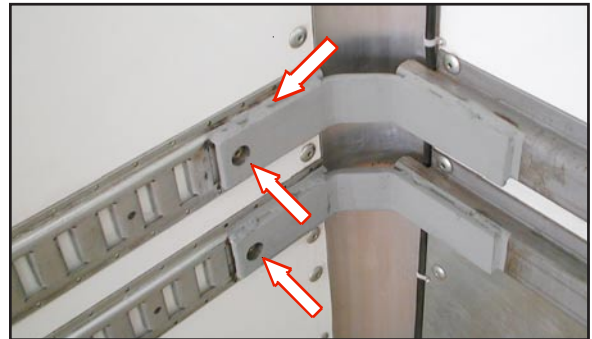


Illustration ET-5
E-track, Fasteners, and Welded Front Brace



CAUTION: Use stainless-steel fasteners for all grab handles.

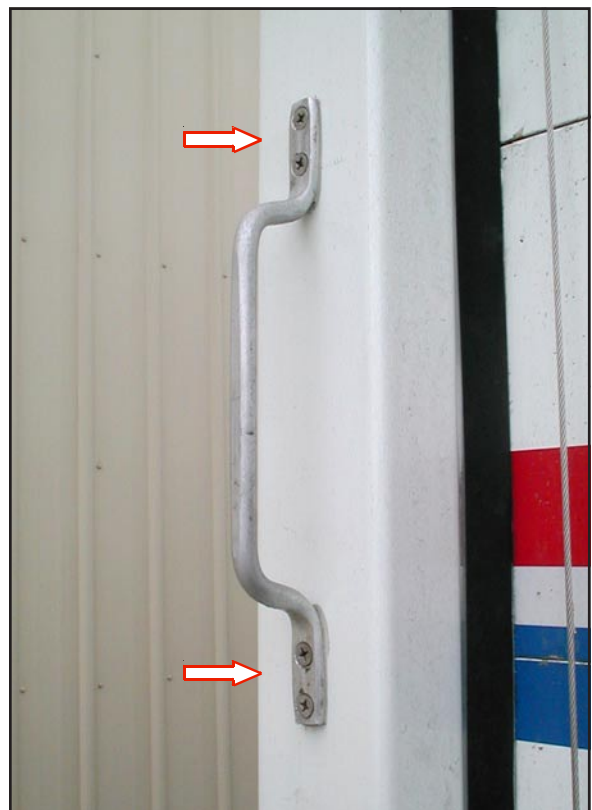


Illustration GH-5
Grab Handle at Roll-Up Door Entrance

Lights

NOTE: This section illustrates lights mounted on Utilimaster vehicle bodies. For chassis-mounted lights, refer to the chassis service information.

Clearance, Identification, and Side Marker Lights

NOTE: Light assemblies that are sealed units must be replaced as complete units.

1. Turn off the ignition and all lights.
2. With an appropriate screwdriver, remove the screws or **gently** pry open the tabs holding the unit to the vehicle. (See Illustrations LI-5 through LI-15.)
3. Disconnect the electrical harness at the back of the unit.
4. Attach the electrical harness to the back of the replacement unit.
5. Align the holes of the new light unit and attach it to the vehicle.



CAUTION: Always replace a light with one of the same size, shape, and wattage.



CAUTION: Some lights may have a definite top and bottom. Always check the position of the light before removing and install right side up.

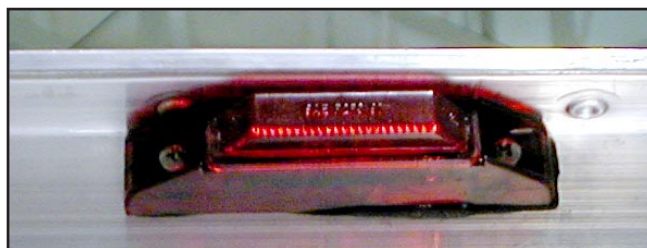


CAUTION: To avoid cracking the lens, do not overtighten the screws.

NOTE: See also the Wiring Diagrams section.



*Illustration LI-5
Front Clearance Light (Sealed Unit)*



*Illustration LI-10
Rear Identification Light (Sealed Unit)*



*Illustration LI-15
Side Marker Light on Rear Light Assembly*

Stop/Turn/Tail/Back-up Lights



CAUTION: Always replace a light with one of the same size, shape, and wattage.

1. Turn off the ignition and all lights.

NOTE: Lightly spray the outer grommet and marker light surface with soapy water to ease the removal and installation.

2. Slip a flat-blade screwdriver under the inner lip of the outside grommet to pry the light unit up, so that it can be pulled out of the grommet. (See Illustration LI-20.)
3. Disconnect the light from the electrical harness at the back of the unit.
4. Plug in the replacement light.
5. Replace the unit by pushing it through the outside (front) of the grommet.



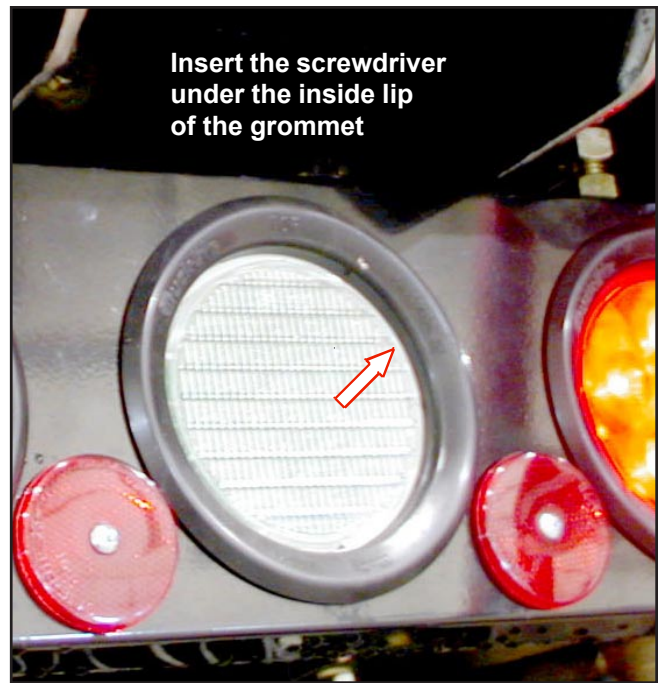
CAUTION: The slit on the rear of the grommet must be pointed down to allow water to drain.



CAUTION: Always replace a light with one of the same size, shape, and wattage.

Cargo Light

1. Turn off the ignition and all lights.
2. Insert a flat blade screwdriver into the side slot and gently pry off the plastic lens. (See Illustration LI-25.)
3. Replace the bulb.
4. Snap the lens back on.



*Illustration LI-20
Back-up Light (Grommet Mount)*



*Illustration LI-25
Cargo Light (Removable Lens)*

NOTE: See also the Wiring Diagrams section.

Paint Repair

*NOTE: This procedure describes how to repair paint damage on **aluminum** and **DuraPlate®** surfaces of Utilimaster bodies. See the Panel, DuraPlate section.*

NOTE: See also the Decals section.



WARNING: Utilimaster recommends that a professional body shop do all paint repairs. The service technician should read this entire procedure before working on the vehicle.

Adequate ventilation is required when working in a confined area with paint and paint-related chemicals. Always wear proper protective equipment when appropriate to the process. Safety and application instructions provided with chemical products should always supersede information provided by Utilimaster.

Tools and Parts

The following are the tools and items used in this procedure:

- All applications can be done with one or more of the following:
 - ☐ Blender gun (1.3 to 1.4 fluid tip for gravity-fed guns; conventional guns use 40–55 PSI at the gun).
 - ☐ Cup gun (for application of Dupont 222S Adhesion Promoter).
 - ☐ Touch-up gun (see above statement for blender gun tips and required PSI).
- Clean white cotton rags.
- 320 and 600 grit sand paper.
- Tack cloth.
- Masking tape and masking paper.
- Dupont® 3900S Cleaner.
- Dupont® 3901S Cleaner.
- Dupont® 3401S Blender.
- Dupont® Imron 5000 paint (check with Customer Service for the original paint code).
- Dupont® 193S Activator.
- Dupont® 8989S Activator.
- Dupont® 8685S Reducer.
- Dupont® 222S Adhesion Promoter.
- Paint strainer.
- Measuring cup graded in ounces up to 1 cup or 2 cups.
- Paint mixing stick.
- **Optional Items:**
 - ☐ Dupont® 2510S Primer and Dupont® 2505S Activator.
 - ☐ Dupont® 359S Paint Additive.
 - ☐ Dupont® 2319S Cleaner.
 - ☐ Buffing compound.

Although some substitutions can be made, these products match the original paint and process and are recommended for best results of your paint repair.

Substrate Preparation

1. If necessary, remove any decals from the affected area (see Decals section) and fill in damaged areas with body putty as needed (see manufacturer's instructions). Allow body putty to cure and sand it smooth.
2. Use a clean rag soaked in DuPont® 3900S Cleaner to clean the repair area and the area surrounding the repair. Using a second clean dry rag, wipe off the 3900S cleaner before it evaporates. If the 3900S dries before it is removed, re-wet and wipe dry. (See Illustration PA-10.)

3. Sand the defective area with 320-grit sand paper. (See Illustration PA-15.)

NOTE: If necessary, use a finer (600-grit) sandpaper to smooth the blend area surrounding the repair area.

4. Repeat cleaning with a clean rag soaked in DuPont 3901S Cleaner to remove sanding dust. (See Step 2.)
5. Mask all fixtures (lights, bumper, etc.) to protect from overspray. (See Illustration



CAUTION: Make sure the area cleaned is bigger than the spray area.

PA-20.)

NOTE: Use masking tape and a paper that cannot be penetrated by paint.

6. Wipe a wide area with the tack cloth to make sure all areas to be sprayed are clear of dust and debris. (See Illustration PA-25.)
7. If the **base or substrate is exposed** by sanding (or if it is a replacement part that has **never been painted**), apply DuPont 2510S Primer and 2505S Activator.



*Illustration PA-10
Use DuPont 3900S and 3901S Cleaners*



*Illustration PA-15
Sand Area to Be Prepared*



*Illustration PA-20
Protect with Masking Tape and Paper*



CAUTION: Mix paint thoroughly to ensure proper application and paint performance.

Paint Preparation

1. Using a graduated (9-ounce) measuring cup, pour 3 ounces paint (DuPont Imron 5000) to 1 ounce activator (DuPont 193S). (See Illustrations PA-30 and PA-35.)
2. Add 1/8 ounce of accelerator (DuPont 8989S gallon can) to the paint mixture. (See Illustration PA-40.)
3. Using a paint stick, stir paint mixture thoroughly.
4. Place the paint strainer in the touch-up gun cup and pour the paint through the strainer. (See Illustration PA-50.)

NOTE: A drop or two of DuPont 359S Paint Additive may be added if there is a problem with “fish eyes” or other contaminant-related imperfections.

5. Assemble the touch-up gun.
6. Check the blender gun to make sure it has sufficient blender (DuPont 3401S).



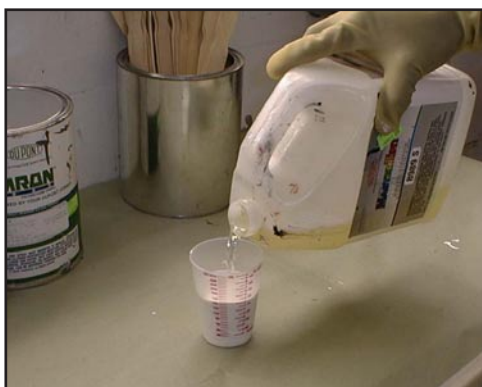
*Illustration PA-25
Use Tack Cloth for Final Wipe*



*Illustration PA-30
Three Ounces of Paint*



*Illustration PA-35
One Ounce of Activator*



*Illustration PA-40
Add 1/8 Ounce Accelerator*



*Illustration PA-50
Use Paint Strainer*



CAUTION: Clear nozzle before spraying.

Paint Application

1. Using the cup gun with DuPont 222S Adhesion Promoter, do a test spray directed away from the vehicle to make sure the gun nozzle is clear.
2. Spray DuPont 222S Adhesion Promoter across the area to be repaired and extend to the area surrounding the repair to ensure adequate adhesion of the new to old paint.
3. Air dry for 1 to 2 **minutes**.
4. Using the touch-up gun containing DuPont Imron 5000 Paint, do a test spray directed away from the vehicle to make sure the touch-up gun nozzle is clear.
5. Apply the first coat of paint. (See Illustration PA-55.)
6. Air dry for 1 to 2 **minutes**.
7. Using the blender gun with DuPont 3401S Blender, do a test spray directed away from the vehicle to make sure the blender nozzle is clear.
8. Apply a first coat of blender. (See Illustration PA-60.)
9. Air dry for 1 to 2 **minutes**.
10. Apply a second coat of paint, covering an area just beyond the first coat of color.
11. Air dry for 1 to 2 **minutes**.
12. Apply the final coat of blender, extending just beyond the previous spray patterns.
13. Air dry 3 to 4 **hours** before removing masking materials. (See Illustration PA-65.)
14. If the repair is not glossy enough after drying, use buffing compound and buff to achieve the desired appearance.
15. If applicable, see the decal installation procedure in the Decals section.



*Illustration PA-55
Apply Paint*



*Illustration PA-60
Apply Blender*



*Illustration PA-65
Air Dry 3 to 4 Hours*

Panel, DuraPlate



CAUTION: Read and understand **ALL** adhesive application instructions and safety procedures. Effectiveness of the repair can be compromised by environmental conditions or poor application.



WARNING: Always wear proper protective equipment whenever appropriate for the process. Safety and application instructions provided with adhesives should always supersede information provided by Utilmaster.

Introduction

Procedures for repairing DuraPlate® body panels depend on the severity and size of damage.

Small dents and scratches in the panel can be covered up by cosmetic repairs by using Options A or B.

If the galvanized steel panel is punctured or badly dented, the steel skins in the damaged section may become delaminated from the plastic core. Over time the delamination may spread, weakening the integrity of the panel. Such a delaminated area should be cut out and replaced, using Option C. All damage should be tested for delamination. See the Testing for Delamination section.

Severe damage may require that the entire panel or sidewall be replaced, using Option D.



CAUTION: All damaged areas in DuraPlate should be tested for delamination of the steel skins to the plastic core. If detected, delaminated areas should be cut out and replaced (Option C), or the panel should be replaced (Option D).



CAUTION: Do not attempt to hammer out a dent in the DuraPlate panel. This can result in delamination of a steel skin to the core. Over time delamination can spread and weaken the strength of the panel.



CAUTION: When welding or cutting next to a DuraPlate panel, be very careful to not overheat the DuraPlate panel (and melting the plastic core).

Testing for Delamination

If a DuraPlate panel is punctured or severely dented, one or more of the steel skins and the plastic core may start to separate. To prevent this delamination from spreading and weakening the DuraPlate panel, the delaminated area should be cut out and replaced. **All damaged areas should be tested for delamination.**

With a quarter, begin tapping on the damaged area and continue tapping while moving outward until you are well away from the damaged area. (See Illustration PL-5.) If there is a noticeable difference in the **sound** while tapping over the damaged area compared to the undamaged area, delamination has probably occurred in that area. The damaged section should be cut out and replaced (Option C), or the panel should be replaced (Option D).



*Illustration PL-5
Tap Across Damaged Area to Test for Delamination*

Procedure Options Summary

NOTE: This section summarizes the various repair options. They are listed in order of severity of damage repaired and/or difficulty of the process. See the subsequent sections for detailed instructions.



CAUTION: All damaged areas in DuraPlate should be tested for delamination of the steel skins to the plastic core. If detected, delaminated areas should be cut out and replaced (Option C), or the panel should be replaced (Option D).

Option A (Minor Damage)

Covering surface dents and scratches with a cosmetic self-adhesive patch.

Option B (Minor Damage)

Filling in a dent with automotive body filler and painting over the filler to match the panel.

Option C (Moderate Damage)

Cutting out a section of damaged panel and securing a replacement panel section with self-adhesive patches on both sides. (This is not considered a structural repair but would prevent further damage caused by delamination.) The largest hole that can be covered in a single application is 8" x 20".

Option D (Severe Damage)

For severe damage over a large area, replace the affected panels or sidewall.

Utilimaster recommends this procedure be done only at a professional body shop or at Utilimaster's Customer Service Department in Wakarusa, Indiana. Contact Utilimaster Customer Service for assistance.

Self-adhesive Patch (Option A)

Parts and Supplies

- Isopropyl alcohol
- Metal snips
- Self-adhesive patch panels (contact Utilimaster Customer Service)

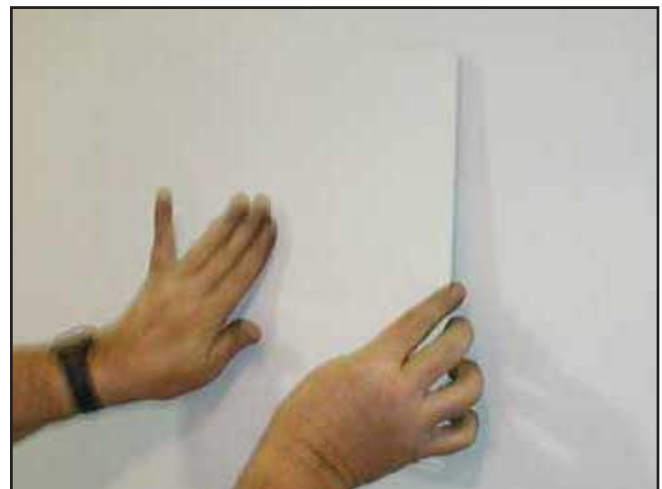
NOTE: The largest currently available size of the self-adhesive patch panels is 12" x 24".

Procedure

1. With isopropyl alcohol, thoroughly clean the area surrounding the damage. The area cleaned should be larger than the size of the patch panel.
2. Peel the paper off the patch panel and carefully center it over damaged area. Apply pressure for good contact. (See Illustration PL-10.)

NOTE: Clipping off the corners of the patch panel at a 45-degree angle before applying may help prevent something catching the edge and peeling the panel back.

3. Carefully tap down the edges of the panel with a rubber mallet.
4. For additional protection, apply a thin bead of sealant around the perimeter of the panel.



*Illustration PL-10
Apply Self-adhesive Patch Panel*

Body Filler (Option B)



CAUTION: Do not attempt to hammer out a dent in the DuraPlate panel. This can result in delamination of a steel skin to the core. Over time delamination can spread and weaken the strength of the panel.

Always test the damaged area for delamination. (See the Testing for Delamination section.) If delamination has occurred, the damaged section must be cut out and/or replaced (Options C or D).

If delamination has not occurred, minor damage may be filled in with automotive body filler. (See Illustration PL-15.)

In the damaged area, file down burrs and protruding metal. Sand smooth and clean the damaged area. Follow the body filler manufacturer's instructions. See also the Paint Repair section.

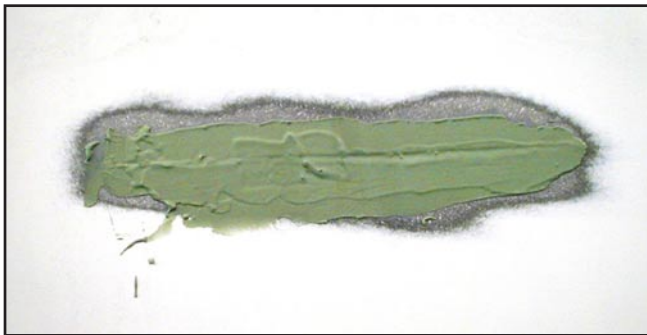


Illustration PL-15
Body Filler Applied (Before Final Sanding and Painting)

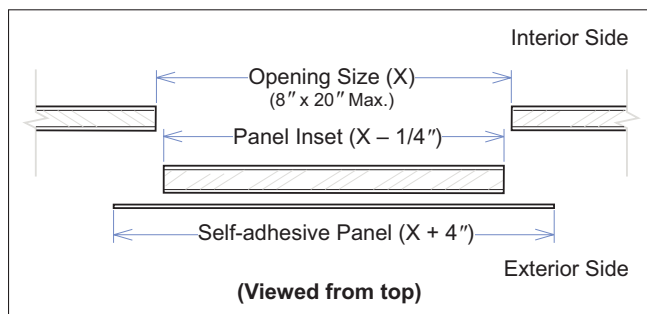


Illustration PL-20
Self-adhesive Panel and Cut-out

Self-adhesive Panel (Option C)

NOTE: The largest available size of the self-adhesive patch panels is 12" x 24". Allowing for a minimum 2" overhang, the largest hole that can be covered in a single application is 8" x 20".

Parts and Supplies

- DuraPlate repair panel (contact Utilimaster Customer Service)
- Self-adhesive patch panels (contact Utilimaster Customer Service)
- Metal snips
- Isopropyl alcohol
- Masking tape

Tools Required

- Safety glasses
- Drill with drill bit set
- Metal file or deburring tool
- Tape measure
- Reciprocating saw

Damaged Area Removal

1. Measure and mark off the area of the damaged panel to be replaced. Apply tape around the area to prevent scratching the wall.
2. Drill relief holes along the edges and cut out the area with a reciprocating saw. (See Illustration PL-25.)
3. Deburr the edges on the inside and outside of the opening.

Patch Panel Preparation

NOTE: The **flange** of the self-adhesive patch panel should overhang the opening by 2" on all sides. The **inset** of the panel should be NO LESS than 1/8" smaller (on each of the four sides) than the opening. (See Illustration PL-20.)

1. Using a low-RPM circular saw or die grinder, cut a piece of DuraPlate that is 1/8" smaller (on each of the four sides) than the hole opening and deburr the edges.

NOTE: To easily capture the size of the patch panel, hold it up next to the opening and mark around the opening from the inside. Measure the opening and the marks on the panel. Verify that the dimensions of the marked panel are 1/4" less than the overall height and width of the opening. (See Illustration PL-20.)

2. Thoroughly clean the **outside** perimeter of the cutout and the inset panel with isopropyl alcohol.

NOTE: Clipping off the corners of the patch panel at a 45-degree angle before applying may help prevent something catching the edge and peeling the panel back.

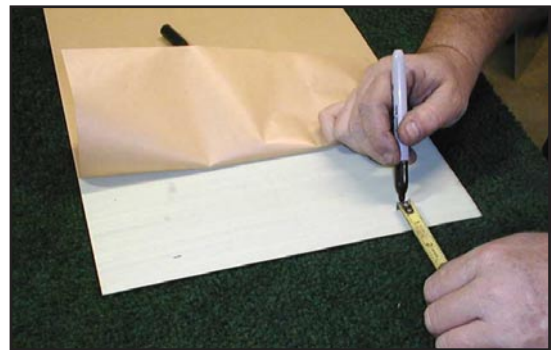
3. Peel the paper back from the patch panel just far enough to mark 2" back from the edges. (See Illustration PL-30.)
4. Peel the paper off the patch panel and carefully set the inset panel in place. Apply pressure for good contact. (See Illustration PL-35.)

Patch Panel Installation

1. Carefully set the panel assembly in the opening from the outside. Apply pressure around the 2" perimeter. (See Illustration PL-40.)
2. Thoroughly clean the inset panel and surrounding 2" perimeter on the **inside** of the vehicle with isopropyl alcohol.
3. Peel the paper off a second patch panel and carefully center it over the **interior** side of the inset panel. Apply pressure for good contact. (See Illustration PL-40.)
4. Carefully tap down the edges of the panels with a rubber mallet. Do **NOT** compress the panels inside the 2" perimeter.
5. For additional protection, apply a thin bead of sealant around the perimeter of the panels.



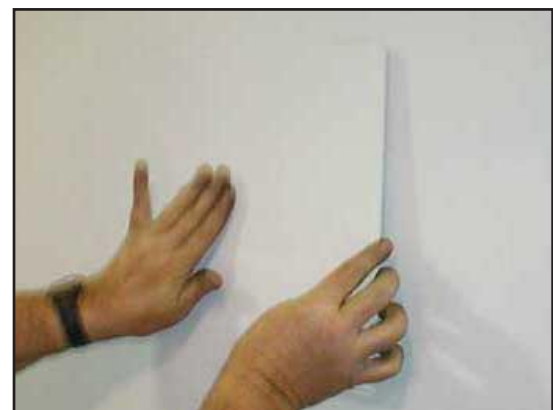
*Illustration PL-25
Mark Off Damaged Area and Cut Out*



*Illustration PL-30
Mark 2" Inset on Adhesive Side of Panel*



*Illustration PL-35
Inset Panel Set on Self-adhesive Patch Panel*



*Illustration PL-40
Apply Self-adhesive Patch Panel*

Entire Panel Replacement (Option D)

For severe damage over a large area, replace the affected panels.

See the Fastener Replacement section.

Utilimaster recommends this procedure be done at a professional body shop or at Utilimaster's Customer Service Department in Wakarusa, Indiana. Contact Utilimaster Customer Service for assistance.

Parts and Supplies

- DuraPlate panel (contact Utilimaster Customer Service)
- Two-part methacrylate adhesive (contact Utilimaster Customer Service)
- Sealant (contact Utilimaster Customer Service)
- Isopropyl alcohol
- Foam Tape (P/N 12301025)
- Appropriate fasteners for rails, castings, and posts as needed (contact Utilimaster Customer Service)

Tools Required

- Safety glasses, gloves, and ear protection
- Drill with drill bit set
- Bar clamps, load bars, spacer blocks, and other braces
- Step ladder
- Pry bar
- Scraper
- Caulk guns
- Air tools for removing and installing fasteners
- Windshield removal tool (CP-838 equivalent)



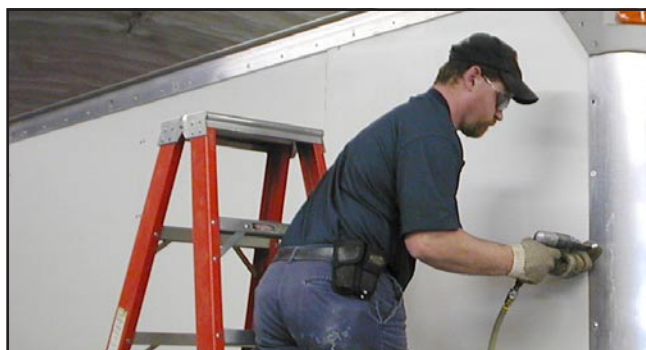
WARNING: Always wear proper protective equipment whenever appropriate for the process. Safety and application instructions provided with adhesives and sealants should always supersede information provided by Utilimaster.



*Illustration PL-45
Removing Floor Plank Fasteners*



*Illustration PL-50
Removing Floor Plank and Front Floor Cap*



*Illustration PL-55
Removing Panel Fasteners*

Removal

1. After unloading and parking the truck on a level surface, remove E-track, scuff plates, vent, deflector plate, cable retainment track, roll-up door track, or any other item that will interfere with the panel removal. (See relevant sections in this manual.)
2. On the damaged panel, cut any decals at the seam. Also, cut the sealant around the perimeter of the panel at the rail, post, and casting.
3. Remove the fasteners in the rear floor cap (that protects the floor planks at the rear door threshold) and remove the cap.
4. Remove the fasteners in the outer floor plank (and front floor cap inside the front post) on the same side as the damaged panel. (See Illustration PL-45.)
5. Remove the floor plank. (See Illustration PL-50. Depending on the orientation of the plank lap joint, you may need to loosen or remove the adjacent plank as well.)
6. Remove all the fasteners holding the damaged DuraPlate panel to the applicable roof rail, base rail, front/rear post, and/or corner casting. (See Illustration PL-55.)



CAUTION: If removing multiple panels, the roof must be supported.

7. Continue removing fasteners about three feet beyond the damaged panel at the base and roof rails (to allow the adjacent panel to flex). (See Illustration PL-65.)
8. Place a pry bar or other object between the panel and the base rail to provide a few inches of clearance. (See Illustration PL-65.)
9. Use a windshield removal tool to cut the adhesive bond on the interior and exterior sides of the DuraPlate seam. (See Illustration PL-60.)

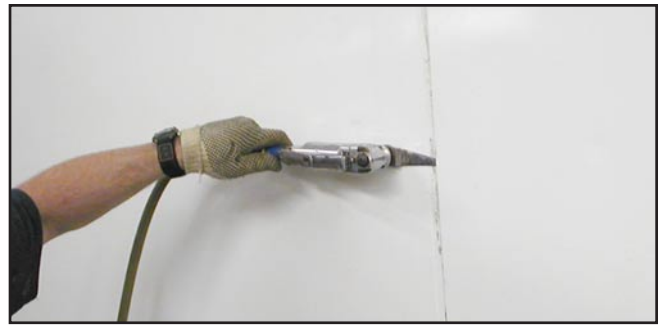


Illustration PL-60
Cutting Adhesive in Seam with Windshield Removal Tool



Illustration PL-65
Leveling Old Adhesive



Illustration PL-70
Applying Foam Tape (Interior Seam Side)

10. Remove the damaged panel (from inside the vehicle).
11. Carefully use the knife tool and/or scraper to remove the high spots of adhesive and tape from the seam of the adjacent panel. Be careful not to remove any paint from the DuraPlate. (See Illustration PL-65.) Also clean off old sealant from rails, posts, and castings. Wipe surfaces clean with isopropyl alcohol.

Installation



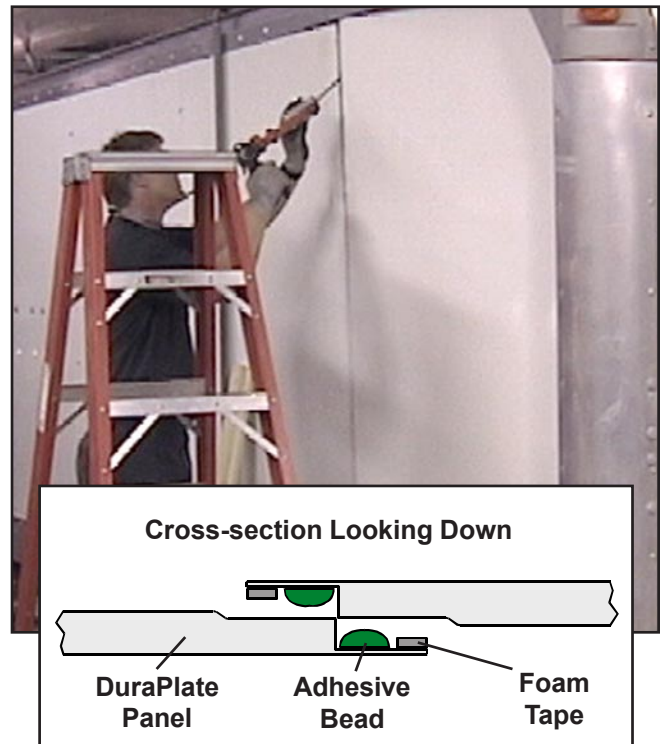
CAUTION: Read and understand ALL adhesive and sealant application instructions and safety procedures. Effectiveness of the repair can be compromised by environmental conditions or poor application. Follow adhesive and sealant manufacturer's application instructions and recommendations for cure time. Safety and application instructions provided by manufacturers always supersedes information provided by Utilimaster.

NOTE: After removing the bonded panel, if desired, you may fasten the replacement panel with rivets instead of adhesive as described in Steps 2 through 8. (See either www.wabashnational.com/products/features/duraplate.htm or the links on the Technical Manuals page of www.utilimaster.com for more information.)

1. Test fit the new DuraPlate panel. (If necessary, cut the front top edge of the new panel to fit under the front roof casting. Be sure the panel lap is correctly oriented before cutting.)
2. Using the applicable fastener holes in the roof rail, base rail, front/rear post, and/or corner casting as a template, drill holes through each of the four corners of the new panel. (These holes are for help locating the correct panel position and inserting the four anchor fasteners as quickly as possible in Steps 6 through 10.)



*Illustration PL-75
Removing Tape Backing (Exterior Seam Side)*



*Illustration PL-80
Applying Adhesive*

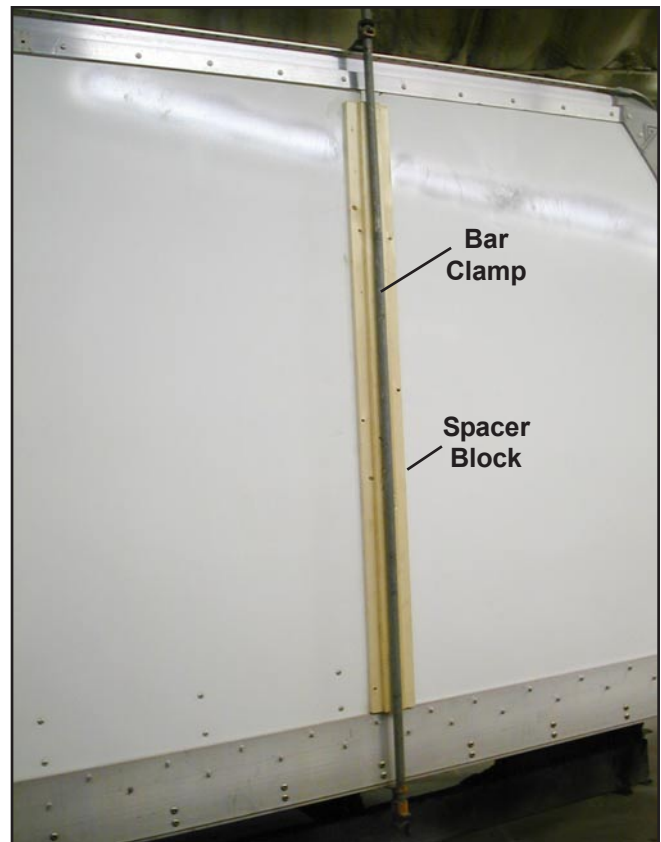
3. Test fit the panel, bar clamps, load bars, braces, and spacer blocks. (See Illustrations PL-85 and PL-95.) After the adhesive is applied, a consistent, even pressure will need to be applied immediately along the entire length of the seam for at least 30 minutes or the time recommended by the adhesive manufacturer.) Be sure that you can position them all again as quickly as possible in Steps 6 and 7.
4. Apply foam tape (P/N 12301025) on the interior and exterior edge of the seam (both sides) and remove the backer paper. (See Illustrations PL-70 through PL-80.)

*NOTE: If a middle panel or multiple panels are replaced, repair one seam at a time and allow to cure **thoroughly** (wait at least double the normal cure time) before repairing the next seam.*

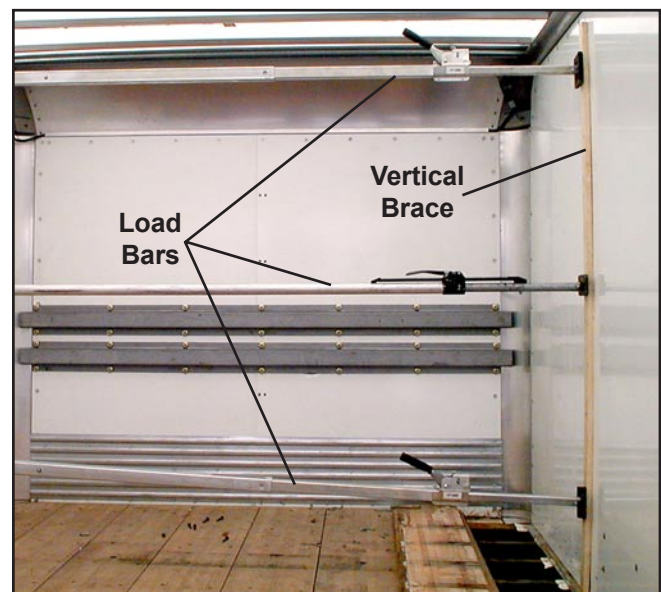


CAUTION: The adhesive sets very quickly. Read and understand ALL adhesive application instructions and safety procedures. Effectiveness of the repair can be compromised by environmental conditions or inadequate application. If the procedure is not performed correctly, after the adhesive is fully cured, you will need to remove the panel and start over.

5. Assemble two adhesive cartridges in two separate applicators—but **do not open the cartridge seal until everything else is ready**. You will need two short tubes per lapped seam (one for each side). **Two** people will need to quickly apply the adhesive simultaneously on the interior and exterior of the panel. **After the adhesive is applied you have only four to five minutes to position the panel, brace it, fasten the four predrilled anchor holes, and wipe up any excess adhesive! Have all necessary personnel and materials (tools, fasteners, panel, etc.) ready before continuing!**



*Illustration PL-85
Clamped in Position (Exterior)*



*Illustration PL-90
Braced in Position with Load Bars (Interior)*



CAUTION: The adhesive sets very quickly. You will have **NOT MORE THAN FOUR TO FIVE MINUTES** to perform Steps 6 through 10. If the panel is moved or repositioned after the adhesive's "open" time, you will need to remove the panel and adhesive and start over. **HAVE ALL NECESSARY PERSONNEL AND MATERIALS (TOOLS, FASTENERS, PANEL, ETC.) READY BEFORE CONTINUING!**

6. Cut the two tube tips down to the point where the adhesive has mixed as it is being pushed out. The adhesive beads should be at least 1/4" wide as they are applied. (See Illustration PL-80.) Apply the adhesive on both sides of the seam and quickly move the panel into position.
7. Immediately, place a bar clamp and spacer block on the exterior of the seam. (See Illustration PL-85.)



CAUTION: The exterior spacer block and interior vertical brace must align with but not cover the edge of the seam where excess adhesive may squeeze out (and bonding the wood to the panel).

8. After the exterior side is clamped, place a vertical (wood or metal) brace and three load bars securely against the interior side of the seam. The vertical brace must be the full height of the panel and sturdy enough to evenly distribute the pressure against the full length of the bonded seam. (See Illustration PL-90.) The DuraPlate panel must be flat and not bowed.
9. Wipe up any adhesive that squeezes out with a clean disposable rag (**before** it cures).
10. In the four corner anchor holes, install new Utilimaster-approved fasteners that are equal to or superior to the original fasteners. Do not reuse old fasteners. Do not use POP rivets.

*NOTE: If you will be installing a second panel, install **all four** anchor fasteners in the first panel (Step 10)—but then install only the first half of the fasteners nearest the seam just completed (Step 12). When the adhesive is fully cured (wait at least double the normal cure time), remove the two anchor fasteners at the seam that will join with the next panel.*

11. After the panel is anchored in position at the four corners, continue using the applicable fastener holes in the roof rail, base rail, front/rear post, and/or corner casting as a template, drill the remaining holes through the new panel.
12. Continue installing the new Utilimaster-approved fasteners that are equal to or superior to the original fasteners. Do not reuse old fasteners. Do not use POP rivets.
13. Allow at least 30 minutes (or adhesive manufacturer's recommendation), before removing the braces.
14. Apply sealant around the perimeter of the rails, posts, and castings.
15. Place floor plank in position and install the fasteners.
16. Place the front corner cover in position and install the fasteners.
17. Place the rear floor cap in position and install the fasteners.
18. Reinstall E-track, vent, deflector plate, cable retainment track, roll-up door track, or other items removed at the beginning.



CAUTION: When welding or cutting next to a DuraPlate panel, be very careful to not overheat the DuraPlate panel (and melting the plastic core).

19. Install new decals as needed. See the Decals section.

Rear Vision (Back-up) Camera System

Operating Instructions

When the vehicle ignition key is turned to the Accessory or On position, power is supplied to the monitor.

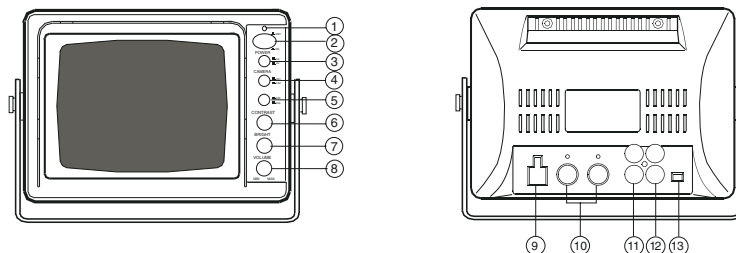
With power supplied to the monitor, the screen can be turned On by pushing the Power button (in). (See the Monitor Controls section below.) The screen will display a picture of the area behind the vehicle the entire time the vehicle is operated.

When the Power button is in the S/By position (out), the monitor is placed in Stand By mode (the screen is normally blank and the LED is not illuminated). However, when the engine is running, placing the transmission in Reverse overrides the Stand By. While the transmission is in Reverse, the LED will glow, and the screen will display a picture.

For safe operation, the entire back edge of the bumper must be visible at the bottom of the monitor's screen. If it is not, loosen the screws on the camera and adjust the camera for the best view. Tighten the screws and recheck the screen.

(Typical operating temperature range of the system is -13°F to $+122^{\circ}\text{F}$ or -25°C to $+50^{\circ}\text{C}$.)

Monitor Controls



1. POWER LED

This glows green whenever the vehicle ignition switch is in the On or Accessory position **and** the monitor's Power switch is in the On position (pushed in). Alternately, when the Power switch is set to S/By (Stand By), the LED will glow (and the monitor will display a picture) when the engine is running and the transmission is put in Reverse.

2. POWER SWITCH

Press the Power switch in to turn the monitor On. Press the power switch again (out) to turn the screen Off (Stand By). (Putting the vehicle in reverse overrides the Standby position and turns on the screen.)

3. CAMERA AUDIO/VIDEO SELECTOR

The button should be out (Ca) to select the camera input.

4. CAMERA SELECTOR

The button should normally be out (Ca1) to select the camera input Ca1. (If the camera has been attached to the other input, push the button the other way.)

5. DAY/NIGHT SWITCH

This switch should normally be in the out position (DAY). At night or in a tunnel, depress the switch to reduce the picture brightness (NIG).

6. CONTRAST CONTROL

Adjust the contrast control for the desired overall best picture. Turn clockwise to increase picture contrast and counterclockwise to decrease.

7. BRIGHTNESS CONTROL

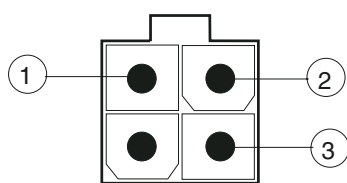
Adjust the brightness control for the best overall picture or display brightness. Turn clockwise to increase picture brightness and counterclockwise to decrease.

8. VOLUME CONTROL

Adjust the volume control for the desired sound level. Turn clockwise to increase and counterclockwise to decrease.

9. MONITOR POWER CONNECTOR

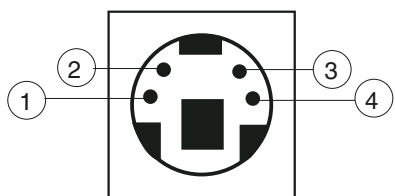
This connector supplies power to the monitor when the engine is on.



| Monitor Power Connector | | | |
|-------------------------|---|---------------|------|
| Pin No. | Description | Value | Tool |
| 1 | Black: Ground | | |
| 2 | Green: R(reverse) gear power (optional) | (10 - 26 VDC) | DVOM |
| 3 | Red: Positive power | (10 - 26 VDC) | DVOM |

10. CAMERA INPUT CONNECTOR

Two mini-DIN type connectors provide the video camera inputs, but only Ca1 is normally used on this vehicle. The monitor supplies power to the camera.



| Camera Input Connector | | | |
|------------------------|--------------|------------|----------------|
| Pin No. | Description | Value | Tool |
| 1 | Power Supply | 12 VDC | DVOM |
| 2 | Audio Input | 35 decibel | Tone Generator |
| 3 | Ground | | |
| 4 | Video Input | 1.0V p-p | Oscilloscope |

11. & 12. VCR JACKS

(Not used on Utilimaster vehicles.)

13. NORMAL/MIRROR OPTION

When the switch is in MIRROR position, the picture will be reversed. When the switch is in NORMAL position, the picture will be displayed normally.

Basic Troubleshooting

Monitor Screen is Black

- Make sure the monitor's Power switch is On (not just in Stand By) **and** the vehicle's ignition is turned to On or Accessory. If the monitor's green LED power indicator is **not** illuminated, see Flowchart A.
- Be sure the Camera Audio/Video Selector switch is set to Ca (button is out) and the Camera Selector Switch is set to the correct input (normally Ca1).
- Check Contrast and Brightness knobs for proper adjustment.
- Check the Day/Night switch for the appropriate setting.
- See Flowchart A.

Monitor Screen is White

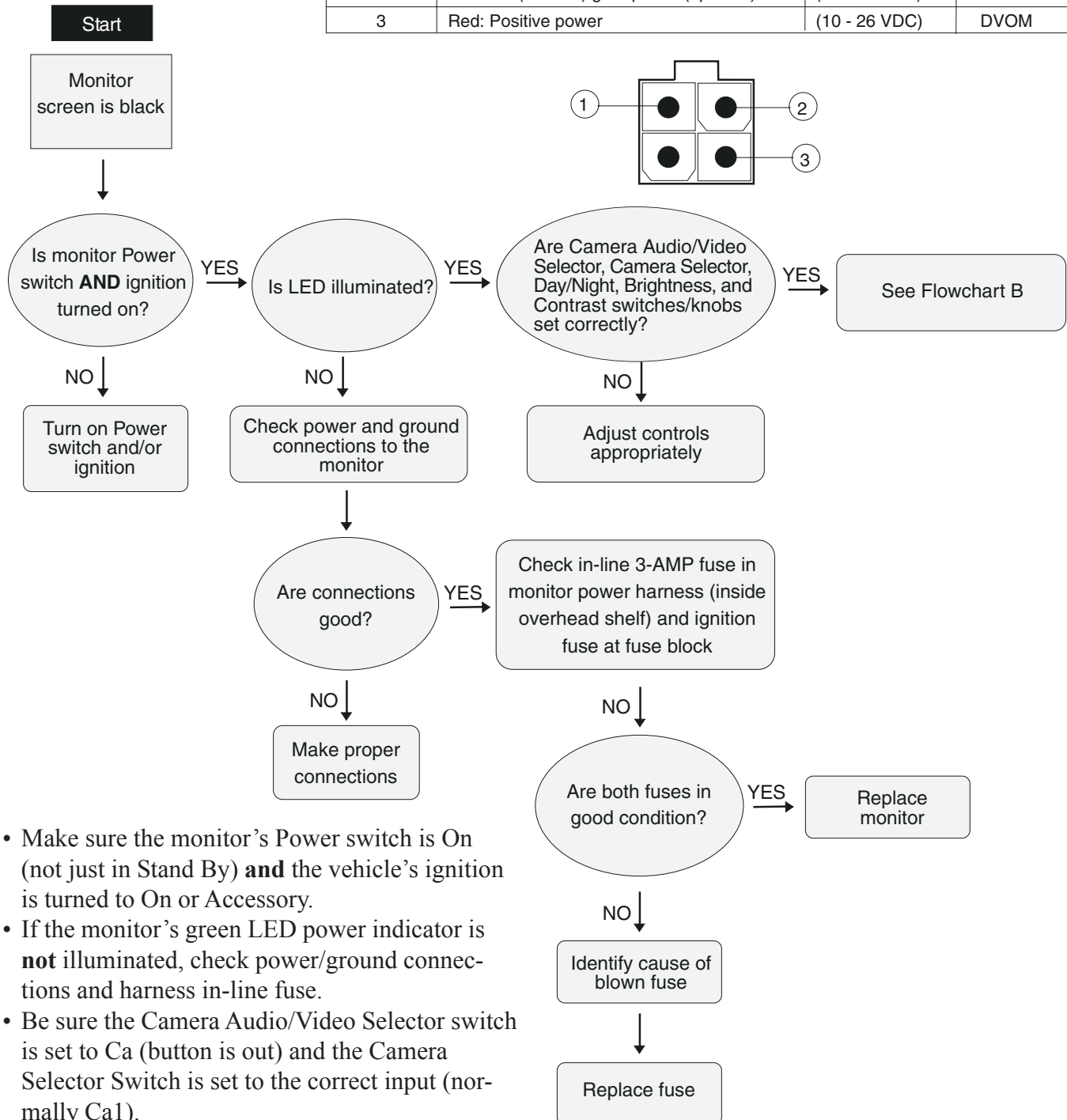
- Be sure the Camera Audio/Video Selector switch is set to Ca (button is out) and the Camera Selector Switch is set to the correct input (normally Ca1).
- Check Contrast and Brightness knobs for proper adjustment.
- Check the Day/Night switch for the appropriate setting.
- See Flowchart C.

NOTE: See also the Wiring Diagrams section.

Troubleshooting Flowcharts

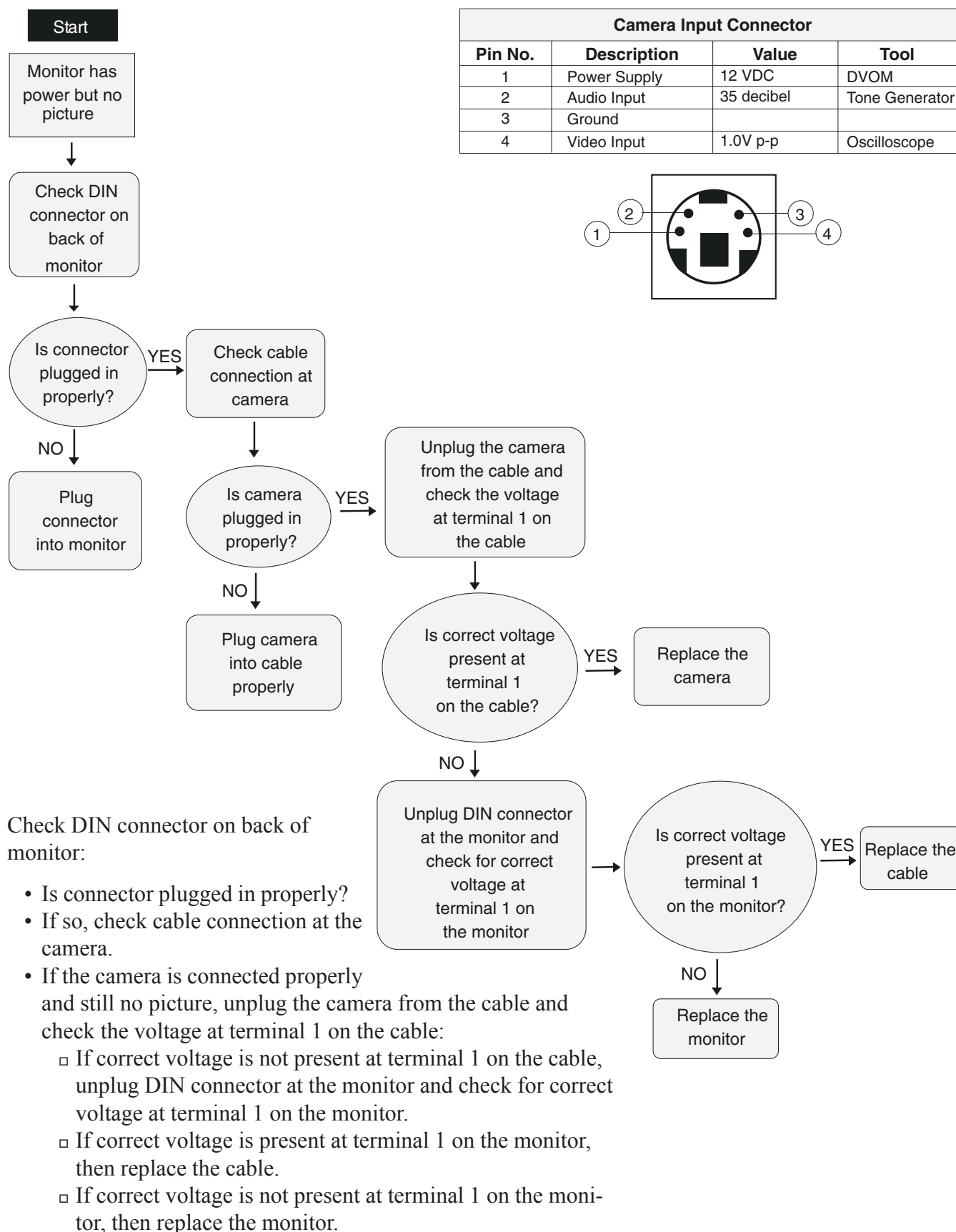
Flowchart A: If Monitor's Screen is Black

| Monitor Power Connector | | | |
|-------------------------|---|---------------|------|
| Pin No. | Description | Value | Tool |
| 1 | Black: Ground | | |
| 2 | Green: R(reverse) gear power (optional) | (10 - 26 VDC) | DVOM |
| 3 | Red: Positive power | (10 - 26 VDC) | DVOM |

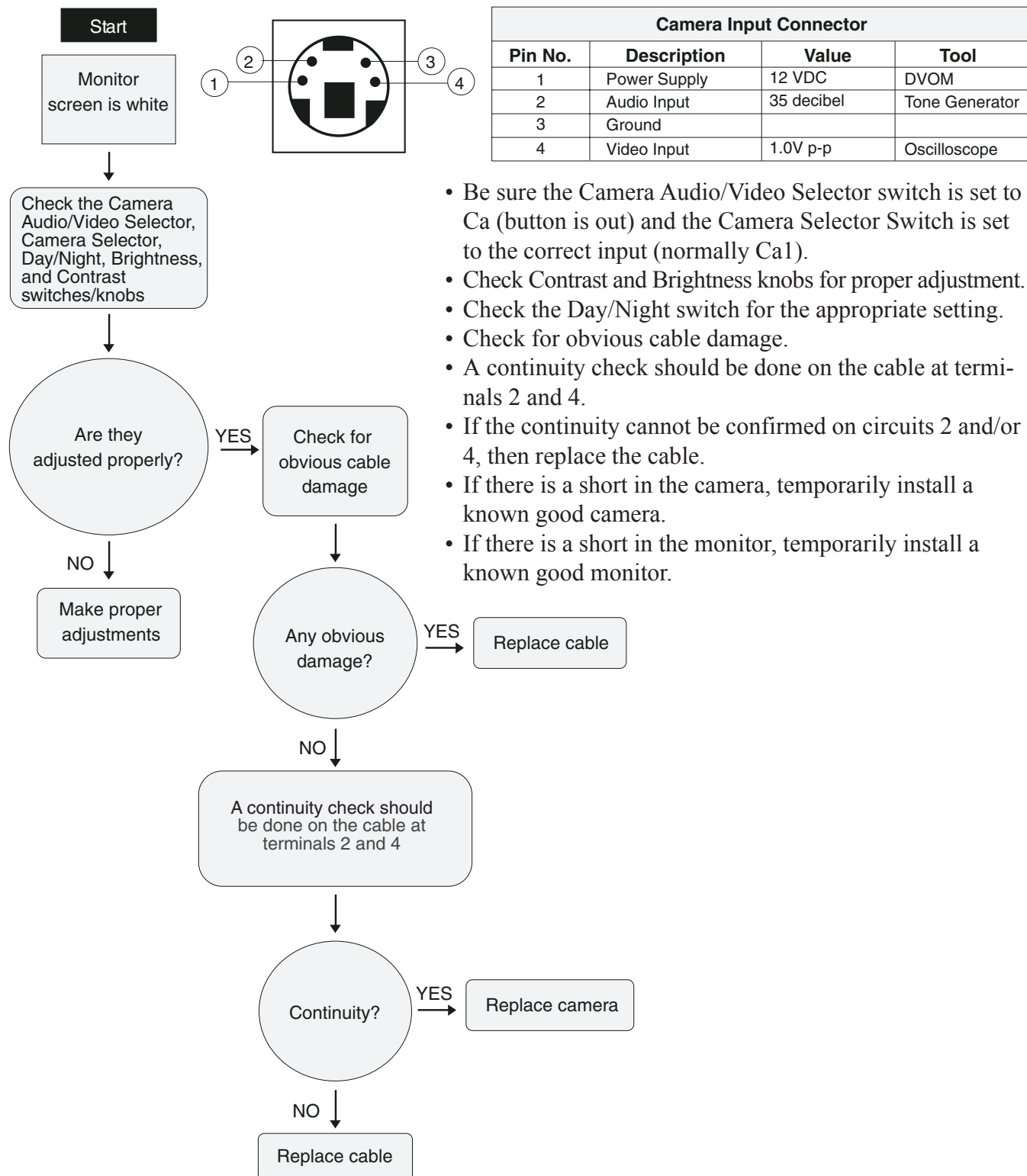


- Make sure the monitor's Power switch is On (not just in Stand By) **and** the vehicle's ignition is turned to On or Accessory.
- If the monitor's green LED power indicator is **not** illuminated, check power/ground connections and harness in-line fuse.
- Be sure the Camera Audio/Video Selector switch is set to Ca (button is out) and the Camera Selector Switch is set to the correct input (normally Ca1).
- Check Contrast and Brightness knobs for proper adjustment.
- Check the Day/Night switch for the appropriate setting.
- See Flowchart B.

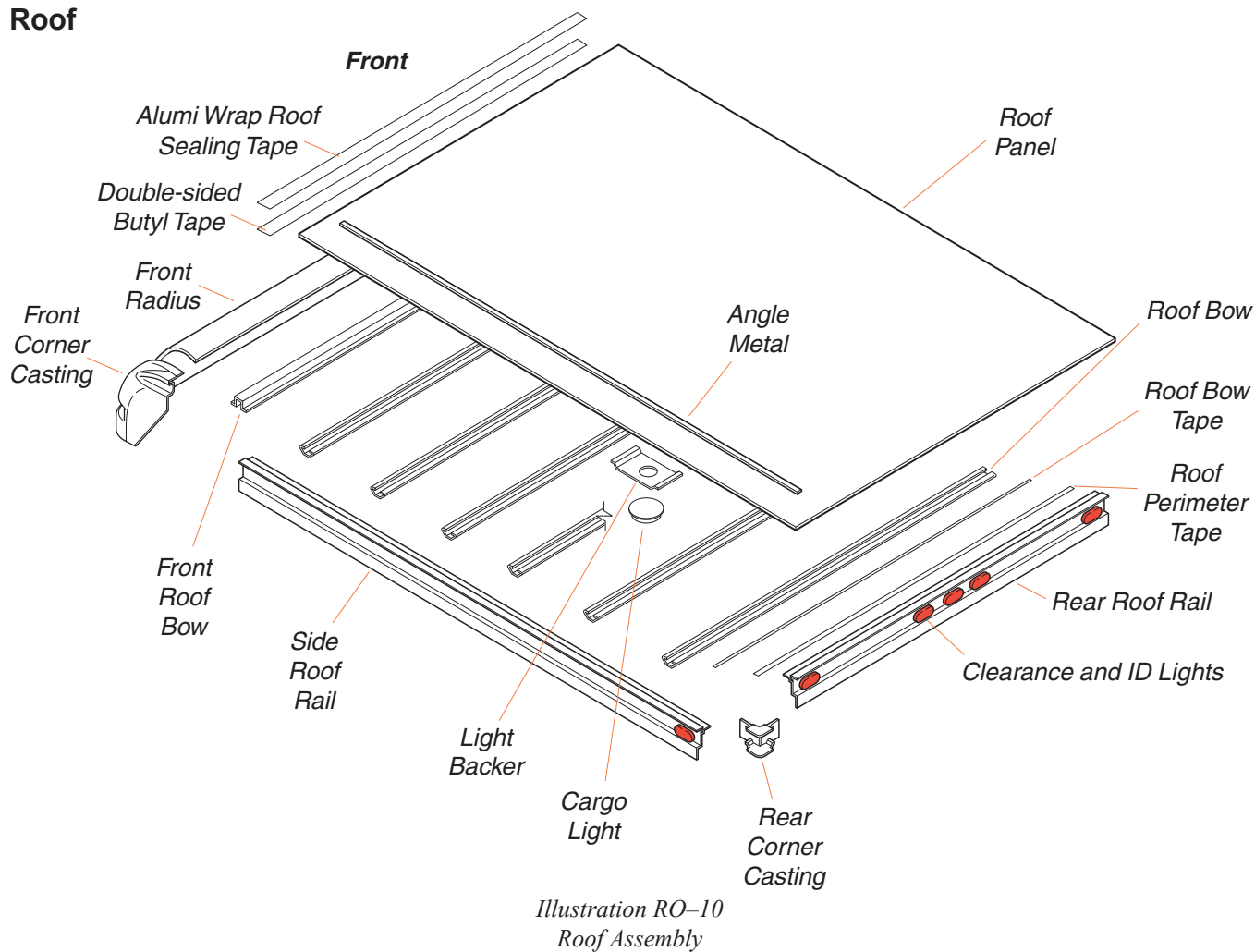
Flowchart B: If Monitor has Power but No Picture



Flowchart C: If Monitor's Screen is White



Roof



CAUTION: Removal and replacement of roof could result in roof leaks. If a vehicle requires major roof or structural repair, check with Utilimaster for a recommendation on returning the vehicle to Utilimaster or repairing damage at a professional body shop.

Corner Casting (Front) Replacement

Removal

1. Remove the clearance light for reuse. See the Light Replacement—Clearance, Identification, and Side Marker Lights section.
2. Remove the fasteners holding the casting to the front radius, walls, and roof. (See Fastener Replacement section.)
3. Using a utility knife, cut the sealant around the casting. Pull off the casting.

Installation

1. Scrape off the old sealant and clean the bonding surface with isopropyl alcohol.
NOTE: For the new casting, drill new holes using the old casting as a model (if possible) or mark hole locations from test-mounting the casting.
2. Apply polyurethane sealant along the bonding surface where the casting will mate with the front radius, roof, and walls. (See the Sealants section.)
3. Fasten the casting into place.
4. Seal the exterior perimeter of the corner casting.
5. Install the clearance light removed from the original casting.
6. After an eight-hour waiting period, water-test the roof. With all doors tightly closed, spray the roof and the top of the side structures near the affected area with water. Check for leaks. (Reseal and retest if any leaks appear.)

Corner Casting (Rear) Replacement

Removal

1. Remove the fasteners holding the casting to the roof rails. (See the Fastener Replacement section.)
2. Using a utility knife, cut the sealant around the casting.
3. Pull off the casting.

Installation

1. Scrape off the old sealant and clean the bonding surface with isopropyl alcohol.
NOTE: For the new casting, drill new holes using the old casting as a model (if possible) or mark hole locations from test-mounting the casting.
2. Apply polyurethane sealant along the bonding surface where the casting will mate with the roof rails. (See the Sealants section.)
3. Fasten the casting into place.
4. Apply polyurethane sealant around the exterior perimeter of the corner casting. (See the Sealants section.)
5. After an eight-hour waiting period, water-test the roof. With all doors tightly closed, spray the roof and the top of the side structures near the affected area with water. Check for leaks. (Reseal and retest if any leaks appear.)

Front Radius Replacement

Removal

1. Remove the tape over the front radius and roof panel seam.
2. Remove one of the castings. (See the Roof—Corner Casting Replacement section.)
3. Remove the fasteners holding the front radius to the other casting, roof, and wall sections. (See the Fastener Replacement section.)
4. Using a razor knife, cut the sealant and tape around the radius. Pull off the radius.

Installation

1. Scrape off old sealant and tape and clean the bonding surfaces with isopropyl alcohol.

NOTE: For the new radius, drill new holes using the old radius as a model (if possible) or mark hole locations from test-mounting the radius on the vehicle.

2. Place double-sided butyl tape along top edge of the roof panel.
3. Carefully place the radius in position and fasten in place.
4. Reinstall the corner casting. (See the Roof—Corner Casting Replacement section.)
5. Apply “Alumi Wrap” roof sealing tape where the front radius and the roof panel overlap.
6. Apply polyurethane sealant around the exterior perimeter of the radius. (See the Sealants section.)
7. After an eight-hour waiting period, water-test the roof. With doors closed tightly, spray the roof and the top of the side structures near the affected area with water. Check for leaks. (Reseal and retest if any leaks appear.)

Roof Panel Repair

Quick and easy translucent fiberglass repair kits are available for permanently repairing small tears and punctures. These kits, such as Kemlite® SunPatch™ repair kit (P/N 01900680), work in a wide range of temperatures and do not require the mixing of resins.



WARNING: Always follow the manufacturer's cautions and recommendations for protective equipment, application, and cleanup.



CAUTION: Removal and replacement of roof could result in roof leaks. If a vehicle requires major roof or structural repair, check with Utilimaster for a recommendation on returning the vehicle to Utilimaster or repairing damage at a professional body shop.

Roof Panel Replacement

NOTE: Use of a patch kit where possible rather than replacing the entire panel. See the Roof Panel Repair section.

Removal

1. Remove the tape over the front radius and roof panel seam.
2. Remove the pop rivets securing the panel to the front radius and the heads of the pierce-and-roll rivets securing the roof panel to the roof rails. **(See the Fastener Replacement section!)**
3. Remove the angle metal above the rails.
4. Cut the double-sided tape between the roof panel and the front radius, roof bows, and rails with a razor knife.
5. Remove the panel (some prying and additional cutting of tape may be required to break the panel loose from the roof bows and rails).

-
6. On the outer edge of the rail use a marker to mark each rivet location (for reference after a new angle metal is placed on top).
 7. Use a 4" angle grinder to grind down all rivet stems until they are flush with the rail surface. Be careful to not grind off excess metal.
 8. Scrape the rails, front radius, and roof bows to remove the old tape.
 9. Clean the tape areas with isopropyl alcohol and allow to dry.

Installation

1. Test fit the new panel and trim as required.
2. Remove the panel.
3. Apply double-sided butyl tape along the bottom of the front radius where the roof panel will overlap. On the side facing down, leave the paper strip on for now.
4. Apply 1/2"-wide adhesive tape (P/N 12605933) on all the roof bows. On the side facing up, leave the paper strip on for now.
5. Apply the 1"-wide adhesive tape (P/N 12605927) around the roof perimeter on the side and rear roof rails. On the side facing up, leave the paper strip on for now.
6. Peel off about an inch (a few centimeters) of the tape paper at each tape end of the roof perimeter.
7. Peel off about an inch (a few centimeters) of the tape paper at each end of the roof bows.
8. Lay down the new translucent panel.
9. Carefully lay down the new translucent panel, inserting the front edge under (the tape of the) front radius, and then carefully remove the paper strip on the tape (between the radius and the roof).
10. Carefully pull out all the remaining tape paper.
11. Apply pressure around the perimeter (by hand or preferably with a roller) to firmly adhere the tape to the roof.
12. Place **new** angle metals over the panel ends and over the rails.
13. Drill 3/16" (for buck rivets) or 1/4" (for Magna-Loks) holes through the new angle metals and panel staggered from the old rivets. **(See the Fastener Replacement section.)**
14. Fasten the panel in position with buck rivets or Magna-Loks.
15. Using the holes in the front radius as a template, drill holes through the front of the roof panel.
16. Fasten the panel to the front radius with POP rivets. (See the Fastener Replacement section.)
17. Apply Alumi Wrap roof sealing tape where the front radius and the roof panel overlap.
18. Apply a bead of sealant around the exterior perimeter of the panel. Ensure there are no voids in the sealant.
19. After an eight-hour waiting period, water-test the roof. With all doors closed tightly, spray the roof and the top of the side structures with water. Check for leaks. (Reseal and retest if any leaks appear.)

NOTE: As you are lowering the panel, make sure you can reach (from the interior or the exterior) the peeled-off paper on every tape strip.

Sidewall Scuff Plates

Lower Plate

Removal

1. Remove the deflector plate. See the Deflector Plate section.
2. Remove the Hucktainers holding the lower scuff plate to the sidewall. (See Illustration SC-5.)
3. Remove the scuff plate.

Installation

1. Measure and cut the plate to length as needed.
2. From the exterior, drill holes in the scuff plate from the exterior, using the fastener holes in the sidewall as a template.
3. Insert Hucktainers into the holes.



*Illustration SC-5
Lower Scuff Plate (and Fasteners)*



*Illustration SC-10
Upper Scuff Plate*

Upper Plate

Removal

1. Remove the four Hucktainers at the front and rear of the plate. (See Illustration SC-10.)
2. Use a utility knife to cut the double-sided tape between the plate and the sidewall.
3. Pull and/or gently pry the plate off the sidewall.
4. Clean remnants of the tape off the sidewall.

Installation

1. Measure and cut the plate to length.
2. Leaving the top paper strip on for now, apply double-sided tape to the top and bottom parts of the plate.
3. Position the plate and mark where rivets from the vent protrude.
4. Lay the plate down.
5. Cut and remove the tape from the rivet areas.
6. Remove the paper strips from all the tape.
7. Carefully position the plate and press it against the sidewall.
8. From the exterior, drill four holes in the scuff plate, using the fastener holes in the sidewall as a template.
9. Insert Hucktainer fasteners into the holes.

Switch, Cargo Light

NOTE: The cargo light can be turned on with or without the key in the ignition.

1. Disconnect the Negative (Black) terminal of the battery. (See Battery, Disconnecting section.)
2. Remove the two screws holding the switch to the deflector plate beside the door opening. (See Illustration SW-5.)
3. Detach the connectors from the back of the switch body.
4. Attach the connectors to the new switch.
5. Attach the switch to the plate with the screws.
6. Reconnect the battery.
7. Test the function of the switch.



*Illustration SW-5
Cargo Light Switch*

Vents

Side Vent

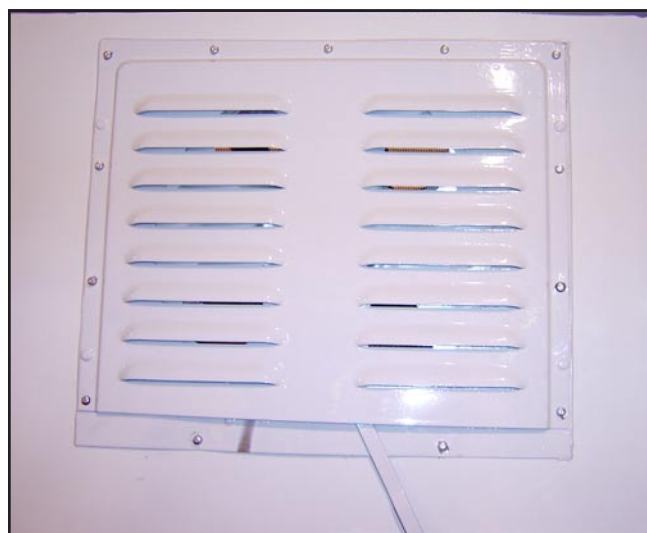
Removal

1. Remove *all* the fasteners securing the vent. (See Illustrations VE-5 and VE-10 and the Fastener Replacement section.)
2. Remove the vent.

Installation

1. Align the hole in the vent and the panel opening.
2. Fasten into position.

NOTE: See also the Drains section for cleaning information.



*Illustration VE-5
Side Vent (Exterior View)*



*Illustration VE-10
Side Vent (Interior View of Holes in Sidewall)*

Front Vent

Removal

1. From the interior of the vehicle, remove the screws holding the plate to the wall and remove the plate. (See Illustration VE-20.)
2. From the exterior of the vehicle, remove the fasteners that attach the vent and remove the vent assembly. (See Illustration VE-15 and Fastener Replacement section.)

Installation

1. From the interior of the vehicle, insert the screws through the plate and sidewall.
2. While the screws are held in position from the interior, from the exterior place the foam rubber spacer over the screws. (See Illustration VE-25.)
3. Place the wire screen over the screws.
4. Turn the screws into the four holes of the vent cover.
5. Rivet the vent cover to the wall using the existing holes.

NOTE: See also the Drains section for cleaning information.



*Illustration VE-15
Front Butterfly Vent (Exterior View)*



*Illustration VE-20
Front Butterfly Vent (Interior View)*



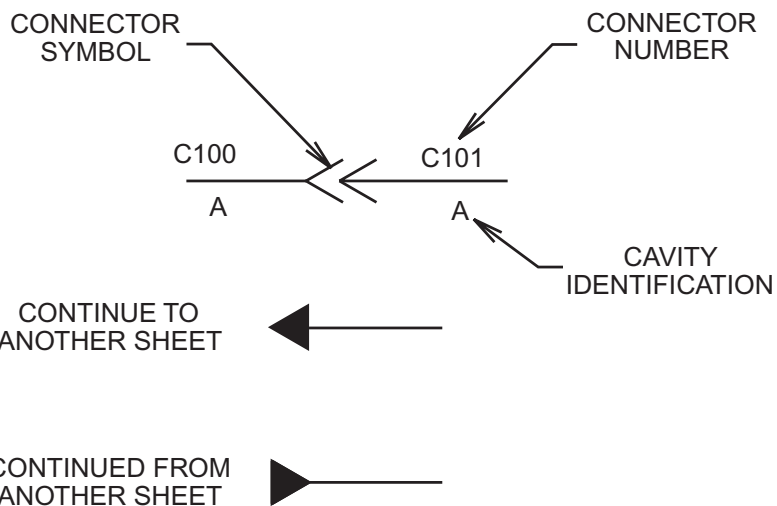
*Illustration VE-25
Front Vent Assembly Parts*

Wiring Diagrams

Codes

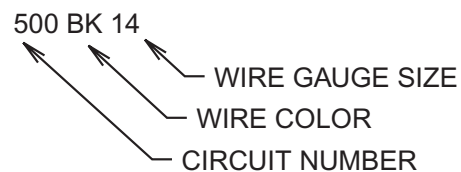
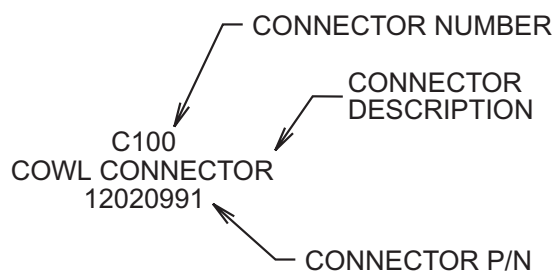
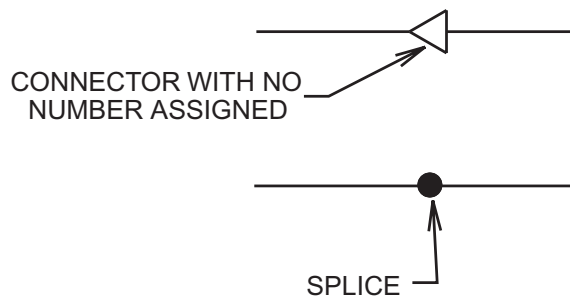
WIRE COLOR CODE:

BK - BLACK
BR - BROWN
DB - DARK BLUE
DG - DARK GREEN
GY - GRAY
LB - LIGHT BLUE
LG - LIGHT GREEN
OR - ORANGE
PK - PINK
RD - RED
YL - YELLOW
VT - VIOLET
WT - WHITE



WIRE GAUGE CHART:

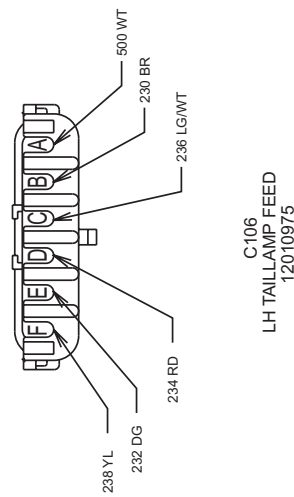
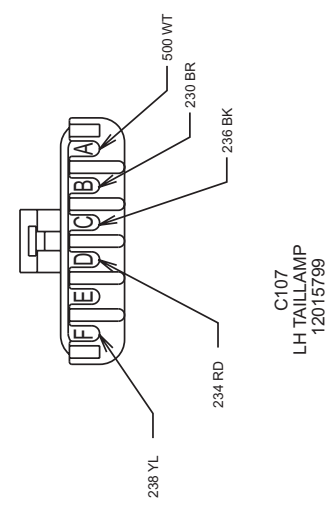
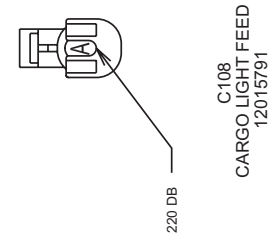
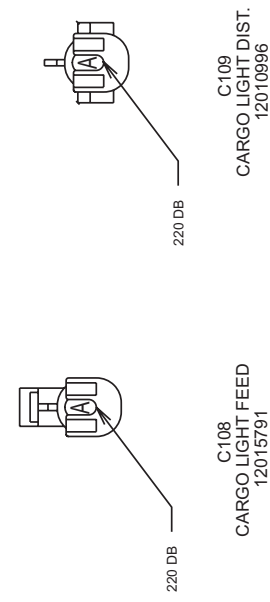
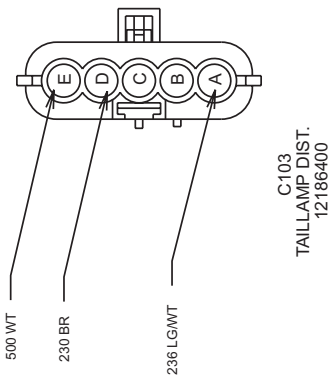
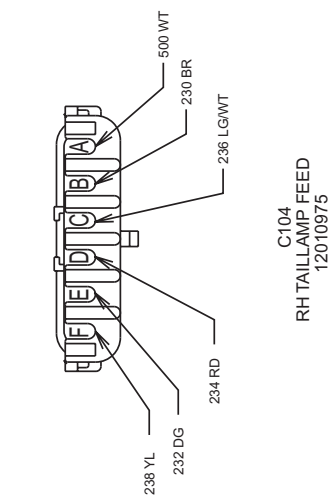
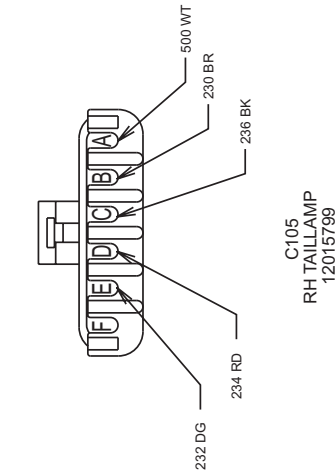
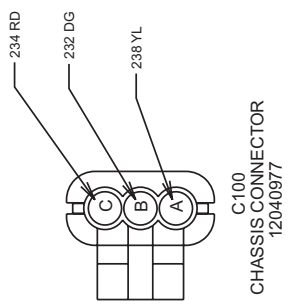
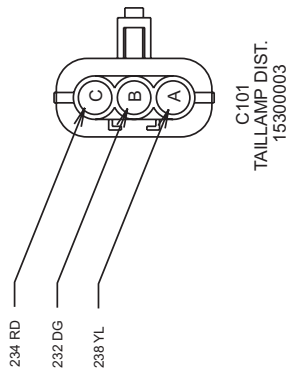
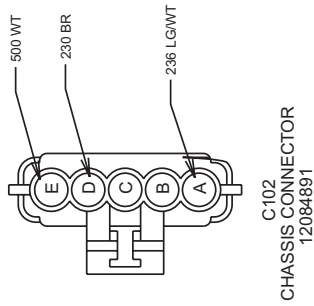
18 - 18GA
16 - 16GA
14 - 14GA
12 - 12GA



NOTE: All connectors are shown in the **load (wire lead insertion)** position.

Codes - Diagram 58301003a1 Sheet 1

Connectors



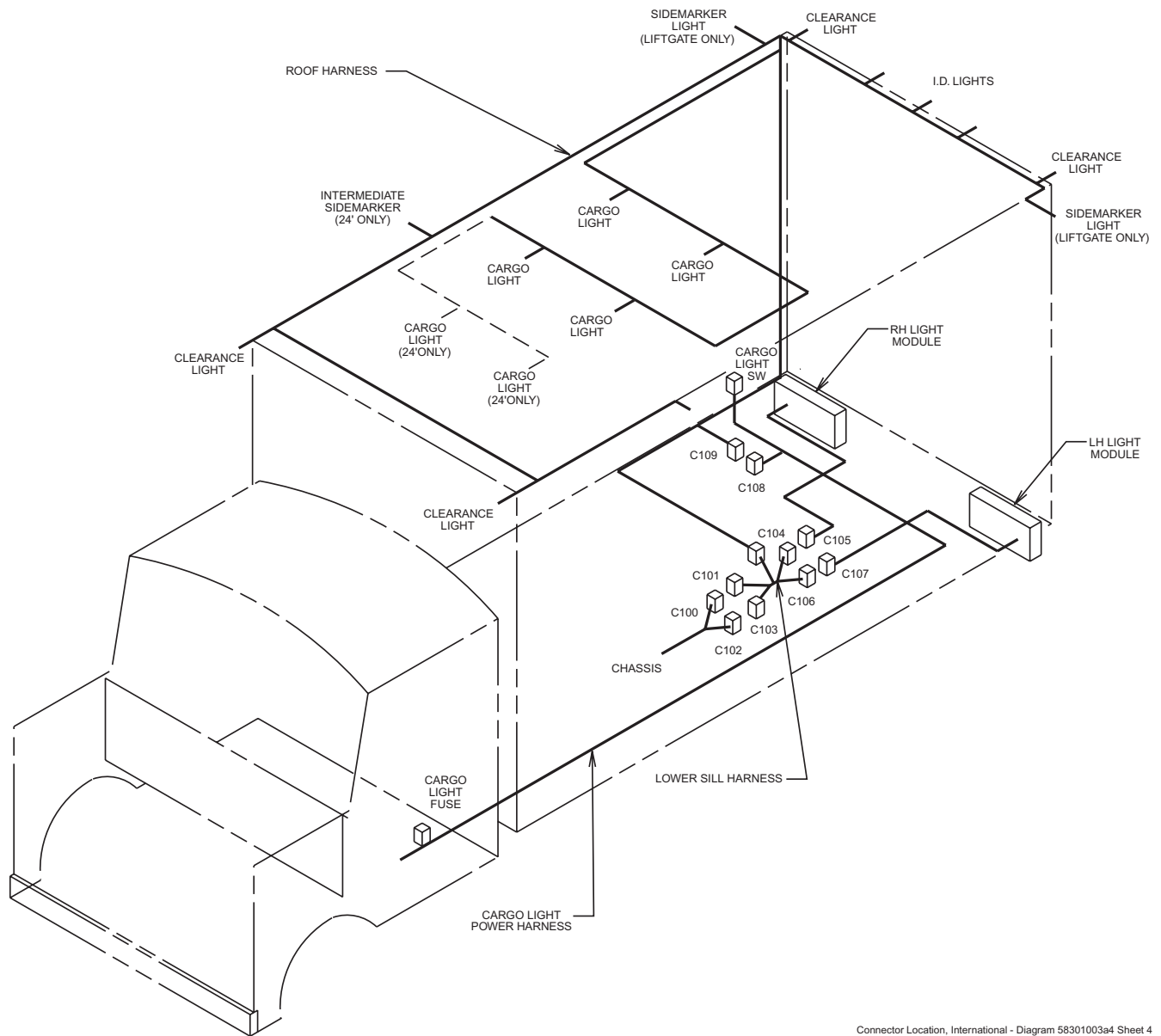
Connectors - Diagram 58301003a2 Sheet 2

Circuit Number Identification

| CIRCUIT NUMBER | COLOR | DESCRIPTION |
|----------------|-------------|------------------------|
| 150 | RED | BATTERY POWER |
| 220 | DARK BLUE | CARGO LIGHTS |
| 230 | BROWN | TAIL/RUNNING LIGHTS |
| 232 | DARK GREEN | REAR RIGHT TURN LIGHTS |
| 234 | RED | STOP LIGHTS |
| 236 | LIGHT GREEN | BACK UP LIGHTS |
| 236 | BLACK | BACK UP LIGHTS |
| 238 | YELLOW | REAR LEFT TURN LIGHTS |
| 500 | WHITE | GROUND |

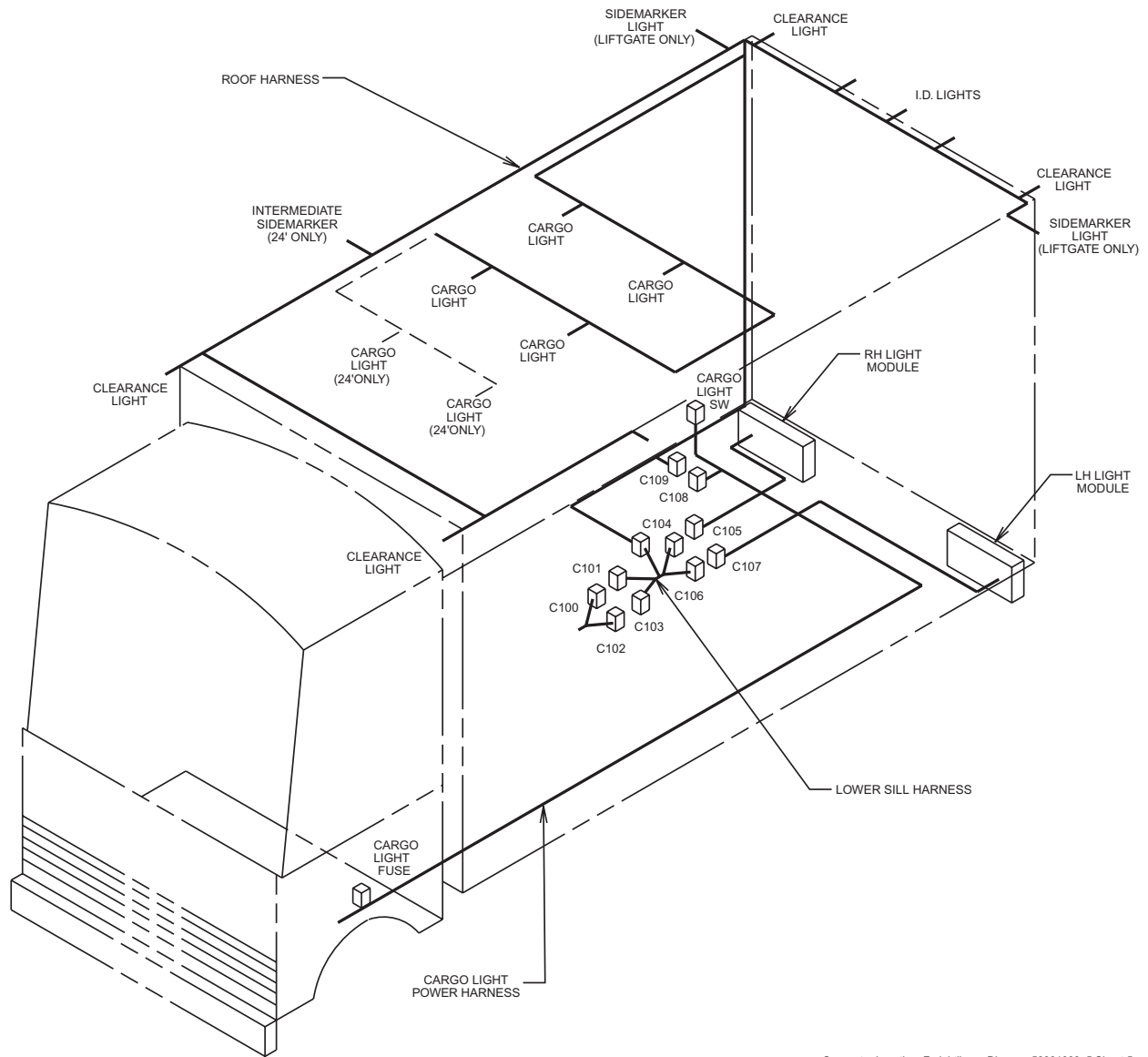
Circuit Number ID - Diagram 58301003a3 Sheet 3

Connector Locating Diagram, International



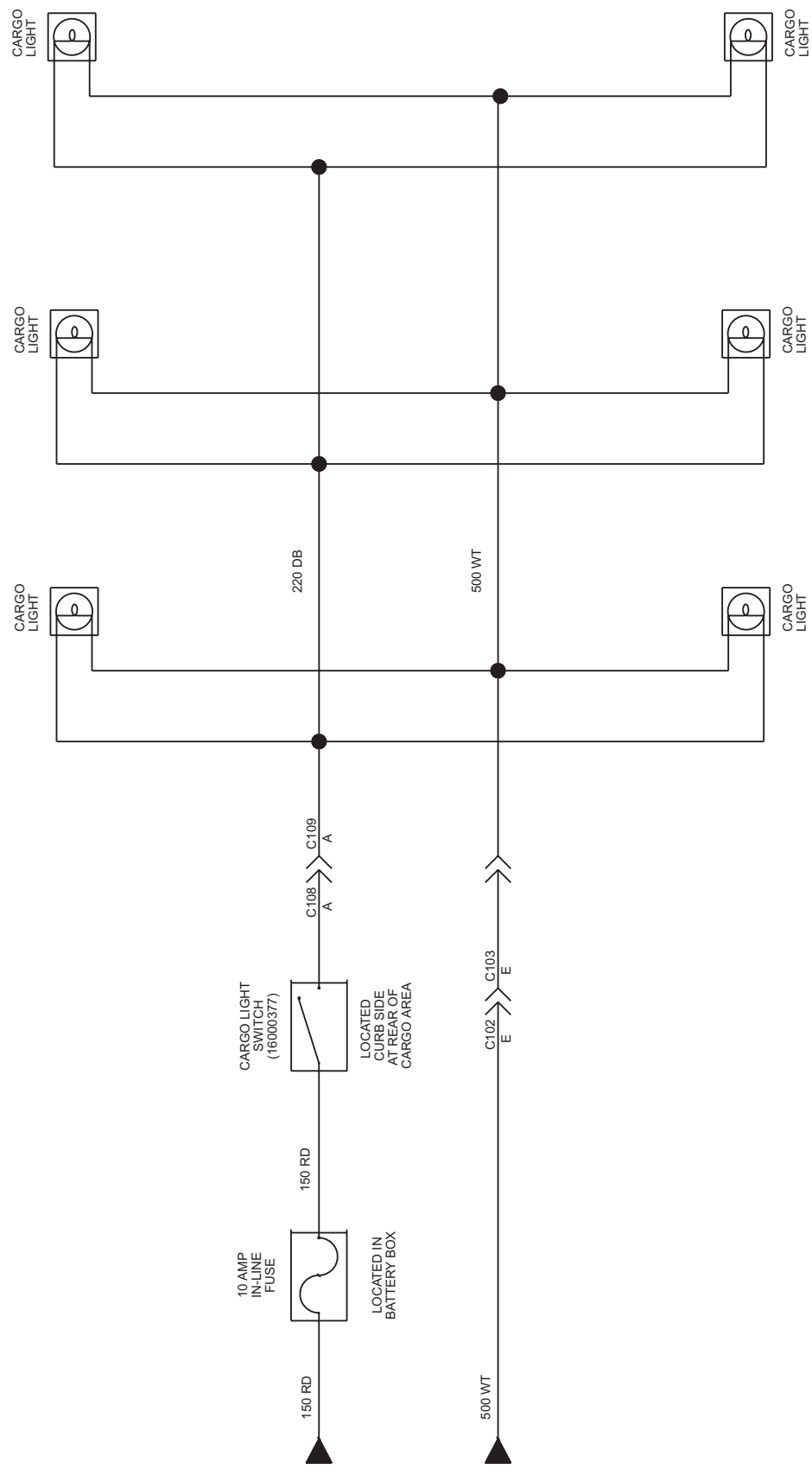
Connector Location, International - Diagram 58301003a4 Sheet 4

Connector Locating Diagram, Freightliner



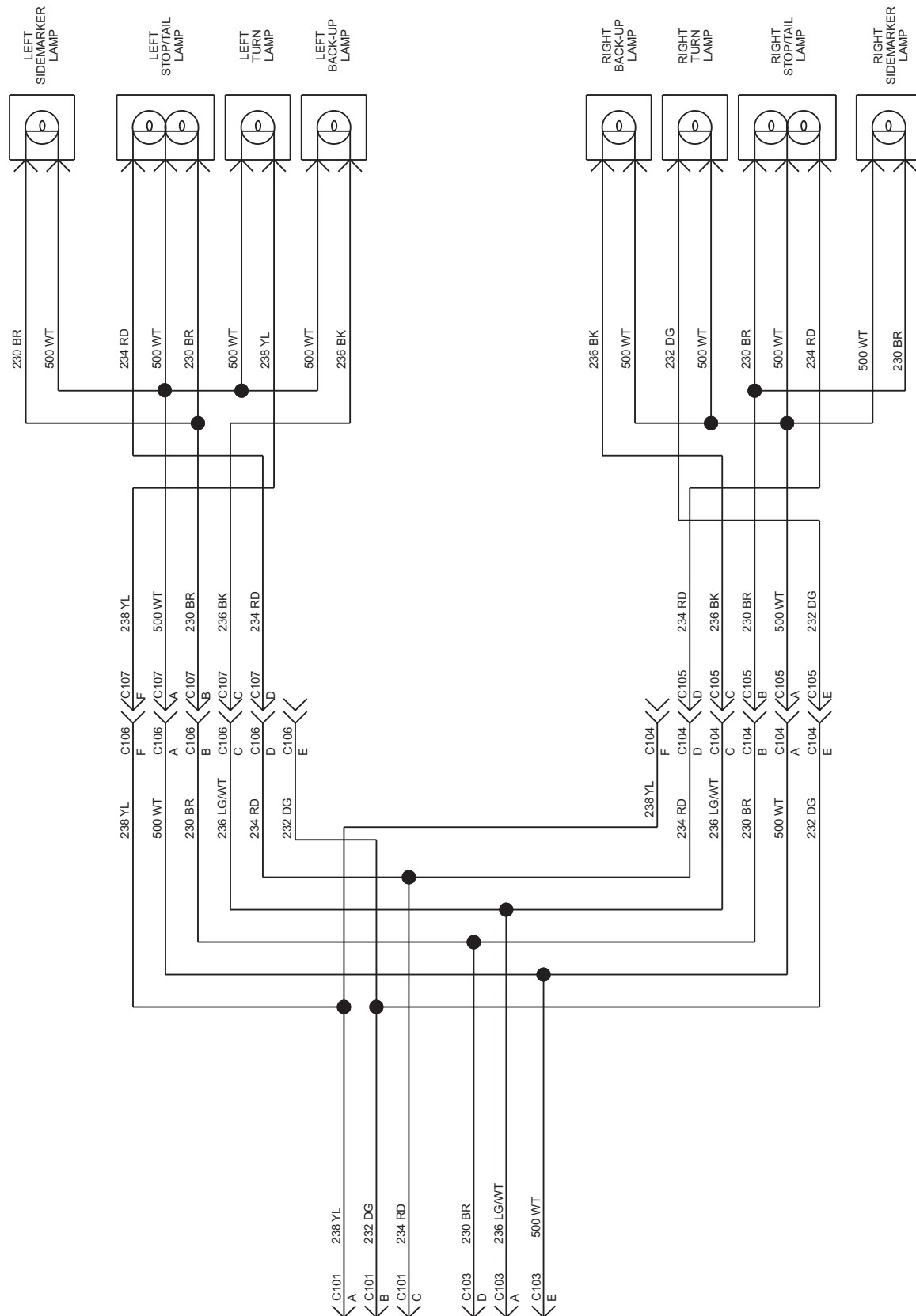
Connector Location, Freightliner - Diagram 58301003a5 Sheet 5

Cargo Lamps Wiring



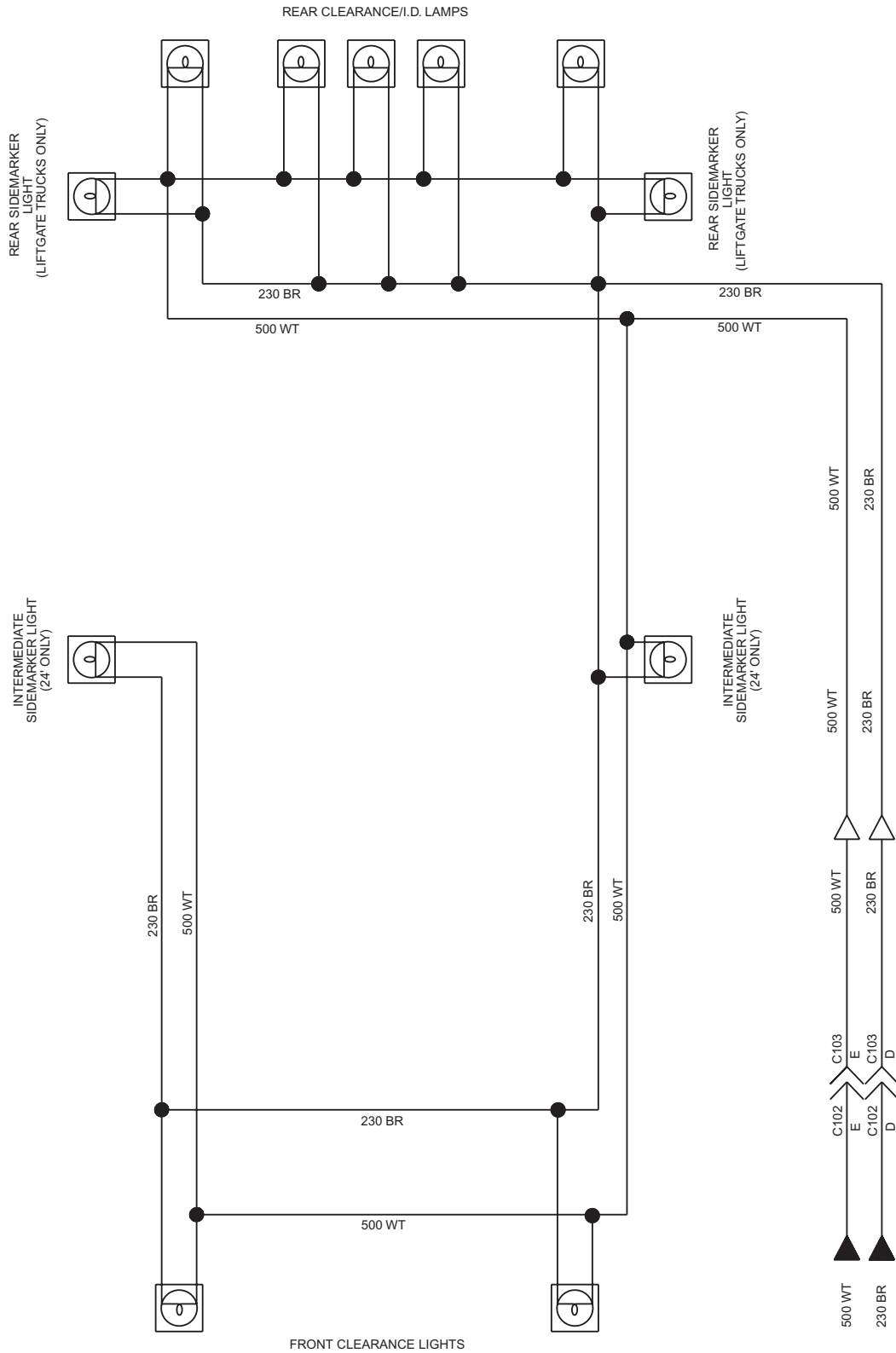
Cargo Lamps - Diagram 56301003a6 Sheet 6

Taillight Wiring



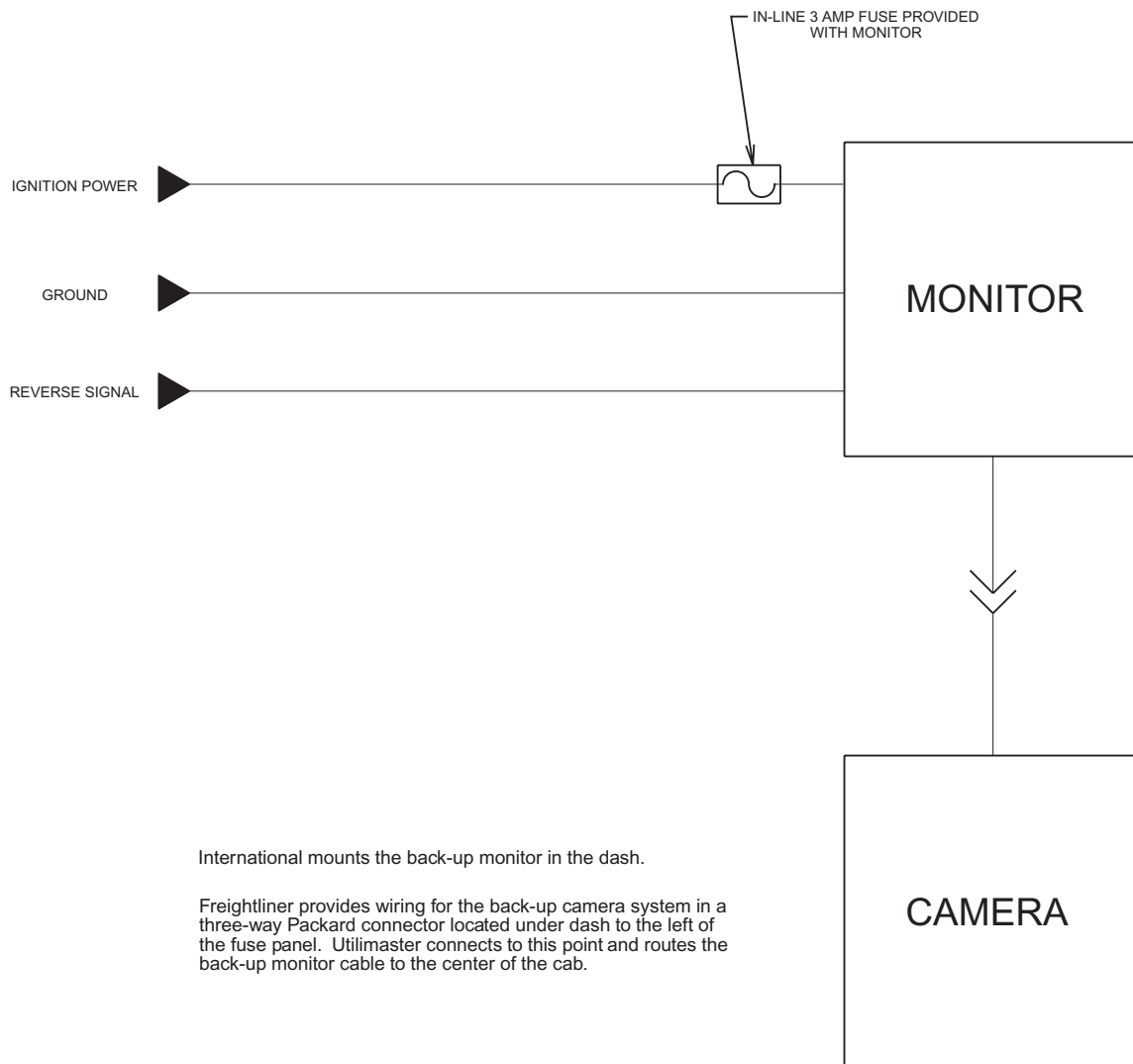
Taillamps - Diagram 58301003a7 Sheet 7

Clearance/Marker Light Wiring



Clearance/Marker Lights - Diagram 56301003a8 Sheet 8

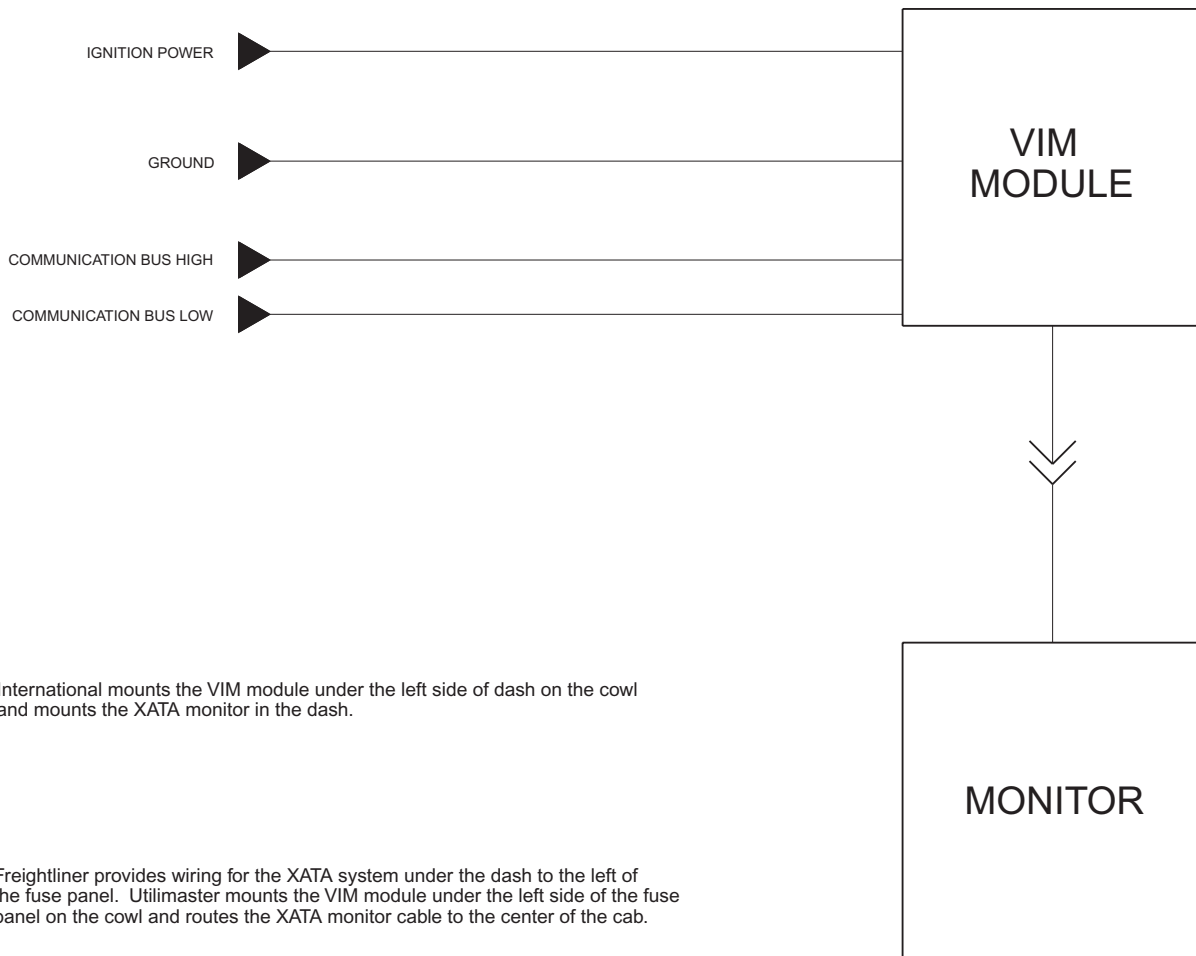
Rear Vision (Back-up) Camera System Connections



Rear Vision - Diagram 58301003a9 Sheet 9

NOTE: See also the Rear Vision (Back-up) Camera System under the Service Information section.

XATA System Connections



XATA - Diagram 58301003a10 Sheet 10

NOTE: See the manufacturer-supplied materials for more information about the XATA system.



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