Removing Undamaged Urethane Glass Negotiation Tool
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Introduction

In response to numerous requests from valued Collision Advice customers across the US, we have created this tool to help explain, justify and negotiate time for repair operations. The collected information and documentation are intended to help clarify whether or not specific repair processes are considered to be required repair operations and if they are included or not-included within any other repair procedures. Our objective is to help our customers build a complete repair plan and to get paid for the work they do.

To do so, we utilize four negotiation questions and supporting documentation as described below:

1. Is it required to put the vehicle back to pre-accident condition?
   - OEM Position Statements
   - ALLDATA®, TechAdvisor and Other Similar Systems
   - Paint Manufacture Bulletins
   - Material Manufacturer Bulletins (ex. 3M, Wurth, Kent)
   - Equipment Manufacturers
   - Internet (www.YouTube.com)
   - Estimating Systems
   - Scan Tools (Ex. ASTech)
   - The Vehicle

2. Is it included in any other labor operations?
   - Estimating Systems
   - ASA Not-Included Charts
   - www.Degweb.org
   - www.Estimatescrubber.com
   - SCRS Guide to Estimating

3. Is there a pre-determined time in the database?
   - Estimating Systems
   - www.Degweb.org

4. What is it worth?
   - Do a Time Study
   - Print an Invoice
   - OEM Warranty Times
   - Equipment Manufacture Times
   - ALLDATA®, TechAdvisor and Other Similar Systems
   - Internet
Definition
Definition

If a vehicle sustains collision damage and stationary glass removal is necessary, it is extremely important that the glass opening receives proper metal preparation and refinishing prior to the installation of any stationary glass. Although the actual area of repair is not likely to be seen by the vehicle owner, the importance of superior paint adhesion and metal corrosion protection cannot be over-emphasized. If the primer and paint products are incompatible or do not adhere when applied, the urethane glass adhesives will not properly bind the glass to the vehicle. This could lead to an increased chance of occupant injury in the event of a vehicle impact or rollover.
Question 1. Is it required?
Four Negotiation Questions

1. Is it required to remove undamaged urethane glass to return the vehicle back to pre-accident condition?

**Answer:** Yes, it may be required to remove undamaged urethane glass to return the vehicle back to pre-accident condition.

**Answer Documentation:**

1. All the Information Providers state that it may be required to remove undamaged urethane glass in order to return the vehicle back to pre-accident condition.
   - AudaExplore
   - CCC
   - Mitchell

2. Tech-Cor Automobile Research on Stationary Glass Replacement: Materials, Preparation and Installation

The supporting documents follow.
AudaExplore

Windshield and Back Glass Replacement:

Important Reminder: Reveal moulding that are mounted flush to the stationary glass (e.g., Windshield, Back Glass, or Quarter Glass) are at risk of breakage when being removed.

Section 4-3 Replacement & Recycled Operations

Refer to the Audatex Labor Report for Operations Specific to the Vehicle Being Repaired

| √ | Visually inspect for damage to suspension components |
| √ | Wheel cover R&I (when required) |
| √ | Attach wheel alignment sensors and compensate for runout on all four wheels |
| √ | Establish vehicle tracking by checking vehicle thrust angle to center of vehicle |
| √ | Center steering wheel |
| √ | Adjust caster and camber; perform manufacturer recommended shimming procedures (when required) (front / rear wheel alignment) |
| √ | Adjust toe-in where applicable (front/rear wheel alignment) |
| √ | Adjust front and rear caster and camber; perform manufacturer recommended shimming procedures (when required) (4-wheel alignment) |
| √ | Adjust front and rear toe-in where applicable (4-wheel alignment) |
| √ | Recheck alignment specifications and print final copy |
| √ | Remove wheel alignment sensors from all four wheels and lower vehicle |
| √ | Remove vehicle from alignment rack and road test |
| √ | Non-OEM shimming |
| √ | Modifications or alignment of suspension, axle, frame, or engine components |
| √ | Re-inspection or realignment |
| √ | Pre-diagnostic road test |
| √ | Replacement of suspension or structural components (e.g., wheel bearings, ball joints, tie rods) |
| √ | R&I steering wheel |
| √ | Realigning the rear suspension axle assembly |
| √ | Rotate tires and compensate for radial tire pull |
| √ | Trimming, repair, or modification of part |

Windshield and Back Glass Replacement and Recycled

Recycled panel replacement may or may not be recommended by the vehicle manufacturer.

Important Reminder:
- Reveal moulding that are mounted flush to the stationary glass (e.g., Windshield, Back Glass, or Quarter Glass) are at risk of breaking when being removed.

Stationary glass that is ultra-bonded is considered a structural part of the vehicle. Replacing stationary glass requires:
- following specific replacement procedures
- using specified installation materials
- returning the vehicle to OEM structural integrity for occupant safety.

New Part Replacement (OEM and non-OEM new parts) Operations

<table>
<thead>
<tr>
<th>Included Operations</th>
<th>Not Included Operations</th>
<th>Recycled Part Replacement Operations</th>
<th>Included Operations</th>
<th>Not Included Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations</td>
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<td>Operations</td>
<td></td>
</tr>
</tbody>
</table>

*Any printed copy of this document may not contain the most current information. For the latest version, please refer to the Database Reference Manual accessed through the Help Menu in the current release of Audatex Estimating, PenPro or Eshoplink. The current version of the Database Reference Manual may also be found at www.training.audatex.us*

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CCC/MOTOR

STATIONARY SIDE GLASS

SPECIAL NOTATION:

Glass, moldings, mounting studs or mounting flange may be damaged or broken during normal service procedures on some applications. MOTOR advises that these factors be considered before performing glass operations in the event unavoidable damage occurs. Time for the removal of old urethane, clean and preparation of sealing surfaces (vehicle and/or glass) should be estimated after an on-the-spot evaluation.

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G20
**WINDSHIELD GLASS**

**SPECIAL NOTATION:**
Glass, moldings, mounting studs or mounting flange may be damaged or broken during normal service procedures on some applications. MOTOR advises that these factors be considered before performing glass operations in the event unavoidable damage occurs. Time for the removal of old urethane, clean and preparation of sealing surfaces (vehicle and/or glass) should be estimated after an on-the-spot evaluation.

**INCLUDED:**
- Crown vent panel/screen (if overlapping glass)
- Rear view mirror/support (attached to glass)
- Reveal & interior moldings/trim
- Rubber channel R&I (if installed)
- Test for leaks
- Urethane adhesive application
- Wiper arm

**DOES NOT INCLUDE:**
- Clean up of broken glass
- Cost of installation material or kit

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**DOOR – DOOR SHELL R& R, HINGED TYPE**

**SPECIAL NOTATION:**
Some replacement components may or may not be supplied with duplicated OEM caulk/seam sealer. This is not included in R&R time and requires an on-the-spot evaluation. Disconnect at hinges unless otherwise noted in text.

**INCLUDED:**
- Align to vehicle
- Appliqué
- Belt Molding
- Bonded glass installation
- Door check
- Glass (fixed/movable)
- Hinge, halves bolted to door
- Inside handles & bezels
- Internal mechanisms
- Latch mechanisms
- License Lamp (if attached to door)
- License plates (if attached to door)
- Lock & cylinder assembly (if necessary)
- Mirror
- Outside handle
- Regulator
- Speakers
- Trim panel R&I
- Vents
- Weatherstrip
- Weatherstrip (if attached to door)
- Window/run channel

---

**STATIONARY SIDE GLASS**
(Doors, Quarter Panel, or Pillar)

**SPECIAL NOTATION:**
Glass, moldings, mounting studs or mounting flange may be damaged or broken during normal service procedures on some applications. MOTOR advises that these factors be considered before performing glass operations in the event unavoidable damage occurs. Time for the removal of old urethane, clean and preparation of sealing surfaces (vehicle and/or glass) should be estimated after an on-the-spot evaluation.

**INCLUDED:**
- Reveal & interior moldings/trim
- Rubber channel (if installed)
- Test for leaks
- Urethane adhesive application

**DOES NOT INCLUDE:**
- Clean up of broken glass
- Cost of installation material or kit

---

Footnotes found in a chapter contain vehicle-specific information. The content of footnotes is in addition to, and takes precedence over, information in the Guide to Estimating pages for the operation indicated.

---

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G20
CCC/MOTOR

WINDSHIELD GLASS

SPECIAL NOTATION:

Glass, moldings, mounting studs or mounting flange may be damaged or broken during normal service procedures on some applications. MOTOR advises that these factors be considered before performing glass operations in the event unavoidable damage occurs. Time for the removal of old urethane, clean and preparation of sealing surfaces (vehicle and/or glass) should be estimated after an on-the-spot evaluation.

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Glass, moldings, mounting studs or mounting flange may be damaged or broken during normal service procedures on some applications. MOTOR advises that these factors be considered before performing glass operations in the event unavoidable damage occurs. Time for the removal of old urethane, clean and preparation of sealing surfaces (vehicle and/or glass) should be estimated after an on-the-spot evaluation.

INCLUDED:
- Crown vent panel/screen (if overlapping glass)
- Rear view mirror/support (attached to glass)
- Reveil & interior moldings/trim
- Rubber channel R&L (if installed)
- Test for leaks
- Urethane adhesive application
- Wiper arms

DOES NOT INCLUDE:
- Clean up of broken glass
- Cost of installation material or kit
- Refinish glass pinchedweld (epoxy primer)

STATIONARY SIDE GLASS
(Doors, Quarter Panel, or Pillar)

SPECIAL NOTATION:
Glass, moldings, mounting studs or mounting flange may be damaged or broken during normal service procedures on some applications. MOTOR advises that these factors be considered before performing glass operations in the event unavoidable damage occurs. Time for the removal of old urethane, clean and preparation of sealing surfaces (vehicle and/or glass) should be estimated after an on-the-spot evaluation.

INCLUDED:
- Reveil & interior moldings/trim
- Rubber channel (if installed)
- Test for leaks
- Urethane adhesive application

DOES NOT INCLUDE:
- Clean up of broken glass
- Cost of installation material or kit

DOOR - DOOR SHELL R&R, HINGED TYPE

SPECIAL NOTATION:
Some replacement components may or may not be supplied with duplicated OEM caulk/tear sealer. This is not included in R&R time and requires an on-the-spot evaluation. Disconnect at hinges unless otherwise noted in text.

INCLUDED:
- Align to vehicle
- Applique
- Belt Molding
- Bonded glass installation
- Door check
- Glass (fixed/movable)
- Hinge halves bolted to door
- Inside handles & bezels
- Internal mechanisms
- Latch mechanisms
- License Lamp (if attached to door)
- License plate (if attached to door)
- Lock & cylinder assembly (if necessary)
- Mirror
- Outside handle
- Regulator
- Speakers
- Trim panel R&L
- Vents
- Water shield
- Weatherstrips (if attached to door)
- Window/rain channel

Footnotes found in a chapter contain vehicle-specific information. The content of footnotes is in addition to, and takes precedence over, information in the Guide to Estimating pages for the operation indicated.
BACK GLASS

SPECIAL NOTATION:

Glass, moldings, mounting studs or mounting flange may be damaged or broken during normal service procedures on some applications. MOTOR advises that these factors be considered before performing glass operations in the event unavoidable damage occurs. Time for the removal of old urethane, clean and preparation of sealing surfaces (vehicle and/or glass) should be estimated after an on-the-spot evaluation.

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G20
GUIDE TO ESTIMATING

WINDSHIELD GLASS

SPECIAL NOTATION:
Glass, moldings, mounting studs or mounting flange may be damaged or broken during normal service procedures on some applications. MOTOR advises that these factors be considered before performing glass operations in the event unavoidable damage occurs. Time for the removal of old urethane, clean and preparation of sealing surfaces (vehicle and/or glass) should be estimated after an on-the-spot evaluation.

INCLUDED:
- Cowl vent panel/screen (if overlapping glass)
- Rear view mirror/support (attached to glass)
- Roval & interior moldings/trim
- Rubber channel R&M (if installed)
- Test for leaks
- Urethane adhesive application
- Wiper arms

DOES NOT INCLUDE:
- Clean up of broken glass
- Cost of installation material or kit
- Refinish glass pinchweld (epoxy primer)

STATIONARY SIDE GLASS
(Doors, Quarter Panel, or Pillar)

SPECIAL NOTATION:
Glass, moldings, mounting studs or mounting flange may be damaged or broken during normal service procedures on some applications. MOTOR advises that these factors be considered before performing glass operations in the event unavoidable damage occurs. Time for the removal of old urethane, clean and preparation of sealing surfaces (vehicle and/or glass) should be estimated after an on-the-spot evaluation.

INCLUDED:
- Reveal & interior moldings/trim
- Rubber channel (if installed)
- Test for leaks
- Urethane adhesive application

DOES NOT INCLUDE:
- Clean up of broken glass
- Cost of installation material or kit

BACK GLASS

SPECIAL NOTATION:
Glass, moldings, mounting studs or mounting flange may be damaged or broken during normal service procedures on some applications. MOTOR advises that these factors be considered before performing glass operations in the event unavoidable damage occurs. Time for the removal of old urethane, clean and preparation of sealing surfaces (vehicle and/or glass) should be estimated after an on-the-spot evaluation.

INCLUDED:
- Reveal & interior moldings/trim
- Rubber channel (if installed)
- Test for leaks
- Urethane adhesive application
- Wiper arm

DOES NOT INCLUDE:
- Clean up of broken glass
- Cost of installation material or kit
- High-mounted stop lamp

DOOR – DOOR SHELL R&R, HINGED TYPE

SPECIAL NOTATION:
Some replacement components may or may not be supplied with duplicated OEM cowl/beam sealer. This is not included in R&R time and requires an on-the-spot evaluation. Disconnect at hinges unless otherwise noted in text.

INCLUDED:
- Align to vehicle
- Appliqués
- Belt Molding
- Bonded glass installation
- Door check
- Glass (fixed/movable)
- Hinge halves bolted to door
- Inside handles & bezels
- Internal mechanisms
- Latch mechanisms
- License Lamp (if attached to door)
- License plate (if attached to door)
- Lock & cylinder assembly (if necessary)
- Mirror
- Outside handle
- Regulator
- Speakers
- Trim panel R&M
- Wets
- Water shield
- Weatherstrips (if attached to door)
- Window/run channel

Footnotes found in a chapter contain vehicle-specific information. The content of footnotes is in addition to, and takes precedence over, information in the Guide to Estimating pages for the operation indicated.

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G20
IMPORTANT REMINDER: No windshield or flush mounted reveal mouldings can be removed without the possibility of breakage or damage that will require replacement. Unintentional damage to glass that is considered a structural member by the vehicle manufacturer may occur when attempting alignment pulls to correct unibody collision damage. Agree beforehand who will incur the charge for damage occurring during normal R&R and R&I operations.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 8
Procedure Explanation

Not Included Operations
- Diagnostic road test to determine if alignment operations are necessary
- Straighten or replace suspension parts and/or structural components
- Shift or align engine subframe/crossmember and/or axle housing
- Remove and install steering wheel
- Non-vehicle manufacturer shimming
- Adjust wheel bearings

Adjust Rear Alignment
Included Operations
- Position vehicle on alignment rack and check/adjust tire pressure
- Check ride height and adjust to vehicle manufacturer specifications
- Set-up gauges on all 4 wheels and check wheel run out and front suspension for wear
- Determine vehicle tracking by checking thrust angle to vehicle center line
- Adjust rear caster, camber and toe-in where applicable
- Perform vehicle manufacturer recommended shimming procedures if necessary
- Remove vehicle from alignment equipment
- Verify alignment by road test

Procedure 11—Front Suspension

Front Suspension Component R&R
Included Operations
- Each operation identified in the text is considered to be a stand-alone operation unless noted otherwise
- Remove and install wheel

Not Included Operations
- Wheel alignment
- Bleed brakes if necessary

Front Suspension O/H
Included Operations
- Remove and install wheel
- Disassemble and clean parts
- Visual check for damage
- Replace needed parts
- Assemble

Not Included Operations
- Replace steering linkage parts
- Remove and replace: Torsion or stabilizer bar, Drive axle parts
- Bleed brakes if necessary
- Wheel alignment

IMPORTANT REMINDER: Due to the design of suspension on unibody vehicles, it may be necessary to perform four wheel alignment.

Procedure 12—Engine/Fuel Tank

Engine & Transmission R&R
Included Operations
- Disconnect and connect: Necessary components to remove and install engine/transmission as an assembly
- Remove and install hood assembly

Not Included Operations
- Remove and install: Radiator if necessary, Any parts on engine if necessary
- Adjust linkage if adjustable type
- Evacuate and recharge air conditioning if so equipped and necessary

NOTE: Labor times shown in the text are only to remove and install the engine and/or transmission assembly in order to facilitate other work. The times are not for engine or transmission replacement.

Procedure 13—Windshield

Windshield R&R
Included Operations
- Remove and replace: Reveal mouldings, Garnish mouldings, Wiper arms, Rear view mirror
- Replace weatherstrip if so installed
- Replace necessary adhesive/urethane
- Clean up old adhesive in opening area
- Test for leaks

Not Included Operations
- Remove and replace: Aftermarket window tint
- Broken glass clean up

IMPORTANT REMINDER: Urethane set glass may typically be considered a structural component. Refer to OEM replacement procedures for installa-

Procedure 14—Cowl & Dash

Hinge and/or Windshield Pillar R&R
Included Operations
- Remove and install: Front door
- Remove and install or replace: Sun visor, if replaced at roof, Shovel plates, Jumbo switches
- Loosen and pull back: Front area of cloth type headliner, Carpet and insulation as required
- Remove and replace caulking for standard factory application

Not Included Operations
- Refinish pillar
- Remove and/or apply: Anti-corrosion rust resistant materials
- Remove and install or replace: Windshield and mouldings, Instrument panel assembly, Door hinges, Air conditioning and heater parts that interfere, Wiring and/or wiring harness
- Remove and install preformed or molded type headliner
- Broken glass clean up

IMPORTANT REMINDER: No windshield or flush mounted reveal mouldings can be removed without the possibility of breakage or damage that will require replacement. Unintentional damage to glass that is considered a structural member by the vehicle manufacturer may occur when attempting alignment pulls to correct unibody collision damage. Agree beforehand who
Tech-Cor Automobile Research on Stationary Glass Replacement: Materials, Preparation and Installation

Purpose

If a vehicle sustains collision damage and stationary glass removal is necessary, it is extremely important that the glass opening receive proper metal preparation and refinishing prior to the installation of any stationary glass. Although the actual area of repair is not likely to be seen by the vehicle owner, the importance of superior paint adhesion and metal corrosion protection cannot be over-emphasized. If the primer and paint products are incompatible or do not adhere when applied, the urethane glass adhesives will not properly bind the glass to the vehicle. This could lead to an increased chance of occupant injury in the event of a vehicle impact or rollover.

Introduction

The United States Government has developed numerous safety standards which must be met by all vehicles sold in this country. The vehicle windshield is covered by FMVSS (Federal Motor Vehicle Safety Standard) 212 which requires that the windshield act as a safety net to keep the occupants of the vehicle within the confines of the passenger compartment during a crash. FMVSS 216, which also deals with the vehicle windshield, sets minimum strength requirements for a passenger car roof to reduce the likelihood of roof collapse in a rollover accident. Most automotive manufacturers have gone beyond the requirements of FMVSS 212 and consider all stationary glass to be structural components that contribute to the overall crash-worthiness of the vehicle. To achieve this level of glass retention, the automotive manufacturers use urethane adhesives which may have strength ratings as high as 600 psi (pounds per square inch).

While there are currently no FMVSS requirements set for bonding strength, most of the automotive manufacturer's windshield retention requirements exceed the level of performance established by FMVSS 212. The Society of Automotive Engineers (SAE) has published two Recommended Practice standards that deal with windshield replacement and automotive glass bonding. SAE J1556 (STATIONARY GLASS REPLACEMENT) provides guidance to automobile repair shops and personnel in the replacement of stationary glass when damaged in collisions. SAE J1836 (OVERLAP SHEAR TEST FOR SEALANT ADHESIVE BONDING OF AUTOMOTIVE GLASS ENCAPSULATING MATERIAL TO BODY OPENING) defines a procedure for the construction of a lap shear specimen for the purpose of testing the bondability of an automotive sealant adhesive to the elastomeric material used in automotive glass encapsulating.

Table 1 lists several adhesive types and their respective strengths.

Table 1
Relative Strengths of Windshield Sealants

Tech-Cor Automobile Research on Stationary Glass Replacement: Materials, Preparation and Installation

1. Butyl Tape 13 psi
2. Liquid Adhesive 50 psi
3. Silicone Sealant 115 psi
4. Construction Urethane 185 psi
5. Polysulfide 190 psi
6. OEM Approved Urethane 600 psi

Windshield sealant data derived from GM Product Service Bulletin: Installation and Resealing of Bonding Windshield and Back Lights

While Butyl Tape (13 psi) has been used in the past to meet the requirements of FMVSS 212, most manufacturers currently use urethane adhesives with significantly higher bonding strengths. These adhesives are chosen by each manufacturer's engineers to satisfy the crash-worthiness requirements of the vehicle design. This normally takes into account the contributory affects of all stationary window glass.

Each automotive manufacturer has its own bonding strength requirements which can be difficult for the individual service shop to determine. Since there are no known adverse effects from using an adhesive that is too strong, the use of an adhesive/sealant with at least a rating of 600 P.S.I. is the safest method for installing all stationary glass, including windshields. However, it must be remembered that the strongest adhesive cannot provide adequate glass retention if the paint and primer do not adhere adequately to the metal surfaces.

Metal Preparation and Installation

If a vehicle has sustained damage requiring glass removal and/or replacement, all glass opening repairs must be performed correctly prior to installing the new glass. To begin this procedure, the window frame must first be returned to its original pre-accident condition via straightening or replacement. After all repairs are performed and welding completed, all areas on the pinch weld flange must be properly dressed. This will remove any protrusions which might contact the glass during or after installation.

During the refinishing process, both surface cleanliness and proper preparation are key to developing a proper glass to metal bond. (Surface preparation will include solvent cleaning, sanding or light grinding for corrosion removal, and chemical etching when necessary). Using a single manufacturer's line of products will insure product compatibility and maximize surface adhesion when the manufacturer's recommendations are followed. Proper surface cleanliness and preparation will also minimize the opportunity for corrosion to work its way under the adhesive and destroy the urethane bond.

Since primers, sealers and color coats separate the metal from the urethane sealants, they contribute significantly to the structural integrity of the vehicle by joining the glass adhesive to the vehicle metal. All bonding areas should be refinished with extreme care and precision prior to the actual bonded glass installation. The refinishing process should be of the latest technology and should include materials with the best adhesion properties applied as per the manufacturers instructions. (Materials will include epoxy, self-etching primers and urethane or catalyzed top coats).

Figure 1 shows the installation of the urethane between the vehicle pinchweld and the windshield glass.

Question 2.
Is it included?
2. Is removing undamaged urethane glass included in any other labor operation?

**Answer:** No, removing undamaged urethane glass is not included with any other labor operation.

**Answer Documentation:**

1. All of the Information Providers state that removing undamaged urethane glass is not included.
   - AudaExplore
   - CCC / MOTOR
   - Mitchell

2. There is also DEG Database Task Force Inquiries that say that removing undamaged urethane glass is not included with any other labor operation.
   - DEG Database Inquiry #1481 – AudaExplore
   - DEG Database Inquiry #2174 – CCC/MOTOR
   - DEG Database Inquiry #287 – Mitchell

**The original source documents follow.**
Windshield and Back Glass Replacement and Recycled

Not Included Operations

- Glass installation kit (Manual Entry M29 Available)
- Broken glass cleanup (Manual Entry M69 available)
- Adhesive cleanup
- Sealant Cleanup
- Trimming, repair or modification of part
- R&I of non-standard equipment not identified as options
- Disassembly, cleaning and reassembly of assemblies

## Section 4-3 Replacement & Recycled Operations

Refer to the Audatex Labor Report for Operations Specific to the Vehicle Being Repaired

<table>
<thead>
<tr>
<th>New Part Replacement (OEM and non-OEM new parts) Operations</th>
<th>Recycled Part Replacement Operations</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Included Operations</td>
<td>Recycled Parts Included Operations</td>
<td>Not Included Operations</td>
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<tr>
<td>✓</td>
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<td>✓</td>
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<td>Wiper arms R&amp;I</td>
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DOES NOT INCLUDE:

- Windshield glass and moldings

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G22
GUIDE TO ESTIMATING

ROCKER PANEL - Continued

- Moldings
- Stripe tape/decals

CENTER PILLAR

SPECIAL NOTATION:
When replacing welded rear door hinges, add one-half of the Hinge R&R time to Center Pillar R&R time.

INCLUDED:
- Adhesive application if required (all types)
- Carpet & insulation turn back
- Caulk/seam sealer
- Cutting & welding as necessary
- Door striker
- Grind, fill & smooth welded seams (up to 150 grit sandpaper)
- Interior trim panels
- Seat belt anchor
- Sill plates
- Weatherstrips

DOES NOT INCLUDE:
- Air bag components
- Carpet, insulation or seat R&R
- Doors
- Door hinge
- Electrical wiring
- Emblems & nameplates
- Foam
- Headliner
- Hinge plate transfer
- Lamp
- Moldings
- Roof cover
- Stripe tape, decals, or overlay

UNISIDE/APERTURE PANEL WITHOUT QUARTER PANEL

SPECIAL NOTATION:
When replacing welded door hinges, add one-half of the Door Hinge R&R time to Uniside R&R time. Included and Not Included items also apply to sectioning below roof (lower uniside) and sectioning roof rail (upper uniside). When sectioning other areas of uniside, follow GTE page for portion of uniside being sectioned.

- Windshield glass and moldings

Footnotes found in a chapter contain vehicle-specific information. The content of footnotes is in addition to, and takes precedence over, information in the Guide to Estimating pages for the operation indicated.

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G22
DOES NOT INCLUDE:

- Bonded glass removal from damaged liftgate

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G25
GUIDE TO ESTIMATING

LIFTGATE - Continued

DOES NOT INCLUDE:
• Bonded glass removal from damaged liftgate
  • Electrical wiring
  • Emblems & nameplates
  • Hinges
  • Lock cylinder reaming
  • Molding (except as listed above)
  • Spare tire carrier
  • Special interior trim
  • Spoiler, flare or lower
  • Stripe tape, decals or overlays

TAILGATE - OUTER PANEL R&R

SPECIAL NOTATION:
Some cutting or welding processes may require the door glass to be removed prior to replacing the outer panel. This factor should be considered prior to finalizing any repair cost estimates.

INCLUDED:
• Adhesive application
  if required (all types)
• Align to vehicle
• Applique panel
• Caulk/seam sealer
• Cutting & welding as
  necessary
• Finish panel
• Finish plate
• Finish molding
• Finish trim
• Flatter material application if required
• Grind, fill and smooth welded seams (up to 150 grit sandpaper)
• Interior trim
• Lamp
• License plate (if attached)
• License pocket
• Lock & cylinder assembly (if necessary)
• Outside handle
• Outside handle
• Tailgate R&B
• Trim panel R&B
• Water shield
• Weatherspots (if attached)

DOES NOT INCLUDE:
• Back glass washer or washer
• Bonded glass removal from damaged tailgate
• Camera
• Electrical wiring
• Emblems & nameplates
• Glass
• Hinge
• Moldings (except as listed above)
• Reinforcement bar
• Spare tire carrier
• Straightening of frame
• Stripe tape, decals or overlays

TAILGATE - PASSENGER CARS/WAGONS

SPECIAL NOTATION:
Some replacement components may or may not be supplied with duplicated OEM caulk/seam sealer. This is not included in R&R time and requires an on-the-spot evaluation. Disconnect at hinge & support cylinder.

INCLUDED:
• Align to vehicle
• Applique panel
• Bonded glass
  installation
• Glass (movable)
• Finish panel
• Finish plate
• Finish molding
• Finish trim
• Inside release
• Internal mechanisms
• Interior trim
• Lamp
• Latch or striker attached to gate
• License plate (if attached)
• License pocket
• Lock & cylinder assembly (if necessary)
• Outside handle
• Regulator
• Run channel
• Trim panel R&B
• Water shield
• Weatherspots (if attached to tailgate)
• Window run channel

DOES NOT INCLUDE:
• Back glass washer or washer
• Bonded glass removal from damaged tailgate
• Camera
• Electrical wiring
• Emblems & nameplates
• Glass
• Hinge
• Moldings (except as listed above)
• Reinforcement bar
• Spare tire carrier
• Straightening of frame
• Stripe tape, decals or overlays

REAR BODY - LOWER BODY PANEL

INCLUDED:
• Adhesive application if required (all types)
• Bolt on extensions & fillers
• Bumper and/or cover assembly R&B
• Caulk/seam sealer
• Cutting & welding as necessary
• Grind, fill & smooth welded seams (up to 150 grit sandpaper)

Footnotes found in a chapter contain vehicle-specific information. The context of footnotes is in addition to, and takes precedence over, information in the Guide to Estimating pages for the operation indicated.

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G25
Mitchell

Not-included Operations:

- Remove undamaged urethane set glass.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 10
Procedure Explanation

- Remove and install or replace: Impact sensors, Control modules, Wire harness, Door glass, Trim panel
- Disable and enable air bag system
- Diagnose air bag system
- Deployed air bag residue clean up

Side Curtain Air Bag Module R&R
Included Operations
- Remove and replace: Side curtain air bag module

Not Included Operations
- Remove and install or replace: Impact sensors, Control modules, Wire harness, Headliner
- Disable and enable air bag system
- Diagnose air bag system
- Deployed air bag residue clean up

IMPORTANT REMINDER: Vehicle manufacturer's recommended service and repair procedures must be followed when servicing any Supplemental Restraint/ Air Bag System. Certain safety precautions and disablement procedures must be observed when performing repairs.

Procedure 15—Rocker Panel/Side Body Panel/Center Pillar
Rocker Outer Panel R&R
Included Operations
- Remove and install: Quarter trim at sill
- Remove and replace or install: Cow trim, Center pillar trim, Sill plates, Rear seat cushion
- Loosen and pull back carpet and/or insulation as required
- Replace and remove caulk for standard factory application

Not Included Operations
- Refinish rocker panel
- Remove and/or apply: Anti-corrosion rust resistant materials
- Remove and install: Front or rear doors
- Remove and replace: Hinge pillar, Center pillar, Lock pillar, Quarter panel
- Remove and install or loosen rear edge of front fender
- Remove and install or replace: Rocker moulding, Wiring and/or wiring harness, Control cables (example: latch release), Fluid lines
- Drill holes for installing trim

NOTE: FULL PANEL REPLACEMENT PROCEDURE - Labor times are for replacement at factory seems if feasible. However, many rocker panels cannot be replaced at factory seems because the hinge pillar, center pillar, lock pillar and/or quarter panel overlaps the rocker panel. If a rocker panel is designed in this manner and a section time is not listed, the time in the text represents replacement of the panel at the most practical area. This reduces repair damage to overlapping panels and is considered a full panel replacement.

IMPORTANT REMINDER: Sectioning of a panel may or may not be recommended by vehicle manufacturer. This procedure should only be performed when a qualified and knowledgeable technician has determined that the operation does not jeopardize the integrity of the vehicle.

IMPORTANT REMINDER: Labor times for inner panels, rails or reinforcements are with outer panels removed.

NOTE: Deduct 1.0 hour each for hinge, center and lock pillar if these items are also replaced.

Side Body Panel R&R
Included Operations
- Remove and install: Front door, Rear door, Front seat, Rear seat, Parcel shelf trim, Quarter trim, Plastic wheelhouse Inner, Luggage compartment trim, Rear lamp assemblies, Rear bumper, Filler panel, stone deflector, or mirror lower race
- Remove and install or replace: Non urethane set glass (Windshield and moulding, Back window and moulding), Quarter window and moulding, Sun visor, if replaced at roof, Roof rail moulding, if replaced at roof, Cowl top panel, Cowl trim, Weatherstrip and weatherstrips, Pillar trim, Sill plates, Jamb switches, Lock striker, Belt-on extension
- Remove and replace urethane set glass: Windshield and mouldings, Back window and moulding, Quarter window and moulding
- Loosen and pull back: Cloth type headliner as required, carpet and/or insulation as required
- Replace and remove caulk for standard factory application

Not Included Operations
- Refinish side body panel
- Remove and/or apply: Anti-corrosion rust resistant materials
- Remove and install: Front fender, Preformed or molded type headliner, Fuel tank
- Remove undamaged urethane set glass: Windshield and moulding, Back window and moulding, Quarter window and moulding
- Remove and install or replace: Instrument panel assembly, Door hinges, Air conditioning and heater parts that interfere, Wiring and/or wiring harness, Control cables (example: latch release), Fluid lines, Decals (example: EPA, body identification, caution/danger), Rocker moulding, Wheel, Antenna
- Remove and replace inner panels
- Replace sound deadening
- Remove and install adhesive exterior trim: add to clean and retape
- Replace new adhesive exterior trim: deduct one half of R&R time
- Install stripes, decals, transfers or overlays
- Drill holes for installing trim
- Cut holes for installing lamps
- Broken glass clean up

IMPORTANT REMINDER: Labor times for inner panels, rails or reinforcements are with outer panels removed. Also, no windshield, back or quarter glass (if applicable), or flush mounted reveal mouldings can be removed without the possibility of breakage.

Side Body Sectioning Explanation: See Procedure 20—Quarter Panel.

SPECIAL NOTE: Procedure Number 15 includes removal of damaged urethane set glass and replacement with new glass. The Procedure does not include allowances for necessary precautionary measures to remove undamaged urethane set glass, nor clean up of the old adhesive on the glass. If the existing urethane set glass is undamaged and will be reused, the labor time difference between the glass R&R and R&I represents the not included allowance.

Example: A Side Body Panel allowance includes a Back Glass R&R of 2.0 hr. The R&I of the back glass is 2.3 hr. The difference of 0.3 hr. between Back Glass R&R (2.0 hr.) and R&I (2.3 hr.) has not been factored into the Side Body Panel allowance.

Door Opening Panel R&R
Included Operations
- Remove and install: Front door, Rear door, Front seat, Rear seat, Quarter trim
- Remove and install or replace: Sun visor, if replaced at roof, Roof rail moulding, if replaced at roof, Cowl top panel, Cowl trim, Weatherstrip and weatherstrips, Pillar trim, Sill plates, Jamb switches, Lock striker
- Remove and replace urethane set glass: Windshield and mouldings
- Loosen and pull back: Cloth type headliner as required, Carpet and/or insulation as required
- Replace and remove caulk for standard factory application

Not Included Operations
- Refinish door opening panel
- Remove and/or apply: Anti-corrosion rust resistant materials
- Remove and install: Front fender, Preformed or molded type headliner
- Remove undamaged urethane set glass: Windshield and moulding
- Remove and install or replace: Instrument panel assembly, Door hinges, Air conditioning and heater parts that interfere, Wiring and/or wiring harness, Control cables (example: latch release), Fluid lines, Decals (example: EPA, body identification, caution/danger), Rocker moulding, Antenna
- Remove and replace inner panels
- Replace sound deadening
- Remove and install adhesive exterior trim: add to clean and retape
- Replace new adhesive exterior trim: deduct one half of R&R time
- Install stripes, decals, transfers or overlays
- Drill holes for installing trim
- Broken glass clean up

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 10
Mitchell

Not-included Operations:

- Remove undamaged urethane set glass.

IMPORTANT REMINDER: Procedure Number 20 includes removal of dam-aged urethane set glass and replacement with new glass. The Procedure does not include allowances for necessary precautionary measures to remove undamaged urethane set glass, nor clean-up of the old adhesive on the glass. If the existing urethane set glass is undamaged and will be reused, the labor time difference between the glass R&R and R&I represents the not included allowance.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 10
**Procedure Explanation**

**Procedure 20—Quarter Panel**

**Quarter Outer Panel R&R**

**Included Operations**
- Remove and install: Rear seat, Parcel shelf trim, Quarter trim, Plastic wheelhouse liner, Luggage compartment trim, Weatherstrip attached to panel, Rear lamp assemblies, Rear bumper, Filler panel, Store deflector or rear lower valance
- Replace urethane set glass: Back window and moulding, Quarter window and moulding
- Remove and install: Non-urethane set glass (back window and moulding), Quarter window and moulding, Waterdust barrier, Lock sticker, Sill plates, Bolt-on extension
- Loose and pull back: Cloth type header as required, Carpet and/or insulation as required
- Loose and pull convertible top at quarter
- Replace and replace caulking for standard factory application

**Not Included Operations**
- Refinish quarter panel
- Remove and/or apply: Anti-corrosion rust resistant materials
- Refurbish and install: Preformed or molded type header, Fuel tank
- Remove and replace: Undamaged urethane set glass: Back window and moulding, Quarter window and moulding
- Replace and replace inner panels
- Remove and install/replace: Wheel, Antenna
- Replace sound deadening
- Replace channels attached to glass: Add .2 hour for lower and 3 hour for upper and lower
- Replace and install: Adhesive exterior trim: Add to clean and repaint
- Replace and install: Adhesive exterior trim: Deduct one-half of R&R time
- Install: Stripes, decals, transfers or overlays
- Drill holes for installing exterior trim
- Cut holes for installing lamps
- Broke glass clean up

**Important Reminder:** Procedure Number 20 includes removal of damaged urethane set glass and replacement with new glass. The procedure does not include allowances for necessary precautionary measures to remove undamaged urethane set glass, nor clean up of the old adhesive on the glass. If the existing urethane set glass is undamaged and will be reused, the labor time difference between the glass R&R and R&R represents the not included allowance.

**Example:** A Quarter Panel allowance includes a Back Glass R&R of 2.0 hr. The R&R of the back glass is 2.3 hr. The difference of .3 hr. between Back Glass R&R (2.0 hr.) and R&R (2.3 hr.) has not been factored into the Quarter Panel allowance.

**Important Reminder:** Labor times for inner panels, rails or reinforcements are with outer panels removed. No back, quarter glass (non-movable) or flush mounted reveal mouldings can be removed without the possibility of breakage or damage that will require replacement. Unintentional damage to glass that is considered a structural member by the vehicle manufacturer may occur when attempting alignment pulls to correct unibody collision damage. Agree beforehand who will incur the charge for damage occurring during normal R&R or R&R operations.

**FULL PANEL REPLACEMENT PROCEDURE:** Labor times are for replacement at factory seams if feasible. However, many quarter panels cannot be replaced at roof seams because the roof panel overlaps the quarter. If a quarter panel is designed in this manner and a section time is not listed, the time in the text represents replacement of the panel at the most practical area - usually below the roof seam. This method is considered a full panel replacement provided the back glass and, if applicable, the quarter glass is removed for splicing in the pillar/tail area.

**Quarter Panel Section**

The time for this operation is for a horizontal cut at belt and below quarter and back window unless described otherwise. The Included and Not Included operations are the same as for a full panel except the removal and installation of the quarter and back glass is not included.

**Important Reminder:** Sectioning of a panel may or may not be recommended by vehicle manufacturer. This procedure should only be performed when a qualified and knowledgeable technician has determined that the operation does not compromise the integrity of the vehicle.

**Quarter Glass R&R**

**Included Operations**
- Remove and install: Trim panel, Rear Seat if necessary
- Remove and install or replace: Parts attached to glass, Watertight barrier
- Replace weatherstrip if so attached
- Replace necessary adhesive/urethane
- Clean up old adhesive in opening area
- Align glass
- Test for leaks

**Not Included Operations**
- Remove and replace: Aftermarket window tint
- Broken Glass clean up

**Important Reminder:** Urethane set glass may typically be considered a structural component. Refer to OEM replacement procedures for installation methods and materials necessary to restore structural integrity.

**Procedure 21—Pickup Bed**

**Bed Assembly R&R**

**Included Operations**
- Remove and install: Rear lamp assemblies, Plastic wheelhouse linings, Fuel door, Rear bumper, Tailgate
- Remove and replace: Rear fender, Running board, Fuel filler pipe
- Remove and replace caulking for standard factory application

**Not Included Operations**
- Refinish bed assembly
- Install: Stripes, decals, transfers or overlays
- Drill holes for installing exterior trim
- Cut holes for installing lamps

**Important Reminder:** Labor times for inner panels, rails or reinforcements are with outer panels removed.

**Side Panel R&R**

**Included Operations**
- Remove and install: Rear lamp assemblies, Plastic wheelhouse liner, Fuel door, Rear bumper, Tailgate, Bed assembly
- Remove and replace: Rear fender, Running board, Fuel filler pipe
- Remove and replace caulking for standard factory application

**Not Included Operations**
- Refinish side panel
- Remove and/or apply: Anti-corrosion rust resistant materials

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Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 13
DEG Database Inquiry - #1481

Inquiry Description

Back Glass

Issue Summary//Under included operation the back glass urethane kit (labor) is included. An insurance company is now stating that the 'urethane kit' is included in the qtr panel replacement along with the labor.

Suggested Action//There needs to be a more obvious distinction between what is included 'the labor' and what is not 'the urethane kit'. The way Audatex has this information currently documented leaves enough ambiguity that this insurance company has now interpreted this as being included. This is not included in any other estimating platform and could present a taxation issue to the collision shop.

No Change

Resolution: The Sealant Kit, Back Glass (GN 0371) material is not included in the replacement time for the quarter panel. The Audatex database does not include body materials in any of our replacement labor allowances.

No changes warranted at this time.

**DEG DATABASE INQUIRY**

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<th>Estimating Platform</th>
<th>Inquiry Category</th>
<th>Year Make Model</th>
<th>Resolution Status</th>
<th>Origination Date</th>
<th>Submission Date</th>
<th>Resolution Date</th>
<th>Total Time to Resolve</th>
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**Inquiry Description**

- **IssueSummary**: Under included operation the back glass urethane kit (labor) is included. An insurance company is now stating that the "urethane kit" is included in the qtr panel replacement along with the labor.

- **SuggestedAction**: There needs to be a more obvious distinction between what is included "the labor" and what is not "the urethane kit". The way Audatex has this information currently documented leaves enough ambiguity that this insurance company has now interpreted this as being included. This is not included in any other estimating platform and could present a taxation issue to the collision shop.

**Resolution Description**

- **Resolution**: The Sealant Kit, Back Glass (GN 0371) material is not included in the replacement time for the quarter panel. The Audatex database does not include body materials in any of our replacement labor allowances.

- **No Change**: No changes warranted at this time.

---

DEG Database Inquiry - #2174

Inquiry Description
Quarter Panel - Glass

Issue Summary//We wrote an estimate on this vehicle including R&R of the RT 1/4 panel and repair of the LT 1/4 panel. When selecting the LT 1/4 glass for R&I the system lists it as an included item. I understand the R&I of the RT 1/4 is included in the R&R time but the R&I of the LT 1/4 glass on a repaired panel should not be an included operation.

Suggested Action//Please review and determine why the current database is including the R&I of the LT 1/4 glass on a repaired panel.

Estimated Fix Apr 10 DVD

Proposed Resolution: Updated the database to show R&R Right Quarter Panel does not include R&I/R&R Left Quarter Glass.

**DEG Database Inquiry - #2174**

### DEG DATABASE INQUIRY

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#### Inquiry Description

**Quarter Panel - Glass**

- **Issue Summary:** We wrote an estimate on this vehicle including R&R of the RT 1/4 panel and repair of the LT 1/4 panel. When selecting the LT 1/4 glass for R&R the system lists it as an included item. I understand the R&I of the RT 1/4 is included in the R&R time but the R&I of the LT 1/4 glass on a repaired panel should not be an included operation.

- **Suggested Action:** Please review and determine why the current database is including the R&I of the LT 1/4 glass on a repaired panel.

#### Resolution Description

**Estimated Fix Apr 10 DVD**

- Proposed Resolution: Updated the database to show R&R Right Quarter Panel does not include R&I/R&R Left Quarter Glass.

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DEG Database Inquiry - #287

Inquiry Description
Quarter Glass

Overlap was taken on R&ling the qtr glass, when replacing the roof. The qtr glass does not have to be removed to replace the roof. The qtr glass must be removed due to repair of the qtr panel. The time on the estimate is .3 to R&I the glass.

Procedure Steps//Remove and replace roof and R&I the qtr glass are separate operations.

Suggested Action//Time to replace glass is 2.0, R&I is 2.3. Overlap must not be taken.

Estimated Fix May 2008

CALLED CUSTOMER & NOTIFIED HIM OF CHANGES 3/25/08

LABOR: UPDATED AS FOLLOWS.

PANEL, ROOF..... #19.0
#DOES NOT INCLUDE R&I/R&R QUARTER GLASS

### DEG Database Inquiry - #287

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#### Inquiry Description

**Quarter Glass**

Overlap was taken on R&I'ling the qtr glass, when replacing the roof. The qtr glass does not have to be removed to replace the roof. The qtr glass must be removed due to repair of the qtr panel. The time on the estimate is .3 to R&I the glass.

**Procedure/Steps**

Remove and replace roof and R&I the qtr glass are separate operations.

**Suggested Action/Time to replace glass**

is 2.0, R&I is 2.3. Overlap must not be taken.

#### Resolution Description

**Estimated Fix May 2008**

- CALLED CUSTOMER & NOTIFIED HIM OF CHANGES
  
  3/25/08

- LABOR: UPDATED AS FOLLOWS.

- PANEL: ROOF..... #19.0

- #DOES NOT INCLUDE R&I/R&R QUARTER GLASS

Question 3.
Are there pre-determined times?
3. Is there a pre-determined time for removing undamaged urethane glass?

Answer: None of the Information Providers provide times for removing undamaged urethane glass.

However, if there is not a time, it does not mean that it is included.

If there is not a time you may need to do a manual entry.
Question 4. What is it worth?
4. If not, then what is removing undamaged urethane glass worth?

**Answer**: The Estimator will have to use judgment times on these items since no database times are given by the Information Providers.

**Answer Documentation:**

- Submit an inquiry to DEG ([www.DEGweb.org](http://www.DEGweb.org)) to prove it is not included only
- Conduct Your Own Time Study:
  - Create a Time Study Form
  - Video of Time Study
- Invoice for materials
Additional Thoughts

- Keep in mind that .1 = 6 minutes
- When determining labor times, remember it should be based on “How long it takes the average technician to gather up their tools, equipment, and supplies and perform the task in a safe manner and return their tools, equipment and supplies back to their storage location.”
- TIP: If you save the P-pages as a PDF and search for terms in the document by going to Edit, then Find or by hitting Ctrl+F

- Glass Materials and Sealant kits are not-included materials