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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 substantiate time with factual documentation. 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 labor operation. 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](http://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.Deqweb.org](http://www.Deqweb.org)
   - [www.Estimatescrubber.com](http://www.Estimatescrubber.com)
   - SCRS Guide to Estimating

3. **Is there a pre-determined time in the database?**
   - Estimating Systems
   - [www.Deqweb.org](http://www.Deqweb.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

Weld Thru primer is used to add corrosion protection to weld zones. This primer must be applied to clean surfaces. Most weld thru primers have poor adhesion qualities.

Weld thru primer can be applied to bare metal mating surfaces where the coating was removed during repair. After welding, remove the excess primer, because it has poor adhesion qualities.
Photo Documentation
### Justifying Each Line on the Repair Plan

<table>
<thead>
<tr>
<th>1. Is it required?</th>
<th>2. Is it included?</th>
<th>3. Is there a predetermined time?</th>
<th>4. If not, what is it worth?</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALLDATA®, TechAdvisor, etc.</td>
<td>ASA Not-Included Charts</td>
<td><a href="http://www.DEGweb.org">www.DEGweb.org</a></td>
<td>Print an Invoice</td>
</tr>
<tr>
<td>Paint Manufacturer’s Bulletins</td>
<td><a href="http://www.DEGweb.org">www.DEGweb.org</a></td>
<td></td>
<td>OEM Warranty Times</td>
</tr>
<tr>
<td>Material Manufacturer’s Bulletins (3M, Wurth, Kent, etc.)</td>
<td><a href="http://www.estimatescrubber.com">www.estimatescrubber.com</a></td>
<td></td>
<td>Equipment Manufacturer’s Bulletins</td>
</tr>
<tr>
<td>Equipment Manufacturer’s Bulletins</td>
<td>SCRS Guide to Complete Repair Planning</td>
<td></td>
<td>ALLDATA®, TechAdvisor, etc. Times</td>
</tr>
<tr>
<td>Internet</td>
<td></td>
<td></td>
<td>Internet</td>
</tr>
<tr>
<td>Scan Tools</td>
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<td></td>
</tr>
<tr>
<td>The Vehicle</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Question 1.
Is it required?
Four Negotiation Questions

1. Is it required to apply weld thru primer in order to return the vehicle back to pre-accident condition?

**Answer:** Yes, it may be required to apply weld thru primer in order to return the vehicle back to pre-accident condition.

**Answer Documentation:**
Several OE manufacturers have released position statements and repair guidelines that support the necessity of applying weld thru primer (zinc primer) in order to correctly repair specific vehicles.

- DaimlerChrysler - “Zinc phosphate conversion coating”
- Ford Focus – “Corrosion protection must be restored whenever bare metal repairs are made. Refer to Restoring Corrosion.”
- GM – Anti-Corrosion and Treatment - Weld-thru primers.
- Toyota Bulletin – CRIB #159 – “In addition, the use of weld thru primer is strongly recommended during welding operations.”
- I-CAR on weld thru primer.

The supporting documents follow.

**NOTE:** The following OE documents are just examples used to support that this operation is required. Collision Advice and Axalta recommend that you always refer to and follow the OEM guidelines.
PAINT AND MATERIAL USAGE

Surface Preparation:
• The first step in any high quality repair is to wash the vehicle with hot, soapy water to remove water soluble contaminants such as: dirt, tree sap, brake dust, road salt, and bird droppings.

• The next step after all water contaminants have been removed is solvent cleaning. This step is designed to remove solvent soluble contaminants such as: grease, oil, road tar, waxes, polishes, and silicone.

Restoring Corrosion Protection:
• Always restore OEM corrosion protection wherever it has been penetrated by sanding or stripping.

• Corrosion protection can be replaced by using refinishing products such as: phosphoric acid and fluoride cleaner, zinc phosphate conversion coating, vinyl etch primer, and two part self-etching primer.

• Always refer to paint manufacturer’s recommendation for restoring corrosion protection.

• Always follow proper safety recommendations and utilize the correct safety equipment.

Basecoat/Clearcoat System:
• Use a basecoat/clearcoat system for repair of DaimlerChrysler Motors vehicles when basecoat/clearcoat was the original equipment finish.

• Never mix a combination of refinishing brands for a single repair.

• Always refer to paint manufacturer’s recommendation for mixing and application procedures.

# General Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug weld hole</td>
<td>8 mm (0.31 in)</td>
</tr>
<tr>
<td>Weld wire ER70S-3 or equivalent</td>
<td>0.9-1.1 mm (0.035-0.045 in)</td>
</tr>
</tbody>
</table>

**WARNING:** Invisible ultraviolet and infrared rays emitted in welding can injure unprotected eyes and skin. Always use protection such as a welder’s helmet with dark-colored filter lenses of the correct density. Electric welding will produce intense radiation, therefore, filter plate lenses of the deepest shade providing adequate visibility are recommended. It is strongly recommended that persons working in the weld area wear flash safety goggles. Also wear protective clothing. Failure to follow these instructions may result in serious personal injury.

The correct equipment and settings must be used when welding mild or high-strength steel. Metal Inert Gas (MIG) and Squares Type Resistance Spot Welding (STRW) are the preferred methods. Surfaces must be clean and free of foreign materials.

- Correct eye protection must be worn.
- The correct protective clothing should always be worn.
- Adequate ventilation must be provided to avoid accumulation of poisonous gases.
- A test weld should always be carried out on a test sample.
- Use cleaning brushes and abrasive grinding wheels dedicated to the type of materials being welded.
- Follow equipment manufacturer's prescribed procedures and equipment settings for the type of welder being used. ER70S-3 or ER70S-G wire are typically used for MIG welding steel.
- Disconnect the battery ground cable.
- Disconnect on-vehicle modules and protect them from possible heat damage and electrical currents when welding.
- Corrosion protection must be restored whenever bare metal repairs are made. Refer to Restoring Corrosion Protection Following Repair.

- Adequate power supplies should be used to make sure of correct equipment operation.
- Factory spot welds may be substituted with either STRW or MIG plug welds. Spot/plug welds should equal factory welds in both location and quantity. Do not place a new spot weld directly over an original weld location. Plug weld hole should equal 8 mm (0.31 in) diameter.
- Vehicles equipped with optional safety canopy require removal of these components prior to any welding procedures being carried out in the roof-line or body side areas of the vehicle.
**Weld Thru Coating**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4353</td>
<td>Weld-Through Primer</td>
</tr>
</tbody>
</table>

*We believe these sources and their products to be reliable. There may be additional manufacturers of such material. General Motors does not endorse, indicate any preference for or assume any responsibility for the products from these firms or for any such items which may be available from other sources.

**Seam Sealers**

Sealers are intended to prevent water and dust from entering the vehicle and also are anti-corrosion barriers. Sealers are applied to such areas as rear compartment lid hem flanges, wheelhouse, quarter outer, floor, cowl, roof, and various other panel to panel attaching points. The originally sealed joints are obvious and any damage to these sealed locations should be corrected by resealing. Attaching points of new replacement panels should be resealed. Replacement lids and doors will also require sealing in the hem flange areas.

Flanged joints, overlap joints, and seams should be sealed using a quality sealer of medium-bodied consistency. The sealer used must retain its flexible characteristics after curing and be paintable.

Open joints which require bridging of the sealer in order to close a gap should be sealed using a heavy-bodied caulking material. Follow the label directions for the material selected.

Color application may be required in order to restore repaired areas such as hood, fenders, doors, quarters, lid, roof, engine compartment, underbody, and inner panels to original appearance. When this is necessary, conventional refinishing preparation, undercoat buildup, and color application techniques should be followed.

Deadener materials, spray-on type, are used on various metal panels in order to provide corrosion resistance and joint sealing. They control the general noise level inside the passenger area of the vehicle. When deadeners are disturbed because of damage, are removed during repair operations, or a new replacement panel is installed, the deadener material must be replaced by a service equivalent material. The application pattern and location of deadener materials can be determined by observing the original production installation.

Cleaning of the interior and underbody panel surfaces is necessary when original galvanized or other anti-corrosion materials have been burned off during welding or heating operations. Removal of the residue from burning will require additional care in such areas as interior surfaces of box-type construction and when configurations of the metal panels limit access to interior surfaces.

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CRIB # 159

TITLE: CORROSION PREVENTION & SOUND ABSORBING MEASURES

SECTION: EXTERIOR BULLETIN #159

MODELS: ALL TOYOTA, LEXUS, and SCION

DATE: DECEMBER 2007

To assure repairs and replacement components meet strict factory standards, all corrosion preventive coatings and sound absorbing materials must be replicated to match OE application and purpose. In addition, the use of weld thru primer is strongly recommended during welding operations.

If the following materials are not restored to OE like-kind and quality, road noise may be amplified, and the Toyota new car corrosion warranty may be voided on the affected components, and adjoining parts and systems which are caused to fail or rust by those components. Refer to CPS-Toyota/Scion Policy 4.17 and CPS Lexus Policy 4.15 for details on what is not covered by the new vehicle limited warranty.

- Seam Sealer
- Cavity Wax
- ED Primer
- Undercoating
- Frame Finish Coatings
- Chip Resistant Coatings
- Sound Absorbing Materials

Please refer to model-specific Collision Damage Repair Manuals (www.techinfo.toyota.com) for specifications, illustrations, instructions, and locations of these coatings.

Intended to inform the collision industry of the general characteristics of coatings and equipment types that are available to the industry.

- I-CAR informs the industry of how a system of products can be used in unison to provide high levels of corrosion protection inside enclosed areas during collision repair. This information focuses on using a three-stage process of corrosion protection. This process includes applying weld through primer in the weld zone areas, epoxy or self-etching primer over bare metal areas, and anti-corrosion compound on the backside of collision-repaired surfaces. The three-stage process will provide an acceptable level of corrosion protection when the individual level of performance of each product used is average. This process also helps ensure good corrosion protection when some of the coatings may have only minimal coverage inside enclosed areas.

**EPOXY PRIMER**

Epoxy primer is recommended by I-CAR for use over bare metal areas inside enclosed areas of structural parts to prevent corrosion (see Figure 1). Automotive epoxy primers typically perform well when used over bare steel to prevent corrosion on the interior of structural parts. However, the product user guides may not state that the product is designed or intended for that use. Some epoxy primers may be acceptable for use in weld flange areas if the epoxy is removed from the weld zone before welding to minimize weld contamination. Unlike weld through primers, epoxy primers contain a high percentage of paint resins. These resins are likely to burn away, reducing the level of corrosion protection adjacent to the weld, and produce gases that affect weld integrity.

**SELF-ETCHING PRIMER**

As coating characteristics vary between product lines, the level of corrosion protection that self-etching primer provided on lab samples varied considerably. However, the average level of corrosion protection that self-etching primers provided was considerably lower than that of epoxy primers. Because of that, the general recommendation is that if self-etching primer is used to protect interior areas of structural parts against corrosion, it must be topcoated or coated with an anti-corrosion compound to achieve an acceptable level of corrosion protection.

**WELD-THROUGH PRIMER**

Weld through primer is recommended by I-CAR for use over bare metal areas along mating flange areas on structural parts to prevent corrosion in areas adjacent to welds (see Figure 2). Unlike other refinish primers, weld through primers are designed specifically for use in weld areas on body panels. Weld through primer is not designed for use over large bare metal areas, only weld zone areas. Weld through primer should be removed from exterior areas that will be refinished.

To improve weldability and weld integrity, weld through primer can be removed from the direct weld area. Care must be taken to not remove the primer from any area beyond the immediate weld area.

As with a number of other corrosion-resistant primers, weld through primers are not intended to be used alone to provide a high level of corrosion protection. They are best when used in conjunction with other products to achieve an acceptable level of corrosion protection. They may be acceptable in areas of the vehicle that are not subjected to concentrations of moisture or in areas that are not prone to corrosion by de.

Source: Copyright I-CAR, Restoring Corrosion Protection Update, Page 2.
Weld through primer offer a relatively low level of corrosion protection when used alone when compared to epoxy primer. For that reason it is preferable to protect areas coated with weld through primer with applications of epoxy primer or anti-corrosion compounds.

**ANTI-CORROSION COMPOUNDS**

Anti-corrosion compounds are generally wax- or petroleum-based coatings (see Figure 3). They may be recommended by the product maker to be applied directly to bare metal or over primers and topcoats in cavities within the vehicle.

**OEM E-COAT**

In many cases, OEM E-coat primers that are provided on most replacement body panels provide a very high level of protection against corrosion on enclosed areas of structural parts. The E-coats tested for temperature and corrosion resistance performed better than any aftermarket coating in the categories of burn resistance and corrosion resistance. Many E-coat samples evaluated exhibited the same, or lesser amount of burning around the weld compared to many of the weld-through primers. However, OEM E-coats are typically susceptible to degradation from sunlight because of the lack of UV resistors in the majority of OEM E-coat formulations. This characteristic is obviously not a concern inside a structural part.

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Source: Copyright I-CAR, Restoring Corrosion Protection Update, Page 2.
Negotiation Question # 1 – Summary

It has been established and proved thru the source documentation it is required to apply weld thru primer in order to return the vehicle to pre-accident condition.
Question 2. Is it included?
2. Is applying weld thru primer included in any other labor operation?

**Answer:** No, applying weld thru primer is not included with any other labor operation.

<table>
<thead>
<tr>
<th>Weld Thru Primer Labor and Materials</th>
<th>AudaExplore Labor</th>
<th>CCC/MOTOR Labor</th>
<th>Mitchell Labor</th>
<th>Materials</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Included</td>
<td>Not Included</td>
<td>Not Included</td>
<td>Not Included</td>
<td>Weld Thru Primer</td>
</tr>
</tbody>
</table>

**Answer Documentation:** Based on the following Information Providers, it is not included.

- AudaExplore
- CCC/ MOTOR
- Mitchell

The original source documents from the leading Information Providers follow.
AudaExplore

Section 4-2 Labor Exclusions

- Restoration of corrosion-protective coatings (e.g., galvanizing zinc coatings, E-coat ‘equivalent,’ and other like materials). (Standard Manual Entry M14 is available). For more detailed information, see Refinish section.


Corrosion Protection

Corrosion protection is the process and materials used to prevent corrosion. The primer included in any specific paint system is one type of corrosion protection. Only one paint system and accompanying products should be used throughout the repair.

Audatex does not include allowances for the restoration of bare metal or application of an “e-coat” equivalent or a “high build primer” either in refinish or in replacement labor.


Labor Exclusions

- Body Materials are not included in Audatex labor values.

Section 4-2 Labor Exclusions

**Note:** R&I labor for mouldings and ornamentation can be obtained by selecting R&I or by selecting replacement of the part and overriding the pre-stored part price to zero.

- Refrigerant recovery (‘Additional Labor’).
- Removal of debris, grease, corrosion, protective coatings, or other materials impeding replacement, R&I, or refinishing of parts.
- Removal of moulding(s), decal(s), tape, or overlay adhesive.
- Removal of part number labels.
- Removal of protective coatings from replacement parts.
- Repair, fitting, or modification of new replacement parts (unless part is being sectioned).
- Repair, fitting, trimming, or modification of recycled parts.
- Replace labor does not include additional labor to repair the replaced panel and or adjacent panels which may become distorted, burned or damaged by welding, drilling, grinding and straightening.
- Reset of electronic components (e.g., airbags, computers, modules, clock, radio, tire pressure monitors, adaptive cruise control, etc.). (Standard Manual Entry M67 is available).

- **Restoration of corrosion-protective coatings (e.g., galvanizing, zinc coatings, E-coat ‘equivalent,’ and other like materials).** (Standard Manual Entry M14 is available). For more detailed information, see Refinish section.

- Setup of a vehicle on a frame machine, dedicated bench, or other measuring / straightening devices. Pulling time is not included (Standard Manual Entry M31 is available).
- Steam cleaning of or rust removal from fuel tanks.
- Test drive to relearn system.
- Transfer of attached items from original parts to recycled parts.
- Wheel balancing (Standard Manual Entries M22 through M25 are available).

*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 Shoplink. The current version of the Database Reference Manual may also be found at www.technical.audatex.com.*

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Section 4-4 Refinish Guidelines

Raw, Unprimed Bumper Covers and Plastic Parts – continued

The Audatex formula for preparation of a raw, unprimed Bumper Cover or Plastic Part is:
• 20% of the base refinish labor.

Note: Audatex will begin to add a “Prep Raw Bumper Cover” operation to the Bumper Cover part choice box for new and update vehicles, beginning with Q1 2011. This will apply only to manufacturers known to supply raw, unprimed bumper covers. This operation only applies to the front and rear bumper covers. The Audatex formula for Prep Raw, Unprimed Bumper Cover is 20% of the base refinish allowance, with a .3 minimum time.

The Audatex formula includes the following:

1. Wash cover with soap and water, rinse & dry
2. Degrease the surface with a wax, grease, and silicone remover.
3. Sand cover with a sanding paste and grey scuff pad
4. Wash cover with soap and water, rinse & dry
5. Degrease the surface with a wax, grease, and silicone remover.

If the paint manufacturer or OEM requires any other or additional steps to prepare a raw, unprimed bumper cover, these steps are Not included in Audatex labor times. They may be accounted for manually, if required.

Corrosion Protection

Corrosion protection is the process and materials used to prevent corrosion. The primer included in any specific paint system is one type of corrosion protection. Only one paint system and accompanying products should be used throughout the repair.

Audatex does not include allowances for the restoration of bare metal or application of an “e-coat” equivalent or a “high build primer” either in refinish or in replacement labor.

Any considerations in this area will need to be determined during the estimate preparation.

Audatex’s refinish labor:
▪ includes mixing, application, and flashing of the paint system primers

Anti-corrosion compounds are the second type of corrosion protection.

These compounds are:
▪ categorized as either wax-based coatings or petroleum-based coatings
▪ applied inside closed sections of structural members

Audatex labor does not include allowances for anti-corrosion compounds in either refinish or replacement labor. Any considerations in this area will need to be determined during estimate preparation.

*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 Shoplink. The current version of the Database Reference Manual may also be found at www.training.audatex.us.*

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Page 20
Section 4-2 Labor Exclusions

Labor Exclusions

Because each vehicle's collision damage is unique, labor to perform some of the following operations may vary. In other cases, the operation is performed less than 80% of the time and may or may not be required due to the collision damage. To address these situations, Audatex provides:

- ‘Standard Manual Entries’ that are entered by the estimate preparer (for a complete listing, see Section 5-1).
- ‘Additional Labor’ operations which are Audatex pre-stored labor for many of these operations.

When the operation has a ‘Standard Manual Entry’ or an ‘Additional Labor’ operation available, a note will appear next to the appropriate exclusion.

- Additional labor for removal of parts that have been impeded by crash damage (access labor). (Standard Manual Entry M62 is available).
- Alignment of front or rear suspension (‘Additional Labor’).
- Alignment of parts adjacent to parts being replaced.
- Application of lubricant or similar material.
- Bleeding of brake, cooling, or hydraulic systems (‘Additional Labor’ for brake bleeding).

**Body Materials are not included in Audatex labor values.**

- Complete R&I of brake line, transmission line, or fuel line.
- Cutting and splicing of lamp wiring.
- Detailing.
- Disabling and enabling of Hybrid Vehicle components (i.e. high voltage systems, battery packs, and power cables).
- Diagnosis and testing of electronic components or systems (e.g., airbags).
- Disassembly of recycled parts and assemblies.
- Disconnect and reconnect of un-deployed airbag.
- Disconnect / reconnect computer modules for welding purposes.

*Drain, refill and/or top off engine oil.*

*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 ShopRisk. The current version of the Database Reference Manual may also be found at www.bsmr.audatex.com.**

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Source: Audatex Database Reference Manual, V: DBRM0114 Page 53
CCC/MOTOR

LABOR TIME PREMISE
LABOR TIME DOES NOT INCLUDE

SPECIAL NOTATION:
The items listed below apply to all labor procedures.

- Anticorrosion material restoration/application
- Caulk (non-OEM), sound insulate or paint inner areas
- Material costs
- Weld through primer

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G10
LABOR TIME LISTINGS

All operation times are listed in hours and tenths of an hour. A time listed as 3.5 indicates three and one half hours.

LABOR TIME PREMISE

The times reported in this publication are to be used as a GUIDE ONLY. Reported times include normal align procedure to insure proper fit of the individual new part being replaced. Reported times include tube/padded OEM caulking and seam sealer removal/application on welded replacement panels. Sprayable seam sealer equipment requires preparation and adjustment before application and is NOT INCLUDED IN LABOR TIME.

Times do not apply to vehicles with equipment other than that supplied by the vehicle manufacturer as standard or regular production options. If other equipment is used, the time may be adjusted to compensate for the variables. Removal and replacement of exchanged or used parts is not considered. If additional aligning or repair must be made, such factors should be considered when developing the estimate. Items not listed under the INCLUDED/DOES NOT INCLUDE heading for any given procedure have not been considered in the estimated work time development for that procedure, unless specified by a footnote. All included/not included items for labor procedures listed between pages G10 and G30 are for component R&R and R&I procedures unless otherwise indicated in operation heading.

OPERATION TIMES LISTED ARE BASED ON NEW UNDAMAGED PARTS INSTALLED ON NEW UNDAMAGED VEHICLES AS INDIVIDUAL OPERATIONS. TIME HAS NOT BEEN CONSIDERED FOR ALIGNMENT PULLS, DAMAGE-RELATED ACCESS TIME, DAMAGED, USED, REMANUFACTURED OR AFTERMARKET PARTS. SOME OPERATION TIMES ARE APPlicable AFTER BOLTED, ATTACHED OR RELATED PARTS HAVE BEEN REMOVED. REFER TO SPECIFIC FOOTNOTES ATTACHED TO OPERATION TIME LISTING.

LABOR TIME DOES NOT INCLUDE:

SPECIAL NOTATION:

The items listed below apply to all labor procedures.

- A/C System, Evacuate and Recharge
- Aftermarket & OEM accessories
- Alignment, check or straightening related parts
- Anti-corrosion material restoration/application
- Brackets & braces transfer
- Broken glass removal or clean up
- Clean up or detailing of vehicle prior to delivery
- Conversion Van (special components, equipment and trim)
- Cutting, pulling or pushing collision damaged parts for access
- Damaged or defective replacement parts
- Drain & fill fuel tank
- Drilling, modification or fabrication of mounting holes
- Fabricate templates, reinforcing inserts, sleeves or flanges
- Fitting, plugging and finishing of unneeded holes in new parts
- Information tab installation
- Material costs
- Inside panels, trim and door cavity damage repair
- Refinishing

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G10
Mitchell

Additions to Labor Times

Anti-Corrosion Rust Resistant Material

Remove and/or apply weldable zinc primers, wax, petroleum-based coatings, undercoating or any type of addition conditioning.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 2-10, Procedure 28 – Refinish Procedure, Page 3

Procedure 8 – Front Inner Structure - Unibody

Inner Structure Assembly R&R

Included Operations

- Remove and install: Cowl trim
- Remove and install or replace: Shroud and radiator assembly, impact absorbers or mounting arms if necessary to perform operation, Cowl top panel if assembly includes dash panel
- Loosen and pull back carpet and insulation as required
- Remove and replace caulking for standard factory application

Not Included Operations

- Refinish radiator support, apron and/or front rail
- Aim lamps
- Remove and/or apply: Anti-corrosion rust resistant materials

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 2-10, Procedure 28 – Refinish Procedure, Page 6
Estimating Information

Labor Categories
The labor times shown in the Guide fall into various categories (for example, body, frame, mechanical) as determined by the repair facility's operating procedures. As a guide, components for which R&I or R&R is commonly considered to be a mechanical operation when performed in a collision repair environment are designated with the letter "m" in the text. These designations are only a guide. They are not necessarily all inclusive, nor do they suggest the application of a labor rate.

Welded Panels
Replacement labor times for new panels that are joined by welding include the necessary use of inserts and accepted sectioning guidelines developed by OEMs, I-CAR, and TECH-COR. The labor times for welded panels include grinding, filling and final sanding with up to 150 grit sandpaper to match the original panel contour. Labor times do not include the Feather, Prime and Block refresh operation. See Procedure 26 in Procedure Explanation section, for information on Feather, Prime and Block.

Adhesive Panel Bonding
Replacement labor times for panel bonding include all necessary weld applications identified by adhesive material manufacturers and OEM guidelines. Users should reference best practices procedures from bonding material manufacturers and OEM guidelines before selecting this replacement method option.

Stop Material
The labor times shown in the Guide do not take into account the cost of any materials, or the cost of hazardous materials recycling or disposal.

Disable and Enable Air Bag System
The labor times shown in the Guide represent the procedures necessary to disable and enable the air bag system in order to replace air bag system components and/or to perform repairs not related to the air bag system, e.g., welding. This procedure includes visually monitoring the air bag warning light to verify proper system functionality. The allowance does not include troubleshooting of the system if proper system functionality is not present.

Diagnose Air Bag System
The labor times shown in the Guide to diagnose air bag systems include system disable and enable, removal and installation of air bag module(s) (where required), installation of appropriate simulators, and retrieving and clearing of trouble codes. Time for specific troubleshooting or Diagnostic Trouble Codes (DTCs) is not included.

Glass Labor Times
The labor times shown in the Guide for glass listed with the NAGS part numbers are Mitchell times, not times from NAGS. Glass labor times are for removal and replace (R&R), i.e., removal of the existing glass and its replacement with new glass. Some glass labor times are also shown for removal and the later installation (R&I) of the same glass.

Stripes, Decals and Overlays
The labor times shown in the Guide for these items refer to installation only.

TECH-COR Repair Information
The labor times shown in the Guide for TECH-COR repair procedures are supplied by Mitchell. TECH-COR does not endorse, sanction or otherwise approve such times. TECH-COR publications are copyrighted material. However, reproduction of TECH-COR bulletins is permitted as long as the bulletin is reproduced in its entirety, including source attribution. TECH-COR bulletins may be obtained by contacting TECH-COR, Inc., Technical Communications Dept., 100 East Palatine Road, Wheeling, IL 60090; Phone: 847-887-2341.

Base Model Vehicle
Vehicle with the minimal level of equipment available from the manufacturer.

Types of Vehicles
The types of vehicles covered are regular production models only.

Comprehensive Labor Time
While completeness is aimed for in each Guide, there will be instances, however, in which a labor time has not been established for an operation at the time of publication. If an item requires replacement and can be replaced as an individual item but shows no time, a time should be agreed upon among all parties and recorded on the damage report. It also should not be inferred that a component with no established Mitchell labor time has been included in another component's replacement allowance.

Procedure Reference
Throughout each vehicle "service" there are Procedure Explanation reference notes located immediately following the main section headings. Example: BUMPER/FRONT PANEL is followed by, Use Procedure Explanations 1, 3 and 28 with the following text. This indicates that the text portion and the Procedure Explanations for Front Bumper, Front Panel and Refinish should be used in conjunction with one another when writing a damage report. LABOR RELATED NOTES IN THE TEXT PORTION OVERLIDE THE PROCEDURE EXPLANATION PAGES.

Procedures
The Procedure Explanations on the following pages outline the operations which are or are not included in the labor time listed in each vehicle "service." You are encouraged to become familiar with these procedure pages to be sure you have a thorough understanding of the Mitchell approach to collision estimating.

The left Included Operations column means that the labor time shown in the Mitchell Collision Estimating Guide text includes that particular operation or operations.

The right Not Included Operations column means that the labor time in the text does not include that particular operation or operations. Performance of one or more of these operations may or may not be necessary as determined by the individual job requirements. If an add-on time has been established for any of these operations it will be shown in the text. If a time has not been established or if the add-on time is dependent on conditions that vary due to collision damage (example: access time, free up parts), the additional time should be recorded on the damage report. Labor times relating to the repair of a damaged panel or the use of used parts would come under this category.

Additions to Labor Times
Due to the wide range of collision damage and vehicle conditions, labor times for the following operations are not included in the Guide.

Access Time
Remove extensively damaged parts by cutting, pushing, pulling, etc.

Anti-Corrosion Rust Resistant Material
Remove and/or apply weldable zinc primers, wax, petroleum based coatings, undercoating or any type of added conditioning.

Broken Glass Clean Up
Clean vehicle of all broken glass.

Detail
Clean vehicle to pre-accident condition.

Drain & Refill
Fuel (see fuel tank)

Electronic Components
- Time to remove and install as necessary: includes wiring and/or wiring harness and computer module.
- Time to reset memory code function (example: seat position, radio presets) when battery has been disconnected to perform repairs.
- Time to complete computer relearn procedures for proper operation of vehicle systems (example: power sunroof, power window) when battery has been disconnected to perform repairs.
Procedure 6—Air Conditioning

Air Conditioning R&R

Included Operations
- Each operation identified in the text is considered to be a stand-alone operation.

Not Included Operations
- Evacuate and recharge system
- Refrigerant recovery
- Remove and install or replace: Receiver drier
- Leak check

IMPORTANT REMINDER: If all refrigerant has been lost by collision damage, or if refrigerant lines have been opened and not immediately sealed, the receiver drier should be replaced. Replacement of collision damaged parts on a system that is still pressurized should not require replacement of receiver drier.

NOTE: Refrigerant recovery is the removal of refrigerant from the vehicle A/C system as specified by SAE standard J-2209, and its transfer to a holding tank. This recovery operation does not include recycling of the used refrigerant.

Procedure 7—Front Fender

Front Fender R&R

Included Operations
- Replace clip type moulding for base model vehicle
- Remove and install or replace: Headlamp assembly if attached to fender, Cornering lamp if so equipped, Side marker lamp if so equipped, Turn Indicator if so equipped, Parts attached to fender except those listed in Not Included Section
- Remove and install front bumper
- Remove and install or replace: Front header panel, Skirt or liner, Wheel, Antenna, Rocker moulding
- Replace and install adhesive exterior trim: add to clean and retape
- Install strips, decoes, transfers or overlays
- Drill holes for installing exterior trim
- Cut holes for installing lamps

Not Included Operations
- Refinish front fender
- Arm lamps
- Remove and install or replace: Shroud and radiator assembly, impact absorbers or mounting arms if necessary to perform operation, Cowl top panel if assembly includes dash panel
- Replace and install or replace: Hood panel if necessary, Cowl top panel, Engine, Wiring and/or wiring harness
- Replace and install or replace: Front bumper, Front header panel, Front fender, Hood panel, Cowl top panel, Suspension assemblies, Upper reinforcement, Bolted parts and assemblies, (example: fluid reservoirs and coolers, vapor canister, cruise control, air conditioning components)

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.

Procedure 8—Front Inner Structure - Unibody

Inner Structure Assembly R&R

Included Operations
- Remove and install: Cowl trim
- Replace and install or replace: Shroud and radiator assembly, impact absorbers or mounting arms if necessary to perform operation, Cowl top panel if assembly includes dash panel
- Refinish radiator support, apron and/or front rail
- Replace and replace caulking for standard factory application

Not Included Operations
- Refinish radiator supports, apron and/or front rail
- Remove and install: Cowl trim
- Replace and install or replace: Impact absorbers or mounting arms if necessary to perform operation
- Replace and install or replace: Shroud and radiator assembly, Engine, Wiring and/or wiring harness
- Replace and install or replace: Front bumper, Front header panel, Front fender, Hood panel, Cowl top panel, Suspension assemblies, Upper reinforcement, Bolted parts and assemblies, (example: fluid reservoirs and coolers, vapor canister, cruise control, air conditioning components)

Procedure Explanation

- Drain, refill and check coolant
- Visual check for leaks
- Not Included Operations
- Remove and install or replace: Fan, Pulley, Fan clutch, Belts, Hoses if necessary, add 1 hour for one, 2 hour for all hoses
- Pressure test system if necessary (example: check for damage due to collision); add 3 hour
- Remove and install: Front bumper, Hood panel, Front header panel, Front fenders, Engine, Wiring and/or wiring harness
- Remove and replace: Radiator hoses, Fan, pulley, Fan clutch or belts
- Decals (example: EPA, body identification, caution/danger)
- Remove and install or replace: Suspension assemblies, Bolted parts and assemblies (example: fluid reservoirs and coolers, vapor canister, cruise control, air conditioning components), Instrument panel and center console, Seat assemblies, Windshield and mouldings, Air safety bag
- Wheel alignment

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

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.

Radiator R&R

Included Operations
- Remove and replace: Shroud, Electric fan if necessary
- Disconnect and connect: Hoses at radiator, Transmission coolant lines
- Drain, refill and check coolant
- Visual check for leaks
- Not Included Operations
- Remove and install or replace: Fan, Pulley, Fan clutch, Belts, Hoses if necessary, add 1 hour for one, 2 hour for all hoses
- Pressure test system if necessary (example: check for damage due to collision); add 3 hour

Radiator Support R&R

Included Operations
- Remove and install or replace: Shroud when support is being replaced as a complete unit, Radiator assembly when support is being replaced as a complete unit, Impact absorbers or mounting arms if necessary to perform operation
- Remove and replace caulking for standard factory application
- Not Included Operations
- Refinish radiator support
- Arm lamps
- Remove and install or replace: Anti-corrosion rust resistant materials
- Replace and replace caulking for standard factory application

Aporn Panel and/or Front Rail R&R

Included Operations
- Remove and install: Cowl trim
- Remove and install or replace: Impact absorbers or mounting arms if necessary to perform operation
- Replace and install or replace: Shroud and radiator assembly, Engine, Wiring and/or wiring harness
- Refinish apron panel and/or front rail
- Remove and install or replace: Shroud and radiator assembly, Engine, Wiring and/or wiring harness
- Replace and install or replace: Front bumper, Front header panel, Front fender, Hood panel, Cowl top panel, Suspension assemblies, Upper reinforcement, Bolted parts and assemblies (example: fluid reservoirs and coolers, vapor canister, cruise control, air conditioning components)

Negotiation Question #2 – Summary

It has been established and proved thru the source documentation that additional labor operations is not included to apply weld thru primer.
Question 3.
Are there pre-determined times?
3. Is there a pre-determined time for applying weld thru primer?

Answer: None of the Information Providers provide times for the application of weld thru primer. 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 it 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:**

- Conduct Your Own Time Study on the labor:
  - Create a Time Study Form
  - Video of Time Study
- 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.”
- Invoice for materials
  - Consider the number of materials you are using
  - Use the 3M Invoicing system Excel spreadsheet to calculate the material costs and create an invoice
  - Visit YouTube or the manufacturer’s website for estimates on how long it takes to apply the products
Additional Thoughts
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