Recycled Parts for Collision Repair

Textbook

I-CAR®

Version: 12.3

RCY01-STMAN1-E

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Contents

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Introduction

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Obligations To The Customer And Liability

The Collision Repair Industry has an obligation to correctly repair the customer's vehicle. Collision repairs must be performed using:

- recommended or tested procedures from vehicle makers, I-CAR, and other research and testing organizations.
- quality replacement parts and materials.
- repair processes and parts as written and agreed upon in the repair order.
- If items on the repair agreement are not consistent with the repair order, it can be considered fraud.

Performing proper collision repairs requires using parts and procedures that keep remaining warranties intact. Collision repairs must restore:

- safety.
- structural integrity.
- durability.
- performance.
- fit.
- finish.

Throughout the damage analysis and repair process the repairer and insurer must: communicate with each other.

- maintain constant communication with the customer.
- be in agreement with each other and the customer on how repairs will be performed.
- inform the customer of any changes in the repair plan from the original repair agreement, and explain the changes and why they have to be made.

To reduce liability:

- make sure that all repairs are performed thoroughly, correctly and as listed in damage report.
- follow proper procedures.
- use quality replacement parts and materials.
- have documentation of required repairs with detailed record keeping available for customers.

Technicians are considered the experts and are expected to be knowledgeable on how to perform a quality repair.

Keeping thorough records includes more than recording the date, mileage, and pre-existing damage. Record keeping also includes: making sure all notes are legible.

- verifying the repairs that were made or not made.
- having the customer sign a waiver for repairs that they do not want performed. Repairers must determine their liability on not repairing safety systems such as restraint and anti-lock brake systems.
- keeping computer printouts or worksheets on file showing wheel alignment readings or vehicle dimensions before and after repairs.
- keeping scan tool printouts and records of computer codes for airbag, anti-lock brake, emission, and powertrain control module (PCM) systems. attaching the OEM or other tested procedure printout to the vehicle repair order.
- keeping receipts for all sublet work performed.

Liability insurance that covers the repair facility may not always cover all damages. For example:

- the policy may not cover faulty repairs, leaving liability responsibility completely on the facility.
- a shop owner may find that repair facility liability coverage may not cover the full amount awarded in a lawsuit. The shop owner would have to pay the difference.

Module 1 - Automotive Recycling Industry

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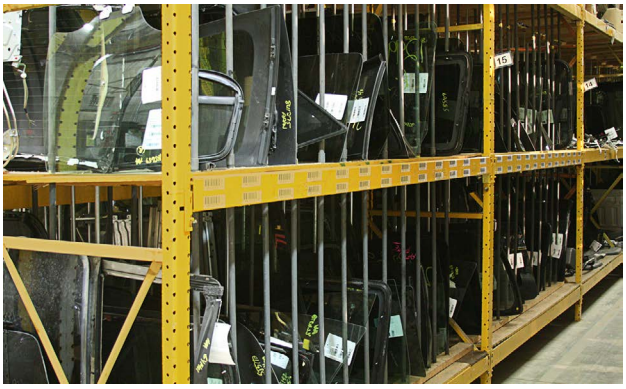
Recycling Industry Overview

Learning objectives for this module include:

- providing an overview of the recycling industry.
- listing the benefits of using recycled parts.
- providing I-CAR positions on the use of recycled parts.
- providing vehicle maker positions on the use of recycled parts.
- providing insurance company positions on the use of recycled parts.
- listing the different recycling industry associations and identifying the services they offer.
- listing considerations for ordering and using recycled parts.



These movable and fixed glass panels are being stored in a recycling facility warehouse.

The intention of this program is to:

- provide an overview of recycling facility operations.
- address common misconceptions about the recycling industry and the steps that have been taken to alter these misconceptions.
- show which parts are commonly recycled.
- list new communication technologies that are used to provide better customer service between collision repair facilities and recycling facilities.
- show how new vehicle technologies affect the use of recycled parts.

Refer to "Video: The I-CAR Position On Recycled Parts" in the presentation. This video discusses I-CAR's position regarding the use of recycled automotive parts.

There is an increased use of recycled parts being used in the collision repair industry.

According to the Automotive Recyclers Association (ARA):

- total automotive recycling industry revenue is estimated to be $10 billion each year.
- the recycling industry employs about 103,000. There are more than 8,000 recycling businesses in the United States.
- most automotive recycling facilities employ ten or fewer people.

Additional statistics include:

- recycling represents the 13th largest industry in the United States.
- the automotive recycling industry supplies approximately 37% of all iron scrap to the scrap processing industry.
- recycling saves an estimated 85 million barrels of oil per year that would have been used in the manufacturing of new or replacement parts.
- using a recycled engine versus a new engine saves 261 kg (575 lb) of carbon dioxide production.

According to a study published by the United Recycler Group (URG), the recycling of steel fenders each year in the United States saves the mining of over five million tons of iron ore, nearly three million tons of coal, and over 250,000 tons of limestone compared to making an equivalent number of new steel fenders.

Much of the salvaged vehicle is stored in large lots outside of the recycling facility.

The recycling industry has seen an increase in all areas of business. With millions of vehicles taken off the road each year, there seems to be an endless supply of parts. Of those vehicles that are taken off the road:

- 75% of parts are recycled for reuse.
- 20% are recycled for scrap.
- 5% are sent to landfills.

United States vehicle makers have been moving toward a more recyclable product. This follows a similar path in Europe that is outlined by an agreement between several countries called the End-Of-Life Vehicles (ELV) Directive.

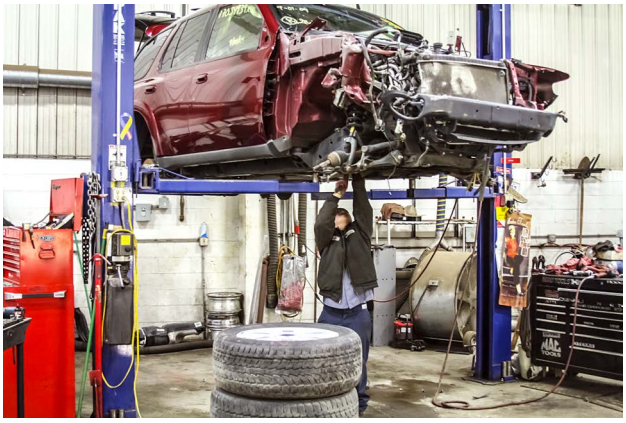
Vehicles are crushed for scrap metal after the usable parts and hazardous fluids have been removed.

The European End-Of-Life Vehicles (ELV) Directive:

- was developed to help make sure vehicles are designed to be more environmentally friendly with regard to being recycled.
- encourages vehicle makers and part producers to use International Standards Organization (ISO) guidelines for part labeling and identification to identify vehicle parts and materials suitable for reuse and recovery.

The directive also includes reducing the use of hazardous materials in vehicle construction. For example, after July 1, 2003, new vehicles should not contain:

- mercury.
- hexavalent chromium.
- cadmium.
- lead.



Authorized treatment facilities are used to de-register a vehicle and prepare it for scrap.

The ELV Directive includes guidelines for the collection of end-of-life vehicles. European Union Member States are required to:

- establish collection procedures for end-of-life vehicles.
- ensure that all vehicles are transferred to authorized treatment facilities through a system of vehicle deregistration based on a certificate of destruction.

For all end-of-life vehicles, the reuse and recycling of vehicle assemblies:

- was increased to a minimum of 80% of average weight on January 1, 2006.
- shall be increased to a minimum of 85% of average weight no later than January 1, 2015.

According to the U.S. Environmental Protection Agency (EPA), these directives have impacted the U.S. vehicle makers and part suppliers. In order to continue to

compete globally, the U.S. has become very interested in "life cycle thinking." Ideas like "design for the environment" and "design for disassembly" have become common in the industry.

Many recycling facilities have increased their standards through professional organizations and programs such as the ARA Gold Seal program.

To keep up with the increasing demands placed on collision repair facilities, most recyclers:

- have increased their professional standards to ensure better customer service.
- provide high quality parts to ensure a steady customer base.
- have an updated inventory process that allows customers to search online inventories.
- have better part descriptions to ensure that repairers understand the part condition before it arrives at the collision repair facility. This is critical for proper cycle time.

Bolt-on fenders are a commonly used recycled part.

The benefits of using recycling parts may include:

- saving energy that would otherwise be used for the creation of new parts. This creates environmental benefits, as emissions created when making new parts are reduced since fewer parts are made.
- reducing the number of total loss vehicles by providing an economic alternative.
- being a less intrusive repair. For example, if a recycled assembly is used, fewer spot welds may need to be drilled out versus if multiple layers of panels must be replaced.
- reducing cycle time. For example, if a door shell is ordered from the vehicle maker, all parts must be transferred to the new part. However, if a recycled part is ordered, it may contain the window regulator and electronics that do not have to be transferred. Note that it may be the policy of the insurer and / or repairer to transfer undamaged parts from the original part to the replacement

(recycled) part. Recycling may also increase cycle time. For example, if a fender requires removing minor damage, it will increase the amount of repair time compared to using a new, undamaged part.

Nissan Xterra

The benefits of using recycled OEM parts include proper fit and mounting locations.

One of the main benefits of using recycled parts is that recycled parts are factory parts. This means that the part has the:

- original factory corrosion protection.
- proper fit.
- proper mounting locations.

Using recycled restraint system parts and some brake systems parts can expose repair facilities and / or recyclers to potential liability issues if proper precautions are not followed.

Potential liability issues may arise from the use of recycled:

- restraint system parts. Improper inspection of airbag assemblies, or not knowing the history of the vehicle that an airbag was removed from, may lead to improper deployment. These concerns extend to all restraint system parts, such as seat belts, control modules, and crash sensors.
- brake system parts. With advanced electronics integrated into the braking systems, all control modules must be inspected. Additionally, any mechanical part must be inspected for condition to ensure proper operation.

From the recycling facility perspective, it is the repair facility that is the expert. Therefore, it is the repair facility's responsibility to ensure recycled parts meet safety requirements. However, many recyclers offer warranties to back up their

part quality, as will be discussed later in the program.

Vehicle makers generally do not approve recycled parts for collision repairs.

While the use of recycled parts is gaining momentum, generally vehicle makers do not recommend the use of recycled parts. One of the primary reasons given from some vehicle makers is that there is a lack of systems in place to provide quality control on recycled parts.

Toyota, in their Collision Repair Information Bulletin (CRIB) #157, does not specifically state that recycled parts cannot be used. Similar to other vehicle makers, they voice their concern about quality control. The CRIB attaches a disclosure and authorization form for the use of recycled, aftermarket, and remanufactured parts that are suggested to be used when repairing Toyota vehicles.

Using recycled parts will not void the warranty of adjacent sheet metal parts. However, installing a malfunctioning recycled mechanical part that damages other parts in the system may lead to some warranty issues with other parts in the system.

Examples of vehicle maker position statements include the following:

Ford

Never install used or reconditioned parts from pre-owned, salvaged, or damaged vehicles. The use of such parts could lead to serious injury. Never use non-Ford parts or accessories for completing repairs. Ford does not approve use of the following:

- Salvaged or used parts
- Major body clips or assemblies from salvage vehicles
- Aftermarket structural or body components
- Salvaged or reconditioned wheels

Honda

"Honda recognizes the importance of recycling but the use of salvage / recycled parts to repair collision-damaged vehicles raises serious concerns about quality, suitability, safety, and warranty. Many factors can influence the quality and / or suitability of salvaged / recycled parts including but not limited to exposure to weather, improper removal or transfer of parts, possible mismatch of vehicle electrical components or other safety-related items as well as excessive wear on vital mechanical parts such as steering and suspension parts. In cases where the donor vehicle was repaired due to a prior collision, salvaged / recycled parts may not be an original or Acura Genuine / Honda Genuine replacement part. At this time, there is no generally accepted process or system in place to regulate the quality or suitability of salvaged / recycled parts."

Toyota

"Toyota Motor Sales, U.S.A., Inc. is an environmentally conscious corporate citizen. We understand the merits of recycling and promote them. Additionally, we are concerned about our customers and maintaining Toyota vehicle image, value, functional and safety systems, and transferable factory warranties. Since Toyota does not warrant used salvage parts, we want to make sure customers are aware of the consequences of having used salvage parts installed on their vehicles. At this time, we believe there are no systems or processes in place to regulate the quality of used salvage parts in the market. Therefore, we are concerned about improper use of salvage parts, i.e., wrong application as well as the use of damaged materials."

Chrysler

"Chrysler LLC does not support the use or re-use of any structural component which has been removed from a vehicle previously damaged, flooded, burned, scrapped, or removed from use for any other reason – commonly referred to as "salvage parts." Mopar replacement parts are required to be equivalent to the originally installed parts and are tested to ensure these requirements are met. While some salvage parts may "appear" equivalent, there can be dramatic differences in the design and functional characteristics which cannot be determined by a visual inspection and which could have a negative effect on the vehicle occupants in a future collision event."

With the exception of restraint system parts, most insurance companies advocate the use of recycled parts.

Insurers will often recommend the use of recycled parts to their customers. To help put the customers at ease with the use of recycled parts, many insurers offer a warranty / guarantee on sheet metal parts that is good for as long as the customer owns the vehicle. These warranties address proper fit, corrosion resistance qualities, and part performance. A warranty may not be applicable toward wear and tear parts such as tires, batteries, belts, hoses, and other items.

The recycling industry has specific terms used to describe their inventory.

When working with the recycled parts and the recycling industry, there are a variety of terms used to describe these parts. They may include:

- used.
- refurbished.
- restored.

On the damage report, or repair estimate, it is important to note that remanufactured, rebuilt, or reconditioned parts are not listed as “recycled” parts. Some in the industry, however, may refer to these parts as recycled since they were rebuilt from recycled cores.

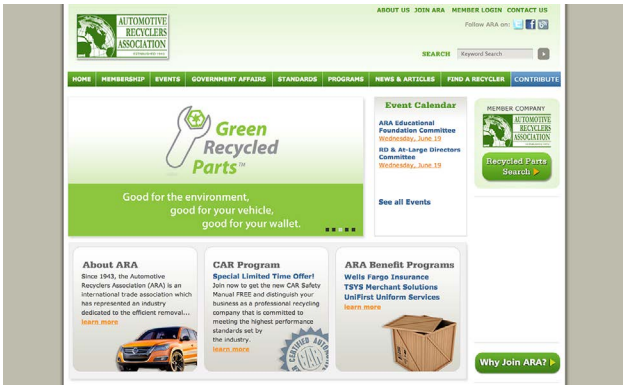
Terms unique to the recycling industry:

- End-of-life vehicle – Any identifiable motor vehicle, with or without all component parts, and is in such condition that its highest or primary value is either in its sale for reusable components or recyclable materials
- Junkyard – An obsolete term referring to an automotive recycling facility
- Pre-dismantling – Initial procedures taken to remove and inventory automotive components or parts in anticipation of future sales
- Major component part – Any component or assembly which has a VIN or derivative marking
- Remanufactured – A used part that has been inspected, rebuilt, and / or reconditioned to restore functionality and performance

ARA has published these and other definitions related to automotive recycling on their website.

Recycling Industry Associations

www.a-r-a.org



The Automotive Recyclers Association (ARA) is a trade association for recyclers dedicated to setting professional standards for the industry.

The Automotive Recyclers Association (ARA):

- is an international trade association that was started in 1943. It has represented an industry "dedicated to the efficient removal and reuse of automotive parts and safe disposal of inoperable motor vehicles."
- has approximately 1,000 direct member companies.
- has a web site at www.a-r-a.org.

ARA has developed the Certified Automotive Recycler (CAR) program. The CAR program:

- is a set of professional standards for participating recycling organizations.
- provides guidance to facilities on how to adhere to these standards.

These standards focus on:

- general business practices.
- environmental protection.
- safety.
- licensing procedures.
- regulatory policies.

The ARA has also developed the Gold Seal program. This program:

- addresses customer service concerns.
- is designed to maintain and enforce reputable, quality business practices throughout the automotive recycling industry.

www.arauniversity.org

The ARA has an online university set up to provide programs that help increase professional standards.

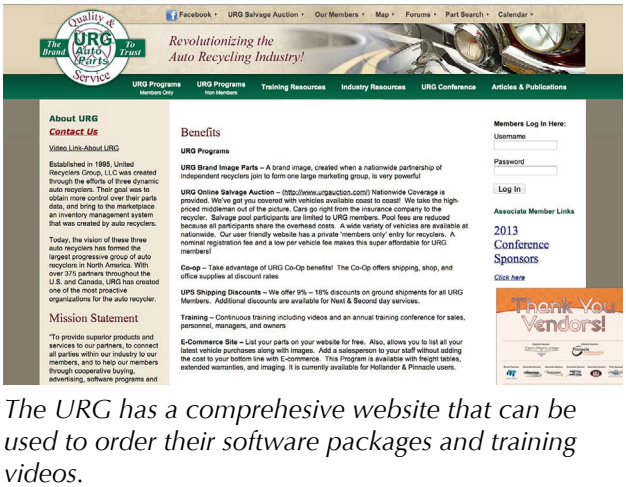
The ARA has developed a set of curriculum for the recycling industry to fill the need for training required to help automotive recyclers succeed. This training:

- is provided online at the ARA University website – www.arauniversity.org.

- requires students to be a subscribed member.
- has an enrollment fee and a monthly fee.
- includes course topics such as part inventorying, part grading, hazardous materials, and business improvement.

Refer to "Video: CAR And Gold Seal Programs" in the presentation. This video shows the role ARA plays in increasing the professional standards of the automotive recycling industry.

www.u-r-g.com



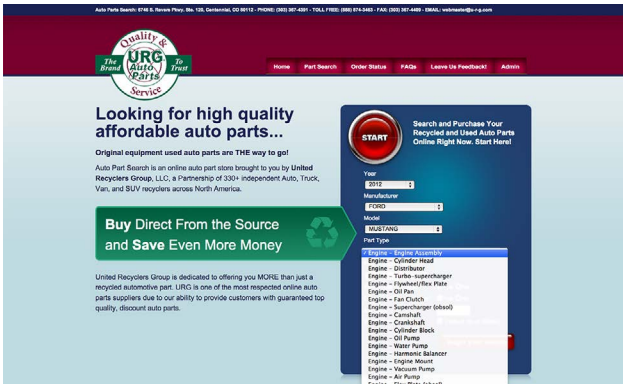
The URG has a comprehesive website that can be used to order their software packages and training videos.

The United Recyclers Group (URG):

- was established in 1995.
- has a mission to provide a state-of-the-art information management system. This system is the Pinnacle system, which is a comprehensive software package that can be used by all areas of a recycling facility – sales, inventory, billing, payroll, etc.
- provides products and services to URG partners.

The URG also provides training videos for recyclers on subjects such as:

- sales.
- quality assurance.
- inventory.
- shipping practices.



The URG has several accreditation programs that are modeled after the ISO9000 standards.

The United Recyclers Group (URG):

- provides an online part search database on its website, www.u-r-g.com.

- created an accreditation program – URG 6000, 7000, and 8000, which are similar to the ISO9000 standards. These programs ensure that those that are URG-certified carry out their activities under controlled conditions required in the program. An annual certification is administered by a third party to verify that a recycling facility is following the requirements of the program.

For more information on the details of the accreditation process, visit the URG website.

Making Informed Business Decisions

Determining where to use recycled parts is decided by the insurer and collision repair facility.

When making a determination to use recycled parts, it is important to consider:

- warranties. The use of recycled parts should not void any warranties that would have been maintained had a new part been used. In this instance, warranties from the recycler and insurer may take the place of vehicle maker warranties.
- part durability. It is important to make sure the part has not been compromised by corrosion or by steps in the removal process that may have altered the strength of the metal (thinning or heating). Another example is a hood that was bent and straightened. It must be as durable in another collision.
- that all involved in repair process must be notified about the type of parts being used for the repair.
- the practicality of finding a recycled part. For example, finding a rare part may take more resources than buying new.

Chevrolet Malibu

Parts that arrive in good condition may reduce cycle time by requiring fewer repairs.

Additional considerations include the:

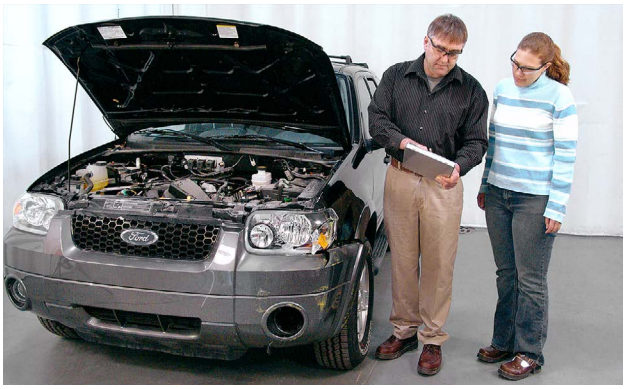
- condition of the part when it arrives. A part that requires extensive repair that was not previously disclosed may not be worth investing the time compared to buying the part new.

- length of time it will take for the part to be shipped to the collision repair facility. If a part will take several days, it may be necessary to explore alternative options, such as using new or aftermarket parts.

Recycled struts should match the vehicle mileage to ensure even wear on both sides.

If using recycled parts that are designed to wear over time:

- they should have equal wear from side to side.
- age and mileage should match the vehicle being repaired, or the part being replaced.
- the insurance company may require the part be replaced with a part that is the same year or newer.



The customer should be informed when recycled parts are used on their vehicle.

When deciding to use recycled parts, the customer should be informed about differences between new and recycled parts. Differences may include that the:

- recycled body parts may require minor repair.
- new body parts may include a factory warranty against corrosion.
- new mechanical parts include a factory warranty.

The customer should also be informed about the similarities between new and recycled OEM parts such as:

- factory corrosion protection.
- proper fit.
- proper mounting locations.
- both parts are factory parts.

Also when deciding to use recycled parts, it may be helpful to compare aftermarket and recycled parts. For this, collision repair technicians may be able to provide insight into which aftermarket parts may not be best suited for a particular repair.

Finally, customer expectations may differ depending on the condition and age of the vehicle. Some customers may be less willing to use recycled parts on a one-year old vehicle versus a customer with a seven-year old vehicle.

Checking paint film thickness may help determine if the part has been previously repaired.

To help ensure part fit and durability, it is important that the recycled part be factory original. Steps to verify part origins and condition include checking:

- the part for consistent paint film thickness and appearance. There should also be a uniform color consistency across multiple panels. If there is not, it is likely that the panel has been repaired, replaced, and / or refinished.
- for vehicle history using various vehicle history services. However, with increasing privacy laws, using some vehicle history websites, such as Carfax, may become more difficult.
- for the absence of VIN labels and other labels, or presence of R-DOT labels. These will indicate that the part has been replaced.

The R-DOT label is placed on replacement parts, so this is an indication that the part is not an original vehicle part. In some instances, aftermarket parts may be indicated by labels on the panel backside. But this is not a reliable method for determining if a part is aftermarket or OEM since some repairers may remove this label.

www.ecarcenter.org

The ECAR website can help identify state laws on hazardous waste disposal.

Most laws associated with the use of recycled parts focus on the disposal of hazardous materials, such as oil, antifreeze, brake fluid, mercury, and batteries. These particular laws vary according to each state or province.

The ARA has a link on their web site that provides a state-by-state breakdown of the requirements for working with hazardous materials. This website is developed through a partnership by the EPA and the ARA to provide compliance assistance for the automotive recycling industry. This compliance assistance source is known

as the Environmental Compliance for Automotive Recyclers (ECAR). The link to this site is:

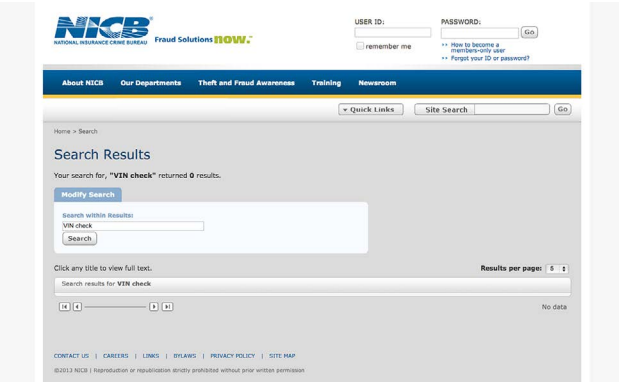
www.ecarcenter.org/ecartour.html

The web pages provide specific regulations for handling various wastes such as:

- antifreeze.
- brake fluid.
- undeployed airbag modules.
- refrigerants.
- transmission fluids.
- oil and oil filters.
- mercury.

Each waste classification has links to state-specific regulations, a self-audit checklist, best management practices, and other related sources.

There are instances when laws regarding VIN labels must be followed. For example, in some states, the VIN must accompany full-frame assemblies.



The NICB website provides information related to vehicle theft.

The National Motor Vehicle Title Information System (NMVTIS) has a free online database. It is used to protect consumers from unsafe vehicles, fraud, and to keep stolen vehicles from being resold. Data that is available to consumers on this website includes:

- title data.
- brand history.
- odometer reading.
- total loss history.
- salvage history.

According to the NMVTIS web site, over 7,500 insurance carriers, vehicle recyclers, and salvage yards in the U.S. report to NMVTIS regularly.

The National Insurance Crime Bureau (NICB) also provides access to a database to determine if a VIN label is:

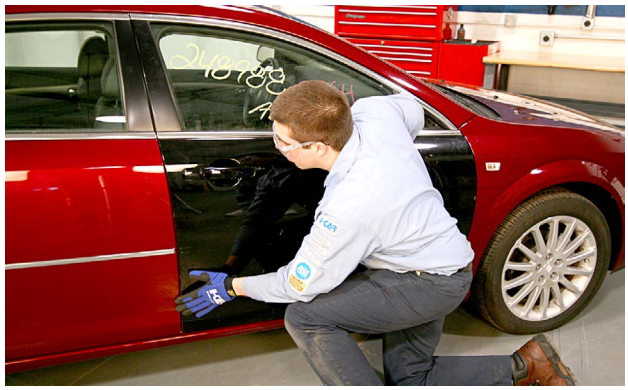
- off of a stolen vehicle.
- from a vehicle that has been declared a total loss.

The websites for both of these organizations are:

- www.nmvtis.gov
- www.nicb.org

Part Ordering

Saturn Aura



Recycled parts should be visually inspected to verify proper match.

When ordering recycled parts for a repair, parts:

- should match the model and model year, depending on the part.
- may require matching a specific build date. In some instances, there may be changes in vehicle design.

Whenever practical, it is the responsibility of the collision repair facility, before installation, to determine the usability of the recycled parts and to ensure the parts will not compromise the repair of the vehicle.

Ordering partial assemblies may be more economical than ordering an entire assembly.

Parts are typically ordered by category type, such as body, electrical / mechanical, and miscellaneous. When working with body parts, the repair facility should determine if a partial assembly is available, if that is all that is needed. This may be preferable and more economical than ordering a complete assembly.

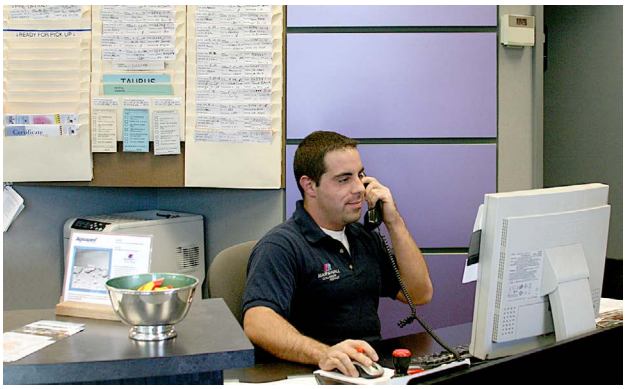
In some instances, using a recycled assembly, partial or complete, is preferable to using individual new parts. A recycled assembly:

- eliminates the need for having to order several individual parts.
- helps avoid assembling individual parts.

Using a recycled assembly may result in:

- fewer welds.
- less intrusion into original structure.
- the original corrosion protection being left intact.

Also, when ordering parts, determine if one-time use fasteners need to be ordered from the vehicle maker. In some situations, the existing fasteners cannot be reused, and new ones must be ordered.



Part orders are most commonly received by the recycling facility via phone.

When ordering recycled parts, they may be ordered "as is." Parts that are ordered "as is":

- may require repair. If this is the case, any repair to recycled parts should be disclosed to the customer.
- may have an unknown amount of damage.
- can increase cycle time.

Parts may also be ordered "clean and undamaged." Clean and undamaged means that the part is generally supplied undamaged, however, in some instances, minor repair may be necessary.

Recycled parts should not be stripped and sent back without first being agreed upon with the recycling facility.

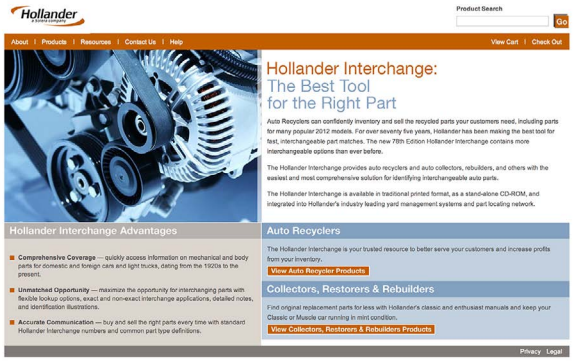
When ordering parts, the repair facility:

- should not remove the needed parts and send the remaining assembly back to the recycler without consent from the recycling facility. Some parts may not be saleable after they have been stripped of certain parts.
- if it has been decided not to use a part, should send the part back in similar condition as it was received. If a part is altered, it devalues the part. Additionally, if the part is a brokered part, it is unlikely that the part can be sent back if it is different than how it was shipped.
- should not paint the part and send it back. Make sure the part matches before painting / edging.

If any part is going to be returned, the condition of the returned part should be agreed upon between the repairer and recycler.

If it has been agreed that parts can be removed from an assembly and the remaining portion returned to the recycler, adjacent panels that can be resold should not be damaged during the part removal process.

www.hollanderinterchange.net



Hollander provides information on which parts can be interchanged with parts from other make and model vehicles.

In some instances, parts are interchangeable from one model to the next. To determine which vehicle parts interchange with others, there are software programs available that provide an index of parts and their interchangeable equivalents from other vehicles.

One example of a company that provides this software is Hollander. The Hollander Interchange software can be accessed at:

- hollanderinterchange.net

The interchange includes mid-year changes of part designs, or even month-to-month changes.

Collision estimating guides are not a good reference source for interchange information since it will not provide data regarding similarities to other makes and models of vehicles. It is recommended to use documentation sources designed specifically for this purpose.

When using an interchangeable part from a different model, it is important that the attachment locations be in the same position. In some instances, the mounting locations may not be exact, even though part design is the same. This may require new mounting holes to be drilled into the recycled replacement part. If this is being considered as an option, the repair facility should consider if this will have an effect on the part's future performance. Additionally, this type of modification should be limited to non-structural panels, not unitized structure parts or sensor mounting locations.

Another consideration for parts ordering is that sometimes part design may slightly differ depending on where the vehicle was built. For example, the apron assembly on a 2009 Toyota Camry has a slight design difference between those built in the United States and those built in Japan. So just because a part was ordered with the same build date does not mean that the part will be identical to the part being replaced. Decoding a portion of the VIN may be necessary in some instances to verify that parts are interchangeable. With Toyota, the first digit in the VIN indicates the country where the vehicle was assembled.

Recycled door shells do not typically include door mirrors.

When ordering parts, what is included with the part assembly varies depending on the recycling facility. The decision is made based on the dismantling procedure, what is available, and what is undamaged on the donor vehicle.

For example:

- doors may include trim, glass, motors, lamps, and switches. However, many recyclers may inventory mirrors separately since that item may be in higher demand.
- dash panels may include various electronic parts depending on how it was removed from the vehicle. What is included should be verified with the collision repair facility. Many U.S. states have specific procedures regarding the use of recycled dash panels in that the VIN plate must be removed from the recycled panel and replaced with the VIN for the repaired vehicle.
- mechanical part inclusions may vary. For example, gas tanks may include the fuel filter, fuel pump, fuel gauge, etc. Suspension parts may include the strut, coil, and brake assembly.

Body structure assemblies may include exterior panels, reinforcements, and interior panels.

Mazda 626

Using recycled parts on estimates may require additional operations not generally associated with new parts.

When including recycled parts on a damage report, some considerations may include:

- parts may require disassembly for installation and refinishing.
- cleaning.
- trimming a part to size.
- measuring the part to verify it is undamaged.

Refer to "Video: Determining To Use Recycled Parts" in a presentation. The video discusses the steps involved in choosing a recycled part for collision repair.

www.realparts.com

Realparts.com is an example of an online subscription service used to order parts from various recycling facilities.

There are several tools that are used to communicate between the recycling facility and its customers, such as:

- websites, which include online ordering at recycler sites and eBay.
- instant messaging. This can be done from the repair facility to the recycler, or from a recycler to a recycler. Pinnacle has an instant messaging feature that allows recycling facilities that use this software to send instant messages to other recycling facilities that use Pinnacle software.
- subscription- type services , such as realparts.com.
- the telephone, which is still the most popular method.

The website realparts.com has been developed for the repair facilities to set their preference for the recycling facilities they work with. When a facility writes an estimate for a vehicle, the needed parts are put into the system, and the predetermined recycling facilities are contacted automatically. The recycling facilities are given a specific time frame to respond with what they have. This setup may be used to satisfy an insurer's need for multiple price requests.

Module Wrap-Up

Topics discussed in this module included:

- providing an overview of the recycling industry.
- listing the benefits of using recycled parts.
- providing I-CAR positions on the use of recycled parts.
- providing vehicle maker positions on the use of recycled parts.
- providing insurance company positions on the use of recycled parts.
- listing the different recycling industry associations and identifying the services they offer.

- listing considerations for ordering and using recycled parts.

Module 2 - Processing Recycled Parts

I-CAR®

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Recycling Facility Processes

Learning objectives for this module include:

- explaining how a recycling facility operates.
- identifying proper cutting locations for body panels.
- identifying proper cutting techniques and tools.
- explaining how to grade a part based on the amount of damage.
- identifying required documentation that should accompany recycled parts.
- explaining how new vehicle technologies affect the use of recycled parts.
- listing the considerations for using recycled restraint system parts.
- listing parts that cannot be recycled.

Recycling facilities have improved their processes and inventory techniques in response to increasing the collision industry's demands for higher quality parts delivered in a more timely manner.

Recycling facilities:

- acquire, dismantle, inventory, store, and sell recycled parts.
- have a variety of job positions. The number of positions depends on the size of the facility. In a small facility, one person may have multiple jobs.
- should comply with ARA and URG standards and codes. Complying with these standards creates a positive and professional image for the recycling industry.

Refer to "Video: Automotive Recycling Facility Tour" in the presentation. This video shows a recycling facility operation and how part orders are filled and shipped to customers.

Vehicles that are acquired by the recycling facility are stored outside with most sheet metal intact.

One of the main functions of the recycling facility is acquiring vehicles for disassembly and resale. The first step in the process is determining which vehicles to acquire in order to meet the needs of the customer.

When a recycling facility is determining which vehicle to acquire, they consider:

- inventory. Some companies use hand-held devices that are used at auction to determine real-time inventory.
- input from sales staff and purchasing.
- common vehicles.
- customer orders.

Other considerations include:

- the length of time a part has been at the recycling facility. If the part is not selling, more parts are not required.
- data on what parts are more commonly damaged.
- parts that are in high demand. In some situations, a vehicle purchase may be made based simply on a couple of high-demand parts.
- OEM information, such as which parts are on backorder from the vehicle maker. A recycling facility may be able to fill the orders that the OEM cannot.

Sources where vehicles are acquired include:

- auctions.
- vehicle makers.
- catastrophe locations.
- individual owners.
- contracts with fleet companies or insurance companies.

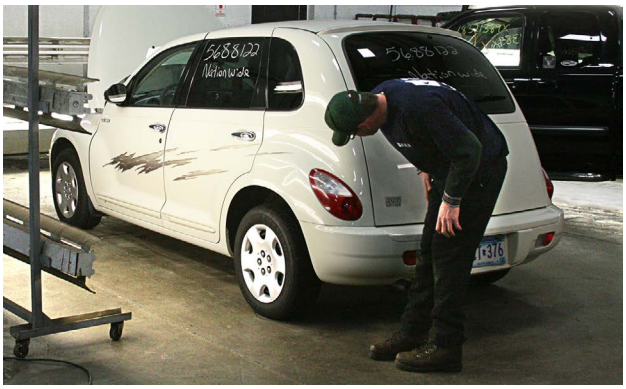
Parts can be shipped between recycling facilities to fulfill customer orders.

Other recycling facilities can also be a source for acquiring vehicles or vehicle parts. Facilities may be part of a network that work together to meet customer demands.

These networks are made of multiple partners, connected by a database that searches other yards to look for a specific part. The parts are shipped between recycling facilities. Shipping directly to a customer from a third party supplier is generally not done, as each facility has their own quality control process to ensure their customer receives the right part and matches the part description.

In addition to networks, there are also brokers who will work with recyclers to acquire the part. In some instances, the broker arranges to dropship parts from another recycler if the part is not in stock. Using this type of arrangement may also make it difficult to return a part if the collision facility rejects the part.

PT Cruiser



An inventory specialist makes the determination which parts can be recycled off a vehicle.

The parts removal process, done by the recycling facility:

- requires determining what is recycled off of each vehicle and which parts will be scrapped.
- involves printing out part tags for the person who dismantles the vehicle. The tags are used to determine which parts are removed from the vehicle and inventoried.

Examples of software that is used to assist in this process include:

- Pinnacle software.
- Hollander software.

All parts must go through a quality control process that requires:

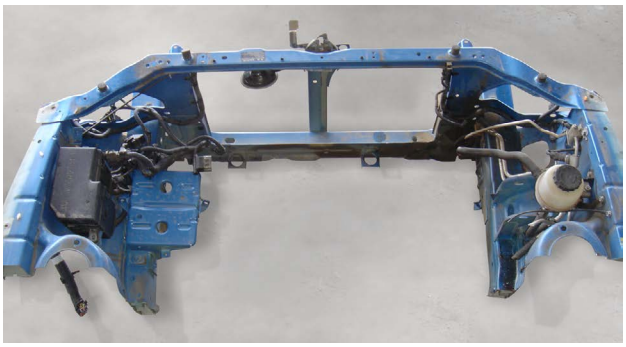
- cleaning the part.
- inspecting the part for damage and categorizing the part according to the extent of damage.
- making sure part description matches actual part condition.
- communicating any discrepancies to the repair facility.

Part of the inspection process is verifying that the part has not been previously repaired and is not an aftermarket part. To check for previous repairs, a recycling facility may:

- check the panel backside.
- look for corrosion, different color primer, and / or weld marks.
- check paint film thickness on the panel surface.

A recycling facility may notify the buyer of previous repairs, whether the panel has been simply refinished or refinished and repaired.

If the part is not factory, and has been deemed an aftermarket part, this should also be disclosed to the buyer.



Some part assemblies may be shipped with some mechanical parts attached which may be used for vehicle repair.

Recycled parts of a unitized structure are generally:

- supplied as part of an assembly.
- removed from the vehicle following cut location recommendations from the repair facility.

Recycled parts that are part of the unitized structure may include, but are not limited to:

- front and rear rails.
- A-, B-, and C-pillars.
- the radiator core support.
- bumper reinforcements.
- quarter panels.
- the roof panel.

Recycled quarter panels will have to be removed from a portion of the vehicle structure.

Exterior panels may:

- be supplied as an assembly.
- be supplied with all attached parts.
- require the collision repair facility to indicate which parts to include with the panel.

Exterior panels that may be used as recycled parts include:

- deck lids.
- hoods.
- doors.
- fenders.
- panoramic roofs. These may be bolted on or bonded on, making the part easier to remove compared to welded-on roof panels.

Parts must be properly protected to prevent damage during shipping.

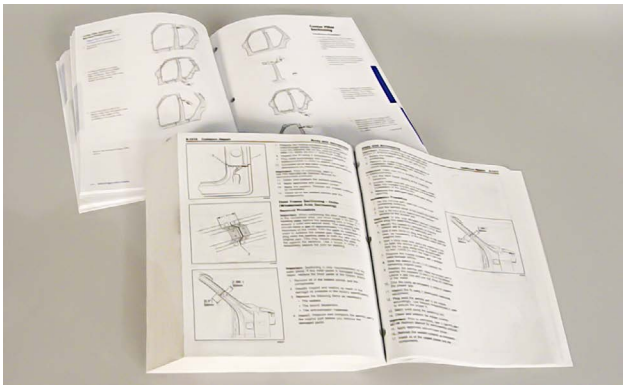
When parts are shipped to customers from the recycling facility, the parts are shipped locally and worldwide. With the Internet, the customer base is expanded well beyond the driving range of delivery drivers.

To ensure parts are not damaged in transport, proper care is taken so that the part is protected. If an item is damaged during transport, there will be discrepancies between the part description from the recycler and how the part was received by the repairer.

To ensure that the part is not damaged in transport, the recycling facility:

- wraps the part in protective material.
- secures the part so it does not move around while in transit.
- secures loose items that can move or swing around and damage adjacent parts.

Dismantling Recycled Vehicles



Whether using recycled or new parts, repair procedures must follow the vehicle maker's recommendations.

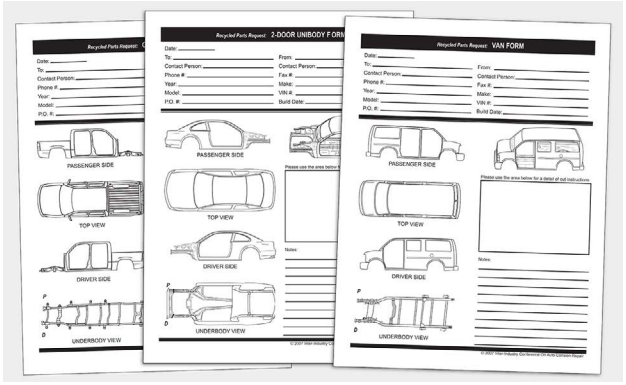
Proper cut locations are critical for a proper repair and it is the repairer's responsibility to determine if a specific cut location is required. When the repair facility is determining the cut location for the recycling facility:

- the vehicle maker part replacement guidelines should be followed in regard to sectioning or replacing a part at factory seams.
- it may be important to know how the part is serviced from the vehicle maker to determine where the cut should be made at the recycling facility.

All parts must be cut according to the repair facility recommendations.

When removing parts of a unitized structure or frame from a recycled vehicle:

- cut locations used by the recycling facility must be done following the instructions from the repair facility.
- the part should be cut longer than needed, not at the actual sectioning joint or factory seam. If the part is cut too short, it makes the part unusable.

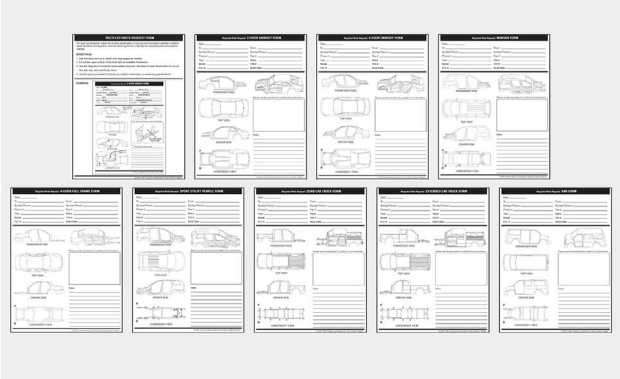


The I-CAR Recycled Parts Request Form is used to communicate specific cutting directions to the recycling facility.

To aid communication between the repair facility and the recycler, I-CAR has developed the I-CAR Recycled Parts Request Form. This form is used by repairers to relay cutting information to the recycler. Those that complete the form should be guided by the vehicle maker recommendations for proper part replacement guidelines.

This form is available at:

- www.i-car.com
- www.a-r-a.org
- many recycling facility web sites.

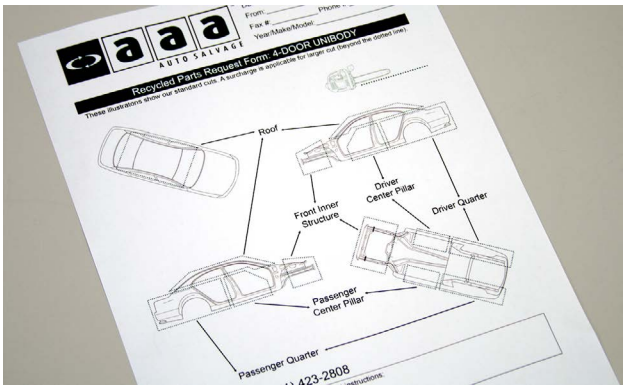


Refer to Module 2, "Activity: I-CAR Recycled Parts Request Form" in the presentation and have your instructor lead you through the activity of how to complete a form.

It is important to provide detailed information on the I-CAR Recycled Parts Request Form to ensure the part arrives at the repair facility with the proper cut locations.

To complete the I-CAR Recycled Parts Request Form:

- identify the vehicle being requested.
- complete the contact information.
- use the diagrams to provide general cutting locations. Use multiple views to highlight the cutting locations – underbody, top view, side view, and three-dimensional view.
- use the notes section to expand on special instructions. For example, to indicate the exact cut location, making sure it is longer than the vehicle maker's recommended sectioning location. The notes section can also be used to specify measuring points when necessary. For example, directions may include statements like "cut the A-pillar 50 mm (2") below the upper windshield pinchweld flange." The more descriptive the instructions, the less chance there is for miscommunication.



Some recycling facilities have standard cut lines that are used to help maximize the number of parts that are sold off of each vehicle structure.

Some recycling facilities may offer standard cut lines. These cut lines are determined by the recycling facility in order to optimize the number of parts that can be used from a vehicle structure.

The cut line provided by the repair facility may require multiple service parts. For example, standard cut lines for a B-pillar may be in the middle of the front and rear door openings. However, if a repair facility indicates that they would like to move one of the cut lines back to the middle of the dogleg area, this now includes two parts since the quarter panel assembly may not be usable anymore.

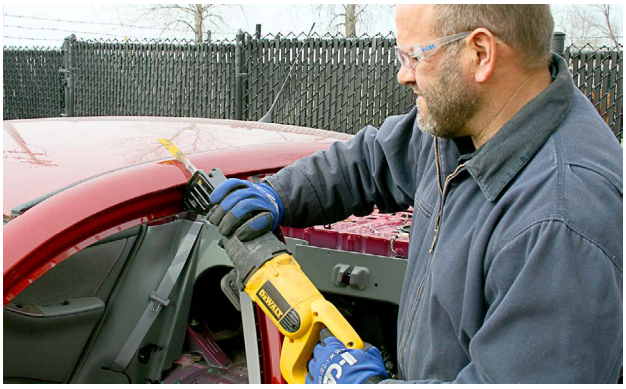
Both insurers and repairers need to take note of this to ensure proper communication about part ordering. Depending on the vehicle maker's recommended cut line, it may be necessary to acquire two parts from a recycler, even though the repair is specific to just one part.

Chrysler 300M

Some cutting locations may be altered to include the foam on some panels.

Foam location may need to be identified on the request form if the repair facility wishes to preserve a foam-filled area. This may require altering the cutting location.

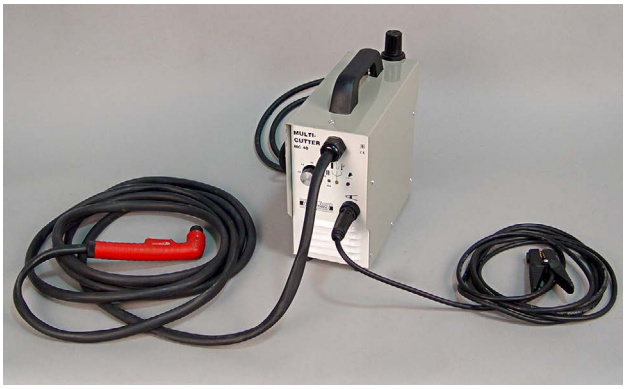
Honda Accord



A reciprocating saw is used to cut the B-pillar from this vehicle.

When the recycling facility cuts the part from the vehicle:

- proper cutting tools are required for working with AHSS parts.
- heat levels must be monitored if a torch is used. Heat should not spread into the area that will be used for the repair since it can weaken the metal and create an unintended collapse zone. This is where the heat should be monitored. Placing heat indicators at the factory sectioning joint will help ensure that excessive heat was not applied to the usable piece. This may require the recycling facility to ask the repair facility where the final cuts will be made.
- avoid scratching the finish. Any scratch can create additional work in prepping the panel for refinishing. If the scratch is deep enough, it can create corrosion hot spots that must be repaired.



Plasma-arc cutters may be used to remove parts from the vehicle structure.

Considerations for cutting the desired assembly from the vehicle structure include determining which cutting tools should be used, such as:

- plasma-arc cutters.
- reciprocating saws.
- cutoff wheels.

Understanding the type of metal being cut is required for determining the type of

cutting equipment. For example, cutting some advanced high-strength steel (AHSS) requires special bits and blades that can withstand the hard steel without breaking or dulling.

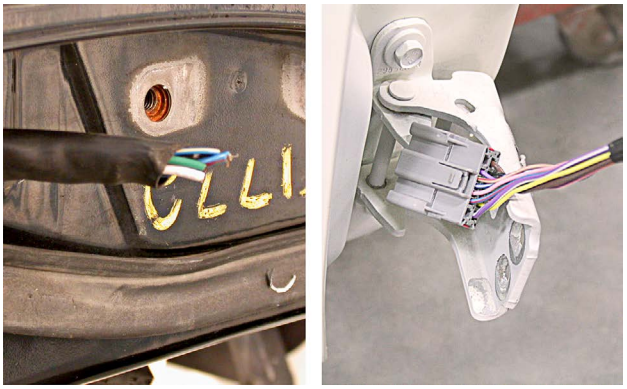
Follow all safety protocol when using a plasma-arc cutting torch to avoid fires.

When using a plasma-arc cutting torch:

- overall use should be limited.
- understand the potential dangers.
- understand what may cause vehicle fires. For example, some foams are flammable, and can increase the chance for vehicle fires if a torch is used. If a torch is used, verify where the foams are used in the rockers panels or pillars before cutting.

ARA has developed a Torch-Use Education and Orientation document that addresses:

- basic facts for using torches.
- best management practices (BMPs) for safe use.



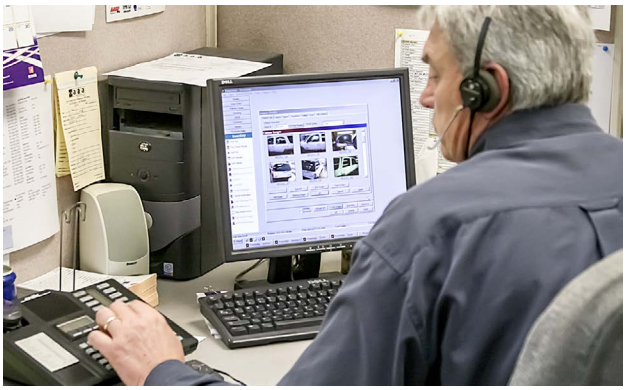
Whenever possible, it is recommended to include connectors with wiring harnesses.

When a part assembly is removed from the vehicle at the recyclers:

- the wiring harness is generally left intact rather than cutting.
- trim may not be included with the door assembly. If the trim panel had to be removed to remove the mirror, the trim is not inventoried with the door assembly.

Because of these variations in how the part is provided, the repair facility must request specific parts during the ordering process.

Assessing Parts for Quality

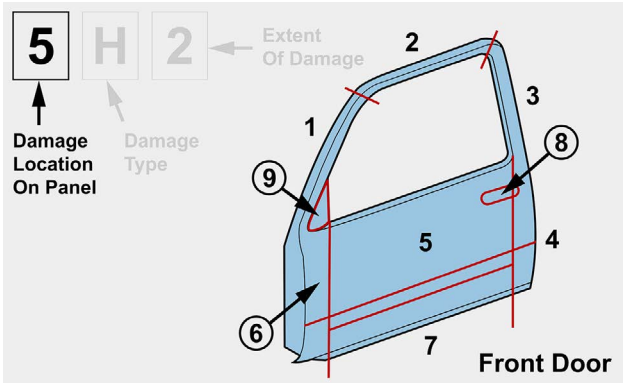


Proper communication between the recycler and the collision repair facility makes sure the proper part is delivered on time in the expected condition.

During the parts ordering process, there needs to be good communication to ensure that the part being delivered by the recycling facility meets the expectations of the repair facility. This requires:

- that the part condition be adequately described to the repair facility.
- a standardized communication system so that there is no confusion on part description regardless of which recycling facility is being used.

Refer to "Video: Grading A Recycled Part" in the presentation. This video shows how to properly grade a panel.

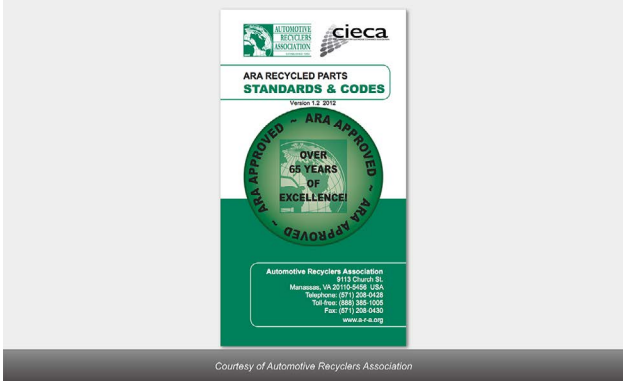


The first position in the damage code lists the location of the damage. On this door, a "5" indicates the center of the door.

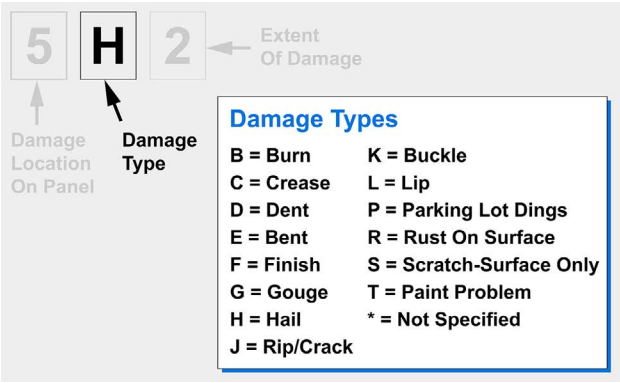
The first position in the ARA damage code is used to identify the damage location on a panel. There is a chart available, titled the ARA Damage Locator sheet, that assigns numbers to specific areas of a panel. There is a specific sheet for each part on a vehicle, such as hood, fenders, doors, and deck lids.

The locator sheet is part of the ARA Standards & Codes Brochure, which can be found at the ARA website and can be downloaded at no charge. This brochure is a good resource for understanding the ARA parts grading system.

If there is damage in multiple areas, multiple damage codes are created for the part.



Refer to the "Activity: ARA Standards & Codes Brochure" in the presentation. The activity explains how the brochure is used to help assign damage codes.

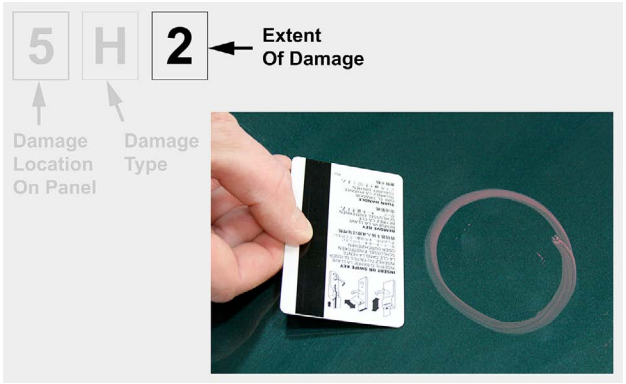


The damage type is indicated by the middle character in the 3-digit code. The "H" in this code indicates hail damage.

The second position of the ARA damage code is a letter that refers to the type of damage on the panel. For example:

- B = Burn
- C = Crease
- D = Dent
- E = Bent
- F = Finish
- G = Gouge
- H = Hail
- J = Rip / Crack
- K= Buckle
- L= Lip
- P = Parking lot dings
- R = Rust
- S = Scratch-surface only
- T = Paint problem
- * = Not specified

There are 15 different codes available for identifying the various types of damage.

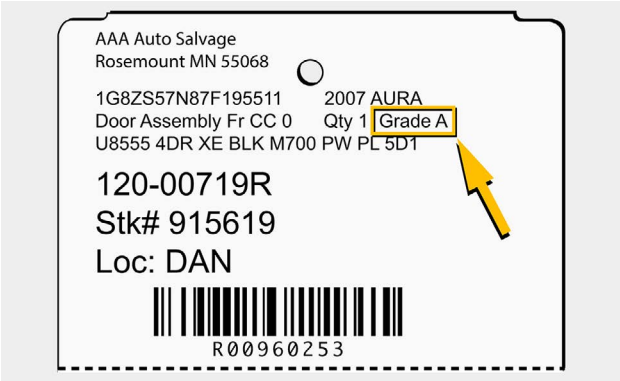


The third figure in the damage code represents the extent of damage. The "2" in this code indicates that there are two units of damage.

The last position in the ARA damage code is a number that is used to identify the extent of damage in repair units. A repair unit:

- represents damage that does not exceed the surface area of a standard size credit card. For example, one unit can be covered by one credit card. Two units can be covered by two credit cards. The damage may be continuous or multiple areas in a single location.
- is used to assign a specific grade to the part. The part grade, in addition to the damage code, is used to communicate the

condition of the part to the repair facility.
- does not represent the amount of time required to repair a part, only that the part has a specific amount of damage.



A grade "A" part means that the part has one unit of repair or is undamaged.

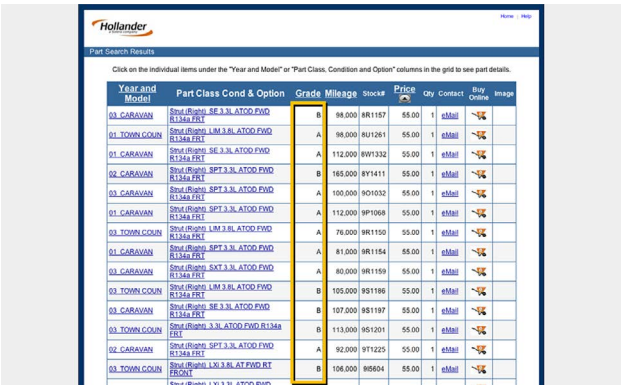
The following describes the four different ARA part grades:

- A Grade = one unit of repair, less than one unit of repair, or "clean and undamaged." A nonmechanical part that is labeled as A grade may also be listed using the code 000.
- B Grade = two units of repair.
- C Grade = more than two units of repair.
- X Grade = not enough data to grade the part, essentially an ungraded part.

Structural parts should be measured for damage before they are used as recycled parts.

When identifying damage for unitized structural parts:

- there is currently no code sheet for structural parts.
- the part must be dimensionally accurate.
- there should be no bends, kinks, tears, or pitting-type corrosion on the part.



Mechanical parts are graded based on the amount of service mileage.

Mechanical parts are inspected for operation, and categorized based on miles / kilometers of operation. For example:

- A Grade parts have been used for less than 60,000 miles.
- B Grade, more than 60,000, less than 200,000.
- C Grade, more than 200,000.

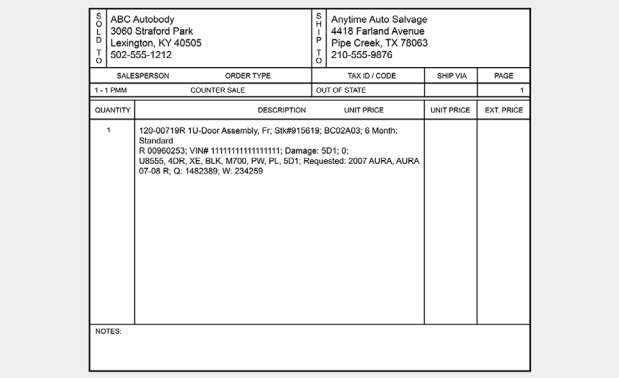
For Grades A and B, if the part has over 60,000 miles, the part must have less than 15,000 miles per model year of age.

Parts grading is also available for items such as cosmetic parts and door mirrors.

The ARA document "ARA Recycled Parts Standards & Codes" provides additional part grading explanations. These include glass, lights, mirrors, and cosmetic parts.

The entire parts grading document can be found on the ARA website.

Repair Documentation And Theft Prevention



SOLD TO	SHIP TO
ABC Autobody 3060 Straford Park Lexington, KY 40505 502-555-1212	Anytime Auto Salvage 4418 Farland Avenue Pipe Creek, TX 78063 210-555-9876

SALESPERSON	ORDER TYPE	TAX ID / CODE	SHIP VIA	PAGE
1 - 1 PMM	COUNTER SALE	OUT OF STATE		1

QUANTITY	DESCRIPTION	UNIT PRICE	UNIT PRICE	EXT. PRICE
1	120-00719R 1U-Door Assembly, Fr; Stk#915619; BC02A03; 6 Month; Standard R 00960253; VIN# 11111111111111111; Damage: 5D1; 0; U8555, 4DR, XE, BLK, M700, PW, PL, 5D1; Requested: 2007 AURA, AURA 07-08 R; Q: 1482389; W: 234259			

NOTES:

The bill of sale should include the VIN and may include the vehicle description of the donor vehicle.

Proper documentation of parts is required by both the recycler and repair facility. As part of the documentation process, paperwork should include:

- copies of paperwork for parts shipped.
- where the vehicle was retrieved from.
- warranties.
- the VIN of the source vehicle for each part, in addition to the make, model, and year.
- vehicle title, if required. Some states require the title to accompany recycled full frames.
- any flood damage documentation.

Vehicle titles may be required to accompany some recycled parts.

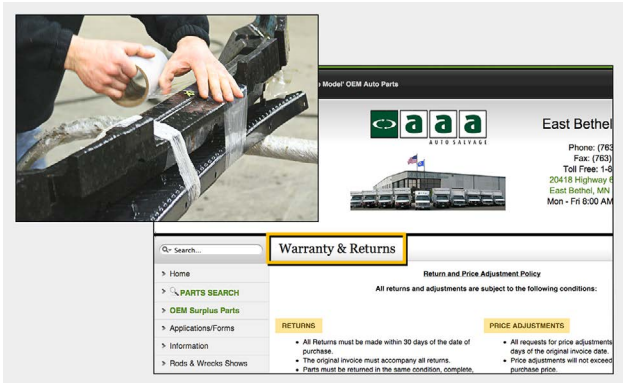
Recycling facilities play an important role in reducing the amount of stolen vehicle parts. To accomplish this:

- a proper documentation process by both the recycler and repair facility is critical.
- VIN labels should remain fixed to the recycled parts.
- a copy of the vehicle title (or original if required) is kept on file, and copies of the title may accompany parts.

There may be specific state requirements regarding the replacement of damaged or missing VIN plates.

To assist in theft deterrence:

- VIN plates or labels that must be transferred should do so following state and local laws. These vary considerably from state to state and require looking into the various legal requirements for VIN transfers.
- anti-theft labels on recycled parts must be left on the part.
- leave R-DOT labels on replacement parts. The R-DOT label is placed on replacement parts shipped from the vehicle maker.



Many collision repair facilities are offering warranties on their parts as part of the Gold Seal program.

Warranties vary according to each recycling facility. Those that participate in the Gold Seal program are required to offer written guarantees on their parts. ARA recommends body parts be warranted for fit and corrosion protection for at least one year. Additionally:

- some recyclers may provide limited lifetime warranty on sheet metal parts.

- some recyclers warranty mechanical parts of sheet metal assemblies such as door parts.
- other mechanical parts may have 30 – 90 days warranty.

The warranty typically includes language about the recycler not being responsible for improper installation, accident, misuse, etc.

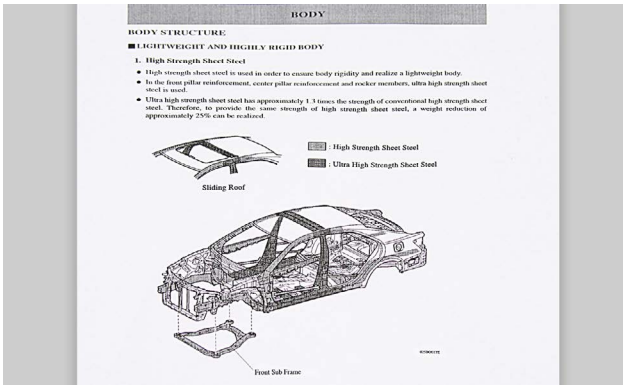
Latest Developments In Recycling

Advanced high-strength steel parts may require specific repair techniques based on vehicle maker recommendations.

To meet federal crash and corporate average fuel economy (CAFE) standards, vehicle makers are using higher strength steels, which are thinner and lighter than mild steels. These AHSS steels come in a variety of thicknesses and strengths.

When using AHSS parts, note that:

- AHSS parts, like mild steel parts, may be used for partial and complete replacement.
- the vehicle maker recommendations must be followed with regard to straightening, welding, sectioning, and complete installation.

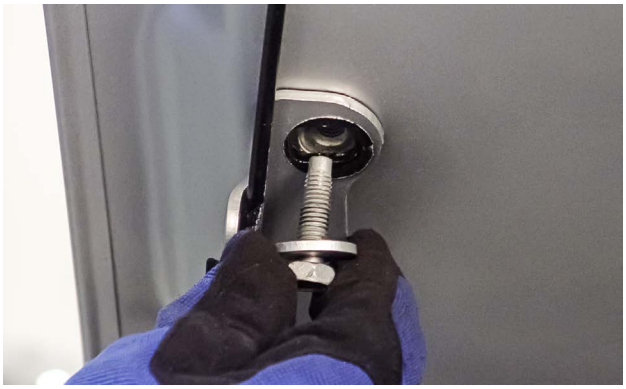


Refer to vehicle maker service information to determine the location of AHSS parts.

When working with AHSS parts:

- some higher strength steels should not be straightened.
- even minor damage, such as a slight bend, may make a part unusable.
- it is important to identify the strength of the steel. Service information is required.

More information on AHSS can be found in the I-CAR live “Steel Unitized Structures Technologies And Repair (SPS07)” training course.



Aluminum parts, such as this hood, may require specific fasteners to avoid galvanic corrosion.

There has been an increased usage in the amount of aluminum parts used for vehicle design. These parts, though more rare than AHSS, are recycled, especially the bolt-on parts such as doors, deck lids, and hoods. Aluminum vehicle structures can also be recycled. However, similar to steel, aluminum structures require following specific replacement procedures that are provided by the vehicle maker.

How these parts are attached to the vehicle may differ compared to their steel counterparts. Aluminum unitized structural parts may require:

- specific fasteners and welding techniques.
- drilling out various types of rivets and replacing with recommended fasteners.

When using vehicle maker's recommendations to replace aluminum parts, the original attachment method is not always duplicated.

More information on aluminum repair can be found in the following I-CAR live courses:

- Aluminum Panels And Structures Damage Analysis (DAM05)
- Cosmetic Straightening Aluminum (STA01)
- Aluminum-Intensive Vehicle Repairs (ALI01)

I-CAR does not recommend using recycled airbag modules. Without knowing the condition or history of the vehicle, it is difficult to know if the airbag functioned properly during the last collision. It is also difficult to know if the airbag has been previously repaired. Therefore, using recycled airbags may pose an unnecessary liability risk.

Vehicle makers do not recommend the use of OEM non-deployed airbags.

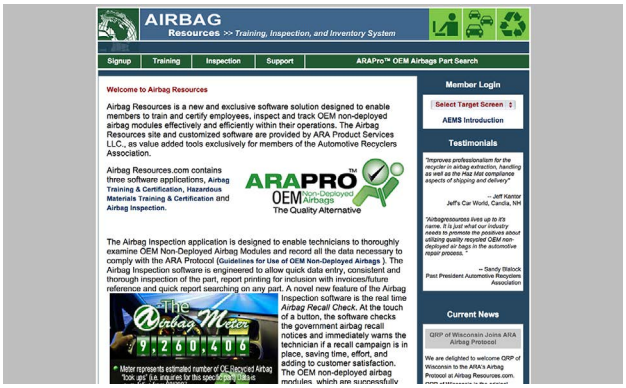
Additional industry positions on the use of recycled OEM non-deployed airbags include:

- no vehicle maker recommends their use, including those vehicle makers that acknowledge the use of recycled parts.
- no insurance companies in the United States will include a recycled airbag on their estimates.
- some industry associations do not approve of their use. For example, the Automotive Service Association (ASA) states "ASA discourages the use of salvage airbags. Safety cannot be compromised in this important safety system. While the use of salvage airbags can reduce cost, ASA believes that safety could be severely compromised and that shop owners could be placed at risk for installing salvage airbags. ASA recommends that all shops inquire with their insurance carriers before installing salvage airbags regarding coverage and increases in rates and get this information in writing."

The Society for Collision Repair Specialists position on the use of recycled airbags states that "SCRS recommends that collision repair professionals use exceptional caution when performing repairs to consumers' vehicles, and to only use parts that they know will perform with the same level of quality and safety as the original part; both upon installation, and for the life of the vehicle.

There are many variables introduced by utilizing alternative Supplemental Restraint System (SRS) replacement parts that have the potential to affect SRS operability, and could impair the integral safety function that these parts are intended to provide. Due to the additional liability assumed by the repairer utilizing the replacement part, SCRS encourages repairers to follow the Vehicle Manufacturers' recommended repair procedures when replacing SRS components, and does not recommend the use of salvaged, remanufactured or aftermarket alternatives for this repair."

www.airbagresources.com



ARA has programs available for inspecting OEM non-deployed airbags, where each airbag that passes inspection is ARAPro Certified.

The ARA approves of using OEM non-deployed airbags, provided they have passed a rigorous inspection process. The ARA has developed a specific protocol for airbag module inspection. Only units that pass the protocol inspection can be sold. The airbags that pass certification are classified as ARAPro Certified. Each airbag is then entered into a database where the certification can be traced. This helps to make sure that flood damaged or recalled airbags are not resold and used.

More information regarding the protocol can be found at:

- www.a-r-a.org

This airbag protocol training is available online at:

- www.airbagresources.com

Toyota Prius

Dismantling hybrid vehicles, such as the Toyota Prius, requires paying attention to specific safety recommendations. These can be found on Toyota's website.

Gasoline / electric hybrid vehicles are equipped with battery packs that may range from 42 – 300 volts or more. This requires:

- safety during dismantling.
- disconnection procedures available from the vehicle maker website.

There are hybrid vehicle battery removal guides available at no charge from some vehicle maker websites.

Safety procedures include:

- wearing the proper safety clothing, such as insulated lineman's gloves when disconnecting the high-voltage battery.
- checking for the presence of high voltage before working on a vehicle.
- being aware of electrolyte spills from damaged high-voltage batteries and how to properly neutralize the spill.

More information on safety with hybrid-electric vehicles can be found in the I-CAR live "Electric And Electric Hybrid Vehicles (ALT01)" training course.

More information on the insulated rubber gloves required for dismantling a high-voltage battery can be found in the article "Insulated Rubber Gloves And High Voltage Batteries" in the February 4, 2010 issue of the I-CAR Advantage Online.

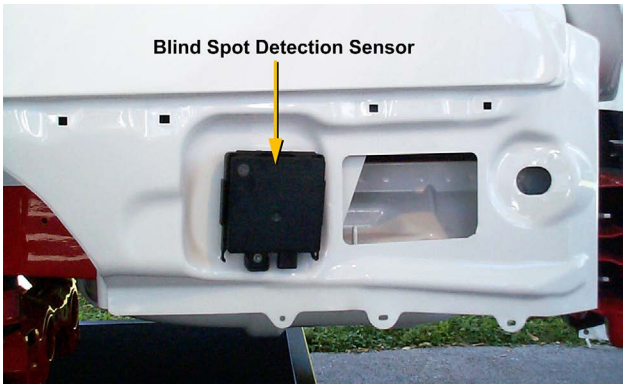
Ford Escape Hybrid Battery

This is a recycled hybrid battery from a Ford Escape Hybrid.

When recycling high-voltage hybrid batteries:

- they are to be charged before storage. Storing batteries that are completely discharged shortens their usable lifespan.
- the mileage on the battery is recorded and disclosed to the customer.
- battery control modules may not work because they are calibrated at the factory to be dedicated to the original vehicle.

Ford Taurus



This is a blind spot sensor for the 2010 Ford Taurus, which is located near the bottom of the quarter panel.

Most advanced automotive electronics require calibration after installing system parts, such as sensors and control modules. Restraint system parts, such as seat sensors, may also require calibration. Other systems or parts that may require calibration if a replacement part is installed include:

- steering wheel angle sensors.
- lane departure warning system cameras.
- the attention assist system.
- adaptive cruise control sensors.
- pre-collision systems.
- rain sensors.

Audi Q5

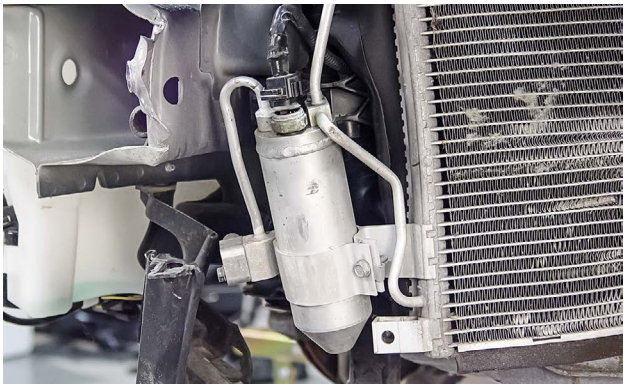
The control modules for Audi headlamps may not be able to be recycled as they are programmed to work on only one vehicle.

In some instances, there may be parts that cannot be calibrated to another vehicle. For this reason, the part cannot be recycled as it will not work when installed in another vehicle.

One example includes the control modules that are part of the Audi headlamp assembly. These are equipped with a part protection system in the module programming that prevents using the control modules in other vehicles.

Even with new control modules, each module is registered with a master data bank that is stored at the vehicle maker. When a new module is installed, the dealership programs the new module to the vehicle. It is important to note that not even a new module can be installed without access to the master data bank, and this access is only available at Audi dealerships.

Parts That Should Not Be Recycled

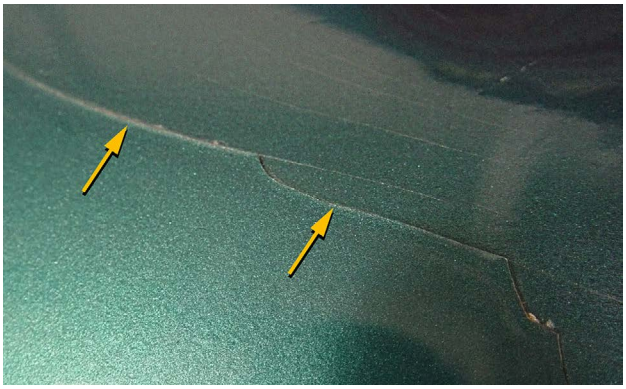


Receiver-driers exposed to moisture should not be reused.

Mechanical parts that should not be recycled may include:

- air conditioning parts exposed to moisture (receiver-drier, accumulator, compressor).
- radiator caps.
- worn suspension and brake parts (pads).
- bushings.
- emissions items, such as catalytic converters and charcoal canisters. Recycled catalytic converters cannot be sold according to the Clean Air Act (section 203(a)(3)). Fines for installation of recycled catalytic converters may be subject to a penalty of up to $25,000 for each installation.
- tie-rod ends.

It is the repairer's responsibility to make sure that any excessively worn parts are not used and that the system works properly.



Cracks in sheet metal parts like this are an indication of previous improper repair.

Sheet metal parts that should not be recycled include those with:

- unrepairable damage.
- an improper previous repair.
- missing mounting locations.
- corrosion that has caused pitting.

Fire-damaged parts should not be reused.

Sheet metal parts that should not be recycled include those with:

- fire damage.
- damage in collapse zones.
- cracks at spot welds or fasteners.

Module Wrap-Up

Topics discussed in this module included:

- recycling facility operation.
- proper cutting locations for body panels.
- proper cutting techniques and tools.
- how to grade a part based on the amount of damage.
- required documentation that should accompany recycled parts.
- how new vehicle technologies affect the use of recycled parts.
- considerations for using recycled restraint system parts.
- identifying parts that cannot be recycled.

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Module 3 - Recycled Parts And Installation Considerations

I-CAR®

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Inspecting Received Parts

Learning objectives for this module include:

- listing proper steps for part inspection during part delivery.
- listing the steps to verify proper part match.
- identifying the unique procedures for installing recycled panels and unitized structure parts.
- determining considerations for using multi-layered assemblies.
- identifying inspection procedures for mechanical parts.

Refer to "Video: Inspecting, Repairing, And Installing A Recycled Part" in the presentation. The video shows the proper steps for visually inspecting a recycled part to ensure it matches the expected quality in addition to the proper make and model of the vehicle.

It is important for the repair facility to inspect a part when it is received to ensure it matches the part description.

When receiving the part at the collision repair facility, make sure the damage code matches the actual condition of the part. While this is generally done at the recycling facility, it should be done when the part is received by the repair facility as well.

When inspecting the part:

- try to have the delivery driver present.
- variances in part descriptions may lead to returns or price negotiations.

With regard to cycle time, it may be quicker to repair a part with more damage than anticipated rather than wait for a replacement part.

Saturn Aura

A visual inspection of the installed recycled part helps verify that the part matches the vehicle.

To ensure that the proper part was ordered and received, compare the replacement part with the removed part. The part must be identical to the one being replaced. Verify that the part has the proper:

- mounting locations. Slight modifications may be made to non-structural panels, but should be avoided for unitized structure parts and sensor mounting locations.
- part shape, including lines, curves, and trim pieces.

Parts may appear the same on the outside, but have a different interior (such as a door). This may require removing the electronics, mechanical parts, and trim pieces from the damaged part and transferring them to the replacement part. Some repairers / insurers may do this as part of their repair policy.

When inspecting the part:

- it needs to be as good or better than the part being replaced before it was collision damaged.
- the repair facility must ensure the recycled part matches the condition and integrity of the original.

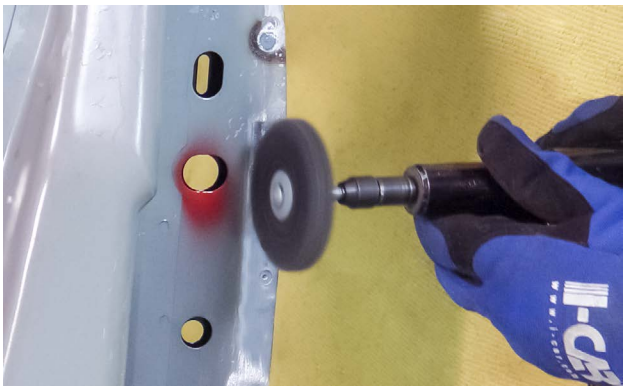
Installing Recycled Panels And Assemblies

Drilling spot welds is required for separating quarter panels from the inner structure.

When preparing recycled welded panels for installation:

- spot welds are drilled out to remove the panel from the donor assembly. This requires determining which parts of the assembly will be used before the spot welds are drilled. Welds should be drilled / removed from the flange not being reused.
- repairs should be made to any damage on the mating flanges.
- the mating flanges of the replacement panel should be cleaned and dressed before installation.

- if spot welding, or weld bonding, the replacement panel should have no holes in the flange for a quality repair.
- remove panels not being installed on the vehicle that may have been included on the assembly from the recycler.



The flanges must be cleaned and dressed before installing the recycled panel.

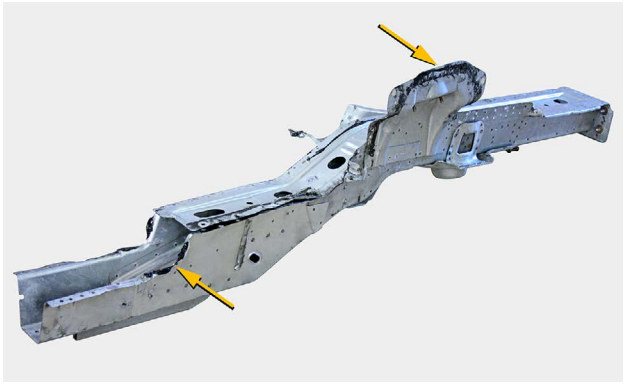
When preparing exterior panels for installation, clean the part and:

- repair any dents.
- remove all corrosion.
- remove any burrs or weld nuggets.
- remove foams and sealers in the area of the repair. In many instances, if the foam is not in the direct repair area, these are left intact rather than removing and reinstalling.
- apply corrosion protection to any areas of the part that will not be accessible for applying corrosion protection or refinishing after installation.

When exterior welded-on panels are being separated from inner structures, heat may be required to loosen foams, adhesives, and sealers between the inner and outer panels. Extreme care must be used when separating the panels because the panels can bend or distort from the pressure exerted from the foams and adhesives peeling away. This is common in the fuel filler door and sail panel areas on a quarter panel.

Bolted-on exterior body panels and assemblies may require removing trim or disassembly before installation and refinishing.

Cadillac SRX

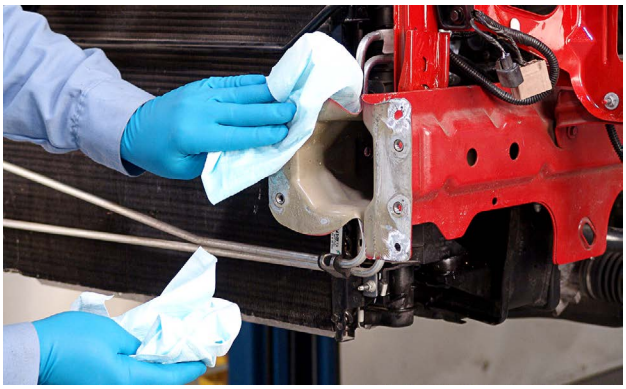


This front lower rail from a Cadillac SRX is adhesively bonded and spot welded together.

Similar to exterior panels, one of the first steps in using recycled unitized structure parts includes identifying how the part will be installed before it is removed from the recycled assembly. This step determines which side of the flange should be drilled. When removing a unitized structure part from an assembly, the mating flanges should be protected before part removal, if needed.

During part removal, note that some parts may:

- have adhesive as an additional attachment method.
- be laser welded, requiring the laser weld to remain intact since it cannot be duplicated in the collision repair facility.
- be prone to damage if laser welds need to be ground away to release the panel. Laser welds may be continuous and require the panel on the backside of the laser weld to be ground away to avoid damaging the panel being recycled.



All contaminants are removed from the surface of the mating flanges.

After the part has been removed from the assembly:

- verify dimensional accuracy. Recycled welded assemblies always need to be checked for dimensional accuracy because the donor vehicle may have had a severe impact that caused indirect damage to radiate into the recycled assembly. Indirect damage may not be evident from a visual inspection, and measuring will be required. It may not be possible to verify the recycled assembly is dimensionally accurate using three-dimensional measuring until it is attached to the vehicle during fitting.
- clean and remove contaminants such as dirt, wax, grease, undercoatings, surface corrosion, etc.
- trim the part to fit.

Multi-layered assemblies may make complete part replacement impractical.

Some assemblies, such as rocker panels, pillars, roof rails, and front and rear rails have multi-layered assemblies. This type of construction may make the installation process difficult since:

- inner panels and reinforcements may need to be accessed for joining.
- several access windows may be required on several parts of the assembly.

- it requires using offset joints. Multiple offset joints may not be practical.

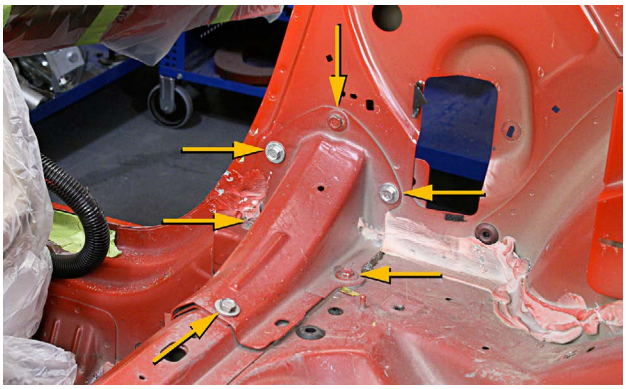
Removing the outer panel may be required to access sectioning joints.

If it has been determined that installing a multi-layered assembly is acceptable:

- outer panels may have to be sacrificed or removed and replaced to access inner panels for joining or sectioning.
- AHSS reinforcements may not have a sectioning procedure, requiring replacement at factory seams to maintain structural integrity. Ultra-high-strength steels should only be sectioned when allowed by the vehicle maker when installing replacement parts.
- determine where the recycled assembly and the sectioning joints can be properly protected from corrosion.

Installing large welded structural assemblies, such as full-front or full-rear body sections, involves making multiple joints in multiple structural panels and reinforcements. On many newer vehicles, many of the panels in the vehicle side structure are made from high- and ultra-high-strength steels that contribute to the structural integrity and occupant safety of the vehicle. Introducing multiple sectioning joints may affect the performance of the vehicle structure during normal operation as well as during another collision. Most vehicle makers have published warnings against doing full body sectioning on their vehicles.

Ford Mustang



This is a bolt-on crossmember for a 2005 Ford Mustang.

Bolted-on unitized structure parts often have design changes from year to year as well as during model changes. These assemblies also vary in type depending on options and powertrain configurations. When bolted-on recycled parts are being considered for use, it is essential that they are inspected to make sure there are no issues with:

- VIN labels.
- powertrain and suspension mounting locations and brackets.
- indirect damage.

- physical condition.
- mid-year design changes.
- vehicle warranties.

Bolted-on unitized structure parts may include:

- frame assemblies.
- engine cradles.
- crossmembers.
- suspension assemblies.

Additional Parts Inspection Criteria

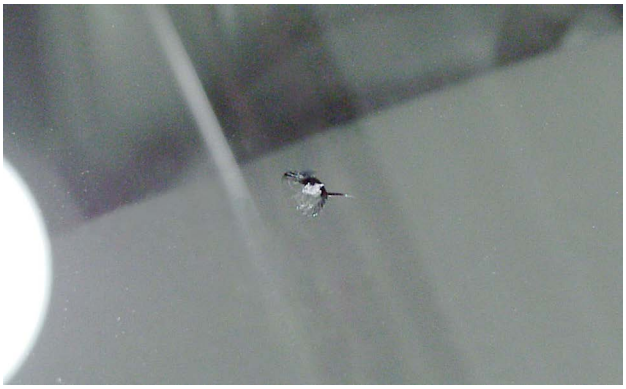
Recycled stationary and movable glass may be warehoused at a recycling facility rather than being left on the vehicle.

Recycled glass may include:

- stationary glass such as windshields and side glass.
- moveable glass such as door glass.

Some encapsulated glass may not be able to be removed without destroying the encapsulation. For example, some Toyota models, such as the 2009 Toyota Prius, have encapsulated backglass that is not reusable. Whether or not the glass can be reused once removed is indicated in the service information.

When ordering a windshield, note that there are various glass configurations based on vehicle options. For example, vehicles equipped with high-beam assist sensors or rain sensors may have a different frit design compared with vehicles not equipped with that option.

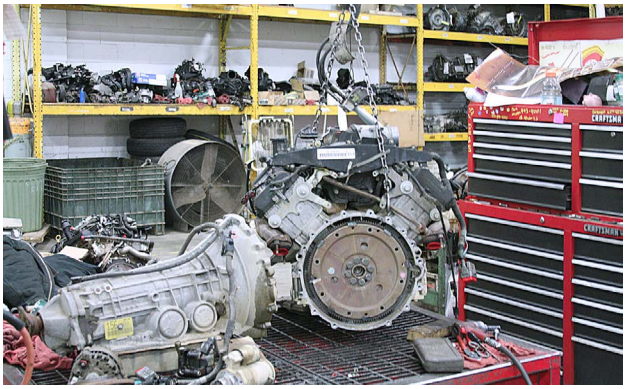


Chips in recycled glass may make the part unusable.

When inspecting glass for use, make sure to avoid glass that has:

- visible damage.
- delamination.
- improper tint or shade.

Before installation, it is important to note that the original adhesive primer must be removed from the glass to ensure proper adhesion during installation.



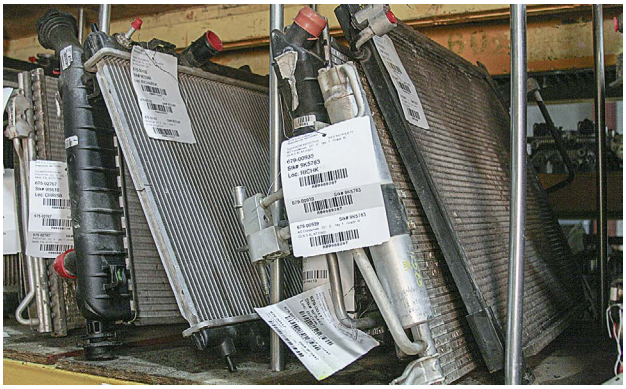
The engine and powertrain may be inspected by the recycling facility during disassembly.

Commonly recycled mechanical parts include parts related to the following systems:

- Air conditioning
- Steering and power steering
- Brakes
- Heating / cooling
- Suspension
- Powertrain

When using recycled mechanical parts, some may:

- need to go through a remanufacturing process.
- be categorized by mileage.

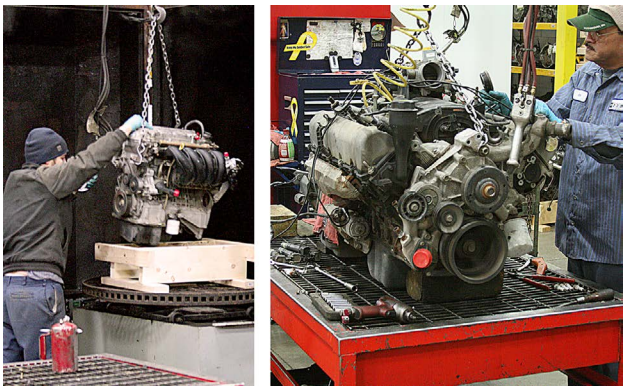


Recyclers may test the radiators before checking them into inventory.

Recycled radiators should be:

- cleaned, flow-tested, and pressure-tested before installation.
- checked for damaged fins and hose connections, corrosion, blocked tubes, and damaged threads.

This may be done at the recycling facility in addition to the repair facility. The recycling facility inspection is required to provide an adequate description of part condition to their customers. To do this, it may be required to perform a proper inspection to verify part condition.



This engine is being steam cleaned and prepared for storage.

While specific procedures may vary according to each recycling facility, recycled engines may be:

- removed by the dismantler.
- quality checked.
- cleaned.

Some recycling facilities test the engine for proper operation. The inspection may include:

- carbon tests.
- oil pressure test.
- compression test.

Recycled halfshafts and driveshafts should be inspected for evidence of previous repair.

Do not install halfshafts with:

- evidence of heating, welding, or damage.
- a damaged or misshaped boot.
- evidence of CV-joint contamination.

On driveshafts, do not install parts with:

- damage, evidence of repair, or corrosion.
- any play between the driveshaft and the U-joints.
- runout exceeding the vehicle maker's specification.

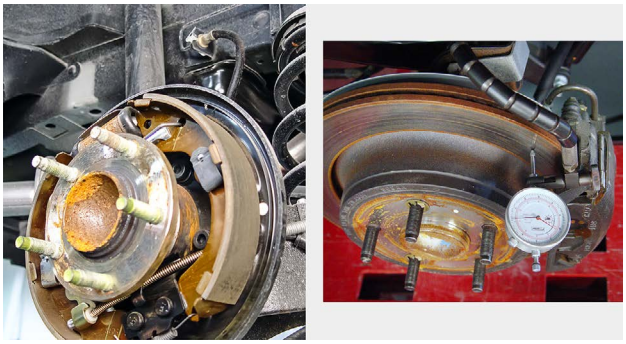
Replace the U-joints on recycled driveshafts.

Recycled exhaust systems must be inspected for any visual defects.

Do not use exhaust system parts that have:

- excessive corrosion.
- flow restrictions.
- damaged or missing mounting points.
- physical damage.

Do not use recycled gaskets or catalytic converters.



Drum brakes (left) and brake rotors (right) should be inspected for visible damage. In some instances, a gauge can be used to check rotors for lateral runout.

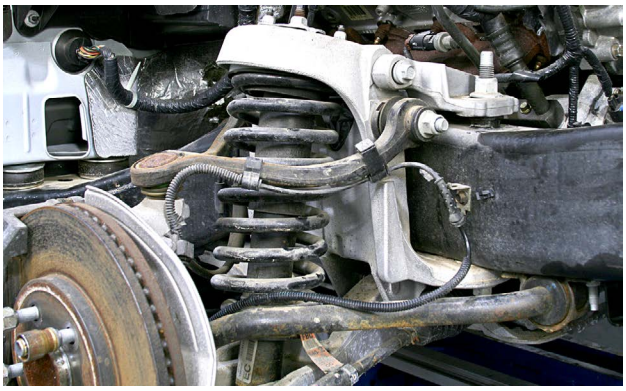
Avoid brake drums / rotors with:

- cracks, scoring, or other visible damage.
- improper thickness.
- radial or lateral runout.
- pitting from corrosion.

This ABS control module should be inspected for proper operation after installation.

Recycled anti-lock brake system (ABS) parts:

- cannot be flood damaged.
- should be taken from the side that is away from the area of direct damage.
- that contact brake fluid should be sealed.
- must be tested for proper operation following installation.



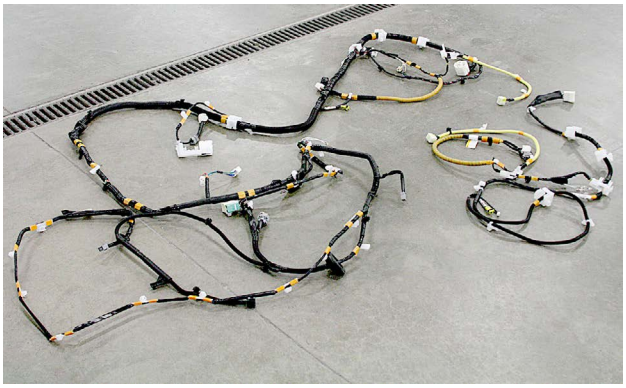
Recycled suspension parts should not have excessive wear compared to parts on the opposite side of the vehicle.

When using recycled suspension parts:

- compare the recycled part to an undamaged part to verify that it is the proper dimensions, undamaged, and that the part is the correct part.
- inspect for bends or cracks. Use dye penetrant if necessary.
- do not install if there is evidence of damage or previous repairs, or any signs of heating, welding, or straightening.

Systems that use these control modules may have been tested for proper operation before the vehicle was dismantled.

Recycled control modules may be used. At the recycling facility, to verify that they are undamaged, the vehicle is checked for malfunction indicator lamps (MILs) before the vehicle is disassembled and the computer is removed. The computer is not used if a MIL indicates a problem.



Minor repairs to recycled wiring harnesses may be made depending on vehicle maker recommendations.

Wiring harnesses, depending on the recycling facility, may:

- not be inventoried inside, but stay with the vehicle in the yard. In many instances, the wiring harness is left on the vehicle and removed upon request by the customer.
- include restraint system wiring harnesses. However, if there is damage to the harness, some vehicle makers do not allow repair. Others have specific kits that must be used to make repairs. Some vehicle makers allow only one splice per section of wire.

If the recycled wire harness has minor damage, note that wire harness repair options vary according to the vehicle maker and the type of electronic system.

Also note that wire damage on the pigtail of control modules should not be repaired.

Module Wrap-Up

Topics discussed in this module included:

- listing proper steps for part inspection during part delivery.
- listing the steps to verify proper part match.
- identifying the unique procedures for installing recycled panels and unitized structure parts.
- determining considerations for using multi-layered assemblies.
- identifying inspection procedures for mechanical parts.