



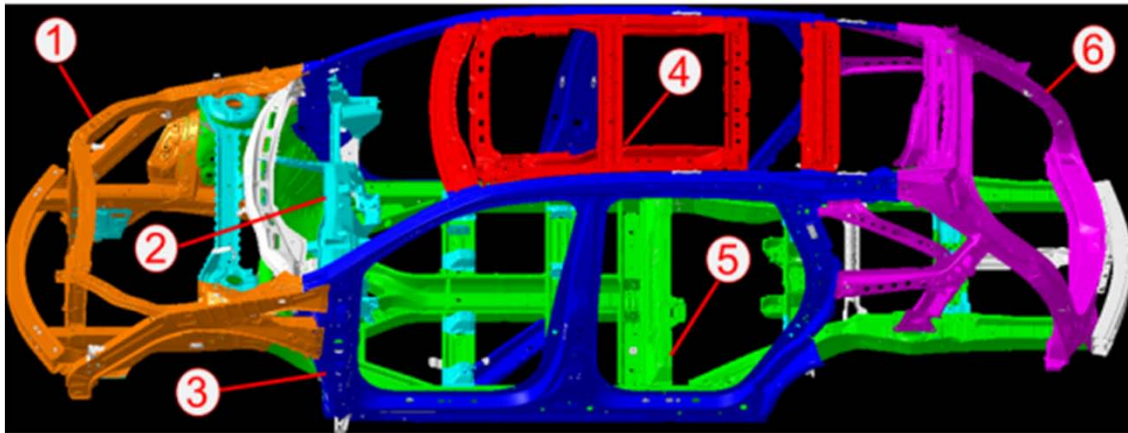
2014 MDX: New Model Body Repair Information

DISCLAIMER: This publication contains a summary of new body and vehicle technology that may affect collision and other body repairs. Always refer to the appropriate service and body repair manuals for complete repair information. A subscription may be purchased at: techinfo.acura.com

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OVERVIEW OF BODY FEATURES

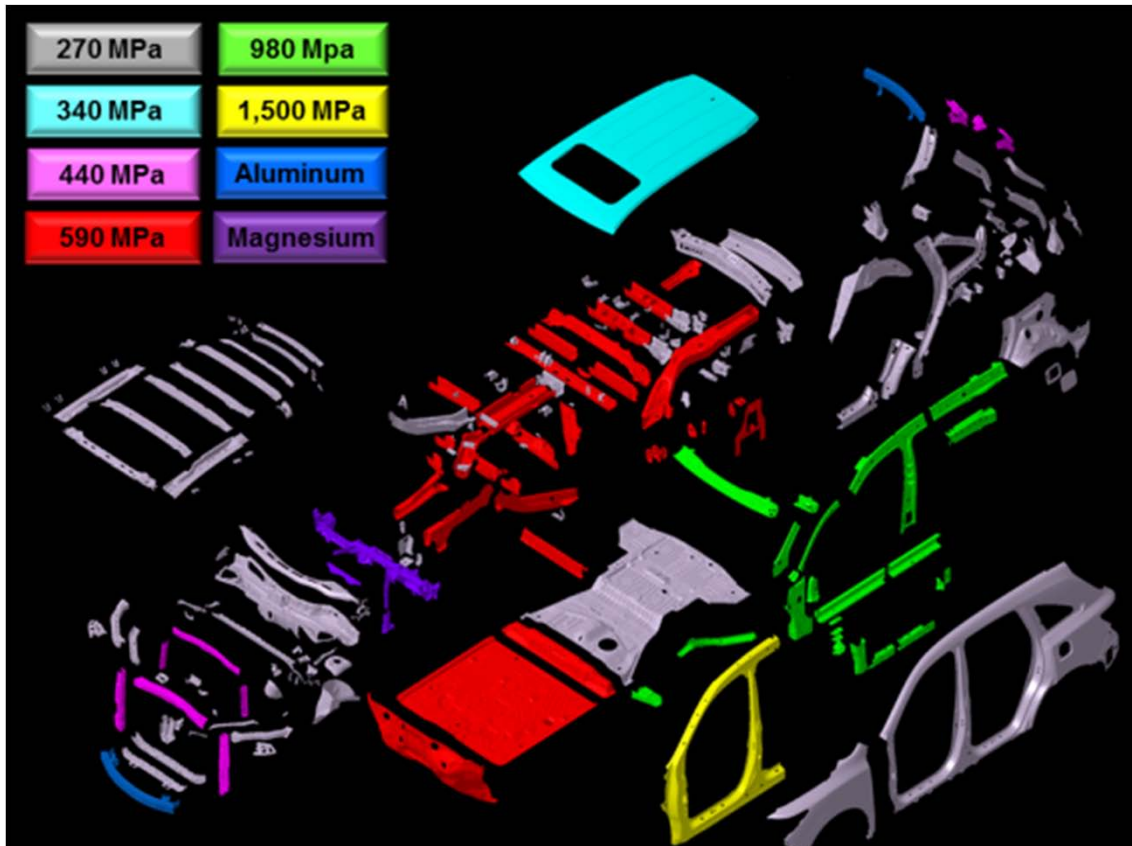


1. Next-Generation Advanced Compatibility Engineering™ (ACE™) body structure.
2. Rigid magnesium steering hanger beam mounts steering column and dashboard components.
3. Reinforced cabin with 1,500 MPa one-piece front door outer stiffener rings.
4. Reinforced roof structure.
5. New “3-Bone” platform with additional stiffeners.
6. Rigid tailgate opening ring with structural foam bulkheads applied at four locations.

New Model Body Technology

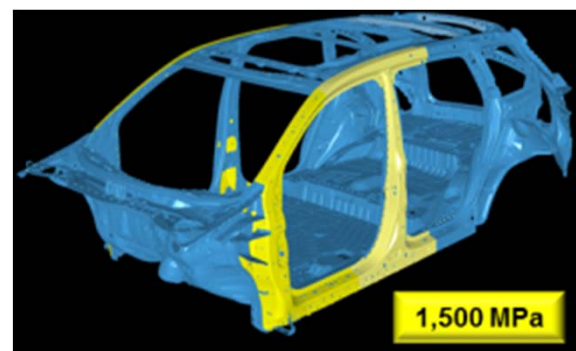
BODY CONSTRUCTION AND HIGH STRENGTH STEEL CONTENT

- Steel parts are color-coded based on their tensile strength in megapascals (MPa).
- High strength steel is defined as any steel with a tensile strength of 340 MPa or higher.
- Steel repair and welding procedures vary depending on the tensile strength of the parts involved.
- Refer to the body repair manual for complete information.



1,500 MPa (HOT STAMP) STEEL LOCATIONS

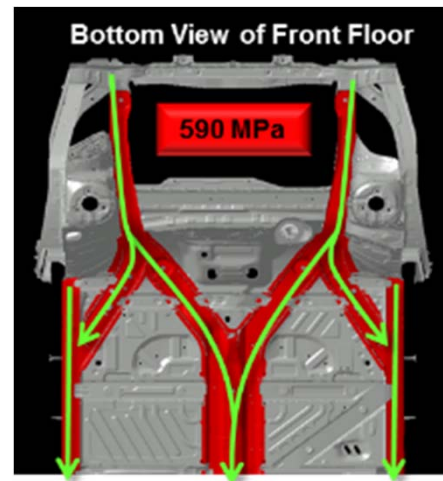
The one-piece front door outer stiffener rings and door reinforcement beams are made from 1,500 MPa steel. This steel is stronger than ordinary steel, so it can help protect vehicle occupants while reducing overall vehicle weight to improve fuel economy.



3-BONE PLATFORM STRUCTURE

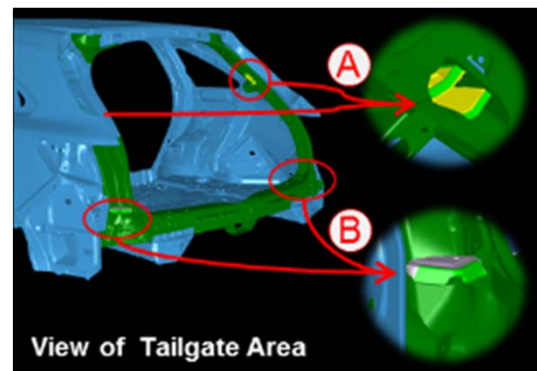
A new “3-Bone” platform structure is used on this vehicle.

- The structure improves impact load management around the cabin while reducing weight.
- Additional floor reinforcements may require replacement or spot weld removal if damaged in a collision.
- Limited sectioning allowed to the Front side frame and Rear frame B parts. Refer to the body repair manual for complete information.

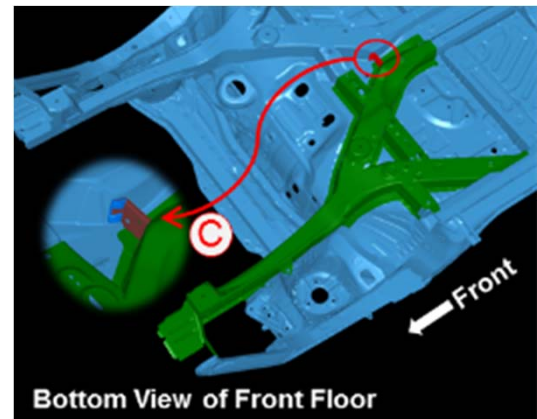


STRUCTURAL FOAM LOCATIONS AND REPAIR

Structural foam bulkheads are used to improve body stiffness at the left and right inner panel assembly (A) and inside the floor rear crossmember assembly (B). Replacement part assemblies have the structural foam pre-installed.



- A structural foam joint is used on a bracket that connects the left and right side center frames under the front floor (C). When replacing either the left or right front side frame assemblies, a special room-temperature cured 2-part epoxy structural adhesive (L&L Products L-0504 or equivalent) is required to replicate this joint.
- Because of limited shelf life, the adhesive must be ordered at the same time as the replacement front side frame.
- Once the adhesive/foam is applied, the parts can be assembled and welded. The repair adhesive material will cure at room temperature in 24 hours.



ALUMINUM AND MAGNESIUM PARTS

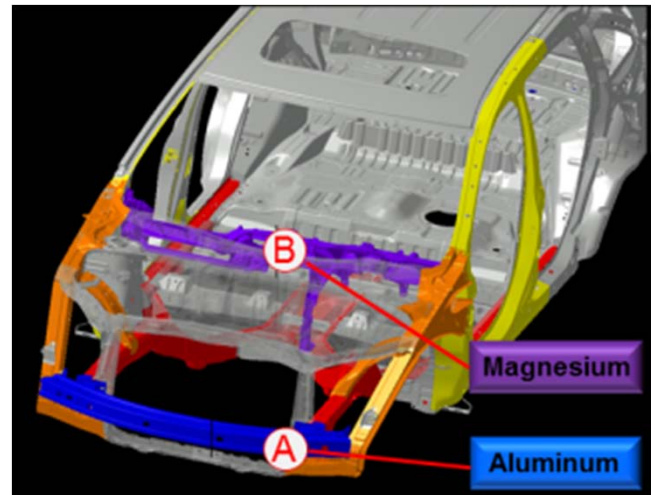
Aluminum alloy parts include:

- Hood panel.
- Front and rear bumper reinforcement beams (A).

Magnesium alloy parts include:

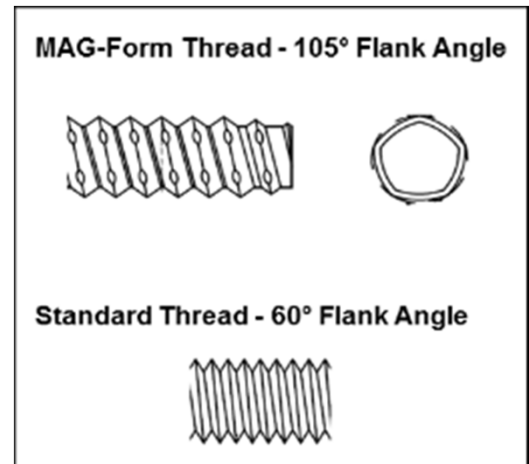
- Steering hanger beam (B).

Do not attempt to repair magnesium parts and aluminum bumper reinforcement beams if damaged.



MAG-FORM® BOLTS AND STUDS

- Special Mag-Form bolts and studs are used to fasten some dashboard components and electrical grounds to the magnesium steering hanger beam.
- These bolts have a 105° flank angle that self-forms threads into the beam as the bolt is installed.
- If any hole in the beam is stripped, it can be repaired by ordering a +1 mm oversize service bolt or stud.
- MAG-Form service bolts will form the new repair threads during installation – no drilling or tapping required.
- Always use a torque wrench to tighten MAG-Form bolts or studs to the specifications in the service manual.
- Do not use power tools because the threads formed in the magnesium steering hanger beam are easily stripped.
- If an oversize service bolt or stud has been installed and strips, the steering hanger beam must be replaced.



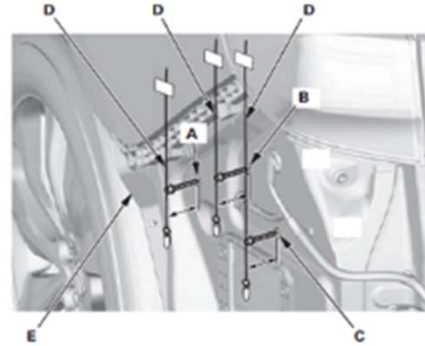
BLIND SPOT INFORMATION (BSI) SYSTEM

Models equipped with this system can be identified by this BSI Alert Indicator, located on both front doors near the outside rearview mirror.

- The system uses two radar units mounted on each side of the vehicle under the rear bumper.
- The system may malfunction and set DTCs because of damage, improper repairs, or excessive foreign material on any of the following:
 - Rear bumper
 - Outer side panels
 - Radar unit mounting locations
- Several checks and inspections must be done during repairs to the radar unit mounting area. Procedures to check the BSI radar unit mounting area can be found:
 - Body repair manual "Rear Side Outer Panel Installation"
 - Service Manual "BSI radar unit mounting area check."
- If the mounting area check is not done, an Acura dealer may not be able to properly aim the radar units.



BSI Alert Indicator



Left Rear of Vehicle Behind Bumper

TOWING AND LIFTING PRECAUTIONS

- SH-AWD models must be towed using flat bed towing equipment only, or transmission damage may result.
- 2WD models may be towed using front wheel lift or flat bed towing equipment.
- Models equipped with the SH-AWD system do not have a manual switch to disable the system. Whenever service work requires spinning the front or rear wheels with the engine, always lift and support the vehicle so all four wheels are off the ground.
- Do not lift or tow this vehicle by its bumpers, or serious damage will result.
- For more information, refer to "Lift and Support Points" in the appropriate service or body repair manual.



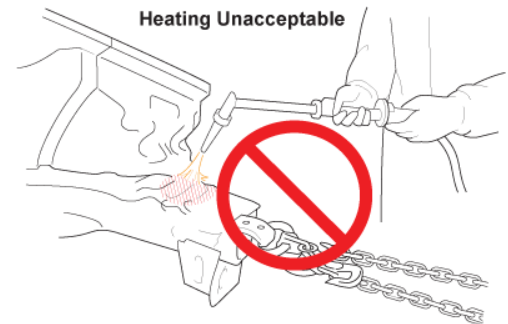
Body Repair Information

NOTE: The following content is intended only to highlight new/special concerns. No body repairs should be attempted without first referencing the appropriate body repair manual for complete information.

USE OF HEAT DURING BODY STRAIGHTENING AND REPAIR

When you are doing body straightening and repair procedures:

- DO NOT apply heat to any body part during straightening. This may compromise the internal structure and strength of high-strength steel parts.
- Any part that has heat applied to it during straightening MUST be replaced with new parts.
- Ignoring these instructions may significantly reduce occupant protection in any subsequent collision.

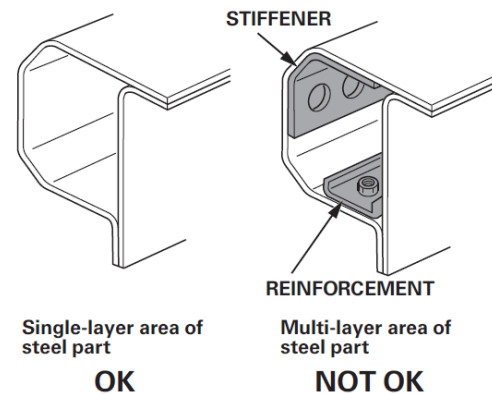


SECTIONING (CUT AND JOINT) GUIDELINES

Various high-strength steel materials with different sheet thicknesses and strengths are applied in many places that vary by body design in order to increase collision safety performance, body stiffness, and weight reduction. Stiffening members inside each part (patch, stiffener, etc.) are also specified in detail.

Follow these guidelines to avoid an unsafe repair:

- Sectioning (cut and joint) should usually be avoided except for mild steel outer panels and floor panels unless a specific procedure is provided in the body repair manual.
- However, depending on the type of vehicle damage, steel parts with a tensile strength ≤ 780 MPa may be sectioned provided ALL of the following conditions are met:
 - Sectioning must be done in a single-layer area of the part.
 - Multi-layer internal steel reinforcements and stiffeners must not be cut.
 - The repair is not in a load bearing area such as engine, transmission, or suspension mounting points.



Sectioning Area Examples

- Replace body structural components such as stiffeners, reinforcements, and other multi-layered steel parts as assemblies that match the replacement parts configuration.
- Approved welding methods are listed in the table.
- Refer to the body repair manual section "Parts Sectioning (Cut and Joint) Guidelines" for complete information.

Steel Part Tensile Strength (MPa)	Welding Method		
	Spot Weld	MAG Welding	
		Plug	Butt
<590	○	○	○
590	○	○	○
780	○	○	○
980	○	○	X
1500	○	X	X

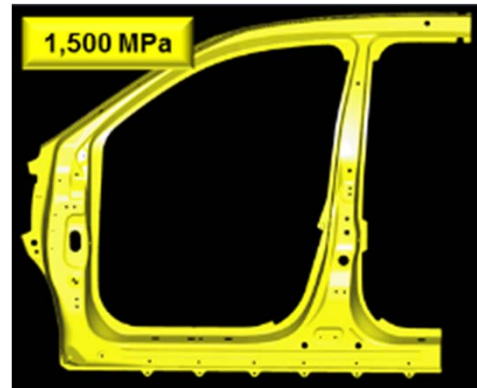
Welding Methods For Steel Parts
(○ = Approved X = Not Approved)

Welding Precautions and Information

REPAIRING 1,500 MPa STEEL PARTS

Observe these precautions when repairing 1,500 MPa steel parts:

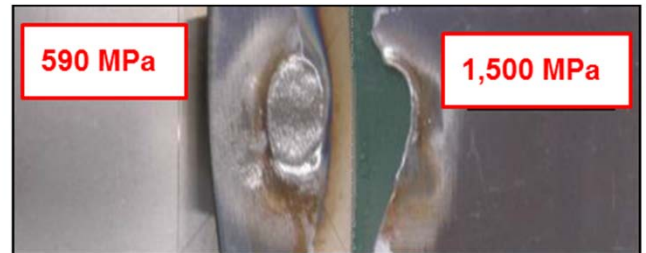
- NEVER attempt to straighten damaged 1,500 MPa steel parts because they may crack.
- 1,500 MPa steel parts MUST be replaced at factory seams using squeeze-type resistance spot welding (STRSW).
- MIG brazed joints should be used ONLY in locations not accessible by a spot welder.
- To assure adequate weld tensile strength, always set the spot welder to the specifications provided in the body repair manual.



Important Information

This panel is made of Ultra High Strength Steel (UHSS/1,500MPa/ USIBOR) and must be installed as a complete part. No sectioning allowed. Ultra High Strength Steel requires special welding equipment, procedures and settings. See the welding section of the appropriate body repair manual. Failure to use the proper equipment or follow the proper procedures can result in an unsafe repair.

- NEVER perform MAG welding on 1,500 MPa steel. The heat generated during welding will significantly reduce the strength and structural integrity of 1,500 MPa steel parts.
- This photo shows tensile strength test results of welded 1,500 MPa steel. The 1,500 MPa steel fractured first, because the welding heat reduced its strength far below 590 MPa.
- For more information, refer to “Hot Stamp (1,500 MPa) Parts Welding Specifications” in the body repair manual.



Tensile Test Results of MAG Welded 1,500 MPa Steel

MIG BRAZING GUIDELINES FOR 1,500 MPa STEEL PARTS

Refer to the body repair manual for complete information:

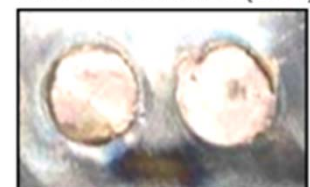
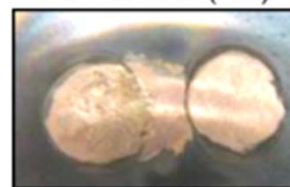
- MIG brazed joint locations are specified in the body repair manual.
- A single or double hole MIG braze may be specified in the body repair manual depending on the tensile strength of the parts being joined.
- The size and number of holes is critical to achieving adequate joint strength.
- A pulsed MIG welder MUST be used. Refer to the equipment manufacturer’s instructions for welder voltage and current set-up.
- Photos at right show the difference in results between pulsed and non-pulsed MIG brazing.



Pulsed MIG (OK)



w/o Pulsed MIG (Bad)



MAG WELDING SPECIFICATIONS FOR 590-980 MPa HIGH-STRENGTH STEEL PARTS

NOTE: In this publication and the body repair manuals, gas metal arc welding (GMAW) is referred to by its subtypes depending on the welding/brazing requirements:

- **MIG welding/brazing** = Metal inert gas welding or brazing where 100% Argon (Ar) shielding gas is used. Argon is inert and does not react with the molten weld pool or brazing operation.
- **MAG welding** = Metal active gas welding where the shielding gas being used contains a mixture of 80% Argon (Ar) and 20% Carbon Dioxide (CO₂). It is considered active because the CO₂ undergoes a limited reaction with the molten weld pool.

The body repair manual specifies the weld types and locations for each body panel:

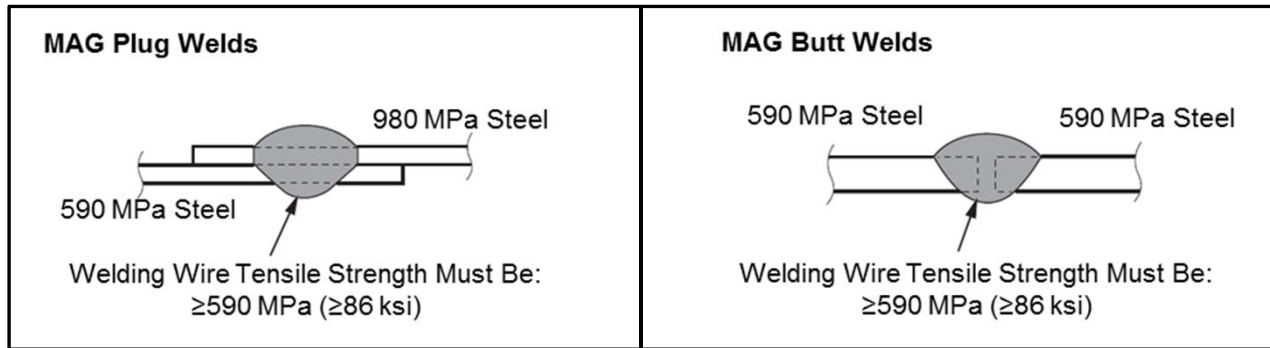
- The welding wire used must have a tensile strength equal to, or greater than, the lowest tensile strength of the parts being welded. This conversion chart shows the relationship of steel tensile strength (MPa) to the minimum welding wire tensile strength (ksi).
- Refer to the diagrams shown below:

Important Information

Parts made of High Strength Steel (590-980 MPa) must often be installed as a complete part. Section only according to published repair information and guidelines. This high-strength steel requires special welding equipment, procedures, and settings. See the welding section of the appropriate body repair manual. Failure to use the proper equipment or follow the proper procedures can result in an unsafe repair.

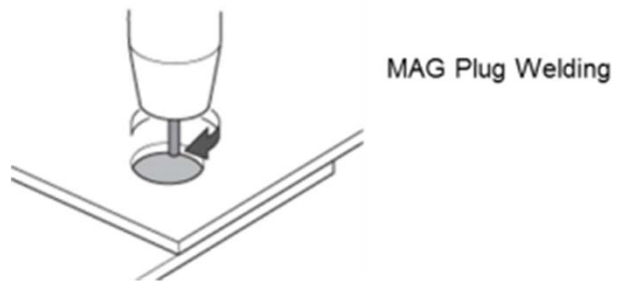
Steel Tensile (MPa)	Wire Tensile (ksi)
590	≥86
780	≥113
980	≥142

(1,000 psi = 1 ksi)



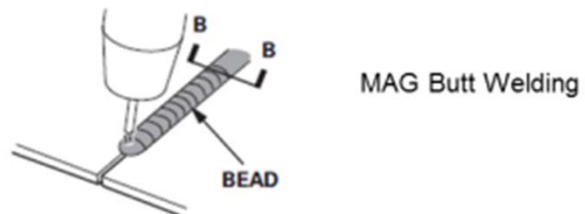
MAG PLUG WELDING GUIDELINES

- MAG plug welding may be done when joining body components to 590-980 MPa steel parts.
- Follow the recommendations described in the body repair manual section "MAG welding specifications for high-strength steel parts 590 MPa and higher."



MAG BUTT WELDING GUIDELINES

- MAG butt welding may only be done on steel parts with a tensile strength of 780 MPa and lower.
- Welding speed is critical to achieve the correct weld strength and minimize the heat affected zone (HAZ).
- Follow the recommendations described in the body repair manual section "MAG welding specifications for high-strength steel parts 590 MPa and higher."

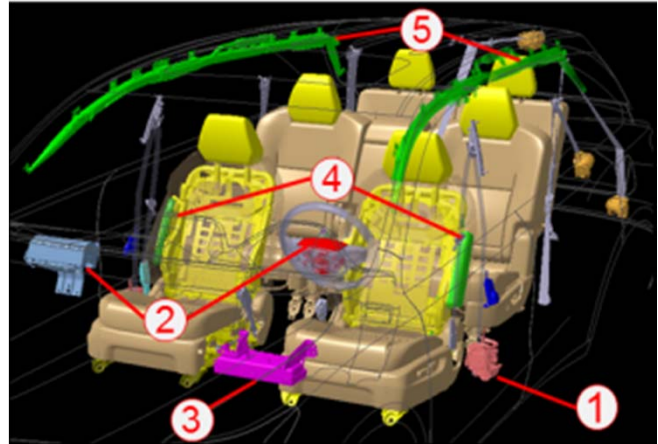


Airbag System Components and Repairs

AIRBAG SYSTEM COMPONENTS

The airbag system in this vehicle includes the following components that may deploy in a collision:

1. Driver and front passenger seat belt tensioners (may deploy independently from any airbags).
2. Driver and front passenger SRS airbags.
3. Driver's knee SRS airbag.
4. Side airbags mounted in the outer driver and front passenger seat-backs.
5. Left-and-right-side curtain airbags mounted above the side windows under the headliner.



AIRBAG SYSTEM INDICATORS

There are two indicators used for the airbag system:

Supplemental Restraint System (SRS) Indicator

When you turn the vehicle to the ON mode, this indicator should come on and then turn off after about 6 seconds.

- If the SRS indicator does not go off, or does not come on at all, there is a problem with the system.
- DTCs must be read and cleared using the HDS (or equivalent) scan tool. Contact an Acura dealer for assistance if necessary.
- If a vehicle is sent to the dealer for airbag system repair or troubleshooting, include a copy of the repair estimate with part numbers and the source for any replaced airbag system parts.



SRS Indicator

Passenger Airbag OFF Indicator

The indicator comes on to alert you that the passenger's front airbag has been turned off.

- This occurs when the front passenger's weight sensors detect 65 lbs. (29 kg) or less, the weight of an infant or small child, on the seat.
- If the indicator comes on with no front passenger and no objects on the seat, or with an adult occupying the seat, something may be interfering with the seat weight sensors, or there may be a problem with the system. Contact an Acura dealer for assistance if necessary.



Passenger Airbag OFF Indicator

AIRBAG SYSTEM REPAIRS REQUIRED AFTER DEPLOYMENT

To restore proper function and allow DTCs to be cleared, the airbag system MUST be repaired as specified in the service manual. Refer to "Component Replacement/Inspection After Deployment" for complete information.

- DO NOT install used, refurbished, or modified airbag system parts!
- When making airbag system repairs, only use new genuine replacement parts, which are manufactured to the same standards and quality as the original parts.
- To ensure the correct replacement airbag system parts are installed, provide the vehicle's VIN when ordering parts. Compare the part numbers on the new and removed parts to make sure they match.

AIRBAG SYSTEM ELECTRICAL REPAIRS

Except when doing electrical inspections that require battery power, always turn the vehicle to the OFF (LOCK) mode, disconnect the negative battery cable, then wait at least 3 minutes before starting work.

- For easier identification, electrical connectors that contain only airbag system wiring are yellow in color.
- Many harnesses that contain primarily airbag wiring are also wrapped in yellow tape.
- Airbag system wiring that runs in a common harness, such as a floor harness, is generally not marked.
- NEVER attempt to modify, splice, or repair airbag system wiring. If airbag system wiring is damaged, replace the wiring harness(es).

NOTE: Refer to the service manual for complete restraint systems operation, diagnostic, and repair information.



Electrical Repair Information

TIRE PRESSURE MONITORING SYSTEM (TPMS)

This vehicle is equipped with an initiator-type TPMS.

- The low tire pressure indicator comes on if the air pressure is too low in one or more tires.
- The TPMS indicator will stay on and the system will set DTCs if all four tire pressure sensor IDs aren't memorized by the TPMS control unit after you replace a wheel and/or tire pressure sensor.
- Refer to "Memorizing a Tire Pressure Sensor ID" in the service manual for complete information.
- The HDS (or equivalent) scan tool may be required to perform this memorization. Contact an Acura dealer for assistance if necessary.



Low Tire Pressure Indicator



TPMS Indicator

SYSTEMS THAT MAY REQUIRE DEALER ASSISTANCE WITH AIMING

Some models may be equipped with one or more of the following systems that require aiming after collision repairs. Special tools are required to complete the aiming procedures. Contact an Acura dealer for assistance.

Blind Spot Information (BSI) System:

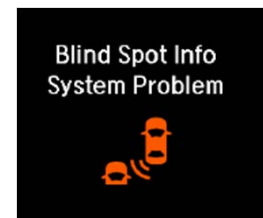
The BSI radar unit must be aimed in these instances:

- After replacing or removal and installation of one or both BSI radar units.
- After replacing/repairing the body rear outer side panel(s).
- Stored DTCs B18B8 or B1E68 - Left or right side BSI radar unit azimuth off alignment.

If a problem occurs in the BSI system, the amber BSI indicator will illuminate and this warning message may also appear.



BSI Indicator



Forward Collision Warning and Lane Departure Warning (FCW/LDW):

The FCW/LDW camera must be re-aimed if:

- The FCW/LDW camera unit is removed or replaced
- The windshield is removed or replaced

If the aiming is incomplete, the FCW and LDW indicators come on and blink.



Adaptive Cruise Control (ACC) and Collision Mitigating Braking System (CMBS):

The millimeter wave radar for the ACC and CMBS must be re-aimed if:

- The radar unit is removed or replaced.
- The radar unit's mounting area was damaged.
- The amber ACC indicator comes on if the aiming process is not completed, or the service manual procedure is not followed.

The ACC warning message may also appear.

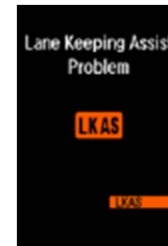


Lane Keeping Assist System (LKAS) System:

The LKAS camera must be aimed if:

- The camera/control unit is removed or replaced.
- The windshield is removed or replaced.

The amber LKAS indicator comes on and blinks if the aiming is not done or is not completed. The LKAS warning message may also appear.



Windshield Replacement On FCW/LDW/LKAS Equipped Vehicles:

- Windshield damage within the FCW/LDW/LKAS camera's field of vision can cause any these systems to operate abnormally.
- Only a genuine Acura replacement windshield should be installed. Installing an aftermarket replacement windshield may also cause abnormal operation .

CMBS GRILLE DIFFERENCES

Advance trim level models are equipped with a Collision Mitigating Braking System™ (CMBS™) that uses a millimeter wave radar unit.

- This unit senses through the front grille upper molding.
- To prevent radar interference, a special black coating is used on the back side of the molding. This coating also significantly increases the part's cost.
- Installation of the wrong grille molding will cause the CMBS indicator to come on and DTC P2583-97 (dust or dirt on the millimeter wave radar) to set.
- To check for this without removing the bumper, remove the front bulkhead cover and look down at the back side of the front grille upper molding.
- If the back side of the grille molding has a metallic finish, the wrong grille upper molding was installed.



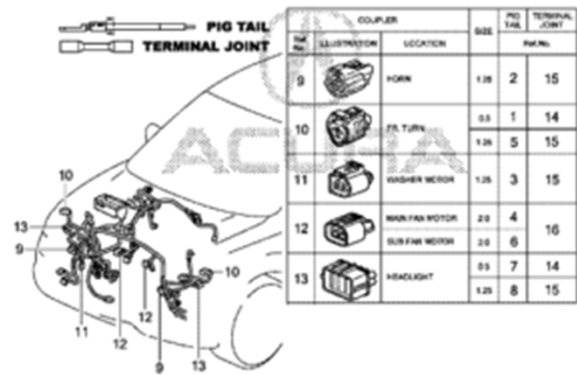
Back Side View of Grille Molding (w/o CMBS)



Back Side View of Grille Molding (w/CMBS)

ELECTRICAL PIGTAIL AND CONNECTOR REPAIR

- Disconnect the vehicle's battery before doing any welding or electrical repairs, Refer to "12 Volt Battery Terminal Disconnection and Reconnection" in the service or body repair manuals for more information.
- Certain front and rear electrical connectors subject to collision damage may be repaired using pigtails and connectors listed in the ELECTRICAL CONNECTORS illustrations in the parts catalog (example shown here).
- Pigtails attach to the vehicle wiring using special crimp-and-seal terminal joints. After crimping, the joints are heated using a heat gun to seal out the environment.
- Repair pigtails come in a limited range of colors that usually don't match the vehicle's wiring. Pay close attention during repairs to ensure correct locations.
- Vehicle wiring schematics service information can be found in the Electrical Wiring Diagrams (EWD).
- If wiring is damaged and a repair pigtail or connector is not available, replace the affected harness.
- NEVER attempt to modify, splice, or repair airbag system wiring.



ELECTRICAL GROUND WIRE PROTECTION

- Painting over electrical ground locations may cause electrical systems, such as Vehicle Stability Assist (VSA), to malfunction and set DTCs that may be difficult to diagnose.
- Protect the ground wire and the ground wire mounting hole threads with a bolt or plug when priming or painting.

