



2013 RDX: Body Repair Information

(Supersedes original publication issued **December 2013**. Revision includes 2016 model info)

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 electronic service manual and body repair manual for complete repair information. A subscription may be purchased at: techinfo.acura.com

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OVERVIEW OF BODY FEATURES



2013–15 models have these body features:

- Advanced Compatibility Engineering™ (ACE™) crash compatible body structure
- Body construction using 56% high tensile strength steel, including 25% in grades 780, and 1,500 MPa
- Aluminum hood panel and front bumper beam for weight reduction and improved fuel efficiency (not shown in this view)

For the 2016 model year, a minor model change (MMC) added or upgraded these body features:

- Next-Generation Advanced Compatibility Engineering™ (ACE™) body structure
- Introduction of 1,500 MPa ultra-high-strength-steel (UHSS) to improve frontal crash energy management through a wider range of offset and oblique collision modes
- Introduction of the AcuraWatch™ Plus suite of advanced safety and driver-assistive technologies, including: Adaptive Cruise Control, Lane Keeping Assist System, Road Departure Mitigation, and Collision Mitigation Braking System™ with pedestrian sensing capability

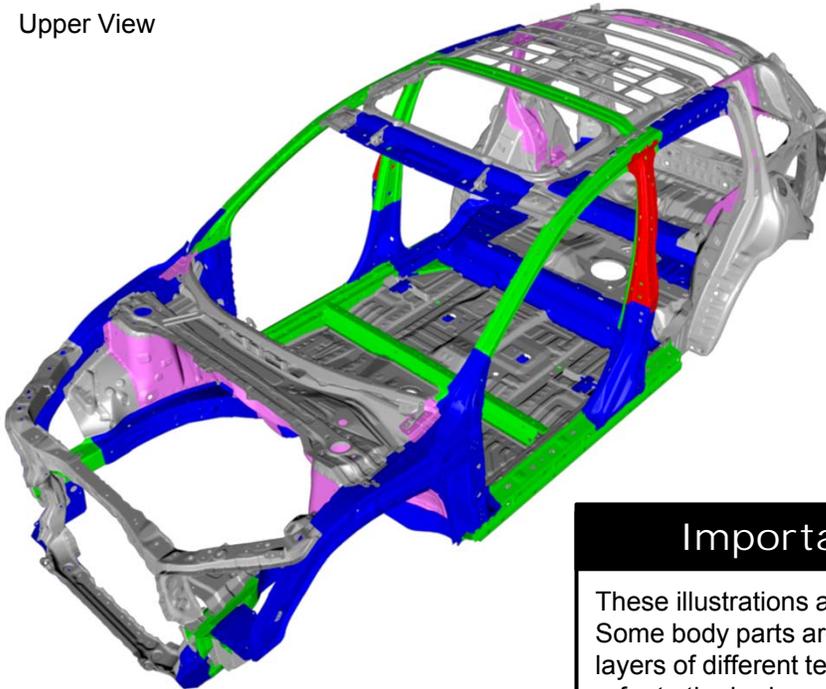
New Model Body Technology

BODY CONSTRUCTION AND HIGH-STRENGTH STEEL CONTENT - 2013–15 MODELS

- 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.
- Ultra-high-strength steel (UHSS) is defined as any steel with a tensile strength of 980 MPa or higher.
- Steel repair and welding procedures vary depending on the tensile strength of the parts involved.

2013–15 Body Construction

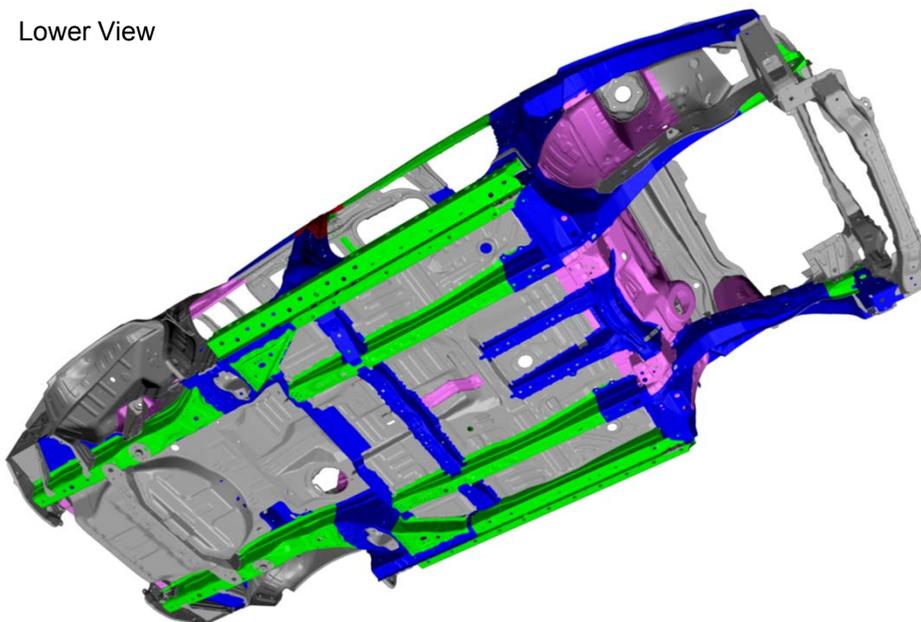
Upper View



Important Information

These illustrations are for general reference only. Some body parts are constructed from multiple layers of different tensile strength steels. Always refer to the body repair manual's body construction section for specific steel tensile strength information.

Lower View



270 MPa
440 MPa
590 MPa
780 MPa
1,500 MPa

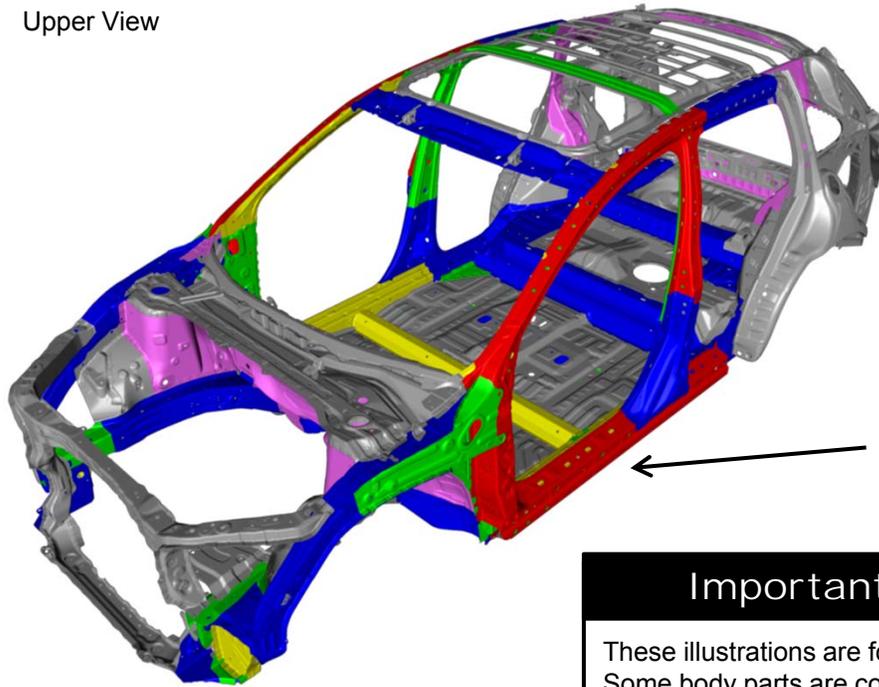
Steel Tensile Strength Legend

BODY CONSTRUCTION AND HIGH-STRENGTH STEEL CONTENT - 2016 MODELS

- 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.
- Ultra-high-strength steel (UHSS) is defined as any steel with a tensile strength of 980 MPa or higher.
- Steel repair and welding procedures vary depending on the tensile strength of the parts involved.

2016 Body Construction

Upper View

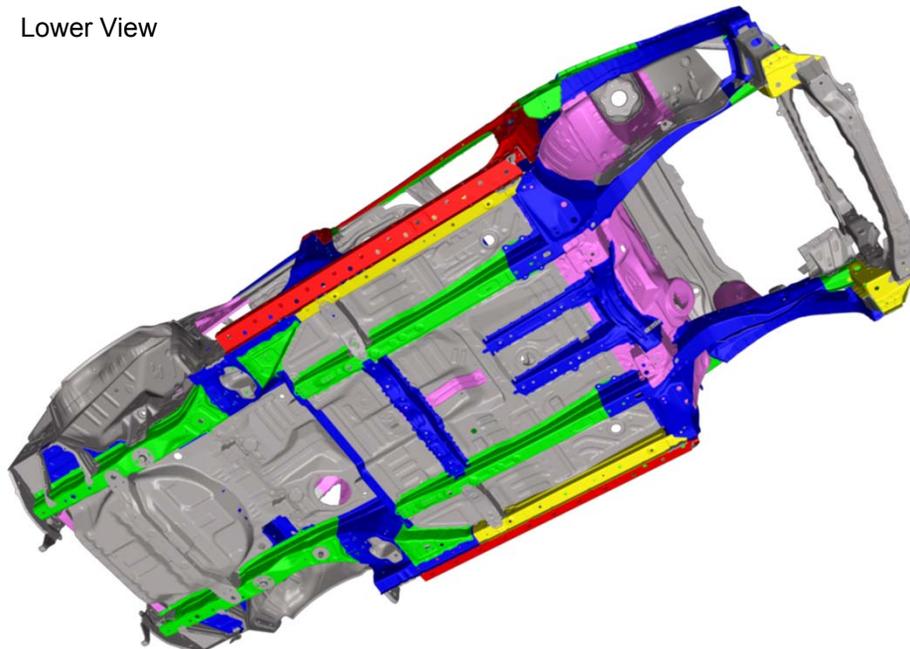


NOTE: 1,500 MPa Side Sill Patch & Inside Sill Stiffener Located Under Side Sill Reinforcement

Important Information

These illustrations are for general reference only. Some body parts are constructed from multiple layers of different tensile strength steels. Always refer to the body repair manual's body construction section for specific steel tensile strength information.

Lower View



270 MPa
440 MPa
590 MPa
780 MPa
980 MPa
1,500 MPa

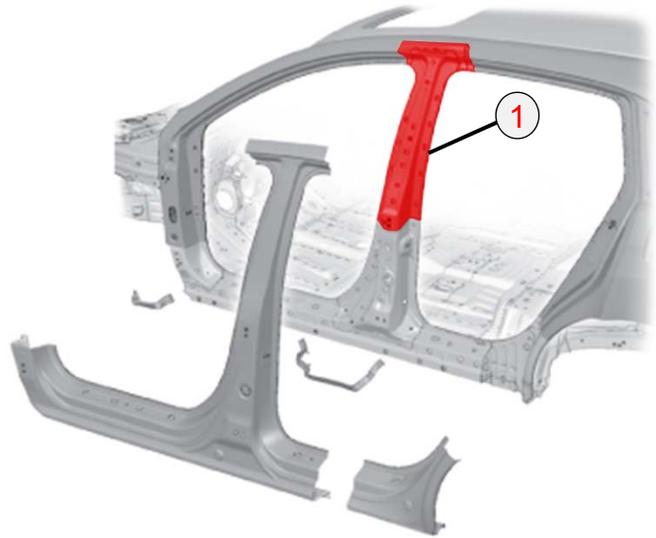
Steel Tensile Strength Legend

1,500 MPa (HOT STAMP) STEEL LOCATIONS - 2013–15 MODELS

1,500 MPa steel is stronger than ordinary steel, so it can help protect vehicle occupants while reducing overall vehicle weight to improve fuel efficiency.

The numbered part in the diagram shown here is constructed of 1,500 MPa steel.

1,500 MPa Steel Parts – 2013-15 Models	
1	Center Pillar Upper Stiffener (Both Sides)

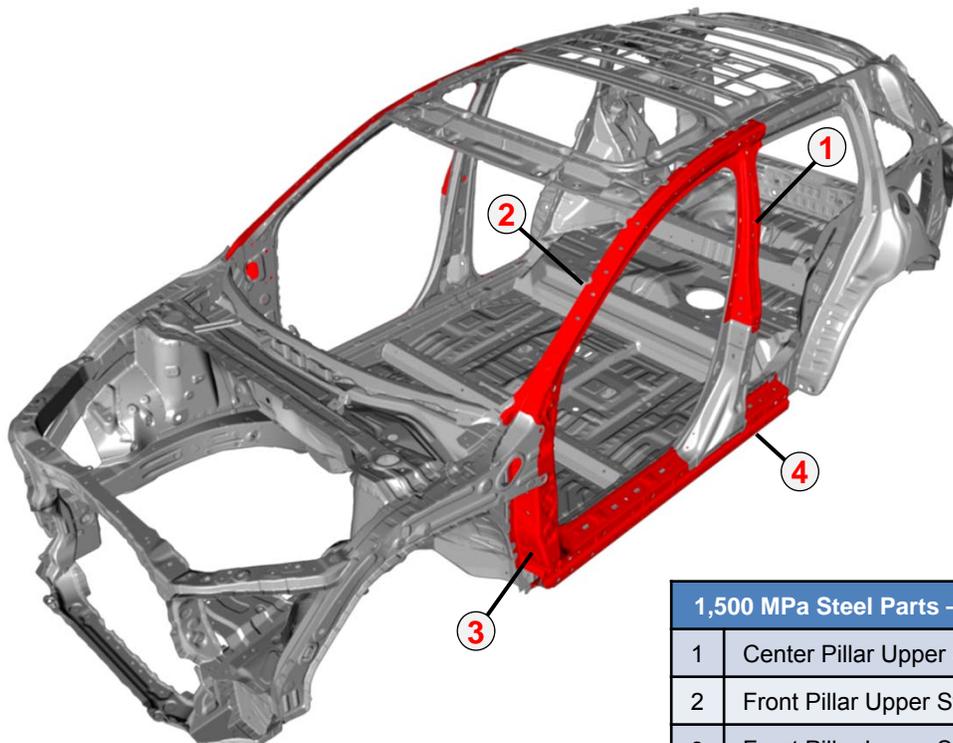


1,500 MPa (HOT STAMP) STEEL LOCATIONS - 2016 MODELS

1,500 MPa steel is stronger than ordinary steel, so it can help protect vehicle occupants while reducing overall vehicle weight to improve fuel efficiency.

The numbered parts in the diagram below are constructed of 1,500 MPa steel.

NOTE: 1,500 MPa steel is not used in 2013–15 models.



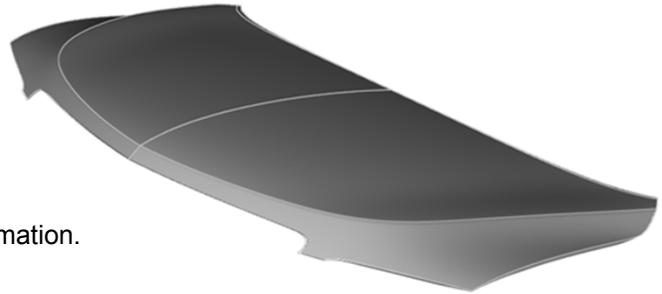
1,500 MPa Steel Parts – 2016 Models	
1	Center Pillar Upper Stiffener
2	Front Pillar Upper Stiffener
3	Front Pillar Lower Stiffener
4	Side Sill Reinforcement & Patch, Inside Sill Stiffener (3 parts)

ALUMINUM PARTS & REPAIRABILITY

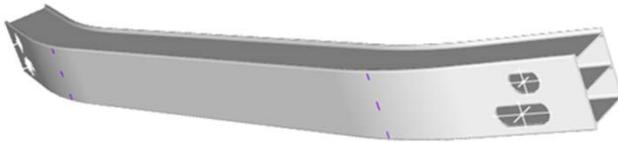
The hood panel and front bumper beam are constructed of aluminum alloy.

Repairability Issues:

- Do not repair damaged bumper beams.
- The aluminum hood may be repaired by body shops that have a dedicated aluminum repair facility and separate tools.
- To prevent galvanic corrosion, some fasteners for aluminum parts are considered one-time use and must be replaced if removed. Refer to the electronic service manual or body repair manual for more information.



Hood Panel



Front Bumper Beam

TOWING AND LIFTING PRECAUTIONS

- AWD models must be towed using flat bed towing equipment only to prevent AWD system damage.
- 2WD models may be towed using front wheel lift or flat bed towing equipment.
- AWD models 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.

For more information, refer to “Emergency Towing” in the owner’s guide.

- Lift or jack only at the specified points to avoid damaging the vehicle.
- 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 electronic service manual or body repair manual.



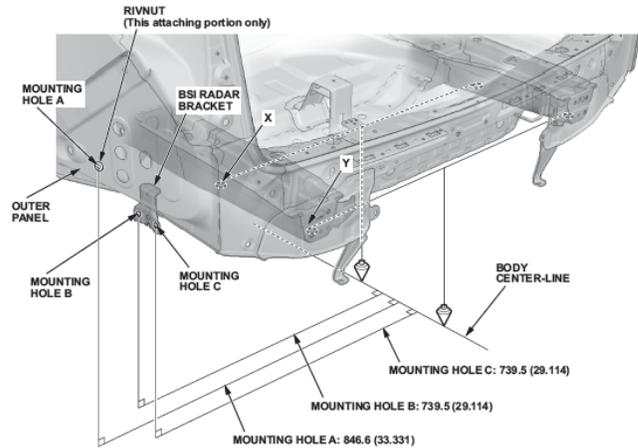
BLIND SPOT INFORMATION (BSI) SYSTEM

Beginning with the 2016 model year, models equipped with this system can be identified by the BSI Alert Indicators located on both outside rearview mirrors.

- The system uses two radar units, one mounted on each side of the vehicle under the rear bumper.
- The radar units are also used along with the multi-view rear camera to monitor rear cross traffic when reversing.
- 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. If the mounting area check is not done, an Acura dealer may not be able to properly aim the radar units.
- For more information, refer to “BSI Radar Unit Mounting Area Check,” in the electronic service manual.



BSI Alert Indicator



LH BSI Unit Mounting Area Check
(RH Side is symmetrical.)

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, follow these guidelines:

- **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.



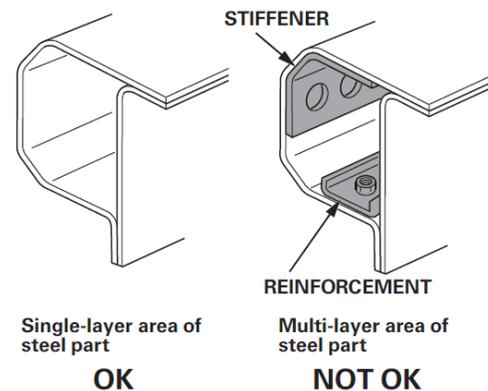
Do not heat during straightening

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.
- 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.



Sectioning Area Examples

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

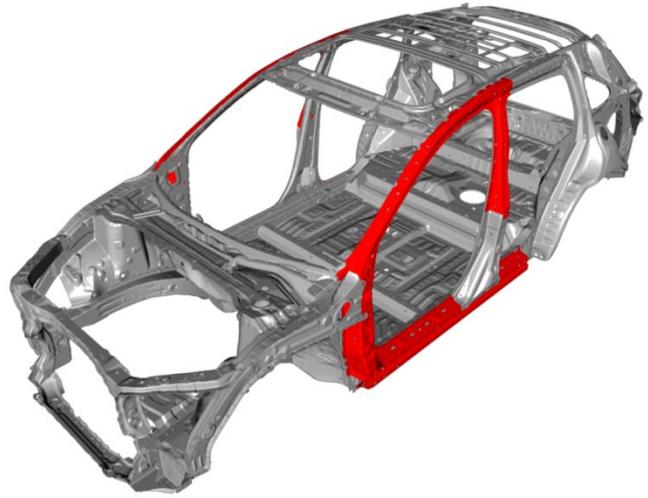
Welding Methods for Steel Parts
(○ = Approved X = Not Approved)

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). **Do not section these parts!**
- 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

Parts made of Ultra-High-Strength Steel (UHSS/1,500MPa/USIBOR) 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 MAG welding will significantly reduce the strength and structural integrity of 1,500 MPa steel parts.
- This photo shows tensile strength test results of MAG welded 1,500 MPa steel. The 1,500 MPa steel fractured first, because the welding heat reduced its strength to far below 590 MPa.
- For more information, refer to “Repair Guidelines for High-Strength Steel Parts,” 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 are 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 setup.
- The photos on the right show the difference in results between pulsed and non-pulsed MIG brazing.



Pulsed MIG (OK)



w/o Pulsed MIG (NG)



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 as follows:

- **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.

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.

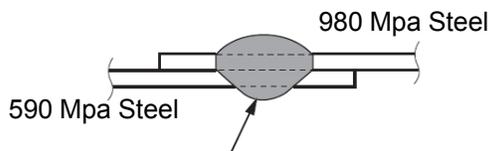
The body repair manual specifies the weld types and locations for each body pane as follows:

- 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 on the right shows the relationship of steel tensile strength (MPa) to the minimum welding wire tensile strength (ksi).
- Typical ER70S-6 MIG wire has a minimum tensile strength of 70 ksi (483 MPa). It can be used when welding up to 440 MPa steel parts. Refer to the diagrams shown below:

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

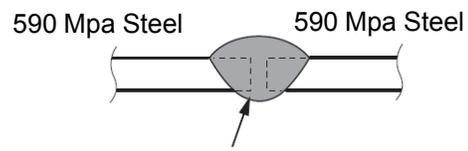
(1,000 psi = 1 ksi)

MAG Plug Welds



Wire tensile strength must be: ≥590 Mpa (≥86 ksi)

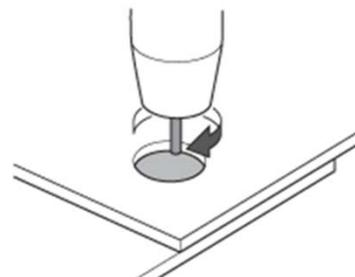
MAG Butt Welds



Wire tensile strength must be: ≥590 Mpa (≥86 ksi)

MAG PLUG WELDING GUIDELINES

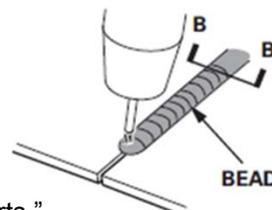
- MAG plug welding may be done when joining body components to 590–980 MPa steel parts.
- Follow the recommendations described in the body repair manual sections “Repair Guidelines for High-Strength Steel Parts”, and “MAG Welding Conditions for High-Strength Steel (Except 1,500 MPa) Parts.”



MAG Plug Welding

MAG BUTT WELDING GUIDELINES

- MAG butt welding may be done **only** 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 sections “Repair Guidelines for High-Strength Steel Parts,” and “MAG Welding Conditions for High-Strength Steel (Except 1,500 MPa) Parts.”



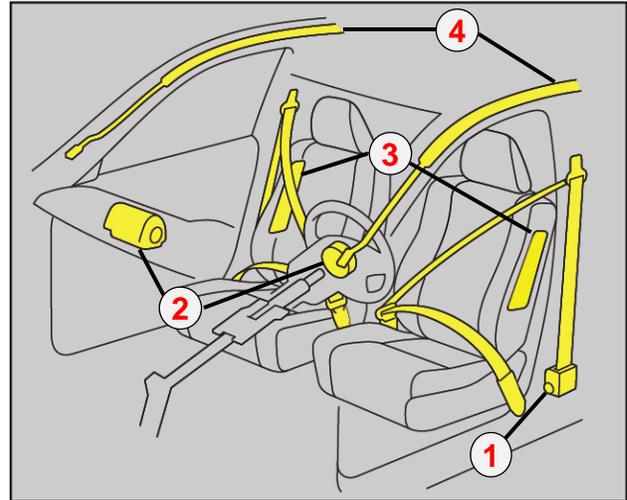
MAG Butt Welding

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



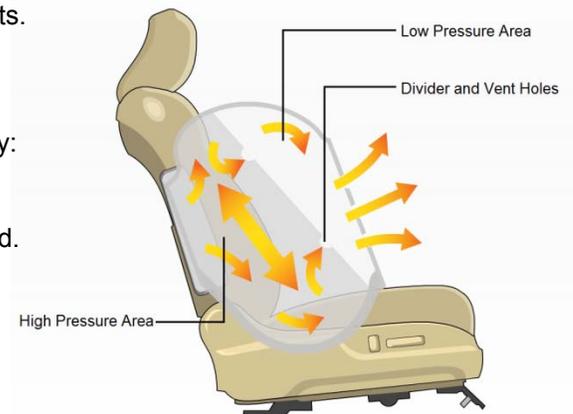
SMARTVENT™ SIDE AIRBAGS

Beginning with the 2016 model year, these vehicles are equipped with SmartVent side airbag construction:

- This airbag design helps mitigate the risk of excessive airbag deployment force and risk of injury to smaller seat occupants.
- Eliminates the need for the occupant position detection system (OPDS) sensor located in the front passenger's seat-back.

As with all side airbags, the following service precautions apply:

- Special seat covers and/or breakaway thread are used to ensure proper deployment path.
- Damaged front seat covers should be replaced, not repaired.
- Do not install non-factory seat covers, because they may alter the airbag's intended deployment path.



SmartVent Side Airbag

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 electronic 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 INDICATORS

There are three indicators used for the airbag system.

Supplemental Restraint System (SRS) Indicator

When you turn the ignition to ON, 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 lb. (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. Refer to "SRS Symptom Troubleshooting," in the electronic service manual, or contact an Acura dealer for assistance if necessary.



Passenger Airbag OFF Indicator

SIDE AIRBAG OFF Indicator (2013–15 Models Only)

This indicator comes on when the OPDS sensor detects that the front passenger side airbag needs to be shut off for safety:

- This may occur because the passenger is too small to be sitting in the front seat, is slouching or not sitting upright, or has leaned into the airbag's deployment path.
- This light is **not** used to indicate problems with the OPDS or airbag system.
- This light is not used on 2016 and later models because the OPDS sensor is not required when SmartVent™ side airbag construction is applied.



Side Airbag OFF Indicator

AIRBAG SYSTEM ELECTRICAL REPAIRS

Except when doing electrical inspections that require battery power, always turn the ignition to OFF, 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 electronic service manual for complete restraint system 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/TPMS indicator comes on if the air pressure is too low in one or more tires. TPMS messages will also appear on the multi-information display in the gauge control module.
- This indicator will also remain on when the compact spare tire is temporarily installed.
- The indicator will stay on and the system will set DTCs if all four tire pressure sensor IDs are not 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 electronic 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/TPMS Indicator

TEMPORARY TIRE REPAIR KIT

Beginning with the 2016 model year, 2WD models replace the compact spare tire with a temporary tire repair kit.

- The kit is capable of sealing small punctures such as a nail.
- A traditional compact spare tire is available as a dealer accessory.



Temporary Tire Repair Kit

POWER TAILGATE INFORMATION

2013–15 Tech models include a power tailgate. Beginning with the 2016 model year, this feature is standard on all models

- The power tailgate will not be able to open or close automatically until it is reset when:
 - The battery is disconnected, or the No. A29 (10 A) fuse in the under-hood fuse/relay box is removed while the power tailgate is operating.
 - Certain power tailgate components have been replaced.
- Refer to “Resetting the Power Tailgate Control Unit” in the electronic service manual for complete information.



Power Tailgate

SYSTEMS THAT MAY REQUIRE DEALER ASSISTANCE WITH AIMING

Beginning with the 2016 model year, vehicles equipped with these systems may 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 With Cross-Traffic Monitor:

The BSI radar units must be aimed in these instances:

- After replacement 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 come on and this warning message may also appear.



BSI Indicator



NOTE: Vehicles equipped with the AcuraWatch™ Plus suite of advanced safety and driver-assistive technologies include all of the following systems:

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

The multipurpose camera unit must be aimed in these instances:

- The 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. The FCW and LDW warning messages may also appear.



FCW/CMBS Indicator



LDW Indicator



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

The millimeter wave radar for the ACC/CMBS must be aimed in these instances:

- The radar unit is removed or replaced.
- The radar unit's mounting area was damaged.
- The ACC indicator changes to amber if the aiming process is not completed, or the electronic service manual procedure is not followed. The ACC warning message may also appear.



Lane Keeping Assist System (LKAS):

The multipurpose camera unit must be aimed in these instances:

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

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



Windshield Replacement on vehicles with AcuraWatch™ Plus :

- Windshield damage within the multipurpose camera unit'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

Beginning with the 2016 model year, some vehicles may be 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.
- **Do not** paint or apply any coverings or coatings to grille parts that the millimeter wave radar unit senses through! These can negatively affect CMBS operation.



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 electronic service manual or body repair manual 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 listed 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 do not 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 (EWDs).
- 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.

The diagram shows a front view of a vehicle's front end with numbered callouts (9, 10, 11, 12, 13) pointing to various electrical components. A legend on the right lists the corresponding parts.

PIG TAIL TERMINAL JOINT	COUPLER	SIZE	PIG TAIL RHT. NO.	TERMINAL JOINT RHT. NO.
9	HORN	1.25	2	15
10	FR. TURN	0.5	1	14
		1.25	5	15
11	WASHER MOTOR	1.25	3	15
12	MAIN FAN MOTOR	2.0	4	16
	SUB FAN MOTOR	2.0	6	
13	HEADLIGHT	0.5	7	14
		1.25	8	15

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.

