Weld & Sectioning Guidelines Revisions Publication:

- Body Repair News Originally published April 2014
- Major update in August 2016 – Today’s Guild 21 topic
- Issued to clarify & address basic body repair policies/questions
- Addresses reality that Honda can't create repair procedures for every possible collision damage situation
- Provides basic repair guidelines when no BRM procedure applies
MAG Welding Policy Changes

REVISED 1,500 MPa MAG Plug Guidelines:
- **ONLY approved in BRM specified locations**
- **Requires larger 10 mm holes**
- **MUST use 980 MPa welding wire**
- **Weld spiral motion from outer edge inward**

<table>
<thead>
<tr>
<th>Steel Part Tensile Strength (MPa)</th>
<th>Spot Weld</th>
<th>MAG Welding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plug</td>
<td>Butt</td>
</tr>
<tr>
<td>&lt;590</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>590</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>780</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>980</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>1,500</td>
<td>O</td>
<td><strong>O</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

(○ = Approved  X = Not Approved)
○<sup>*</sup> = Approved Only as Specified In BRM

Changes To 1,500 MPa MAG Welding Rules:
- MAG plug welding will be allowed on 1,500 MPa (hot stamp) steel parts for some models in select locations only as specified in the BRM
- Welding instructions must be followed exactly as specified to ensure adequate weld strength
- This change DOES NOT APPLY to any current or previous models
- Further testing in Japan made this change possible
Weld-Thru Primer Changes

Changes To Guidelines For Weld-Thru Primer (Spot Sealer) Use:

- Weld-thru primer now only allowed for spot welding
- **Do not use** weld-thru primer on:
  - MAG butt
  - MAG plug
  - MIG brazing
- Further testing in Japan drove this change. Research shows zinc in primer can negatively affect weld/joint strength
- Make weld/joint then use corrosion inhibiting primer over joint

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Weld-Through Primer Guidelines (Revised):

- When doing squeeze-type resistance spot welding (STRSW), apply a zinc-rich weld-through primer, or spot sealer, to bare steel areas being welded and wipe off any excess. Use approved respiratory protection when working around these primers.
- Weld-through primer should **not** be used when doing MAG plug, MAG butt, or MIG Brazing. Further study has shown that weld-through primers can negatively affect weld or joint quality.
- When doing MAG plug and butt welding, or MIG brazing, remove only enough of the factory e-coat to allow bare metal in the weld or joint area. Then, apply corrosion-inhibiting primer over the completed weld or joint.
- Refer to the body repair manual for complete information.
“Wire tensile strength MUST be equal to, or greater than, lowest tensile strength of parts being welded”

Tensile Conversion Chart

<table>
<thead>
<tr>
<th>Steel Tensile (MPa)</th>
<th>Wire Tensile (ksi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>590</td>
<td>≥86</td>
</tr>
<tr>
<td>780</td>
<td>≥113</td>
</tr>
<tr>
<td>980</td>
<td>≥142</td>
</tr>
</tbody>
</table>

(1,000 psi = 1 ksi)

~300 MPa Tensile Strength Spread = UNACCEPTABLE!

High-Strength Steel MAG Welding Wire Requirements:
- Steel tensile rated in MPa – Wire tensile in ksi (psi x 1,000)
- Causes confusion so conversion chart included in all BRN
- Typical ER70S-6 min. tensile 483 MPa (70 ksi-OK to 440 MPa)
- Large tensile spread between base metal and weld!
- See “bad example” frame sectioning scenario above
High-Strength 980 Mpa MAG Welding Wire

New Honda Union X96 High-Strength MAG Wire:
- **DS980J** wire no longer available (OK to use existing stock)
- New 0.8 mm Bohler Union X96 wire custom made to Honda specs
- Available in 11 lb. (5 kg) rolls, Much lower cost than DS980J ~$35lb.
- Beware of “Imitation” 980MPa wire – Only Union X96 is Honda Approved
- Three North American vendors for wire shown above

<table>
<thead>
<tr>
<th>Vendor Name</th>
<th>Vendor P/N</th>
<th>Ordering Website</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dealer Equipment &amp; Services (DES) Canada</td>
<td>HWW-98008</td>
<td><a href="https://www.techniciantools.net">https://www.techniciantools.net</a></td>
<td>1-866-868-3372</td>
</tr>
<tr>
<td>Honda and Acura Tool &amp; Equipment Program</td>
<td>PRO50740</td>
<td><a href="https://honda.sapon.com">https://honda.sapon.com</a></td>
<td>1-866-346-8858</td>
</tr>
</tbody>
</table>

NOTE: Vendors obtain wire supplies independently. Please contact each vendor about availability and pricing.
Silicon Bronze Wire For MIG Brazing

Silicon Bronze MIG Brazing Wire Requirements:

- Often confused with 980 MPa wire. Two completely separate operations
- Specified diameter 0.8 mm
- CuSi-A (AWS designation) CuSi3 (European designation)
- Can be either - Both certs are NOT required
- Commercially available – Buy only from reputable sources!
- Also available from same North American vendors as 980 MPa wire
Honda Requirements For Shielding Gas:

- **MIG Brazing** = Metal Inert Gas welding or brazing
  - Argon is inert and does not react with the brazing operation.
  - MIG brazing shielding gas is 100% argon (Ar)

- **MAG Welding** = Metal Active Gas welding
  - The preferred shielding gas is C20. A mixture of 80% argon (Ar) and 20% carbon dioxide (CO₂), C20 produces a more stable arc, less weld spatter, and better weld quality/appearance.
  - C25 shielding gas, a mixture of 75% argon (Ar) and 25% carbon dioxide (CO₂), is also acceptable.
  - These are considered active gases because CO₂ undergoes a limited reaction with the molten weld pool.
Honda Requirements For Partial Panel Replacement:

- Replacement of body service parts as supplied at factory seams preferred EXCEPT in cases of unnecessary/excessive intrusion into body structure
- Service part may be disassembled at factory seams as required to replace only damaged portion
- Example: Rear outer wheelhouse from rear inner panel service part
- Can’t write repair procedure for every possible collision occurrence
- No BRM procedure for rear inner panels - Rarely installed complete
- All basic welding & sectioning guidelines specified in service information **must** be observed during partial panel replacement

Basic Sectioning Guidelines - MUST MEET ALL:

- Tensile strength 780 MPa or less
- Sectioning must be done in single-layer area of part
- Multi-layer internal steel reinforcements and stiffeners must not be cut.
- No sectioning in load bearing areas: e.g. Engine/Transmission/Suspension mounting points

Rear Outer Wheelhouse

Rear Inner Panel Service Part Example
How to Access & Use ServiceExpress

Honda Independent Repair/ServiceExpress Website:

- Web address = techinfo.honda.com
- ServiceExpress is the subscription side content
- ProFirst Certified shops access using program website:
  https://honda.collisionrepairnetwork.org
Choice 1: Choose Information Path:

- 1a Blue Column = Quick reference (BRN, Position Statements, etc.)
- 1b “Service Info” Tab = Electronic service manual search
How to Access & Use ServiceExpress

Choice #1a: Blue Column = Quick Reference:
- Position Statements
- Body Repair News
- Tool & Equipment Program
Diagnostic Scanning & Calibration Position Statement:

• Applies to all Honda & Acura models
• Requires pre and post diagnostic scans
• Provides background, reasons, and guidelines for requirements

Another FREE Collision Industry Position Statement:

➢ Posted July 2016 on Honda Independent Repair/ServiceExpress website
➢ Industry agreement with IIHS & NHTSA - AEB standard by Sep. 2022
➢ Camera & radar on every new car - Calibration more common
➢ Scan tool info on Independent Repair Website under “Diagnostic Tools”
Why Scanning Should NOT Be Optional – An Accord Sedan Story

Insurance Institute For Highway Safety (IIHS)

- Insurance industry funded non-profit organization
- Independent testing - Help reduce losses from crashes on the nation's highways
- Advanced/Superior front crash prevention rating (radar-based autobrake/AEB) required for TSP+ beginning 2015 model year
- Technology required for IIHS safety rating, Service requirements must be supported

2013-14 TSP+

2015 TSP - Drop due to no AEB (CMBS)

2016 TSP+ AEB (CMBS) Available
QUESTIONS?
Thank You!

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