The robot with integrated welding power source has evolved further. High Speed Welding and Ultra Low Spatter.

NEW

Super Active Wire Feed Process (S-AWP)

Wider current range and precise wire feed
- High speed and low spatter welding increases productivity.
- 100 % duty cycle at 310 A!

(when using 1.2 mm mild steel solid wire, CO₂ gas, and air-cooling unit)

System for both high speed low spatter welding

- S-AWP servo pull torch
- Wire booster
- S-AWP software
- Air-cooling unit

High speed welding

- Improved productivity at 100 cm/min or higher
- Beautiful and wide bead

Weld conditions: Joint: Lap Gas: CO₂ Weld current: 320 A Weld speed: 110 cm/min Plate thicknesses: 3.2 mm x 3.2 mm

Max. 99 % spatter reduction! (compared to conventional model)

Example of mild steel SPCC

98 % reduction at 200 A

99 % reduction at 250 A

96 % reduction at 250 A
**NEW**

**Super Active Wire Feed Process (optional: for thin plate, gap)**

HBC (Heat Balance Control) process supports welding of high-tensile steel plates that are becoming thinner.

- Low heat input control greatly increases weld speed and gap tolerance.
- Capable to weld thin high-tensile steel that is prone to burn-through.

**HBC process (optional) prevents burn-through in thin plate welding.**

Example of high tensile steel (980 MPa)

<table>
<thead>
<tr>
<th>Conventional Active TAWERS: Burn-through</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBC process: No burn-through</td>
</tr>
</tbody>
</table>

Weld conditions:  
- Joint: Lap  
- Gas: MAG  
- Weld current: 150 A  
- Weld speed: 100 cm/min  
- Plate thicknesses: 0.8 mm x 0.8 mm  
- Gap: 1 mm

**Hot Active Wire Feed Process (Hot-AWP)**

Optional software for Active TAWERS (Hot Active wire welding process) is included in S-AWP standard software (YA-1TPMV1).
Zinc-Coated Steel Welding Solution

**Using Solid Wire!**

Reduce Spatter and Blowholes with TAWERS Zi-Tech.

**Super Zi-Active**
—Solution Using Super Active TAWERS

- Uses standard welding wire. (1.2 mm solid wire)
- Supports MAG welding in addition to CO₂ welding.
- Effective on a wide range of coating weight.
  - 100 % CO₂: 45 to 190 g/m²
  - 80 % argon and 20 % CO₂: 45 to 60 g/m²
  - 90 % argon and 10 % CO₂: 45 to 60 g/m²

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**Weld Conditions:**
- Base metal: A5052
- Joint: Butt
- Weld current: 50 A

**Example of medium thickness (30 mm) plate**

- Super Active TAWERS Aluminum
  - S-AWP’s low-spatter performance proven in mild steel is applied to aluminum.
  - Wider current range (40 to 180 A) allows higher welding speed and powerful thick plate welding.

**Great for thin aluminum welding!**

**Example of 0.6 mm thin plate welding**

- Super Active Wire Feed Process for aluminum MIG!
  - Less spatter and smut!

**TAWERS Zi-Pulse**
—Solution Using Standard TAWERS

- Uses standard welding wire. (1.2 mm solid wire)
- Uses mixed gas of 90 % Argon and 10 % CO₂.
  (HD-Pulse Weld Process)
- Effective on a wide range of coating weight from 45 to 60 g/m².

**Optional Software for High-Quality Welds and High Productivity**

**Just add to standard TAWERS (TS/TM/TL series).**

**75 to 95 % Spatter Reduction Compared with Conventional CO₂ Process**

<table>
<thead>
<tr>
<th>Coating Weight: 190 g/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bead Appearance</strong></td>
</tr>
<tr>
<td>A lot of spatter/adhesion</td>
</tr>
<tr>
<td>A lot of blowholes</td>
</tr>
<tr>
<td><strong>X-Ray Image</strong></td>
</tr>
<tr>
<td>A lot of spatter/adhesion</td>
</tr>
<tr>
<td>A lot of blowholes</td>
</tr>
</tbody>
</table>

Weld Conditions:
- Wire: YM-50 (1.2 mm)
- Joint: Lap
- Gas: CO₂
- Weld Current: 250 A
- Weld Speed: 80 cm/min
- Plate Thicknesses: 2.3 mm x 2.3 mm

**30 to 60 % Spatter Reduction Compared with Mixed Gas of 80 % Ar+20 % CO₂**

<table>
<thead>
<tr>
<th>Coating Weight: 45 g/m²</th>
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<tr>
<td><strong>Bead Appearance</strong></td>
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<td>A little spatter/adhesion</td>
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Weld Conditions:
- Wire: YM-50MT (1.2 mm)
- Joint: Lap
- Weld Current: 230 A
- Weld Speed: 80 cm/min
- Plate Thicknesses: 2.0 mm x 2.0 mm