The patented STT® (Surface Tension Transfer) is a modified GMAW short circuit welding process, designed for open root welding. This unique process simplifies open root welding, requiring less operator experience to implement. STT® is a proven pipeline process, produces excellent quality welds, and improves productivity over more traditional SMAW & GTAW root welding methods. These results are due to the patented design of this process, eliminating common problems such as burn-through and lack of fusion commonly associated with standard short-circuit transfer.

**STT® – Fill any open root, anywhere.**
- 2 times faster than SMAW
- 4 times faster than GTAW
- Requires less operator skill
- Meets low Hydrogen requirements

**TRAVEL SPEED**
- GTAW
- SMAW
- STT®

**CLEANING/PREP TIME**
- STT®
- GTAW
- SMAW

**LBS/HR DEPOSITION RATE**
- GTAW
- SMAW
- STT®

**DIFFICULTY**
- EASY
- HARD
- STT®
- SMAW
- GTAW

**STT®, SMAW & GTAW**
- **STT®**
  - Larger bead.
  - Flat face.
  - Perfect back bead.
  - Excellent fusion.
- **SMAW**
  - Medium-sized bead.
  - Convex shape.
  - Droopy back bead.
  - Grinding required.
- **GTAW**
  - Smaller bead.
  - Concave shape.
  - Limited back bead reinforcement.
Steel Procedures

### English

#### Joint Preparation

#### 1G – NO LAND (Knife Edge)

<table>
<thead>
<tr>
<th>Gas</th>
<th>Position</th>
<th>Gap (Inches)</th>
<th>Gap (mm)</th>
<th>Land (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% CO₂</td>
<td>1G</td>
<td>.080” – .100”</td>
<td>2.0 – 2.5</td>
<td></td>
</tr>
<tr>
<td>ARGON / MIX</td>
<td>1G</td>
<td>.100” – .125”</td>
<td>2.5 – 3.2</td>
<td></td>
</tr>
</tbody>
</table>

#### Metric

<table>
<thead>
<tr>
<th>Gas</th>
<th>Position</th>
<th>Gap (Inches)</th>
<th>Gap (mm)</th>
<th>Land (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% CO₂</td>
<td>1G</td>
<td>.200” – .250”</td>
<td>5.1 – 6.4</td>
<td></td>
</tr>
<tr>
<td>ARGON / MIX</td>
<td>1G</td>
<td>.250” – .300”</td>
<td>6.4 – 7.6</td>
<td></td>
</tr>
</tbody>
</table>

*See the STT™ weld process guide for: technical data, proper set-up, application settings and troubleshooting.

### Joint Preparation

See Customer Assistance Policy and Disclaimer Notice.

**1G, 2G, 5G, 6G – LAND**

<table>
<thead>
<tr>
<th>Gas</th>
<th>Position</th>
<th>Gap (Inches)</th>
<th>Gap (mm)</th>
<th>Land (Inches)</th>
<th>Land (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% CO₂</td>
<td>1G</td>
<td>.100” – .125”</td>
<td>2.5 – 3.2</td>
<td>.060” – .125”</td>
<td>1.5 – 2.0</td>
</tr>
<tr>
<td>ARGON / MIX</td>
<td>1G</td>
<td>.125” – .156”</td>
<td>3.2 – 4.0</td>
<td>.060” – .125”</td>
<td>1.5 – 2.0</td>
</tr>
</tbody>
</table>

Recommended Equipment

**Power Source**

- Power Wave® S350, R350, S500 or R500 w/ Digital STT® Module or Advanced Module

**Wire Feeder**

- Power Feed® 84 or 25M

**Accessories**

- SuperArc® Wire
- SupraMig® Magnum® Pro Gun

Customer Assistance Policy

The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customer and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for advice or information about their use of our products. We respond to our customers based on the best information in our possession at that time. Lincoln Electric is not in a position to warrant or guarantee such advice, and assumes no liability, with respect to such information or advice. We expressly disclaim any warranty of any kind, including any warranty of fitness for any customer’s particular purpose, with respect to such information or advice. As a matter of practical consideration, we also cannot assume any responsibility for updating or correcting any such information or advice once it has been given, nor does the provision of information or advice create, expand or alter any warranty with respect to the sale of our products.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirement.

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