History of Hobart Brothers

After 100 years in the business, Hobart Brothers is Welding. And Welding is Hobart Brothers. Much has changed in industry since 1902, Hobart Brothers owns every corner of the wire. You might even say the company didn’t know how to keep up with the new technologies and processes.

A Hobart long haul... Hobart has become a world leader in the field, setting the pace that the industry keeps up with. The products we make are the benchmark of the world’s leading brands. Hobart: A 1/2 century of welding metal into history.

Training and expertise are key to Hobart/Brothers. Every Hobart/Tri-Mark product can only be built by knowledgeable people. That’s why we have welders qualified in, dozens of, applications. You know who to call.

The company was started that first spark over 100 years ago.

The company can be proud of a long and major national and international presence.

It helped forge them.

Hobart is known for its product formulation and quality and is recognized worldwide as the "specialists in flux-cored and metal-cored wires." Hobart Brothers features over 52 low alloy steels, in addition to specialty low alloy steels, and its wide range of products: carbon steel, stainless steel, and nickel based products. Hobart is a worldwide family of companies producing a wide range of welding products and services. Hobart is the market leader of welding products and services worldwide.

Hobart offers a wide range of products, including:

- **Low Alloy Steels**
- **Carbon Steels**
- **Stainless Steels**
- **Nickel-Based Alloys**
- **High Temperature Alloys**

Hobart distributes its products globally, with a strong presence in North America, Europe, Asia, and the Pacific Rim. The company’s commitment to quality and innovation has helped it maintain its position as a leader in the welding industry for over a century.

Hobart has a long history of developing innovative products and processes that have contributed to the advancement of welding technology. From the introduction of flux-cored and metal-cored wires to the development of new welding processes, Hobart has continuously pushed the boundaries of what is possible in welding.

Hobart’s commitment to excellence is evident in its products and services, which are designed to meet the needs of industries ranging from automotive and aerospace to construction and manufacturing. Hobart’s products are trusted by professionals around the world, who rely on them to deliver quality results.

On the occasion of its 100th anniversary, Hobart Brothers celebrated its rich history and continued its commitment to innovation and excellence in welding.

**PRODUCT CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Wire Feed Speed</th>
<th>Deposition Rate</th>
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<tbody>
<tr>
<td>25 – 30</td>
<td>12.0</td>
</tr>
<tr>
<td>30 – 35</td>
<td>12.4</td>
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<td>35 – 40</td>
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<td>40 – 45</td>
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<td>45 – 50</td>
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<tr>
<td>50 – 55</td>
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</tbody>
</table>

**USING PARAMETERS**

- **Wire Feed Speed:** The speed at which the wire is fed through the welding gun.
- **Deposition Rate:** The rate at which the wire is deposited as a weld.
Our manufacturing process was designed from the ground up with consistency in mind. The result: Better feeding and more consistent arcs start than standard metalloy products.

Tri-Mark’s metal-cored wires for carbon steels are designed to provide welders with what they look for most: excellent wetting, lower smoke, less silicon islands, and more consistent arc starts. Most of our wires are manufactured with a lap seam, leading to better feedability (which in turn leads to longer liner life) and arc starting, good penetration, and outstanding fusing at the root. This produces a high quality, slag-free, low spatter weld. Our next generation metal-cored wire, Matrix, is specifically designed for robotic applications.

Tri-Mark metal-cored wires have a high current density which provides a wider projection area for increased deposition rate efficiencies of up to 97%. In addition, they offer a penetration pattern that is more uniform, with less chance of cold lap. Compared to the performance of solid wires, Tri-Mark metal-cored wires allow faster travel speeds and a higher quality weld bead. What does that mean to you? Increased productivity and reduced costs from labor (pre- and post-weld cleanup and rework), and more time spent by your welders doing what they do best: welding.

Our metal-cored wires have high current density which provides a wider projection area for increased deposition and a less turbulent weld pool. The result is a penetration pattern that is more uniform, with less chance of cold lap. Compared to the performance of solid wires, Tri-Mark metal-cored wires allow faster travel speeds and a higher quality weld bead. What does that mean to you? Increased productivity and reduced costs from labor (pre- and post-weld cleanup and rework), and more time spent by your welders doing what they do best: welding.

### Matrix Weld Penetration

Wire comparison shows the advantage of metal-cored wire over solid wire.

**Heat Transfer**

**Metal-Cored Wire**

**Solid Wire**

**Metal-Cored Wire Has Wider Projection Area With Less Turbulent Weld Pool**

**Current Path**

**Met 70x**

**Vantage Met 55**

**Matrix Solid Wire**

**Matrix Metalloy 70X**

**Tri-Mark's metal-cored welding wires are winning the attention of cost-conscious metal fabricators.** Their excellent re-strike characteristics, low spatter levels, high deposition rates make Tri-Mark metal-cored wires ideal for automated, automatic and robotic applications.

### Additional benefits of Tri-Mark's proprietary metal-cored wires include:

- Higher deposition rates compared to solid wire resulting from:
  - Higher wire feed speeds for a given arc current
  - Tubular wire cross section carrying most of the current, leading to higher current density in the wire sheath
  - Spray transfer occurring at a lower current than solid wire
- Higher deposition rates compared to solid wire resulting from:
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Our manufacturing process was designed from the ground up with consistency in mind. The result: Better feeding and more consistent arc starts than standard metalloy products.

Tri-Mark’s metal-cored wires for carbon steels are designed to provide welders with what they look for most: excellent wetting of toes, low visible smoke, less silicon islands and superb bead appearance. Additional benefits include: deposition rate efficiencies of up to 97%, high arc stability, and excellent tear-in capabilities. Most of our wires are manufactured with a lap seam, leading to better feedability (which in turn leads to longer liner life) and arc starting, good penetration and outstanding fusing at the root. This produces a high quality, slag free, low spatter weld.

Our next generation metal-cored wire, Matrix, is specifically designed for robotic applications.

Tri-Mark metal-cored wires have a high current density which provides a wider projection area for increased deposition rates, a wider penetration pattern that is more uniform, with less chance of cold lap. Compared to the performance of solid wires, Tri-Mark metal-cored allow faster travel speeds and a higher quality weld bead. What does that mean to you? Increased productivity and reduced costs from pre- and post-weld cleanup and rework, and more time spent by your welders doing what they do best: welding.

Don't miss out on the advantages of metal-cored wires! To find out how Tri-Mark's metal-cored wires can increase your productivity and save your company money, call your Tri-Mark representative today for a free Hobart Brothers Improvement Potential Methodology review/procedure today!

### Applications

**Matrix Weld Penetration**

Wire comparison shows the advantage of metal-cored wire over solid wire.

**Matrix Metal-Cored vs. Solid Wire**

- **Current Path**
  - Matrix Metal-Cored
  - Solid Wire

- **Heat Transfer**
  - Matrix Metal-Cored
  - Solid Wire

- **Wider penetration pattern provides better side wall fusion and reduces risk of cold lap**
- **Less spatter compared to flux-cored wires, in addition to no slag, making for easier post-weld cleanup**

![Matrix Metal-Cored Wire](image)

**Deposition Rate vs. Amperage**

High deposition rates and efficiencies, up to 27 lbs/hr and 97%, respectively, aid in reducing welding time and cleanup costs.

**70X FGR Comparison**

- **Amperage vs. FGR**
  - Tri-Mark Matrix
  - Solid Wire
  - Tri-Mark Metalloy 70X

- **Optimal Settings for 70X**

**Positioning**

<table>
<thead>
<tr>
<th>Metalloy 70X</th>
<th>Matrix</th>
<th>Vantage</th>
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<tbody>
<tr>
<td>Tolerance of Mill Scale</td>
<td>50-100ths</td>
<td>30-60ths</td>
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<tr>
<td>Tolerance of Torch Angles</td>
<td>1-2</td>
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<tr>
<td>Thin Gauge Crack Resistance</td>
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<tr>
<td>Packaging</td>
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<td>100%</td>
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<tr>
<td>Pricing</td>
<td>Lower</td>
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**Matrix Metal-Cored Wires**

- **Deposition Rate vs. Amperage**

- **Matrix’s metal-cored welding wires are winning the attention of cost-conscious metal fabricators.** Their excellent tear-in capabilities, low silicon-in welds, high current densities, and deposition rates make Tri-Mark metal-cored wires ideal for both automatic, robotic and industrial applications.

**Additional Benefits of Tri-Mark’s proprietary metal-cored wires include:**

- Higher deposition rates compared to solid wire resulting from:
  - Higher wire feed speeds for a given arc current
  - Tubular wire cross section carrying most of the current, leading to higher current density in the wire sheath
  - Spray transfer occurring at a lower current than solid wire

- **Wider penetration pattern provides better side wall fusion and reduces risk of cold lap**

- **Less spatter compared to flux-cored wires, in addition to no slag, making for easier post-weld cleanup**

**Positioning**

<table>
<thead>
<tr>
<th>Positioning</th>
<th>Distance</th>
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<tr>
<td>Matrix</td>
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<tr>
<td>Tolerance</td>
<td>1-2</td>
<td>1-2</td>
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</table>

**70X FGR Comparison**

- **Amperage vs. FGR**
  - Tri-Mark Matrix
  - Solid Wire
  - Tri-Mark Metalloy 70X

- **Optimal Settings for 70X**
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<table>
<thead>
<tr>
<th>Product</th>
<th>Class</th>
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<th>(ksi)</th>
<th>in</th>
<th>2&quot;</th>
<th>(ft•lbs@°F)</th>
<th>C</th>
<th>Mn</th>
<th>Si</th>
<th>P</th>
<th>S</th>
<th>Ni</th>
<th>Cr</th>
<th>Mo</th>
<th>Cu</th>
<th>Gas</th>
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<tr>
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<td>MC-710XL; MC-706 Coreweld 70 Select</td>
<td>70C-6</td>
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<td>47</td>
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<td>.86</td>
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<td>98% Ar/2% O₂</td>
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<td>26.0</td>
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<td>95-98% Ar/Bal O₂</td>
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### TENSILE PROPERTIES

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<th>Tensile Properties</th>
<th>YIELD</th>
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<th>IMPACT</th>
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<tr>
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<td>(ksi)</td>
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<td>97.0</td>
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<td>-40°F</td>
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<tr>
<td>-60°F</td>
<td>46.0</td>
<td>56.0</td>
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### WEAK-AnG PARAMETERS

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<tr>
<td>27</td>
<td>250</td>
<td>383</td>
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<td>30</td>
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<td>33</td>
<td>400</td>
<td>500</td>
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</table>

### Optimum parameters for welder appeal using 90% Argon/10% CO₂

- **Bold:** Parameters for welder appeal using 90% Argon/10% CO₂.

- **††:** Stress relieved 8 hrs. @ 1150°F.
- **†††:** Stress relieved 1 hr. @ 1275°F.
### PRODUCT CHARACTERISTICS

<table>
<thead>
<tr>
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<td>.34</td>
<td>2.26</td>
<td>-</td>
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</tbody>
</table>

**WELDING PARAMETERS**

- **.035”**  Flat & Horizontal  
  - Voltage: 26  
  - Amperage: 200  
  - Deposition Rate: 8.5  
  - Wire Feed Speed: 350  

- **.052”**  Flat & Horizontal  
  - Voltage: 27  
  - Amperage: 250  
  - Deposition Rate: 8.5  
  - Wire Feed Speed: 350  

- **1/16”**  Flat & Horizontal  
  - Voltage: 29  
  - Amperage: 275  
  - Deposition Rate: 8.5  
  - Wire Feed Speed: 350  

**PRODUCT COMPARISON**

**PRODUCT CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Hobart</th>
<th>Weldwell</th>
<th>ITW Welding Singapore (PTE) Ltd</th>
<th>ITW Welding Products Russia</th>
<th>Elga AB</th>
<th>JETLINE</th>
<th>Miller Electric Mfg Co</th>
<th>Miller Brothers</th>
<th>Miller China</th>
<th>Miller Deutschland</th>
<th>Miller Electric Manufacturing</th>
<th>Miller France</th>
<th>Miller India</th>
<th>Miller Italia</th>
<th>Miller Mexico</th>
<th>Miller Products</th>
<th>Miller Welding Products</th>
<th>Miller Welding S.A.S.</th>
<th>Miller Welding UK</th>
<th>Miller Welding Products Group FZE</th>
<th>Miller Welding Products Italy SRL</th>
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<tr>
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