QUICK SPECIFICATIONS

PROCESSES
HF TIG (GTAW)
LIFT TIG (GTAW)
STICK (SMAW)

APPLICATIONS
Aluminum Fabricators
Training Institutions
Maintenance & Repair
On-Site & Portable Welding Applications
Automotive, Boats & Trailers

RATED OUTPUT
200A / 18V @ 20% Duty Cycle
180A / 17.2V @ 25% Duty Cycle
150A / 16V @ 35% Duty cycle

MAX. OPEN CIRCUIT VOLTAGE
70.3V DC / 50 VAC

AMPERAGE RANGE
10-200 A

WEIGHT
48.4 lbs (22 kg)

ORDER INFORMATION
Part No: W1006301
Description: Thermal Arc 186 AC/DC System

Part No: W1006303
Description: Thermal Arc 186 AC/DC System with Foot Pedal

Part No: W1006304
Description: Thermal Arc 186 AC/DC System with Foot Pedal & Cart

Comes Complete with:
- Thermal Arc 186 AC/DC Power Supply
- TIG Torch & Accessories, 26 Style with integrated controls (3 control modules included), 13 ft (4 m)
- Tweco 200 Amp Electrode Holder with 13 ft (4 m) Lead
- Tweco 200 Amp Ground Clamp with 10 ft (3 m) Lead
- Victor Argon Flow Gauge & 12.5 ft (3.8 m) Hose
- 9 ft (2.75 m) Power Cord and NEMA 6-50P 230V AC Plug
- Operators Manual & CD
- General Purpose Stick Electrodes (E6013)
- Shoulder Strap

186 AC/DC Overview
- Multi-Process, complete Stick & TIG system solution ready for any application
- Fully featured professional performance capability made easy to use
- High output duty cycle, ready to perform


TIG:
- AC and DC output for aluminum and non-ferrous alloys, stainless, mild steel & chrome molys.
- AC Frequency: Adjustable frequency of the AC square wave when welding on aluminum for optimized set up (15 Hz - 150Hz).
- Wave Balance: Adjustable for optimized penetration or cleaning action when welding on aluminum.
- HF Arc Start: Provides non-contact arc starting that eliminates tungsten or material contamination.
- Lift TIG Start: Provides optimized TIG arc starting without the use of high frequency.
- Pulse: Changes the weld current from high to low at a specified frequency, reduces heat input on thin material (0.5 Hz - 200 Hz).
- Preflow & Postflow: Enables independent control over shielding gas before and after the weld.
- Upslope / Downslope & Crater modes: Eliminates cracking at the end of the weld.
- Hot Start: Ensures fusion at arc starts for both TIG and Stick processes.

STICK:
- Adjustable Arc Force & Hot Start Control for optimum Stick electrode performance.

Other Features:
- Digital Meters: Voltage and Amperage; Preview and Hold Capability for easy set up
- Trigger Control: 4T (Latch) eliminates operator fatigue
- Comprehensive Setup Chart: Weld set up guide for optimum welding performance over a wide range of materials
- Remote Receptacle: Enables connection of remote control devices like a foot pedal and torch slide control
- Excellent Portability: Lightweight at 48.4 lbs
- Overload Protection: Shuts down the power source to protect the internal electrical components from overheating
- IP23S: Suitable for outdoor use.
THERMAL ARC®
186 AC/DC FEATURES

Digital Meters - Displays both the pre-set and actual output current and voltage of the power source. Also used to display parameters in programming mode.

Easy to use welding setup chart with comprehensive process parameters.

Purge, Pulse and Mode Buttons

Carry Handle and Shoulder Strap

Heavy Duty 50 mm Dinse Terminals

8 Pin Remote Receptacle

Shielding Gas Outlet

Process Selection Button - Three modes are available, GTAW (LIFT TIG), GTAW (HF TIG) & SMAW (Stick) modes.

Trigger Control

U.S. Customer Care: 800-426-1888 / Fax 800-535-0557
Canada Customer Care: 905-827-4515 / Fax 800-588-1714
Effect of Wave Balance Adjustment on AC/GTAW

The 186 AC/DC controls the wave form changes on the amount of time spent on DCEP (cleaning) and DCEN (penetration) parts of each cycle, increasing arc stability. The DCEP cycle insures that the aluminum oxide is thoroughly removed, allowing the DCEN cycle a thorough penetration of the base metal. Both cycles enhance weld quality and significantly improve performance.

When a conventional system changes its wave balance, there can be as much as a 50% increase in amperage draw. Thermal Arc® 186 AC/DC amperage draw is unaffected by any adjustments. The 186 AC/DC increases efficiency and eliminates tungsten spitting and enables the use of a smaller diameter tungsten electrode to operate at a higher current levels. Figures 1 & 2 show the difference in TIG torch electrode and heat and cleaning variations.

SEE THE DIFFERENCE!
3 COMPLETE SYSTEM OPTIONS

**Thermal Arc® 186 AC/DC Portable HF TIG System**  
Part No. W1006301

Comes Complete with:
1. Thermal Arc 186 AC/DC Power Supply
2. Tweco 200 Amp Ground Clamp with 10 ft (3 m) Lead
3. Tweco 200 Amp Electrode Holder with 13 ft (4 m) Lead
4. 4 General Purpose Stick Electrodes (E6013)
5. TIG Torch & Accessories, 26 Style with integrated controls (3 control modules included), 13 ft (4 m)
6. Victor Argon Flow Gauge & 12.5 ft (3.8 m) Hose
7. 9 ft (2.75 m) Power Cord and NEMA 6-50P 230V AC Plug (not shown)
8. Operators Manual & CD (not shown)
9. Shoulder Strap

**Thermal Arc® 186 AC/DC Portable HF TIG System with Foot Pedal & Cart**  
Part No. W1006304

Comes Complete with:
1. Thermal Arc 186 AC/DC Portable HF TIG System (Part No. W1006301)
2. Foot Pedal with 15 ft cable
3. Basic Utility Cart

**Thermal Arc® 186 AC/DC Portable HF TIG System with Foot Pedal**  
Part No. W1006303

Comes Complete with:
Thermal Arc 186 AC/DC Portable HF TIG System (Part No. W1006301), same as above plus foot control
1. Foot Pedal with 15 ft cable
**SPECIFICATIONS**

**WELDING DC**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Maximum Output</td>
<td>200 Amp</td>
</tr>
<tr>
<td>TIG (GTAW) Welding Output @104˚F (40˚C)</td>
<td>200A / 18V @ 20% Duty Cycle</td>
</tr>
<tr>
<td></td>
<td>180A / 17.2V @ 25% Duty cycle</td>
</tr>
<tr>
<td></td>
<td>150A / 16V @ 35% Duty Cycle</td>
</tr>
<tr>
<td>STICK (SMAW) Welding Output @104˚F (40˚C)</td>
<td>170A / 26.6V @ 16% Duty Cycle</td>
</tr>
<tr>
<td></td>
<td>150A / 26V @ 25% Duty cycle</td>
</tr>
<tr>
<td></td>
<td>150A / 26V @ 100% Duty Cycle</td>
</tr>
<tr>
<td>Current Range</td>
<td>10-200 A</td>
</tr>
<tr>
<td>Maximum Open Circuit Voltage</td>
<td>70.3 VDC / 50 VAC</td>
</tr>
<tr>
<td>Warranty Period</td>
<td>3 Years*</td>
</tr>
<tr>
<td>Approvals</td>
<td>CSA E60974-1-00 / UL60974-1 / IEC 60974-1</td>
</tr>
<tr>
<td>Protection Class</td>
<td>IP23S</td>
</tr>
<tr>
<td>Dimensions H x W x D</td>
<td>H 15.75” x W 9.45” x D 18.7”</td>
</tr>
<tr>
<td>Weight</td>
<td>48.4 lbs (22 kg)</td>
</tr>
</tbody>
</table>

**PRIMARY POWER**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Primary Voltage</td>
<td>Nominal 208/230 VAC</td>
</tr>
<tr>
<td>Supply Voltage Range</td>
<td>187-276 VAC</td>
</tr>
<tr>
<td>Number of Phases</td>
<td>Single Phase</td>
</tr>
<tr>
<td>Supply Frequency</td>
<td>50/60 Hz</td>
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<tr>
<td>Supply Plug</td>
<td>NEMA 6-50P</td>
</tr>
<tr>
<td>Rated kVA @ 200 Amps</td>
<td>9.5 kVA</td>
</tr>
<tr>
<td>Lead Cord Length</td>
<td>9 ft (2.75 m)</td>
</tr>
<tr>
<td>Maximum Input Current</td>
<td>35.6 Amps</td>
</tr>
</tbody>
</table>

**DIMENSIONS AND WEIGHT**

- **Dimensions H x W x D**: H 15.75” x W 9.45” x D 18.7” (400 mm x 240 mm x 475 mm)
- **Weight**: 48.4 lbs (22 kg)

**REPLACEMENT ACCESSORIES**

- **TIG Torch & Accessories, 26 Style with integrated controls (3 control modules included), 13 ft (4 m)**: W4013600
- **Tweco 200 Amp Electrode Holder w/Lead, 13 ft, 50 mm Dinse**: WS200E13
- **Tweco 200 Amp Ground Clamp w/Lead, 10 ft, 50 mm Dinse**: WS200G10
- **Victor Argon Regulator/Gauge**: 0781-4169
- **Gas Hose, 12.5 ft, Male 5/8-18UNF**: W4013900
- **Foot Control, 15 ft**: W4013200

**ACCESSORIES**

- **Basic Utility Cart**: W4014700
  - Utility Cart, accommodates maximum 7” diameter cylinder

- **Foot Control**: W4013200
  - Contactor On/Off and current control with 15 ft cable and 8-pin male plug

- **Helmet**: 4100-1004
  - TWECO Helmet (USA only)

* Limited Warranty, refer to warranty schedule.

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>Equipment Option</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Arc® 186 AC/DC Package</td>
<td>W1006301</td>
<td>Includes Thermal Arc 186 AC/DC Inverter Power Source, Electrode holder with 13 ft (4 m) lead, Work Clamp with 10 ft (3.1 m) lead, 26 TIG Torch 12.5 ft (3.8 m) lead with Integrated Controls &amp; Accessory, Input power cable/plug, 9 ft (2.75 m), Victor Argon Flow Gauge &amp; 12.5 ft (3.8 m) Hose, Electrode Bonus, Shoulder Strap, and Operating Manual/CD</td>
</tr>
<tr>
<td>Thermal Arc 186 AC/DC Package w/Foot Control</td>
<td>W1006303</td>
<td>Includes contents of W1006301 with Foot Control (W4013200)</td>
</tr>
<tr>
<td>Thermal Arc 186 AC/DC Package w/Foot Control &amp; Utility Cart</td>
<td>W1006304</td>
<td>Includes contents of W1006301 with Foot Control (W4013200) &amp; Cart (W4014700)</td>
</tr>
</tbody>
</table>

**INTERNATIONAL CUSTOMER CARE:** 940-381-1212 / FAX 940-483-8178

**www.thermalarc.com**

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Welcome to the Family

... Introducing

The Thermal Arc®
186 AC/DC Inverter