Syncrowave® 300

TIG/Stick Welding Power Source

Quick Specs

**Industrial Applications**
- Precision metal fabrication
- Maintenance and repair
- Light and heavy manufacturing
- Shipbuilding
- Tube and pipe
- Automotive
- Vocational

**Processes**
- TIG (GTAW)
- Stick (SMAW)
- DC pulsed TIG (GTAW-P)

**Amperage Range**
- 5–300 A

**Max. Open-Circuit Voltage**
- 60 VDC

**Rated Output**
- 300 A at 22 V, 30% duty cycle
- 210 A at 18 V, 60% duty cycle

**Input Power**
- 208/240/480 V, 1-phase or 3-phase power

**Net Weight**
- Machine only: 101 lb. (45.8 kg)
- With Cooler and Running Gear: 176.4 lb. (80 kg)

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**Auto-Link® circuit automatically links**
the power source to primary voltage
being applied (208/240/480 V, single- or three-phase).

**Simple to install.** Accepts either single- or three-phase input power.

**Internal cooler power supply**
runs the Coolmate™ 3S off of the input power and requires no additional hook up.

**Smaller footprint and lightweight design**
make it easier to install and maneuver.

**Easy to use.** Intuitive user interface is simple to understand making it easy to adjust parameters, and means less time training new employees and more time getting work done.

**Pro-Set™ button**
gets to factory preset parameters with one touch of a button.

**Energy efficient.** Save up to 33 percent on energy costs versus outdated welding equipment.

**More stable arc and better arc starts**
versus outdated welding equipment.

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**AC TIG Features**
- Balance control provides adjustable oxide removal which is essential for creating the highest quality aluminum welds.

**DC TIG Features**
- Pulse. Pulsing can increase puddle agitation, arc stability and travel speeds while reducing heat input and distortion.

**DC Stick Features**
- DIG control allows the arc characteristics to be changed for specific applications and electrodes. Lower the DIG setting for smooth running electrodes like E7018 and increase the DIG setting for stiffer, more penetrating electrodes like E6010.

**Hot Start™ adaptive control**
provides positive arc starts without sticking.

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Power source is warranted for three years, parts and labor.

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An ITW Welding Company
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International FAX: 920-735-4125

MillerWelds.com
Additional Features

Fan-On-Demand™ power source cooling system operates only when needed, reducing noise, energy use and the amount of contaminants pulled though the machine.

Wind Tunnel Technology™ protects internal electrical components from airborne contaminants, extending the product life.

Coolmate™ 3S cooler (Complete packages only). Three-gallon cooling system equipped with a visual flow indicator ensures that the coolant is flowing. An external coolant filter stops foreign objects from entering the water-cooled torch cable for better flow and longer life. Extended cooling capacity ensures maximum productivity. Three-year cooler warranty.

Arc timer/cycle counter records actual welding time and number of arc starts. Great for estimating job costs.

Welding aluminum? Oxides that form on aluminum melt at temperatures over 3,700 degrees Fahrenheit. The aluminum material that is located under this layer of oxide melts at 1,200 degrees Fahrenheit. The AC squarewave welding current of the Syncrowave 300 automatically removes the layer of oxide which is necessary for producing high-quality welds.

Do you have power fluctuations? The Syncrowave 300 compensates for power fluctuation without changing your welding parameters. Line voltage compensation works on fluctuating power ±10 percent.

Easy-load cylinder rack minimizes cylinder lifting. Cylinder is not included.

Lift-Arc™ provides AC or DC arc initiation without the use of high frequency.

Auto-postflow adjusts the length of postflow time based on the amperage setting, shielding your tungsten and eliminating the need to set the postflow time.

AC Output: Balance Control

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
<th>Arc Effect</th>
<th>Weld Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AC Balance Control</strong></td>
<td>75% EN</td>
<td>Reduces balling action and helps maintain point</td>
<td>Bead</td>
</tr>
<tr>
<td>Controls arc cleaning action.</td>
<td></td>
<td></td>
<td>Minimum visible oxide removal (etching)</td>
</tr>
<tr>
<td>Adjusting the % EN of the AC wave controls the width of the etching zone surrounding the weld.</td>
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<tr>
<td>Note: Set the AC Balance control for adequate arc cleaning (etching) action at the sides and in front of the weld puddle. AC Balance should be fine-tuned according to the amount of etching desired.</td>
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<tr>
<td>Balance range: Ball, 60–80%</td>
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<tr>
<td>Pro-Set™ setting: 68%</td>
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<tr>
<td></td>
<td>60% EN</td>
<td>Increases balling action of the electrode</td>
<td>Bead</td>
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<tr>
<td></td>
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<td>Visible oxide removal (etching)</td>
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## Specifications (Subject to change without notice.)

### Welding Process

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<tbody>
<tr>
<td>TIG* (GTAW)</td>
<td>1-phase</td>
<td>5–300 A</td>
<td>300 A at 22 V, 30% duty cycle</td>
<td>60 VDC (13 VDC**)</td>
<td>Power Source H: 29.4 in. (746 mm) W: 15 in. (381 mm) D: 24.6 in. (625 mm)</td>
<td>Power Source 101 lb. (45.8 kg)</td>
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<td></td>
<td>3-phase</td>
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<td></td>
<td>With Cooler and Running Gear H: 43.9 in. (1114 mm) W: 20.5 in. (521 mm) D: 36.3 in. (921 mm)</td>
<td>With Cooler and Running Gear 176.4 lb. (80 kg)</td>
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<tr>
<td></td>
<td>1-phase</td>
<td>5–300 A</td>
<td>210 A at 18.4 V, 60% duty cycle</td>
<td>60 VDC (13 VDC**)</td>
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<tr>
<td></td>
<td>3-phase</td>
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<tr>
<td></td>
<td>1-phase</td>
<td>5–300 A</td>
<td>175 A at 17 V, 100% duty cycle</td>
<td>60 VDC (13 VDC**)</td>
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<tr>
<td>Stick (SMAW)</td>
<td>1-phase</td>
<td>5–230 A</td>
<td>230 A at 28.4 V, 30% duty cycle</td>
<td>60 VDC (13 VDC**)</td>
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<tr>
<td></td>
<td>3-phase</td>
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<tr>
<td></td>
<td>1-phase</td>
<td>5–230 A</td>
<td>160 A at 26.4 V, 60% duty cycle</td>
<td>60 VDC (13 VDC**)</td>
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<tr>
<td></td>
<td>3-phase</td>
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<tr>
<td></td>
<td>1-phase</td>
<td>5–230 A</td>
<td>125 A at 25 V, 100% duty cycle</td>
<td>60 VDC (13 VDC**)</td>
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<tr>
<td></td>
<td>3-phase</td>
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</tbody>
</table>

### Welding Amperage Range

- TIG: 5–300 A
- Stick: 5–230 A

### Duty Cycle Chart

- **TIG**
- **Stick**

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*Includes cooler power draw. **Indicates sense-voltage for Lift-Arc™ TIG and low OCV stick.

Certified by Canadian Standards Association to both the Canadian and U.S. Standards.
Control Panel

1. **Ammeter**
   Displays actual amperage while welding and preset amperage while idle. It is also used to display parameter selection options while in the menu.

2. **Voltmeter**
   Displays actual rectified average voltage when voltage is present at the weld output terminals. It is also used to display parameter descriptions while in the menu.

3. **Main Power Switch**
   Use switch to turn machine on or off.

4. **Output ON Indicator**
   Blue indicator illuminates when output is on.

5. **Process Selector**
   - **AC TIG** — Used for welding aluminum.
   - **DC TIG (DCEN)** — Used for welding mild and stainless steel.
   - **DC TIG Pulse (DCEN)** — Used for welding mild and stainless steel.
   - **DC Stick (DCEP)** — Used for welding steels.

6. **Memory Card Port and Indicator**
   This port is used to add features to the machine and update software to the boards within the machine. Indicator is lit while card is being accessed.

7. **Amperage Adjustment Control**
   Use control to change preset amperage value. If a remote control is used, preset amperage value is the maximum amperage output available. This control also functions as a parameter change control while in the menu mode.

8. **Menu Button**
   Press button to scroll through available parameters for the selected process. Hold button to enter setup mode.

9. **Pro-Set™ Button**
   Press button to lock in all parameters to factory settings while LED is lit. Press and hold for five seconds to reset all parameters to factory settings. Meter display counts down.
Syncrowave® 300 Models/Packages

Syncrowave 300 machine only

907782  (208/240/480 V)
Input power plug NOT included.

Syncrowave 300 Complete packages

951829  (208/240/480 V)  with wired foot control
951830  (208/240/480 V)  with wireless foot control

Completely assembled. Includes Syncrowave, Coolmate™ 3S cooler, running gear, RFCS-14 HD remote foot control OR wireless remote foot control, four gallons of TIG coolant, and a water-cooled torch kit consisting of Weldcraft™ W-280 TIG torch, torch consumables kit, cable cover, flowmeter regulator, gas hose, torch connector, and work clamp with cable and Dinse-style connector.
Input power plug NOT included.
**Genuine Miller® Accessories**

### TIG Torch Kits and Connectors

**W-280 Water-Cooled Torch Kit 300990**
Kit comes with Weldcraft™ W-280 (WP-280) 25-foot (7.6 m) TIG torch with Dinse-style connector, torch cable cover, work clamp with 15-foot (4.6 m) cable and Dinse-style connector, flowmeter regulator with gas hose and AK4GL gas lens torch accessory kit.

**Water-Cooled TIG Torch Connector 195377**
50 mm Dinse-style with water return line. For use with all Weldcraft™ water-cooled torches.

**Air-Cooled TIG Torch Connector 195379**
Used to adapt a Weldcraft™ A-200 (WP-26) torch to a Dinse-style connector.

### Remote Controls and Switches

**Wireless Remote Foot Control 300429**
For remote current and contactor control. Receiver plugs directly into the 14-pin receptacle of Miller machine. 90-foot (27.4 m) operating range.

**RFCS-14 HD Foot Control 194744**
Maximum flexibility is accomplished with a reconfigurable cord that can exit the front, back or either side of the pedal. Foot pedal provides remote current and contactor control. Includes 20-foot (6 m) cord and 14-pin plug.

**RHC-14 Hand Control 242211020**
Miniature hand control for remote current and contactor control. Dimensions: 4 x 4 x 3.25 inches (102 x 102 x 83 mm). Includes 20-foot (6 m) cord and 14-pin plug.

**RCCS-14 Remote Contactor and Current Control 043688**
North/south rotary-motion fingertip control attaches to TIG torch using two hook-and-loop fasteners. Includes 26.5-foot (8 m) cord and 14-pin plug.

**RCC-14 Remote Contactor and Current Control 151086**
East/west rotary-motion fingertip control attaches to TIG torch using two hook-and-loop fasteners. Includes 26.5-foot (8 m) cord and 14-pin plug.

**RMLS-14 Switch 129337**
Momentary- and maintained-contact rocker switch for contactor control. Push forward for maintained contact and backward for momentary contact. Includes 26.5-foot (8 m) cord and 14-pin plug.

**RMS-14 On/Off Control 187208**
Momentary-contact switch for contactor control. Rubber-covered pushbutton dome switch ideal for repetitive on-off applications. Includes 26.5-foot (8 m) cord and 14-pin plug.

**Extension Cables for 14-Pin Remote Controls**
- 242208025 25 ft. (7.6 m)
- 242208050 50 ft. (15.2 m)
- 242208080 80 ft. (24.4 m)
Coolant

Low-Conductivity Coolant  043810
Sold in cases of four one-gallon recyclable plastic bottles. Miller coolants contain a base of ethylene glycol and deionized water to protect against freezing to -37 degrees Fahrenheit (-38˚C) or boiling to 227 degrees Fahrenheit (108˚C). Also contains a compound that resists algae growth.

TIG Welding Gloves

Performance TIG Gloves
263346 Small
263347 Medium
263348 Large
263349 X-Large
Completely unlined, goat grain leather with triple-padded palm.

Educational Materials

Gas Tungsten Arc Welding (TIG) Publication 250833

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Tungsten

<table>
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<tr>
<th>Tungsten</th>
<th>Amp Range</th>
<th>2% Ceriated (AC/DC)</th>
<th>2% Lanthanated (AC/DC)</th>
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<tr>
<td>1/16 in. (1.6 mm)</td>
<td>70 – 150 A</td>
<td>WC116X7</td>
<td>WL2116X7</td>
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<tr>
<td>3/32 in. (2.4 mm)</td>
<td>140 – 250 A</td>
<td>WC332X7</td>
<td>WL2332X7</td>
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<td>1/8 in. (3.2 mm)</td>
<td>225 – 400 A</td>
<td>WC018X7</td>
<td>WL2018X7</td>
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<tr>
<td>5/32 in. (4.0 mm)</td>
<td>300 – 500 A</td>
<td>WC532X7</td>
<td>WL2532X7</td>
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### Equipment and Options

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<tr>
<td>Syncrowave® 300</td>
<td>907782</td>
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<tr>
<td>Syncrowave® 300 Complete with Wired Foot Control</td>
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<td>Syncrowave® 300 Complete with Wireless Foot Control</td>
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<td>TIG Torch Kits and Connectors</td>
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<td>W-280 Water-Cooled Torch Kit</td>
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<td>TIG Coolant (Must be ordered in quantities of four)</td>
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<td>TIG Welding Gloves</td>
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**Ordering Information**

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**Miller**

*The Power of Blue*