

# Maxstar® 400

TIG/Stick Welding Power Source  

## Quick Specs



### Industrial Applications

Precision fabrication  
 Tube mills  
 Pipe and tube fabrication  
 Tool and die  
 Exotic material fabrication  
 Pressure vessel fabrication

### Processes

TIG (GTAW)  
 Pulsed TIG (GTAW-P)  
 Stick (SMAW)  
 Air carbon arc (CAC-A)  
 1/4 in. maximum

**Input Power** 208–600 V, 3-phase or 1-phase power

**Amperage Range** 3–400 A

**Rated Output** 300 A at 32 V, 60% duty cycle

**Net Weight** 126 lb. (57 kg)

## Reimagined for Your Pursuit of Perfection.

Unlock your full potential with the new Maxstar 400 advanced DC TIG welder. Now equipped with an intuitive LCD interface that puts precision welding capabilities at your fingertips. Demand more from your machine and achieve results that you never thought were possible.



**Easy-to-understand interface with 7-inch LCD display.**

- Ensures proper machine setup and parameter selection
- Informative on-screen explanations and dynamic images enhance the parameter selection process

## QUIETPULSE™

Activate QuietPulse by selecting sine or triangular waveshape to reduce audible noise.

**Blue Lightning™** provides more consistent high-frequency (HF) arc starts and greater reliability compared to traditional arc starters.

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

## AUTO-LINE™ TECHNOLOGY

Allows for any input voltage hookup (208–600 V) with no manual linking, providing convenience in any job setting. Ideal solution for dirty or unreliable power.



Maxstar 400 machine only



Maxstar 400 Wireless Complete

**Program memory** allows easy naming, saving and recalling of favorite weld settings.

- Deliver more productivity by eliminating the need to manually set the parameters
- Deliver consistent quality by welders of all skills

**Pro-Set™** eliminates the guesswork when setting weld parameters.

**Locks and limits.** Provides control of weld parameter ranges minimizing deviation from the welding procedure specification (WPS).

**USB.** Front panel port provides the ability to easily update software, back-up settings and transfer saved weld programs from one unit to the next.

Visit [MillerWelds.com/TIGSoftware](http://MillerWelds.com/TIGSoftware) for the latest software updates and expansions.

**Cooler Power Supply (CPS)** is an integrated 120-volt dedicated-use receptacle for the Coolmate™ 3.5.

**Cooler-On-Demand™** feature operates the auxiliary cooling system only when needed, reducing noise, energy use, and airborne contaminants pulled through the cooler.



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



**Miller Electric Mfg. LLC**  
 An ITW Welding Company  
 1635 West Spencer Street  
 P.O. Box 1079  
 Appleton, WI 54912-1079 USA

**Equipment Sales US and Canada**  
 Phone: 866-931-9730  
 FAX: 800-637-2315  
 International Phone: 920-735-4554  
 International FAX: 920-735-4125

**MillerWelds.com**  
    



# Weld Process Features


## DC TIG


**Exceptionally smooth** and precise arc for welding exotic materials.

**Pulse.** Pulsing can increase puddle agitation, arc stability and travel speeds while reducing heat input and distortion. These models provide extended ranges.

### Pulse Waveforms

 **Square** provides a fast freezing puddle for ultimate arc control.

 **Sine** produces a reduced audible sound and provides a more fluid puddle that is good for overlaying applications.

 **Triangular** provides a quick-forming puddle while further reducing heat for thin materials.

**QuietPulse™** Activate QuietPulse by selecting sine or triangular waveshape to reduce audible noise.

## DC Stick

**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.

**Stick-Stuck** detects if the electrode is stuck to the part and turns the welding output off to safely and easily remove the electrode. Menu selectable.

# Specifications (Subject to change without notice.)



Input Power	Welding Amperage Range	Rated Output	Amps Input at Rated Load Output, 50/60 Hz							Max. Open-Circuit Voltage	Dimensions	Net Weight	
			208 V	230 V	400 V	460 V	600 V	KVA	KW				
3-phase	3–400 A	250 A at 30 V, 100% duty cycle	27	24	14	12	9	9.4	9.1	75 VDC (10–15 VDC*)	H: 24.125 in. (613 mm) W: 13.875 in. (352 mm) D: 24.313 in. (618 mm)  with TIGRunner® H: 43.125 in. (1,095 mm) W: 23.125 in. (587 mm) D: 41.625 in. (1,057 mm)	126 lb. (57 kg)	
		300 A at 32 V, 60% duty cycle	33	30	17	15	11	12	11.6				
1-phase	3–400 A	200 A at 28 V, 100% duty cycle	36	33	18	15	11	7.4	6.9				with TIGRunner® 246 lb. (112 kg)
		250 A at 30 V, 60% duty cycle	48	43	24	20	15	10	9.2				

 Certified by Canadian Standards Association to both the Canadian and U.S. Standards.  All CE models conform to the applicable parts of the IEC 60974 series of standards.

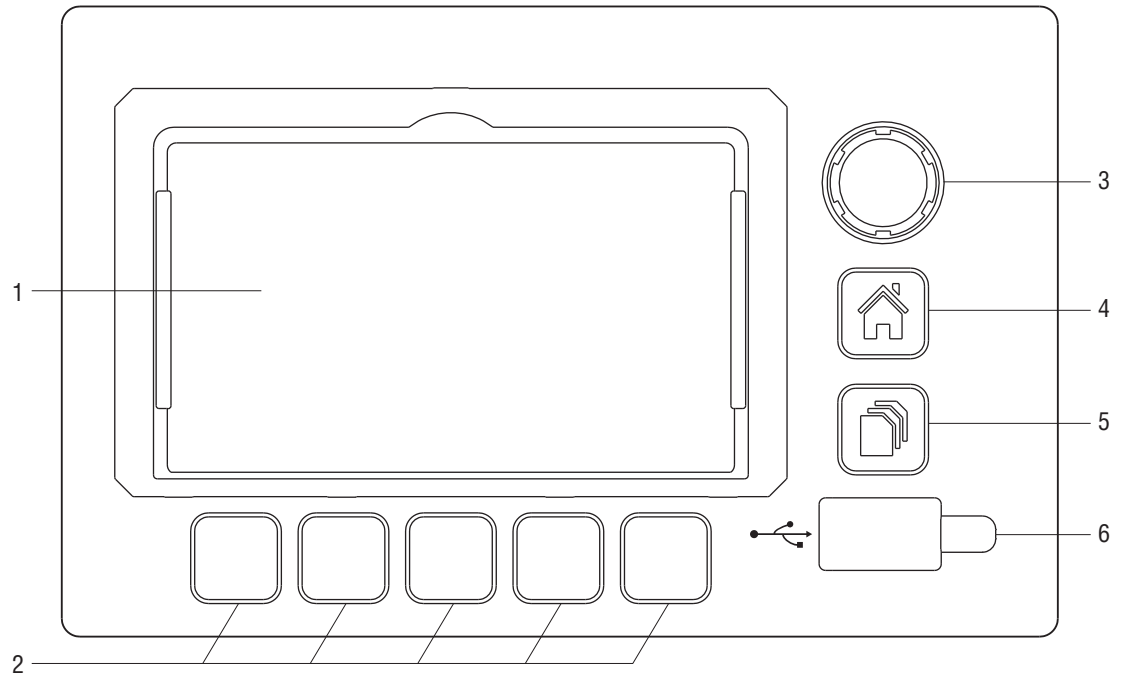
\*Sense voltage for low OCV stick and Lift-Arc™ TIG.

# Performance Data

Input Power	TIG (GTAW) Duty Cycle	Stick (SMAW) Duty Cycle	DC TIG Material Thickness Range	Stick Electrode Maximum Diameter	Carbon Arc Gouging (CAC-A) Maximum	Generator Requirement
3-phase	400 A, 20% 300 A, 60% 250 A, 100%	400 A, 20% 300 A, 60% 250 A, 100%	.012–5/8 in. (0.3–15.9 mm)	6010: 1/4 in. (6.4 mm) 7018: 1/4 in. (6.4 mm) 7024: 1/4 in. (6.4 mm)	1/4 in. (6.4 mm)	20 kVA
1-phase	300 A, 20% 250 A, 60% 200 A, 100%	300 A, 20% 250 A, 60% 200 A, 100%				

# Maxstar® 400 Control Panel

1. Color LCD Display
2. Soft Keys  
(Multiple functions depending on screen displayed.)
3. Control Knob  
(Adjusts amperage or parameter values depending on mode.)
4. Home Button
5. Program Button
6. USB Port



## Amperage

TIG DC	3–400 A**
Stick	5–400 A

## Process

DC TIG HF, DC TIG Lift-Arc™, DC Stick, Carbon Arc Gouge

## Tungsten (inch)

.020, .040, 1/16, 3/32, 1/8, 5/32, 3/16 in., General (.05, 1.0, 1.6, 2.4, 3.2, 4.0, 4.8 mm)

## Trigger

Remote Standard: Foot, Finger, Pushbutton  
Sequencer: Pushbutton Hold (2T), 3T 4T, 4TE, 4TL, 4TM

## Pulse

Pulses per Second*	DC: 0.1–5,000 pps
Peak Time*	5–95%
Background Amps*	5–95%
DC Pulse Waveshape:	Square, Sine, Triangular

## Sequencer Control

Initial Amps DC	3–400 A**
Initial Time	0.0–25.0 seconds
Initial Slope	0.0–50.0 seconds
Weld Time	0.0–999 seconds
Final Slope	0.0–50.0 seconds
Final Amps DC	3–400 A**
Final Time	0.0–25.0 seconds

## Preflow

0.0–25.0 seconds

## Postflow

Auto/Off–50 seconds

## DIG\*

Off–100%

## Hot Start™

On, Off

## Stick-Stuck

On, Off

## OCV

Normal, Low

## Programs

1–99 (user defined program names)

## Locks and Limits

Individual Parameters

## Languages

English, Spanish, French, German, Italian, Dutch, Swedish, Polish

\*Pro-Set parameter selectable. \*\*Amperage range is tungsten size dependent.

# Maxstar® 400 Models/Packages

## Machines and Preconfigured Water-Cooled Packages

Order machine only or use a single stock number to order a complete preconfigured system.



907873 model shown.



907873001 package shown.



951000098 package shown.

Machine Only		TIGRunner® Package (Machine/Cooler/Cart)		Complete Package (Machine/Cooler/Cart/Torch Kit/Remote)	
<b>Maxstar 400</b>	<b>907873</b>	<b>Maxstar 400</b>	<b>907873001</b>	<b>Maxstar 400 with Wireless Foot Control</b>	<b>951000098</b>
<b>Maxstar 400, CE</b>	<b>907873002</b>	<b>Maxstar 400, CE</b>	<b>907873003</b>	Complete package includes TIGRunner at left, plus:	
Maxstar 400 comes with:		Maxstar 400 TIGRunner comes with:		<ul style="list-style-type: none"> <li>• Coolant (4 one-gallon bottles)</li> <li>• W-375 torch kit (see page 5 for contents)</li> <li>• Wireless foot control</li> </ul>	
<ul style="list-style-type: none"> <li>• 8 ft. power cord (no plug)</li> <li>• Two 50 mm Dinse-style connectors</li> </ul>		<ul style="list-style-type: none"> <li>• 8 ft. power cord (no plug)</li> <li>• Coolmate™ 3.5 (quick connect model on CE TIGRunner)</li> <li>• Runner™ cart</li> </ul>			

## Build a Water-Cooled Package

Select desired stock number for each step.



907873001 Maxstar 400 TIGRunner® shown with four bottles of 043810 Low-Conductivity Coolant.



301580 remote shown.



301268 kit shown.

Step 1 • Select Maxstar TIGRunner® and Coolant		Step 2 • Select Remote Control		Step 3 • Select Torch Kit	
<b>Maxstar 400 TIGRunner</b>	<b>907873001</b>	<b>Wireless Foot</b>	<b>301580</b>	<b>W-250 Kit</b>	<b>300185</b>
<b>Maxstar 400 TIGRunner, CE</b>	<b>907873003</b>	<b>RFCS-14 HD Foot</b>	<b>301589</b>	<b>W-280 Kit</b>	<b>300990</b>
_____ & _____		<b>RCC-14 E/W Fingertip</b>	<b>151086</b>	<b>W-375 Kit</b>	<b>301268</b>
<b>Low-Conductivity Coolant</b>	<b>043810</b>	<b>RCCS-14 N/S Fingertip</b>	<b>043688</b>	<b>(recommended for Maxstar 400)</b>	
<b>(must be ordered in quantities of four)</b>		<b>RMS-14 Pushbutton</b>	<b>187208</b>	<b>W-400 (WP-18SC) Kit</b>	<b>300186</b>
		<b>RMLS-14 Momentary/Maintained</b>	<b>129337</b>	See page 5 for kit contents.	
		<b>RHC-14 Hand</b>	<b>242211020</b>		
		<b>Wireless Hand</b>	<b>301582</b>		
		See page 6 for remote descriptions.			

## Water-Cooled Torch Kits



### W-280 Torch Kit 300990

- Weldcraft™ W-280 25-foot (7.6 m) TIG torch with Dinse-style connector
- Torch cable cover
- Work clamp with 15-foot (4.6 m) 1/0 cable and Dinse-style connector
- Flowmeter regulator
- Gas hose (regulator to machine)
- AK4GL torch accessory kit includes short back cap, nozzles, gas lenses, collets and 2% ceriated tungsten electrodes (1/16, 3/32 and 1/8 inch)



### W-375 Torch Kit 301268

(Standard torch kit included in Maxstar® 400 Complete package)

- Weldcraft™ W-375 25-foot (7.6 m) TIG torch with Dinse-style connector
- Torch cable cover
- Work clamp with 15-foot (4.6 m) 1/0 cable and Dinse-style connector
- Flowmeter regulator
- Gas hose (regulator to machine)
- AK4GL torch accessory kit includes short back cap, nozzles, gas lenses, collets and 2% ceriated tungsten electrodes (1/16, 3/32 and 1/8 inch)

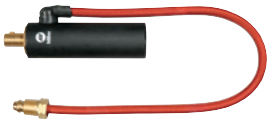


### W-400 (WP-18SC) Torch Kit 300186

- Weldcraft™ W-400 (WP-18SC) 25-foot (7.6 m) TIG torch with thread-lock connector
- Torch cable cover
- Work clamp with 12-foot (3.7 m) 4/0 cable with thread-lock connector
- Flowmeter regulator
- Gas hose (regulator to machine)
- AK18C torch accessory kit includes short back cap, nozzles, collets, collet bodies and 2% ceriated tungsten electrodes (3/32, 1/8 and 5/32 inch)



## Genuine Miller® Accessories



**Water-Cooled TIG Torch Connector 195377**  
For Dynasty® and Maxstar® 400.  
50 mm Dinse-style with water return line. For use with all Weldcraft™ water-cooled torches.



**Weldcraft™ Gas Hose Quick Connect QRG**  
Sold individually. Allows for quick connection and removal of torch shielding gas hoses.



**Weldcraft™ Water Hose Quick Connect QRW**  
Sold individually. Allows for quick connection and removal of torch coolant hoses.



**Runner™ Cart 300244**  
Designed to accommodate Dynasty 400/800 or Maxstar 400 power sources and a Coolmate™ 3.5 Cooler. Cart features single cylinder rack, foot pedal holder, three cable/torch holders, and two TIG electrode filler holders.



**Coolmate™ 3.5**  
**301788** 120 V, 50/60 Hz, **CE**  
**301789** 120 V, 50/60 Hz, **CE** with quick connect  
Industrial 3.5-gallon cooler for use with water-cooled torches rated up to 600 amps. Designed to integrate with the Dynasty 400/800 and Maxstar 400 power sources.



**Low-Conductivity TIG Coolant 043810**  
Must be ordered in quantities of four. One-gallon recyclable plastic bottle. Miller coolants contains a base of ethylene glycol and deionized water to protect against freezing to -37° Fahrenheit (-38°C) or boiling to 227° Fahrenheit (108°C).

**Contractor Kit 301549**  
All-in-one TIG/stick welding kit comes with a Weldcraft™ A-200 TIG torch, RFCS-14 HD foot control, 200-amp stick electrode holder and 300-amp work clamp with 15-foot (4.6 m) cables, flow gauge regulator with 12-foot (3.7 m) gas hose, gas hose coupler, AK2C torch accessory kit and TIG torch connector.

**Automation Interface Connection Kit 278161 Field**  
Provides control of power source welding parameters through a 28-pin receptacle. The 28-pin receptacle replaces the standard 14-pin receptacle and requires a PLC controller to operate the power source. Ideal for automated equipment integration.

**Weld Current Sensor 300179 Field**  
Detects when work clamp is not connected and prevents expensive damage to disconnect devices and input power cord and wiring.

### Remote Controls and Switches



**Wireless Remote Foot Control 301580**  
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 301589**  
Heavy-duty foot pedal current and contactor control provides increased stability and durability from larger base and heavier cord. Includes 20-foot (6 m) cord with 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. Great for production or contractors that need quick ramp-up. Includes 26.5-foot (8 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. Great for applications that require a finer amperage control. 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.



**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.



**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.



**Wireless Remote Hand Control 301582**  
For remote current and contactor control. Receiver plugs directly into the 14-pin receptacle of Miller machine. 300-foot (91.4 m) operating range.

**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)

## Genuine Miller® Accessories (Continued)



### Performance TIG Gloves

**263346** Small

**263347** Medium

**263348** Large

**263349** X-Large

Completely unlined, goat grain leather with triple-padded palm.



### Performance TIG/Multitask Gloves

**263352** Small

**263353** Medium

**263354** Large

**263355** X-Large

Goat grain leather with dual-padded palm and wool back.



### Cut-Resistant TIG Gloves

**290401** Small

**290402** Medium

**290403** Large

**290404** X-Large

**290411** 2X-Large

Protects against cuts and abrasions with an ANSI A5 cut rating, level 4 puncture and abrasion ratings, and level 3 heat rating.

## Tungsten

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

# Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
<b>Maxstar® 400</b>	<b>907873</b>	Auto-Line™ 208–600 V, 50/60 Hz. 8 ft. power cord		
	<b>907873002</b>	Auto-Line™ 380–600 V, 50/60 Hz, <b>CE</b> . 8 ft. power cord		
<b>Maxstar® 400 TIGRunner®</b>	<b>907873001</b>	Auto-Line™ 208–600 V, 50/60 Hz. 8 ft. power cord. <i>Requires coolant</i>		
	<b>907873003</b>	Auto-Line™ 380–600 V, 50/60 Hz, <b>CE</b> . 8 ft. power cord. <i>Requires coolant</i>		
<b>Maxstar® 400 Complete w/Wireless Foot</b>	<b>951000098</b>	Auto-Line™ 208–600 V, 50/60 Hz. 8 ft. power cord		
<b>TIG Torch Kits and Connectors</b>				
Water-Cooled Torch Kits (see page 5 for contents)	<b>300990</b>	W-280		
	<b>301268</b>	W-375 (standard torch kit included in Maxstar 400 Complete package)		
	<b>300186</b>	W-400 (WP-18SC)		
Water-Cooled TIG Torch Connector	<b>195377</b>	Connects Weldcraft™ water-cooled torches to Dinse-style connector		
Weldcraft™ A-200 (WP-26) TIG Torch	<b>WP-26-25-R</b>	For Dynasty 400 only. 25 ft. (7.6 m) cable. Requires <b>195379</b> connector		
Weldcraft™ Quick Connects (sold individually)	<b>QRG</b>	For gas hoses		
	<b>QRW</b>	For water hoses		
Tungsten		See page 7		
<b>Accessories</b>				
Runner™ Cart	<b>300244</b>	See page 6		
Coolmate™ 3.5	<b>301788</b>	120 V, 50/60 Hz, <b>CE</b> . <i>Requires coolant</i>		
	<b>301789</b>	120 V, 50/60 Hz, <b>CE</b> with quick connect. <i>Requires coolant</i>		
Cooler Adapter	<b>301791</b>	Used to connect legacy Coolmate 3.5 to power source		
TIG Coolant (must be ordered in quantities of four)	<b>043810</b>	1-gallon plastic bottle. Protects against freezing to -37° Fahrenheit (-38°C) or boiling to 227° Fahrenheit (108°C)		
Contractor Kit	<b>301549</b>	See page 6 for contents		
Automation Interface Kit	<b>278161</b>	Field installation required. Provides 28-pin automation connections		
Weld Current Sensor	<b>300179</b>	Field installation required. Detects when work clamp is not connected		
Dinse-Style Connector 50 mm (1 male)	<b>042418</b>	Used to connect weld cable to Dinse terminal machine		
Dinse-Style Connector 50 mm (1 male, 1 female)	<b>042419</b>	Used to extend weld cables		
Dinse/Tweco® Adapter	<b>042465</b>	Male Dinse to female Tweco		
Dinse/Cam-Lok Adapter	<b>042466</b>	Male Dinse to female Cam-Lok		
<b>Remote Controls</b>				
Wireless Remote Foot Control	<b>301580</b>	Foot control with wireless 90 ft. (27.4 m) operating range		
RFCS-14 HD	<b>301589</b>	Heavy-duty foot control		
RCC-14	<b>151086</b>	East/west fingertip control		
RCCS-14	<b>043688</b>	North/south fingertip control		
RMS-14	<b>187208</b>	Momentary rubber dome switch		
RMLS-14	<b>129337</b>	Momentary/maintained rocker switch		
RHC-14	<b>242211020</b>	Hand control		
Wireless Remote Hand Control	<b>301582</b>	Hand control with wireless 300 ft. (91.4 m) operating range		
Extension Cables		See page 6		
<b>TIG Gloves</b>		See page 7		

Date:

Total Quoted Price:

Distributed by:

