Issued Dec. 2016 • Index No. DC/35.0

Maxstar® 280 Series

TIG/Stick Welding Power Source

Quick Specs

Industrial Applications
Precision fabrication
Petro chemical
Aerospace
Food/beverage industry
Dairy
Shipboard

Processes
DC TIG (GTAW)
Pulsed TIG (GTAW-P)
Stick (SMAW)
Air carbon arc (CAC-A)

Input Power 208–575 V, 3- or 1-phase power

Amperage Range 1–280 A (DC)

Rated Output 200 A at 28 V, 60% duty cycle

Net Weight 47 lb. (21.3 kg)

Update and expand. Front panel memory card data port provides the ability to easily update software and expand product features.
Visit MillerWelds.com/TIGSoftware for the latest software updates and expansions.

Pro-Set™ eliminates the guesswork when setting weld parameters. Use Pro-Set when you want the speed, convenience and confidence of preset controls. Simply select the feature and adjust until Pro-Set appears on the display.

Sleep timer conserves electricity. This programmable feature will power down the machine if it sits idle for a specific time.

AUTO-LINE™ Power Management Technology

Allows for any input voltage hookup (208–575 V) with no manual linking, providing convenience in any job setting. Ideal solution for dirty or unreliable power.

Cooler Power Supply (CPS). An integrated 120-volt dedicated-use receptacle to power the Coolmate™ 1.3. The power switch on the Maxstar also activates the receptacle to help prevent torch failure. Available on select models, see page 6.

Blue Lightning™ high-frequency (HF) arc starter for non-contact arc initiation. Provides more consistent arc starts and greater reliability compared to traditional HF arc starters.



Maxstar 280 — WIRELESS REMOTE COMPATIBLE — Maxstar 280 DX

Meter calibration allows digital meters to be calibrated for certification.

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

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

DC TIG Features

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

Exceptionally smooth and precise arc for welding exotic materials.

DC Stick Features

Dual schedule allows operators to switch welding parameters for specific electrodes without readjusting the machine, minimizing downtime and enhancing quality. Base model only (not DX).

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.

TRUE BLUE® 3YR. WARRANTY

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

Miller®

Miller Electric Mfg. Co.
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

ISO 9001 REGISTERED QUALITY SYSTEM

Specifications (Subject to change without notice.)

Welding Mode	Input Power	Welding Amperage Range	Rated Output	Amps Input at Rated Load Output, 50/60 Hz 208 V	230 V	400 V	460 V	575 V	KVA	KW	Max. Open-Circuit Voltage	Dimensions	Net Weight
TIG (GTAW)	3-phase	1–280 A	235 A at 19.4 V, 60% duty cycle	17	15	9	7	6	6.2	6.0	60 VDC (11 VDC**)	H: 13.6 in. (346 mm) W: 8.6 in. (219 mm) D: 22.5 in. (569 mm)	47 lb. (21.3 kg) 50 lb. (22.7 kg) with CPS
	1-phase	1–280 A	235 A at 19.4 V, 60% duty cycle	28	26	15	13	10	6.0	6.0			
Stick (SMAW)	3-phase	5–280 A	200 A at 28 V, 60% duty cycle	20	18	10	9	7	7.2	7.0			
	1-phase	5–280 A	180 A at 27.2 V, 60% duty cycle*	30	27	15	13	10	6.2	6.2			

** Refer to owner's manual for 208 V output ratings and duty cycle. ** Low OCV sense voltage for stick and Lift-Arc™ TIG.*

***IP23 rating** — This equipment is designed for outdoor use. It may be stored, but is not intended to be used outside during precipitation unless sheltered. Operating temperature range is 14 to 104°F (-10 to 40°C). Storage temperature range is -22 to 149°F (-30 to 65°C). Portions of the preceding text are contained in EN 60974-1: "Welding power sources for arc welding equipment."*

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.

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	280 A, 25% 235 A, 60% 200 A, 100%	280 A, 15% 200 A, 60% 160 A, 100%	0.004–3/8 in. (0.1–9.5 mm)	6010: 1/4 in. (6.4 mm) 7018: 7/32 in. (5.6 mm) 7024: 3/16 in. (4.8 mm)	3/16 in. (4.8 mm)	12.5 kW
1-phase*	280 A, 25% 235 A, 60% 200 A, 100%	280 A, 10% 180 A, 60% 160 A, 100%				

** Refer to owner's manual for 208 V output ratings and duty cycle.*

Coolmate™ 1.3 Cooler



- Maxstar® models with CPS turn Coolmate 1.3 on and off
- Power indicator light
- Fluid level sight window
- Rustproof polyethylene-molded coolant tank and filler spout
- 1/4 hp motor is thermally protected to guard against overheating
- Efficient fin and tube heat exchanger
- Factory-set pressure relief valve (55 psi) maintains consistent pressure during operation
- Filter and coolant filling spout are conveniently located
- Brass-body, positive displacement rotary vane pump provides consistent coolant flow and pressure rating with long pump-life expectancy

Input Power	Maximum Current Draw	Maximum Cooling Capacity	Rated Cooling Capacity	Tank Capacity	Dimensions	Net Weight
115 V, 60 Hz	4.7 A (60 Hz)	3,400 W (11,600 Btu/hr.) 3.8 qt./min. (3.6 L/min.)	1,330 W (4,540 Btu/hr.) 1.1 qt./min. (1 L/min.)	1.3 gal. (4.9 L)	H: 11.25 in. (286 mm) W: 10.375 in. (264 mm) D: 24 in. (610 mm)	43 lb. (20 kg)

Weldcraft™ W-280 (WP-280) TIG Torch



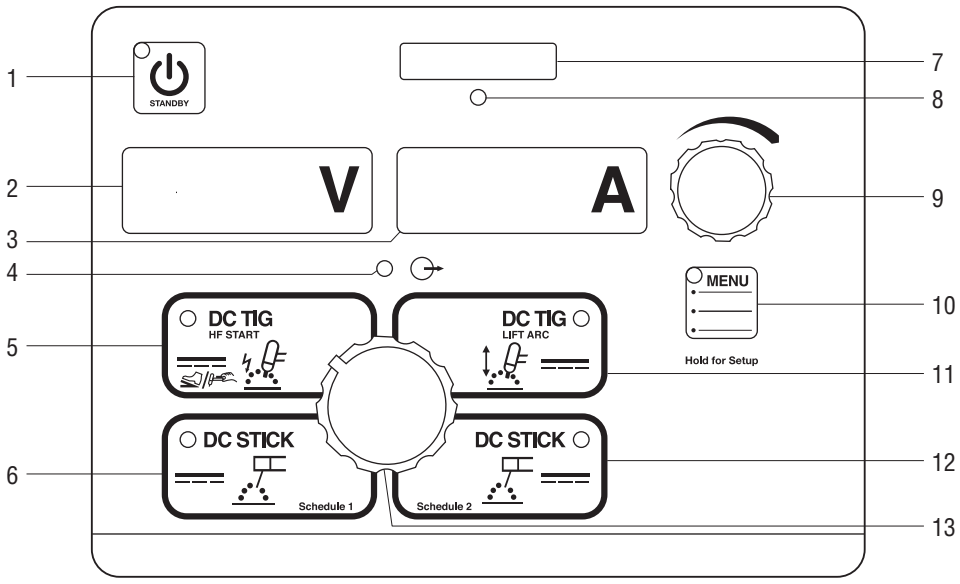
- Two-piece torch head and exclusive Super Cool™ Technology provides additional surface area to increase cooling efficiency and capacity
- Torch body includes an anti-rotation feature and multi-position locking to prevent handle movement during welding and improve operator control
- Secure mechanical fittings and connections minimize leakage

Cooling Method	AC Rating	DC Rating	Consumables	Electrode Range	Cable
Water-cooled	195 A, 100% duty cycle	280 A, 100% duty cycle	13N	.020–1/8 in. (0.5–3.2 mm)	Three-piece

TIG Upgrade Chart

Why Upgrade?	Syncrowave 250	UPGRADE	Maxstar 280	UPGRADE	Maxstar 280 DX	Maxstar 280 Benefits
Thickness Capacity	.012–3/8 in. steel	⇨	.004–3/8 in. steel			The Maxstar 280 has a lower bottom end and can weld thinner metals.
Duty Cycle	200 A, 60%	⇨	235 A, 60%			Weld longer at higher amperages. At 200 A the Maxstar 280 can weld continuously.
Arc Starting	HF and Lift-Arc™	⇨	Blue Lightning™ HF and Lift-Arc™			Blue Lightning arc starting is tailored for each tungsten size to produce perfect starts.
Precision Controls	Digital and dial %	⇨	All digital			Precise adjustments can be made with all-digital controls for greater quality control and repeatability.
Confusion on Where to Set the Controls?	Trial and error	⇨	Pro-Set™ eliminates the guesswork when setting weld parameters.			Select the feature and adjust until Pro-Set appears in display. Pro-Set is available for Pulse and DIG parameters.
Pulser	Optional field kit 0.25–10 PPS	⇨	Easy pulse with Pro-Set, .01–250 PPS	⇨	Full featured with Pro-Set, .01–500 PPS	Higher speed pulse provides better arc control and faster travel speeds.
Portability	378 lb. (172 kg) crane or cart	⇨	47 lb. (21.3 kg) carry or cart			Easier to move because of size and weight. Don't have to wait for a crane operator.
Power Flexibility	Manual link, 208/230/460 V 1-phase only	⇨	Auto-Line™, 208–575 V 1-phase or 3-phase			Auto-Line allows the unit to operate on any voltage. 1- or 3-phase. Even generators!
Line Draw at 200 Amps	77 A, 230 V, 1-phase	⇨	21 A, 230 V, 1-phase 13 A, 230 V, 3-phase			Line requirement to operate is much less. Smaller electrical service needed, smaller breaker/fuses and power cord.

Maxstar® 280 Control Panel



1. **Standby Switch**
2. **Voltmeter Display**
3. **Ammeter Display**
4. **Output Contactor "On" Indicator**
5. **DC TIG (HF Start) Process Menu Parameters**
   - Amperage 1–280 A**
   - Pulse* Off–250 PPS
   - Postflow Auto/Off–50 seconds
6. **DC Stick (Schedule 1) Process Menu Parameters**
   - Amperage 5–280 A
   - DIG* Off–100%
7. **Memory Card Port**
8. **Activity Indicator**
9. **Encoder Control**
10. **Menu Ranges**
11. **DC TIG (Lift-Arc) Process Menu Parameters**
    - Amperage 1–280 A**
    - Pulse* Off–250 PPS
    - Postflow Auto/Off–50 seconds
12. **DC Stick (Schedule 2) Process Menu Parameters**
    - Amperage 5–280 A
    - DIG* Off–100%
13. **Process Selector**

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

User Menu (Hold Menu button three seconds.)

DC TIG (HF Start)
1. Tungsten Size = .020–1/8 in. or .05–3.2 mm
2. Remote Trigger = STD/HOLD/OUTPUT ON

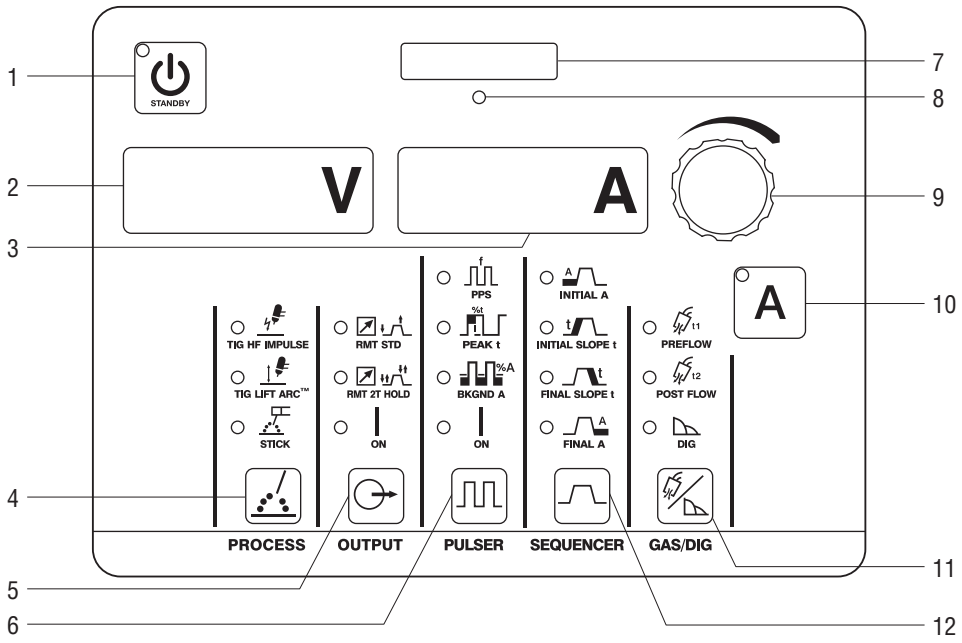
DC TIG (Lift-Arc)
1. Tungsten Size = .020–1/8 in. or .05–3.2 mm
2. Remote Trigger = STD/HOLD/OUTPUT ON

DC Stick (Schedule 1 and 2)
1. Hot Start = ON/OFF
2. Remote Trigger = OUTPUT ON/HOLD/STD

Tech Menu (Hold Menu button five seconds.)

1. Arc Time 0.0–9,999 hours
   0.0–59 minutes
   0–999,999 cycles
   Resettable
2. Error Log = Error event recorder
3. Sleep Timer = 1/5/10/15/30/45MIN/1HR
4. Stick Stuc = OFF/ON
5. OCV = LOW/NORM
6. Cooler Power = AUTO/OFF (only on Maxstar models with CPS)
7. Machine Reset
8. Software Number
9. Serial Number

Maxstar® 280 DX Control Panel



1. Standby Switch

2. Voltmeter Display

3. Ammeter Display

4. Process/ Arc Starting — TIG: HF impulse, Lift-Arc; Stick: Adaptive Hot Start

5. Output Control — Standard remote, 2T trigger hold, Output on

6. Pulser Control

Pulses per Second*	DC: 0.1–500 PPS
Peak Time*	5–95%
Background Amps*	5–95%

7. Memory Card Port

8. Activity Indicator

9. Encoder Control

10. Amperage Button

11. Gas/DIG

Preflow	0.0–25.0 seconds
Postflow	Auto/Off–50 seconds
DIG*	Off–100%

12. Sequencer Control

Initial Amps	1–280 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	1–200 A
Final Time	0.0–25.0 seconds

**Pro-Set parameter selectable.*

User Menu (Press Gas and Amperage buttons.)

1. Tungsten Size = .020–1/8 in./GEN or .05–3.2 mm
2. Remote Trigger = 3T/4T/4TL/4TE/4Tm
3. Stick Hot Start = ON/OFF

Tech Menu (Hold Gas and Amperage buttons five seconds.)

1. Arc Time — 0.0–9,999 hours; 0.0–59 minutes; 0–999,999 cycles; Resettable
2. Error Log = Error event recorder
3. Sleep Timer = 1/5/10/15/30/45MIN/1HR
4. Stick Stuc = OFF/ON
5. OCV = LOW/NORM
6. Weld Timers = OFF/ON
7. Cooler Power = AUTO/ON/OFF (only on Maxstar models with CPS)
8. Locks = OFF/1–4
9. Meter Display
10. External Pulse Control = OFF/ON
11. Machine Reset
12. Software Number
13. Serial Number

Maxstar® 280 Models/Packages

Build an Air-Cooled Package

Select desired stock number for each step.



907552
Maxstar shown.



301311
kit shown.

Step #1 • Select Maxstar			Step #2 • Select Contractor Kit	
Maxstar 280	**907552**	*Note: For models without the Cooler Power Supply (CPS), the Coolmate 1.3 must be powered through an external 120-volt facility power.*	**Foot Control Contractor Kit**	**301309**
Maxstar 280 with CPS	**907538**		**Fingertip Control Contractor Kit**	**301311**
Maxstar 280 DX	**907553**			
Maxstar 280 DX with CPS	**907539**			
Maxstar comes with adjustable shoulder strap, 8 ft. power cord (no plug) and two 50 mm Dinse-style connectors.			See page 7 for kit contents.	

Build a Water-Cooled Package

Select desired stock number for each step.



907538002
Maxstar 280
TIGRunner® shown
with four bottles
of 043810
Low-Conductivity
Coolant.





194744 remote shown.



300990 kit shown.

Step #1 • Select Maxstar TIGRunner® and Coolant		Step #2 • Select Remote Control		Step #3 • Select Torch Kit	
Maxstar 280 (with CPS) TIGRunner	**907538002**	**Wireless Foot**	**300429**	**W-250 Kit**	**300185**
Maxstar 280 DX (with CPS) TIGRunner	**907539001**	**RFCS-14 HD Foot**	**194744**	**W-280 Kit**	**300990**
&		**RCC-14 E/W Fingertip**	**151086**	**(recommended for 280 model)**	
Low-Conductivity Coolant (must be ordered in quantities of 4)	**043810**	**RCCS-14 N/S Fingertip**	**043688**	**W-375 Kit**	**301268**
		RMS-14 Pushbutton	**187208**		
		RMLS-14 Momentary/Maintained	**129337**		
		RHC-14 Hand	**242211020**		
		Wireless Hand	**300430**		
Maxstar TIGRunner comes with 8 ft. power cord (no plug), Coolmate™ 1.3 and Small Runner™ cart.		See page 7 for remote descriptions.		See page 7 for kit contents.	

Genuine Miller® Accessories

Protective Cover 301382
Fits Dynasty 210/280 and Maxstar 280.



Small Runner™ Cart 301318
Designed for Dynasty/Maxstar 210 and 280 with or without a Coolmate 1.3 cooler. Cart features single cylinder rack, foot pedal holder, two cable/torch holders, and two TIG filler holders.



Coolmate™ 1.3
300972 120 V
1.3-gallon cooler designed to cool torches up to 280 amps.



Performance TIG Gloves
263345 X-Small
263346 Small
263347 Medium
263348 Large
263349 X-Large
Completely unlined, goat grain leather with triple-padded palm.

Memory Card (Blank) 301080
A blank, commercially available memory card used for transferring software updates and expandable features from your computer to the machine.

Memory Card Expansion
301151 14-Pin Automation Expansion
Provides the ability to access common automation functions through the 14-pin connection.
301152 14-Pin Modbus® Expansion
Provides the ability to access basic and advanced functions through the 14-pin connection.

TIG Torches, Kits and Connectors

Contractor Kits
301309 150 A RFCS-14 HD Foot Pedal Kit
301311 150 A RCCS-14 Fingertip Kit
All-in-one TIG/stick welding kit comes with either a RFCS-14 HD foot control **OR** RCCS-14 fingertip control, Weldcraft™ A-150 TIG torch, 200-amp stick electrode holder with 15-foot (4.6 m) cable, 300-amp work clamp with 15-foot (4.6 m) cable, flow gauge regulator with 12-foot (3.7 m) gas hose, gas hose coupler, AK2C torch accessory kit and TIG torch connector.



Weldcraft™ A-200 (WP-26) TIG Torch
WP-26-12-R (12 ft.)
WP-26-25-R (25 ft.)
200-amp air-cooled torch. Torch body gas valve models also available.
*Note: A-200 (WP-26) torches require **195379** connector.*



Air-Cooled TIG Torch Connectors
195379 A-200 (WP-26)
195378* All others
50 mm Dinse-style for one-piece air-cooled torch.
A-80 (WP-24) torches require **24-5 connector.*

Water-Cooled Torch Kits
300185 W-250
300990 W-280 (recommended)
301268 W-375
Kit comes with Weldcraft™ 25-foot (7.6 m) TIG torch with Dinse-style connector, torch cable cover, work clamp with 15-foot (4.6 m) cable, flowmeter regulator with gas hose and torch accessory kit (1/16-, 3/32- and 1/8-inch 2% ceriated tungsten, nozzles, collets and collet bodies).



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

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.



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) control 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.



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 300430
For remote current and contactor control. Receiver plugs directly into the 14-pin receptacle of Miller machine. 300-foot (91.4 m) operating range.

Educational Materials

To order, please call Miller Literature at 866-931-9732 or visit MillerWelds.com/resources/tools.

Gas Tungsten Arc Welding (TIG) Publication 250833

Setup DVD 251116
Video topics include tungsten selection, setup menus, DC pulse, sequencer, balance and frequency settings.

Tungsten

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

Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
Maxstar® 280	**907552**	Auto-Line™ 208–575 V, 50/60 Hz, **CSA.** 8 ft. power cord		
Maxstar® 280 with CPS	**907538**	Auto-Line™ 208–575 V, 50/60 Hz, **CSA.** 8 ft. power cord		
Maxstar® 280 DX	**907553**	Auto-Line™ 208–575 V, 50/60 Hz, **CSA.** 8 ft. power cord		
Maxstar® 280 DX with CPS	**907539**	Auto-Line™ 208–575 V, 50/60 Hz, **CSA.** 8 ft. power cord		
Maxstar® 280 DX with CPS International	**907539002**	Auto-Line™ 208–575 V, 50/60 Hz, **CE.** 8 ft. power cord		
Water-Cooled Packages				
Maxstar® 280 (with CPS) TIGRunner®	**907538002**	Auto-Line™ 208–575 V, 50/60 Hz, **CSA.** 8 ft. power cord (Torch kit, accessories and coolant sold separately.)		
Maxstar® 280 DX (with CPS) TIGRunner®	**907539001**	Auto-Line™ 208–575 V, 50/60 Hz, **CSA.** 8 ft. power cord (Torch kit, accessories and coolant sold separately.)		
Accessories				
Protective Cover	**301382**	For Dynasty 210/280 and Maxstar 280		
Small Runner™ Cart	**301318**	For Dynasty/Maxstar 210 and 280 with or without Coolmate 1.3		
Coolmate™ 1.3	**300972**	120 V, 60 Hz, **CSA.** *Requires coolant*		
TIG Coolant (Must be ordered in quantities of 4)	**043810**	1-gallon plastic bottle. Protects against freezing to -37° Fahrenheit (-38° C) or boiling to 227° Fahrenheit (108° C)		
TIG Gloves		See page 7		
Memory Card (Blank)	**301080**			
Memory Card Expansion	**301151** **301152**	14-pin automation expansion 14-pin Modbus® expansion		
TIG Torches, Kits and Connectors				
Air-Cooled Contractor Kits	**301109** **301311**	Foot pedal Fingertip		
Weldcraft™ A-150 (WP-17) TIG Torch	**WP-17-12-R** **WP-17-25-R**	12 ft. (3.7 m) cable. Requires **195378** connector 25 ft. (7.6 m) cable. Requires **195378** connector		
Weldcraft™ A-200 (WP-26) TIG Torch	**WP-26-12-R** **WP-26-25-R**	12 ft. (3.7 m) cable. Requires **195379** connector 25 ft. (7.6 m) cable. Requires **195379** connector		
Air-Cooled TIG Torch Connectors	**195379** **195378**	Connects Weldcraft™ A-200 (WP-26) torch to Dinse-style connector Connects all air-cooled Weldcraft™ torches (except A-200) to Dinse-style connector. A-80 (WP-24) torches require **24-5** connector		
Water-Cooled Torch Kits	**300185** **300990** **301268**	W-250 W-280 (recommended for Maxstar 280) W-375		
Water-Cooled TIG Torch Connector	**195377**	Connects Weldcraft™ water-cooled torches to Dinse-style connector		
Tungsten		See page 7		
Remote Controls				
Wireless Remote Foot Control	**300429**	Foot control with wireless 90 ft. (27.4 m) operating range		
RFCS-14 HD	**194744**	Heavy-duty foot control		
RCC-14	**151086**	Side-to-side (east/west) fingertip control		
RCCS-14	**043688**	North/south fingertip control		
RMS-14	**187208**	Momentary rubber dome switch		
RMLS-14	**129337**	Momentary/maintained rocker switch		
RHC-14	**242211020**	Hand control		
Wireless Remote Hand Control	**300430**	Hand control with wireless 300 ft. (91.4 m) operating range		
Educational Materials				
Gas Tungsten Arc Welding (TIG) Publication	**250833**			
Setup DVD	**251116**			

Date: **Total Quoted Price:**

Distributed by:

Miller®

The Power of Blue®

© 2016 Miller Electric Mfg. Co.