Dynasty 400 and 800 TIG/Stick Welding Power Source





Quick Specs



Industrial Applications

Precision fabrication Heavy fabrication Pipe and tube fabrication Aerospace Aluminum ship repair

Anodized aluminum fabrication

Processes

TIG (GTAW) Pulsed TIG (GTAW-P) Stick (SMAW) Air carbon arc (CAC-A) **400:** 1/4 in. maximum

800: 3/8 in. maximum

Amperage Range 400: 3-400 A

Rated Output

800: 5-800 A

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

400: 300 A at 32 V, 60% duty cycle

800: 600 A at 44 V, 60% duty cycle

Net Weight 400: 134 lb. (61 kg)

800: 198 lb. (90 kg)

-∧UTO-LINE* 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.

Meter calibration allows digital meters to be calibrated for certification.

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

Wind Tunnel Technology™ protects internal electrical components from airborne contaminants, 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.

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

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.

Program memory features nine independent program memories that maintain/save your parameters.

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/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.

AC frequency control adds additional stability when stick welding in AC for smoother welds.

AC TIG Features

Independent amplitude/amperage control allows EP and EN amperages to be set independently to precisely control heat input to the work and electrode.

Balance control provides adjustable oxide removal which is essential for creating the highest quality aluminum welds. These models provide extended ranges.

Frequency controls the width of the arc cone and can improve directional control of the arc.

AC Waveforms

____ Advanced squarewave, fast freezing puddle, deep penetration and fast travel speeds.

Soft squarewave for a soft buttery arc with maximum puddle control and good wetting action.

Sine wave for customers that like a traditional arc. Quiet with good wetting.

____ Triangular wave reduces the heat input and is good on thin aluminum. Fast travel speeds.

DC TIG Features

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.



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



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Specifications (Subject to change without notice.)









Model	Input Power	Welding Amperage Range	Rated Output	Amps 208 V	Input at 230 V	Rated I	.oad Ou 460 V	tput, 50 575 V)/60 Hz KVA	KW	Max. Open-Circuit Voltage	Dimensions	Net Weight
Dynasty 400	3-phase	3-400 A	250 A at 30 V, 100% duty cycle	28	26	14	13	10	10.3	9.8	75 VDC (10-15 VDC*)	W: 13.75 in. (349 mm) D: 22 in. (559 mm) with TIGRunner® with H: 43.125 in. (1,095 mm) WIGHT TIGRU	134 lb. (61 kg)
			300 A at 32 V, 60% duty cycle	36	33	19	16	13	13.1	12.5			
	1-phase	3-400 A	200 A at 27.2 V, 100% duty cycle	39	35	19	17	13	8.2	7.5			251 lb.
			250 A at 29 V, 60% duty cycle	52	47	26	22	17	10.9	9.9			(114 kg)
Dynasty 800	3-phase	5-800 A	500 A at 40 V, 100% duty cycle	73	66	37	32	25	26	25	75 VDC (10-15 VDC*)	H: 34.5 in. (876 mm) W: 13.75 in. (349 mm)	198 lb. (90 kg)
			600 A at 44 V, 60% duty cycle	96	86	48	42	33	35	33		D: 22 in. (559 mm) with TIGRunner®	with
	1-phase	5-800 A	400 A at 34 V, 100% duty cycle	98	88	48	41	32	20	19		H: 53.125 in. (1,400 mm) W: 23.125 in. (587 mm)	TIGRunner® 313 lb.
			500 A at 40 V, 60% duty cycle	136	122	66	56	44	28	26		D: 43.75 in. (1,111 mm)	(142 kg)

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

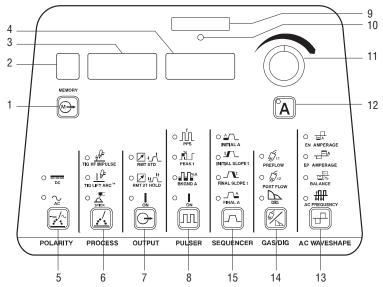
Performance Data

Model	Input Power	TIG (GTAW) Duty Cycle	Stick (SMAW) Duty Cycle	AC TIG Material Thickness Range	DC TIG Material Thickness Range	Stick Electrode Maximum Diameter	Carbon Arc Gouging (CAC-A) Maximum	Generator Requirement
Dynasty 400	3-phase	400 A, 20% 300 A, 60% 250 A, 100%	400 A, 20% 300 A, 60% 250 A, 100%	.015-5/8 in. (0.38-15.9 mm)	.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%					
Dynasty 800	3-phase	800 A, 20% 600 A, 60% 500 A, 100%	800 A, 20% 600 A, 60% 500 A, 100%	.020-1 in. (0.5-25.4 mm)	.020-1 in. (0.5-25.4 mm)	6010: 1/4 in. (6.4 mm) 7018: 1/4 in. (6.4 mm) 7024: 1/4 in. (6.4 mm)	3/8 in. (9.5 mm)	50 kVA
	1-phase	500 A, 60% 400 A, 100%	500 A, 60% 400 A, 100%					



^{*}Sense voltage for low OCV stick and Lift-Arc™ TIG.

Dynasty® 400 and 800 Control Panel



Control Panel Parameter Values

1. Memory Switch 36 Combinations

(9 AC TIG) (9 AC stick) (9 DC TIG) (9 DC stick)

2. Memory Display

3. Voltmeter Display

4. Ammeter Display

5. Polarity AC/DC

6. Process/ TIG: HF impulse, Lift-Arc Arc Starting STICK: Adaptive Hot Start

7. **Output Control** Standard remote,

2T trigger hold, Output on

8. Pulser Control

Pulses per Second* DC: 0.1-5,000 pps

AC: 0.1-500 pps

Peak Time* 5-95% Background Amps* 5-95%

User Menu (Press Gas and Amperage buttons.)

- 1. Tungsten Size 400 = .020 3/16 in./GEN or 0.5 4.8 mm 800 = .040 1/4 in./GEN or 1.0 6.4 mm
- 2. Remote Trigger = 3T/4T/4TL/4TE/4Tm
- 3. Independent Amplitude = SAME/INDP
- 4. Wave Form = SOFT/ADVS/SINE/TRI
- 5. Commutation Amperage = HIGH/LOW
- 6. Stick Hot Start = ON/OFF

- 9. Memory Card Port
- 10. Activity Indicator
- 11. Encoder Control
- 12. Amperage Button
- 13. AC Waveshape

EN Amperage 3-400 A/5-800 A
EP Amperage 3-400 A/5-800 A
Balance* 50-99% EN
Frequency* 20-400 Hz

14. Gas/DIG

Preflow 0.0-25.0 seconds Postflow Auto/Off-50 seconds

DIG* Off-100%

15. Sequencer Control

Initial Amps
Initial Time
Initial Slope
Weld Time
Final Slope
Final Amps
Final Time
Off-25.0 seconds
Off-999 seconds
Off-50.0 seconds
Off-50.0 seconds
Final Amps
3-400 A/5-800 A
Final Time
Off-25.0 seconds

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. Stick Stuc = OFF/ON
- 4. OCV = LOW/NORM
- 5. Weld Timers = OFF/ON
- 6. Cooler Power = AUTO/ON/OFF
- 7. Locks = OFF/1-4
- 8. Meter Display
- 9. External Pulse Control = OFF/ON
- 10. Machine Reset
- 11. Software Number
- 12. Serial Number
- 13. Slave (with Modbus® Address = 1-247
 automation expansion) Baudrate = 9600/19.2K
 Parity = EVEN/ODD/NONE



^{*}Pro-Set parameter selectable.

AC Waveshape Controls

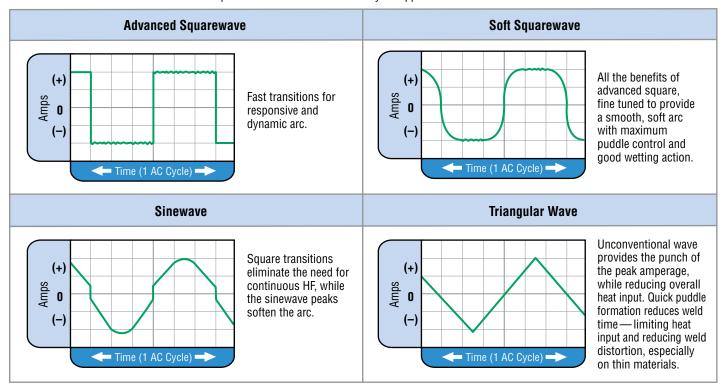
Feature	Setting	Arc Effect	Weld Effect
AC Balance Control Controls arc cleaning action. Adjusting the % EN of the AC wave controls the width of the etching zone surrounding the weld. Note: Set the AC Balance control for adequate arc cleaning (etching) action at the sides and in front of the weld puddle.	75% EN **EP **EN **EN	Reduces balling action and helps maintain point	Minimum visible oxide removal (etching)
AC Balance should be fine-tuned according to the amount of etching desired.	50% EN web web Time Time	Increases balling action of the electrode	Visible oxide removal (etching)
AC Frequency Control Controls the width of the arc cone. Increasing the AC Frequency provides a more focused arc and increased directional control. Note: Decreasing the AC Frequency softens the arc and broadens the weld	60 Hz	Wider profile ideal for buildup work	Bead Visible oxide removal (etching)
puddle for a wider weld.	120 Hz two wen wen Time +	Narrower profile for fillet welds and automated applications	Visible oxide removal (etching)
Independent AC Amperage Control Allows the EN and EP amperage values to be set independently. Adjusts the ratio of EN to EP amperage to precisely control heat input to the work and the electrode. EN amperage	100A EP 200A EN	More current in EN than EP: Faster travel speeds and deeper penetration	Minimum visible oxide removal (etching)
controls the amount of heat directed to the work, while EP amperage dramatically affects the arc cleaning action (along with the AC Balance control). Increased EN amperage also provides deeper penetration and allows for increased travel speeds.	200A EP 100A EN	More current in EP than EN: Shallow penetration, increased balling and etching	Visible oxide removal (etching)



AC Waveshape Controls (Continued)

AC Waveform Selection

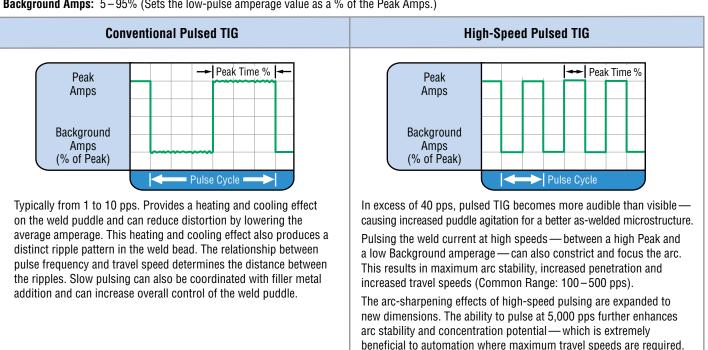
Select from four different AC waveforms to optimize the arc characteristic for your application. Choose from:



Pulsed TIG Controls

High-Speed Pulsed TIG Controls

- Pulses per second (pps) (Hz): DC = 0.1 5.000 pps / AC = 0.1 500 pps
- % **ON -** % **Peak Time:** 5-95% (Controls the amount of time during each pulse cycle at the PEAK amperage.)
- Background Amps: 5-95% (Sets the low-pulse amperage value as a % of the Peak Amps.)





Dynasty® 400 and 800 Models/Packages

Machines and Preconfigured Water-Cooled Packages

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







Machine Only	TIGRunner® Package (Machine/Cart/Cooler)	Complete Package (Machine/Cart/Cooler/Torch Kit/Remote)		
Dynasty 400 (CSA) 907717 Dynasty 400 (CE) 907717002	Dynasty 400 (CSA) 907717001	Dynasty 400 (CSA) w/Foot Control, W-375 951694 Dynasty 400 (CSA) w/Wireless Foot Control, W-375 951876		
Dynasty 800 (CSA) 907719 Dynasty 800 (CE) 907719002	Dynasty 800 (CSA) 907719001	Dynasty 800 (CSA) w/Foot Control 951696 Dynasty 800 (CSA) w/Wireless Foot Control 951875		
Comes with: • 8 ft. power cord (no plug) (400 model) • Quick-reference guide • Two 50 mm Dinse-style connectors (400 model) • Two thread-lock connectors (800 model) • One thread-lock water-cooled connector (800 model)	Comes with: • 8 ft. power cord (no plug) (400 model) • Quick-reference guide • Runner™ cart 300244 • Coolmate™ 3.5 300245 • Two thread-lock connectors (800 model) • One thread-lock water-cooled connector (800 model)	Comes with: • 8 ft. power cord (no plug) (400 model) • Quick-reference guide • Runner™ cart 300244 • Coolmate™ 3.5 300245 and 4 gallons of coolant 043810 • W-375 torch kit 301268 (400 model) or W-400 (WP-18SC) torch kit 300186 (800 model) • Remote control 194744 (foot) or Remote control 301580 (wireless foot)		

Build a Water-Cooled Package

Select desired stock number for each step.



907717001 Dynasty 400 TIGRunner® shown with four bottles of 043810 low-conductivity coolant.



301580 remote shown.



Step 1 • Select Dynasty TIGRunne	Step 2 • Select Remote (Step 3 • Select Torch Kit			
Dynasty 400 TIGRunner Dynasty 800 TIGRunner Low-Conductivity Coolant (must be ordered in quantities of four)	907717001 907719001 043810	Wireless Foot RFCS-14 HD Foot RCC-14 E/W Fingertip RCCS-14 N/S Fingertip RMS-14 Pushbutton RMLS-14 Momentary/Maintained RHC-14 Hand Wireless Hand	301580 194744 151086 043688 187208 129337 242211020 301582	W-250 Kit W-280 Kit W-375 Kit (recommended for 400 m W-400 (WP-18SC) Kit (recommended for 800 m	300186

Genuine Miller® Accessories

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

Recommended for Dynasty 400

- 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

Recommended for Dynasty 800

- 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 (Continued)



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.



Water-Cooled TIG Torch Connector 225028

For Dynasty and Maxstar 800. 50 mm thread-lock with water return line. For use with all Weldcraft™ water-cooled torches.



Runner™ Cart 300244

Designed to accommodate Dynasty or Maxstar 400 or 800 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 300245

Designed to integrate with the Dynasty and Maxstar 400 and 800

power sources. For use with water-cooled torches rated up to 600 amps. 3.5-gallon capacity.

Low-Conductivity TIG Coolant 043810

Sold in multiples of four in one-gallon recyclable plastic bottles. 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).

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.



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.



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.



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.



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)

TIG Welding Gloves



Performance TIG Gloves

263346 Small

263347 Medium

263348 Large

263349 X-Large

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

Memory Cards

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.

Memory Card (Blank) 301080

A blank, commercially available memory card used for transferring software updates and expandable features from your computer to the machine.

Free software updates and feature expansions can be downloaded at MillerWelds.com/tigsoftware.

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

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
Dynasty® 400	907717	Auto-Line™ 208-575 V, 50/60 Hz, CSA. 8 ft. power cord		
Dynasty® 400 International	907717002	Auto-Line™ 380-575 V, 50/60 Hz, CE. 8 ft. power cord		
Dynasty® 400 TIGRunner®	907717001	Auto-Line™ 208-575 V, 50/60 Hz, CSA. 8 ft. power cord. <i>Requires coolant</i>		
Dynasty® 400 Wireless Complete W-375	951876	Auto-Line™ 208-575 V, 50/60 Hz, CSA. 8 ft. power cord		
Dynasty® 400 Complete W-375	951694	Auto-Line™ 208-575 V, 50/60 Hz, CSA. 8 ft. power cord		
Dynasty® 800	907719	Auto-Line™ 208-575 V, 50/60 Hz, CSA		
Dynasty® 800 International	907719002	Auto-Line™ 380-575 V, 50/60 Hz, CE		
Dynasty® 800 TIGRunner®	907719001	Auto-Line™ 208-575 V, 50/60 Hz, CSA . Requires coolant		
Dynasty® 800 Complete with Wireless Remote Foot Control	951875	Auto-Line™ 208-575 V, 50/60 Hz, CSA		
Dynasty® 800 Complete with Foot Control	951696	Auto-Line™ 208-575 V, 50/60 Hz, CSA		
TIG Torches, Kits and Connectors				
Water-Cooled Torch Kits (see page 6 for contents)	300185 300990 301268 300186	W-250 (WP-20) W-280 (WP-280) W-375 (recommended for Dynasty 400) W-400 (WP-18SC) (recommended for Dynasty 800)		
Water-Cooled TIG Torch Connectors	195377 225028	Connects Weldcraft™ water-cooled torches to Dinse-style connector Connects Weldcraft™ water-cooled torches to Dynasty 800 (thread-lock connector included with 800 models)		
Weldcraft™ A-200 (WP-26) TIG Torch	WP-26-25-R	For Dynasty 400 only. 25 ft. (7.6 m) cable. Requires 195379 connector		
Tungsten		See page 7		
Remote Controls				
Wireless Remote Foot Control	301580	Foot control with wireless 90 ft. (27.4 m) operating range		
Wireless Remote Hand Control	301582	Hand control with wireless 300 ft. (91.4 m) operating rang		
RCCS-14	043688	North/south fingertip control		
RCC-14	151086	East/west fingertip control		
RFCS-14 HD	194744	Heavy-duty foot control		
RHC-14	242211020	Hand control		
RMLS-14	129337	Momentary/maintained rocker switch		
RMS-14	187208	Momentary rubber dome switch		
Extension Cables		See page 7		
Accessories			1	
Runner™ Cart	300244	See page 7	+	1
Coolmate™ 3.5	300245	120 V, 50/60 Hz, CE . Requires coolant		+
TIG Coolant (must be ordered in quantities of four)	043810	1-gallon plastic bottle. Protects against freezing to -37° Fahrenheit (-38°C) or boiling to 227° Fahrenheit (108°C)		
Automation Interface Kit	278161	Field installation required. Provides 28-pin automation connections	1	
Weld Current Sensor	300179	Field installation required. Detects when work clamp is not connected	1	
Dinse-Style Connector 50 mm (1 male)	042418	Used to connect weld cable to Dinse terminal machine	1	1
Thread-Lock Connectors (2 male)	225029	Used to connect weld cable to Dynasty 800 or Maxstar 800		
Dinse-Style Connector 50 mm (1 male, 1 female)	042419	Used to extend weld cables		
Dinse/Tweco® Adapter	042465	Male Dinse to female Tweco		
Dinse/Cam-Lok Adapter	042466	Male Dinse to female Cam-Lok		
TIG Welding Gloves		See page 7		
Memory Cards		See page 7		
Gas Tungsten Arc Welding (TIG) Publication	250833			

Date: Total Quoted Price:

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