

# 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:** 6 mm maximum  
**800:** 10 mm maximum

**Input Power** 380–460 V, 3-phase power

**Amperage Range** **400:** 3–400 A

**800:** 5–800 A

**Rated Output**

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

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

**Net Weight**

**400:** 61 kg (134 lb.)

**800:** 90 kg (198 lb.)



Allows for any input voltage hookup (380–460 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 through 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.



**Dynasty 400 machine only**

**Dynasty 800 machine only**


## 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.

## 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.

## 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 warranted for three years, parts and labour.



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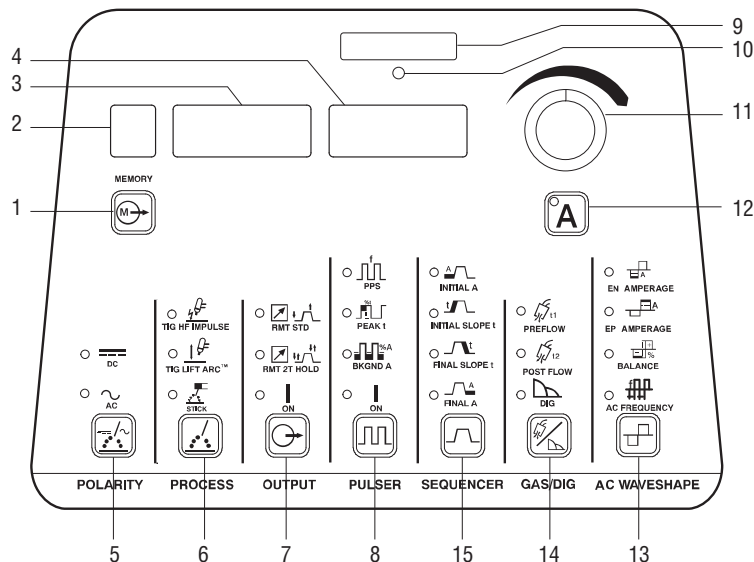
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# Dynasty® 400 and 800 Control Panel



## Control Panel Parameter Values

<b>1. Memory Switch</b>	36 Combinations (9 AC TIG) (9 AC stick) (9 DC TIG) (9 DC stick)	<b>9. Memory Card Port</b>	
<b>2. Memory Display</b>		<b>10. Activity Indicator</b>	
<b>3. Voltmeter Display</b>		<b>11. Encoder Control</b>	
<b>4. Ammeter Display</b>		<b>12. Amperage Button</b>	
<b>5. Polarity</b>	AC/DC	<b>13. AC Waveshape</b>	EN Amperage 3–400 A/5–800 A EP Amperage 3–400 A/5–800 A Balance* 50–99% EN Frequency* 20–400 Hz
<b>6. Process/ Arc Starting</b>	TIG: HF impulse, Lift-Arc STICK: Adaptive Hot Start	<b>14. Gas/DIG</b>	Preflow 0.0–25.0 seconds Postflow Auto/Off–50 seconds DIG* Off–100%
<b>7. Output Control</b>	Standard remote, 2T trigger hold, Output on	<b>15. Sequencer Control</b>	Initial Amps 3–400 A/5–800 A Initial Time Off–25.0 seconds Initial Slope Off–50.0 seconds Weld Time Off–999 seconds Final Slope Off–50.0 seconds Final Amps 3–400 A/5–800 A Final Time Off–25.0 seconds
<b>8. Pulser Control</b>			
Pulses per Second*	DC: 0.1–5,000 pps AC: 0.1–500 pps		
Peak Time*	5–95%		
Background Amps*	5–95%		

\*Pro-Set parameter selectable.

## User Menu (Press Gas and Amperage buttons.)

1. Tungsten Size 400 = 0.5–4.8 mm  
800 = 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

## 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® automation expansion) Address = 1–247  
Baudrate = 9600/19.2K  
Parity = EVEN/ODD/NONE

# Specifications (Subject to change without notice.)



Model	Welding Amperage Range	IP Rating	Rated Output	Amps Input at Rated Load Output, 50/60 Hz					Max. Open-Circuit Voltage	Dimensions	Net Weight
				380 V	400 V	460 V	KVA	KW			
Dynasty 400	3–400 A	IP23	250 A at 30 V, 100% duty cycle	15	14	13	10.3	9.8	75 VDC (10–15 VDC*)	H: 629 mm (24.75 in.) W: 349 mm (13.75 in.) D: 559 mm (22 in.)	61 kg (134 lb.)
			300 A at 32 V, 60% duty cycle	19	19	16	13.1	12.5			
			400 A at 36 V, 20% duty cycle	29	28	24	19.4	18.6			
Dynasty 800	5–800 A	IP23	500 A at 40 V, 100% duty cycle	39	37	32	26.3	25.2	75 VDC (10–15 VDC*)	H: 876 mm (34.5 in.) W: 349 mm (13.75 in.) D: 559 mm (22 in.)	90 kg (198 lb.)
			600 A at 44 V, 60% duty cycle	51	48	42	34.7	33.2			
			800 A at 44 V, 20% duty cycle	69	65	57	46.9	45.0			

CE All CE models conform to the applicable parts of the IEC 60974 series of standards.

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

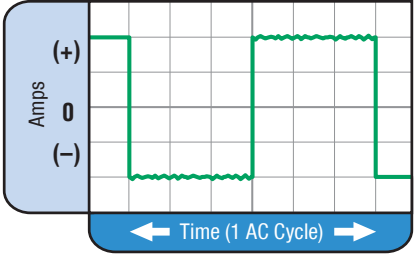
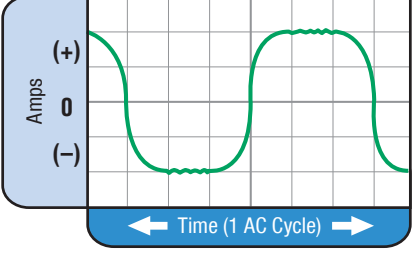
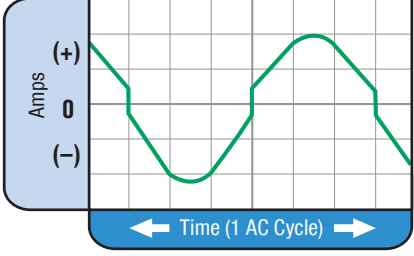
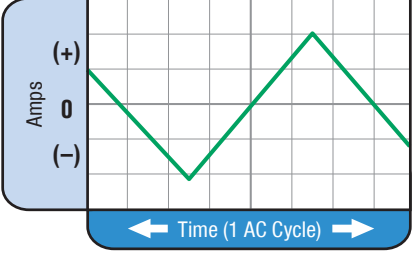
## AC Waveshape Controls

Feature	Setting	Arc Effect	Weld Effect
<b>AC Balance Control</b> Controls arc cleaning action. Adjusting the % EN of the AC wave controls the width of the etching zone surrounding the weld.  <i>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.</i>	<b>75% EN</b> 	Reduces balling action and helps maintain point 	Bead Minimum visible oxide removal (etching)
	<b>50% EN</b> 	Increases balling action of the electrode 	Bead Visible oxide removal (etching)
<b>AC Frequency Control</b> Controls the width of the arc cone. Increasing the AC Frequency provides a more focused arc and increased directional control.  <i>Note: Decreasing the AC Frequency softens the arc and broadens the weld puddle for a wider weld.</i>	<b>60 Hz</b> 	Wider profile ideal for buildup work 	Bead Visible oxide removal (etching)
	<b>120 Hz</b> 	Narrower profile for fillet welds and automated applications 	Bead Visible oxide removal (etching)
<b>Independent AC Amperage Control</b> 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 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.	<b>100A EP / 200A EN</b> 	More current in EN than EP: Faster travel speeds and deeper penetration 	Bead Minimum visible oxide removal (etching)
	<b>200A EP / 100A EN</b> 	More current in EP than EN: Shallow penetration, increased balling and etching 	Bead Visible oxide removal (etching)

## AC Waveshape Controls (Continued)

### AC Waveform Selection

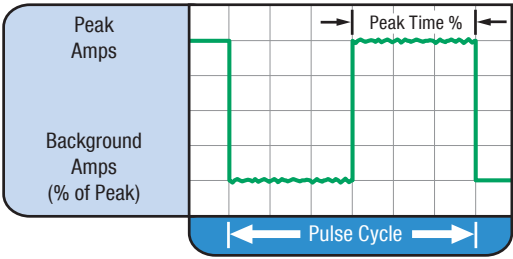
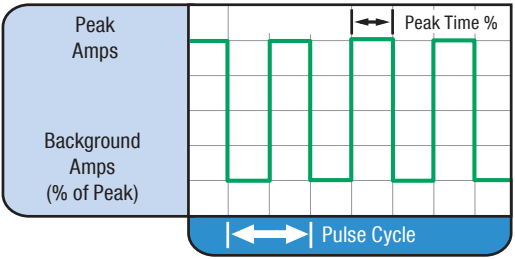
Select from four different AC waveforms to optimize the arc characteristic for your application. Choose from:

Advanced Squarewave	Soft Squarewave
 <p data-bbox="563 389 719 465">Fast transitions for responsive and dynamic arc.</p>	 <p data-bbox="1259 349 1437 528">All the benefits of advanced square, fine tuned to provide a smooth, soft arc with maximum puddle control and good wetting action.</p>
Sinewave	Triangular Wave
 <p data-bbox="563 703 742 831">Square transitions eliminate the need for continuous HF, while the sinewave peaks soften the arc.</p>	 <p data-bbox="1259 674 1461 931">Unconventional wave provides the punch of the peak amperage, while reducing overall heat input. Quick puddle formation reduces weld time — limiting heat input and reducing weld distortion, especially on thin materials.</p>

## Pulsed TIG Controls

### High-Speed Pulsed TIG Controls

- **PPS Pulses per second (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 – 99% (Sets the low-pulse amperage value as a % of the Peak Amps.)

Conventional Pulsed TIG	High-Speed Pulsed TIG
	
<p data-bbox="129 1626 756 1805">Typically from 1 to 10 PPS. Provides a heating and cooling effect on the weld puddle and can reduce distortion by lowering the average amperage. This heating and cooling effect also produces a distinct ripple pattern in the weld bead. The relationship between pulse frequency and travel speed determines the distance between the ripples. Slow pulsing can also be coordinated with filler metal addition and can increase overall control of the weld puddle.</p>	<p data-bbox="818 1626 1453 1682">In excess of 40 PPS, Pulsed TIG becomes more audible than visible — causing increased puddle agitation for a better as-welded microstructure.</p> <p data-bbox="818 1686 1474 1794">Pulsing the weld current at high speeds — between a high Peak and a low Background amperage — can also constrict and focus the arc. This results in maximum arc stability, increased penetration and increased travel speeds (Common Range: 100 – 500 PPS).</p> <p data-bbox="818 1798 1469 1899">The Arc-Sharpening effects of high speed pulsing are expanded to new dimensions. The ability to pulse at 5,000 PPS further enhances arc stability and concentration potential — which is extremely beneficial to automation where maximum travel speeds are required.</p>

## TIG Torch Kits and Connectors for Dynasty® 400

The Miller TIG torches have been designed to perfectly match and to ensure that the welder can fully benefit from the superior arc quality of the Miller Dynasty®. The material has been carefully selected to prevent ageing and leakage in the hoses and cables. Miller uses more copper in the power cable to minimize the heat losses and maximize the output.

The TIG torches can be configured with a standard torch head or a flexible alternative. The ergonomic handle can also be fitted with a remote control for adjustment of the weld current at the point of welding.

The torches come equipped with a 2.4 mm Miller®/Weldcraft® 2% lanthanated tungsten electrode.

The blue electrode ensures a stable arc in both AC and DC processes, with greater longevity than conventional tungsten electrodes, the ability to use a smaller-diameter electrode for the same job, use of a higher current for a similar-sized electrode, and less tungsten spitting.



\*Remote current control from the thumb wheel, available as an option on all models

Torch	Stock No.	Technical description	DC current	AC current
EuroTorch W-350, 4 meter	058022001	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	350A @ 100%	250A @ 100%
EuroTorch W-350R, 4 meter	058022002	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	350A @ 100%	250A @ 100%
EuroTorch W-350, 8 meter	058022003	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	350A @ 100%	250A @ 100%
EuroTorch W-350R, 8 meter	058022004	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	350A @ 100%	250A @ 100%
EuroTorch W-270, 4 meter	058022005	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	270A @ 100%	190A @ 100%
EuroTorch W-250F, 4 meter	058022006	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	250A @ 100%	175A @ 100%
EuroTorch W-270, 8 meter	058022007	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	270A @ 100%	190A @ 100%
EuroTorch W-250F, 8 meter	058022008	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	250A @ 100%	175A @ 100%
EuroTorch W-270R, 4 meter	058022009	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	270A @ 100%	190A @ 100%
EuroTorch W-250FR, 4 meter	058022010	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	250A @ 100%	175A @ 100%
EuroTorch W-270R, 8 meter	058022011	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	270A @ 100%	190A @ 100%
EuroTorch W-250FR, 8 meter	058022012	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	250A @ 100%	175A @ 100%
EuroTorch A-125, 4 meter	058022031	50 mm <sup>2</sup> Dinse, 5/8" gas, 14 pin control	125A @ 60%	100A @ 60%
EuroTorch A-150, 4 meter	058022021	50 mm <sup>2</sup> Dinse, 5/8" gas, 14 pin control	150A @ 60%	115A @ 60%
EuroTorch A-200, 4 meter	058022013	50 mm <sup>2</sup> Dinse, 5/8" gas, 14 pin control	200A @ 60%	150A @ 60%
EuroTorch A-200F, 4 meter	058022014	50 mm <sup>2</sup> Dinse, 5/8" gas, 14 pin control	200A @ 60%	150A @ 60%
EuroTorch A-200, 8 meter	058022015	50 mm <sup>2</sup> Dinse, 5/8" gas, 14 pin control	200A @ 60%	150A @ 60%
EuroTorch A-200F, 8 meter	058022016	50 mm <sup>2</sup> Dinse, 5/8" gas, 14 pin control	200A @ 60%	150A @ 60%
EuroTorch A-200R, 4 meter	058022017	50 mm <sup>2</sup> Dinse, 5/8" gas, 14 pin control	200A @ 60%	150A @ 60%
EuroTorch A-200FR, 4 meter	058022018	50 mm <sup>2</sup> Dinse, 5/8" gas, 14 pin control	200A @ 60%	150A @ 60%
EuroTorch A-200R, 8 meter	058022019	50 mm <sup>2</sup> Dinse, 5/8" gas, 14 pin control	200A @ 60%	150A @ 60%
EuroTorch A-200FR, 8 meter	058022020	50 mm <sup>2</sup> Dinse, 5/8" gas, 14 pin control	200A @ 60%	150A @ 60%

R – Remote control F – Flex neck W – Water cooled A – Air cooled

## TIG Torch Kits and Connectors for Dynasty® 800

Torch	Stock No.	Technical description	DC current	AC current
Tig Torch Crafter series 410A, 4 meter	CS410AS4JAFD	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	410A @ 100%	310A @ 100%
Tig Torch Crafter series 410A, 8 meter	CS410AS8JAFD	50 mm <sup>2</sup> Dinse, 5/8" gas, Water quick connect, 14 pin control	410A @ 100%	310A @ 100%

# Tungsten

## 2% Ceriated (EWCe-2)

Type	Ø mm (in.)	Stock No.
Performs well in DC welding and arc starting at low current settings and offers excellent performance in AC Processes.	1.6 (1/16")	WC116X7
	2.4 (3/32")	WC332X7
	3.2 (1/8")	WC018X7
	4.0 (5/32")	WC532X7



## 2% Lanthanated (EWLa-2)

Type	Ø mm (in.)	Stock No.
Provides excellent arc starting, arc stability and re-ignition and less tip erosion in AC or DC welding. Can substitute for 2% Thoriated.	1.6 (1/16")	WL2116X7
	2.4 (3/32")	WL2332X7
	3.2 (1/8")	WL2018X7
	4.0 (5/32")	WL2532X7



## Rare Earth (EWG)

Type	Ø mm (in.)	Stock No.
Combines the best of all alloying elements and provides excellent arc stability in AC or DC welding.	1.6 (1/16")	WG116X7
	2.4 (3/32")	WG332X7
	3.2 (1/8")	WG018X7



## Genuine Miller® Accessories

### Remote Controls



**Wireless Remote Foot Control 301580**  
For remote current and contactor control. Receiver plugs directly into the 14-pin receptacle of Miller machine. 27.4 m (90 ft.) 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 6 m (20 ft.) 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. 91.4 m (300 ft.) operating range.



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

### TIG Welding Gloves



**Miller® TIG Welding Gloves**  
**758081006** size 8  
**758081007** size 9  
**758081008** size 10  
**758081009** size 11  
**758081010** size 12  
 Completely unlined, goat grain leather, with the upper hand and cuff in cow split.



**Miller® TIG Pro Welding Gloves**  
**758081001** size 8  
**758081002** size 9  
**758081003** size 10  
**758081004** size 11  
**758081005** size 12  
 Completely unlined, goat grain leather, with the cuff in cow split.

### Coolers & Coolants



**Coolmate™ 3.5 300245**  
Industrial 13.25l (3.5-gallon) cooler designed for water-cooled torches rated up to 600 amps.



**Low-Conductivity Coolant 043810**  
Sold in 3.8 liter recyclable plastic bottles. Miller coolants contain a base of ethylene glycol and deionized water to protect against freezing to -38°C (-37°F) or boiling to 108°C (227°F). Also contains a compound that resists algae growth.

### Cart



**4-wheel Large Running Gear 058035011**  
Running gear for XMT® 350 Series as well as Maxstar® 400/800 and Dynasty® 400/800 systems.

## Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
<b>Dynasty® 400</b>	<b>907717002</b>	Auto-Line™ 380–460 V, 50/60 Hz, <b>CE</b> . 2.4 m (8 ft.) power cord		
<b>Dynasty® 800</b>	<b>907719002</b>	Auto-Line™ 380–460 V, 50/60 Hz, <b>CE</b>		
<b>Torches</b>				
Water-Cooled TIG Torch for Dynasty® 400		See page 5		
Water-Cooled TIG Torch for Dynasty® 800		See page 5		
<b>Tungsten</b>				
		See page 6		
<b>Remote Controls</b>				
Wireless Remote Foot Control	<b>300429</b>	Foot control with wireless 27.4 m (90 ft.) operating range		
Wireless Remote Hand Control	<b>300430</b>	Hand control with wireless 91.4 m (300 ft.) operating range		
RFCS-14 HD	<b>194744</b>	Heavy-duty foot control		
RHC-14	<b>242211020</b>	Hand control		
<b>Accessories</b>				
4-wheel Large Running Gear	<b>058035011</b>	Running gear for XMT® 350 Series as well as Maxstar® 400/800 and Dynasty® 400/800 systems		
Coolmate™ 3.5	<b>300245</b>	120 V, 50/60 Hz, <b>CE</b> . <i>Requires coolant</i>		
Industrial Coolant	<b>043810</b>	3.78-liter plastic bottle		
Automation Interface Kit	<b>278161</b>	Field installation required. Provides 28-pin automation connections		

Date:

Total Quoted Price:

Miller recommends  consumables

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