

Dynasty® 200 Series

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TIG/Stick Welding
Power Source 

Quick
Specs



Industrial Applications

Precision Fabrication
Petro/Chemical
Aerospace
Food/Beverage Industry
Dairy
Shipboard

Processes

TIG (GTAW)
Pulsed TIG (GTAW-P)
Stick (SMAW)
Air Carbon Arc (CAC-A) 5/32 in max.

Input Power 115 – 460 V, 3- or 1-Phase Power

Amperage Range 1 – 200 A

Rated Output 200 A at 28 V, 20% Duty Cycle

Weight 45 lb (20.5 kg)

The Power of Blue.®



Allows for any input voltage hookup (115–460 V) with no manual linking, providing convenience in any job setting. Ideal solution for dirty or unreliable power.

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

NEW! Complete Package — One stock number provides all the necessary items required for a water-cooled TIG welding system. See page 6 for packages.

Lift-Arc™ starting provides x-ray clean welds in AC or DC arc starting without the use of high frequency.

NEW! Blue Lightning™ — High Frequency Arc Starter for non-contact arc initiation.

More consistent arc starts compared to traditional HF arc starters.

Greater reliability and no maintenance on solid state components. Preset parameters for tungsten sizes from .020 – 1/8 inch provide optimized starting for applications from thick to micro thin. For unique applications, custom settings are programmable.

Dynasty 200 SD



Dynasty 200 DX
Foot Pedal
Complete Package



Models:

Dynasty® 200 SD (Standard features for Stick and TIG)

Dynasty® 200 DX (Advanced features, see page 3)

NEW! Dynasty® 200 DX TIGRunner®
(Advanced features, water cooler and cart)

NEW! Dynasty® 200 DX Foot Pedal or Fingertip Complete
(Complete Advanced Water Cooled System)


See page 6 for complete list of included items.


AC TIG Features


Extended AC balance (30–99%) controls the amount of oxide cleaning (amperage time in EN) which is essential for high quality welds on aluminum.


AC frequency (20–250 hz) controls the width of the arc cone and the force of the arc.

NEW! AC Waveforms

 **Advance 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.

Stick Features (AC/DC)

Tailored arc control (DIG) allows the arc characteristic to be changed for specific applications and electrodes. Smooth running 7018 or stiffer, more penetrating 6010.

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

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



Power source is warranted for 3 years, parts and labor.
Original main power rectifier parts are warranted for 5 years.
Water cooler is warranted for 1 year, parts and labor.

MADE IN USA
APPLETON, WI



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Web Site
www.MillerWelds.com



Specifications (Subject to change without notice.)



Welding Mode	Welding Amperage Range	Max. Open-Circuit Voltage	Input Power	Rated Output	Amps Input at Rated Load Output, 50/60 Hz						Dimensions	Net Weight
					120 V	230 V	400 V	460 V	KVA	KW		
TIG (GTAW)	AC 5–150 A DC 1–150 A (120 VAC)	80 VDC 12–16**	3-Phase	200 A at 18 V, 20% Duty Cycle	—	13.7	8.7	6.9	5.5	5.2	H: 13-1/2 in (343 mm) W: 7-1/2 in (191 mm) D: 21-1/2 in (546 mm) with TIGRunner® H: 46-1/4 in (1,175 mm) W: 23-1/2 in (597 mm) D: 22-1/4 in (565 mm)	45 lb (20.5 kg) with TIGRunner® 137 lb (62.1 kg)
				150 A at 16 V, 60% Duty Cycle	—	9.4	6.0	4.7	3.8	3.6		
	1-Phase		150 A at 16 V, 60% Duty Cycle	—	15.8	—	7.9	3.6	3.6			
			140 A at 15.6 V, 40% Duty Cycle	31.0	—	—	—	3.6	3.5			
Stick (SMAW)	AC 5–105 A DC 1–105 A (120 VAC)	80 VDC 12–16**	3-Phase	200 A at 28 V, 20% Duty Cycle	—	20.8	13.0	10.2	8.1	7.8		
				130 A at 25.2 V, 60% Duty Cycle	—	12.3	7.6	6.0	4.8	4.6		
	1-Phase		130 A at 25.2 V, 60% Duty Cycle	—	20.0	—	10.0	4.7	4.7			
			100 A at 24 V, 60% Duty Cycle	31.3	—	—	—	3.6	3.6			
	AC 5–200 A DC 1–200 A (200–460 VAC)			90 A at 23.6 V, 100% Duty Cycle	27.6	—	—	—	3.2	3.2		
					0.42*	—	—	—	0.05*	0.03*		

* While idling. ** Sense voltage for Stick and Lift-Arc™ TIG. Note: Duty cycle limitations on units with 115 V input power are due to the input power cord supplied with the unit.

Certified by Canadian Standards Association to both Canadian and U.S. Standards.

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

Performance Data

DUTY CYCLE

110–120 V INPUT VOLTAGE

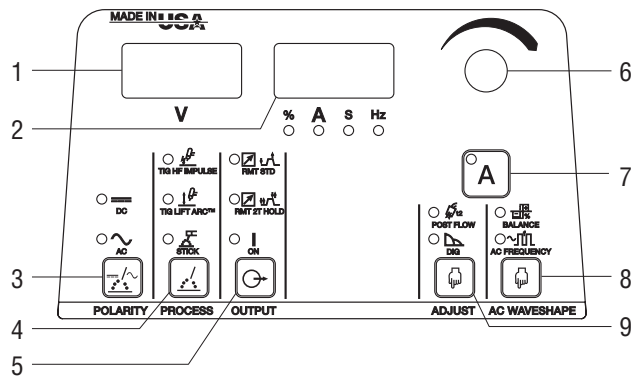
%	TIG	STICK
10–30%	150 A	100 A
40%	140 A	100 A
60%	120 A	100 A
100%	100 A	90 A

200–460 V INPUT VOLTAGE

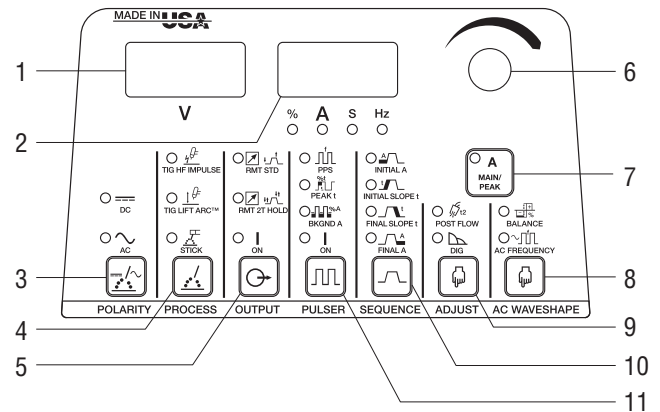
%	TIG	STICK
10–20%	200 A	200 A
30%	180 A	170 A
40%	166 A	150 A
60%	150 A	130 A
100%	120 A	110 A

Control Panel

Dynasty 200 SD



Dynasty 200 DX



Control Panel Parameter Values

1. Voltmeter Display

2. Ammeter Display

3. Polarity AC/DC

4. Process/
Arc Starting TIG: HF Impulse, Lift Arc
STICK: Adaptive Hot Start

5. Output Control Standard Remote,
2T Trigger Hold,
Output ON

6. Encoder Control

7. Amperage Control

8. AC Waveshape Balance 30–99%

AC Frequency 20–250 Hz

9. Gas/DIG Preflow 0.0–25.0 Seconds

Postflow 0–50 Seconds

DIG 0–100%

Advanced features on the Dynasty DX only:

10. Sequencer Control

Initial Amps AC: 5–200 A

DC: 1–200 A

Initial Slope 0.0–25.0 Seconds

Final Slope 0.0–25.0 Seconds

Final Amps AC: 5–200 A

DC: 1–200 A

11. Pulser Control

Pulses per Second DC: 0.1–500 PPS

AC: 0.1–500 PPS

Peak Time 5–95%

Background Amps 5–95%

Additional Setup Parameter Values

Preprogrammed Starts

.040 – 1/8 in Tungsten

Programmable Starts

Amperage AC: 5–200 A

DC: 1–200 A

Time 1–200 Milliseconds

Ramp Time 1–250 Milliseconds

Minimum Amperage 1–20 A

Polarity EP, EN

Additional Triggers 3T, 4T, Mini Logic,
4T Momentary

Waveshapes Advance Squarewave,
Soft Squarewave, Sine
Wave, Triangular wave

Spot/Timer 0.1–25.0 Seconds

OCV Low OCV, Normal OCV

Stick Stuck Check On/Off

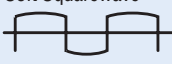
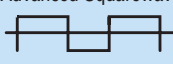
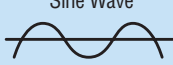
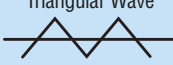


Lockouts Four levels

Arc Timer 0.0–9999 Hours
and 0–59 Min

Cycle Counter 0–999,999 Cycles

TIG Upgrade Chart

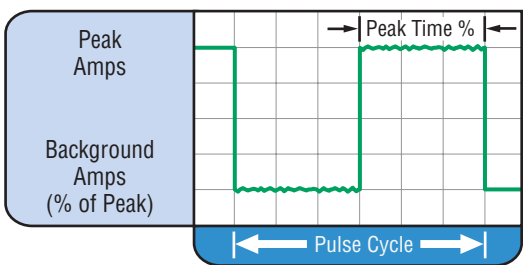
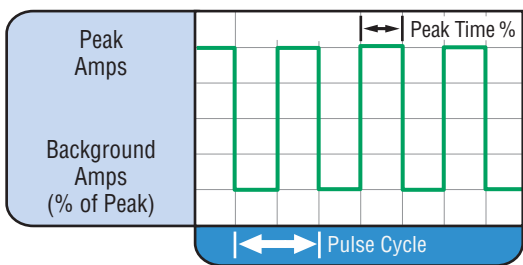
Which Machine is Right for You?

Why Upgrade?	Syncrowave 200	Dynasty 200	Dynasty 200 Benefits
Maximum Thickness Capacity	1/4 in Aluminum	1/4 in Aluminum	Same material thickness capacity.
High Frequency Arc Starting	Continuous HF	Start Only	Start Only limits HF interference issues.
Frequency Control AC Output Control	Fixed at 60 Hz	Variable 20–250 Hz	Higher frequencies provide better arc control and faster travel speeds.
AC Waveforms	Soft Squarewave 	Advanced Squarewave  Sine Wave  Triangular Wave 	Advanced Squarewave=Travel faster Soft Squarewave= Maximum puddle control Sine Wave= Traditional characteristics Triangular Wave= Reduced heat input
Weld Aluminum with Pointed Tungsten			Waveshaping controls maintain the point. The benefits are: reduced heat input into your part, smaller weld beads, better starting and more control of the arc.
Portability	238 lb Manual Link 208–230 or 460–575 V Single-Phase	45 lb Auto-Line™ 120–460 V Single-Phase or Three-Phase	Easier to move because of size and weight. Auto-Line™ allows the unit to operate on any voltage. Single- or three-phase. Even generators!
Power Draw at 150 Amps	54 A at 230 V Single-Phase	15.8 A at 230 V Single-Phase	Power requirement to operate is much less. Smaller electrical service needed, smaller breaker/fuses and power cord.

Pulse TIG Controls

High Speed DC TIG-Pulse Controls

- **PPS Pulses per second (Hz):** DC = 0.1 – 500 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>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>In excess of 40 PPS, Pulsed TIG becomes more audible than visible — causing increased puddle agitation for a better as-welded microstructure. 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>

AC Waveshape Controls

Feature	Waveform	Effect on Bead	Effect on Appearance
AC Balance Control 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 action at the sides and in front of the weld puddle. AC Balance should be fine tuned according to how heavy or thick the oxides are.</i>	51 – 99% EN 	Reduces balling action and helps maintain point Deep, narrow penetration 	Narrow bead, with no visible cleaning
	30 – 50% EN 	Increases balling action of the electrode Shallow penetration 	Wider bead and cleaning action
AC Frequency Control Controls the width of the arc cone. Increasing the AC Frequency provides a more focused arc with increased directional control. <i>Note: Decreasing the AC Frequency softens the arc and broadens the weld puddle for a wider weld bead.</i>	60 Cycles per Second 	Wider bead, good penetration — ideal for buildup work 	Wider bead and cleaning action
	120 Cycles per Second 	Narrower bead for fillet welds and automated applications 	Narrower bead and cleaning action

AC Waveform Selection

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

ADVANCED SQUAREWAVE Fast transitions for responsive and dynamic arc.	SOFT SQUAREWAVE All the benefits of advanced square, fine tuned to provide a smooth, soft arc with maximum puddle control and good wetting action.
SINEWAVE Square transitions eliminate the need for continuous HF, while the sinewave peaks soften the arc.	TRIANGULAR WAVE 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.