# Dynasty 200 Series

## 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-inch maximum

- **Input Power**
  - 120–480 V, 3- or 1-Phase Power

- **Amperage Range**
  - 1–200 A

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

- **Net Weight**
  - 45 lb. (20.5 kg)

## AC TIG Features

- **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.

## 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.
- **Frequency** control adds additional stability when Stick welding in AC for smoother welds.

## Dynasty 200 SD

**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.

**Dynasty 200 DX Complete Package with Wireless Foot Control**

**Power source is warranted for 3 years, parts and labor. Coolant system is warranted for 1 year, parts and labor.**
### Performance Data

#### DUTY CYCLE

<table>
<thead>
<tr>
<th>110–120 V INPUT VOLTAGE</th>
<th>TIG</th>
<th>STICK</th>
<th>200–480 V INPUT VOLTAGE</th>
<th>TIG</th>
<th>STICK</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td></td>
<td></td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30%</td>
<td>150 A</td>
<td>100 A</td>
<td>20%</td>
<td>200 A</td>
<td>120 A</td>
</tr>
<tr>
<td>40%</td>
<td>140 A</td>
<td>100 A</td>
<td>30%</td>
<td>180 A</td>
<td>150 A</td>
</tr>
<tr>
<td>60%</td>
<td>120 A</td>
<td>100 A</td>
<td>40%</td>
<td>166 A</td>
<td>150 A</td>
</tr>
<tr>
<td>100%</td>
<td>100 A</td>
<td>90 A</td>
<td>60%</td>
<td>150 A</td>
<td>130 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>100%</td>
<td>120 A</td>
<td>110 A</td>
</tr>
</tbody>
</table>
Control Panel

1. Voltmeter Display
2. Ammeter Display
3. Polarity
   - AC/DC
4. Process/TIG 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%

Control Panel Parameter Values

Additional Setup Parameter Values

Preprogrammed Starts
- .020 – 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 minutes

Cycle Counter
- 0 – 999,999 cycles
### TIG Upgrade Chart

#### Which Machine is Right for You?

<table>
<thead>
<tr>
<th>Why Upgrade?</th>
<th>Syncrowave 210</th>
<th>Upgrade</th>
<th>Dynasty 200</th>
<th>Dynasty 200 Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Thickness Capacity</td>
<td>1/4-in. Aluminum</td>
<td>1/4-in. Aluminum</td>
<td>Same material thickness capacity.</td>
<td></td>
</tr>
<tr>
<td>AC Frequency Control (Aluminum TIG)</td>
<td>Fixed at 100 Hz (Expandable 60–150 Hz)</td>
<td>Variable 20–250 Hz</td>
<td>Higher frequencies provide better arc control and faster travel speeds.</td>
<td></td>
</tr>
<tr>
<td>AC Balance Control (Aluminum TIG)</td>
<td>60–80%</td>
<td>30–99%</td>
<td>Extended Balance control provides more versatility on specialty materials.</td>
<td></td>
</tr>
<tr>
<td>Pulse Control</td>
<td>Off–50 PPS (Expandable Off–150)</td>
<td>Off–500 PPS</td>
<td>Provides more arc stability.</td>
<td></td>
</tr>
<tr>
<td>AC Waveforms (Aluminum TIG)</td>
<td>Soft Squarewave</td>
<td>Advanced Squarewave</td>
<td>Soft Squarewave = Maximum puddle control</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soft Squarewave</td>
<td>Sine Wave = Traditional characteristics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Triangular Wave = Reduced heat input</td>
<td></td>
</tr>
<tr>
<td>Portability</td>
<td>133.5 lb. (61 kg)</td>
<td>45 lb. (20.5 kg)</td>
<td>Easier to move because of size and weight.</td>
<td></td>
</tr>
<tr>
<td>Power Flexibility</td>
<td>Auto-Line™ 120–240 V 1-Phase</td>
<td>Auto-Line™ 120–480 V 1- or 3-phase</td>
<td>Auto-Line™ allows the unit to operate on any voltage. 1- or 3-phase. Even generators!</td>
<td></td>
</tr>
</tbody>
</table>

### Pulsed TIG Controls

#### High-Speed Pulsed TIG Controls

- **PPS Pulses per second (Hz):** 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.)

<table>
<thead>
<tr>
<th>Conventional Pulsed TIG</th>
<th>High-Speed Pulsed TIG</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Conventional Pulsed TIG Diagram" /></td>
<td><img src="image2" alt="High-Speed Pulsed TIG Diagram" /></td>
</tr>
</tbody>
</table>

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.

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).
AC Waveshape Controls

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
<th>Arc Effect</th>
<th>Weld Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AC Balance Control</strong></td>
<td>75% EN</td>
<td>Reduces balling action and helps maintain point</td>
<td>Minimum visible oxide removal (etching)</td>
</tr>
<tr>
<td></td>
<td>50% EN</td>
<td>Increases balling action of the electrode</td>
<td>Visible oxide removal (etching)</td>
</tr>
<tr>
<td><strong>AC Frequency Control</strong></td>
<td>60 Hz</td>
<td>Wider profile ideal for buildup work</td>
<td>Bead</td>
</tr>
<tr>
<td></td>
<td>120 Hz</td>
<td>Narrower profile for fillet welds and automated applications</td>
<td>Bead</td>
</tr>
</tbody>
</table>

AC Waveform Selection

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

<table>
<thead>
<tr>
<th>Advanced Squarewave</th>
<th>Soft Squarewave</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+) 0 (-)</td>
<td>(+) 0 (-)</td>
</tr>
<tr>
<td>Time (1 AC Cycle)</td>
<td>Time (1 AC Cycle)</td>
</tr>
</tbody>
</table>

- **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.

<table>
<thead>
<tr>
<th>Sinewave</th>
<th>Triangular Wave</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+) 0 (-)</td>
<td>(+) 0 (-)</td>
</tr>
<tr>
<td>Time (1 AC Cycle)</td>
<td>Time (1 AC Cycle)</td>
</tr>
</tbody>
</table>

- **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.
Dynasty 200 Power Sources

Dynasty 200 SD    #907 099 (CSA)
Dynasty 200 DX    #907 099 011 (CSA)
Dynasty 200 DX    #907 356 (CE)

Includes:
- Adjustable shoulder strap
- 8-ft. (2.4 m) power cord (no plug)
- Two 50-mm Dinse-style connectors
- Setup DVD (#251 116)
- One air-cooled TIG torch connector (#195 378)

Note: See page 7 for recommended Contractor Torch Kit.

Air-Cooled Contractor Kit Packages

Dynasty 200 DX with Contractor Kit
#951 174 (CSA) w/Foot Control
#951 175 (CSA) w/Fingertip Control

Packages include:
- Dynasty 200 DX (#903 099 011)
- RFCS-14 HD foot control (#194 744) or RCCS-14 fingertip control (#043 688)
- Weldcraft™ A-150 (WP-17) 25-ft. (7.6 m) TIG torch
- 200-amp Stick electrode holder with 15-ft. (4.6 m) #4 cable
- Work clamp with 15-ft. (4.6 m) #4 cable
- Flow gauge regulator with gas hose
- AK2C accessory kit with short back cap, nozzles, collets, collet bodies, and 2% ceriated tungsten electrodes (.040, 1/16, and 3/32 in.)
- One air-cooled TIG torch connector (#195 378)
- Protective carrying case for accessories
- Note: The Coolmate 1 requires a separate source for electricity. The Dynasty 200 does not contain auxiliary power.

Water-Cooled TIGRunner Package

Dynasty 200 DX TIGRunner
#907 099 021 (CSA)

Completely assembled.

Package includes:
- Dynasty 200 DX (#907 099 011)
- Coolmate™ 1, 120 VAC (#300 360)
- One gallon of pre-mixed, low-conductivity coolant (#043 810)
- 2-Wheel Trolley Cart (#300 480) with the following features: easy-to-maneuver single-cylinder cart with cable and torch holders. Easy to release and remove welder from cart for even more portability. Convenient tray for consumable storage and filler rod holders.

Notes: TIG Torch Connector must be ordered separately. See page 7 for recommended W-250 (WP-20) Torch Kit (#300 185).

The Coolmate 1 requires a separate source for electricity. The Dynasty 200 does not contain auxiliary power.

Water-Cooled Complete Packages

Dynasty 200 DX Complete
#951 397 (CSA) w/Wireless Foot Control
#951 139 (CSA) w/Foot Control
#951 140 (CSA) w/Fingertip Control

Completely assembled.

Package includes:
- Dynasty 200 DX (#907 099 011)
- Coolmate™ 1, 120 VAC (#300 360)
- One gallon of pre-mixed, low-conductivity coolant (#043 810)
- Wireless Remote Foot Control (#300 429) or RFCS-14 HD foot control (#194 744) or RCCS-14 fingertip control (#043 688)
- 2-Wheel Trolley Cart (#300 480) with the following features: easy-to-maneuver single-cylinder cart with cable and torch holders. Easy to release and remove welder from cart for even more portability. Convenient tray for consumable storage and filler rod holders.
- W-250 (WP-20) Torch Kit (#300 185).

See page 7 for more details.

Note: The Coolmate 1 requires a separate source for electricity. The Dynasty 200 does not contain auxiliary power.
Genuine Miller® Accessories

2-Wheel Trolley Cart

#300 480

Easy-to-maneuver two-wheel cart features single-cylinder rack, chain for cylinder, straps (quick and easy to detach and carry machine), cable holders, torch holder, storage area, and filler rod storage area. Works with Dynasty® or Maxstar® 200 and Coolmate™. Contact your local distributor for filler material holders.

Universal Carrying Cart and Cylinder Rack

#042 934

Holds power source, and gas cylinder up to 56 inches (142 cm) high and 6 to 9 inches (15 to 23 cm) in diameter.

Coolmate™

#300 360

120 VAC, 60 Hz. One-gallon water cooler designed for 200 A portable welders. Features include fin-and-tube heat exchanger, back-lit power switch, external filter, polyethylene tank and coolant level sight gauge.

Low-Conductivity TIG Coolant

#043 810

Sold in multiples of four in one-gallon recyclable plastic bottles. Miller coolants contains a base of ethylene glycol and deionized water to protect 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).

Contractor Kits

#195 054

kit shown.

W-250 (WP-20) Torch Kit

#300 185

Weldcraft® W-250 (WP-20) 25-foot (7.6 m) TIG torch with Dinse-style connector

Air-Cooled TIG Torch Connectors

#195 379

A-200 (WP-26)

All others

50-mm Dinse-style for one-piece air-cooled torch. A-200 (WP-26) torch requires #195 379 connector.

Weldcraft™ A-200 (WP-26) TIG Torch

#WP-26-12-R (12 ft.)

#WP-26-25-R (25 ft.)

Torch body gas valve models are available.

Note: A-200 (WP-26) torch requires #195 379 connector.

Remote Controls and Switches

Wireless Remote Foot Control

#300 429

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

#300 430

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

#043 688

North/south-rotation-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

#151 086

East/west-rotation-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

#194 744

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

#242 211 020

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.

Extension Cables for 14-Pin Remote Controls

#242 208 025 25 ft. (7.6 m)

#242 208 050 50 ft. (15.2 m)

#242 208 080 80 ft. (24.4 m)

Educational Materials

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

Gas Tungsten Arc Welding (TIG) Publication

#250 833

Ron Covell TIG Welding Basics DVD

#196 567

Setup DVD

#251 116

Video topics include tungsten selection, setup menus, DC pulse, sequencer, balance and frequency settings. (Included with machine.)

<table>
<thead>
<tr>
<th>Tungsten</th>
<th>Amp Range</th>
<th>2% Ceriated (AC/DC)</th>
<th>2% Lanthanated (AC/DC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.040 in. (1.2 mm)</td>
<td>10 – 80 A</td>
<td>WC040X7</td>
<td>WL2040X7</td>
</tr>
<tr>
<td>.016 in. (1.6 mm)</td>
<td>70 – 150 A</td>
<td>WC116X7</td>
<td>WL2116X7</td>
</tr>
<tr>
<td>.032 in. (2.4 mm)</td>
<td>140 – 250 A</td>
<td>WC332X7</td>
<td>WL2332X7</td>
</tr>
<tr>
<td>.062 in. (3.2 mm)</td>
<td>225 – 400 A</td>
<td>WC018X7</td>
<td>WL2018X7</td>
</tr>
<tr>
<td>.050 in. (4.0 mm)</td>
<td>300 – 500 A</td>
<td>WC532X7</td>
<td>WL2532X7</td>
</tr>
<tr>
<td>Stock No.</td>
<td>Description</td>
<td>Qty.</td>
<td>Price</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------------------------------------</td>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>#907 099</td>
<td>Dynasty® 200 SD 120 – 480 VAC, 50/60 Hz, CSA. 8-ft. power cord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#907 099 011</td>
<td>Dynasty® 200 DX 120 – 480 VAC, 50/60 Hz, CSA. 8-ft. power cord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#907 356</td>
<td>Dynasty® 200 DX International 120 – 480 VAC, 50/60 Hz, CE. 8-ft. power cord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#951 174</td>
<td>Auto-Line™ 120 – 480 VAC, 50/60 Hz, CSA. 8-ft. power cord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#951 175</td>
<td>Auto-Line™ 120 – 480 VAC, 50/60 Hz, CSA. 8-ft. power cord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#951 397</td>
<td>Auto-Line™ 120 – 480 VAC, 50/60 Hz, CSA. 8-ft. power cord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#951 139</td>
<td>Auto-Line™ 120 – 480 VAC, 50/60 Hz, CSA. 8-ft. power cord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#951 140</td>
<td>Auto-Line™ 120 – 480 VAC, 50/60 Hz, CSA. 8-ft. power cord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#907 099 021</td>
<td>Dynasty® 200 DX Contractor Kit w/Foot Control 120 – 480 VAC, 50/60 Hz, CSA. 8-ft. power cord (Torch kit and accessories sold separately)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#951 222</td>
<td>Auto-Line™ 120 – 480 VAC, 50/60 Hz, CSA. 8-ft. power cord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#951 223</td>
<td>Auto-Line™ 120 – 480 VAC, 50/60 Hz, CSA. 8-ft. power cord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#195 054</td>
<td>Foot pedal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#195 055</td>
<td>Fingertip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#195 379</td>
<td>Weldcraft™ A-200 (WP-26) TIG Torch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#195 378</td>
<td>Weldcraft™ A-200 (WP-26) TIG Torch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#195 377</td>
<td>Water-Cooled TIG Torch Connector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#300 185</td>
<td>Water-Cooled TIG Torch Kit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#300 360</td>
<td>Coolmate™ 1 120 VAC, 60 Hz. Requires coolant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#043 810</td>
<td>TIG Coolant (Must be ordered in quantities of four) 1-gallon plastic bottle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#042 418</td>
<td>Dinse-Style Connector 50 mm (1 male)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#042 419</td>
<td>Dinse-Style Connector 50 mm (1 male, 1 female)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#042 465</td>
<td>Dinse/Tweco® Adapter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#042 466</td>
<td>Dinse/Cam-Lok Adapter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#250 833</td>
<td>Ron Covell TIG Welding Basics DVD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#129 934</td>
<td>2-Wheel Trolley Cart</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#042 934</td>
<td>2-Wheel Trolley Cart</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#300 480</td>
<td>Gas Tungsten Arc Welding (TIG) Publication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#196 567</td>
<td>Ron Covell TIG Welding Basics DVD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#187 208</td>
<td>Ronald J. Covell TIG Welding Basics DVD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#251 116</td>
<td>Setup DVD (included with machine)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Date:**

**Total Quoted Price:**