# Dynasty 280 Series



# **Quick Specs**

### **Industrial Applications**

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

#### **Processes**

AC/DC TIG (GTAW) Pulsed TIG (GTAW-P) Stick (SMAW) Air carbon arc (CAC-A) **Input Power** 208–575 V, 3-phase or 1-phase power

Amperage Range 1-280 A (DC) 2-280 A (AC)

Rated Output 250 A at 20 V, 60% duty cycle

**Net Weight** 52 lb. (23.6 kg)





Dynasty 280 DX

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 specified time.



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) is an integrated 120-volt dedicated-use receptacle for the Coolmate™ 1.3. Available on select models, see page 6.

**Cooler-On-Demand**<sup>™</sup> feature operates the auxiliary cooling system only when needed, reducing noise, energy use, and airborne contaminants pulled through the cooler. Available on CPS models only.

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.

Meter calibration allows digital meters to be calibrated for certification.

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

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





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# **Weld Process Features**

### **AC TIG**

Balance control provides adjustable oxide removal which is essential for creating the highest quality aluminum welds. DX 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**

**Exceptionally smooth** and precise arc for welding exotic materials.

# AC/DC Stick

**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**<sup>™</sup> adaptive control provides positive arc starts without sticking.

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

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.

# **Specifications** (Subject to change without notice.)









Welding Mode	Input Power	Welding Amperage Range	Rated Output at 60% Duty Cycle		•	t Rated 400 V					Max. Open- Circuit Voltage	Dimensions	Net Weight
TIG (GTAW)	3-phase	2-280 A (AC) 1-280 A (DC)	250 A at 20 V	21	19	11	9	7	7.6	7.3	60 VDC (11 VDC**)	H: 13.6 in. (346 mm) W: 8.6 in. (219 mm)	52 lb. (23.6 kg)
	1-phase	2-280 A (AC) 1-280 A (DC)	250 A at 20 V	35	32	18	16	13	7.3	7.1		D: 22.5 in. (569 mm)	55 lb. (25 kg)
Stick	3-phase	5-280 A	250 A at 30 V	*	*	14	13	10	9.9	9.6			with CPS
(SMAW)	1-phase	5-280 A	180 A at 27.2 V	32	29	*	*	*	6.7	6.5			

<sup>\*</sup> Refer to owner's manual for complete ratings. \*\* Sense voltage for low OCV 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	AC TIG Material Thickness Range	DC TIG Material Thickness Range	Stick Electrode Maximum Diameter	Carbon Arc Gouging (CAC-A) Maximum	Generator Requirement
380-575 V	280 A, 40% 250 A, 60% 200 A, 100%	280 A, 35% 200 A, 60% 160 A, 100%	0.012-3/8 in. (0.3-9.5 mm)	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
208-240 V	280 A, 40% 250 A, 60% 200 A, 100%	280 A, 15% 180 A, 60% 160 A, 100%					



# **Coolmate**<sup>™</sup> 1.3 Cooler



- Dynasty® 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

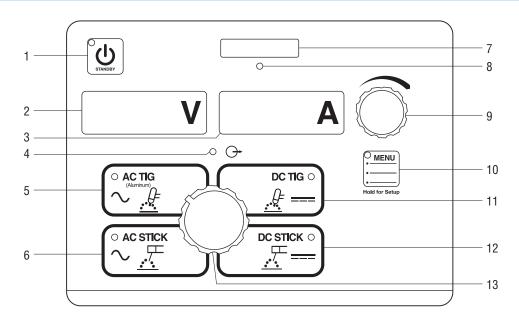


- Two-piece torch head and exclusive Super Cool™ Technology provides additional surface area to increase cooling efficiency and capacity
- Torch body includes an anti-rotation feature and multi-position locking to prevent handle movement during welding and improve operator control
- Secure mechanical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



# **Dynasty® 280 Control Panel**



- 1. Standby Switch
- 2. Voltmeter Display
- 3. Ammeter Display
- 4. Output Contactor "On" Indicator
- 5. AC TIG Process Menu Parameters

Amperage 2-280 A\*\* Balance\* 60-80% Frequency\* 70-150 Hz

Postflow Auto/Off-50 seconds

6. AC Stick Process Menu Parameters

Amperage 5-280 A DIG\* 0ff-100%

- 7. Memory Card Port
- 8. Activity Indicator
- 9. Encoder Control
- 10. Menu Ranges
- 11. DC TIG Process Menu Parameters

Amperage 1–280 A\*\* Pulse\* Off–250 pps

Postflow Auto/Off-50 seconds

12. DC Stick 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.)

### **AC TIG**

- 1. Start = HF/Lift Arc
- 2. Tungsten Size = .020-1/8 in. or .05-3.2 mm
- 3. Remote Trigger = STD/HOLD/OUTPUT ON

### AC Stick

- 1. Hot Start = ON/OFF
- 2. Remote Trigger = OUTPUT ON/STD

#### DC TIG

- 1. Start = Lift Arc/HF
- 2. Tungsten Size = .020-1/8 in. or .05-3.2 mm
- 3. Remote Trigger = STD/HOLD/OUTPUT ON

# DC Stick

- 1. Hot Start = ON/OFF
- 2. Remote Trigger = OUTPUT ON/STD

# **Tech Menu** (Hold Menu button five seconds.)

1. Arc Time 0.0-9,999 hours

0.0-59 minutes

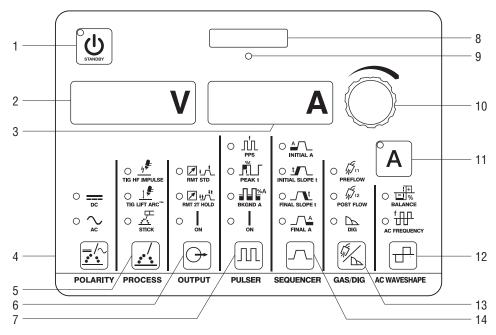
0-999,999 cycles

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 Dynasty models with CPS)
- 7. Machine Reset
- 8. Software Number
- 9. Serial Number



# **Dynasty® 280 DX Control Panel**



1. Standby Switch

2. Voltmeter Display

3. Ammeter Display

4. Polarity AC/DC

**5. Process/** TIG: HF impulse, Lift-Arc **Arc Starting** Stick: Adaptive Hot Start

**6. Output Control** Standard remote,

2T trigger hold, Output on

7. Pulser Control

Pulses per Second\* DC: 0.1-500 pps

AC: 0.1-500 pps

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

8. Memory Card Port

9. Activity Indicator

10. Encoder Control

# 11. Amperage Button

### 12. AC Waveshape

Balance\* 50-99% EN Frequency\* 20-400 Hz

13. Gas/DIG

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

510

14. Sequencer Control

Initial Amps
AC: 2–280 A
DC: 1–280 A
Initial Time
O.0–25.0 seconds
Initial Slope
Weld Time
Final Slope
Final Amps
AC: 2–280 A
DC: 1–280 A
DC: 2–280 A
DC: 2–280 A

DC: 1-280 A

Final Time 0.0-25.0 seconds

# **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/4TLE
- 3. Wave Form = SOFT/ADVS/SINE/TRI
- 4. 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 Dynasty models with CPS)
- 8. Locks = 0FF/1-4
- 9. Meter Display
- 10. External Pulse Control = OFF/ON
- 11. Machine Reset
- 12. Software Number
- 13. Serial Number



<sup>\*</sup>Pro-Set parameter selectable.

# Dynasty® 280 Models/Packages

# Build an Air-Cooled Package

Select desired stock number for each step.



907550 Dynasty shown.



;	Step 1 • Select Dyna	asty	Step 2 ◆ Select Contractor Kit			
Dynasty 280 Dynasty 280 (CPS) Dynasty 280 DX Dynasty 280 DX (CPS)	907550 907537 907551 907514	Note: For models without the Cooler Power Supply (CPS), the Coolmate 1.3 must be powered through an external 120-volt facility power.	A-150 TIG Torch and RFCS-14 HD Foot Control 301309 A-150 TIG Torch with RCCS-14 Fingertip Control 301311 A-200 TIG Torch with RFCS-14 HD Foot Control 301549 A-200 TIG Torch with RCCS-14 Fingertip Control 301550			
Dynasty comes with adjustabl quick-reference guide and two	1 /		See page 7 for kit contents.			









Step 1 • Select Dynasty TIGRunner® an	Step 2 • Select Remote Control		Step 3 • Select Torch Kit		
Dynasty 280 (CPS) TIGRunner Dynasty 280 DX (CPS) TIGRunner  Low-Conductivity Coolant (Must be ordered in quantities of four.)	907537002 907514001 043810	Wireless Foot (recommended) 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 (recommended for 280 mod W-375 Kit	300185 300990 del) 301268
Dynasty TIGRunner comes with 8 ft. power cord (no plug), quick-reference guide, Coolmate™ 1.3 and Small Runner™ cart.		See page 7 for remote descriptions.		See page 7 for kit contents.	



# **Select Water-Cooled Complete Package**

Dynasty 280 (CPS) Complete with Foot Control 951466
Dynasty 280 DX (CPS) Complete with Foot Control 951468
Dynasty 280 DX (CPS) Complete with Wireless Foot Control 951877

### Comes with:

- 8 ft. power cord (no plug)
- Quick-reference guide
- Coolmate<sup>™</sup> 1.3 300972
- Coolant (4 one-gallon bottles of 043810)
- Small Runner™ cart 301318
- Remote control 194744 (foot) **OR** remote control 301580 (wireless foot)
- W-280 torch kit 300990 (see page 7 for contents)



# **Genuine Miller® Accessories**

#### Protective Cover 301382

Fits Dynasty 210/280 and Maxstar 280.



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



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



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.

**301235** Independent AC Expansion Allows EP and EN amperages and waveforms to be set independently to precisely control heat input to the work and electrode.

### Memory Card (Blank) 301080

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

### **TIG Torches, Kits and Connectors**



Contractor kit **301311** shown.

### **Contractor Kits**

**301309** A-150 with RFCS-14 HD **301311** A-150 with RCCS-14

**301549** A-200 with RFCS-14 HD

301550 A-200 with RCCS-14

All-in-one TIG/stick welding kit comes with either a Weldcraft™ A-150 **0R** A-200 TIG torch, RFCS-14 HD foot control **0R** RCCS-14 fingertip control, 200-amp stick electrode holder and 300-amp work clamp with 15-foot (4.6 m) cables, flow gauge regulator with 12-foot (3.7 m) gas hose, gas hose coupler, AK2C torch accessory kit and TIG torch connector.



Note: A-200 (WP-26) torches require 195379 connector.

available.



Weldcraft™ A-250 TIG Torch 301525025 No valve 301526025 With valve 250-amp air-cooled two-piece torch with 25-foot (7.6 m) cable. Note: Two-piece torches require connector: 042533 Dinse-style 191981 Tweco-style

Weldcraft™ A-200

(WP-26) TIG Torch

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

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

200-amp air-cooled

valve models also

torch. Torch body gas



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 AK4GL gas lens torch accessory kit.



Water-Cooled TIG Torch Connector 195377

300990 shown.

50 mm Dinse-style with water return line. For use with all Weldcraft™ water-cooled torches.

# **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.



# 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 ( $102 \times 102 \times 83 \text{ mm}$ ). Includes 20-foot (6 m) 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.

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
Dynasty® 280	907550	Auto-Line™ 208-575 V, 50/60 Hz, <b>CSA</b> . 8 ft. power cord		
Dynasty® 280 (CPS)	907537	Auto-Line™ 208-575 V, 50/60 Hz, <b>CSA.</b> 8 ft. power cord		
Dynasty® 280 DX	907551	Auto-Line™ 208-575 V, 50/60 Hz, <b>CSA</b> . 8 ft. power cord		
Dynasty® 280 DX (CPS)	907514	Auto-Line™ 208-575 V, 50/60 Hz, <b>CSA</b> . 8 ft. power cord		
Dynasty® 280 DX (CPS) International	907514002	Auto-Line™ 208–575 V, 50/60 Hz, <b>CE.</b> 8 ft. power cord		
Water-Cooled Packages				
Dynasty® 280 (CPS) TIGRunner®	907537002	Auto-Line™ 208–575 V, 50/60 Hz, <b>CSA.</b> 8 ft. power cord (Torch kit, accessories and coolant sold separately)		
Dynasty® 280 DX (CPS) TIGRunner®	907514001	Auto-Line™ 208-575 V, 50/60 Hz, <b>CSA</b> . 8 ft. power cord (Torch kit, accessories and coolant sold separately)		
Dynasty® 280 (CPS) Complete w/Foot Control	951466	Auto-Line™ 208-575 V, 50/60 Hz, <b>CSA.</b> 8 ft. power cord		
Dynasty® 280 DX (CPS) Complete w/Foot Control	951468	Auto-Line™ 208-575 V, 50/60 Hz, <b>CSA.</b> 8 ft. power cord		
Dynasty® 280 DX (CPS) Complete w/Wireless Foot Control	951877	Auto-Line™ 208-575 V, 50/60 Hz, <b>CSA.</b> 8 ft. power cord		
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 four)	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 Cards		See page 7		
TIG Torches, Kits and Connectors				
Air-Cooled Contractor Kits		See page 7		
Weldcraft™ A-150 (WP-17) TIG Torch	WP-17-12-R WP-17-25-R	12 ft. (3.7 m) cable. Requires <b>195378</b> connector 25 ft. (7.6 m) cable. Requires <b>195378</b> connector		
Weldcraft™ A-200 (WP-26) TIG Torch	WP-26-12-R WP-26-25-R	12 ft. (3.7 m) cable. Requires <b>195379</b> connector 25 ft. (7.6 m) cable. Requires <b>195379</b> connector		
Weldcraft™ A-250 TIG Torch	301525025 301525026	No valve. 25 ft. (7.6 m) cable With valve. 25 ft. (7.6 m) cable		
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 <b>24-5</b> connector		
Water-Cooled Torch Kits		See page 7		
Water-Cooled TIG Torch Connector	195377	Connects Weldcraft™ water-cooled torches to Dinse-style connector		
Tungsten		See above		
Remote Controls		See page 7		
Educational Materials		See page 7		

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