

# Maxstar® 210 Series

TIG/Stick Welding  
Power Source



## Quick Specs



### Industrial Applications

Precision fabrication  
Petro chemical  
Aerospace  
Food/beverage industry  
Dairy  
Shipboard

### Processes

DC TIG (GTAW)  
Pulsed TIG (GTAW-P)  
except STR model  
Stick (SMAW)

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

**Amperage Range** 1–210 A (DC)

**Rated Output** 210 A at 18.4 V, 60% duty cycle

**Net Weight** STR: 36 lb. (16.3 kg)  
Base/DX: 38 lb. (17.2 kg)



Maxstar 210 STR

Maxstar 210

Maxstar 210 DX

## QUIETPULSE™

Activate QuietPulse by selecting sine or triangular waveshape to reduce audible noise.

**Blue Lightning™** provides more consistent high-frequency (HF) arc starts and greater reliability compared to traditional arc starters. Base and DX models only.

**Lift-Arc™** provides DC arc initiation without the use of high frequency.

## AUTO-LINE™

TECHNOLOGY

Allows for any input voltage hookup (120–480 V) with no manual linking, providing convenience in any job setting. Ideal solution for dirty or unreliable power.

**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. Base and DX models only.

**Pro-Set™** eliminates the guesswork when setting weld parameters.

**Update and expand.** Front panel memory card data port provides the ability to easily update software and expand product features. See memory cards on page 7.

Visit [MillerWelds.com/TIGSoftware](http://MillerWelds.com/TIGSoftware) for the latest software updates and expansions.

**Sleep timer** conserves electricity. This programmable feature will power down the machine if it sits idle for a specified time.

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



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



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### MillerWelds.com



# Weld Process Features


## DC TIG


**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. Base and DX models only. DX models provide extended ranges.

### Pulse Waveforms

 **Square** provides a fast freezing puddle for ultimate arc control.

 **Sine** produces a reduced audible sound and provides a more fluid puddle that is good for overlaying applications.

 **Triangular** provides a quick-forming puddle while further reducing heat for thin materials.

**QuietPulse™** Activate QuietPulse by selecting sine or triangular waveshape to reduce audible noise.

## DC Stick

**Dual schedule** allows operators to switch welding parameters for specific electrodes without readjusting the machine, minimizing downtime and enhancing quality. STR model only.

**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.

**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	Amps Input at Rated Load Output, 50/60 Hz						Max. Open-Circuit Voltage	Dimensions	Net Weight	
				120 V	208 V	240 V	400 V	480 V	KVA				KW
TIG (GTAW)	3-phase	1–210 A <sup>1</sup>	210 A at 18.4 V	—	14	12	7	6	5.2	4.9	80 VDC (11 VDC <sup>4</sup> )	H: 13.6 in. (346 mm) W: 8.6 in. (219 mm) D: 19.5 in. (495 mm)	STR: 36 lb. (16.3 kg) Base/DX: 38 lb. (17.2 kg)
	1-phase	1–210 A <sup>1</sup>	210 A at 18.4 V	—	24	20	12	10	4.9	4.9			
	1-phase (120 V)	1–150 A <sup>2</sup>	125 A at 15 V	22	—	—	—	—	2.6	2.6			
Stick (SMAW)	3-phase	5–210 A <sup>1</sup>	160 A at 26.4 V	—	15	13	8	6	5.5	5.2			
	1-phase	5–210 A <sup>1</sup>	160 A at 26.4 V	—	26	22	13	11	5.3	5.3			
	1-phase (120 V)	5–100 A <sup>3</sup>	90 A at 23.6 V	23	—	—	—	—	2.8	2.8			

Maxstar 210 STR welding amp range: <sup>1</sup>10–210 A. <sup>2</sup>10–150 A. <sup>3</sup>10–100 A. <sup>4</sup>Low OCV sense voltage for 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.

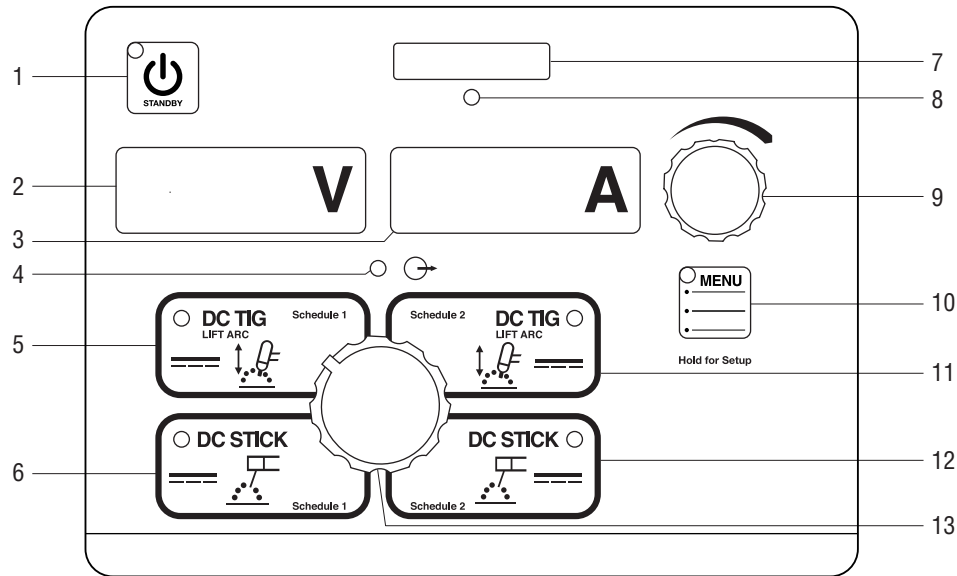
Operating temperature range is 14 to 104°F (-10 to 40°C). Storage temperature range is -22 to 149°F (-30 to 65°C). Portions of the preceding text are contained in EN 60974-1: “Welding power sources for arc welding equipment.”

 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	DC TIG Material Thickness Range	Stick Electrode Maximum Diameter	Generator Requirement
208–480 V	210 A, 60% 175 A, 100%	210 A, 30% 160 A, 60% 125 A, 100%	STR: 0.025–1/4 in. (0.6–6.4 mm) Base/DX: 0.002–1/4 in. (0.05–6.4 mm)	6010: 3/16 in. (4.8 mm) 7018: 5/32 in. (4.0 mm) 7024: 5/32 in. (4.0 mm)	9 kW
120 V	150 A, 40% 125 A, 60% 100 A, 100%	100 A, 40% 90 A, 60% 75 A, 100%			

# Maxstar® 210 STR Control Panel



1. Standby Switch

2. Voltmeter Display

3. Ammeter Display

4. Output Contactor "On" Indicator

5. DC TIG (Lift-Arc Schedule 1) Process Menu Parameters

Amperage 10–210 A

6. DC Stick (Schedule 1) Process Menu Parameters

Amperage 10–210 A

DIG Off–100%

7. Memory Card Port

8. Activity Indicator

9. Encoder Control

10. Menu Button

11. DC TIG (Lift-Arc Schedule 2) Process Menu Parameters

Amperage 10–210 A

12. DC Stick (Schedule 2) Process Menu Parameters

Amperage 10–210 A

DIG Off–100%

13. Process Selector

## User Menu (Hold Menu button three seconds.)

### DC TIG (Lift-Arc)

1. Remote Trigger = OUTPUT ON/STD

### DC Stick (Schedule 1 and 2)

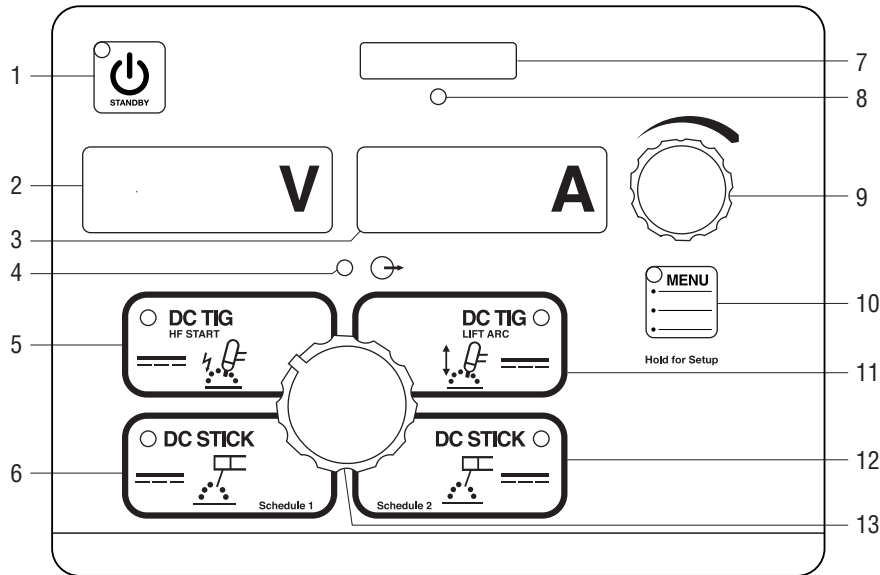
1. Remote Trigger = OUTPUT ON/STD

## 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 Stuck = OFF/ON  
5. OCV = LOW/NORM  
6. Machine Reset  
7. Software Number  
8. Serial Number

# Maxstar® 210 Control Panel



## 1. Standby Switch

## 2. Voltmeter Display

## 3. Ammeter Display

## 4. Output Contactor "On" Indicator

## 5. DC TIG (HF Start) Process Menu Parameters

Amperage	1–210 A**
Pulse*	Off–250 pps
Postflow	Auto/Off–50 seconds

## 6. DC Stick (Schedule 1) Process Menu Parameters

Amperage	5–210 A
DIG*	Off–100%

## 7. Memory Card Port

## 8. Activity Indicator

## 9. Encoder Control

## 10. Menu Button

## 11. DC TIG (Lift-Arc) Process Menu Parameters

Amperage	1–210 A**
Pulse*	Off–250 pps
Postflow	Auto/Off–50 seconds

## 12. DC Stick (Schedule 2) Process Menu Parameters

Amperage	5–210 A
DIG*	Off–100%

## 13. Process Selector

\*Pro-Set parameter selectable. \*\*Amperage range is tungsten size dependent.

## User Menu (Hold Menu button three seconds.)

### DC TIG (HF Start)

1. Tungsten Size = .020–1/8 in. or .05–3.2 mm
2. Remote Trigger = STD/HOLD/OUTPUT ON

### DC TIG (Lift-Arc)

1. Tungsten Size = .020–1/8 in. or .05–3.2 mm
2. Remote Trigger = STD/HOLD/OUTPUT ON

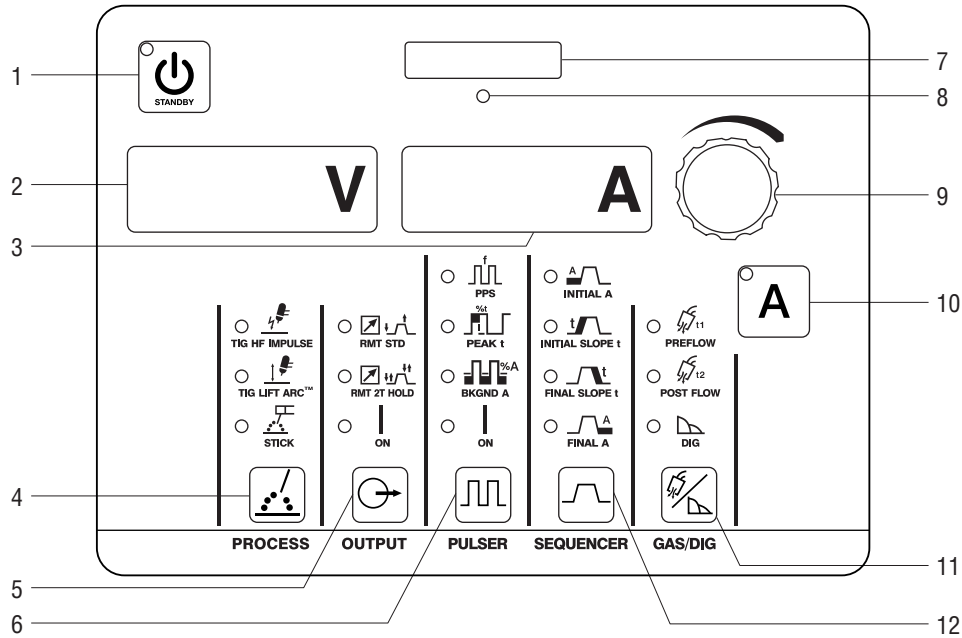
### DC Stick (Schedule 1 and 2)

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 Stuck = OFF/ON
5. OCV = LOW/NORM
6. Machine Reset
7. Software Number
8. Serial Number

# Maxstar® 210 DX Control Panel



## 1. Standby Switch

## 2. Voltmeter Display

## 3. Ammeter Display

## 4. Process/ Arc Starting

TIG: HF impulse, Lift-Arc  
Stick: Adaptive Hot Start

## 5. Output Control

Standard remote,  
2T trigger hold,  
Output on

## 6. Pulser Control

Pulses per Second\* DC: 0.1–500 pps  
Peak Time\* 5–95%  
Background Amps\* 5–95%

## 7. Memory Card Port

## 8. Activity Indicator

## 9. Encoder Control

## 10. Amperage Button

TIG 1–210 A\*\*  
Stick 5–210 A

## 11. Gas/DIG

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

## 12. Sequencer Control

Initial Amps 1–210 A\*\*  
Initial Time 0.0–25.0 seconds  
Initial Slope 0.0–50.0 seconds  
Weld Time 0.0–999 seconds  
Final Slope 0.0–50.0 seconds  
Final Amps 1–210 A\*\*  
Final Time 0.0–25.0 seconds

\*Pro-Set parameter selectable. \*\*Amperage range is tungsten size dependent.

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

1. Tungsten Size = .020–1/8 in./GEN or .05–3.2 mm
2. Remote Trigger = 2T/3T/4T/4TL/4TE/4Tm
3. Stick Hot Start = ON/OFF
4. Pulse Waveshaping = Square Wave, Sine Wave (Quiet Pulse™), and Triangular Wave (Quiet Pulse™)

## Tech Menu (Hold Gas and Amperage buttons three 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 Stuck = OFF/ON
5. OCV = LOW/NORM
6. Weld Timers = OFF/ON
7. Locks = OFF/1–4
8. Meter Display
9. External Pulse Control = OFF/ON
10. Machine Reset
11. Software Number
12. Serial Number

# Maxstar® 210 Models/Packages

## Build an Air-Cooled Package

Select desired stock number for each step.



907683  
Maxstar 210 shown.



301311  
contractor kit shown.

### Step 1 • Select Maxstar

#### Select One

Maxstar 210 STR	907682
Maxstar 210	907683
Maxstar 210 DX	907684
Maxstar 210 DX, CE	907684001

Maxstar comes with:

- Adjustable shoulder strap
- 8 ft. power cord (no plug)
- Two 50 mm Dinse-style connectors

### Step 2 • Select Cable Set/TIG Torch/Regulator OR Contractor Kit

#### For Maxstar 210 STR Only — Select All (Cable Set/TIG Torch/Regulator)

No. 2 Stick Cable Set	195196
Weldcraft A-150V (WP-17) TIG Torch	WP-17V-25-2
Flow Gauge Argon Regulator	31-50-580

#### For Maxstar 210 OR 210 DX — Select One

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

See page 7 for descriptions and kit contents.

## Build a Water-Cooled Package

Select desired stock number for each step.



907683 Maxstar  
210 shown with  
301615 Small  
Runner Cart and  
Coolant System.



301580 remote shown.



300185 kit shown.

### Step 1 • Select Maxstar/Cart/Coolant System

#### Select One

Maxstar 210	907683
Maxstar 210 DX	907684
Maxstar 210 DX, CE	907684001

*Note: Maxstar 210 series does not have Cooler Power Supply (CPS). Coolmate 1.3 must be powered through external 120-volt facility power.*

#### Select One

2-Wheel Trolley Cart	300971
Small Runner Cart	301615

#### Select All (Coolmate/Bracket/Coolant)

Coolmate™ 1.3	301616
Mounting Bracket for Maxstar 210 (required for mounting to Coolmate 1.3)	301661
Low-Conductivity Coolant (must be ordered in quantities of four)	043810

Maxstar comes with:

- Adjustable shoulder strap
- 8 ft. power cord (no plug)
- Two 50 mm Dinse-style connectors

### Step 2 • Select Remote Control

#### Select One

Wireless Foot (recommended)	301580
RFCS-14 HD Foot	301589
RCC-14 E/W Fingertip	151086
RCCS-14 N/S Fingertip	043688
RMS-14 Pushbutton	187208
RMLS-14 Momentary/Maintained	129337
RHC-14 Hand	242211020
Wireless Hand	301582

See page 7 for remote descriptions.

### Step 3 • Select Torch Kit

#### Select One

W-250 Kit	300185
(recommended for 210 model)	
W-280 Kit	300990

See page 7 for kit contents.

## Genuine Miller® Accessories



### 2-Wheel Trolley Cart 300971

For Maxstar® 210/280 and Dynasty® 210/300 with or without Coolmate 1.3 cooler. Easy-to-maneuver two-wheel cart features single-cylinder rack, chain for cylinder, cable holders, torch holder, storage area, and filler rod storage area.



### Small Runner™ Cart 301615

For Maxstar® 210/280 and Dynasty® 210/300 with 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 301616 CE

301617 CE, quick connect 120 V, 50/60 Hz 1.3-gallon cooler designed to cool torches up to 280 amps.

*Note: Requires 301661 Mounting Bracket to mount to Maxstar 210.*

### Protective Cover 301381

Fits Maxstar 210 only.



### Performance TIG Gloves

263346 Small  
263347 Medium  
263348 Large  
263349 X-Large  
Completely unlined, goat grain leather with triple-padded palm.

### No. 2 Stick Cable Set 195196

Consists of 15-foot electrode cable with holder and work cable with clamp. 200 A, 100% duty cycle.

## 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.



**301790** QuietPulse™ expansion  
For machines manufactured prior to serial number ND040985L. Adds QuietPulse feature.

### 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 **OR** A-200 TIG torch, RFCS-14 HD foot control **OR** 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.



### Weldcraft™ A-150 (WP-17) 150-Amp Air-Cooled TIG Torches

#### One-Piece Cable

**WP-17-12-R** (12 ft.)

**WP-17-25-R** (25 ft.)

*Note: A-150 (WP-17) one-piece torches require 195378 connector.*

#### Two-Piece Cable and Valve

**WP-17V-12-2** (12 ft.)

**WP-17V-25-2** (25 ft.)



### Weldcraft™ A-200 (WP-26) 200-Amp Air-Cooled TIG Torches

#### One-Piece Cable

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

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

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

#### Two-Piece Cable and Valve

**WP-26V-12-2** (12 ft.)

**WP-26V-25-2** (25 ft.)

### Air-Cooled TIG Torch Connectors

**195378\*** All air-cooled torches (except A-200)

**195379** A-200 (WP-26)

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 (recommended)

**300990** W-280

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.

## 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 301589

Heavy-duty foot pedal current and contactor control provides increased stability and durability from larger base and heavier cord. Includes 20-foot (6 m) cord with 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.

### 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 x 102 x 83 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](http://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
<b>Maxstar® 210 STR</b>	<b>907682</b>	Auto-Line™ 120–480 V, 50/60 Hz. 8 ft. power cord		
<b>Maxstar® 210</b>	<b>907683</b>	Auto-Line™ 120–480 V, 50/60 Hz. 8 ft. power cord		
<b>Maxstar® 210 DX</b>	<b>907684</b>	Auto-Line™ 120–480 V, 50/60 Hz. 8 ft. power cord		
<b>Maxstar® 210 DX</b>	<b>907684001</b>	Auto-Line™ 120–480 V, 50/60 Hz, <b>CE</b> . 8 ft. power cord		
<b>Accessories</b>				
2-Wheel Trolley Cart	<b>300971</b>	For Maxstar® 210/280 and Dynasty 210/300 with or without Coolmate 1.3		
Small Runner™ Cart	<b>301615</b>	For Maxstar® 210/280 and Dynasty 210/300 with Coolmate 1.3		
Coolmate™ 1.3	<b>301616</b>	120 V, 50/60 Hz, <b>CE</b> . <i>Requires coolant</i>		
	<b>301617</b>	120 V, 50/60 Hz, <b>CE</b> . Quick connect. <i>Requires coolant</i>		
Maxstar Mounting Bracket	<b>301661</b>	Required for mounting the Maxstar 210 to the Coolmate 1.3		
TIG Coolant (must be ordered in quantities of four)	<b>043810</b>	1-gallon plastic bottle. Protects against freezing to -37° Fahrenheit (-38°C) or boiling to 227° Fahrenheit (108°C)		
Protective Cover	<b>301381</b>	For Maxstar 210 only		
TIG Gloves		See page 7		
No. 2 Stick Cable Set	<b>195196</b>	See page 7		
Memory Cards		See page 7		
<b>TIG Torches, Kits and Connectors</b>				
Air-Cooled Contractor Kits		See page 7		
Weldcraft™ A-150 (WP-17) TIG Torch	<b>WP-17-12-R</b>	12 ft. (3.7 m) 1-piece cable. Requires <b>195378</b> connector		
	<b>WP-17-25-R</b>	25 ft. (7.6 m) 1-piece cable. Requires <b>195378</b> connector		
	<b>WP-17V-12-2</b>	12 ft. (3.7 m) 2-piece cable and valve		
	<b>WP-17V-25-2</b>	25 ft. (3.7 m) 2-piece cable and valve		
Weldcraft™ A-200 (WP-26) TIG Torch	<b>WP-26-12-R</b>	12 ft. (3.7 m) 1-piece cable. Requires <b>195379</b> connector		
	<b>WP-26-25-R</b>	25 ft. (7.6 m) 1-piece cable. Requires <b>195379</b> connector		
	<b>WP-26V-12-2</b>	12 ft. (3.7 m) 2-piece cable and valve		
	<b>WP-26V-25-2</b>	25 ft. (7.6 m) 2-piece cable and valve		
Air-Cooled TIG Torch Connectors	<b>195378</b>	Connects all air-cooled Weldcraft™ torches (except A-200) to Dinse-style connector. A-80 (WP-24) torches require <b>24-5</b> connector		
	<b>195379</b>	Connects Weldcraft™ A-200 (WP-26) torch to Dinse-style connector		
Water-Cooled Torch Kits		See page 7		
Tungsten		See above		
<b>Remote Controls</b>				
Wireless Remote Foot Control	<b>301580</b>	Foot control with wireless 90 ft. (27.4 m) operating range		
RFCS-14 HD	<b>301589</b>	Heavy-duty foot control		
RCC-14	<b>151086</b>	Side-to-side (east/west) fingertip control		
RCCS-14	<b>043688</b>	North/south fingertip control		
RMS-14	<b>187208</b>	Momentary rubber dome switch		
RMLS-14	<b>129337</b>	Momentary/maintained rocker switch		
RHC-14	<b>242211020</b>	Hand control		
Wireless Remote Hand Control	<b>301582</b>	Hand control with wireless 300 ft. (91.4 m) operating range		
<b>Educational Materials</b>				
		See page 7		

Date:

Total Quoted Price:

Distributed by:

