Issued Dec. 2016 • Index No. DC/32.1

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, 1-phase or 3-phase power

Amperage Range 1–210 A (DC)

Rated Output 210 A at 18 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

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 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.

AUTOLINE Power Management 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.

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. Base and DX models only.

Meter calibration allows digital meters to be calibrated for certification.

Wind Tunnel Technology™ protects internal electrical components from airborne contaminates, 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 though the machine.

DC TIG Features

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.

Exceptionally smooth and precise arc for welding exotic materials.

DC Stick Features

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. Base and DX models only.

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.

TRUE BLUE® 3YR. WARRANTY

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

Miller

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An ITW Welding Company
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P.O. Box 1079
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International FAX: 920-735-4125

MillerWelds.com

ISO 9001 REGISTERED QUALITY SYSTEM

Specifications (Subject to change without notice.)

Welding Mode	Input Power	Welding Amperage Range	Rated Output	Phase	Amps Input at Rated Load Output, 50/60 Hz 120 V	208 V	240 V	400 V	480 V	KVA	KW	Max. Open-Circuit Voltage	Dimensions	Net Weight
TIG (GTAW)	208–480 V	1–210 A	210 A at 18.4 V, 60% duty cycle	3-phase	—	14	12	7	6	5.2	4.9	80 VDC (11 VDC*)	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	—	24	20	12	10	4.9	4.9			
	120 V	1–210 A	125 A at 15 V, 60% duty cycle	1-phase	22	—	—	—	—	2.6	2.6			
Stick (SMAW)	208–480 V	5–210 A	160 A at 26.4 V, 60% duty cycle	3-phase	—	15	13	8	6	5.5	5.2			
				1-phase	—	26	22	13	11	5.3	5.3			
	120 V	5–100 A	90 A at 23.6 V, 60% duty cycle	1-phase	23	—	—	—	—	2.8	2.8			

** 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.

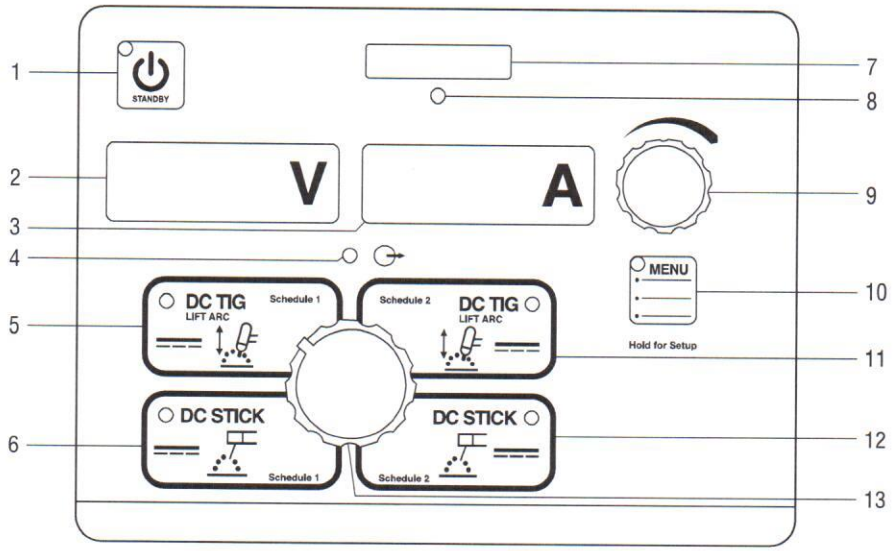
Performance Data

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%			

TIG Upgrade Chart

Why Upgrade?	Maxstar 210 STR	UPGRADE	Maxstar 210	UPGRADE	Maxstar 210 DX	Upgrade Benefits
Amperage Range	10–210 A	➡	1–210 A		1–210 A	Base and DX models offer wider range and improved low-amperage performance.
Arc Starting	Lift-Arc™ Only	➡	Lift-Arc™ or Blue Lightning™ HF		Lift-Arc™ or Blue Lightning™ HF	Base and DX models provide the ability of non-contact arc starting.
Internal Shielding Gas Valve	No	➡	Yes		Yes	Base and DX models control flow of shielding gas for TIG welding.
Pulser	No	➡	Easy pulse with Pro-Set™, Off–250 PPS	➡	Full featured with Pro-Set™, Off–500 PPS	Higher speed pulse provides better arc control and faster travel speeds.
Sequencer	No		No	➡	Yes	Improves repeatability on similar parts.

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.)

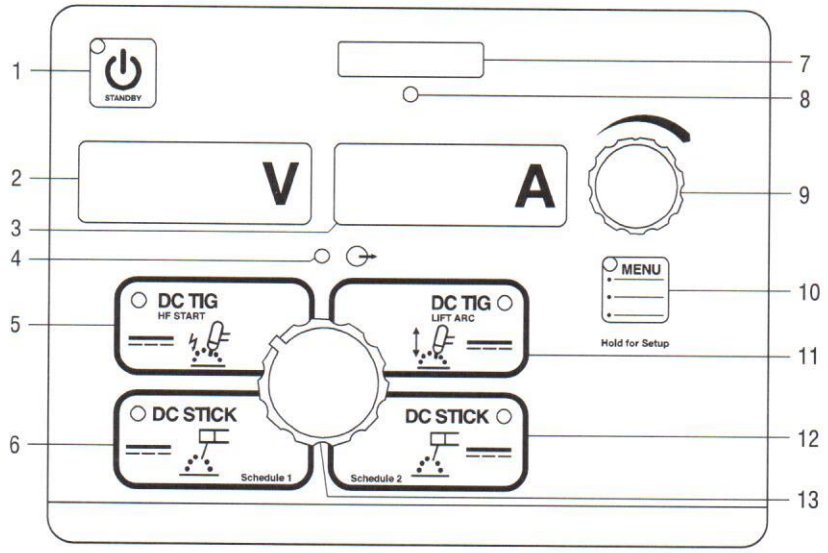
DC TIG (Lift-Arc)
1. Remote Trigger = OUTPUT ON/STD

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 Stuc = 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

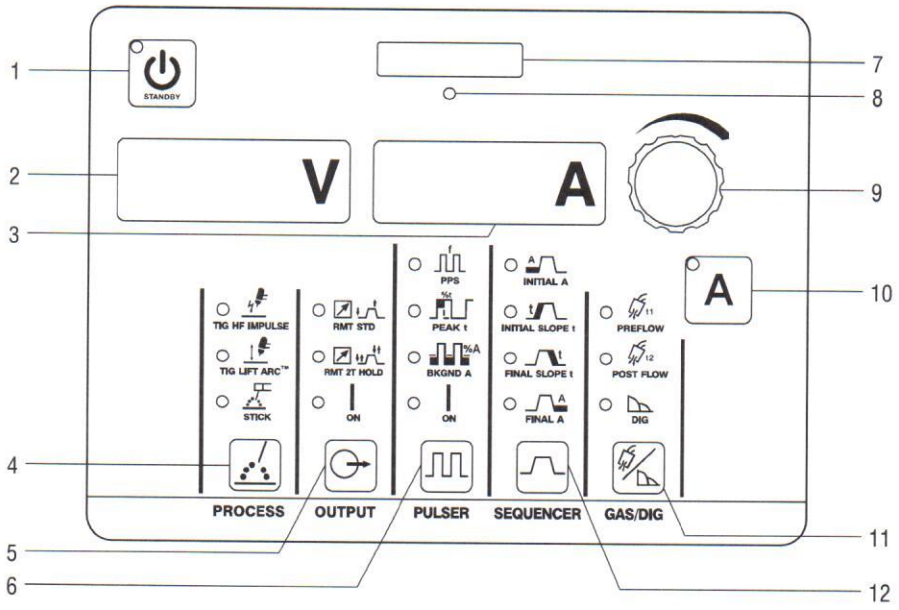
DC TIG (Lift-Arc)
1. Tungsten Size = .020–1/8 in. or .05–3.2 mm
2. Remote Trigger = STD/HOLD/OUTPUT ON

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 Stuc = 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

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 Stuc = 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		Step #2 • Select Cable Set/TIG Torch/Regulator OR Contractor Kit	
Select One		**For Maxstar 210 STR Only — Select All (Cable Set/TIG Torch/Regulator)**	
Maxstar 210 STR	907682	No. 2 Stick Cable Set	195196
Maxstar 210	907683	Weldcraft A-150V (WP-17) TIG Torch	WP-17V-25-2
Maxstar 210 DX	907684	Flow Gauge Argon Regulator	31-50-580
		For Maxstar 210 OR 210 DX — Select One	
		Foot Control Contractor Kit	301309
		Fingertip Control Contractor Kit	301311
Maxstar comes with adjustable shoulder strap, 8 ft. power cord (no plug) and two 50 mm Dinse-style connectors.		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 301318 Small Runner Cart and Coolant System.



300429 remote shown.



300185 kit shown.

Step #1 • Select Maxstar/Cart/Coolant System		Step #2 • Select Remote Control		Step #3 • Select Torch Kit	
Select One		**Select One**		**Select One**	
Maxstar 210	907683	Wireless Foot (recommended)	300429	W-250 Kit	300185
Maxstar 210 DX	907684	RFCS-14 HD Foot	194744	(recommended for 210 model)	
Select One		RCC-14 E/W Fingertip	151086	W-280 Kit	300990
2-Wheel Trolley Cart	300971	RCCS-14 N/S Fingertip	043688		
Small Runner Cart	301318	RMS-14 Pushbutton	187208		
Select All (Coolmate/Bracket/Coolant)		RMLS-14 Momentary/Maintained	129337		
Coolmate™ 1.3	300972	RHC-14 Hand	242211020		
Mounting Bracket for Maxstar 210 (required for mounting to Coolmate 1.3)	301312	Wireless Hand	300430		
Low-Conductivity Coolant (must be ordered in quantities of 4)	043810				
Maxstar comes with adjustable shoulder strap, 8 ft. power cord (no plug) and two 50 mm Dinse-style connectors.		See page 7 for remote descriptions.		See page 7 for kit contents.	

Genuine Miller® Accessories

Protective Cover 301381
Fits Maxstar 210 only.



2-Wheel Trolley Cart 300971
Easy-to-maneuver two-wheel cart features single-cylinder rack, chain for cylinder, cable holders, torch holder, storage area, and filler rod storage area. Works with Dynasty®/Maxstar® 210 and 280 with Coolmate 1.3 cooler. Straps also included for mounting Dynasty/Maxstar 200 with Coolmate 1 cooler.



Small Runner™ 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.
*Note: Requires **301312** Mounting Bracket to mount to Maxstar 210.*



Performance TIG Gloves
263345 X-Small
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.

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 Kits
301309 150 A RFCS-14 HD Foot Pedal Kit
301311 150 A RCCS-14 Fingertip Kit
All-in-one TIG/stick welding kit comes with either a RFCS-14 HD foot control **OR** RCCS-14 fingertip control, Weldcraft™ A-150 TIG torch, 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 torch accessory kit (1/16-, 3/32- and 1/8-inch 2% ceriated tungsten, nozzles, collets and collet bodies).

Remote Controls and Switches

Wireless Remote Foot Control 300429
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) 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 300430
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
Maxstar® 210 STR	**907682**	Auto-Line™ 120–480 V, 50/60 Hz, **CSA.** 8 ft. power cord		
Maxstar® 210	**907683**	Auto-Line™ 120–480 V, 50/60 Hz, **CSA.** 8 ft. power cord		
Maxstar® 210 DX	**907684**	Auto-Line™ 120–480 V, 50/60 Hz, **CSA.** 8 ft. power cord		
Maxstar® 210 DX International	**907684001**	Auto-Line™ 120–480 V, 50/60 Hz, **CE.** 8 ft. power cord		
Accessories				
Protective Cover	**301381**	For Maxstar 210 only		
2-Wheel Trolley Cart	**300971**	See page 7		
Small Runner™ Cart	**301318**	See page 7		
Coolmate™ 1.3	**300972**	120 V, 60 Hz, **CSA.** *Requires coolant*		
Maxstar Mounting Bracket	**301312**	Required for mounting the Maxstar 210 to the Coolmate 1.3		
TIG Coolant (Must be ordered in quantities of 4)	**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		
No. 2 Stick Cable Set	**195196**	See page 7		
Memory Cards		See page 7		
TIG Torches, Kits and Connectors				
Air-Cooled Contractor Kits	**301309** **301311**	Foot pedal Fingertip		
Weldcraft™ A-150 (WP-17) TIG Torch	**WP-17-12-R** **WP-17-25-R** **WP-17V-12-2** **WP-17V-25-2**	12 ft. (3.7 m) 1-piece cable. Requires **195378** connector 25 ft. (7.6 m) 1-piece cable. Requires **195378** connector 12 ft. (3.7 m) 2-piece cable and valve 25 ft. (3.7 m) 2-piece cable and valve		
Weldcraft™ A-200 (WP-26) TIG Torch	**WP-26-12-R** **WP-26-25-R** **WP-26V-12-2** **WP-26V-25-2**	12 ft. (3.7 m) 1-piece cable. Requires **195379** connector 25 ft. (7.6 m) 1-piece cable. Requires **195379** connector 12 ft. (3.7 m) 2-piece cable and valve 25 ft. (7.6 m) 2-piece cable and valve		
Air-Cooled TIG Torch Connectors	**195378** **195379**	Connects all air-cooled Weldcraft™ torches (except A-200) to Dinse-style connector. A-80 (WP-24) torches require **24-5** connector Connects Weldcraft™ A-200 (WP-26) torch to Dinse-style connector		
Water-Cooled Torch Kits	**300185** **300990**	W-250 (recommended for Maxstar 210) W-280		
Tungsten		See above		
Remote Controls				
Wireless Remote Foot Control	**300429**	Foot control with wireless 90 ft. (27.4 m) operating range		
RFCS-14 HD	**194744**	Heavy-duty foot control		
RCC-14	**151086**	Side-to-side (east/west) fingertip control		
RCCS-14	**043688**	North/south fingertip control		
RMS-14	**187208**	Momentary rubber dome switch		
RMLS-14	**129337**	Momentary/maintained rocker switch		
RHC-14	**242211020**	Hand control		
Wireless Remote Hand Control	**300430**	Hand control with wireless 300 ft. (91.4 m) operating range		
Educational Materials				
Gas Tungsten Arc Welding (TIG) Publication	**250833**			
Setup DVD	**251116**			

Date: **Total Quoted Price:**

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