

PipeWorx Welding System **Multiprocess Pipe Welding Systems**

Quick Specs

Pipe Welding Fabrication

Process piping
Refinery
Petrochemical
Power
HVAC and water pipe

Processes

Stick (SMAW)
DC TIG (GTAW)
MIG (GMAW)
RMD®
Pulsed MIG (GMAW-P)
Flux-cored (FCAW)

Rated Output 400 A at 36 VDC, 100% duty cycle

Output Range Stick: 40–400 A
DC TIG: 10–350 A
MIG/flux-cored: 10–44 V, 400 A

Net Weight Power source: 225 lb. (102 kg)
Dual-wire feeder: 90 lb. (41 kg)
Cooler: 133 lb. (60 kg)

Designed exclusively for pipe fabrication shops.

Simple process setup

- Clearly labeled controls in easy-to-understand welder terminology.
- Requires just a few basic steps to set up a new weld process, resulting in less training time and minimizing errors from incorrect setups.
- The front panel was designed by welders for welders. Only backlit controls are adjustable to eliminate confusion.
- Memory feature stores four programs for each selection: stick, DC TIG, and MIG (left and right side of feeder). Beneficial when using multiple procedures, multiple process parameters or multiple welders and eliminates the need to remember parameters.

Quick process changeover

- No need to manually switch polarity or cables and hoses between processes. Simply push a process selection button to choose a welding process. PipeWorx 'Quick-Select' technology automatically selects the welding process, the correct polarity, cable outputs and welding parameters.
- Quick process changeover eliminates set-up time for switching cables and gas hoses. Also, reduces the risk of weld reworks due to incorrect cable connection.



Accu-Power™ PipeWorx memory card (optional) displays instantaneous power during welding to meet the new ASME requirement for calculating heat input on complex waveform processes (RMD and pulsed MIG). *See page 3 for more information.*

Multiprocess machine

- Weld processes are optimized to deliver superior arc performance and stability specifically for root pass, fill and cap pipe welding.
- Includes conventional stick, DC TIG (Lift-Arc™ or HF start), flux-cored and MIG welding processes.
- Also features the advanced RMD and pulsed MIG processes that deliver superior quality welds, increase productivity, and reduce rework and training.

Streamlined system

- Wind Tunnel Technology™ and Fan-On-Demand™ provide system protection in the dusty shop environment.
- Innovative cable and gun storage manages clutter for a cleaner, organized weld-cell area. Cables remain connected to the power source and do not need to be switched for the different welding processes.
- All system components have been selected to meet the needs of a pipe fabrication shop.

PipeWorx Welding System (951381) shown with accessory kit (300568).
Filler metal and shielding gas sold separately.



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



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MillerWelds.com



PipeWorx Welding System

Typical system with remote feeder — see page 6 for systems



PipeWorx power source control panel with door open

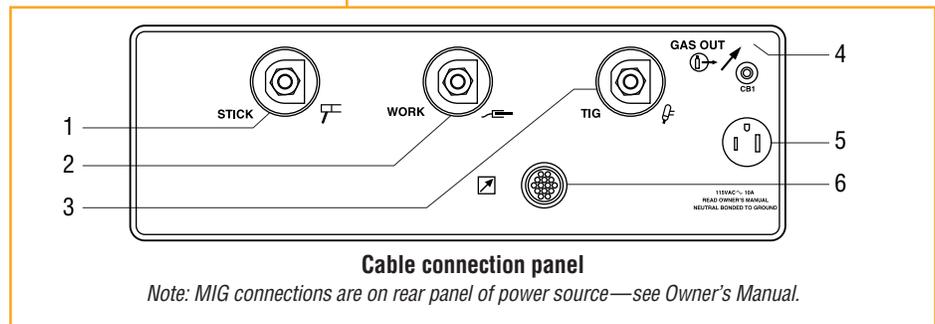
- 1. Process selection** clearly backlights adjustable controls and lights the appropriate meter — stick or DC TIG. TIG gas pre-flow and post-flow optimized for the application.
- 2. Optimized stick welding conditions.** Automatically sets the optimum welding conditions for common E6010 series and E7018 low hydrogen series electrodes. Adaptive Hot Start™ for stick arc starts automatically increases the output amperage at the start of a weld, and prevents the electrode from sticking.
- 3. Versatile TIG arc starts.** Select between Lift-Arc™ or high frequency starting with the push of a button.
- 4. Memory card** provides the ability to save the process parameters of all memory locations. Each operator can have their own machine settings.
- 5. Memory** stores four programs for each selection stick, TIG, MIG (left and right). This eliminates the need to remember parameters. The convenient white board area can be customized using magnetic strips, grease pencils or erasable markers.
- 6. Flux-cored selection** provides the optimum weld conditions for welding pipe with gas-shielded flux-cored wires.
- 7. MIG starts and stops** are optimized based on selection of material type, wire diameter and shielding gas type. No setting required.
- 8. The MIG-modified short circuit (RMD®) programs and pulsed MIG programs** are synergic programs designed specifically to provide optimum pipe welding performance for combinations of wire type, wire diameter and shielding gas. See pages 4 and 5 for welding process information.
- 9. Left/right side feeder select**
- 10. Remote program select** allows the welder to select a stored program without returning to the power source.

Wind Tunnel Technology™ and Fan-On-Demand™ provide system protection in the dusty environment of a pipe shop.

Work cable and clamp (along with regulators and gas hoses) included in **PipeWorx accessories kit (300 568)**.



(TIG torch is optional, see page 7.)



Cable connection panel

Note: MIG connections are on rear panel of power source—see Owner's Manual.

- 1. Dedicated stick connection**
- 2. Dedicated work cable connection**
- 3. Dedicated TIG torch cable connection**
- 4. Dedicated TIG gas hose connection.** Built-in TIG gas solenoid automatically turns gas on/off in HF or Lift-Arc™ mode.
- 5. 115-volt (10 amp) receptacle** for water cooler, if used.
- 6. Dedicated TIG remote receptacle**

PipeWorx Welding System (Continued)

Right-sized power source provides 400 amps at 100 percent duty cycle for stick for maximum stick electrode diameters. Provides 350 amps at 100 percent duty cycle for TIG welding in high-amperage applications. Provides 400 amps at 100 percent duty cycle for MIG and gas-shielded flux-cored weld processes.

Cable hangers are provided with the power source for guns, stick electrode holders and TIG torch.

Dual-wire feeder available with simple operator interface. Wire feed speeds up to 780 ipm.

Bernard® PipeWorx guns configured for pipe welding applications.

Composite Cable Kit
300454 25 ft. (7.6 m)
300456 50 ft. (15.2 m)
For remote feeder applications. Encases control cable, weld cable and gas hose in a protective sheath to simplify installation and reduce clutter in the weld cell.

PipeWorx Running Gear
300368
 Includes dual gas cylinder rack and front handles for power source.

RFCS-14 HD Foot Control 194744 (optional)
For TIG applications. Heavy-duty foot pedal current/contacter control with increased stability and durability from larger base and heavier cord. Reconfigurable cord can exit front, back or either side of the pedal for flexibility. Includes 20-foot (6 m) cord and 14-pin plug.



Note: Other non-standard programs are optionally available for unique welding applications. These programs are available on commercial memory cards and operate through the PipeWorx Card Reader on the operator interface. Contact Miller for more information on less common materials and gases.

Rear panel of feeder

Volt sense lead connection. This provides accurate voltage feedback for proper operation of the MIG welding processes.

Note: The arc will be hotter than typical welding systems at a given setting because the voltage loss in the weld cable is not included in the measurement displayed on the meter.



Feeder Cart 300467
 For remote feeder applications. Includes cable hangers and consumables drawer.

Additional Accessories

Spool Covers

057607 For left side of dual feeder
090389 For right side of dual feeder
 For 12-inch (305 mm) diameter spools. Protects wire from dust and contaminants.

Reel Covers

195412 For left side of dual feeder
091668 For right side of dual feeder
 For 60-pound (27 kg) coils. Protects wire from dust and contaminants.



Wire Reel Assembly
108008
 For 60-pound (27 kg) coil of wire.



DSS-9 Dual Schedule Switch 071833
 Allows the operator to switch between two sets of parameters during welding to provide consistent penetration in the fixed position or change parameter between passes in roll welding applications.



RPBS-14 Remote Control
300666
 Attaches to the TIG torch to remotely start and stop the TIG welding process.



Wireless Remote Foot Control
300429 For PipeWorx models with serial number MA470021G and after
300859 For PipeWorx models before serial number MA470021G
 See literature AY/6.5 for more information.

PipeWorx Memory Cards

- 301080** **Blank Card** — Used to store weld programs
- 301340** **System Software** — For free download, visit MillerWelds.com
- 300557** **Calibration** — Used to calibrate the PipeWorx System. For free download, visit MillerWelds.com
- 300536** **Inconel** — Pulsed MIG, .035/.045-inch diameter wire, 75% argon/25% helium
- 300675** **Carbon Steel, RMD®** — .052-inch diameter wire with 75% argon/25% CO₂
- 300460** **Range Locks** — Provides ability to set nominal parameter values and ranges for wire feed processes.
- 300667** **Accu-Power™** — Displays instantaneous power during welding to meet the new ASME requirement for calculating heat input on complex waveform processes (RMD and pulsed MIG). Requires version 1.07 software minimum.
- 301035** **Trigger Select/Hold Option** — Enables trigger select while welding to change processes and parameters without stopping.
- 301116** **VRD** — Voltage reduction device (VRD) lowers open-circuit voltage (OCV) to 15 VDC

Welding Process Capabilities

The PipeWorx Welding System provides standard welding process programs, specifically designed for the welding of carbon steel and stainless steel pipe. The RMD® (MIG-modified short circuit) programs and pulsed MIG programs are synergic programs designed specifically for combinations of wire type, wire diameter and shielding gas.

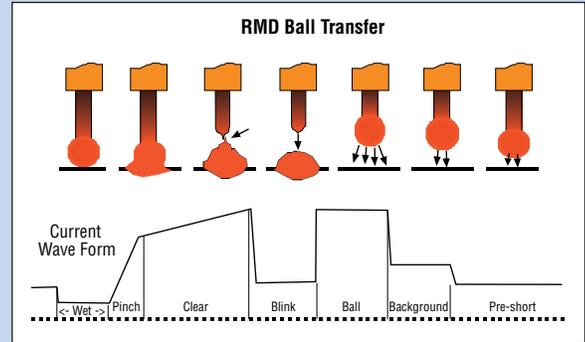
Carbon Steel Programs		Wire Type			
		Solid Wire			Metal-cored Wire
		.035 in. (0.9 mm)	.040 in. (1.0 mm)	.045 in. (1.1/1.2 mm)	.045 in. (1.1/1.2 mm)
Shielding Gas	100% CO ₂	MIG, RMD	MIG, RMD	MIG, RMD	
	C25 (argon/25% CO ₂)	MIG, RMD	MIG, RMD	MIG, RMD	RMD
	C20 (argon/20% CO ₂)	MIG, RMD, Pulse	MIG, RMD, Pulse	MIG, RMD, Pulse	RMD
	C8-15 (argon/8–15% CO ₂)	MIG, RMD, Pulse	MIG, RMD, Pulse	MIG, RMD, Pulse	Pulse

Stainless Steel Programs		Wire Type		
		Solid Wire		
		.035 in. (0.9 mm)	.040 in. (1.0 mm)	.045 in. (1.1/1.2 mm)
Shielding Gas	C2 (argon/2% CO ₂)	MIG, RMD, Pulse	MIG, RMD, Pulse	MIG, RMD, Pulse
	98/2 (argon/2% oxygen)	MIG, RMD, Pulse	MIG, RMD, Pulse	MIG, RMD, Pulse
	Tri H (90% He/7.5% Ar/2.5% CO ₂)	MIG, RMD, Pulse		MIG, RMD, Pulse
	Tri A (81% Ar/18% He/1% CO ₂)	MIG, RMD, Pulse		MIG, RMD, Pulse

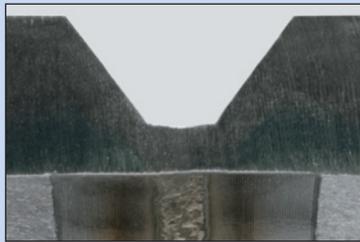
Improved Arc Performance

RMD® (Regulated Metal Deposition)

A precisely controlled short-circuit metal transfer that provides a calm, stable arc and weld puddle. This provides less chance of cold lap or lack of fusion, less spatter and a higher quality root pass on pipe. The stability of the weld process lessens the puddle manipulation required by the welder and is more tolerant to hi-lo conditions, reducing training requirements. Weld bead profiles are thicker than conventional root pass welds which can eliminate the need for a hot pass, improving weld productivity. In some stainless steel applications, it may be possible to eliminate the backing (purge) gas to further improve productivity and reduce welding costs.



RMD carbon steel

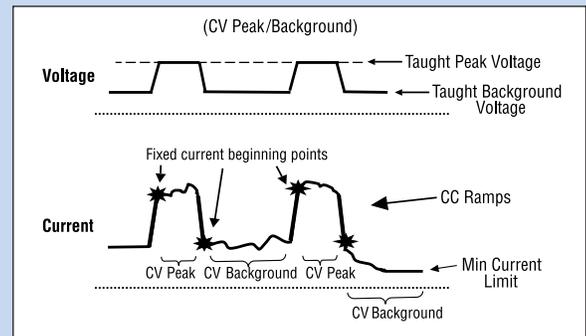


RMD stainless

- Ideally suited to root pass welding
- Consistent side wall fusion
- Less weld spatter
- Tolerant to hi-lo fit-up conditions
- More tolerant of tip-to-work distance
- Less welder training time
- Thicker root passes can eliminate hot pass
- Eliminate backing gas on some stainless steel applications

Pulsed MIG

This method of pulse welding provides a shorter arc length, narrower arc cone and less heat input than with traditional spray pulse transfer. Since the process is closed-loop, arc wandering and variations in tip-to-work distances are virtually eliminated. This provides easier puddle control for both in-position and out-of-position welding, reducing welder training time. The process also improves fusion and fill at the toe of the weld, permitting higher travel speeds and higher deposition. This process coupled with RMD for root pass welding permits welding procedures with one wire and one gas to eliminate process switch-over time.



Pulsed MIG carbon



Pulsed MIG stainless

- Ideally suited to fill and cap pass welding
- Easier puddle control than conventional spray pulse
- Shorter arc lengths and narrow arc cone for out-of-position welding
- More tolerant of tip-to-work variation
- Improve fusion and fill at toe of weld
- Less heat input reduces interpass cooling time and improves weld cycle time
- Enables one-wire with one-gas weld procedures

PipeWorx Welding System Specifications (Subject to change without notice.)



PipeWorx Power Source

Welding Mode	Rated Output at 100% Duty Cycle	Amp/Volt Range	Amps Input at Rated Output, 60 Hz, 3-Phase					KVA	KW	Max. Open-Circuit Voltage	Dimensions	Net Weight
			230 V	380 V	400 V	460 V	575 V					
CC: stick	400 A at 36 VDC	40–400 A	43.9	26.3	25.5	26.6	22.4	230 V 17.5 380 V 17.6 400 V 17.8 460 V 21.2 575 V 22.3	230 V 16.1 380 V 16.5 400 V 16.5 460 V 16.3 575 V 16.4	90	H: 28.5 in. (724 mm) W: 19.5 in. (495 mm) D: 31.75 in. (806 mm)	225 lb. (102 kg)
CC: DC TIG	350 A at 24 VDC	10–350 A	29.3	19	18.1	18.2	13.5	230 V 11.8 380 V 12.4 400 V 12.5 460 V 14.5 575 V 13.4	230 V 10.7 380 V 9.7 400 V 9.8 460 V 10.6 575 V 10.0			
CV: MIG/flux-cored	400 A at 34 VDC	10–44 V	42.9	27.1	25.7	24	20.5	230 V 17.3 380 V 18.0 400 V 18.0 460 V 19.2 575 V 20.5	230 V 16.0 380 V 15.5 400 V 15.6 460 V 15.8 575 V 16.2			

PipeWorx Single and Dual Feeders

Input Power	Input Welding Circuit Rating	Wire Feed Speed Range	Wire Diameter Capacity	Maximum Spool Size Capacity	Dimensions	Net Weight
24 VAC, 11 amps	100 V, 750 A, 100% duty cycle	50–780 ipm (1.3–19.8 mpm)	.035–.062 in. (0.9–1.6 mm)	60 lb. (27 kg)	H: 14 in. (356 mm) W: 19 in. (483 mm) D: 29 in. (737 mm)	90 lb. (41 kg)

Feeder Drive Roll Kits*

Wire size	“V” groove for hard wire	“V” knurled for hard-shelled cored wires
.035 in. (0.9 mm)	151026	151052
.040 in. (1.0 mm)	161190	—
.045 in. (1.1/1.2 mm)	151027	151053
.052 in. (1.3/1.4 mm)	151028	151054
1/16 in. (1.6 mm)	151029	151055
.068/.072 in. (1.8 mm)	—	151056
5/64 in. (2.0 mm)	—	151057
3/32 in. (2.4 mm)	—	151058

Wire Guides

Wire size	Inlet Guide	Intermediate Guide
.023–.040 in. (0.6–1.0 mm)	150993	149518
.045–.052 in. (1.1–1.4 mm)	150994	149519
1/16–5/64 in. (1.6–2.0 mm)	150995	149520
3/32–7/64 in. (2.4–2.8 mm)	150996	149521

*Select drive roll kits from chart at left according to type and wire size being used. Drive roll kits include four drive rolls, the necessary guides and feature an anti-wear sleeve for the inlet guide.

Typical PipeWorx Welding Systems (Filler metal and shielding gas sold separately.)



Air-Cooled System

PipeWorx Welding System package (**951381**) includes power source (with cable hangers), running gear and handles, dual feeder, cable kit with 25-foot (7.6 m) work sense lead, and two PipeWorx 300 guns. Shown with PipeWorx accessory kit (**300568**), sold separately—see ordering information on back page for part numbers included in package.



Air-Cooled w/Remote Feeder System

System is shown with power source (**907382**), running gear (**300368**), dual feeder (**300366**), 25-foot composite cable (**300454**), feeder cart (**300467**), two 300-amp guns (**195400**), remote foot control (**194744**), TIG torch (**WP1725RM** with **105257** adapter), and accessory kit (**300568**).



Water-Cooled System

System is shown with PipeWorx Welding System package (**951381**), PipeWorx cooler (**300370**) for MIG or TIG welding (removable for service and repair), remote foot control (**194744**), TIG torch (**WP1825RM** with **45V11** adapter), coolant (**043810**), and accessory kit (**300568**).

Bernard® PipeWorx Guns Features



As the preferred hand-held MIG gun and consumable manufacturer of Miller, Bernard is proud to provide its durable and innovative products for use with Miller® wire feeders and machines. Each Bernard product is versatile, dependable and built with the goal in mind of improving your welding productivity and performance.

The Bernard PipeWorx gun with a tapered tip and nozzle is recommended for root pass welding, especially in fixed-position applications where visibility is difficult. Switch to a standard tip and nozzle for fill and cap pass welding with flux-cored or pulsed MIG welding processes. This allows one gas and one wire to make the weld.

Versatility	Can be used for MIG, pulsed MIG, and flux-cored.
Ergonomics	Compact, lightweight gun with high-amperage capability reduces operator fatigue improving productivity.
Visibility	The combination of tapered tips and nozzles and 60-degree neck provides excellent visibility on root passes in pipe joints.
Centerfire™ Tip	Provides “drop-in” tip with no threads providing quick changeover. No tools are required.

Specifications (Subject to change without notice.)

Bernard Model	100% Duty Cycle NEMA	100% Duty Cycle CE	60% Duty Cycle CE	35% Duty Cycle CE	Gas Type	Cable Length	Net Weight
PipeWorx 250-15 195399 (root pass only)	300 A	250 A	300 A	365 A	100% CO ₂	15 ft. (4.6 m)	9 lb. (4.1 kg)
	—	210 A	250 A	300 A	80% argon/20% CO ₂		
PipeWorx 300-15 195400	350 A	320 A	370 A	470 A	CO ₂ gas	15 ft. (4.6 m)	10 lb. (4.6 kg)
	—	270 A	310 A	390 A	80% argon/20% CO ₂		

Key Gun Consumables

Description	Part Number	Package Quantity
.035 in. tapered tip	TT-035 ¹	10
.040 in. tapered tip	TT-039	10
.045 in. tapered tip	TT-045	10
.035 in. tip	T-035	10
.040 in. tip	T-039	10
.045 in. tip	T-045 ²	10
.052 in. tip	T-052	10
1/16 in. tip	T-062	10
.035–.045 in. liner	43115 ^{1,2}	1
.045–.062 in. liner	44215	1

¹Standard part on PipeWorx 250-15.

²Standard part on PipeWorx 300-15.

Description	Part Number	Package Quantity
Nozzle 5/8 in. ID	NS-5818C ²	10
Nozzle 5/8 in. ID	N-5818C	10
Nozzle 1/2 in. ID	NS-1218C	10
Nozzle 3/4 in. ID	N-3418C	10
Nozzle 3/8 in. ID tapered tip	NT-3800C	10
Nozzle 3/8 in. ID tapered tip	NST-3800B	10
Nozzle 3/8 in. ID extended tapered tip	NST-38XTB ¹	10
Diffuser	D-1	10
Diffuser	DS-1 ^{1,2}	10
Q tube assembly 60°	QT2-60 ^{1,2}	1
Q tube assembly 80°	QT2-80	1
O-ring	4929	10

Weldcraft™ TIG Torches



Complete your PipeWorx Welding System with a Weldcraft TIG torch. These torches use high-quality, durable components combined with innovative designs to ensure long, trouble-free performance, better productivity and lower costs.

Stock No.	Model	Connector
WP1725RM	Air-cooled (one cable) 150 amp	105Z57
WP2625RM	Air-cooled (one cable) 200 amp	45V62
WP1825RM	Water-cooled (one cable) 350 amp	45V11
WP2025RM	Water-cooled (one cable) 250 amp	45V11
Cable Cover: WC-3-22		

Ordering Information (Most popular model ←. Select a power source, wire feeder and cable package for complete system.)

PipeWorx Package	Stock No.	Description	Qty.	Price
PipeWorx Welding System <i>(Does not include input power cable, input gas hoses, gas flowmeter regulators, work cable and clamp, stick electrode holder and cable, TIG torch and cable, TIG remotes)</i>	951381 ← 951382	230/460 V, 3-phase, 50/60 Hz, air-cooled 575 V, 3-phase, 50/60 Hz, air-cooled Systems include power source (with side-mount cable hangers), running gear and handles (300368), dual feeder (300366), cable kit with 25 ft. (7.6 m) work sense lead (300367) and two PipeWorx 300-15 guns (195400)		
PipeWorx Accessories Kit for Dual Feeder	300568	Includes 25 ft. (7.6 m) work cable, EG500 work clamp, two flowmeter regulators and two 4 ft. (1.2 m) gas hoses		
To Configure a Custom PipeWorx System — see page 6 for typical system configurations				
1 Select a Power Source 	PipeWorx 400 Power Source	907382 230/460 V, 3-phase, 50/60 Hz. Includes side-mount cable hangers 907384 575 V, 3-phase, 50/60 Hz. Includes side-mount cable hangers 907475 400 V, 3-phase, 50/60 Hz. Includes side-mount cable hangers <i>Includes one blank memory card (301080) and short gas hose for connecting output gas connection on power source to TIG block. Does not include an input power cable</i>		
2 Select a Feeder 	Dual-Wire Bench-Style Feeder	300366 Includes .035/.045 in. combination smooth V-drive rolls (for solid wire), .045 in. knurled V-drive rolls (for flux-cored wire), and Y-hose for single gas input		
3 Select a Cable Kit  See page 3	Cable Kit <i>(For feeder used on power source)</i>	300367 5 ft. (1.5 m) feeder control cable, weld cable and 25 ft. (7.6 m) work sense lead		
	Composite Cable Kit <i>(For remote feeder applications)</i>	300454 25 ft. (7.6 m) composite cable with feeder control cable, gas hose and weld cable in protective sheath and 25 ft. work sense lead		
		300456 50 ft. (15.2 m) composite cable with feeder control cable, gas hose and weld cable in protective sheath and 50 ft. work sense lead		
4 Select a MIG Gun  See page 7	Bernard® PipeWorx 250-15 Gun <i>(Recommended for root pass only)</i>	195399 15 ft. (4.6 m), 250 A air-cooled MIG gun		
	Bernard® PipeWorx 300-15 Gun <i>(Included in pkgs)</i>	195400 15 ft. (4.6 m), 300 A air-cooled MIG gun		
System Options				
PipeWorx Running Gear	300368	See page 2/3. For power source. Includes gas cylinder rack and handles		
PipeWorx Cooler <i>(Coolant sold separately)</i>	300370	See page 6. For MIG or TIG welding		
Coolant	043810	One gallon of low-conductivity coolant. Must be ordered in multiples of four (one case)		
Feeder Cart	300467	See page 3. For remote feeder applications. Includes cable hangers and consumables drawer		
Accessories				
Spool Covers for 12 in. (305 mm) spool		See page 3		
Reel Covers for 60 lb. (27 kg) coil		See page 3		
Wire Reel Assembly	108008	For 60 lb. (27 kg) coil		
DSS-9 Dual Schedule Switch	071833	See page 3. Used to change weld parameters during welding		
PipeWorx Remote Feeder Interface w/Gun Triggers and Cable	300597	For mechanized systems		
Wire Feeder Consumables		See page 6 for drive rolls, inlet guides and intermediate guides		
Weldcraft™ TIG Torches		See page 7		
RFCS-14 HD Remote Control	194744	See page 2/3. Heavy-duty foot current/contacter control		
Foot Control Bracket	300676	Used to hold RFCS-14 HD remote foot control		
RPBS-14 On-Off Switch Remote	300666	See page 3. TIG welding remote		
Wireless Remote Foot Control	300429	See page 3. Wireless foot current/contacter control		
PipeWorx Memory Cards		See page 3		
Flowmeter Regulator <i>(Gas hose sold separately)</i>	194738			
Gas Hose	144108	5 ft. (1.5 m)		
Work Sense Lead <i>(Volt sense)</i>	300461	25 ft. (7.6 m)		
	300462	50 ft. (15.2 m)		

Date:

Total Quoted Price:

Distributed by:

