

# 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)  
Single feeder: 65 lb. (29.5 kg)  
Dual 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 #951 381 shown with accessory kit #300 568. (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

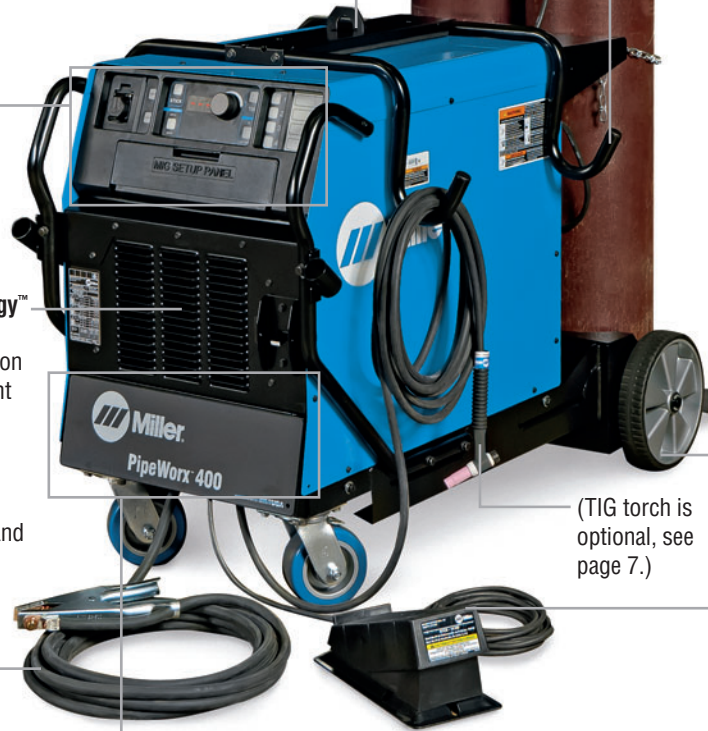


## PipeWorx power source control panel with door open

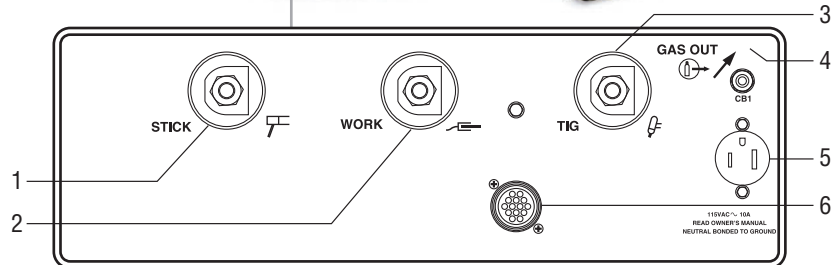
- 1. Process selection** clearly backlights adjustable controls and lights the appropriate meter — stick or DC TIG. TIG gas pre-flow and post-flow optimized for the application.
- 2. Optimized stick welding conditions.** Automatically sets the optimum welding conditions for common E6010 series and E7018 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.

**Single or 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**  
**#300 454** 25 ft. (7.6 m)  
**#300 456** 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**  
**#300 368**  
 Includes dual gas cylinder rack and front handles for power source.

**RFCS-14 HD Foot Control** **#194 744 (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** **#300 467**  
 For remote feeder applications. Includes cable hangers and consumables drawer.

## Additional Accessories



**Spool Covers**  
**#057 607** For single or left side of dual feeder  
**#090 389** For right side of dual feeder

For 12-inch (305 mm) diameter spools. Protects wire from dust and contaminants.

### Reel Covers

**#195 412** For single or left side of dual feeder  
**#091 668** For right side of dual feeder  
 For 60-pound (27 kg) coils. Protects wire from dust and contaminants.



**Wire Reel Assembly**  
**#108 008**  
 For 60-pound (27 kg) coil of wire.



**DSS-9 Dual Schedule Switch** **#071 833**  
 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**  
**#300 666**  
 Attaches to the TIG torch to remotely start and stop the TIG welding process.



**Wireless Remote Foot Control**  
**#300 429** For PipeWorx models with serial number MA470021G and after  
**#300 859** For PipeWorx models before serial number MA470021G  
 See Lit. Index No. AY/6.5 for more information.

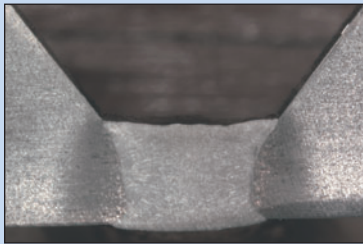
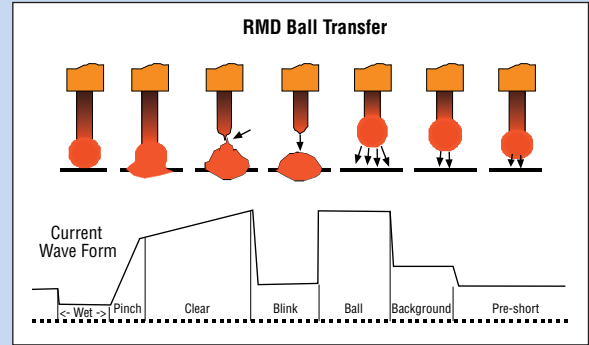
## PipeWorx Memory Cards

- #301 080 Blank Card** — Used to store weld programs
- #301 340 System Software** — For free download, visit MillerWelds.com
- #300 557 Calibration** — Used to calibrate the PipeWorx System. For free download, visit MillerWelds.com
- #300 536 Inconel** — Pulsed MIG, .035/.045-inch diameter wire, 75% argon/25% helium
- #300 675 Carbon Steel, RMD®** — .052-inch diameter wire with 75% argon/25% CO<sub>2</sub>
- #300 460 Range Locks** — Provides ability to set nominal parameter values and ranges for wire feed processes.
- #300 667 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.
- #301 035 Trigger Select/Hold Option** — Enables trigger select while welding to change processes and parameters without stopping.
- #301 116 VRD** — Voltage reduction device (VRD) lowers open-circuit voltage (OCV) to 15 VDC

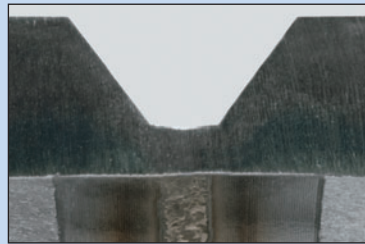
# Improved Arc Performance

## 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

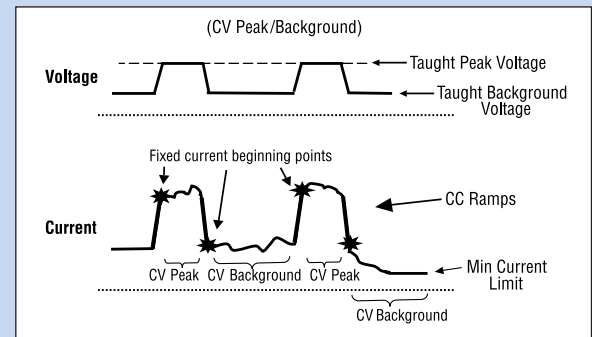


RMD® stainless

- 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	Wire Feed Speed Range	Wire Diameter Capacity	Input Welding Circuit Rating	Maximum Spool Size Capacity	Dimensions		Net Weight	
					Single	Dual	Single	Dual
24 VAC, 11 amps	50–780 ipm (1.3–19.8 mpm)	.035–.062 in. (0.9–1.6 mm)	100 V, 750 A, 100% duty cycle	60 lb. (27 kg)	H: 14 in. (356 mm) W: 19 in. (483 mm) D: 29 in. (737 mm)	H: 14 in. (356 mm) W: 19 in. (483 mm) D: 29 in. (737 mm)	65 lb. (29.5 kg)	90 lb. (41 kg)

## Feeder Drive Roll Kits\* (Order from Miller Service Parts.)

Wire size	“V” groove for hard wire	“V” knurled for hard-shelled cored wires
.035 in. (0.9 mm)	#151 026	#151 052
.040 in. (1.0 mm)	#161 190	—
.045 in. (1.1/1.2 mm)	#151 027	#151 053
.052 in. (1.3/1.4 mm)	#151 028	#151 054
1/16 in. (1.6 mm)	#151 029	#151 055
.068/.072 in. (1.8 mm)	—	#151 056
5/64 in. (2.0 mm)	—	#151 057
3/32 in. (2.4 mm)	—	#151 058

## Wire Guides

Wire size	Inlet Guide	Intermediate Guide
.023–.040 in. (0.6–1.0 mm)	#150 993	#149 518
.045–.052 in. (1.1–1.4 mm)	#150 994	#149 519
1/16–5/64 in. (1.6–2.0 mm)	#150 995	#149 520
3/32–7/64 in. (2.4–2.8 mm)	#150 996	#149 521

\*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 (#951 381) 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. PipeWorx accessory kit (#300 568) included in picture—see ordering information on back page for part numbers included in package.



### Air-Cooled w/Remote Feeder System

System is shown with power source (#907 382), running gear (#300 368), dual feeder (#300 366), 25-foot composite cable (#300 454), feeder cart (#300 467), two 300-amp guns (#195 400), remote foot control (#194 744), TIG torch (WP1725RM with 105257 adapter), and accessory kit (#300 568).



### Water-Cooled System

System is shown with PipeWorx Welding System package (#951 381), PipeWorx cooler (#300 370) for MIG or TIG welding (removable for service and repair), remote foot control (#194 744), TIG torch (WP1825RM with 45V11 adapter), coolant (#043 810), and accessory kit (#300 568).



## 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.

<b>Versatility</b>	Can be used for MIG, pulsed MIG, and flux-cored.
<b>Ergonomics</b>	Compact, lightweight gun with high-amperage capability reduces operator fatigue improving productivity.
<b>Visibility</b>	The combination of tapered tips and nozzles and 60-degree neck provides excellent visibility on root passes in pipe joints.
<b>Centerfire™ Tip</b>	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 #195 399 (root pass only)	300 A	250 A	300 A	365 A	100% CO <sub>2</sub>	15 ft. (4.6 m)	9 lb. (4.1 kg)
	—	210 A	250 A	300 A	80% argon/20% CO <sub>2</sub>		
PipeWorx 300-15 #195 400	350 A	320 A	370 A	470 A	CO <sub>2</sub> gas	15 ft. (4.6 m)	10 lb. (4.6 kg)
	—	270 A	310 A	390 A	80% argon/20% CO <sub>2</sub>		

### Key Gun Consumables

Description	Part Number	Package Quantity
.035 in. tapered tip	TT-035 <sup>1</sup>	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 <sup>2</sup>	10
.052 in. tip	T-052	10
1/16 in. tip	T-062	10
.035–.045 in. liner	43115 <sup>1,2</sup>	1
.045–.062 in. liner	44215	1

<sup>1</sup>Standard part on PipeWorx 250-15.

<sup>2</sup>Standard part on PipeWorx 300-15.

Description	Part Number	Package Quantity
Nozzle 5/8 in. ID	NS-5818C <sup>2</sup>	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 <sup>1</sup>	10
Diffuser	D-1	10
Diffuser	DS-1 <sup>1,2</sup>	10
Q tube assembly 60°	QT2-60 <sup>1,2</sup>	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
<b>Cable Cover: WC-3-22</b>		

# Ordering Information (Select a power source, wire feeder and cable package for complete system.)

PipeWorx Package	Stock No.	Description	Qty.	Price
<b>PipeWorx Welding System</b> <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>	<b>#951 381</b> <b>#951 382</b>	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 (#300 368), dual feeder (#300 366), cable kit with 25 ft. (7.6 m) (#300 367) work sense lead and two PipeWorx 300-15 guns (#195 400)		
<b>PipeWorx Accessories Kit for Dual Feeder</b>	<b>#300 568</b>	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

<b>1 Select a Power Source</b> 	<b>PipeWorx 400 Power Source</b>	<b>#907 382</b> <b>#907 384</b> <b>#907 475</b>	230/460 V, 3-phase, 50/60 Hz. Includes side-mount cable hangers 575 V, 3-phase, 50/60 Hz. Includes side-mount cable hangers 400 V, 3-phase, 50/60 Hz. Includes side-mount cable hangers <i>Includes one blank memory card (#301 080) and short gas hose for connecting output gas connection on power source to TIG block. Does not include an input power cable</i>		
<b>2 Select a Wire Feeder</b> 	Single Bench-Style Feeder	<b>#300 365</b>	Includes .035/.045 in. combination smooth V-drive rolls		
	Dual Bench-Style Feeder	<b>#300 366</b>	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		
<b>3 Select a Cable Kit</b>  See page 3	Cable Kit <i>(For feeder used on power source)</i>	<b>#300 367</b>	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>	<b>#300 454</b>	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		
		<b>#300 456</b>	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		
<b>4 Select a MIG Gun</b>  See page 7	Bernard™ PipeWorx 250-15 Gun <i>(Recommended for root pass only)</i>	<b>#195 399</b>	15 ft. (4.6 m), 250 A air-cooled MIG gun		
	Bernard™ PipeWorx 300-15 Gun <i>(Included in pkgs)</i>	<b>#195 400</b>	15 ft. (4.6 m), 300 A air-cooled MIG gun		

## System Options

PipeWorx Running Gear	<b>#300 368</b>	See page 2/3. For power source. Includes gas cylinder rack and handles		
PipeWorx Cooler <i>(Coolant sold separately)</i>	<b>#300 370</b>	See page 6. For MIG or TIG welding		
Coolant	<b>#043 810</b>	One gallon of low-conductivity coolant. Must be ordered in multiples of four (one case)		
Feeder Cart	<b>#300 467</b>	See page 3. For remote feeder applications. Includes cable hangers and consumables drawer		
Insight Module	<b>#301 304</b>	See page 4. For weld data collection. Includes Insight Pipe and Vessel software		

## 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	<b>#108 008</b>	For 60 lb. (27 kg) coil		
DSS-9 Dual Schedule Switch	<b>#071 833</b>	See page 3. Used to change weld parameters during welding		
PipeWorx Remote Feeder Interface w/Gun Triggers and Cable	<b>#300 597</b>	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	<b>#194 744</b>	See page 2/3. Heavy-duty foot current/contacter control		
RPBS-14 On-Off Switch Remote	<b>#300 666</b>	See page 3. TIG welding remote		
Wireless Remote Foot Control	<b>#300 429</b>	See page 3. Wireless foot current/contacter control		
Foot Control Bracket	<b>#300 676</b>	Used to hold RFCS-14 HD remote foot control		
PipeWorx Memory Cards		See page 3		
Flowmeter Regulator <i>(Gas hose sold separately)</i>	<b>#194 738</b>			
Gas Hose	<b>#144 108</b>	5 ft. (1.5 m)		
Work Sense Lead <i>(Volt sense)</i>	<b>#300 461</b>	25 ft. (7.6 m)		
	<b>#300 462</b>	50 ft. (15.2 m)		

Date:

Total Quoted Price:

Distributed by:

