

PipeWorx™ Welding System

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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)
MIG RMD™ (GMAW MSC)
Pro-Pulse™ (GMAW-P)
Flux Cored (FCAW)

Rated Output 400 A at 44 VDC, 100% Duty Cycle

Voltage Range 10–44 V

Amperage Stick: 40–350 A
DC TIG: 10–350 A

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)

The Power of Blue.®

New! 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 4 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 user programmed 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.



PipeWorx Welding System
#951 131 shown.
(Filler metal sold separately)

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™ Pro and Pro-Pulse™ 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.

TRUE BLUE
3YR. WARRANTY

Power source is warranted for 3 years, parts and labor.

MADE IN **USA**
APPLETON, WI



Miller Electric Mfg. Co.
An Illinois Tool Works Company
1635 West Spencer Street
Appleton, WI 54914 USA

Equipment Sales US and Canada
Phone: 866-931-9730
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International Phone: 920-735-4554
International FAX: 920-735-4125

Web Site
www.MillerWelds.com



Typical System with Remote Feeder — See page 6 for systems

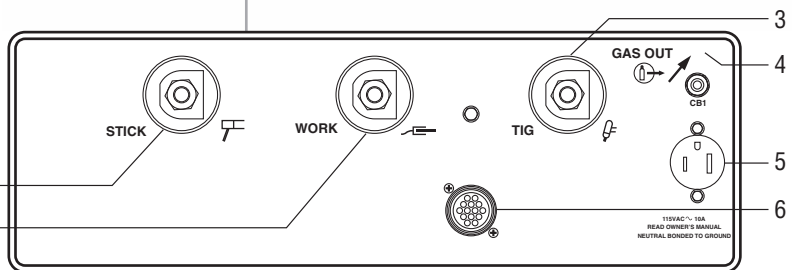
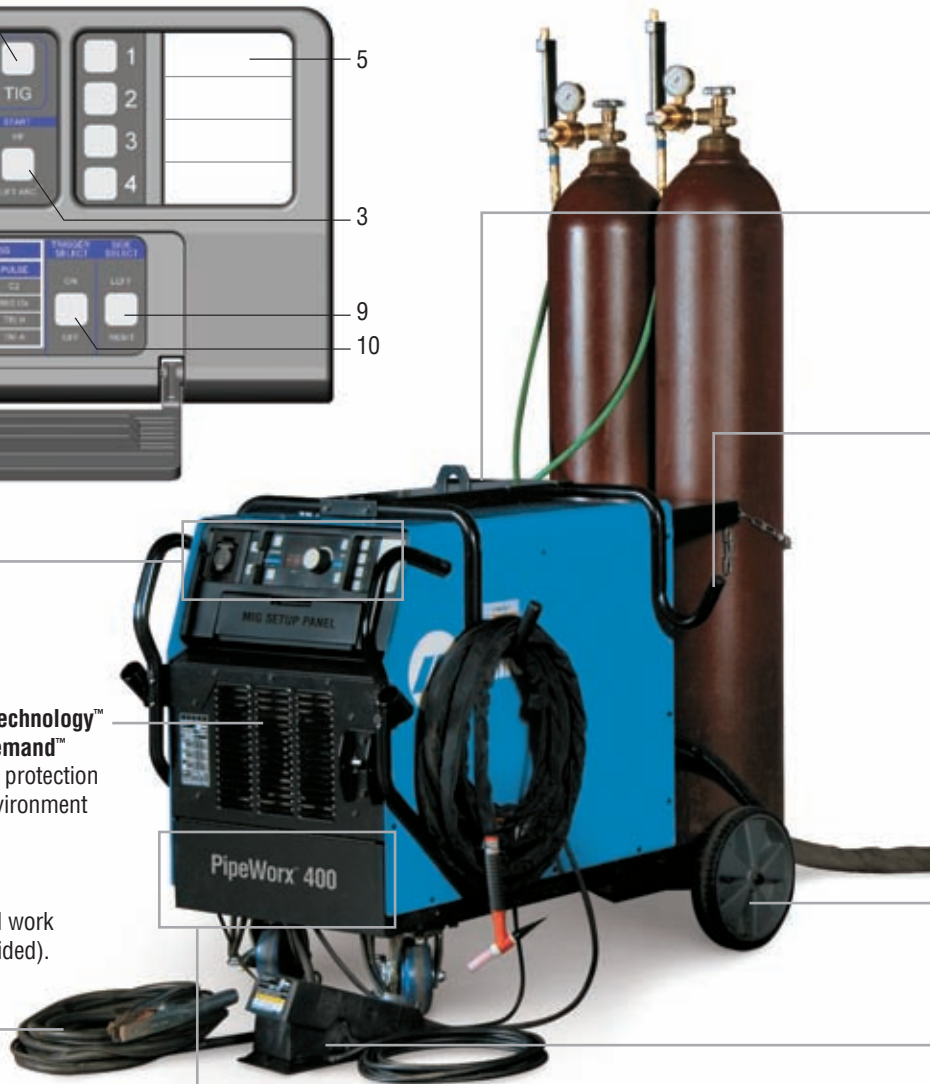


PipeWorx Power Source Control Panel with Door Open

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.
3. **Versatile TIG Arc Starts** — Select between lift arc starting 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 welder can have their own machine settings.
5. **Memory** stores 4 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 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 Pro-Pulse™ 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.

(weld cable and work clamp not provided).



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 VAC (10 amp) Receptacle** for water cooler, if used.
6. **Dedicated TIG Remote Receptacle**

Single or dual wire feeder available with simple operator interface. Wire feed speeds up to 780 IPM.

Right-sized power source provides 350 amps at 100% duty cycle for Stick and TIG for maximum stick electrode diameters and high-amperage TIG applications. Provides 400 amps at 100% duty cycle for MIG and Flux Cored weld processes.

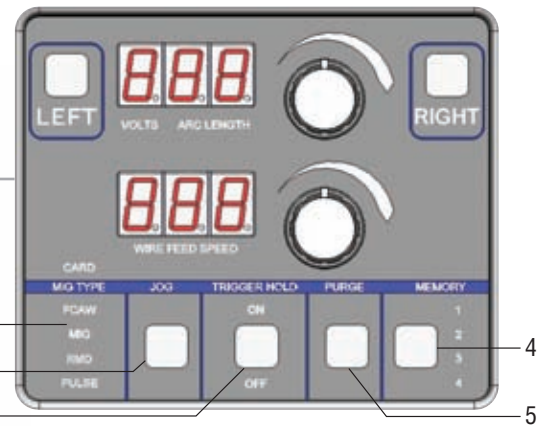
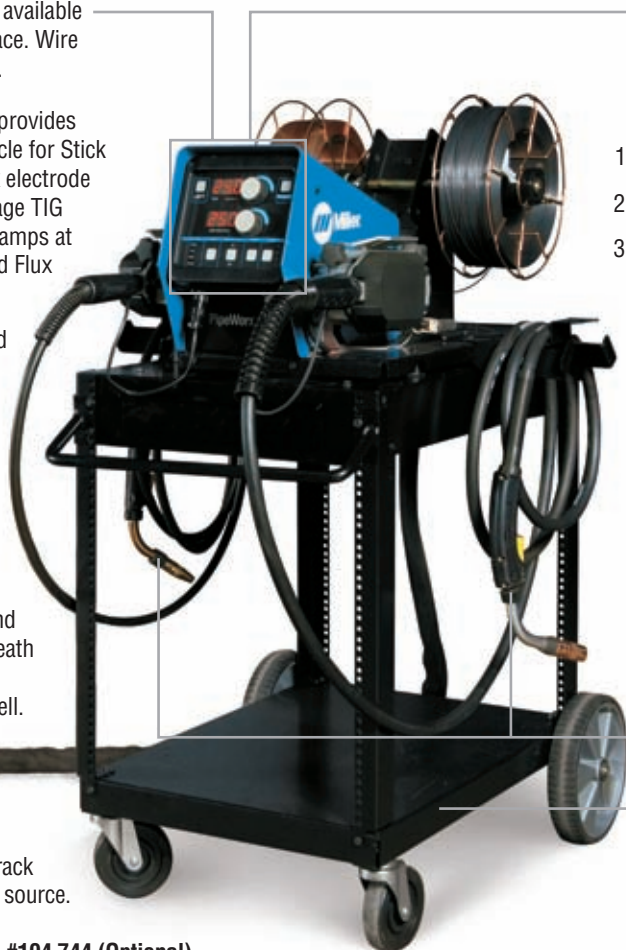
Cable hangers are provided with the power source for guns, Stick electrode holders and TIG torch.

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/contact 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 ft (6 m) cord and 14-pin plug



Feeder Control Panel

Simple Operator Interface with LEDs for easy viewing.

1. **MIG Process Type Indicator** is helpful in remote feeder applications.
2. **Jog** feeds the wire through the torch.
3. **Trigger Hold** reduces welder fatigue by allowing continuous welding without holding the trigger.
4. **Remote Memory Select** allows the welder to change programs (stored parameters) without returning to the power source or feeder.
5. **Purge** purges gas hoses.

Bernard® PipeWorx guns configured for pipe welding applications.

Feeder Cart #300 467

For remote feeder applications. Includes cable hangers and consumables drawer.

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.

Additional Accessories



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.



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

Reel Covers — for 60 lb (27 kg) coils
#195 412 For single or left side of dual feeder
#091 668 For right side of dual feeder
 Protects electrode wire from dust and contaminants. For 60 lb (27 kg) coil of wire.



Spool Covers— 12 in (305 mm) diameter spools
#057 607 For single or left side of dual feeder
#090 389 For right side of dual feeder
 Protects electrode wire from dust and contaminants.

Welding Process Capabilities

The PipeWorx™ Welding System provides standard welding process programs (detailed in the table below), specifically designed for the welding of carbon steel and stainless steel pipe. The MIG-Modified Short Circuit (RMD™) Programs and Pro-Pulse™ MIG Programs are synergic programs designed specifically for combinations of wire type, wire diameter and shielding gas.

The power source is shipped with typical weld parameters for pipe welding. There is a means to reset the power source back to the typical weld conditions (factory settings). Synergic welding programs can only be adjusted within a range of acceptable wire feed speed to prevent operation in an unstable arc condition. This promotes weld quality and simplifies set-up.



Welding Process	Metal Transfer	Material Type	Wire Diameter	Shielding Gas
Stick (SMAW)	—	—	—	—
HF TIG (GTAW)	—	—	—	—
Lift-Arc™ TIG (GTAW)	—	—	—	—
MIG (GMAW)	Short Circuit or Spray	Carbon Steel	.035 or .045	C8-C15 (Argon/8-15% CO ₂) C20-C25 (Argon/20-25% CO ₂) 100% CO ₂ Others
MIG (GMAW)	Short Circuit or Spray	Stainless Steel	.035 or .045	C2 (Argon/2% CO ₂) 98/2 O _x (Argon/2% O ₂) TriH (90% He/7.5% Ar/2.5% CO ₂) Others
MIG RMD (GMAW)	Modified Short Circuit	Carbon Steel	.035 or .045	C8-C15 (Argon/8-15% CO ₂) C20-C25 (Argon/20-25% CO ₂) 100% CO ₂
MIG RMD (GMAW)	Modified Short Circuit	Stainless Steel	.035 or .045	C2 (Argon/2% CO ₂) 98/2 O _x (Argon/2% O ₂) TriH (90% He/7.5% Ar/2.5% CO ₂)
MIG (GMAW)	Pro-Pulse	Carbon Steel	.035 or .045	C8-C15 (Argon/8-15% CO ₂)
MIG (GMAW)	Pro-Pulse	Stainless Steel	.035 or .045	C2 (Argon/2% CO ₂) 98/2 O _x (Argon/2% O ₂) TriH (90% He/7.5% Ar/2.5% CO ₂) TriA (81% Ar/18% He/1% CO ₂)
Flux Cored (FCAW)	—	—	—	No Requirement

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.



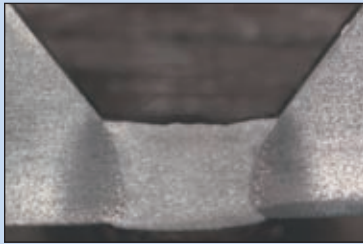
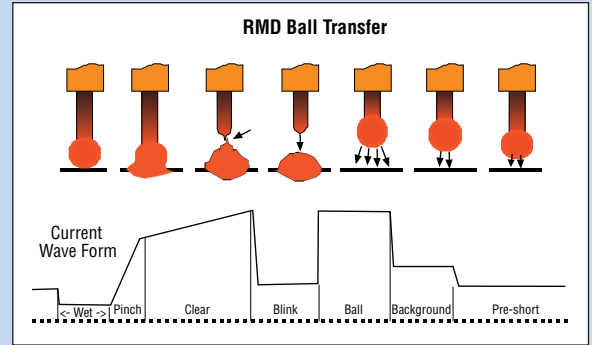
PipeWorx Memory Card

- #300 538 **Blank Card** — Used to store weld programs
- #300 535 **System Software, Version 1.05** — For free download, visit MillerWelds.com
- #300 557 **Calibration** — Used to calibrate the PipeWorx System. For free download, visit MillerWelds.com
- #300 536 **Inconel** — Pro Pulse .045 inch diameter wire, 75% Argon/25% Helium
- #300 460 **Range Locks** — Provides ability to set nominal parameter values and ranges for wire feed processes.

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

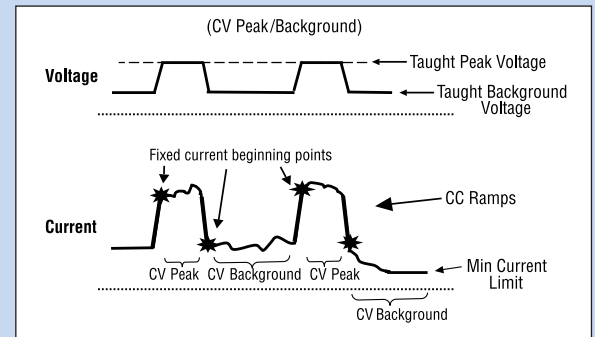


RMD™ Stainless

- 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

Pro-Pulse™

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 synergistic, 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 Pro for root pass welding permits welding procedures with one wire and one gas to eliminate process switch-over time.



Pro-Pulse Carbon



Pro-Pulse 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	Amperage/Voltage Range	Amps Input at Rated Output, 60 Hz, 3-Phase			KVA	KW	Max. Open-Circuit Voltage	Dimensions	Weight
			230 V	460 V	575 V					
CC: Stick	350 A at 34 VDC	40–350 A	36.8	22.5	18.9	230 V 14.8 460 V 18.0 575 V 19.0	230 V 13.7 460 V 13.7 575 V 13.8	90	H: 28 in (711 mm) W: 19-1/2 in (495 mm) D: 31-3/4 in (806 mm)	225 lb (102 kg)
CC: DC TIG	350 A at 34 VDC	10–350 A								
CV: MIG/Flux Cored	400 A at 44 VDC	10–44 V	53.6	31.1	26	230 V 21.5 460 V 24.7 575 V 25.9	230 V 20.0 460 V 19.9 575 V 19.7			

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 Volts, 750 Amps, 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.)

Select drive roll kits from chart below according to type and wire size being used. Drive roll kits include 4 drive rolls, the necessary guides and feature an anti-wear sleeve for the inlet guide.

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

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



Air-Cooled System

PipeWorx Welding System Package (#951 131) includes power source (with cable hangers), running gear and handles, dual feeder, cable kit with 25 ft (7.6 m) work sense lead, and PipeWorx 250 and 300 guns.



Air-Cooled with Remote Feeder System

System is shown with power source (#907 382), running gear (#300 368), dual feeder (#300 366), 25 ft composite cable (#300 454), feeder cart (#300 467), 250 amp gun (#195 399), 300 amp gun (#195 400), remote foot control (#194 744), regulator/flowmeters (#194 738) and TIG torch (WP1725RM with 105257 adapter).



Water-Cooled System

System is shown with PipeWorx Welding System Package (#951 131), PipeWorx cooler (#300 370) for MIG or TIG Welding (removable for service and repair), remote foot control (#194 744), regulator/flowmeters (#194 738) and TIG torch (WP1825RM with 45V11 adapter).

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 PipeWorx 250-15 Gun is recommended for root pass welding, especially in fixed-position applications where visibility is difficult. The PipeWorx 300-15 or 400-15 are recommended for fill and cap pass welding with Flux Cored or Pulsed MIG welding processes. In welding applications where one gas and one wire are used to make the weld, the PipeWorx 300-15 or 400-15 guns can be used to deposit the root pass. (A smaller nozzle diameter should be considered for improved puddle visibility and should be used for stainless steel root pass welding without purge gas.)

- 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° 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	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	350 A	320 A	370 A	470 A	CO ₂ Gas	15 ft (4.6 m)	10 lb (4.6 kg)
	—	270 A	270 A	390 A	80% Argon/20% CO ₂		
PipeWorx 400-15	400 A	350 A	425 A	520 A	CO ₂ Gas	15 ft (4.6 m)	10 lb (4.6 kg)
	—	275 A	350 A	425 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 ^{2,3}	10
.052 in Tip	T-052	10
1/16 in Tip	T-062	10
.035 – .045 Liner	43115 ^{1,2,3}	1
.045 – .062 Liner	44215	1

¹Standard part on PipeWorx 250-15.

²Standard part on PipeWorx 300-15

³Standard part on PipeWorx 400-15.

Description	Part Number	Package Quantity
Nozzle 5/8 in ID	NS-5818C ²	10
Nozzle 5/8 in ID	N-5818C ³	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 ³	10
Diffuser	DS-1 ^{1,2}	10
Q Tube Assembly 60°	QT2-60 ^{1,2,3}	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. Weldcraft torches use high-quality, durable components combined with innovative designs to ensure long, trouble-free performance, better productivity and lower costs. That’s what makes Weldcraft the “TIG Welder’s Choice.”

Torch Type	Torch	Adapter
Air-Cooled (One Cable) <i>Order from Miller Parts</i>	WP1725RM	105Z57 (150 A)
	WP2625RM	45V62 (200 A)
Water-Cooled (One Cable) <i>Order from Miller Parts</i>	WP1825RM	45V11 (350 A)
	WP2025RM	45V11 (250 A)







Weldcraft.com 1-800-752-7620



Ordering Information (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 regulators/flowmeters, work cable and clamp, stick electrode holder and cable, TIG torch and cable, TIG remotes)</i>	#951 131	230/460 V, 3-Phase, 60 Hz, Air-cooled		
	#951 132	575 V, 3-Phase, 60 Hz, Air-cooled		
PipeWorx™ Accessories Kit for Dual Feeder	#300 568	Includes 25 ft (7.6 m) work cable, EG500 work clamp, two Smith® regulator/flowmeters 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	#907 382	230/460 V, 3-Phase, 60 Hz, Includes side-mount cable hangers		
		#907 384	575 V, 3-Phase, 60 Hz, Includes side-mount cable hangers		
2 Select a Wire Feeder 	Single Bench-Style Feeder	#300 365	Includes .035 smooth V-drive rolls		
	Dual Bench-Style Feeder	#300 366	Includes .035 smooth V-drive rolls and .045 knurled V-drive rolls		
3 Select a Cable Kit  See page 3	Cable Kit <i>(For feeder used on power source)</i>	#300 367	Feeder control cable, weld cable and 25 ft (7.6 m) work sense lead.		
	Composite Cable Kit <i>(For remote feeder applications)</i>	#300 454	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		
		#300 456	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>	#195 399	15 ft (4.6 m), 250 A air-cooled MIG gun		
	Bernard® PipeWorx™ 300-15 Gun	#195 400	15 ft (4.6 m), 300 A air-cooled MIG gun		
	Bernard® PipeWorx™ 400-15 Gun	#300 240	15 ft (4.6 m), 400 A air-cooled MIG gun		

System Options

PipeWorx™ Running Gear	#300 368	See page 2. For power source. Includes gas cylinder rack and handles		
PipeWorx™ Cooler	#300 370	See page 6. For MIG or TIG welding		
Coolant	#043 810	For MIG or TIG welding		
Feeder Cart	#300 467	See page 3. For remote feeder applications. Includes cable hangers and consumables drawer		

Accessories

Spool Covers (for 12 in [305 mm] spool)	#057 607 #090 389	See page 3. For single feeder or left side of dual feeder See page 3. For right side of dual feeder		
Wire Reel Assembly (for 60 lb [27 kg] coil)	#108 008	See page 3		
Reel Covers (for 60 lb [27 kg] coil)	#195 412 #091 668	See page 3. For single feeder or left side of dual feeder See page 3. For right side of dual feeder		
DSS-9 Switch for Dual Schedule	#071 833	See page 3. Used to change weld parameters during welding		
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	#194 744	See page 2. Heavy-duty foot current/contact control		
PipeWorx Memory Cards		See page 4		
Smith® Regulator/Flowmeter	#194 738			

Date:

Total Quoted Price:

Distributed by:

