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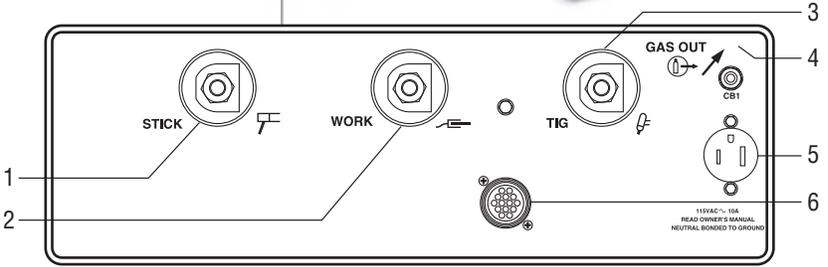
Cable connection panel
Note: MIG connections are on rear panel of power source—see Owner's Manual.

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**

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/contactor 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.

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.

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.

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_2
#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

Insight Welding Intelligence™

Insight Module for PipeWorx 400

The Insight Module for PipeWorx 400 automates documentation requirements by capturing weld data and relating it to a specific weld joint. The module includes Insight Pipe and Vessel* software package. Requires PipeWorx system software 1.13 or later.

Information with total traceability
Capture and connect welding information to individual weld joints so pipe fabricators can efficiently track productivity and quality metrics.

Real-time data collection
Welding information is collected as welds are completed allowing pipe fabricators to monitor progress in real time.

Reduce data entry time and errors
Collect data directly from the weld cell eliminating the need to enter information after fabrication is complete reducing potential errors due to typos and poor handwriting.
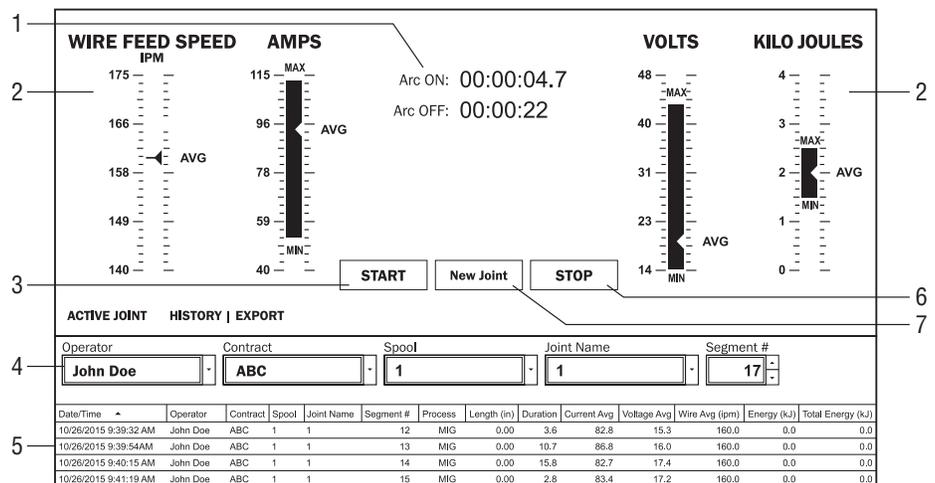
Flexible design offers ERP integration
The Insight System for Pipe and Vessel provides the ability to import and export jobs in a generic file format allowing easy integration with your current business software programs.
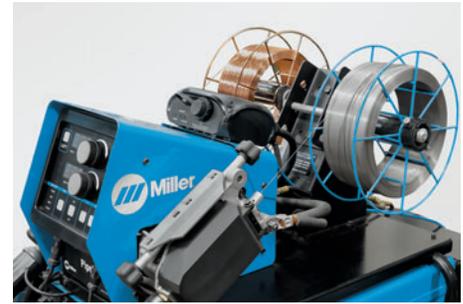
Insight Pipe and Vessel Software Interface*

1. **Arc on timer**
2. **Parameter display area.** Wire speed, weld amperage, weld voltage and instantaneous power ranges and averages are displayed here.
3. **Start button** starts recording data.
4. **Current joint information.** User enters information about the joint being welded — contract, spool and joint.
5. **Joint data log.** Weld data collected for the current joint being welded displays here.
6. **Stop button** stops data from being recorded.
7. **New joint button** logs data from the previous joint and sets up for the next joint.

1	WIRE FEED SPEED IPM	AMPS		VOLTS	KILO JOULES	2
2	175 / 166 / 158 AVG / 149 / 140	115 MAX / 96 AVG / 78 / 59 / 40 MIN	Arc ON: 00:00:04.7 Arc OFF: 00:00:22	48 MAX / 40 / 31 / 23 / 14 MIN AVG	4 / 3 / 2 MAX AVG MIN / 1 / 0	2
3			START New Joint STOP			6 / 7

ACTIVE JOINT   HISTORY | EXPORT

	Operator	Contract	Spool	Joint Name	Segment #
4	John Doe	ABC	1	1	17

Date/Time ▲	Operator	Contract	Spool	Joint Name	Segment #	Process	Length (in)	Duration	Current Avg	Voltage Avg	Wire Avg (ipm)	Energy (kJ)	Total Energy (kJ)
10/26/2015 9:39:32 AM	John Doe	ABC	1	1	12	MIG	0.00	3.6	82.8	15.3	160.0	0.0	0.0
10/26/2015 9:39:54AM	John Doe	ABC	1	1	13	MIG	0.00	10.7	86.8	16.0	160.0	0.0	0.0
10/26/2015 9:40:15 AM	John Doe	ABC	1	1	14	MIG	0.00	15.8	82.7	17.4	160.0	0.0	0.0
10/26/2015 9:41:19 AM	John Doe	ABC	1	1	15	MIG	0.00	2.8	83.4	17.2	160.0	0.0	0.0

* PC connected to the PipeWorx Insight Module via CAT 5 or CAT 6 Ethernet cable is required to run Insight Pipe and Vessel software. Minimum system requirements: PC running Windows 7/8; Intel Core 2 Duo, AMD Athlon X2 or better; 4 GB RAM (32-bit OS) or 8 GB RAM (64-bit OS); 250 GB of available hard drive space.

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

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PipeWorx Welding System Specifications (Subject to change without notice.) [CC/CV] [DC] [3 Phase]

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 Single	Dual	Net Weight 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 **105Z57** 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)**.

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