Toll Free: 800-582-5229 Ph: 651-646-1393 Fax: 651-646-3616 www.spotweldinc.com



SPOTWELD Incorporated

Excellence in Resistance Welding

PressRite Standard Inverter Projection Welder



INTRODUCTION

Spot Weld, Inc. has created the optimal universal machine to be the one Go-To welder in your shop. No questions, no limitations, it just welds. If it can be spot welded, this machine will do it. Safety concerns? This is the safest spot welder you can buy. No more calling the supplier to find out if the machine is capable, no more hassles of being "borderline" on your welding capability. This is the first and last welder you may ever need. All at an industry-leading price point.

PRESSRITE STANDARD INVERTER HIGHLIGHTS

KVA Size: 160KVA 1000Hz MFDC Inverter Power Supply: 230V – 600V primary available, 50/60 Hz, 3-phase

Throat Depth: 31"

Max Electrode Force: 2024lbsf, 5" bore air cylinder Max Secondary Amps at the electrodes: 30kA Safety: industry leading Soft Touch system Inverter: MFDC 3-phase inverter with closed-loop feedback.

Operation: On-board PLC.

Circuit Protection: 150-Amp integrated circuit breaker Part Loading: Adjustable retractable weld cylinder

DESIGN

Spot Weld, Inc. has developed the "Standard Inverter" press spot welder for those customers that are doing contract jobs, job shop or lab work, or any application where you don't know what's coming next. How do you buy a welder for your company when you do not yet know what you will be welding? Don't worry because The Standard Inverter can do it all, and please your OSHA and Safety team along the way.

Based on the PressRite press spot type welder, we have included the very latest in Mid-Frequency DC Inverter technology, integrated with the very latest and greatest safety feature available on spot welders today; the Soft Touch system. The Soft Touch is designed to prevent getting fingers caught in the pinch point of the electrodes, as the upper head comes down to weld.

Double Acting Cylinder and Roller Bearing Slide: The standard PressRite ram is made of case hardened steel. Accurately machined guide surfaces travel on anti-friction cam followers for low inertia, friction free movement. Slide bearings are provided with initial adjustment and wear take up.

ABOUT US

With 35 years of service and experience, we have the best trained and most knowledgeable resistance welding technicians available anywhere, period. Contact our friendly staff with your welding problem, and we will work efficiently and quickly to solve nearly all of the most complicated resistance welding applications.

BUILT TO YOUR NEEDS

Spot Weld, Incorporated can take your application specifications and build standard or special application spot welders to suit your needs. Just tell us the material you are welding, the metal thickness, and provide us with any special prints or sketches that communicate your welding needs. We'll take it from there!

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PressRite Features and Benefits



The main frame is high quality welded steel construction styled for trim appearance and functional design. The slim design requires a minimum of floor space. The upper arm extension is built integrally with the frame to prevent flex. The lower arm and casting are pure electrolytic copper for the greatest conductivity. Removable panels permit ready access to the frame interior for inspection and maintenance. The standard PressRite ram is made of case hardened steel. Accurately machined guide surfaces travel on anti-friction cam followers for low inertia, friction free movement. Slide bearings are provided with initial adjustment and wear take up.

Standard Equipment

- Mid-Frequency DC (MFDC) Inverter Inverters provide superior weld quality using closedloop feedback, reading the resistance and modulating the current in milliseconds as your welding.
- Adjustable, Retractable Cylinder This type of cylinder incorporates the features of an adjustable stroke cylinder, plus a retraction feature. Operation of the retraction stroke can be controlled by the foot switch.
- Unitrol Soft Touch
 The only fully OSHA compliant offering for spot welders available today in preventing pinch points.
- 150-Amp integrated circuit breaker
 Fully compliant with the latest NFPA and Lock-Out-Tag-Out procedures, handle locks when power is on.

Standard Equipment (Continued)

- PLC weld schedule select
 To make the most complicated set-ups uncomplicated, The Standard has a PLC onboard for easy weld schedule selection.
- Adjustable upper ram

Precision CNC machined, with 8 heavy duty cam follower guides to maintain the tightest of tolerances. Fully adjustable and rebuildable.

30-inch throat depth

Provides the greatest reach balanced with the least electrical and structural losses.

Adjustable gap

Lower arm and support raise and lower with over 10-inches of travel, to optimize your setup.

CC & AVC

Constant Currant and Automatic Voltage Control (AVC) are both there to keep your welds consistent, regardless of setup or noisy primary bus voltage.

Only copper

Exclusive use of copper core water cooled transformers, 99.9% pure or RWMA class copper in all castings, arms, shunts, cables and all electrical contacts. No shortcuts with brass or bronze.

- Frame: Rugged, heavy gauge, one-piece, all steel body, strongly reinforced with welded stiffeners and ribs on heavy duty base.
- Ejector-style Electrode Holders
 Water cooled, 5RW ejector type, furnished standard.
- Spring loaded water tubes
 Never question the adjustment of your water tubes again.
- Pneumatic flow controls
 minutely adjust the speed of your weld cylinder,
 to optimize production and machine life.
- 3-stage footswitch initiation US made
 - Designed, and built in the USA

ADAPTABILITY

Experience being the best teacher, we have learned how to best align machinery with your needs. We take into account your production rate, your operators needs, electricity prerequisites, and of course your budget.

Confused by all the options available to you? Let us help you select from a long list of resistance welding styles:

- Single-Phase A/C
- Three- Phase A/C
- Medium Frequency Direct
 Current (MFDC) Inverter
- Seam Welding
- Rapid-Fire Welding
- Capacitive Discharge

ONE STOP SHOPPING

Our in-house capabilities include 3D solid modeling (CAD), Finite Element (stress) Analysis, CNC prototyping, MIG & TIG (GMAW & GTAW) welding, plasma cutting, Horizontal and vertical milling, lathe work, and engineering skills make all this work for you.

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PROFESSIONALS

You get the individual attention you deserve at Spot Weld, Inc. You can rely on our courteous service. We know what we're talking about. If we don't have an answer, we'll say so, and then do our best to get it for you.

Call us with your questions about electrode tips, studs, holders or any kind of resistance spot weld equipment.

- Competitive Prices
- Large Stock
- High Quality
- Fast Delivery
- No Minimum Order

GAURANTEE

All our machines carry a likenew one-year parts and labor guarantee.

If you're not satisfied, we take it back!



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Machinery Details

Transformer

The "heart of the welder", the The Standard Inverter transformer is built to RWMA automotive and appliance standards. Transformer secondaries are of cast copper with integral, non-corrosive water cooling pipes. Welding transformer: Inverter DC, 650V 1000Hz primary, 160KVA at 50% duty cycle, center tap rectifier, 9.0 or 13.0 secondary voltage range in two steps, primary connection via studs, machined copper secondary pads, water cooled, 7.5LPM minimum, primary and secondary temperature thermostats, secondary pickup coil, wound core, fully potted. 72:1 turns ratio lo, 50:1 hi.









Supply Voltage, Frequency, and 3-phase

The Standard machine can be supplied for any one voltage supply of 220, 380, 440, or 550 volts, 50 or 60 cycles, three phase. Three-phase power means less strain on your electrical bus, less peak energy consumption, greater power factor, and improved efficiency.

MFDC (Medium Frequency DC) Inverter

Precisely controlled heating is required to achieve consistent, reliable welds. The medium frequency inverter achieves this level of control by precisely managing and monitoring weld parameters. The higher frequency permits much faster (1000 times per second) process control, which again results in better weld quality. The Standard employs the WTC model 6001 Inverter control. With secondary closed loop feedback, the inverter is able to sample the weld real-time, feed that information back to the control, and make adjustments according to variations during the weld.

Air Accessories

Standard Equipment included air pressure regulator, gauge, lubricator, speed control valve, and solenoid valve for control of the cylinder.

Soft Touch

Protects against pinch point injuries with a fully passive system.

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Transformer Rating Curve

Inverter power supplies are sized based on their ability to withstand heat and current. The following chart will help gain an understanding of the relationship of "Duty Cycle" (your "worst case" weld time, per minute) to maximum current output. What this means to the operator is that, as you increase your weld current and weld time, you must also increase the time between your welds. The WTC Model 6001 will come preprogrammed to compensate for your transformer duty cycle. If it detects that you are exceeding the capacity of the transformer, it will pause momentarily between welds to allow for proper cooling to take place.



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Machinery Specifications

power at 50% duty cycle	160	KVA	
Maximum welding current	37*	kAmps	
Maximum Short Circuit Current	40*	kAmps	
No Load Secondary Voltage	9 or 13	volts	
wire size, up to 50ft	1/0		
weld arm spacing, minimum	12	inches	
weld arm spacing, maximum	20	inches	
weld arm diameter	2.5	inches	
weld arm material, solid	110 electro	olytic copper	
throat depth to first obstruction	31	inches	
Maximum Electrode Force (@100PSI)	2024	lbsf	
Working Stroke	adjustable		
Maximum Stroke	5	inches	
Compressed Air Supply, min	100	PSI	
Air Consumption for 1000 spots @100PSI	350	Cu. Ft	100PSI, full stroke
Supply Air Hose Inside Diameter	0.5	inches	
Cooling Water Consumption at 50PSI	3.5	gallons/min	
Max Mild Steel Sheet Thickness*	0.25	inches	
Max 6061-T6 Aluminum Sheet Thickness*	0.125	inches	
Net Weight	1650	lbs	
Packaging	crate**		
Air fittings and hose	1/2	inch, NPT	
Water fittings and hose	3/8	inch, NPT	
Weld cylinder diameter	5	inches	
weld force at 25PSI	550	lbsf	
weld force at 50PSI	1040	lbsf	
weld force at 75PSI	1530	lbsf	

* see rating curves for duty cycle limitations

** standard crating not suitable for international shipments. If international shipping required, please inquire.

Features

- Unitrol Soft Touch, tip dress, reset after pinch
- x 31" throat depth provides the greatest reach balanced with the least electrical and structural losses.
- x PLC weld schedule select with LCD operator interface
- x 150-Amp integrated circuit breaker
- x dual handwheel adjustable retracable air cylinder, for limited weld stroke
- x adjustable lower arm support
- x fully adjustable, rebuildable welding ram
- x pneumatic flow speed control on weld cylinder allows controlled rate of weld head
- x Tuffaloy electrode holders, 5RW taper with spring loaded water tubes
- x copper "L" casting

Welding transformer: Inverter DC, 650V 1000Hz primary, 160KVA at 50% duty cycle, center tap rectifier, 9.0 or 13.0 secondary voltage range in two steps, primary connection via studs, machined copper secondary pads, water cooled, 7.5LPM minimum, primary and secondary temperature thermostats, secondary pickup coil, wound core, fully potted. 72:1 turns ratio lo, 50:1 hi.

Weld Control: WTC model 6001, Part# 964-2129, Control power (120v/60Hz/3-phase), 500VA, Interrupting Capacity: 85KA, Maximum continuous power @ 60Hz, 100PF for 480VAC 3-phase is 54KVA

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Weld Control Specifications

Power Source				
Standard Line Voltage Configurations:	3-Phase AC 220V-480V (± 10%)			
Alternate Line Voltage Configuration:	3-Phase AC 575V (± 10%)			
Line Frequency:	50/60 Hz (Automatic Selection)			
Output Frequency:	1,000 Hz Default (Range = 400Hz - 2,000Hz)			
Output Current at 10% Duty Cycle:	400 Amps			
Output Voltage:	305 VAC Nominal @ 220 VAC Line			
Maximum Power:	260 KVA @ 480 VAC Line Power			
Device Type:	IGBT			
Current Rise Time:	< 4ms Into Resistive Load			
Power Consumption:	70VA (Idling condition)			
Monitoring and Control Functions				
Firing Control:	Fixed Frequency, Pulse Width Modulation			
Current Control:	Primary Constant Current			
Primary Current Range:	10A to Rated Current Level			
Primary Current Accuracy:	± 1% Setting, ± .5% Repeatability			
DC Bus Voltage Measurement Accuracy:	± 1% Setting, ± .5% Repeatability			
Secondary Current Accuracy:	± 2% Setting, ± 1% Repeatability			
Secondary Voltage Accuracy:	± 3%			
Secondary Resistive Accuracy:	± 3%			
MFDC Transformer Flux Protection:	Included			
Duty Cycle Protection:	Monitors Inverter and Weld Transformer Duty Cycle			
MFDC Weld Transformer Monitoring:	Diode Short Monitoring			
Power Consumption:	70VA (Idling Condition)			
Processor & Functions				
Weld Processor:	Series 6000			
Standard Communicatons:	Ethernet IP 10/100 BaseT			
Optional Commnications:	DeviceNet			
Onboard Inputs (LIO):	2 x 24VDC			
Onboard Outputs (LIO):	3 x 120VAC			
Number of weld schedules:	255			
Number of steppers:	10			
Processor Storage Type:	F-RAM (No Battery Required)			
Weld Processor Languages:	English			
Environmental Conditions				
Operating Temperature:	5° C to +50° C			
Humidity:	0 - 90% (Relative, without Condensation)			
ESD:	EN 61000-4-2 Level 3			
Noise Immunity:	EN 61000-4-4 Level 3			
Surge Immunity:	EN 61000-4-5 Level 3			
Water Cooling Requirements				

Maximum temperature not to exceed 104° F. (40° C.), or fall below the dew point of ambient air at about 70° F. (21° C.). pH maintained between 7.0 and 8.0 Maximum chloride content 20 PPM (parts per million) Maximum nitrate content 10 PPM Maximum sulfate content 100 PPM Maximum suspended solids content 100 PPM (non-abrasive) Maximum total solids content 250 PPM (suspended and dissolved) Maximum calcium carbonate content 250 PPM Minimum Water Flow Rate: Greater than 5 liters/min (1.32 gal/min) Less than 70kPa / .7 bar / 10 PSI Max Pressure Drop @ 5 liters/min flow: Less than 620 kPa / 6.2 bar / 90 PSI Pressure Rating: **Electrical Sensitivity of Water:** Greater than 5000 ohms/cm Water Inlet Temperature: Less than 95° F (35° C) Output Current - Water Cooled: 400 Amps **Air Cooling Requirements** Less than 104° F (40° C) Ambient Air Temperature: Minimum Fan Rating: 80 CFM