



Your Trusted Partner in Precision Welding

Elderfield & Hall / Pro-Fusion

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Pro-Fusion Dual Arc 82 HFP Micro-Arc Power Supply



The Most Capable Low Amperage Welding Systems Available

Very stable and soft arc, easy to start at 0.1 amp, the Dual Arc is ideal for difficult welds and micro welding requiring a high degree of precision. Its soft arc will not damage small or delicate parts.

Operated in hundreds of facilities and labs worldwide.

In either TIG or plasma configuration, the Dual Arc 82 HFP can be configured for manual or automatic welding and offers all connectivity required for automation of welding processes. Dual process capability from 0.1 to 80.0 Amps. No restriction to TIG or plasma, it offers both!

Dual Arc 82 Micro-TIG



Dual Arc 82 Micro-Plasma

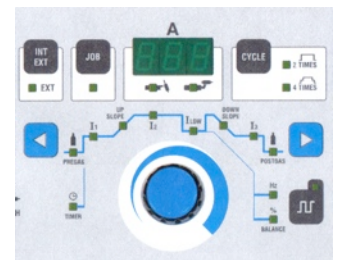


Features and System Capability:

- Precision in micro welding (TIG and plasma) from 0.1 to 80 amps
- Ultra low current capability (0.1 amp) with no arc wander even at the lowest amperages
- High Frequency Arc Starting automatically shuts off when the arc is started
- Short duration weld capability starting at 0.1 seconds up to 99 seconds
- Manual and automatic welding ability with built in computer control memorizing welding programs
- Robotic interface: ability to provide a start and stop "Arc On" signal to control and automate a lathe, a turn table, a linear table, a wire feeder, etc.
- Reduced heat input thru built-in arc pulsation (1 to 500 Hz)
- Highly accurate, repeatable welds for volume production

Simple interface programming with memory for up to 10 welding programs

- Programmable panel to create and memorize welding schedules for pre-flow, starting current, up-slope, welding current, down-slope, final weld current levels and post flow
- Easy to set weld timer range from .001 to 99 seconds



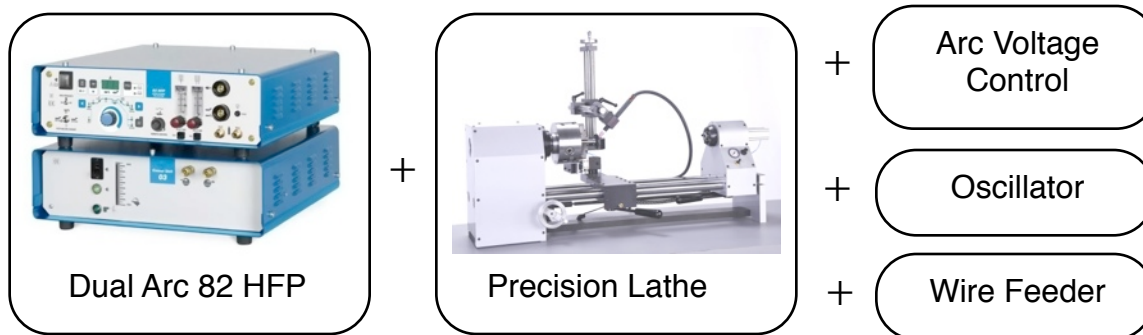
Turnkey Dual Arc 82 HFP Advanced Arc Welding Systems

We assemble and ship complete welding systems so that you have everything needed to start micro welding, except the shielding gas. Pro-Fusion welding systems include the following accessories:

- Manual or automatic TIG or plasma welding torch (selected based on welding application) with consumable torch parts kit
- Foot pedal or remote pendant based on preference
- Shielding gas and, if configured for PAW, a pilot gas pressure regulator: two stage with stainless steel diaphragm and 20' of highly leak resistant polyethylene tubing
- Ground cable with all fittings and inter-connects necessary for system operation
- Package of 10 precision ground tungsten electrodes
- Dual Arc water cooler (when purchasing the plasma configuration)

Complete Welding Workstation

Pro-Fusion designs complete automated welding workstations for various application needs in many industries. Workstations can incorporate a precision lathe, mounted automatic torch, and can include an arc voltage control, wire feeder, oscillator or any combination. For more information contact us with your welding project details.



The Dual Arc is Used for Welding the Following Industry Applications

Bellows, canisters, forceps, batteries, thermocouple, solenoid, tool & die, switch, valves, metal seals, diaphragms, pressure transducers, sensors, implant devices, relay cans capacitor cans, micro switches, motors, electronic devices, enclosures, explosive detonators, airbag components, air seals, tube/ fitting assemblies, vacuum tubes, electrocautery tools, metal meshes, pacemakers, thermocouples, tube closure, surgical instruments, dental instruments, wires, aspiration needles, injection needles, surgical baskets, catheter metal capsules, guidewires, light bulb filaments, and more.



We are here to help. Contact us for more information or quotation:

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Technical Specifications

Weld Current: 0.1 to 80.0 amps (with 2ms response time at 80A, faster at lower amps)
Weld Timer: 0.01 – 99.9 seconds (see detailed specification sheet)
Arc Pulsation: 1 - 500 Hz onboard. (Up to 1000 Hz with an external controller)
Weld Programs: 10 programs can be stored in machine memory
Input Voltage: 115V (30A) or 230V (15A), 50/60 Hz single phase
Weight: Power Supply: 80 lbs. (36.3 kg)
Water Recirculator: 38 lbs (17.25kg) w/o water
Dimensions: Power Supply: 19.5”L x 19.5”W x 6.75”W (496mm x 496mm x 172mm)
Water Recirculator.: 19.5”L x 19.5”W x 6.5”W (496mm x 496mm x 165mm)

Programmable Weld Parameters

Current

Current Increments: 0.1 A increments from 0.1 to 20 A
0.5 A increments from 20 to 80 A
Response Time: 2 ms @ 80 A (faster at lower amps)
Start Current: 5%-100% of programmed weld current
Final Current: 5%-100% of programmed weld current

Timers

Shield Gas Pre-Purge Time: 0.1 – 10.0 secs in 0.1 sec increments
Upslope Time: 0.00 – 9.99 secs in 0.01 sec increments
Weld Time: 0.010 – 0.999 secs in 0.001 sec increments
1.00 – 9.99 secs in 0.01 sec increments
10.0 – 99.9 secs in 0.1 sec increments
Downslope Time: 0.01 – 9.99 secs in 0.01 sec increments
Shield Gas Post-Purge Time: 0.1 – 30.0 secs in 0.1 sec increments

Arc Pulsation

Mode: On/Off
Peak (Main) Current: Low scale: 0.1 to 20 A in 0.1 A increments
High scale: 1 to 80 A in 0.5 A increments
Background Current: 5% to 95% of programmed weld current
Pulse Time (Frequency Rate): .004 – 1 second (1-250 Pulses per second)
Pulse Width/Duty Cycle: Peak current at 5 - 95% of pulse period

Other System Specifications:

Open Circuit Voltage: 110 Volts
Output Current/Power: 80 weld amps, 22V, 2.3 KVA - 60% duty cycle
40 weld amps, 21V, 1.6 KVA - 100% duty cycle
Arc Start Method: High voltage pulse (6,000 V), very narrow
(about 2 micro seconds) with a repetition ratio of 60-70Hz

Communications:

Connectors:

Torch, Foot pedal/remote control: Front panel 7 pin connector
External/robot receptacle: Rear panel 16 pin connector
Modbus RTU

Inputs:

Foot Pedal: Front panel foot pedal/remote connector
0 – 10 volt signal: From external/robot receptacle on rear
Remote Operator Pendant: Start and stop buttons
Remote Start: Starts automatic sequence through any
of the three connectors
Remote Downslope/Stop: Slopes current out/stops arc
immediately

Outputs:

Front Panel Digital Amp Meter: Digital readout while welding
Arc Detect/Transfer Signal: Through external/robot receptacle
Start signal to external Positioner: Can be connected through
any of the three connectors

Weld Program Memory:

10 internal weld programs storable

Panel Switches/Manual Controls:

High Frequency: On/Off
Pilot Gas and Current: On Low / Off / On
High Weld Current: High/Low key switch
Pilot Gas Flowmeter: 0.2 – 3.0 SCHF (0.1 – 1.5 l/min)
Pilot Gas Manual Purge Button: Off / momentary on
Shield Gas Flowmeter: 1.0 – 30.0 SCHF (0.5 – 15 l/min)
Shield Gas Manual Purge Button: Off / momentary on

Operating Environment:

Ambient Temperature: Max. 40°C
Relative Humidity: Must be less than 80%

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