

projection welding Pulsar Series RP3000 Rotary Welder

Capacitive Discharge Welding Systems

- Short duration weld pulse enables low energy welding and repeatable precise results
- Ultra-fast rise times for high throughput weld cycles over a broad range of applications
- High value price/performance ratio
- Simple intuitive user interface

The Pulsar power supply and high-efficiency matched weld transformers can be combined with a KN Weld Head for single station production or a RP3000 Rotary System for high volume production. Production proven in industrial environments around the world, these systems are dependable workhorses of the industry. Whether hermetically sealing microelectronic packages or joining a variety of metal parts, Pulsar's broad range of precision power choices provide technically advanced process solutions. The Pulsar Series can be easily integrated into atmospheric enclosures to insure high yield hermetic sealing results.



- Unitek Benchmark's low input power requirement guarantees weld stability and a weld pulse of short duration and concentrated high energy. Output weld energy is discharged from capacitor storage banks which are independent of the main AC power input. A Unitek Benchmark system requires only 3.5-50 amperes, compared to AC power systems requiring 100-800 amperes.
- Hermetically seals diverse microelectronic packages, ranging from the smallest TO, UM and HC styles to hybrids up to nine linear inches (230mm), depending on package design.
- Pulsar's short, high energy weld pulse, localizes heat in the weld zone, reducing heat build-up in sensitive micro-electronic packages.



- Accommodates a variety of metal joining requirements, including sensors, frequency devices, filaments, heating elements, photonics packages, strain gauges, transducers, and more.
- The solid state weld controller produces an adjustable series of steps that initiate weld firing.
- Pulsar capacitive discharge power supplies are the most efficient available, configured in a variety of models, from 200 – 9000 joules.
- Weld energy is discharged to the part only after proper charge is verified. This ensures a consistent weld pulse.
- A weld inhibit function accepts input from atmospheric enclosure instruments, such as oxygen analyzer and moisture monitors, for integrated process control.
- All systems have been extensively field proven, producing millions of welds.
- Designed to operate as either manual or automatic welding equipment, or can be retrofitted to an existing welding system.

TYPICAL APPLICATIONS



Projection Welding System – Design and Operations

The Pulsar's operation and control are extremely straightforward – easy to learn and understand.

- Diagnostic controls monitor the power supply status and prevent weld firing if power levels differ from the desired set point. Digital control of charging and discharging produces rapid charging rates for decreased cycle times.
- Provides fast weld follow-up, allowing complete metal fusion without weld splatter. Electrode holders accept custom designed electrodes to your application. One-inch diameter (25.4 mm) electrodes as standard. Two-inch diameter (50.8 mm) electrodes are available as options on the KN Weld Head.

KN Weld Head Operation

- All weld parameters are accessed, set, and displayed on front panel of the Pulsar weld controller.

- Two palm switches initiate the weld cycle (footswitch optional).
- Both the electrode approach pressure and speed are adjustable to guarantee safe handling and avoid damage to fragile parts. Solid state controller applies low pressure air to the air cylinder, closing the electrodes. Once electrodes are closed, high pressure air is released to the cylinder until the preset weld (forge) pressure is reached. Weld pressure, forge time, and hold time are adjustable over a wide range of settings. When the specified pressure is reached, the welding power supply is activated initiating weld pulse. Hold time is activated when weld pulse is fired.

RP3000 Rotary Operation

- Rotation is initiated by automatic mode or manually with a standard footswitch. Optional single palm button is available.



- Pre- and post-weld station part sensors and head retract sensor verify part presence and head position, inhibiting rotation and welding if error condition exists. If pre-weld station senses missing part, that position will be skipped.

TECHNICAL SPECIFICATIONS: PULSAR POWER SUPPLIES

	P-200	P-500	P-1500	P-3000	P-6000	P-9000
Energy range:	1-200 joules	1-500 joules	100-1500 joules	100-3000 joules	100-6000 joules	100-9000 joules
Capacitance:	650 uF	1550 uF	4650 uF	9300 uF	18600 uF	27,900 uF
Maximum potential:	50-800 VDC	50-800 VDC	50-800 VDC	50-800 VDC	50-800 VDC	50-800 VDC
Weld pulse:	5-10 msec	5-10 msec	5-10 msec	5-15 msec	5-15 msec	5-15 msec
Input voltage:	120VAC 50/60Hz			208/240/480 VAC 50/60 Hz Single Phase		
Input current:	adjustable between 3.5-15 amperes			adjustable between 10-40 amperes 50/60 Hz		
Dimensions inches (cm):	17.0 x 5.5 x 16.0 (43 x 13 x 41)			34.0 x 22.0 x 16.0 (86 x 56 x 41)		
Circuitry:	All solid-state/charge and discharge					
Control circuit protection:	Zener-referenced closed-loop circuit					
Weld transformer:	High-efficiency matched weld transformer					
Energy repeatability:	5% of energy set point					

RP3000 ROTARY WELDING SYSTEM

Forge force:	120-1200 lbs.(534-5340 newtons)
Rotary table:	8-station, counter-clockwise rotation, 10" (254 mm) dia.
Drive system:	Mechanical Sine Cam System, variable speed
Index accuracy:	±75 arc seconds (±0.0014" (0.035mm) @ weld zone)
Index time:	0.5 seconds
System drive:	Induction Motor with clutch and brake
Upper electrode/lower electrode contact:	Easy removal, water cooled
Controls:	Automatic and Manual with foot or palm switch
Input air:	80-100 psi (552-689 KPa)
Remote control:	Remote control of energy, weld, and ready/wait functions
Top electrode eject (optional):	Prevents parts from sticking after weld
Part collection (optional):	Collection box external to enclosure with automatic feed tube seal
Part hold-down fixture (Optional):	Part hold down for stations before and after weld station

KN WELD HEAD AND CONTROLLER

Forge force:	Adjustable between 120-1200 lbs. (534-5340 newtons)
Single range:	Adjustable between 120-4000 lbs. (534-18000 newtons)
Dual range:	Adjustable between 120-4000 lbs. (534-18000 newtons)
Stroke:	47.6 mm (1.875 inches) or longer as special option
Electrode holders:	Quick change
Alignment:	Zero alignment die set
Kinetic expander:	Expansion >6.4 mm (0.25 Inches)
Die set design:	Zero weld zone flexure
Dimensions (LxDxH) Inches (cm):	12 L x 15 D x 24 H (30.5 x 38.0 x 61.0)
Approach time:	Adjustable from 50 msec to 3 seconds
Forge time:	Adjustable from 50 msec to 3 seconds
Hold time:	Adjustable from 50 msec to 3 seconds
Weld initiate circuit:	Automatic
Locking regulators:	Adjustable from 10 psi (72 kpa) to 120 psi (827 kpa)
Cycle status:	Visual illuminated indicators

Your Local Representative



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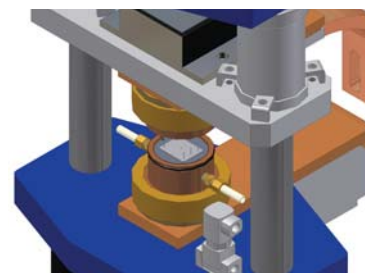
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Optional Electrode Holder Assembly provides a vacuum or specialty gas inside part after welding.

Specifications subject to change without notice.

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