

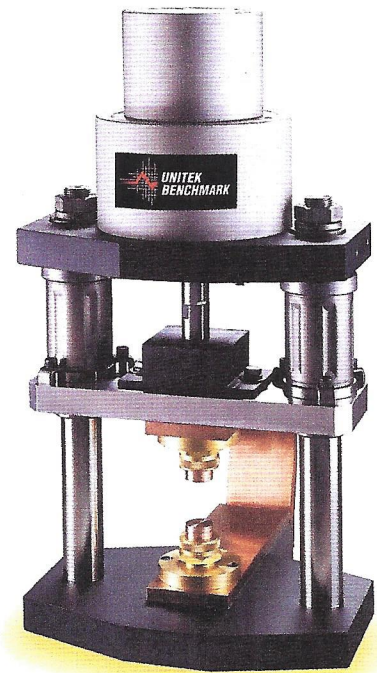
Pulsar Series

Projection Welding Systems

Pulsar Capacitive Discharge
Welding Systems offer excellent
results over a broad range of
applications.

Unitek Benchmark projection welding systems perform flawlessly.

Unitek Benchmark's Pulsar projection welding systems perform the way they are designed. Flawlessly. Weld after weld. Production proven in industrial environments around the world, these systems are the 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 the best match to your welding applications.



- **Unitek Benchmark's low input power requirement guarantees weld stability** and a weld pulse of short duration, 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 35-50 amperes, compared to AC power systems that require 100-800 amperes.
- **Hermetically seal diverse microelectronic packages**, ranging from the smallest TO, UM and HC styles to hybrids up to five linear inches in circumference.
- **Pulsar's short, high energy weld pulse localizes heat in the weld zone**, eliminating heat build up in sensitive micro-electronic packages.
- **Accommodates a variety of metal joining requirements in industrial, automotive and consumer applications** including sensors, filaments, heating elements, strain gauges, and transducers.
- **The solid state weld controller produces a precisely adjustable series of steps that initiate weld firing.** Weld force can be set from 534 newtons (120 lbs) to over 18000 newtons (4000 lbs) depending upon the model.
- **Weld accuracy exceeds 25 microns (0.001 inches) with virtually perfect repeatability.** The KN weld head is specifically designed for precision resistance welding applications under production conditions.
- **Pulsar capacitive discharge power supplies are the most efficient available**, configured in a variety of models, from 200 – 9000 joules.
- **Ultra-fast rise times** permit high throughput weld cycles.
- **All systems have been extensively field proven** in electronic package encapsulation and industrial metal joining applications. Designed to operate with either manual or automatic welding equipment, or to be retrofitted to existing welding systems.
- **Simple, intuitive user interface.** All the welding parameters are accessed, set and displayed on the front panel of the Pulsar weld controller.
- **High value price/performance ratio.**
- **Calibrated to NIST standards.**
- **CE certification available.**

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Projection Welding System - Design and Operations



The Pulsar's operation and control are extremely straightforward – easy to learn and easy to understand. Simply set the dials on the front of the controller and you are ready to begin.

- The welding cycle begins when two palm switches or an optional foot pedal is pressed. The Pulsar solid state weld controller then applies low pressure air to the air cylinder closing the electrodes. Both the electrode approach pressure and speed are adjustable to guarantee safe handling and avoid damage to parts.
- Diagnostic circuitry monitors the status of the power supply and performs automatic weld monitoring, preventing weld firing if power levels differ from the adjustable set point, and assuring rapid charging rates.
- Once the electrodes are closed, high pressure air is released to the air cylinder until the preset weld (forge) pressure is reached. Both the weld pressure and the hold times are adjustable over a wide range of settings. When the specified pressure is reached, the welding power supply is activated, firing a burst of energy. Simultaneously, a preset hold time is activated to complete the weld.
- The Pulsar KN weld head provides fast weld follow-up, allowing complete metal fusion without weld splatter. Both platens of the die set are fitted with electrode holders which accept custom-designed electrodes to conform to the components being welded. For hermetic applications, single or dual heads are located within a Unitek Benchmark Generation 2 or Alpha series atmospheric enclosure.

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		208/220/240/480 VAC 50/60 Hz			
Input current:	adjustable between 3.5-15 amperes			adjustable between 10-40 amperes 50/60 Hz		
Dimensions:	43 cm L x 13 cm H x 41 cm D		86 cm L x 56 cm H x 41 cm D		34" L x 22" H x 16" D	
	17" L x 5.5" H x 16" D					

Circuitry: All solid-state/charge and discharge
 Control Circuit Protection: Zener-referenced closed-loop circuit
 Weld transformer: High-efficiency matched weld transformer

Weld Controller

Approach time: Adjustable from 50 msecs to 3 seconds
 Forge time: Adjustable from 50 msecs to 3 seconds
 Hold time: Adjustable from 50 msecs 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

KN Weld Head

Forge force:
 Single range: Adjustable between 120-1200 lbs. (534-5340 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: Overall 30.5 cm L x 38 cm D x 61 cm H
 (12 inches L x 15 inches D x 24 inches H)

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