



Weld Heads

Low Inertia Parallel and Opposed Gap
Weld Heads **Instruction Pamphlet**

SEK500

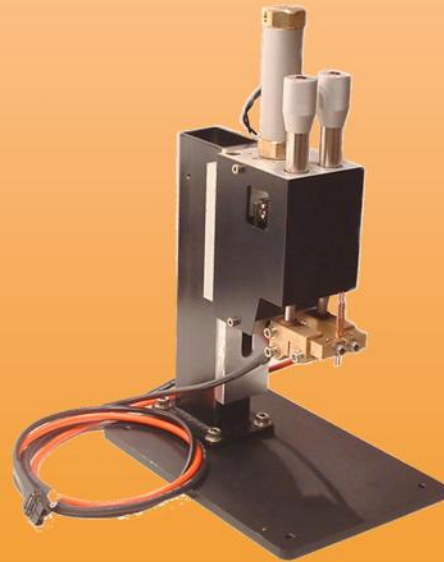
Low Inertia Parallel Gap Weld Head

- Parallel gap for battery manufacturing
- Rugged, durable construction
- Independent electrode pressure adjustment
- Four inch head travel
- Micro-switch triggers at set-point pressure
- Low inertia for fast follow-on pressure



SEK500A

- Air actuation



SEK500B

- Manual foot pedal actuation

The SEK500 Parallel Gap Weld Head

The SEK500 is a parallel gap weld head suitable for high volume battery pack manufacturing. The SEK500A is actuated via air and the SEK500B with a manual foot pedal. Independent electrode pressure adjustment allows fast welder setup. The SEK500 micro-switch fires when electrodes have reached the set-point pressure and is independent of head travel. This unit is durable and has an excellent track record. Figures 12 and 13 lists the different components of the SEK500 weld head.

Electrode Placement and Preparation

Welding electrodes are held by a brass electrode holder (see Figure 14). Use a level surface to position electrodes in holder before tightening. Additional leveling can be accomplished by pulling sand paper under electrode tips while they are depressed on a flat surface. Be sure to wipe away dust from tip surfaces.

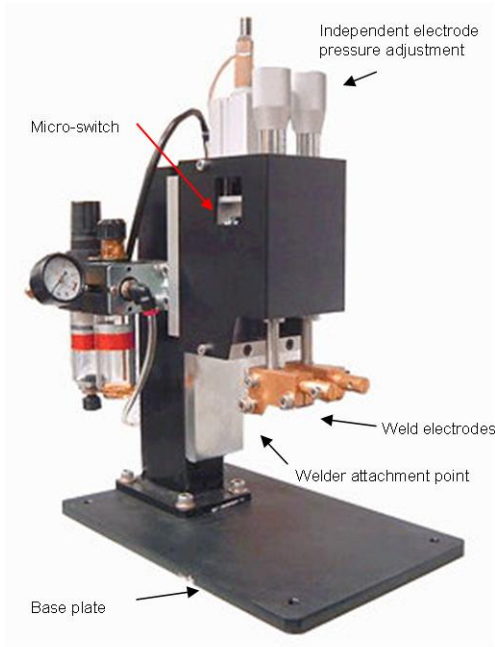


Figure 12: The SEK500A air actuated weld head.

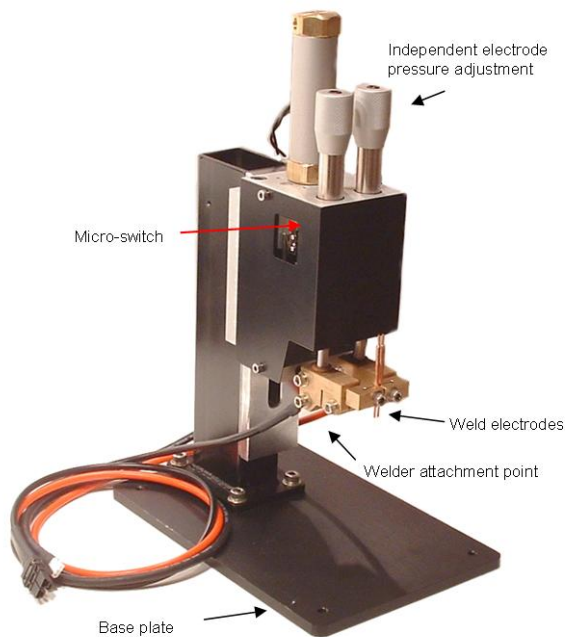


Figure 13: The SEK500B parallel gap weld head. Foot pedal actuated.

Adjust the two independent electrode force knobs to produce the desired electrode pressure level. For battery welding applications this will typically be around 2.5 lbf. Perform a test weld to determine if one spot is hotter than the other. If a weld spot is too hot increase electrode pressure. If the weld is too cool, decrease electrode pressure.

Weld Head Hookup

The SEK500 weld head comes with the weld head adapter cable (WHAC) and the external switch hookup cable (ESHC).

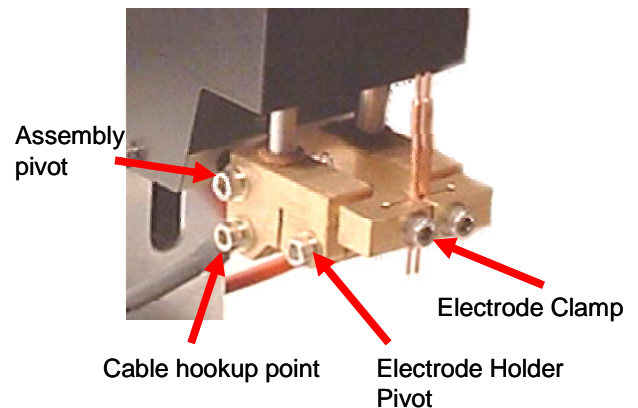


Figure 14: Hookup and adjustment bolts of the SEK500.

The ESHC is attached to the SEK500 weld head as indicated in Figure 15. ESHC wires can be attached without specific color orientation.



Figure 15: The ESHC external switch hookup cable attaches to the SEK500 as shown.

Increasing Weld Performance

SEK500 weld performance can be increased using some simple procedures. Use a belt sander to sand the corners off of the electrode tips. Reducing the effective tip area will reduce the required weld energy.

Sunstone Engineering also can provide the SEK500 Hookup and Electrode Holder Upgrade (SHEHU) to reduce required weld energy. The SHEHU shortens the conduction path and increases energy delivered by a significant factor. Figure 16 shows the SHEHU weld head upgrade.

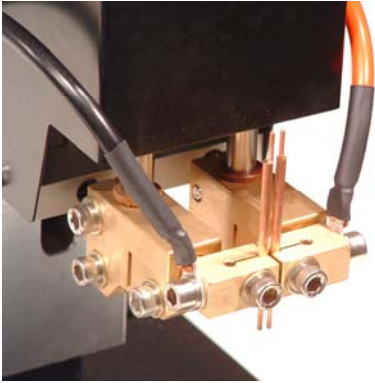


Figure 16: A reduction of required weld energy can be accomplished by using SEK500 Hookup and Electrode Holder Upgrade (SHEHU).

SAFETY

Please follow these points to help insure your comfort and safety.

1. Always wear safety glasses when working with spot welders and weld heads.
2. Avoid touching welds spots immediately after the weld has been performed as they will be hot.
3. Be careful not to pinch fingers in moving weld head parts or between welding electrodes.
4. Remove hand jewelry before welding.

All welds are performed at low voltage for increased safety of operation.

For further information on using SEK500 weld heads please see our instructional videos on the web at www.SunstoneEngineering.com.

Weld Head Physical Characteristics

		SEK500	
Actuation			
	Hand Lever	No	
	Foot Pedal	Yes (SEK500B)	
	Air	Yes (SEK500A)	
Electrode Configuration			
	Parallel Gap	Yes	
	Opposed Gap	No	
Force			
	Max lbf (N)	20	(88)
	Min lbf (N)	1	(4.4)
Dimensions			
	Electrode Diameter inch (cm)	0.125	(0.3)
	Max Height inch (cm)	18	(45.8)
	Max Depth inch (cm)	12	(30.5)
	Max Width inch (cm)	8	(20.3)
	Max Head Travel inch (cm)	4	(10.2)
	Typical Head Travel Inch (cm)	1	(2.5)

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