



# World-Class Micro Welding Systems



**sunstone**<sup>™</sup>

The Micro Welder Experts

# The World's Most Respected Micro TIG Welders

*Orion™ Pulse Arc Technology with Precision Energy Control!*

- Crisp, Clear 5X Microscopic Optics
- Easy to Learn and Use
- Dependable 2-year Warranty
- Precisely Controlled Delivery of Pulse Length and Energy  
*(with most models)*



## Specifications

	orion™ mPulse	orion™ 100c
POWER SUPPLY FOOTPRINT (L X W X H)	14x14.1x8.9 cm	27.3x15.2x16.9 cm
TOTAL WEIGHT	13.2 kg	17.2 kg
INPUT VOLTAGE	100/230 VAC (AUTO DETECTED)	100/240 VAC (AUTO DETECTED)
ENERGY RANGE (JOULES)	<b>3-30 J</b>	<b>3-100 J</b>
EST WELD SPOT DIAMETER RANGE	≈ 1 - 1.5 mm	≈ 0.75 - 2.5 mm
DISPLAY (TOUCH SCREEN)	11 cm	13 cm
WELD SPEED	1 weld/2 seconds	1 weld/0.7 seconds
HIGH FREQ AGITATION OPTIONS	None	Basic
AVAILABLE POWER SETTINGS	27	100
SAVE SETTINGS SPACES	0	30
5X MAGNIFICATION	•	•
IR & UV EYE PROTECTION VIA SCOPE	•	•
20+ ON-SCREEN LANGUAGES		•
FOOT PETAL INPUT		•
ARC START TECHNOLOGY		•
TACK MODE		•
BASIC SCREEN METAL PRESETS		•
UPGRADEABLE SOFTWARE		•
ON SCREEN TRAINING VIDEOS		
ADAPTIVE WELD IGNITION		
DYNAMIC ENERGY ADJUSTMENT		
MULTIPLE WELDING WAVEFORMS		
PICO MODE		





POWER SOURCE  
NOT PICTURED

## orion™ 150s

30.5x12.7x25.4 cm

19.9 kg

100/240 VAC (AUTO DETECTED)

**1-150 J**

≈ 0.5 - 3.5 mm

20 cm

1 weld/0.2 seconds

Multiple

280

100

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## orion™ 200i

40.6x12.7x26.7 cm

26.3 kg

100/240 VAC (AUTO DETECTED)

**0.2-200 J**

≈ 0.1 - 4.5 mm

25 cm

1 weld/0.2 seconds

Advanced

20,000

Unlimited

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# The Sunstone™ CDDP-A

Now available in Four Models:

- 200
- 400
- 600
- 1200 **NEW!**



## Advanced CD Fine-Spot Resistance Welders

*Precise, Repeatable Control Over Every Aspect of Every Weld*

- Touchscreen, Full-color Interface
- Visual Graph of Weld Waveform
- High-precision Energy Adjustment
- Histogram
- Comparator with Voltage, Current, Power
- Alarms and Warnings
- Timestamp Data Feedback
- Import/Export Weld Data
- Multiple Languages
- Software Updates with WiFi Connectivity
- Save Settings
- Built-in Training Videos, Documentation
- Full Welder Cloning Capabilities
- Easy-to-Reach Emergency Stop
- PLC Ready
- Dual Weld Head Control
- Roll-spot Welding
- Lock-out Mode

### Application Ideas

- Honeycomb Tacking
- Battery Pack Connections
- Continuous Roll Spot Welding
- Cross-wire Welding
- Thermocouples
- Thin Sheets and Wire of Copper, Aluminum, Brass, and other Conductive Metals
- Miscellaneous Resistive Applications
- Compatible with Many Weld Heads: High Force, Opposed, Parallel, Tweezer, and More!





## RECOMMENDED WELD HEADS



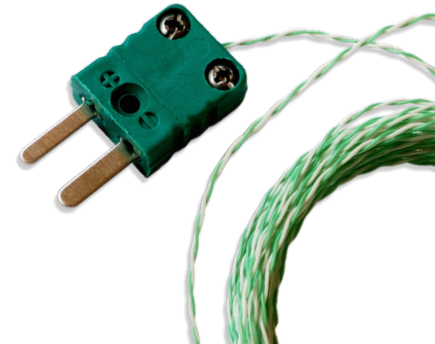
HIGH FORCE



OPPOSED



PARALLEL



## Specifications

	CD200DP-A	CD400DP-A	CD600DP-A	CD1200DP-A <sup>NEW!</sup>
TABLETOP FOOTPRINT (L X W X H)	22.8x48.2x30.5 cm	22.8x48.2x30.5 cm	22.8x48.2x30.5 cm	30.5x33x48.2 cm
UNIT WEIGHT	19.6 kg	20.2 kg	20.8 kg	30.4 kg
INPUT VOLTAGE	85 - 260 VAC	85 - 260 VAC	85 - 260 VAC	85 - 260 VAC
FREQUENCY RANGE	47 - 63 Hz	47 - 63 Hz	47 - 63 Hz	47 - 63 Hz
POWER FACTOR (typ.)	PF>0.94/230 VAC PF>.99/115 VAC	PF>0.94/230 VAC PF>.99/115 VAC	PF>0.94/230 VAC PF>.99/115 VAC	PF>0.94/230 VAC PF>.99/115 VAC
AC CURRENT (typ.)	8.5A/115 VAC 5A/230 VAC	8.5A/115 VAC 5A/230 VAC	8.5A/115 VAC 5A/230 VAC	17A/119 VAC 10A/230 VAC
POTENTIAL PEAK INPUT ACTUAL AVERAGE CURRENT (welding)	5A/115 VAC 3A/230 VAC	5A/115 VAC 3A/230 VAC	5A/115 VAC 3A/230 VAC	8.9A/119 VAC 5A/230 VAC
SINGLE AND DUAL PULSE	YES	YES	YES	YES
PULSE 1 ENERGY ADJUSTMENT	0-30%	0-30%	0-30%	0-30%
PULSE 2 ENERGY ADJUSTMENT	0-100%	0-100%	0-100%	0-100%
<b>WELD PULSE CHARACTERISTICS</b>				
MIN AND MAX OUTPUT	0.2 ws - 200 ws	0.2 ws - 400 ws	0.2 ws - 600 ws	0.2 ws - 1,200 ws
MIN AND MAX PULSE WIDTH	0.27 ms - 19.5 ms	0.29 ms - 30 ms	0.31 ms - 40.5 ms	1.13 ms - 60 ms
RISE TIME (to max voltage)	0.2 ms	0.2 ms	0.2 ms	0.2 ms
MIN AND MAX PULSE HEIGHT	1.1 V - 15.8 V	0.9 V - 18.3 V	0.8 V - 19.4 V	0.3 V - 19.4 V
<b>WELDS PER MINUTE BY % OF TOTAL WELD ENERGY (IN DUAL PULSE MODE, MAX ENERGY, PULSE WIDTH AT 100%)</b>				
0.10% with both pulses enabled	650 (0.2 ws)	600 (0.4 ws)	530 (0.6 ws)	460 (1.2 ws)
0.10%	550 (0.2 ws)	530 (0.4 ws)	500 (0.6 ws)	260 (1.2 ws)
1%	450 (2 ws)	290 (4 ws)	240 (6 ws)	214 (12 ws)
5%	250 (10 ws)	160 (20 ws)	130 (30 ws)	120 (60 ws)
10%	190 (20 ws)	120 (40 ws)	90 (60 ws)	85 (120 ws)
25%	130 (50 ws)	70 (100 ws)	60 (150 ws)	52 (300 ws)
50%	90 (100 ws)	50 (200 ws)	40 (300 ws)	36 (600 ws)
100%	60 (200 ws)	30 (400 ws)	30 (600 ws)	23 (1200 ws)
<b>PEAK WELD CURRENT* (BY EXTERNAL CABLING GAUGE NUMBER, AWG. FOUR AND EIGHT AWG IS TYPICAL FOR HAND-HELD ATTACHMENTS)</b>				
1 AWG 8ft	6583	7625	8080	8500
4 AWG 8ft	4575	4910	5225	5800
8 AWG 8ft	3038	3520	3730	3960

\*MINIMUM LOAD = 1mOhm. USING A SMALLER LOAD MAY DAMAGE THE WELDER.



## The Sunstone™ Linear DC

**The Power of an Inverter with Ultra Linear Precision!**  
*Providing high repetition rates and fine, low energy control*

- 10" Touchscreen, Full-color Interface
- High-speed, Advanced Loop Feedback
- Pre-weld and Weld Monitoring
- Save/Load Capabilities
- Graphical Display of Current, Power, Voltage
- Dual Weld Head Control
- Dual Pulse Agitation
- Customizable Waveform Generation
- Geared for Automation
- Fast Rise Times
- Long Weld Times
- Single Phase Power Input (110 or 220 VAC)
- Fully Automated Capable
- Software Update via WiFi
- Current, Voltage, Power Controls
- Custom Software Development Available
- Fully Contained Power—External Transformer Not Required!

### ***Application Ideas***

- Automotive, Aerospace, Maritime
- Battery Packs
- Coil Termination
- Strain Gauge
- Honeycomb
- PCB Welding
- Magnet Wire Bonding
- Solenoids, Actuators, Inductors
- Capacitor Assemblies
- Cathode Ray Tubes
- Solar Cells
- Lamp Assemblies
- Heating Elements
- Electronic Assemblies
- Multi Weld Head Compatible



## RECOMMENDED WELD HEADS



MICRO



HIGH FORCE



OPPOSED



PARALLEL

## Specifications

### Linear DC

FOOTPRINT (L X W X H)	38.5 x 28.9 x 39.3cm	
UNIT WEIGHT	21.1 kg	
VOLTAGE (SINGLE PHASE)	90 - 264 AC VERSION	
POWER SOURCE	110 OR 220 SINGLE PHASE	
CURRENT	10 - 4000A 10 Amp/Step	
POWER	0.01 0 20 kW at 10W/Step	
PEAK CURRENT	4000A	
PEAK POWER	20kW	
CURRENT OUTPUT ACCURACY	±10A	
VOLTAGE OUTPUT ACCURACY	±0.005V	
WELD PERIOD RANGES	RANGES (msec)	RESOLUTION (steps)
WELD TIME (EACH SECTION)	0-100	0.1ms
SQUEEZE/HOLD PERIODS	0-5	1ms



**sunstone™**  
The Micro Welder Experts







## The Sunstone™ AC 5.0 kVA Welder

**Continuous Energy and a Full Range of Hand Pieces**  
*The perfect tool for hermetic seals, seams, filter assemblies, or mesh!*

- Internal AC Transformer for Compact Design
- Simple, Easy-to-Use Weld Controls
- Weld On/Off Switch for Added Safe Operation
- Single or Repeat Mode to Match Your Needs
- Control Weld Cycle and Rest Time to Increase Weld Strength
- Power Range Selection for Flexible Application
- Modify Power from 40% to 100% of Selected Power for Added Precision
- Weld Times as Low as 1/100 Second
- Synchronous IC Control
- Weld Up to 1.25mm Thickness for Added Flexibility and Application
- Adjustable Heat Control to Match Any Material
- Standard 240 VAC—Ready for Your Shop!
- Available in 3 Models: 2.2kVA, 5.0kVA, 15kVA
- Full Range of Hand Pieces for Any Job
- Optional Chiller for High Duty Cycles

### **Application Ideas**

- Hermetic Sealing
- Resistance Seam Welding
- Thermocouples
- Brazing
- Mild Steel Saddles
- Copper Cooling Tubes
- Galvanized or Zintec Panels for Refrigeration work
- Stainless Steel Heat Insulation Blankets or Reactor Insulators
- Wire Welding
- Sheet Welding
- Roll Spot
- Terminal Welding



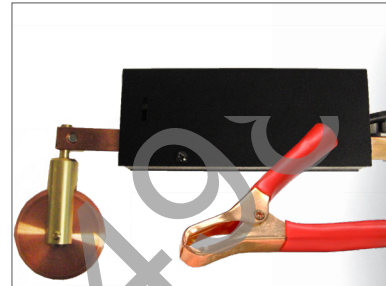
## AVAILABLE HAND PIECES



Roll Spot with Wheel (PG2 Wheel)



Gun Hand Piece (PG2)



Pressure-Activated Roll Spot (PASP)



Water-cooled Single Probe (PG3W)



Single Probe (PG1)

## Specifications

	2.2kVA	5.0kVA	15kVA
FOOTPRINT (L X W X H)	35.6x25.9x33cm	54.1x32x34cm	54.1x32x34cm
UNIT WEIGHT	19.9 kg	47.6 kg	54.9 kg
PRIMARY VOLTAGE	110 or 240 (1-phase)	240 (1-phase)	415 (3-phase)
MAX WELD CAP (PG2)	2 x 0.5mm	2 x 0.75mm	2 x 0.75mm
PG6	-	-	2 x 1.25mm
SHORT CIRCUIT CURRENT	2100A	2500A	4250A
SHORT CIRCUIT VOLTAGE	4.5V	5.8V	8V



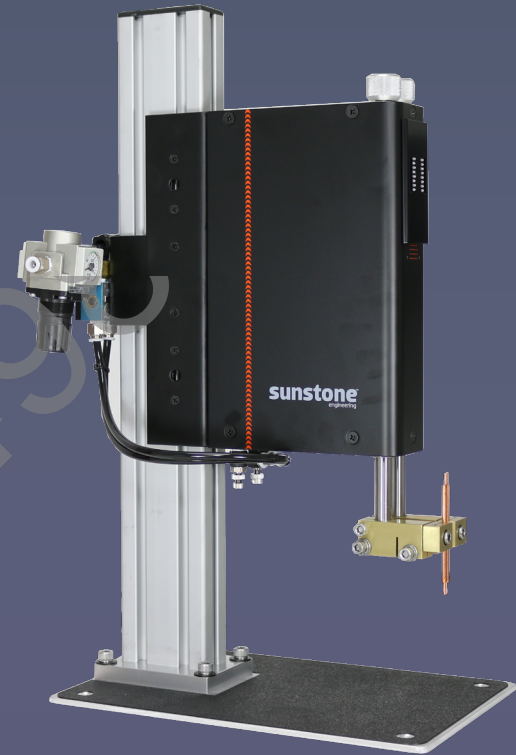
# Sunstone™ Quality Weld Heads

*Loaded with Options to Meet Any Welding Challenge!*

## Sunstone™ WH1

Sunstone's WH1 weld head is ideal for typical opposed resistance welding applications. Available in manual, pneumatic, or high force operation.

- Adjustable Force Firing and Up/Down Stroke Velocity
- Quick Release Height Adjustment Handles
- Height Adjustment from 0-5.25"
- Assortment of Electrode Diameters, Shapes, Material Available



## Specifications

	WH1 MANUAL	WH1 PNEUMATIC	WH1 HIGH FORCE
FOOTPRINT (L X W X H)	30.5x11.45x49.5 cm	30.5x11.45x49.5 cm 30.5x11.45x49.5 cm with MAC Valve	35.6x17.1x61.9 cm
UNIT WEIGHT	11.35 kg	11.35 kg	12.7 kg
WELD FORCE	1-15 lbs	1-15 lbs	1.7-45 lbs
ELECTRODE DIAMETER (AVAIL UPGRADES)	.125 in (.1875 in, .25 in)	.125 in (.1875 in, .25 in)	.1875 in (.25 in)
ELECTRODE CONFIG/HOLDER TYPE	OPPOSED/IN LINE	OPPOSED/IN LINE	OPPOSED/IN LINE
MAX THROAT SIZE (HxD)	5.25 x 6.5 in	5.25 x 6.5 in	
WELD CABLE SIZE/LENGTH	1 AWG / 24 in	1 AWG / 24 in	1 AWG / 24 in
FRONT PEDAL TYPE	MANUAL CABLE	AC, 3 PRONG OR PNEUMATIC	PNEUMATIC
AIR PRESSURE BY MAX FORCE	N/A	60-80 PSI	60-80 PSI
AIR CYLINDER INSIDE DIAMETER BORE	-	.75 in	1.125 in
CYCLE RATE (STROKE)	1 in	1 in	1 in







## Sunstone™ WH2

Sunstone's WH2 weld head features a parallel set of electrodes, which is ideal for battery pack manufacturing or other applications requiring same-side welding. Additionally, the WH2 provides the precision and repeatability that automated manufacturing facilities require.

- Manual or Pneumatic Operation
- Adjustable Force Firing and Up/Down Stroke Velocity
- Quick Release Height Adjustment
- Height Adjustment 0-7.25"
- Electrode Gap Adjustment 0.05 - 1.5"

## Sunstone™ MWH3000

When you need precision, thermo-compression bonding, and reflow soldering, Sunstone's MWH3000 is the perfect tool. An LED light ring, flexible configuration, and available 5X optics makes the MWH3000 a versatile tool for any shop.



WH2		MWH3000	
MANUAL	PNEUMATIC		
49.5x20.3x30.5	49.5x22.9x30.5	FOOTPRINT (L X W X H)	40.6x6.1x50.8 cm
11.35 kg	11.35 kg	UNIT WEIGHT	14 kg
1-15 lbs	1-15 lbs	WELD FORCE	80-3000 grams
.125 in (.1875 in, .25 in)	.125 in (.1875 in, .25 in)	MAX ELECTRODE STROKE	1 in
PARALLEL	PARALLEL	ELECTRODE DIAMETER	.75 in
OFFSET	OFFSET	ELECTRODE CONFIGURATION	PARALLEL or OPPOSED or BOTH
7.25 X 6.5 in	7.25 X 7.5 in	ADJUSTABLE ELECTRODE GAP	YES
MANUAL CABLE	AC, 3 PRONG OR PNEUMATIC	MAX THROAT SIZE	12 in
N/A	60-80 PSI	WELD CABLE SIZE/LENGTH	8 AWG
-	1.5 in	FOOT PEDAL TYPE	MANUAL CABLE
1 in	1 in		



## Avio High Frequency Inverters

Avio welders are engineered to monitor and respond to changes that occur during the weld in real time. If the system detects an anomaly, adjustments are automatically made to make sure the weld is successful. As a result, you're guaranteed a strong, repeatable weld.

- LCD Display of Controls and Weld Waveform
- Multiple Controls: Constant Current, Voltage, Power
- Programmable Schedules and Jobs
- Multi-Monitoring Function
- Available in 4000, 8000, and 16000 A Models
- Weld Times Up to 3 seconds
- Pre-Weld Check Function
- Save/Load Capability
- Automation Ready
- Weld Data Log



### Specifications

	AV HF 4K	AV HF 8K
FOOTPRINT/WEIGHT	170x350x265mm/14 kg	186x490x265mm/19kg
WELDING TRANSFORMER	NT-IN4400	NT-IN8400
MAXIMUM CURRENT	4000 A	8000 A
CONTROL FREQUENCY	2KHz	2KHz
CONTROL MODE	CONSTANT CURRENT, CONSTANT VOLTAGE, CONSTANT POWER,	
RANGE OF TIMER SETTING	PRE, 1ST, 2ND, UP, WELD, DOWN TOTAL TIME 0.5-3000ms	
SETTING RANGE FOR WELD TYPE	CURRENT: 0.4-4.1KA VOLTAGE: 0.4-4.1V POWER: 0.2-8.2KW	CURRENT: 0.4-8.2KA VOLTAGE: 0.4-6.2V POWER: 0.2-24.6KW
CURRENT, VOLTAGE, POWER, RESISTANCE MONITORING	AVERAGE/PEAK/PROFILE	
TRACE MONITORING	CURRENT/VOLTAGE/POWER, RESISTANCE	
DISPLAY OF WAVEFORM	CURRENT/VOLTAGE/POWER, RESISTANCE	
NUMBER OF CONDITIONS	31	31
INTERFACE	RS232C	
COLLING METHOD	FORCED AIR	
POWER SOURCE	AC200-230V 3 Φ	AC380-415V 3 Φ



## AV HF 16K

280x410x470mm/35kg

NT-IN16K4

16000 A (200 V OPTION: 12000 A)

2KHz

FIXED PULSE WIDTH

PRE, 1ST, 2ND, UP, WELD, DOWN TOTAL TIME 1-3000ms

CURRENT: 0.4-16KA

VOLTAGE: 0.4-6.2V

POWER: 0.2-49.2KW

255

AC380-415V 3  $\Phi$

**WELDING  
ANALYSIS**

## AVIO PARALLEL RECOMMENDED WELD HEADS

**NA-131**  
PRESSURE: 0.7-5 N  
 $\Phi$  3.2mm ELECTRODE



**NA-132**  
PRESSURE: 5-65 N  
 $\Phi$  3.2mm ELECTRODE



**NA-143**  
PRESSURE: 40-150 N  
 $\Phi$  3.2mm ELECTRODE



## AVIO OPPOSED RECOMMENDED WELD HEADS

**NA-121**  
PRESSURE: 0.7-5 N  
 $\Phi$  1.6mm ELECTRODE



**NA-122**  
PRESSURE: 5-65 N  
 $\Phi$  3.2mm ELECTRODE



**NA-124**  
PRESSURE: 20-150 N  
 $\Phi$  6.4mm ELECTRODE



**NA-125**  
PRESSURE: 100-600 N  
DEDICATED  
ELECTRODE



**NA-126**  
PRESSURE: 300-1800 N  
DEDICATED  
ELECTRODE







## Avio Pulse Heat Power Supplies

When you're faced with reflowing solder, thermo-compression bonding, or heat fusing challenges, the Avio TCW general purpose pulse heat power supply coupled with the right weld held is an ideal solution.

- LCD Display of Controls and Weld Waveform
- High Precision Displacement Control
- Monitors Temperature, Displacement, and More
- Digital Temperature Control
- Four-stage Heating
- Built-in Motor Control

### Specifications

AV TCW PRECISION	
FOOTPRINT/WEIGHT	22x400x320/23 kg
HEATING TEMPERATURE	ROOM TEMP-600°C IN 1°C STEPS, E TYPE/J TYPE (Option) ROOM TEMP-600°C, K TYPE (Option)
HEATING TIME	0.00-99.99 SECONDS
RATED CAPACITY	750 VA, 50% DUTY CYCLE
HEATING STEPS	4
MONITOR	SINK AMOUNT, TEMPERATURE, WORK HEIGHT
MOTOR RESOLUTION	1 m/PULSE
DISPLACEMENT RESOLUTION	1 um
INTERFACE	rs-232c, I/O
TRANSFORMER	BUILT-IN
TAP VOLTAGE	0.88 V, 1.24 V, 1.75 V, 2.47 V, 3.5 V
POWER SOURCE	AC200-240±10%, 1 Φ, 50/60Hz, 15A

## AVIO REFLOW RECOMMENDED WELD HEADS

**NA-111**  
PRESSURE: 0.7-5 N



**NA-112**  
PRESSURE: 5-65 N



**NA-151**  
PRESSURE: 1.2-7 N



**NA-154**  
PRESSURE: 40-300 N



**NA-155**  
PRESSURE: 100-600 N



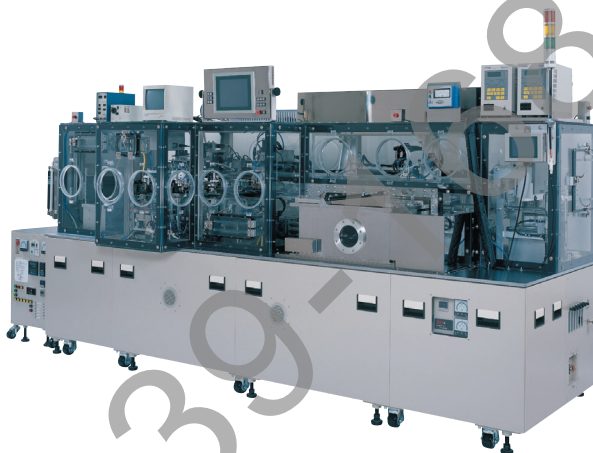
# Avio Ultrasonic Welders

The Avio Ultrasonic Welder converts high electrical frequencies to an ultrasonic range resulting in stable oscillation. A simple-to-use LCD touchpad provides all the controls to operate the welder. Little, if any, training yields superior results. True to Avio's welding philosophy, instant feedback on all weld parameters ensure complete control of the welding process.

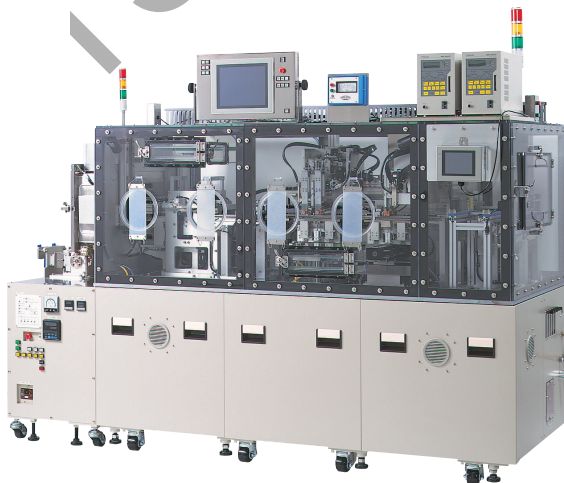
- Holds and Monitors Melting Depth and Finished Dimensions
- Records and Timestamps Each Welding Parameter
- Supports USB Storage Devices
- Convenient LAN Connection
- Ability to Control Delay, Oscillation Period, Retention Time (cooling time)
- Digital Display of Frequency, Air Pressure, Applied Current, Weld Head Displacement, Applied Pressure, Energy Waveform



## Vacuum Type



## N<sup>2</sup> Gas Type



# Avio Seam Sealers

When your production plans call for a dependable hermetic seal, Avio is ready to help. High quality hermetic sealing begins with a nitrogen or vacuum environment. Avio provides both, with models better suited for R&D or high production. Additionally, Avio's seam sealers are able to tack lids onto various electronic packages, such as crystal and SAW devices, sensors, optical devices, MEMS, or other small electrical components.

Let Sunstone help you choose the Avio seam sealer right for your production needs! Call **877-786-9353** for more information.



# Orion™: State-of-the-Art Micro Laser Systems

*Harnessing Light for a Perfect, Tiny Weld*



## The Orion™ LZR

*Available in Three Models:  
60, 100, 140*

- 0.2 to 2.0mm Spot Weld Size
- Up to 30 Welds per Second
- Precision Control with Touchscreen Interface
- Convenient Live Video Feed
- Ultra Clear 10x Leica Optics
- Advanced Cooling System for Sustained Use
- No Messy Water Filter
- High-efficiency, Industrial Components
- Large Ceramic Cavity
- Cool LED Lighting Reduces Heat
- Low Maintenance Costs
- Ergonomic Adjustable Pedestal (Optional)



## The Dado

- Affordable, Easy to Learn, Simple to Use
- Small Footprint Fits Every Benchtop
- 12 Simple Power Settings for Easy Use
- Crystal Clear 10X Optics
- No-fuss, Internal Water Cooling System
- Convenient Smartphone App for Added Usability
- 0.2 - 1.2mm Spot Weld Size
- 2-Year Warranty

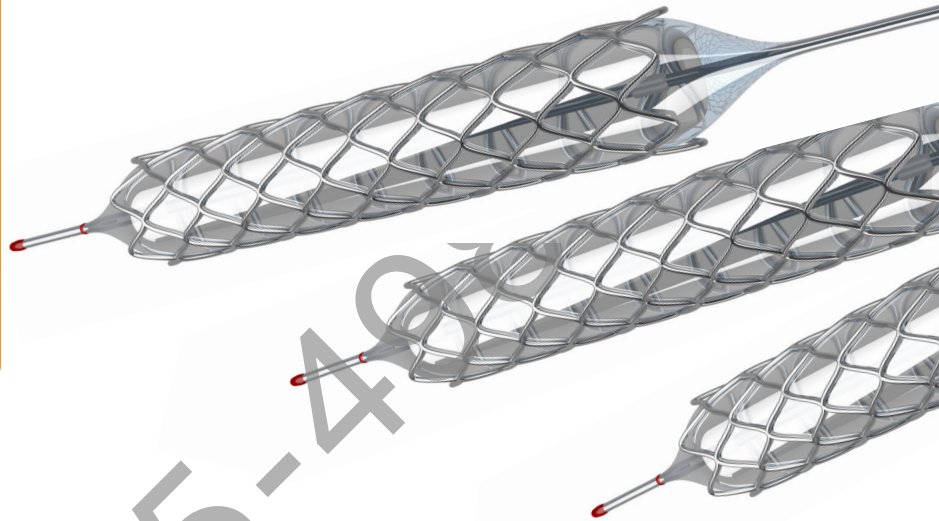






## Application Ideas

- Mold and Die Repair
- Medical Devices
- Stents and Catheters
- Thermocouples
- Combining Dissimilar Metals
- Lighting Fixtures
- Mounting Brackets
- Magnet Wire Welding



## Specifications

	Dado	LZR Series		
		LZR 60	LZR 100	LZR 140
AVERAGE POWER	150 W	75 W	95 W	100 W
PEAK POWER [KW]	1.8 kW	3 kW	5 kW	7 kW
ENERGY RANGE	1 - 10.8 J	0.1 - 100 J		
LASER SOURCE AND WAVELENGTH	Nd: YAG 1064 nm	Nd: YAG 1064 nm		
IMPULSE TIME	0.1 - 6 ms	0.1 - 20 ms		
WELDS PER SECOND	1	1 - 30		
SPOT DIAMETER	0.2 - 1.5 mm	0.2 - 2.0 mm		
PROGRAMS	None	6 Pulse Shaping Presets		
MEMORIES CELL STORED	4	100		
CONTROL JOYSTICK	On Board	On Board		
EXTERNAL CONTROL	App on Mobile/Tablet	Color Touch Screen		
INPUT POWER	110/230 V AC, 50/60 hz	110 or 230 V AC, 50/60 Hz, single		
AMPERE	T16A	10A		
MAX DIMENSIONS [LxWxH]	34x34x34 cm	76x53x56 cm		
TYPE	Benchtop	Benchtop		
ARGON / AIR NOZZLE	Optional Upgrade	Yes / Yes		



**sunstone**<sup>™</sup>  
The Micro Welder Experts

# High-Precision Laser Engraving & Cutting

*The Control and Flexibility You Expect from Orion™!*



## The Orion™ LZR 3D Engraver

*Available in 20, 30, 50, 70, 100 W*

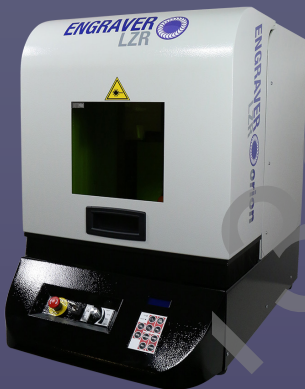
- 3D Bas-Relief Capability
- Marking or Cutting on Uneven Surfaces
- Dynamic Automatic Focus System
- 110x110 mm Marking Area
- Use on Any Metal



## The Orion™ LZR Pro

*Available in 20, 30, 50, 70, 100, 200 W*

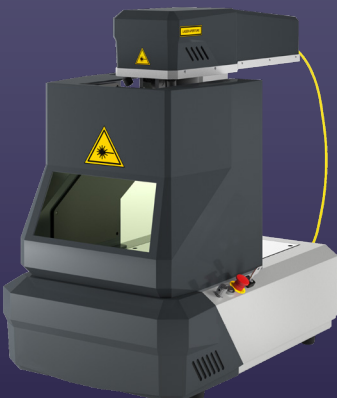
- 3D Bas-Relief Capability
- High Precision and Control
- 110x110 mm Marking Area
- Resolutions up to 40  $\mu\text{m}$
- Use on Any Metal



## The Orion™ LZR Eco

*Available in 20, 30, 50 W*

- High Precision and Control
- 110x110 mm Marking Area
- Resolutions up to 40  $\mu\text{m}$
- Use on Any Metal



## The Orion™ LZR Nano

*Available in 20, 30 W*

- High Precision and Control
- 100 x 100 mm Marking Area
- Resolutions up to 30  $\mu\text{m}$
- Use on Any Metal



## Application Ideas

- Perfect for High Precision Cut Outs
- Permanent Marking for S/N's, Barcodes, Certifications, Company Info
- Excavation by Layers and 3D Bas-Reliefs (LZR 3D & PRO engravers only)
- Photographs, Names, Designs, Logos
- Automated Sequential Numbering

## Specifications

	LZR NANO	LZR ECO	LZR PRO	LZR 3D
OUTPUT POWER	20 W, 30 W	20 W, 30 W, 50 W	20 W, 30 W, 50 W, 70 W, 100 W, 200 W	20 W, 30 W, 50 W, 70 W, 100 W
WAVE LENGTH	1064 nm	1064 nm	1064 nm	1064 nm
M <sup>2</sup>	<1.8	<1.8	<1.6, <1.4 at 200 W	<1.6
POWER SUPPLY	110V or 230 VAC 50/60 Hz	110V or 230 VAC 50/60 Hz	110V or 230 VAC 50/60 Hz	110V or 230 VAC 50/60 Hz
ABSORBED POWER	250 W, 350 W	250 W, 350 W, 350 W	300 W, 300 W, 300 W, 450 W, 450 W, 900 W	500 W, 500 W, 500 W, 600 W, 650 W
DIMENSIONS (LXWXH)	65.2x39.2x62.9 cm	75x45x104 cm	75x45x70 cm	96.5x47x10.5 cm
CHAMBER DIMENSIONS (LXWXH)	25X25X31 cm	25x25x35 cm	25x25x35cm	23x38x35 cm
WEIGHT	35 kg	55 kg - 58 kg	50 kg - 130 kg	55 kg - 60 kg
FOCAL 100: MARKING AREA/SPOT	60x60 mm / 16 µm	60x60 mm / 16 µm	60x65 mm / 11 µm	60x60 mm / 11 µm
FOCAL 160: MARKING AREA/SPOT	100x100 mm / 26 µm	110x110 mm / 26 µm	110x110 mm / 26 µm	110x110 mm / 26 µm
FOCAL 210: MARKING AREA/SPOT	N/A	N/A	160x160 mm / 34 µm	N/A
SPEED OF SALVO HEAD	5000 mm/s	5000-7000 mm/s	Up to 7000 m/s	6000 m/s
MAX PULSE ENERGY	Up to 1 mJ	Up to 1 mJ	Up to 1 mJ	Up to 1.5mJ
MAX FREQUENCY	60 kHz	Up to 1000 kHz	1000 kHz, 400 kHz at 200 W	1000 kHz
COOLING SYSTEM	Air	Air	Air	Air
PULSE DURATION	100 nsec @20kHz	100-120 nsec @20kHz	10-200 nsec 30-100 nsec at 200 W	10-200 nsec
LASER CLASS	IV	Class IV	Class IV	Class 4/1
Z FOCUS RANGE, 100mm LENS	N/A	N/A	N/A	10mm
Z FOCUS RANGE, 160mm LENS	N/A	N/A	N/A	35mm



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