

# OPERATIONAL





# DENALIWELD

DENALIWELD INC

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## **About us**

DenaliWeld INC; is a proud employee-owned fiber laser welding machine manufacturer based in Chicago, USA. The company is bolstered by the most experienced engineers and design personnel in the laser industry with multiple innovative patents for our superior laser welding machines. All DenaliWeld machines are designed in Chicago and manufactured in Chicago factory. All laser welding machines have CE and SGS certifications.



# Jet Series

## Main Components



### DenaliWeld Laser Source

Accurate output and always comes with full power.

- Patented CUAL mosaic laser source, continuous operation, reliable for  $-20^{\circ}\text{C}$  to  $55^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$  to  $130^{\circ}\text{F}$ ).
- DenaliWeld independently designed laser control system, which produces a smooth output curve which makes a better weld.



### DenaliWeld Welding Control System

- Easy to use, all parameters can be quickly adjusted
- Quickly adjust the laser position without worrying about laser deviation
- More safety settings for better protection of users and observers
- Accurate preset parameters that can be selected with a simple click to start welding

### DenaliWeld Laser welding head

- 3-in-1 multifunctional laser head with welding, remote cleaning and seam cleaning functions
- Intuitive status display with indicator lights to keep track of the machine's status
- Individual air-cooled design channel, four hours (with test records) of stable operation without overheating
- Ergonomically designed welding machine with a Physical safety off button for easy stop / start even with welding gloves on



### Emergency stop at will

- An extra emergency stop button is positioned on the laser head which allows the users to shut down the machine immediately thereby reducing any potentially harmful occurrences.



### Automatic Wire Feeder

- All newly designed automatic wire feeders could feed up to 2mm of wire
- Double Wire feeding available
- Wire feeder is designed to complement the welding machine
- Physical button, easy to operate even with welding gloves on

# Technical Parameter

Item	JET1500	JET2000
Laser Power	1500W	2000W
Operating System	3in1 / Cleaning	3in1 / Cleaning
Laser Wavelength	1060-1100 NM	1060-1100 NM
Fiber Length	Approx. 10 m	Approx. 10 m
Operating Mode	Continuous/Modulated	Continuous/Modulated
Oscillation Operation Mode	Single, Various Spots, Line	Single, Various Spots, Line
Positioning	Laser red dot	Laser red dot
Air Pressure	10-15L/min	10-15L/min
Voltage	AC220V/380V±5%	AC220V/380V±5%
Power Consumption	6.5kw	7.7KW
Frequency	50/60 HZ	50/60 HZ
Currency	29A/10A	35A/14A
Focus Length	150mm	150mm
Welding Speed	0-80cm/min	0-90cm/min
Cooling System	Air cooling	
Laser Protection Method	security lock + safety button	
Touch Panel	Monitor + PLC	
Wire Feeder	Single/Double Motor Automatic "push" and "pull"	
Wire Thickness in Automatic Mode	0.8mm, 1.0mm, 1.2mm, 1.6mm, 2.0mm	
Machine Weight	Approx. 68kg/150lb	Approx. 74kg/163lb
Machine Measurements	Height 736mm, Width 433mm, Length 883mm	
3in1 Laser Head Weight	900g/1.98lb	
Cleaning Head	980g/2.16lb	

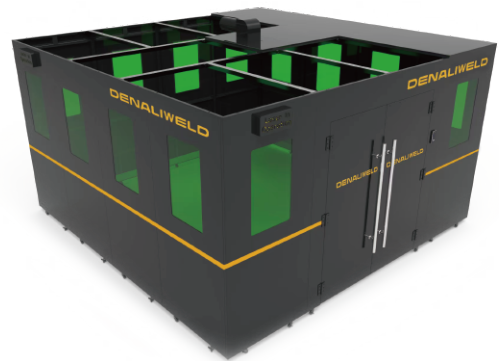
## Basic advantages

- Proud employee-owned company based and designed in Chicago.
- Patented CUAL mosaic laser source, reliable continuous operation, -20°C to 55 °C (-4°F to 130°F )
- Modular designed, easy for maintenance and repair
- Jet series portable laser welders are the Smallest in size and lightest in weight.
- Seam tracking systems are available as an option.
- Three functions in one machine: Welding, Cleaning and Seam cleaning.
- All parameters are pre-set, one click operation.
- Welding data acquisition system helps track operation and cost calculations.
- One click switches to Cobot/Robot automation welding system\*\* with DENALIWELD ROBOX™
- Adaptable with DENERGY™ portable power bank, which is designed to power the machine working off the grid for a continuous 60mint.

## Laser Safety

### Welding station

- We offer a wide range of laser protection solutions
- Welding workstations provide complete protection of the welding area and are suitable for Class 4 laser work. Panels fitted with CE laser protection glass filter out 1060-1100nm wavelength laser light. All-aluminum construction for easy handling and installation
- Freely adjustable to the shape and size of the site.
- Fitted with a safety door interlock for quick connection to the laser welding machine.



### Laser protective helmet

- In dual-layer design, the outer variable light module can effectively block welding generated light, UV and other potential hazards, the inner layer of the laser protection glass filters the 1060-1100nm wavelength fiber optic laser, which will ultimately protect the user.
- Can be equipped with DENALIWELD respirator, effective filtration of toxic dust and smoke.



**DENALIWELD JET SERIES**

**AIR COOLING LASER WELDING MACHINE**





# Water Series

## Main Components

### DenaliWeld Water Cooled Laser Source



Accurate output and always comes with EXTRA power.

- Compact in size, continuous operation, reliable for -20°C to 55 °C (-4°F to 130°F)
- DenaliWeld independently designed laser control system, produces a smooth output curve which makes a better weld.
- Up to 3000w output with EXTRA power could reach to 3300w for a hand held welder
- Up to 8000w output for Robotic Welding
- Up to 20000w output for Hybrid Welding

### DenaliWeld Welding Control System



- Easy to use, all parameters can be quickly adjusted
- Quickly adjust the laser position without worrying about laser deviation
- More safety settings for better protection of users and observers
- Accurate preset parameters that can be selected with a simple click to start welding

### DenaliWeld Laser welding head



- 3-in-1 multifunctional laser head with welding, remote cleaning and seam cleaning functions
- Individual air-cooled design channel, four hours (with test records) of stable operation without overheating
- Ergonomically designed welding machine with a Physical safety off button for easy stop / start even with welding gloves on

### Emergency stop at will

- An extra emergency stop button is positioned on the laser head which allows the users to shut down the machine immediately thereby reducing any potential harmful occurrences.





## Automatic Wire Feeder

- All newly designed automatic wire feeders could feed up to 2mm of wire
- Double Wire feeding available
- Wire feeder is designed to complement the welding machine
- Physical button, easy to operate with even welding gloves on

## Water Chiller

- Designed with independent modules for easy maintenance and replacement
- Accurate calculation and design of cooling capacity, providing maximum cooling effect with minimal power consumption, can meet the needs of long-term continuous operation
- All use R410a refrigerant that meets environmental requirements



## The Key of Cooling

- We use the Copper+Aluminum heat exchanging system, compared with micro tube exchangers which are used on 99% of coolers in the market, our cooling unit could give much more reliable and efficient cooling to the laser source and machine, ensure the full load running of the welder.



# Technical Parameter

Laser Power	1500W	2000W	3000W
Operating System	3in1 / Cleaning	3in1 / Cleaning	3in1 (Cleaning Max. 2kw)
Laser Wavelength	1060-1100NM	1060-1100NM	1060-1100NM
Fiber Length	15m (could customize to 20m)	15m (could customize to 20m)	15m (could customize to 20m)
Operating Mode	Continuous/Modulated	Continuous/Modulated	Continuous/Modulated
Oscillation Operation Mode	Single, Various Spots, Line	Single, Various Spots, Line	Single, Various Spots, Line
Positioning	Laser red dot	Laser red dot	Laser red dot
Gas flow rate	10-15L/min	10-15L/min	10-15L/min
Voltage	AC220V/380V±5%	AC220V/380V±5%	AC380V±5%
Power Consumption	7kw	9KW	11KW
Frequency	50/60 HZ	50/60 HZ	50/60 HZ
Currency	32A/19A	40A/24A	29A
Focus Length	150mm	150mm	150mm
Welding Speed	0-85cm/min	0-95cm/min	0-105cm/min
Cooling System	Water cooling		
Laser Protection Method	laser beam lock + security lock + safety button		
Touch Panel	Monitor + PLC		
Wire Feeder	Single/Double Motor Automatic	Single/Double Motor Automatic	Single/Double Motor Automatic
Wire Diameter in Automatic Mode	0.8mm, 1.0mm, 1.2mm, 1.6mm, 2.0mm		
Machine Weight	Approx. 144kg/317lb	Approx. 153kg/336lb	Approx. 251kg/552lb
Machine Measurements	Height 810mm, Width 580mm, Length 1170mm	Height 810mm, Width 580mm, Length 1170mm	Height 1000mm, Width 720mm, Length 1370mm
3in1 Laser Head Weight	900g/1.98lb		
3in1 Laser Head Size	L: 273.38mm, W: 36.5mm, H: 185.1mm		
remark:	cleaning function Max. 2kw for operation		



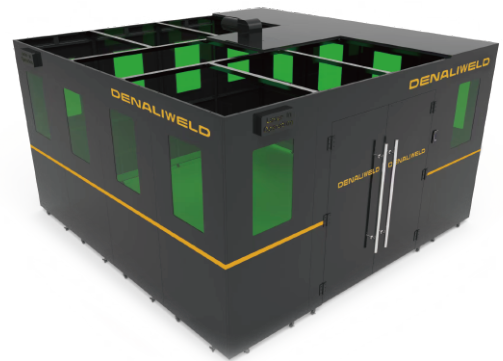
# Basic advantages

- Proud employee-owned company based and designed in Chicago.
- Continuous operation, reliable for -20°C to 55°C (-4°F to 130°F)
- Up to 3000 Watt Output.
- Modular designed Chiller, easy for maintenance and repair.
- Compact in size, lightest in weight.
- Three functions in one machine: Welding, Cleaning and Seam treatment.
- All parameters are pre-set, one click operation.
- Welding data acquisition system helps track operation and cost calculations.
- One click switches to Cobot/Robot automation welding system\*\* with DENALIWELD ROBOX™.
- Adaptable with DENERGY™ portable power bank, could support machine working off grid for 60mint.

# Laser Safety

## Welding station

- We offer a wide range of laser protection solutions
- Welding workstations provide complete protection of the welding area and are suitable for Class 4 laser work. Panels fitted with CE laser protection glass filter out 1060-1100nm wavelength laser light. All-aluminum construction for easy handling and installation
- Freely adjustable to the shape and size of the site.
- Fitted with a safety door interlock for quick connection to the laser welding machine.



## Laser protective helmet

- In dual-layer design, the outer variable light module can effectively block the welding generated light pollution, UV and other ray damage, the inner layer of the laser protection glass to effectively filter the 1060-1100nm wavelength fiber optic laser, better protection of the user.
- Can be equipped with DENALIWELD respirator, effective filtration of toxic dust and smoke.



**DENALIWELD WATER SERIES**

**WATER COOLING LASER WELDING MACHINES**





DENALIWELD JET SERIES

AIR COOLING LASER CLEANING MACHINES



# AIR & WATER SERIES

## Main Components

### DenaliWeld Water Cooled Laser Source



Accurate output and always comes with EXTRA power.

- Compact in size, continuous operation, reliable for -20°C to 55 °C (-4°F to 130°F)
- DenaliWeld independently designed laser control system, produces a smooth output curve which makes a better weld.
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- Up to 20000w output for Hybrid Welding

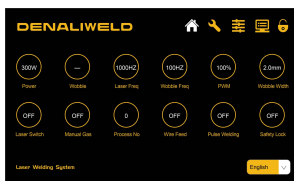
### DenaliWeld Laser Source



Accurate output and always comes with full power.

- Patented CUAL mosaic laser source, continuous operation, reliable for -20°C to 55°C(-4°F to 130°F).
- DenaliWeld independently designed laser control system, which produces a smooth output curve which makes a better weld.

### DenaliWeld Cleaning Control System



- Easy to use, all parameters can be quickly adjusted
- Quickly adjust the laser position without worrying about laser deviation
- More safety settings for better protection of users and observers
- Accurate preset parameters that can be selected with a simple click to start welding



## Water Chiller

- Designed with independent modules for easy maintenance and replacement
- Accurate calculation and design of cooling capacity, providing maximum cooling effect with minimal power consumption, can meet the needs of long-term continuous operations
- All use R410a refrigerant that meets environmental requirements



## The Key of Cooling

- We use the Copper+Aluminum heat exchange system, compared with micro tube exchangers which are used on 99% of coolers in the market, our cooling unit could give much more reliable and efficient for cooling (Omit On)the laser source and machine, ensuring continuous full load duty cycle of the welder.

## DenaliWeld Laser Cleaning head

- 3-in-1 multifunctional laser head with welding, remote cleaning and seam cleaning functions
- Individual air-cooled design channel, four hours (with test records) of stable operation without overheating
- Ergonomically designed cleaning machine with a Physical safety off button for easy stop / start even with welding gloves on



## Emergency stop at will

- An extra emergency stop button is positioned on the laser head which allows the users to shut down the machine immediately thereby reducing any potential harmful occurrences.

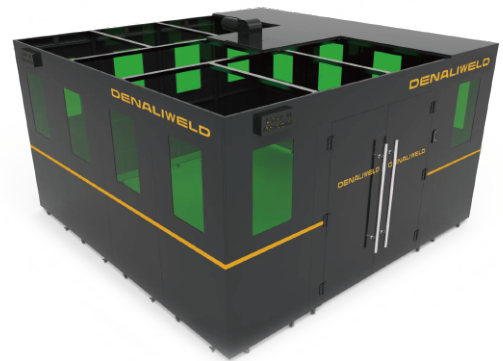
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- One click switches to Cobot/Robot automation welding system\*\* with DENALIWELD ROBOX™.
- Adaptable with DENERGY™ portable power bank, could support machine working off grid for 60mint.

## Laser Safety

### Cleaning station

- We offer a wide range of laser protection solutions
- Cleaning workstations provide complete protection of the cleaning area and are suitable for Class 4 laser work. Panels fitted with CE laser protection glass filter out 1060-1100nm wavelength laser light. All-aluminum construction for easy handling and installation
- Freely adjustable to the shape and size of the site.
- Fitted with a safety door interlock for quick connection to the laser cleaning machine.



### Laser protective helmet

- In dual-layer design, the outer variable light module can effectively block the welding generated light pollution, UV and other ray damage, the inner layer of the laser protection glass to effectively filter the 1060-1100nm wavelength fiber optic laser, better protection of the user.
- Can be equipped with DENALIWELD respirator, effective filtration of toxic dust and smoke.





	Air cooling			Water cooling		
Item	JET1500	JET2000	WATER1500	WATER2000	WATER3000	
Laser Power	1500W	2000W	1500W	2000W	3000W	
Operating System	3in1 / Cleaning	3in1 / Cleaning	3in1 / Cleaning	3in1 / Cleaning	3in1 (Cleaning Max. 2kw)	
Laser Wavelength	1060-1100NM	1060-1100NM	1060-1100NM	1060-1100NM	1060-1100NM	
Fiber Length	Approx. 10 m	Approx. 10 m	15m (could customize to 20m)	15m (could customize to 20m)	15m (could customize to 20m)	
Operating Mode	Continuous/Modulated			Continuous/Modulated		
Oscillation Operation Mode	Single, Various Spots, Line			Single, Various Spots, Line		
Positioning	Laser red dot			Laser red dot		
Air Pressure	10-15L/min	10-15L/min	10-15L/min	10-15L/min	10-15L/min	
Voltage	220V/380V±5%	220V/380V±5%	220V/380V±5%	220V/380V±5%	380V±5%	
Power Consumption	6.5kw	7.7KW	7kw	9kw	11KW	
Frequency	50/60 HZ	50/60 HZ	50/60 HZ	50/60 HZ	50/60 HZ	
Currency	29A/10A	35A/14A	32A/19A	40A/24A	29A	
Focus Lenght	150mm	150mm	150mm	150mm	150mm	
Welding Speed	0-80cm/min	0-90cm/min	0-85cm/min	0-95cm/min	0-105cm/min	
Cooling System	Air cooling			Water cooling		
Laser Protecion Method	laser beam lock + security lock + safety button			laser beam lock + security lock + safety button		
Touch Panel	Monitor + PLC			Monitor + PLC		
Wire Feeder	Single/Double Motor Automatic			Single/Double Motor Automatic		
Wire Thickness in Automatic Mode	0.8mm, 1.0mm, 1.2mm, 1.6mm, 2.0mm			0.8mm, 1.0mm, 1.2mm, 1.6mm, 2.0mm		

**DENALIWELD SERIES WATER**

**COOLING LASER CLEANING MACHINES**





# Cobot Series

## DenaliWeld COBOT Welding

DenaliWeld collaborative robots (cobots) have entered the marketplace strongly, and they offer lightweight, flexible, and intelligent designs at an affordable investment. Best-in-class speed, safety, and ease of use will take your business to the next level. Staff can quickly teach collaborative robots specific welding applications and have them do the actual welding, while operators can focus on different activities. Allowing for maximum flexibility and efficiency.

## Basic advantages

- Basic advantages Main Components Proud employee-owned company based and designed in Chicago.
- Strategic partnership with ABB Compatible with both Denalweld air cooled and water cooled models.
- Modular designed for uncomplicated maintenance and repair.
- Cobot intelligent programs with simple interface All parameters pre-set, one click operation.
- Welding data acquisition system which helps track operation and cost calculations.
- One click switches to Cobot/Robot automation welding system\*\* with DENALIWELD ROBOX™ \*\*DENALIWELD welding machines are compatible with most cobot manufacturers.
- Using an Automatic Welding Head (Gofa5/ 10/12) could provide realtime power changing during the whole welding procedure. Seam Tracking system available for option.

## Main Components



## ABB Strategic Cooperation

DENALIWELL and ABB conduct joint testing in the field of welding Cobots to ensure maximum performance and functionality to meet user needs, and offer a variety of ABB Cobot model choices

\*\*DENALIWELD welding machines are compatible with most cobots in the market.

## Manual Welding Easily Switches to Automated Welding

DenaliWeld collaborative robotic welding solutions utilize handheld welding torches. The laser welding machine is equipped with a manual/automatic switching button to quickly switch between handheld and automatic welding.



## Simple and Easy to Use

Designed for easy and fast integration and setup, regardless of the robotic welding application



# Technical Parameters



**GoFa 5™**



**GoFa 10™**



**GoFa 12™**

Specification	GoFa 5	GoFa 10	GoFa 12
Reach (mm)	950 (wrist) 1050 (flange)	1520 (wrist) 1620 (flange)	1270 (wrist) 1370 (flange)
Payload (kg)	5	10	12
Arm load (kg)	1 (mounted on axis 4)	1 (mounted on axis 2, 3, or 4)	1 (mounted on axis 2, 3 or 4)
Number of axes	6	6	6
Protection	IP54	IP67	IP67
Mounting	Any angle, including table mounting, wall mounting, and ceiling mounting		
Controller	OmniCore C30		
Customer power supply	24V/2A supply		
Customer signals	4 signals (for IO, Fieldbus, or Ethernet)		
Tool flange	Standard ISO 9409-1-50		
Functional safety	SafeMove Collaborative included all safety functions certified to Category 3, PL d		
Max TCP Velocity	2,2 m/s	2 m/s	2 m/s
Max TCP acceleration (Controlled motion for nominal load)	36,9 m/s <sup>2</sup>	28 m/s <sup>2</sup>	27 m/s <sup>2</sup>
Max TCP acceleration (e-stop for nominal load)	61,6 m/s <sup>2</sup>	94 m/s <sup>2</sup>	79 m/s <sup>2</sup>
Pose repeatability	0,02 mm	0,02 mm	0,02 mm
Dimensions robot base	165 x 165 mm	200 x 200 mm	200 x 200 mm
Weight	28 kg	51 kg	48 kg



# Robots



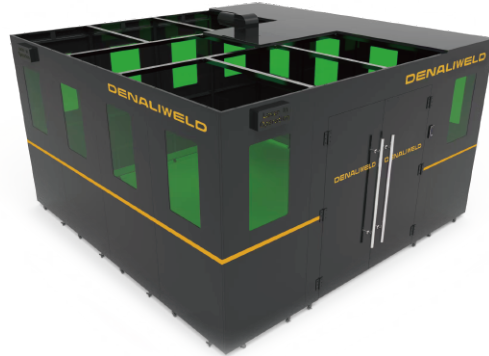
## Basic advantages

- Proud employee-owned company based and designed in Chicago
- Strategic partnership with ABB
- Compatible with both Denaliweld air cooled and water cooled models.
- Robot intelligent programs with a simple interface
- All parameters are pre-set, one click operation.
- Welding data acquisition system which helps track operation and cost calculations.
- One click switches to Cobot/Robot automation welding system\*\* with DENALIWELD ROBOX™
- \*\*DENALIWELD welding machines are compatible with most robot manufacturers.
- Could provide realtime power changing during the whole welding procedure.
- Seam Tracking system available for option

## Robots Technical Parameter

Robot variant	IRB 2600ID-15/1.85
Handling capacity(kg)	15
Reach(m)	1.85
Weight	273kg
ISO Cube Max.velocity	0.85KW
Brakes engaged	0.206KW
Brakes disengaged	0.40KW

# Laser Safety



## Welding station

- We offer a wide range of laser protection solutions
- Welding workstations provide complete protection of the welding area and are suitable for Class 4 laser work. Panels fitted with CE laser protection glass filter out 1060-1100nm wavelength laser light.  
All-aluminum construction for easy handling and installation
- Freely adjustable to the shape and size of the site.
- Fitted with a safety door interlock for quick connection to the laser welding machine.



## Laser protective helmet

- In Dual-layer design, the outer variable light module can effectively block welding generated light, UV and other potential hazards, the inner layer of the laser protection glass filters the 1060-1100nm wavelength fiber optic laser, which will ultimately protect the user.
- Can be equipped with a DENALIWELD respirator, effective filtration of toxic dust and smoke.