

Denaliweld

Explanations Of Settings



Laser Power

DENALIWELO



Laser power Wobble Width Laser frequency Wobble frequency PWM Wobble graph



Laser switch Gas purge Safety Lock Wire Feed Switch Fish scale welding Process No.

Handheld Laser
Welding Control System

2024-09-29 16:52:24

Language
selection

Laser power is variable by process and machine. Between 0 and 2000 watts. Just like traditional welding power needs to be set properly per application.

Wobble Width

DENALI WELD



300W

Laser power

2.0mm

Wobble Width

1000HZ

Laser frequency

100HZ

Wobble frequency

100%

PWM

—

Wobble graph

OFF

Laser switch

OFF

Gas purge

OFF

Safety Lock

OFF

Wire Feed Switch

OFF

Fish scale welding

0

Process No.

Handheld Laser
Welding Control System

2024-09-29

16:52:24

Language
selection

Wobble size is variable between 0mm and 5mm. Wobble size is determined by the size of the filler metal being used. Wobble size should be within 1mm of your filler metal size. If fusing base your wobble size off the materials thickness

DENALIWELO



Laser power Wobble Width Laser frequency Wobble frequency PWM Wobble graph



Laser switch Gas purge Safety Lock Wire Feed Switch Fish scale welding Process No.

Handheld Laser
Welding Control System

2024-09-29 16:52:24

Language
selection

Laser Frequency

- Laser frequency is variable from 0hz-50,000hz depending on application. The higher the frequency the more pinpoint the laser is. Typically for welding applications the laser frequency should be at 1000hz

Wobble Frequency

DENALIWELO



Laser power Wobble Width Laser frequency Wobble frequency PWM Wobble graph



Laser switch Gas purge Safety Lock Wire Feed Switch Fish scale welding Process No.

Handheld Laser
Welding Control System

2024-09-29 16:52:24

Language
selection

Wobble frequency is variable between 0hz and 200hz. The lower the frequency the slower the laser moves side to side in a weave motion. The higher the frequency the faster it moves side to side.

DENALIWELD



300W	2.0mm	1000HZ	100HZ	100%	—
Laser power	Wobble Width	Laser frequency	Wobble frequency	PWM	Wobble graph
OFF	OFF	OFF	OFF	OFF	0
Laser switch	Gas purge	Safety Lock	Wire Feed Switch	Fish scale welding	Process No.

Handheld Laser
Welding Control System

2024-09-29 16:52:24

Language
selection

PWM Pulse Width Modulation

**PWM (DUTY CYCLE) REMAINS AT
100% FOR ALL APPLICATIONS**

Wobble Graph

DENALI WELD



Laser power



Wobble Width



Laser frequency



Wobble frequency



PWM



Wobble graph



Laser switch



Gas purge



Safety Lock



Wire Feed Switch



Fish scale welding



Process No.

Handheld Laser
Welding Control System

2024-09-29

16:52:24

Language
selection

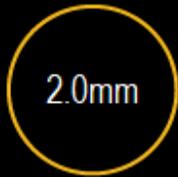
For the pattern you have your choice of line, or spot welding. The line pattern is better for running a weld. The spot pattern is good for tacking, and spot welding.

Laser Switch

DENALIWELD



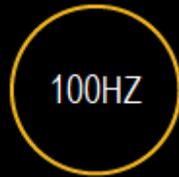
Laser power



Wobble Width



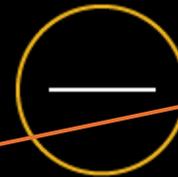
Laser frequency



Wobble frequency



PWM



Wobble graph



Laser switch



Gas purge



Safety Lock



Wire Feed Switch



Fish scale welding



Process No.

Laser switch is an on off toggle.
· Must be on for laser to emit.
· Anytime the emergency stop is hit laser switch must be turned back to the on position

Handheld Laser
Welding Control System

2024-09-29

16:52:24

Language
selection

Manual Blowing (gas purge)

DENALIWELO



300W 2.0mm 1000HZ 100HZ 100% —

Laser power Wobble Width Laser frequency Wobble frequency PWM Wobble graph

gas purge is to ensure proper gas flow for the welding application

OFF OFF OFF OFF OFF 0

Laser switch Gas purge Safety Lock Wire Feed Switch Fish scale welding Process No.

Handheld Laser
Welding Control System

2024-09-29 16:52:24

Language
selection

Wire Feed Switch

DENALIWELD



300W	2.0mm	1000HZ	100HZ	100%	—
Laser power	Wobble Width	Laser frequency	Wobble frequency	PWM	Wobble graph

OFF	OFF	OFF	OFF	OFF	0
Laser switch	Gas purge	Safety Lock	Wire Feed Switch	Fish scale welding	Process No.

Wire feed switch must be turned on for all wire feeding welding.
·Wire feed switch must be turned off for all fusion welding.

Handheld Laser
Welding Control System

2024-09-29 16:52:24

Language
selection

Scale Weld

DENALIWELD



300W

Laser power

2.0mm

Wobble Width

1000HZ

Laser frequency

100HZ

Wobble frequency

100%

PWM

—

Wobble graph

OFF

Laser switch

OFF

Gas purge

OFF

Safety Lock

OFF

Wire Feed Switch

OFF

Fish scale welding

0

Process No.

One of the least talked about features of the machine but a personal favorite. Scale weld gives you the ability to mimic pulsed tig.

Handheld Laser
Welding Control System

2024-09-29

16:52:24

Language
selection

General Settings

DENALI WELD



Galvanometer Setting

Basic Setting

1000W

Max laser power

PNP

Laser Alarm Level

0ms

Copper Nozzle
Relaxation Time

300ms

Gas in advance

200ms

Gas delay

100ms

Beam Off Delay

300W

Power of turning
on the laser

300W

Power of turning
off the laser

200ms

Ascend

200.0ms

Descend

50ms

ScaleWeld Duration

10ms

ScaleWeld Interval

Handheld Laser
Welding Control System

2024-09-29

16:53:02

Language
selection

Max Laser Power

DENALI WELD



Galvanometer Setting

Basic Setting

1000W

Max laser power

PNP

Laser Alarm Level

0ms

Copper Nozzle
Relaxation Time

300ms

Gas in advance

200ms

Gas delay

100ms

Beam Off Delay

300W

Power of turning
on the laser

300W

Power of turning
off the laser

200ms

Ascend

200.0ms

Descend

50ms

ScaleWeld Duration

10ms

ScaleWeld Interval

Handheld Laser
Welding Control System

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Language
selection

This is the max laser power of the machine.

· It is already preset and is based off the purchased machine.

· This setting **Can Not be changed**

Laser Alarm Level

DENALI WELD



Galvanometer Setting

Basic Setting

Laser alarm level is based off of the system you are using PNP/NPN

1000W	PNP	0ms	300ms	200ms	100ms
Max laser power	Laser Alarm Level	Copper Nozzle Relaxation Time	Gas in advance	Gas delay	Beam Off Delay
300W	300W	200ms	200.0ms	50ms	10ms
Power of turning on the laser	Power of turning off the laser	Ascend	Descend	ScaleWeld Duration	ScaleWeld Interval

Handheld Laser
Welding Control System

2024-09-29 16:53:02

Language
selection

Copper Nozzle Relaxation Time

DENALIWELD



Galvanometer Setting

Basic Setting

1000W	PNP	0ms	300ms	200ms	100ms
Max laser power	Laser Alarm Level	Copper Nozzle Relaxation Time	Gas in advance	Gas delay	Beam Off Delay
300W	300W	200ms	200.0ms	50ms	10ms
Power of turning on the laser	Power of turning off the laser	Ascend	Descend	ScaleWeld Duration	ScaleWeld Interval

This is the amount of time the laser can emit after the nozzle loses contact with the work piece.
· This setting **can not** be changed

Handheld Laser
Welding Control System

2024-09-29 16:53:02

Language
selection

Gas in advance

DENALI WELD



Galvanometer Setting

Basic Setting

1000W

Max laser power

PNP

Laser Alarm Level

0ms

Copper Nozzle
Relaxation Time

300ms

Gas in advance

200ms

Gas delay

100ms

Beam Off Delay

300W

Power of turning
on the laser

300W

Power of turning
off the laser

200ms

Ascend

200.0ms

Descend

50ms

ScaleWeld Duration

10ms

ScaleWeld Interval

Handheld Laser
Welding Control System

2024-09-29

16:53:02

Language
selection

Gas in advance is the setting that determines when gas flow starts before the laser is emitted.
· Generally, this setting **does not** need to be changed.

Gas Delay

DENALIWELD



Galvanometer Setting

Basic Setting

1000W	PNP	0ms	300ms	200ms	100ms
Max laser power	Laser Alarm Level	Copper Nozzle Relaxation Time	Gas in advance	Gas delay	Beam Off Delay
300W	300W	200ms	200.0ms	50ms	10ms
Power of turning on the laser	Power of turning off the laser	Ascend	Descend	ScaleWeld Duration	ScaleWeld Interval

Gas delay is the setting for how long the gas remains on after a completed weld.

· Generally, this setting **does not** need to be changed

Handheld Laser
Welding Control System

2024-09-29 16:53:02

Language
selection

Beam Off Delay

DENALIWELD



Galvanometer Setting

Basic Setting



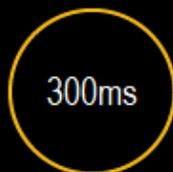
Max laser power



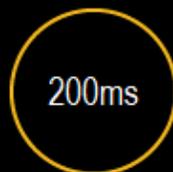
Laser Alarm Level



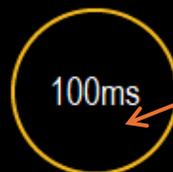
Copper Nozzle
Relaxation Time



Gas in advance



Gas delay



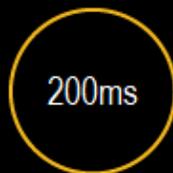
Beam Off Delay



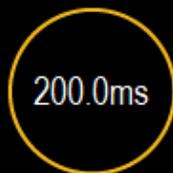
Power of turning
on the laser



Power of turning
off the laser



Ascend



Descend



ScaleWeld Duration



ScaleWeld Interval

- Beam off delay is how long the laser emits after the trigger is released.
- Generally, this setting **does not** need to be changed.

Handheld Laser
Welding Control System

2024-09-29

16:53:02

Language
selection

Power Of Turning On The Laser

DENALI WELD



Galvanometer Setting

Basic Setting

1000W

Max laser power

PNP

Laser Alarm Level

0ms

Copper Nozzle
Relaxation Time

300ms

Gas in advance

200ms

Gas delay

100ms

Beam Off Delay

300W

Power of turning
on the laser

300W

Power of turning
off the laser

200ms

Ascend

200.0ms

Descend

50ms

ScaleWeld Duration

10ms

ScaleWeld Interval

Power of turning on the laser allows you to adjust the power of the laser at the initial turn on.

· This may need to be adjusted based on your filler metal size to eliminate cold starts.

Handheld Laser
Welding Control System

2024-09-29

16:53:02

Language
selection

Power Of Turning Off The Laser

DENALIWELD



Galvanometer Setting

Basic Setting

1000W

Max laser power

PNP

Laser Alarm Level

0ms

Copper Nozzle
Relaxation Time

300ms

Gas in advance

200ms

Gas delay

100ms

Beam Off Delay

300W

Power of turning
on the laser

300W

Power of turning
off the laser

200ms

Ascend

200.0ms

Descend

50ms

ScaleWeld Duration

10ms

ScaleWeld Interval

Handheld Laser
Welding Control System

2024-09-29

16:53:02

Language
selection

Power of turning off the laser will help with the wire release at the end of a weld.
· It is also based off the filler metal size being used.

Slow Rising Time & Slow Descent time

DENALI WELD



Galvanometer Setting

Basic Setting

1000W

Max laser power

PNP

Laser Alarm Level

0ms

Copper Nozzle Relaxation Time

300ms

Gas in advance

200ms

Gas delay

100ms

Beam Off Delay

300W

Power of turning on the laser

300W

Power of turning off the laser

200ms

Ascend

200.0ms

Descend

50ms

ScaleWeld Duration

10ms

ScaleWeld Interval

This is the ascend and descend of the laser power.
· Generally, this **does not** need to be changed.

Handheld Laser
Welding Control System

2024-09-29 16:53:02

Language
selection

Scale Weld Duration & Scale Weld Interval

DENALI WELD



Galvanometer Setting

Basic Setting

1000W

Max laser power

PNP

Laser Alarm Level

0ms

Copper Nozzle Relaxation Time

300ms

Gas in advance

200ms

Gas delay

100ms

Off Delay

300W

Power of turning on the laser

300W

Power of turning off the laser

200ms

Ascend

200.0ms

Descend

50ms

ScaleWeld Duration

10ms

ScaleWeld Interval

When fish scale welding is turned on this is how you adjust the duration (length) of Pulse and the interval (how long between pulses)

· Both of these settings are based on wire feed speed and size of filler metal.

· In testing the baseline pulse duration 175ms, pulse interval 40ms and wire feed speed at .50ips(inches per second)

Handheld Laser Welding Control System

2024-09-29

16:53:02

Language selection



300W Laser power
 2.0mm Wobble Width
 1000HZ Laser frequency
 100HZ Wobble frequency
 100% PWM
 — Wobble graph

OFF Laser switch
 OFF Gas purge
 OFF Safety Lock
 OFF Wire Feed switch
 OFF Fish scale welding
 0 Process No.

**Handheld Laser
 Welding Control System**

2024-09-29 16:52:24

Language selection

DENALIWELD Process

No Feeding

Num	Sheet	Thickness (mm)	Power (W)	PWM (%)	Freq (Hz)
0	MATL	0.0	300	100	1000
1	SS	1.0	550	100	1000
2	SS	1.5	800	100	1000
3	SS	2.0	1000	100	1000
4	SS	2.5	1200	100	1000

Process No. 3 Import Shutdown-save Restore

Process allows you to access 16 preset and tested settings for welding aluminum, carbon steel, and stainless steel.

- Select the thickness and type of material.
- Enter the associated process number.
- Select the import button.
- the selected process will now be uploaded into the welding system.
- you can overwrite process and save up to 99 in the machine.
- Change from no wire feeding to wire feeding processes.

Seam Cleaning

Multi-function switching

Assembly Replacement-WELD SEAM CLEAN



Remove the wire feed assembly, remove the extension tube, and replace the cleaning tube in the direction shown in the illustration. Then tightly lock the cleaning tube in the direction of rotation.

Welding function

Weld Seam Cleaning

Remote Cleaning

Function Switch

MFG Setting

Parameter Restore

About

Exit

Seam cleaning is a fast transition.

- Remove the welding scale tube and insert the seam cleaning tube.
- Scale tube should remain at 0

Seam Cleaning Settings

Seam cleaning can also be used for pre cleaning materials.

Seam cleaning requires low laser power.

· laser frequency and PWM don't need to be changed.

· Wobble frequency can be changed to get the desired appearance of the cleaned weld.

· Cleaning width can be changed to the desired size. Recommended a little larger than the wobble size used for the weld.

DENALI WELD



300W

Laser power

1000HZ

Laser frequency

100HZ

Wobble frequency

100%

PWM

5.0mm

Cleaning Width

OFF

Laser switch

OFF

Gas purge

0

Process No.

OFF

Safety Lock

Control System-
Handheld Weld Seam Cleaning

2024-09-29

16:55:59

Language
selection

Remote Cleaning



MFG Setting



Parameter Restore

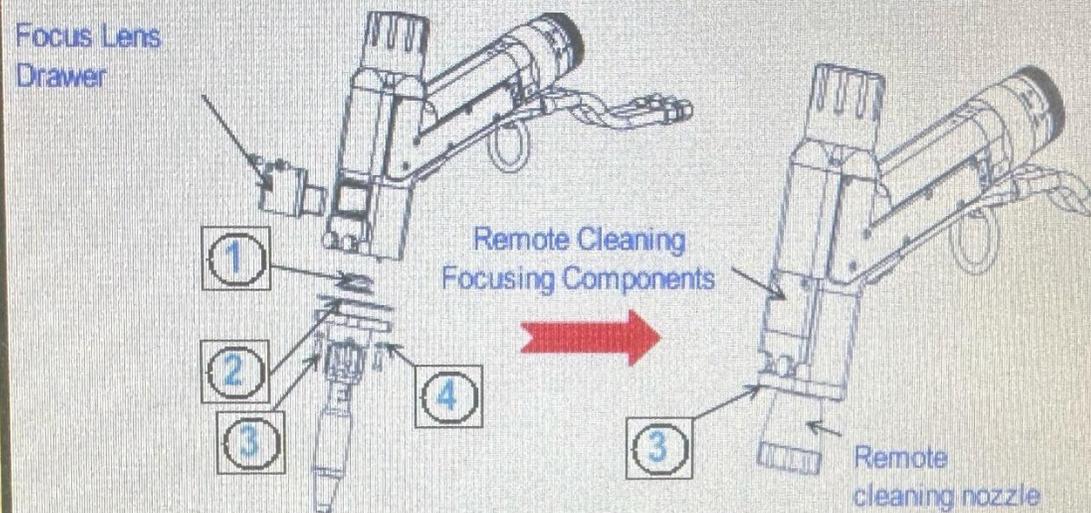


About

Exit

Multi-function switching

Assembly Replacement-REMOTE CLEAN (Optional)



As shown in the figure, first replace the original focusing lens drawer with a remote cleaning focusing assembly, and then Remove the nozzle chuck assembly, remove ① ② ④ and keep it in order to ensure the restoration of other Remove ① ② ④ and keep them in order to ensure the restoration of other functions! Replace the remote cleaning nozzle by aligning the two pins and locking the four removed screws that were removed.



Welding function



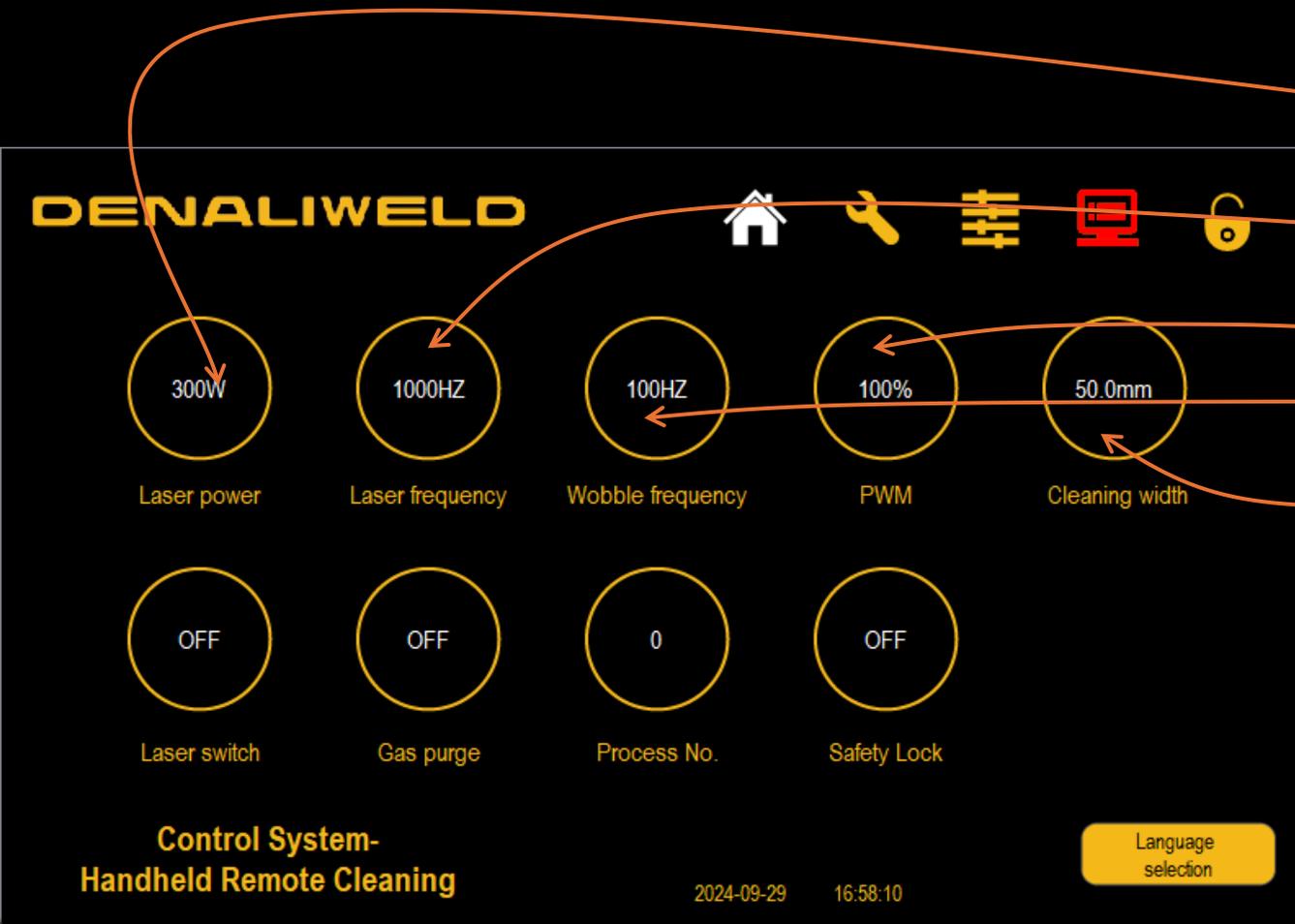
Weld Seam Cleaning



Remote Cleaning

Function Switch

Remote Cleaning Settings



Laser power can be set to the required power for the application.

Laser frequency can be adjusted to help achieve desired finish.

· PWM remains at 100%

· Wobble Frequency can be adjusted for the desired outcome/application.

· Cleaning width is adjustable to the size needed for the application. Max size of roughly 8”.

· Processes are still able to be saved.(up to 99)