

# Denaliweld

## Explanations Of Settings



# Laser Power

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.

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



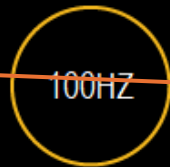
Laser power



Wobble Width



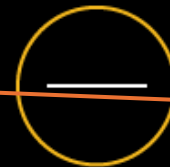
Laser frequency



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 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



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

- 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

# Laser Frequency

# Wobble Frequency

DENALIWELO



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 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



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

DENALI WELD



Laser power



Wobble Width



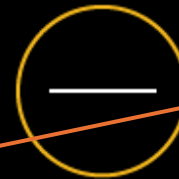
Laser frequency



Wobble frequency



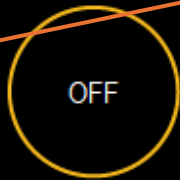
PWM



Wobble graph



Laser switch



Gas purge



Safety Lock



Wire Feed Switch



Fish scale welding



Process No.

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

Laser power

2.0mm

Wobble Width

1000HZ

Laser frequency

100HZ

Wobble frequency

100%

PWM

—

Wobble graph

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

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

# Wire Feed Switch

DENALIWELD



Laser power



Wobble Width



Laser frequency



Wobble frequency



PWM



Wobble graph



Laser switch



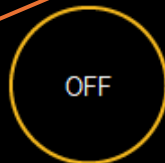
Gas purge



Safety Lock



Wire Feed Switch



Fish scale welding



Process No.

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.

Handheld Laser  
Welding Control System

2024-09-29

16:52:24

Language  
selection

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

# 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

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

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

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

# Copper Nozzle Relaxation Time

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

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

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

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

# Beam Off Delay

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

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

# 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

Handheld Laser  
Welding Control System

2024-09-29

16:53:02

Language  
selection

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.

# Power Of Turning Off 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

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

Handheld Laser  
Welding Control System

2024-09-29

16:53:02

Language  
selection

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)

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.

Handheld Laser  
Welding Control System

2024-09-29

16:52:24

Language  
selection

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

DENALIWELD Process

No Feeding

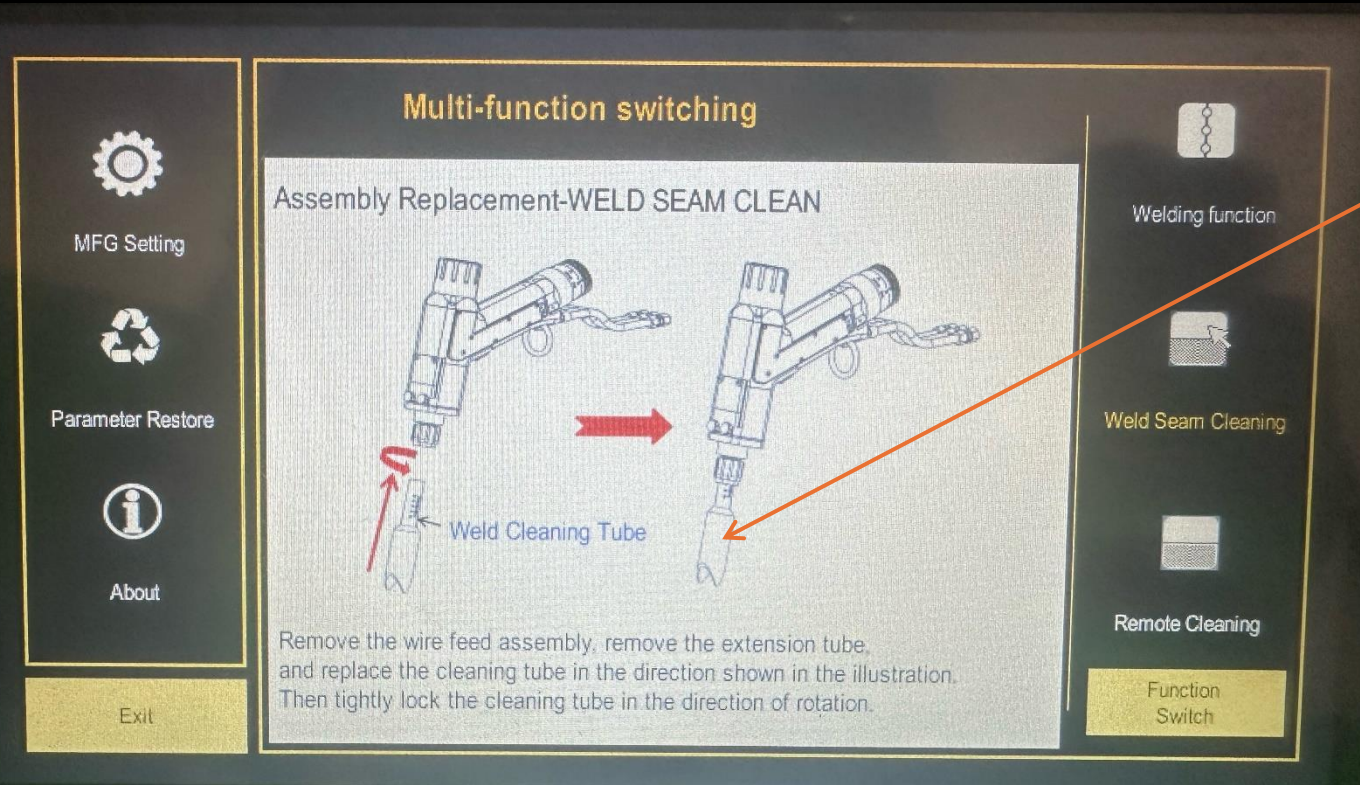
Num	Sheet	Thickness (mm)	Power (W)	PWM (%)	Freq (Hz)
0	MATL	0.0	300	100	1000
1	SS	1.0	550	100	1000
2	SS	1.5	800	100	1000
3	SS	2.0	1000	100	1000
4	SS	2.5	1200	100	1000

Process No. 3 Import Shutdown-save Restore

- 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



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



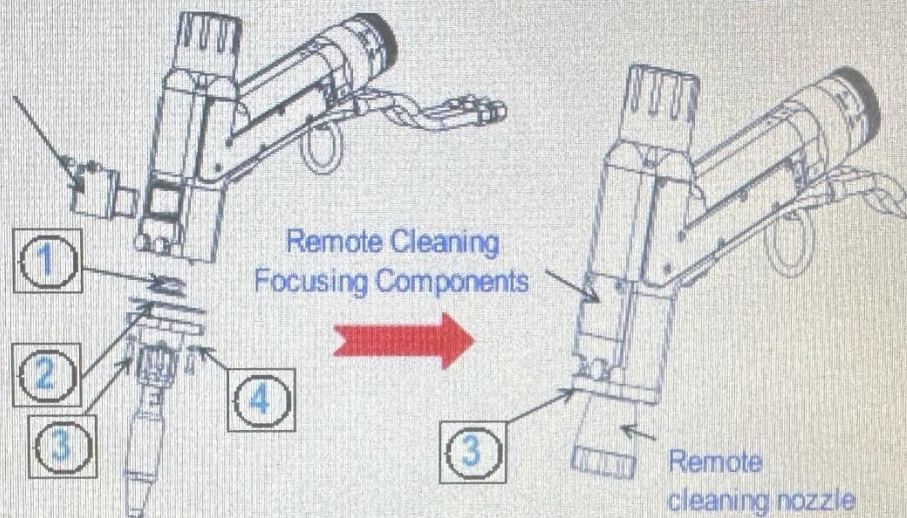
About

Exit

## Multi-function switching

### Assembly Replacement-REMOTE CLEAN ( Optional )

Focus Lens  
Drawer



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

**DENALI WELD**

Home Settings Laser

300W  
Laser power

1000HZ  
Laser frequency

100HZ  
Wobble frequency

100%  
PWM

50.0mm  
Cleaning width

OFF  
Laser switch

OFF  
Gas purge

0  
Process No.

OFF  
Safety Lock

Language selection

2024-09-29 16:58:10

Control System-  
Handheld Remote Cleaning

- 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)