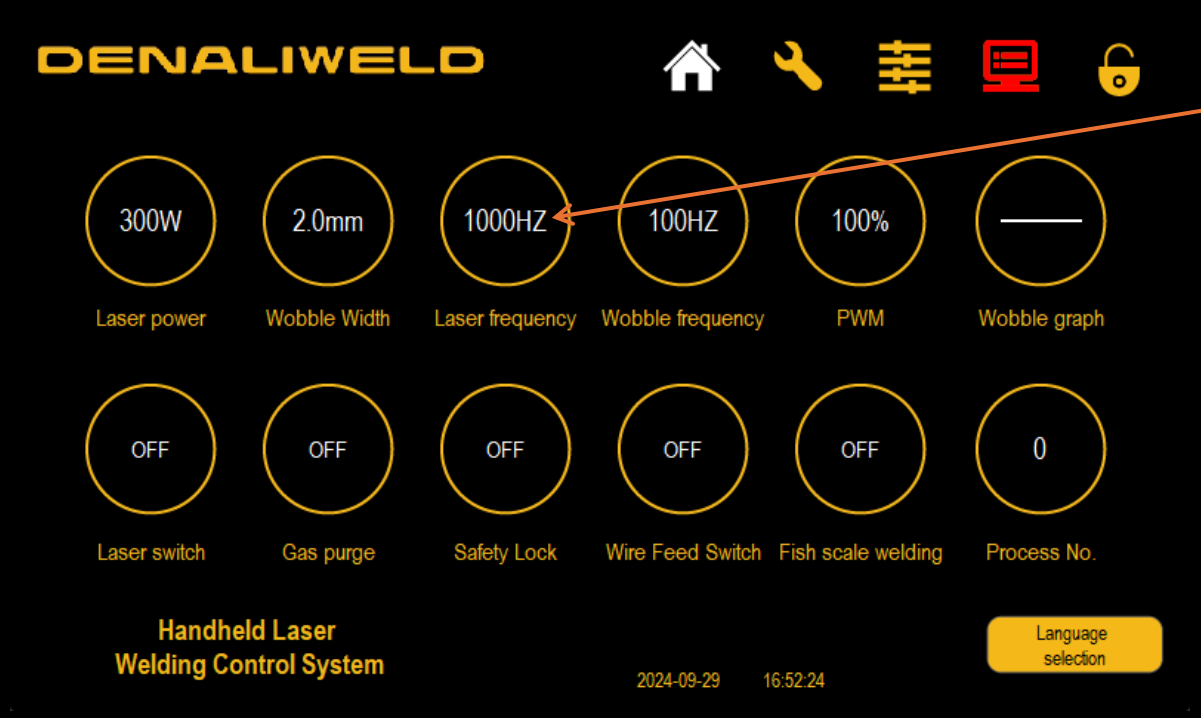
Denaliweld Explanations Of Settings

Laser Power

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

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



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

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.

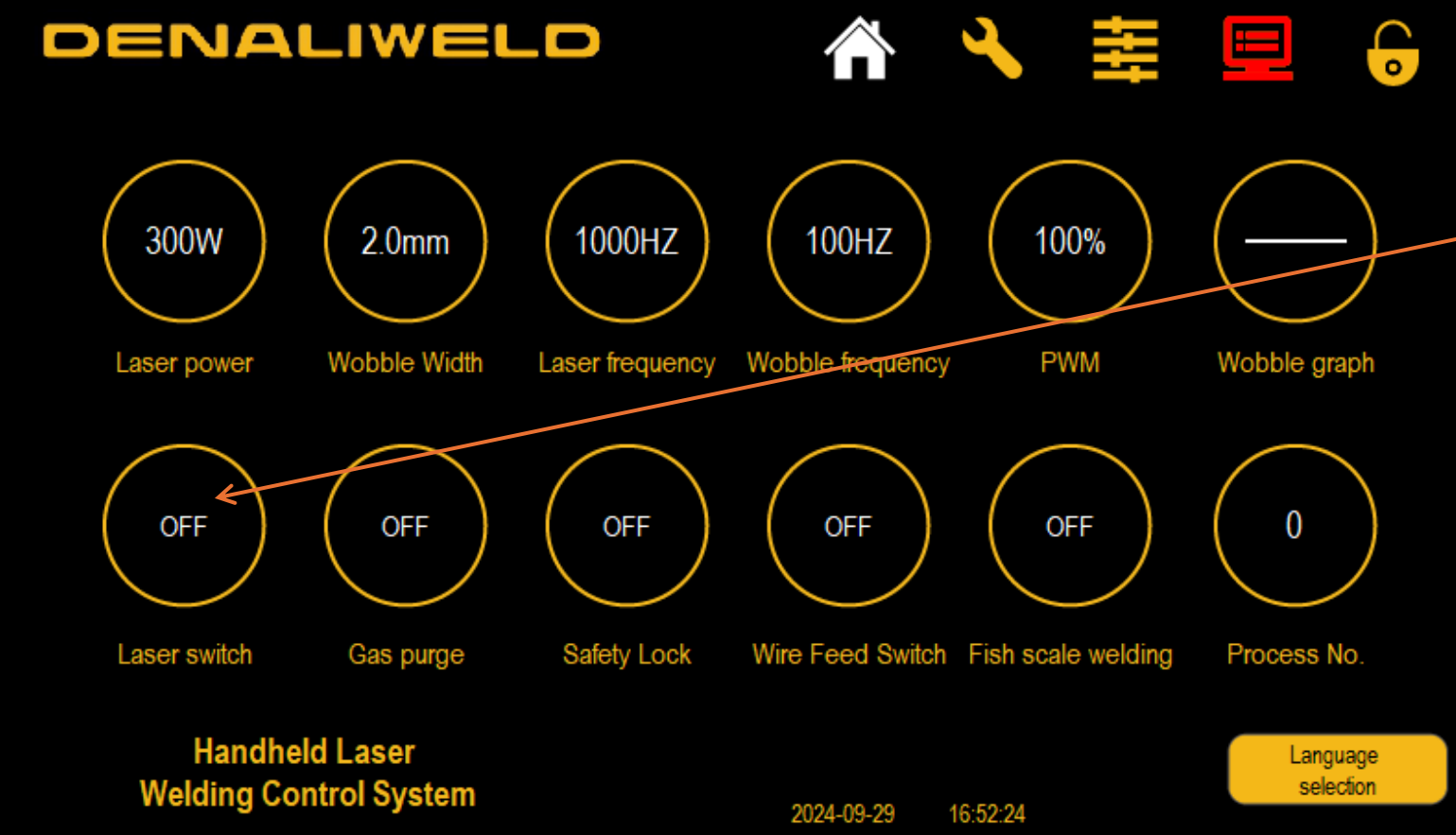
PWM
Pulse Width Modulation

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

Wobble Graph

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



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

Manual Blowing (gas purge)

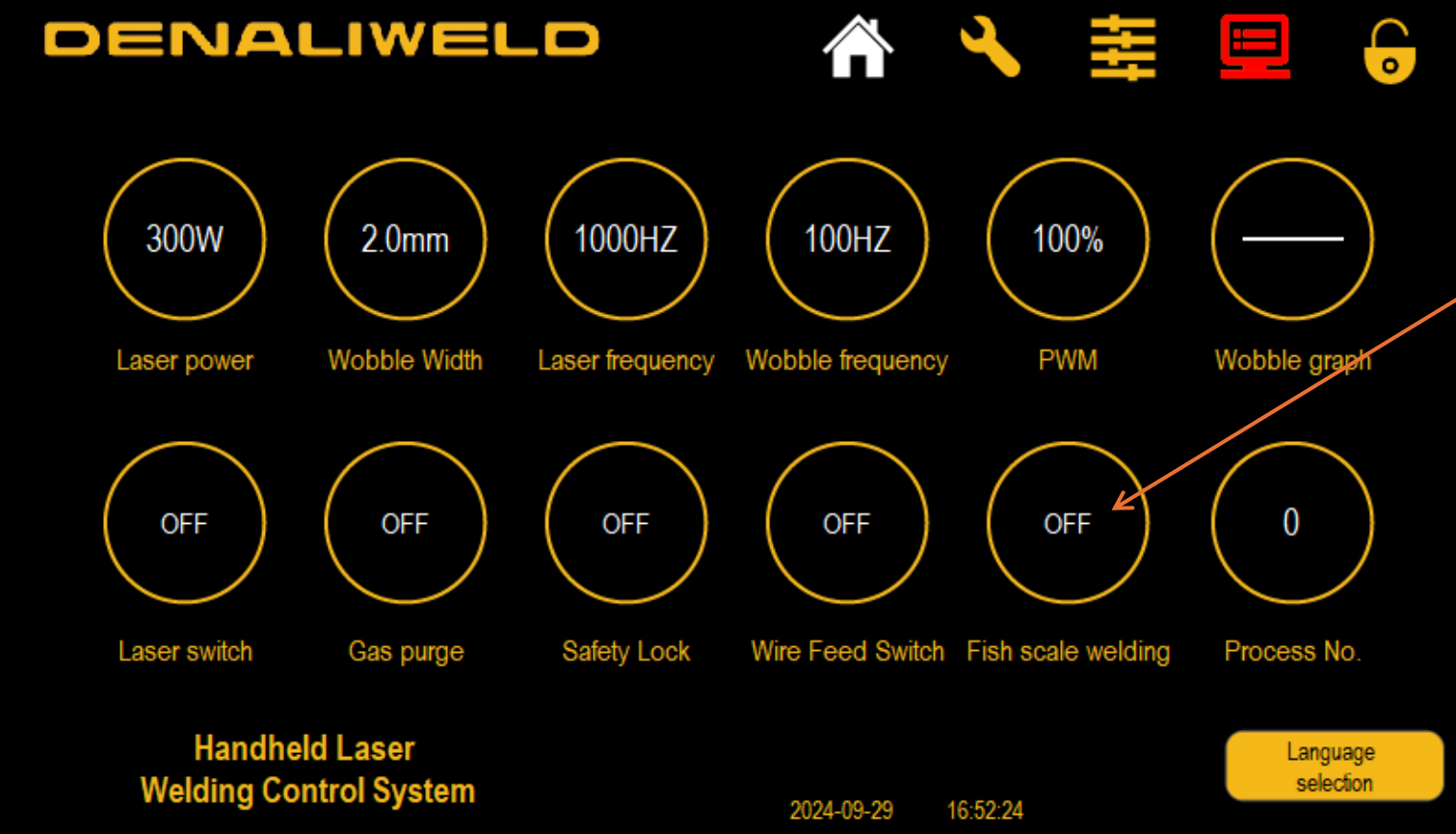
gas purge is to ensure proper gas flow for the welding application

Wire Feed Switch

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

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

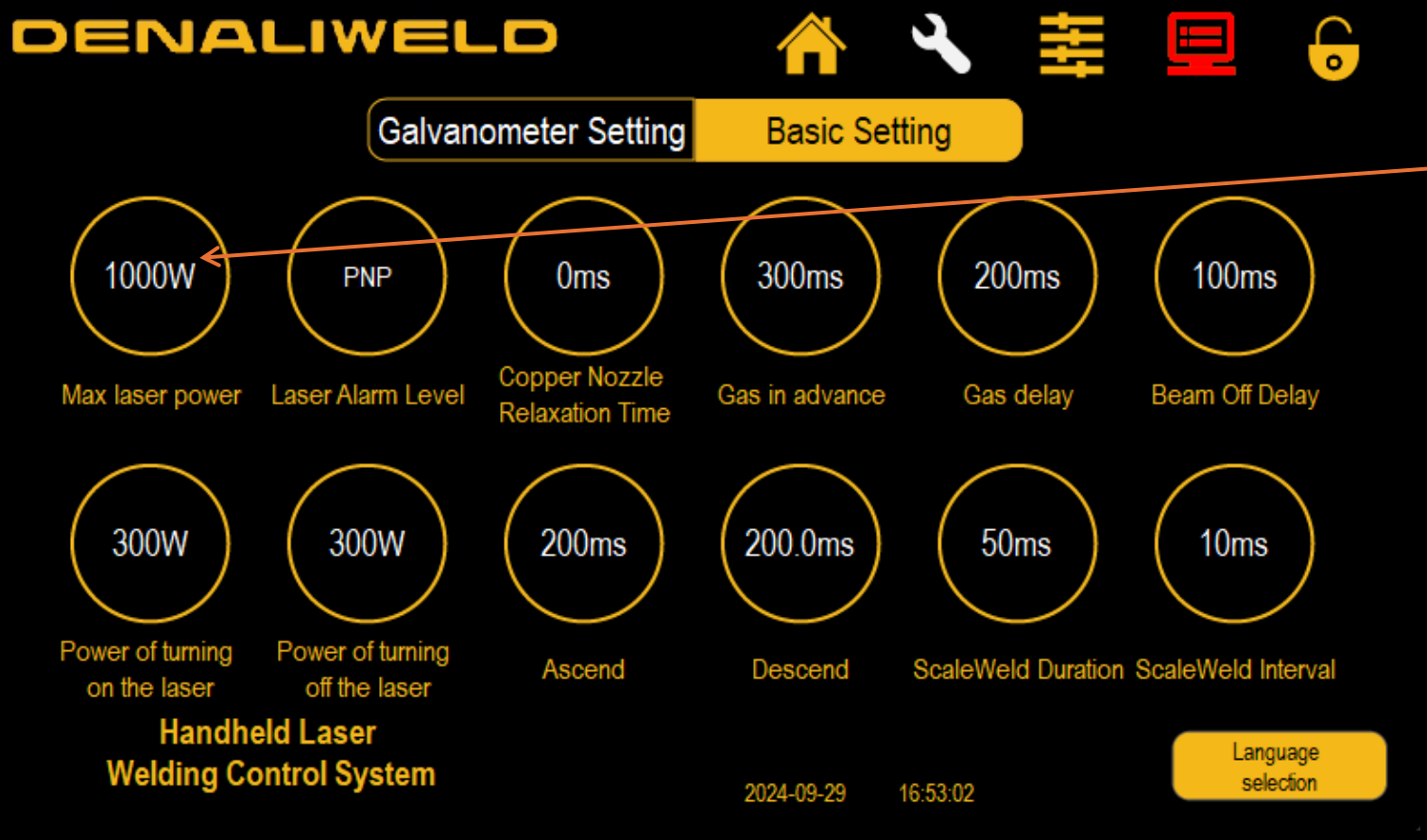
Scale Weld



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

Max Laser Power



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

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

Copper Nozzle Relaxation Time

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

Gas in advance

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

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

- 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

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

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

This is the ascend and descend of the laser power.

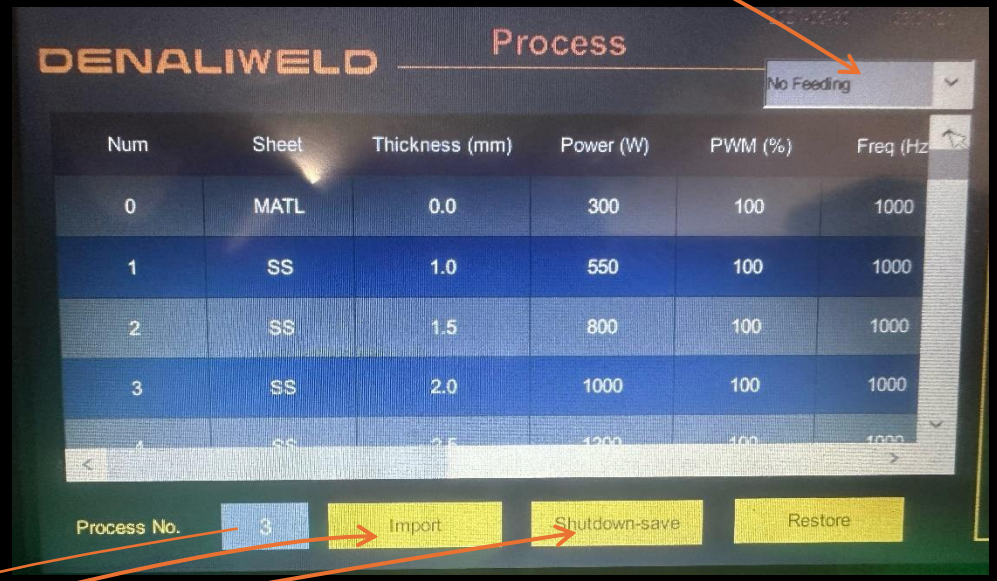
· Generally, this does not need to be changed.

Scale Weld Duration & Scale Weld 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)

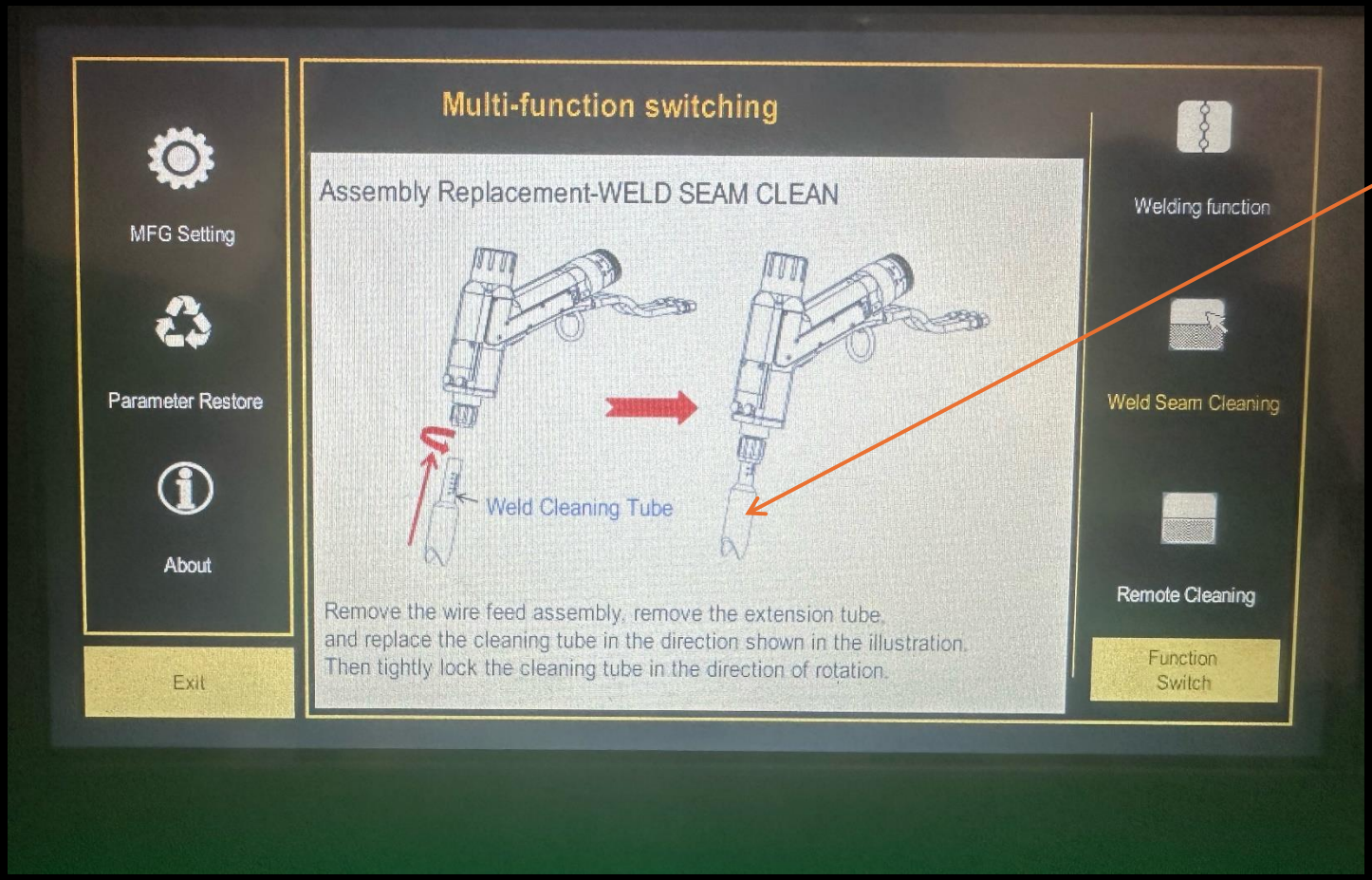
Process allows you to access 16 preset and tested settings for welding aluminum, carbon steel, and stainless steel.



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



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

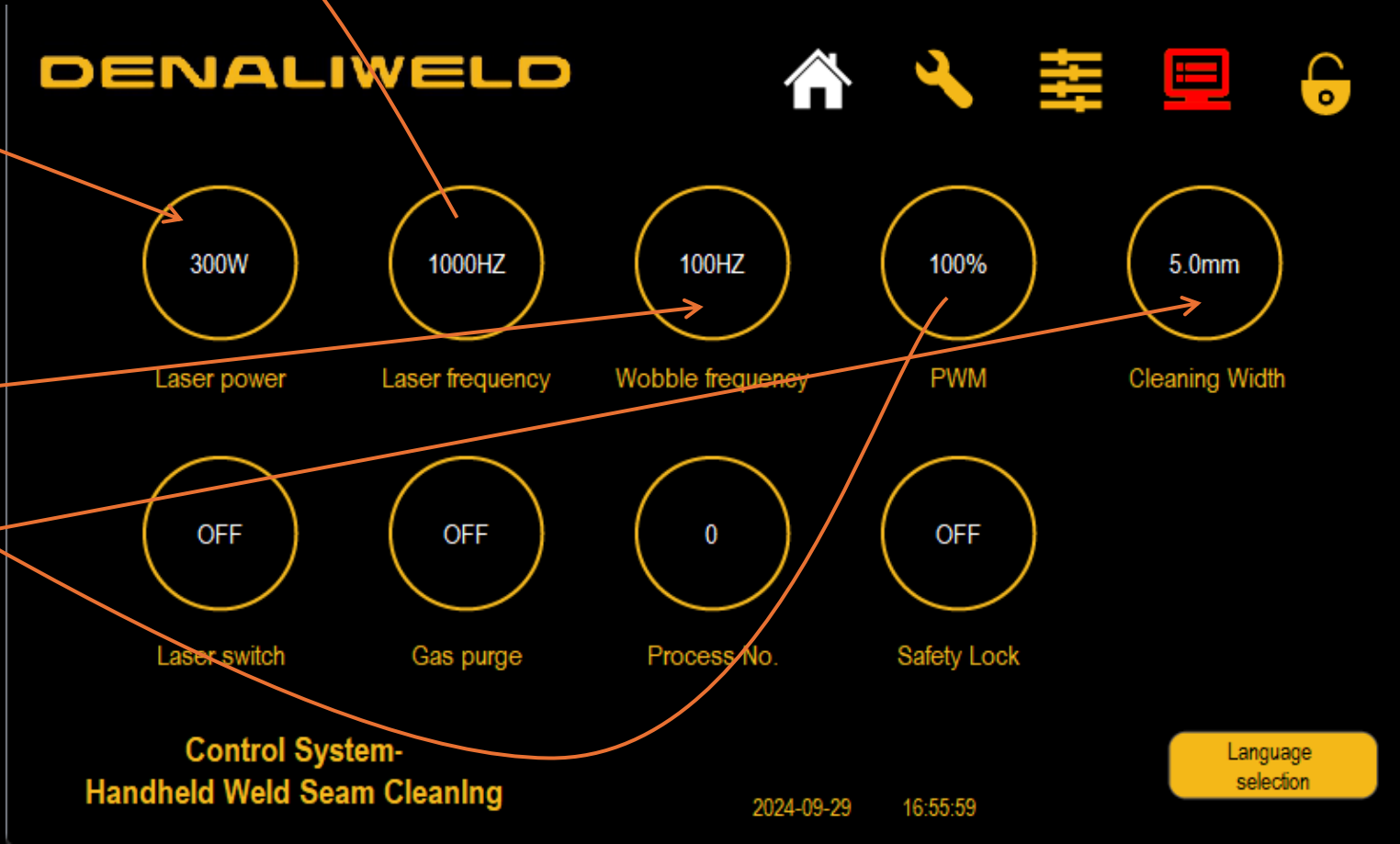
Seam cleaning can also be used for pre cleaning materials.

Seam cleaning requires low laser power.

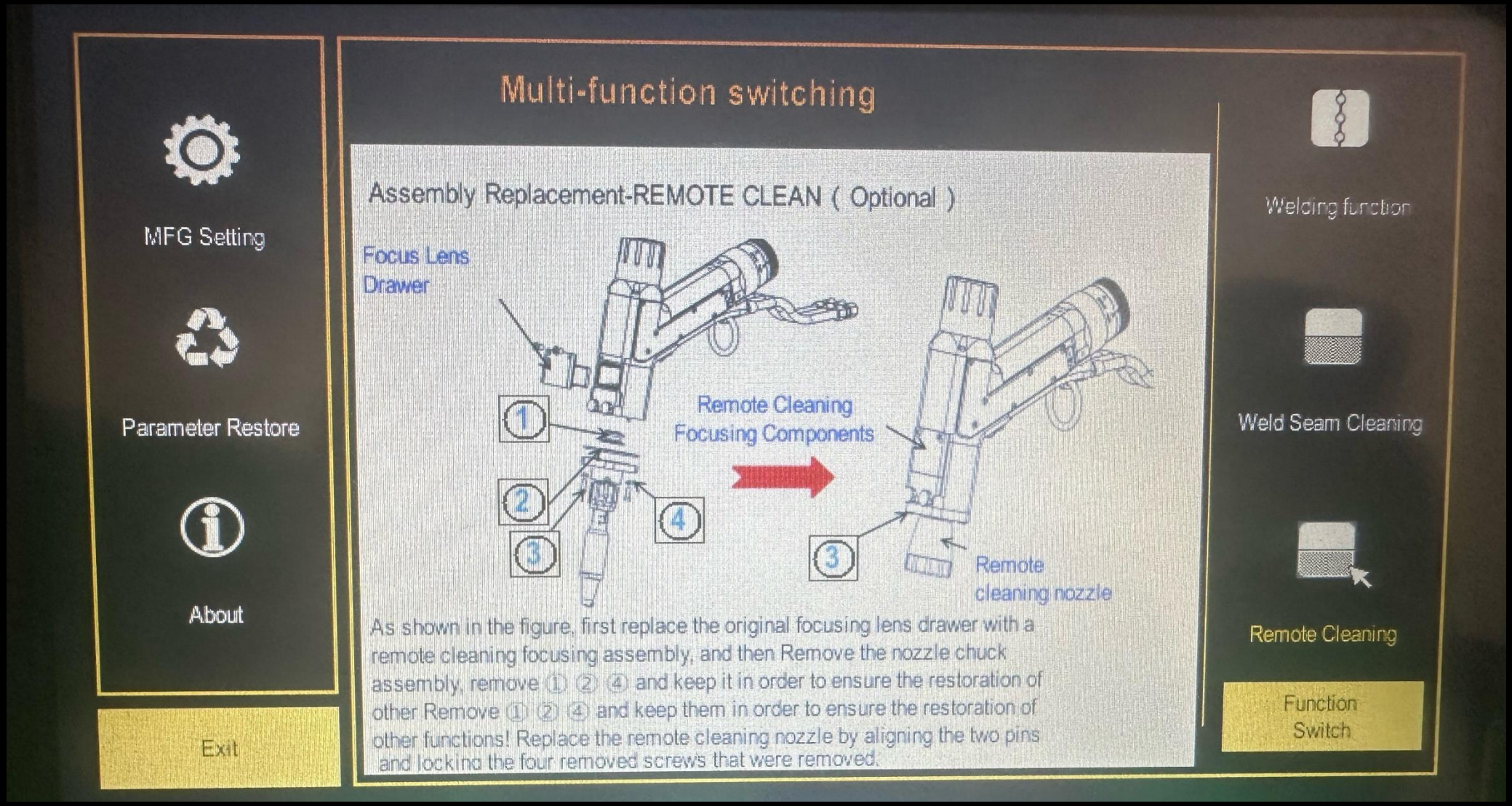
· laser frequency and PWM don't need to be changed.

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

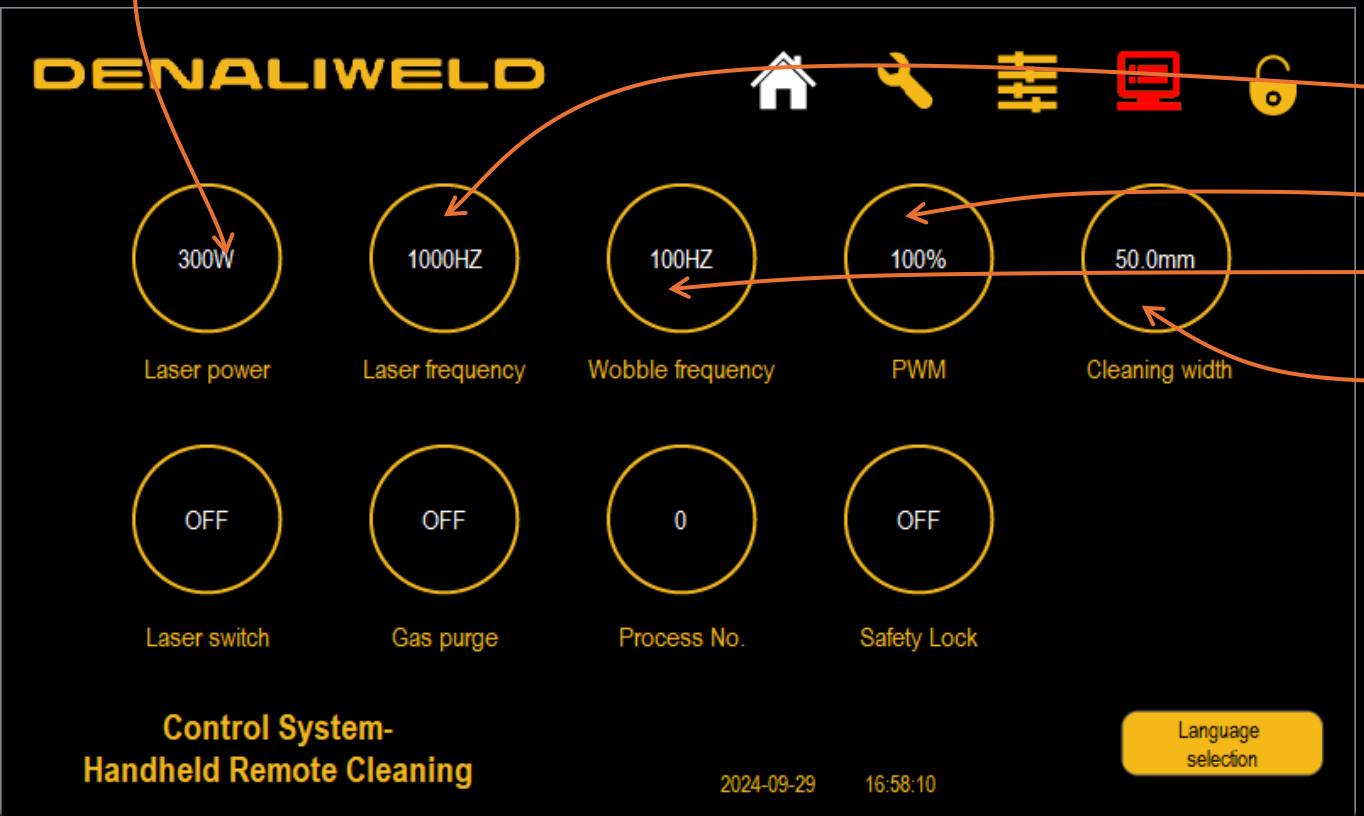
· Cleaning width can be changed to the desired size. Recommended a little larger than the wobble size used for the weld.



Remote Cleaning



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)