HANDHELD FIBER LASER WELDING ,CUTTING & CLEANING
MODEL : LCW-2000W-RAYCUS (3-in-1 Machine)

WELDING **CUTTING** **CLEANING**

PRODUCT ADVANTAGES:

3-in-1 Handheld Fiber Laser Welding, Cutting & Cleaning

One Machine for multiple purposes, small size and light weight, easy to learn, only a few hours for beginners to get started.

Double Red & Light Design

Lightweight design of cleaning head, easy to hold. Double red-light design, easy to focus and improve work efficiency

Intelligent Operating System

Adopt touch screen design, easy and quick to click and set, with real time fault reading, feedback and alarm functions. There is a process parameter library, which can realize the rapid storage and recall of cleaning process parameter. Remote controller at the welder side for multi-parameters adjustment, save time and effort, easy to operate.

TECHNICAL CONFIGURATIONS:

	COMPONENT	DESCRIPTION	BRAND/ORIGIN
	2000W RAYCUS LASER SOURCE	100,000 hours life time more stable and cost-efficient maintenance free	Raycus
	AU3TECH LASER CLEANING HEAD	Easy to use and high efficiency. Protect modules for calibration and focus lens. Drawer-type of lens mount, quick and easy use	Au3Tech
	AU3TECH LASER WELDING HEAD	Easy to use and high efficiency. Protect modules for calibration and focus lens. Drawer-type of lens mount, quick and easy use	Au3Tech
	AU3TECH LASER CUTTING HEAD	Easy to use and high efficiency. Protect modules for calibration and focus lens. Drawer-type of lens mount, quick and easy use	Au3Tech
	AU3TECH CONTROL SYSTEM	Integrated file read, design, processing and output control as a whole. Software provides extensive laser cutting process parameters.	Au3Tech
	S & A WATER CHILLER	Water chiller is a Dual Cooling function of cutting machine's water system adopts double temperature water chiller, one is cooling laser and the other is cooling cutting head	G·WEIKE LASER 金威刻 ® **G-WEIKE**

RELATED PARAMETERS:

HANDHELD FIBER LASER WELDING ,CUTTING & CLEANING (3-in-1 MACHINE)

Model	**: LCW-2000W**
Laser Wave Length	**: 1064 mm**
Fiber Length	: Standard 10M / Max 15M
Welding Speed Range	: 0~120 mm/s
Cooling Chiller	: Industrial Water Chiller
Working Environment Temp. range	: 15~35˚C
Welding thickness recommendations	: 0.5-3 mm
Working Voltage	: 220 V
Brand New	**: China**

2000W LASER WELDING PROCESS PARAMETERS :

Material		Carbon Steel + 1.2 Iron Wire	Stainless Steel + 1.2 Stainless Steel Wire	Aluminum + 1.6 Aluminum Wire
Thickness		1	1	1
		2	2	2
		3	3	3
Wire Feed Control	Wire Feed Speed	20	20	18
		16	16	16
		12	12	13
	Sightseeing Delay	1		
	Stop Light	0		
Welding Head Motor Control	Scanning Frequency	80		
	Stop Time	300		
Blow Delay setting	Before Light	50		
	After Light	50		
Power Delay Setting	Ramp up Time	1		
	Ramp down time	1		
Light Energy	PVM Frequency	5000		
	Power %	30	30	80
		45	45	80
		60	60	80
	PVM Duty Cycle	100	100	100
		100	100	100
		100	100	100
	Focus Position	0	0	0
		0	0	0
		0	0	0
	Starting Power	1		
	Cut-off Power	1		
Air Pressure/Flow		0.05-0.2 MPA -15L/min- 30L/min		

2000W LASER CLEANING PROCESS PARAMETERS :

Classification of Cleaning Objects	Oxide Layer	Rust Layer	Paint, Coating
Cleaning Thickness Classification	≤ 25 μm	≤ 30 μm	≤ 200 μm
			≤ 400 μm
	≤ 50 μm	≤ 60 μm	≤ 600 μm
			≤ 800 μm
	≤ 75 μm	≤ 100 μm	≤ 1000 μm
			≤ 1200 μm
Core	50 μm		
Beam Quality	6		
Frequency	20-500 Hz		
Optical path configuration	Field lens f=170	Field lens f=170	Field lens f=340
			Field lens f=340
	Field lens f=170	Field lens f=170	Field lens f=340
			Field lens f=340
	Field lens f=170	Field lens f=170	Field lens f=340
			Field lens f=340
Focus spot Size	113 μm	113 μm	227 μm
			227 μm
	113 μm	113 μm	227 μm
			227 μm
	113 μm	113 μm	227 μm
			227 μm

Cleaning Speed	15 mm/s	50 mm /s	10 mm/s
			10 mm/s
	15 mm/s	35 mm/s	10 mm/s
			10 mm/s
	15 mm/s	20 mm/s	10 mm/s
			10 mm/s
Cleaning Speed	50 mm	50 mm	90 mm
			90 mm
	50 mm	50 mm	90 mm
			90 mm
	50 mm	40 mm	90 mm
			90 mm
Cleaning Time	1	1	3
			5
	3	1	6
			7
	5	1	8
			9
Efficiency (Based on trial Evaluation	2.7 m^2/h	9 m^2/h	1.08 m^2/h
			0.65 m^2/h
	0.9 m^2/h	6.3 m^2/h	0.54 m^2/h
			0.46 m^2/h
	0.54 m^2/h	2.88 m^2/h	0.4 m^2/h
			0.36 m^2/h

2000W CUTTING PARAMETER:

Sheet	Thickness mm	Depth Mm	Output Power	Speed m/s	GAS Pressure	Swing Speed	Blowing delay/s	Wire Feeding Welding	Overall Power
SUS/CS	0.6	0.3	10%	0.02	2.0 Bar	90	Light out 0.3-0.5 light off 0.5-1.0	0.2mm	12KW
	0.8	0.4	15%	0.02	2.0 Bar	90		0.2mm	
	1	0.5	20%	0.02	2.0 Bar	90		0.2mm	
	1.2	0.6	25%	0.02	2.0 Bar	90		0.2mm	
	1.8	0.8	35%	0.02	2.0 Bar	90		0.2mm	
	2.5	1	35-45%	0.02	2.3 Bar	90-100		0.2mm	
	3	1.4	50%	0.02	2.3 Bar	90-100		0.2mm	
	5	2.1	70-80%	0.02	2.3 Bar	90-100		0.2mm	
	6	2.5	80-90%	0.02	2.3 Bar	90-100		0.2mm	
	7	3	80-90%	0.02	2.3 Bar	90-100		0.2mm	
AL/CU	0.5	0.4	60-80%	0.02	2.0 Bar	90-100		0.2mm	
	1	0.8	80-90%	0.02	2.0 Bar	90-100		0.2mm	
	1.5	0.8	80-90%	0.02	2.3 Bar	90-100		0.2mm	
	2	1	85-95%	0.02	2.3 Bar	90-100		0.2mm	
	4	2	90-100%	0.01	2.3 Bar	90-100		0.2mm	

COST ANALYSIS

2000W WELDING & CLEANING LASER USING COST:

Assisted Gas Laser Power		2000W LASER USING NITROGEN WELDING
Power Consumption	Laser Module	6.1 kw
	Water Chiller Group	3.7 kw
	Host Machine	0.5 kw
Quick-wear part		1.5 AED/h
Gas Consumption		8.75 AED/h
Total Power		10.3 kw
Average Power Consumption (Take 60% Cutting Efficiency)		10.3 x 60%=6.18 kw
All Cost (0.58 AED/Kwh)		14 AED/h

DELIVERY & INSTALLATION:

1. **Delivery at your site within UAE.**
2. **Training & Installation by our skilled Engineers at your site.**

AFTER SALES SERVICE:

1. **Two years warranty (One-year spare parts & 2nd year free Service). Except for consumable items e.g Nozzle, Lens etc.**
2. **Complaint will be solved within 12 working hours, by our in-house skilled Engineers.**

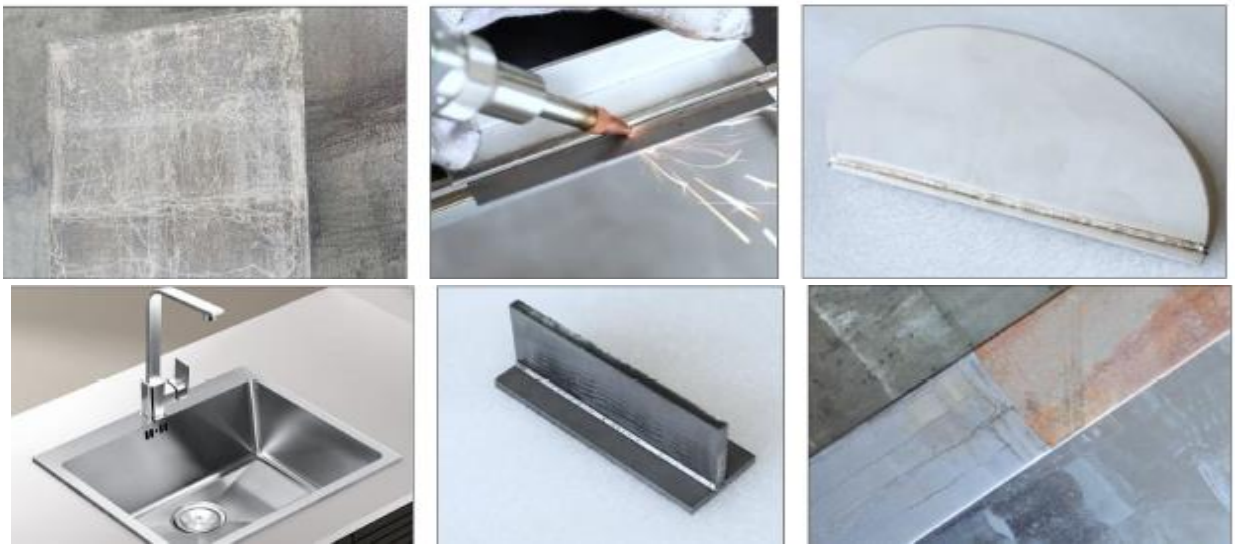
MACHINE TESTING & EVALUATION:

From the mechanical debugging aspects, our machine precision is better than other suppliers for:

- Using the following instruments to test the mechanical precisions, including:
- Collimation degree test
- Straightness accuracy test
- Parallelism test
- Mable measuring scale and dial indicator
- Laser interferometer instrument
- Gantry Milling Machine to guarantee machine cutting accuracy

APPLICABLE MATERIALS & SAMPLES:

Laser Cutting, Cleaning and Welding Machine can remove the object surface resin, paint, oil pollution , stains, dirt, rust and oxide coatings . Can weld iron , aluminum alloy, stainless steel and other Materials.



Machine Videos:

1. https://www.youtube.com/watch?v=HpAoifBfjhs
2. https://www.youtube.com/watch?v=JTGeUREDe2A
3. https://www.youtube.com/shorts/tL9YUGTJtlw
4. https://www.youtube.com/watch?v=lkghgMRQ4tg