STRONGEST LASER

STRONGEST LASER

REDEFINE THE PERFORMANCE OF HANDHELD LASER WELDERS

Strongest Laser Welding Solutions

LEARN MORE

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Sichuan Strongest Laser Technology Co., Ltd (STR)

Based on its core competence in high power fiber laser technologies, STR has always been committing itself to R&D and equipment production in suchapplication fields as conventional laser welding, special laser hybrid welding andprecision cutting. It is a " National High-Tech Enterprise" engaged in R&D, production, sales, and technical service.

Guided by market demand and the national strategy of supporting thedevelopmentof emerging industries and industrialization, STR has strengthened thecomprehensive competitiveness of its core technologies, key components,and main products, and gradually established a product system in high- endindustrial applications, defense applications, and other fields.

Over the years of development, STR has provided various services to over 1000 enterprise users and professional services for over 10,000 times. Its sales network covers over 30 provinces and provincial-level municipalities in China, and its products are exported to dozens of countries including the United States and some in Europe, and Southeast Asia.

Technology & R&D

STR boasts a R&D team that can be rated as the first-class in China, which has been driving technological innovation in the industry and continuously enhancing its competitiveness as an enterprise.

STR excels many other counterparts as a result of tremendous R&D strength supported by an average annual R&D investment of about CNY 30 million.

Through continuously introducing excellent talents and developing their professional competence,STR have established a proven and experienced R&D team consisting of 8 doctorate holders and over 20 master degree holders, the number of which accounts for more than 30% of the company's total staff.

Multiple Industry-Leading Technologies

- Integration Technologies for High Power Fiber Laser
- Laser Thermal Management Technology
- High Power Pumping Beam Combining Technology
- Coaxial Arrangement Technology for Laser-Assisted Plasma Arc Welding
- Mode Instability Suppression Technology
- Ultra Stable Water Jet Technology

At present, the R&D and production workspace of STR has a total floor area of over 10,000 square meters, featuring a complete set of facilities for R&D, product production, and application testing, including a 4000 square meter optical cleaning workshop, and equipped with a full spectrum of internationally advanced experimental instruments and equipment.

STR-HW Series Handheld Laser Welding

Redefine the Performance of Handheld Laser Welders

- Larger Penetration
- More Stable Operation
- Faster Welding Speed
- Longer Life Cycle and Up Time

Integrated Intelligent Handheld Laser Welders——True to their Names

Based on the self-developed "small core diameter" laser technology, the STR-HW Series handheld laser welders adopt a new dual circuit refrigerant direct cooling system and integrated structural design. These welders can provide customers with such experiences as high effectiveness, large penetration, high energy-efficiency, and high convenience.These welders can weld various metal materials, including aluminum, stainless steel, carbon steel, galvanized sheet, brass, etc. (The welder for welding special materials can be customized per user’ s requirements).

- **Integrated Engineering Design**
- **Adaptive Repair Process Package**
- **Dual-Circuit Refrigerant Direct Cooling**

STR-HW Series Technical Parameter

Item	STR-HW-200	STR-HW-350	STR-HW-450	STR-HW-550	STR-HW-550 Pro	STR-HW-850
Rated input power supply	Single phase 220V					Three phase 380V
Input power frequency	50/60HZ					
Laser Power	700W	900W	1200W	1500W	2000W	3000W
Power Consumption	2.45kW/h	3.25kW/h	3.8kW/h	4.95kW/h	7kW/h	10kW/h
Wave length	1080nm					
Fiber laser diameter	30μm		14μm			20μm
Wobble Length	0-4mm	0-6mm				0-8mm
Cooling	Dual-circuit refrigerant direct cooling					
Weld penetration (Single side)						
Aluminum	<1.5mm	<2.5mm	<3.5mm	<5mm	<6mm	<=8mm
Stainless Steel	0.2~2.8mm	<3mm	<4mm	<6mm	<7mm	<=10mm
Carbon Steel	0.2~2.8mm	<3mm	<4mm	<6mm	<7mm	<=10mm
Galvanized Sheet	0.2~2.4mm	<3mm	<4mm	<6mm	<7mm	<=10mm
Brass	<2mm	<3mm	<4mm	<6mm	<7mm	<=10mm
Copper	/	<0.5mm	<1mm	<2.5mm	<2.5mm	<4mm
Process Gas	Argon, Nitrogen, Helium, compressed air					
Applicable Wire diameter	0.8/1.0/1.2mm	0.8/1.0/1.2/1.6/2.0/2.5mm				
Wire feeder mode	Single/double wire feeding					
Safety	System features include key for laser ON/Off, 2-step laser operation trigger (Enable and Fire), Part-head contact safety circuit, Facility door interlock circuit.					
Working Temperature	-30~60℃	-30~60℃	-20~60℃	-20~60℃	-20~60℃	-20~60℃
Storage Temperature	-40~70℃	-40~70℃	-30~70℃	-30~70℃	-30~70℃	-30~70℃
Working Humidity	0-90%	0-90%	0-90%	0-90%	0-90%	0-90%
Product Dimensions	675×457×310mm		690×457×310mm			912×390×565mm
Product Weight	38KG	39KG	43KG	45KG	45KG	70KG

STR-HW WELDER FEATURES

Integrated Design of the Complete Set Ensures Higher Welding Efficiency Longer Service Life, and Lower Maintenance Costs

The whole set of the welders features integrated design, proprietary welding guns and welding wire feeder, built-in welding process packages, linked operation and smoother coordination among different components. Meanwhile, it is the first product of its kind to incorporate the adaptive welding process package repair function, bringing higher working efficiency and better welding experience.

Higher Stability Ensures Round-the-clock Operation

Capable of 24 × 7 continuous welding, thanks to the refrigerant direct cooling system that is developed independently by STR and welding gun insulation material that can ensure long-term use without becoming hot or shutdown.

Adopting Dual Circuit Refrigerant Direct Cooling Technology to Eliminate the Shortcomings of Traditional Air-cooled and Water-cooled Welder

The operating environment temperature of conventional water-cooled handheld welders is between 5 °C and 50 °C, while that of air-cooled handheld welders is between -10 °C and 35 °C. The refrigerant direct cooling system developed independently by STR ensures the handheld welder good environmental temperature adaptability with an operating temperature ranging from -20 °C to 60 °C.

Adaptive Repair Process Package Ensures Life-cycle Reliability

STR is the first in the industry to launch the adaptive repair function of the process package, which can regularly self check the machine status, perform parameter calibration, and ensure continuous use reliability throughout the life cycle, without compromising the welding effectiveness.

Unique Design of Welding Torch

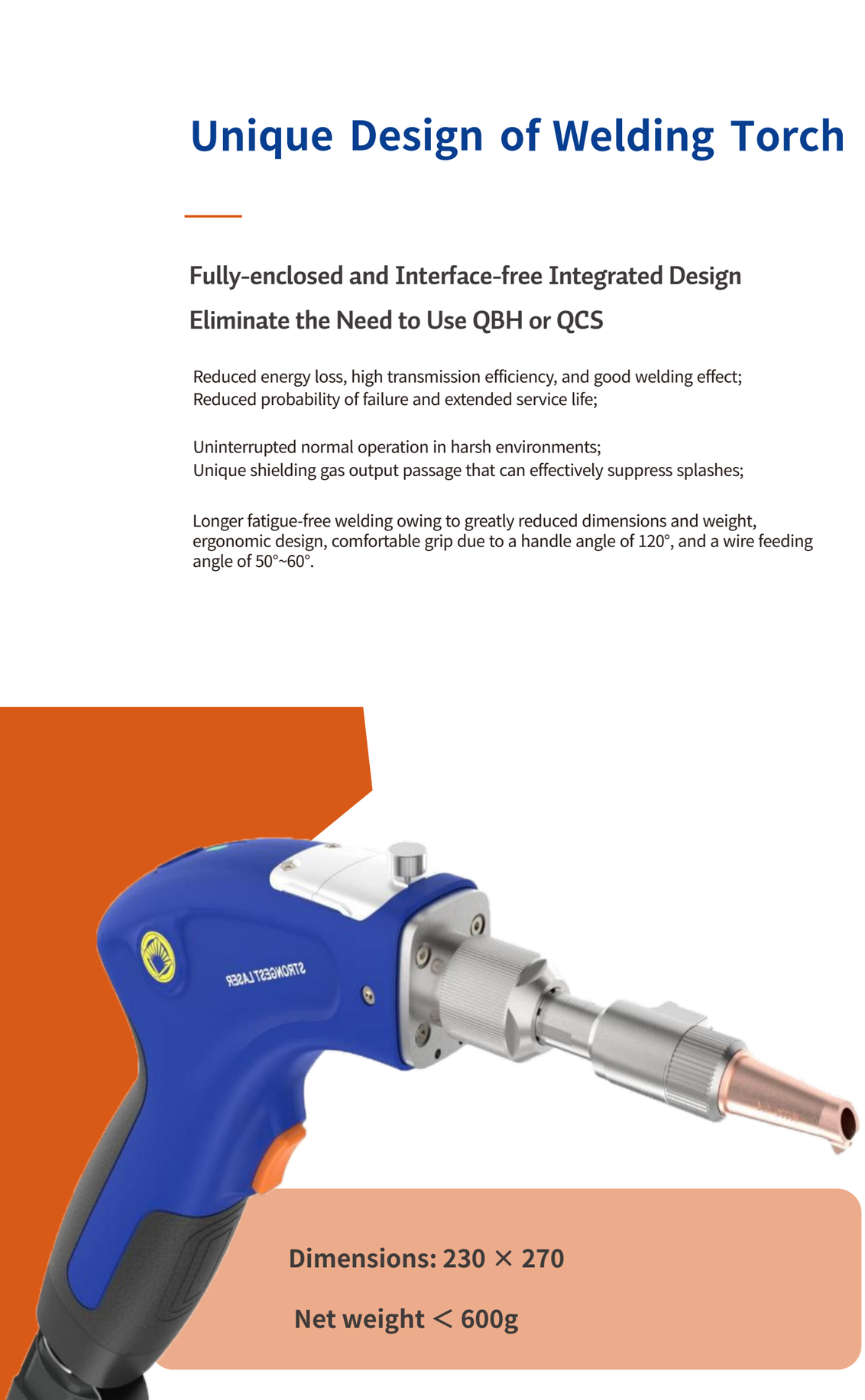
Fully-enclosed and Interface-free Integrated Design

Eliminate the Need to Use QBH or QCS

Reduced energy loss, high transmission efficiency, and good welding effect;
Reduced probability of failure and extended service life;

Uninterrupted normal operation in harsh environments;
Unique shielding gas output passage that can effectively suppress splashes;

Longer fatigue-free welding owing to greatly reduced dimensions and weight, ergonomic design, comfortable grip due to a handle angle of 120°, and a wire feeding angle of 50°~60°.



Dimensions: 230 × 270

Net weight < 600g

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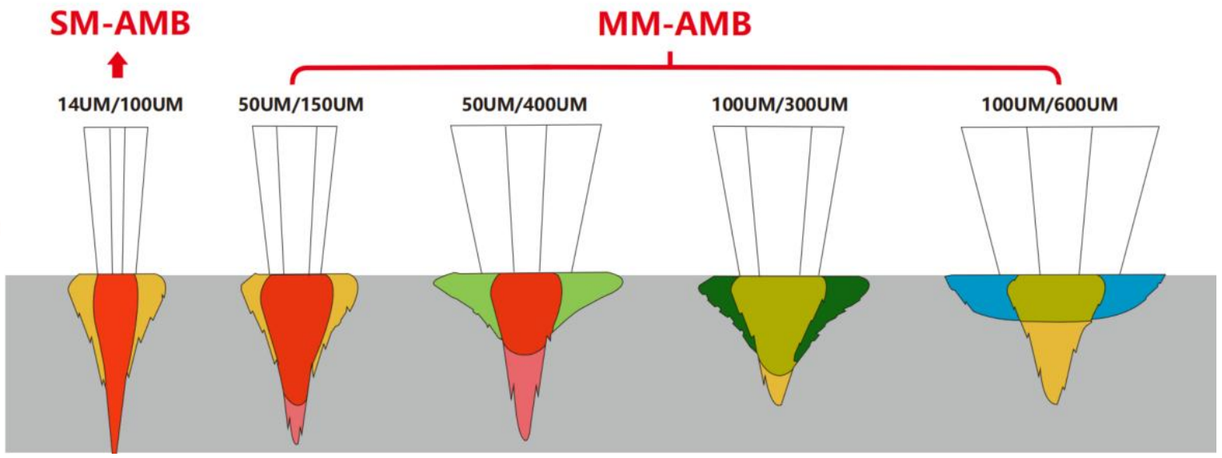
Special Designs of STR-HW welders

Whole Machine Integrated Deisgn

Integrated design of the whole machine with self-developed welding torch, wire feeders, preset welding process packages, etc., make the operation better. And fully enclosed design makes less failure rate, low loss, longer service life and lower maintenance, etc.

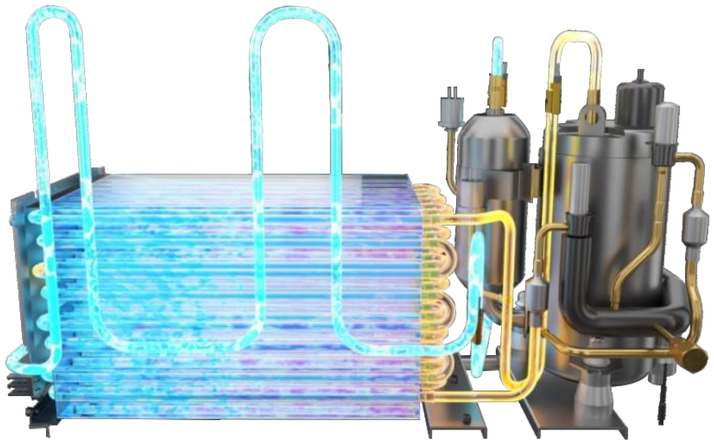
"Small-core diameter" Laser Technology

Small core fibers have better beam quality and higher energy density under the same power.



Modular Design of Welding Torch

The simplified design welding torch, adopt beam collimation module input , and the fully enclosed design minimize the refraction and scattering of laser energy transmitted between the lenses. Industrial plastic + soft rubber design of the gun handle greatly reduces the torch weight and have better thermal insulation performance.



Dual-Circuit Refrigerant Direct Cooling Techonology

Different from the air cooling system, STR-HW series handheld welding laser uses refrigeration cooling system.
The operating temperature range is: -20°C~+60°C with better ambient temperature adaptability, and 7x24 continuously work.

Inegrated Cable Technology

Integrating multiple connecting wires between various components in a traditional welding torch into armored cable with diameter of only 17mm. Greatly improve the welding results and operation flexibility. Makes easlier angle rotation and less fatigue with long term operation.

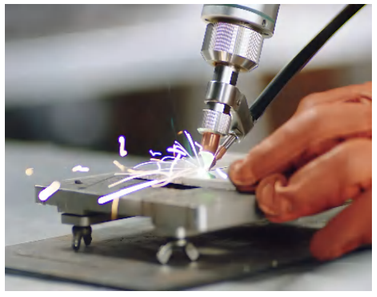
STR-HW WELDERS ADVANTAGES

An Innovation to Traditional Arc Welding Technology Effectively Improves Welding Efficiency

	STRONGEST LASER handheld laser welding machine	Traditional Arc Welding
Welding quality	High-quality results	Depends on user experience
Distortion & Deformation	High	Very low
Speed	Fast-**3~4X faster** than Arc	Average
Heat affected zone	Small	Large
Wobble welding	Yes, up to 8mm	No
Cost	Low	High
Physical Hazards	Low radiation, protective spectacles can filter out strong light	Great harm to welders and high incidence rate of occupational diseases
Environmental	Green and environmentally friendly	A large amount of smoke and dust pollution

TIG Welding

TIG welding is a time-consuming, two-handed welding method that requires experienced and skilled operators.TIG welding generates extremely high heat, resulting in distortion of thin materials, poor cosmetic results, difficulty in welding copper, and limitations in welding metals of varying thicknesses.



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Compared with MIG or TIG, STRONGEST LASER is based on the company ’ s independently developed “ small core diameter ” laser technology, adopts a new dual-circuit refrigerant direct cooling system and an integrated structure design, providing customers with higher efficiency, higher melting depth, higher energy saving and more convenient experience.

MIG Welding

MIG welding requires consumable wire, material pre -cleaning, and beveled joints in thick metals to allow for complete penetration. Movement and working angles are limited, and vertical positions are challenging.

Welding application cases

After accurately and effectively presetting the process package of the welder, the wire feeder can achieve real-time linkage with the weld base unit.
Welding parameters can be quickly and intelligently selected and automatically matching wire feeding speed without manual debugging.
Even novices can easily and efficiently weld high-quality welded joints that achieve ideal penetration.

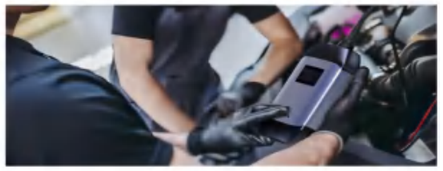
Applications

Suitable for welding various metals, including but not limited to aluminum, stainless steel, carbon steel, galvanized sheet, brass, etc.

Hardware processing

Sheet metal processing

Home appliance

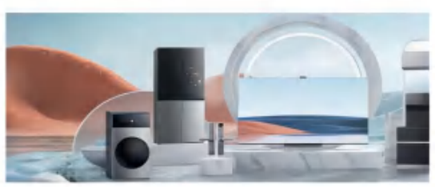


Equipment maintenance

Automotive body processing

Aviation space and transportation

Construction and pipeline processing



Advertising and other applications

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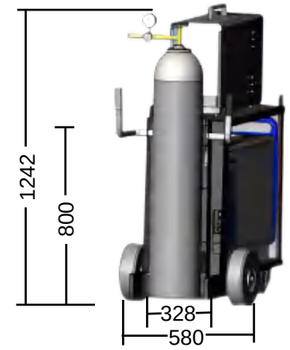
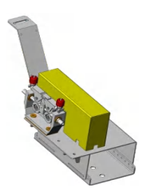
Trolley

Trolley: Weight:30KG-35KG

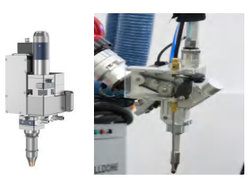


Automatic Laser Welding Solutions



Servo wire feeder

Handheld torch



Other torches

Intelligent seam tracking system

Standard Package

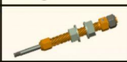
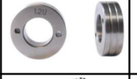
Laser welder x 1; Wire feeder x 1; Accessory package x 1

Unit: mm

More options of STR-Wire Feeder

Items	STR-WF00C	STR-WF00B	STR-WF00D	STR-WF00S
Wire feed tube length	3M / 5M			5M
Control interfaces	Control cable			
Compatible wire diameter	0.8/1/1.2/1.6/2.0mm		1/1.2/1.6/2.0mm	1.6/2.0/2.5mm
Welding wire spool weight	5/7.5/15/20 kgs			<20 kgs
Compatible wire materials	Stainless steel/Carbon steel/Aluminum alloy			
Power supply	220V 50Hz/60Hz	220V 50Hz/60Hz or Power supply by welding machine	220V 50Hz/60Hz	220V±5% 50Hz/60Hz
Motor Power	85W(24V, 3.5A)	85W(24V, 3.5A)	130W(24V, 5.5A)	80W(24V, 3.4A)
Wire feeding speed	20-600 cm/min	20-600 cm/min	25-150 cm/min	15-600 cm/min
Maximum allowable wire spool diameter	270mm	300mm	300mm	300mm
Wire feed mode	Single feed mode	Single feed mode	Single/Double feed mode	Single/Double feed mode
Overall dimensions	585×265×457	510x290x425	490x390x390	575x250x670
Wire feeder weight	18kgs	12kgs	20kgs	32kgs
Pictures				

Standard accessories package

No.	Name	Qty.	Pictures	Remarks
Accessory box	Protective window	10 pcs		10 pcs protective windows+ 1 pc cover
	Focusing lens	2 pcs		Already installed 1 with torch
	Copper nozzle	19 pcs		7 types nozzles (0.8,1.0,1.2,1.6mm)
	Cutting copper nozzle	1 pc		
	Wire feeding guide nozzle	4 pcs		0.8,1.0, 1.2, 1.6 for each
	Wire feeding clamp set	1 set		
	Wire feeding fixed tube set	1 set		For all types of wires
	Screws	2 pcs		2pcs Hexagon Cylindrical screw M3x8
	Allen wrench	3 pcs		One short flat head: 1x 2.5mm 58 * 20mm,1x 4mm 73.5 * 28.5mm 1x 2mm 51.5 * 17.5mm
	Cross screwdriver	1 pc		2mm with length 65mm
Welding machine	Goggles	1 pair		Protective level: OD6+
	Gloves	1 pair		
	Safety Clamping cable	1 pc		10M
	Wire feeding control cable	1 pc		5M
	Welder power cable	1 pc		5M
Wire feeder	Wire feeding tube	2 pcs		5M spring tube for wire φ0.8-2.0) -carbon steel, stainless steel 5M graphite tube for wire φ0.8-2.0)-aluminum
	Wire feeding wheel	4 sets		0.8-1.0V installed Additional 1.2V-1.6V Suitable for carbon steel, stainless steel (2pcs/set) 0.8U-1.0U,1.2U-1.6U Suitable for aluminum (4pcs/set)
	Wire feeder power cable	1 pc		5M