

# A BEST-SELLING MODEL AMONG ECONOMICAL MACHINES



## R3/R3 PLUS

### Economical Tube Laser Cutting Machine

Technical Parameter	R3	R3 PLUS
Power	1500-4000W	1500-4000W
Max. Rotating Speed of Chucks	90r/min	80r/min
Max. No-load Speed	90m/min	90m/min
Max. Acceleration	0.8G	0.8G
X/Y-axis Positioning Accuracy	±0.05mm/m	±0.05mm/m
X/Y-axis Repositioning Accuracy	±0.03mm	±0.03mm
Min. Length of Tailing	85mm	110mm
Max. Cutting Capacity	Round tube $\Phi$ 20- $\Phi$ 219mm Square tube $\square$ 20*20-150*150mm Rectangular tube $\square$ 20-150mm	Round tube $\Phi$ 20- $\Phi$ 325mm Square tube $\square$ 20*20-230*230mm Rectangular tube $\square$ 20-200mm
Max. Weight of Single Tube	100kg	200kg
Overall Dimensions (without Loading Racks) (L*W*H)	8627*2230*2100mm	8627*2230*2100mm



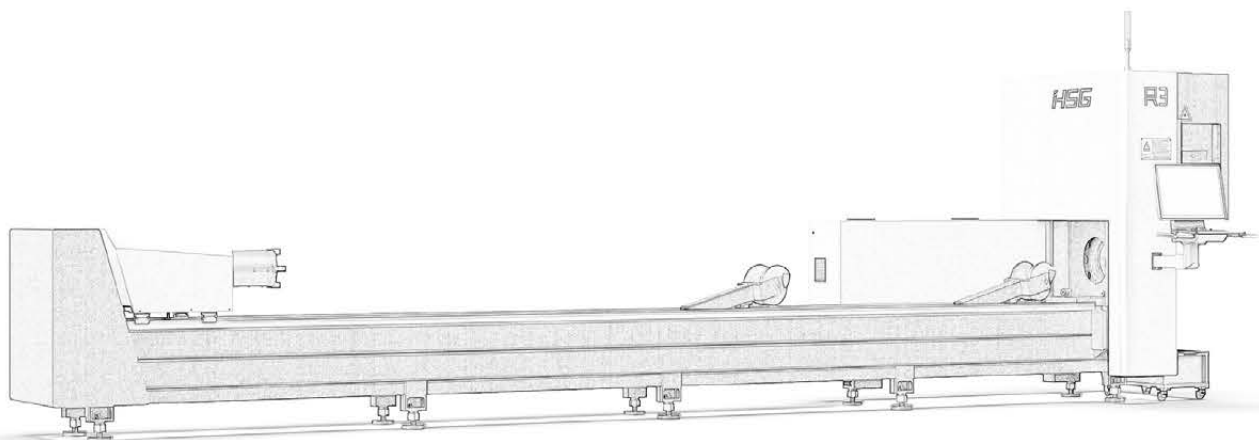
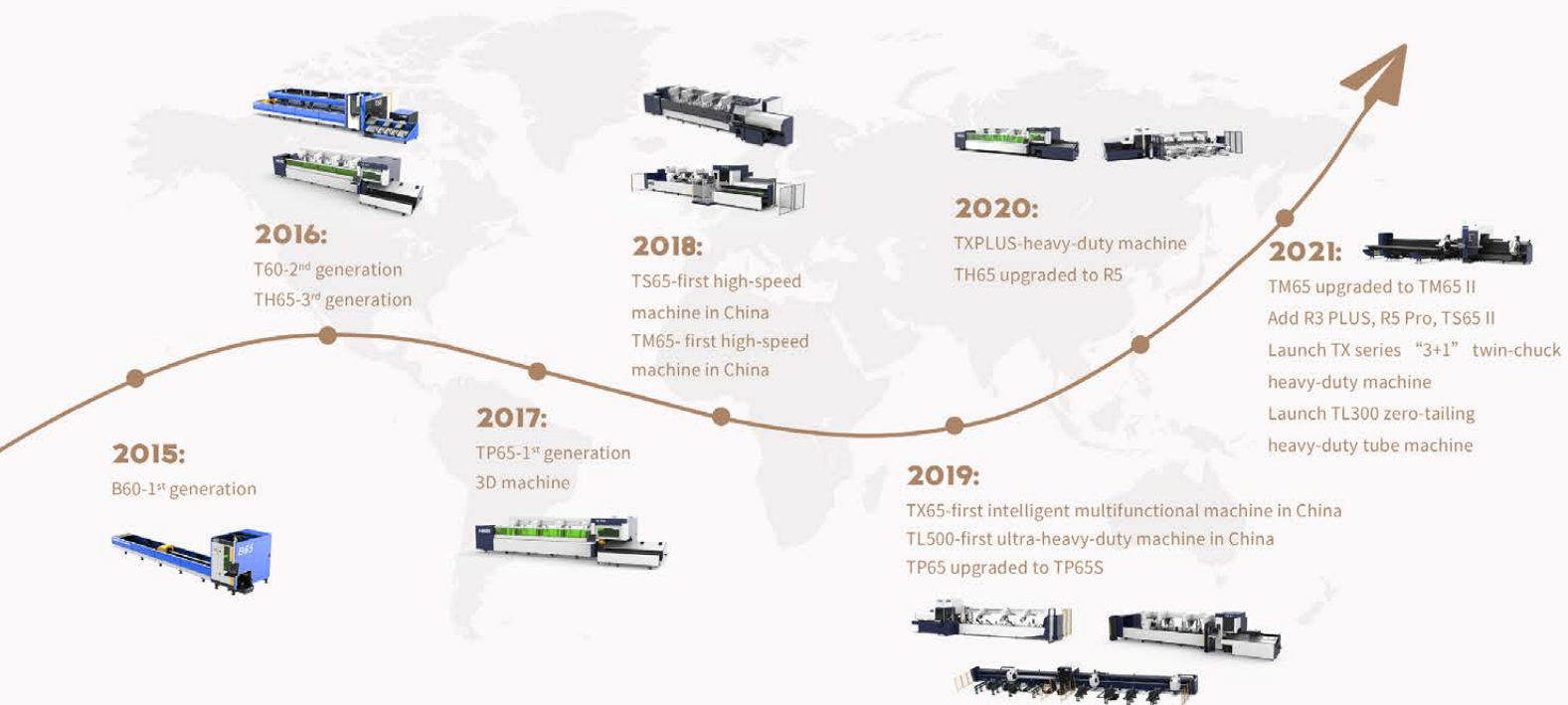
# WHAT IS R?

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- 🌀 **Reform** : In pursuit of cutting technology & efficiency, practical use & functional customization
- 🌀 **Real** : Satisfy the real demands of users by functional upgrades
- 🌀 **Relax** : Offer convenient service by its intellectualization
- 🌀 **Running** : Take the lead in tube cutting industry by many ground-breaking functions
- 🌀 **Return** : Bring higher efficiency & returns by forward-looking plans



# DEVELOPMENT HISTORY





## OUR CURRENT TUBE LASER CUTTING MACHINES



Many different models



High degree of automation



Real 0 tailing



Balance tiny tubes (50kg) and ultra-heavy (1000kg+) tubes well

	Model	Max. Range of Chucks	Max. Weight of Single Tube	Min. Tailing Length	Bevel Cutting
Economical	R3/R3 PLUS	R3: $\Phi$ 20-219MM R3 PLUS: $\Phi$ 20-325MM	R3: 100KG R3 PLUS: 200KG	R3: 85MM R3 PLUS: 110MM	X
	R5/R5 PRO	$\Phi$ 20-254MM	200KG	R5: 190MM R5 PRO: 50MM	X
Professional	TM65/TM65 II	TM65: $\Phi$ 10-100MM TM65 II: $\Phi$ 10-160MM	50KG	TM65: 125MM TM65 II: 50MM	X
	TS65 II	$\Phi$ 12-273MM	200KG	130MM	X
	TPS	$\Phi$ 20-273MM	200KG	200MM	√
	TX PLUS	$\Phi$ 20-325MM	600KG	80MM	X
Special Applications	NEW TX	$\Phi$ 20-360MM	1200KG	0	X
	TL300	$\Phi$ 20-254MM	300KG	0	X
	TL500	$\Phi$ 80-426MM	1500KG	0	X



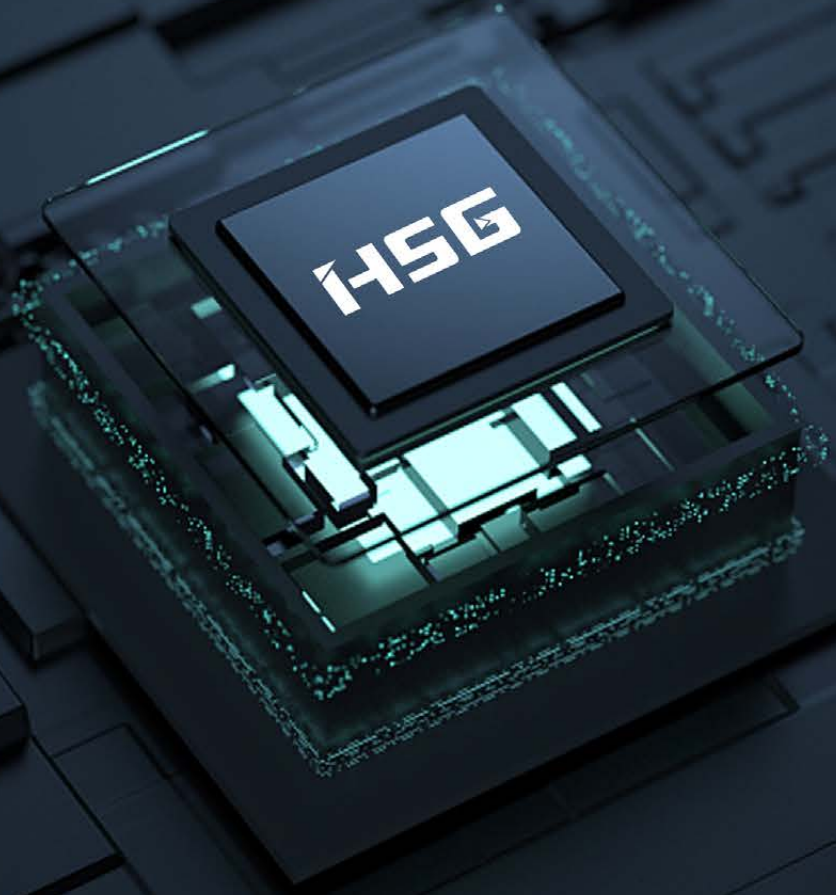
## WHY CHOOSE R3/R3 PLUS?

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- 🏠 The most popular economical machine overseas
- 🏠 Mainly aim at round, square and rectangular tubes
- 🏠 Fit for batch processing customers who only cut relatively single-type materials
- 🏠 Applications: metal furniture, office desk and chair, handrail, outdoor fitness equipment, display props, medical devices



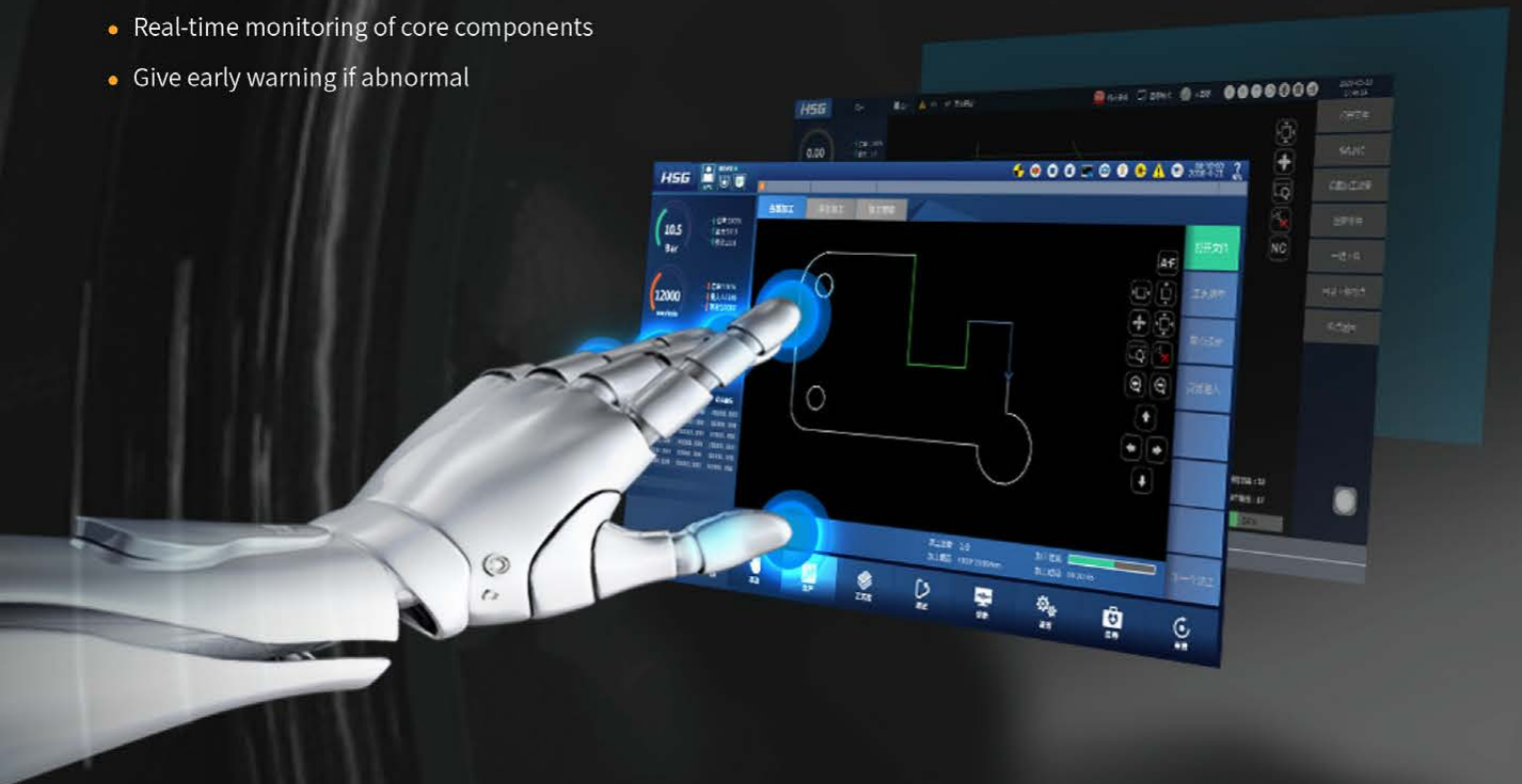
# OUR FAMILY OF TUBE CUTTING CONTROL SYSTEMS



Year	Generation	Name	Features	Applicable Models
2015	I	HSG-X8800	Stable and reliable	TH65
2016	II	HSG-X8900	Allow functional customization	TS65
2017	III	HSG-X9000 BUS CNC SYSTEM	Upgrade from automation to intellectualization	R3/R3 PLUS, R5/R5 Pro, TM65/TM65 II, TX PLUS
2018	IV	HSG-X9500	Serve subdivided areas	TP65S
2019	V	HSG-X9800	Special for four chucks and 0 tailing	TL300, TL500, NEW TX
2020	VI	HSG-XMT	First multi-touch operating system in China	TS65 II

# HSG-X9000 BUS CONTROL SYSTEM

- 21.5-inch touch screen with concise interface
- One-key operation by suspension virtual key helper
- Powerful cutting process database
- Real-time monitoring of core components
- Give early warning if abnormal



**1**  
Simple lines,  
low failure rate

**2**  
Rapid and stable  
data transmission

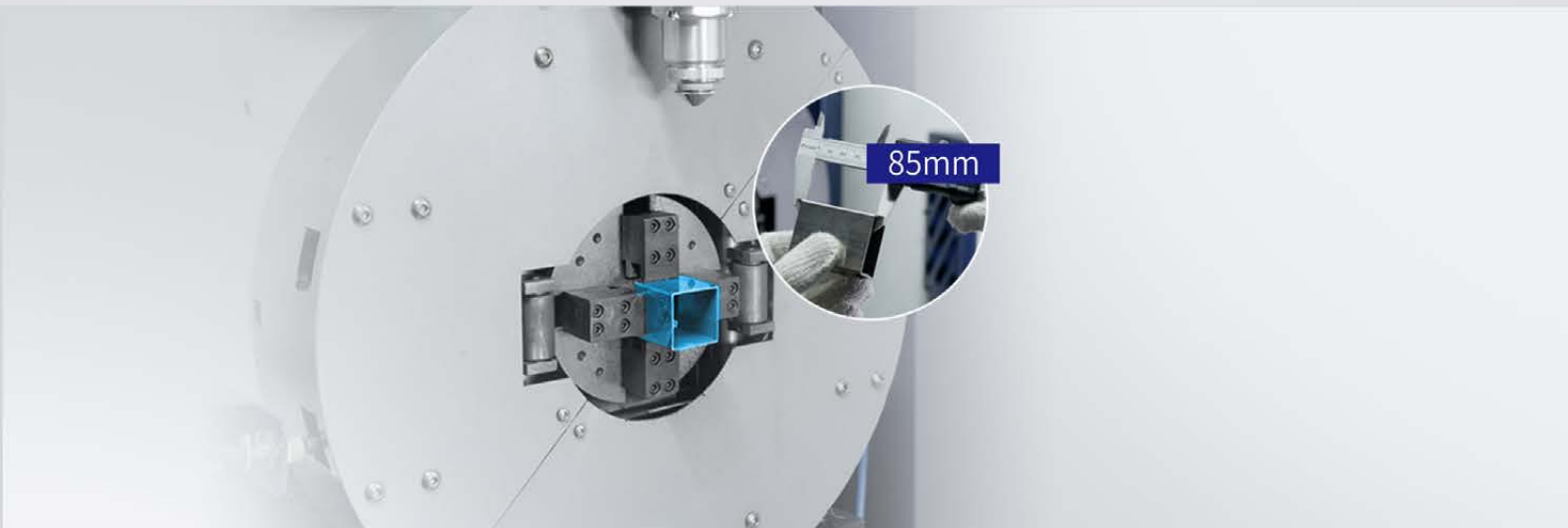
**3**  
High anti-interference  
capacity

**4**  
Multi-axis control  
by strong expandability

**5**  
Take less time to  
troubleshoot and maintain

☞ X9000 bus system, based on German CNC bus control system, is compatible with conventional tubes and various profiles.

# FURTHER UPGRADES IN CUTTING CAPACITY



## Extension of Cutting Range

R3:  $\Phi$ 20-219mm, 20\*20-150\*150mm

R3 PLUS:  $\Phi$ 20-325mm, 20\*20-230\*230mm

## Much Heavier Weight of Single Tube

R3: 100kg

R3 PLUS: 200kg

## **Common Sense**

The smaller the distance between chucks and cutting head, the higher the cutting precision and the shorter the tailing.

## Much Shorter Tailing

R3: Min. tailing 85mm

R3 PLUS: Min. tailing 110mm





## **SIGMATUBE NESTING SOFTWARE --THE BEST ONE FOR THE TIME BEING**

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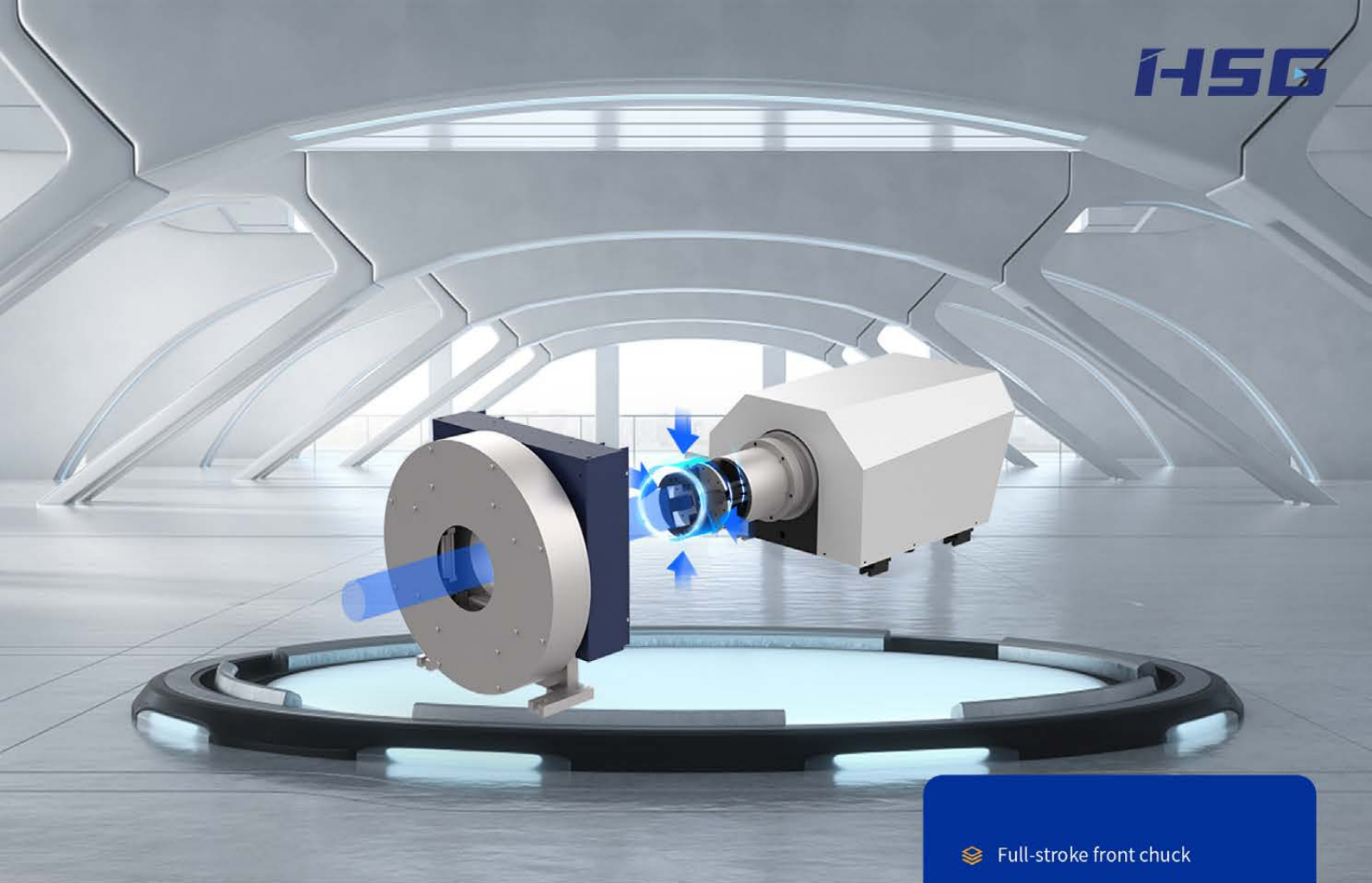
- 📦 Apply to conventional tubes, profiles and other sectional profiles
- 📦 Import assembly drawing model for nesting
- 📦 Build cutting path on model
- 📦 Auto creation of production reports



## RICH TUBE CUTTING LIBRARY

HSG-X9000 bus CNC system offers nearly 100 kinds of tube joggling patterns, for convenience of subsequent welding.

- Splicing of male and female head of square tube
- 90° arc splicing
- Splicing of round tube tee
- Splicing of cut-through holes
- 45° splicing of hexagon
- Splicing of angle iron and channel steel



## HIGH-PRECISION DOUBLE PNEUMATIC CHUCKS

- Full-stroke front chuck
- Large and constant clamping force
- Simple in structure, low failure rate
- Light in weight
- Small rotational inertia
- Low energy consumption

- 3 times faster than electric chucks due to one-key clamping and auto centering
- Clamp heavy tubes stably by large and constant clamping force
- Use two rows of rollers to keep high cutting precision
- Also cut channel, angle steel and other profiles, besides round and square tubes

## SPECIAL FRONT CHUCK

- Full stroke
- Function of front chuck ventilation
- Front chuck avoidance cutting for short tailing



Cool down automatically for long-term cutting



Autofocus accuracy  $\pm 0.01\text{mm}$



Save cutting gas



Easy to realize mirror-like cutting



Cut more kinds of tubes

- Flying cutting with cross-plane leapfrog  
Improve efficiency by 50%+



Dust-proof design

## KLINGE AUTOFOCUS LASER CUTTING HEAD

- ☞ Water cooling, dual-path ultrasonic cooling nozzle
- ☞ Take accurate control of gas flow for easy cutting with mirror-like surface
- ☞ Avoid spark splashing by SS protective tubes
- ☞ Fast in piercing and cut tubes in most shapes and materials
- ☞ Prevent dust from transmission parts due to its dust cover on Z axis



## INTELLIGENTIZED PRODUCTION LINE (OPTIONAL)



Improve processing efficiency



Save labor costs



Keep high cutting quality



Reduce labor intensity

- 📦 Semi-automatic loading device and unloading equipment
- 📦 Channel steel claws for faster speed of loading and unloading
- 📦 Concave supports used during unloading to prevent any tube collision

## HIGH-STANDARD PACKAGE

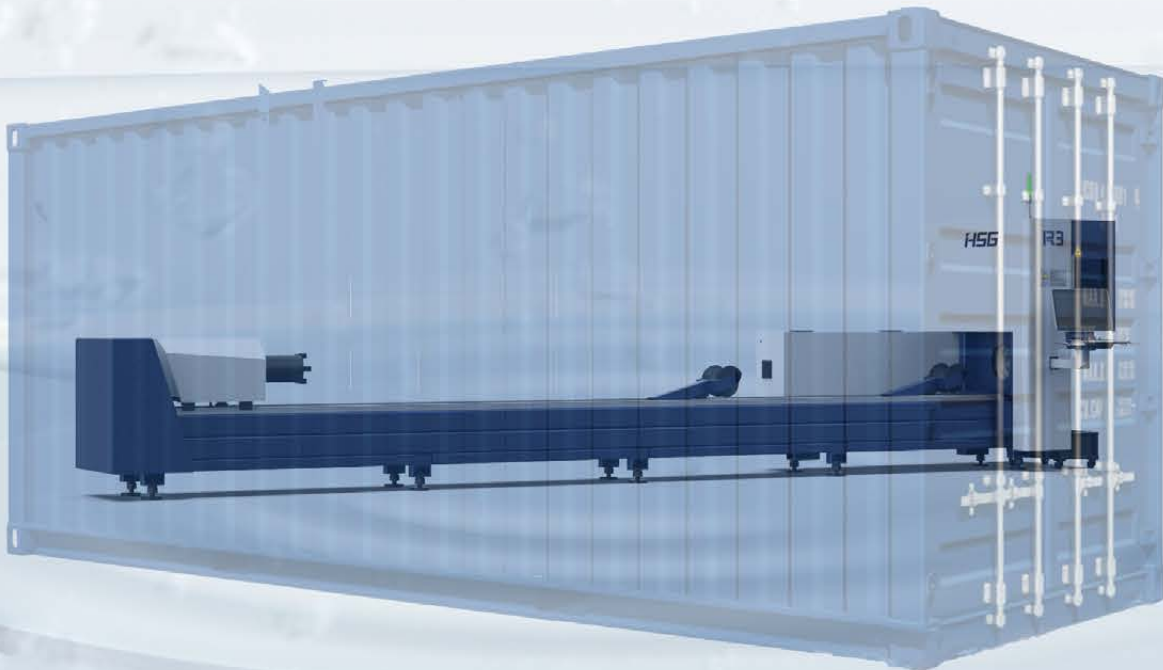


Standard container  
transport

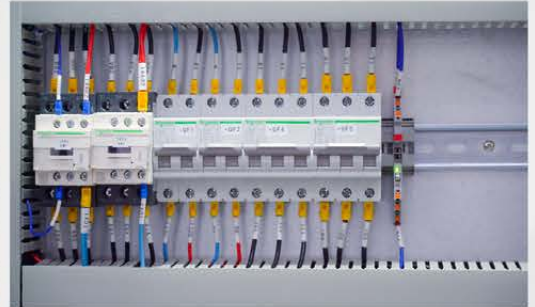


High-standard  
package

📦 R3/R3 PLUS is easily put in 40HQ standard container.



# STANDARD WIRING

**CE**CE-compliant  
electrical cabinetNo worry about  
wiring errorMuch safer in  
operation

- ☞ The integrated electrical cabinet caters to EU CE standards and separates weak current from strong current area to prevent electromagnetic interference, dust entry and possible ignition.
- ☞ External control elements are equipped with Phoenix pluggable fail-safe wiring terminal.
- ☞ Every line matches with its own code. The optical fiber line, gas hose, water hose, strong current line and weak current line in wiring duct are arranged in different zones to prevent signal interference and frictional loss among lines.

# INTERNATIONAL FIRST-CLASS CONFIGURATIONS



## JAPANESE BRAND

Speed reducer (incl, gear wheels)



## JAPANESE, GERMAN AND AMERICAN BRANDS

Gas path control



## TAIWAN BRANDS

High-precision racks and linear guides



## FRENCH BRANDS

Electrical control system

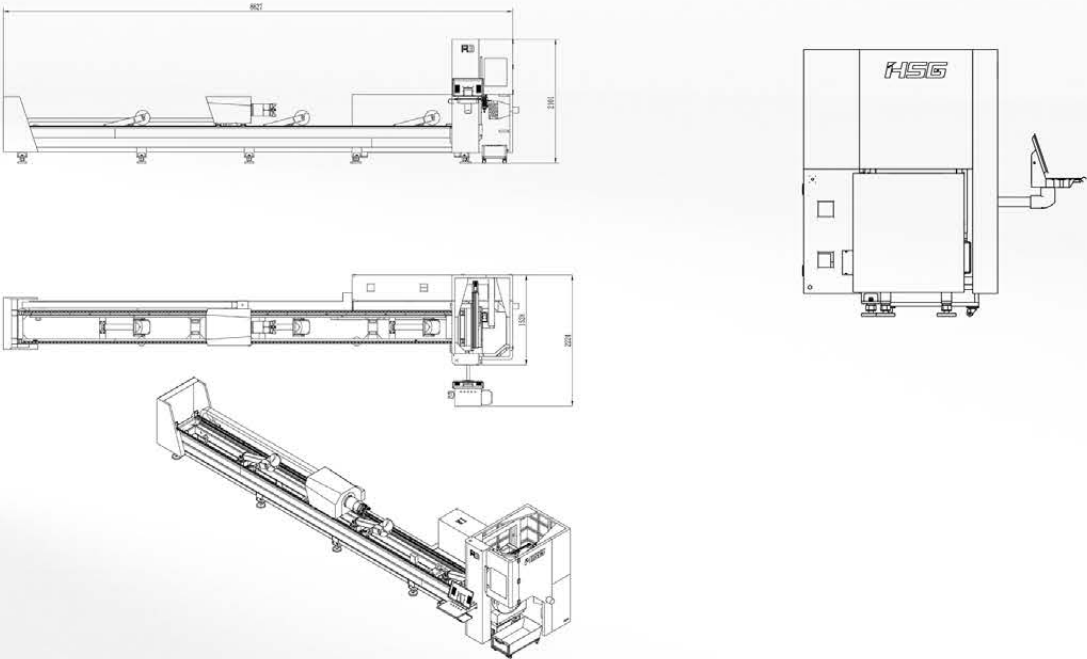




# CUTTING SAMPLES



# MACHINE FOUNDATION





# HSG LASER

THE LIGHT OF INTELLIGENT MANUFACTURING

## HI-TECH ENTERPRISE IN CHINA

HSG Laser, founded in 2006, as a national hi-tech enterprise with an eye to R&D, production and sales of laser equipment, is now mainly dedicated to serve global customers with intelligent metal forming solutions.



33 patents for  
invention



316 patents  
in total

# SERVE 100+ COUNTRIES AND REGIONS



**4**  
Standardized  
manufacturing  
bases in China

**80000m<sup>2</sup> +**  
Total area of  
production factories

**5000+**  
Annual productivity

**3000+**  
Global sales in 2020

**1500+**  
Strugglers

**170+**  
R&D personnel

**10**  
Branches/subsidiaries/  
sub-subsidiaries

**30+**  
Service outlets overseas









- \* 3D five-axis bevel cutting technology
- \* P30 ultra-high-power intelligent laser cutting head
- \* Intelligent digital four chucks
- \* Alpha T bus system
- \* HSG-XMT multi-touch operating system



# MACHINES AVAILABLE FOR SALE

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-  Sheet metal laser cutting machines
-  Sheet & tube laser cutting machines
-  Tube metal laser cutting machines
-  Bending machines
-  Welding machine
-  Automation devices



# STRICT IN QUALITY CONTROL FLOW



## PROFESSIONAL AFTER-SALES SERVICE



1-year warranty period for entire machine, except for vulnerable parts and consumables, force majeure incl. natural disaster and war, unprofessional operations, man-made destroy



Global after-sales hotline: +86 400 8229 288, or network technical supports (within 2h) and on-site service



Offer consultation services concerning cutting technology, spare parts, extension of warranty period or maintenance

## TABLE OF TUBE THICKNESS AND CUTTING SPEED

Material name	Thickness (mm)	IPG CUTTING SPEED (m/min)			Raycus CUTTING SPEED (m/min)		
		1500W	3000W	4000W	1500W	3000W	4000W
Carbon steel (O <sub>2</sub> )	1	6.0-11.0	7.0-12.0	7.0-12.0	6.0-11.0	7.0-12.0	7.0-12.0
	2	5.0-6.6	5.0-7.0	5.0-7.2	5.0-6.6	5.0-7.0	5.0-7.2
	3	3.0-3.6	3.5-5.0	3.5-5.3	3.0-3.6	3.5-5.0	3.5-5.3
	4	2.0-3.0	3.0-4.2	3.0-4.4	2.0-3.0	3.0-4.2	3.0-4.4
	5	1.8-2.4	2.5-3.6	2.5-3.8	1.8-2.4	2.5-3.6	2.5-3.8
	6	1.5-2.0	2.4-3.0	2.4-3.2	1.5-2.0	2.4-3.0	2.4-3.2
	8	1.0-1.3	1.8-2.4	1.8-2.6	1.0-1.3	1.8-2.4	1.8-2.6
Stainless steel (N <sub>2</sub> )	1	6.0-20.0	6.0-20.0	6.0-22.0	6.0-20.0	6.0-20.0	6.0-22.0
	2	5.0-9.6	5.5-17.0	5.5-27.0	5.0-9.6	5.5-17.0	5.5-27.0
	3	2.0-4.0	5.0-11.0	5.0-15.0	2.0-4.0	5.0-11.0	5.0-15.0
	4	1.0-3.0	3.0-6.0	3.0-7.5	1.0-3.0	3.0-6.0	3.0-7.5
	5	0.5-1.5	2.0-4.0	2.0-5.0	0.5-1.5	2.0-4.0	2.0-5.0
	6		1.0-3.2	1.0-4.0		1.0-3.2	1.0-4.0
	8		0.6-1.8	0.6-2.6		0.6-1.8	0.6-2.6
Aluminum alloy (N <sub>2</sub> )	1	6.0-20.0	6.0-20.0	6.0-22.0	6.0-20.0	6.0-20.0	6.0-22.0
	2	3.0-9.0	4.5-16.0	4.5-21.0	5.5-17.0	5.5-17.0	5.5-27.0
	3	1.0-3.0	3.0-6.0	3.0-9.0	5.0-11.0	5.0-11.0	5.0-15.0
	4		1.0-3.6	1.0-4.5		3.0-6.0	3.0-7.5
	5		1.0-2.4	1.0-3.0		2.0-4.0	2.0-5.0
	6		0.5-1.5	0.5-2.5		1.0-3.2	1.0-4.0
	8		0.3-0.7	0.3-0.7			
Brass (N <sub>2</sub> )	1	6.0-20.0	6.0-20.0	6.0-22.0	6.0-20.0	6.0-20.0	6.0-22.0
	2	2.0-6.0	2.0-11.0	2.0-13.0	2.0-6.0	2.0-11.0	2.0-13.0
	3	1.0-1.8	1.0-6.0	1.0-6.5	1.0-1.8	1.0-6.0	1.0-6.5
	4		1.0-4.5	1.0-5.2		1.0-4.5	1.0-5.2
	5		0.7-2.0	0.7-3.0		0.7-2.0	0.7-3.0
	6		0.5-1.6	0.5-2.0			
Red copper (O <sub>2</sub> )	1	6.0-12.0	6.0-20.0	6.0-22.0	6.0-12.0	6.0-20.0	6.0-22.0
	2	1.8-3.6	3.0-9.0	3.0-10.0	1.8-3.6	3.0-9.0	3.0-10.0
	3		1.0-3.0	1.0-3.5		1.0-3.0	1.0-3.5