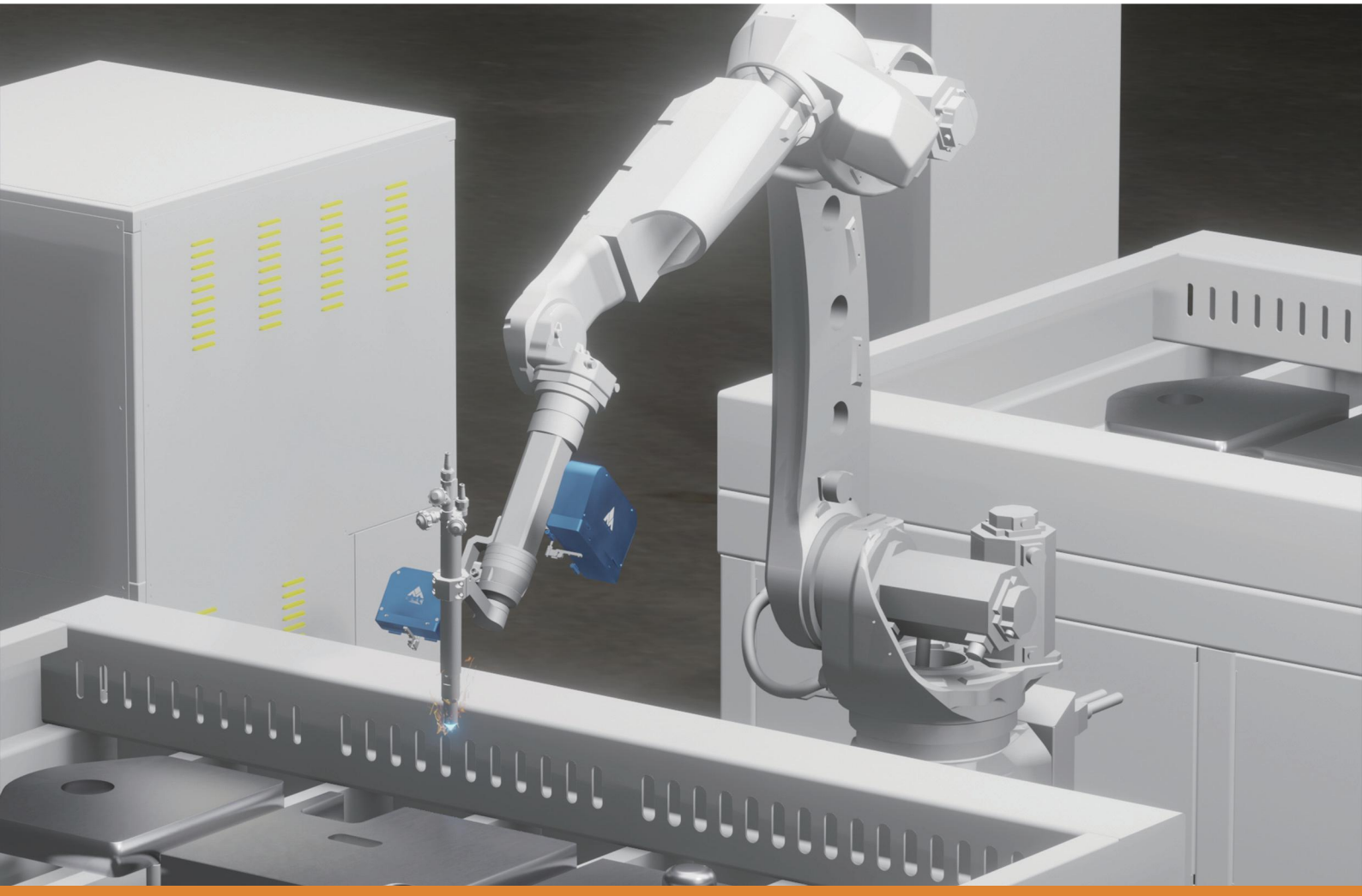
ROBOT SMART | Make robot smarter



TEACHING-FREE BEVEL CUTTING SYSTEM

SmartCut
Robot Intelligent Bevel Cutting System

Scan the QR code to follow

BEIJING MINYUE TECHNOLOGY CO.,LTD

ABOUT US

Beijing Minyue Technology Co., Ltd. (hereinafter referred to as "Minyue Technology") was established in 2016. It is a high-tech innovative company focused on intelligent applications for industrial robots. The company integrates the research and development, production, and sales of laser vision welding seam tracking systems, intelligent binocular vision systems, and industrial robot intelligent decision-making systems. The company's headquarters and R&D center are located in Beijing and Wuhan,with the manufacturing and solution center in Anhui, and the office and after-sales center in Xuzhou.

The core R&D members of the company are graduates of renowned universities such as Tsinghua University, Huazhong University of Science and Technology, and Beihang University. They have deep understanding and experience in robotics, image processing algorithms, 3D vision algorithms, sensor design, CAM/CAD, and artificial intelligence. The company continuously refines and iterates its hardware and software products through application scenarios, accumulating a rich industry process database. It is committed to empowering and serving system integrators in the fields of automatic welding and cutting, providing intelligent and easy-to-use vision products, and achieving "driverless" solutions for industrial robots to reduce manpower, increase efficiency, and lower costs.

MISSON

To make intelligent robots ubiquitous in factories worldwide

VISION

To become a world-class company in intelligent industrial application products

24H
Service Response

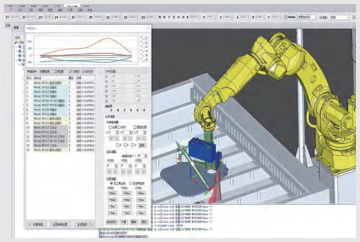
100%
PhD and master's degree holders in the development team

500+
Partners

The SmartCut intelligent robot cutting workstation is based on years of accumulation in CAD/CAM, robotics and 3D vision, and artificial intelligence. Building on the company's independently developed RobotSmart and 3D visual sensor systems, it introduces a non-modeling and visual feature recognition method, providing an automated "teaching-free" solution. This addresses the issue of industrial robots' position control in cutting operations. The integrated system is equipped with a dual-camera 3D visual sensor, industrial control (internal RobotSmart intelligent cutting software), and consists of three main parts: the cutting body, cutting platform, and control system.

Non-Teaching Bevel Cutting Station Configuration

The SmartCut Intelligent Bevel Cutting Workstation, equipped with the RobotSmart Intelligent Bevel Decision-Making System, can quickly generate robot motion trajectories, effectively addressing complex programming inefficiencies and low robot utilization in cutting trajectory teaching. The automatic programming meets the needs of multi-variety, small-batch, and flexible production. The Minyue stereo vision system and laser tracking system effectively resolve errors related to clamping positions, size variations, and thermal deformation, achieving precise closed-loop control of the production process and significantly improving bevel accuracy and consistency.



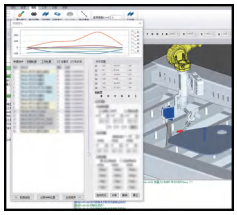
Intelligent Bevel Decision-Making Platform

laser tracking system

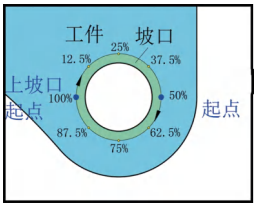
stereo structured light

Software features

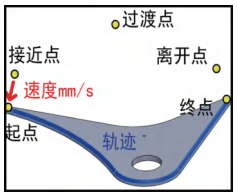
Customizable cutting parameters



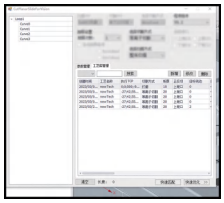
One-click matching of process parameters



Automatic path optimization



Intelligent bevel path planning



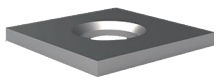
Cutting without flipping for upper and lower bevels

Supported bevel types

Forward V bevel

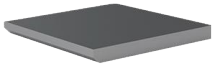
Forward Y bevel

K bevel

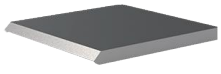


Directional bevel

Reverse V bevel



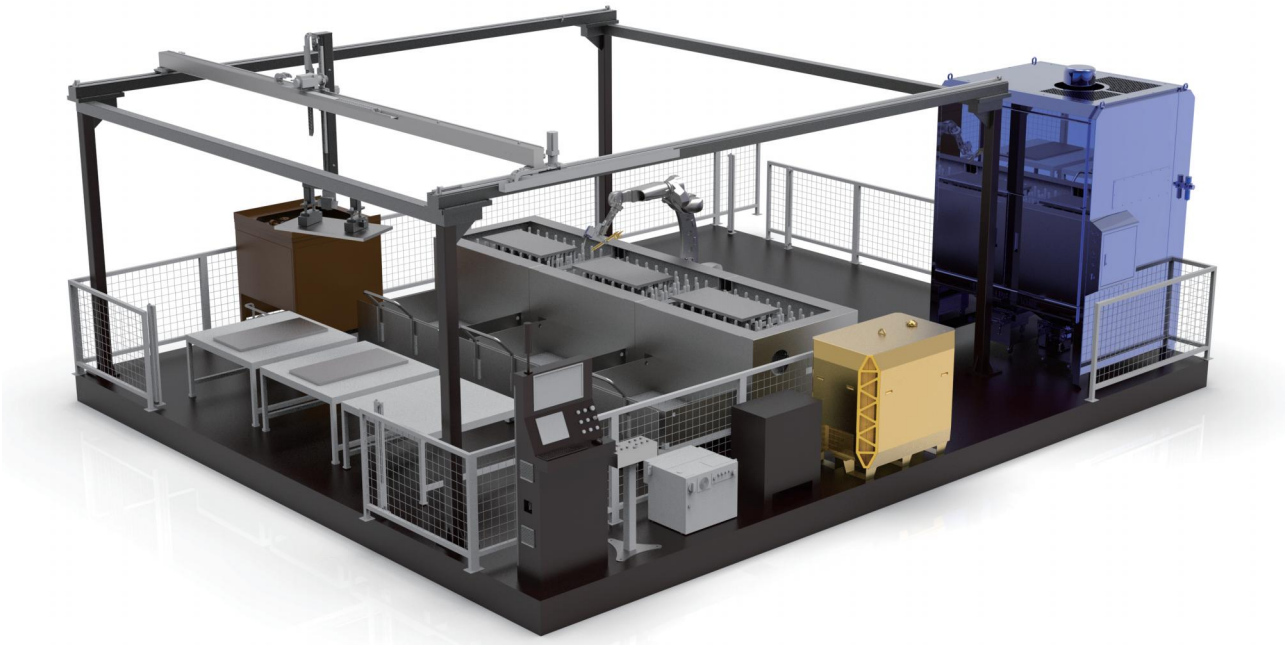
Reverse Y bevel



X bevel

Variable bevel

Intelligent Beveling Solution for Long Workpieces Without Manual Teaching



Cutting Parameters

Category	Technical Parameters	Flame Reference Values	Plasma Reference
Cutting	Bevel Cutting Thickness	8mm≤X≤100mm	8mm≤X≤45mm
	Bevel Angle	Positive Bevel: 25°—45° Reverse Bevel: 30°—60° (Flame) Positive Bevel: 30°—45° Reverse Bevel: 40°—60° (Plasma)	
	Cutting Edge Tolerance	±1.5mm	±1mm
	Bevel Angle Tolerance	±2°	±1°
Applicable Range	Material	Carbon Steel	
	Cuttable Plate Size	Positive Bevel:100mmx100mm–4000mmx1200mm Bevel: 00mmx100mm–4000mmx1000mm	
	Minimum Cutting Edge Length	>30mm	
Cutting Gas	Recommended Value	Oxygen ⩾ 99.6% purity, 0.8Mpa (static) Compression: 0.8—1.0Mpa, Flow Rate: 10—15m^3/h	

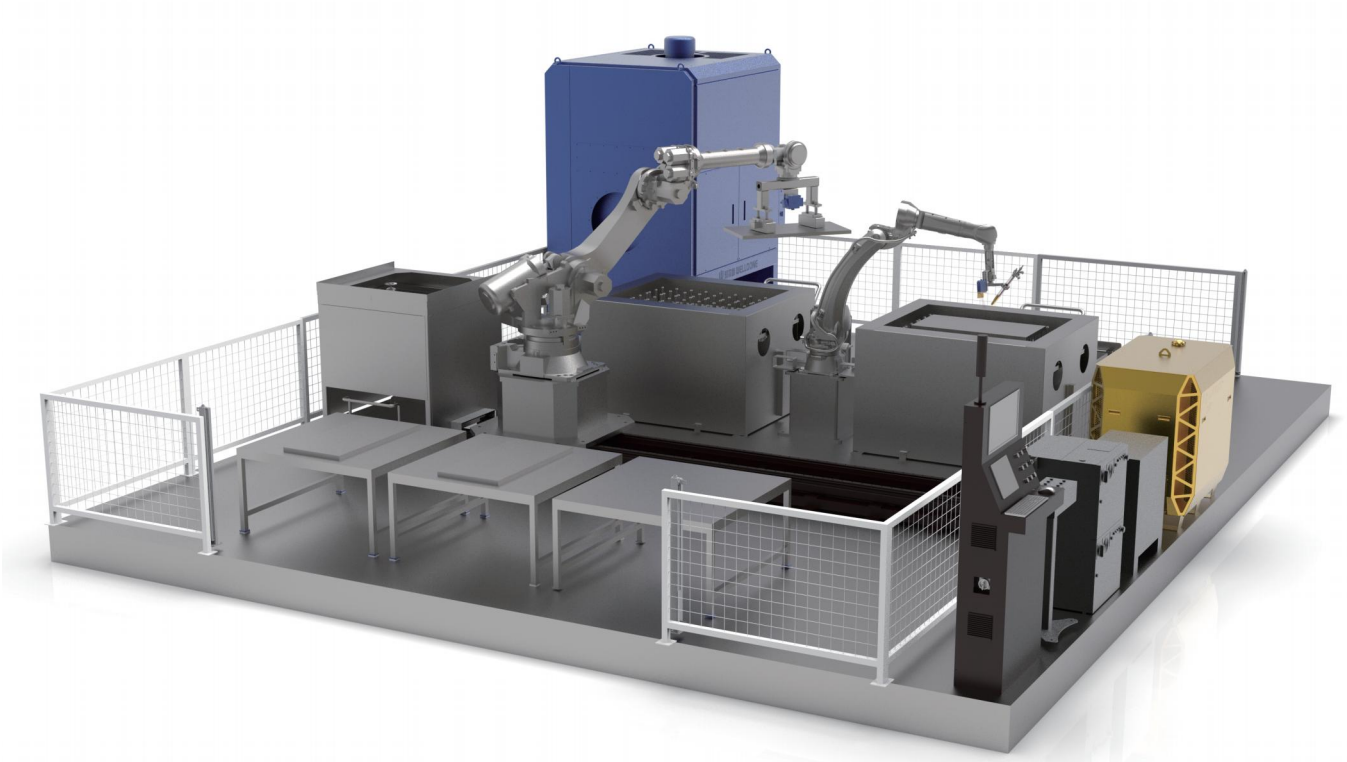
Product Composition

Main Equipment	Robot	FANUC、KUKA、ABB、Estun and some domestic robots
	Cutting Equipment	Jierui (Flame), Haibao (Plasma) or equivalent brands
Teaching-free system	Intelligent Dual-Vision System	SmartVision Dual-Vision System
	Laser Vision Sensor	SmartEye Laser Vision System
	Software System	RobotSmart Intelligent Cutting Software

Laser Vision Tracking Sensor Parameters			
Parameter/ Product Model	WRP150	Weight(g)	500
Sensor Near Field (mm)	105	Sensor Far Field(mm)	185
Recommended Installation Distance(mm)	145	Detection Period(ms)	20
Minimum Distance to Weld(mm)	0.3	Minimum Weld Seam (mm)	0.2
Near-Field Horizontal	0.06	Vertical Detection Accuracy(mm)	0.1
Measurement Distance(mm)	50	Far-Field Horizontal Measurement Distance(mm)	70

Wide-field Stereo Sensor			
Recommended Working Distance Range	1200~3000mm	Dimensions	Approx.459x77x86mm
Near Field of View	1200x1000mm @1.2m	Weight	Approx. 2.9kg
Far Field of View	3000x2400mm @3.0m	Communication Interfac	Gigabit Ethernet
Depth Map Resolution	2048x1536	Input	24VDC，3.75A
Z-axis Single Point Repeatability(σ)”	0.5mm @3.0m	Safety and EMC Compliance	CE/FCC/CCI/UKCA/KC/ISED/NRTL
VDI/DE Measurement Accuracy	1.0mm@3.0m	Protection Level	IP65

Intelligent dual-machine dual-cutting table teaching-free beveling solution



Cutting Parameters

Category	Technical Parameters	Torch Reference Values	Plasma Reference Values
Cutting	Bevel cutting thickness	8mm≤X≤100mm	8mm≤X≤45mm
	Bevel angle	Positive bevel: 25°—45°, Negative bevel: 30°—60° (Torch) Positive bevel: 30°—45°, Negative bevel: 40°—60° (Plasma)	
	Cutting inclination deviation	±1.5mm	±1mm
	Bevel angle deviation	±2°	±1°
Applicable Range	Material	Carbon steel	
	Cuttable plate size	Positive bevel:100mmx100mm–1500mmx1000mm Negative bevel:100mmx100mm–1500mmx800mm	
	Minimum cuttable side length	>30mm	
Cutting Gas	Recommended values	Oxygen ⩾ 99.6% purity, 0.8Mpa (static) Compressed air: 0.8—1.0Mpa, Flow rate: 10—15m^3/h	

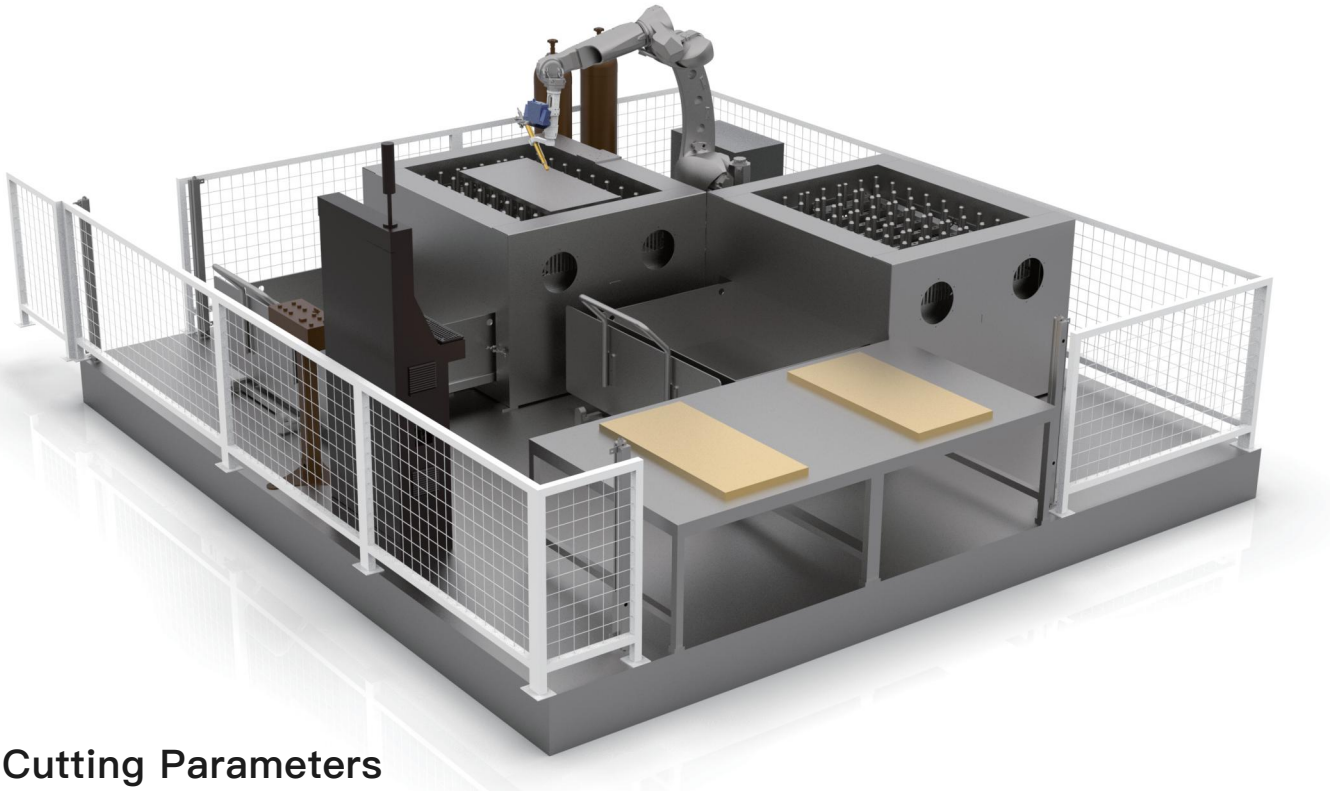
Product Composition

Category	Technical Parameters	Torch Reference Values	Plasma Reference Values
Main Equipment	Robot	FANUC、KUKA、ABB、 Anhua and other domestic robots	
	Cutting equipment	Dedicated cutting torch + external alignment torch	Haibao or similar brands
Teaching-free system	Intelligent binocular vision system	SmartVision dual vision system	
	Laser vision sensor	SmartEye laser vision system	
	Software system	RobotSmart intelligent cutting software	

Laser Vision Tracking Sensor Parameters			
Parameter / Product Model	WRP150	Weight(g)	500
Sensor near vision(mm)	105	Sensor far vision (mm)	185
Recommended installation distance(mm)	145	Detection cycle(ms)	20
Minimum joint detection width (mm)	0.3	Minimum detectable weld(mm)	0.2
Horizontal detection accuracy(ms)	0.06	Vertical detection accuracy(mm)	0.1
Near-field horizontal detection range (mm)	50	Far-field horizontal detection range(mm)	70

Narrow-field Stereo Sensor			
Recommended Working Distance Range	750~850mm	Size	Approx.233*76*121mm
Near Field of View	700x450mm @0.75m	Weight	Approx.2kg
Far Field of View	750x480mm @0.85m	Communication Interface	Gigabit Ethernet
Depth Resolution	1280x1024	Input	12VDC，4.5A
Z-axis Single Point Repeatability(σ)"	0.5mm @0.8m	Safety and Electromagnetic Compatibility	CE/FCC/CCI/UKCA/KC/ISED/NRTL
VDI/DE Measurement Uncertainty2	1.0mm @0.8m	Protection Level	IP65

Intelligent Single-Machine Dual-Cutting Station Teaching-Free Beveling Solution



Cutting Parameters

Category	Technical Parameters	Flame Reference Values	Plasma Reference Values
Cutting	Bevel Cut Thickness	8mm≤X≤100mm	8mm≤X≤45mm
	Bevel Angle	Positive Bevel: 25° ~ 45° Negative Bevel: 30° ~ 60° (Flame) Positive Bevel: 30° ~ 45° Negative Bevel: 40° ~ 60° (Plasma)	
	Cutting Edge Deviation	±1.5mm	±1mm
	Bevel Angle Deviation	±2°	±1°
Application Range	Material	Carbon Steel	
	Cuttable Plate Size	Positive Bevel: 100mmx100mm-1200mmx1200mm Negative Bevel:100mmx100mm-1200mmx1000 mm	
	Minimum Cuttable Grooving Size	>30mm	
Cutting Gas	Recommended Values	Oxygen: >99.6% purity, 0.8Mpa (static) Compressed air: 0.8 ~ 1.0Mpa, Flow rate: 10 ~ 15m^3/h	

Product Composition

Main Equipment	Robot	FANUC, KUKA, ABB, Yaskawa, and domestic robot brands
	Cutting Equipment	Kjellberg (Flame), Hypertherm (Plasma), or equivalent brands
Teaching-Free System	Intelligent Dual-Eye Vision System	SmartVision Dual-Eye Vision System
	Software System	RobotSmart Intelligent Cutting Software

Narrow-field Stereo Sensor			
Recommended Working Distance Range	750~850mm	Dimensions	Approx.233*76*121mm
Near Field of View	700x450mm @0.75m	Weight	Approx.2kg
Far Field of View	750x480mm @0.85m	Communication Interface	Gigabit Ethernet
Depth Resolution	1280x1024	Input	12VDC, 4.5A
Z-axis Single Point Repeatability (σ)	0.5mm @0.8m	Safety and Electromagnetic Certification	CE/FCC/CCI/UKCA/KC/ISED/NRTL
VDI/DE Measurement Accuracy	1.0mm @0.8m	Protection Level	IP65

Software Features

New "Intelligent Monitoring" replaces "Manual Teaching"

Increases efficiency, reducing programming time by 95%

Auto-selection for intelligent code generation

Multi-robot collaboration with complex motion simulation verification

Compatible Products

- Supports work sizes from 0.3M to 5M
- Supports simultaneous placement of various types of workpieces
- Supports various processes including flame, plasma, and laser
- Supports coordination with gantry, robots, and other machines
- Supports loading and unloading, cutting, grinding, and other processes
- Supports real-time tracking to effectively solve cutting thermal deformation

ROBOT SMART | Make robot smarter

Contact Us :

Web site: https//www.minyuetech.com

Address: 1/F,Building B-2,Dongsheng Sci-tech Park,Haidian District,Beijing,China;
Building 6, Phase 1, Xiadian Industrial Park, Gulou District, Xuzhou City,Jiangsu Provice,China;
Siasun Industrial Park, Yingquan District, Fuyang City, Anhui Province,China