

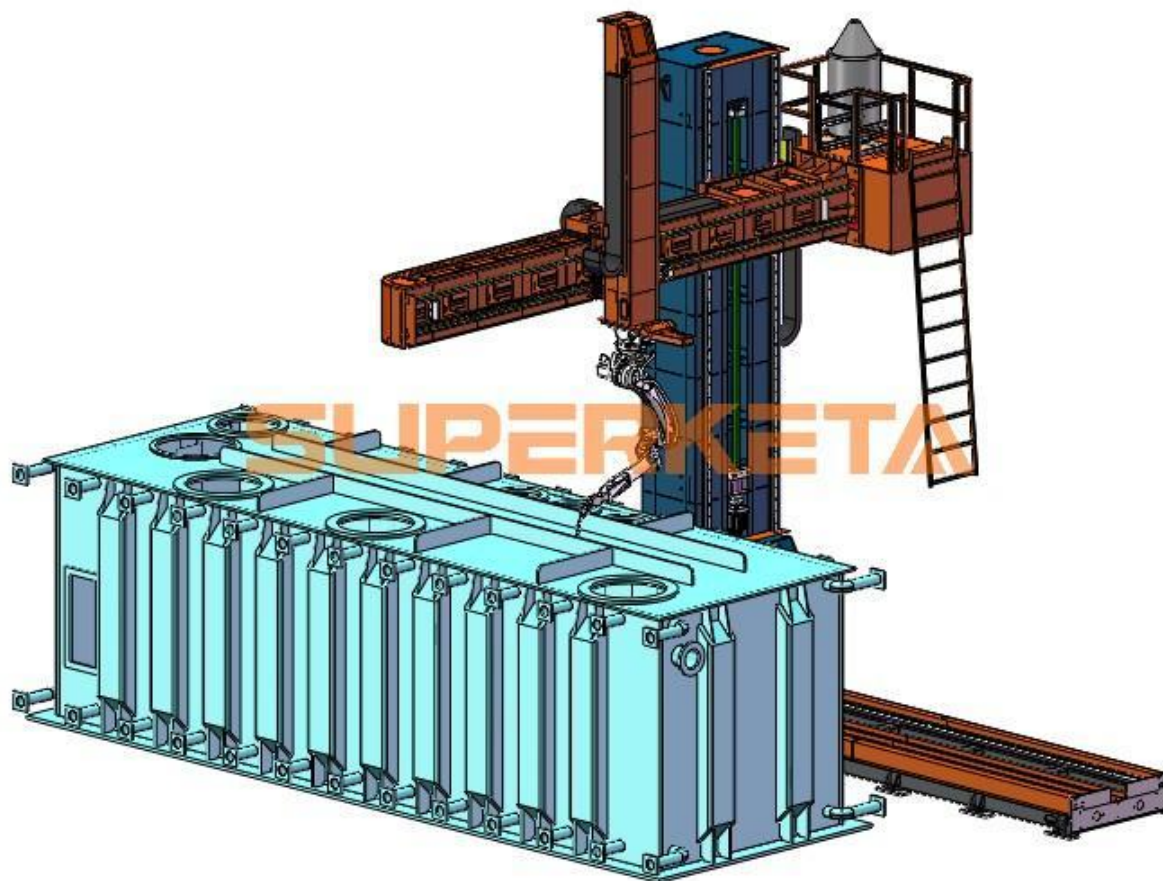


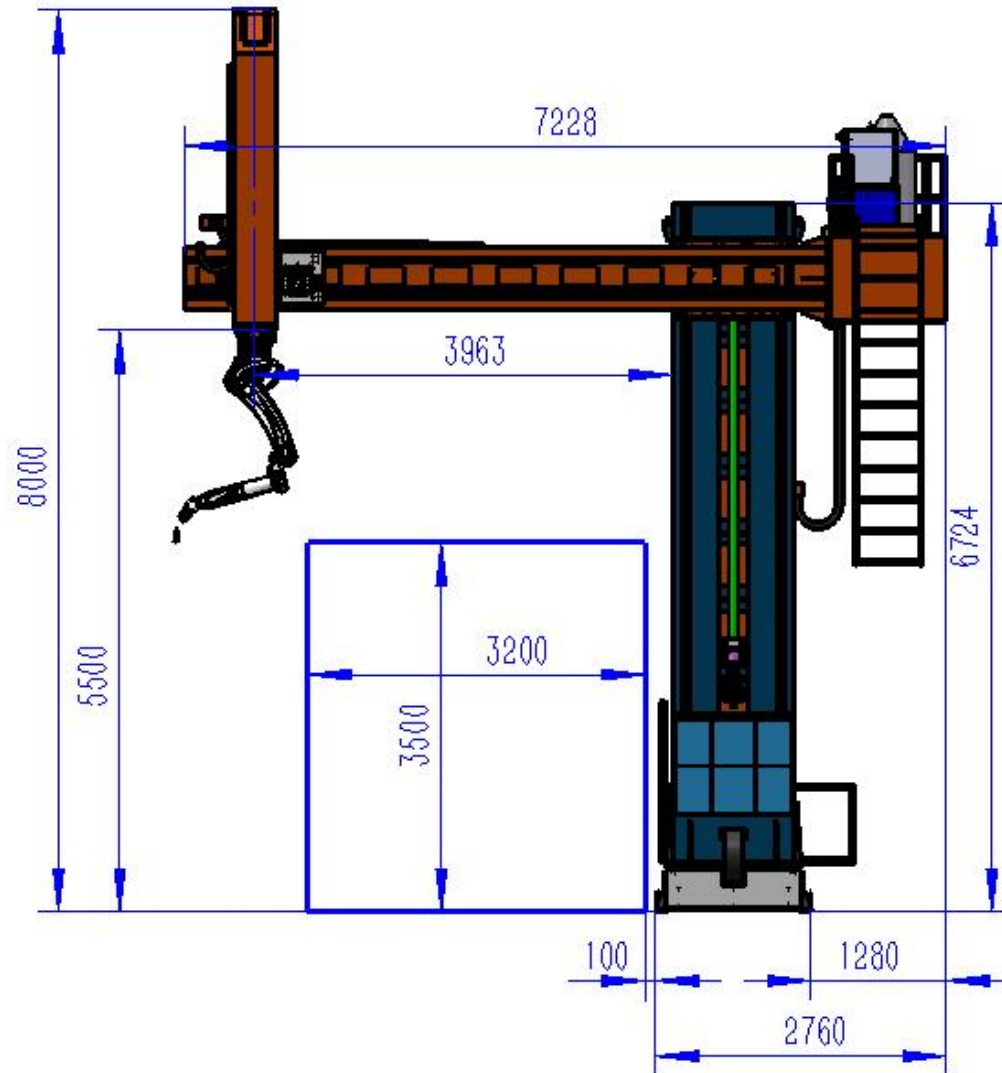
SUPERKETA

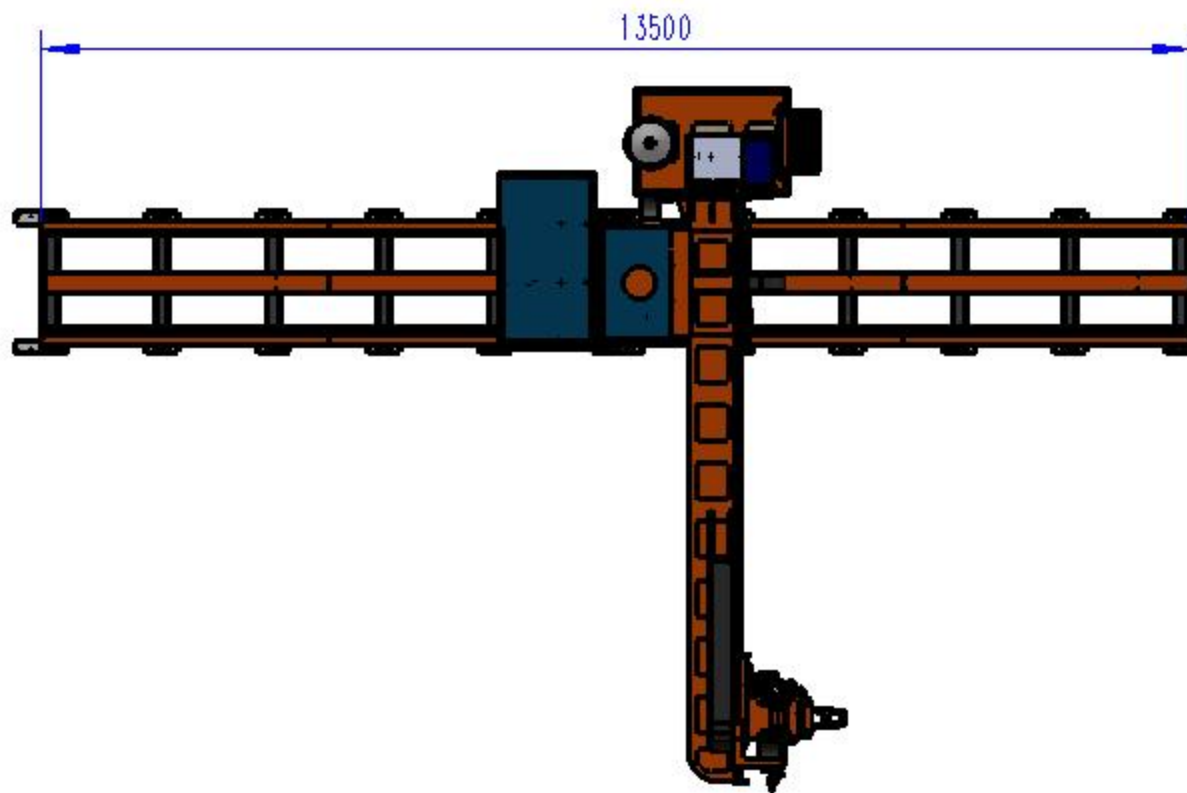
26A020503

ROBOTIC WELDING SOLUTIONS

创新驱动未来
Innovation Driving the Future



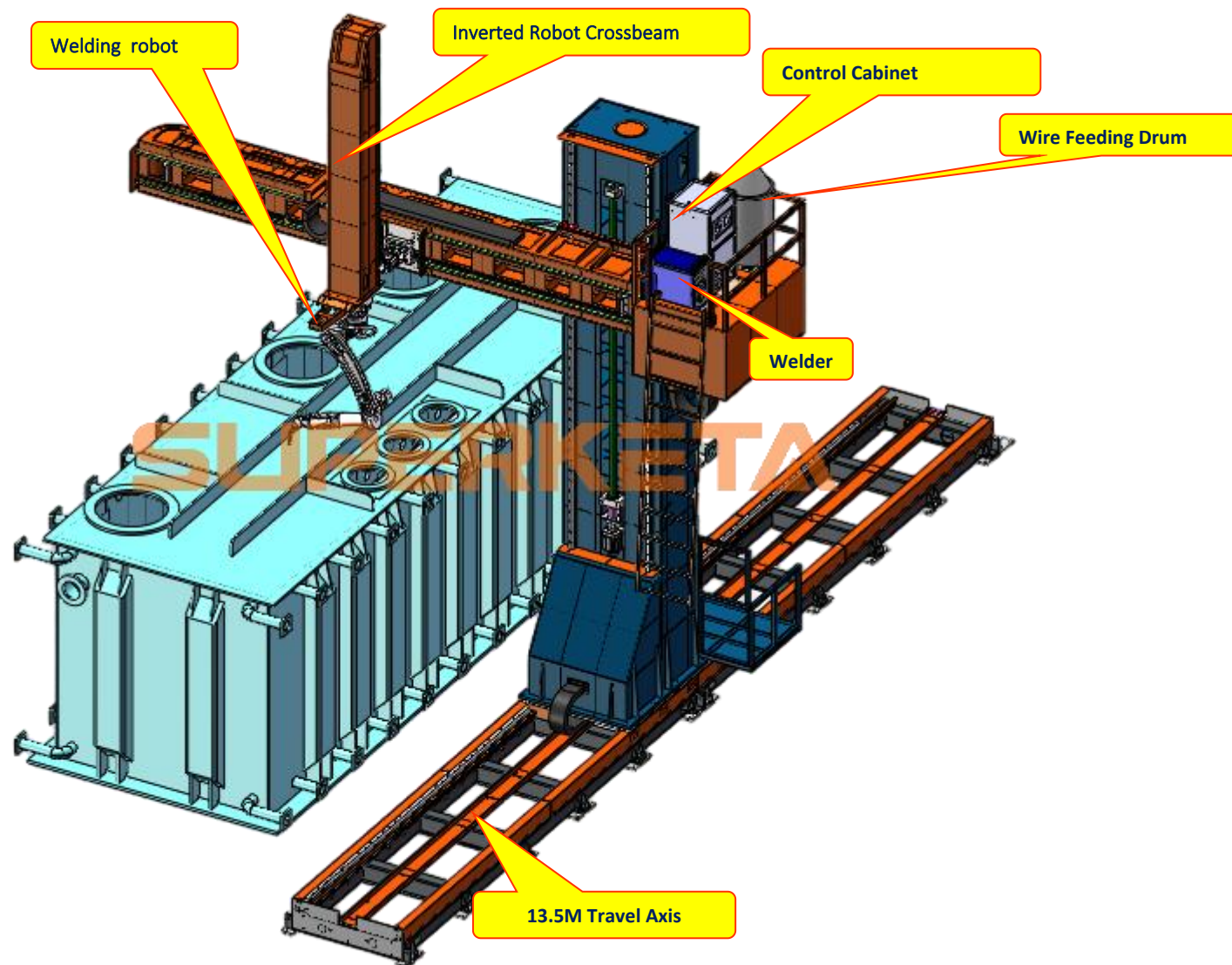


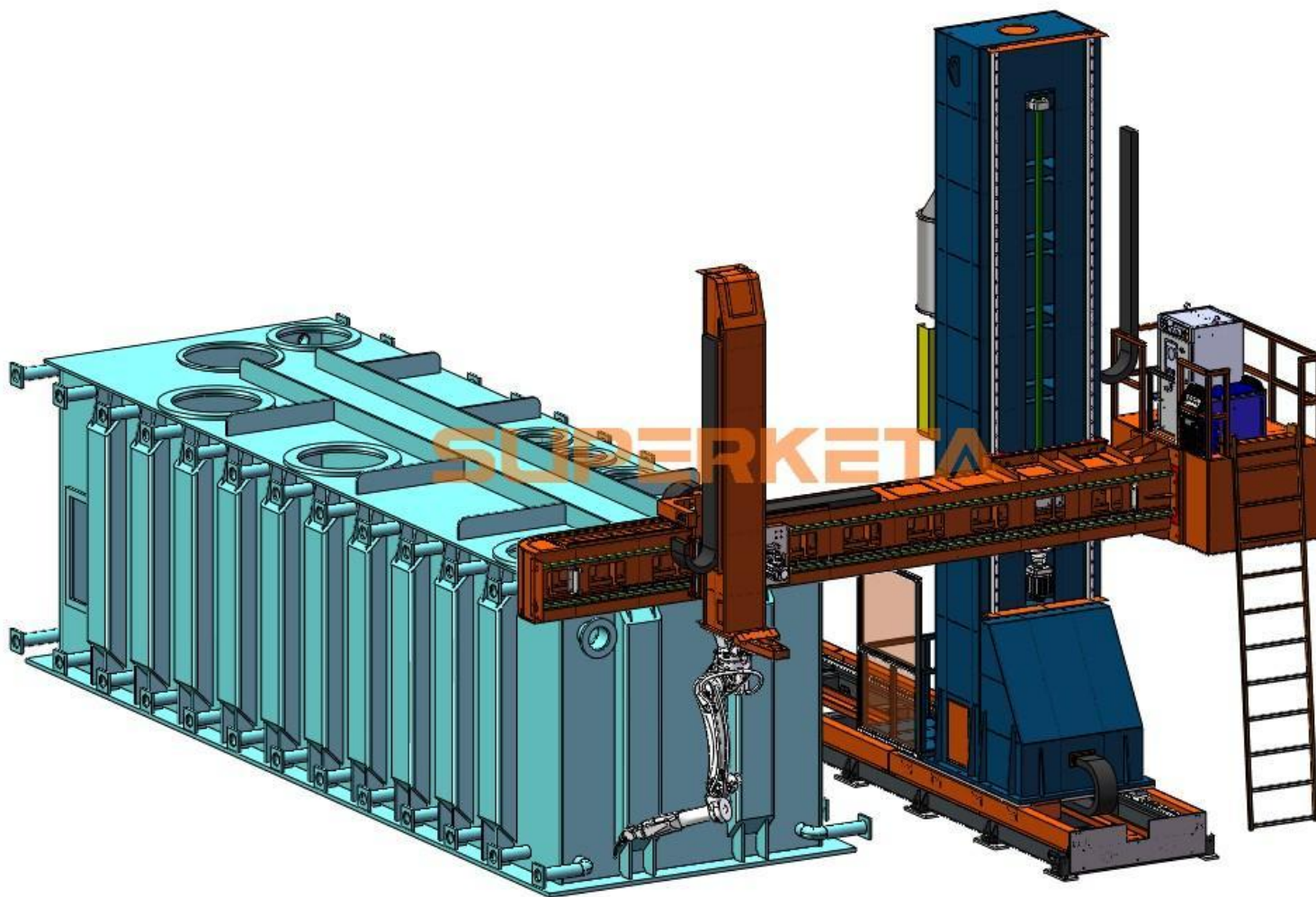


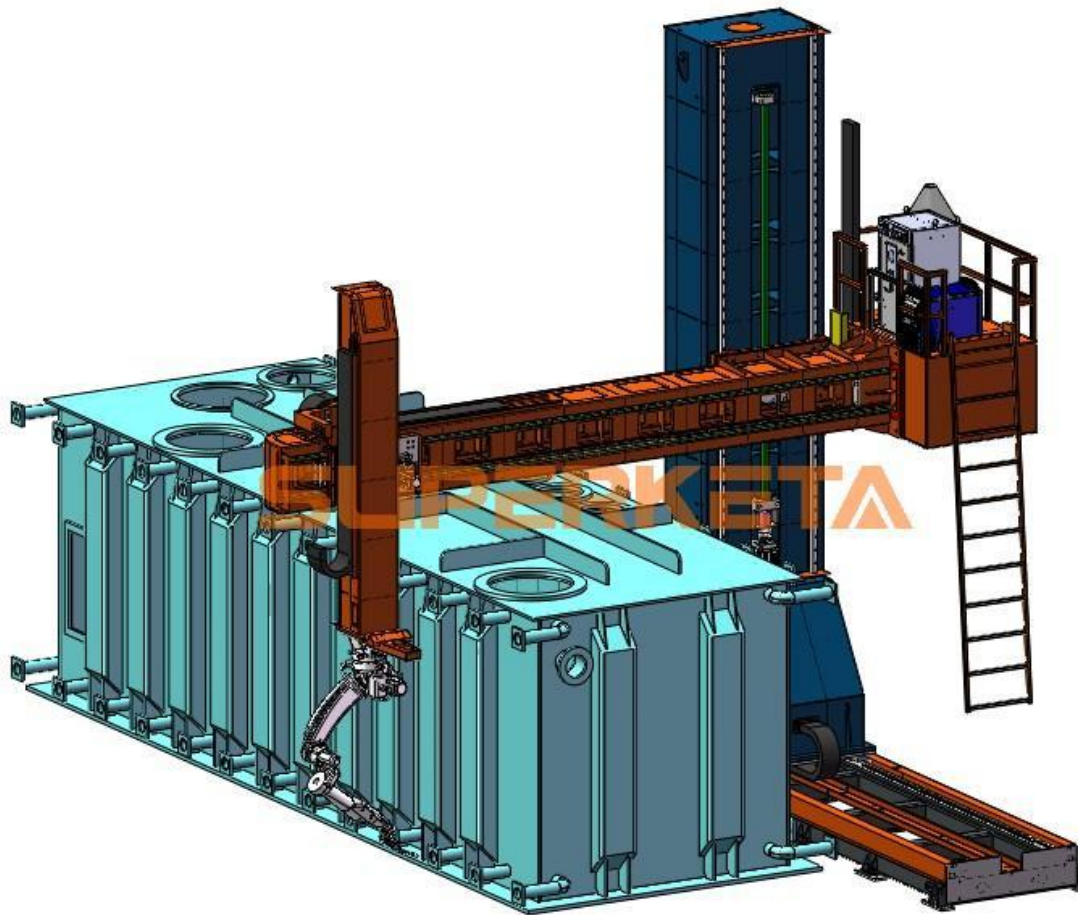
Travelling axis 13.5M

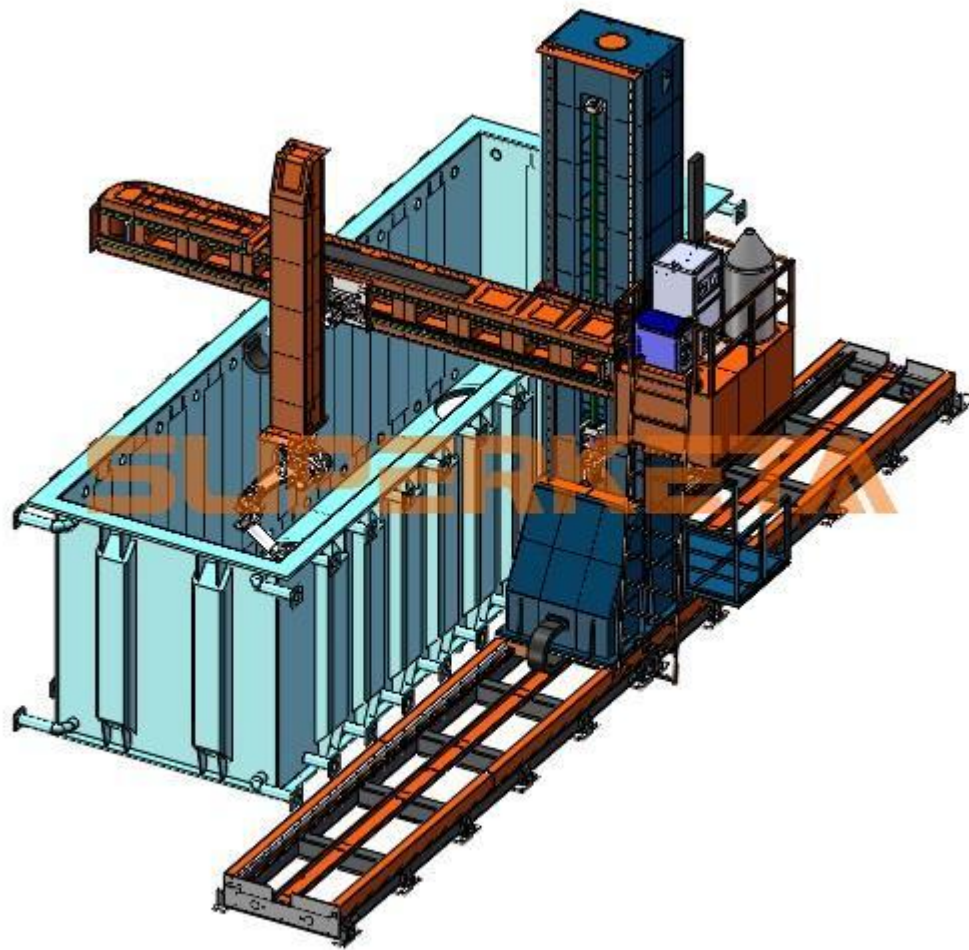
Layout Plan

SUPERKETA









Introduction to Robots

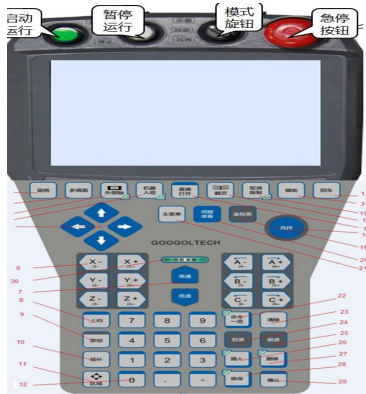
SUPERKETA



Model	ARC12 - 2000	Allowable Torque of Wrist	J4: 16.1 N.mJ5: 16.1 N.mJ6: 5.9 N.m
Mechanism	Multi - joint Robot	Allowable Inertial Torque of Wrist	J4: 0.63 kg·m ² J5: 0.63 kg·m ² J6: 0.081 kg·m ²
Number of Axes	6 Axes	Maximum Single - Axis Speed	J1: 220°/sec J2: 180°/sec J3: 210°/sec J4: 420°/sec J5: 420°/sec J6: 700°/sec
Payload of Wrist	12 kg	Motion Range of Each Axis	J1: ±170° J2: +77°/ - 160° J3: +180°/ - 80° J4: ±190° J5: ±190° J6: ±450° (when the integrated application cable is externally routed); ±220° (when the integrated application cable is internally routed)
Repeat Positioning Accuracy	±0.03 mm	Drive Method	Using AC Servo Motor for Drive, with Servo Drive
Weight of Body Weight	185 kg	Installation Method	Floor - mounted Installation, Vertical Installation, Wall - mounted Installation
Maximum Working Radius	2025 mm	Ambient Temperature	0 - 45 °C
Protection Class of Body	IP67 (Wrist); IP54 (Others)	Ambient Humidity	Usually below 80% (at 40 °C) (no condensation phenomenon)
Protection Class of Electrical Cabinet	IP20 (Cabinet); IP54 (Fan)	Vibration Acceleration	4.9 m/s ² (below 0.5G)

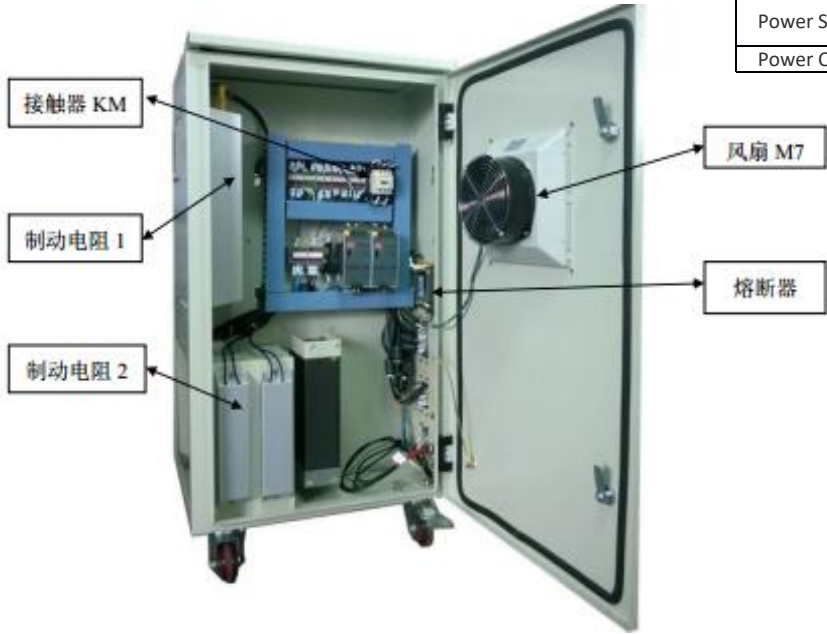
[illegible]

Control Cabinets and Teach Pendants



The GRP4000 handheld teach pendant supports a 640×480 resolution color touchscreen

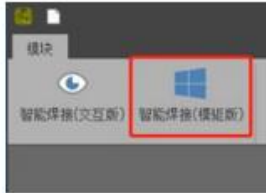
Name	Specification	Name	Specification
Number of Controlled Axes	6 axes	External Dimensions	550 (length) * 500 (width) * 1080 (height) (mm)
Power Supply Specification	Three phase AC 380V ± 10%	Ambient Temperature	When powered on: 0 - 45° C
Power Consumption	3KWH	Power Cable Specification	4C*2.5mm² (recommended)



Communication Interface	USB Interface
	Network Interface
	RS232 Interface
	RS422/RS485/RS232
	CAN
Local IO	IO Expansion
	16 - channel digital output, photoelectric isolation, MOS tube open - drain output, maximum output current 500mA; 16 - channel digital input, photoelectric isolation, open - drain/source type (every 4 channels have COM terminal selection, default source - type input)

Node Scanning Operation Demonstration

一：打开 guosmart 软件



二：联机、上电



三：拍照，测距



四：画焊缝



五：节点参数编辑



六：激光扫描



七：计算焊接路径



八：程序创建，上传，运行



Model-Driven Usage Demonstration

一：打开软件



二：打开文件



三：绘制模型



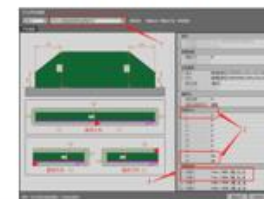
四：构件对齐与保存



五：绘制节点



六：编辑节点参数



七：保存

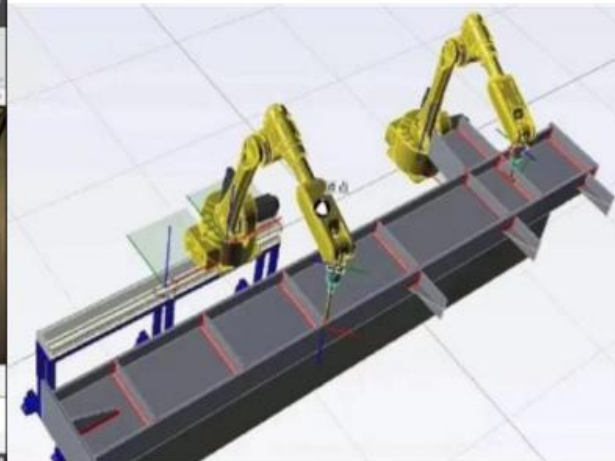
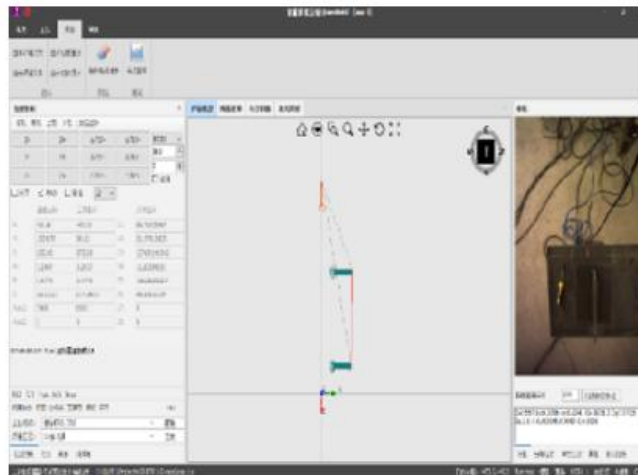


Intelligent Welding Control System

The SmartWeld software system is a self-developed system. Its main function is to deeply integrate devices such as robots, welding machines, and external sensors, enabling intelligent programming based on external inputs and controlling the robots and welding systems to achieve intelligent welding.

This system has two modes: a mature camera-photographing and manual auxiliary identification welding intelligent programming function, and a 3D digital model intelligent identification of weld seams and generation of welding programs based on 3D digital model software development. The system software can automatically identify weld seams and arbitrarily plan the welding sequence. Then, it automatically generates robot welding programs through the model, and then activates the laser sensor to scan the weld seams of the workpiece to be welded, driving the robot to weld according to the planned path. There is no need for any on-site teaching work, and one-click automatic welding of the workpiece can be realized.

SmartWeld can arbitrarily plan the welding sequence of workpieces and can arbitrarily select the size of the weld seams of workpieces. This software itself has a set of basic process library for welding experts. This software is deployed on a PC system. The PC system can be placed anywhere, and remote control can be realized through a wireless router. That is, the on-site equipment can be directly operated for welding in the office.



Panasonic YD - 500FT2HGE welding machine

F系列

350/500FT2

数字逆变脉冲MIG/MAG焊机

CO₂/
MAG
焊接

脉冲
MAG
焊接

脉冲
MIG
焊接

MIG
焊接

MIG/MAG脉冲焊接的新境界

■ 优秀焊接性能的实现

■ 32位CPU，全数字控制，可对应从薄板到厚板的多种焊接要求。



It provides multiple intelligent welding control methods, including DC MIG/MAG welding method based on real-time energy control, pulse energy control-based welding method, etc.

It can be used for welding various materials such as carbon steel and stainless steel.

Panasonic YD - 500FT2HGE welding machine

Item	Unit	YD - 350FT2HGE	YD - 500FT2HGE
Control Method	-	Digital IGBT Control	Digital IGBT Control
Rated Input Power - Phase	-	Three - phase AC 380V	Three - phase AC 380V
Input Power Frequency	Hz	50/60	50/60
Rated Input Capacity	kVA/kW	14.5/14	23.3/22.4
Power Factor	-	0.97	0.96
Output Characteristic	-	CV (Constant Voltage Characteristic)	CV (Constant Voltage Characteristic)
Rated Output Current	A	DC 350	DC 500
Rated Output Voltage	V	31.5	39
Rated Duty Cycle at Rated Output	%	60	100
Rated No - load Voltage	V	DC 70	DC 69
Output Current Range	A	DC 40 - 430(Resistive Load Output Capacity	DC 60 - 550(Resistive Load Output Capacity
Output Voltage Range	V	16 - 35.5	17 - 41.5
Regulation Range	-	MIG/MAG/Carbon SteelPulse MIG/Stainless Steel	-
Welding Method	-	CO ₂ /MAG/Pulse MIG	-
Enclosure Protection Class	-	IP21S	IP21S
Insulation Class	-	Main Transformer 155°C (Reactor 200°C)	Main Transformer 155°C (Reactor 200°C)
Cooling Method	-	Forced Air Cooling	Forced Air Cooling
Applicable Welding Wire Type	-	Solid Wire ϕ 1.0/ ϕ 1.2Flux - cored Wire ϕ 1.2	Solid Wire ϕ 1.2/ ϕ 1.4/ ϕ 1.6Flux - cored Wire ϕ 1.2/ ϕ 1.4/ ϕ 1.6
Applicable Welding Wire Diameter	mm	-	-
Storage	-	9 - channel Adjustable Welding Specification Storage	9 - channel Adjustable Welding Specification Storage
Sequence	-	Welding/Welding - Arc Ending/Initial - Welding - Arc Ending	Welding/Welding - Arc Ending/Initial - Welding - Arc Ending
Shielding Gas	-	CO ₂ Welding: Ar: 80%, CO ₂ : 20%MAG Welding: Ar: 98%, O ₂ : 2%MIG Welding: Ar: 100%	CO ₂ Welding: Ar: 80%, CO ₂ : 20%MAG Welding: Ar: 98%, O ₂ : 2%MIG Welding: Ar: 100%
Gas Check Time	-	60s (Maximum Gas Check Time)	60s (Maximum Gas Check Time)
Pre - purge Time	-	0s - 5.0s Stepless Adjustment (0.1s Increment)	0s - 5.0s Stepless Adjustment (0.1s Increment)
Post - purge Time	-	0.3s - 10.0s Stepless Adjustment (0.1s Increment)	0.3s - 10.0s Stepless Adjustment (0.1s Increment)
External Dimensions(Length × Width × Height)	mm	550 × 380 × 645	550 × 380 × 815
Weight	kg	60	76

3D vision system



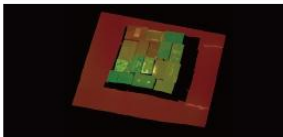
RVC-G33500

Ultra-Large FOV 3D Industrial Camera

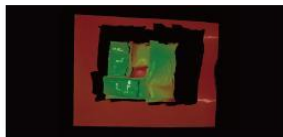
RVC-G33500 Ultra-Large FOV 3D Camera | 3.5×2.4m×3m FOV | 1.8m DOF | Sub-millimeter Precision | IP65 | Anti-ambient Light. Rapidly measure randomly placed/tightly stacked cartons, woven bags, steel plates, output high-quality 3D point cloud data.
Ideal for logistics, express, heavy machinery depalletizing/palletizing/handling.

- High Precision**
 Single-point repeatability up to 0.01mm, enabling high-precision shooting in medium field of view and long distance, easily handling various workpieces with complex structures and tight stacking.
- Anti-ambient Light Interference**
 Self-developed dynamic stripe structured light technology enables shooting and detection of multiple materials simultaneously, greatly improving anti-ambient light interference capability and more complete imaging.
- Innovative Algorithms Handle High Reflectivity**
 Applies binocular dynamic compensation algorithms to obtain high-quality point clouds even under near-mirror reflection conditions.
- Multiple Version Options**
 Blue light/White light options available to meet diverse customer scenario needs.

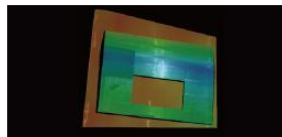
Point Cloud Display



Point Clouds of Various Cartons



Point Clouds of Flexible Package



Point Clouds of Large Vehicle Bodies

High-Strength Carbon Fiber Body for All-Round Protection



Significantly Improved Waterproof Rating



Significantly Improved Dustproof Rating



Passed Professional Vibration Testing



Gigabit Ethernet Data Transmission

Compact structural design, stable performance and lighter weight

IP65-Rated High-Strength Carbon Fiber Body

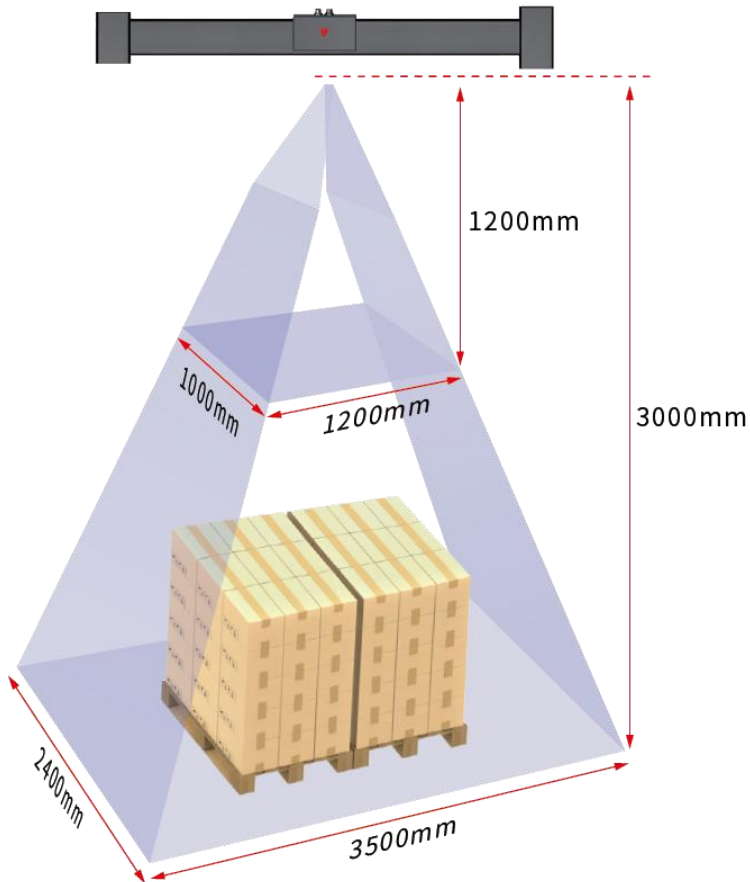


Laser Projection for Sharper Imaging

Fanless heat dissipation design, excellent stability and higher protection

Equipped with a high-resolution lens for enhanced point cloud quality

3D vision system



Item	Details
Model	RVC - G33500
Shortest Exposure Time (ms/frame)	1.4
Resolution (MP)	3.2
Working Distance Range (mm)	1200 - 3000
Near Field of View (FOV) (mm)	1200*1000@1200
Far Field of View (FOV) (mm)	3500*2400@3000
XY Direction Resolution (mm)	0.8 - 1.82
Z - axis Single - point Repeatability (mm)	0.06 - 0.88
Z - axis Regional Repeatability (mm)	0.01 - 0.25
Light Source	Laser
Communication Interface	Gigabit Ethernet
Camera Weight (kg)	2.5
Camera Dimensions (mm)	94013067
Working Voltage/Current	DC 24V/3.75A
Protection Grade	IP65
Working Temperature (°C)	0 - 45
Working Humidity (%RH)	20 - 80 (No Condensation)
Standard Accessories	Power Adapter, Power Cable, Data Cable
Whether to Support Third - party Development	Yes
Supported Development Languages	C/C++/C#/Python
Supported Development Platforms	Linux/Windows
Adapted Third - party Software Libraries	Halcon/OpenCV/Open3D/PCL/VisionPro

3D vision system



坡口直角 点云精细

对结构复杂，具有多次反射的工件，单次曝光即可成像。最新研发的多次反射成像算法，确保坡口和直角边缘的点云数据精确无误。

直面强光 稳定成像

采用自主研发核心强光和创新的抗环境光算法，即使在超过40万Lux的强光环境中也能保持点云完整清晰，可面对焊接强光、太阳成像。

算法创新 无惧高反

应用双自动补偿算法，即使在接近镜面反射的条件下，也能获得高质量的点云。

轻巧身形 坚固防护

148x73.5x73.5mm迷你机身，0.95kg超轻量化，隔绝焊渣的防护面结构，协助机器人从应对各类焊接场景。

产品参考数据

产品参考数据		
基本数据	相机尺寸 (mm)	148*73.5*73.5
	相机重量 (kg)	0.95
	基线长度(mm)	93
	相机分辨率	1440*1080(1.6M), 双目, 灰度
	光源	蓝光
	数据接口	千兆网
	工作电压/电流	DC 24V/2A
	SDK支持的系统	Linux/Windows
性能参数	SDK支持的语言	C/C++/C#/Python
	工作距离(mm)	400-1000
	测量(mm)	600
	近视距(mm)	350*220@400
	最佳工作距离视距(mm)	600*450@700
	远视距(mm)	860*650@1000
	Z单点重复精度(mm) ^{1,2}	0.27@1000
	Z区域重复精度(mm) ^{1,2}	0.05@1000
	XY空间测量误差 ^{1,2}	全视野<0.2% 视野中央<0.1%
	点间距(mm)	0.25@400 0.7@1000
	拍摄时间(s/帧) ¹	0.98-2.2s
	机身防护	IP65防护等级
稳定性	抗环境光 ³	抗扫描式>40万 Lux
	工作温度 ⁴	-20~50℃

Product and Application - Gun Cleaner



The cleaning and shearing device is very necessary for welding guns that are welded for a long time on the robot. When cutting and cleaning the mouth, a special procedure is generally prepared. When the welding torch reaches the wire cutting position, the wire feeding and wire cutting action are automatically controlled. When the welding torch reaches the cleaning position, the switch detects whether the welding gun is in place, locks the welding gun, and the rotating blade is pushed by the cylinder to clean the spatter adhered to the inside of the nozzle, and sprays silicone oil to the inside of the nozzle to avoid the firm adhesion of the spatter during welding. Ensure that the robot system runs continuously and without monitoring for a long time.



感谢您的观赏与聆听

THANKS FOR LISTENING