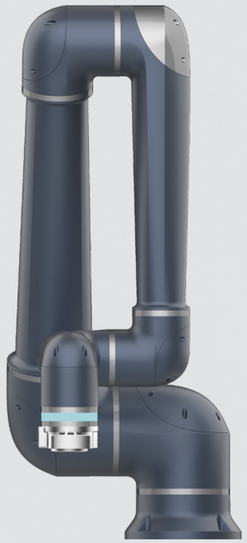

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ESTUN
CODROID

ESTUN CoDroid

Collaborative Robot

Collaborative Robot

Multiple safety designs for comprehensive protection

- Independent safety joint module and safety controller certification.
- Compliant with ISO 13849-1 Cat.3 PLd and ISO 10218-1:2011 (including ISO/TS 15066:2016) functional safety certification, featuring multiple proactive safety protection functions.
- Incorporating independent dual-channel redundant sensor information monitoring, real-time detection of position and force control.
- No need for safety light curtains or fences, achieving ultimate safety through highly sensitive collision protection based on joint torque sensor.

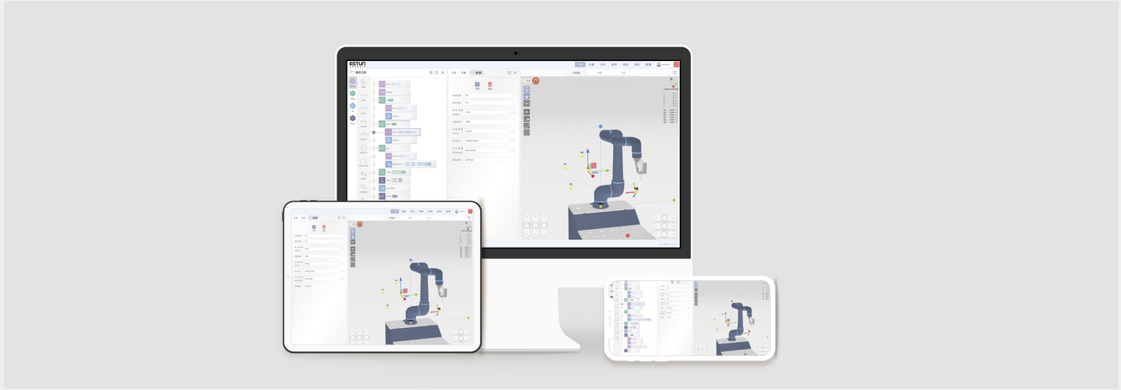
Standardized customization flexible and user-friendly

- Equipped with built-in high-precision joint sensors, paired with simple and easy-to-use force control process packages.
- Integrated with high-dynamic force control, supporting various drag modes in both joint and Cartesian spaces.
- Drag teaching is sensitive and smooth, easy to master, enabling more precise and convenient point and trajectory teaching.
- User-friendly graphical programming, combined with intuitive drag teaching, allows even zero-experience users to master robot operation within one hour.
- Integration of vision and force control, catering to the automation needs of unstructured and dynamic environments.

/Flexible teaching through motion/

/Higher repeatability positioning accuracy/

/Strict quality system/



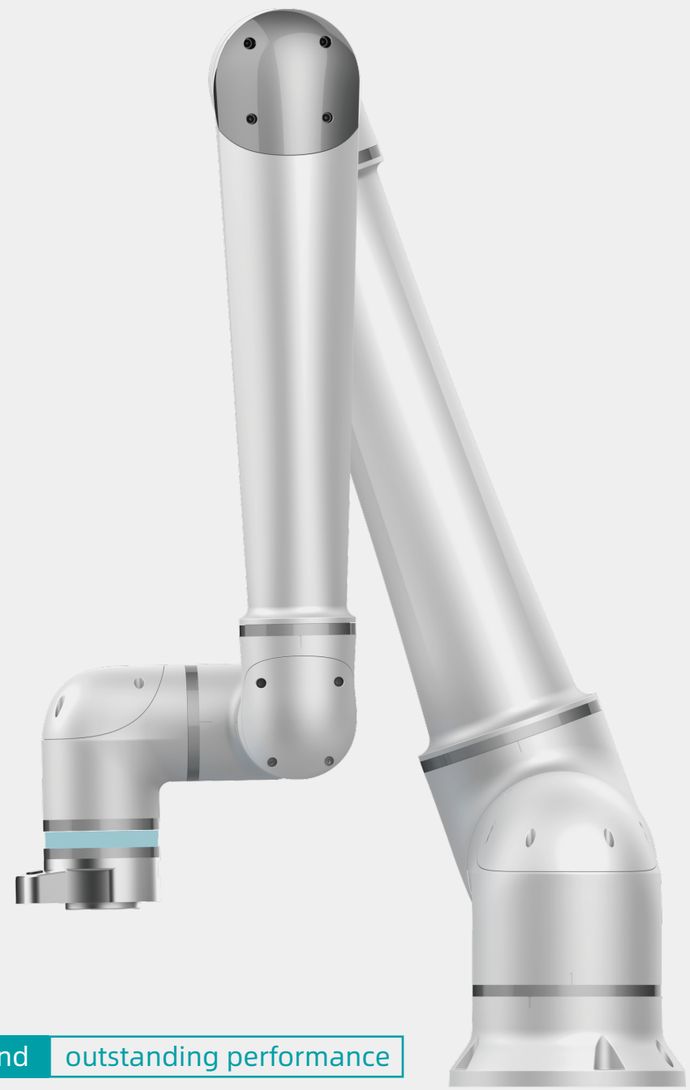
/Support for multiple terminals including PC, tablets, and smartphones/

Performance

Safety

Flexibility

Excellence



Precise motion control and outstanding performance

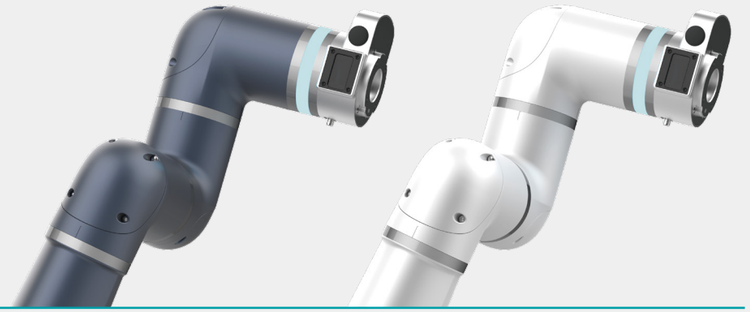
- Comparable to traditional industrial robot-level joint and end-effector speeds, ensuring high safety and efficiency.
- Accurate robot precision calibration and compensation technology, elevating precision to industrial robot levels.
- High-precision dynamic model identification and compensation, ensuring preciser robot trajectories and smoother motion.
- Industry-leading unified force control and motion control architecture, featuring a new highperformance open control system.

Comprehensive quality system excellence in quality

- A comprehensive production quality management system ensures excellence.
- Strict and consistent manufacturing quality control and quality inspection ensure dual reliability of product performance and quality.
- Each robot undergoes kinematic accuracy calibration, with precision results recorded in the production system database, to ensure absolute accuracy and traceability.
- 100+ design type tests, 20+ factory inspections, with each unit running continuously for 120 hours without failure beforedelivery.

Specifications

Colors



Parameters of Arms

Model	S3-60	S5-90	S10-140	S20-180
				
DOF	6			
Payload (kg)	3	5	10	20
Reach of Arms (mm)	600	920	1400	1800
Repeatability (mm)	0.03	0.03	0.03	0.1
Dead Load (kg)	14	24	39	68
Safety	Adjustable collaborative drag mode and collision detection levels/			
Certification	EN ISO 13849-1 PLd Cat.3 & EN ISO 10218-1			
IP Grade	IP54			
Max. Speed at Tool End (m/s)	2	2.5	2.5	3.2
Working Range	Axis 1/2/4/5/6: ±360°			
	Axis 3: ±160°			
Max. Speed	[3、5、10kg] Axis 1/2/3: 150°/s	[20kg] Axis 1/2: 110°/s	Axis 3: 150°/s	
	Axis 4/5/6: 180°/s			
Mounting	Mount at any angle			
Operating Temp.	0 - 50 °C			
Operating Humidity	70% RH			
Flange Connector	ISO 9409-1-50-4-M6			
Flange Communication	2 DI, 2DO, 24VDC, MODBUS RTU, RS485			

Parameters of Control Cabinets

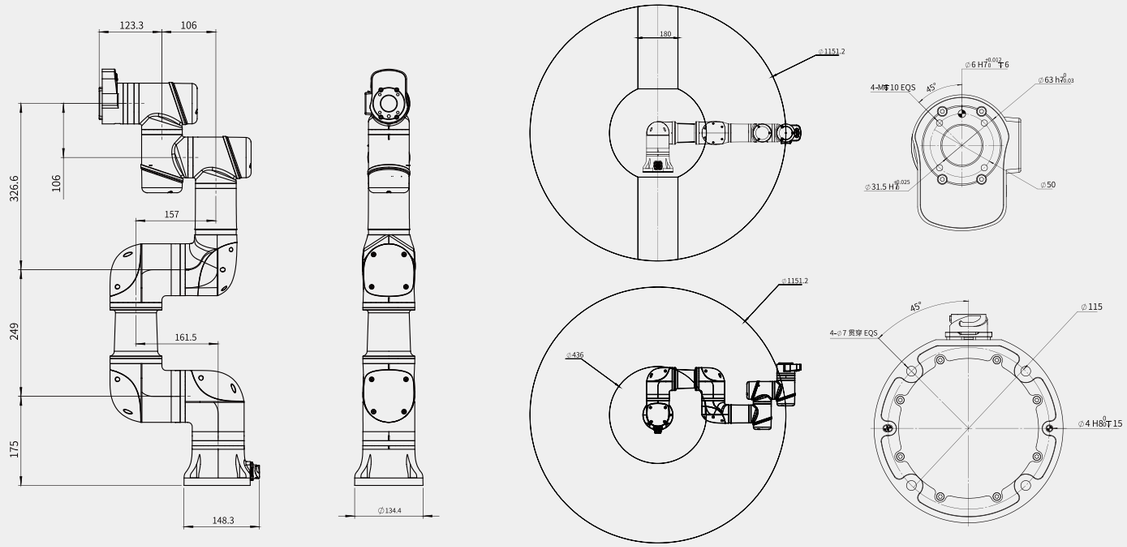
Human-machine interaction	PC/laptop/tablet/smartphone/teach pendant
Safety device	Hand-held enable 1 channel/hand-held emergency stop 1 channel
Drag teaching	Drag mode: Cartesian space/axis space; Teaching method: point/continuous path
High dynamic force control	Cartesian space/axis space impedance control
IP grade	IP20
Cabinet I/O ports	16DI(PNP), 16D0(PNP), 4AI, 4AO, 2 safety DI, 2 safety DO, five E-stop inputs
Cabinet I/O power supply	24VDC, 2A
Communication	MODBUS RTU, MODBUS TCP, CAN, RS485
	EtherNET, EtherCAT, Profinet slave (optional), EthernetIP slave (optional)
Power supply	AC: 100- 240 V 47 - 63 Hz / DC: 48 V
Control cabinet dimensions	350mm x 210mm x 140mm
Weight	13kg
Material	Aluminum alloy
External control interface	Underlying force/position control interface; Robot model library and API

PAD Teach Pendant optional

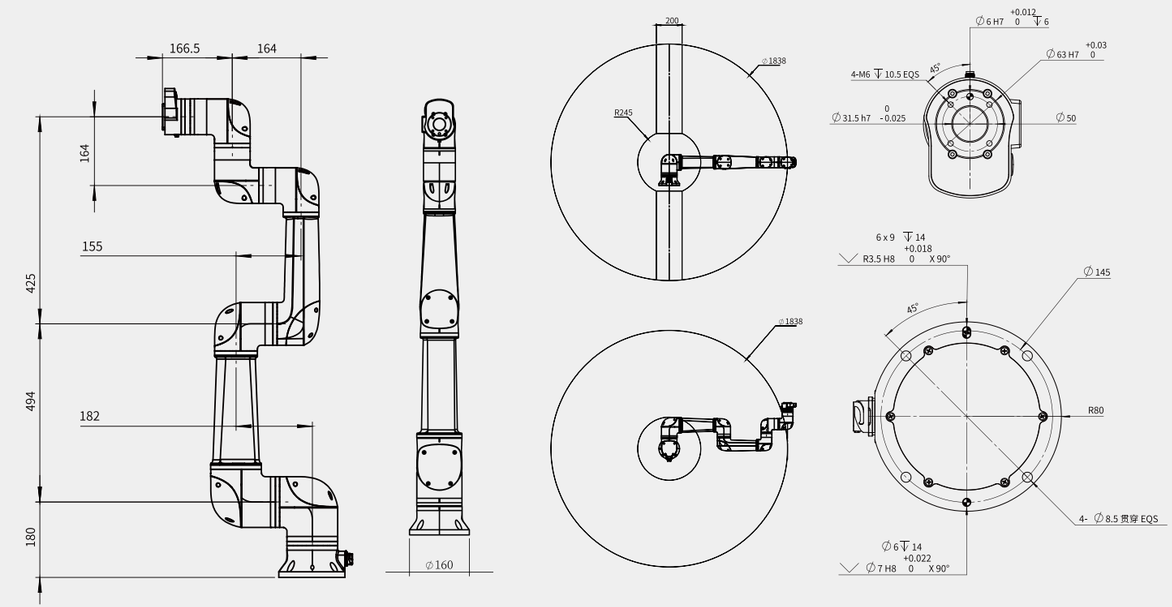
Model	Pad
Weight	550g
Screen Size	12.7 in.

Technical Drawings

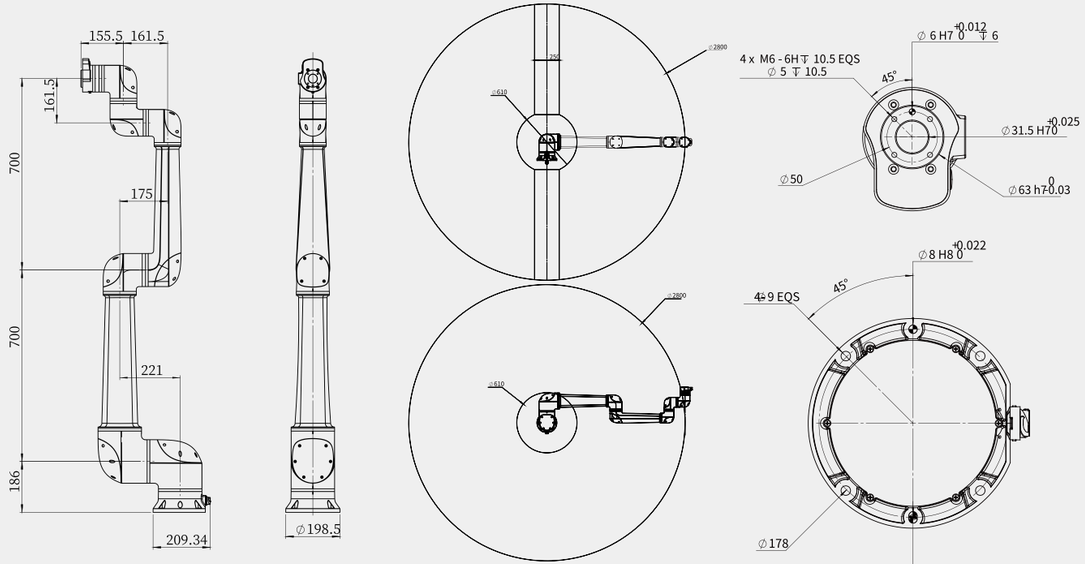
3kg Arm



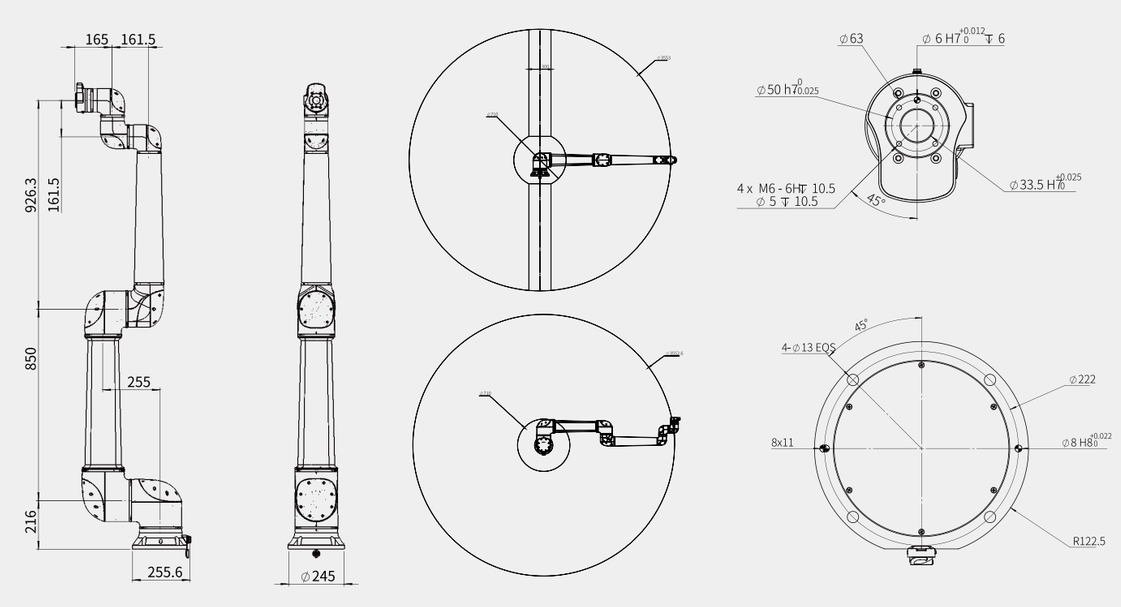
5kg Arm



10kg Arm



20kg Arm



Smart Welding Solutions

Core Advantages

Core self-developed technologies, enhancing programming efficiency

01 Swing welding: Providing triangular, sinusoidal, circular, and figure-eight swing patterns, allowing adjustment of swing frequency,swing amplitude, left-right dwell time, and other parameters to meet welding seam dimensions and forming requirements.

02 Welding torch posture transformation: Theoretical operating angles and forward/backward angles can be attached to teaching points to simplify the teaching process, ensuring good weld seam quality and accurate welding posture.

03 Multi-layer, multi-pass welding: For medium-thick plates, multi-layer, multi-pass welding only requires teaching the relevant points of the first weld seam. The remaining weld paths are calculated based on offset parameters, significantly reducing programming time, with parameters that can be saved and called upon.

04 Skip welding: Suitable for single-pass fillet welding and intermittent weld seams. Only teaching the relevant points of the weld seam is needed, while the remaining welding length, gap length, and welding sequence are determined by parameters, simplifying program logic.

05 Skip welding: Suitable for single-pass fillet welding and intermittent weld seams. Only teaching the relevant points of the weld seam is needed, while the remaining welding length, gap length, and welding sequence are determined by parameters, simplifying program logic.

With the backing of intelligent algorithms, welding quality is optimized

05 Positioning: Wire positioningand laser positioning ensure the robot's accuracy under repetitive operations.

06 Seam tracking: Arc tracking and laser tracking ensure that the weld seam remains stable without deviation.

07 Welding database: Monitoring and recording key parameters, establishing a core database, and allowing expert-level parameters to be called upon at any time.

Auxiliary welding functions to ensure welding stability

08 Welding trimming: Process parameters such as current, voltage, speed, and swing can be adjusted during welding, along with the relative position of the welding torch.

09 Welding restart function: In case of external interference causing program interruption, it can be restarted from the pause point without repeating the previous path.

10 Arcing by scratching: When arcing fails, scratching near the arcing position along the teaching path can be performed. Upon successful arcing, the program can proceed to run formally at the arcing position.

Product Features

Flexible
The welding tractor can be flexibly transported, suitable for various scenarios.

Safe
Interlocking signals between the welding machine and the robot ensure absolute safety.

Universal
Compatible with mainstream welding machine brands both domestically and internationally.

Convenient
Modular invocation of welding program templates, which can be divided into single-pass welding programs, multi-layer, multi-pass weld seams, and skip welding.

Diverse
Capable of using MIG/MAG, TIG, and Laser welding methods.

User-friendly
One-click import of expert-level parameters from the database; users only need to teach welding points.

Real-time
Welding process parameters can be adjusted in real-time to ensure excellent welding quality.

Traceable
Key parameters can be monitored and recorded, to form a welding log.

Adjustable
Supports non-arcing running programs for verifying teaching paths and supports manual wire feeding/retraction and gas feeding.

Arc Welding

Model	QINEO StarT 406
Welding output	20A/15V-400A/34V
60% duty cycle of welding current	400A
100% duty cycle of welding current	350A
Operating voltage	380V-400V/3-phase
Dimensions	1270*765*960 mm

Laser Welding

Model	RFL-C2000H
Rated output power	2000W
Working mode	Continuous/Modulated
Modulation frequency	1-5000Hz
Fiber core diameter	50μm
Operating voltage	220±10%VAC、50/60Hz
Dimensions	1270*765*960 mm

Broader Target Market

/Palletizing/

End Effectors

Various end effectors can be quickly switched to match multiple industry applications

Handling

Screw fastening

Polishing

Welding

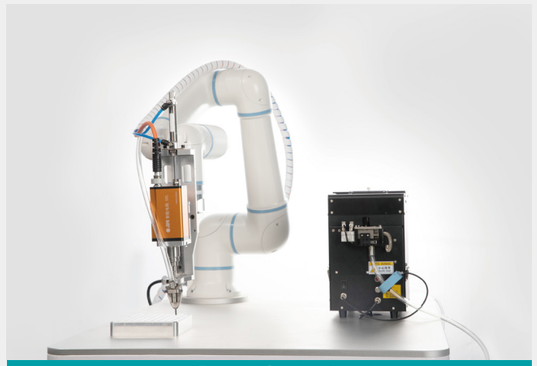
Spraying

Application Scenarios

/Warehouse logistics/

/Laboratory automation/

/Welding/



/Screw fastening/

/New energy/

/Electronics manufacturing/

/Automotive/

/Service robots/