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# PRODUCT
# CATALOGUE

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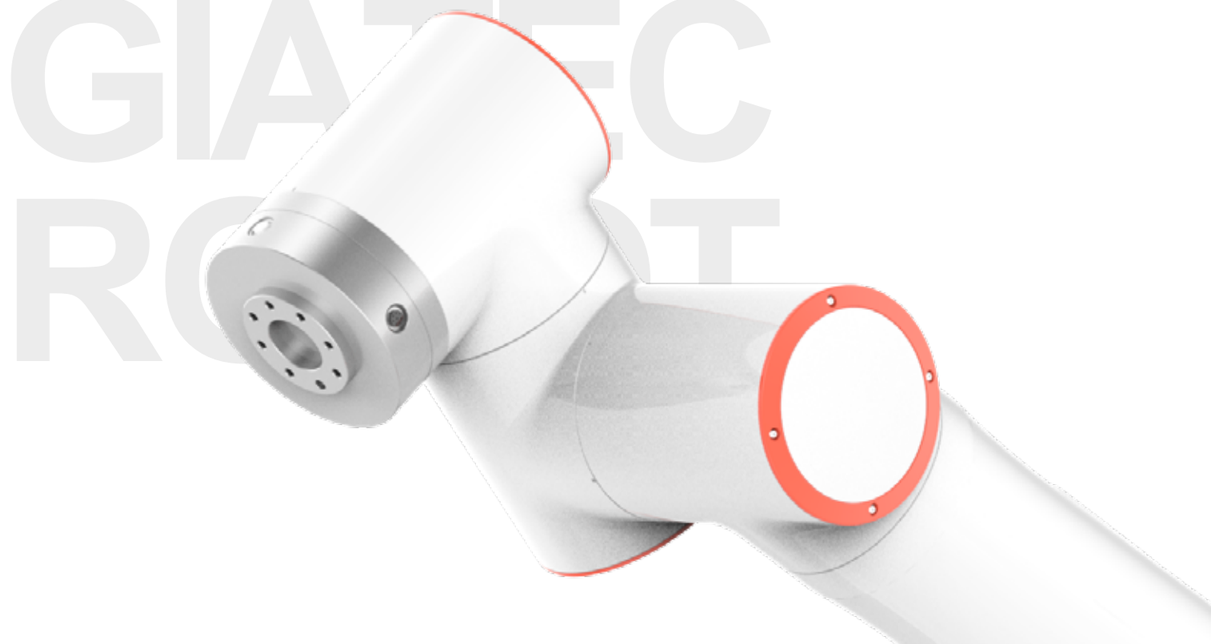
# CONTENTS





**Intelligent human-robot cooperation system solutions**

According to different payload and parameter, Giatec collaborative robots GI series are divided into six models: GI-3, GI-5, GI-10, GI-16, GI-20 and GI-30.

**Quality Management System:** ISO 9001

**Product Certification:** CR, CE, KCs, NRTL, RoHS 2.0, NSF, SEMI, IP65

**ISO Functional Safety Certification:** ISO 10218, ISO 13849, ISO 15066

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# PRODUCT DISPLAY

GI-3

GI-5

GI-10

GI-16

GI-20

GI-30

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# ROBOT ARM TECHNICAL SPECIFICATION

| | GI-3 | GI-6 | GI-10 | GI-16 | GI-20 | GI-30 |
|---|---|---|---|---|---|---|
| Payload | **3kg** | **5kg** | **10kg** | **16kg** | **20kg** | **30kg** |
| Reach | **622mm** | **922mm** | **1400mm** | **1034mm** | **1854mm** | **1403mm** |
| Degrees of freedom | 6 rotating joints | 6 rotating joints | 6 rotating joints | 6 rotating joints | 6 rotating joints | 6 rotating joints |
| HMI | 10.1 inch teach pendant or mobile terminal Web App | | 10.1 inch teach pendant or mobile terminal Web App | | 10.1 inch teach pendant or mobile terminal Web App | |
| Pose repeatability per ISO 9283 | **±0.02mm** | **±0.02mm** | **±0.05mm** | **±0.03mm** | **±0.1mm** | **±0.1mm** |

| Axis movement | Working range | Maximum speed | Working range | Maximum speed | Working range | Maximum speed | Working range | Maximum speed | Working range | Maximum speed | Working range | Maximum speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±120°/s | ±175° | ±120°/s | ±175° | ±120°/s | ±175° | ±120°/s |
| Shoulder | + 85°/ – 265° | ±180°/s | + 85°/ – 265° | ±180°/s | + 85°/ – 265° | ±120°/s | + 85°/ – 265° | ±120°/s | + 85°/ – 265° | ±120°/s | + 85°/ – 265° | ±120°/s |
| Elbow | ±150° | ±180°/s | ±160° | ±180°/s | ±160° | ±180°/s | ±160° | ±180°/s | ±160° | ±120°/s | ±160° | ±120°/s |
| Wrist 1 | + 85°/ – 265° | ±180°/s | + 85°/ – 265° | ±180°/s | + 85°/ – 265° | ±180°/s | + 85°/ – 265° | ±180°/s | + 85°/ – 265° | ±180°/s | + 85°/ – 265° | ±180°/s |
| Wrist 2 | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±180°/s |
| Wrist 3 | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±180°/s |
| Typical TCP speed | 1m/s | | 1m/s | | 1.5m/s | | 1m/s | | 2m/s | | 2m/s | |
| IP classification | IP54(IP65 Optional) | | IP54(IP65 Optional) | | IP54(IP65 Optional) | | IP54(IP65 Optional) | | IP54(IP65 Optional) | | IP54(IP65 Optional) | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Noise | <65dB | <65dB | <65dB | <65dB | <70dB | <70dB |
| Robot mounting | Any orientation | Any orientation | Any orientation | Any orientation | Any orientation | Any orientation |
| I/O Ports | (DI) 2 (DO) 2 | (DI) 2 (DO) 2 | (DI) 2 (DO) 2 | (DI) 2 (DO) 2 | (DI) 2 (DO) 2 | (DI) 2 (DO) 2 |
| | (AI) 1 (AO) 1 | (AI) 1 (AO) 1 | (AI) 1 (AO) 1 | (AI) 1 (AO) 1 | (AI) 1 (AO) 1 | (AI) 1 (AO) 1 |
| Tool I/O power supply | 24V/1.5A | 24V/1.5A | 24V/1.5A | 24V/1.5A | 24V/1.5A | 24V/1.5A |
| Footprint | 128mm | 149mm | 190mm | 190mm | 240mm | 240mm |
| Weight | ≈15kg | ≈22kg | ≈40kg | ≈40kg | ≈85kg | ≈85kg |
| Operating temperature | 0-45℃ | 0-45℃ | 0-45 ℃ | 0-45℃ | 0-45℃ | 0-45℃ |
| Operating humidity | 90%RH(non-condensing) | 90%RH(non-condensing) | 90%RH(non-condensing) | 90%RH(non-condensing) | 90%RH(non-condensing) | 90%RH(non-condensing) |
| Materials | Aluminium、Steel | Aluminium、Steel | Aluminium、Steel | Aluminium、Steel | Aluminium、Steel | Aluminium、Steel |

■ Typical power test payload settings, different loads are set according to robot models, payload configuration parameters are as follows :

| | | | | | |
|---|---|---|---|---|---|
| | FR3 payload setting: 3kg, Z-axis: 18mm | FR5 payload setting: 5kg, Z-axis: 30mm | FR10 payload setting: 10kg, Z-axis: 60 | FR16 payload setting: 16kg, Z-axis: 96mm | FR20 payload setting: 20kg, Z-axis: 120mm | FR30 payload setting: 30kg, Z-axis: 200mm |
| Select aging test program, connect robot's total power to power meter, set robot to automatic mode, set global speed to 100, click run, if there are no abnormalities after running two cycles, start continuous testing for 24 hours. After 24 hours, respectively, record the peak and average power of the power meter, and then statistically analyze each model : | | | | | | |
| Typical average power | 224W | 261W | 294W | 315W | 624W | 594W |
| Typical peak power | 276W | 314W | 503W | 410W | 806W | 909W |

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# CONTROLLER TECHNICAL SPECIFICATION

**DC MINI Controller**

**MINI Controller 2kW**

**Controller 4kW**

**Controller 6kW**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Features** | IP classification | IP54 | | IP54 | | IP54 | | IP54 | |
| | Operating temperature | 0-45℃ | | 0-45℃ | | 0-45℃ | | 0-45℃ | |
| | Operating humidity | 90%RH(non-condensing) | | 90%RH(non-condensing) | | 90%RH(non-condensing) | | 90%RH(non-condensing) | |
| | I/O Ports | (DI) 16 | (DO) 16 | (DI) 16 | (DO) 16 | (DI) 16 | (DO) 16 | (DI) 16 | (DO) 16 |
| | | (AI) 2 | (AO) 2 | (AI) 2 | (AO) 2 | (AI) 2 | (AO) 2 | (AI) 2 | (AO) 2 |
| | | High speed pulse input 2 | | High speed pulse input 2 | | High speed pulse input 2 | | High speed pulse input 2 | |
| | I/O power supply | 24V/1.5A | | 24V/1.5A | | 24V/1.5A | | 24V/1.5A | |
| | Standard communication | I/O、TCP/IP、Modbus_TCP/RTU | | I/O、TCP/IP、Modbus_TCP/RTU | | I/O、TCP/IP、Modbus_TCP/RTU | | I/O、TCP/IP、Modbus_TCP/RTU | |
| | Optional communication | CC-Link、Profinet、Ethernet/IP、EtherCAT | | CC-Link、Profinet、Ethernet/IP、EtherCAT | | CC-Link、Profinet、Ethernet/IP、EtherCAT | | CC-Link、Profinet、Ethernet/IP、EtherCAT | |
| | Software development kit | C#/C++/Python/ROS/ROS2 | | C#/C++/Python/ROS/ROS2 | | C#/C++/Python/ROS/ROS2 | | C#/C++/Python/ROS/ROS2 | |
| **Physical** | L*W*H | 245*180*44.5mm (No protrusions) | | 245*180*44.5mm (No protrusions) | | 245*180*89mm (No protrusions) | | 320*183*100mm (No protrusions) | |
| | Weight | 2.1kg (Cable weight included) | | 2.5kg (Cable weight included) | | 3.6kg (Cable weight included) | | 6.5kg (Cable weight included) | |
| | Materials | Galvanized plate | | Galvanized plate | | Galvanized plate | | Galvanized plate | |
| | Power supply | 30-60VDC | | 176-264VAC ~ 50-60Hz<br>100-240VAC ~ 50-60Hz | | 100-240VAC ~ 50-60Hz | | 176-264VAC ~ 50-60Hz | |

# TEACH PENDANT [ Optional ]

All operations are gathered in the hand

The teach pendant, computer, tablet or mobile phone is connected to the WebAPP system to realize the operation of the collabroative robot.

- The user interface is more intuitive
- Wide range of technological packages
- Cloud deployment provides greater convenience

| | | |
|---|---|---|
| Features | IP classification | IP54 |
| | Operating humidity | 90%RH(non-condensing) |
| | Display resolution | 1280 x 800 pixels |
| Physical | L*W*H | 268*210*88mm |
| | Weight | 1.6kg |
| | Materials | ABS、PP |
| | Cable length | 5m |

# SAFETY BOX

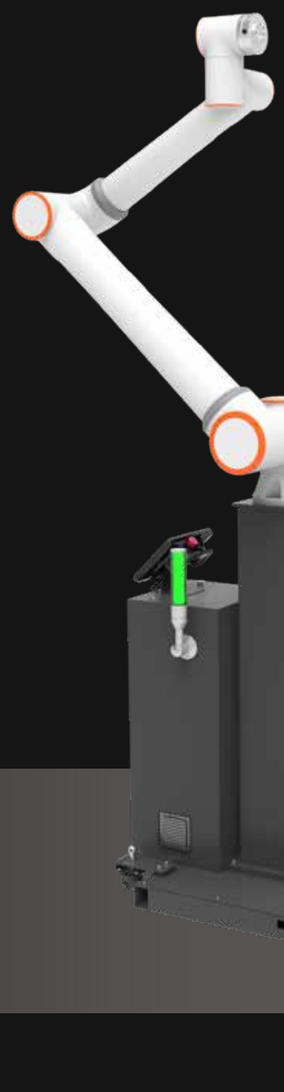
Human-cobot interaction tools for basic interaction functions. It can be linked with computers, tablets and other devices through the RJ45 interface, and directly log in to the Web App teaching interface.

- Simple to use
- Easy to operate
- Flexible to deploy

| | | |
|---|---|---|
| Features | IP classification | IP54 |
| | Button function | Manual/Auto, Drag, Point Record, Match or Not with Safety Button Box, Start/Stop, Shutdown |
| | Communication | TCP/IP |
| | Network transfer rate | 100M |
| | Power over ethernet | Standard POE |
| Physical | L*W*H | 136*60*66mm (No protrusions) |
| | Weight | 490g (Cable weight included) |
| | Materials | ABS |
| | Cable length | 5m |
| | Number of keys | ≥20W 次 |

# INDUSTRY

Abundant welding process kits, with a variety of welding technologies, seam welding, straight welding, oscillating welding, arc welding, and multi-layer multi-pass welding. It also incorporates intelligent welding technologies for wire positioning and weld seam tracking, significantly enhancing welding efficiency and ensuring welding quality.



## Palletizing Solution

In modern enterprises, palletizing work is very common. Due to the low efficiency of manual handling, many companies have introduced robotic palletizing systems to automate this task.

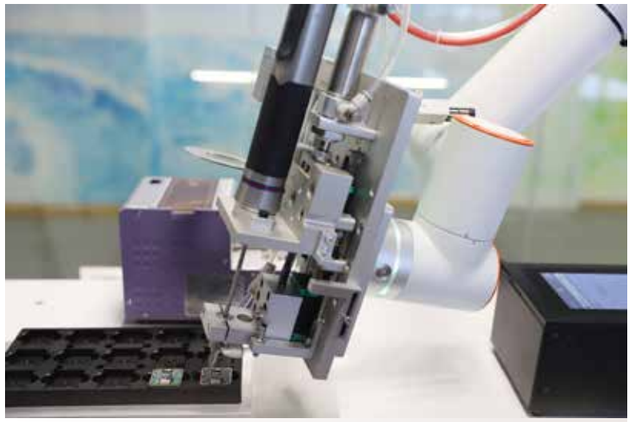
Collaborative robots can perform round-the-clock automated palletizing work, effortlessly and quickly transporting goods to their destinations, saving time and energy. This frees employees from fatigue and repetitive tasks, allowing them to engage in more meaningful work. Additionally, there is no need for safety barriers, enabling true human-robot collaboration.

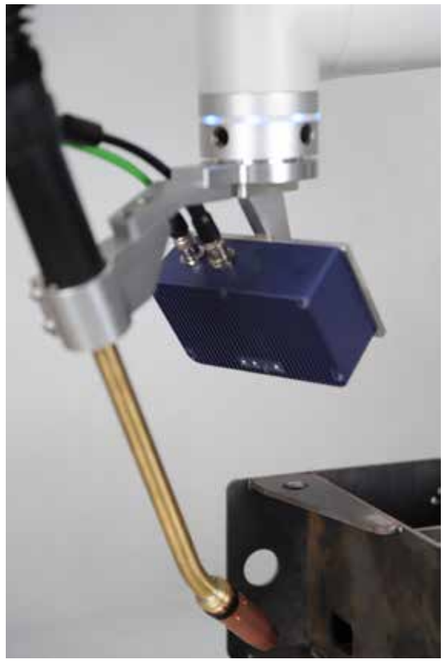
The platform utilizes a six-axis collaborative robot to accomplish palletizing work, offering easy deployment and quick utilization, truly enabling a plug-and-play experience.

## Screw Tightening Solution

Combined with the end intelligent tightening device at the end, it achieves adjustable, controllable, and programmable torque, making it suitable for screw tightening in various scenarios. It can stably, efficiently, and accurately complete the production process, greatly reducing repetitive labor for workers and supporting data traceability.

- Safe and convenient
- Flexible deployment
- Flexible force control
- High efficiency in production





## Welding Solution

Abundant welding process kits, with a variety of welding technologies such as spot welding, seam welding, straight welding, oscillating welding, arc welding, and multi-layer multi-pass welding. It also incorporates intelligent welding technologies for wire positioning and weld seam tracking, significantly enhancing welding efficiency and ensuring welding quality.

- Ultimate safety
- Flexible deployment
- Reduced entry barriers
- Multi-axis coordination
- High production efficiency

# APPLICATIONS

## Conveyor Belt Solution

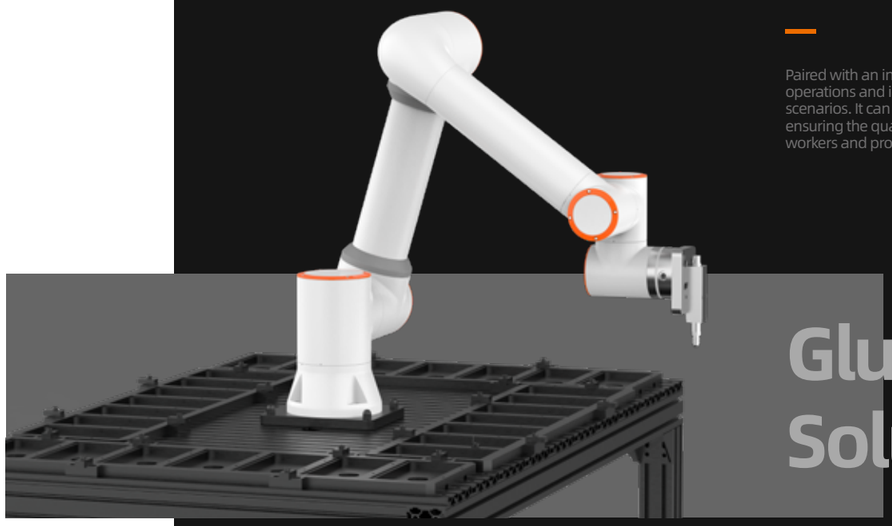
- Enhance work safety
- Reduce error rate and losses
- Data recording and traceability
- Real-time monitoring and feedback
- Improve production efficiency
- Accurate tracking and identification

## Pick And Place Solution

Material handling robots can improve production efficiency, quality, and safety, reduce labor intensity, and provide flexibility and adaptability, bringing higher benefits and competitive advantages to businesses.

## Educational Solution

The platform includes common functions in the industrial field, such as gluing, tightening, and material handling, closely aligning with actual production line scenarios. It allows students to experience the real factory atmosphere up close in the classroom, making it an invaluable collaborative robot training platform in the field of education.



Paired with an intelligent dispensing device at the end effector, it enables precise operations and is suitable for precise gluing and dispensing tasks in various scenarios. It can achieve stable, efficient, and accurate adhesive application, ensuring the quality of the adhesive work. This greatly reduces repetitive labor for workers and protects their health.

## Glue Dispending Solution

# COMMERCIAL

It has achieved integration of upper limb rehabilitation and lower limb exercise, reducing the barrier to entry through the reproduction of motion trajectories. By recording real-time feedback data, it significantly enhances safety performance. With various mode settings, it makes rehabilitation treatment more targeted, leading to a significant improvement in rehabilitation efficiency.

## Rehabilitation Solution

Ultimate safety

Open platform

Data traceability

Reduced entry barriers


Collaborative robots can be applied in various types of new retail scenarios and can be customized according to different scenario requirements.Benefits include:
Cost-saving: They replace manual labor, reducing manpower costs while increasing work efficiency.
Consistent tea brewing: They ensure consistent taste regardless of different operators or different time points, eliminating variations caused by human factors.
Entertainment value: The robotic performance brings enjoyment to consumers, while employees can focus on more fulfilling and higher-paying jobs.
Cost-effective: They have low costs and provide a quick return on investment, resulting in good economic benefits.
Small footprint: They occupy less space, resulting in higher space utilization and adaptability to various innovative business models.

## Automated Tea Solution

# ONE STOP SHOP

- *Automation*
- *Machine enginering*
- *Maintenance*
- *(24/7) Breakdown service*

*Meerheide 113*
*5521 DX, Eersel*

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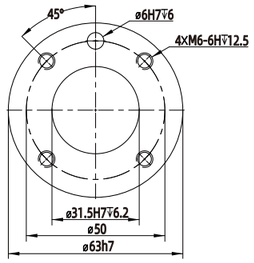
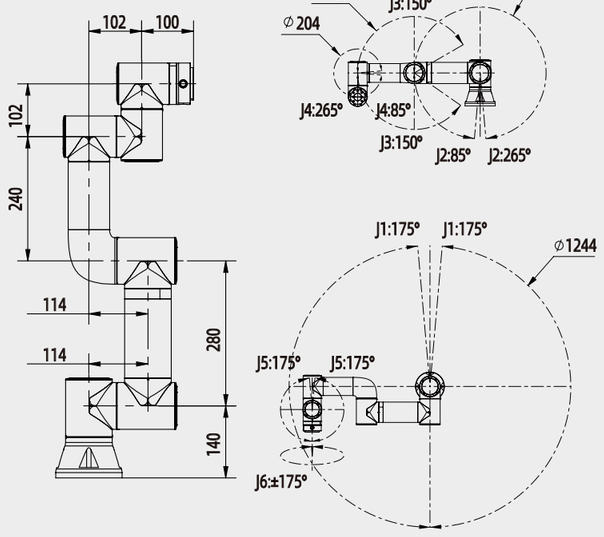
# DRAWINGS

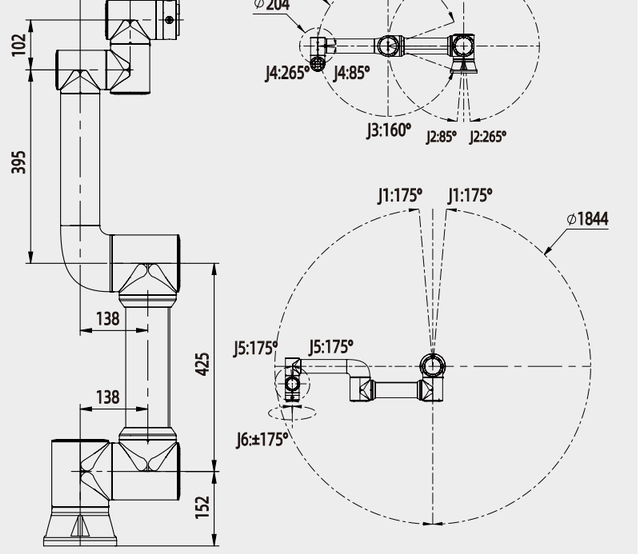
Unit : mm



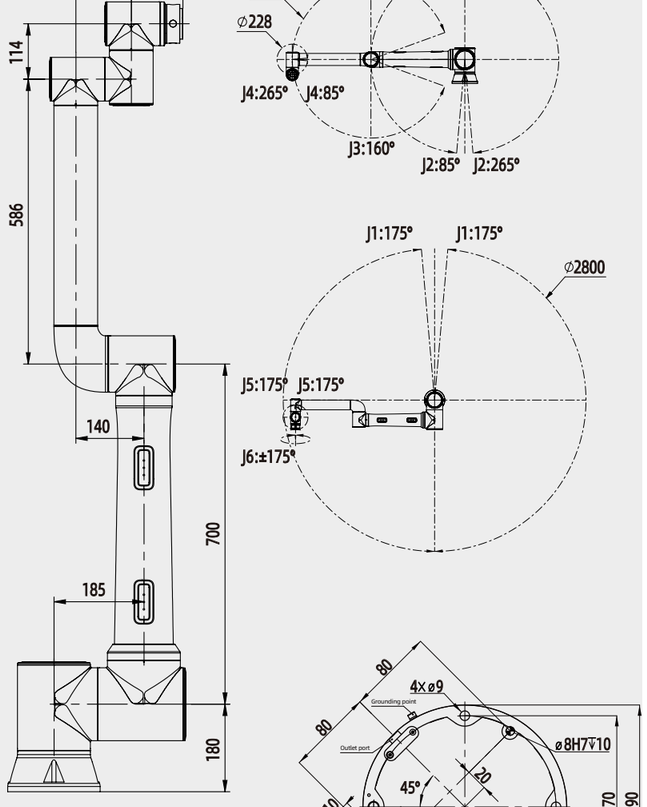

ROBOT END-EFFECTOR COMPATIBLE WITH
INDUSTRIAL ROBOT END-EFFECTOR CONNECTION METHODS



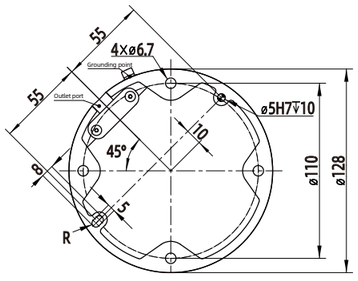

GI-3



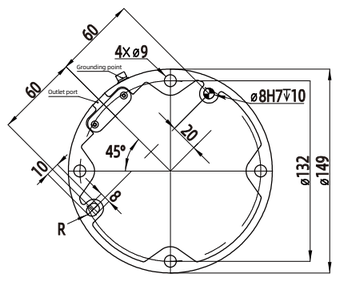

GI-5



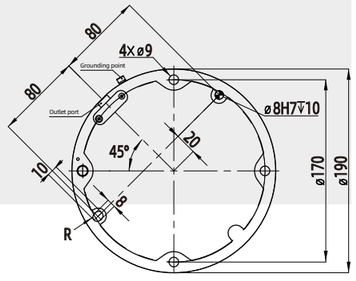

GI-10




GI-3 Pedestal diagram




GI-5 Pedestal diagram




GI-10 Pedestal diagram

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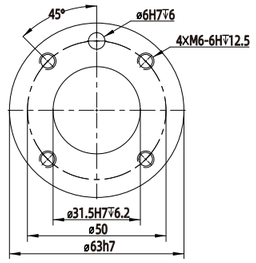
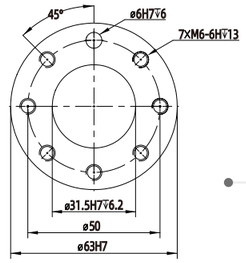
# DRAWINGS

Unit : mm

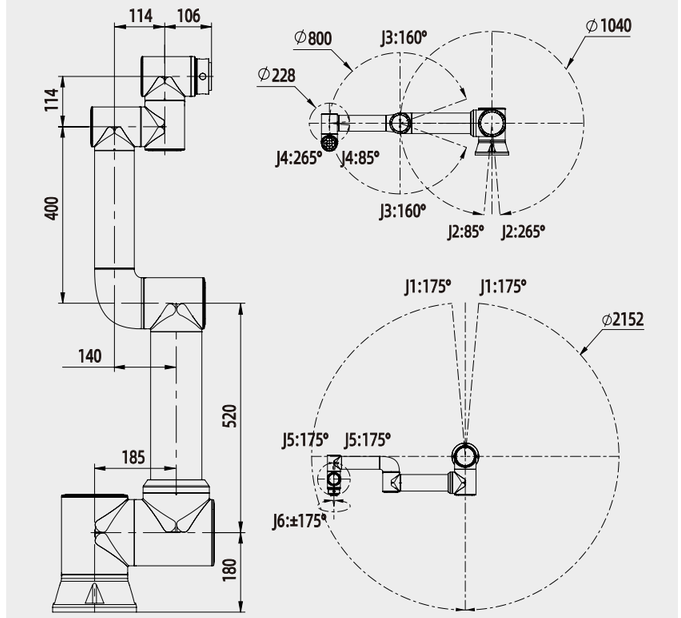


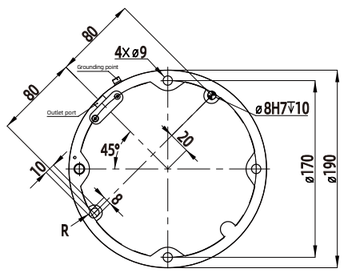

ROBOT END-EFFECTOR COMPATIBLE WITH
INDUSTRIAL ROBOT END-EFFECTOR CONNECTION METHODS




ROBOT END-EFFECTOR COMPATIBLE
WITH INDUSTRIAL ROBOT END-EFFECTOR CONNECTION METHODS

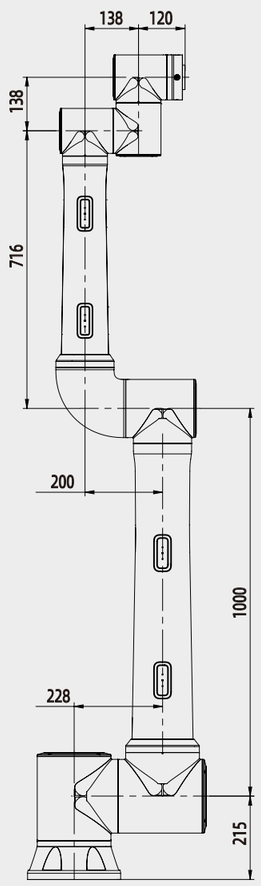
GI-16

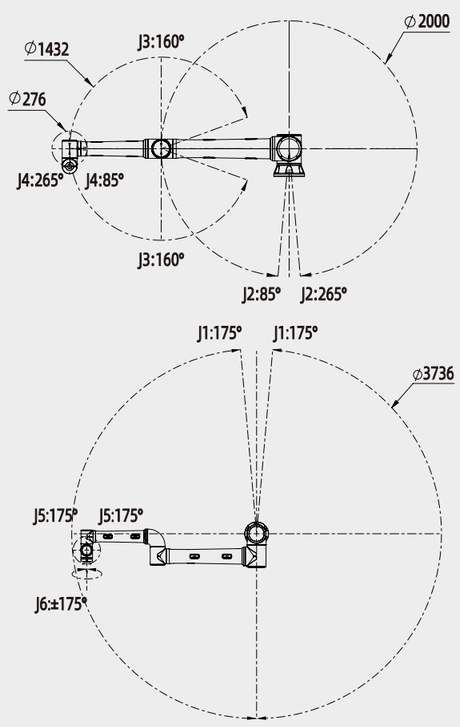


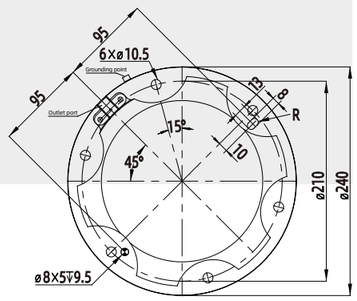




GI-16 Pedestal diagram

GI-20

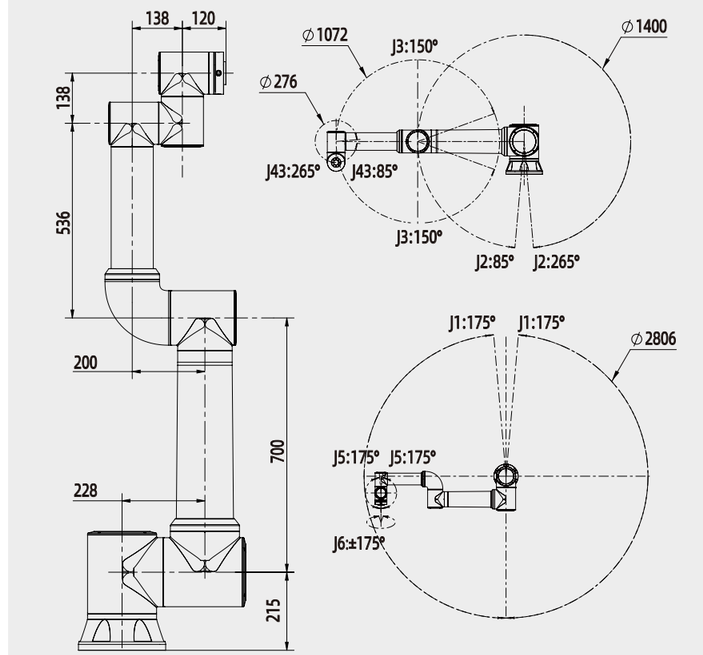


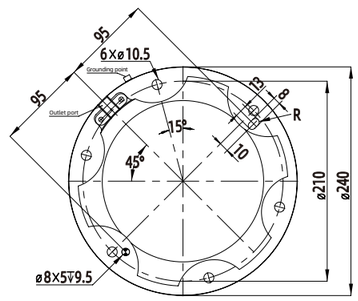




GI-20 Pedestal diagram

GI-30




GI-30 Pedestal diagram