# PRODUCT
## CATALOGUE

# SPECIFICATION

| | FR3 | | FR5 | | FR10 | |
|---|---|---|---|---|---|---|
| **Specification** | | | | | | |
| Payload | **3kg** | | **5kg** | | **10kg** | |
| Reach | **622mm** | | **922mm** | | **1400mm** | |
| Range | 6 | | 6 | | 6 | |
| HMI | 10.1 inch teach pendant or mobile terminal APP | | | | | |
| **Movement** | | | | | | |
| Repeatability | **±0.02mm** | | **±0.02mm** | | **±0.05mm** | |
| Axis movement | Working range | Maximum speed | Working range | Maximum speed | Working range | Maximum speed |
| 1 Axle | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±120°/s |
| 2 Axle | + 85°/ – 265° | ±180°/s | + 85°/ – 265° | ±180°/s | + 85°/ 265° | ±120°/s |
| 3 Axle | ±150° | ±180°/s | ±160° | ±180°/s | ±160° | ±180°/s |
| 4 Axle | + 85°/ – 265° | ±180°/s | + 85°/ – 265° | ±180°/s | + 85°/ 265° | ±180°/s |
| 5 Axle | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±180°/s |
| 6 Axle | ±175° | ±180°/s | ±175° | ±180°/s | ±175° | ±180°/s |
| Typical TCP speed | 1m/s | | 1m/s | | 1.5m/s | |
| **Features** | | | | | | |
| IP classification | IP54 (Optional IP66) | | IP54 (Optional IP66) | | IP54 (Optional IP66) | |
| Noise | <65dB | | <65dB | | <65dB | |
| Robot mounting | Any orientation | | Any orientation | | Any orientation | |
| I/O | (DI) 2 | (DO) 2 | (DI) 2 | (DO) 2 | (DI) 2 | (DO) 2 |
| | (AI) 1 | (AO) 1 | (AI) 1 | (AO) 1 | (AI) 1 | (AO) 1 |
| Power supply | 24V/1.5A | | 24V/1.5A | | 24V/1.5A | |
| Communication | I/O、TCP/IP、Modbus_TCP/RTU、Profinet | | I/O、TCP/IP、Modbus_TCP/RTU、Profinet | | I/O、TCP/IP、Modbus_TCP/RTU、Profinet | |
| Development environment | C#/C++/Python/java/ROS | | C#/C++/Python/java/ROS | | C#/C++/Python/java/ROS | |
| **Physical** | | | | | | |
| Footprint | 130mm | | 150mm | | 190mm | |
| Weight | ≈15kg | | ≈22kg | | ≈40kg | |
| Operating temperature | 0-45 | | 0-45 | | 0-45 | |
| Operating humidity | 90%RH(non-condensing) | | 90%RH(non-condensing) | | 90%RH(non-condensing) | |
| Materials | Aluminium、Steel | | Aluminium、Steel | | Aluminium、Steel | |

# SPECIFICATION

| | FR16 | | FR20 | |
|---|---|---|---|---|
| **Specification** | | | | |
| Payload | **16kg** | | **20kg** | |
| Reach | **1076mm** | | **1868mm** | |
| Range | 6 | | 6 | |
| HMI | 10.1 inch teach pendant or mobile terminal APP | | | |
| **Movement** | | | | |
| Repeatability | **±0.03mm** | | **±0.1mm** | |
| Axis movement | Working range | Maximum speed | Working range | Maximum speed |
| 1 Axle | ±175° | ±120°/s | ±175° | ±120°/s |
| 2 Axle | + 85°/  265° | ±120°/s | + 85°/  265° | ±120°/s |
| 3 Axle | ±160° | ±180°/s | ±160° | ±120°/s |
| 4 Axle | + 85°/  265° | ±180°/s | + 85°/  265° | ±180°/s |
| 5 Axle | ±175° | ±180°/s | ±175° | ±180°/s |
| 6 Axle | ±175° | ±180°/s | ±175° | ±180°/s |
| Typical TCP speed | 1m/s | | 2m/s | |
| **Features** | | | | |
| IP classification | IP54 (Optional IP66) | | IP54 (Optional IP66) | |
| Noise | <65dB | | <65dB | |
| Robot mounting | Any orientation | | Any orientation | |
| I/O | (DI) 2 | (DO) 2 | (DI) 2 | (DO) 2 |
| | (AI) 1 | (AO) 1 | (AI) 1 | (AO) 1 |
| Power supply | 24V/1.5A | | 24V/1.5A | |
| Communication | I/O、TCP/IP、Modbus_TCP/RTU、Profinet | | I/O、TCP/IP、Modbus_TCP/RTU、Profinet | |
| Development environment | C#/C++/Python/java/ROS | | C#/C++/Python/java/ROS | |
| **Physical** | | | | |
| Footprint | 190mm | | 240mm | |
| Weight | ≈40kg | | ≈65kg | |
| Operating temperature | 0-45 | | 0-45 | |
| Operating humidity | 90%RH(non-condensing) | | 90%RH(non-condensing) | |
| Materials | Aluminium、Steel | | Aluminium、Steel | |

# SAFETY REMOTE

Human-computer interaction tool, which can realize basic interactive functions. It can be linked with computers, tablets and other devices through the RJ45 interface, and directly log in to the web teaching interface.

■ Simple to use    ■ Easy to operate    ■ Flexible to deploy

| Features | | |
|---|---|---|
| | IP classification | IP54 |
| | Network transfer rate | 100M Standard POE |
| | Number of keys | ≥20W Order |
| Physical | | |
| | L*W*H | 136*60*66mm |
| | Weight | 490g (Belt weight) |
| | Materials | ABS |
| | Cable length | 5m |

# TEACH PENDANT [ Optional ]

**All operations in one place**

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

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

# CONTROL BOX

245mm

180mm
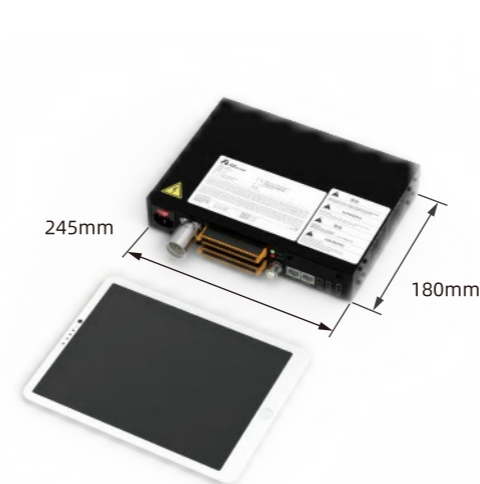
Small size, light weight, convenient installation and flexible deployment; Provide rich interfaces: I/O, TCP/IP, Modbus_TCP/RTU, Profinet etc., supporting for multiple development environment: C#/C++/Python/java/ROS, etc.

| Features | | |
|---|---|---|
| | IP classification | IP54 |
| | Operating temperature | 0-45 Degrees Celsius |
| | Operating humidity | 90%RH(non-condensing) |
| | I/O | (DI) 16        (DO) 16 |
| | | (AI) 2        (AO) 2 |
| | | (High speed pulse input) 2 |
| | Power supply | 24V/1.5A |
| Physical | | |
| | L*W*H | 245*180*44.5mm |
| | Weight | 2.1kg |
| | Materials | Galvanized sheet |

| 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 |

# 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.

## Welding Solution

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Ultimate safety

Flexible deployment

Reduced entry barriers

Multi-axis coordination

High production efficiency

## Screw Locking Solution

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

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

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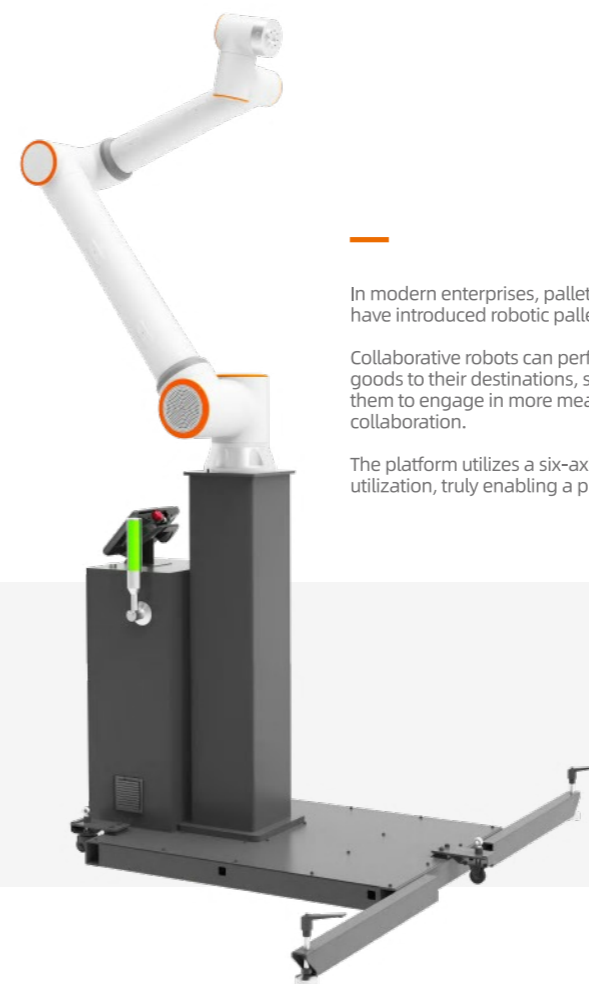
In modern enterprises, palletizing work is very common. Due to the low efficiency of manual handling, many companies have introduced robotic palletizing systems to automate this task.

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.

## Palletizing Solution

# APPLICATIONS

## Conveyor Belt Solution

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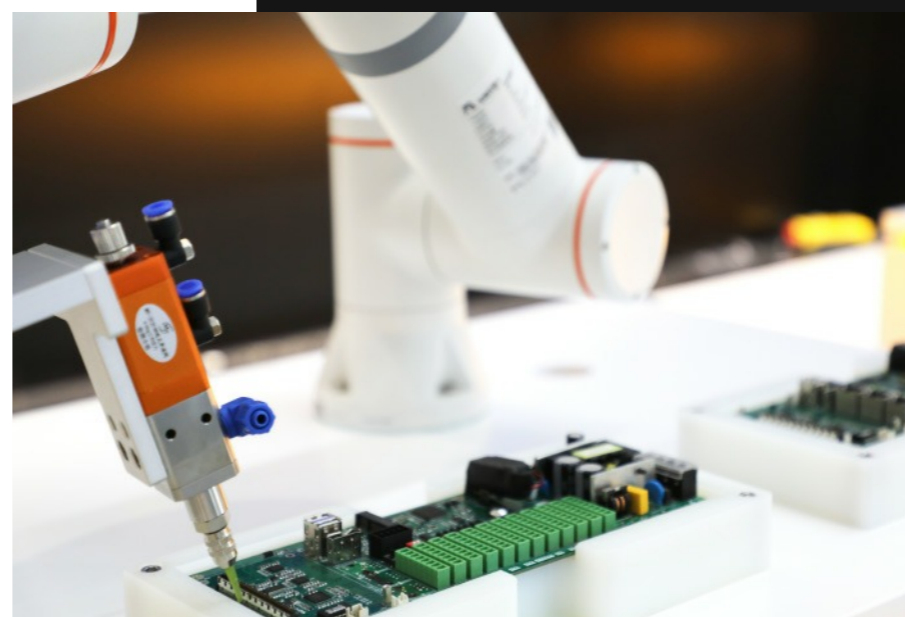
## Educational Solution

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.

## Pick And Place Solution

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

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 labour for workers and protects their health.

## Glue Dispensing 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

## Moxibustion Solution

It fully replicates the five major moxibustion techniques, offering hovering moxibustion, sparrow pecking moxibustion, rotating moxibustion, reciprocating moxibustion, and meridian moxibustion, thus reducing the barrier to entry for moxibustion. With the latest certifications, it is equipped with end collision detection, temperature control, and infrared distance measurement, providing triple protection to ensure the safety of moxibustion. It also has a built-in suction device to prevent inhalation of smoke and dust during the moxibustion process.

- Ultimate safety
- Flexible deployment
- Efficient moxibustion
- Lower barrier to entry

Cooperative 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 labour, 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.
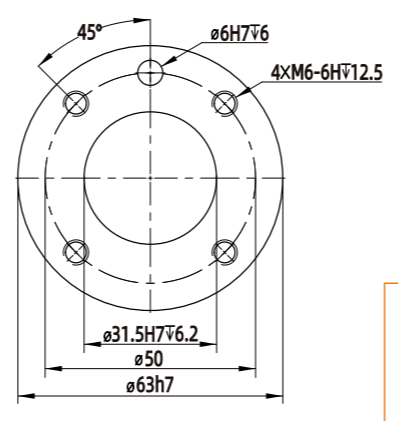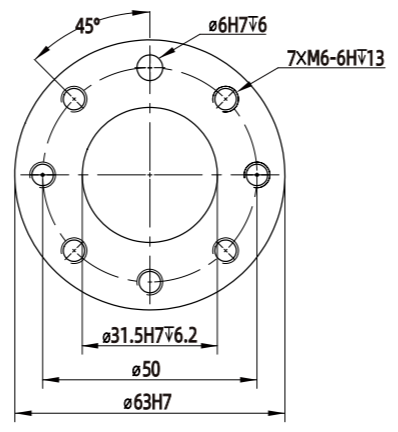
## Automated Tea Solution

# DRAWINGS

Unit : mm

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

45°
ø6H7▼6
4XM6-6H▼12.5
ø31.5H7▼6.2
ø50
ø63h7

**FR10**

114  106
114
586
140
700
185
180

Ø1172
Ø228
J3:160°
Ø1400
J4:265°  J4:85°
J3:160°
J2:85°  J2:265°

J1:175°  J1:175°
Ø2800
J5:175°  J5:175°
J6:±175°

**FR5**

102  100
102
395
138
425
138
152

Ø790
Ø204
J3:160°
Ø850
J4:265°  J4:85°
J3:160°
J2:85°  J2:265°

J1:175°  J1:175°
Ø1844
J5:175°  J5:175°
J6:±175°

**FR3**

102  100
102
240
114
280
114
140

Ø480
Ø204
J3:150°
Ø560
J4:265°  J4:85°
J3:150°
J2:85°  J2:265°

J1:175°  J1:175°
Ø1244
J5:175°  J5:175°
J6:±175°

80
80
4Xø9
Grounding point
Outlet port
ø8H7▼10
45°
20
10
R
ø170
ø190

**FR10 Pedestal diagram**

60
60
4Xø9
Grounding point
Outlet port
ø8H7▼10
45°
20
10
R
ø132
ø149

**FR5 Pedestal diagram**

55
55
4Xø6.7
Grounding point
Outlet port
ø5H7▼10
45°
10
8
5
R
ø110
ø128

**FR3 Pedestal diagram**

# DRAWINGS

Unit : mm



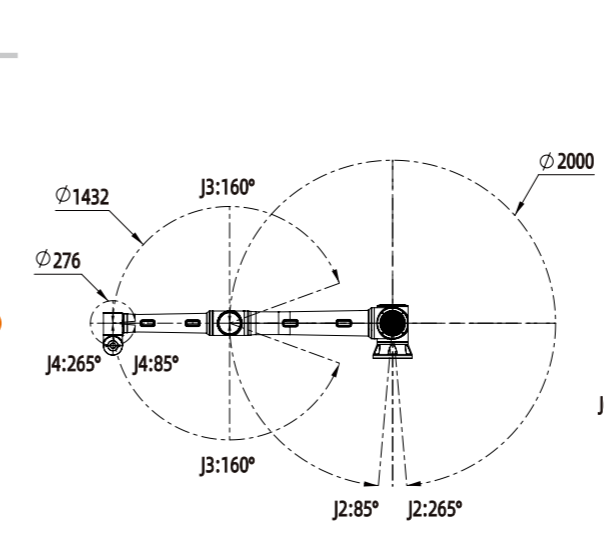ROBOT END-EFFECTOR COMPATIBLE WITH INDUSTRIAL ROBOT END-EFFECTOR CONNECTION METHODS
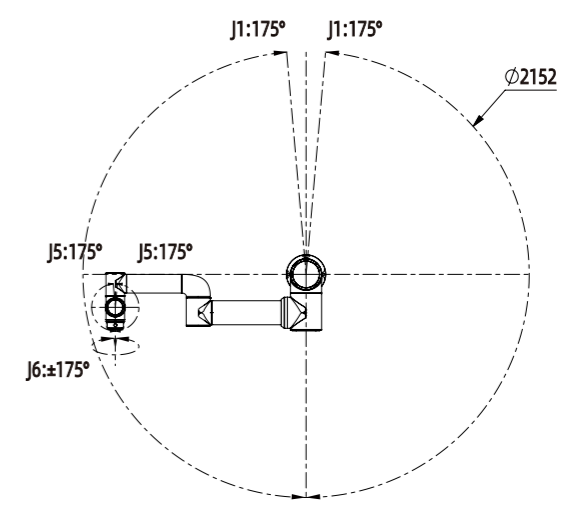
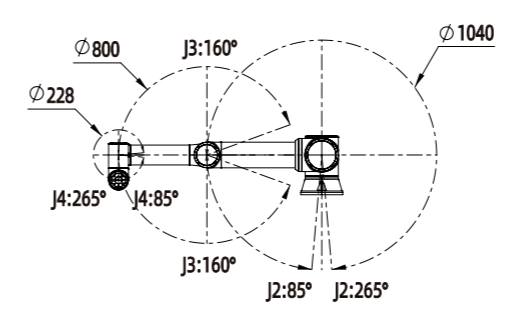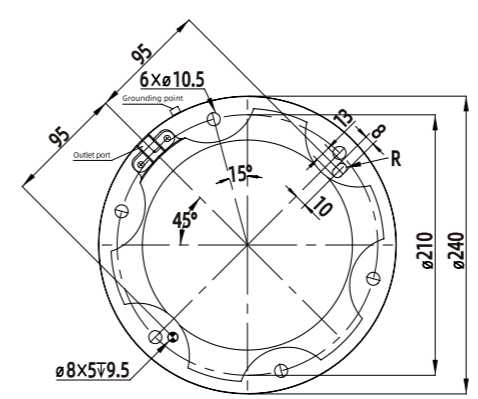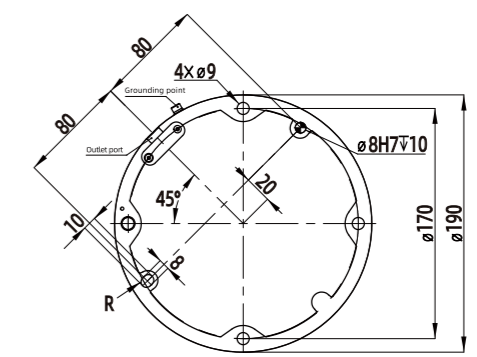ROBOT END-EFFECTORS ALL ADOPT INTERNATIONAL STANDARDS
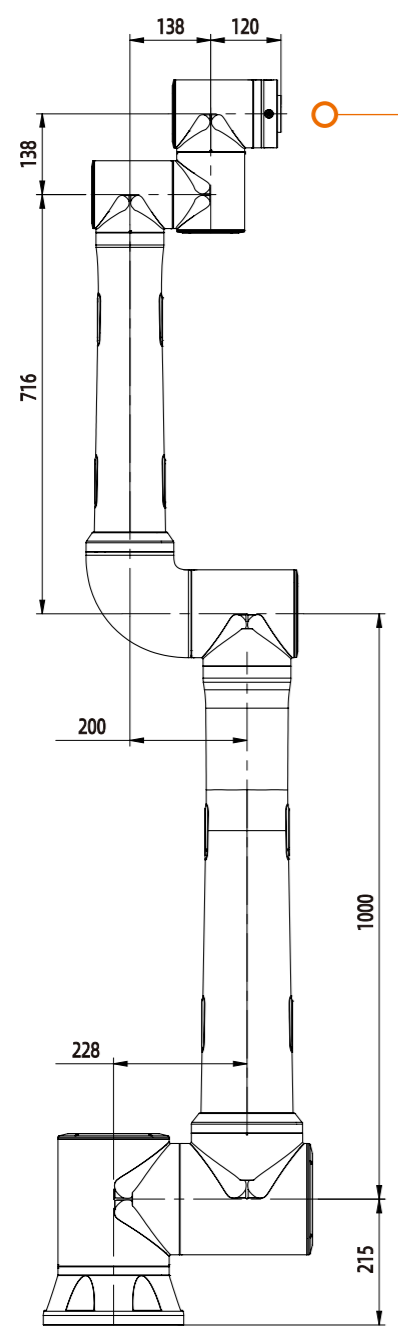
FR20
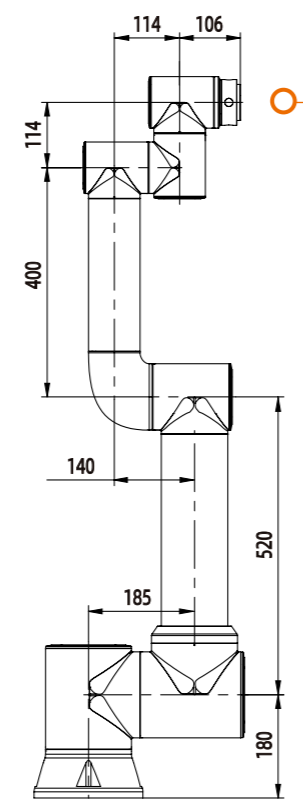
FR16
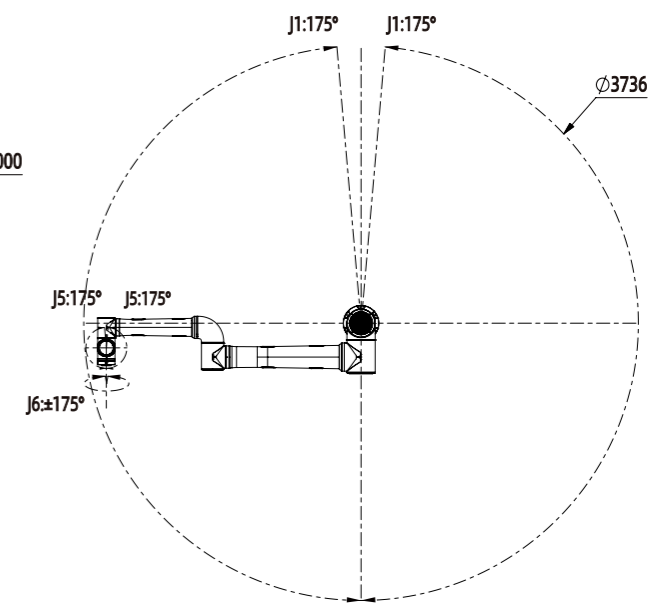
FR20

FR16

FR20 Pedestal diagram

FR16 Pedestal diagram