

Kawasaki Robot

LINE UP

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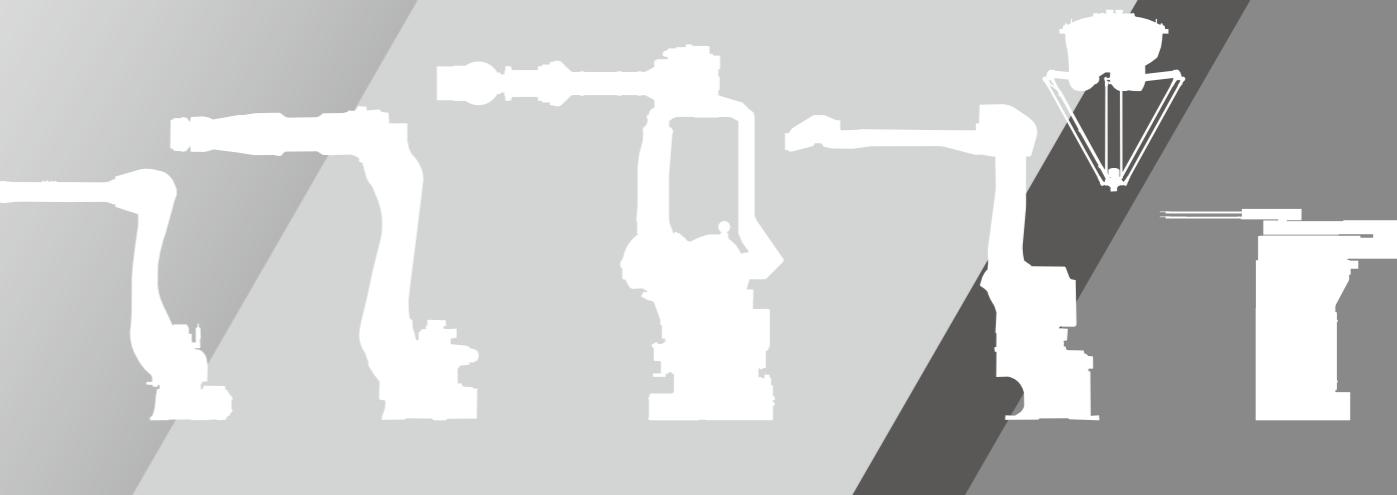
CAUTIONS TO BE TAKEN TO ENSURE SAFETY

- For those persons involved with the operation / service of your system, including Kawasaki Robot, they must strictly observe all safety regulations at all times. They should carefully read the Manuals and other related safety documents.
- Products described in this catalogue are general industrial robots. Therefore, if a customer wishes to use the Robot for special purposes, which might endanger operators or if the Robot has any problems, please contact us. We will be pleased to help you.
- Be careful as Photographs illustrated in this catalogue are frequently taken after removing safety fences and other safety devices stipulated in the safety regulations from the Robot operation system.



ISO certified in Akashi Works.

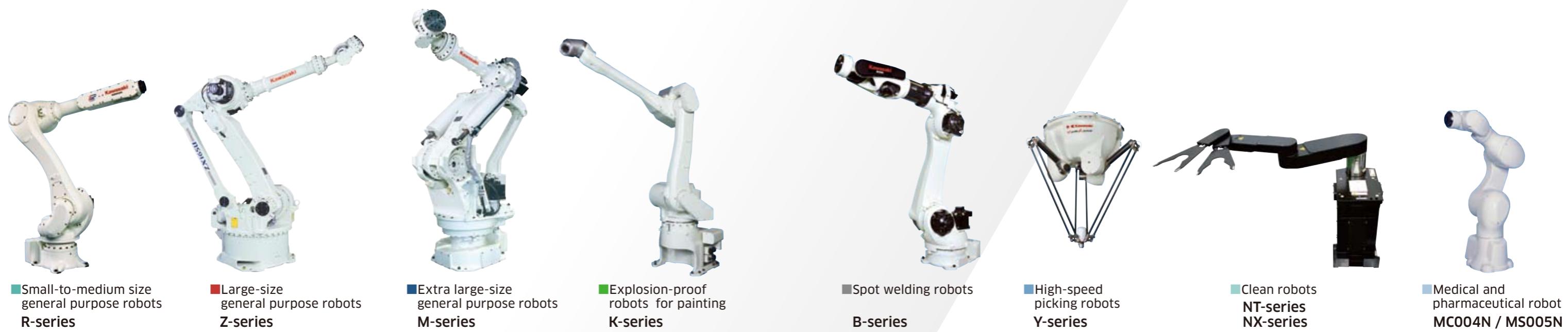
*Materials and specifications are subject to change without notice.



Our Product Concept is “Simple and friendly”

Utilizing our more than 40 years experience in industrial robotics, we consolidate our state-of-art technologies in a form that is simple and friendly. Our product line-up offers the optimum solutions to your problems and needs.

Kawasaki started the manufacture and sales of industrial robots in 1969. Since that time, we have continually produced a wide range of advanced industrial robots using state-of-the-art technology for both the domestic and overseas markets. Our line-up includes manipulators developed to meet diverse industrial requirements. From the assembly of miniature components, weighing only a few grams, to robots capable of handling 700 kg. The line-up is supported by our continuous development of control technology to improve functionality and operation for optimum control of the manipulator. Human and environmentally friendly robot systems provide a high level of skill and intelligence. We hope that you will benefit from our technology and experience in your future automation systems.



■ Small-to-medium size
general purpose robots
R-series

■ Large-size
general purpose robots
Z-series

■ Extra large-size
general purpose robots
M-series

■ Explosion-proof
robots for painting
K-series

■ Spot welding robots
B-series

■ High-speed
picking robots
Y-series

■ Clean robots
NT-series
NX-series

■ Medical and
pharmaceutical robot
MC004N / MS005N

■Small-to-medium size general purpose robots

R series

Higher speed and longer reach in a compact design. Complete line-up based on the consolidation of our vast technologies and experience.

1. High speed

The new light-weight arm of the R-series robot, which incorporates high-output, high-revolution, small motors and other design innovations, provides industry leading acceleration and high-speed operation. In addition, the acceleration rate automatically adjusts to fit the payload and robot posture, delivering both optimum performance within the shortest cycle times.

2. High torque

High-output servomotors, combined with enhanced arm rigidity, allow for superior wrist load capacity. This high torque rating offers system designers a broad selection of end-of-arm tooling, and allows for increased flexibility while performing work with complex workpieces.

3. Wide working range

In addition to extending the robot's maximum reach, the motion range of each axis has also been increased. The wider motion range has expanded the working area of the robot, delivering greater flexibility throughout the work envelope.

4. Environmental adaptability

Each joint axis has a double seal construction, and the electrical connectors are waterproof. These features enable the wrists to meet IP67 standards, and the remaining axes to meet IP65 standards. If required, an option that meets IP67 standards can be provided for the remaining axes.

5. Integrated features

Built-in solenoid valves and signal harnesses are available. These options enable peripheral equipment to be used for a wide range of applications. Furthermore, the arm is equipped with standard service-taps in different sections, allowing for the easy installation of additional cabling and tubing.



| | RS03N | RS05N/05L | RS06L/10N | RS15X | RS10L/20N | RS30N/50N/80N | RD80N |
|--------------------------|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Application | ● ● ● | ● ● ● (●) *1 | ● ● ● (●) *1 | ● ● ● | ● ● ● (●) *1 | ● ● ● | ● |
| Degree of freedom (axes) | 6 | 6 | 6 | 6 | 6 | 6 | 5 |
| Max. payload (kg) | 3 | 5 | 6/10 | 15 | 10/20 | 30/50/80 | 80 |
| Motion range (°) | Arm rotation (JT1) | ±160 | ±180 | ±180 | ±180 | ±180 | ±180 |
| | Arm out-in (JT2) | +150 ~ -60 | +135 ~ -80 | +145 ~ -105 | +140 ~ -105 | +155 ~ -105 | +140 ~ -105 |
| | Arm up-down (JT3) | +120 ~ -150 | +118 ~ -172 | +150 ~ -163 | +135 ~ -155 | +150 ~ -163 | +135 ~ -155 |
| | Wrist swivel (JT4) | ±360 | ±360 | ±270 | ±360 | ±270 | ±360 |
| | Wrist bend (JT5) | ±135 | ±145 | ±145 | ±145 | ±145 | ±10 |
| | Wrist twist (JT6) | ±360 | ±360 | ±360 | ±360 | ±360 | — |
| Max. speed (° / s) | Arm rotation (JT1) | 360 | 360/300 | 250 | 180 | 190 | 180 |
| | Arm out-in (JT2) | 250 | 360/300 | 250 | 180 | 205 | 180 |
| | Arm up-down (JT3) | 225 | 410/300 | 215 | 200 | 210 | 185/185/160 |
| | Wrist swivel (JT4) | 540 | 460 | 365 | 410 | 400 | 260/260/185 |
| | Wrist bend (JT5) | 225 | 460 | 380 | 360 | 360 | 260/260/165 |
| | Wrist twist (JT6) | 540 | 740 | 700 | 610 | 610 | 360/360/280 |
| Repeatability (mm) *2 | ±0.05 | ±0.02 ±0.03 | ±0.05 ±0.04 | ±0.15 | ±0.06 ±0.05 | ±0.07 | ±0.07 |
| Max. reach (mm) | 620 | 705/903 | 1,650/1,450 | 3,150 | 1,925/1,725 | 2,100 | 2,062.3 |
| Mass (kg) | 20 | 34/37 | 150 | 545 | 230 | 555 | 540 |
| Installation | Floor, Ceiling | Floor, Ceiling | Floor, Ceiling | Floor, Ceiling | Floor, Ceiling | Floor, Ceiling | Floor, Ceiling |
| Matching controller | E73 | E74 | E20, E74 | E22 | E20, E94 | E22 | E22 |

*1: Model code has changed. The configuration is also slightly different from that shown in the photo. *2: conforms to ISO9283

Application: ● Assembling ● Handling ● Sealing ● Arc welding ● Palletizing

■Spot welding robots

B series

Our advanced robotics technologies streamline the spot welding process.

1. High-speed spot welding

The B series robots come with lightweight arms and high-output, high-revolution motors, and utilize the latest in anti-vibration control technology. These features help to reduce the time needed for short-pitch movements, which constitute the main part of spot welding. The improved sequence of axial operations performed by the servo welding guns also leads to a significant reduction in cycle time.

2. Integrated dress package

Exposed cable harnesses on conventionally dressed robots present a number of drawbacks, such as interference caused by adjacent robots or peripheral devices during in-field teaching or while executing playback after offline programming. The B series eliminates this problem by housing the cable harness within the robot arm. The arm and wrist of the B series robot are hollow, allowing the cable harness for spot welding to be internally routed between the base and wrist. This greatly boosts the efficiency of both offline programming and in-field teaching.

3. Higher density installation

Compared to conventional robots, the B series robots have a much smaller footprint and an even thinner body. Coupled with the cable harnesses housed within the robot arm, these features make it possible to install a large number of B series robots within a confined space.



| | BX100N | BX100L/165L/200L | BX130X | BX165N | BT200L |
|--------------------------|--------------------|------------------|-------------|-----------|-----------|
| Degree of freedom (axes) | 6 | 6 | 6 | 6 | 6 |
| Motion range (°) | Arm rotation (JT1) | ±160 | ±160 | ±160 | ±160 |
| | Arm out-in (JT2) | +120 ~ -65 | +76 ~ -60 | +76 ~ -60 | +76 ~ -60 |
| | Arm up-down (JT3) | +90 ~ -77 | +90 ~ -75 | +90 ~ -75 | +90 ~ -75 |
| | Wrist swivel (JT4) | ±210 | ±210 | ±210 | ±210 |
| | Wrist bend (JT5) | ±125 | ±125 | ±125 | ±125 |
| | Wrist twist (JT6) | ±210 | ±210 | ±210 | ±210 |
| Max. speed (° / s) | Arm rotation (JT1) | 135 | 105/120/105 | 105 | 105 |
| | Arm out-in (JT2) | 110 | 130/110/90 | 90 | 85 |
| | Arm up-down (JT3) | 140 | 130/130/100 | 130 | 100 |
| | Wrist swivel (JT4) | 200 | 200/170/120 | 200 | 120 |
| | Wrist bend (JT5) | 200 | 160/170/120 | 160 | 120 |
| | Wrist twist (JT6) | 300 | 300/280/200 | 300 | 200 |
| Repeatability (mm) *1 | ±0.2 | ±0.2 | ±0.2 | ±0.2 | ±0.2 |
| Max. reach (mm) | 2,200 | 2,597 | 2,991 | 2,325 | 3,151 |
| Mass (kg) | 740 | 930 | 970 | 903 | 1,100 |
| Installation | Floor | Floor | Floor | Floor | Shelf |
| Matching controller | E22, E12 | E22, E12 | E22, E12 | E22, E12 | E22, E12 |

*1: conforms to ISO9283

■ Extra large-size general purpose robots

M series

Maximum payload capacity: 700 kg.
The M-series offer compact footprint and large wrist torque.

1. Compact profile

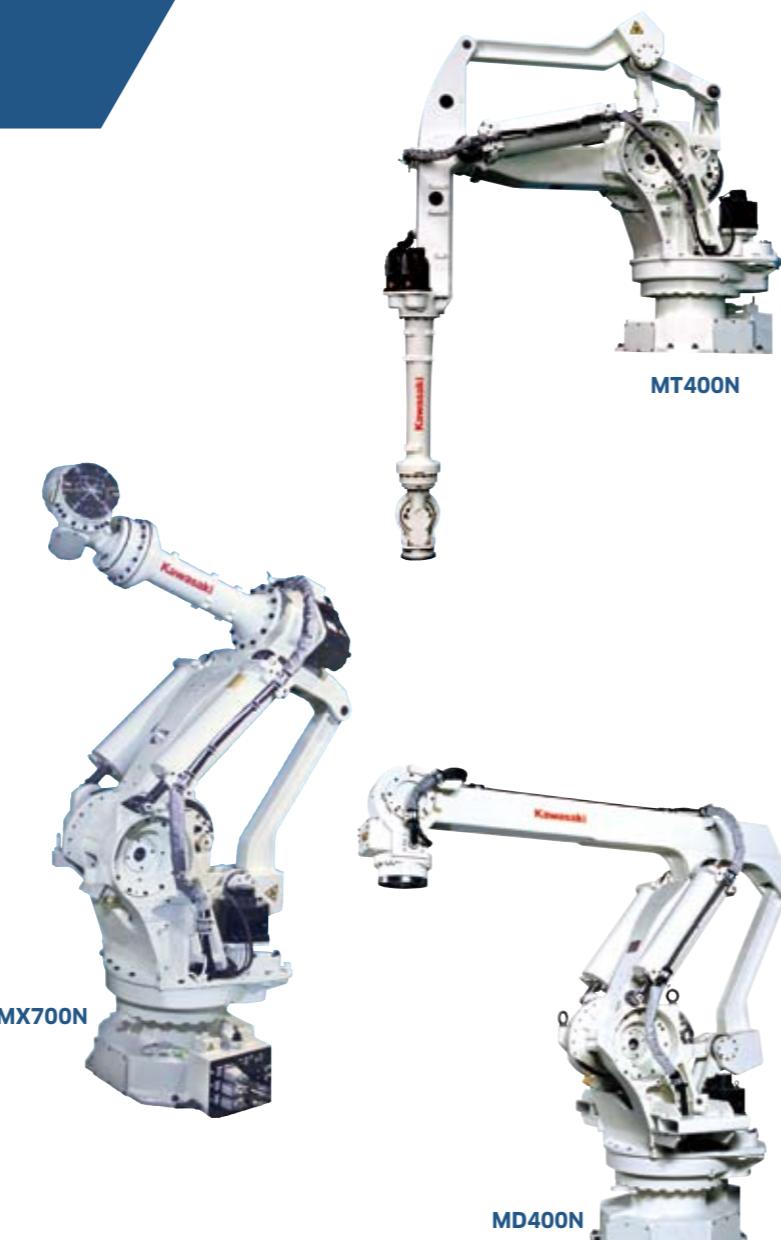
High payload robots conventionally require a large counterbalance that increases interference and reduces the work envelope. Kawasaki's innovative design of a advanced link mechanism has reduced interference and increased work envelope by elimination the function of this redundant counterbalance.

2. High wrist torque

The MX500N and 700N have superb wrist torque. This torque increases the offset distance from the twist flange surface to the center of gravity of a workpiece. Its application offers excellent results when working with off-centered workpieces.

3. Many variations

Four MX models (6-axis type, 350-700 kg) are floor mounting types. The MT400N (6-axis, 400kg) is a shelf mounting type. These models are for assembling and handling applications. The two MD models (5-axis, 400 - 500 kg) are floor mounting type for palletizing applications.



| | MX350L/420L/500N/700N | MT400N | MD400N/500N |
|--------------------------|--|------------|-------------|
| Application | ● ● ● | ● ● ● | ● |
| Degree of freedom (axes) | 6 | 6 | 5 |
| Max. payload (kg) | 350/420/500/700 | 400 | 400/500 |
| Motion range (°) | Arm rotation (JT1) ±180 | ±180 | ±180 |
| | Arm out-in (JT2) +90 ~ -45 | +15 ~ -135 | +90 ~ -45 |
| | Arm up-down (JT3) +20 ~ -115 / -125 / -130 / -130 | +106 ~ -30 | +14 ~ -125 |
| | Wrist swivel (JT4) ±360 | ±360 | ±360 |
| | Wrist bend (JT5) ±110 | ±120 | ±10 |
| | Wrist twist (JT6) ±360 | ±360 | — |
| | Arm rotation (JT1) 80/80/80/65 | 80 | 80/70 |
| Max. speed (° / s) | Arm out-in (JT2) 70/70/70/50 | 70 | 70/65 |
| | Arm up-down (JT3) 70/70/70/45 | 70 | 70/45 |
| | Wrist swivel (JT4) 80/80/80/50 | 70 | 180/160 |
| | Wrist bend (JT5) 80/80/80/50 | 70 | — |
| | Wrist twist (JT6) 120/120/120/95 | 130 | — |
| | Repeatability (mm) *1 ±0.5 | ±0.5 | ±0.5 |
| | Max. reach (mm) 3,018/2,778/2,540/2,540 | 3,503 | 2,710.4 |
| Mass (kg) | 2,800/2,800/2,750/2,860 | 2,600 | 2,650/2,680 |
| Installation | Floor | Shelf | Floor |
| Matching controller | E24 | E22 | E24 |

*1: conforms to ISO9283

Application: ● Assembling ● Handling ● Palletizing

■ Explosion-proof robots for painting

K series

The optimum model with right wrist configuration can be selected according to the workpiece.
Various painting package cells enable very easy installation.

1. Broad range of robots

Kawasaki offers four basic types of painting robot, from the KF121 for small workpieces to the KG264 for the inner and outer bodies of automobiles. We provide a range of robots that covers the requirements of all applications and installations.

2. Built-in hoses

The hollow wrist(3R) prevents paint mist from adhering on tubes and cables and can minimize the chance of painting defects. The inner diameter of the hollow wrist is either 40 or 70 mm.

3. Enhanced peripheral units

A control panel is provided to enhance the ease of system development and to interface with the robot traveling unit, workpiece transfer unit, rotation unit and other devices.

4. Significant experience

Gathering painting robot experience has enabled Kawasaki to put together a robot that will match your every need. The K-series has used this information and is now equipped with more advanced functions than ever, resulting in a robot of great capability.

5. Customer support

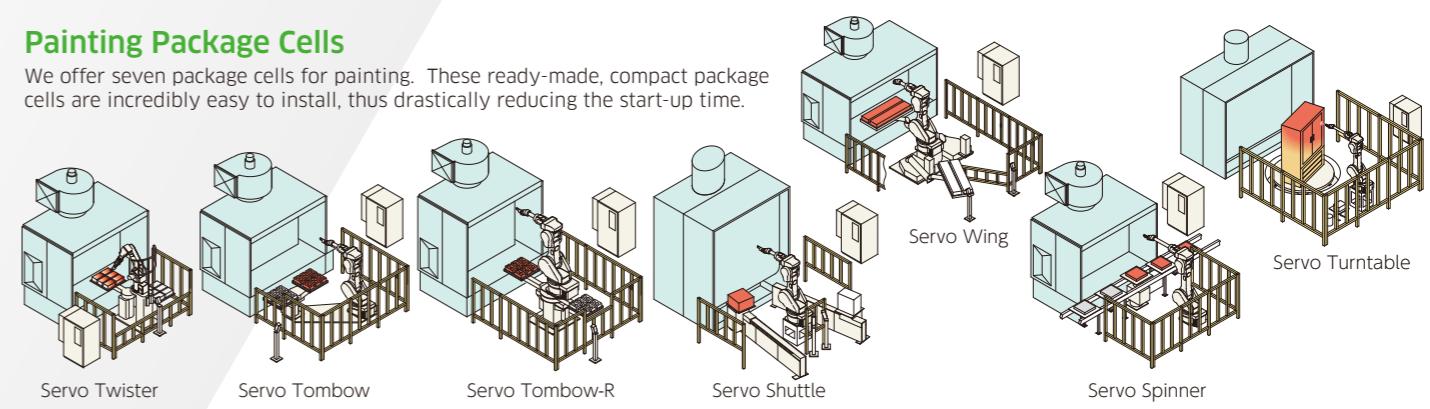
Our professional staff will be available for support from the initial planning stage right up to the system start up. This service will be of great benefit to those new to painting applications.



| | KF121 | KF192/193/194 | KF262/263/264 | KG264 | KJ264(Floor/Shelf/Wall)/314 |
|--------------------------|-------------------------|---|-----------------------|-----------------------|--|
| Degree of freedom (axes) | 6 | 6 | 6 | 6 | 6/6/6/7 |
| Motion range (°) | Max. payload (kg) | 5 | Wrist : 12 Arm : 20 | Wrist : 20 Arm : 30 | Wrist : 15 Arm : 25 |
| | Arm rotation (JT1) | ±160 | ±150 | ±150 | ±120 / ±120 / +30 ~ -120 / ±120 |
| | Arm out-in (JT2) | ±90 | +110 ~ -60 | +110 ~ -60 | +120 ~ -60 |
| | Arm up-down (JT3) | ±150 | +90 ~ -80 | +90 ~ -80 | +90 ~ -65 |
| | Wrist swivel (JT4) | ±270 | ±360 / ±720 / ±720 | ±360 / ±720 / ±720 | ±720 |
| | Wrist bend (JT5) | ±145 | ±360 / ±720 / ±720 | ±360 / ±720 / ±720 | ±720 |
| | Wrist twist (JT6) | ±360 | ±360 / ±410 / ±410 | ±360 / ±410 / ±410 | ±410 |
| Wrist type | Arm swing (JT7) | — | — | — | — / — / ±90 |
| | RBR | BBR / 3Rφ40 / 3Rφ70 | BBR / 3Rφ40 / 3Rφ70 | 3Rφ70 | 3Rφ70 |
| | Repeatability (mm) *1 | ±0.2 | ±0.5 | ±0.5 | ±0.5 |
| | Max. reach (mm) | 1,240 | 1,973 / 1,973 / 1,978 | 2,665 / 2,665 / 2,668 | 2,665 |
| | Explosion protection | Combination of pressurized type and intrinsically safety type (Expiib II BT4/Exib II BT4) | | | Combination of pressurized type and intrinsically safety type (f2G4/Exib II BT4) |
| | Mass (kg) | 140 | 690 / 720 / 750 | 720 / 740 / 770 | 795 |
| | Installation | Floor, Wall | Floor, Wall | Floor, Wall | Floor/Shelf/Wall/Wall |
| Matching controller | E27 | E25 | E25 | E25 | E25 |
| | *1: conforms to ISO9283 | | | | |

Painting Package Cells

We offer seven package cells for painting. These ready-made, compact package cells are incredibly easy to install, thus drastically reducing the start-up time.



■ Large-size general purpose robots

Z series

Wide work envelope and large motion ranges of the wrists provide flexibility in applications.

1. Improved cycle time

The cycle time has been greatly improved by reduction of the mass and adoption of the E-controller.

2. Wide work envelope

The Z-series has wide work envelope due to long reach and small dead space. Joint 1 travel is 360 degrees with mechanical hard stops.

3. Upgradability

The ZX165U can be upgraded to a faster robot or higher payload robot by adding simple hardware and software at the user site. The alteration at the production site is easier and economical. This means that an exact model selection at the design stage is not required.



ZX165U



ZT130Y



ZD250S

| | ZX130S/130L/165U/200S/300S | ZH100U | ZT130S/165U/200S | ZT130Y/165X/165Y | ZD130S/250S |
|--------------------------|--|------------|-------------------|-------------------|-------------|
| Application | ● ● ● ● | ● ● ● | ● ● ● ● | ● ● ● ● | ● |
| Degree of freedom (axes) | 6 | 6 | 6 | 6 | 4 |
| Motion range (°) | Arm rotation (JT1) ±180 | ±160 | ±180 | ±180 | ±180 |
| | Arm out-in (JT2) +75 ~ -60 | +120 ~ -60 | +60 ~ -75 | +50 ~ -120 | +90 ~ -50 |
| | Arm up-down (JT3) +250 ~ -120 | +75 ~ -90 | +165 ~ -95 | +150 ~ -65 | +15 ~ -120 |
| | Wrist swivel (JT4) ±360 | ±360 | ±360 | ±360 | ±360 |
| | Wrist bend (JT5) ±130/±130/±130/±120/±120 | ±130 | ±130/±130/±120 | ±130 | - |
| | Wrist twist (JT6) ±360 | ±360 | ±360 | ±360 | - |
| Max. speed (°/s) | Arm rotation (JT1) 130/110/110/105/100 | 140 | 130/105/100 | 120/120/105 | 135/95 |
| | Arm out-in (JT2) 130/110/110/110/85 | 100 | 130/105/100 | 110/110/105 | 110/90 |
| | Arm up-down (JT3) 130/110/115/105/85 | 100 | 130/105/90 | 115/115/100 | 130/95 |
| | Wrist swivel (JT4) 180/140/140/120/90 | 150 | 180/135/120 | 160/140/140 | 400/190 |
| | Wrist bend (JT5) 180/135/155/120/90 | 150 | 180/135/115 | 180/155/155 | - |
| | Wrist twist (JT6) 280/230/260/200/150 | 250 | 280/210/180 | 280/260/260 | - |
| Repeatability (mm) *1 | ±0.3 | ±0.3 | ±0.3 | ±0.3 | ±0.5 |
| Max. reach (mm) | 2,651/2,951/2,651/2,651/2,501 | 1,634 | 3,230/3,230/3,230 | 3,130/2,830/3,130 | 3,255 |
| Mass (kg) | 1,350/1,400/1,350/1,400/1,400 | 750 | 1,550/1,550/1,600 | 1,665/1,650/1,665 | 1,350 |
| Installation | Floor | Floor | Shelf | Shelf | Floor |
| Matching controller | E22 | E22 | E22 | E22 | E23 |

*1: conforms to ISO9283

Application: ● Spot Welding ● Assembling ● Handling ● Palletizing

■ High-speed picking robot

Yseries

A high-speed picking robot for food, pharmaceutical, cosmetics and solar panel production lines.



| | YS02N | YF03N |
|----------------------------------|------------------------------|-----------------------------|
| Degree of freedom (axes) | 4 | 4 |
| Max. payload (kg) | 2 | 3 |
| Motion range (mm) | φ600 × H200 | φ1,300 × H500 |
| Cycle time (s) *1 (Payload) | 0.3 s (0.5 kg) 0.36 s (2 kg) | 0.27 s (1 kg) 0.45 s (3 kg) |
| Positional repeatability (mm) *2 | ± 0.04 | ± 0.1 |
| Angular repeatability (°) | ± 0.1 | ± 0.1 |
| Mass (kg) | 60 | 145 |
| Installation | ceiling | ceiling |
| Matching controller | E94 | E94 |

*1: Motion pattern (25mm up, 305mm horizontal, 25mm down in a to-and-fro motion)

*2: conforms to ISO9283

*3: For the YF series

1. High-processing capability

The high-processing ability contributes to takt time reduction.

2. Large motion range

The expanded line of products cover various types of workpieces and production lines.

3. High accuracy

High repeatability ensures accurate pick & place operation and high productivity.

4. High-density layout

The YS02N, with its more compact structure and smaller footprint, enables the high-density layout of multiple robots. The lighter body can also be installed on a cantilever mount.

5. Readily compatible with the Vision system

The series can offer high-speed, high-precision, and safe transfer in combination with a visual sensing system. The YS02N's top mounting base is provided with a hollow space at the center for installing a camera.

6. Wash-downs with acid or alkaline cleanser^{※3}

The arm is designed for wash-downs with acid or alkaline cleanser, thus assuring hygiene in production plants.

7. Use of food-safe grease and oil for food-processing machinery^{※3}

Grease and oil for food-processing machinery is used for moving parts to assure hygiene in case of unforeseeable accidents.

8. Easy maintenance

The simple, center-drive shaftless design results in easy maintenance. The YS02N is designed so that the main parts can be exchanged in units, greatly facilitating the task of exchanging parts.

■ Medical and pharmaceutical robot

MC004N

A clean robot for medical and pharmaceutical application: The new solutions from KAWASAKI offering.

| | MC004N | |
|--------------------------|--------------------------------------|----------------|
| Degree of freedom (axes) | 6 | |
| Motion range (°) | Max. payload (kg) | 4 |
| | Arm rotation (JT1) ±180 | ±180 |
| | Arm out-in (JT2) +135 ~ -95 | +135 ~ -95 |
| | Arm up-down (JT3) +60 ~ -155 | +60 ~ -155 |
| | Wrist swivel (JT4) ±270 | ±270 |
| | Wrist bend (JT5) ±120 | ±120 |
| Max. speed (°/s) | Wrist twist (JT6) ±270 | ±270 |
| | Arm rotation (JT1) 200 | 200 |
| | Arm out-in (JT2) 180 | 180 |
| | Arm up-down (JT3) 225 | 225 |
| | Wrist swivel (JT4) 700 | 700 |
| | Wrist bend (JT5) 500 | 500 |
| Repeatability (mm) *1 | Wrist twist (JT6) 350 | 350 |
| | Arm rotation (JT1) ±0.05 | ±0.05 |
| | Arm out-in (JT2) 505.8 | 505.8 |
| | Arm up-down (JT3) 25 | 25 |
| | Wrist swivel (JT4) Floor, ceiling | Floor, ceiling |
| | Wrist bend (JT5) E73 | E73 |

*1: conforms to ISO9283

1. Human arm-like

Human arm-like joint configurations provide minimal dead space and allow robot to rotate and operate in constricted workspaces.

2. Sanitary features

Streamlined design features a smooth surface, high performance seals, and a chemical resistant epoxy paint finish to facilitate decontamination process.

3. Hollow wrist

Through-arm cable and tube technology eliminates cable interference. (The built-in cable specification should be defined separately.)

4. Cleanroom classification

Meets ISO Class 5 (Class 100 of US FED STD 209E) cleanroom standard.

5. Compact body

Short and compact arm design is ideal for narrow or confined spaces.

MS005N

MSR is an enhanced version of MCR; a robot for medical and pharmaceutical application with additional features.

1. All stainless steel

Vapor hydrogen peroxide (VHP) resistant.

2. Meets to FDA standards

FDA (Food and Drug Administration, USA) approved gaskets and seals.

3. Flexible motion

7-axis configuration makes it easy to avoid potential interference with other equipment and provides high dexterity for flexible or complex motion.



MS005N

■Clean robots

NT series

Horizontal Articulated type
NT420/NT520 : 2 wrists
NT410/NT510 : 1 wrist

We offer a wide range of clean robots that can be used in semi-conductor manufacturing lines.

1. High throughput

The NT-series provides a high throughput of 400 WPH (without aligner) or 280 WPH (with aligner). By adding optional specifications, it can exceed 500 WPH.

2. Advanced common platform

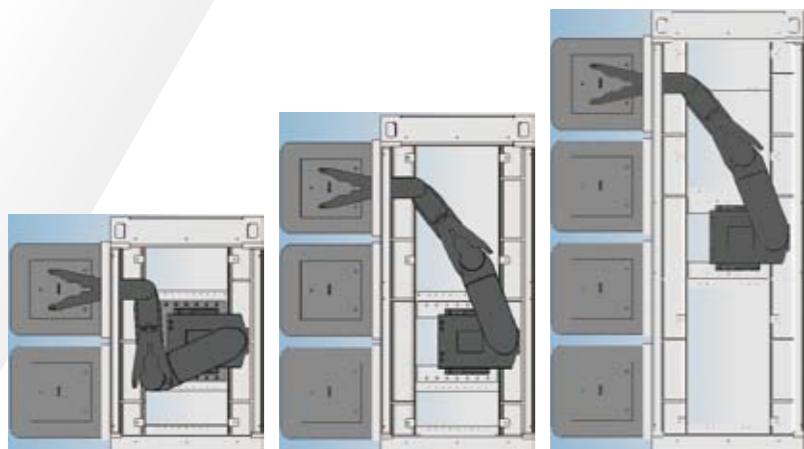
A traverse truck is not necessary. This is because a single robot arm can cope with all the EFEMs having up to 4 FOUPs.

3. High cleanliness

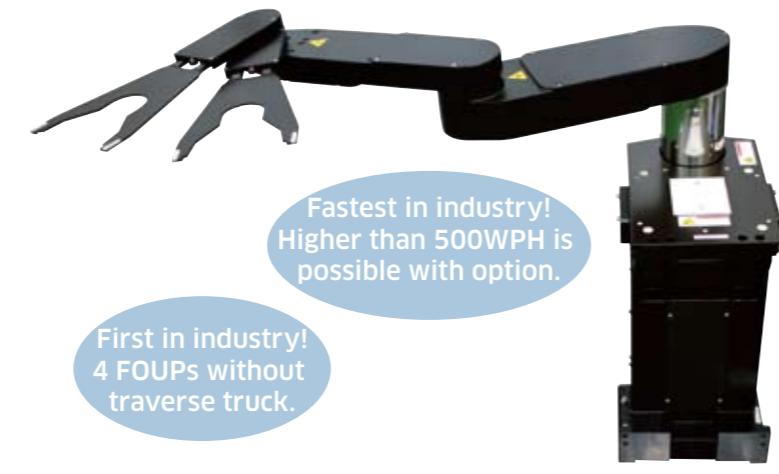
The NT-series meets ISO class-1 standards for cleanliness.

4. Unique control functions

Fully automated programming and self diagnostic functions can be supplied as options.



A common platform with a single arm for 2 FOUPs, 3 FOUPs and 4 FOUPs EFEM without a traverse truck.



NT420/NT520



NT410/NT510

NX series

Horizontal Articulated type

Consists of 4 models including 2 links / 1 wrist NX510, 2 links / 2 wrists NX520, 3 links / 1 wrist NX540 and 3 links / 2 wrists NX550. All of them achieve ISO Class-1 cleanliness and realize 2 FOUPs and 3 FOUPs action without track.



NX550

■Controller

E series

Kawasaki's ability to combine its achievements and experience have enabled it to create a system which is easy to operate and delivers performance which exceeds.

In addition, the enhanced CPU capacity allows for more accurate trajectory control and faster application program execution.



| | E73/74 | E94 | E20/22/23/24 | E25/27 |
|----------------------|---|---|--|--|
| Features | The E73/74 controllers are extremely compact, and specially designed for small robot arms (RS03N, 05N, 05L, 06L and 10N). Though compact in design, these controllers offer high performance and expandability. | The E94 controller is extremely compact, and specially designed for medium robot arms (Y-series, RS10L and RS20N). This compact size enables it to be installed vertically or horizontally in practically any location, such as under a conveyor or on an arm mount rack. | The E20/22/23/24 are standard controllers. The footprint and overall volume of the E2x controller have been reduced, making it easy to achieve high-density layouts. | With a new explosion-proof teach pendant featuring a color LCD, programming and editing work can efficiently be carried out from inside the explosion-proof paint booth. |
| Type of driving | Full digital servo system | Full digital servo system | Full digital servo system | Full digital servo system |
| Teaching method | Easy operation teaching or AS language programming | Easy operation teaching or AS language programming | Easy operation teaching or AS language programming | Easy operation teaching or AS language programming |
| Teach pendant | Color LCD teach pendant for the E series controllers | Color LCD teach pendant for the E series controllers | Color LCD teach pendant for the E series controllers | Explosion-proof teach pendant |
| Memory capacity (MB) | 8 | 8 | 8 | 8 |
| I/O signal | External operation Input (Channels) Output (Channels) | Motor power off, Hold etc. 32 (max. 96) 32 (max. 96) | Motor power off, Hold etc. 32 (max. 96) 32 (max. 96) | Motor power off, Hold etc. 32 (max. 128) 32 (max. 128) |
| Construction | Self-standing fully-enclosed type with indirect cooling system | Open structure/Direct Cooling System (Option: Enclosed structure) | Self-standing fully-enclosed type with indirect cooling system | Self-standing fully-enclosed type with indirect cooling system |
| Mass (kg) | 30 | 40 | 95/95/110/95 | 120 |

■Teach pendant

Color LCD teach pendant for the E series controllers

The teach pendant boasts a significantly lighter body with an optimized weight balance that reduces the burden of teaching work. The operator can now switch on the motors and activate the cycle start all from the teach pendant. In addition, new features such as the easy-to-navigate screen and switch layout allow for a more convenient system of control. Two information windows can be displayed simultaneously on the monitor screen, providing access to different types of information (for example, positional information and signal information).



Explosion-proof teach pendant

The explosion-proof feature on the color LCD with a large-sized touch panel allows for teaching, editing, and monitoring information such as current position and I/O signals in the explosion-proof area, and it is possible to customize the interface panel according to user preference. The backlight allows for clear view of the screen in dark locations.

