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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.

THE SYSTEM CERTIFICATION

IQB certified in Wixom, Michigan, U.S.A.

Materials and specifications are subject to change without notice.

Kawasaki Robot
Arc welding robots
Kawasaki arc welding robots use the latest arc welding technology to rival the quality of a skilled human welder.

Features

**Application specific operation**
Each robot is equipped standard with an easy to view and operate color LCD touchscreen teach pendant. The operator teaches the process path using dedicated arc welding teaching screens that are designed for simplified use and easy operation.

**Welding condition database**
During an automated process, the operator can change the welding conditions on-the-fly and then store these changes to a built-in database. The saved conditions can then be recalled from the database and reused.

**Reduced downtime**
A standard, dedicated start sequence function improves the arc establishment. Also, for weld process faults, the robot includes a restart sequence function to automatically conduct overlap welding and resume the operation.

**Manual arc control**
The Kawasaki arc welding robots feature a one button “arc on / arc off” function to allow operators to easily and quickly turn the weld off and on during the automatic weld process. This manual arc control helps operators deal with part anomalies.

**Advanced technology**
Servo torch, touch sensing, special weaving pattern, real-time path modification (RTPM) sensor, start point sensing, multilayer welding function, and auto voltage control (AVC) sensor are some of the advanced arc welding options available with the Kawasaki welding robots.

**Offline programming**
Kawasaki offers arc welding specific offline programming software to automatically generate robot programs from 3D CAD data. Kawasaki’s RCONG software significantly reduces robot teaching time and lowers production costs.
### Standard specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>R800N</th>
<th>R800EL</th>
<th>R500EL</th>
<th>R500ON</th>
<th>R5010N</th>
<th>R5010L</th>
<th>R5015X</th>
<th>R5020N</th>
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<tr>
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<td>6.4</td>
<td>6.4</td>
<td>6.4</td>
<td>10</td>
<td>10</td>
<td>10</td>
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<tr>
<td>Max. reach (mm)</td>
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<td>2,036</td>
<td>1,650</td>
<td>1,650</td>
<td>1,925</td>
<td>1,925</td>
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<td>Positional repeatability (mm)</td>
<td>±0.05</td>
<td>±0.05</td>
<td>±0.05</td>
<td>±0.05</td>
<td>±0.05</td>
<td>±0.05</td>
<td>±0.05</td>
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<tr>
<td>Motion range (°)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arm up-down</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
</tr>
<tr>
<td>Arm in</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
<td>+180</td>
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<tr>
<td>Wrist swivel</td>
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<td>±160</td>
<td>±160</td>
<td>±160</td>
<td>±160</td>
<td>±160</td>
<td>±160</td>
<td>±160</td>
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<tr>
<td>Wrist bend</td>
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<td>±135</td>
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<tr>
<td>Wrist twist</td>
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<td>±145</td>
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<td>Moment of inertia (kg-m²)</td>
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<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
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<td>Mass (kg)</td>
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<td>610</td>
<td>610</td>
<td>610</td>
<td>610</td>
<td>610</td>
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<td>Body cover:</td>
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<td>Ambient temperature (°C)</td>
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<td>55</td>
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<td>35</td>
<td>85</td>
<td>35</td>
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<td>Power requirements (VA)</td>
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<td>30</td>
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<tr>
<td>Controller</td>
<td>America</td>
<td>Europe</td>
<td>Japan &amp; Asia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Optional equipment

- Shock sensor
- Torch bracket (350 A / 500 A)
- Installation base (600 mm / 300 mm)
- Base plate (750 mm x 750 mm x 25 mm)
- Linear slide
- Positioner
- Servo motor
- RTPL (arc sensor)
- AVC (arc sensor dedicated to TIG welding)
- 3D laser sensor
- Wall mounting

### Integration with many welding power supplies

For communication between the Kawasaki robot and power source as well as easy and comprehensive arc welding processes, Kawasaki Robotics offers Welder specific interfaces to leading arc welding power sources, such as:
- Lincoln
- Miller
- Fanuc
- OTC Daihen

### Kawasaki Common Offline NC data Generator

**KCONG**

KCONG, our offline programming software, automatically generates a robot's welding path based off of workpiece geometry.

**Features**

- No need for time-consuming robot teaching
  - KCONG generates robot welding paths quickly and easily from 3D CAD data such as DXF, IGES, STEP or VRML.
- Offline process verification
  - Once KCONG automatically generates the robot welding path, users can then view the simulation of the arc welding process, check for collisions, weld access, and system layout issues, and make fine adjustments to the generated welding path.
- Direct program download
  - After verifying the weld process and making any necessary adjustments, the operation program is generated by KCONG. The completed weld operation program can then be downloaded directly to the robot controller.

### Servo Torch

Kawasaki's servo torch option delivers high quality welding.

**Features**

- Can be used with small-gauge iron or aluminum wire
  - The steady feed of the iron (0.6 mm) or aluminum wire results in no buckling.
- Excellent arc stability
  - The constant speed and control of the wire feed results in excellent arc stability.
- Improved arc ignition performance
  - The servo torch can control complex wire feeding at the start and end of welding operations, thereby improving arc ignition.
Motion range & dimensions

RS010L

RS015X

RS020N

Installation dimensions

Working range based on point P

Installation dimensions

Working range based on point P

Installation dimensions

Installation dimensions

Working range based on point P

Installation dimensions

Installation dimensions

Installation dimensions

Working range based on point P

Installation dimensions

Installation dimensions

Working range based on point P

Installation dimensions

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Installation dimensions

Working range based on point P

Installation dimensions

Installation dimensions

Working range based on point P

Installation dimensions

Installation dimensions

Working range based on point P

Installation dimensions

Installation dimensions
E series
- An evolution of engineering excellence

Kawasaki has incorporated more than 45 years of experience as a robot industry leader into the development of the most technically advanced controller available. The E Controller combines high performance, unprecedented reliability, a host of integrated features and simple operation, all in a compact design.

Features

Compact
The overall volume of the E Controller has been reduced compared with the previous model. The small footprint of this compact controller allows for installation in high-density applications. For further space saving options, an upright position or stacked installation is possible, without impeding performance.

User-friendly operation
The easy-to-use teach pendant now incorporates motor power and cycle start at your fingertips. Multiple information screens can be displayed simultaneously. The intuitive teaching interface is simple to use.

Programming ease & flexibility
A rich set of programming functionalities come standard with the E Controller to support a wide range of applications. Functions can be combined and easily configured within a system to suit a particular application. Also, the powerful Kawasaki AS Programming Language provides sophisticated robot motion and sequence controls.

Advanced technologies
The enhanced CPU capability allows for more accurate trajectory control, faster program execution, and quicker loading and saving of files. In addition, memory has been expanded to meet the need for higher program storage capacity. The controller comes equipped with a USB port for external storage devices.

Easy maintenance
 Modular components with limited cables translate into easy diagnostics and maintenance. A host of maintenance functions are available, including self-diagnostics on hardware and application errors to minimize troubleshooting and reduce MTTR (Mean Time To Repair). Remote diagnostics via the web server function enables service support from anywhere in the world.

Expandable
Two external axes can be added to the 021/022 controller for a total of nine controlled axes. Numerous communication fieldbuses are available for controlling peripheral devices. The Kawasaki K-Logic sequencer software can be combined with user customized interface panels on the teach pendant.

Specifications

<table>
<thead>
<tr>
<th>Features</th>
<th>Standard</th>
<th>Option</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (mm)</td>
<td>550 × 950 × (H)278</td>
<td>Transformer unit</td>
<td>550 × 950 × (H)278</td>
</tr>
<tr>
<td>Structure</td>
<td>Enclosed structure / Indirect cooling system</td>
<td>Transformer unit</td>
<td>Enclosed structure / Indirect cooling system</td>
</tr>
<tr>
<td>Number of controlled axes</td>
<td>Max. 9</td>
<td>Transformer unit</td>
<td>Max. 9</td>
</tr>
<tr>
<td>Drive system</td>
<td>Full numeric system</td>
<td>Transformer unit</td>
<td>Full numeric system</td>
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<tr>
<td>Coordinate systems</td>
<td>Joint, Base</td>
<td>Fixed foot point</td>
<td>Joint, Base</td>
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<tr>
<td>Types of motion control</td>
<td>Joint / Linear / Circular Interpolated motion</td>
<td>Transformer unit</td>
<td>Joint / Linear / Circular Interpolated motion</td>
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<tr>
<td>Programming</td>
<td>Point to point teaching or language based programming</td>
<td>Transformer unit</td>
<td>Point to point teaching or language based programming</td>
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<tr>
<td>Memory capacity (bit)</td>
<td>8</td>
<td>Transformer unit</td>
<td>8</td>
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<tr>
<td>General purpose signals</td>
<td>Motor power off, hold</td>
<td>Transformer unit</td>
<td>Motor power off, hold</td>
</tr>
<tr>
<td>Input (channels)</td>
<td>32</td>
<td>Transformer unit</td>
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<tr>
<td>Output (channels)</td>
<td>32</td>
<td>Transformer unit</td>
<td>32</td>
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<tr>
<td>Operation panel</td>
<td>Cycle start switch, motor on switch, hold/run switch, Error light, rapid-feed check mode switch</td>
<td>Transformer unit</td>
<td>Cycle start switch, motor on switch, hold/run switch, Error light, rapid-feed check mode switch</td>
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<tr>
<td>Cable length (m)</td>
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<td>Robot controller (m)</td>
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Power requirements

<table>
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<th>Standard</th>
<th>Option</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>AC100-230V +10% / -5% 50/60Hz, 3A</td>
<td>Transformer unit</td>
<td>AC380-415V +10% / -5% 50/60Hz, 3A</td>
</tr>
</tbody>
</table>

Environmental conditions

| Condition | detail | Temperature (°C) | 0 to 40 (no dew, no frost allowed) |

Body color

<table>
<thead>
<tr>
<th>Model</th>
<th>color</th>
<th>D0001BT1 equivalent</th>
</tr>
</thead>
</table>

Teach pendant

| Type | TF color LCD display with touch panel, 6-step switch, Teach-on switch, Brake switch |

Auxiliary storage unit

| Type | USB memory |

Interface

| Type | USB, Ethernet (100BASE-TX), RS-232C |

System configuration diagram