

Product Comparison Shows

# Kawasaki Heavy Industries' Arc Welding Robots



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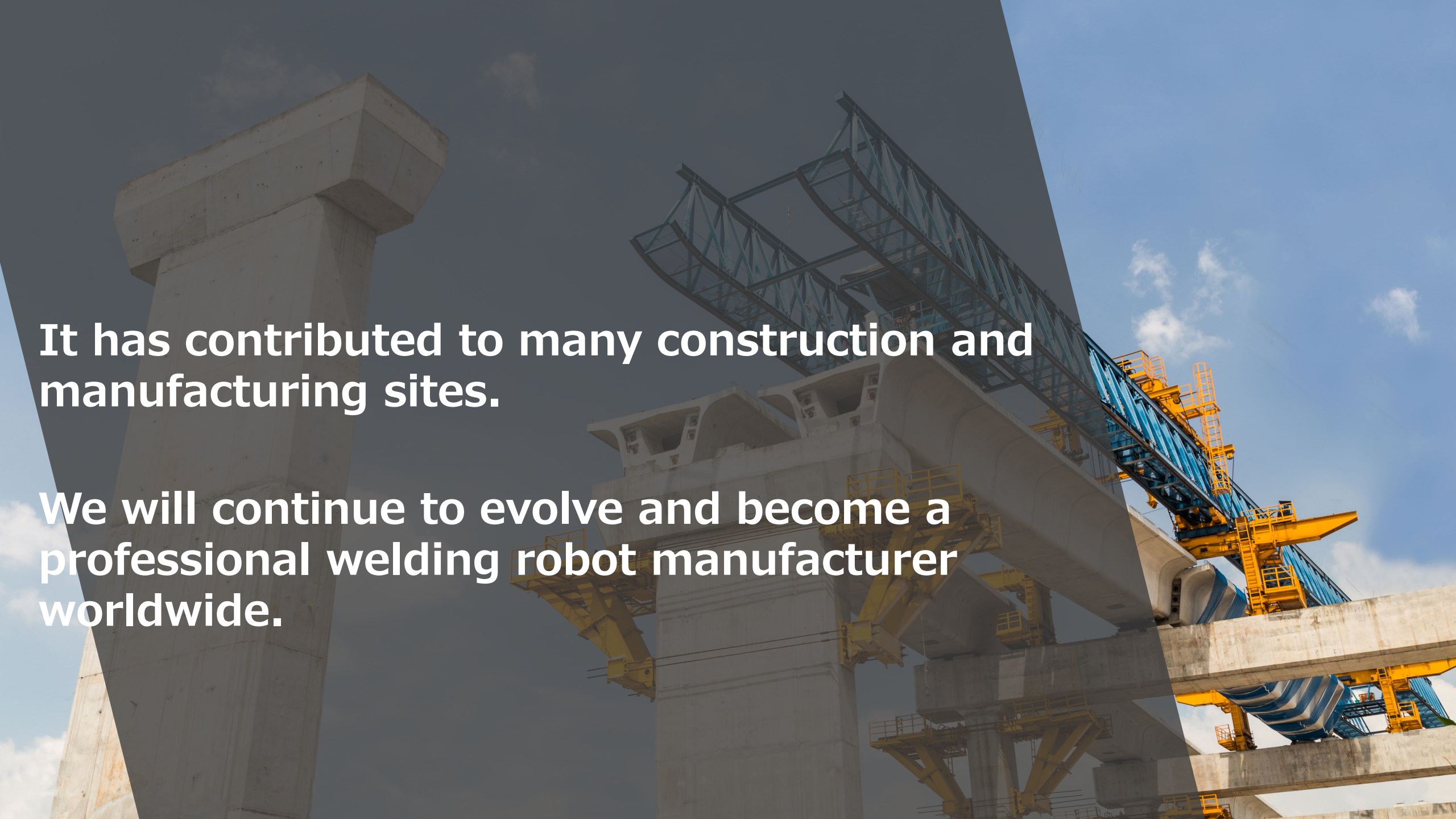
- 1. Arc welding robots: BA series**
- 2. Comparison of specifications with competitive products**
- 3. Strengths of the BA Series**
- 4. About the connected power supply**
- 5. Examples of Applications**





**Kawasaki has achieved automation of many processes in the welding field, where manpower is in short supply.**

**Over 30 years of experienceAs a welding robot professional**



**It has contributed to many construction and manufacturing sites.**

**We will continue to evolve and become a professional welding robot manufacturer worldwide.**

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# Arc welding robots BA/RA series

## BA series

Hoses and cables can be built into the hollow wrist.  
No interference with peripheral equipment, reducing off-line teaching review time.



BA006N



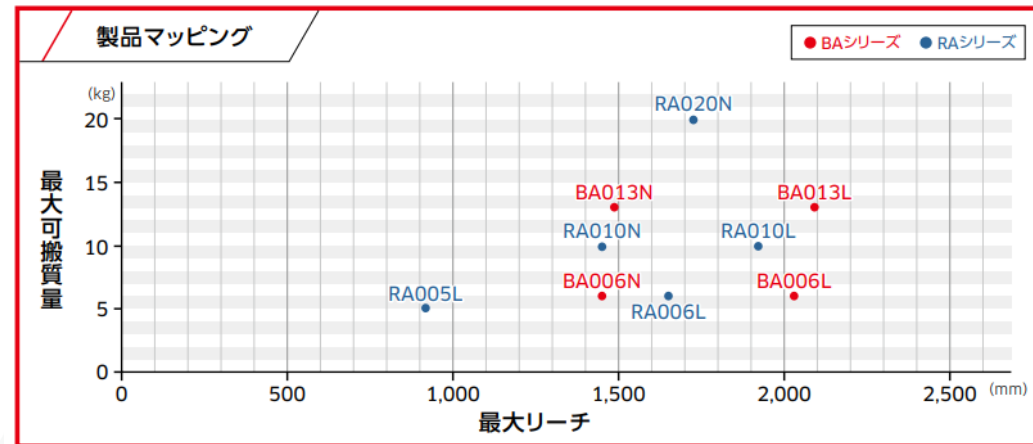
BA006L



BA013N



BA013L



## RA series

Wide range of payloads from 5kg to 20kg, and can be used for a wide range of welding targets.



RA005L



RA006L



RA010N



RA010L



RA020N

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# Comparison of specifications with competitive products



Manufacturer		<b>Kawasaki</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
Maximum Payload (Kg)		6	8	10	4	8	8	10
Maximum Reach (mm)		<b>2,036</b>	2,028	2,010	2,006	1,809	2,000	2,010
Maximum speed (°/S)	JT1	<b>210</b>	200	190	195	195	175	127
	JT2	<b>210</b>	200	190	200	197	175	130
	JT3	<b>220</b>	210	210	200	205	175	125
	JT4	<b>430</b>	430	410	420	425	360	315
	JT5	<b>430</b>	430	410	420	425	360	320
	JT6	<b>650</b>	630	610	600	629	500	680

**Highest speed performance in its class; wrist load specification optimized for hollow torches  
Offsetting of the upper arm allows clean handling of the wire feeder.**



# Comparison of specifications with competitive products



Manufacture		Kawasaki	A				B
Maximum Payload (Kg)		13	12	12	12	12	12
Maximum Reach (mm)		1,492	1,098	1,420	1,441	1,441	1,440
Maximum speed (°/S)	JT1	265	260	230	260	210	260
	JT2	250	280	225	240	210	230
	JT3	265	315	230	260	265	260
	JT4	470	430	430	430	420	470
	JT5	475	430	430	450	450	470
	JT6	730	630	630	720	720	700

Outperforms competitors in payload, maximum speed per axis, and reach, and has changed the JT4 motor arrangement from BA006N, Further improved feeder mountability and enlarged hollow diameter (from  $\phi 45$  to  $\phi 50$ ) to accommodate high-current and high-quality arc equipment.

# Comparison of specifications with competitive products



Maximum Payload (Kg)		13	12	12	12
Maximum Reach (mm)		2,093	2,009	2,272	2,010
Maximum speed (°/S)	JT1	215	200	210	210
	JT2	215	175	210	210
	JT3	270	190	265	220
	JT4	440	430	420	435
	JT5	475	430	450	435
	JT6	730	630	720	700

Outperforms competitors in payload, maximum speed per axis, and reach, and has changed the JT4 motor arrangement from BA006N, Further improved feeder mountability and enlarged hollow diameter (from  $\phi 45$  to  $\phi 50$ ) to accommodate high-current and high-quality arc equipment.

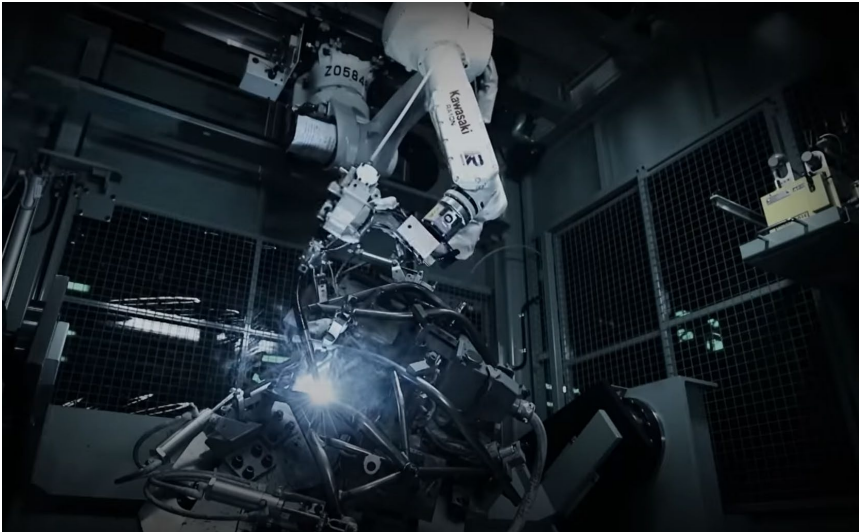
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# Solutions combined with cutting process

## Arc welding process



## Cutting/ Cutting engineering



synergy

Kawasaki Heavy Industries' robots are not only used for arc welding, but also for the pre-processing of the arc welding process. And higher cutting/cutting accuracy also means higher arc welding accuracy.

# Cutting/cutting process lution

**Kawasaki offers three distinctive lineups**

**1. Gas & Plasma Cutting System**

**2. Weld Bead Cutting Robot**

**3. R Cutter Robot System**



**Introducing our cutting/machining solutions, which we have a lot of experience with along with arc welding**

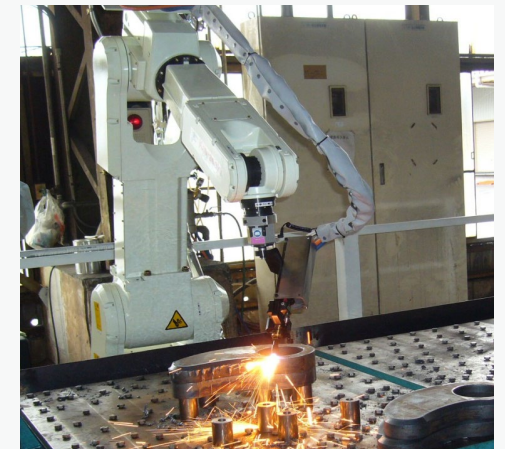
# 1. Gas & Plasma Cutting System

## 〈 summary 〉

- Thin plate plasma cutting for chemical and food tanks
- Gas cutting of thick plates for construction machinery parts

## 〈 system configuration 〉

robot	FA010NFD20 1unit
peripherals	running, expansion and contraction, elevating equipment
	tool changer, laying out, cutting, Touch Probe
application	cutting
notes	KCONG



## feature

Together with defining the mirror plate by parametric input, By selecting a figure for creasing or cutting, NC data for creasing and cutting by the robot is generated and output, and the robot performs creasing and cutting without teach-in.

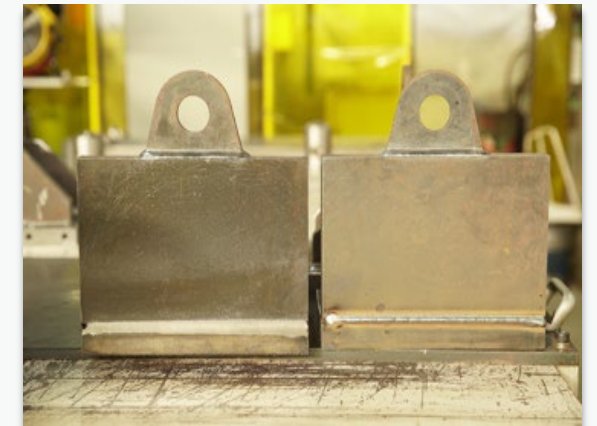
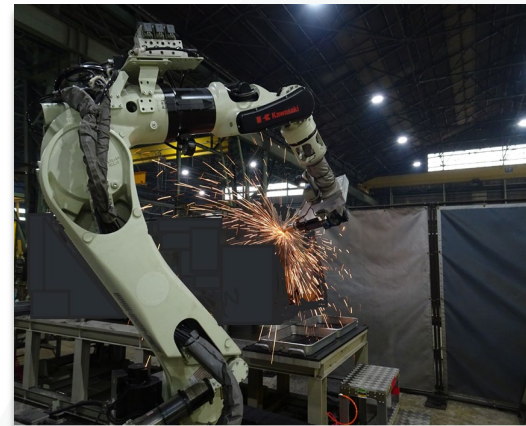
## 2. Weld Bead Cutting Robot

### 〈 summary 〉

- This robot system performs bead cutting (weld finishing) work on the outer circumference welds of structures.
- Before cutting, workpiece position is automatically compensated by automatic touch sensing of the workpiece.
- Automatic tool change enables long-time machining and application-specific cutting.

### 〈 system configuration 〉

robot	BX200L 1unit
peripherals	traveling gear、 tool changer
	Spindle motor、
	Touch Probe、 End mills (various types)
application	cutting
notes	KCONG



**feature**

**Fully automated cutting from sensing to the end of machining**

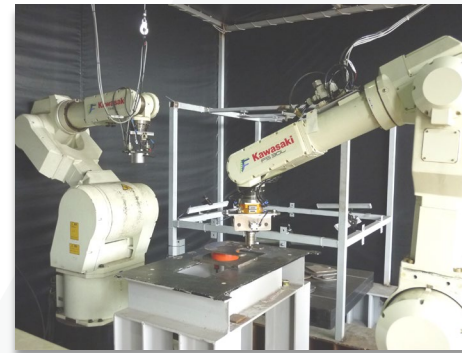
# 3. R Cutter Robot System

## < summary >

- This robot system performs bead cutting (weld finishing) of the outer circumference welds of structures.
- Before cutting, workpiece position is automatically compensated by automatic touch sensing of the workpiece.
- Automatic tool change enables long-time machining and application-specific cutting.

## < system configuration >

robot	RS080N 2units
peripherals	vision camera
	Laser sensor
	KCONG
	processing table
application	chamfering
notes	



### feature

**Realization of 2R automatic machining equipment, automatic recognition of workpiece shape and start of machining**



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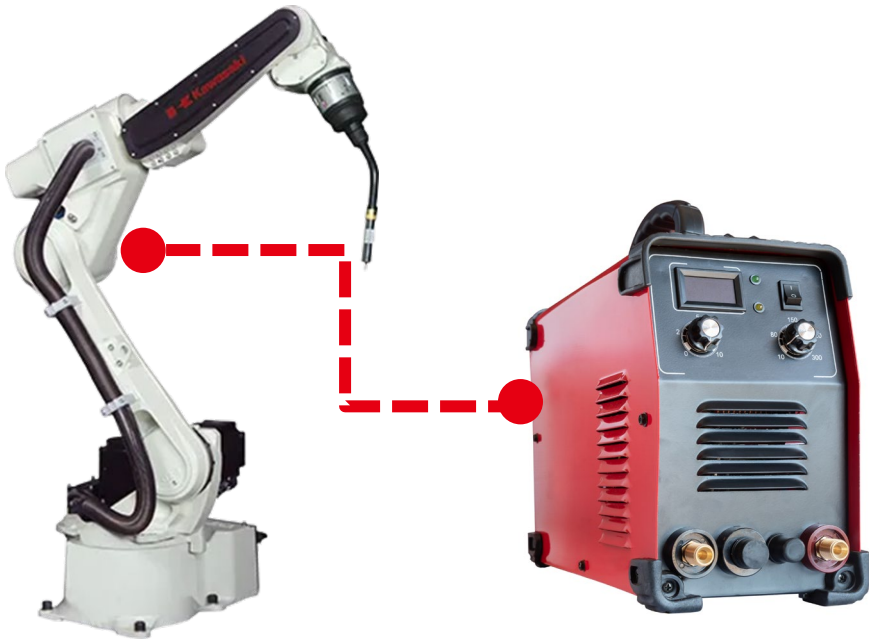
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# Connectable power supply that can be connected to Kawasaki Robot

## Connects to most major power supplies

The system is compatible with most of the power sources used in arc welding, This allows for flexible support at various sites.



LINCORN  
Miller



LORCH



KEMPPI



FRONIUS



India

MogoraCosmic



Migatronic



Japan

DAIHEN  
Corporation  
Panasonic



China

奥太  
JASIC  
MEGMEET  
大德重工



South Korea

HYOSUNG

# Example of function development to ensure weld quality

## Continuous arc spot welding function

### Summary

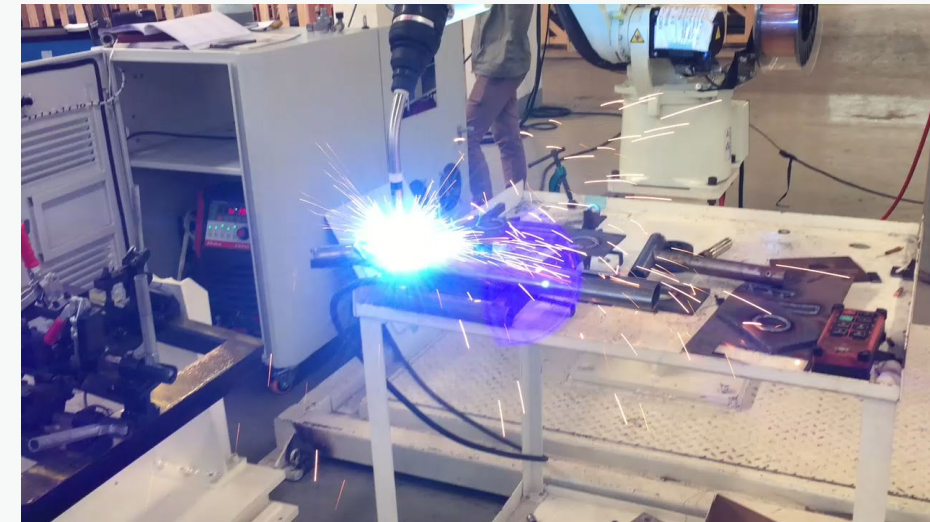
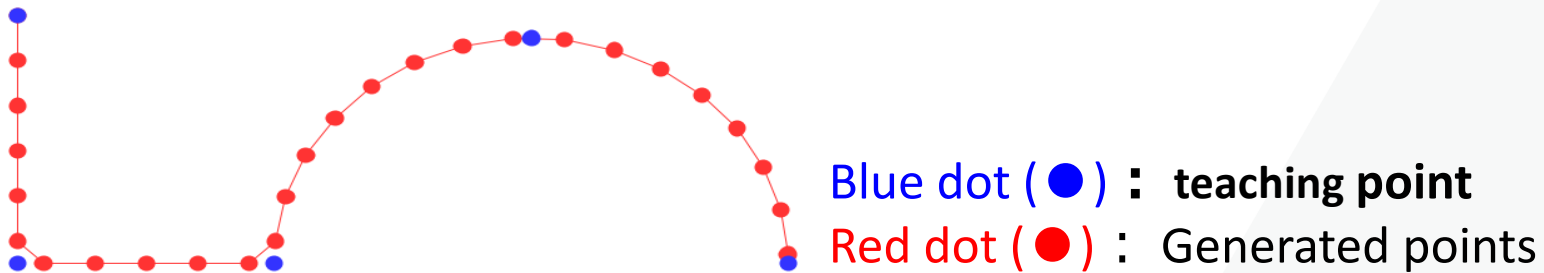
By setting the minimum required welding points and welding intervals, arc spot welding points are automatically generated.

Request from a system integrator in China. Quality assurance of thin plate welding using inexpensive welding equipment.

Essentially, a high-performance (pulse welding) power supply is required.



Example)



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# Application Examples

## Reliable Robot Welds for More Than 20 Years

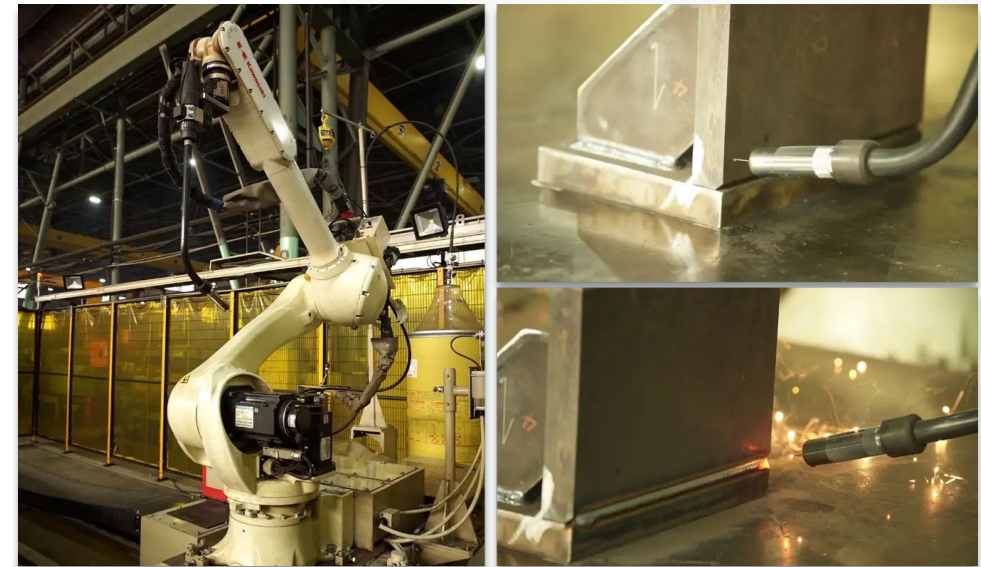


Introduction of automated arc welding of motor cycle parts

[Article detail URL](https://kawasakirobotics.com/case-studies/reliable-robot-welds-for-more-than-20-years/)

<https://kawasakirobotics.com/case-studies/reliable-robot-welds-for-more-than-20-years/>

## Welding and cutting of large steel materials



Introduction of automated arc welding process in the process of making construction materials for a huge overpass.

[Article detail URL](https://kawasakirobotics.com/jp/case-studies/case_khf/)

[https://kawasakirobotics.com/jp/case-studies/case\\_khf/](https://kawasakirobotics.com/jp/case-studies/case_khf/)

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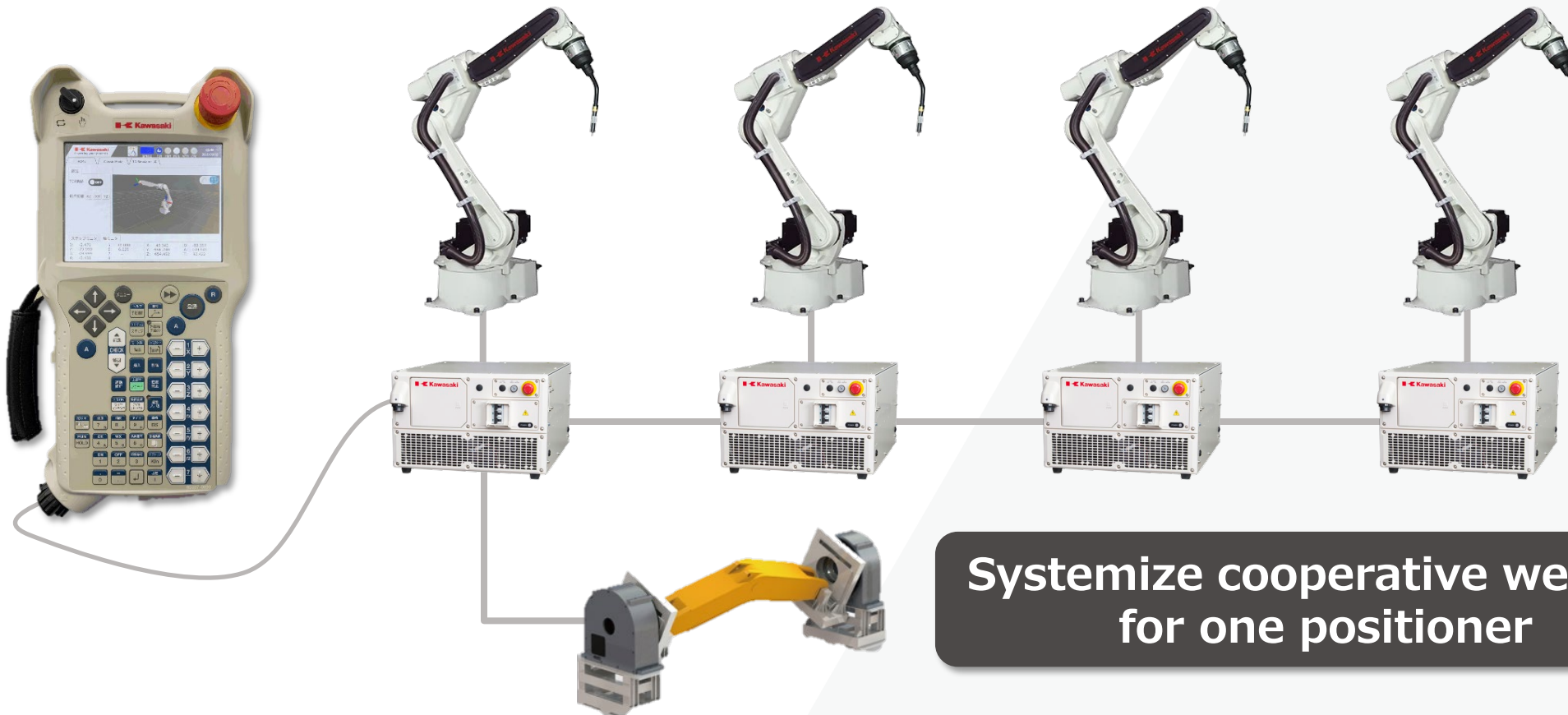
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# Operate multiple controllers with just one Teach pendant

New features

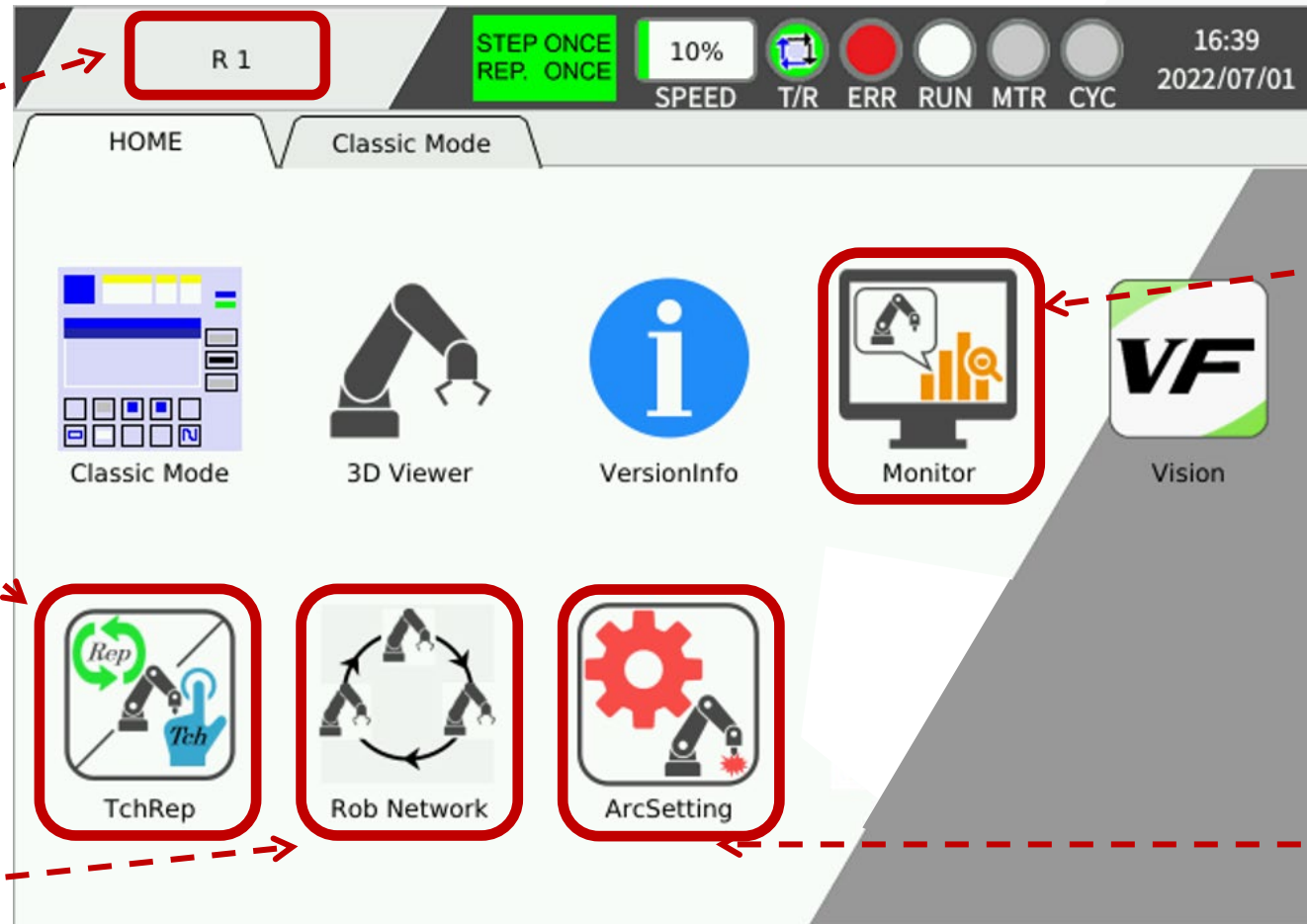
**Cooperative welding** operation of **up to 4 robots** is possible with one TP



**Systemize cooperative welding for one positioner**

# New Teach pendant screen

## Teach pendant Gen II



Selecting robots  
(R1,R2,R3,R4)

Switching T/R

Network setting

Programming  
and  
monitoring  
robots

Arc setting



## Contact us



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Kawasaki, working as one for the good of the planet

**“Global Kawasaki”**