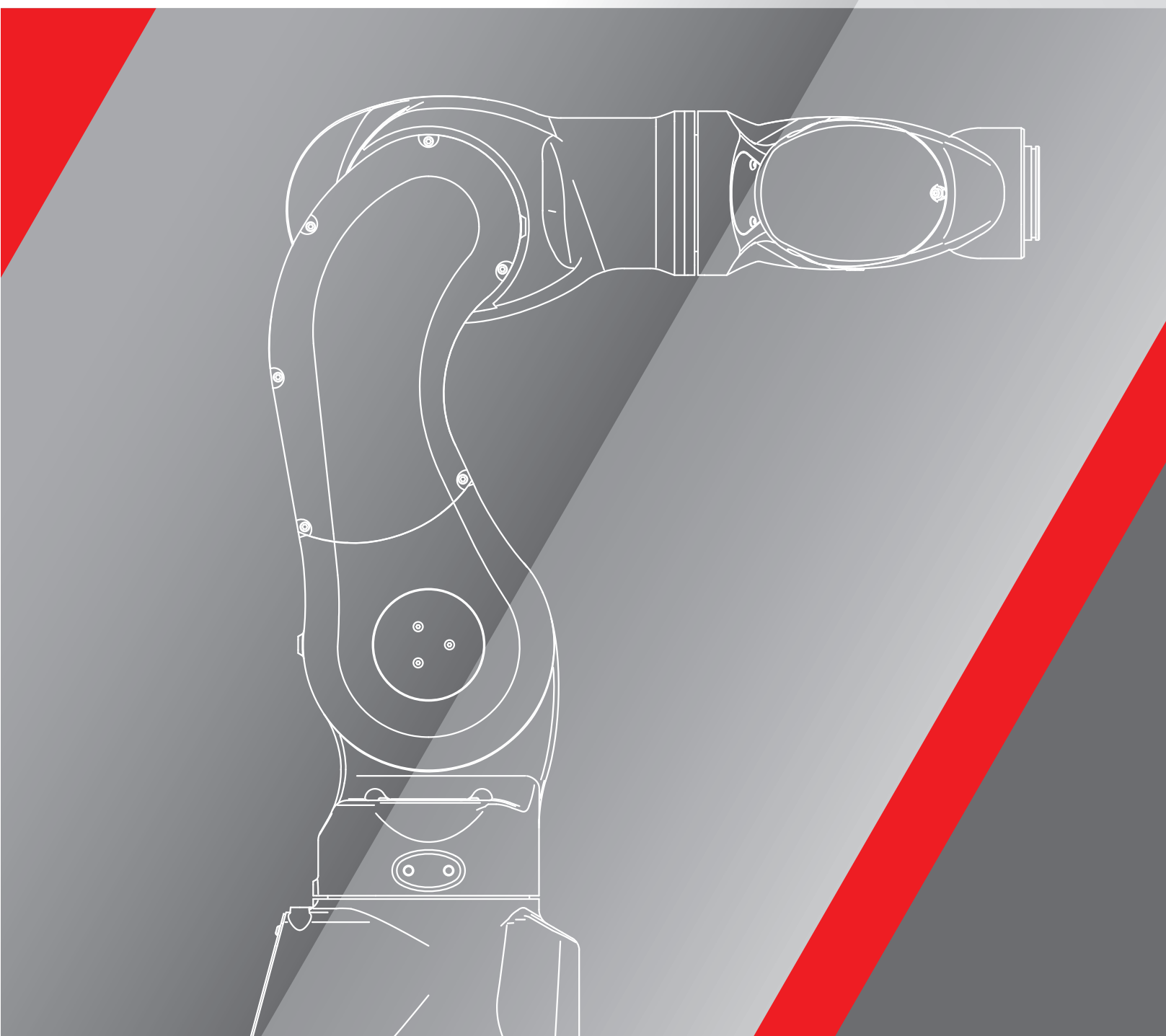


# Kawasaki Robot MC series Medical and pharmaceutical robots



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## Kawasaki Robot



### 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 Wixom, Michigan U.S.A.

# Designed specifically for pharmaceutical and medical applications, the MC series clean robots meet the healthcare industry's demands.

The Kawasaki MC series robots help prevent human errors, contamination risks and exposure to High Potency Active Pharmaceutical Ingredients, such as anticancer drugs. These robots meet the healthcare industry's processing equipment specifications for accuracy, consistency and cleanliness, making them ideal for assembly, dispensing, inspection and material handling applications.

## Features

### Human-like arm with compact body

The human-like arm joint configuration minimizes dead space and allows MC series robots to operate in constricted workspaces. Their compact design allows for direct mounting to a machine or table top.

### Sanitary features

The streamlined design of the MC004N robot features a smooth surface, high performance seals, and a chemical resistant epoxy paint finish to help prevent contamination. The MC004V robot offers a special metal coating and protective seals to withstand sterilization with Vaporized Hydrogen Peroxide (VHP).

### Hollow wrist

The MC series robots' through-arm cable and tube technology minimizes potential interference with other processing and manufacturing equipment.

### Cleanroom classification

Both MC series robots meet the ISO Class 5 (Class 100 of US FED STD 209E) cleanroom standard.



MC004V



MC004N

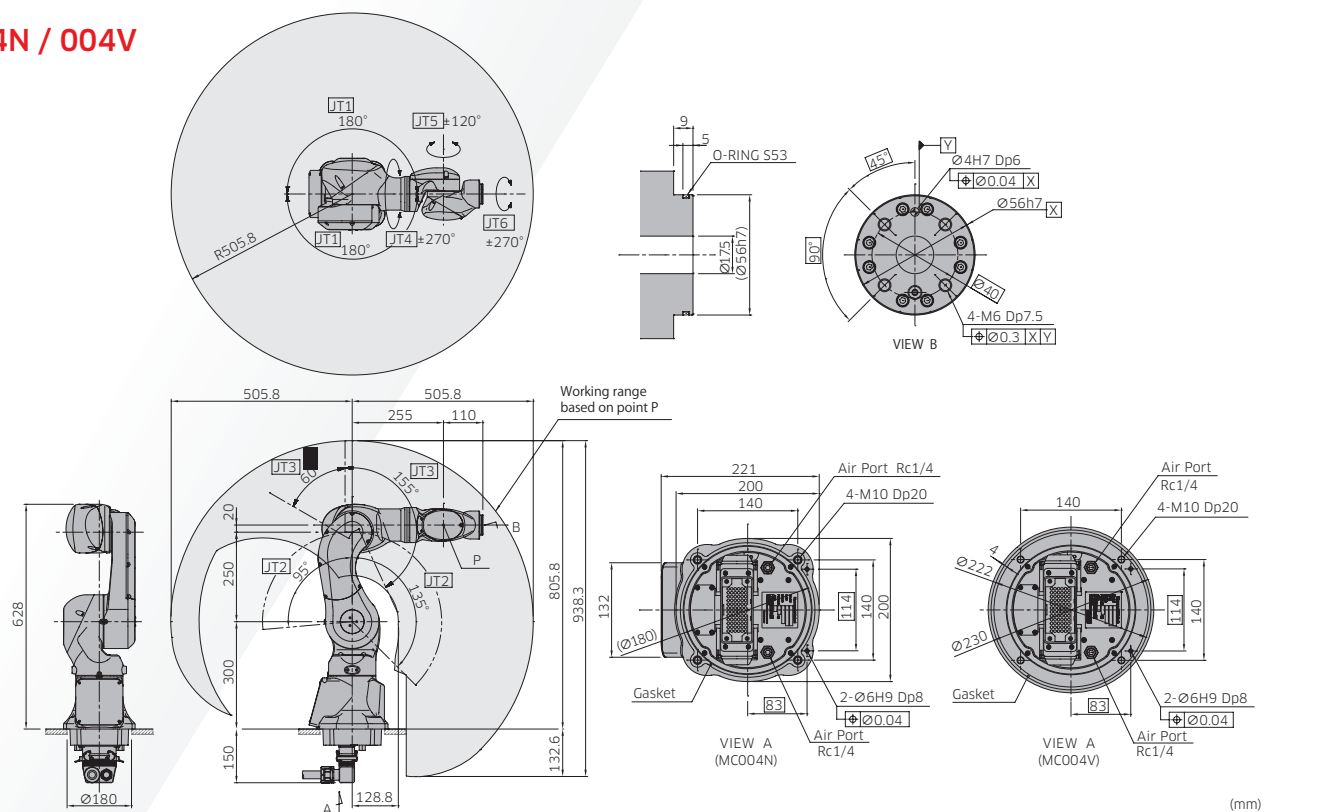
## Specifications

		MC004N	MC004V
Type		Articulated	
Degrees of freedom (axes)		6	
Max. payload (kg)		4	
Max. reach (mm)		505.8	
Positional repeatability (mm) *1		±0.05	
Motion range (°)	Arm rotation (JT1)	±180	
	Arm out-in (JT2)	+135 - -95	
	Arm up-down (JT3)	+60 - -155	
	Wrist swivel (JT4)	±270	
	Wrist bend (JT5)	±120	
	Wrist twist (JT6)	±270	
Max. speed (°/s)	Arm rotation (JT1)	200	
	Arm out-in (JT2)	180	
	Arm up-down (JT3)	225	
	Wrist swivel (JT4)	700	
	Wrist bend (JT5)	500	
	Wrist twist (JT6)	350	
Moment (N·m)	Wrist swivel (JT4)	8.5	
	Wrist bend (JT5)	8.5	
	Wrist twist (JT6)	4.0	
Moment of Inertia (kg·m <sup>2</sup> )	Wrist swivel (JT4)	0.2	
	Wrist bend (JT5)	0.2	
	Wrist twist (JT6)	0.1	
Mass (kg)		25	
Body color		White 12-MTJ-500938 (epoxy paint)	Special surface treatment
Installation		Floor, Ceiling	
Cable connection		Bottom, Back	Bottom
Environmental conditions	Temperature (°C)	10 - 35	
	Humidity (%)	35 - 85 (no dew, nor frost allowed)	
Cleanliness		ISO Class 5	
Integrated function		Air piping (∅4×2) Through from the wrist flange, Port size: Rc1/4	
Power requirements (kVA) *2		1.0	
Degree of protection *3		IP65 (Wrist: IP67)	
Matching controller	America	E76	
	Europe	E70	
	Japan & Asia	E73	

\*1: Conforms to ISO9283 \*2: Depends on the payload and motion patterns \*3: With a closed flange when using the built-in piping

## Motion range & dimensions

### MC004N / 004V



## Specifications

		Standard	Option
America		E76	
Europe		E70	
Japan & Asia		E73	
Dimensions (mm)		W500 × D420 × H259	
Structure		Enclosed structure / Indirect cooling system	
Number of controlled axes		6	Max. 8
Drive system		Full digital servo system	
Coordinate systems	Teach mode	Joint, Base, Tool	
	Repeat mode	Joint / Linear / Circular interpolated motion	
Programming		Point to point teaching or language based programming	
Memory capacity (MB)		8	
General purpose signals	External operation	Motor power off, Hold	
	Input (channels)	32	Max. 96
	Output (channels)	32	Max. 96
Operation panel		E-Stop switch, Teach/repeat switch, Control power light, Fast check mode switch (E70)	Cycle start switch, Motor-on switch, Hold/run switch, Error light, Error reset switch, Fast check mode switch (E73/76)
Cable length	Teach pendant (m)	5	10, 15
	Robot-controller (m)	5	10, 15
Mass (kg)		30	
Power requirements		AC200-240V ±10%, 50/60Hz, 1∅ Class-D earth connection (Earth connection dedicated to robots), Leakage current: Maximum 100mA	
Environmental conditions	Ambient temperature (°C)	0 - 45 (in vertical use 0-40)	
	Relative humidity (%)	35 - 85 (no dew, nor frost allowed)	
Teach pendant		TFT color LCD display with touch-panel, E-Stop switch, Teach lock switch, Enable switch	
Auxiliary storage unit		-	
Interface		USB, Ethernet (100BASE-TX), RS232C	
		USB memory	