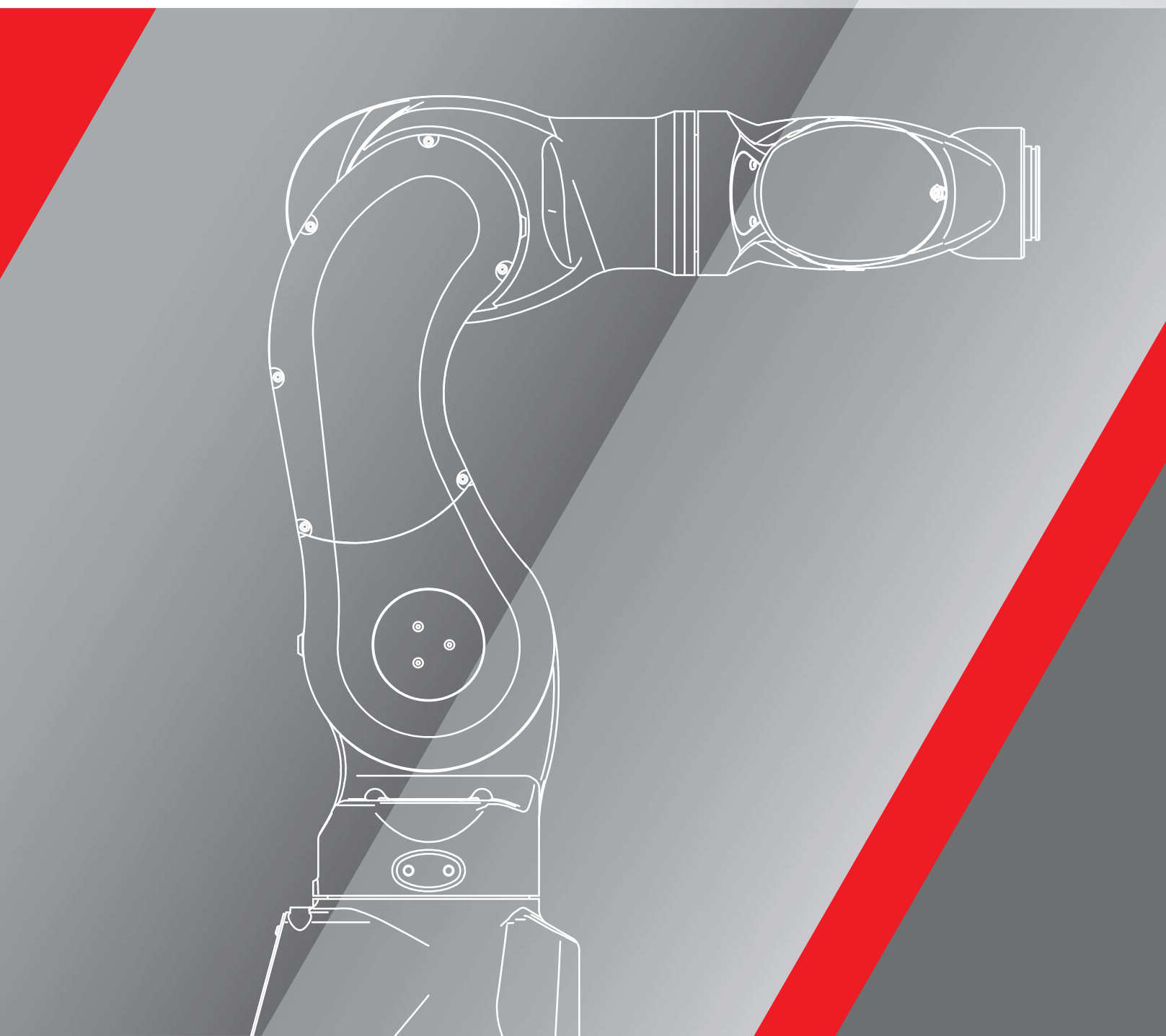


# Kawasaki Robot MC series Medical and pharmaceutical robots



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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

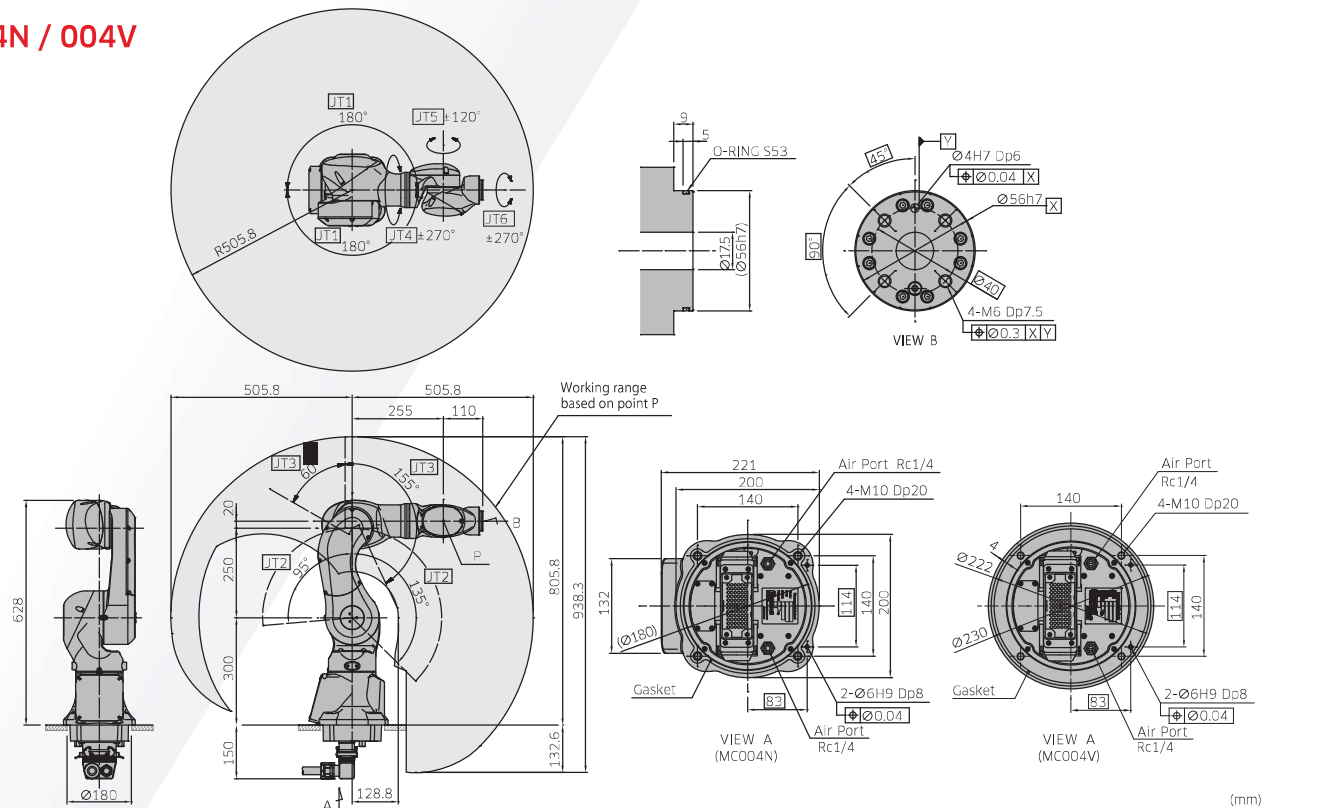
## Specifications

		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	
Max. torque (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	F60		

\*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

		F60	Option
Dimensions (mm)	W300 x D320 x H130 *1		
Structure	Open structure with direct cooling system (IP20)		Enclosed structure with indirect cooling system (IP54) *2
Number of controlled axes	6		
Type of driving	Full digital servo system		
Types of motion control	Manual mode	Joint, Base, Tool	
	Teach mode	Joint, Linear and circular interpolated motions	
Teaching method	Point to point teaching or language based programming		
Memory capacity (MB)	16		
I/O signals	External signal	E-stop, Hold etc.	
	Input	16	Addition: 64 (max. 80) Including remote I/O: 128 (max. 144)
	Output	16	Addition: 64 (max. 80) Including remote I/O: 128 (max. 144)
Operation panel	Teach/Repeat switch, E-Stop switch		
Cable length (m)	Robot-controller	Harness between robot & controller 5	
	Teach pendant	Teach pendant cable 5	
Mass (kg)	8.3 *		
Power requirements	AC200-230V ±10%, 50/60Hz, 1∅ Class D earth connection (Earth connection dedicated to robots)		
Environmental conditions	Ambient temperature (°C)	0 - 45	
	Relative humidity (%)	35 - 85 (no condensation)	
Teach pendant	TFT Color LCD with touch panel, E - stop switch, Teach lock switch and Enable switch		
Color	Munsell 5Y8.5/1 equivalent		
External interface	USB 2.0 x 3 ports, RS-232C x 2 ports, Ethernet (100BASE-T/100BASE-TX/10BASE-T) x 2 ports		

\*1: Without options \*2: Cabinet is larger