

# MEDICAL & PHARMACEUTICAL ROBOT

Designed specifically for medical and pharmaceutical applications, the new high speed MCR04N Robot meets the healthcare industry's processing equipment specifications for accuracy, consistency and cleanliness. Its features make the MCR04N Robot ideal for a wide range of assembly, dispensing, inspection and material handling applications within the healthcare industry.

# MCR04N

 Payload
 4 kg

 Horizontal Reach
 506 mm

 Vertical Reach
 938 mm

 Repeatability
 ± 0.1 mm

 Maximum Speed
 5,000 mm/s

### Medical & Pharmaceutical Applications

- Assembly
- · Dispensing
- Inspection
- · Material Handling

## CLEANROOM CLASSIFICATION

The new MCR04N Robot was designed for cleanroom environments and meets Class 100 of the US FED STD 209E cleanroom standards. A Class 100 cleanroom maintains less than one hundred particles larger than 0.5 microns in each cubic foot of air space. It is equivalent to ISO Class 5 cleanroom.

#### **SANITARY FEATURES**

Built for medical and pharmaceutical applications in non-sterile areas, the streamlined design of the MCR04N Robot features a smooth surface, high performance seals, and a chemical resistant epoxy paint finish for easy cleaning to help prevent contamination.

#### **HOLLOW WRIST**

The through-arm cable and tube technology of the MCR04N Robot minimizes potential interference with other processing and manufacturing equipment.

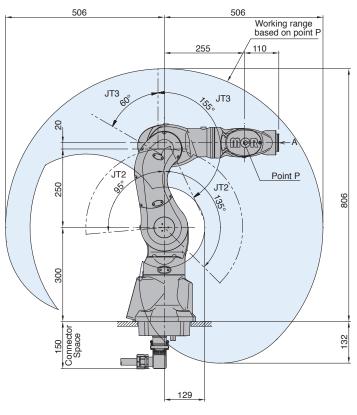
#### COMPACT BODY

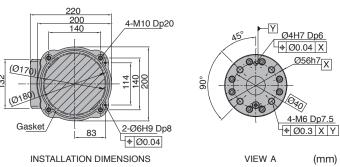
The MCR04N Robot is a fully functional 6-axis robot complete with all the features of larger robots, yet weighs a mere 25 kg. Its compact size is ideal for narrow or confined spaces and also allows for the robot to be mounted directly to a machine or table top.





#### **MOTION RANGE & DIMENSIONS**





Type	MCRO4N SPECIFICATIONS				
Payload	Туре	Articulated			
Horizontal Reach   506 mm	Degrees of Freedom	6 axes			
Vertical Reach         938 mm           Repeatability         ±0.10 mm           Maximum Speed         5,000 mm/s           Work         JT1         ±180°         175°/s           Envelope         JT2         +135° ~ - 95°         180°/s           (degrees)         JT3         +60° ~ -155°         225°/s           JT4         ±270°         700°/s           JT5         ±120°         500°/s           JT6         ±270°         350°/s           Axis         Maximum Torque         Moment of Inertia           JT4         8.5 N·m         0.20 kg·m²           JT5         8.5 N·m         0.20 kg·m²           JT6         4.0 N·m         0.10 kg·m²           Motor(s)         Brushless AC Servomotor           Brakes         All axes           Mass         25 kg (excluding Options)           Body Color         Epoxy paint (ampule white)           Installation         Floor, ceiling           Environmental Conditions         Temperature         10 ~ 35° C           Humidity         35 ~ 85 % (no dew, nor frost allowed)           Protection Classification         Urist: IP67 Base: IP65 * Equivalent           Cleanroom Classification         ISO Class	Payload	4 kg			
Repeatability	Horizontal Reach	506 mm			
Maximum Speed         5,000 mm/s           Work Envelope (degrees) & Maximum Speed (degrees) & Maximum Speed (degrees/s) & Maximum Speed (degrees/s)         JT2 +135° ~ -95° 180°/s           Maximum Speed (degrees/s)         JT4 ±270° 700°/s           JT5 ±120° 500°/s         JT6 ±270° 350°/s           JT6 ±270° 350°/s         Axis Maximum Torque Moment of Inertia           JT5 8.5 N·m 0.20 kg·m²         JT5 8.5 N·m 0.20 kg·m²           JT6 4.0 N·m 0.10 kg·m²         JT6 4.0 N·m 0.10 kg·m²           Motor(s)         Brushless AC Servomotor           Brakes         All axes           Mass         25 kg (excluding Options)           Body Color         Epoxy paint (ampule white)           Installation         Floor, ceiling           Environmental Conditions         Temperature         10 ~ 35° C           Humidity         35 ~ 85 % (no dew, nor frost allowed)           Protection Classification         Wrist: IP67 Base: IP65 * Equivalent           Cleanroom Classification         ISO Class 5 (Fed. Std. Class 100)	Vertical Reach	938 mm			
Work Envelope (degrees) & Maximum Speed (degrees) & Maximum Speed (degrees) & Maximum Speed (degrees/s) & Maximum Speed (degrees/s)         JT2	Repeatability	±0.10 mm			
Work   Serve   Serve	Maximum Speed	5,000 mm/s			
Brushless AC Servomotor   Brushless AC Ser	Envelope (degrees) & Maximum Speed	Axis	Motion Range	Maximum Speed	
Envelope (degrees)		JT1	±180°	175°/s	
& Maximum Speed (degrees/s)         JT4         ±270°         700°/s           JT5         ±120°         500°/s           JT6         ±270°         350°/s           Wrist Load Capacity         Axis         Maximum Torque         Moment of Inertia           JT4         8.5 N·m         0.20 kg·m²           JT5         8.5 N·m         0.20 kg·m²           JT6         4.0 N·m         0.10 kg·m²           Motor(s)         Brushless AC Servomotor           Brakes         All axes           Mass         25 kg (excluding Options)           Body Color         Epoxy paint (ampule white)           Installation         Floor, ceiling           Environmental Conditions         Temperature         10 ~ 35° C           Humidity         35 ~ 85 % (no dew, nor frost allowed)           Protection Classification         Wrist: IP67         Base: IP65         * Equivalent           Cleanroom Classification         ISO Class 5 (Fed. Std. Class 100)		JT2	+135° ~ - 95°	180°/s	
Maximum Speed (degrees/s)         JT4         ±270°         700°/s           JT6         ±270°         500°/s           JT6         ±270°         350°/s           Wrist Load Capacity         Axis         Maximum Torque         Moment of Inertia           JT4         8.5 N·m         0.20 kg·m²           JT5         8.5 N·m         0.20 kg·m²           JT6         4.0 N·m         0.10 kg·m²           Motor(s)         Brushless AC Servomotor           Brakes         All axes           Mass         25 kg (excluding Options)           Body Color         Epoxy paint (ampule white)           Installation         Floor, ceiling           Environmental Conditions         Temperature         10 ~ 35° C           Humidity         35 ~ 85 % (no dew, nor frost allowed)           Protection Classification         Wrist: IP67         Base: IP65         * Equivalent           Cleanroom Classification         ISO Class 5 (Fed. Std. Class 100)		JT3	+60° ~ -155°	225°/s	
STS		JT4	±270°	700°/s	
Wrist Load Capacity         Axis         Maximum Torque         Moment of Inertia           JT4         8.5 N·m         0.20 kg·m²           JT5         8.5 N·m         0.20 kg·m²           JT6         4.0 N·m         0.10 kg·m²           Motor(s)         Brushless AC Servomotor           Brakes         All axes           Mass         25 kg (excluding Options)           Body Color         Epoxy paint (ampule white)           Installation         Floor, ceiling           Environmental Conditions         Temperature         10 ~ 35° C           Humidity         35 ~ 85 % (no dew, nor frost allowed)           Protection Classification         Wrist: IP67         Base: IP65         * Equivalent           Cleanroom Classification         ISO Class 5 (Fed. Std. Class 100)		JT5	±120°	500°/s	
Wrist Load Capacity         JT4         8.5 N·m         0.20 kg·m²           JT5         8.5 N·m         0.20 kg·m²           JT6         4.0 N·m         0.10 kg·m²           Motor(s)         Brushless AC Servomotor           Brakes         All axes           Mass         25 kg (excluding Options)           Body Color         Epoxy paint (ampule white)           Installation         Floor, ceiling           Environmental Conditions         Temperature         10 ~ 35° C           Humidity         35 ~ 85 % (no dew, nor frost allowed)           Protection Classification         Wrist: IP67 Base: IP65 * Equivalent           Cleanroom Classification         ISO Class 5 (Fed. Std. Class 100)		JT6	±270°	350°/s	
Capacity         JT5         8.5 N·m         0.20 kg·m²           Motor(s)         Brushless AC Servomotor           Brakes         All axes           Mass         25 kg (excluding Options)           Body Color         Epoxy paint (ampule white)           Installation         Floor, ceiling           Environmental Conditions         Temperature         10 ~ 35° C           Humidity         35 ~ 85 % (no dew, nor frost allowed)           Protection Classification         Wrist: IP67         Base: IP65         * Equivalent           Cleanroom Classification         ISO Class 5 (Fed. Std. Class 100)		Axis	Maximum Torque	Moment of Inertia	
JT6		JT4	8.5 N·m	0.20 kg·m²	
Motor(s)     Brushless AC Servomotor       Brakes     All axes       Mass     25 kg (excluding Options)       Body Color     Epoxy paint (ampule white)       Installation     Floor, ceiling       Environmental Conditions     Temperature     10 ~ 35° C       Humidity     35 ~ 85 % (no dew, nor frost allowed)       Protection Classification     Wrist: IP67 Base: IP65 * Equivalent       Cleanroom Classification     ISO Class 5 (Fed. Std. Class 100)		JT5	8.5 N·m	0.20 kg·m²	
Brakes All axes  Mass 25 kg (excluding Options)  Body Color Epoxy paint (ampule white)  Installation Floor, ceiling  Environmental Conditions Temperature 10 ~ 35° C  Humidity 35 ~ 85 % (no dew, nor frost allowed)  Protection Classification Wrist: IP67 Base: IP65 * Equivalent  Cleanroom Classification ISO Class 5 (Fed. Std. Class 100)		JT6	4.0 N·m	0.10 kg·m²	
Mass 25 kg (excluding Options)  Body Color Epoxy paint (ampule white)  Installation Floor, ceiling  Environmental Conditions Temperature 10 ~ 35° C  Humidity 35 ~ 85 % (no dew, nor frost allowed)  Protection Classification Wrist: IP67 Base: IP65 * Equivalent  Cleanroom Classification ISO Class 5 (Fed. Std. Class 100)	Motor(s)	Brushless AC Servomotor			
Body Color     Epoxy paint (ampule white)       Installation     Floor, ceiling       Environmental Conditions     Temperature     10 ~ 35° C       Humidity     35 ~ 85 % (no dew, nor frost allowed)       Protection Classification     Wrist: IP67 Base: IP65 * Equivalent       Cleanroom Classification     ISO Class 5 (Fed. Std. Class 100)	Brakes	All axes			
Installation	Mass	25 kg (excluding Options)			
Temperature	Body Color	Epoxy paint (ampule white)			
Environmental Conditions  Humidity  35 ~ 85 % (no dew, nor frost allowed)  Protection Classification  Wrist: IP67 Base: IP65 * Equivalent  Cleanroom Classification  ISO Class 5 (Fed. Std. Class 100)	Installation	Floor, ceiling			
Conditions  Humidity  35 ~ 85 % (no dew, nor frost allowed)  Protection Classification  Wrist: IP67 Base: IP65 * Equivalent  Cleanroom Classification  ISO Class 5 (Fed. Std. Class 100)		Temperature		10 ~ 35° C	
Classification Wrist: IP67 Base: IP65 * Equivalent  Cleanroom Classification ISO Class 5 (Fed. Std. Class 100)		Humidity		, ,	
Classification ISO Class 5 (Fed. Std. Class 100)		Wrist: IP67 Base: IP65		* Equivalent	
Controller E77 (see E Controller data sheet for specifications)		ISO Class 5 (Fed. Std. Class 100)			
	Controller	E77 (s	see E Controller data sh	eet for specifications)	

Note: Detailed drawings are available upon request.



Assembly • Cutting • Dispensing • Grinding • Handling • Inspection • Packaging • Painting • Palletizing • Polishing • Tending • Welding

(mm)

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