

## Medium Payload Intelligent Robot

# FANUC Robot M-710iC

### Features

The M-710iC is a medium payload robot with a wrist payload of 12 - 70kg. Eight models are available for a wide variety of applications.

- **FANUC Robot M-710iC/45M, /50, /70**

Wide motion envelope and enough wrist load capacity to handle a large panel.

M-710iC/45M : Payload capacity 45kg

M-710iC/50 : Payload capacity 50kg

M-710iC/70 : Payload capacity 70kg

- **FANUC Robot M-710iC/50S**

This model has a compact body that is suitable for narrow work environments. (Payload capacity 50kg)

- **FANUC Robot M-710iC/12L, /20L, /20M**

Long reach and high motion performance make it suitable for many applications, such as handling, sealing and arc welding.

M-710iC/12L : Payload capacity 12kg (Hollow wrist)

M-710iC/20L : Payload capacity 20kg

M-710iC/20M : Payload capacity 20kg

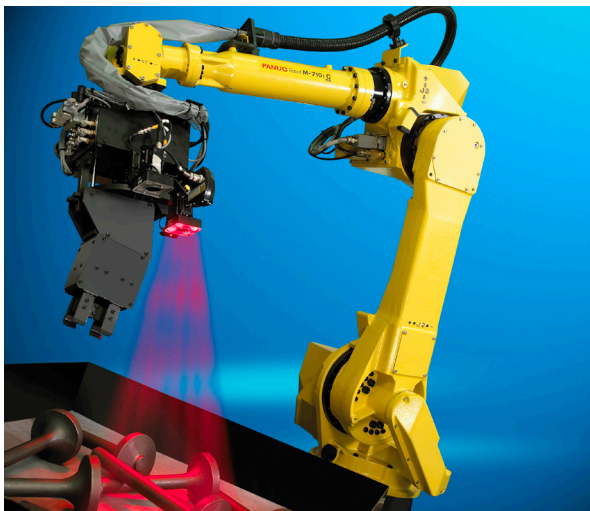
- **FANUC Robot M-710iC/50H**

This five-axes model is designed for the high speed transferring of parts. The ceiling mount option is ideal for compact handling systems. (Payload capacity 50kg)

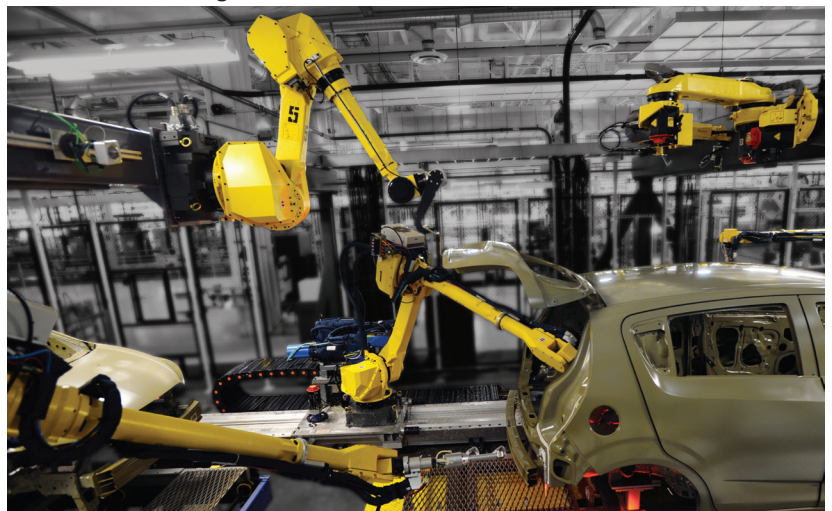
- The full cover provides IP67-equivalent resistance to environmental conditions (dust and liquid). The M-710iC is reliable for various applications, such as load/unload for machined parts, de-burring and die cast loading.



### Application system



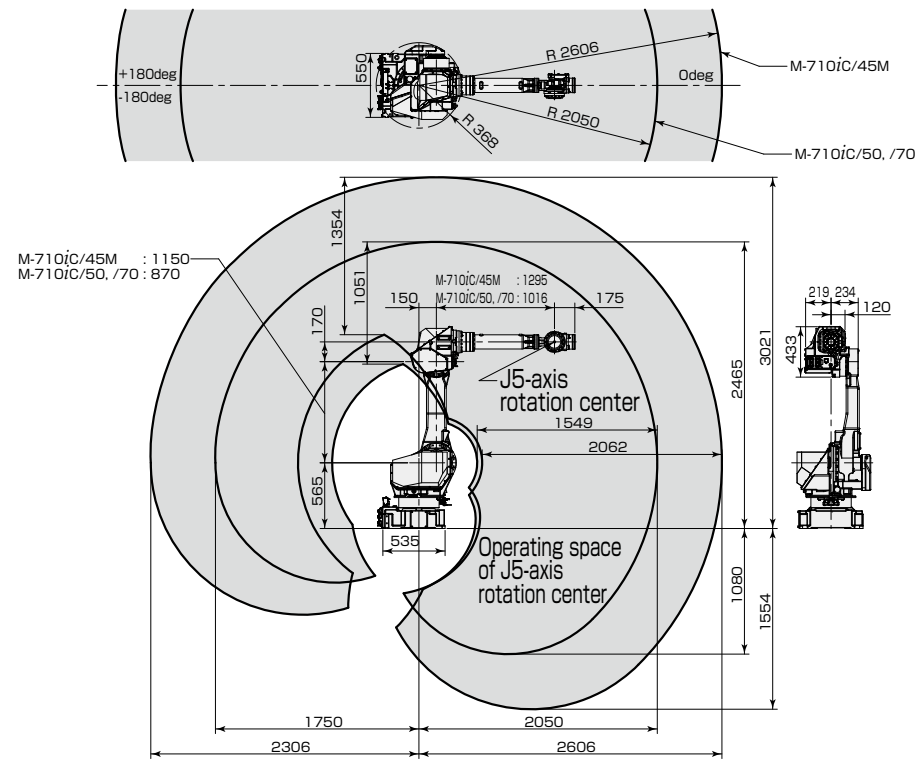
Bin picking of cylindrical parts



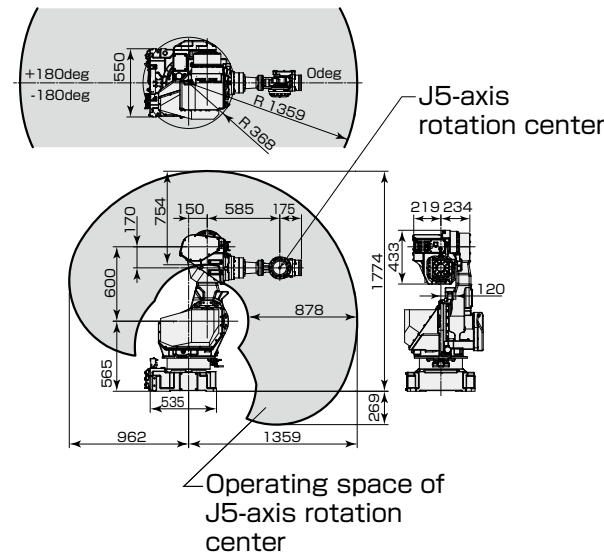
Car body sealing

# Operating space

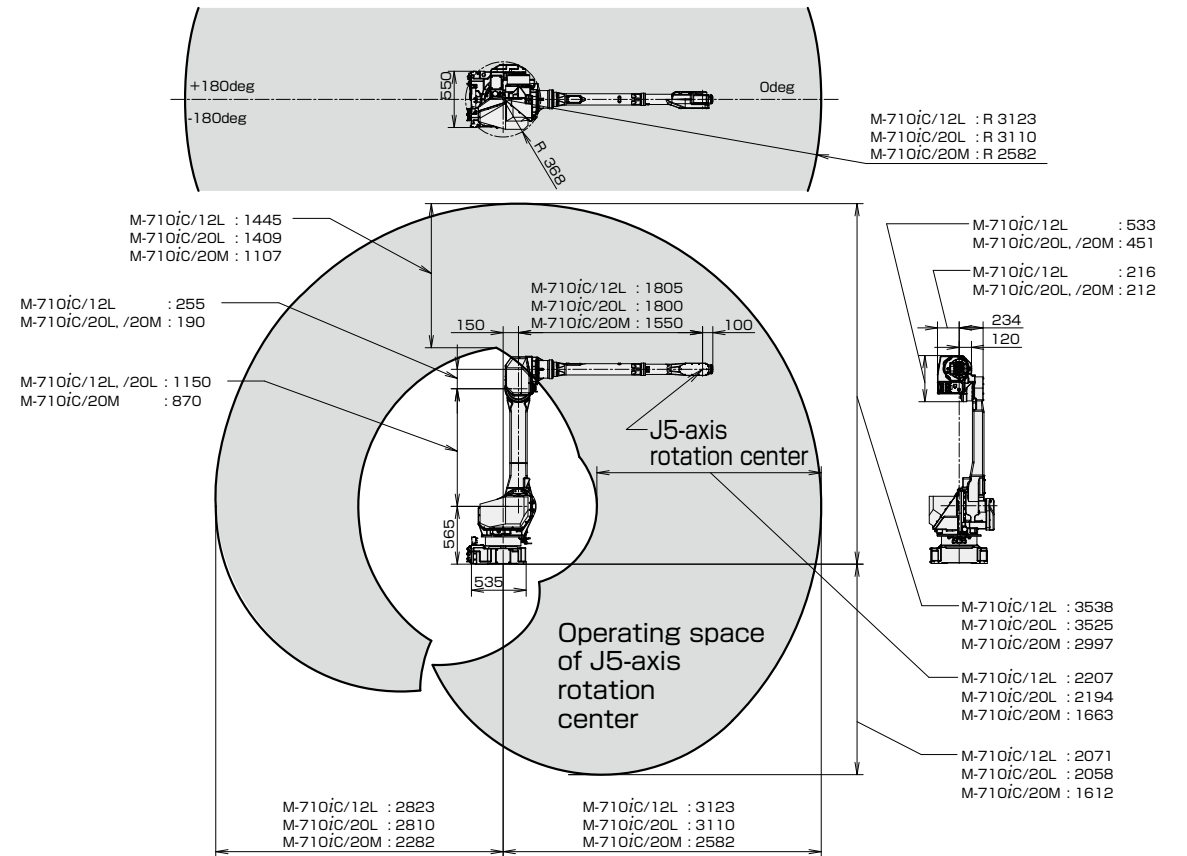
## M-710iC/45M, /50, /70



## M-710iC/50S



## M-710iC/12L, /20L, /20M



### Specifications

Model	M-710iC/45M	M-710iC/50	M-710iC/70	
Type	Articulated Type			
Controlled axes	6 axes (J1, J2, J3, J4, J5, J6)			
Reach	2606 mm	2050 mm		
Installation (Note 1)	Floor, Upside-down, Angle mount			
Motion range (Maximum speed) (Note 2)	J1 axis rotation	360° (180°/s) 6.28 rad (3.14 rad/s)	360° (175°/s) 6.28 rad (3.05 rad/s)	360° (160°/s) 6.28 rad (2.79 rad/s)
	J2 axis rotation	225° (180°/s) 3.93 rad (3.14 rad/s)	225° (175°/s) 3.93 rad (3.05 rad/s)	225° (120°/s) 3.93 rad (2.09 rad/s)
	J3 axis rotation	440° (180°/s) 7.68 rad (3.14 rad/s)	440° (175°/s) 7.68 rad (3.05 rad/s)	440° (120°/s) 7.68 rad (2.09 rad/s)
	J4 axis wrist rotation	800° (250°/s) 13.96 rad (4.36 rad/s)	720° (250°/s) 12.57 rad (4.36 rad/s)	720° (225°/s) 12.57 rad (3.93 rad/s)
	J5 axis wrist swing	250° (250°/s) 4.36 rad (4.36 rad/s)	250° (250°/s) 4.36 rad (4.36 rad/s)	250° (225°/s) 4.36 rad (3.93 rad/s)
	J6 axis wrist rotation	800° (360°/s) 13.96 rad (6.28 rad/s)	720° (355°/s) 12.57 rad (6.20 rad/s)	720° (225°/s) 12.57 rad (3.93 rad/s)
	Max. load capacity at wrist	45 kg	50 kg	70 kg
Max. Load capacity at J3 casing (Note 3)	15 kg			
Allowable load moment at wrist	J4 axis	206 N·m	21 kgf·m	294 N·m 30 kgf·m
	J5 axis	206 N·m	21 kgf·m	294 N·m 30 kgf·m
	J6 axis	127 N·m	13 kgf·m	147 N·m 15 kgf·m
Allowable load inertia at wrist	J4 axis	28 kg·m <sup>2</sup>	286 kgf·cm·s <sup>2</sup>	
	J5 axis	28 kg·m <sup>2</sup>	286 kgf·cm·s <sup>2</sup>	
	J6 axis	20 kg·m <sup>2</sup> 204 kgf·cm·s <sup>2</sup>	11 kg·m <sup>2</sup> 112 kgf·cm·s <sup>2</sup>	
Drive method	Electric servo drive by AC servo motor			
Repeatability (Note 4)	± 0.06 mm	± 0.03 mm	± 0.04 mm	
Mass (Note 5)	570 kg	560 kg		
Installation environment	Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No dew nor frost allowed) Short term 95%RH or less (within one month) Vibration acceleration : 4.9m/s <sup>2</sup> (0.5G) or less			

### Specifications

Model	M-710iC/50S	
Type	Articulated Type	
Controlled axes	6 axes (J1, J2, J3, J4, J5, J6)	
Reach	1359 mm	
Installation (Note 1)	Floor, Upside-down, Angle mount	
Motion range (Maximum speed) (Note 2)	J1 axis rotation	360° (175°/s) 6.28 rad (3.05 rad/s)
	J2 axis rotation	169° (175°/s) 2.95 rad (3.05 rad/s)
	J3 axis rotation	376° (175°/s) 6.56 rad (3.05 rad/s)
	J4 axis wrist rotation	720° (250°/s) 12.57 rad (4.36 rad/s)
	J5 axis wrist swing	250° (250°/s) 4.36 rad (4.36 rad/s)
	J6 axis wrist rotation	720° (355°/s) 12.57 rad (6.20 rad/s)
	Max. load capacity at wrist	50 kg
Max. load capacity at J3 casing (Note 3)	15 kg	
Allowable load moment at wrist	J4 axis	206 N·m 21 kgf·m
	J5 axis	206 N·m 21 kgf·m
	J6 axis	127 N·m 13 kgf·m
Allowable load inertia at wrist	J4 axis	28 kg·m <sup>2</sup> 286 kgf·cm·s <sup>2</sup>
	J5 axis	28 kg·m <sup>2</sup> 286 kgf·cm·s <sup>2</sup>
	J6 axis	11 kg·m <sup>2</sup> 112 kgf·cm·s <sup>2</sup>
Drive method	Electric servo drive by AC servo motor	
Repeatability (Note 4)	± 0.04 mm	
Mass (Note 5)	545 kg	
Installation environment	Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No dew nor frost allowed) Short term 95%RH or less (within one month) Vibration acceleration : 4.9m/s <sup>2</sup> (0.5G) or less	

### Specifications

Model	M-710iC/12L	M-710iC/20L	M-710iC/20M	
Type	Articulated Type			
Controlled axes	6 axes (J1, J2, J3, J4, J5, J6)			
Reach	3123 mm	3110 mm	2582 mm	
Installation (Note 1)	Floor, Upside-down, Angle mount			
Motion range (Maximum speed) (Note 2)	J1 axis rotation	360° (180°/s) 6.28 rad (3.14 rad/s)	360° (175°/s) 6.28 rad (3.05 rad/s)	360° (175°/s) 6.28 rad (3.05 rad/s)
	J2 axis rotation	225° (180°/s) 3.93 rad (3.14 rad/s)	225° (175°/s) 3.93 rad (3.05 rad/s)	225° (175°/s) 3.93 rad (3.05 rad/s)
	J3 axis rotation	434° (180°/s) 7.57 rad (3.14 rad/s)	432° (180°/s) 7.54 rad (3.14 rad/s)	435° (180°/s) 7.59 rad (3.14 rad/s)
	J4 axis wrist rotation	400° (400°/s) 6.98 rad (6.98 rad/s)	400° (350°/s) 6.98 rad (6.11 rad/s)	400° (350°/s) 6.98 rad (6.11 rad/s)
	J5 axis wrist swing	380° (430°/s) 6.63 rad (7.50 rad/s)	280° (360°/s) 4.89 rad (6.28 rad/s)	280° (360°/s) 4.89 rad (6.28 rad/s)
	J6 axis wrist rotation	720° (630°/s) 12.57 rad (11.0 rad/s)	900° (600°/s) 15.71 rad (10.47 rad/s)	900° (600°/s) 15.71 rad (10.47 rad/s)
	Max. load capacity at wrist	12 kg	20 kg	
Max. Load capacity at J3 casing (Note 3)	24 kg			
Allowable load moment at wrist	J4 axis	22.0 N·m 2.24 kgf·m	39.2 N·m 4.0 kgf·m	4.0 kgf·m
	J5 axis	22.0 N·m 2.24 kgf·m	39.2 N·m 4.0 kgf·m	
	J6 axis	9.8 N·m 1.0 kgf·m	19.6 N·m 2.0 kgf·m	
Allowable load inertia at wrist	J4 axis	0.65 kg·m <sup>2</sup> 6.6 kgf·cm·s <sup>2</sup>	0.88 kg·m <sup>2</sup> 9.0 kgf·cm·s <sup>2</sup>	
	J5 axis	0.65 kg·m <sup>2</sup> 6.6 kgf·cm·s <sup>2</sup>	0.88 kg·m <sup>2</sup> 9.0 kgf·cm·s <sup>2</sup>	
	J6 axis	0.17 kg·m <sup>2</sup> 1.7 kgf·cm·s <sup>2</sup>	0.25 kg·m <sup>2</sup> 2.6 kgf·cm·s <sup>2</sup>	
Drive method	Electric servo drive by AC servo motor			
Repeatability (Note 4)	± 0.09 mm	± 0.06 mm	± 0.06 mm	
Mass (Note 5)	540 kg	530 kg		
Installation environment	Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No dew nor frost allowed) Short term 95%RH or less (within one month) Vibration acceleration : 4.9m/s <sup>2</sup> (0.5G) or less			

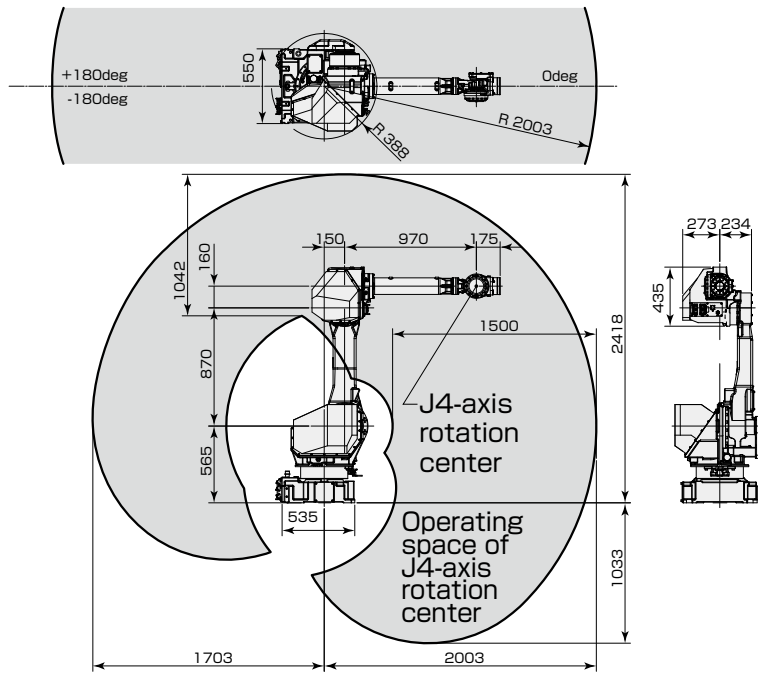
Note 1) In case of the angle mounting, the J1 and J2 axis motion range are restricted.  
 Note 2) During short distance motions, the axis speed may not reach the maximum value stated.  
 Note 3) Max. load capacity at J3 casing is limited by payload at wrist.  
 Note 4) Compliant with ISO 9283.  
 Note 5) Without controller.

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# Operating space

## M-710iC/50H



### Specifications

Model		M-710iC/50H	
Type		Articulated Type	
Controlled axes		5 axes (J1, J2, J3, J4, J5)	
Reach		2003 mm	
Installation		Floor, Upside-down	
Motion range (Maximum speed) (Note 1)	J1 axis rotation	360° (1.75°/s) 6.28 rad (3.05 rad/s)	
	J2 axis rotation	225° (1.75°/s) 3.93 rad (3.05 rad/s)	
	J3 axis rotation	440° (1.75°/s) 7.68 rad (3.05 rad/s)	
	J4 axis wrist swing	234° (1.75°/s) 4.08 rad (3.05 rad/s)	
	J5 axis wrist rotation	720° (7.20°/s) 12.57 rad (12.57 rad/s)	
Max. load capacity at wrist		50 kg	
Max. load capacity at J3 casing (Note 2)		15 kg	
Allowable load moment at wrist	J4 axis	150 N·m 15.3 kgf·m	
	J5 axis	68 N·m 6.9 kgf·m	
Allowable load inertia at wrist	J4 axis	6.3 kg·m <sup>2</sup> 64.3 kgf·cm·s <sup>2</sup>	
	J5 axis	2.5 kg·m <sup>2</sup> 25.5 kgf·cm·s <sup>2</sup>	
Drive method		Electric servo drive by AC servo motor	
Repeatability		± 0.15 mm	
Mass (Note 3)		540 kg	
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No dew nor frost allowed) Short term 95%RH or less (within one month) Vibration acceleration : 4.9m/s <sup>2</sup> (0.5G) or less	

Note 1) During short distance motions, the axis speed may not reach the maximum value stated.

Note 2) Max. load capacity at J3 casing is limited by payload at wrist.

Note 3) Without controller.

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