

Multi-purpose Intelligent Robot

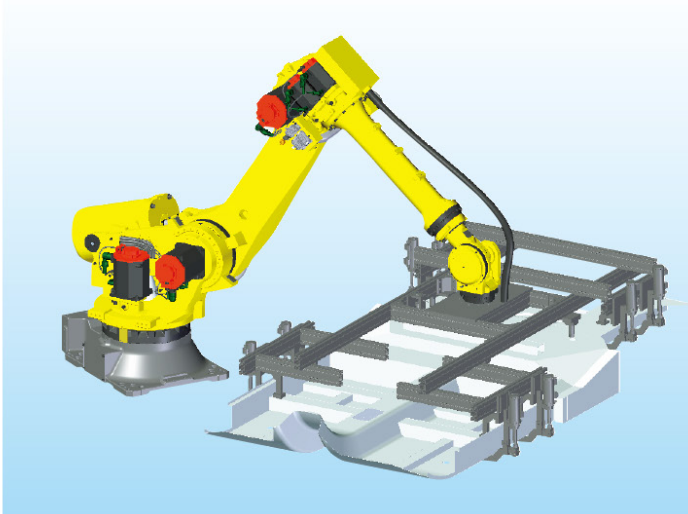
# FANUC Robot R-2000iC series



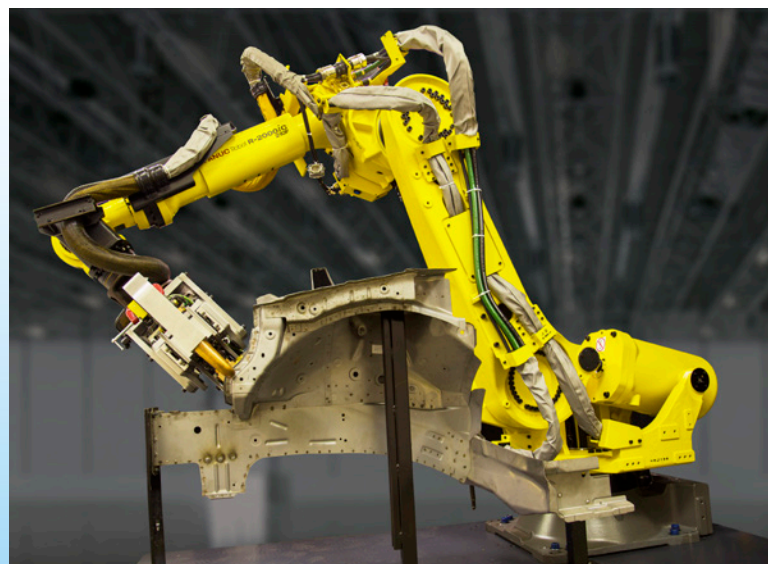
The FANUC R-2000iC robot is a multi-purpose intelligent robot based on FANUC's years of experience and renowned technology. This high performance intelligent robot with outstanding reliability and cost performance will support your needs in a wide range of applications, such as spot welding, material handling and assembly.

- Size and weight reduction of the mechanical unit for a more lightweight and compact robot.
- A lightweight, rigid arm combined with the world's most advanced motion control technology offers significantly improved motion performance, and higher productivity.
- Extensive options are available for various processes, including the spot welding solution arm.
- The new R-30iB robot controller provides an energy regeneration option and a compact cabinet.
- Available with the most advanced intelligent features such as the Learning Robot, Bin Picking, Force Sensing, iRVision and Visual Line Tracking.

## Application system



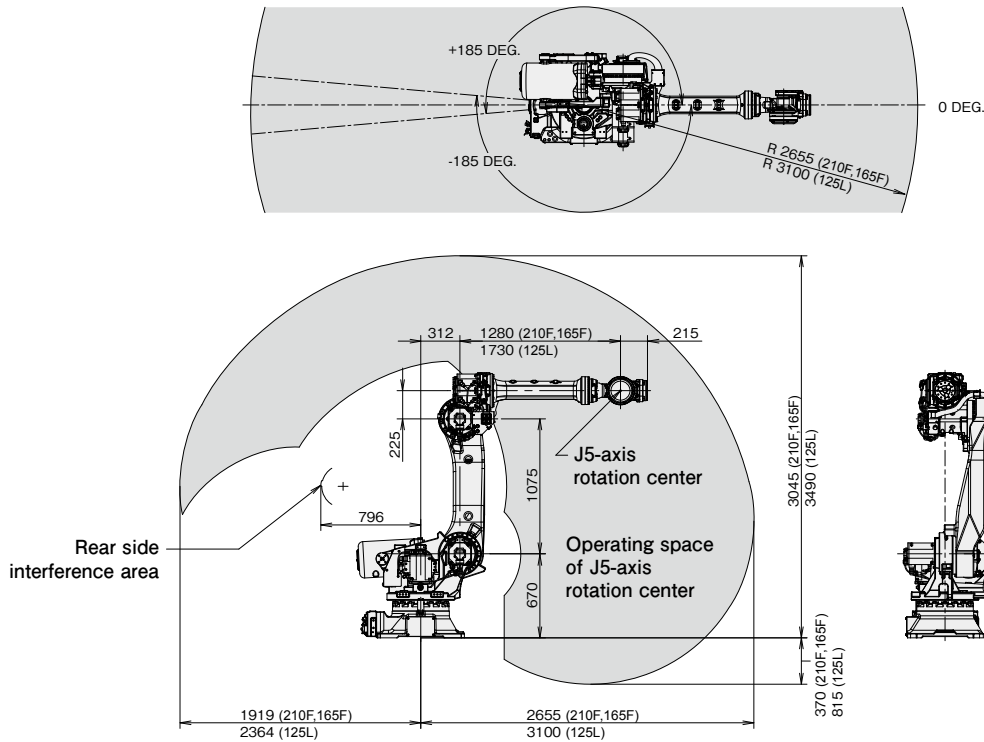
Large part handling



Spot welding

## Operating space

# R-2000iC/210F,/165F,/125L



## Specifications

Model		R-2000iC/210F		R-2000iC/165F		R-2000iC/125L	
Type		Articulated Type					
Controlled axes		6 axes (J1, J2, J3, J4, J5, J6)					
Reach		2655 mm				3100 mm	
Installation		Floor					
Motion range (Maximum speed) Note 1)	J1 axis rotation	370°(120°/s)	6.46 rad (2.09 rad/s)	370°(130°/s)	6.46 rad (2.27 rad/s)	370°(125°/s)	6.46 rad (2.01 rad/s)
	J2 axis rotation	136°(105°/s)	2.37 rad (1.83 rad/s)	136°(115°/s)	2.37 rad (2.01 rad/s)	301°(125°/s)	5.25 rad (2.18 rad/s)
	J3 axis rotation	312°(110°/s)	5.45 rad (1.92 rad/s)	312°(125°/s)	5.45 rad (2.18 rad/s)	301°(125°/s)	5.25 rad (2.18 rad/s)
	J4 axis wrist rotation	720°(140°/s)	12.57 rad (2.44 rad/s)	720°(180°/s)	12.57 rad (3.14 rad/s)	720°(180°/s)	12.57 rad (3.14 rad/s)
	J5 axis wrist swing	250°(140°/s)	4.36 rad (2.44 rad/s)	250°(180°/s)	4.36 rad (3.14 rad/s)	250°(180°/s)	4.36 rad (3.14 rad/s)
	J6 axis wrist rotation	720°(220°/s)	12.57 rad (3.84 rad/s)	720°(260°/s)	12.57 rad (4.54 rad/s)	720°(260°/s)	12.57 rad (4.54 rad/s)
Max. load capacity at wrist		210 kg		165 kg		125 kg	
Max. load capacity at J2 base		550 kg		550 kg		550 kg	
Max. load capacity on J3 arm		25 kg (A)	(A) + (B) ≤ 50 kg	25 kg (A)	(A) + (B) ≤ 50 kg	25 kg (C)	(C) + (D) ≤ 40 kg
Max. load capacity on J3 casing		50 kg (B)		50 kg (B)		40 kg (D)	
Allowable load moment at wrist	J4 axis	1360 N·m	139 kgf·m	940 N·m	96 kgf·m	710 N·m	72 kgf·m
	J5 axis	1360 N·m	139 kgf·m	940 N·m	96 kgf·m	710 N·m	72 kgf·m
	J6 axis	735 N·m	75 kgf·m	490 N·m	50 kgf·m	355 N·m	36 kgf·m
Allowable load inertia at wrist	J4 axis	147 kg·m <sup>2</sup>	1500 kgf·cm·s <sup>2</sup>	89 kg·m <sup>2</sup>	908 kgf·cm·s <sup>2</sup>	72 kg·m <sup>2</sup>	735 kgf·cm·s <sup>2</sup>
	J5 axis	147 kg·m <sup>2</sup>	1500 kgf·cm·s <sup>2</sup>	89 kg·m <sup>2</sup>	908 kgf·cm·s <sup>2</sup>	72 kg·m <sup>2</sup>	735 kgf·cm·s <sup>2</sup>
	J6 axis	82 kg·m <sup>2</sup>	837 kgf·cm·s <sup>2</sup>	46 kg·m <sup>2</sup>	469 kgf·cm·s <sup>2</sup>	40 kg·m <sup>2</sup>	408 kgf·cm·s <sup>2</sup>
Drive method		Electric servo drive by AC servo motor					
Repeatability Note 2)		±0.05 mm					
Mass Note 3)		1090 kg		1090 kg		1115 kg	
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No dew, nor frost allowed) Short term Max. 95%RH or less (within one month) Vibration acceleration : 4.9m/s <sup>2</sup> (0.5G) or less					

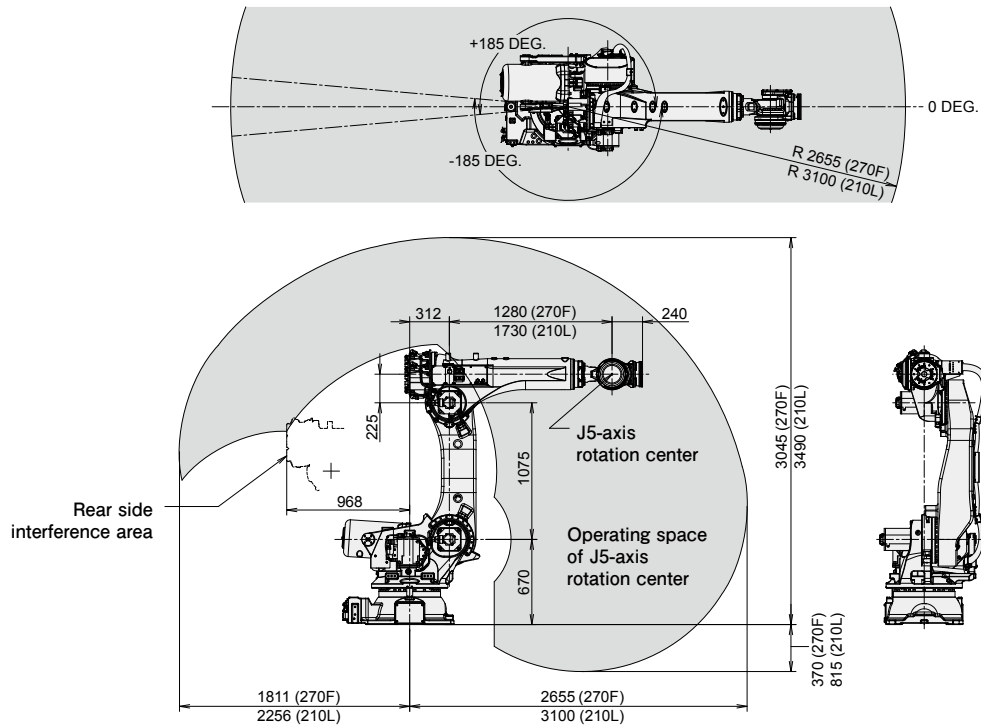
Note 1) During short distance motions, the axis speed may not reach the maximum value stated.

Note 2) Compliant with ISO 9283.

Note 3) Without controller.

# Operating space

## R-2000iC/270F, /210L



# Specifications

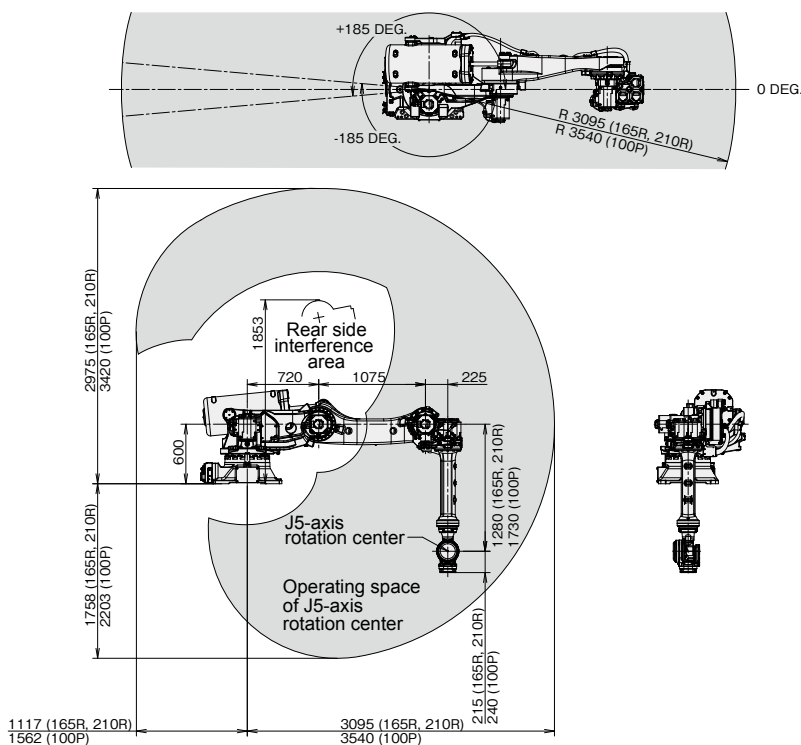
Model		R-2000iC/270F		R-2000iC/210L	
Type		Articulated Type			
Controlled axes		6 axes (J1, J2, J3, J4, J5, J6)			
Reach		2655 mm		3100 mm	
Installation		Floor			
Motion range (Maximum speed) Note 1)	J1 axis rotation	370°(105°/s)		6.46 rad (1.83 rad/s)	
	J2 axis rotation	136°( 90°/s)		2.37 rad (1.57 rad/s)	
	J3 axis rotation	312°( 85°/s)	5.45 rad (1.48 rad/s)	301°( 85°/s)	5.25 rad (1.48 rad/s)
	J4 axis wrist rotation	720°(120°/s)		12.57 rad (2.09 rad/s)	
	J5 axis wrist swing	250°(120°/s)		4.36 rad (2.09 rad/s)	
	J6 axis wrist rotation	720°(200°/s)		12.57 rad (3.49 rad/s)	
Max. load capacity at wrist		270 kg		210 kg	
Max. load capacity at J2 base		550 kg		550 kg	
Max. load capacity on J3 arm		40 kg (A)	$(A) \times 5/4 + (B) \leq 50 \text{ kg}$	20 kg (C)	$(C) \times 5/2 + (D) \leq 50 \text{ kg}$
Max. load capacity on J3 casing		50 kg (B)		50 kg (D)	
Allowable load moment at wrist	J4 axis	1730 N·m	177 kgf·m	1700 N·m	173 kgf·m
	J5 axis	1730 N·m	177 kgf·m	1700 N·m	173 kgf·m
	J6 axis	900 N·m	92 kgf·m	900 N·m	92 kgf·m
Allowable load inertia at wrist	J4 axis	320 kg·m <sup>2</sup>	3265 kgf·cm·s <sup>2</sup>	320 kg·m <sup>2</sup>	3265 kgf·cm·s <sup>2</sup>
	J5 axis	320 kg·m <sup>2</sup>	3265 kgf·cm·s <sup>2</sup>	320 kg·m <sup>2</sup>	3265 kgf·cm·s <sup>2</sup>
	J6 axis	230 kg·m <sup>2</sup>	2347 kgf·cm·s <sup>2</sup>	230 kg·m <sup>2</sup>	2347 kgf·cm·s <sup>2</sup>
Drive method		Electric servo drive by AC servo motor			
Repeatability Note 2)		±0.05 mm			
Mass Note 3)		1320 kg		1350 kg	
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No dew, nor frost allowed) Short term Max. 95 %RH or less (within one month) Vibration acceleration : 4.9 m/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) Compliant with ISO 9283.

# Operating space

## R-2000iC/210R,/165R,/100P



## Specifications

Model		R-2000iC/210R		R-2000iC/165R		R-2000iC/100P	
Type		Articulated Type					
Controlled axes		6 axes (J1, J2, J3, J4, J5, J6)					
Reach		3095 mm				3540 mm	
Installation		Rack mount					
Motion range (Maximum speed) Note 1)	J1 axis rotation	370°(105°/s)	6.46 rad (1.83 rad/s)	370°(115°/s)	6.46 rad (2.01 rad/s)	370°(120°/s)	6.46 rad (2.09 rad/s)
	J2 axis rotation	200°(100°/s)	3.49 rad (1.75 rad/s)	200°(110°/s)	3.49 rad (1.92 rad/s)	200°(100°/s)	3.49 rad (1.75 rad/s)
	J3 axis rotation	375°(110°/s)	6.54 rad (1.92 rad/s)	375°(125°/s)	6.54 rad (2.18 rad/s)	375°(115°/s)	6.54 rad (2.01 rad/s)
	J4 axis wrist rotation	720°(140°/s)	12.57 rad (2.44 rad/s)	720°(180°/s)	12.57 rad (3.14 rad/s)	720°(140°/s)	12.57 rad (2.44 rad/s)
	J5 axis wrist swing	250°(140°/s)	4.36 rad (2.44 rad/s)	250°(180°/s)	4.36 rad (3.14 rad/s)	250°(140°/s)	4.36 rad (2.44 rad/s)
	J6 axis wrist rotation	720°(220°/s)	12.57 rad (3.84 rad/s)	720°(260°/s)	12.57 rad (4.54 rad/s)	720°(210°/s)	12.57 rad (3.66 rad/s)
Max. load capacity at wrist		210 kg		165 kg		100 kg	
Max. load capacity at J2 base		550 kg		550 kg		550 kg	
Max. load capacity on J3 arm		30 kg (A)	(A)×4/3+(B) ≤ 40 kg	25 kg (C)	(C) + (D) ≤ 50 kg	25 kg (E)	(E)×2 + (F) ≤ 50kg
Max. load capacity on J3 casing		40 kg (B)		50 kg (D)		50 kg (F)	
Allowable load moment at wrist	J4 axis	1360 N·m	139 kgf·m	940 N·m	96 kgf·m	1000 N·m	102 kgf·m
	J5 axis	1360 N·m	139 kgf·m	940 N·m	96 kgf·m	1000 N·m	102 kgf·m
	J6 axis	735 N·m	75 kgf·m	490 N·m	50 kgf·m	706 N·m	72 kgf·m
Allowable load inertia at wrist	J4 axis	147 kg·m <sup>2</sup>	1500 kgf·cm·s <sup>2</sup>	89 kg·m <sup>2</sup>	908 kgf·cm·s <sup>2</sup>	227 kg·m <sup>2</sup>	2316 kgf·cm·s <sup>2</sup>
	J5 axis	147 kg·m <sup>2</sup>	1500 kgf·cm·s <sup>2</sup>	89 kg·m <sup>2</sup>	908 kgf·cm·s <sup>2</sup>	227 kg·m <sup>2</sup>	2316 kgf·cm·s <sup>2</sup>
	J6 axis	82 kg·m <sup>2</sup>	837 kgf·cm·s <sup>2</sup>	46 kg·m <sup>2</sup>	469 kgf·cm·s <sup>2</sup>	196 kg·m <sup>2</sup>	2000 kgf·cm·s <sup>2</sup>
Drive method		Electric servo drive by AC servo motor					
Repeatability Note 2)		±0.05 mm					
Mass Note 3)		1370 kg		1370 kg		1470 kg	
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75 %RH or less (No dew, nor frost allowed) Short term Max. 95 %RH or less (within one month) Vibration acceleration : 4.9 m/s <sup>2</sup> (0.5G) or less					

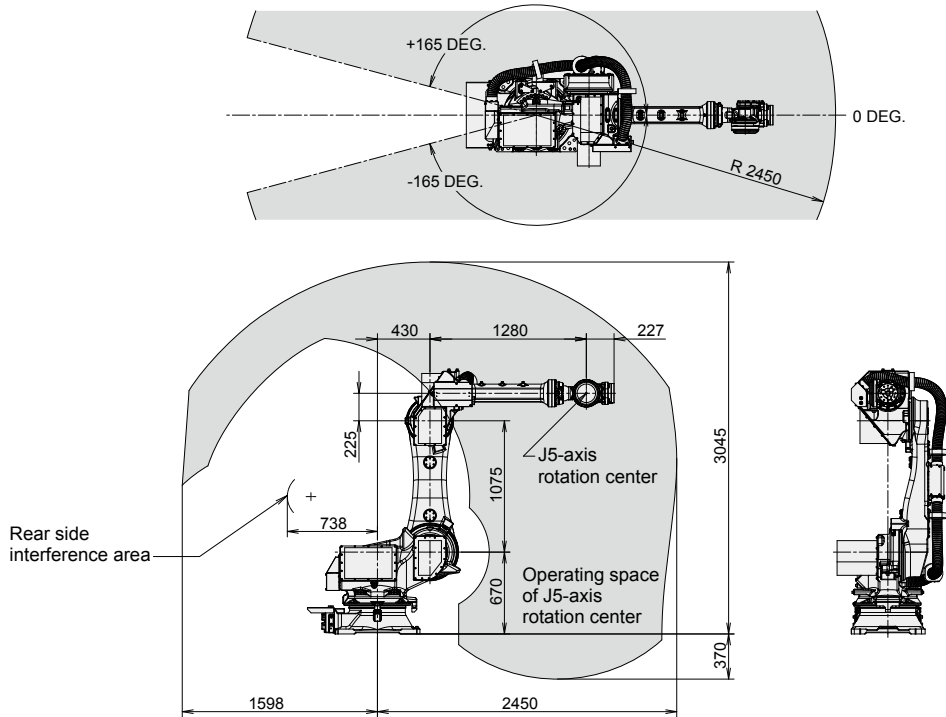
Note 1) During short distance motions, the axis speed may not reach the maximum value stated.

Note 2) Compliant with ISO 9283.

Note 3) Without controller.

## Operating space

# R-2000iC/210WE



## Specifications

Model		R-2000iC/210WE	
Type		Articulated Type	
Controlled axes		6 axes (J1, J2, J3, J4, J5, J6)	
Reach		2450 mm	
Installation		Rack mount	
Motion range (Maximum speed) Note 1)	J1 axis rotation	330°( 95°/s)	5.76 rad (1.66 rad/s)
	J2 axis rotation	141°( 85°/s)	2.46 rad (1.48 rad/s)
	J3 axis rotation	318°( 95°/s)	5.55 rad (1.66 rad/s)
	J4 axis wrist rotation	720°(120°/s)	12.57 rad (2.09 rad/s)
	J5 axis wrist swing	250°(120°/s)	4.36 rad (2.09 rad/s)
	J6 axis wrist rotation	720°(190°/s)	12.57 rad (3.32 rad/s)
Max. load capacity at wrist		210 kg	
Max. load capacity at J2 base		550 kg	
Max. load capacity on J3 arm		-	
Max. load capacity on J3 casing		10 kg	
Allowable load moment at wrist	J4 axis	1333 N·m	136 kgf·m
	J5 axis	1333 N·m	136 kgf·m
	J6 axis	706 N·m	72 kgf·m
Allowable load inertia at wrist	J4 axis	141.1 kg·m <sup>2</sup>	1440 kgf·cm·s <sup>2</sup>
	J5 axis	141.1 kg·m <sup>2</sup>	1440 kgf·cm·s <sup>2</sup>
	J6 axis	78.4 kg·m <sup>2</sup>	800 kgf·cm·s <sup>2</sup>
Drive method		Electric servo drive by AC servo motor	
Repeatability Note 2)		± 0.1 mm	
Mass Note 3)		1180 kg	
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75 %RH or less (No dew, nor frost allowed) Short term Max. 95 %RH or less (within one month) Vibration acceleration : 4.9 m/s <sup>2</sup> (0.5G) or less	

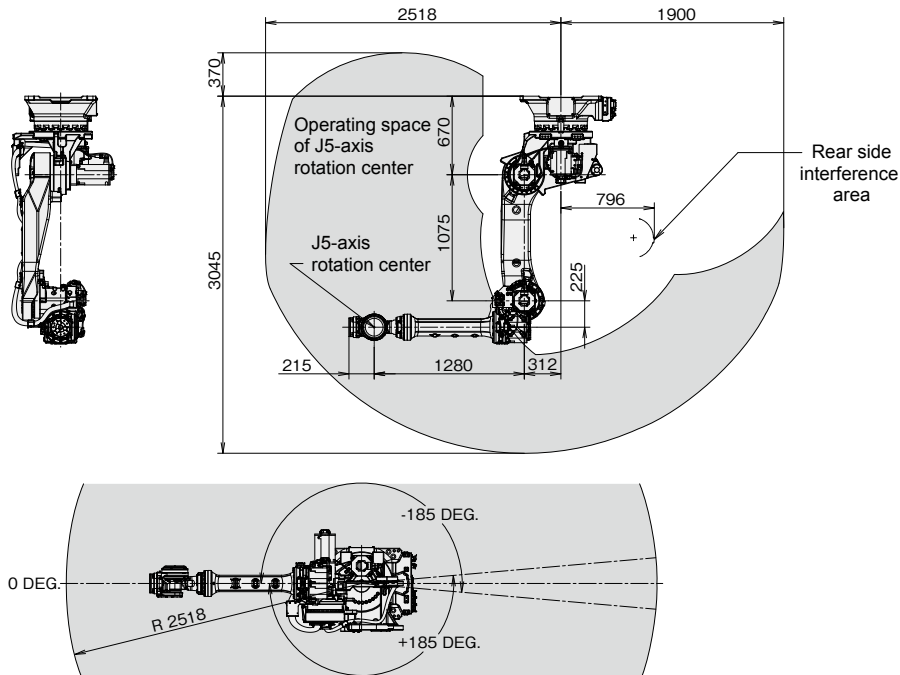
Note 1) During short distance motions, the axis speed may not reach the maximum value stated.

Note 2) Compliant with ISO 9283.

Note 3) Without controller.

## Operating space

# R-2000iC/220U



## Specifications

Model		R-2000iC/220U	
Type		Articulated Type	
Controlled axes		6 axes (J1, J2, J3, J4, J5, J6)	
Reach		2518 mm	
Installation		Upside-down	
Motion range (Maximum speed) Note 1)	J1 axis rotation	370°(120°/s)	6.46 rad (2.09 rad/s)
	J2 axis rotation	136°( 85°/s)	2.37 rad (1.48 rad/s)
	J3 axis rotation	312°(110°/s)	5.45 rad (1.92 rad/s)
	J4 axis wrist rotation	720°(140°/s)	12.57 rad (2.44 rad/s)
	J5 axis wrist swing	250°(140°/s)	4.36 rad (2.44 rad/s)
	J6 axis wrist rotation	720°(220°/s)	12.57 rad (3.84 rad/s)
Max. load capacity at wrist		220 kg	
Max. load capacity at J2 base		-	
Max. load capacity on J3 arm		25 kg(A)	(A)×6/5 + (B) ≤ 30kg
Max. load capacity on J3 casing		30 kg(B)	
Allowable load moment at wrist	J4 axis	1360 N·m	139 kgf·m
	J5 axis	1360 N·m	139 kgf·m
	J6 axis	735 N·m	75 kgf·m
Allowable load inertia at wrist	J4 axis	147 kg·m <sup>2</sup>	1500 kgf·cm·s <sup>2</sup>
	J5 axis	147 kg·m <sup>2</sup>	1500 kgf·cm·s <sup>2</sup>
	J6 axis	82 kg·m <sup>2</sup>	837 kgf·cm·s <sup>2</sup>
Drive method		Electric servo drive by AC servo motor	
Repeatability Note 2)		± 0.05 mm	
Mass Note 3)		1020 kg	
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75 %RH or less (No dew, nor frost allowed) Short term Max. 95 %RH or less (within one month) Vibration acceleration : 4.9 m/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) Compliant with ISO 9283.

Note 3) Without controller.

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