

Compact and High-speed Robot

FANUC Robot R-1000iA

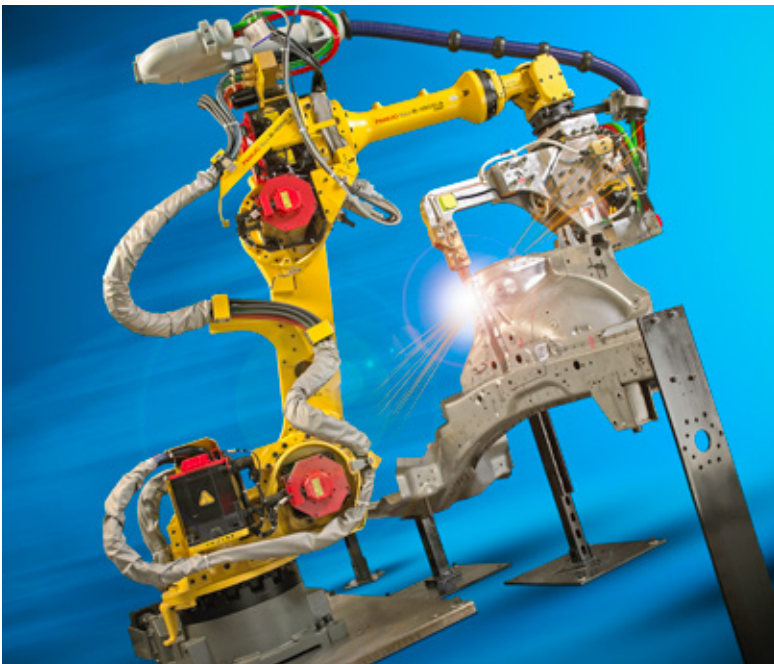


Features

The R-1000iA is a compact and high-speed robot with a wrist capacity of 80kg and 100kg. A compact mechanical unit combined with outstanding motion performance make this robot ideal for material handling or spot welding processes. A narrow footprint allows more robots to fit into a work cell, helping save valuable floor space.

- Three models are available to meet a variety of applications
 - The R-1000iA 80F/100F has a large operating space (including its rear and downward side) due to a serial link configuration. This robot can be installed up side down. A slim profile, high speed approach and fast short pitch motion combine for reduced process time.
 - The R-1000iA 80H is a 5 axis variant that produces faster transfer speed in a compact unit.
- A slim design allows for easy access to adjacent robots, fixtures and work pieces. The R-1000iA can be floor or invert mounted.
- The latest intelligent features with *iR*Vision and force sensing are available, as well as a range of other features with the R-30iB controller.

Application system



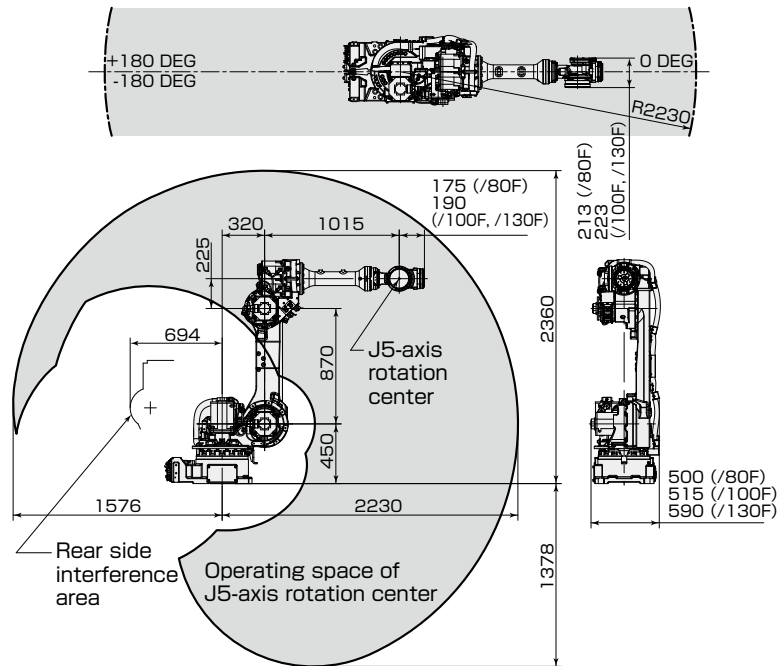
Spot welding with the Learning Robot option



Bag palletizing with R-1000+A 80H

R-1000iA/80F, /100F, /130F

Operating space



Specifications

Model		R-1000iA/80F	R-1000iA/100F	R-1000iA/130F
Type		Articulated Type		
Controlled axes		6 axes (J1, J2, J3, J4, J5, J6)		
Reach		2230 mm		
Installation		Floor, Upside-down		
Motion range (Maximum speed) Note 1)	J1 axis rotation	360° (170°/s) 6.28 rad(2.97 rad/s)	360° (130°/s) 6.28 rad(2.27 rad/s)	360° (130°/s) 6.28rad(2.27rad/s)
	J2 axis rotation	245° (140°/s) 4.28 rad(2.44 rad/s)	245° (110°/s) 4.28 rad(1.92 rad/s)	245° (110°/s) 4.28rad(1.92rad/s)
	J3 axis rotation	360° (160°/s) 6.28 rad(2.79 rad/s)	360° (120°/s) 6.28 rad(2.09 rad/s)	360° (120°/s) 6.28rad(2.09rad/s)
	J4 axis wrist rotation	720° (230°/s) 12.57 rad(4.01 rad/s)	720° (170°/s) 12.57 rad(2.97 rad/s)	720° (170°/s) 12.57rad(2.97rad/s)
	J5 axis wrist swing	250° (230°/s) 4.36 rad(4.01 rad/s)	250° (170°/s) 4.36 rad(2.97 rad/s)	250° (170°/s) 4.36rad(2.97rad/s)
	J6 axis wrist rotation	720° (350°/s) 12.57 rad(6.11 rad/s)	720° (250°/s) 12.57 rad(4.36 rad/s)	720° (250°/s) 12.57rad(4.36rad/s)
Max. load capacity at wrist		80 kg (A)	100 kg	
Max. load capacity on J3 arm		-	(A)+(B) < 80kg	
Max. load capacity on J3 casing		15 kg (B)	20 kg (C) 20 kg (D)	130 kg (C)+(D) < 20kg 20 kg (D)
Allowable load moment at wrist	J4 axis	380 N·m 38.8 kgf·m	690 N·m 70.4 kgf·m	800 N·m 81.6 kgf·m
	J5 axis	380 N·m 38.8 kgf·m	690 N·m 70.4 kgf·m	800 N·m 81.6 kgf·m
	J6 axis	200 N·m 20.4 kgf·m	260 N·m 26.5 kgf·m	360 N·m 36.7 kgf·m
Allowable load inertia at wrist	J4 axis	30 kg·m ² 306.1 kgf·cm·s ²	57 kg·m ² 581.6 kgf·cm·s ²	71 kg·m ² 724.5 kgf·cm·s ²
	J5 axis	30 kg·m ² 306.1 kgf·cm·s ²	57 kg·m ² 581.6 kgf·cm·s ²	71 kg·m ² 724.5 kgf·cm·s ²
	J6 axis	20 kg·m ² 204.1 kgf·cm·s ²	32 kg·m ² 326.5 kgf·cm·s ²	38 kg·m ² 387.8 kgf·cm·s ²
Drive method		Electric servo drive by AC servo motor		
Repeatability Note 2)		± 0.03 mm		
Mass Note 3)		620 kg	665 kg	675 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 ² (0.5G) or less		

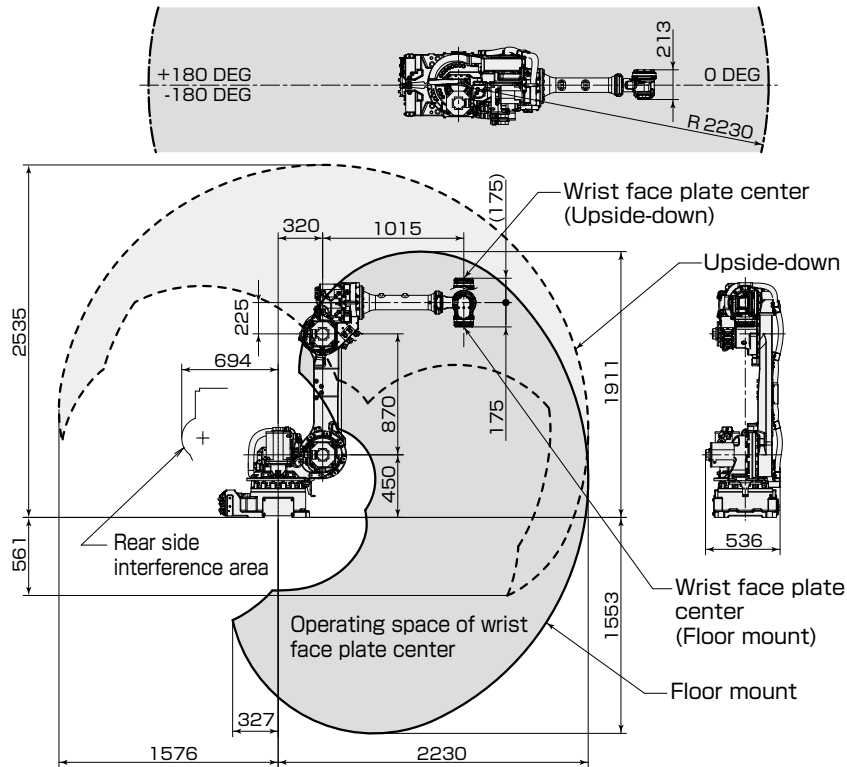
Note 1) During short distance motions, the axis speed may not reach the maximum value stated.

Note 2) Compliant with ISO 9283.

Note 3) Without controller.

R-1000iA/80H

Operating space



Specifications

Model		R-1000iA/80H	
Type		Articulated Type	
Controlled axes		5 axes (J1, J2, J3, J4, J5)	
Reach		2230 mm	
Installation		Floor, Upside-down	
Motion range (Maximum speed) Note 1)	J1 axis rotation	360° (185°/s) 6.28 rad(3.23 rad/s)	
	J2 axis rotation	245° (180°/s) 4.28 rad(3.14 rad/s)	
	J3 axis rotation	215° (180°/s) 3.75 rad(3.14 rad/s)	
	J4 axis wrist swing	20° (180°/s) 0.35 rad(3.14 rad/s) Note 2)	
	J5 axis wrist rotation	720° (500°/s) 12.57 rad(8.73 rad/s)	
Max. load capacity at wrist		80 kg (A)	(A)+(B) < 80kg
Max. load capacity on J3 arm		-	
Max. load capacity on J3 casing		15 kg (B)	
Allowable load moment at wrist	J4 axis	Note 3)	
	J5 axis		
Allowable load inertia at wrist	J4 axis	48 kg·m ²	489.8 kgf·cm·s ²
	J5 axis	25 kg·m ²	255.1 kgf·cm·s ²
Drive method		Electric servo drive by AC servo motor	
Repeatability Note 4)		± 0.03 mm	
Mass Note 5)		610 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 ² (0.5G) or less	

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

Note 2) The wrist interface is always controlled downward. It can be made fine adjustment from -10 to +10 degrees.

Note 3) Distance from the center of gravity of the load to the wrist flange center is limited by the wrist load and load inertia.

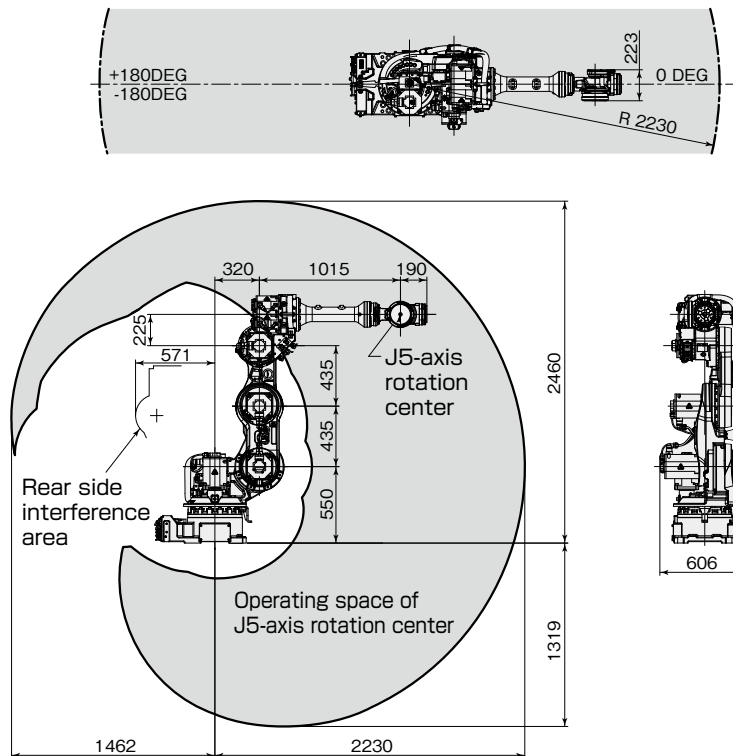
In case of the wrist load and load inertia are maximum, the center of gravity of the load can be offset up to 254mm in the horizontal direction and up to 400mm in the vertical direction from the wrist flange center.

Note 4) Compliant with ISO 9283.

Note 5) Without controller.

R-1000iA/120F-7B

Operating space



Specifications

Model		R-1000iA/120F-7B	
Type		Articulated Type	
Controlled axes		7 axes (J1, J2, J3, J4, J5, J6, E1)	
Reach		2230 mm	
Installation		Floor, Upside-down	
Motion range (Maximum speed) Note 1)	J1 axis rotation	360° (130°/s) 6.28 rad(2.27 rad/s)	
	J2 axis rotation	200° (110°/s) 3.50 rad(1.92 rad/s)	
	J3 axis rotation	385° (120°/s) 6.72 rad(2.09 rad/s)	
	J4 axis wrist rotation	720° (170°/s) 12.57 rad(2.97 rad/s)	
	J5 axis wrist swing	250° (170°/s) 4.36 rad(2.97 rad/s)	
	J6 axis wrist rotation	720° (250°/s) 12.57 rad(4.36 rad/s)	
	E1 axis rotation	225° (130°/s) 3.93 rad(2.27 rad/s)	
Max. load capacity at wrist		120 kg	
Max. load capacity on J3 arm		20 kg (A)	(A)+(B) < 20kg
Max. load capacity on J3 casing		20 kg (B)	
Allowable load moment at wrist	J4 axis	800 N·m	81.6 kgf·m
	J5 axis	800 N·m	81.6 kgf·m
	J6 axis	360 N·m	36.7 kgf·m
Allowable load inertia at wrist	J4 axis	71 kg·m ²	724.5 kgf·cm·s ²
	J5 axis	71 kg·m ²	724.5 kgf·cm·s ²
	J6 axis	38 kg·m ²	387.8 kgf·cm·s ²
Drive method		Electric servo drive by AC servo motor	
Repeatability Note 2)		± 0.03 mm	
Mass Note 3)		790 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 ² (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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