

# FANUC Robot M-410

## FEATURES

- M-410 is a palletizing robot which contributes to the robotization of the palletizing system.
- Suitable robot models can be selected according to the workpieces.

M-410/110F-24C	Payload 110kg
M-410/140F-29B-5X	Payload 140kg
M-410/185F-31C	Payload 185kg
M-410/315F-31C	Payload 315kg
M-410/500F-31C	Payload 500kg
M-410/800F-32C	Payload 800kg
- M-410/110F-24C has a compact body and a high throughput.
- M-410/185F-31C, /315F-31C, /500F-31C support two types of base.

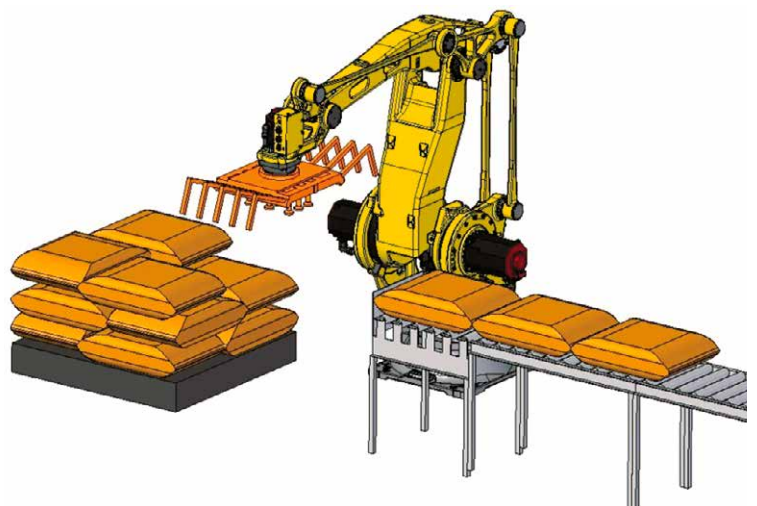
Pedestal type base :  
The controller can be placed under the pedestal. It eliminates cabling at installation and saves the installation space.

Compact base :  
The base minimizes the robot's maximum height. It is suitable for low ceiling location or integrating into other manufacturing system.
- M-410/185F-31C, /315F-31C, /500F-31C, /800F-32C have the hollow wrist that enables easy wiring to a gripper.
- Advanced intelligent functions are available as an option, such as *i*RVision (integrated robot vision).

## Application Examples



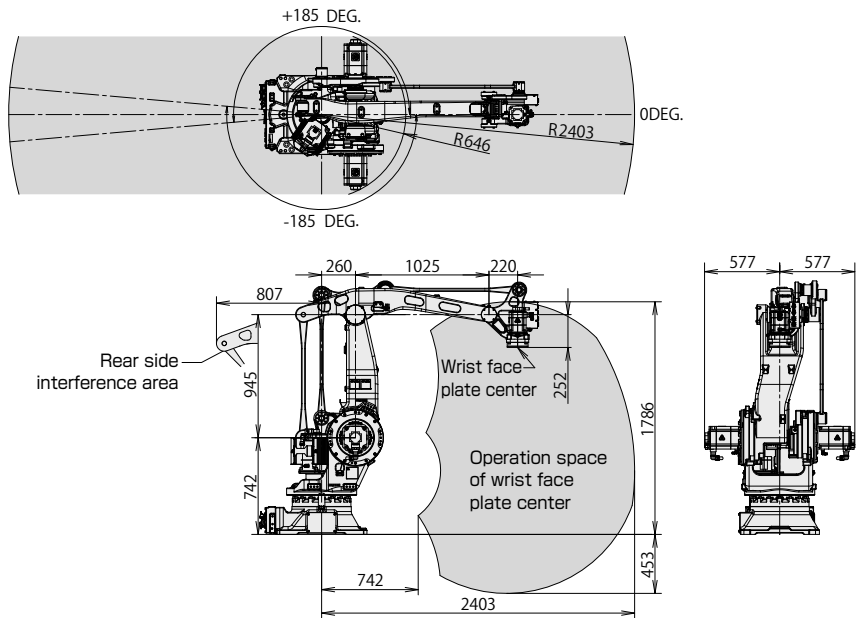
Boxes Palletizing



Bags Palletizing

Operating Space

M-410/110F-24C



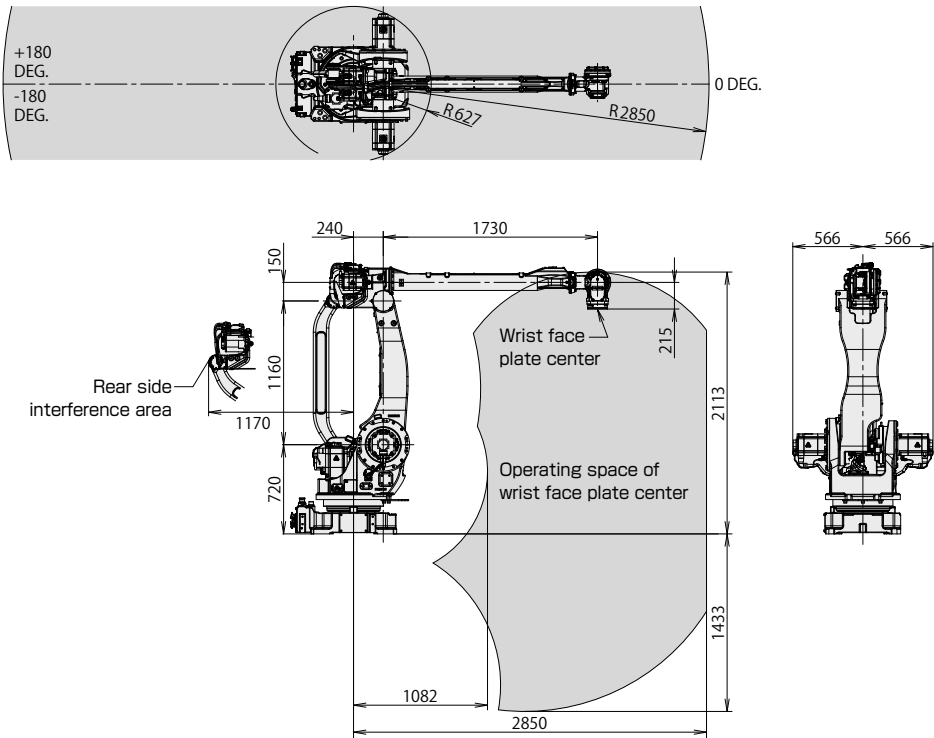
Specifications

Model		M-410/110F-24C
Type		Articulated Type
Controlled axes		4 axes (J1, J2, J3, J4)
Reach		2403 mm
Installation		Floor
Motion range (Maximum speed) Note 1)	J1 axis rotation	370° (145°/s) 6.46 rad (2.53 rad/s)
	J2 axis rotation	125° (130°/s) 2.18 rad (2.27 rad/s)
	J3 axis rotation	140° (140°/s) 2.44 rad (2.44 rad/s)
	J4 axis wrist rotation	720° (420°/s) 12.57 rad (7.33 rad/s)
Max. load capacity at wrist		110 kg
Max. load capacity on J2 base		550 kg
Max. load capacity on J3 arm Note 2)		30 kg
Allowable load inertia at wrist		53 kg·m <sup>2</sup> 540 kgf·cm·s <sup>2</sup>
Drive method		Electric servo drive by servo motor
Repeatability Note 3)		± 0.04 mm
Mass Note 4)		1030 kg
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No condensation allowed.) Short term (Within one month) 95%RH or less (No condensation allowed.) 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) Max. load capacity on J3 arm depends on the load at wrist.  
Note 3) Compliant with ISO 9283.  
Note 4) Controller mass is not included.

Operating Space

M-410/140F-29B-5X



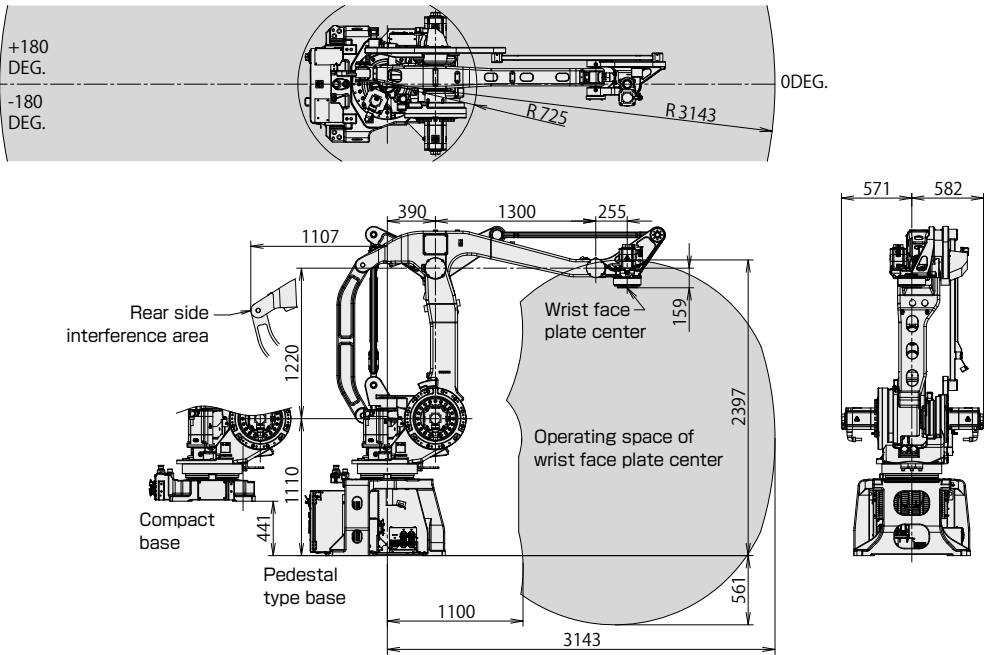
Specifications

Model		M-410/140F-29B-5X
Type		Articulated Type
Controlled axes		5 axes (J1, J2, J3, J4, J5)
Reach		2850 mm
Installation		Floor
Motion range (Maximum speed) (Note 1)	J1 axis rotation	360° (140°/s) 6.28 rad (2.44 rad/s)
	J2 axis rotation	155° (115°/s) 2.71 rad (2.01 rad/s)
	J3 axis rotation	112° (135°/s) 1.95 rad (2.36 rad/s)
	J4 axis wrist swing Note 2)	20° (135°/s) 0.35 rad (2.36 rad/s)
	J5 axis wrist rotation	720° (420°/s) 12.57 rad (7.33 rad/s)
Max. load capacity at wrist		140 kg
Max. load capacity on J2 base		550 kg
Max. load capacity on J3 arm Note 3)		140 kg
Allowable load inertia at wrist	J4 axis	147 kg·m <sup>2</sup> 1500 kgf·cm·s <sup>2</sup>
	J5 axis	53 kg·m <sup>2</sup> 540 kgf·cm·s <sup>2</sup>
Drive method		Electric servo drive by servo motor
Repeatability Note 4)		± 0.04 mm
Mass Note 5)		1200 kg
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No condensation allowed.) Short term (Within one month) 95%RH or less (No condensation allowed.) 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) The wrist interface is always toward to down ward. The angle is variable up to 20 degrees width.  
Note 3) Max. load capacity on J3 arm depends on the load at wrist.  
Note 4) Compliant with ISO 9283.  
Note 5) Controller mass is not included.

Operating Space

M-410/185F-31C, /315F-31C



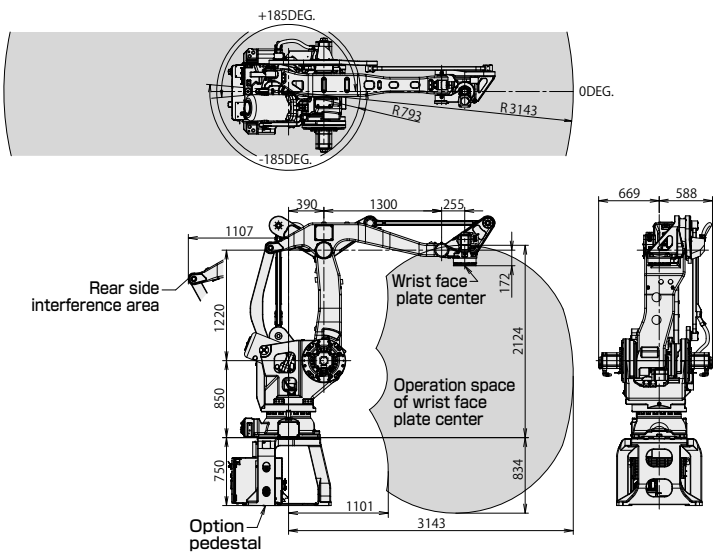
Specifications

Model		M-410/185F-31C	M-410/315F-31C
Type		Articulated Type	
Controlled axes		4 axes (J1, J2, J3, J4)	
Reach		3143 mm	
Installation		Floor	
Motion range (Maximum speed) Note 1)	J1 axis rotation	360° (140°/s) 6.28 rad (2.44 rad/s)	360° (90°/s) 6.28 rad (1.57 rad/s)
	J2 axis rotation	144° (140°/s) 2.51 rad (2.44 rad/s)	144° (100°/s) 2.51 rad (1.75 rad/s)
	J3 axis rotation	136° (140°/s) 2.37 rad (2.44 rad/s)	136° (110°/s) 2.37 rad (1.92 rad/s)
	J4 axis wrist rotation	720° (305°/s) 12.57 rad (5.32 rad/s)	720° (195°/s) 12.57 rad (3.40 rad/s)
Max. load capacity at wrist		185 kg	315 kg
Max. load capacity on J2 base		550 kg	
Max. load capacity on J3 arm Note 2)		30 kg	
Allowable load inertia at wrist		88 kg·m <sup>2</sup> 898 kgf·cm·s <sup>2</sup>	155 kg·m <sup>2</sup> 1580 kgf·cm·s <sup>2</sup>
Drive method		Electric servo drive by servo motor	
Repeatability Note 3)		± 0.04 mm	
Mass	Pedestal type base Note 4)	1615 kg	
	Compact base Note 5)	1330 kg	
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No condensation allowed.) Short term (Within one month) 95%RH or less (No condensation allowed.) Vibration acceleration : 4.9 m/s <sup>2</sup> (0.5G) or less	

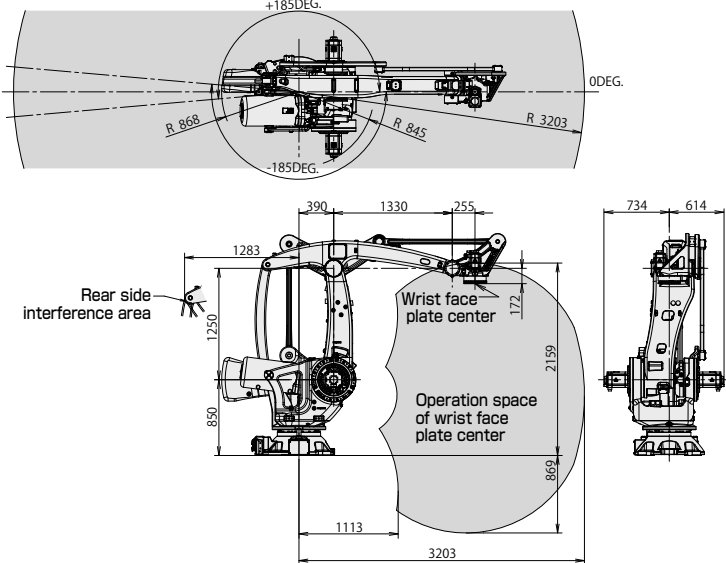
Note 1) During short distance motions, the axis speed may not reach the maximum value stated.  
Note 2) Max. load capacity on J3 arm depends on the load at wrist.  
Note 3) Compliant with ISO 9283.  
Note 4) Controller mass (120kg) is included.  
Note 5) Controller mass is not included.

Operating Space

M-410/500F-31C



M-410/800F-32C



Specifications

Model		M-410/500F-31C
Type		Articulated Type
Controlled axes		4 axes (J1, J2, J3, J4)
Reach		3143 mm
Installation		Floor
Motion range (Maximum speed) Note 1)	J1 axis rotation	370° (85°/s) 6.46 rad (1.48 rad/s)
	J2 axis rotation	144° (85°/s) 2.51 rad (1.48 rad/s)
	J3 axis rotation	136° (85°/s) 2.37 rad (1.48 rad/s)
	J4 axis rotation	720° (200°/s) 12.57 rad (3.49 rad/s)
	J4 axis wrist rotation	12.57 rad (3.49 rad/s)
Max. load capacity at wrist		500 kg
Max. load capacity on J2 base		550 kg
Max. load capacity on J3 arm Note 2)		30 kg
Allowable load inertia at wrist		250 kg·m <sup>2</sup> 2550 kgf·cm·s <sup>2</sup>
Drive method		Electric servo drive by servo motor
Repeatability Note 3)		± 0.04 mm
Mass	Pedestal type base Note 4)	2410 kg
	Compact base Note 5)	1910 kg
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No condensation allowed.) Short term (Within one month) 95%RH or less (No condensation allowed.) Vibration acceleration : 4.9 m/s <sup>2</sup> (0.5G) or less

Specifications

Model		M-410/800F-32C
Type		Articulated Type
Controlled axes		4 axes (J1, J2, J3, J4)
Reach		3203 mm
Installation		Floor
Motion range (Maximum speed) Note 1)	J1 axis rotation	370° (65°/s) 6.46 rad (1.13rad/s)
	J2 axis rotation	144° (65°/s) 2.51 rad (1.13rad/s)
	J3 axis rotation	136° (65°/s) 2.37 rad (1.13rad/s)
	J4 axis rotation	720° (125°/s) 12.57 rad (2.18rad/s)
	J4 axis wrist rotation	12.57 rad (2.18rad/s)
Max. load capacity at wrist		800 kg
Max. load capacity on J2 base		550 kg
Max. load capacity on J3 arm Note 2)		50 kg
Allowable load inertia at wrist		830 kg·m <sup>2</sup> 8470 kgf·cm·s <sup>2</sup>
Drive method		Electric servo drive by servo motor
Repeatability Note 3)		± 0.04 mm
Mass Note 4)		2500 kg
Installation environment		Ambient temperature : 0 to 45°C Ambient humidity : Normally 75%RH or less (No condensation allowed.) Short term (Within one month) 95%RH or less (No condensation allowed.) 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) Max. load capacity on J3 arm depends on the load at wrist.  
Note 3) Compliant with ISO 9283.  
Note 4) Controller mass (120kg) is included.  
Note 5) Controller mass is not included.

Note 1) During short distance motions, the axis speed may not reach the maximum value stated.  
Note 2) Max. load capacity on J3 arm depends on the load at wrist.  
Note 3) Compliant with ISO 9283.  
Note 4) Controller mass is not included.

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