

## FANUC Robot M-410*i*B



### FEATURES

- M-410*i*B series are the intelligent palletizing robots which contribute for robotization of palletizing system.
- Suitable robot type can be selected according with workpieces.
  - FANUC Robot M-410*i*B/140H  
140kg payload, high speed type
  - FANUC Robot M-410*i*B/160  
160kg payload, high speed type
  - FANUC Robot M-410*i*B/300  
300kg payload, heavy payload type
  - FANUC Robot M-410*i*B/450  
450kg payload, heavy payload type
  - FANUC Robot M-410*i*B/700  
700kg payload, extra heavy payload type
- Customer can use the latest intelligent function of *i*RVision and ROBOGUIDE.(option)
- Detection of height of workpieces.
  - Discrimination of a size or a kind.
  - Visual inspection.
  - Sorting of workpieces.
  - Depalletizing the load on a received pallet.
  - Easy to create a palletizing program.
  - Motion optimization of a program.

### Application systems

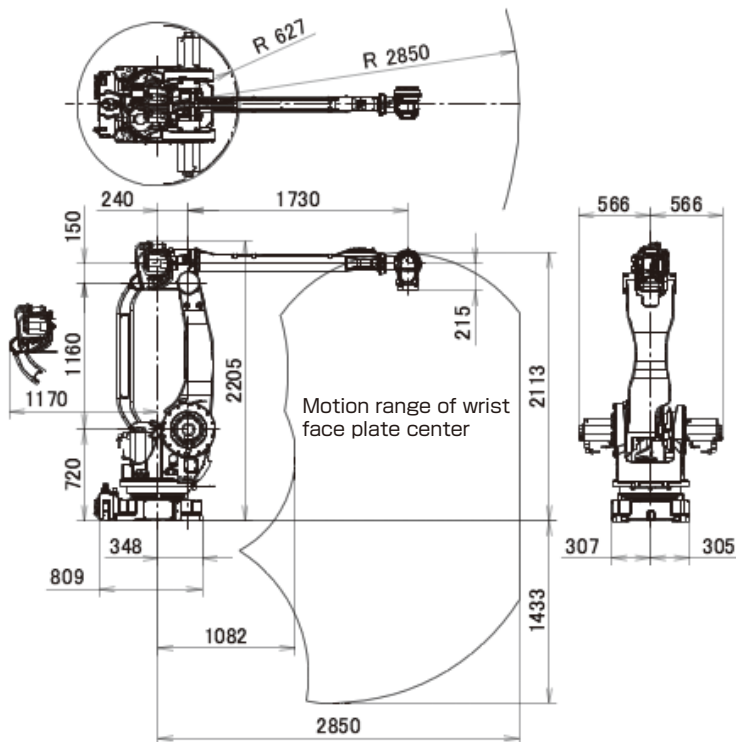


Boxes palletizing

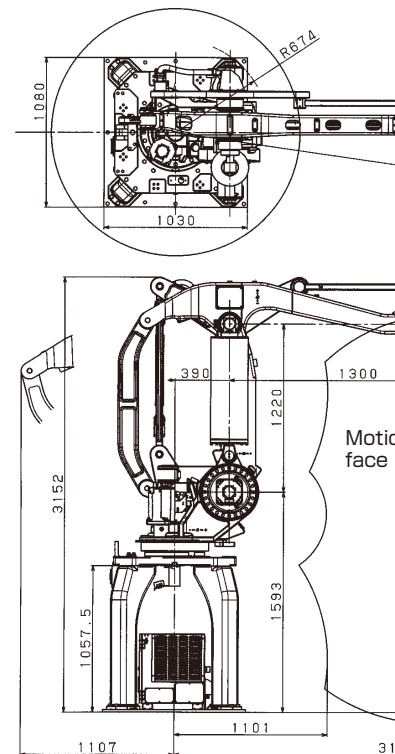


Bags palletizing

## Operating space (M-410iB/140H)



## Operating space (M-410iB/160)



## Specifications

| Item                                       |                             | Specifications   |
|--|-----------------------------|--|
|  |                             | M-410iB/140H   |
| Type                                       |                             | Articulated Type   |
| Controlled axes                            |                             | 5 axes (J1, J2, J3, J4, J5)  |
| Reach                                      |                             | 2850mm   |
| Installation                               |                             | Floor  |
| Motion range<br>(Maximum speed)<br>(Note1) | J1 axis rotation            | 360° (140° /s)<br>6.28 rad ( 2.44 rad/s)   |
|  | J2 axis rotation            | 155° (115° /s)<br>2.71rad(2.01rad/s)   |
|  | J3 axis rotation            | 112° (135° /s)<br>1.95 rad ( 2.36 rad/s)   |
|  | J4 axis wrist swing (Note2) | 20° (135° /s)<br>0.35 rad ( 2.36 rad/s)  |
|  | J5 axis wrist rotation      | 720° (420° /s)<br>12.57 rad ( 7.33 rad/s)  |
|  | Max. load capacity at wrist | 140kg  |
| Max. load capacity at J2 base              |                             | 550kg  |
| Max. load capacity at J3 arm (Note3)       |                             | 140kg  |
| 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>   |
| Throughput (Note4)                         |                             | 1900 cycles/hour   |
| Drive method                               |                             | Electric servo drive by AC servo motor   |
| Repeatability                              |                             | ± 0.2 mm   |
| Mass (Note5)                               |                             | 1200 kg  |
| Installation environment                   |                             | Ambient temperature : 0~45°C<br>Ambient humidity :<br>Normally 75%RH or less (No dew, nor frost allowed)<br>Short term Max. 95%RH or less (within one month)<br>Vibration : 0.5G or less |

Note 1) In case of short distance motion, 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. payload capacity at wrist are changed by wrist load.

Note 4) With 45kg payload, the horizontal range is 2000mm and vertical one is 400mm. (with fan option)

Note 5) Without controller.

## Specifications

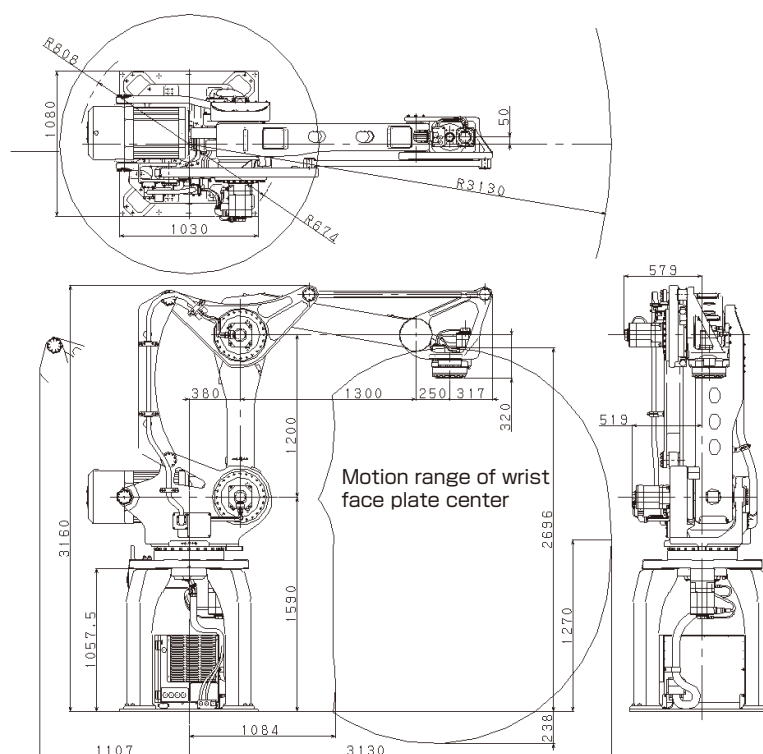
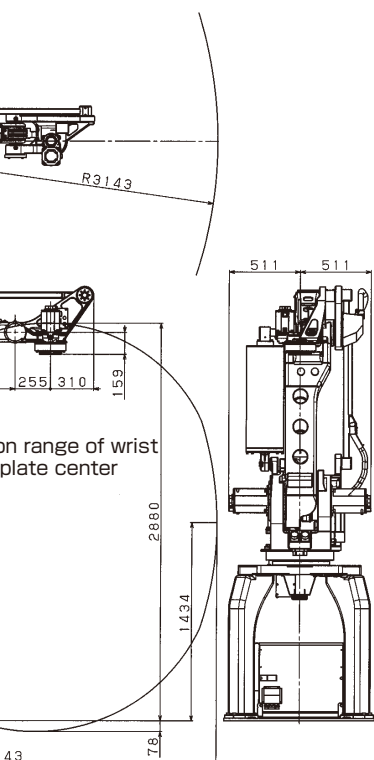
| Item                                       |                             | M-410iB/160  |
|--|-----------------------------|--|
| Type                                       |                             | Articulated Type   |
| Controlled axes                            |                             | 5 axes (J1, J2, J3, J4, J5)  |
| Reach                                      |                             | 2850mm   |
| Installation                               |                             | Floor  |
| Motion range<br>(Maximum speed)<br>(Note1) | J1 axis rotation            | 360° (140° /s)<br>6.28 rad ( 2.44 rad/s)   |
|  | J2 axis rotation            | 155° (115° /s)<br>2.71rad(2.01rad/s)   |
|  | J3 axis rotation            | 112° (135° /s)<br>1.95 rad ( 2.36 rad/s)   |
|  | J4 axis wrist swing (Note2) | 20° (135° /s)<br>0.35 rad ( 2.36 rad/s)  |
|  | J5 axis wrist rotation      | 720° (420° /s)<br>12.57 rad ( 7.33 rad/s)  |
|  | Max. load capacity at wrist | 140kg  |
| Allowable load inertia at wrist            |                             | 78 kg·m <sup>2</sup>   |
| Throughput (Note2)                         |                             | 1500 cycles/hour   |
| Drive method                               |                             | Electric servo drive by AC servo motor   |
| Repeatability                              |                             | ± 0.2 mm   |
| Mass (Note3)                               |                             | 1200 kg  |
| Installation environment                   |                             | Ambient temperature : 0~45°C<br>Ambient humidity :<br>Normally 75%RH or less (No dew, nor frost allowed)<br>Short term Max. 95%RH or less (within one month)<br>Vibration : 0.5G or less |

Note 1) In case of short distance motion, the axis speed may not reach the maximum value stated.

Note 2) With maximum payload, the horizontal range is 2000mm and vertical one is 400mm. (with fan option)

Note 3) Controller mass (120kg) is included.

## Operating space (M-410*i*B/450)



## Specifications

| Specifications                            |  |
|---|--|
| 410 <sup>1</sup> B/160                    | M-410 <sup>1</sup> B/300                         |
| Articulated Type                          |  |
| 4 axes (J1,J2,J3,J4)                      |  |
| 3143mm                                    |  |
| Floor                                     |  |
| 0° (130° /s)                              | 360° (85° /s)                                    |
| d (2.27 rad/s)                            | 6.28 rad (1.48 rad/s)                            |
| 0° (130° /s)                              | 144° (90° /s)                                    |
| d (2.27 rad/s)                            | 2.51 rad (1.57 rad/s)                            |
| 0° (135° /s)                              | 136° (100° /s)                                   |
| d (2.36 rad/s)                            | 2.37 rad (1.75 rad/s)                            |
| 0° (300° /s)                              | 540° (190° /s)                                   |
| d (5.24 rad/s)                            | 9.42 rad (3.32 rad/s)                            |
| 160 kg                                    | 300 kg   |
| 800 kgf·cm·s <sup>2</sup>                 | 137 kg·m <sup>2</sup> 1400 kgf·cm·s <sup>2</sup> |
| cycles/hour                               | 1 000 cycles/hour                                |
| ric servo drive by AC servo motor         |  |
| ± 0.5 mm                                  |  |
| 1940 kg                                   |  |
| temperature : 0~45°C                      |  |
| humidity :                                |  |
| 75%RH or less (No dew, nor frost allowed) |  |
| rm Max. 95%RH or less (within one month)  |  |
| : 0.5G or less                            |  |

This speed may not reach the maximum value stated.  
Range is 2000mm and vertical one is 400mm.

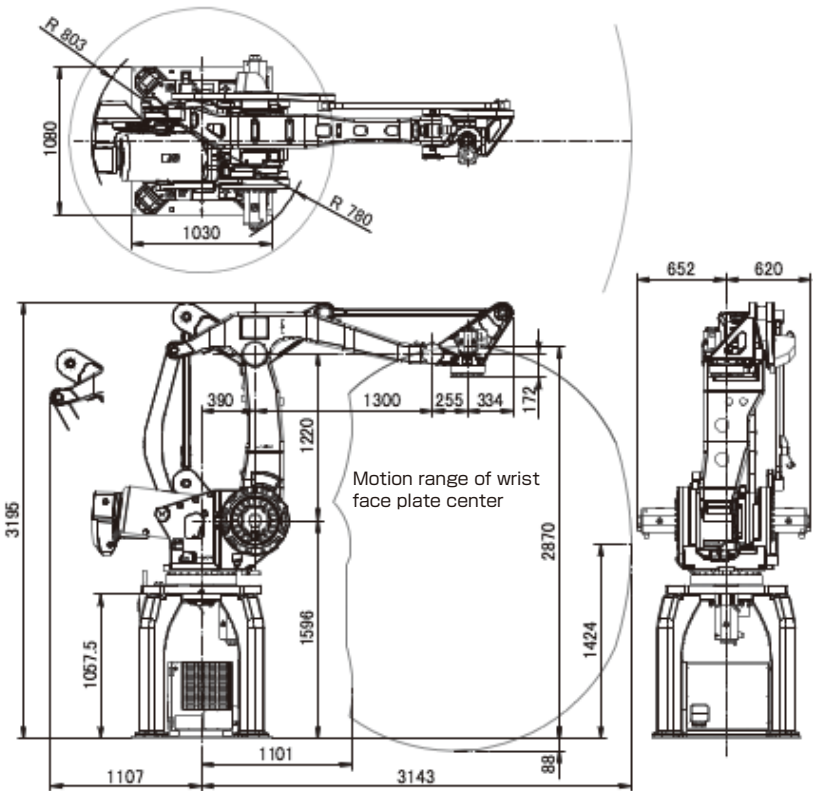
| Item                                       |                  | Specifications  |
|--|------------------|---|
|  |                  | M-4101B/450   |
| Type                                       |                  | Articulated Type  |
| Controlled axes                            |                  | 4 axes (J1,J2,J3,J4)  |
| Reach                                      |                  | 3130mm  |
| Installation                               |                  | Floor   |
| Motion range<br>(Maximum speed)<br>(Note1) | J1 axis rotation | 360° (70° /s)<br>6.28 rad (1.22 rad/s)  |
|  | J2 axis rotation | 145° (70° /s)<br>2.53 rad (1.22 rad/s)  |
|  | J3 axis rotation | 135° (70° /s)<br>2.36 rad (1.22 rad/s)  |
|  | J4 axis rotation | 540° (180° /s)<br>9.42 rad (3.14 rad/s)   |
| Max. load capacity at wrist                |                  | 450 kg  |
| Allowable load inertia at wrist            |                  | 196 kg·m <sup>2</sup> 2000 kgf·cm·s <sup>2</sup>  |
| Throughput (Note2)                         |                  | 700 cycles/hour   |
| Drive method                               |                  | Electric servo drive by AC servo motor  |
| Repeatability                              |                  | ± 0.5 mm  |
| Mass (Note3)                               |                  | 2430 kg   |
| Installation environment                   |                  | Ambient temperature : 0~45℃<br>Ambient humidity :<br>Normally 75%RH or less (No dew, nor frost allowed)<br>Short term Max. 95%RH or less (within one month)<br>Vibration : 0.5G or less |

Note 1) In case of short distance motion, the axis speed may not reach the maximum value stated.

Note 2) With maximum payload, the horizontal range is 2000mm and vertical one is 400mm.

Note 3) Controller mass (120kg) is included.

Operating space



Specifications

| Item  |                  | Specifications  |
|---|------------------|---|
|   |                  | <b>M-410iB/700</b>  |
| Type  |                  | Articulated Type  |
| Controlled axes                             |                  | 4 axes (J1,J2,J3,J4)  |
| Reach                                       |                  | 3143mm  |
| Installation                                |                  | Floor   |
| Motion range<br>(Maximum speed)<br>(Note 1) | J1 axis rotation | 360° (60° /s)<br>6.28 rad (1.05 rad/s)  |
|   | J2 axis rotation | 144° (60° /s)<br>2.51 rad (1.05 rad/s)  |
|   | J3 axis rotation | 136° (60° /s)<br>2.37 rad (1.05 rad/s)  |
|   | J4 axis rotation | 540° (120° /s)<br>9.42 rad (2.09 rad/s)   |
| Max. load capacity at wrist                 |                  | 700 kg  |
| Allowable load inertia at wrist             |                  | 490 kg·m <sup>2</sup> 5000 kgf·cm · s <sup>2</sup>  |
| Throughput (Note2)                          |                  | 700 cycles/hour   |
| Drive method                                |                  | Electric servo drive by AC servo motor  |
| Repeatability                               |                  | ± 0.5 mm  |
| Mass (Note3)                                |                  | 2700 kg   |
| Installation environment                    |                  | Ambient temperature : 0~45℃<br>Ambient humidity :<br>Normally 75%RH or less (No dew, nor frost allowed)<br>Short term Max. 95%RH or less (within one month)<br>Vibration : 0.5G or less |

Note 1) In case of short distance motion, the axis speed may not reach the maximum value stated.  
Note 2) With maximum payload, the horizontal range is 2000mm and vertical one is 400mm.  
Note 3) Controller mass (120kg) is included.

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