

High-Accuracy, High-Rigidity Robots

# M-800/M-810

*High accuracy and rigidity for robot machining*

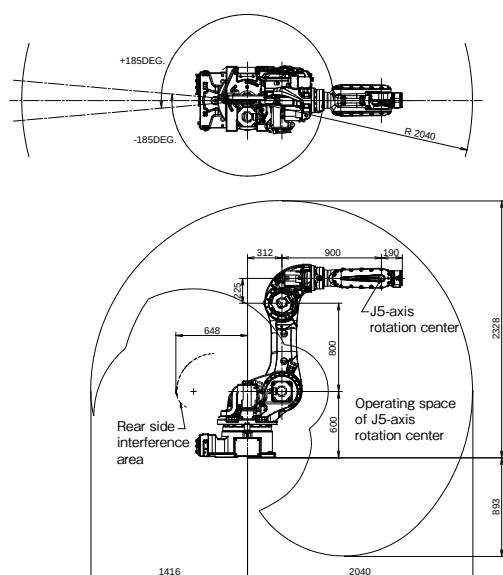
*6 degrees of freedom for flexible machining of large parts*

*Protection against wet and harsh machining environments*

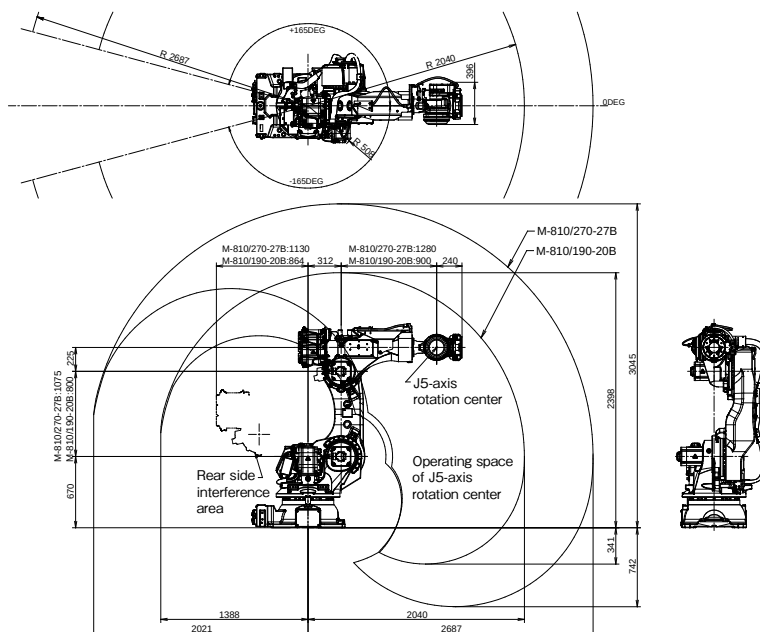


## Operating space

### M-800/60-20B



### M-810/190-20B, /270-27B



## Specifications

| Model                                      |                        | M-800/60-20B                                                                                                                                 |                  | M-810/190-20B         |           | M-810/270-27B         |            |
|--------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------|-----------|-----------------------|------------|
| Type                                       |                        | Articulated Type                                                                                                                             |                  |                       |           |                       |            |
| Controlled axes                            |                        | 6 axes (J1, J2, J3, J4, J5, J6)                                                                                                              |                  |                       |           |                       |            |
| Reach                                      |                        | 2040 mm                                                                                                                                      |                  |                       |           | 2687 mm               |            |
| Installation                               |                        | Floor                                                                                                                                        |                  |                       |           |                       |            |
| Motion range<br>(Maximum speed)<br>Note 1) | J1 axis rotation       | 370° (150°/s)                                                                                                                                |                  | 330° (100°/s)         |           |                       |            |
|                                            | J2 axis rotation       | 225° (150°/s)                                                                                                                                |                  | 171° (80°/s)          |           |                       |            |
|                                            | J3 axis rotation       | 340° (150°/s)                                                                                                                                |                  | 297° (80°/s)          |           | 405° (130°/s)         |            |
|                                            | J4 axis wrist rotation | 720° (260°/s)                                                                                                                                |                  | 306° (120°/s)         |           |                       |            |
|                                            | J5 axis wrist swing    | 250° (260°/s)                                                                                                                                |                  | 240° (115°/s)         |           |                       |            |
|                                            | J6 axis wrist rotation | 720° (400°/s)                                                                                                                                |                  | 720° (200°/s)         |           |                       |            |
| Max. load<br>capacity                      | At J2 base             | -                                                                                                                                            |                  | 550 kg                |           |                       |            |
|                                            | On J3 arm              | 21kg (A)                                                                                                                                     | 5/3*(A)+(B)≤35kg | -                     |           |                       |            |
|                                            | On J3 Casing           | 35kg (B)                                                                                                                                     |                  | 50 kg                 | 50 kg (A) | 1/2*(A)+(B)≤275kg     |            |
|                                            | At wrist               | 60 kg                                                                                                                                        |                  | 190 kg                |           |                       | 270 kg (B) |
| Allowable load<br>moment at wrist          | J4 axis                | 210 N·m                                                                                                                                      |                  | 1200 N·m              |           | 1730 N·m              |            |
|                                            | J5 axis                | 210 N·m                                                                                                                                      |                  | 1200 N·m              |           | 1730 N·m              |            |
|                                            | J6 axis                | 130 N·m                                                                                                                                      |                  | 630 N·m               |           | 900 N·m               |            |
| Allowable load<br>inertia at wrist         | J4 axis                | 30 kg·m <sup>2</sup>                                                                                                                         |                  | 200 kg·m <sup>2</sup> |           | 320 kg·m <sup>2</sup> |            |
|                                            | J5 axis                | 30 kg·m <sup>2</sup>                                                                                                                         |                  | 200 kg·m <sup>2</sup> |           | 320 kg·m <sup>2</sup> |            |
|                                            | J6 axis                | 20 kg·m <sup>2</sup>                                                                                                                         |                  | 180 kg·m <sup>2</sup> |           | 230 kg·m <sup>2</sup> |            |
| Drive method                               |                        | Electric servo drive by servo motor                                                                                                          |                  |                       |           |                       |            |
| Repeatability Note 2)                      |                        | ± 0.015 mm                                                                                                                                   |                  | ± 0.020 mm            |           | ± 0.030 mm            |            |
| Mass Note 3)                               |                        | 820 kg                                                                                                                                       |                  | 1360 kg               |           | 1430 kg               |            |
| Installation environment                   |                        | Ambient temperature : 0 to 45℃                                                                                                               |                  |                       |           |                       |            |
|                                            |                        | Ambient humidity : Normally 75%RH or less (No condensation allowed)<br>Short term (Within one month) 95%RH or less (No condensation allowed) |                  |                       |           |                       |            |
|                                            |                        | 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.

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