Catalogue of MOTOMAN robots

Suitable for arc welding

Table of Contents
The high-speed, 6-axis MOTOMAN HP20D-6 robot offers superior performance in a variety of applications, such as handling, machine tending, packaging, cutting and assembly, where small to medium sized parts are handled. The compact HP20D-6 requires minimal installation space, and offers improved part accessibility and the widest work envelope in its class.

Key benefits
- Increase productivity due to high speed motion
- Ideal for a variety of applications, multi-purpose robot
- Improved part accessibility
- A robust and rigid robot with increased inertia

MOTOMAN HP20D-6
General purpose and handling
Specifications HP20D-6

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>± 180</td>
<td>197</td>
<td>–</td>
<td>–</td>
<td>6</td>
<td>6</td>
<td>±0.06</td>
<td>R = 1915</td>
<td>0 bis +45</td>
<td>20 – 80</td>
<td>273</td>
<td>2.8</td>
</tr>
<tr>
<td>L</td>
<td>+155/–110</td>
<td>175</td>
<td>–</td>
<td>–</td>
<td>6</td>
<td>6</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>+255/–160</td>
<td>187</td>
<td>–</td>
<td>–</td>
<td>6</td>
<td>6</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>± 200</td>
<td>400</td>
<td>11.8</td>
<td>0.24</td>
<td>6</td>
<td>6</td>
<td>±0.06</td>
<td>R = 1915</td>
<td>0 bis +45</td>
<td>20 – 80</td>
<td>273</td>
<td>2.8</td>
</tr>
<tr>
<td>B</td>
<td>+230/–50</td>
<td>400</td>
<td>9.8</td>
<td>0.17</td>
<td>6</td>
<td>6</td>
<td>±0.06</td>
<td>R = 1915</td>
<td>0 bis +45</td>
<td>20 – 80</td>
<td>273</td>
<td>2.8</td>
</tr>
<tr>
<td>T</td>
<td>± 360</td>
<td>600</td>
<td>5.9</td>
<td>0.06</td>
<td>6</td>
<td>6</td>
<td>±0.06</td>
<td>R = 1915</td>
<td>0 bis +45</td>
<td>20 – 80</td>
<td>273</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Controlled axes: 6

Max. payload [kg]: 6

Repeat. pos. accuracy [mm]: ±0.06

Max. working range [mm]: R = 1915

Temperature [° C]: 0 bis +45

Humidity [%]: 20 – 80

Weight [kg]: 273

Power supply, average [KVA]: 2.8
The high-speed, 6-axis MOTOMAN HP20D, HP20F robot offers superior performance in a variety of applications, such as handling, welding, machine tending, packaging, cutting and assembly, where small to medium sized parts are handled. The compact HP20D, HP20F requires minimal installation space, and offers improved part accessibility and the widest work envelope in its class. This all-round robot can be driven by the high-performance-controller DX100 as well as the compact-controller FS100.

Key benefits
- Increase productivity due to high speed motion
- Ideal for a variety of applications, multi-purpose robot
- Improved part accessibility
- A robust and rigid robot with increased inertia

MOTOMAN HP20D, HP20F
General purpose and handling
### Specifications HP20D, HP20F

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>± 180</td>
<td>197</td>
<td>–</td>
<td>–</td>
<td>6</td>
<td>20</td>
<td>± 0.06</td>
<td>± 180</td>
<td>± 180</td>
<td>0 to +45</td>
<td>268</td>
<td>2</td>
</tr>
<tr>
<td>L</td>
<td>+155/-110</td>
<td>175</td>
<td>–</td>
<td>–</td>
<td>6</td>
<td>20</td>
<td>± 0.06</td>
<td>± 155/-110</td>
<td>± 155/-110</td>
<td>0 to +45</td>
<td>268</td>
<td>2</td>
</tr>
<tr>
<td>U</td>
<td>+255/-165</td>
<td>187</td>
<td>–</td>
<td>–</td>
<td>6</td>
<td>20</td>
<td>± 0.06</td>
<td>± 255/-165</td>
<td>± 255/-165</td>
<td>0 to +45</td>
<td>268</td>
<td>2</td>
</tr>
<tr>
<td>R</td>
<td>± 200</td>
<td>400</td>
<td>39.2</td>
<td>1.05</td>
<td>6</td>
<td>20</td>
<td>± 0.06</td>
<td>± 200</td>
<td>± 200</td>
<td>0 to +45</td>
<td>268</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>+230/-50</td>
<td>400</td>
<td>39.2</td>
<td>1.05</td>
<td>6</td>
<td>20</td>
<td>± 0.06</td>
<td>± 230/-50</td>
<td>± 230/-50</td>
<td>0 to +45</td>
<td>268</td>
<td>2</td>
</tr>
<tr>
<td>T</td>
<td>± 360</td>
<td>600</td>
<td>19.6</td>
<td>0.75</td>
<td>6</td>
<td>20</td>
<td>± 0.06</td>
<td>± 360</td>
<td>± 360</td>
<td>0 to +45</td>
<td>268</td>
<td>2</td>
</tr>
</tbody>
</table>

*In this case, unbalanced moment is not permitted.*

### View A
- 4 x M6, depth 10 mm
- Ø 25 H7, depth 6 mm

### View B
- 1 x Air
- Internal user wiring connector

### View C
- 4 x Ø 18
- 2 x Ø 12 H7
- Mounting options: Floor, ceiling, wall

### View D
- 1 x Air
- Internal user wiring connector
- All dimensions in mm | Technical data may be subject to change without previous notice | Please request detailed drawings at robotics@yaskawa.eu.com – YR-HP0020D-B00 (DX100), YR-HP0020F-B00 (FX100), F-07-2012, A-No. 150273
The 6-axis MOTOMAN MA1400 has been developed in order to achieve optimal results in extremely difficult conditions and especially for the high demands of arc welding applications. With its superior wire feed system, the maximum working range of 1,434 mm and integrated media hose package, the 6-axis robot MA1400 significantly improve welding quality. This enables the simple machining of bulky and hard-to-access workpieces. The fast motion sequences reduce welding cycle times. The torch cables are integrated in the robot arm in order to avoid collisions with the workpiece or other robots. This not only ensures greater accessibility to the devices; the reduced torsional and flexural loads on the torch dress package also result in less wear. Additionally, the possible number of robots in the production cells can be increased considerably. Further new features are the integration of the power cable as well as the gas and air connections in the base and an enlarged turning range of more than 360°.

**Key benefits**

- Enlarged welding reach with maximum working range of 1,434 mm
- Can always be used for welding of short and very long seams
- Protected cable routing in the robot arm
- Simple machining of bulky and hard-to-access workpieces
- Increased productivity
- Production space savings thanks to high density of robots in the cell
- Increased productivity with world's fastest dynamics
- Space-saving cell concept
Specifications MA1400

<table>
<thead>
<tr>
<th>Axes</th>
<th>Maximum motion range [°]</th>
<th>Maximum speed [° /sec.]</th>
<th>Allowable moment [Nm]</th>
<th>Allowable moment of inertia [kg · m²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>± 170</td>
<td>220</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>L</td>
<td>+155/-90</td>
<td>200</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>U</td>
<td>+190/-175</td>
<td>220</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>R</td>
<td>± 150</td>
<td>410</td>
<td>8.8</td>
<td>0.27</td>
</tr>
<tr>
<td>B</td>
<td>+180/-45</td>
<td>410</td>
<td>8.8</td>
<td>0.27</td>
</tr>
<tr>
<td>T</td>
<td>± 200</td>
<td>610</td>
<td>2.9</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Controlled axes: 6
Max. payload [kg]: 3
Repeat. pos. accuracy [mm]: ± 0.08
Max. working range [mm]: R = 1434
Temperature [°C]: 0 to +45
Humidity [%]: 20 – 80
Weight [kg]: 130
Power supply, average [KVA]: 1.5

View A
- Maximum barycenter adjustment for periphery
- 6 x M4, depth 10 mm

View B
- Internal user wiring connector
- Welding power source’s terminal board
- Media connector
- 2 x Air

View C
- Mounting options: Floor, ceiling, wall
- 1 x Ø 12 H7
- 2 x Air
- Internal user wiring connector
- Media connector
- Ø 50
- Ø 6 H7, depth 6 mm

View D
- Maximum barycenter adjustment for periphery
- Internal user wiring connector
- Media connector
- 2 x Air

All dimensions in mm | Technical data may be subject to change without previous notice | Please request detailed drawings at robotics@yaskawa.eu.com – YR-MA01400-B00, E-07-2012, A-No. 150298
The 6-axis MOTOMAN MA1400-4 has been developed in order to achieve optimal results in extremely difficult conditions and especially for the high demands of arc welding applications. With its superior wire feed system, the maximum working range of 1,434 mm and integrated media hose package, the 6-axis robot MA1400-4 significantly improve welding quality. This enables the simple machining of bulky and hard-to-access workpieces. The fast motion sequences reduce welding cycle times. The torch cables are integrated in the robot arm in order to avoid collisions with the workpiece or other robots. This not only ensures greater accessibility to the devices; the reduced torsional and flexural loads on the torch dress package also result in less wear. Additionally, the possible number of robots in the production cells can be increased considerably. Further new features are the integration of the power cable as well as the gas and air connections in the base and an enlarged turning range of more than 360°.

**Key benefits**

- Enlarged welding reach with maximum working range of 1,434 mm
- Can always be used for welding of short and very long seams
- Protected cable routing in the robot arm
- Simple machining of bulky and hard-to-access workpieces
- Increased productivity
- Production space savings thanks to high density of robots in the cell
- Increased productivity with world’s fastest dynamics
- Space-saving cell concept
Specifications MA1400-4

### Axes

<table>
<thead>
<tr>
<th>Axes</th>
<th>Maximum motion range [°]</th>
<th>Maximum speed [° /sec.]</th>
<th>Allowable moment [Nm]</th>
<th>Allowable moment of inertia [kg · m²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>± 170</td>
<td>220</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>L</td>
<td>+155/–90</td>
<td>200</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>+190/–175</td>
<td>220</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>R</td>
<td>± 150</td>
<td>185</td>
<td>14</td>
<td>0.27</td>
</tr>
<tr>
<td>B</td>
<td>+180/–45</td>
<td>164</td>
<td>14</td>
<td>0.27</td>
</tr>
<tr>
<td>T</td>
<td>± 200</td>
<td>610</td>
<td>0.98</td>
<td>0.03</td>
</tr>
</tbody>
</table>

### Specified Values

- **Controlled axes**: 6
- **Max. payload [kg]**: 4
- **Repeat. pos. accuracy [mm]**: ±0.08
- **Max. working range [mm]**: R = 1434
- **Temperature [°C]**: 0 to +45
- **Humidity [%]**: 20 – 80
- **Weight [kg]**: 130
- **Power supply, average [KVA]**: 1.5

**Mounting options**: Floor, ceiling, wall

---

**Technical Data**

All dimensions in mm | Technical data may be subject to change without previous notice |
Please request detailed drawings at robotics@yaskawa.eu.com – YR-MA01400-B80, A-04-2013, A-No. 162538

---

**View A**

- Maximum barycenter adjustment for periphery
- 6 x M4, depth 10 mm

**View B**

- 2 x Air
- Internal user wiring connector
- Media connector
- Ø 6 H7, depth 6 mm

**View C**

- 4 x Ø 18
- 1 x Ø 12 H7
- Mounting options: Floor, ceiling, wall

**View D**

- Maximum barycenter adjustment for periphery
- 2 x Air
- Internal user wiring connector
- Media connector

---

**Headquarters Robotics Division**

YASKAWA Europe GmbH
Yaskawastraße 1
D-85391 Allershausen
Tel. 0049-8166-90-0
Fax 0049-8166-90-103
robotics@yaskawa.eu.com
www.yaskawa.eu.com

**YASKAWA Academy and sales office Frankfurt**

YASKAWA Europe GmbH
Robotics Division
Hauptstraße 185
D-65760 Eschborn
Tel. 0049-6196-77725-0
Fax 0049-6196-77725-39
robotics@yaskawa.eu.com
www.yaskawa.eu.com
The Motoman MA1550 was developed on the basis of the service-proven MA1400. The working range has been extended by 150 mm to 1584 mm. The superior wire feed system and integrated cable routing have been retained. This opens up new fields of application for the arc welding of bulky workpieces that are difficult to reach, while ensuring high-quality results. This is assured not only by the high path accuracy of Motoman robots, but also by the integrated supply lines that prevent collisions in the workspace, minimize wear to the torch dress package and facilitate access to the fixture. Furthermore, power, gas and air connections are integrated in the base, allowing the implementation of a 360° workspace. Fast motion sequences and high repeatability ensure high workpiece output.

**Key benefits**
- Extended working range to provide increased flexibility for large workpieces
- Improves weld quality
- Protected cable routing inside the robot arm
- Low space requirements thanks to streamlined design
- Increased productivity thanks to high dynamic performance

**MOTOMAN MA1550**
Shielded arc welding

---

YASKAWA
### Specifications MA1550

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>± 170</td>
<td>220</td>
<td>–</td>
<td>–</td>
<td>6</td>
<td>3</td>
<td>± 0.08</td>
<td>R = 1584</td>
<td>0 to +45</td>
<td>20 – 80</td>
<td>130</td>
<td>1.5</td>
</tr>
<tr>
<td>L</td>
<td>±155/–90</td>
<td>200</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>±190/–175</td>
<td>220</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>±150</td>
<td>410</td>
<td>8.8</td>
<td>0.27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>±180/–45</td>
<td>410</td>
<td>8.8</td>
<td>0.27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>±200</td>
<td>610</td>
<td>2.9</td>
<td>0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**View A**
- Attachments shall be mounted within this range
- 6 x M4, depth 10 mm
- Ø 6 H7, depth 6 mm

**View B**
- 2 x Air
- Internal user wiring connector
- Media connector

**View C**
- Welding power source terminal board

**View D**
- Attachments shall be mounted within this range
- Internal user wiring connector
- Media connector
- 2 x Air

*All dimensions in mm | Technical data may be subject to change without previous notice | Please request detailed drawings at robotics@yaskawa.eu.com – YR-MA01550-880, A-11-2012, A-No. 159592*
The 6-axis MOTOMAN MA1800 is remarkable for its excellent performance in all applications. In addition to welding, the robot can also be used for other tasks such as handling applications. All supply lines are routed through the upper part of the arm and the wrist axes of the robot in order to reduce interference contours and enlarge the possible working range. A payload capacity of 15 kg allows for a large field of applications of the 6-axis robot. The media hose package is routed inside the wrist and thus protected thereby ensuring better accessibility to the devices and workpieces. The optimized supply line system considerably extends the durability of the cables and hoses. In addition to this, the whiplash effect of conventional supply lines could be completely eliminated. Additionally, the possible number of robots in the production cells can be increased significantly. Defined interference contours enable synchronous cooperation of several robots in a minimum of space.

### Key benefits

- Max. payload of 15 kg
- Max. working range of 1,807 mm
- Ideally suited to welding and handling applications
- Simpler programming and installation
- The world’s fastest in its class
- Complete media hose package is lead through the upper arm and the head axes of the robot
### Specifications MA1800

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>±180</td>
<td>195</td>
<td>–</td>
<td>–</td>
<td>6</td>
<td>15</td>
<td>±0.08</td>
<td>R = 1807</td>
<td>0 to +45</td>
<td>20 – 80</td>
<td>380</td>
<td>5</td>
</tr>
<tr>
<td>L</td>
<td>+155/–100</td>
<td>175</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>+210/–175</td>
<td>190</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>±175</td>
<td>380</td>
<td>38.6</td>
<td>1.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>+180/–45</td>
<td>340</td>
<td>38.6</td>
<td>1.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>±200</td>
<td>560</td>
<td>7.35</td>
<td>0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Headquarters**
YASKAWA Europe GmbH
Yaskawastraße 1
D-85391 Allershausen
Tel. 0049–81 66–90–0
Fax 0049–81 66–90–103
robotics@yaskawa.eu.com
www.yaskawa.eu.com

**YASKAWA Academy and sales office**
Frankfurt
YASKAWA Europe GmbH
Robotics Division
Hauptstraße 185
D-65760 Eschborn
Tel. 0049–61 96–777 25–0
Fax 0049–61 96–777 25–39
robotics@yaskawa.eu.com
www.yaskawa.eu.com

All dimensions in mm | Technical data may be subject to change without previous notice | Please request detailed drawings at robotics@yaskawa.eu.com – YR MA01800-800, E-07-2012, A-No. 150300

---

Images and diagrams depict various views of the MOTOMAN MA1800 robot, including its working range, allowables, and mounting options; all dimensions, movements, and technical specifications are detailed in the accompanying text.
The 6-axis MOTOMAN MA1900 has been developed in order to achieve optimal results in extremely difficult conditions and especially for the high demands of arc welding applications. With its superior wire feed system, the maximum working range of 1,904 mm and integrated media hose package, the 6-axis robot MA1900 significantly improve welding quality. This enables the simple machining of bulky and hard-to-access workpieces. The fast motion sequences reduce welding cycle times. The torch cables are integrated in the robot arm in order to avoid collisions with the workpiece or other robots. This not only ensures greater accessibility to the devices; the reduced torsional and flexural loads on the torch dress package also result in less wear. Additionally, the possible number of robots in the production cells can be increased considerably. Further new features are the integration of the power cable as well as the gas and air connections in the base and an enlarged turning range of more than 360°.

Key benefits
- Enlarged welding reach with maximum working range of 1,904 mm
- Can always be used for welding of short and very long seams
- Protected cable routing in the robot arm
- Simple machining of bulky and hard-to-access workpieces
- Increased productivity
- Production space savings thanks to high density of robots in the cell
- Increased productivity with world’s fastest dynamics
- Space-saving cell concept
Specifications MA1900

<table>
<thead>
<tr>
<th>Axes</th>
<th>Maximum motion range [°]</th>
<th>Maximum speed [°/sec.]</th>
<th>Allowable moment [Nm]</th>
<th>Allowable moment of inertia [kg·m²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>±180</td>
<td>197</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>L</td>
<td>+155/–110</td>
<td>175</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>+220/–165</td>
<td>185</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>R</td>
<td>±150</td>
<td>410</td>
<td>8.8</td>
<td>0.27</td>
</tr>
<tr>
<td>B</td>
<td>+180/–45</td>
<td>410</td>
<td>8.8</td>
<td>0.27</td>
</tr>
<tr>
<td>T</td>
<td>±200</td>
<td>610</td>
<td>2.9</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Controlled axes

- Max. payload [kg]: 6
- Repeat. pos. accuracy [mm]: ±0.08
- Max. working range [mm]: R = 1904
- Temperature [°C]: 0 to +45
- Humidity [%]: 20 – 80
- Weight [kg]: 280
- Power supply, average [KVA]: 2.8

All dimensions in mm | Technical data may be subject to change without previous notice |
Please request detailed drawings at robotics@yaskawa.eu.com – YR-MA01900-B00, E-07-2012, A-No. 150302
The MOTOMAN MH50-20 is a dynamic, high-speed robot featuring an extended reach for large parts. It offers superior performance in arc welding, coating, gluing, dispensing, material cutting and material handling applications.

**Key benefits**
- High repeatability ±0.15 mm
- Ideal for a variety of applications, multi-purpose robot
- Very wide motion range
- Small interference radius reduces floorspace requirements
- Specifically designed for processing large parts

**MOTOMAN MH50-20**
General purpose and handling
### Specifications MH50-20

<table>
<thead>
<tr>
<th>Axes</th>
<th>Maximum motion range [º]</th>
<th>Maximum speed [º/sec.]</th>
<th>Allowable moment [Nm]</th>
<th>Allowable moment of inertia [kg · m²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>±180</td>
<td>180</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>L</td>
<td>+135/-90</td>
<td>178</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>+251/-160</td>
<td>178</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>R</td>
<td>±190</td>
<td>400</td>
<td>39.2</td>
<td>1.05</td>
</tr>
<tr>
<td>B</td>
<td>±230/-50</td>
<td>400</td>
<td>39.2</td>
<td>1.05</td>
</tr>
<tr>
<td>T</td>
<td>±360</td>
<td>600</td>
<td>19.6</td>
<td>0.75</td>
</tr>
</tbody>
</table>

### Controlled axes
- Max. payload [kg]: 6
- Repeat. pos. accuracy [mm]: ±0.15
- Max. working range [mm]: R = 3106
- Temperature [º C]: 0 to +45
- Relative humidity [%]: 20 – 80
- Weight [kg]: 495
- Power supply, average [KVA]: 3.5

### Allowable wrist load
- Wrist + U-arm in front: Up to 20 kg for attaching load mass including wrist load.
- U-arm behind: Up to 10 kg.
- S-axis below: 49 N · m (5 kgf · m) max. for increased moment amount of upper arm (floor-, ceiling-mounted type only).
- Up to 30 kg (floor-, ceiling-mounted type only).

---

YASKAWA Europe GmbH
Yaskawastrasse 1
D-85391 Allershausen
Tel. 0049-81 66-90-0
Fax 0049-81 66-90-103
robotics@yaskawa.eu.com
www.yaskawa.eu.com

YASKAWA Academy
and sales office
Frankfurt

YASKAWA Europe GmbH
Robotics Division
Hauptstraße 185
D-65760 Eschborn
Tel. 0049-61 96-777 25-0
Fax 0049-61 96-777 25-39
robotics@yaskawa.eu.com
www.yaskawa.eu.com

All dimensions in mm | Technical data may be subject to change without previous notice | Please request detailed drawings at robotics@yaskawa.eu.com – YR-MH00050-B10, F-07-2012, A-No. 150269
The MOTOMAN MH50-35 is a dynamic, high-speed robot featuring an extended reach for large parts. It offers superior performance in laser welding, coating, dispensing, gluing, material cutting and material handling applications.

**Key benefits**
- High repeatability: ±0.07 mm
- Ideal for a variety of applications, multi-purpose robot
- Wide motion range
- Small interference radius reduces floorspace requirements
- Specifically designed for processing large parts

**MOTOMAN MH50-35**
General purpose and handling
**Specifications MH50-35**

<table>
<thead>
<tr>
<th>Axes</th>
<th>Maximum motion range [º]</th>
<th>Maximum speed [º/sec.]</th>
<th>Allowable moment [Nm]</th>
<th>Allowable moment of inertia [kg · m²]</th>
<th>Controlled axes</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>± 180</td>
<td>180</td>
<td>–</td>
<td>–</td>
<td>6</td>
</tr>
<tr>
<td>L</td>
<td>+135/–90</td>
<td>140</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>+296/–160</td>
<td>178</td>
<td>147</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>±360</td>
<td>250</td>
<td>147</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>±125</td>
<td>250</td>
<td>147</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>±360</td>
<td>360</td>
<td>78</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**Headquarters Robotics Division**

YASKAWA Europe GmbH
Yaskawastrasse 1
D-85391 Allershausen
Tel. 0049-81 66-90-0
Fax 0049-81 66-90-103
robotics@yaskawa.eu.com
www.yaskawa.eu.com

**YASKAWA Academy and sales office Frankfurt**

YASKAWA Europe GmbH
Robotics Division
Hauptstrasse 185
D-65760 Eschborn
Tel. 0049-61 96-777 25-0
Fax 0049-61 96-777 25-39
robotics@yaskawa.eu.com
www.yaskawa.eu.com

---

**View A**

- Working range Point P
- Ø 8 H7, depth 14 mm
- 6 x M8, depth 14 mm
- Ø H7, depth 10 mm

**View B**

- Internal user wiring connector
- Media connector

**View C**

- Mounting options: Floor, ceiling, wall

**Allowable wrist load**

<table>
<thead>
<tr>
<th>LT (mm)</th>
<th>200</th>
<th>400</th>
<th>600</th>
<th>800</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-point</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Up to 35 kg for attaching load mass including wrist load.
- Up to 10 kg.
- 49 N • m (5 kgf • m) max. for increased moment amount of upper arm (floor-, ceiling-mounted type only).
- Up to 30 kg (floor-, ceiling-mounted type only).
The MOTOMAN MH50 is a versatile, high-speed 6-axis robot offering superior performance in material handling, machine tending, processing and dispensing applications. Featuring a streamlined body, the MH50 can be placed close to machines for loading and unloading of parts.

**Key benefits**
- Fast, flexible and reliable
- Ideal for a variety of applications, multi-purpose robot
- Robot with sleek design that requires minimal installation space
- 50 kg payload

**MOTOMAN MH50**
General purpose and handling
Specifications MH50

### Axes

- **S**: ±180
- **L**: +135°/-90
- **U**: +251°/-170
- **R**: ±360
- **B**: ±125
- **T**: ±360

#### Maximum motion range [°]
- **S**: 180
- **L**: 178
- **U**: 178
- **R**: 250
- **B**: 250
- **T**: 360

#### Maximum speed [°/sec.]
- **S**: 180
- **L**: 178
- **U**: 178
- **R**: 216
- **B**: 216
- **T**: 147

#### Allowable moment [Nm]
- **S**: –
- **L**: –
- **U**: –
- **R**: 28
- **B**: 28
- **T**: 11

#### Allowable moment of inertia [kg · m²]
- **S**: –
- **L**: –
- **U**: –
- **R**: 216
- **B**: 216
- **T**: 147

#### Controlled axes
- 6

#### Repeat. pos. accuracy [mm]
- ±0.07

#### Max. working range [mm]
- R = 2061

#### Temperature [°C]
- 0 to +45

#### Humidity [%]
- 20 – 80

#### Weight [kg]
- 550

#### Power supply, average [KVA]
- 4

---

**YASKAWA Europe GmbH**

Robotics Division

Yaskawastraße 1

D-85391 Allershausen

Tel. 0049-81 66-90-0

Fax 0049-81 66-90-103

robotics@yaskawa.eu.com

www.yaskawa.eu.com

---

**YASKAWA Academy**

and sales office

Frankfurt

YASKAWA Europe GmbH

Hauptstraße 185

D-65760 Eschborn

Tel. 0049-61 96-777 25-0

Fax 0049-61 96-777 25-39

robotics@yaskawa.eu.com

www.yaskawa.eu.com

---

**All dimensions in mm | Technical data may be subject to change without previous notice | Please request detailed drawings at robotics@yaskawa.eu.com – YR-MH00050-B00, F-07-2012, A-No. 150267**
The MOTOMAN MH6-10 is a compact and powerful 6-axis robot with high performance in a variety of applications such as machine tending, material handling and processing, where versatility is required. Its slim and lightweight design enables it to be positioned close to the workpiece to improve part accessibility.

**Key benefits**
- Compact and powerful
- Ideal for a variety of applications, multi-purpose robot
- Wide working envelope

**MOTOMAN MH6-10**
General purpose and handling
### MOTOMAN MH6-10 Technical Data

#### Specifications MH6-10

<table>
<thead>
<tr>
<th>Axes</th>
<th>Maximum motion range [°]</th>
<th>Maximum speed [°/sec]</th>
<th>Allowable moment [Nm]</th>
<th>Allowable moment of inertia [kg · m²]</th>
<th>Controlled axes</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>±170</td>
<td>140</td>
<td>–</td>
<td>–</td>
<td>6</td>
</tr>
<tr>
<td>L</td>
<td>+155/–90</td>
<td>130</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>+250/–175</td>
<td>135</td>
<td>12.2</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>±180</td>
<td>270</td>
<td>14.2</td>
<td>0.21</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>+225/–45</td>
<td>270</td>
<td>7.3</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>±360</td>
<td>400</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

#### Allowable wrist load

![Allowable wrist load](image)

#### Allowable load on U-axis

![Allowable load on U-axis](image)

### Additional Information

- **Controlled axes**: 6
- **Max. payload [kg]**: 10
- **Repeat. pos. accuracy [mm]**: ±0.08
- **Max. working range [mm]**: R = 1422
- **Temperature [°C]**: 0 to +45
- **Humidity [%]**: 20 – 80
- **Weight [kg]**: 130
- **Power supply, average [KVA]**: 1.5

---

**Headquarters Robotics Division**
YASKAWA Europe GmbH
Yaskawastraße 1
D-85391 Allershausen
Tel. 0049-81 66-90-0
Fax 0049-81 66-90-103
robotics@yaskawa.eu.com
www.yaskawa.eu.com

**YASKAWA Academy and sales office Frankfurt**
YASKAWA Europe GmbH
Robotics Division
Hauptstraße 185
D-65760 Eschborn
Tel. 0049-61 96-777 25-0
Fax 0049-61 96-777 25-39
robotics@yaskawa.eu.com
www.yaskawa.eu.com

---

*All dimensions in mm | Technical data may be subject to change without previous notice | Please request detailed drawings at robotics@yaskawa.eu.com – YR-MH00006-830, D-07-2012, A-No. 150265*
The MOTOMAN MH6D, MH6F is a compact and powerful 6-axis robot with high performance in a variety of applications such as machine tending, material handling and processing, where versatility is required. Its slim and lightweight design enables it to be positioned close to the workpiece to improve part accessibility.

With increased speed of the robot axes, cycle times can be reduced up to 15% for increased productivity. This all-round robot can be driven by the high-performance-controller DX100 as well as the compact-controller FS100.

**Key benefits**
- Compact and powerful
- Cycle time reduction with up to 15%
- Ideal for a variety of applications, multi-purpose robot
- Wide working envelope
- 6 kg payload

**MOTOMAN MH6D, MH6F**
General purpose and handling
Specifications MH6D, MH6F

<table>
<thead>
<tr>
<th>Axes</th>
<th>Maximum motion range [°]</th>
<th>Maximum speed [°/sec]</th>
<th>Allowable moment [Nm]</th>
<th>Allowable moment of inertia [kg · m²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>±170</td>
<td>220</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>+155/–90</td>
<td>200</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>+250/–175</td>
<td>220</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>R</td>
<td>±180</td>
<td>410</td>
<td>11.8</td>
<td>0.27</td>
</tr>
<tr>
<td>B</td>
<td>+225/–45</td>
<td>410</td>
<td>9.8</td>
<td>0.27</td>
</tr>
<tr>
<td>T</td>
<td>±360</td>
<td>610</td>
<td>5.9</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Controlled axes: 6
Max. payload [kg]: 6
Repeat. pos. accuracy [mm]: ±0.08
Max. working range [mm]: R = 1422
Temperature [°C]: 0 to +45
Humidity [%]: 20 – 80
Weight [kg]: 130
Power supply, average [KVA]: 1.5

View A

- 4 x M6, depth 9 mm
- Ø 6 H7, depth 6 mm
- PCD 40

View B

- Internal user wiring connector
- Media connector

View C

- Mounting options: Floor, ceiling, wall

All dimensions in mm | Technical data may be subject to change without previous notice | Please request detailed drawings at robotics@yaskawa.eu.com – YR-MH0006-B00 (DX100), YR-MH0006F-B00 (FX100), F-07-2012, A-No. 150260

YASKAWA Europe GmbH
Robotics Division
Yaskawastraße 1
D-85391 Allershausen
Tel. 0049-81 66-90-0
Fax 0049-81 66-90-103
robotics@yaskawa.eu.com
www.yaskawa.eu.com

YASKAWA Academy
and sales office
Frankfurt
YASKAWA Europe GmbH
Robotics Division
Hauptstraße 185
D-65760 Eschborn
Tel. 0049-61 96-777 25-0
Fax 0049-61 96-777 25-39
robotics@yaskawa.eu.com
www.yaskawa.eu.com
The industrial robots MOTOMAN MH6S and MH6S-10 are compact and powerful 6-axis robots with high performances in a variety of applications such as machine tending, material handling and processing, where versatility is required. The short-arm models of the MH6 family is highly compact, giving it greater stiffness and making it ideal for positioning in confined spaces and close to the workpiece. It’s maximum working range amounts 977 mm. With increased speed of the robot axes, cycle times can be reduced.

Key benefits:
- Compact and powerful
- Greater Stiffness
- Ideal for a variety of applications, multi-purpose robots
- Maximum working range of 977 mm
- Maximum payload of 6/10 kg

MOTOMAN MH6S, MH6S-10
General purpose and handling
### MOTOMAN MH6S, MH6S-10 Technical Data

#### Specifications MH6S, MH6S-10

<table>
<thead>
<tr>
<th>Axes</th>
<th>Maximum motion range [°]</th>
<th>Maximum speed [°/sec.]</th>
<th>Allowable moment [Nm]</th>
<th>Allowable moment of inertia [kg · m²]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MH6S</td>
<td>MH6S-10</td>
<td>MH6S</td>
<td>MH6S-10</td>
</tr>
<tr>
<td>S</td>
<td>±170</td>
<td>220</td>
<td>200</td>
<td>–</td>
</tr>
<tr>
<td>L</td>
<td>+133/-80</td>
<td>220</td>
<td>200</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>+165/-130</td>
<td>220</td>
<td>200</td>
<td>11.8</td>
</tr>
<tr>
<td>R</td>
<td>±180</td>
<td>410</td>
<td>270</td>
<td>9.8</td>
</tr>
<tr>
<td>B</td>
<td>+225/-45</td>
<td>410</td>
<td>270</td>
<td>5.9</td>
</tr>
<tr>
<td>T</td>
<td>±360</td>
<td>610</td>
<td>400</td>
<td>–</td>
</tr>
</tbody>
</table>

#### Allowable wrist load

- **P-point**
  - L1 (mm): 200
  - L2 (mm): 141

- **B-axis center of rotation**
  - LB (mm): 100
  - LT (mm): 141

#### Allowable load on U-axis

- **Controlled axes**
  - Max. payload [kg]: MH6S | MH6S-10
  - Repeat. pos. accuracy [mm]: ±0.08
  - Max. working range [mm]: R = 997
  - Temperature [°C]: 0 to +45
  - Humidity [%]: 20 – 80
  - Weight [kg]: 120
  - Power supply, average [KVA]: 1.5

### Mounting options
- Floor, ceiling, wall

---

**All dimensions in mm | Technical data may be subject to change without previous notice | Please request detailed drawings at robotics@yaskawa.eu.com – YR-MH00006S-B00, YR-MH0000S-B30, C-07-2012, A-Nr. 150262**
The MOTOMAN VA1400 is a seven-axis arc-welding robot and offers superior performance in spot welding, handling, machine tending and assembly. It has torch cables built into the robot arm to eliminate interference with the workpiece, jig or other nearby robots. Also, the power cable and gas and air hoses can be accommodated to the base. Several robots can be installed in close proximity without interfering with each other, which will allow construction of a highly effective and space-saving welding cell. Furthermore, installation space can be minimized as this new robot allows highly dense positioning between units. The innovation of the 7th axis has dramatically increased the freedom of the robot’s movement. By keeping the optimal posture for welding at all times, the VA1400 has achieved the highest welding quality. The highest performance of its class, including the world’s fastest motion, high repeatability of +/-0.08 mm and a maximum reach of 1,434 mm, greatly increases productivity.

**Key benefits**
- Controlled axes: 7
- Max. payload of 3 kg
- Repeatability of +/-0.08 mm
- Max. working range of 1,434 mm
- High flexibility in its working area
- Space saving with high-density cell layout
- Conception of compact production lines are possible
- Integrated cables
- Less interference contours
- Further improvement of welding quality with 7th axis for ideal posture
- Increase productivity with highest performance

**MOTOMAN VA1400**
Shielded arc welding
## Specifications VA1400

<table>
<thead>
<tr>
<th>Axes</th>
<th>Maximum motion range [°]</th>
<th>Maximum speed [°/sec.]</th>
<th>Allowable moment [Nm]</th>
<th>Allowable moment of inertia [kg · m²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>±170</td>
<td>220</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>L</td>
<td>+148/–70</td>
<td>200</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>+150/–175</td>
<td>220</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>R</td>
<td>±150</td>
<td>410</td>
<td>8.8</td>
<td>0.27</td>
</tr>
<tr>
<td>B</td>
<td>+180/–45</td>
<td>410</td>
<td>8.8</td>
<td>0.27</td>
</tr>
<tr>
<td>T</td>
<td>±200</td>
<td>610</td>
<td>2.9</td>
<td>0.03</td>
</tr>
<tr>
<td>E</td>
<td>±90</td>
<td>220</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

### Controlled axes
- Max. payload [kg]: 3
- Repeat. pos. accuracy [mm]: ±0.08
- Max. working range [mm]: R = 1434
- Temperature [°C]: 0 to 45
- Humidity [%]: 20 – 80
- Weight [kg]: 150
- Power supply, average [KVA]: 1.5

### Specifications

- **Axes**
  - Maximum motion range [°]: ±170
  - Maximum speed [°/sec.]: 220
  - Allowable moment [Nm]: –
  - Allowable moment of inertia [kg · m²]: –

### Views

- **View A**
  - Maximum barycenter adjustment for periphery
  - 6 x M4, depth 10 mm

- **View B**
  - 2 x Air
  - Internal user wiring connector
  - Media connector

- **View C**
  - Mounting options: Floor, ceiling, wall

---

All dimensions in mm | Technical data may be subject to change without previous notice | Please request detailed drawings robotics@yaskawa.eu.com – YN-VA01400-800, D-07-2011, A-No. 150296

---

MOTOMAN VA1400 Technical Data

YASKAWA Europe GmbH
Yaskawastraße 1
D-85391 Allershausen
Tel. 0049-81 66-90-0
Fax 0049-81 66-90-103
robotics@yaskawa.eu.com
www.yaskawa.eu.com

YASKAWA Academy
and sales office
Frankfurt

YASKAWA Europe GmbH
Robotics Division
Hauptstraße 185
D-65760 Eschborn
Tel. 0049-61 66-777 25-0
Fax 0049-61 66-777 25-39
robotics@yaskawa.eu.com
www.yaskawa.eu.com

---

Headquarters
Robotics Division
YASKAWA Europe GmbH
Yaskawastraße 1
D-85391 Allershausen
Tel. 0049-81 66-90-0
Fax 0049-81 66-90-103
robotics@yaskawa.eu.com
www.yaskawa.eu.com
The “Master Cut” MOTOMAN MC2000 is a high speed 6 axis robot. It is designed with high rigidity and precision drives to provide superior path accuracy for laser cutting small holes and sharp corners. Its path accuracy can be with 0.1 mm depending on the application. The slim base, waist and arm allow robot to be placed close to work piece holding fixtures to improve part accessibility.

Compact design and advanced collision avoidance features with multiple robot control allow up to eight robots (72 axes) to be used together to maximize productivity while minimising floor space requirements. This outstanding robot is controlled from the high performance DX100 controller.

**Key benefits**
- Higher payload for Remote Laser Welding head or higher path accuracy when using welding or cutting laser head
- Typical path accuracies of 0.1 to 0.3 mm depending on application
- Compact design reduces floor space and allows good access to work piece

**MOTOMAN MC2000**
Laser welding, material cutting, dispensing
### Specifications MC200

<table>
<thead>
<tr>
<th>Axes</th>
<th>Maximum motion range [°]</th>
<th>Maximum speed [°/sec]</th>
<th>Allowable moment [Nm]</th>
<th>Allowable moment of inertia [kg · m²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>±180</td>
<td>150</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>L</td>
<td>+135/-60</td>
<td>150</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>U</td>
<td>+235/-157</td>
<td>150</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>R</td>
<td>±360</td>
<td>250</td>
<td>110</td>
<td>7</td>
</tr>
<tr>
<td>B</td>
<td>±125</td>
<td>250</td>
<td>110</td>
<td>7</td>
</tr>
<tr>
<td>T</td>
<td>±360</td>
<td>250</td>
<td>55</td>
<td>1</td>
</tr>
</tbody>
</table>

- **Controlled axes**: 6
- **Max. payload [kg]**: 50
- **Repeat. pos. accuracy [mm]**: ±0.07
- **Max. working range [mm]**: R = 3164
- **Temperature [°C]**: 0 to +45
- **Humidity [%]**: 20 – 80
- **Weight [kg]**: 845
- **Power supply, average [KVA]**: 3.5

All dimensions in mm | Technical data may be subject to change without previous notice | Please request detailed drawings at robotics@yaskawa.eu.com