

# MOTOMAN AR700

Arc Welding with the AR-series



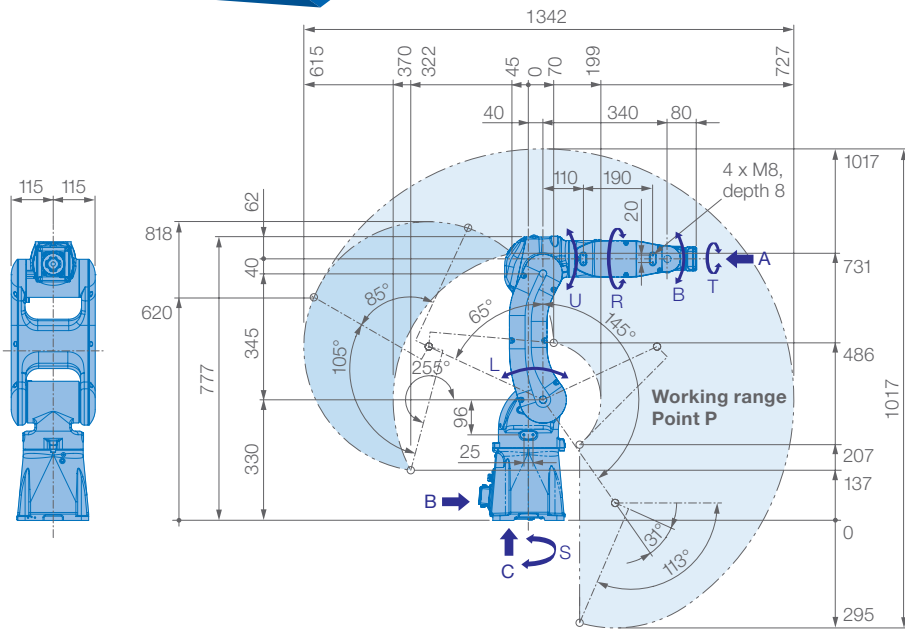
The MOTOMAN AR700 is a compact high-speed 6-axis robot which provides accurate performance to achieve optimal results in extremely difficult conditions and especially for the high demands of arc welding applications.

With a payload of up to 8 kg and a working range of 700 mm, this robot enables welding of a broad variety of small workpieces with high quality results. The applicable inertia and axis speeds have been significantly raised, which leads to a "best in class" performance, speed and acceleration.

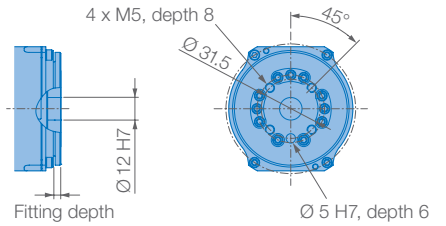
The slim, straight and symmetrical arm design minimizes interference with peripherals even in small workspaces. The MOTOMAN AR700 is easy to clean and well protected (by protection class IP67) against dust or coolants. Cable routing is possible from the side of the robot socket or from the bottom through the base plate (option). This enables an easy and space-saving integration into its environment.

#### KEY BENEFITS

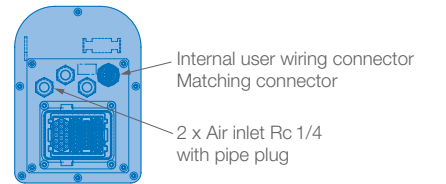
- Compact, fast and accurate
- High acceleration
- Protection class IP67
- Less interferences due to optimized design
- Simple integration, installation and maintenance



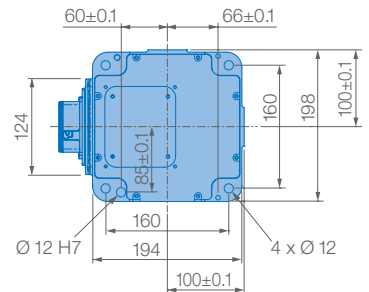
**View A**



**View B**



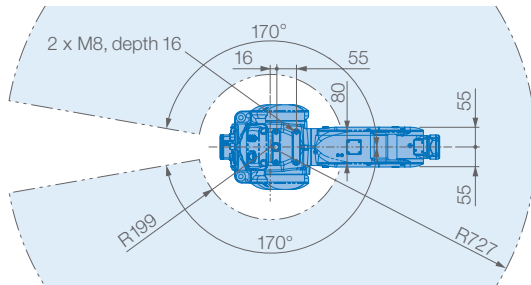
**View C**



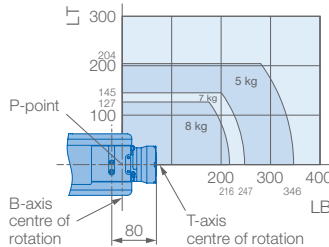
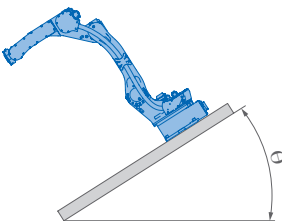
Mounting options: Floor, ceiling, wall, tilt\*  
IP Protection: IP67

\* tilt with condition of angle – see table below

Robot installation angle $\theta$ [deg.]	S-axis operating range [deg.]
$0 \leq \theta \leq 30$	$\pm 170$ degrees or less (no limit)
$30 < \theta \leq 35$	$\pm 60$ degrees or less
$35 < \theta \leq 45$	$\pm 45$ degrees or less
$45 < \theta$	$\pm 30$ degrees or less



**Allowable wrist load**



Specifications AR700					
Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes
S	±170	455	–	–	6
L	+145/-65	385	–	–	Max. payload [kg]
U	+190/-70	520	–	–	Repeatability [mm]
R	±190	550	17	0.5	Max. working range R [mm]
B	±135	550	17	0.5	Temperature [°C]
T	±360	1000	10	0.2	Humidity [%]
					Weight [kg]
					Power supply, average [kVA]

\* Conforms to ISO 9283 \*\* Varies in accordance with applications and motion patterns

# YASKAWA

# MOTOMAN AR900

Arc Welding with the AR-series



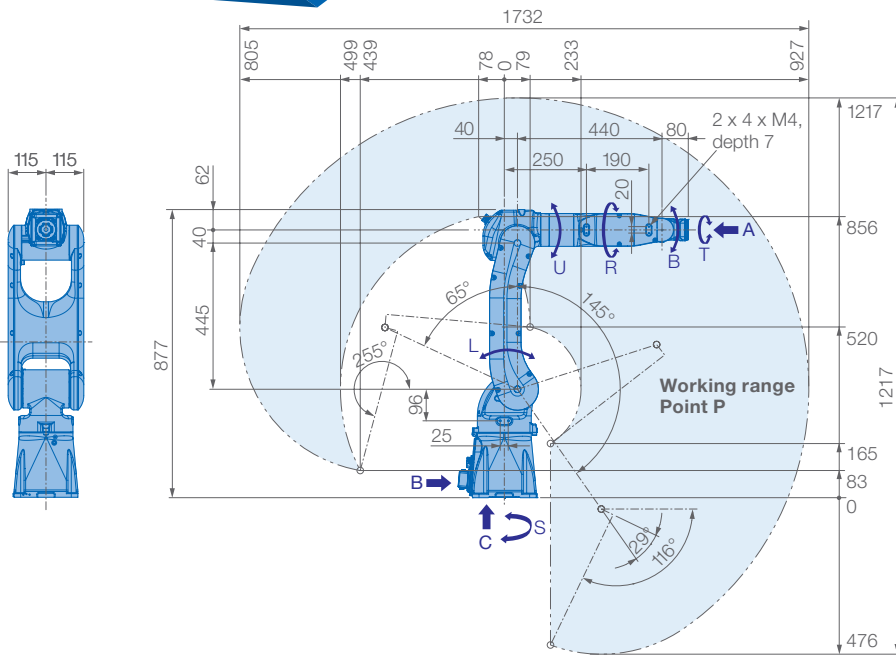
The MOTOMAN AR900 is a compact high-speed 6-axis robot which provides accurate performance to achieve optimal results in extremely difficult conditions and especially for the high demands of arc welding applications.

With a payload of up to 7 kg and a working range of 900 mm, this robot enables welding of a broad variety of small workpieces with high quality results. The applicable inertia and axis speeds have been significantly raised, which leads to a “best in class” performance, speed and acceleration.

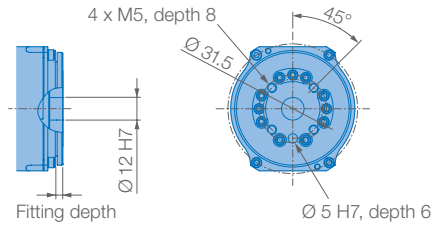
The slim, straight and symmetrical arm design minimizes interference with peripherals even in small workspaces. The MOTOMAN AR900 is easy to clean and well protected (by protection class IP67) against dust or coolants. Cable routing is possible from the side of the robot socket or from the bottom through the base plate (option). This enables easy and space-saving integration into its environment.

## KEY BENEFITS

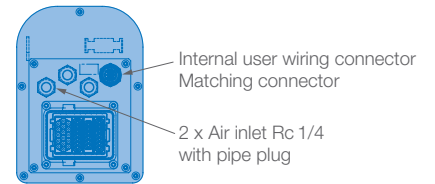
- Compact, fast and accurate
- High acceleration
- Protection class IP67
- Less interferences due to optimized design
- Simple integration, installation and maintenance



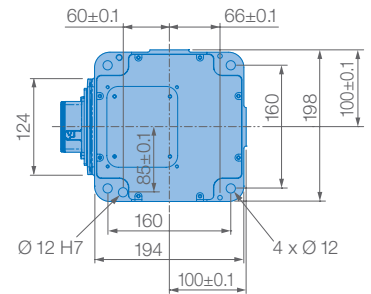
**View A**



**View B**



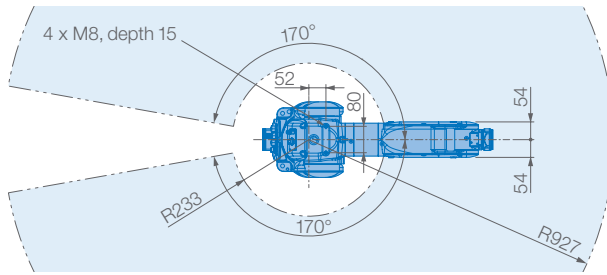
**View C**



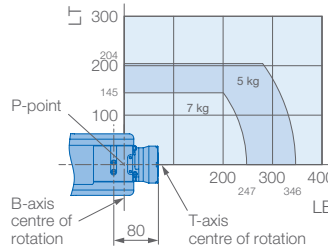
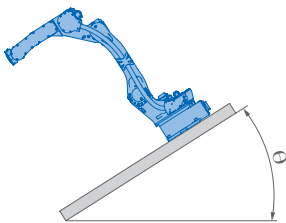
Mounting options: Floor, ceiling, wall, tilt\*  
IP Protection: IP67

\* tilt with condition of angle – see table below

Robot installation angle $\Theta$ [deg.]	S-axis operating range [deg.]
$0 \leq \Theta \leq 30$	$\pm 170$ degrees or less (no limit)
$30 < \Theta \leq 35$	$\pm 60$ degrees or less
$35 < \Theta \leq 45$	$\pm 45$ degrees or less
$45 < \Theta$	$\pm 30$ degrees or less



**Allowable wrist load**



Specifications AR900					
Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes
S	$\pm 170$	375	–	–	6
L	+145/–65	315	–	–	Max. payload [kg]
U	+190/–70	410	–	–	Repeatability [mm]
R	$\pm 190$	550	17	0.5	Max. working range R [mm]
B	$\pm 135$	550	17	0.5	Temperature [°C]
T	$\pm 360$	1000	10	0.2	Humidity [%]
					Weight [kg]
					Power supply, average [kVA]

\* Conforms to ISO 9283 \*\* Varies in accordance with applications and motion patterns

# MOTOMAN AR1440

Arc Welding with the AR-series



The six-axis MOTOMAN AR1440 robot provides fast and accurate performance to achieve optimal results in extremely difficult conditions and especially for the high demands of arc welding applications.

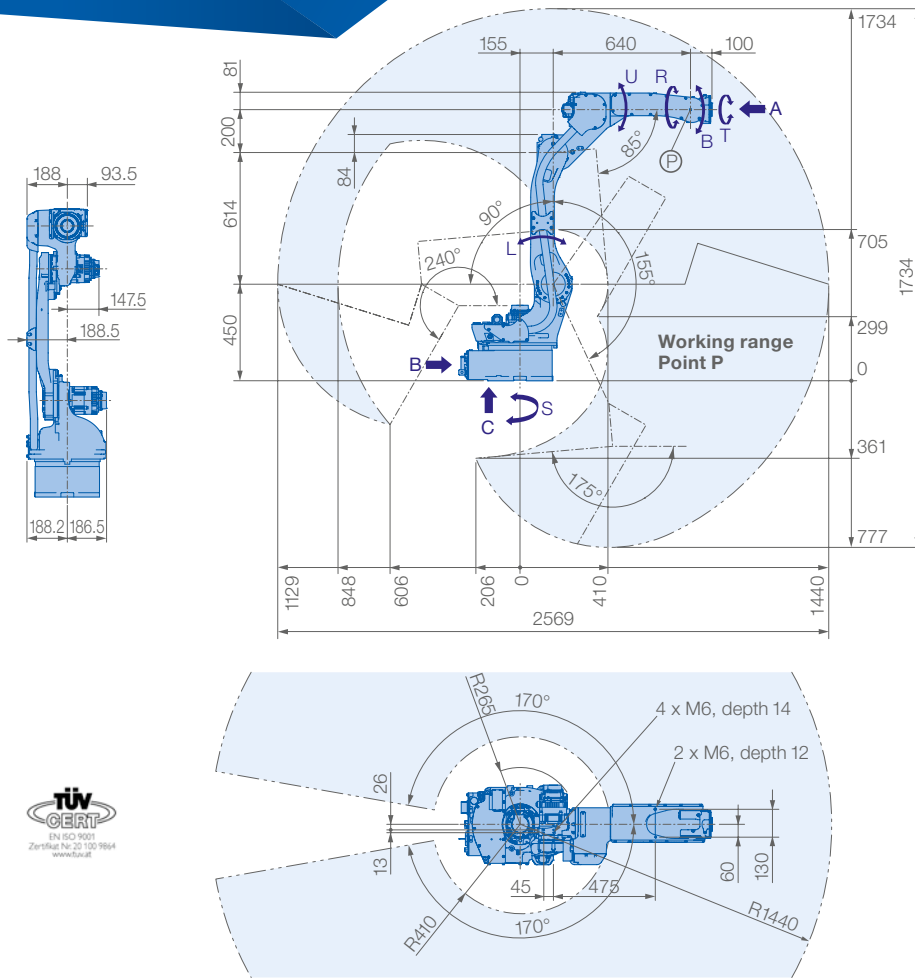
With a payload of up to 12 kg, its wire feed system, the maximum working range of 1440 mm and integrated media hose package, this robot enables simple machining of bulky and hard-to-access workpieces with high quality results. Furthermore, the slim design allows high-density robot placement in confined spaces.

The fast motion sequences of the MOTOMAN AR1440 robot reduce welding cycle times and the hollow wrist of 50 mm allow integrated torch cabling in the robot arm in order to avoid collisions with the workpiece or other robots.

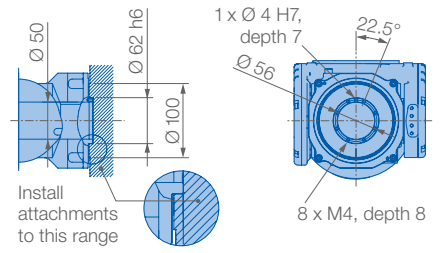
The integration of the power cable and the air connections in the base enable an enlarged turning range of more than 340°.

## KEY BENEFITS

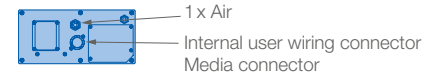
- Fast motion sequences
- Wide motion range
- High path accuracy
- High density placement due to slim design
- Integrated cabling avoids interferences



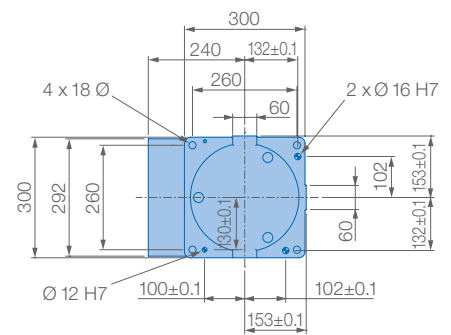
**View A**



**View B**



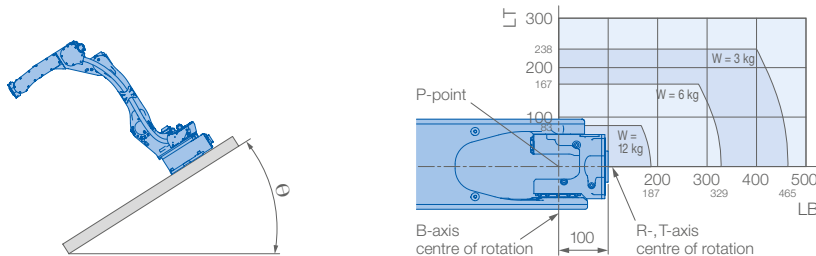
**View C**



Mounting options: Floor, ceiling, wall, tilt\*  
 Protection class: Main axes (S, L, U) IP54, wrist IP67

\* tilt with condition of angle – see table below

**Allowable wrist load**



Robot installation angle $\Theta$ [deg.]	S-axis operating range [deg.]
$0 \leq \Theta \leq 30$	$\pm 170$ degrees or less (no limit)
$30 < \Theta \leq 35$	$\pm 60$ degrees or less
$35 < \Theta \leq 45$	$\pm 45$ degrees or less
$45 < \Theta$	$\pm 30$ degrees or less

Specifications AR1440					
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes
S	$\pm 170$	260	–	–	6
L	+155/–90	230	–	–	Max. payload [kg]
U	+155/–85	260	–	–	Repeatability [mm]
R	$\pm 200$	470	22	0.65	Max. working range R [mm]
B	$\pm 150$	470	22	0.65	Temperature [°C]
T	$\pm 455$	700	9.8	0.17	Humidity [%]
					Weight [kg]
					Power supply, average [KVA]

\* Conforms to ISO 9283 \*\* Varies in accordance with applications and motion patterns



# YASKAWA

# MOTOMAN AR1730

Arc Welding with the AR-series



The powerful, dynamic six-axis MOTOMAN AR1730 robot provides highest motion performance in its class to achieve optimal results in extremely difficult conditions and especially for the high demands of arc welding applications.

With a high payload of up to 25 kg and a wide working range of 1730 mm this robot supports welding of bulky workpieces and mounting a broad variety of heavy welding and cutting equipment.

Its hollow arm design enables leading the welding cables and wire feeding through the arm to the wrist, which saves valuable space around it. The MOTOMAN AR1730 allows easy programming and enables high freedom of motion.

The wire feeder can be mounted in the prepared space at axis 3, supporting short distance and centric supply of the welding wire to the weld torch. The streamlined, slightly bowed arm structure reduces the interference area between the jigs and work pieces.

## KEY BENEFITS

- Powerful and dynamic
- Wide motion range
- High path accuracy
- Easy programming
- Less interferences due to optimized design





# MOTOMAN AR2010

Arc Welding with the AR-series



The 6-axis robot MOTOMAN AR2010 of our AR series, thanks to its high path accuracy, is an optimal robot for arc welding applications.

With a payload of up to 12 kg and a wide working range of 2010 mm this robot supports welding of bulky workpieces.

Its hollow arm design enables leading the welding cables and wire feeding through the arm to the wrist, which saves valuable space around it. The MOTOMAN AR2010 allows easy programming and enables high freedom of motion.

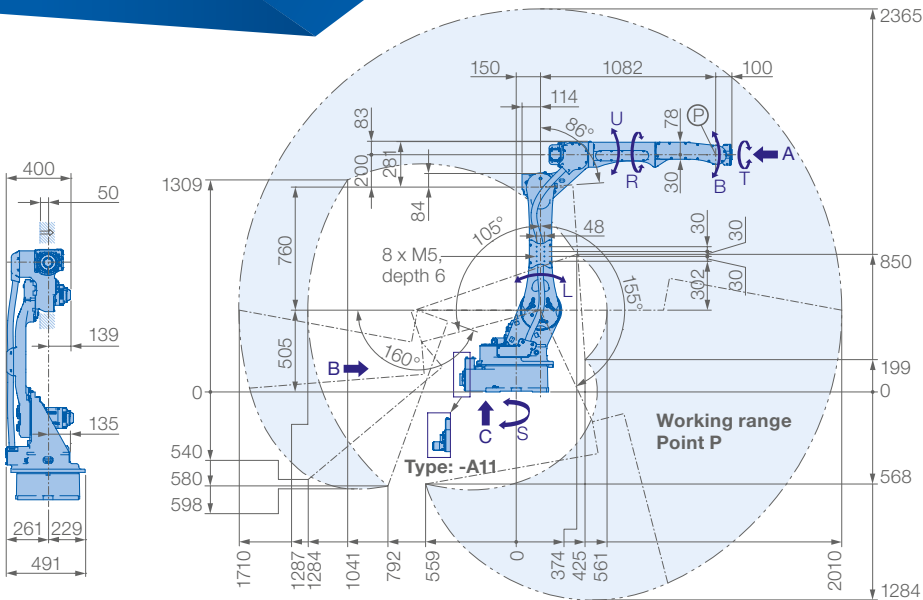
The wire feeder can be mounted in the prepared space at axis 3, supporting short distance and centric supply of the welding wire to the weld torch. The streamlined, slightly bowed arm structure reduces the interference area between the jigs and work pieces.

The robot is controlled by the YRC1000 controller which facilitates both programming and use with a wide range of functions specially designed for arc welding applications.

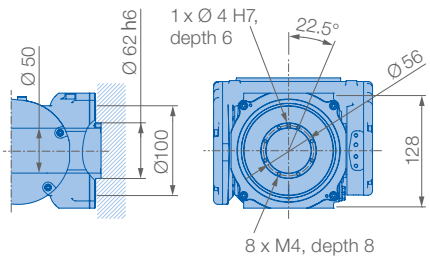
## KEY BENEFITS

- Wide motion range
- High path accuracy
- Easy programming
- Less interferences due to optimized design

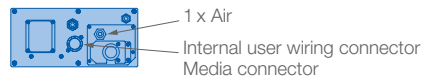
Controlled by  
YRC1000



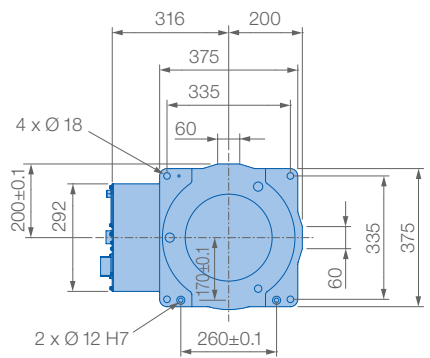
View A



View B



View C

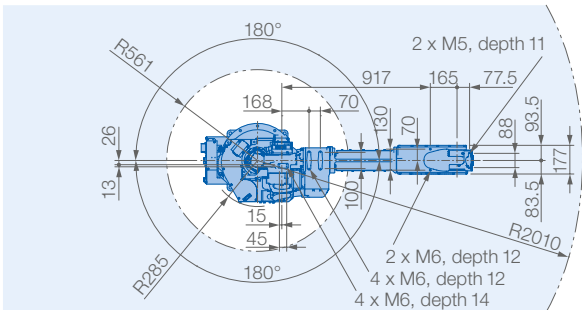


Mounting options: Floor, ceiling, wall, tilt\*

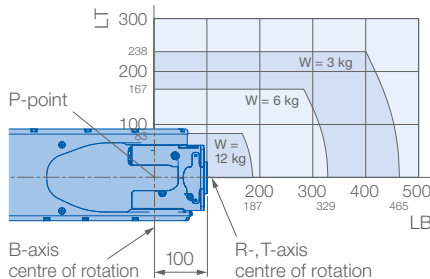
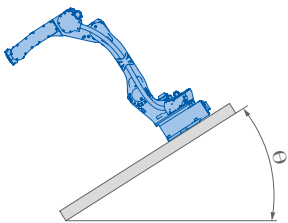
Protection class: Main axes (S, L, U) IP54, wrist IP67

\* tilt with condition of angle – see table below

Robot installation angle $\theta$ [deg.]	S-axis operating range [deg.]
$0 \leq \theta \leq 30$	$\pm 180$ degrees or less (no limit)
$30 < \theta \leq 35$	$\pm 60$ degrees or less
$35 < \theta$	$\pm 30$ degrees or less



Allowable wrist load

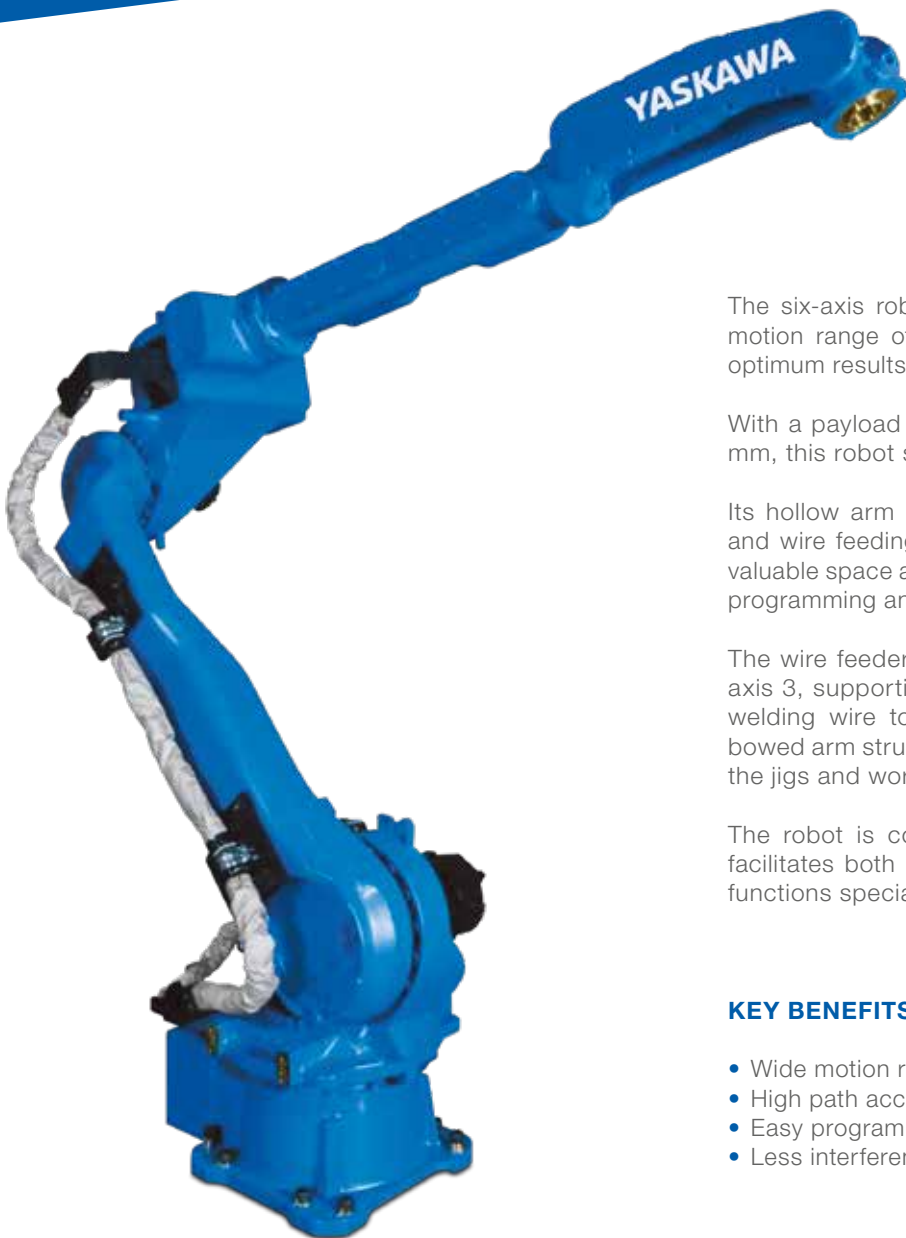


Specifications AR2010						
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes	6
S	$\pm 180$	210	-	-	Max. payload (on U-axis) [kg]	12 (9)
L	$+155/-105$	210	-	-	Repeatability [mm]	$\pm 0.03^*$
U	$+160/-86$	220	-	-	Max. working range R [mm]	2010
R	$\pm 200$	435	22	0.65	Temperature [°C]	0 to +45
B	$\pm 150$	435	22	0.65	Humidity [%]	20 – 80
T	$\pm 455$	700	9.8	0.17	Weight [kg]	260
					Power supply, average [KVA]	2.0**

\* Conforms to ISO 9283 \*\* Varies in accordance with applications and motion patterns

# MOTOMAN AR3120

Arc Welding with the AR-series



The six-axis robot MOTOMAN AR3120 provides the widest motion range of our AR-series and high path accuracy for optimum results of arc welding applications.

With a payload of up to 20 kg and a motion range of 3124 mm, this robot supports welding of bulky workpieces.

Its hollow arm design enables leading the welding cables and wire feeding through the arm to the wrist, which saves valuable space around it. The MOTOMAN AR3120 allows easy programming and enables high freedom of motion.

The wire feeder can be mounted in the prepared space at axis 3, supporting short distance and centric supply of the welding wire to the weld torch. The streamlined, slightly bowed arm structure reduces the interference area between the jigs and work pieces.

The robot is controlled by the YRC1000 controller which facilitates both programming and use with a wide range of functions specially designed for arc welding applications.

## KEY BENEFITS

- Wide motion range
- High path accuracy
- Easy programming
- Less interferences due to optimized design

