



YASKAWA

MOTOMAN GP-series

Handling & General Application



Controlled by
YRC1000

MOTOMAN GP8



reddot award 2018
winner

Masters of Robotics, Motion and Control



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MOTOMAN YRC1000

Industrial Robot Controller



High Performance Controller YRC1000 for MOTOMAN Robots

The MOTOMAN YRC1000 is a compact, fast and flexible controller for MOTOMAN robots that combines high performance robot control in a small footprint cabinet with volume of 125 litres and a maximum weight of 70 kg.

Besides the typical YASKAWA controller functionality, the YRC1000 includes additional functional improvements. Speed of the controller has been increased by lowering a ladder scanning time.

Path accuracy improvement assures increased precision in trajectory performance independently on the motion speed.

User interface supports smartphone like touch operations and allows the user to 3D simulate robots motion on PP screen before and during execution of the real robot arm. Service staff can directly connect to the PP user interface for remote service purposes. Total programming pendant's weight was reduced to 730 grams which offers more convenient use by the operator. The new controller simplifies maintenance by offering preventive maintenance information and powerful software tools for analysis and notification.

KEY BENEFITS

- Compact, fast and flexible
- Global standardization (no transformer required)
- High path accuracy
- High efficiency

Optimal Industrial Design

- Volume: 125 liters



Programming Pendant (PHG) – ergonomical, light and easy





Specifications controller YRC1000	
Dimensions	598 (W) x 490 (H) x 427 (D) mm (125 l without protrusion parts)
Mass	70 kg max. (possible to control three external axes)
Cooling system	Indirect cooling
Ambient temperature	During operation: 0°C to +45°C / During storage: -10°C to +60°C
Relative humidity	90 % max. (non-condensing)
Power supply	Three-phase 380–440 VAC (+10 %, -15 %), 50/60 Hz (±2 %)
Digital I/Os	Specialized signals: 19 inputs and 6 outputs / General signals: 40 inputs and 40 outputs
Programming capacity	JOB: 200,000 steps, 10,000 instructions / CIO ladder: 20,000 steps
Expansion slots	2 x PCIe or 2 x PCI or 1 x PCI/1 x PCIe
LAN (Connection to host)	2 (10BASE-T/100BASE-TX)
Interface	RS-232C/RS422: 1 ch (used by switching)

Common Size for use
in Japan, Asia, Europe, and the U.S.



Improved Programming Pendant



Specifications programming pendant	
Dimensions	152 (W) x 299 (H) x 53 (D) mm
Mass	0.730 kg
Material	Reinforced plastics
Operation device	Select keys, axis keys, numerical/application keys, mode selector switch with keys (mode: teach, play, and remote), emergency stop button, enable switch, SD card interface device, USB port (1 port)
Display	5.7-inch color LCD, touch panel 640 x 480 pixels
IEC protection class	IP54



MOTOMAN GP8



reddot award 2018
winner



MOTOMAN YRC1000micro

Industrial Robot Controller
for small MOTOMAN Robots

The MOTOMAN YRC1000micro controller is a controller for small MOTOMAN robots. It provides high performance robot control in a small footprint cabinet. Its performance and functions are optimized for Pick & Place and assembly applications.

Besides the typical YASKAWA functionality, the MOTOMAN YRC1000micro controller includes easy connections to peripheral devices and new high speed and high precision motion control.

It is compatible with the optional "Functional Safety", which monitors motion range and speed limitations.



KEY BENEFITS

- Compact and lightweight
- High performance
- New motion control
- Minimum installation space
- Easy connections to peripheral devices
- Compatible with "Functional Safety"

Industrial Robot Controller

YRC1000micro

for small MOTOMAN Robots

Specifications Controller YRC1000micro	
Configuration	Open structure
Dimensions	425 (W) x 125 (H) x 280 (D) mm – excluding protrusions
Mass	10.5 kg (without top mount box)
Cooling system	Direct cooling
Ambient temperature	During operation: 0°C to +40°C During storage: -10°C to +60°C
Relative humidity	90 % max. (non-condensing)
Power supply	Single-phase 200/230 VAC (+10 to -15%), 50/60 Hz (±2 %) ¹ ; three-phase 220/220 VAC (+10 to -15 %), 50/60 Hz (±2 %)
Digital I/Os	External IO (hardware, standard max): 8 inputs / 8 outputs (transistor 100 mA; number of points cannot be expanded) ² Standard signal allocation: General Purpose IO: 1 input / 1 output Specific IO: 7 inputs / 7 outputs
Programming capacity	JOB: 200,000 steps, 10,000 instructions; CIO ladder: 1,500 steps
Expansion slots	PCI express, 2 slots
LAN (Connections to host)	1 (10BASE-T/100BASE-TX)
Safety category	3, PLd

¹ Manipulators operated by single-phase power supply: MOTOMAN GP7, GP8, MotoMINI.

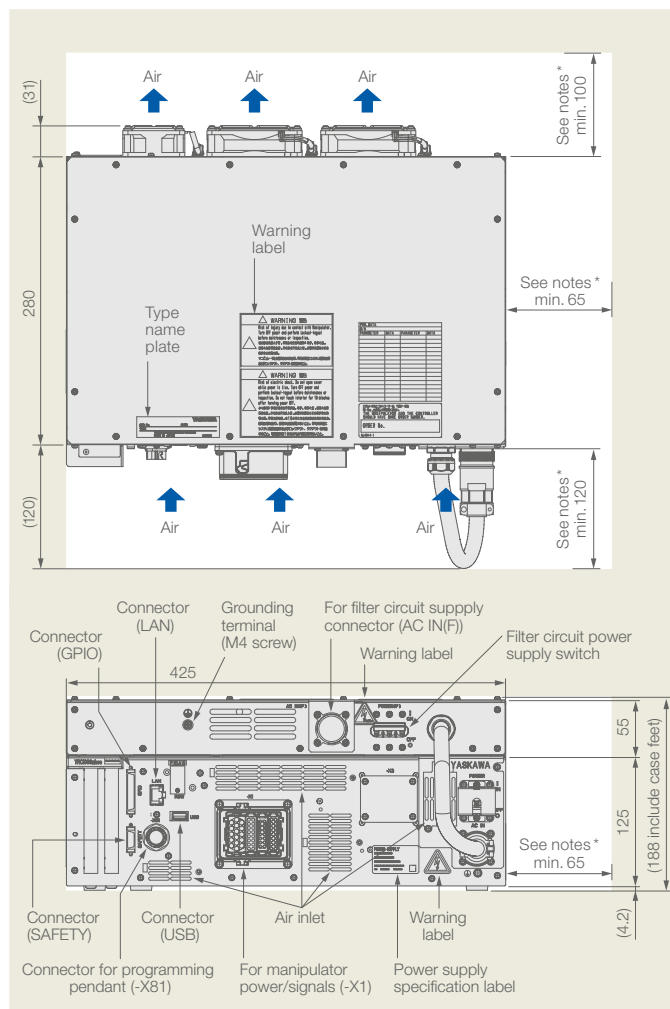
² If it is necessary to expand the number of points, a filled bus board is required

Specifications programming pendant	
Dimensions	152 (W) x 299 (H) x 53 (D) mm
Mass	0.730 kg
Material	Reinforced plastics
Operation device	Select keys, axis keys, numerical/application keys, mode selector switch with keys (mode: teach, play, and remote), emergency stop button, enable switch, SD card interface device, USB port (1 port)
Display	5.7-inch color LCD, touch panel 640 x 480 pixels
IEC Protection class	IP54

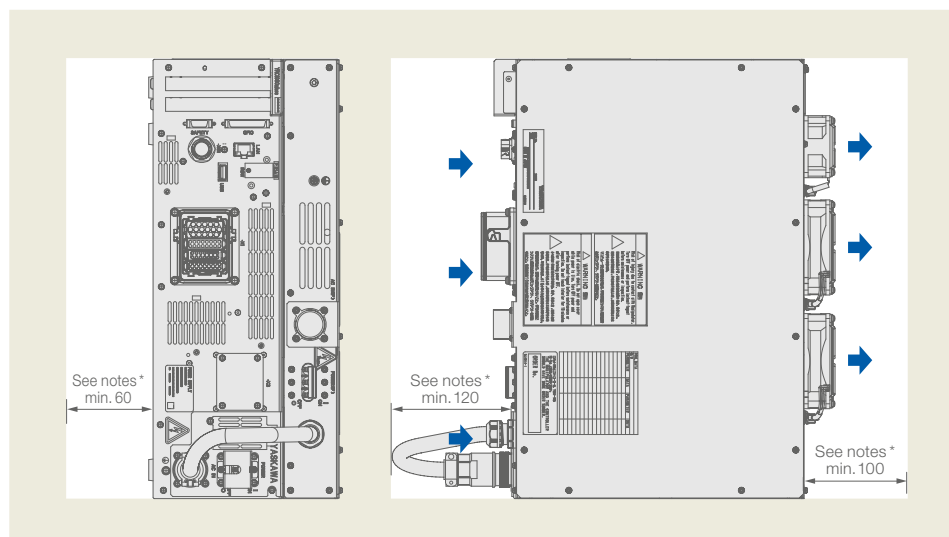
Programming Pendant (PHG) – ergonomical, light and easy



Horizontally mounted ***



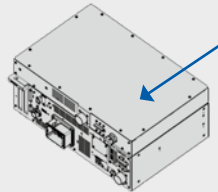
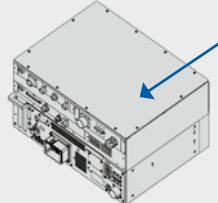
Vertically mounted ***

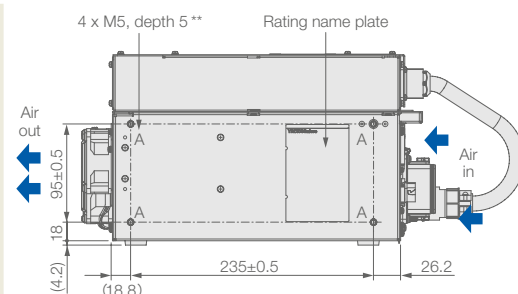


Optimal Industrial Design

- Volume: 21,5 l (GP7/8/12, MotoMini), 30 l (HC10DT)



Manipulator type		Region: Europa and Korea (EMC directive required)
Standard size: 425 (W) x 125 (H) x 280 (D) mm without additional boxes	GP7 GP8 GP12 MotoMINI	 Top mount box for CE noise filter: 55 (H) x 280 (D) mm Total litres: 21.5 l
	HC10	 Top mount box for CE noise filter PFL-Card: 125 (H) x 280 (D) mm Total litres: 30 l



* Secure the dimensions stated in the placement space chart for cooling and maintenance.

** Use eight holes marked with the symbol "A" to fix the controller on the floor with fixing jigs and anchor bolts. When fixing the rack, use A hole (8 places).

*** Values refer to version for GP7, GP8, GP12 und MotoMini.

MOTOMAN GP-series

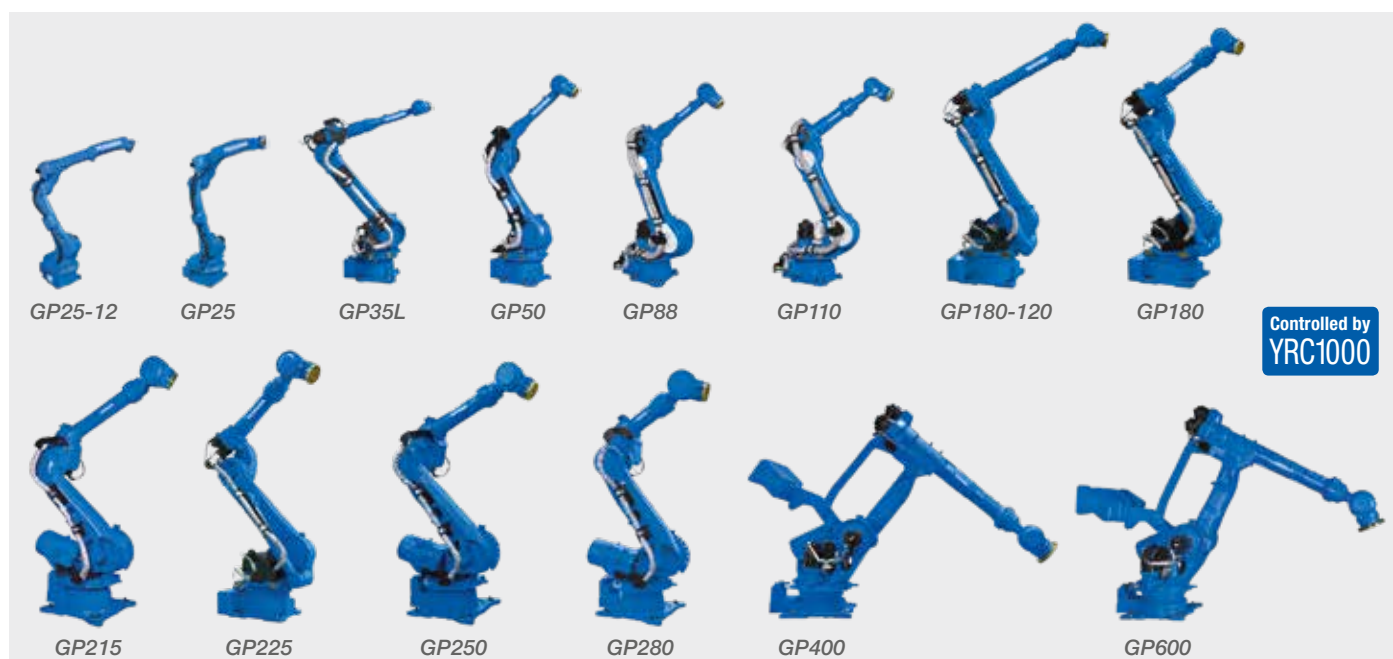
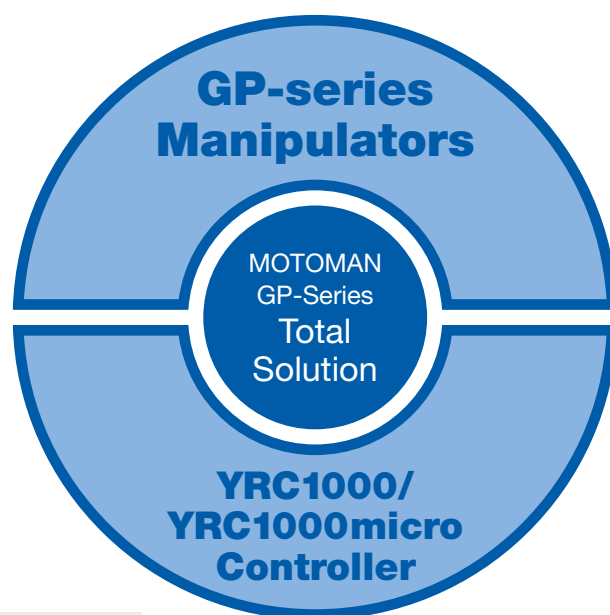
Robot System Solutions MOTOMAN GP-series

Find smart solutions for production site issues with YASKAWA's cutting-edge robot systems.



YASKAWA has the Answer!

We can meet customer's diversified needs with a variety of functions and components.

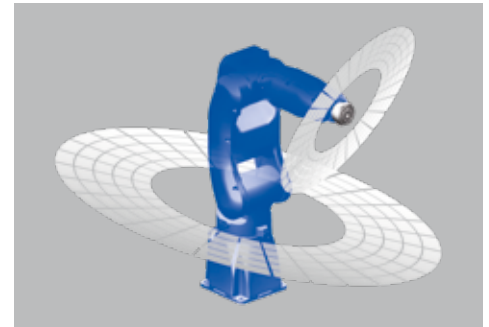


GP7 and GP8 – Compact and High Speed

Increase Productivity

Highest payloads, speeds and wrist allowable moment in its class

- A variety of workpieces can be transferred and different grippers can be mounted with 7-kg and 8-kg payloads and 38 % greater allowable moment
- Speeds of all axes have been increased by 39 % (max)
- Acceleration/deceleration control has been improved to achieve maximum reduction of acceleration/deceleration times for all robot postures



Reduced interference radius when S-axis is turning



Former model MH5(L)S II
Interference radius: 182 mm



New model GP7 and GP8
Interference radius: 140 mm

Reduced interference radius when the wrist is turning



Former model (MH5S II): 73 mm
New model (GP7 and GP8): 67 mm

Make Equipment compact

Slim and easy-to-use structure

- Slim robot body requires minimum installation space (minimizes L-U axis offset)
- The manipulator cable can be connected at the bottom section, which reduces interference with walls and requires far less installation space when compared with cable connections on the side of the robot
- Increased maximum reach and horizontal reach enables robots to operate in wider work areas
- The slim, straight, and symmetrical arm design minimize interference with peripheral devices even in small spaces



Manipulator cable connection on the side and bottom (optional) of the robot

Improve efficiency in Installation, Operation and Maintenance of Equipment

Easy set-up

- Only one cable is required, which reduces setup time

High environmental performance

- Its structure can resist dust and coolants due to its IP67 standard protection class

Easy-to-clean design

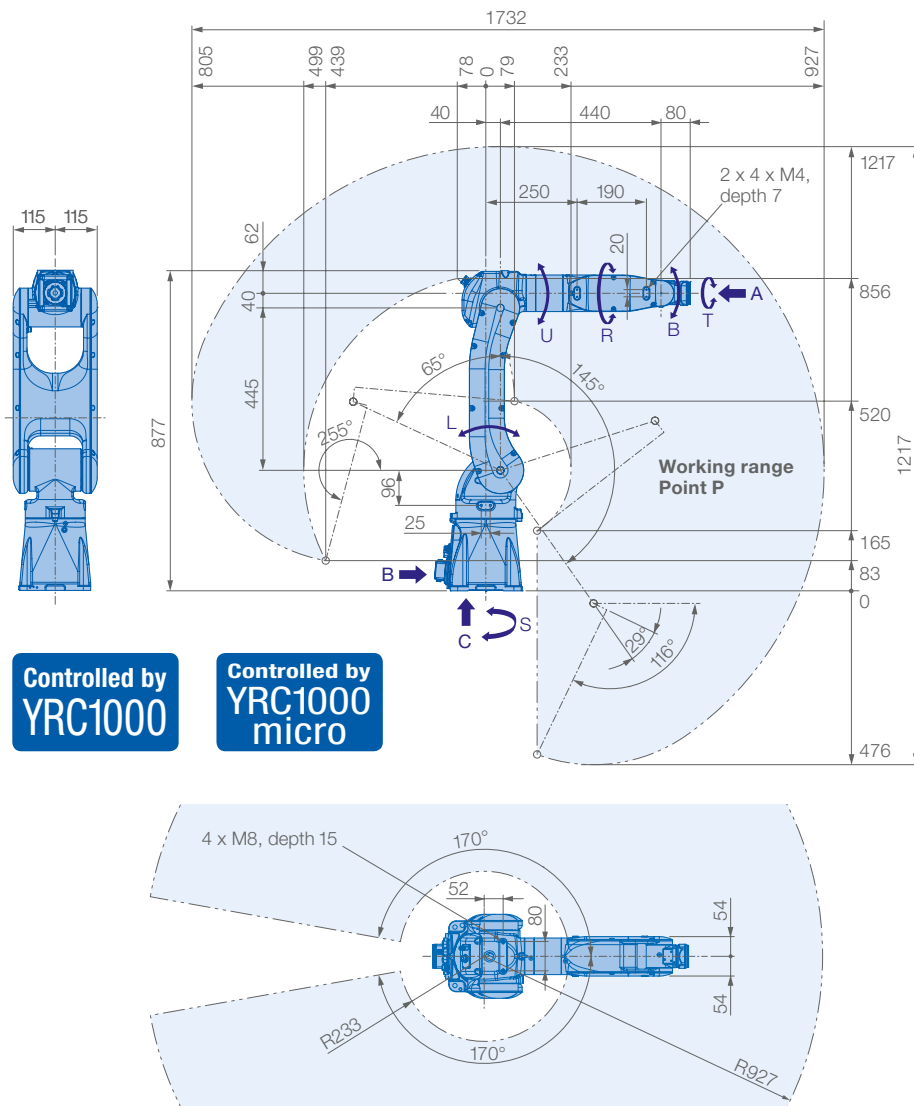
- Robot surface is designed to prevent adherence of dust

Easy maintenance

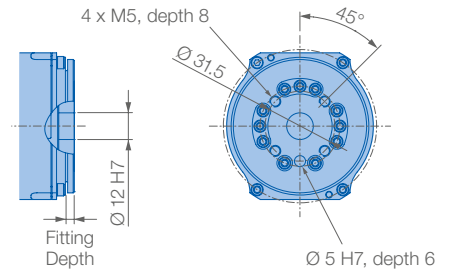
- Data saving feature enables to replace the wire harness in the robot without having to connect to a battery
- Productivity improvement due to reduction in number of cables & connectors



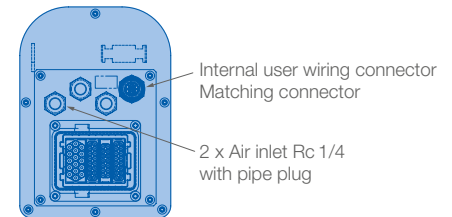
Rounded shape and smooth surface



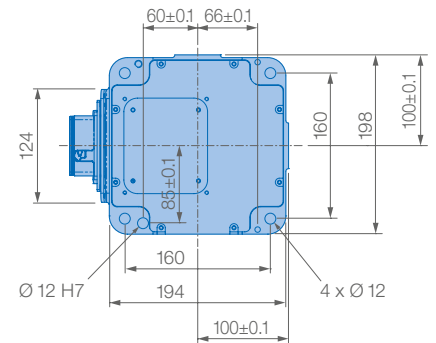
View A



View B



View C



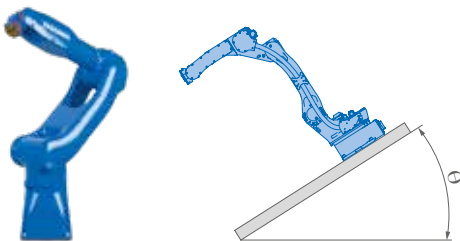
Mounting options: Floor, ceiling, wall, tilt*

Protection class: IP67

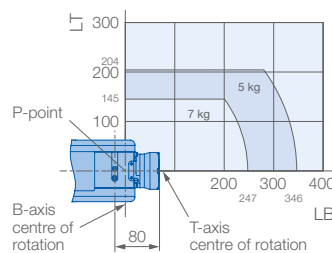
* tilt with condition of angle – see table below

Prevent interaction of the robot with:

- Corrosive gases, liquids or explosive gases
- Exposure to water, oil or dust
- Excessive electrical noise (plasma)



Allowable wrist load

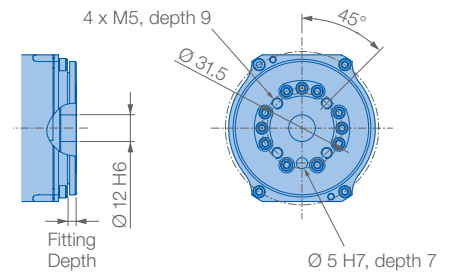


Robot installation angle θ [deg.]	S-axis operating range [deg.]
$0 \leq \theta \leq 30$	± 170 degrees or less (no limit)
$30 < \theta \leq 35$	± 60 degrees or less
$35 < \theta \leq 45$	± 45 degrees or less
$45 < \theta$	± 30 degrees or less

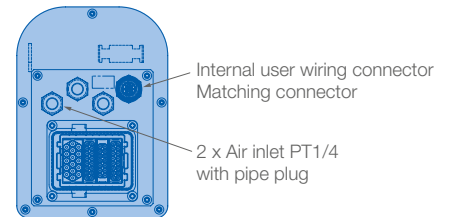
Specifications GP7

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m ²]	Controlled axes	
S	± 170	375	–	–	Max. payload [kg]	6
L	$+145/-65$	315	–	–	Repeatability [mm]	7
U	$+255/-116$	410	–	–	Max. working range R [mm]	$\pm 0.03^*$
R	± 190	550	17	0.5	Temperature [°C]	927
B	± 135	550	17	0.5	Humidity [%]	0 to +45
T	± 360	1000	10	0.2	Weight [kg]	20 – 80
					Power supply, average [KVA]	34
						1**

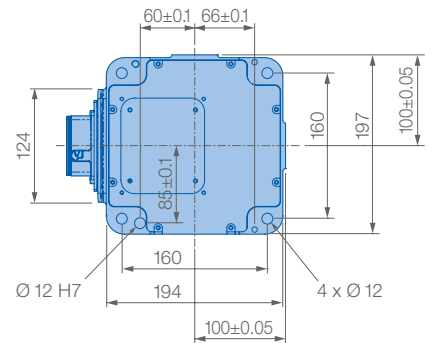
View A



View B



View C

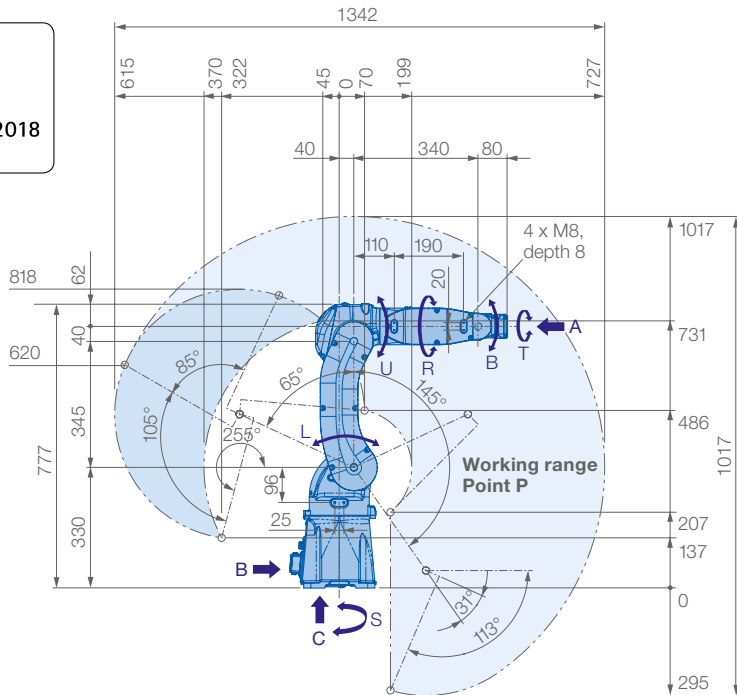
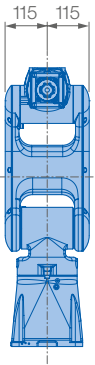


Mounting options: Floor, ceiling, wall, tilt*

Protection class: IP67

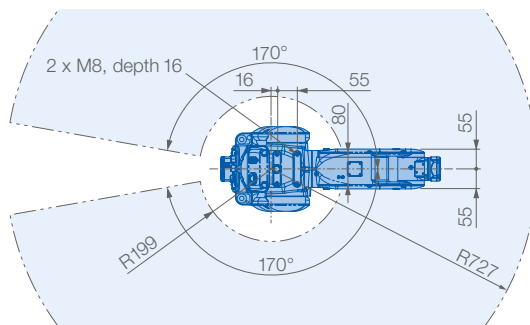
* tilt with condition of angle – see table below

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



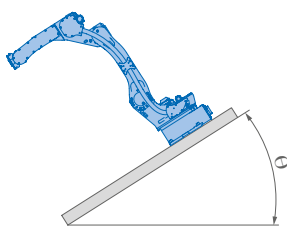
Controlled by
YRC1000

Controlled by
YRC1000
micro

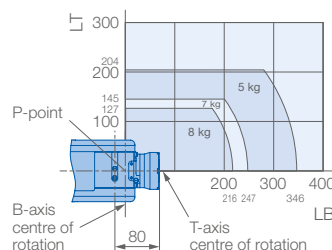


Prevent interaction of the robot with:

- Corrosive gases, liquids or explosive gases
- Exposure to water, oil or dust
- Excessive electrical noise (plasma)



Allowable wrist load



Specifications GP8

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	
S	± 170	455	–	–	Max. payload [kg]	6
L	$+145/-65$	385	–	–	Repeatability [mm]	8
U	$+255/-113$	520	–	–	Max. working range R [mm]	$\pm 0.02^*$
R	± 190	550	17	0.5	Temperature [°C]	727
B	± 135	550	17	0.5	Humidity [%]	0 to +45
T	± 360	1000	10	0.2	Weight [kg]	20 – 80
					Power supply, average [KVA]	32
						1**

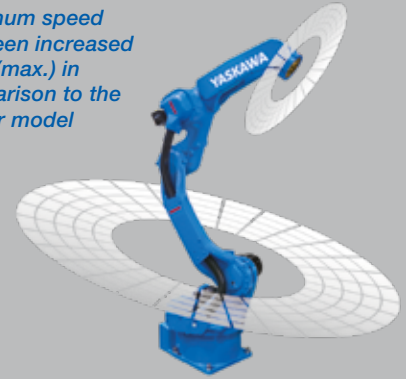
GP12, GP25 and GP25-12

Increase Productivity

Highest payloads, speeds and wrist allowable moment in its class

- The productivity of the customer's equipment can be improved with the highest speed in the 12 and 25 kg payload class
- Acceleration/deceleration control has been improved to achieve maximum reduction of acceleration/deceleration times for all robot postures

Maximum speed has been increased 15 % (max.) in comparison to the former model



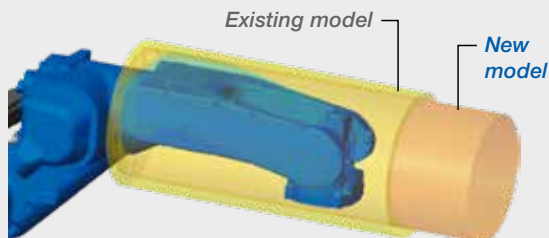
Hollow arm



50 mm dia.



50 mm dia.



Minimized interference radius of the wrist
 MH12/MH24 (earlier models): 136/147 mm
 GP12/GP25 (new models): 120/138 mm

Make Equipment compact

Easy-to-use structure

- The hollow arm structure to store cables reduces operation restriction due to cable interference, simplifies teaching and eliminates cable disconnection caused by interference

Best accessibility in its class

- The slim arm design minimizes interference with peripheral devices even in small spaces

Improve Efficiency in Installation, Operation and Maintenance of Equipment

Easy set-up

- Only one cable is required, which reduces setup time

Wrist structure with great environment resistance

- Wrist structure of R, B and T axes are IP67-compliant as a standard specification
- Wrist structure of S, L and U axes are IP54-compliant (option IP65)

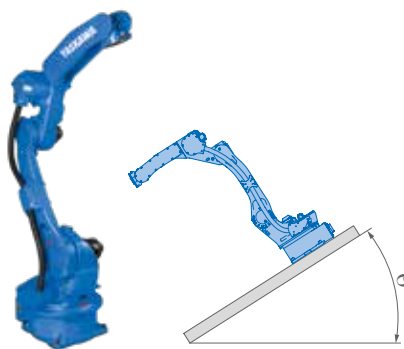
Easy maintenance

- Data saving feature enables to replace the wire harness in the robot without having to connect to a battery
- Productivity improvement due to reduction in number of cables & connectors





- Corrosive gases, liquids or explosive gases
- Exposure to water, oil or dust
- Excessive electrical noise (plasma)



Technical drawing of a square flange. The drawing includes a side view on the left and a top view on the right. The side view shows a flange with a central bore of diameter $\varnothing 50$ and a total thickness of $\varnothing 100$. The top view shows a square flange with a side length of 128. The central bore has a diameter of $\varnothing 56$. There are four mounting holes, each with a diameter of $\varnothing 4$ H7 and a depth of 6. The mounting holes are spaced 8 mm apart from the center. The flange has a chamfered edge with a 22.5° angle. The flange is made of a material with a hardness of $\varnothing 62$ H6.

Internal user wiring connector
Media connector
1 x Air

Technical drawing of the front view of a pump housing. The drawing shows a blue-colored pump housing with a central circular opening. Key dimensions are labeled: overall width 316, distance from left edge to center 200, overall height 375, distance from top edge to center 200 ± 0.1 , distance from bottom edge to center 292, distance from center to right edge 170 ± 0.1 , distance from center to bottom edge 60, distance from center to top edge 335, distance from center to right edge 335, distance from center to bottom edge 60, distance from center to top edge 375, distance from center to right edge 260 ± 0.1 , and distance from center to bottom edge 260 ± 0.1 . There are four mounting holes labeled "4 x Ø 18" and two cooling holes labeled "2 x Ø 12 H7".

* tilt with condition of angle – see table below

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

Specifications GP25						
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	6
					Max. payload [kg]	25
S	±180	210	–	–	Repeatability [mm]	±0.06*
L	+155/–105	210	–	–	Max. working range R [mm]	1730
U	+160/–86	265	–	–	Temperature [°C]	0 to +45
R	±200	420	52	2.3	Humidity [%]	20 – 80
B	±150	420	52	2.3	Weight [kg]	250
T	±455	885	32	1.2	Power supply, average [KVA]	2,0**

All dimensions in mm



MOTOMAN GP35L

Handling & General Applications
with the GP-series

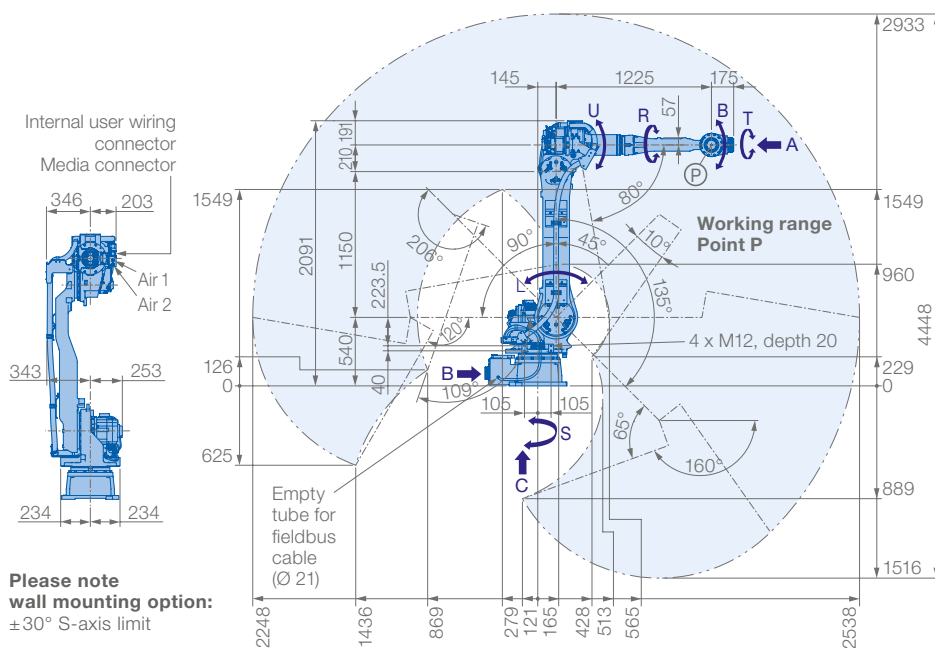


The MOTOMAN GP35L is a dynamic, high-speed robot featuring an extended reach for large parts. It offers superior performance in laser welding, coating, dispensing, gluing, material cutting and material handling applications.

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
- Protection class IP54/67 as standard

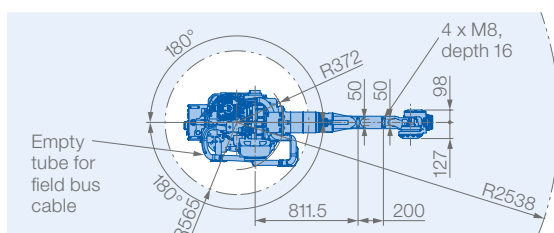
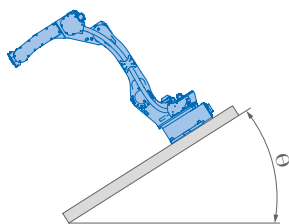
Controlled by
YRC1000



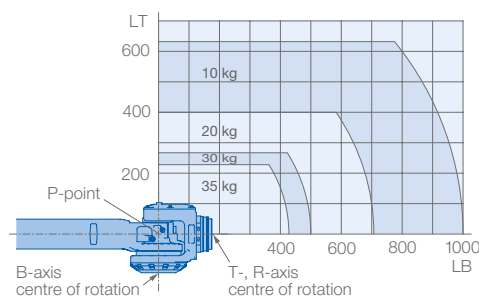
Please note wall mounting option:
±30° S-axis limit

Please note ceiling mounting option:
Please notice working range of B-axis

Please note tilted robot:
0°–90° limitation of S-axis, details on request

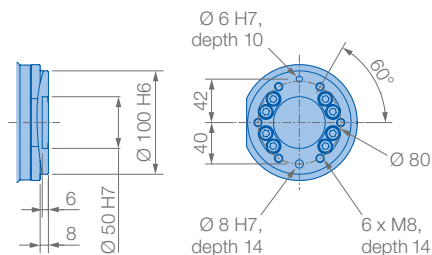


Allowable wrist load

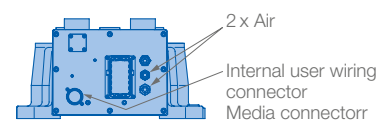


Robot installation angle θ [deg.]	S-axis operating range [deg.]
$0 \leq \theta \leq 30$	±180 (Standard)
$30 < \theta \leq 35$	±60
$35 < \theta \leq 45$	±45
$45 < \theta$	±45

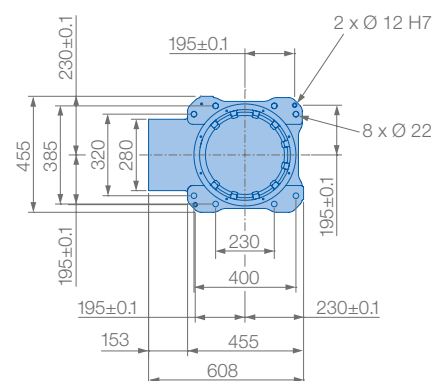
View A



View B



View C



Mounting options: Floor, ceiling, wall, tilt*

Protection class: IP54/67

* tilt with condition of angle – see table left side

Wrist + U-arm in front	Up to 35 kg for attaching load mass including wrist load
U-arm behind	Up to 10 kg, 49 N · m (5 kgf · m) max. for increased moment amount of upper arm (floor-, ceiling-mounted type only)
S-axis below	Up to 30 kg (floor-, ceiling-mounted type only)

Specifications GP35L

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	
S	±180	180	–	–	Max. payload [kg]	6
L	+135/–90	140	–	–	Repeatability [mm]	±0.07
U	+206/–80	178	–	–	Max. working range R [mm]	2538
R	±360	250	147	10	Temperature [°C]	0 to +45
B	±125	250	147	10	Humidity [%]	20 – 80
T	±360	360	78	4	Weight [kg]	600
					Power supply, average [KVA]	4.0

MOTOMAN GP50

Handling & General Applications
with the GP-series



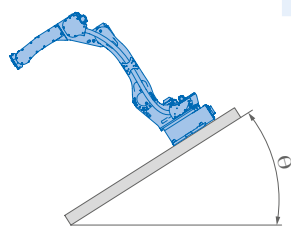
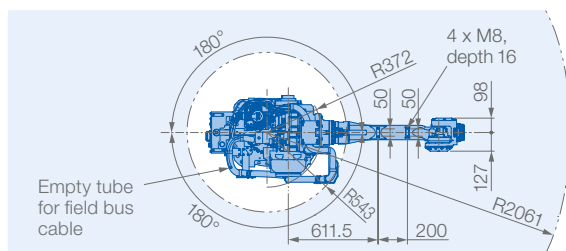
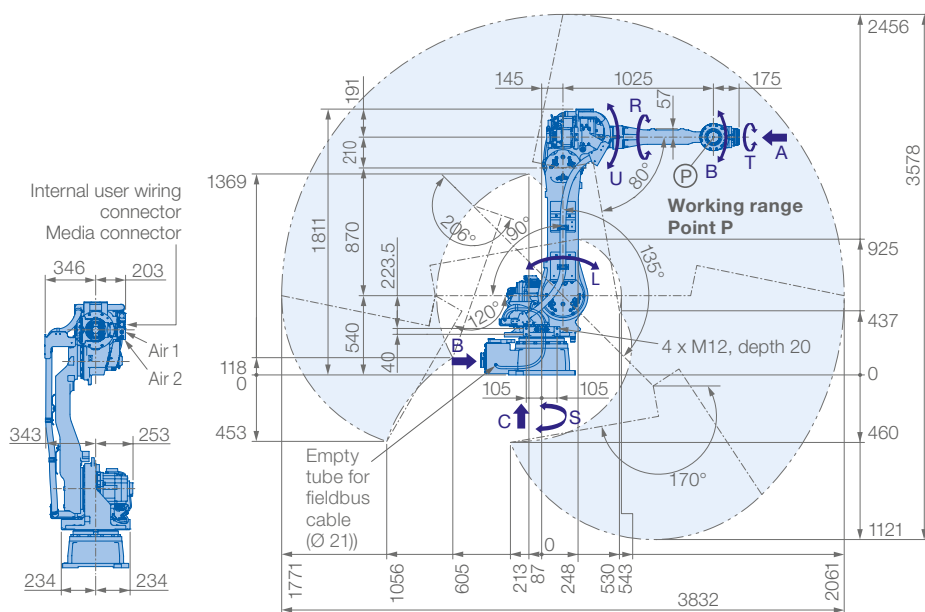
The MOTOMAN GP50 is a versatile, high speed 6-axis robot offering superior performance in material handling, machine tending, processing and dispensing applications.

Due to its compact design, the GP50 can be placed close to machines for loading and unloading of parts.

KEY BENEFITS

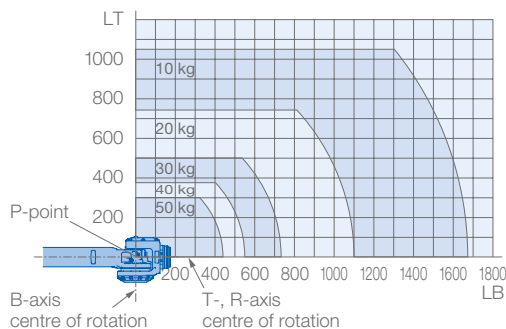
- Fast, flexible and reliable
- Ideal for a variety of applications, multi-purpose robot
- Robot with sleek design that requires minimal installation space
- 50 kg payload

Controlled by
YRC1000

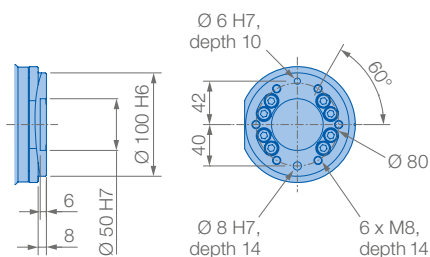


Robot installation angle θ [deg.]	S-axis operating range [deg.]
0 ≤ θ ≤ 30	±180 (Standard)
30 < θ ≤ 35	±60
35 < θ ≤ 45	±45
45 < θ	±30

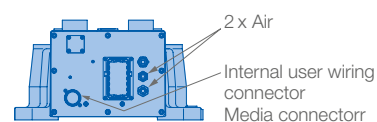
Allowable wrist load



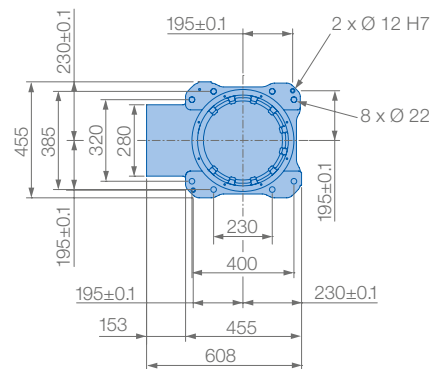
View A



View B



View C



Mounting options: Floor, ceiling, wall, tilt*

Please notice wall mounting option:
±30° S-axis limit

Please notice ceiling mounting option:
Please notice working range of B-axis

Please notice tilted robot:
0°–90° limitation of S-axis, details on request

Protection class: IP54/67

Please notice: Just valid for body/wrist, connector base not protected

*tilt with condition of angle – see table left side

Specifications GP50

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	
S	±180	180	–	–	Max. payload [kg]	6
L	+135/–90	178	–	–	Repeatability [mm]	±0.07
U	+206/–80	178	–	–	Max. working range R [mm]	2061
R	±360	250	216	28	Temperature [°C]	0 to +45
B	±125	250	216	28	Humidity [%]	20 – 80
T	±360	360	147	11	Weight [kg]	570
					Power supply, average [KVA]	4.0

MOTOMAN GP88

Handling & General Applications
with the GP-series



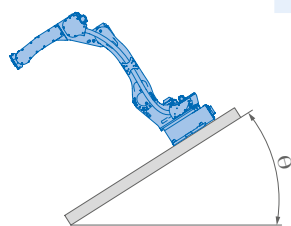
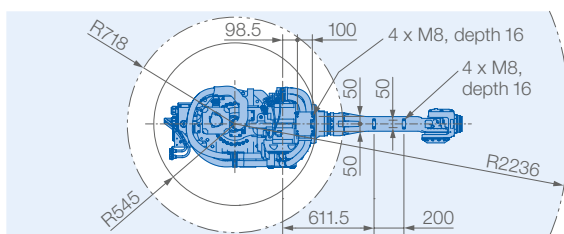
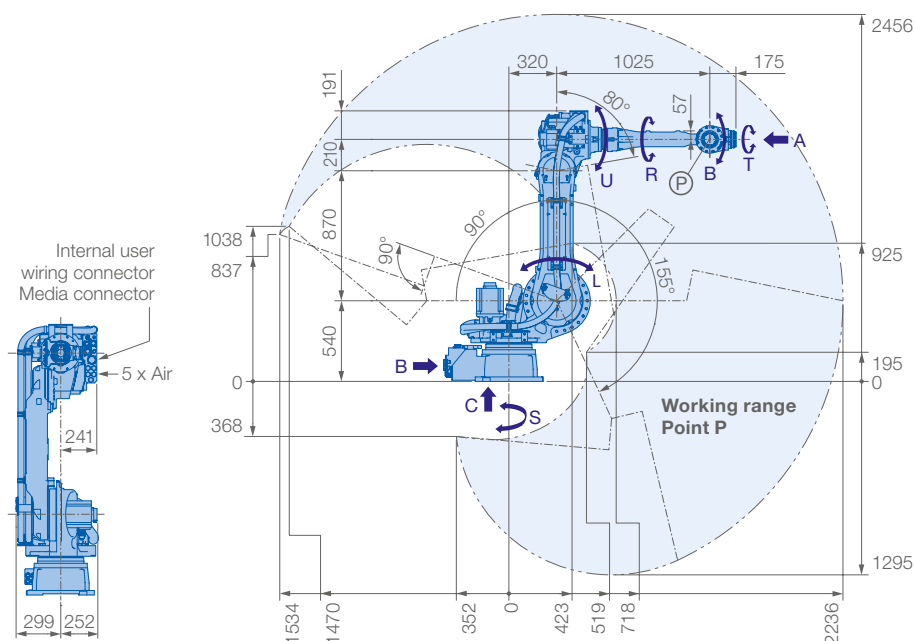
The MOTOMAN GP88 is a versatile high speed 6-axis robot, providing a high payload of up to 88 kg. It offers superior performance in material handling, machine tending, processing and dispensing applications.

Despite its slim body, the MOTOMAN GP88 features a wide work envelope with a small interference radius. Thereby it can be placed close to machines for loading and unloading of parts, which reduces the required floor space to a minimum.

KEY BENEFITS

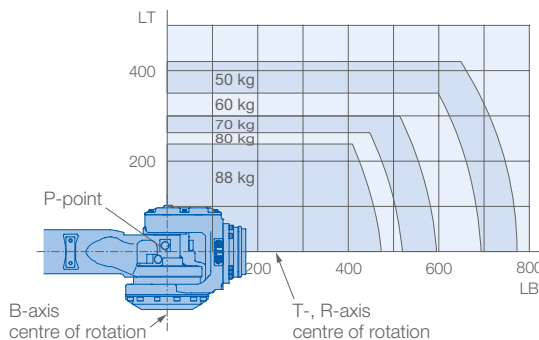
- Flexible and powerful (payload of 88 kg)
- High axis speeds
- Improved wrist ratings provide higher handling capacity
- Small interference radius reduces floor space requirements

Controlled by
YRC1000

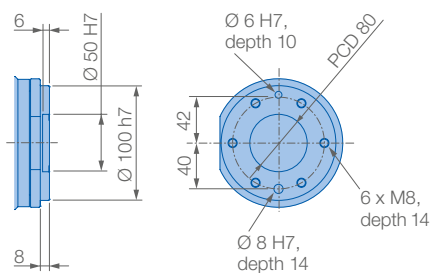


Robot installation angle θ [deg.]	S-axis operating range [deg.]
0 ≤ θ ≤ 30	±180 (Standard)
30 < θ ≤ 35	±60
35 < θ ≤ 45	±45
45 < θ	±30

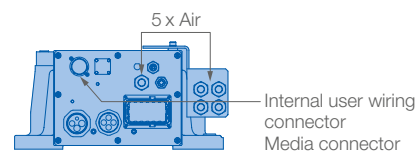
Allowable wrist load



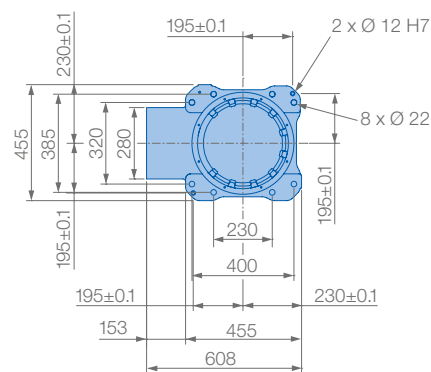
View A



View B



View C



Mounting options: Floor, ceiling, wall, tilt*

Protection class: IP54/67

Please notice: Just valid for body/wrist, connector base not protected

* tilt with condition of angle – see table left side

Specifications GP88

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	6
S	±180	170	–	–	Max. payload [kg]	88
L	+155/–90	140	–	–	Repeatability [mm]	±0.07
U	+90/–80	160	–	–	Max. working range R [mm]	2236
R	±360	230	408	30	Temperature [°C]	0 to +45
B	±125	230	408	30	Humidity [%]	20 – 80
T	±360	350	206	11	Weight [kg]	630
					Power supply, average [KVA]	4.0

MOTOMAN GP110

Handling & General Applications
with the GP-series



The 6-axis MOTOMAN GP110 is a versatile, high speed robot offering superior performance for a variety of applications, for example material handling, machine and press tending.

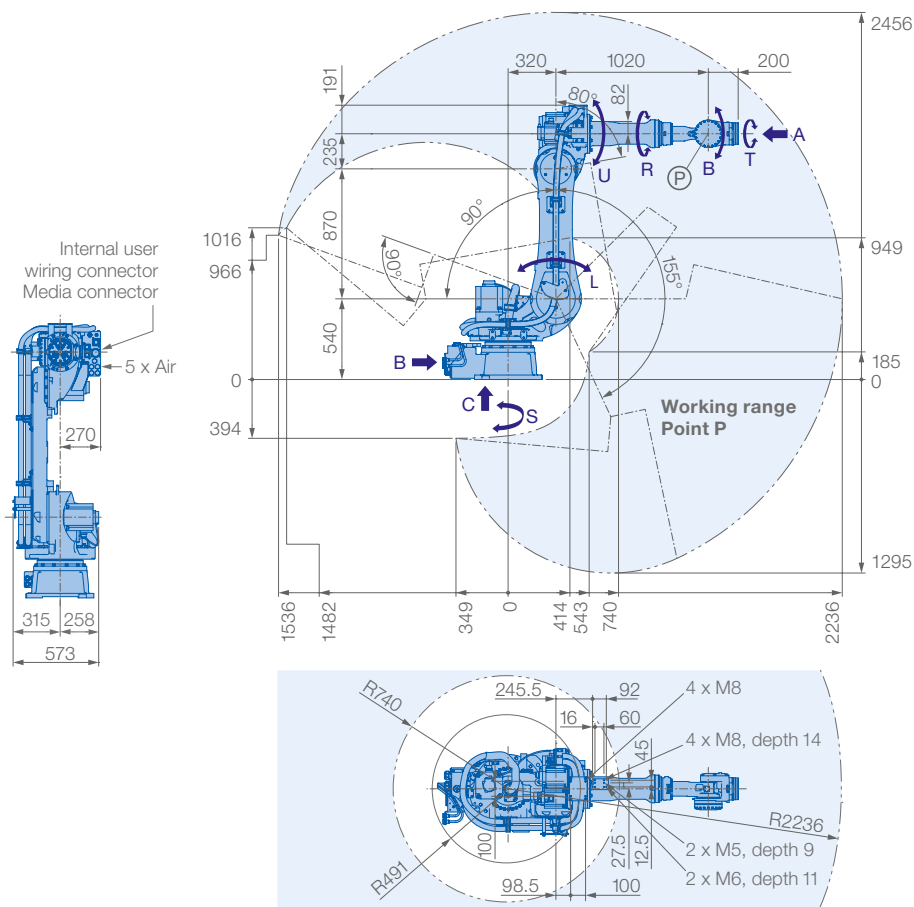
Despite of providing a wide motion range and high payload of 110 kg, the MOTOMAN GP110 has a streamlined design, which allows extremely close positioning of several robots. Also the slim cable inlet reduces the robots width, therefore valuable floor space can be saved.

The MOTOMAN GP110 is available with the PLd Category 3 Functional Safety Unit (FSU).

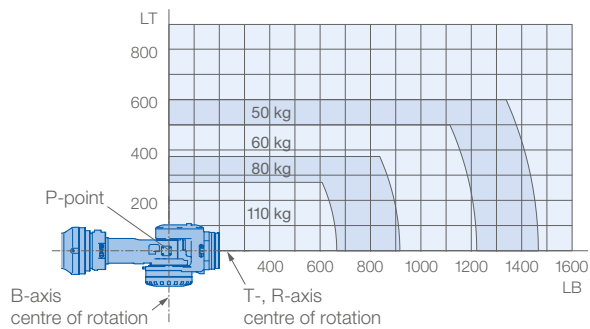
KEY BENEFITS

- Fast and flexible
- Wide motion range: 2236 mm
- High payload: 110 kg
- Compact design
- Slim cable inlet
- Enhanced safety functions

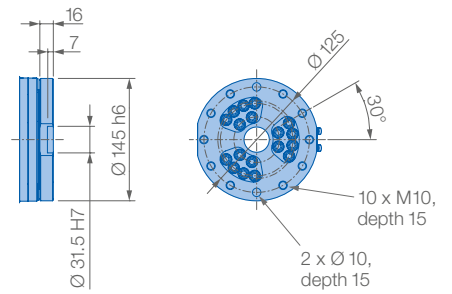
Controlled by
YRC1000



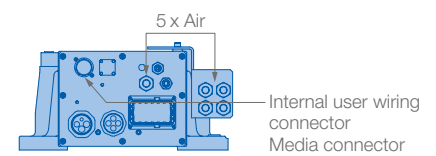
Allowable wrist load



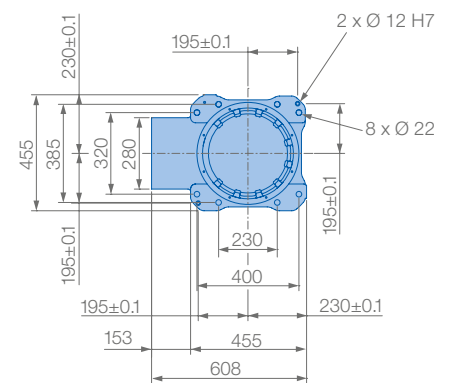
View A



View B



View C



Mounting options: Floor

Protection class: IP54/67

Specifications GP110

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m ²]	Controlled axes	6
S	±180	140	—	—	Max. payload [kg]	110
L	+155/−90	110	—	—	Repeatability [mm]	±0.07
U	+90/−80	130	—	—	Max. working range R [mm]	2236
R	±360	175	721	60	Temperature [°C]	0 to +45
B	±125	175	721	60	Humidity [%]	20 – 80
T	±360	255	294	33.7	Weight [kg]	660
					Power supply, average [KVA]	5.0

MOTOMAN GP180-120

Handling & General Applications
with the GP-series



This powerful six-axis handling robot features high speed motion which reduce cycle times.

High payload and increased moment and inertia ratings allows the MOTOMAN GP180-120 the handling of large and heavy payloads. Its streamlined upper arm design features a slim wrist profile and reduces robot width. This enables easier reach into confined spaces, improving application flexibility. Therefore the MOTOMAN GP180-120 can be mounted closer to machines and fixtures, making best use of valuable floor space.

Its cables and airlines are routed through the robot base to upper arm to increase cable life, enhance safety and reduce teaching time.

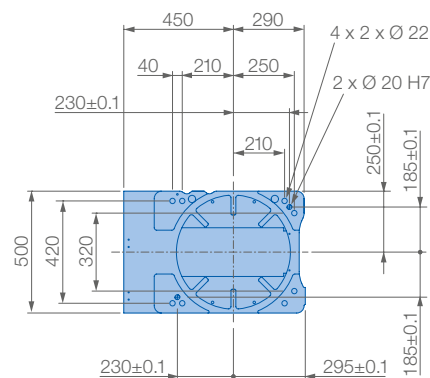
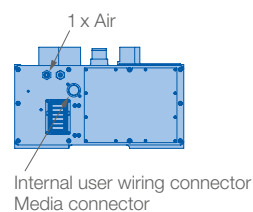
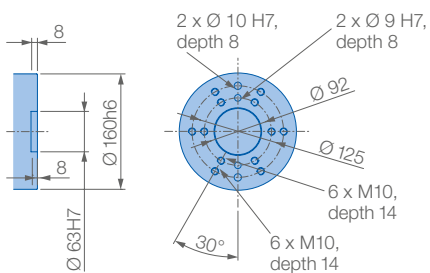
The cable installation tube in the base of the robot facilitates fieldbus routing to the robot upper arm and/or gripper. It is also pre-wired for servo gripper which allows a wider range of product handling.

The MOTOMAN GP180-120 has an IP67-rated wrist and an IP54 body standard.

KEY BENEFITS

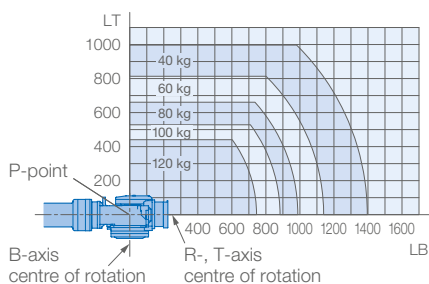
- Small footprint and minimal interferences
- High inertia rating enables handling of huge work pieces
- Reduced cycle times by optimal design and high axes speed
- Versatile use in various applications
- High density spacing and reaching into confined spaces

Controlled by
YRC1000



Mounting option: Floor
Protection class: IP54/67

Allowable wrist load



Specifications GP180-120						
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	6
					Max. payload [kg]	120
S	±180	125	–	–	Repeatability [mm]	±0.2
L	+76/–60	115	–	–	Max. working range R [mm]	3058
U	+90/–86	125	–	–	Temperature [°C]	0 to +45
R	±360	182	883	79	Humidity [%]	20 – 80
B	±130	175	883	79	Weight [kg]	1090
T	±360	265	520	40	Power supply, average [KVA]	5.0

MOTOMAN GP180

Handling & General Applications
with the GP-series



The 6-axis MOTOMAN GP180 is a versatile, high speed robot offering superior performance for a variety of applications, like material handling, machine and press tending.

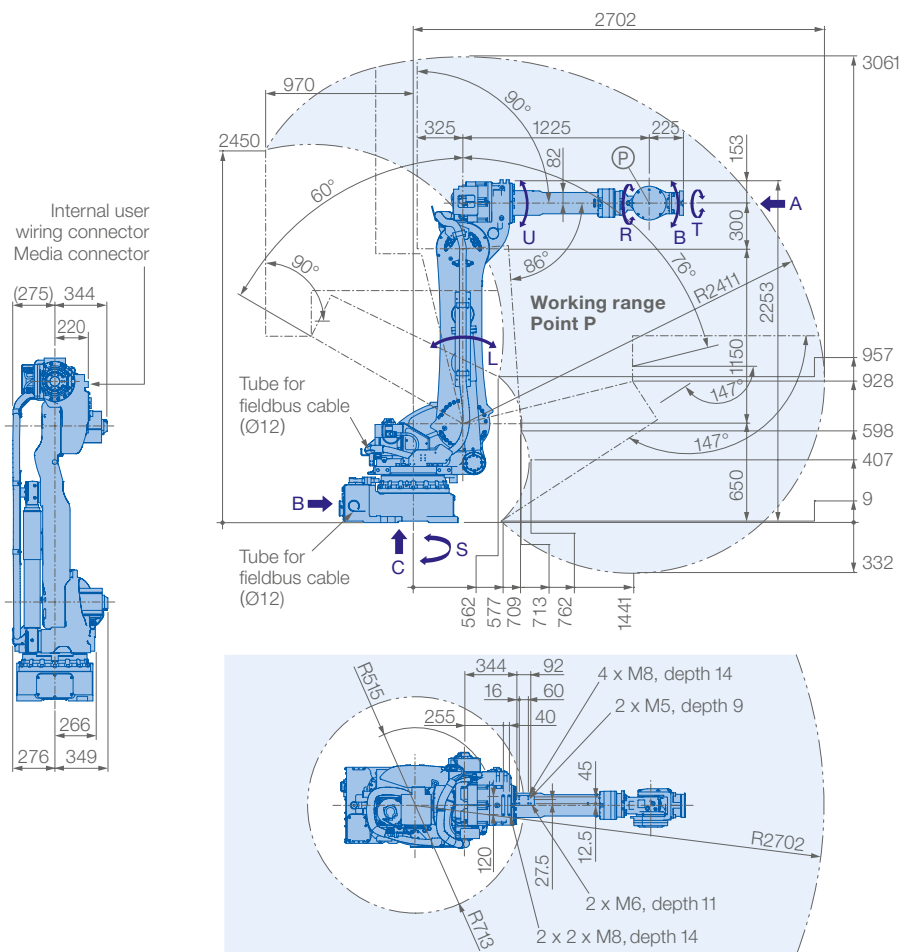
Despite of providing a high payload of 180 kg and the wide motion range of 2702 mm, the MOTOMAN GP180 was designed with a width of 625 mm, therefore valuable floor space can be saved.

With the higher axis operation speed and speed reducer rigidity, a special vibration control system was developed. By reducing cycle times, this system realises high increases in productivity.

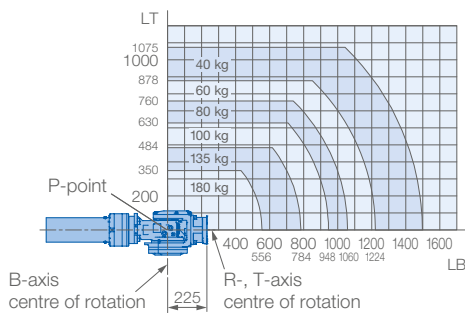
KEY BENEFITS

- Fast, flexible and powerful
- High payload: 180 kg
- Wide motion range: 2702 mm
- Maximum performance using minimal floor space

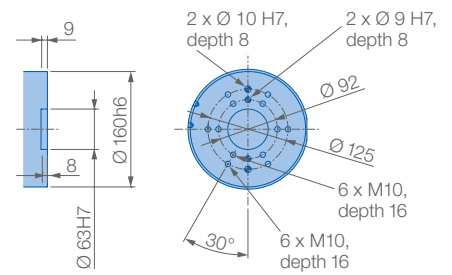
Controlled by
YRC1000



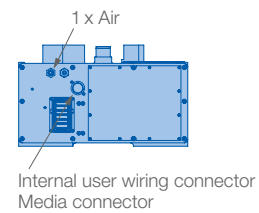
Allowable wrist load



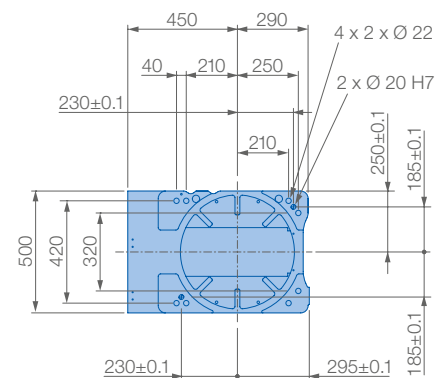
View A



View B



View C



Mounting option: Floor
Protection class: IP54/67

Specifications GP180					
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes
S	±180	125	—	—	6
L	+76/-60	115	—	—	Max. payload [kg]
U	+90/-86	125	—	—	Repeatability [mm]
R	±360	182	1000	90	Max. working range R [mm]
B	±130	175	1000	90	Temperature [°C]
T	±360	265	618	46.3	Humidity [%]
					Weight [kg]
					Power supply, average [KVA]

MOTOMAN GP215

Handling & General Applications
with the GP-series



The 6-axis MOTOMAN GP215 is a versatile, high speed robot offering superior performance for a variety of applications, like material handling, machine and press tending.

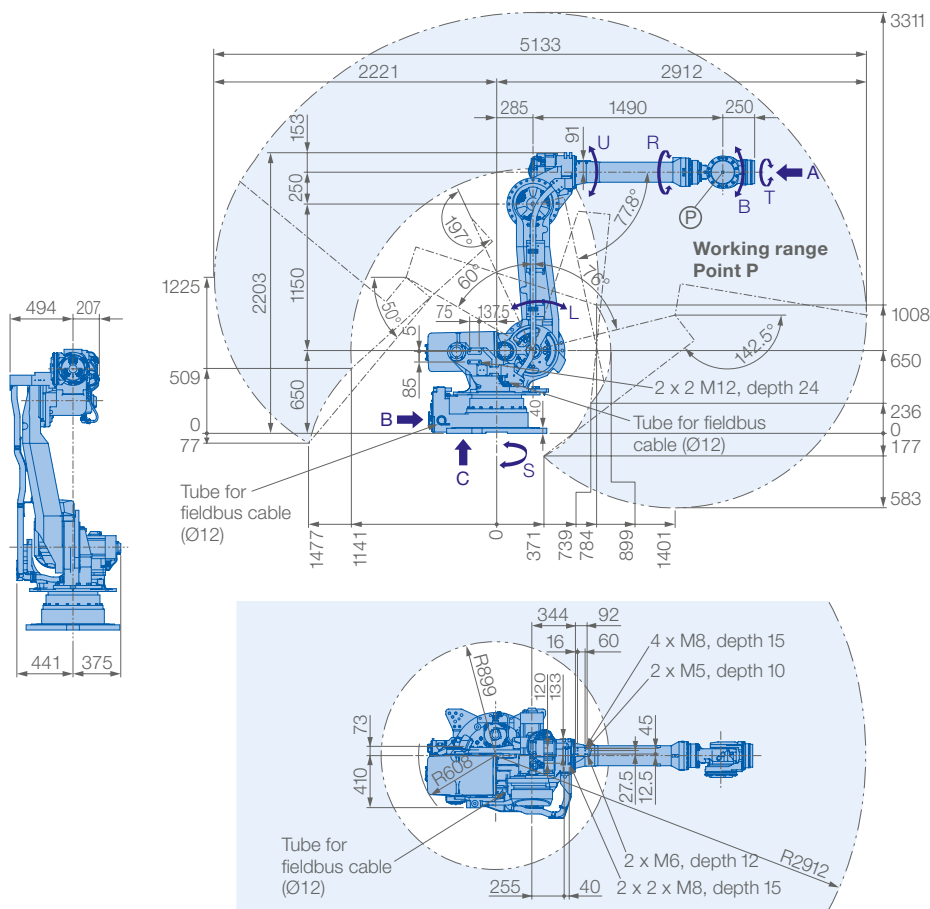
Despite of providing a high payload of 215 kg and the wide motion range of 2912 mm, the MOTOMAN GP215 was designed with a width of 816 mm, therefore valuable floor space can be saved.

The vibration control system uses higher axis operation speed and speed reducer rigidity to allow fast acceleration of short movements. By reducing cycle times, this system realises high increases in productivity.

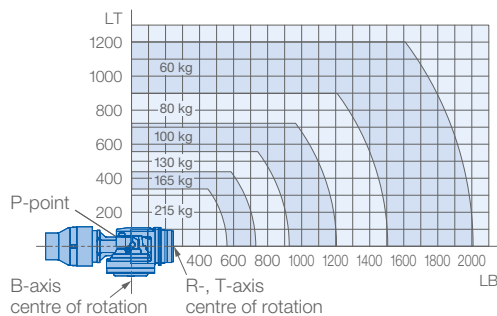
KEY BENEFITS

- Fast, flexible and powerful
- High payload: 215 kg
- Wide motion range: 2912 mm
- Maximum performance using minimal floor space

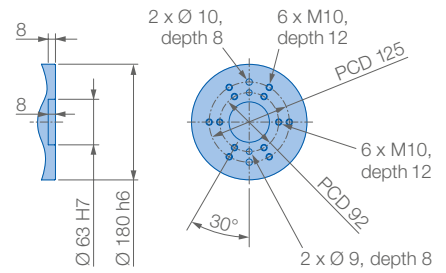
Controlled by
YRC1000



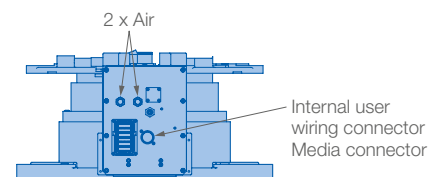
Allowable wrist load



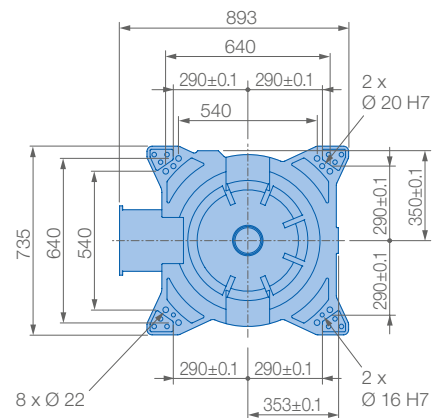
View A



View B



View C



Mounting option: Floor
Protection class: IP54/67

Specifications GP215

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m ²]	Controlled axes	6
S	±180	100	—	—	Max. payload [kg]	215
L	+76/−60	90	—	—	Repeatability [mm]	±0.2
U	+197/−77.8	97	—	—	Max. working range R [mm]	2912
R	±360	120	1176	317	Temperature [°C]	0 to +45
B	±125	120	1176	317	Humidity [%]	20 – 80
T	±360	190	710	200	Weight [kg]	1340
					Power supply, average [KVA]	5.0

MOTOMAN GP225

Handling & General Applications
with the GP-series



The 6-axis MOTOMAN MH225 is a versatile, high speed robot offering superior performance for a variety of applications, like material handling, machine and press tending.

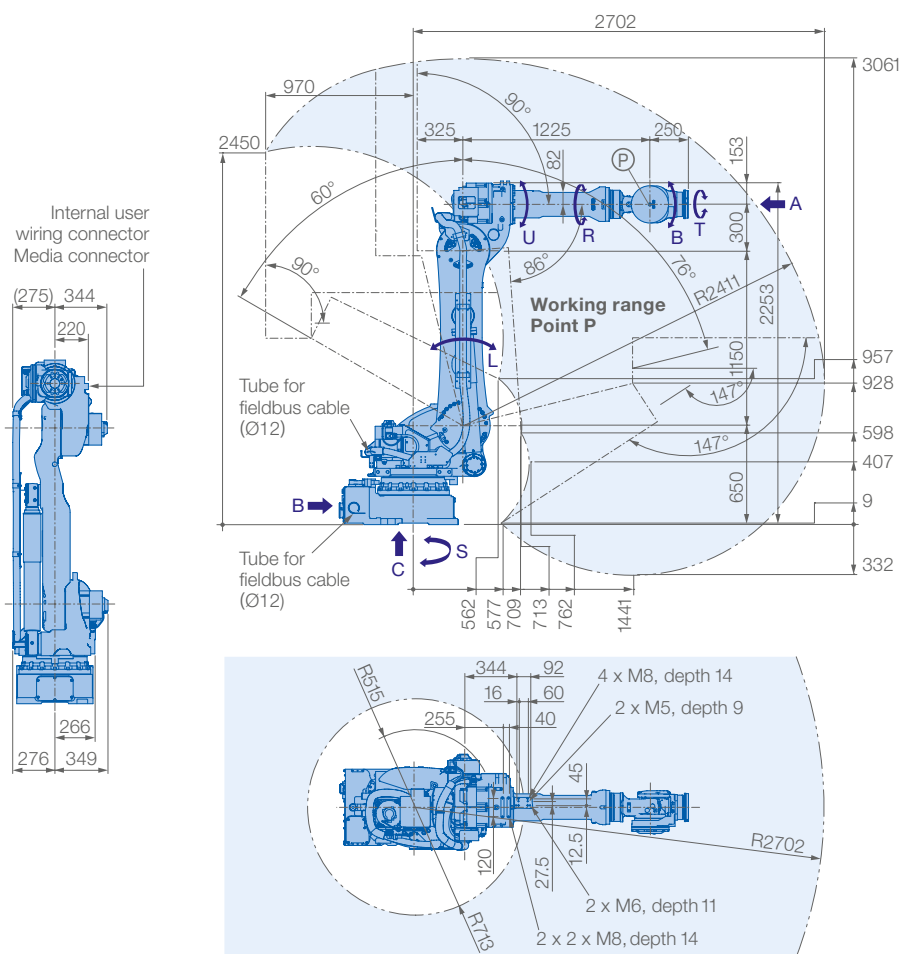
Despite of providing a high payload of 225 kg and the wide motion range of 2702 mm, the MOTOMAN GP225 was designed with a width of 625 mm, therefore valuable floor space can be saved.

With the higher axis operation speed and speed reducer rigidity, a special vibration control system was developed. By reducing cycle times, this system realises high increases in productivity.

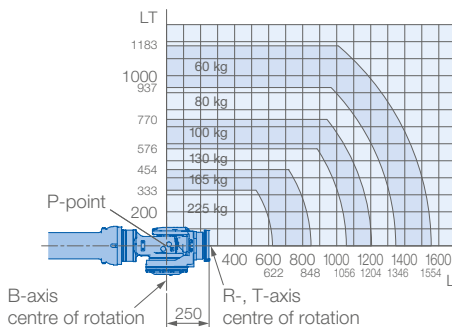
KEY BENEFITS

- Fast, flexible and powerful
- High payload: 225 kg
- Wide motion range: 2702 mm
- Maximum performance using minimal floor space

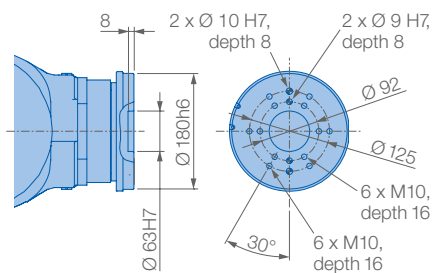
Controlled by
YRC1000



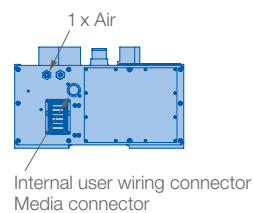
Allowable wrist load



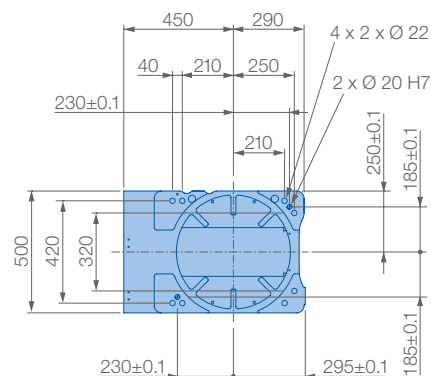
View A



View B



View C



Mounting option: Floor
Protection class: IP54/67

Specifications GP225					
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes
S	±180	120	—	—	6
L	+76/-60	97	—	—	Max. payload [kg]
U	+90/-86	115	—	—	Repeatability [mm]
R	±360	145	1372	145	Max. working range R [mm]
B	±125	145	1372	145	Temperature [°C]
T	±360	220	735	84	Humidity [%]
					Weight [kg]
					Power supply, average [KVA]

MOTOMAN GP250

Handling & General Applications
with the GP-series



The 6-axis MOTOMAN GP250 is a versatile, high speed robot offering superior performance for a variety of applications, like material handling, machine and press tending.

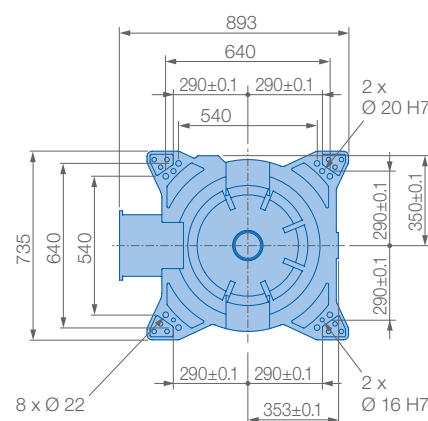
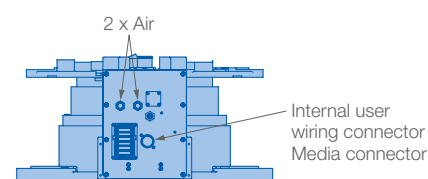
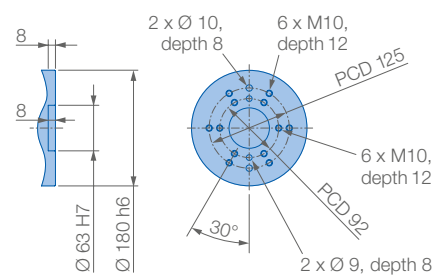
Despite of providing a high payload of 250 kg and the wide motion range of 2710 mm, the MOTOMAN GP250 was designed with a width of 816 mm, therefore valuable floor space can be saved.

The vibration control system uses higher axis operation speed and speed reducer rigidity to allow fast acceleration of short movements. By reducing cycle times, this system realises high increases in productivity.

KEY BENEFITS

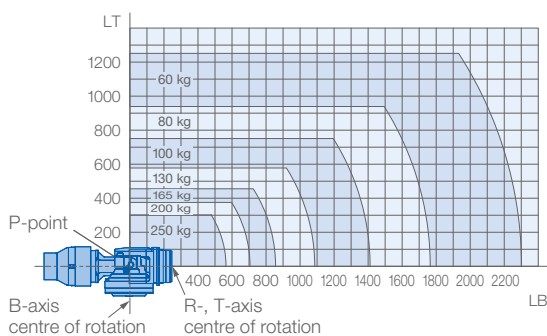
- Fast, flexible and powerful
- High payload: 250 kg
- Wide motion range: 2710 mm
- Maximum performance using minimal floor space

Controlled by
YRC1000



Mounting option: Floor
Protection class: IP54/67

Allowable wrist load



Specifications GP250						
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	6
					Max. payload [kg]	250
S	±180	100	–	–	Repeatability [mm]	±0.2
L	+76/–60	90	–	–	Max. working range R [mm]	2710
U	+197/–77.8	97	–	–	Temperature [°C]	0 to +45
R	±360	120	1385	317	Humidity [%]	20 – 80
B	±125	120	1385	317	Weight [kg]	1345
T	±360	190	735	200	Power supply, average [KVA]	5.0

MOTOMAN GP280

Handling & General Applications
with the GP-series



The 6-axis MOTOMAN GP280 is a versatile, high speed robot offering superior performance for a variety of applications, like material handling, machine and press tending.

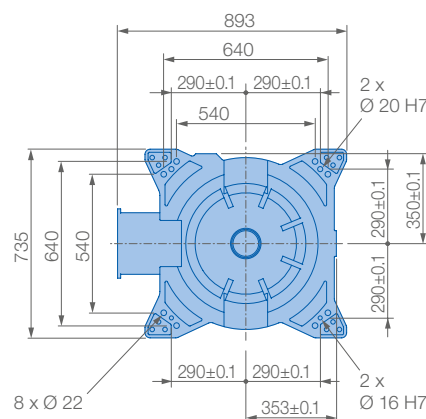
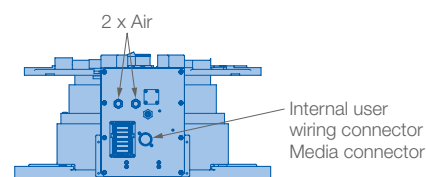
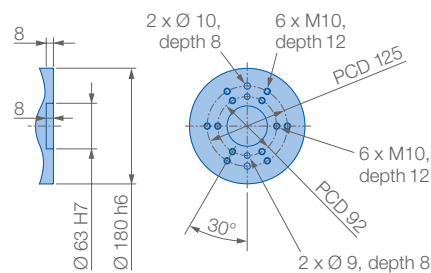
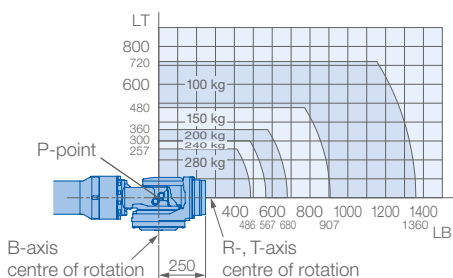
The GP280 offers a large work envelope of 2446 mm and a high moment of inertia ratings. Fast axial speeds and acceleration reduce cycle times and increase production output. The compact, slim design allows the robot to reach into confined spaces, improving system productivity.

The MOTOMAN GP280 is available with the PLd Category 3 Functional Safety Unit (FSU).

KEY BENEFITS

- Fast, flexible and powerful
- Compact design allows maximum performance using minimal floor space
- Max. payload of 280 kg
- Max. working range of 2446 mm
- Enhanced safety functions

Controlled by
YRC1000



Mounting option: Floor
Protection class: IP54/67

Specifications GP280						
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	6
					Max. payload [kg]	280
S	±180	90	–	–	Repeatability [mm]	±0.2
L	+76/–60	80	–	–	Max. working range R [mm]	2446
U	+197/–77.8	90	–	–	Temperature [°C]	0 to +45
R	±360	115	1333	142	Humidity [%]	20 – 80
B	±125	110	1333	142	Weight [kg]	1300
T	±360	190	706	79	Power supply, average [KVA]	5.0

MOTOMAN GP400

Handling & General Applications with the GP-series

The 6-axis MOTOMAN GP400 is a versatile, powerful robot offering superior performance for a variety of applications. It provides a high payload of 400 kg and a wide motion range, which especially enables the handling of large work pieces.

The robot features a parallel-link construction for strength, rigidity and stabilization of high moment and inertia loads. The GP400 also has heavy-duty bearings which provide a smooth arm rotation.

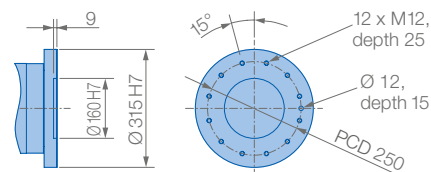
The MOTOMAN GP400 is available with the PLd Category 3 Functional Safety Unit (FSU).



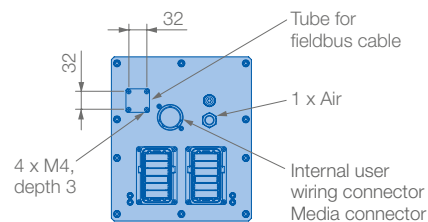
KEY BENEFITS

- Fast, flexible and powerful
- High payload: 400 kg
- Wide motion range: 2942 mm
- Parallel-link construction
- Heavy-duty bearings for smooth arm rotation
- Enhanced safety functions

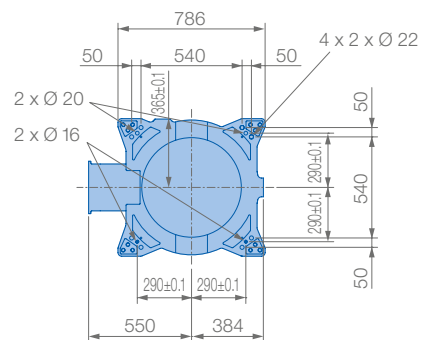
Controlled by
YRC1000



View B

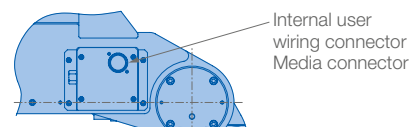


View C

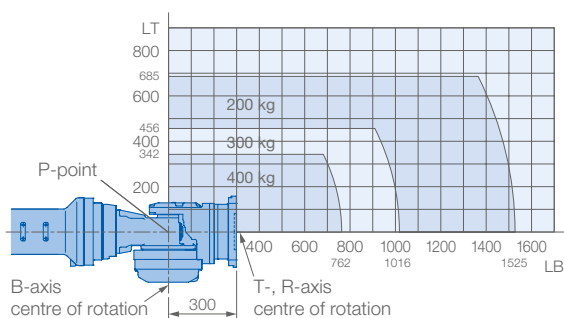


Mounting option: Floor
Protection class: IP30/67

View D



Allowable wrist load



Specifications GP400						
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	6
					Max. payload [kg]	400
S	±180	102	–	–	Repeatability [mm]	±0.3
L	+61/–55	97	–	–	Max. working range R [mm]	2942
U	+18/–113	97	–	–	Temperature [°C]	0 to +45
R	±360	80	2989	500	Humidity [%]	20 – 80
B	±115	80	2989	500	Weight [kg]	2840
T	±360	172	1343	315	Power supply, average [KVA]	7.0

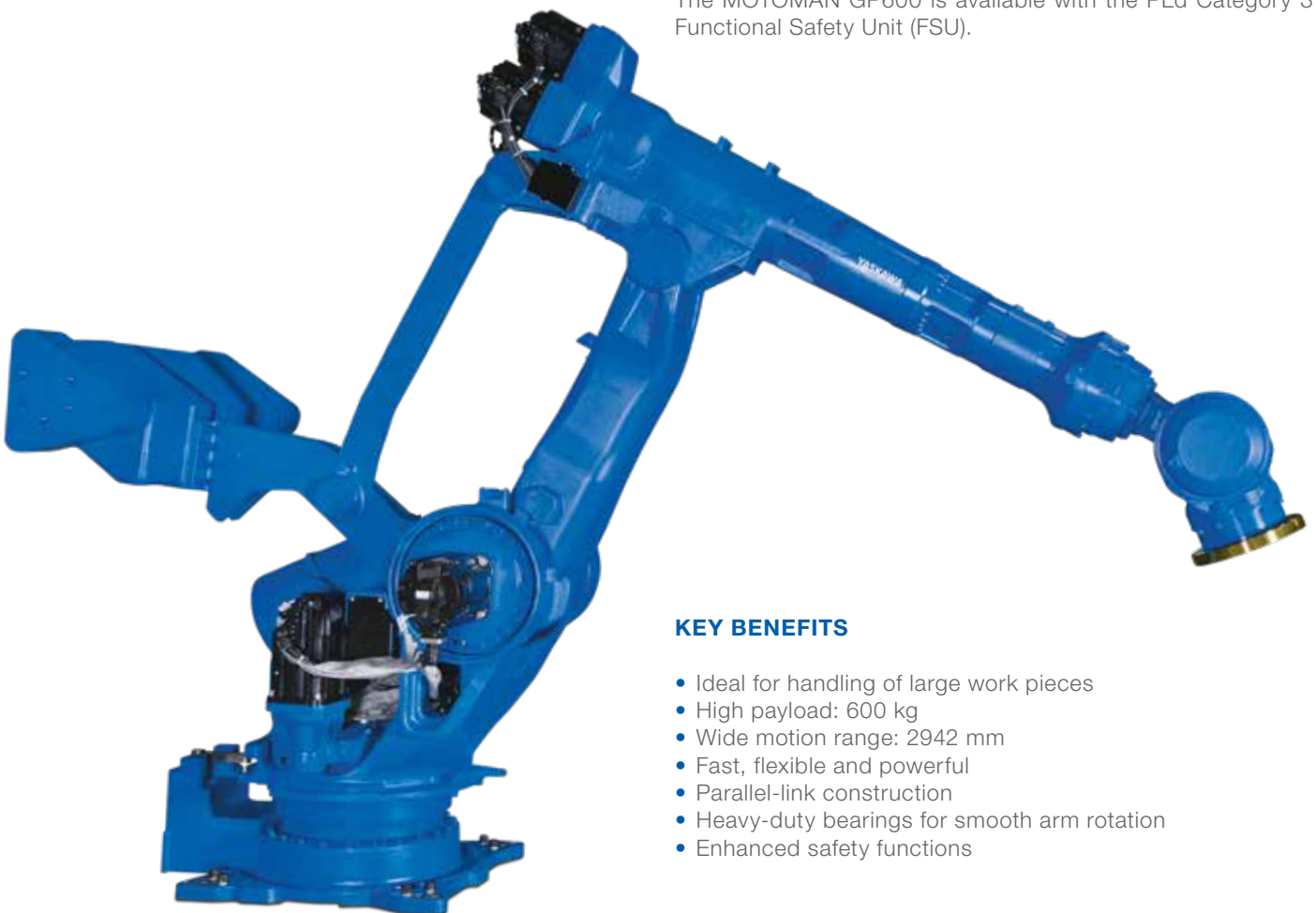
MOTOMAN GP600

Handling & General Applications with the GP-series

The 6-axis MOTOMAN GP600 is a versatile, powerful robot offering superior performance for a variety of applications. It provides a high payload of 600 kg and a wide motion range, which especially enables the handling of large and heavy work pieces.

The robot features a parallel-link construction for strength, rigidity and stabilization of high moment and inertia loads. The GP600 also has heavy-duty bearings which provide a smooth arm rotation.

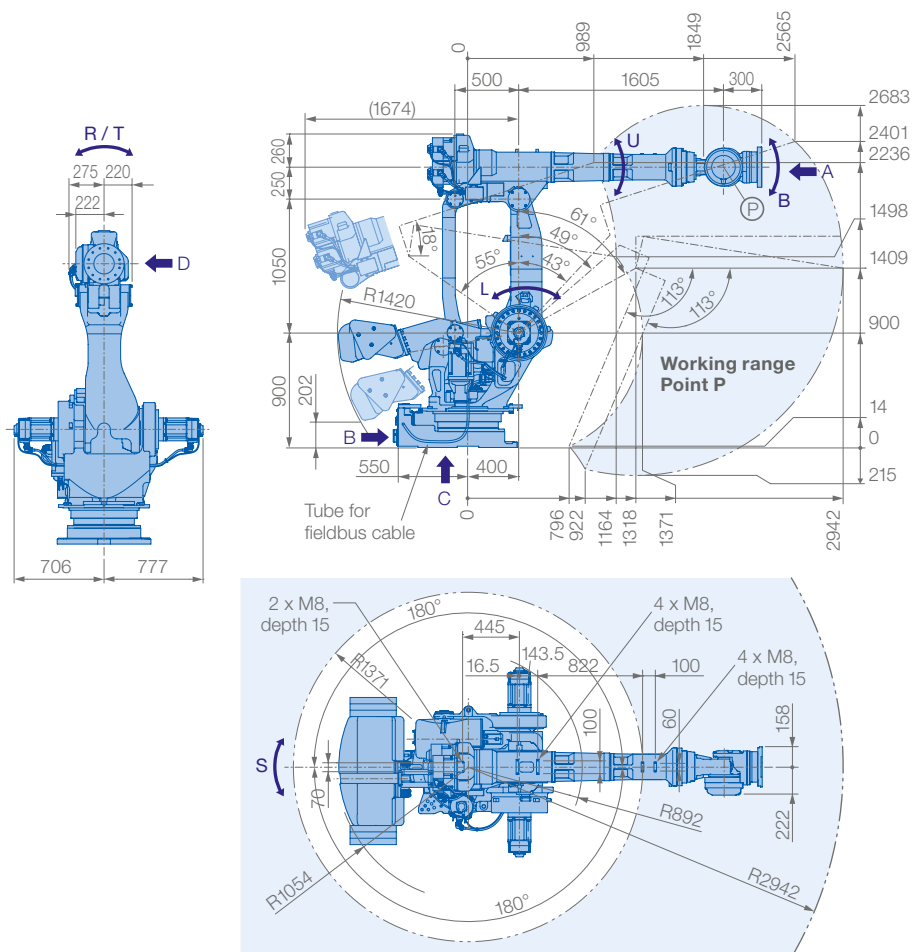
The MOTOMAN GP600 is available with the PLd Category 3 Functional Safety Unit (FSU).



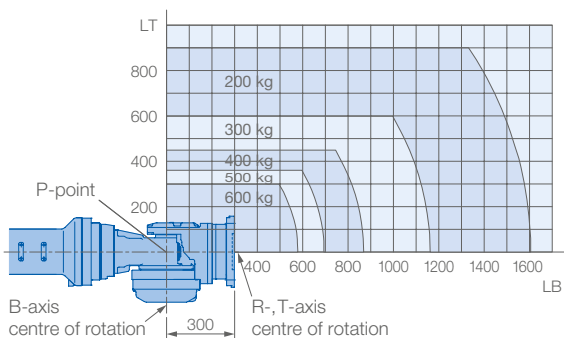
KEY BENEFITS

- Ideal for handling of large work pieces
- High payload: 600 kg
- Wide motion range: 2942 mm
- Fast, flexible and powerful
- Parallel-link construction
- Heavy-duty bearings for smooth arm rotation
- Enhanced safety functions

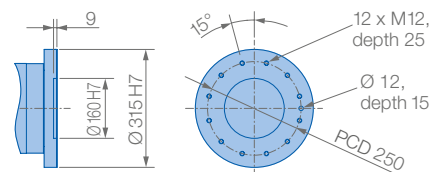
Controlled by
YRC1000



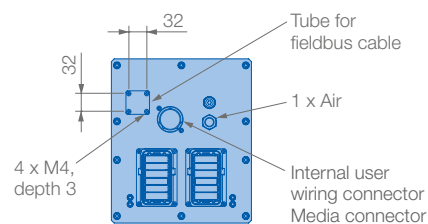
Allowable wrist load



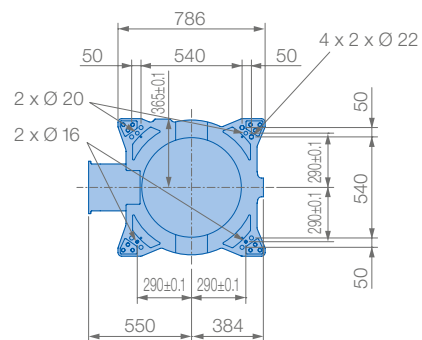
View A



View B



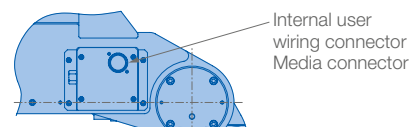
View C



Mounting option: Floor

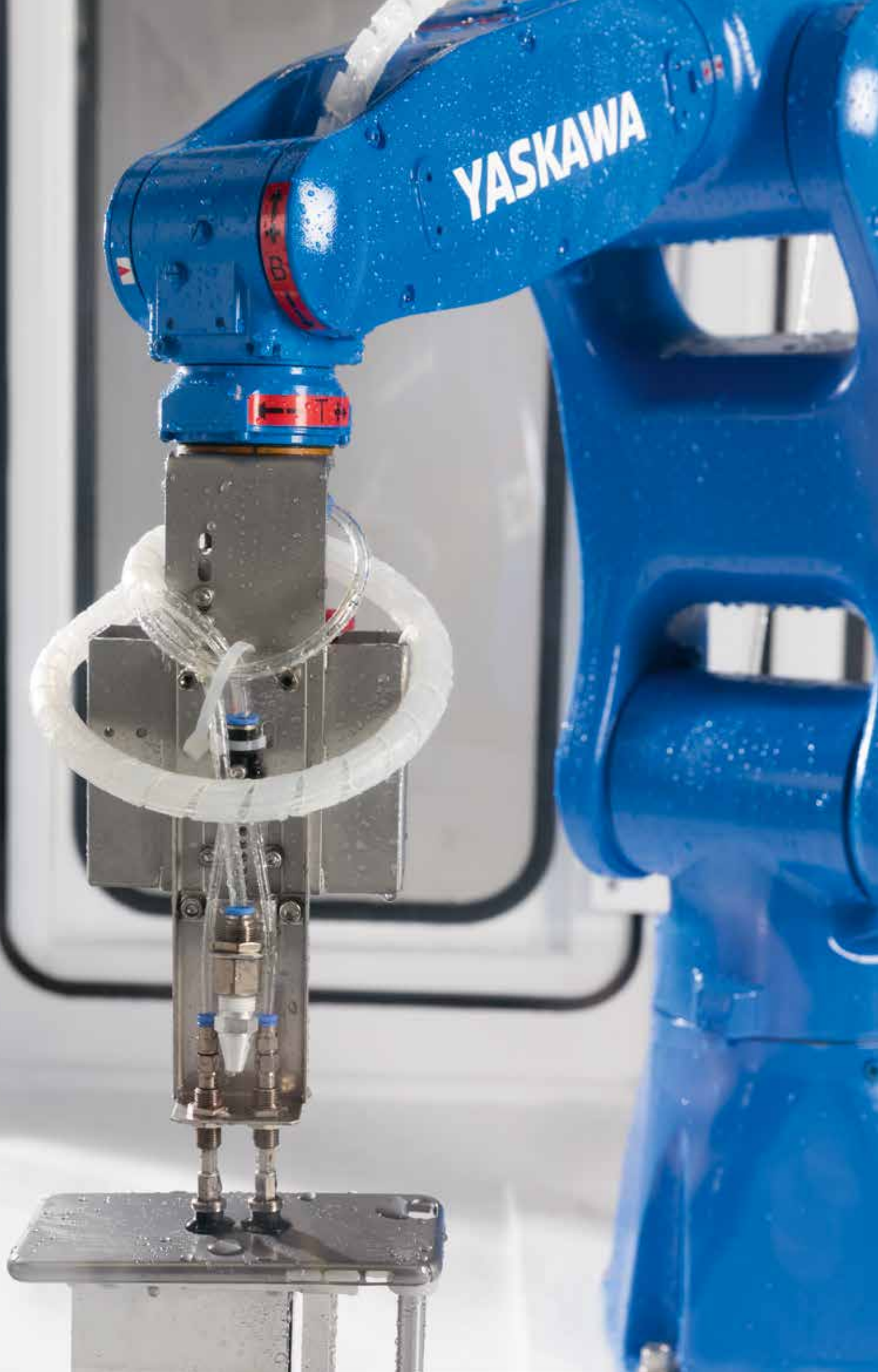
Protection class: IP30/67

View D



Specifications GP600

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m ²]	Controlled axes	6
S	±180	82	—	—	Max. payload [kg]	600
L	+61/-55	82	—	—	Repeatability [mm]	±0.3
U	+18/-113	82	—	—	Max. working range R [mm]	2942
R	±360	80	3430	520	Temperature [°C]	0 to +45
B	±115	80	3430	520	Humidity [%]	20 – 80
T	±360	162	1764	350	Weight [kg]	3035
					Power supply, average [KVA]	7.0

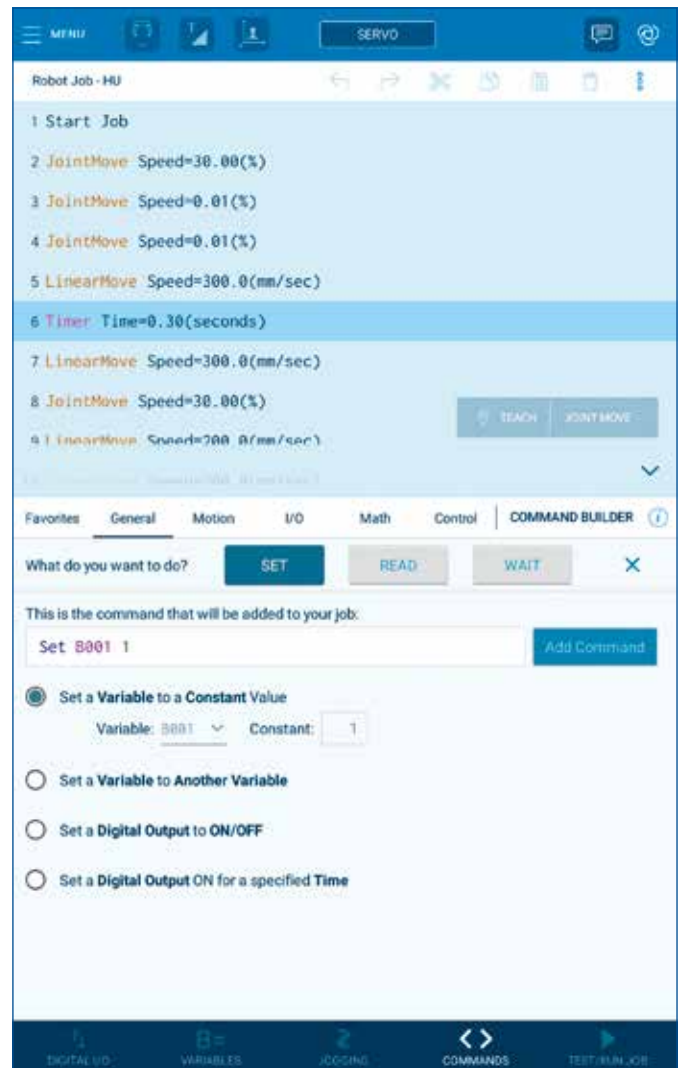


Smart Pendant

- **Smart Pendant reduces what the user needs to remember in order to enter instructions and values, and the procedures for doing so.**
- The main menu makes switching between screens more user-friendly, as all menus are listed in a sequence that requires minimal memorization.
- Easy access to all functions:
The user can remember the location of each item in the navigation menu and safely return to the home menu in case of confusion.



- **Smart Pendant allows a user to quickly:**
 - Trigger an action
 - Select an option
 - Adapt parameter options
 - Obtain assistance
- Smart Pendant introduces a new type of coordinate frame: SMART FRAME
- Traditional teach pendant programming requires the operator to select the appropriate coordinate frame (joint, world, tool or user), which defines the direction in which the robot will move when a button is pressed. If the frame is not set correctly, moving the robot in the wrong direction or with the wrong trajectory can lead to problems and require time-consuming corrections.
- **Hand Guiding is a collaborative feature that allows an operator to hand-guide the robot to a desired position.**
- **This task can be achieved by utilizing additional external hardware mounted directly on the robot or by a robot specifically designed to support this feature, e.g. HC10.**
- Smart Pendant is YASKAWA's next generation programming pendant that makes no compromise between ease of use and capability.
- **Its key features are:**
 - Easy-to-understand operation and user interface designed with customer participation
 - Simplified INFORM programming without loss of functionality
 - Command Builder for automatic INFORM generation
 - SMART FRAME jogging eliminates coordinate frames
 - Direct teaching with hand guiding for HC10
 - Built in Help function and “How-To” guides



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

GP-Serie
H-12-2018, A-No. 180894

YASKAWA