

**YASKAWA**

# MOTOMAN GP-Series

Handling & General Application



Controlled by  
YRC1000

# MOTOMAN GP-Series

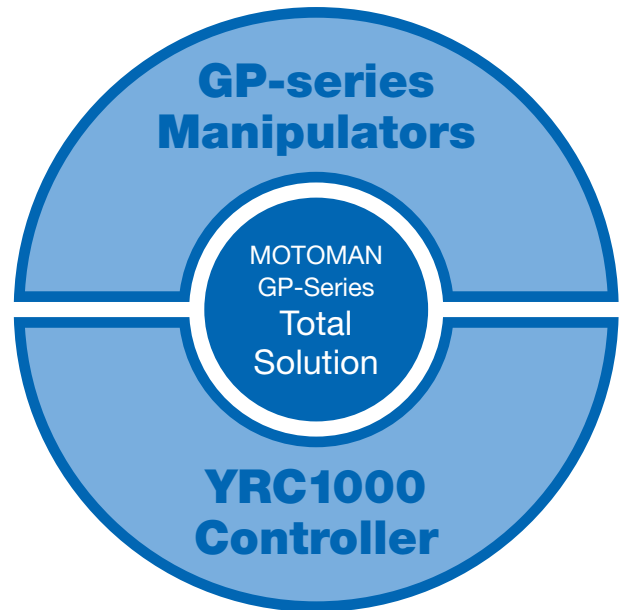
## Robot System Solutions MOTOMAN GP-Series

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



GP8



GP12



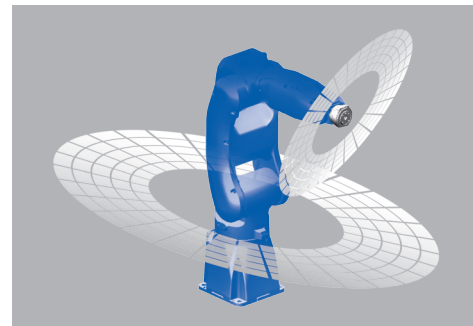
YRC1000 Controller

# 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



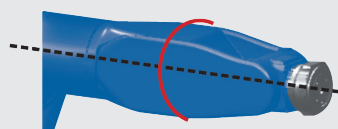
### Reduced interference radius when S-axis is turning



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

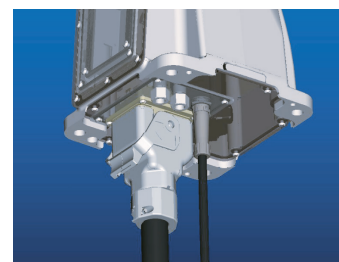
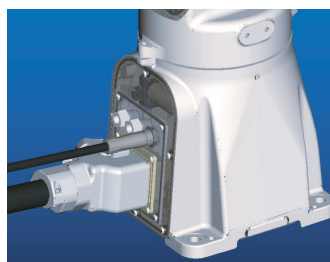


Former model (MH5S II): 73 mm  
New model (GP7 and GP8): 67 mm

## 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



# GP12 – World's Highest Speed in its Class

## 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-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



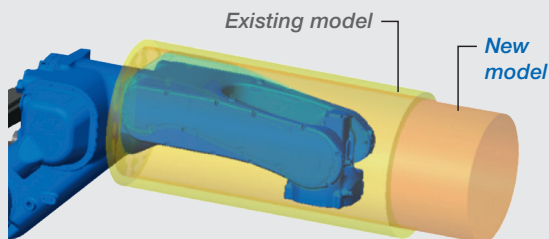
### Hollow arm



50 mm dia.



50 mm dia.



Minimized interference radius of the wrist  
MH12 (earlier model): 136 mm  
GP12 (new model): 120 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

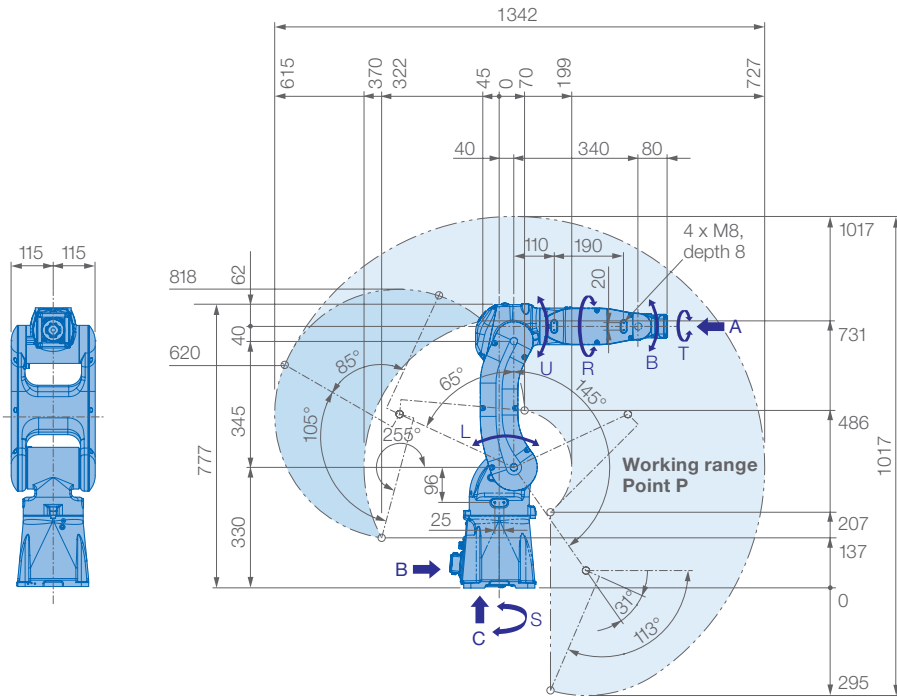
- Wrist structure of R, B and T axes are IP67-compliant as a standard specification
- Wrist structure of S, L and U axes are IP54-compliant (option IP65)

### Easy maintenance

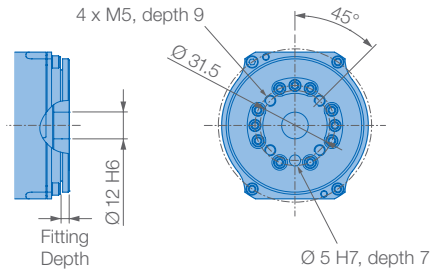
- Data saving feature enables to replace the wire harness in the robot without having to connect to a battery
- Productivity improvement due to reduction in number of cables & connectors



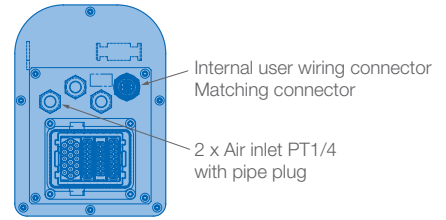




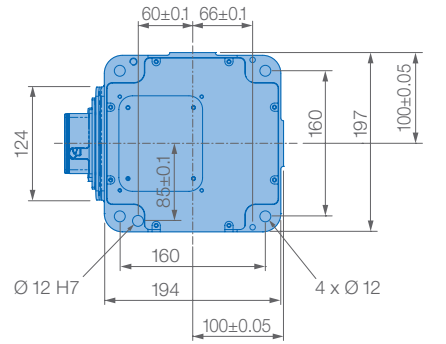
View A



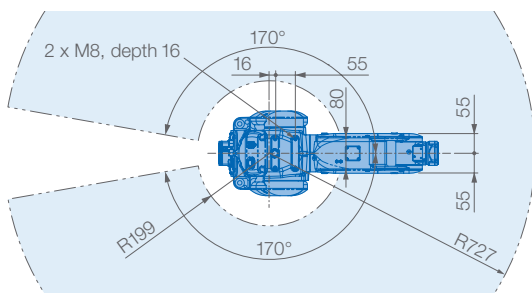
View B



View C

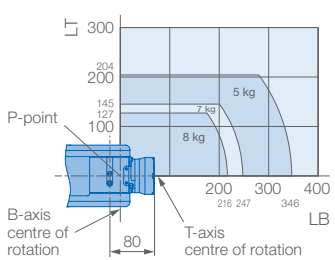
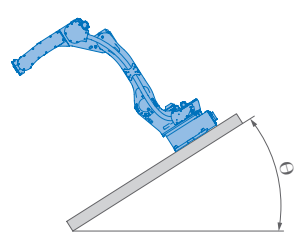


Montagemöglichkeiten: Boden, Decke, Wand  
Schutzklasse: IP67



- Free from corrosive gasses or liquids, or explosive gasses
- Free from exposure to water, oil or dust
- Free from excessive electrical noise (plasma)

Allowable wrist load

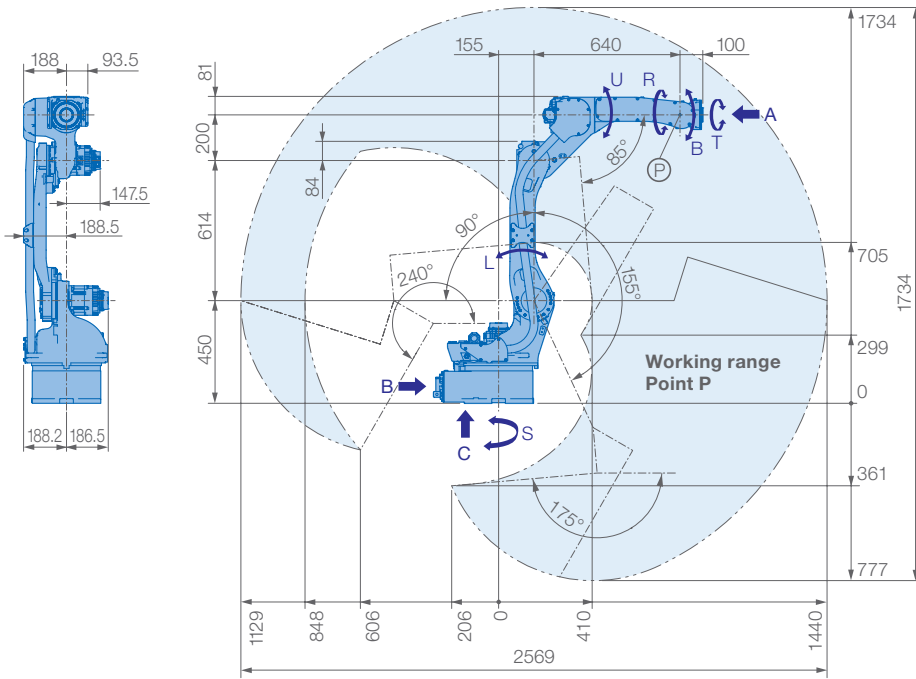


Robot installation angle deg. [°]	S-axis operating range [°]
0 ≤ θ ≤ 30	±170 degrees or less (no limit)
30 < θ ≤ 35	±60 degrees or less
35 < θ ≤ 40	±50 degrees or less
40 < θ ≤ 45	±45 degrees or less
45 < θ ≤ 50	±40 degrees or less
50 < θ ≤ 60	±35 degrees or less
60 < θ	±30 degrees or less

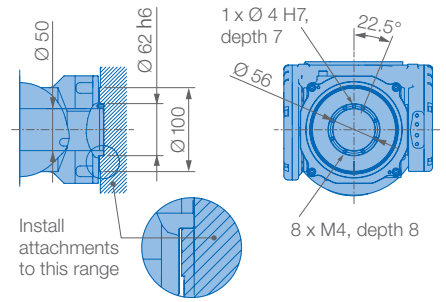
Specifications GP8						
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes	6
S	±170	455	-	-	Max. payload [kg]	8
L	+145/-65	385	-	-	Repeatability [mm]	±0.02*
U	+255/-113	520	-	-	Max. working range R [mm]	727
R	±190	550	17	0.5	Temperature [°C]	0 to +40
B	±135	550	17	0.5	Humidity [%]	20 - 80
T	±360	1000	10	0.2	Weight [kg]	32
					Power supply, average [KVA]	1**

\* Conforms to ISO 9283 \*\* Varies in accordance with applications and motion patterns Note: SI units are used for specifications.

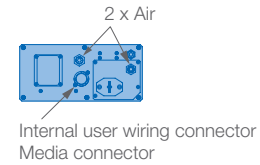
All dimensions in mm



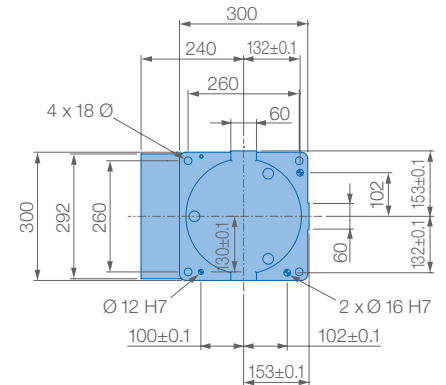
## View A



## View B



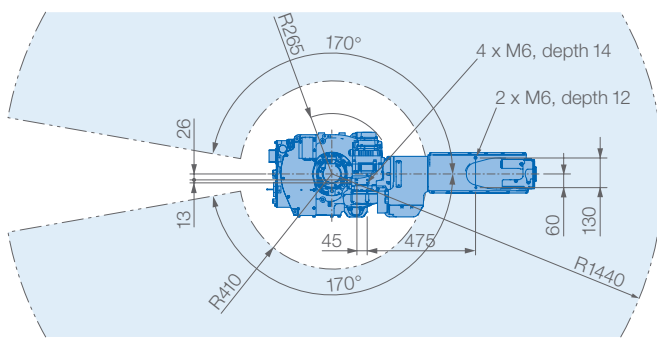
## View C



Mounting options: Floor, ceiling, wall

Protection class: Main axes (S, L, U) IP54 (option 65), wrist IP67

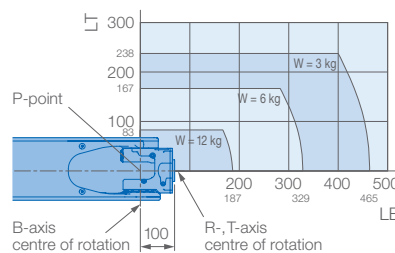
Robot installation angle deg. [°]	S-axis operating range [°]
$0 \leq \theta \leq 30$	$\pm 170$ degrees or less (no limit)
$30 < \theta \leq 35$	$\pm 60$ degrees or less
$35 < \theta \leq 40$	$\pm 50$ degrees or less
$40 < \theta \leq 45$	$\pm 45$ degrees or less
$45 < \theta \leq 50$	$\pm 40$ degrees or less
$50 < \theta \leq 60$	$\pm 35$ degrees or less
$60 < \theta$	$\pm 30$ degrees or less



- Free from corrosive gasses or liquids, or explosive gasses
- Free from exposure to water, oil or dust
- Free from excessive electrical noise (plasma)



## Allowable wrist load



Specifications GP12						
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes	6
S	$\pm 170$	260	–	–	Max. payload [kg]	12
L	+155/–90	230	–	–	Repeatability [mm]	$\pm 0.08^*$
U	+155/–85	260	–	–	Max. working range R [mm]	1440
R	$\pm 200$	470	22	0.65	Temperature [°C]	0 to +40
B	$\pm 150$	470	22	0.65	Humidity [%]	20 – 80
T	$\pm 455$	700	9.8	0.17	Weight [kg]	150
					Power supply, average [KVA]	1.5**

\* Conforms to ISO 9283 \*\* Varies in accordance with applications and motion patterns **Note:** SI units are used for specifications.

All dimensions in mm

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