

# YASKAWA

# MOTOMAN GP FGG-series

Handling & General Application for the Food Sector

GP4 FGG, GP7 FGG, GP8 FGG, GP8 FGG HS, GP12 FGG,  
GP25 FGG, GP50 FGG and GP180 FGG



Increase your Productivity  
with a large Range of food-grade  
YASKAWA Manipulators!

**Multiple payload options, highest speeds and permissible robot wrist torque values**

- Handling of a wide range of products and mounting of different grippers with payloads of up to 180 kg
- Optimized acceleration and braking behavior, enabling an improvement in cycle times

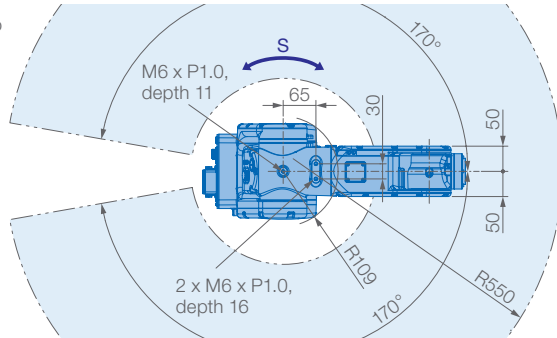
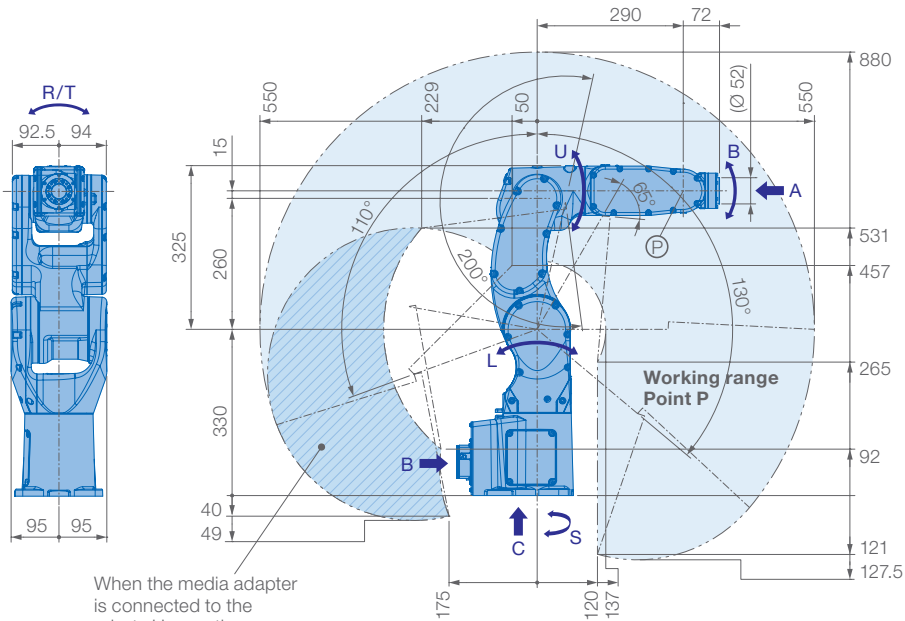
Compact Equipment

**Streamlined and user-friendly structure**

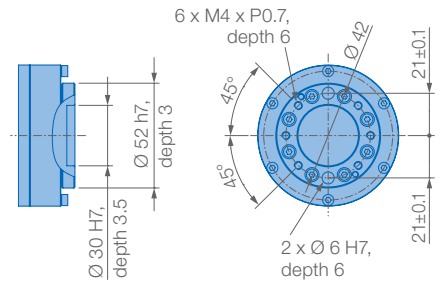
- More compact robot housings reduce interference contours (minimizing the offset of L-U axes).
- Connection of manipulator cables possible from below at the bottom of the 1st axis. This requires a much smaller footprint compared to cable installations on the side of the robot. For example, the robot can be mounted closer to wall(s).
- Increased maximum and horizontal reach: This allows the robot to use a larger working area.
- Streamlined, straight and symmetrical arm design to minimize interference contours with peripherals even in extremely confined spaces.

**KEY BENEFITS**

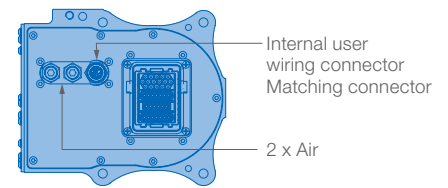
- High IP65/67 protection class
- Maximum performance with minimum space requirement
- Short cycle times, high performance thanks to Sigma7 motors
- Perfect solution for use in food applications (secondary and tertiary packaging)
- Drip-proof design



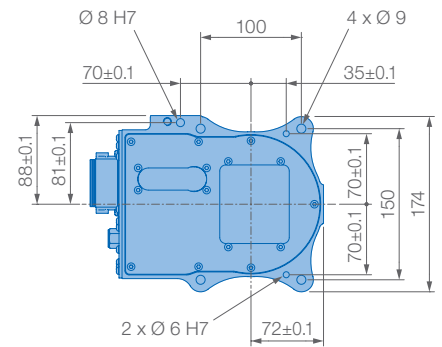
## View A



## View B



## View C



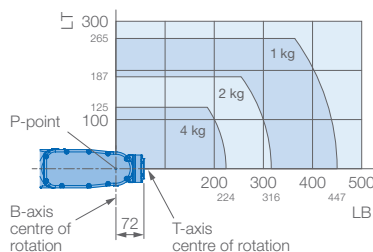
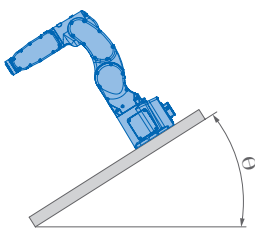
### Prevent interaction of the robot with:

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

Controlled by  
**YRC1000**

Controlled by  
**YRC1000  
micro**

### Allowable wrist load



Mounting options: Floor, ceiling, wall, tilt

Protection class: IP67

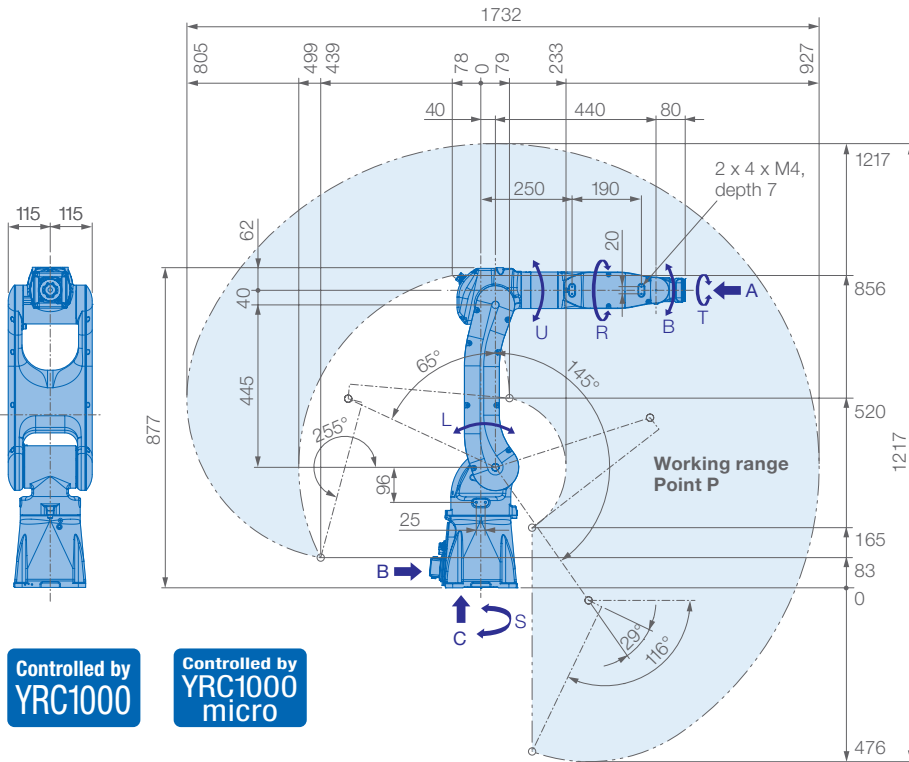
Tilt angle without limitations

No operating limit in S-axis

### Specifications GP4 FGG

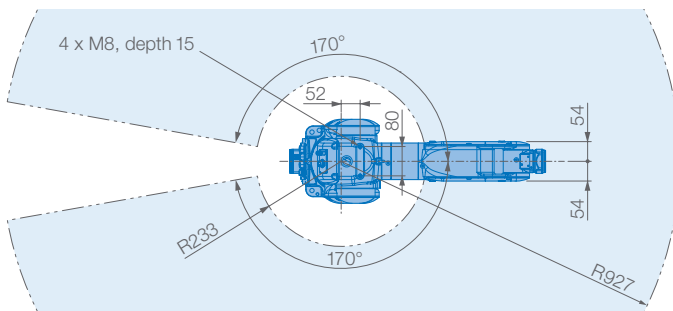
Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes	6
S	±170	465	–	–	Max. payload [kg]	4
L	+130/–110	465	–	–	Repeatability [mm]	±0.01*
U	+200/–65	525	–	–	Max. working range R [mm]	550
R	±200	565	8.86	0.2	Temperature [°C]	0 to +45
B	±123	565	8.86	0.2	Humidity [%]	20 – 80
T	±455	1000	4.9	0.07	Weight [kg]	28
					Power supply, average [kVA]	1**

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



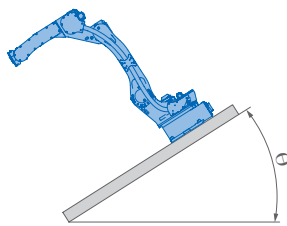
Controlled by YRC1000

Controlled by YRC1000 micro

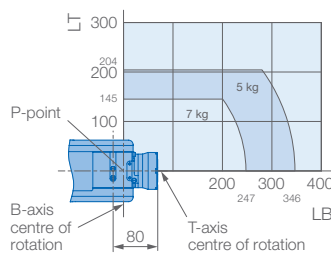


### Prevent interaction of the robot with:

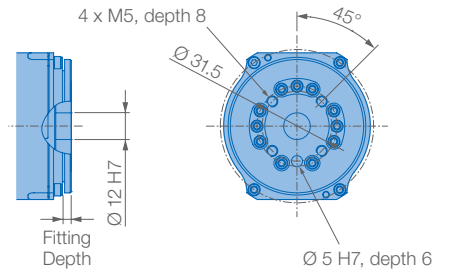
- Corrosive gasses, liquids or explosive gasses
- Exposure to water, oil or dust
- Excessive electrical noise (plasma)



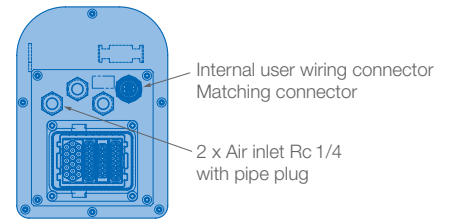
### Allowable wrist load



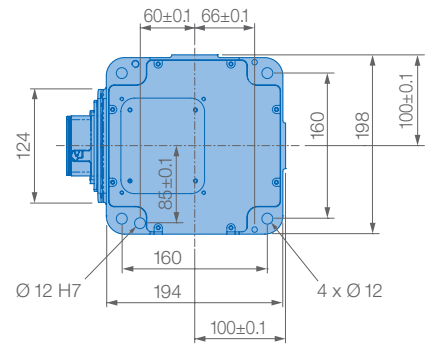
### View A



### View B



### View C



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

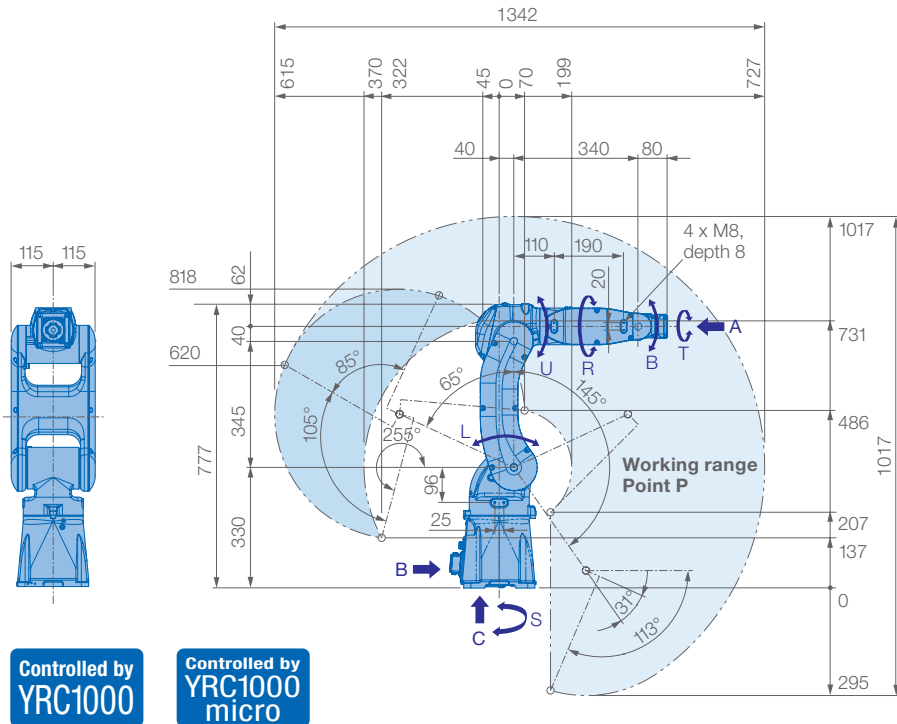
Protection class: IP67

\* tilt with condition of angle – see table below

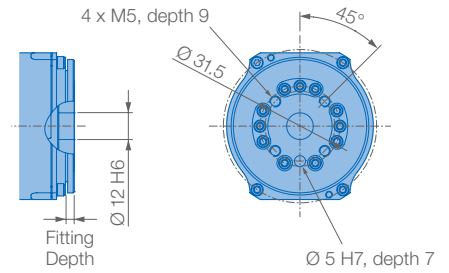
Robot installation angle $\theta$ [deg.]	S-axis operating range [deg.]
$0 \leq \theta \leq 30$	$\pm 170$ degrees or less (no limit)
$30 < \theta \leq 35$	$\pm 60$ degrees or less
$35 < \theta \leq 40$	$\pm 50$ degrees or less
$40 < \theta \leq 45$	$\pm 45$ degrees or less
$45 < \theta \leq 50$	$\pm 40$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

### Specifications GP7 FGG

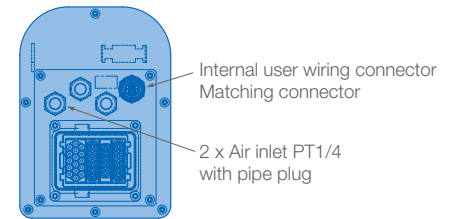
Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes	
S	$\pm 170$	375	–	–	Max. payload [kg]	6
L	+145/–65	315	–	–	Repeatability [mm]	7
U	+190/–70	410	–	–	Max. working range R [mm]	$\pm 0.01^*$
R	$\pm 190$	550	17	0.5	Temperature [°C]	$0$ to $+45$
B	$\pm 135$	550	17	0.5	Humidity [%]	20 – 80
T	$\pm 360$	1000	10	0.2	Weight [kg]	37
					Power supply, average [kVA]	1**



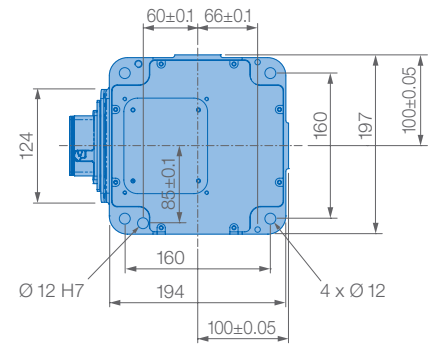
**View A**



**View B**



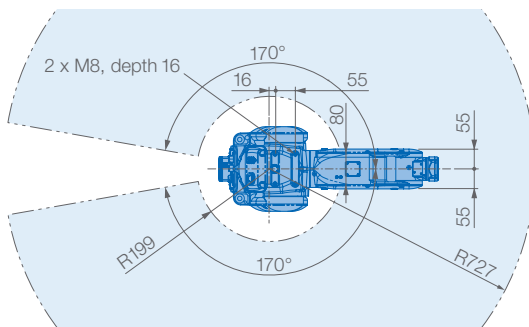
**View C**



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

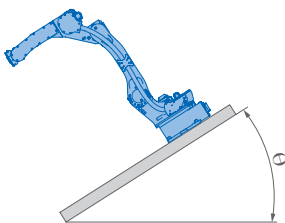
\* tilt with condition of angle – see table below

Robot installation angle $\theta$ [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
$35 < \theta \leq 40$	$\pm 50$ 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

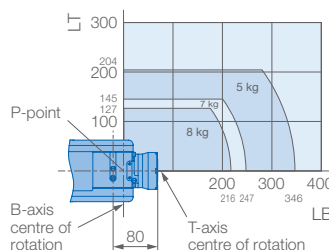


**Prevent interaction of the robot with:**

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

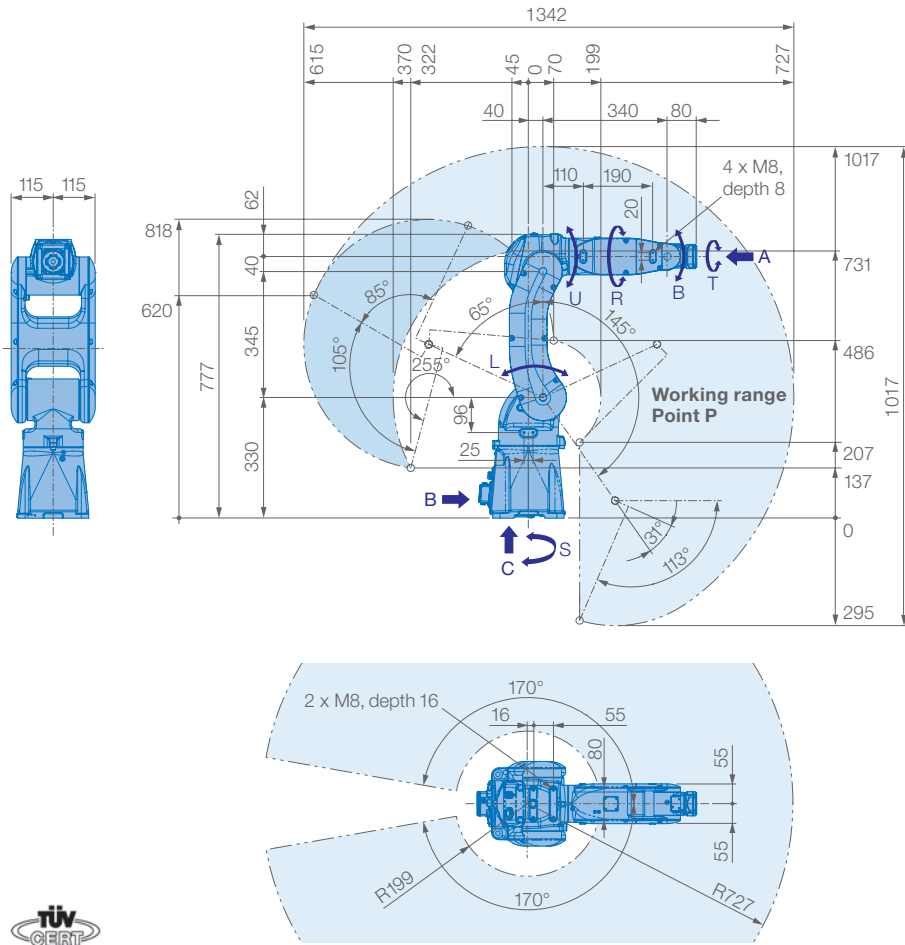


**Allowable wrist load**

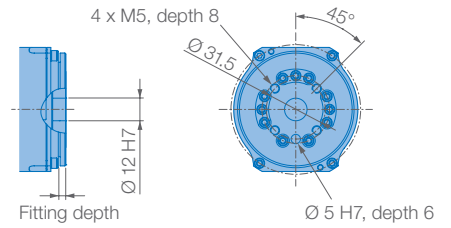


Specifications GP8 FGG						
Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes	6
S	$\pm 170$	455	–	–	Max. payload [kg]	8
L	+145/–65	385	–	–	Repeatability [mm]	$\pm 0.01^*$
U	+255/–113	520	–	–	Max. working range R [mm]	727
R	$\pm 190$	550	17	0.5	Temperature [°C]	0 to +45
B	$\pm 135$	550	17	0.5	Humidity [%]	20 – 80
T	$\pm 360$	1000	10	0.2	Weight [kg]	35
					Power supply, average [kVA]	1**

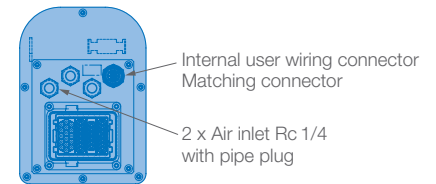
\* Conforms to ISO 9283 \*\* Varies in accordance with applications and motion patterns **Note:** SI units are used for specifications.



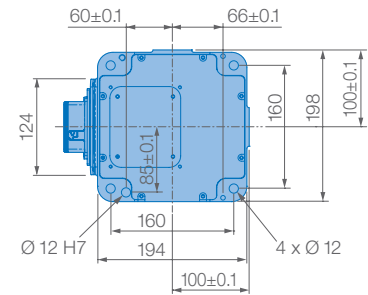
## View A



## View B



## View C



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

IP Protection: IP67

Option: Cleanroom class 5

\* tilt with condition of angle – see table below



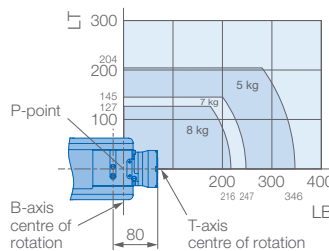
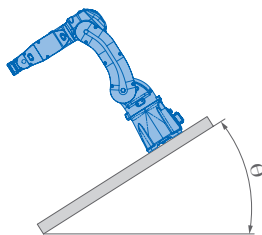
### Prevent interaction of the robot with:

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

Controlled by  
**YRC1000**

Controlled by  
**YRC1000  
micro**

### 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 GP8 FGG HS

Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes	6
S	$\pm 170$	455	–	–	Max. payload [kg]	8
L	+145/–65	385	–	–	Repeatability [mm]	$\pm 0.01^*$
U	+190/–70	520	–	–	Max. working range R [mm]	727
R	$\pm 190$	550	17	0.5	Temperature [°C]	0 to +45
B	$\pm 135$	550	17	0.5	Humidity [%]	20 – 80
T	$\pm 360$	1000	10	0.2	Weight [kg]	35
					Power supply, average [kVA]	1**

# MOTOMAN GP FGG-series

## Overview



### MOTOMAN GP4 FGG

Max. payload: 4 kg  
Repeatability:  $\pm 0.01$  mm  
Max. working range R: 550 mm  
Weight: 28 kg



### MOTOMAN GP7 FGG

Max. payload: 7 kg  
Repeatability:  $\pm 0.01$  mm  
Max. working range R: 927 mm  
Weight: 37 kg



### MOTOMAN GP8 FGG

Max. payload: 8 kg  
Repeatability:  $\pm 0.01$  mm  
Max. working range R: 727 mm  
Weight: 35 kg



### MOTOMAN GP8 FGG HS

Max. payload: 8 kg  
Repeatability:  $\pm 0.01$  mm  
Max. working range R: 727 mm  
Weight: 35 kg





### MOTOMAN GP12 FGG

Max. payload: 12 kg  
Repeatability:  $\pm 0.02$  mm  
Max. working range R: 1440 mm  
Weight: 155 kg



### MOTOMAN GP25 FGG

Max. payload: 25 kg  
Repeatability:  $\pm 0.02$  mm  
Max. working range R: 1730 mm  
Weight: 265 kg



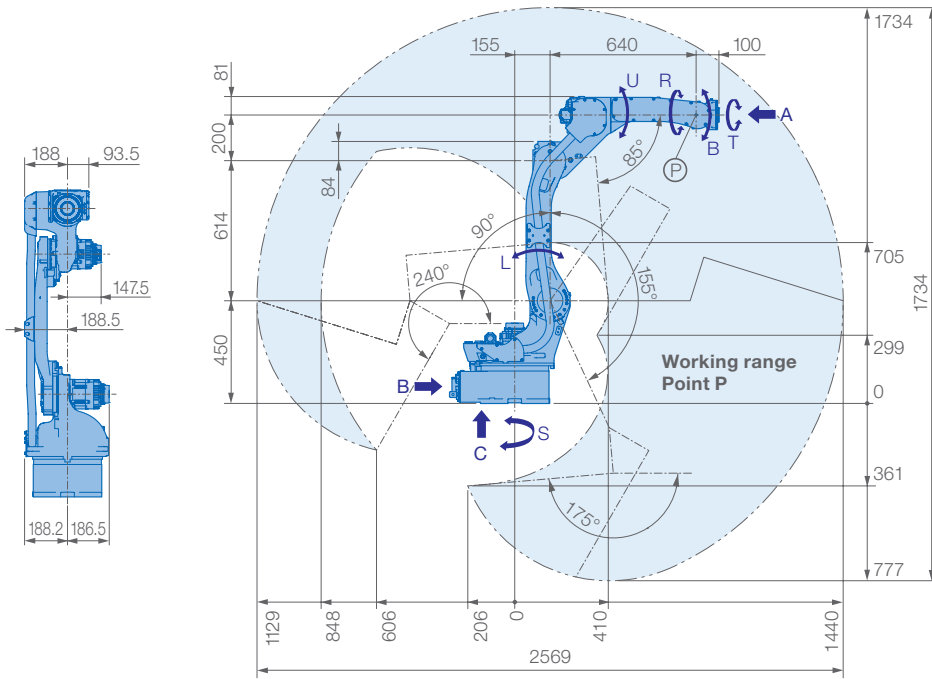
### MOTOMAN GP50 FGG

Max. payload: 50 kg  
Repeatability:  $\pm 0.03$  mm  
Max. working range R: 2061 mm  
Weight: 585 kg

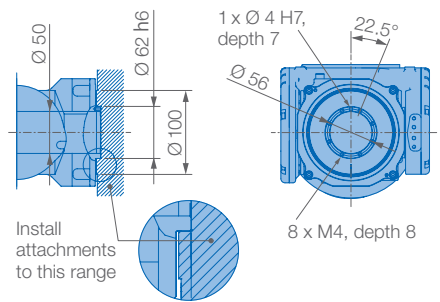


### MOTOMAN GP180 FGG

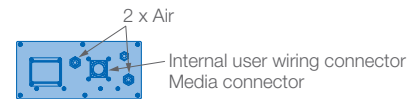
Max. payload: 180 kg  
Repeatability:  $\pm 0.05$  mm  
Max. working range R: 2702 mm  
Weight: 1020 kg



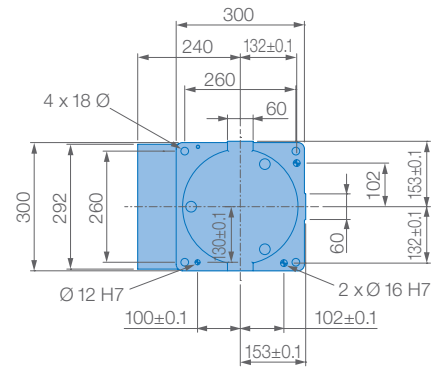
## View A



## View B



## View C

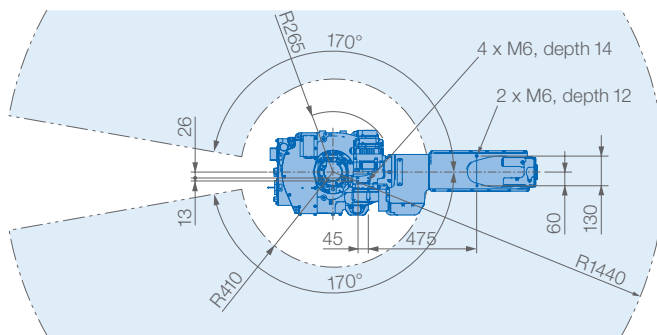


Mounting options: Floor, ceiling, wall, tilt\*

Protection class: IP67

\* tilt with condition of angle – see table below

Roboter-Neigungswinkel $\Theta$ [Grad]	S-Achsen-Arbeitsbereich [Grad]
$0 \leq \Theta \leq 30$	$\pm 170$ max. Neigungswinkel (keine Beschränkung)
$30 < \Theta \leq 35$	$\pm 60$ max. Neigungswinkel
$35 < \Theta \leq 45$	$\pm 45$ max. Neigungswinkel
$45 < \Theta$	$\pm 30$ max. Neigungswinkel

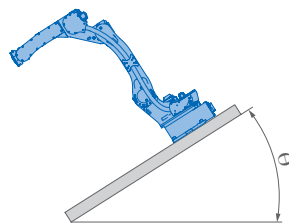


## Prevent interaction of the robot with:

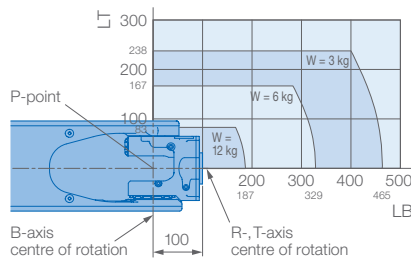
- Corrosive gasses, liquids or explosive gasses
- Exposure to water, oil or dust
- Excessive electrical noise (plasma)

Controlled by YRC1000

Controlled by YRC1000 micro



## Allowable wrist load

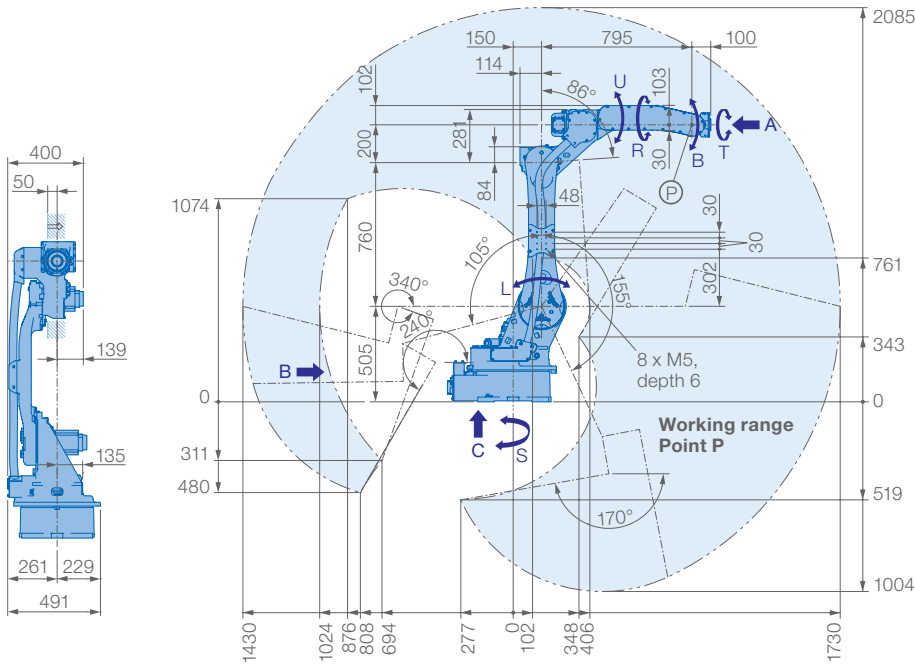


## Specifications GP12 FGG

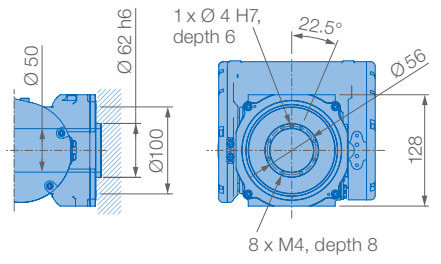
Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes	6
S	$\pm 170$	260	–	–	Max. payload [kg]	12
L	+155/–90	230	–	–	Repeatability [mm]	$\pm 0.02^*$
U	+155/–85	260	–	–	Max. working range R [mm]	1440
R	$\pm 200$	470	22	0.65	Temperature [°C]	15 to +45
B	$\pm 150$	470	22	0.65	Humidity [%]	20 – 80
T	$\pm 455$	700	9.8	0.17	Weight [kg]	155
					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.

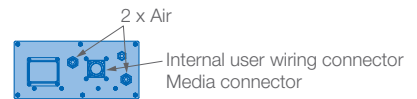




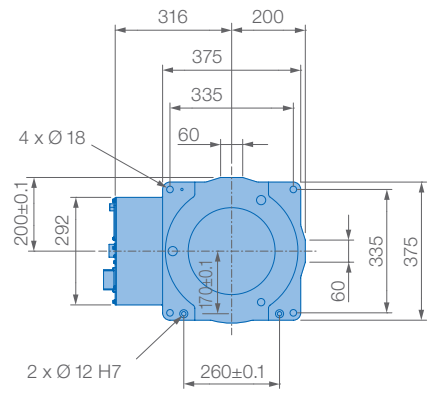
### View A



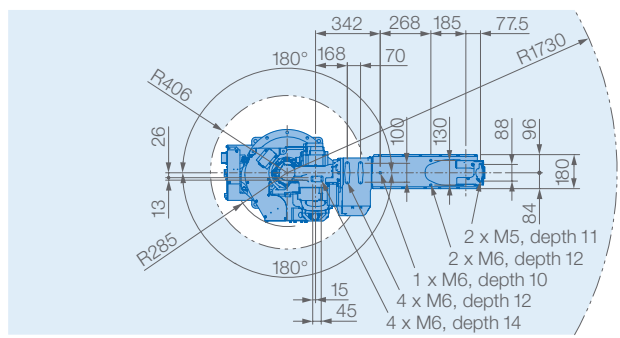
### View B



### View C

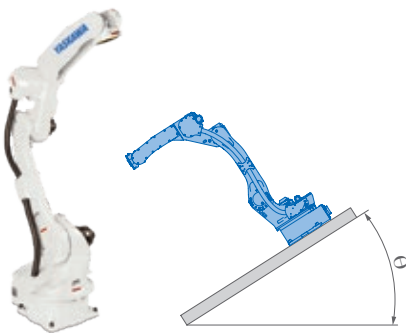


Controlled by  
**YRC1000**

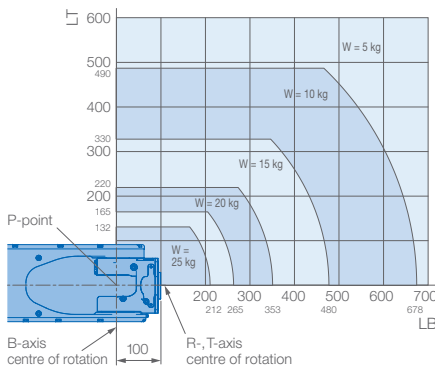


### Prevent interaction of the robot with:

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



### Allowable wrist load



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

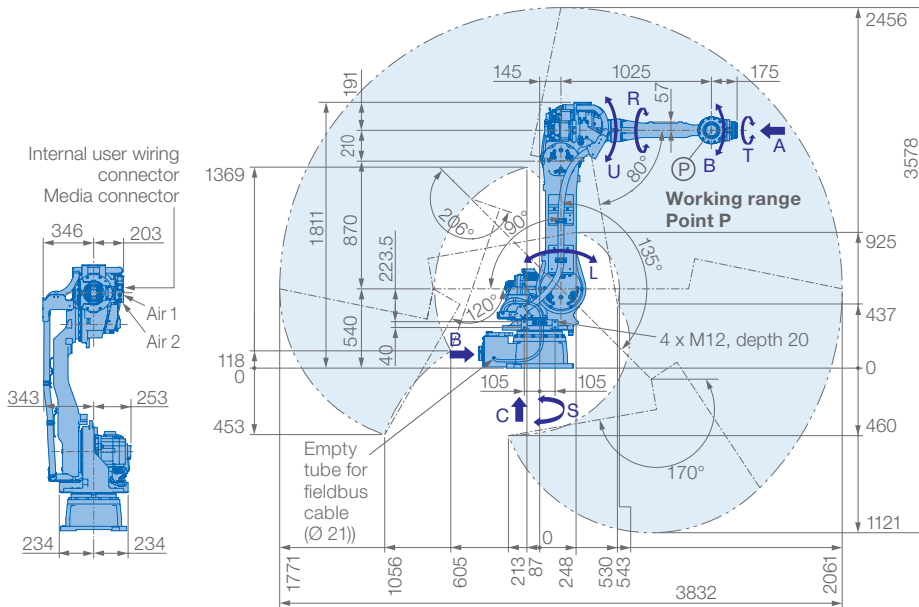
Protection class: IP65/67

\* tilt with condition of angle – see table below

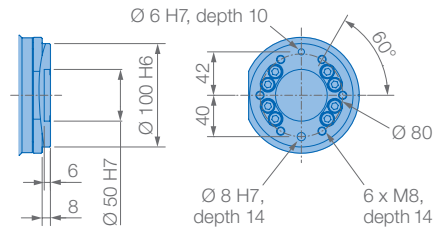
Robot installation angle $\Theta$ [deg.]	S-axis operating range [deg.]
$0 \leq \Theta \leq 30$	$\pm 180$ degrees or less (no limit)
$30 < \Theta \leq 35$	$\pm 60$ degrees or less
$35 < \Theta$	$\pm 30$ degrees or less

Specifications GP25 FGG						
Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes	6
S	$\pm 180$	210	–	–	Max. payload [kg]	25
L	$+155/-105$	210	–	–	Repeatability [mm]	$\pm 0.02^*$
U	$+160/-86$	265	–	–	Max. working range R [mm]	1730
R	$\pm 200$	420	52	2.3	Temperature [°C]	15 to +45
B	$\pm 150$	420	52	2.3	Humidity [%]	20 – 80
T	$\pm 455$	885	32	1.2	Weight [kg]	265
					Power supply, average [kVA]	2,0**

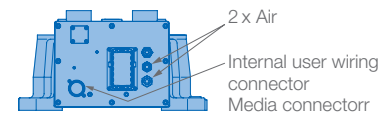
\* Conforms to ISO 9283 \*\* Varies in accordance with applications and motion patterns **Note:** SI units are used for specifications.



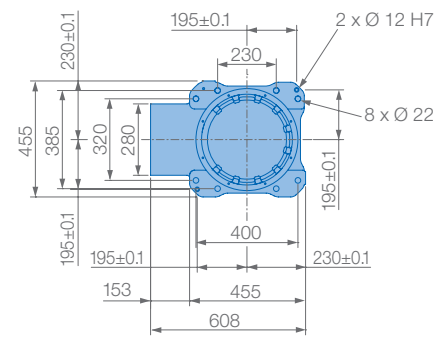
## View A



## View B



## View C



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

Protection class: IP67

\* tilt with condition of angle – see table below

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

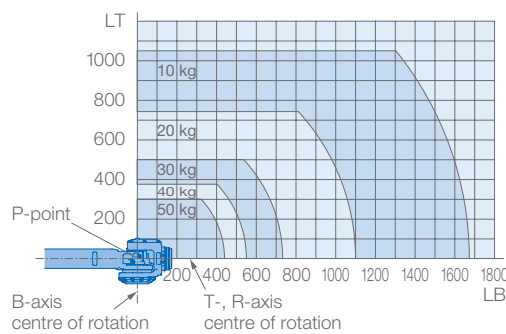
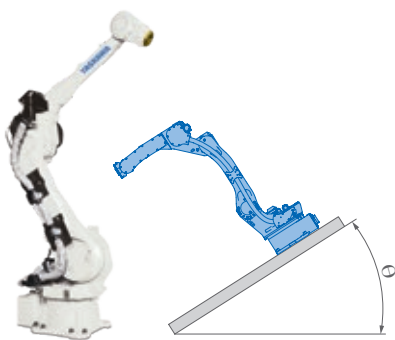


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- Exposure to water, oil or dust
- Excessive electrical noise (plasma)

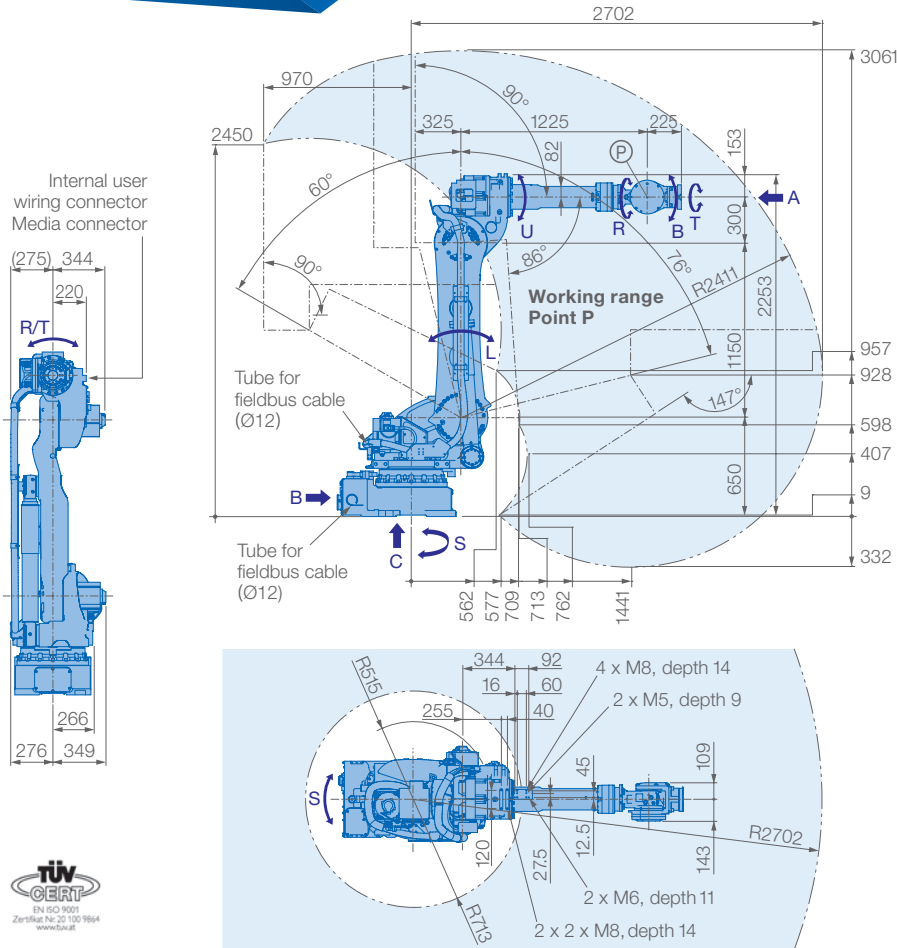
Controlled by  
**YRC1000**

### Allowable wrist load



### Specifications GP50 FGG

Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	Controlled axes	6
S	±180	180	–	–	Max. payload [kg]	50
L	+135/–90	178	–	–	Repeatability [mm]	±0.03
U	+206/–80	178	–	–	Max. working range R [mm]	2061
R	±360	150	216	28	Temperature [°C]	15 to +45
B	±125	150	216	28	Humidity [%]	20 – 80
T	±360	200	147	11	Weight [kg]	585
					Power supply, average [kVA]	4.0

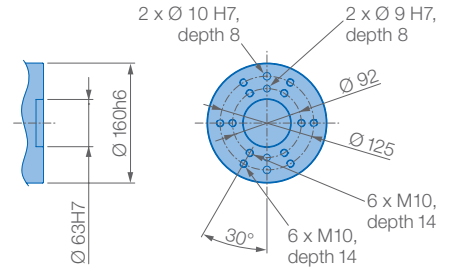


**Note:**

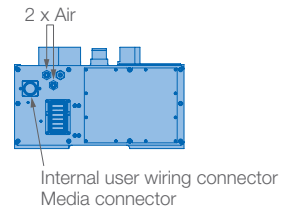
The suspension of the gas balancer are not supplied with food grade grease; if required we can provide a special protection cover as an option. Please check carefully if the grease spec complies with your individual application specifications. For more information, please refer to the manipulator manual.



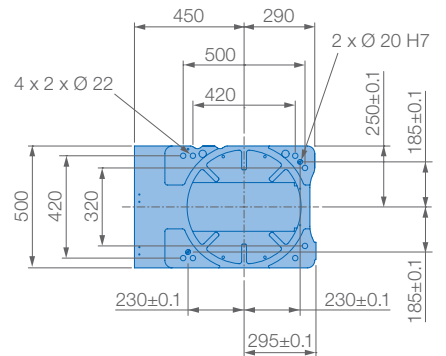
**View A**



**View B**



**View C**

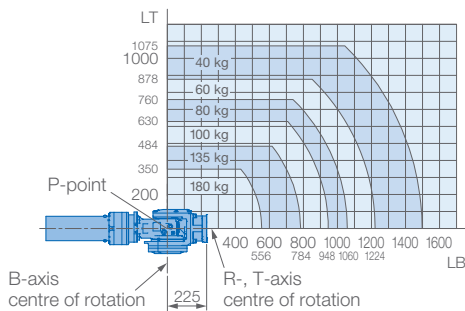


Mounting option: Floor

Protection class:  
Main axes (S, L, U) IP65, wrist IP67



**Allowable wrist load**



Specifications GP180 FGG					
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m <sup>2</sup> ]	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]

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All drawing dimensions in mm.  
Technical data may be subject to change without previous notice.  
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H-06-2023, A-Nr. 231030

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