

YASKAWA

MOTOMAN GP-Series

Handling & General Application



Controlled by
YRC1000

MOTOMAN GP-Series

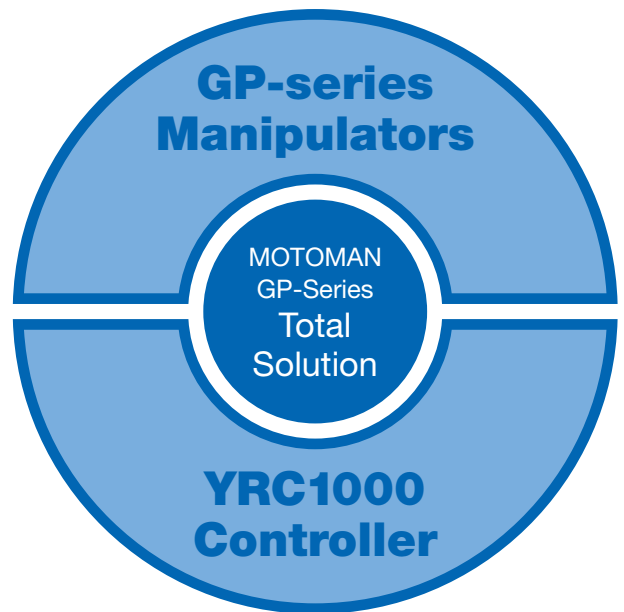
Robot System Solutions **MOTOMAN GP-Series**

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



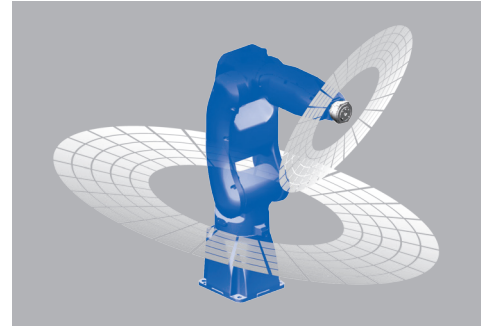
YRC1000 Controller

GP7 and GP8 – Compact and High Speed

Increase productivity

Highest payloads, speeds and wrist allowable moment in its class

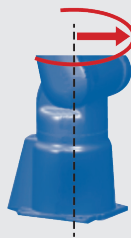
- A variety of workpieces can be transferred and different grippers can be mounted with 7-kg and 8-kg payloads and 38 % greater allowable moment
- Speeds of all axes have been increased by 39 % (max)
- Acceleration/deceleration control has been improved to achieve maximum reduction of acceleration/deceleration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



Reduced interference radius when S-axis is turning

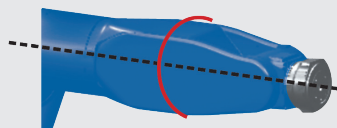


Former model MH5(L)S II
Interference radius: 182 mm



New model GP7 and GP8
Interference radius: 140 mm

Reduced interference radius when the wrist is turning

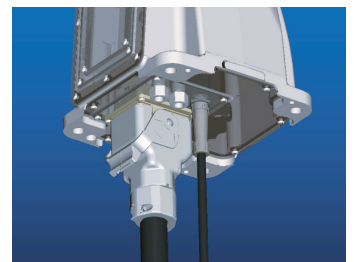
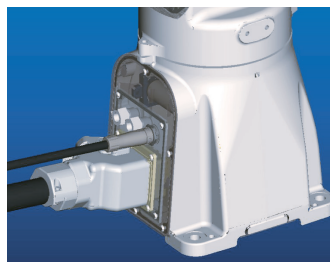


Former model (MH5S II): 73 mm
New model (GP7 and GP8): 67 mm

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



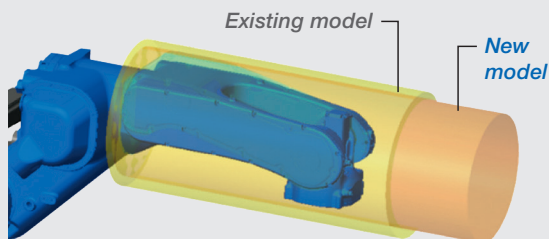
Hollow arm



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

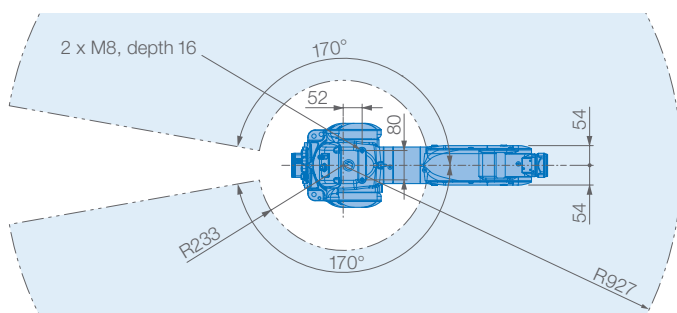
Wrist structure with great environment resistance

- 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





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- The figure consists of two parts. On the left is a photograph of a blue KUKA robotic arm, model KR 10, standing vertically. On the right is a schematic diagram of a robotic arm mounted on a rotating platform. The diagram illustrates the arm's joints and the platform's rotation angle, which is labeled with the symbol θ .

Specifications GP7						
Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	6
					Max. payload [kg]	7
S	±170	375	–	–	Repeatability [mm]	±0.03*
L	+145/–65	315	–	–	Max. working range R [mm]	927
U	+255/–116	410	–	–	Temperature [°C]	0 to +40
R	±190	550	17	0.5	Humidity [%]	20 – 80
B	±135	550	17	0.5	Weight [kg]	34
T	±360	1000	10	0.2	Power supply, average [KVA]	1**

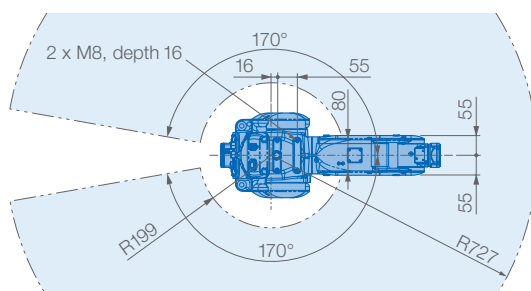
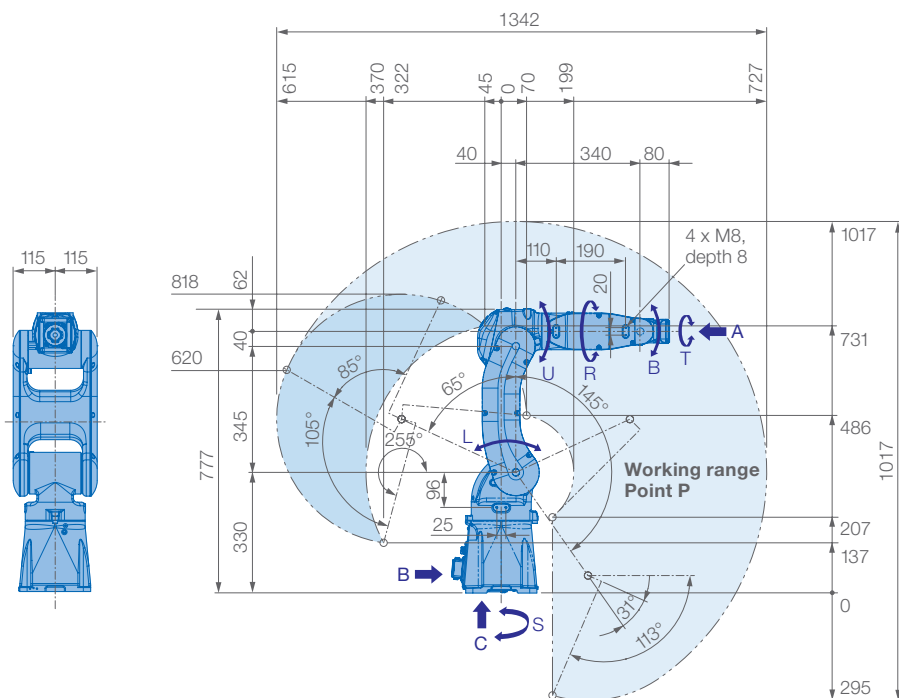
Technical drawing of a 10-hole 1/2" NPT plug. The drawing includes a side view and a top view. The side view shows a cylindrical plug with a 10-hole pattern on its face. The top view shows the 10 holes arranged in two concentric circles of five. Dimensions include: 4 x M5, depth 9 (for the mounting holes), 45° chamfer, Ø 31.5 (outer diameter), Ø 12 H6 (inner diameter), Fitting Depth (for the inner diameter), Ø 5 H7, depth 7 (for the central hole), and a 10-hole pattern.

Internal user wiring connector
Matching connector

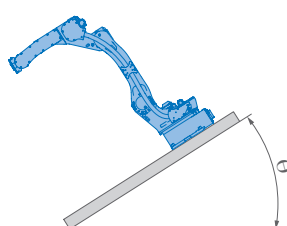
2 x Air inlet PT1/4 with pipe plug

Montagemöglichkeiten: Boden, Decke, Wand
Schutzklasse: IP67

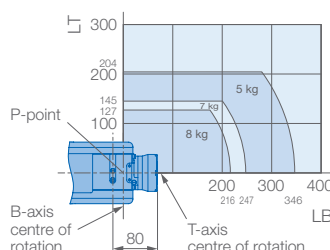
Robot installation angle deg. [°]	S-axis operating range [°]
$0 \leq \theta \leq 30$	±170 degrees or less (no limit)
$30 < \theta \leq 35$	±60 degrees or less
$35 < \theta \leq 40$	±50 degrees or less
$40 < \theta \leq 45$	±45 degrees or less
$45 < \theta \leq 50$	±40 degrees or less
$50 < \theta \leq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



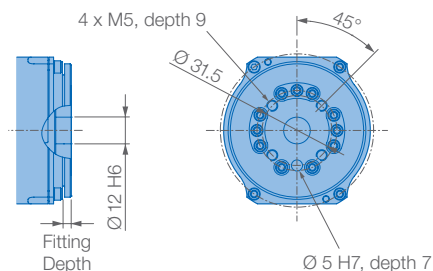
- Free from corrosive gasses or liquids, or explosive gasses
- Free from exposure to water, oil or dust
- Free from excessive electrical noise (plasma)



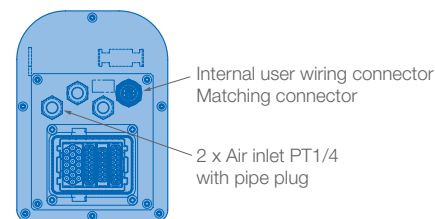
Allowable wrist load



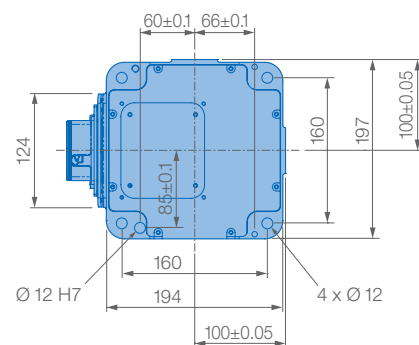
View A



View B



View C

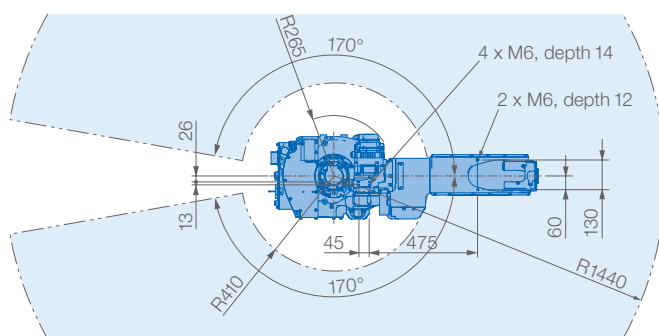


Montagemöglichkeiten: Boden, Decke, Wand
Schutzklasse: IP67

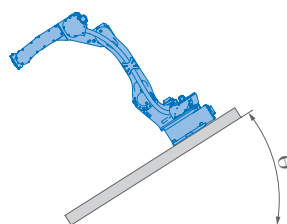
Robot installation angle deg. [°]	S-axis operating range [°]
0 ≤ θ ≤ 30	±170 degrees or less (no limit)
30 < θ ≤ 35	±60 degrees or less
35 < θ ≤ 40	±50 degrees or less
40 < θ ≤ 45	±45 degrees or less
45 < θ ≤ 50	±40 degrees or less
50 < θ ≤ 60	±35 degrees or less
60 < θ	±30 degrees or less

Specifications GP8

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m ²]	Controlled axes	
S	±170	455	—	—	Max. payload [kg]	6
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**



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



2 x Air

Internal user wiring connector

Media connector

Technical drawing of a mechanical part (Fig. 1.10) showing dimensions and tolerances. The part is a square plate with a central circular hole and four smaller holes. Dimensions include overall size 300x300, hole diameters 18 and 12, and various positional tolerances.

Dimensions and Tolerances:

- Overall width: 300
- Overall height: 300
- Distance from top edge to center of top holes: 240
- Distance from top edge to center of bottom holes: 260
- Distance from left edge to center of left holes: 100 ± 0.1
- Distance from left edge to center of right holes: 102 ± 0.1
- Distance from center of top holes to center of bottom holes: 132 ± 0.1
- Distance from center of left holes to center of right holes: 153 ± 0.1
- Distance from top edge to center of top holes: 132 ± 0.1
- Distance from top edge to center of bottom holes: 102
- Distance from left edge to center of top holes: 60
- Distance from left edge to center of bottom holes: 60
- Hole diameters: 4 x 18 Ø, Ø 12 H7, 2 x Ø 16 H7

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 [°]
$0 \leq \theta \leq 30$	±170 degrees or less (no limit)
$30 < \theta \leq 35$	±60 degrees or less
$35 < \theta \leq 40$	±50 degrees or less
$40 < \theta \leq 45$	±45 degrees or less
$45 < \theta \leq 50$	±40 degrees or less
$50 < \theta \leq 60$	±35 degrees or less
$60 < \theta$	±30 degrees or less

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	6
					Max. payload [kg]	12
S	±170	260	–	–	Repeatability [mm]	±0.08*
L	+155/–90	230	–	–	Max. working range R [mm]	1440
U	+155/–85	260	–	–	Temperature [°C]	0 to +40
R	±200	470	22	0.65	Humidity [%]	20 – 80
B	±150	470	22	0.65	Weight [kg]	150
T	±455	700	9.8	0.17	Power supply, average [KVA]	1.5**

YASKAWA

YASKAWA Headquarters

YASKAWA Europe GmbH
Robotics Division
Yaskawastraße 1
85391 Allershausen, Germany
Tel. +49 (0) 8166/90-0
Fax +49 (0) 8166/90-103

YASKAWA ACADEMY and sales office Frankfurt

YASKAWA Europe GmbH
Robotics Division
Hauptstraße 185
65760 Eschborn, Germany
Tel. +49 (0) 6196/77725-0
Fax +49 (0) 6196/77725-39

YASKAWA GROUP

AT YASKAWA Austria
Schwechat/Wien
+43(0)1-707-9324-15

CZ YASKAWA Czech s.r.o.
Rudná u Prahy
+420-257-941-718

ES YASKAWA Ibérica, S.L.
Gavà/Barcelona
+34-93-6303478

FR YASKAWA France SARL
Saint-Aignan-de-Grand-Lieu
+33-2-40131919

FI YASKAWA Finland Oy
Turku +358-(0)-403000600

GB YASKAWA UK Ltd.
Banbury +44-1295-272755

IT YASKAWA Italia s.r.l.
Torino +39-011-9005833

IL YASKAWA Europe Technology Ltd.
Rosh Ha'ayin +972-3-9004114

NL YASKAWA Benelux B.V.
Son +31-40-2895500

PL YASKAWA Polska Sp. z o.o.
Wrocław +48-71-7928670

RU YASKAWA Nordic AB
Moskva +46-480-417-800

SE YASKAWA Nordic AB
Torsås +46-480-417-800

SI YASKAWA Slovenia
Ribnica +386-1-8372-410

TR YASKAWA Turkey Elektrik
Ticaret Ltd. Sti.
İstanbul +90-216-5273450

ZA YASKAWA Southern Africa (PTY) Ltd
Johannesburg +27-11-6083182

DISTRIBUTORS

BG ARAMET ROBOTICS Ltd.
Yambol +359-885 317 294
Kammarton Bulgaria Ltd.
Sofia +359-02-926-6060

CH Messer Eutectic Castolin
Switzerland S.A.
Dällikon +41-44-847-17-17

DK Robotcenter Danmark
Løsning +45 7022 2477

EE RKR Seadmed OÜ
Tallinn/Estonia +372-68-35-235

GR Gizelis Robotics
Nea Kifissia +30-2106251455

HU Flexman Robotics Kft
Budapest +36-30-9510065

LT Profibus UAB
Panevezys +370-45-518575

NO Skala Robotech AS
Lierstranda +47-32240600

PT ROBOPLAN Lda
Aveiro +351-234 943 900

RO Sam Robotics srl
Timisoara +40-720-279-866
MPL Automation S.R.L.
Satu Mare +40 (0) 261 750 741



ROBOTICS • AUTOMATION • CONVEYORS

0800 37 55 66 | www.autoline.nz | sales@autoline.nz



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

GP-series, B-05-2017, A-No. 180894