

# MOTOMAN NEX7

Handling robot for adaptive,  
AI-based automation



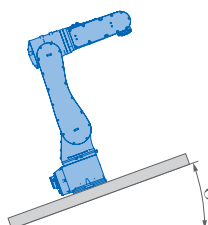
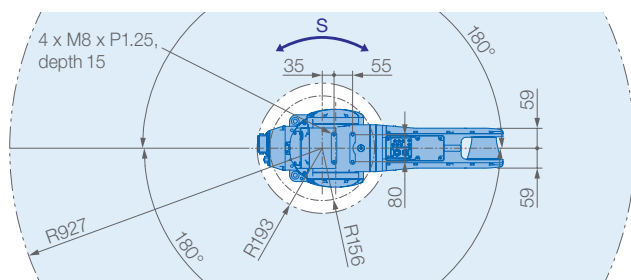
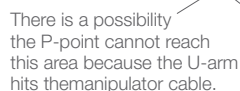
With a payload of 7 kg and a reach of 927 mm, the compact NEX7 manipulator is the right choice for a wide range of adaptive handling and assembly tasks. As part of the MOTOMAN NEXT platform, it is suitable for automation in which robots use sensors (e.g., cameras, force sensors) to detect, understand, evaluate, and autonomously respond to new situations and workpiece variants.

MOTOMAN NEXT integrates classic robot control with an NVIDIA-based control module (ACU), offering all the possibilities of the classic signal-based automation world (OT) and the data-based IT world on one single platform. Modern software engineering tools (by Yaskawa, NVIDIA, ROS 2 community), an open LINUX Docker environment, and services provided by Yaskawa give programmers complete freedom to efficiently and successfully deploy AI robotics applications in the field. The NEX7 manipulator features newly designed high-inertia robot servo drives from Yaskawa's  $\Sigma 10$  generation, which combine high drive dynamics with outstanding absolute accuracy – for exact correspondence between the real and virtually planned worlds including automatic path planning or precise sensor guidance.

Integrated media and Ethernet cables (Cat6) in the robot arm supply intelligent plug-and-play actuators or cameras on the robot flange, for example, without the need of external media packages along the robot arm.

## KEY FEATURES

- Compact design with high load capacity and working range (up to 7 kg / 927 mm)
- High motion performance and agile servo control (new high inertia servo drives)
- Outstanding positioning / absolute accuracy
- Slim design with small installation area
- Integrated Ethernet and media cables, options for cable routing
- IP67-protected housing



Technical drawing of a 45° ball joint. The top view shows a cylindrical component with a diameter of  $\varnothing 42\ h7$ . The side view shows a spherical component with a diameter of  $\varnothing 31.5$ , a  $45^\circ$  angle, and a  $7 \times M5 \times P0.8$  thread with a depth of 7.5. A torque  $T$  is indicated around the spherical part.

IP Protection: IP67 (all axes)

Robot inclination angle $\theta$ [deg.]	S-axis operating range [deg.]
$0 \leq \theta \leq 30$	$\pm 170$ max.
$30 < \theta \leq 35$	$\pm 60$ max.
$35 < \theta \leq 45$	$\pm 45$ max.
$45 < \theta$	$\pm 30$ max.

Specifications NEX7						
Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	6
					Max. payload [kg]	7
S	±170	375	–	–	Repeatability [mm]	±0.016
L	+145/–100	315	–	–	Max. working range R [mm]	927
U	+190/–70	410	–	–	Temperature [°C]	0 to +45
R	±190	550	17	0.5	Humidity [%]	20 – 80
B	+225/–45	550	17	0.5	Weight [kg]	48
T	±360	1000	10	0.2	Power supply, average [kVA]	1

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