

# MOTOMAN NEX10

Universal handling robot for adaptive,  
AI-based automation



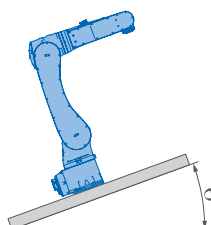
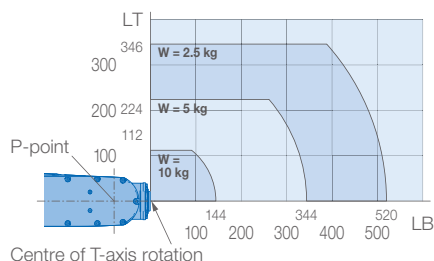
With a payload of 10 kg and a reach of 1,101 mm, the compact NEX10 manipulator is the right fit for a wide range of adaptive handling and assembly tasks. As part of the MOTOMAN NEXT platform, it is suitable for automation in which robots use sensors (e.g., cameras, force sensors) to detect, understand, 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 NEX10 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

- Universal load capacity and working range (up to 10 kg / 1,101 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 7-hole flange. The drawing includes a top view and a side view. The top view shows a circular flange with 7 holes, a central hole of diameter 5 H7, and an outer diameter of 42 h7. The side view shows a flange with a thickness of 7 mm, a 45-degree chamfer, and a central hole of diameter 31.5. The drawing is labeled with dimensions and tolerances.

Technical drawing of the front view of the motor. The drawing shows a blue motor housing with a circular flange. Dimensions are given in millimeters. The overall width is 194 mm, and the overall height is 198 mm. The flange has an outer diameter of 160 mm and a central hole diameter of  $66 \pm 0.1$  mm. There are four mounting holes with a diameter of 12 mm, spaced  $92 \pm 0.1$  mm apart. The motor body has a height of 132.5 mm and a base width of 203 mm. The mounting holes are 2 x Ø 6 H7.

IP Protection: IP67 (all axes)

Robot inclination angle $\theta$ [deg.]	S-axis operating range [deg.]
$0 \leq \theta \leq 30$	$\pm 180$ max.
$30 < \theta \leq 35$	$\pm 60$ max.
$35 < \theta \leq 45$	$\pm 45$ max.
$45 < \theta$	$\pm 30$ max.

Specifications NEX10						
Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m²]	Controlled axes	6
					Max. payload [kg]	10
S	±180	300	–	–	Repeatability [mm]	±0,015
L	+145/–100	250	–	–	Max. working range R [mm]	1101
U	+190/–70	340	–	–	Temperature [°C]	0 to +45
R	±190	500	22	0.9	Humidity [%]	20 – 80
B	+225/–45	470	22	0.9	Weight [kg]	58
T	±360	800	11	0.3	Power supply, average [kVA]	1

# YASKAWA