

MOTOMAN NHC12

Collaborative robot for adaptive,
AI-based automation



With a payload of 12 kg and a reach of 1,250 mm, the NHC12 manipulator is the right choice for a wide range of collaborative handling and assembly tasks. As part of the MOTOMAN NEXT platform, it is suitable for adaptive automation applications 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 (Yaskawa, NVIDIA, ROS 2), 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 NHC12 features high-resolution, safely monitored torque sensors in all axes and PLd Cat 3 certification with safety-related hardware and software functions. This enables both handguiding and applications with safe human-robot interaction (without a safety fence).

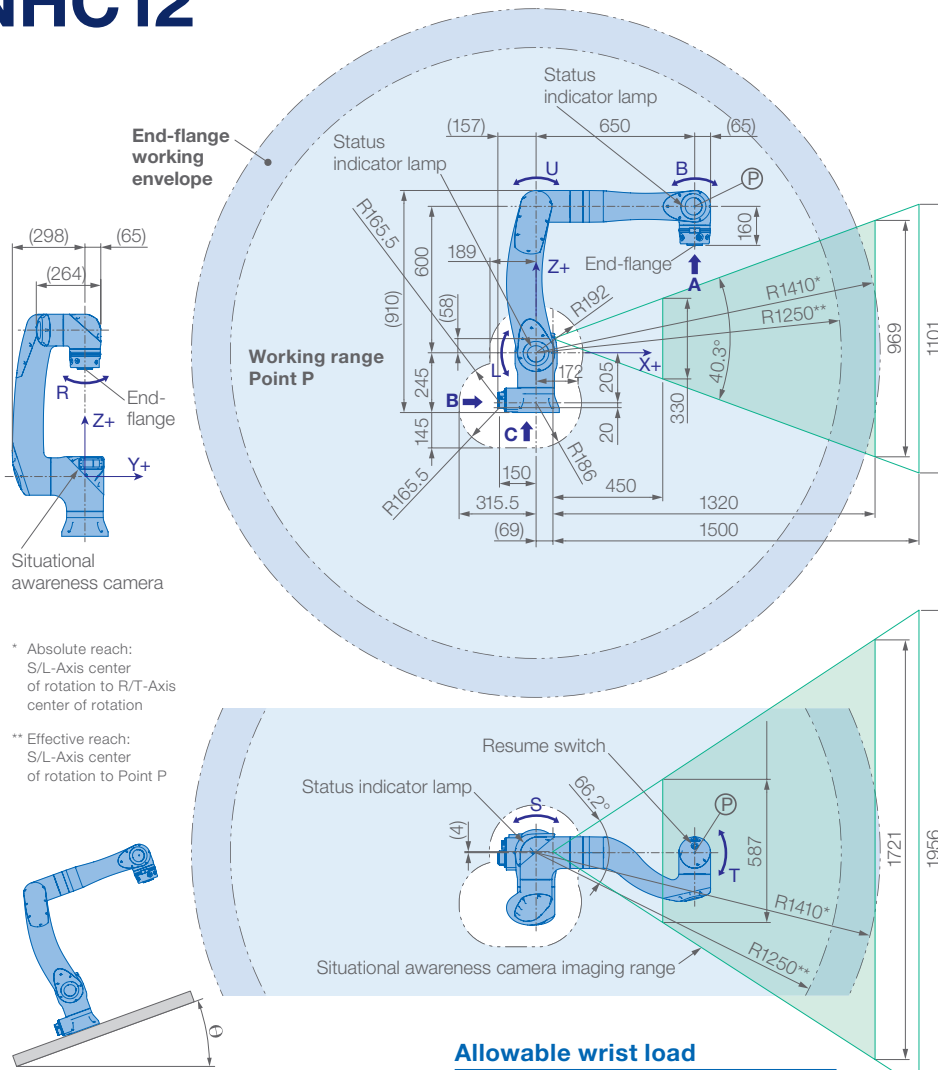
A standard integrated RGB-D bodycam can be used – in line with adaptive robotics – to monitor the work area, automatically identify workpieces, respond to events in real time, or simply perform visual inspection tasks.

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.

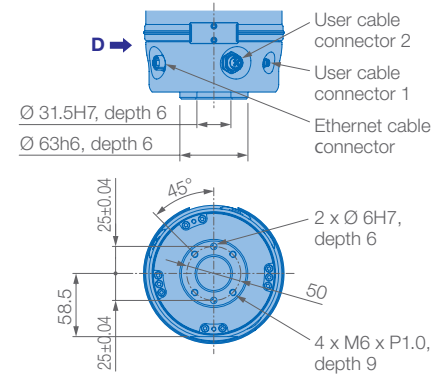
KEY FEATURES

- Collaborative robot (cobot) with large payload and working range (up to 12 kg / 1,250 mm)
- Integrated RGB-D bodycam
- Low weight, slim design, and small installation footprint
- Adjustable axis speeds for safe and fast operation
- Suitable for operation without protective fencing
- Standard cobot ISO flange for easy connection of accessories
- Integrated Ethernet and media cables, options for cable routing
- IP67-protected housing

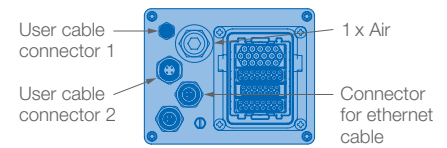
MOTOMAN NHC12



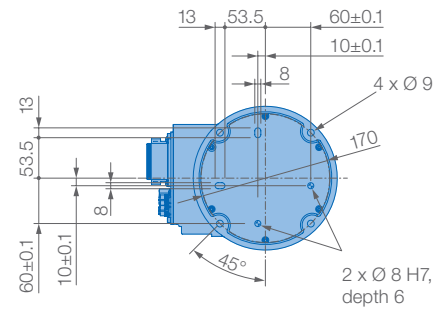
View A



View B

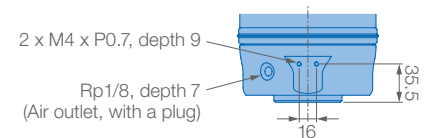


View C



Mounting options: Floor
IP Protection: IP67 (all axes)

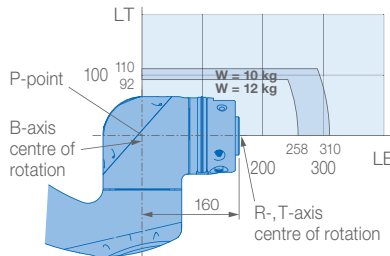
View D



* Absolute reach:
S/L-Axis center of rotation to R/T-Axis center of rotation

** Effective reach:
S/L-Axis center of rotation to Point P

Allowable wrist load



Robot installation angle θ [deg.]	S-axis operating range [deg.]
$0 \leq \theta \leq 25$	within ± 210 (no limit)
$25 < \theta \leq 30$	within ± 60
$30 < \theta \leq 35$	within ± 45
$35 < \theta \leq 60$	within ± 30
$60 < \theta$	within ± 25

Specifications NHC12

Axes	Maximum motion range [°]	Maximum speed [°/s]	Allowable moment [Nm]	Allowable moment of inertia [kg · m ²]	Controlled axes	6
S	± 210	130	–	–	Max. payload [kg]	12
L	± 180	130	–	–	Repeatability [mm]	± 0.05
U	+253/–73	180	–	–	Max. working range R [mm]	1410*/1250**
R	± 210	180	30	0.94	Temperature [°C]	0 to +40
B	+270/–90	250	30	0.94	Humidity [%]	20 – 80
T	± 210	250	11	0.30	Weight [kg]	46
					Max. connected load [kVA]	1.0

* Absolute reach: S/L-Axis center of rotation to R/T-Axis center of rotation ** Effective reach: S/L-Axis center of rotation to Point P

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All drawing dimensions in mm. Technical data may be subject to change without previous notice. Please request detailed drawings at robotics@yaskawa.eu.

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