

LET'S MOVE IT



OUR AUTONOMOUS MOBILE ROBOTS HELP
TO AUTOMATE AND OPTIMIZE YOUR
INTERNAL TRANSPORT.

BOWE FLEXXBOT



- Implement mixed processes with manual and autonomous cart movement, due to **intelligent cart recognition**
- Autonomous cart transfer for example between workstations, storage and production areas
- Autonomous detection of available carts and drop positions enables the implementation of **dynamic processes with minimal effort**

ROBOT

Height: 80 cm

Length: 80 cm (body),
130 cm (incl. arm)

Width: 62 cm

Weight: 270 Kg

- Voice output
- Intuitive LED signals
- Multiple Action Buttons directly on the robot
- Easy use Remote Controller
- 3 emergency buttons, easily accessible
- CE Certified

"EASY TO
WORK WITH"

CHALLENGING
ENVIRONMENT?
NO NEED TO WORRY

3D-Slam Navigation for reliable free
navigation in even in an 85%
dynamic environment

PERFORMANCE PARAMETERS

Max towing load:	500 kg/ 1 t
Max Speed:	2.0 m/s (500 kg), 1.0 m/s (1 t)
Operational Time:	up to 6h
Charging time:	40 min (from 15% to 90%)
Ramp ability:	5° (with up to 300 kg load)
Environmental Temperature:	0°C – 40°C
Humidity:	20% to 80%RH

Communication:	Wifi 802.11 a/b/g/n. BT 5.0, LTE 5G (optional), REST, UDP, OPC UA, proprietary interfaces, ...
Position Accuracy:	+/-5 cm; +/-1 cm with QR code marker
Operating System:	MOV.AI-OS

TAKES CARTS WITH IT, NO MATTER HOW THEY LOOK LIKE **JUST MOVE IT**



The **FLEXXBOT** can carry nearly any shape of carts. Thanks to the flexible gripper design, the device can adapt to **different gripping parameters**, such as the thickness and height of the gripping point. And all without having to reconfigure the vehicle!

Weights

Model FB50: 500 kg at
max speed of 2.0 m/s

Model FB100: 1000 kg at
max speed of 1.0 m/s



**EVEN HEAVY
GOODS CAN BE
MOVED RELIABLY
THANKS TO THE
HIGH GRIP FORCE.**

With its flexible arm, the
robot can move the trolley
**safely even in difficult road
conditions.**

Front wheels: rotating
Back wheels or middle wheel: fixed

OPERATION DETAILS

- Autonomous pick-up of carts with rotation inaccuracy of up to 10° and an X/Y variation of 20 cm thanks to intelligent object detection regarding position and orientation in the room
- Cart movement with a max speed of 2 m/s
- Cart tracking via log of all robot cart interactions
- Interaction with doors, elevators, and machines for seamless process execution
- Dynamic obstacle detection

ADDITIONAL ADD-ON

Further add-ons will be available in the future, such as top modules for small load carriers and other handling units. On request, we can fit a Blue Spot extension and provide an external battery starter set.

TECHNICAL EQUIPMENT

- Navigation:** 3D slam navigation using a 3D LiDAR sensor, two 2D LiDAR sensors and two 3D cameras combined in an intelligent algorithm
- Safety equipment:** two certified 2D-LiDAR with Sick Safety PLC; 16 infrared sensors for near-field coverage
- 3D-Cameras:** One camera each at the front and rear enables high process flexibility
- Motors:** Two powerful 400W motors, individually controllable for stable transport and maximum cornering flexibility
- Cart engagement:** additional infrared sensor for reliably approaching the cart

ROOM REQUIREMENTS

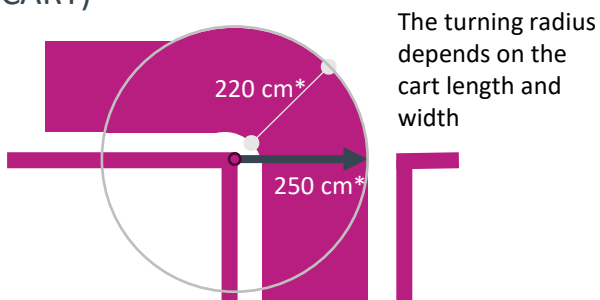
CREATING A BALANCE OF SAFETY AND USABILITY

The actual space requirement of an AMR system depends on the **risk analysis** and the evaluation of the application. For this purpose, the European harmonized standard **ISO EN 3691:4** specifies basic values that can be used as a basis for the layout design, but do not define a unique design for every application. Nevertheless, we would like to provide you with **sample values** for common operating modes so that you can get an idea of whether this AMR solution can be used in your system in principle.

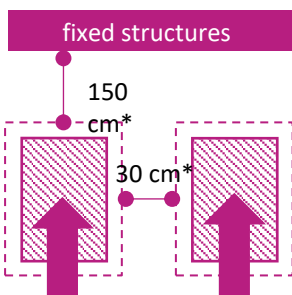
Please note that with towing robots, the **carriage dimensions** and design have a massive impact on the movement space of the AMR. This document only gives an example of a specific type of carriage.

One way to **reduce the movement radii** is to mount a **fixed wheel in the center of the cart**, while the other 4 wheels are mounted loosely. However, the track stability of the trolley may suffer as a result and should therefore be checked for feasibility in each individual case.

TURNING RADIUS OF A CORNER PATH (EXAMPLE 1M LONG, 65CM WIDE CART, 2 FIXED WHEELS AT THE BACK OF THE CART)



DROP POSITIONS

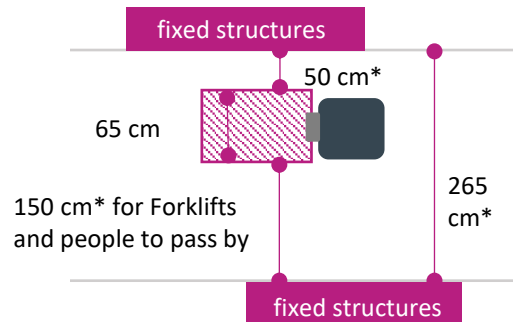


When dropping, the AMR must pass through the position and requires sufficient space on the rear side to exit.

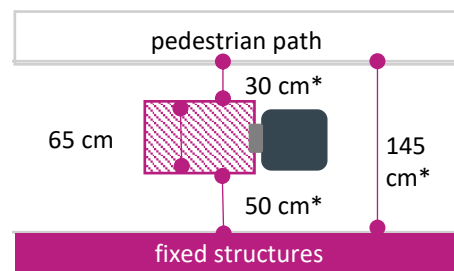
Each position should provide the cart sizes plus an extra 10 cm in all orientations.

*The values listed serve as a rough estimate. The actual dimensions in your layout may differ from the values listed, e.g. due to AMR speed and risk analysis assessments.

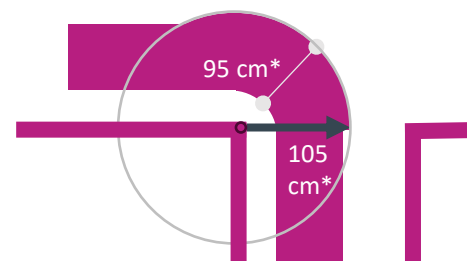
RECOMMENDED DRIVEWAY WITH TWO-WAY TRAFFIC



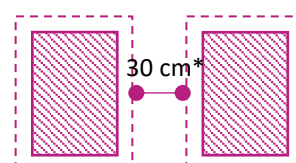
RECOMMENDED DRIVEWAY WITH ONE-WAY TRAFFIC AND PEDESTRIAN PATH



TURNING RADIUS OF A CORNER PATH (WITHOUT A CART)



PICK POSITIONS



Each position should provide the cart sizes plus an extra 10 cm in all orientations.

MORE ABOUT BOWE AMRS:
BOWE.COM/MOVE