

**AUTONOMOUS
MOBILE
ROBOTER**
AUTONOMOUS MATERIAL TRANSPORTATION



**OUR SYSTEM.
YOUR SOLUTION.**

www.MartinSystems.eu



SPECIAL CATALOGUE AMR

OUR SYSTEM. YOUR AMR.

Welcome to the world of MartinSystems!

At MartinSystems, the many years of experience and proven concepts of the innovative special machine builder MartinMechanic accumulate into a clever automation concept.

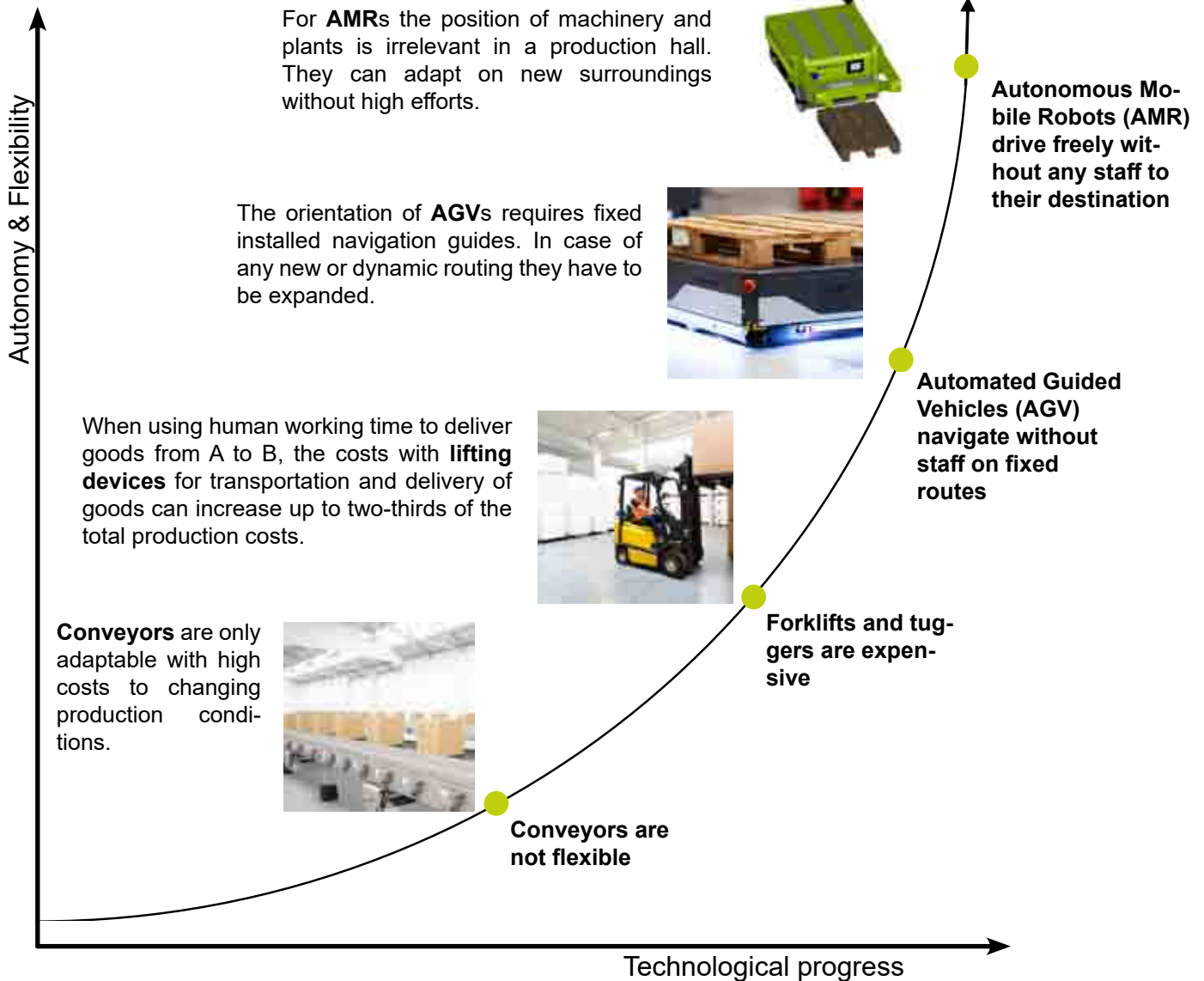
The advantages we offer you are clear:

- sophisticated machine concepts
- user-friendly operation
- short delivery times
- fast integration into your production process
- favorable prices

We look forward to seeing you!



FROM CONVEYOR BELT TO CONVEYOR SYSTEM. - THE DIFFERENCE IS FLEXIBILITY -



Customer Requirements.

- Substitution of inflexible conveyors
- Minimization the risk of accidents
- Increase of productivity
- Increasing the flexibility of intralogistics
- Reduction of total costs
- Monitoring
- Part Traceability
- Minimization of material stock in production
- Reduction of central storage locations

AMR VS. AGV. - FLEXIBILITY THROUGH AMR -

AMR vs. AGV.

The most important difference between AMR and AGV is in the navigation. Autonomous Mobile Robots do not require markings or rails installed in or on the ground, which is why they are more flexible compared to AGVs.

AMR.

- Drive around obstacles dynamically and autonomously
- can adapt to different situations
- no markings/rails installed on the ground are required
- Dynamically expandable



AGV.

- stop in front of an obstacle and wait until the obstacle has been removed
- transport goods and merchandise on fixed routes and perform predefined tasks
- AGVs can only operate with the help of markings installed on the ground (sensors, magnetic tapes, rails, etc.)



AUTOMATION WITHOUT INFLEXIBLE LINKAGE. - OUR FLEET AT A GLANCE -

Technical data.

		LD 60	LD90	LD250	MD650	MD900	HD1500
							
Width	[mm]	500	500	720	944	944	1.195
Length	[mm]	699	699	969	1194	1194	1.696
Height	[mm]	383	383	380	320	320	370
Weight incl. battery	[kg]	62	62	148	249	249	506,5
Payload [kg]	[kg]	60	90	250	650	900	1.500
Speed	[m/sec]	1,8	1,35	1,2	2,2	1,8	1,8
Power run time (full load)	[h]	15	15	13	8	8	9
Power recharge time	[h]	4	4	4	0,5	0,5	0,5
ESD-design	[-]	Ja	Ja	-	-	-	-
Cleanroom	[-]	ISO 5	ISO 5	ISO 5	-	-	-

MartinSystems APPLICATIONS (AN EXCERPT)

						
Conveyor belt (belt, roller)	✓	✓	✓	✓	✓	✓
Active Horizontal Axis Kinematics	✓	✓	✓	✓	✓	✓
Lift	✓	✓	✓	✓	✓	✓
Palettes				✓	✓	✓

The mobile robots are available with different super-structures. They are ready for immediate use, because no construction measures are required to enable them to drive freely in their surroundings.

Our range is being constantly expanded! Please find all application modules on www.MartinSystems.eu.

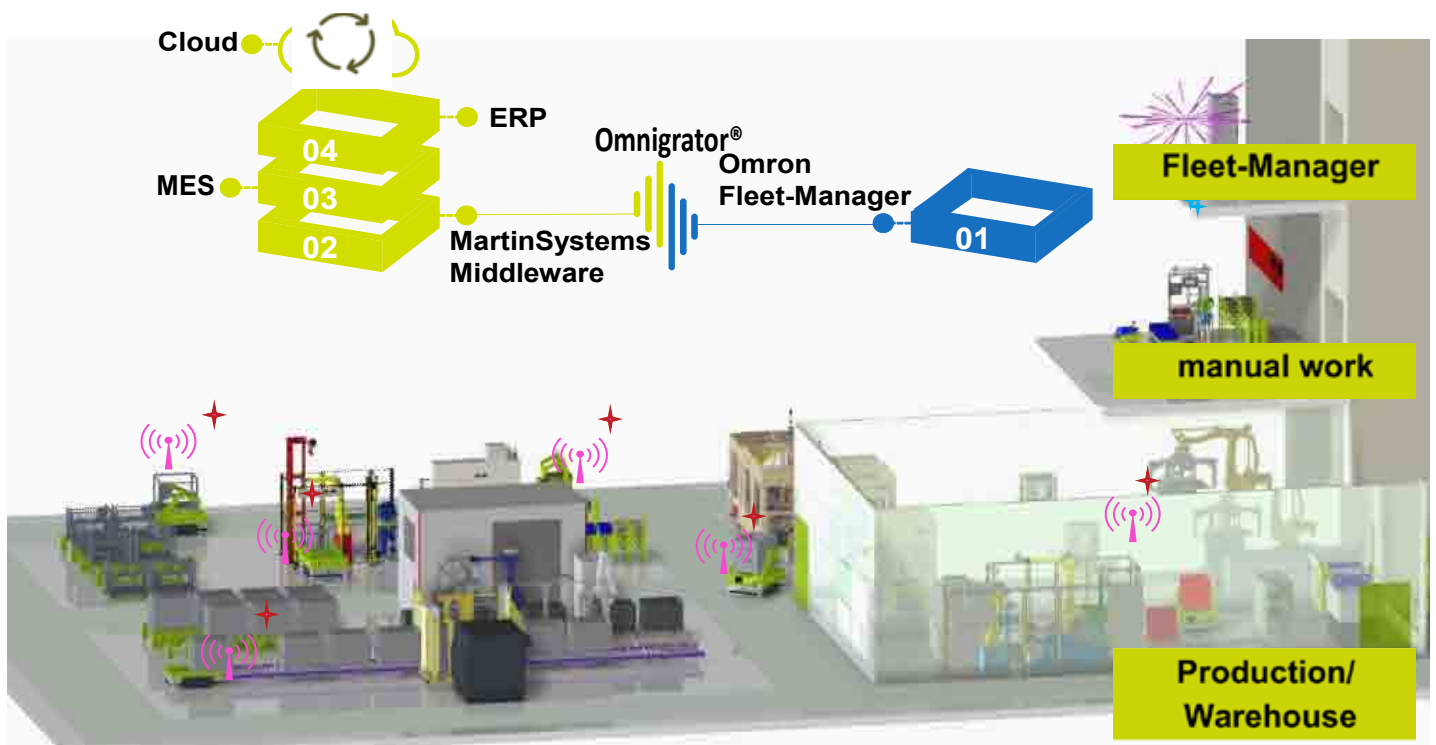
What doesn't fit is made to fit.



INTEGRATION INTO EXISTING INFRASTRUCTURE. - RELIABLE OPERATION ROUND THE CLOCK -

Fleet Manager.

Due to the industry-leading fleet manager there can be used different mobile robots with one and the same system. This allows a fully automated production.



MartinSystems Middleware.

- Automated Logistic Job Handling
- Connection to MES/ERP System
- Interface to machine control
- All common fieldbus systems and protocols

OMRON Fleet-Manager.

- Intelligent Job Assignment to AMR
- AMR Traffic Control
- AMR Charge Management
- AMR Skill Administration

CONTAINER-INDEPENDENT MATERIAL TRANSPORTATION. - FOR LOW AND HEAVY PAYLOADS -

Areas of application.

The area of application of autonomous mobile robots extends to all tasks where goods have to be delivered. Therefore, the AMR is also available with an ESD- or clean room design.

APPLICATION EXAMPLES

For low payloads -

AMR OMRON LD90/250. The mobile robot takes the transportation of Container.



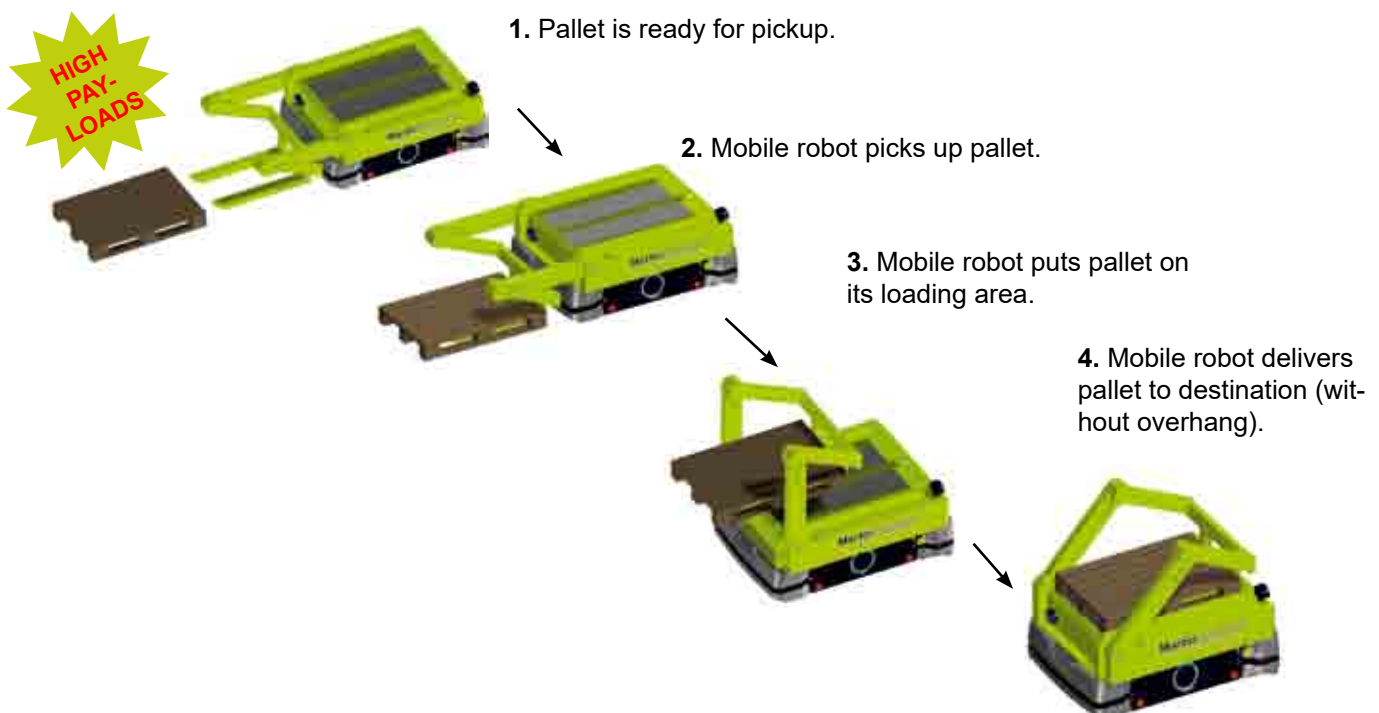
1. transport container is ready for pickup.

2. Mobile robot picks up container.

3. Mobile robot delivers container to destination.

For high payloads -

AMR OMRON HD1500. The mobile robot takes the material transportation of complete euro pallets.



1. Pallet is ready for pickup.

2. Mobile robot picks up pallet.

3. Mobile robot puts pallet on its loading area.

4. Mobile robot delivers pallet to destination (without overhang).

SUCCESSFUL FACTORY AUTOMATION. - INTELLIGENT, INTERACTIVE, INTEGRATED -

Living
i4.0



Intelligent Logistics.

Fully integrated integration of customer systems, fleet managers and infrastructure to optimize the flow of goods.

- Continuous supply of goods
- Feedback of ongoing works in real-time
- Feedback about manufactured parts and parts which have to be tested
- Transparency about parts availability due to complete traceability



More Safety.

Mobile robots monitor their surroundings and adapt speed and driving direction continuously. The safety of people is increased due to:

- Increase of safety distance with increasing robot speed
- Delayed speed adjustment of driving speed after obstacle removal
- Dynamic safety zones for driving forward and reverse, rotating left and right, driving in an arc to the left and right, docking station, no movement zone, low speed zone



Powerful Fleet Management.

The enterprise manager is the key interface for each fleet application. He optimizes order management, traffic flow and charge level of the mobile robots. This includes:

- Display of the current robot position and robot status
- Assignment, optimization and prioritization of transport orders
- Traffic control to optimize the traffic flow
- MobilePlanner for managing robots or fleet on PC
- Interfaces for the integration of other systems (MES, WMS, ERP, etc.)



Industries.

Autonomous mobile robots are used industry independent, for example:

- Automotive
- Electronics
- Plastics
- Food
- Logistics
- Aerospace
- Medical
- Furniture
- General industry and all others

IT ALWAYS WORKS. - EXAMPLES -

MagMover MMM.

Task: You need an AMR that can remove and insert workpiece carriers from a passive storage.

Base: Omron LD90
Topmodule: Horizontal Axis Kinematics
Payload: 40kg
Loading space: 600mm x 400mm

Function: Axes are attached which are moved behind the workpiece carrier. By swiveling the pushers, the workpiece carrier can be pulled onto the AMR.



HighLift MKB.

Task: You need an AMR that can pick up and lift workpiece carriers perpendicular to the direction.

Base: Omron LD250
Topmodule: Horizontal and vertical axis kinematics
Payload: 60kg
Loading space: 400mm x 600mm

Function: Carriers are moved under the workpiece carrier and lifted slightly. the carrier is then pulled onto the lift.



Transporter MTT.

Task: You need an AMR that transports goods from any pick-up position A to any loading position B.

Base Omron LD60/90
Topmodule: Conveyor line with rotary module
Payload: 35kg
Loading space: 600mm x 400mm

Function: Conveyor belt at fixed transfer height with active 180 degree rotation module.



IT ALWAYS WORKS. - EXAMPLES -

Lift MTL.

Task: You need an AMR that transports goods from any pick-up position A to any loading position B.

Base: Omron LD60/90/250
Topmodule: Transporter mit Lift
Payload: 40/80kg
Loading space: 600 x 400mm

Function: The electrical lift system has 2.000mm travel. It enables multiple applications where the pick up and hand over positions for load carriers are on different high.

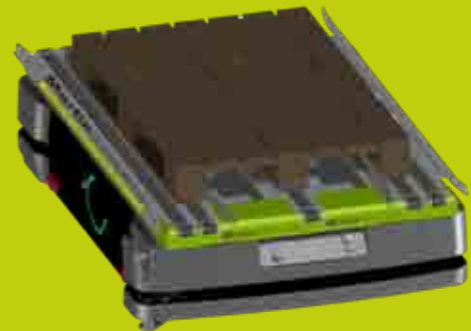


Flatmobil.

Task: You need an AMR that builds ultra-flat.

Base: Omron HD1500
Topmodule: Chain conveyor
Payload: 1300kg
Loading space: 1200/800mm

Function: Particularly flat conveyor belt for high load capacities.



Mechafant MHP.

Task: You need an AMR which pick up euro pallets directly from the shopfloor without any assisting machinery.

Base: Omron HD1500
Topmodule: Stroke kinematics
Payload: 800kg
Loading space: 1200mm x 800mm

Function: Pick up pallets from the ground and set them down.



ARE YOU READY TO UPGRADE YOUR INTRALOGISTICS TO TAKE IT TO THE NEXT LEVEL?



MartinSystems.

If you make your decision to MartinSystems, you will not only get a mobile robot. You will get a fully integrated solution for automation. Therefore we are working together with Omron, the worldwide leading producer of industrial mobile robots and we are proud to be a certified Omron Solution Partner since 2018. We as an experienced system integrator will accompany you through the whole implementation process. From consultation, analysis to introduction and further support. This is what sets us apart! We are looking forward to welcome you. Please feel free to contact us.

RoboDrom.

In our approx. 600qm showroom "RoboDrom" we show the operation of a fleet from small to large navigating in a network. Various machines, manual workstations and warehouse situations are realistically set up and connected and can thus also illustrate how Autonomous Mobile Robots (AMR) can be integrated into production. Our solutions for pallets (Floor to Floor; Box transport with and without lift) are very well received!

POC'S are possible at any time.

Get in touch with us and take advantage of the opportunity to test various scenarios directly on site.



*YOUR
personal
Note!*

SUCCESS THROUGH A PRODUCTIVE FUTURE!

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More informationen about our standard machinery please find on
www.MartinSystems.eu

