

FREQUENTLY ASKED QUESTIONS BY CUSTOMERS INTERESTED IN A-MATE MOBILE ROBOTS

This document is meant to cover the most common customer questions with a satisfactory answer at an appropriate technical level. For deeper explanations, AGV experts of KHW or its local partner should be involved.

Question	Answer
General questions	
What is the difference between A-MATE FreeLift, A-MATE Counter and A-MATE Lite?	The A-MATE FreeLift offers omnidirectional movements and a slim body. It is designed to operate in very narrow spaces, e.g., existing production environment. The A-MATE Counter is the most compact AGV/AMR counterbalance forklift in its payload class on the market. The customizable forks (available 2025) offer a wide range of application scenarios. The A-MATE Lite is an omnidirectional mobile robot, designed as a counterbalance forklift. Compared to the FreeLift and the Counter (1000kg at 1.1m) can lift up to 600kg with a lifting height of up to 300mm.
How long does the system set-up take?	This is strongly related to complexity of the project (no. of vehicles, stations, and interfaces). Typically, we are 2-3 weeks on-site for implementation and user training for small installations of 1-4 vehicles.
What is the lead time for A-MATE?	Smaller amounts of vehicles (1-4) can usually be delivered within 3 - 6 months after purchase order and agreement on project specifications plus the transport time from Germany to the destination.
Where is the A-MATE built?	Development, design, vehicle-related software programming, manufacturing, assembly, and End of Line testing of the A-MATE all take place in Buchholz near Hamburg, Germany.
Technical questions	
How does A-MATE navigate?	The A-MATE uses navigation based on natural features in the environment (walls, pillars, machines etc.). The measurement data of the LiDAR sensor is used to locate itself on a pre-recorded map of the operating area.
How fast does A-MATE go?	The maximum driving speed forward is 1.5 m/s (3.4 mph). In reverse direction (the direction with forks) we drive 0.5 m/s max (1.2 mph). The final speed profile will be adapted to customer environment.
Can I use A-MATE outdoors (in the rain)?	The A-MATE is designed to drive indoor only.
Can you pick up manually placed load units?	The A-MATE can adapt its driving path corresponding to actual load unit position if it is placed within feasible tolerance. This optional so called "load carrier detection" feature works with a variety of loading devices (pallets, lattice box etc.) and makes use of an extra sensor which is a 3D camera.

How long can you operate with a fully charged battery?	With typical use of our A-MATE, the battery lasts an 8-hour work shift without opportunity charging. For continuous use the battery will be charged during operational waiting times at our automatic charging station. The typical charge to operating ratio is 1:8 which means 10 minutes of charging batteries for 80 minutes of A-MATE driving.
How safe is it, can A-MATE work with people?	The A-MATE uses personnel safety laser scanners to ensure 360-degree safety according to AGV standard ISO 3691-4. In addition, four easy to reach emergency stop buttons can stop all movements. Safety switches in the fork tip complete our safety equipment. An additional 3D obstacle detection sensor is integrated as a default.
Can A-MATE pass obstacles in the driveway?	If A-MATE detects an obstacle in the driving path it asks the fleet management for permission to bypass and calculates the manoeuvre online. However, while this feature is beneficial in some situations keeping the driveway clear of obstacles ensures a better system performance and acceptance with manual drivers.
Fleet management questions	
Why does A-MATE need a fleet management system?	The task of a fleet management system is to dispatch orders to the best suitable AGV/AMR, coordinate the traffic and interface to shop floor installations (doors, conveyors etc.) as well as upper-level management systems (WMS, MES, ERP etc.). Depending on the intelligence of the vehicles, individual tasks can also be transferred to the vehicles. However, a central instance is advantageous for an efficient, predictable, and integrated logistics system.
Can the A-MATE interact with other AGV/AMR?	Organizing different fleets of AGV/AMR within the same operational environment is the task of a central fleet management system which we can offer. To third party fleet management software A-MATE can connect via VDA5050 interface upon request.