

# M500-U

Unit Load  
2268 kg lbs Carry Capacity

The Model M500-U is part of our top-selling family of AGVs offering ultimate flexibility, reliability and scalability at an affordable price.

## FEATURES

**Compact and Maneuverable:** The ultra-low top of deck is ideally suited to carry heavy loads at an ergonomic height, also available with lift or conveyor deck. This AGV is highly maneuverable with center rotate and bidirectional capabilities making the best use of your valuable space.

**Multi-talented:** This AGV supports both Natural Feature Navigation and Inertial navigation ensuring the ability to navigate in challenging environments.

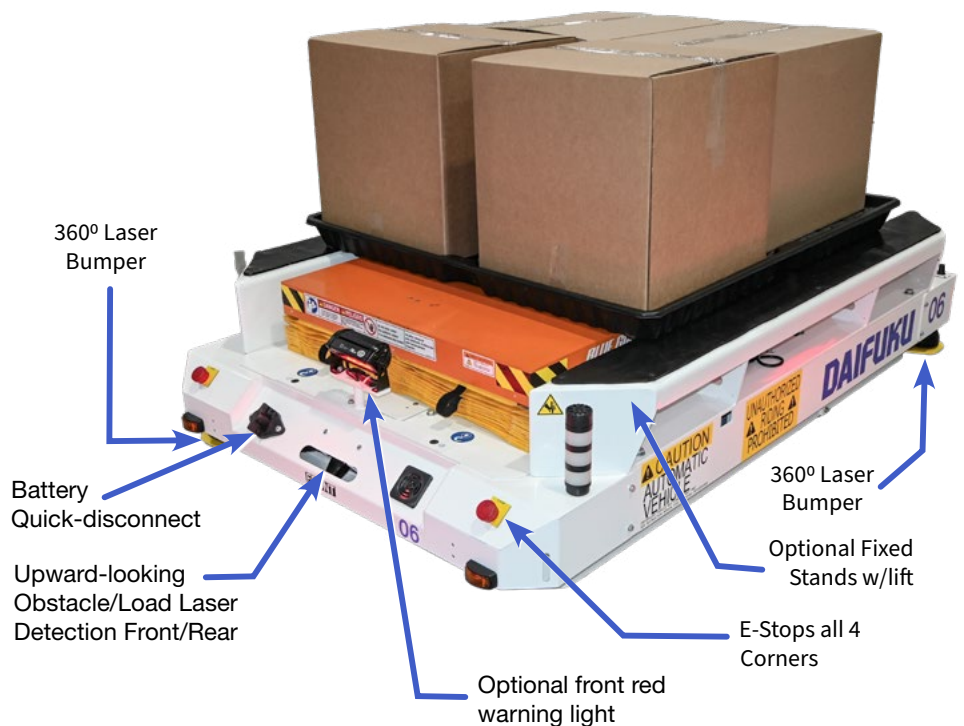
**Robust:** The M500-U follows our decades of experience building rugged AGVs suited to industrial environments.

**Safe:** The M500-U offers 360 degree laser bumpers + 2 additional (upward looking front/rear) lasers to detect obstructions and personnel.

**Efficient:** Highly efficient AC drives powered by optional lithium batteries for fast charging and long life. Automatic charging supports 24/7 operation.

**Connected:** With Daifuku's System Automation Manager™ (SAM) software providing traffic control and fleet coordination, AGV operations may be integrated with Plant Control and Warehouse Management Systems.

**Simple:** CartTools™ and AGV Tools software provide a user-friendly interface to implement/make changes.



Vehicle shown with the following options:  
Scissor lift, fixed platforms, and red warning lights on all sides.

## NAVIGATION

**Natural Feature Navigation (NFN):** Environmental feature data is collected by on-vehicle sensors and used by the vehicle computer to determine location.

**Inertial Navigation:** Odometry data and in-floor waypoints are used by the vehicle computer to determine location.

Either NFN or Inertial can be used as the sole navigation method or they can be combined for challenging environments.

## FEATURES AND OPTIONS

- Automatic Charging, 140 amps
- Wi-fi Communications 802.11 a/b/g/n/ac
- Wi-fi 6E
- 360° Red Warning Lights front, rear, and sides
- Automatic Shut Off
- Sleep/Auto-wake
- Warning Light/Horn
- Music Generator
- Lithium Battery Pack



### General Specifications

|                       |   |
|-----------------------|---|
| Weight with batteries | 907 kg  |
| Dimensions:           | W: 1219 mm L: 1995 mm H: 286 mm   |
| Capacity:             | 2268 kg max, flat deck base unit<br>1814 kg max, conveyor deck option<br>1814 kg max, lift deck option; H: 464 mm |
| Safety                | ANSI B56.5 laser bumpers all sides  |
| Speed – 6 Selectable  | 4.6mpm to 73 mpm with inertial or up to 109 mpm with natural feature navigation<br>.03 mpm increments             |
| Pedestrian Awareness  | Flashing light and horn, per ANSI B56.5   |
| Battery Power         | 24VDC   |
| Battery Pack Options  | AGM/TPPL 204 AH, 300,000 AH life<br>Lithium 180 AH, 1,200,000 AH life   |
| Automatic Charge      | 140-amp charge rate   |
| Manual Charge         | Up to 25-amp charge rate  |

### Environment

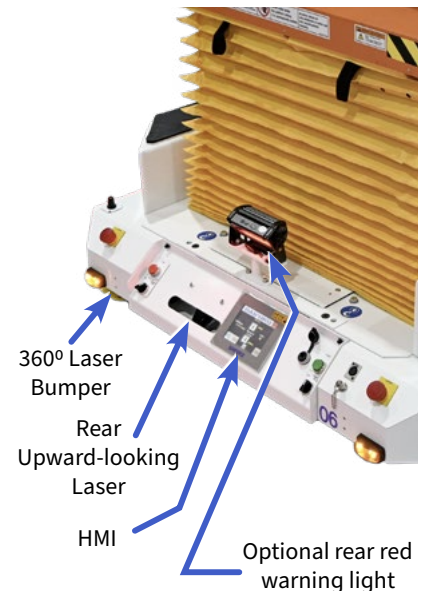
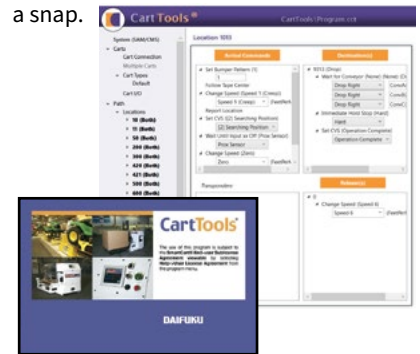
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|----------------------------|---|
| Atmosphere                 | 0 to 40° C, 25% to 95% non-condensing humidity                |
| Dust/Water-proof           | No  |
| Floor Specs – Edges/Debris | 6.4 mm abrupt elevation change maximum, smoothed              |
| Expansion Joints           | 6.4 mm minimum  |
| Friction                   | 0.6 coefficient of friction between wheels and floor, minimum |
| Floor Conductivity         | Static dissipative, less than $3.5 \times 10^7 \Omega$        |
| Radio Communications       | IEEE 802.11a/b/g/n/ac standard Wi-fi 6E available             |

### Detailed Specifications

|                              |  |
|------------------------------|--|
| Drive Direction              | Automatic Forward and Reverse  |
| Duty Cycle                   | 100% @ Maximum Load Rating   |
| Drive Type                   | Gear driven fixed  |
| Motors                       | 1 kw AC  |
| Brakes                       | Static-electric, 8 Nm, spring actuated (fail-safe) with manual release |
| Drive Wheels – 2             | Wheel 250 mm dia. X 80 mm Polyurethane 92 Shore A                      |
| Load Wheels – 4              | Swivel Caster 150 mm Shore A, durometer 95                             |
| Navigation                   | Natural Feature Navigation, and/or Inertial                            |
| Drive Wheel Sensor Encoders  | Yes, absolute multi-turn encoders                                      |
| Steering / Stopping Accuracy | +/- 12.7 mm  |
| HMI Display                  | 145 mm color touch screen – errors & destinations                      |
| Manual Movement              | Pendant – via pendant plug receptacle                                  |
| Minimum Path Radius          | 0  |
| Pivot Turn Capable           | Yes  |
| Drive Stalled Detection      | Yes  |
| Distance Initiated Functions | Yes – in 25.4 mm increments  |
| Program Method               | PC and Wireless  |
| Obstacle Detection           | 360°, programmable up to 2.8 meters                                    |
| Emergency Stop               | 4 – Corners  |
| Wiring                       | Per CE/UKCA ampacity guidelines  |

### CARTTOOLS SOFTWARE

Simple, standardized toolbox of commands that make configuration a snap.



REAR VIEW

**System Automation Manager – (SAM)** is a robust, easily-configured control system option for Automatic Guided Vehicles (AGVs) and SmartCart® Automatic Guided Carts (AGCs). SAM is the result of more than 60 years of experience engineering, manufacturing and installing more than 20,000 vehicles. SAM's framework can be easily customized to meet our customers' individual needs and improve the efficiency of our AGV and AGC systems.

