

Automatic Guided Vehicles

M300-CF

Counterbalance Fork 1,400 lbs Pallet Capacity

The M300-CF is a light-duty fork vehicle with high value features for today's demanding material handling solutions.

FEATURES

Fork Lift: 1,400 lbs (636 kg) load capacity at a 20" (508 mm) load center or 1,230 lbs (559 kg) at 24" (609 mm) load center. Perfect for picking up and dropping off pallets from conveyors, stretch wrappers, or floor.

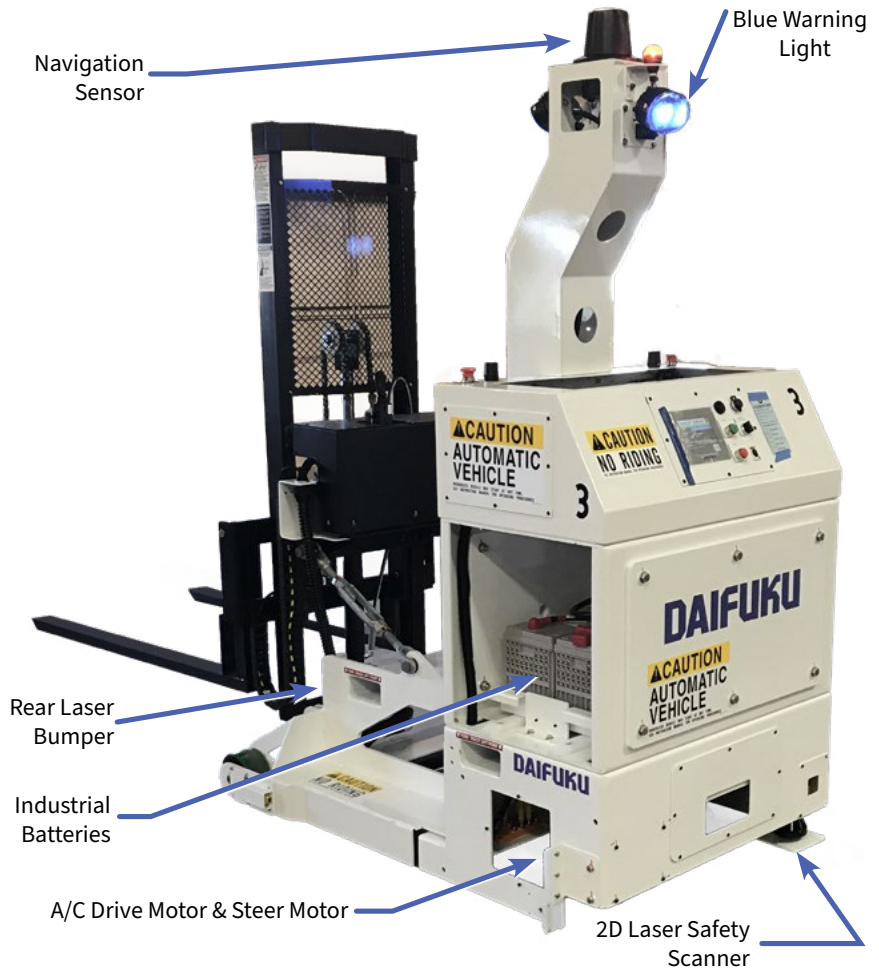
Safe: A 16-pattern laser detects obstructions and personnel.

Efficient: The M300-CF operates on battery power, while also automatically charging, yielding up to 24/7 fully automatic operation.

Integration: Can integrate with Plant Control Systems via Wi-Fi communications and System Automation Manager™ (SAM) software providing traffic control.

Affordable: Many applications can demonstrate Return On Investment in three months or less.

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



NAVIGATION AND GUIDANCE OPTIONS

Natural Feature Navigation (NFN):

The AGV determines its location using LIDAR to identify structures in the environment and match their locations to a virtual map of the facility.

Laser Navigation: Field of reflective targets seen by on-vehicle sensors and used by vehicle computer to determine location.

Magnetic Tape/Bar Guidance: Magnetic path is followed using sensors.

NAVIGATION ENHANCEMENTS

Enhanced Navigation: Additional sensors can be added to augment the vehicle's navigation technology.

Co-Navigation Technology: Multiple navigation packages may be used on a vehicle in challenging environments.

FEATURES AND OPTIONS

- Communications Wi-Fi 5
- Automatic Shut Off
- Sleep/Auto-wake
- Automatic Charging
- Lithium Battery Pack
- Wheel Brushes
- Side Swipe Optics
- Warning Light/Horn
- Cab Side Covers

Smart Handling AGV Solutions

General Specifications

Weight / with batteries	2,585 lbs (1084 kg)
Dimensions	W: 41" (1041 mm) L: 111" (2820 mm) H: 84" (2133 mm)
Maximum Load	1,400 lbs (636 kg) at 20" (508 mm) Load Centers
	1,230 lbs (559 kg) at 24" (609 mm) Load Centers
Lift Range	Floor to 48" (1219 mm)
Safety – Front& Rear Laser Bumper	ANSI B56.5 compliant bumper (16 Pattern)
Speed	15 to 240 FPM, (160 FPM with magnetic tape) 6 speeds, 1 FPM increments
Battery Options	AGM 210 AH 24 VDC Battery Pack
	AGM/TPPL 204 AH 24 VDC Battery Pack
	Lithium 180AH 24VDC battery pack
Automatic Charge	80 amp charge rate
Fast Automatic Charge	140 amp charge rate
Manual Charge	Up to 25 amp charge rate

Environment

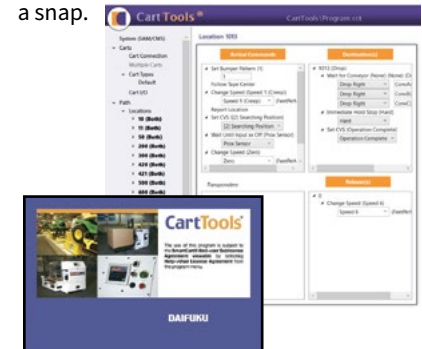
Atmosphere	0 to 40° C, 25% to 95% non-condensing humidity
Dust/Water-proof	No
Floor Specs – Edges/Debris	.25" abrupt elevation change maximum, smoothed
Expansion Joints	.25" maximum
Grade Rating	0%
Flatness	1% and .25" (6 mm) variation in 5' (1524 mm) or less
Friction	0.6 coefficient of friction between wheels and floor, minimum
Floor Conductivity	Static dissipative, less than $3.5 \times 10^7 \Omega$
Radio Communication	Wi-Fi 5

Detailed Specifications

Drive Direction – Automatic	Forward and Reverse
Duty Cycle	95% @ Maximum Load Rating
Drive Unit – Wheel	Vulkolan 210 mm dia X 70 mm wide
Drive Type	Gear driven steerable turntable
Motor	1000W 24 VAC
Brake	10 NOM Spring actuated (fail-safe)
Rear Wheels	Poly 6" dia x 3" wide
Navigation	Daifuku AGV – Natural Feature Navigation and Laser
Steer Angle Sensor Encoder	Yes
Steering /Stopping Accuracy	+/- .5"
Guidance – Magnetic Tape/Bar	SmartCart AGV
Steer Angle Sensor	Analog 10 turn potentiometer
Steering Accuracy	+/- 1" from physical path
Guide Loss Error	Error generated within 6" of path loss
Hunt for Path	Not offered, violates ANSI B56.5
Sensor	16 millisecond data rate, 50 updates per second
SmartSteer Accuracy	+/- 3" @ 10'
Stopping Accuracy	.5" proximity sensor, 1.5" transponder reader @ 30 FPM
Location Method	Transponder tags, 5 data bytes including checksum
	Virtual Locations via distance initiated functions
Program Capacity	5000 program steps
HMI Display	5.7" color touch screen – errors & destinations
Manual Movement	Pendant – via plug receptacle or fork pockets
Minimum Path Radius	24" @ 90° turn, 48" @ 180° turn
Drive Stalled Detection	Yes
Distance Initiated Functions	Yes – in 1" increments
Program Method	PC and Wireless
Obstacle Detection	Front and rear programmable up to 2.8 m
Emergency Stop	3 – Front, Top Left/Right
Side Swipe Optics	Both sides near floor
Wiring	Per NEC ampacity guidelines

CARTTOOLS SOFTWARE

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



Magnetic-guided M300-CF

SmartSteer – CartTools directing the AGV to intentionally leave the magnetic tape path. It allows maneuvers like pivot turns and ignoring floor problems when in full automatic operation.