



The Mobile Robot Company

Knowledge Center — Manual and Autonomous Modes · 2026-08-04

<https://info.mobilerobot.com/documentation/getting-started/manual-and-autonomous-modes>

Manual and Autonomous Modes

The J1600 is a dual-mode vehicle: one machine that works both as a conventional walk-behind electric pallet jack and as a self-driving robot. Understanding the two modes and the handover between them is the core of operating it. For the concept behind the design, see [Dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) and [Human-in-the-loop automation](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/).

Manual mode

In manual mode a person controls the tiller and lift functions like a conventional electric pallet jack:

- pallet picks and drops at heights up to 1,600 mm (63 in);
- full payload of 1,600 kg;
- nuanced pickup, difficult approaches, [sensitive or unstable loads](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/), congestion, and [exceptions](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/);
- gradeability of 5% unloaded and 3% at full load — slopes and dock plates are manual work.

White lights indicate manual mode. See [Manual Operation](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) for the full guide.

Autonomous mode

In automatic mode the J1600 drives itself to a saved destination at up to 5.4 km/h, avoids obstacles, drops the pallet at floor level, and then returns, parks, continues, or waits according to the task:

- autonomous driving is indoor and [level-floor](https://info.mobilerobot.com/documentation/installation/floor-requirements/) only (0% gradeability);
- blue floor-light strips display the protected area, [which expands with speed](https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/);

- a 360-degree safety field covers forward and reverse travel.

See [Autonomous Operation](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) (<https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/>), for the full guide.

The key switch

A [three-position key switch](https://info.mobilerobot.com/safety-compliance/safety-functions/mode-selection/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/mode-selection/>) selects the operating state:

Position	Meaning
Power off	Vehicle powered down
Manual	Manual-only operation
Automatic	Autonomous task execution permitted

Handover: entering autonomous mode

[The operator — never the robot — initiates autonomous work](https://info.mobilerobot.com/documentation/user-guides/operator-manual/) (<https://info.mobilerobot.com/documentation/user-guides/operator-manual/>):

1. Create or select a task on the touchscreen and execute it.
2. The robot asks for confirmation to [enter automatic mode](https://info.mobilerobot.com/safety-compliance/safety-overview/manual-and-autonomous-mode-safety/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/manual-and-autonomous-mode-safety/>).
3. Confirm with the physical LED start/resume button.
4. The interface instructs you to step clear; the robot starts only after confirmation.

Takeover: returning to manual control

Manual control is always immediately available:

- grabbing or moving the tiller returns the vehicle to manual control;
- [tiller-position switches](https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection/>) handle emergency stop and manual control;

- [three emergency-stop buttons](https://info.mobilerobot.com/safety-compliance/safety-overview/emergency-stops-and-manual-takeover/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/emergency-stops-and-manual-takeover/>) and a belly button (stop and reverse) provide hard stops.

Immediate human takeover is central to the product concept — human judgment is treated as part of the system, not as a failure mode.

Capability ladder

Level	Capabilities
Manual functions	Pallet pick and drop up to 1.6 m; full manual tiller control
Basic automation	Start automatic tasks on-screen; save locations; floor-level pallet drop; self-drive to saved locations; return-to-me; go-to-parking
Advanced automation	Come-to-me; automatic charging; VDA 5050 fleet manager; API integrations

The ladder describes machine capabilities; it is separate from the Standard and Advanced software packages described in the [J1600 User Manual](https://info.mobilerobot.com/documentation/user-guides/j1600-user-manual/#software-versions) (<https://info.mobilerobot.com/documentation/user-guides/j1600-user-manual/#software-versions>).