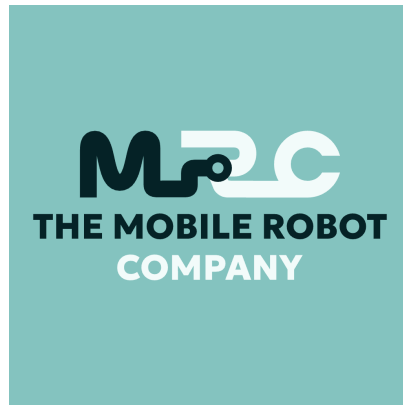




The Mobile Robot Company

Knowledge Center — Dual Mode · 2026-08-04

<https://info.mobilerobot.com/documentation/concepts/dual-mode>

Dual Mode

Dual mode means one vehicle combines two operating behaviors: manual control like a conventional electric pallet jack, and operator-initiated autonomous driving. It is [the J1600](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>)'s defining concept. This page explains both modes, the handover between them, and the reasoning behind the combination.

The two modes

- **Manual mode:** a person controls the tiller and lift functions exactly as on a conventional electric pallet jack. [Manual operation](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>), covers nuanced pickup, handling up to 1.6 m, difficult approaches, [sensitive or unstable loads](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/) (<https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/>), and [exceptions](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>).
- **Automatic mode:** after the operator selects a saved destination and [confirms the mode change](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/>), the vehicle [drives autonomously](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) (<https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/>), performs a floor-level pallet drop, and follows its configured return, park, wait, or continue behavior.

How the handover works

The operator initiates autonomous work from the task interface and the physical start/resume button. The robot asks for confirmation and instructs the person to step clear before moving. Manual control is regained at any time through the tiller and safety controls: [tiller-position switches](https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection/>), govern emergency stop and manual control, and 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 power off, manual-only, or automatic mode. Grabbing or moving the tiller enables [immediate manual takeover](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/>).

Capability ladder

Level	Capabilities
Manual functions	Pallet pick and drop up to 1.6 m; full manual tiller control
Basic automation	On-screen task start; saved locations; autonomous travel to saved points; floor-level drop; return-to-me; go-to-parking
Advanced automation	Come-to-me; automatic charging; VDA 5050 fleet management; API integrations

The ladder describes what the vehicle can do; the [Standard and Advanced software packages](https://info.mobilerobot.com/products/software/software-comparison/) describe how capabilities are licensed. See the [integration overview](https://info.mobilerobot.com/documentation/technical-integration/integration-overview/).

Why dual mode exists

Full automation becomes expensive and rigid when the judgment-heavy part of a task — checking loads, placing forks, improvising around congestion — has to be engineered away with WMS and fleet integration, precise load data, and controlled processes. Dual mode leaves those decisions to a person and automates the long travel instead. The intended balance is [roughly 80% automation rather than 100%](https://info.mobilerobot.com/applications/results/productivity-improvements/), with greater [flexibility](https://info.mobilerobot.com/applications/results/operational-flexibility/) and a lower entry cost.

Manual control preserves the ability to unload trucks, handle unstable or sensitive loads, work around congestion, and respond to exceptions; autonomy [removes the repeated walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/). The result is a product tier between manual electric pallet jacks and conventional [AGVs](https://info.mobilerobot.com/documentation/concepts/mobile-robot-terminology/) and fully automated systems — see [pallet automation fundamentals](https://info.mobilerobot.com/documentation/concepts/pallet-automation-fundamentals/) and [human-in-the-loop automation](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/).

Dual mode on the J1600

For the J1600-specific implementation — controls, workflows, and demonstrations — see the product page on [dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) and the [example workflows](https://info.mobilerobot.com/documentation/technical-integration/example-workflows/).