



The Mobile Robot Company

Knowledge Center — Manual Operation · 2026-08-04

<https://info.mobilerobot.com/documentation/user-guides/manual-operation>

Manual Operation

In manual mode the J1600 behaves like a conventional walk-behind electric pallet jack. The tiller and manual behavior are deliberately familiar, so an experienced pallet-jack operator can use the machine with about 30 minutes of [training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>).

Manual capabilities

Capability	Value
Pallet pick and drop height	Up to 1,600 mm (63 in)
Payload	Up to 1,600 kg (about 3,500 lb)
Fork lifting speed	0.10 m/s unloaded; 0.08 m/s at full load
Fork lowering speed	0.08 m/s unloaded; 0.12 m/s at full load
Gradeability, unloaded	2.86° / 5%
Gradeability, full load	1.72° / 3%
Traversable bump height	25 mm (1 in)
Traversable gap width	20 mm (0.8 in)

Manual mode is the only mode for handling above floor level: autonomous delivery is always a floor-level drop.

Controls

- **Tiller:** drives and steers the vehicle and controls lifting. Grabbing or moving the tiller during autonomous travel [returns the vehicle to manual control immediately](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/>).
- **Key switch** (<https://info.mobilerobot.com/safety-compliance/safety-functions/mode-selection/>): set to the manual position for manual-only operation.

- **Tiller-position switches** (<https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection/>): provide emergency stop and manual-control functions.
- **White lights** indicate the vehicle is in manual mode.

When to work manually

Manual mode carries the judgment-heavy share of pallet work:

- **Pallet pickup** — always manual, including fork placement and load checks.
- **Truck unloading and dock plates** — [automatic gradeability is 0%](https://info.mobilerobot.com/documentation/installation/floor-requirements/) (<https://info.mobilerobot.com/documentation/installation/floor-requirements/>), so slopes, ramps, and trailer entry are manual.
- **Sensitive or unstable loads** (<https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/>) — barrels, top-heavy stacks, leaning loads, and confined maneuvering benefit from manual judgment of pallet detection and height.
- **Congested areas** — improvise a route through [crowded receiving floors](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>).
- **Exceptions** (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>) — misplaced pallets, damaged goods, loose shrink wrap, urgent reprioritization.

The [Operator Manual](https://info.mobilerobot.com/documentation/user-guides/operator-manual/) (<https://info.mobilerobot.com/documentation/user-guides/operator-manual/>) lists these situations in full.

Manual driving builds the map

Every manual drive does double duty: the robot continuously [learns and updates its 3D model of the environment](https://info.mobilerobot.com/documentation/getting-started/creating-the-first-map/) (<https://info.mobilerobot.com/documentation/getting-started/creating-the-first-map/>) while you steer it. Manual driving is also how you create new saved locations — see [Location Management](https://info.mobilerobot.com/documentation/user-guides/location-management/) (<https://info.mobilerobot.com/documentation/user-guides/location-management/>).

Switching to autonomous work

When the repetitive travel portion begins, hand the load over to the robot: create a task, confirm automatic mode, and step away. See [Autonomous Operation](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) (<https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/>) and [Manual and](#)

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