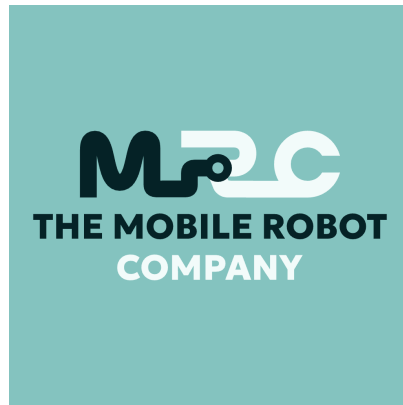




# The Mobile Robot Company

Knowledge Center — Tiller Detection · 2026-08-04

<https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection>

# Tiller Detection

Tiller-position detection is a certified J1600 safety function rated **Performance Level c (PL c)**. The tiller — the handle familiar from any walk-behind electric pallet jack — doubles as a safety device.

## Two tiller-position switches

The [safety architecture](https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/>), includes two dedicated tiller-position switches:

- **Emergency-stop switch.** One tiller position acts as an emergency stop.
- **Manual-control switch.** Another tiller position enables manual control.

Certified detection of the tiller's position is what makes both behaviors reliable.

## Instant takeover

During autonomous operation, grabbing or moving the tiller returns the vehicle to manual control immediately. There is no menu, code, or delay — immediate human intervention is central to the [dual-mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (<https://info.mobilerobot.com/products/j1600/dual-mode/>) concept. Tiller takeover works alongside the three emergency-stop buttons and the belly button; the full set of stop controls is listed in [Emergency stops and 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/>).

## A familiar tool by design

One of the product's [design principles](https://info.mobilerobot.com/company/about/our-approach-to-automation/) (<https://info.mobilerobot.com/company/about/our-approach-to-automation/>) is that the tiller and manual behavior should feel like a conventional electric pallet jack, so an experienced operator needs only about 30 minutes of training. The [safety design](https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/>) builds on that familiarity: the natural reaction of reaching for the handle is also the takeover mechanism.

## Related pages

- [Mode selection](https://info.mobilerobot.com/safety-compliance/safety-functions/mode-selection/) (https://info.mobilerobot.com/safety-compliance/safety-functions/mode-selection/) — the key switch and confirmation sequence (PL c).
- [Manual and autonomous mode safety](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/) — safety behavior in each mode.
- [Performance levels](https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/) (https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/) — all assigned levels in one table.

### **PRELIMINARY SPECIFICATION**

The assigned Performance Levels are preliminary January 2026 specifications and subject to change.