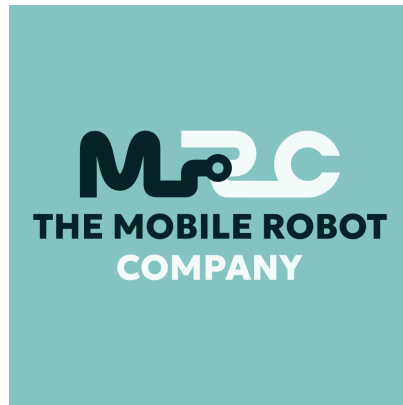




The Mobile Robot Company

Knowledge Center — User and Operator Guides · 2026-08-04

<https://info.mobilerobot.com/category/user-and-operator-guides>

User and Operator Guides

Reference guides for operating the J1600 day to day: manual and autonomous operation, tasks, locations, charging, and supported loads.



J1600 User Manual

Reference manual for the J1600 self-driving pallet jack — controls and interface, specifications, operating limits, safety behavior, and software versions.



Operator Manual

The J1600 operator's role — division of work between person and robot, mode handover and takeover, and the situations that call for human judgment.



How-To Guides

Short task-oriented instructions for common J1600 operations — adding a drop location, creating a task, charging, taking over control, and getting help.



Task Management

All J1600 task patterns — Boomerang, Simple ABC, come to me, drop and wait, deliver and park, and multi-point flows — plus task creation and constraints.



Location Management

[Managing J1600 saved locations — creating and naming points, the no-limit location model, recombining destinations, and parking locations.](#)



Manual Operation

[Operating the J1600 manually — tiller control, lift heights and speeds, gradeability, and the handling situations that call for manual mode.](#)



Autonomous Operation

[How the J1600 operates autonomously — confirmation and start, navigation and obstacle avoidance, safety fields and lights, floor-level delivery, and takeover.](#)



Charging

[Charging the J1600 — manual plug-in and automatic opportunity charging, battery specifications, charge and drain rates, runtime, and charger list prices.](#)



Supported Pallets and Loads

[Which pallets and load carriers the J1600 supports — the open-base requirement, size and weight limits, EPAL and GMA compatibility, and fork geometry.](#)

J1600 User Manual

This manual is the day-to-day reference for the J1600 self-driving pallet jack: its [controls](https://info.mobilerobot.com/documentation/technical-reference/interface-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/interface-specifications/>), capabilities, operating limits, and software. For the operator's role and working practices, see the [Operator Manual](https://info.mobilerobot.com/documentation/user-guides/operator-manual/) (<https://info.mobilerobot.com/documentation/user-guides/operator-manual/>); for step-by-step procedures, see the [How-To Guides](https://info.mobilerobot.com/documentation/user-guides/how-to-guides/) (<https://info.mobilerobot.com/documentation/user-guides/how-to-guides/>).

PRELIMINARY SPECIFICATIONS

The January 2026 specifications are preliminary and subject to change. Use current product documentation for deployment decisions, and see the [technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>) for the master list.

The machine at a glance

The J1600 is a compact, electric, [dual-mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (<https://info.mobilerobot.com/products/j1600/dual-mode/>) self-driving pallet jack for indoor, floor-to-floor pallet transport. It is operated with a tiller like a conventional walk-behind electric pallet jack or sent autonomously to saved locations. It carries up to 1,600 kg (about 3,500 lb), picks and drops manually at up to 1,600 mm (63 in), delivers autonomously at floor level, and travels at up to 5.4 km/h (1.5 m/s). It is [CE marked](https://info.mobilerobot.com/safety-compliance/certificates/ce-declaration-of-conformity/) (<https://info.mobilerobot.com/safety-compliance/certificates/ce-declaration-of-conformity/>) and made in Denmark. See the [product overview](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>).

Controls and interface

Control	Function
15-inch multi-touch HMI	Task creation, location saving, tutorials, help and support menu
Tiller	Manual driving and lift control; grabbing or moving it returns the vehicle to manual control
Key switch	Three positions: power off, manual only, automatic mode
LED start/resume button	Physical confirmation and resumption of automatic task execution
Emergency-stop buttons	Three, for hard stops
Belly button	Stop and reverse
Floor-indicator lights	White in manual mode; blue strips display the protected area in automatic mode
Audio speaker	Audible signals

Sensing and compute: a 3D navigation LiDAR, an RGB AI camera, an industrial NVIDIA Jetson AI computer, two 2D safety LiDARs (front and rear), a lifting-height sensor, and a [load-detection sensor](https://info.mobilerobot.com/safety-compliance/safety-functions/load-detection/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/load-detection/>). HMI is short for human-machine interface; other terms are in the [glossary](https://info.mobilerobot.com/documentation/concepts/glossary/) (<https://info.mobilerobot.com/documentation/concepts/glossary/>).

Key specifications

Parameter	Value
Rated payload	1,600 kg / approximately 3,500 lb
Maximum manual pick/drop height	1,600 mm / 63 in
Autonomous delivery height	Floor level
Top speed	5.4 km/h / 1.5 m/s / 3.4 mph
Truck weight	980 kg
Vehicle size (forks lowered)	1,893 × 850 × 2,060 mm
Turning radius	1,501 mm
Fork dimensions	1,150 mm long, 180 mm wide, 60 mm thick; outer distance 680 mm, inner 320 mm
Fork height range	90 mm lowest to 1,600 mm highest
Battery	24 V, 200 Ah lithium iron phosphate (LiFePO4)
Drive motor	AC, 1.5 kW
Lift motor	2.2 kW
Wheels	Polyurethane; drive wheel 75 × 230 mm; load wheels 70 × 80 mm
Ground clearance	30 mm
Wheelbase	1,106 mm

[Lifting speeds](https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/>): 0.10 m/s unloaded and 0.08 m/s at full load; lowering 0.08 m/s unloaded and 0.12 m/s at full load.

Operating limits

Parameter	Limit
Gradeability, automatic mode	0° / 0% — level floors only
Gradeability, manual mode	2.86° / 5% unloaded; 1.72° / 3% at full load
Maximum traversable bump	25 mm / 1 in
Maximum traversable gap	20 mm / 0.8 in
Operating temperature	5–40 °C / 41–104 °F
Relative humidity	20–80%, non-condensing
Floor flatness	TR34 FM3 / FF 25, FL 20
Ingress protection	IP21

Loads must be open-base carriers within a 1,250 × 1,250 mm envelope and 1,700 mm load height — see [Supported Pallets and Loads](https://info.mobilerobot.com/documentation/user-guides/supported-pallets-and-loads/) (<https://info.mobilerobot.com/documentation/user-guides/supported-pallets-and-loads/>).

Safety behavior

The J1600 uses a [layered safety architecture](https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/>): an independent safety controller, two 2D safety LiDARs, three emergency stops, a belly button, tiller-position switches, safety-certified encoders and motor controllers, and a [speed-dependent 360-degree protective field](https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/>). The operator must [confirm entry into 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/>), and the robot instructs the operator to step away before starting. Safety functions carry [Performance Levels from PL b to PL d](https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/>). Full details: [How J1600 safety works](https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/>).

Software versions

One hardware platform supports [two software versions](https://info.mobilerobot.com/products/software/software-comparison/) (<https://info.mobilerobot.com/products/software/software-comparison/>):

- **Standard software** (<https://info.mobilerobot.com/products/software/standard-software/>) — reduced to essential functions for maximum ease of use; configuration-free [teach-and-repeat](https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/) (<https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/>); touchscreen task launch and saved locations; [Wi-Fi optional](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>). Intended for single-unit deployments [without systems integration](https://info.mobilerobot.com/documentation/technical-integration/integration-overview/) (<https://info.mobilerobot.com/documentation/technical-integration/integration-overview/>).
- **Advanced software** (<https://info.mobilerobot.com/products/software/advanced-software/>) — adds [VDA 5050](https://info.mobilerobot.com/documentation/concepts/vda-5050-explained/) (<https://info.mobilerobot.com/documentation/concepts/vda-5050-explained/>) interoperability, a [REST API](https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/) (<https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/>), [Fleet Manager](https://info.mobilerobot.com/documentation/technical-integration/fleet-manager-guide/) (<https://info.mobilerobot.com/documentation/technical-integration/fleet-manager-guide/>), advanced mission planning, and advanced [integration with other software and equipment](https://info.mobilerobot.com/documentation/technical-integration/external-system-integration/) (<https://info.mobilerobot.com/documentation/technical-integration/external-system-integration/>). €14,500 list as an upgrade; Fleet Manager is €6,500 list per robot. The upgrade is easiest to install at the factory when ordering; a partner can perform it later, but the customer cannot.

Advanced automation functions include [come-to-me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>), automatic charging, VDA 5050 fleet management, and API integrations.

Getting help

The on-machine **Help/Support** menu provides a QR code through which technical requests can be sent directly. Three [after-sales plans](https://info.mobilerobot.com/support/faq/service-and-warranty/) (<https://info.mobilerobot.com/support/faq/service-and-warranty/>) exist — Free, Basic Care, and Full Care — with remote support, warranty, and parts terms varying by plan. Basic Care lists at €4,900 and Full Care at €13,000 per robot per year; Full Care includes a free loan robot when a repair lasts more than two business days.

Daily use guides

- [Manual Operation](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>).
- [Autonomous Operation](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) (<https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/>)
- [Task Management](https://info.mobilerobot.com/documentation/user-guides/task-management/) (<https://info.mobilerobot.com/documentation/user-guides/task-management/>)
- [Location Management](https://info.mobilerobot.com/documentation/user-guides/location-management/) (<https://info.mobilerobot.com/documentation/user-guides/location-management/>).
- [Charging](https://info.mobilerobot.com/documentation/user-guides/charging/) (<https://info.mobilerobot.com/documentation/user-guides/charging/>)
- [Supported Pallets and Loads](https://info.mobilerobot.com/documentation/user-guides/supported-pallets-and-loads/) (<https://info.mobilerobot.com/documentation/user-guides/supported-pallets-and-loads/>)

Operator Manual

The J1600 (<https://info.mobilerobot.com/products/j1600/overview/>) is built around the operator. You initiate every task, perform every pickup, and decide when the machine may drive itself. This manual covers your role and working practices; machine reference data is in the [J1600 User Manual](https://info.mobilerobot.com/documentation/user-guides/j1600-user-manual/) (<https://info.mobilerobot.com/documentation/user-guides/j1600-user-manual/>).

Division of work

You	The J1600
Judge load stability, pallet condition, congestion, urgency, and exceptions	Build and update a 3D map and navigate to saved points
Pick pallets and perform difficult or high handling	Carry up to 1,600 kg along repetitive routes
Select the destination and what happens after delivery	Avoid obstacles and apply speed-dependent safety fields
Confirm entry into autonomous mode	Drop at floor level, then return, park, continue, or wait
Override or resume manual control at any time	Repeat stored tasks consistently

This split reflects the company's human-in-the-loop philosophy: the robot removes repetitive travel, and the person keeps the judgment-heavy work. See [Human-in-the-loop automation](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/) (<https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/>).

Starting autonomous work

1. [Pick up the pallet manually](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>) and check the load.
2. Create or select the task on the touchscreen and execute it.

3. When the robot asks 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/>), confirm with the physical start/resume button.
4. Step clear when the interface tells you to. The robot starts only after your confirmation.

Taking back control

- Grab or move the tiller to return to manual control immediately.
- [Tiller-position switches](https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection/>) provide 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) are available for hard stops.
- The [key switch](https://info.mobilerobot.com/safety-compliance/safety-functions/mode-selection/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/mode-selection/>) lets you lock the vehicle to manual-only operation or power it off.

Situations that stay with you

Warehouses are messy, dynamic, and unpredictable. Keep these in manual hands:

1. **Damaged pallets** — spot a broken bottom board or protruding nail before it becomes a hazard or a jam.
2. **Unstable loads** (<https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/>) — recognize a top-heavy, leaning, or poorly stacked load before lifting it.
3. **Plastic-wrap tails** — tuck away loose shrink wrap before it catches a rack or doorframe.
4. **Misplaced pallets** — look around for a pallet that is not exactly where the system expects it.
5. **Damaged goods** — catch leaks or crushed corners before delivery to a customer or production line.
6. **Dock plates and slopes** — [autonomous gradeability is 0%](https://info.mobilerobot.com/documentation/installation/floor-requirements/) (<https://info.mobilerobot.com/documentation/installation/floor-requirements/>); bumps, slopes, and truck entry are manual work.
7. **Crowded floors** (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>) — improvise a safe route through a cluttered receiving area.

8. **Urgency** — reprioritize immediately when a production line is starving.
9. **New routes** — drive to a new point and tap **Save location** instead of waiting for IT.

Mode awareness

- White lights: manual mode.
- Blue floor-light strips: automatic mode; they display the protected area, which expands as speed increases.
- The robot announces mode changes on the interface and asks for confirmation before driving itself.

Everyday tasks

- [Task Management](https://info.mobilerobot.com/documentation/user-guides/task-management/) (<https://info.mobilerobot.com/documentation/user-guides/task-management/>) — all task patterns and post-delivery options.
- [Location Management](https://info.mobilerobot.com/documentation/user-guides/location-management/) (<https://info.mobilerobot.com/documentation/user-guides/location-management/>) — adding and combining saved points.
- [Manual Operation](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>), and [Autonomous Operation](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) (<https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/>).
- [Charging](https://info.mobilerobot.com/documentation/user-guides/charging/) (<https://info.mobilerobot.com/documentation/user-guides/charging/>) — plug-in and automatic charging routines.

New operators typically need about 30 minutes of training — see [Operator Training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>).

How-To Guides

Quick instructions for the most common J1600 operations. Each entry links to the full guide for background and detail.

How to add a drop location and create a task

1. Drive the J1600 manually to the [drop point](https://info.mobilerobot.com/documentation/installation/mapping-and-drop-point-setup/) — it handles like a regular electric pallet jack.
2. Tap **Save location** and name the point, for example `pallet1` or "Pallet Bay 1".
3. Tap **Create task** and choose **Drop Pallet at Location**.
4. Choose the post-delivery behavior — return to origin, go to another point or parking, or [stop and wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/).
5. Execute the task, confirm automatic mode with the physical start/go button, and step back.

Full guides: [Location Management](https://info.mobilerobot.com/documentation/user-guides/location-management/), [Task Management](https://info.mobilerobot.com/documentation/user-guides/task-management/).

How to send the robot on a delivery

1. [Pick up a supported pallet manually](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/).
2. Select or create a task on the touchscreen and execute it.
3. Confirm automatic mode with the start/resume button and step clear.

The robot drives itself, avoids obstacles, drops the pallet at floor level, and performs the selected post-delivery action. Full guide: [Autonomous Operation](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/).

How to take back control

- Grab or move the tiller — the vehicle returns to manual control immediately.
- Use the [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/) or the belly button for a hard stop.
- Turn the key switch to manual to keep the vehicle in manual-only operation.

Full guide: [Manual Operation](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (https://info.mobilerobot.com/documentation/user-guides/manual-operation/).

How to charge the robot

- [Manual charging](https://info.mobilerobot.com/products/chargers-and-accessories/manual-charger/) (https://info.mobilerobot.com/products/chargers-and-accessories/manual-charger/): plug in the charger during a break or whenever the machine is idle — for example before lunch.
- [Automatic charging](https://info.mobilerobot.com/applications/scenarios/automatic-charging/) (https://info.mobilerobot.com/applications/scenarios/automatic-charging/) (optional charger): the robot drives to the station, positions itself, and the charging interface extends to its charging plates, enabling opportunity charging while it is not busy.

Full guide: [Charging](https://info.mobilerobot.com/documentation/user-guides/charging/) (https://info.mobilerobot.com/documentation/user-guides/charging/).

How to check whether a load is supported

Confirm the carrier has an open base with no bottom deck board, fits within 1,250 × 1,250 mm including overhang, stays under 1,700 mm load height, and weighs no more than 1,600 kg. Full guide: [Supported Pallets and Loads](https://info.mobilerobot.com/documentation/user-guides/supported-pallets-and-loads/) (https://info.mobilerobot.com/documentation/user-guides/supported-pallets-and-loads/).

How to get help with a technical issue

Open the on-machine menu, go to **Help/Support**, and scan the QR code to send a technical request directly. Remote support terms depend on your after-sales plan — see the [J1600 User Manual](https://info.mobilerobot.com/documentation/user-guides/j1600-user-manual/#getting-help) (https://info.mobilerobot.com/documentation/user-guides/j1600-user-manual/#getting-help).

Setting up from scratch

New machine? Start with the [J1600 Quick Start Guide](https://info.mobilerobot.com/documentation/getting-started/j1600-quick-start-guide/) (<https://info.mobilerobot.com/documentation/getting-started/j1600-quick-start-guide/>), and the rest of the Getting Started section.

Task Management

A task defines where the J1600 delivers a pallet and what it does afterwards. Tasks are created on the touchscreen without code, and every task is initiated and confirmed by a person.

Named task patterns

- **Boomerang** (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>): deliver to a destination and return to the origin or operator.
- **Simple ABC** (<https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/>): deliver from A to B, then travel to C.
- **Drop and wait** (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>): deliver, drop, and remain at the destination.
- **Deliver and park** (<https://info.mobilerobot.com/applications/scenarios/deliver-and-park/>): complete the drop and proceed to a defined parking location.
- **Come to me** (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>): call the robot to a location using a mobile app or web interface. An advanced automation function.
- **Multi-point to multi-point** (<https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/>): combine saved points freely — useful for cross-docking and changing flows.

The most common task in practice is [manual pickup, autonomous delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>), floor-level drop, and return to origin. The route can be a few meters or more than 100 meters; the concept is the same.

Creating a task

1. Pick up a supported pallet manually.
2. Open task creation on the touchscreen.
3. Choose the task type and a saved drop destination from the map or list.
4. Choose the post-delivery behavior: return to origin/operator, go to another point or parking, or stop and wait.

5. Execute the task, [confirm automatic mode](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) with the physical start/resume button, and step away when instructed.

Destinations come from saved locations — see [Location Management](https://info.mobilerobot.com/documentation/user-guides/location-management/). Because the robot plans its own routes on its 3D map, you can recombine points without demonstrating every possible A-to-B variation.

Task constraints

- Pallet pickup is always manual.
- Automatic pallet delivery is at floor level. [Handling above floor level, up to 1,600 mm, is manual](https://info.mobilerobot.com/support/troubleshooting/task-and-location-problems/).
- Autonomous mode requires [level floors](https://info.mobilerobot.com/documentation/installation/floor-requirements/) (0% automatic gradeability).
- Loads must meet the open-base envelope in [Supported Pallets and Loads](https://info.mobilerobot.com/documentation/user-guides/supported-pallets-and-loads/).

Task patterns in daily flows

- [Inbound receiving](https://info.mobilerobot.com/applications/use-cases/inbound-receiving/): unload the truck manually, then send each pallet to inspection or storage.
- [Production supply](https://info.mobilerobot.com/applications/use-cases/production-supply/): pick a pallet of materials and deliver it to the line on demand.
- [Cross-docking](https://info.mobilerobot.com/applications/use-cases/cross-docking/): shuffle pallets across multiple origins and destinations with multi-point tasks.
- [Buffer and staging](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/): move pallets between lines, staging areas, and storage zones while operators stay on value-added work.

Advanced task capabilities

With [Advanced software](https://info.mobilerobot.com/products/software/advanced-software/), task execution can scale up to fleet orchestration through [VDA 5050](https://info.mobilerobot.com/documentation/concepts/vda-5050-explained/), a [REST API](https://info.mobilerobot.com/documentation/concepts/vda-5050-explained/),

[m/documentation/technical-integration/rest-api-documentation/](https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/)), **Fleet Manager** (<https://info.mobilerobot.com/documentation/technical-integration/fleet-manager-guide/>), and advanced mission planning — see the **J1600 User Manual** (<https://info.mobilerobot.com/documentation/user-guides/j1600-user-manual/#software-versions>).

Location Management

Saved locations are the destinations the J1600 can drive to autonomously. They are created by driving, not by configuration, which keeps the location set as flexible as the facility itself.

The location model

- A location is created by [manually driving the robot](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) to the desired point and tapping **Save location** on the touchscreen.
- Each location gets a name chosen by the operator — for example `pallet1` or "Pallet Bay 1".
- There is **no software limit** on the number of saved locations. The practical limit is available warehouse space.
- Any location can be combined with any other in a task. The robot plans routes on its 3D map, so you never teach every A-to-B pair. See [Creating the First Map](https://info.mobilerobot.com/documentation/getting-started/creating-the-first-map/).

Adding a location

1. Drive manually to the exact drop point. Autonomous delivery is at floor level, so choose a clear floor position.
2. Tap **Save location**.
3. Name the point recognizably.

This takes minutes and needs no automation expert — adding locations is an operator job by design.

Location types in practice

- **Drop points** (<https://info.mobilerobot.com/documentation/installation/mapping-and-drop-point-setup/>): destinations for autonomous floor-level pallet delivery.

- **Parking locations:** points the robot proceeds to after completing a delivery ("[deliver and park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/)").
- **Temporary storage points** (<https://info.mobilerobot.com/applications/use-cases/temporary-storage/>): [short-lived locations created when demand changes](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) and removed from use when no longer needed.
- **Origin returns:** the pickup point the robot returns to in a [Boomerang task](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/).

Locations in changing facilities

Because locations are cheap to create, the J1600 fits changing layouts, temporary storage, shifting SKU mixes, and [brownfield sites](https://info.mobilerobot.com/applications/use-cases/brownfield-automation/): when the flow changes, drive to the new point and save it. The robot's continuously updated 3D map handles the surrounding changes.

Validated drop points at commissioning

The optional five-day installation and commissioning package includes creation of up to 25 drop points with task and safety validation, and additional validated drop points are available as an add-on. See [First-Time Setup](https://info.mobilerobot.com/documentation/getting-started/first-time-setup/#the-commissioning-package).

Related pages

- [Saving the First Location](https://info.mobilerobot.com/documentation/getting-started/saving-the-first-location/)
- [Task Management](https://info.mobilerobot.com/documentation/user-guides/task-management/)

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/>).

Autonomous Operation

In automatic mode the J1600 drives itself to [saved destinations](https://info.mobilerobot.com/documentation/user-guides/location-management/) (<https://info.mobilerobot.com/documentation/user-guides/location-management/>), avoids obstacles on the way, and delivers pallets at floor level. Autonomous work always starts with a person: [the operator creates the task, confirms the mode change, and can take over at any moment](https://info.mobilerobot.com/documentation/user-guides/operator-manual/) (<https://info.mobilerobot.com/documentation/user-guides/operator-manual/>).

Starting an autonomous run

1. [Pick up the pallet manually](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>) and select or create a task on the touchscreen — see [Task Management](https://info.mobilerobot.com/documentation/user-guides/task-management/) (<https://info.mobilerobot.com/documentation/user-guides/task-management/>).
2. Execute the task. The robot asks to [enter automatic mode](https://info.mobilerobot.com/support/troubleshooting/robot-will-not-enter-autonomous-mode/) (<https://info.mobilerobot.com/support/troubleshooting/robot-will-not-enter-autonomous-mode/>).
3. Confirm with the physical LED start/resume button. The [key switch](https://info.mobilerobot.com/safety-compliance/safety-functions/mode-selection/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/mode-selection/>) must be in the automatic position.
4. Step clear when the interface instructs you to. The robot moves only after confirmation.

While the robot drives

- [Top speed](https://info.mobilerobot.com/products/j1600/dimensions-and-performance/) (<https://info.mobilerobot.com/products/j1600/dimensions-and-performance/>) is 5.4 km/h (1.5 m/s / 3.4 mph).
- The robot localizes on the 3D map built during manual driving and plans its own route to the destination — no fixed paths, wires, or reflectors. See [Creating the First Map](https://info.mobilerobot.com/documentation/getting-started/creating-the-first-map/) (<https://info.mobilerobot.com/documentation/getting-started/creating-the-first-map/>).
- It [detects and avoids obstacles](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>) in dynamic environments, [routing around people and objects](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>).
- Preferred travel zones can be defined for safer routing through production areas.

- A 360-degree protective field, monitored by two 2D safety LiDARs and an independent safety controller, covers forward and reverse travel. The [field changes with speed](https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/) and expands at higher speeds.
- Blue floor-light strips display the protected area and the vehicle's status.

[Person detection](https://info.mobilerobot.com/safety-compliance/safety-functions/person-detection/) and [braking](https://info.mobilerobot.com/safety-compliance/safety-functions/braking/) carry certified safety [Performance Levels](https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/) — see [How J1600 safety works](https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/).

Delivery and after

The robot drops the pallet at floor level, then performs the post-delivery action from the task: [return to origin or operator](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/), proceed to another point or parking, or [stop and wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/). With [Advanced software](https://info.mobilerobot.com/products/software/advanced-software/) it can also be called to a location ("[come to me](https://info.mobilerobot.com/applications/scenarios/come-to-me/)") via a mobile app or web interface, and it can drive itself to an automatic charger — see [Charging](https://info.mobilerobot.com/documentation/user-guides/charging/).

Operating limits in automatic mode

- [Level floors](https://info.mobilerobot.com/documentation/installation/floor-requirements/): only: automatic gradeability is 0° / 0%. Slopes and dock plates are manual work.
- [Indoor operation](https://info.mobilerobot.com/documentation/installation/operating-environment-requirements/): within 5–40 °C and 20–80% non-condensing humidity.
- Automatic delivery is floor-level only; higher drops are a manual capability.

Taking over

Manual control is immediately available at all times:

- grab or move the tiller to regain manual control;

- use any of the [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/) or the belly button (stop and reverse);
- the [tiller-position switches](https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection/) (https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection/), provide emergency stop and manual control.

See [Manual and Autonomous Modes](https://info.mobilerobot.com/documentation/getting-started/manual-and-autonomous-modes/) (https://info.mobilerobot.com/documentation/getting-started/manual-and-autonomous-modes/) for the full mode model and [Manual Operation](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (https://info.mobilerobot.com/documentation/user-guides/manual-operation/), for manual work.

Charging

The J1600 supports two charging methods: manual plug-in charging and, with the optional [automatic charger](https://info.mobilerobot.com/products/chargers-and-accessories/automatic-charger/) (<https://info.mobilerobot.com/products/chargers-and-accessories/automatic-charger/>), self-docking opportunity charging.

Battery

Parameter	Value
Battery	24 V, 200 Ah
Chemistry	Lithium iron phosphate (LiFePO4)
Charging rate	Approximately 47 percentage points per hour
Drain, driving fully loaded	Approximately 13% per hour
Drain, driving unloaded	Approximately 12% per hour
Drain, standby	Approximately 2% per hour

Runtime exceeds eight hours in a typical duty cycle. The [drain rates](https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/>), imply approximately 7.7 hours of continuous fully loaded driving or 8.3 hours unloaded — these are calculated figures, not guaranteed runtimes, and do not account for standby, lifting, duty cycle, battery reserve, or operating conditions.

The [charging-current relay](https://info.mobilerobot.com/safety-compliance/safety-functions/charging-safety/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/charging-safety/>) is a safety function rated PL b.

Manual charging

Manual charging works like charging a conventional electric pallet jack: plug in the charger during a break or whenever the machine is idle — for example before lunch.

The [manual charger](https://info.mobilerobot.com/products/chargers-and-accessories/manual-charger/) (<https://info.mobilerobot.com/products/chargers-and-accessories/manual-charger/>) lists at €3,600.

Automatic charging

With the optional automatic charger, the robot drives to the charging station, positions itself in front of the charger, and a charging interface extends to the vehicle's charging plates. This enables [opportunity charging](https://info.mobilerobot.com/applications/scenarios/automatic-charging/) while the robot is not busy, without operator involvement.

- Automatic charging is an advanced automation capability.
- When purchased with the commissioning package, automatic-charging setup is part of installation Day 1 — see [First-Time Setup](https://info.mobilerobot.com/documentation/getting-started/first-time-setup/#the-commissioning-package).
- The automatic charger lists at €8,400.

Which charger to choose

- Single robot, single shift, predictable breaks: manual charging keeps cost lowest and mirrors the routine operators already know.
- Higher utilization or hands-off operation: automatic charging lets the robot top up on its own between tasks.

A charger is not included with the robot purchase, so [plan for one when ordering](https://info.mobilerobot.com/documentation/installation/charger-installation/) — see [Delivery and Unpacking](https://info.mobilerobot.com/documentation/getting-started/delivery-and-unpacking/).

PRELIMINARY SPECIFICATIONS

Battery and charging figures are preliminary January 2026 specifications and are subject to change. See the [technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/).

Supported Pallets and Loads

The J1600 handles any forkable carrier with an **open base and no bottom deck board**, within its size and weight envelope. This page defines that envelope and the fork geometry a carrier must accommodate.

Load envelope

Parameter	Limit
Maximum pallet/load length, including overhang	1,250 mm / 49 in
Maximum pallet/load width, including overhang	1,250 mm / 49 in
Maximum load height from floor	1,700 mm / 67 in
Maximum payload	1,600 kg / about 3,500 lb

The exact envelope is 1,250 mm; some summaries round it to 1.2 m, but 1,250 mm is the figure to plan with.

Supported carrier types

Category	Support
EPAL	EPAL Euro Pallet, EPAL 3, EPAL 6
GMA	All GMA (Grocery Manufacturers Association) pallets with an open base
Custom carriers	Any forkable open-base carrier within the size limits

Examples beyond standard pallets include [open cages, barrels](https://info.mobilerobot.com/applications/use-cases/open-cages-and-alternative-load-carriers/) (<https://info.mobilerobot.com/applications/use-cases/open-cages-and-alternative-load-carriers/>), and carriers for sensitive loads. The working rule from the product team: everything that is open underneath can be picked up, within the envelope.

Fork geometry

Carriers must accept the J1600's forks:

Parameter	Value
Fork length	1,150 mm / 45 in
Fork width	180 mm / 7 in
Fork thickness	60 mm / 2.4 in
Fork outer distance	680 mm / 27 in
Fork inner distance	320 mm / 13 in
Fork height, lowest	90 mm / 3.5 in
Fork height, highest	1,600 mm / 63 in

Judgment still applies

Compatibility depends on base geometry, size, stability, and operator judgment. No [blanket approval](https://info.mobilerobot.com/safety-compliance/safe-deployment/approved-loads-and-pallets/) (<https://info.mobilerobot.com/safety-compliance/safe-deployment/approved-loads-and-pallets/>) exists for every carrier or for hazardous materials. [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/>) — top-heavy stacks, leaning pallets, barrels — should be picked and closely maneuvered manually, with autonomous mode reserved for the transport leg. See [Manual Operation](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>) and the [Operator Manual](https://info.mobilerobot.com/documentation/user-guides/operator-manual/) (<https://info.mobilerobot.com/documentation/user-guides/operator-manual/>).

Handling heights

- Manual pick and drop: up to 1,600 mm (63 in).
- Autonomous delivery: floor level only.

ⓘ PRELIMINARY SPECIFICATIONS

These January 2026 figures are preliminary and subject to change. See the [technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).