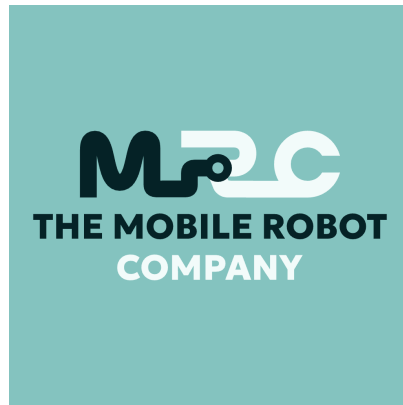




The Mobile Robot Company

Knowledge Center — Applications & Customer Stories · 2026-08-04

<https://info.mobilerobot.com/category/applications>

Applications & Customer Stories

Use cases, operating scenarios, industries, results, and application planning.



Use Cases

12 pages



Operating Scenarios

12 pages



Industries

8 pages



Customer Stories

2 pages



Results and Business Impact

8 pages



Application Planning

8 pages

Inbound Receiving

Inbound receiving pairs the two halves of [dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (https://info.mobilerobot.com/products/j1600/dual-mode/), naturally: the truck and dock area demand judgment, while the trip from the dock to inspection or storage is repetitive travel. The operator unloads manually, hands each pallet to the J1600, and stays at the dock while the robot makes the delivery.

How the flow works

1. Unload the trailer manually using the tiller, exactly as with a conventional electric pallet jack.
2. Select a saved drop point — inbound inspection, a storage zone, or a buffer location — on the touchscreen.
3. Choose **return to origin** as the post-delivery behavior, confirm autonomous mode with the start button, and step clear.
4. The J1600 travels at up to 5.4 km/h (1.5 m/s), avoids obstacles on the way, drops the pallet at floor level, and returns to you at the dock for the next pallet.

This deliver-and-return loop is the most commonly demonstrated J1600 task. See [Deliver and Return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) and [Manual Pickup and Autonomous Delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/).

Why the dock stays manual

Truck unloading concentrates the situations where human context matters most:

- **Dock plates and ramps.** Automatic mode has 0% gradeability; it is a [level-floor application](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/). [Manual mode](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (https://info.mobilerobot.com/documentation/user-guides/manual-operation/) handles gradients up to 5% unloaded and 3% at full load, so dock plates, bumps, and trailer misalignment are operator work.
- **Pallet condition.** A broken bottom board, a protruding nail, or a loose shrink-wrap tail is spotted and handled before it becomes a jam or a safety hazard.

- **Load stability.** [Top-heavy, leaning, or poorly stacked inbound loads](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/) (<https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/>) get a human judgment call before lifting.
- **Congestion.** A [crowded receiving area](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>) with overflow pallets calls for an improvised manual route.

See [Handling Exceptions and Irregular Loads](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>) for the full list of judgment tasks that remain with the operator.

What the robot removes

[The walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) (<https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/>). Each autonomous delivery removes a round trip that the operator would otherwise walk, whether the route is a few meters or well over 100 meters. Across a receiving shift, the J1600 is designed to remove [up to 80% of the operator time spent on repetitive transport](https://info.mobilerobot.com/applications/results/productivity-improvements/) (<https://info.mobilerobot.com/applications/results/productivity-improvements/>), while the operator keeps unloading at the dock.

Setting up a receiving flow

- Drive once to each inspection, storage, or buffer point and tap **Save location**. There is no software limit on saved locations.
- No tracks, wires, reflectors, or building changes are needed — navigation uses [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>).
- An operator who already uses an electric pallet jack needs about 30 minutes of [training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>).

If receiving volumes shift, add or change drop points in minutes — see [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>) and [Temporary Storage](https://info.mobilerobot.com/applications/use-cases/temporary-storage/) (<https://info.mobilerobot.com/applications/use-cases/temporary-storage/>).

For load limits at the dock, see [Open Cages and Alternative Load Carriers](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 the [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).



Production Supply

In production supply, an operator prepares or picks a pallet of materials or components, and the J1600 delivers it to the production line on demand. The person keeps the judgment-heavy work — picking, sequencing, and prioritizing — while the robot covers the distance between warehouse and line.

How the flow works

1. Prepare the pallet at the warehouse, supermarket, or kitting area and pick it up manually.
2. Select the saved drop point at the line or work cell on the touchscreen.
3. Choose what happens after delivery: [return to you for the next pallet](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>), continue to another point, park, or [stop and wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>) at the line.
4. Confirm autonomous mode and continue preparing the next load while the robot travels.

The J1600 delivers at floor level and carries up to 1,600 kg per trip. See [Manual Pickup and Autonomous Delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>) for the full task workflow.

Calling material to the line

With the come-to-me function, a line-side worker can call the robot to a location from a mobile app or web interface instead of waiting for a scheduled round. This turns replenishment into a pull signal: the line calls, the operator loads, the robot delivers. See [Come-to-Me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>).

Routing through production areas

Preferred travel zones can be defined so autonomous traffic keeps to safer corridors through production areas. The robot's 360-degree safety field and speed-dependent protective zones cover forward and reverse travel; blue light strips on the vehicle

show the protected area. See [Operation in Crowded Environments](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>) and [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/>).

When priorities change

A starving production line is an urgency call, not a system error. The operator can reprioritize immediately: take the tiller, and the vehicle is back under manual control. Urgent reprioritization is one of the situations where [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/>) keeps its value — see [Handling Exceptions and Irregular Loads](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>).

Related flows

- Longer chains from receiving through storage into production: [Warehouse-to-Production Transport](https://info.mobilerobot.com/applications/use-cases/warehouse-to-production-transport/) (<https://info.mobilerobot.com/applications/use-cases/warehouse-to-production-transport/>)
- Moving finished goods away from the line: [Production-to-Shipping Transport](https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/) (<https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/>)
- Line-side buffers and staging areas: [Buffer and Staging Management](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/) (<https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/>)
- A single line or cell inside a larger site: [Local Work-Cell Automation](https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/) (<https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/>)

Cross-Docking

Cross-docking moves pallets from inbound doors to outbound doors or staging lanes with little or no storage in between. Origins and destinations multiply quickly, and lanes change with the day's volume. The J1600 fits this pattern because [saved locations](https://info.mobilerobot.com/documentation/user-guides/location-management/) (<https://info.mobilerobot.com/documentation/user-guides/location-management/>) can be recombined freely: you do not teach a bespoke task for every origin-destination pair.

How the flow works

1. Save each door, lane, and staging point once by driving there and tapping **Save location**. There is no software limit on the number of saved locations.
2. At the inbound side, [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/>) — trailer interiors and dock plates are manual work, since automatic mode requires [level floors](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>).
3. Select the outbound lane or staging point for this pallet and choose the post-delivery behavior: return to you, continue to another point, park, or wait.
4. Confirm autonomous mode. The robot delivers at floor level and follows the selected behavior.

Any saved point can be the next origin or destination, which is what makes multi-point-to-multi-point shuffling practical. See [Multi-Point Pallet Transport](https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/) (<https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/>) and [A-to-B-to-C Transport](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/) (<https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/>).

Built for changing lanes

Cross-dock layouts rarely stand still. Observations at a major e-commerce cross-docking facility — a visit that shaped the J1600's [flexibility-first design](https://info.mobilerobot.com/applications/results/operational-flexibility/) (<https://info.mobilerobot.com/applications/results/operational-flexibility/>) — found layout, flow, buffer, and SKU-mix changes occurring several times per week, even in a heavily automated operation. The J1600 answers this with:

- **Teach and repeat** (<https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/>): add or move a lane in minutes by driving there once and saving it — see

[Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>).

- **3D LiDAR SLAM navigation** (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>): the robot continuously updates its environment model and routes around obstacles, with no tracks, wires, or reflectors to relocate — see [Dynamic Route Changes](https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/) (<https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/>).
- **Immediate manual takeover:** when a lane overflows or a pallet is misplaced, grab the tiller and handle it — see [Handling Exceptions and Irregular Loads](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>).

Busy floors

Cross-dock floors are crowded with people, pallet jacks, and staged freight. The J1600's 360-degree safety field, two 2D safety LiDARs, and speed-dependent protective zones support autonomous travel through this traffic, and blue light strips show the protected area. See [Operation in Crowded Environments](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>).

Capacity per trip

Each trip carries up to 1,600 kg at up to 5.4 km/h, with loads up to 1,250 × 1,250 mm including overhang on any supported open-base carrier. See [Open Cages and Alternative Load Carriers](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 the [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Temporary Storage

Demand peaks, seasonal inventory, and project stock all create the same need: floor storage that exists this month and is gone the next. The J1600 treats a storage point as nothing more than a [saved location](https://info.mobilerobot.com/documentation/user-guides/location-management/) (<https://info.mobilerobot.com/documentation/user-guides/location-management/>), so temporary storage areas can be created, used, and abandoned without any automation engineering.

Creating a temporary storage point

1. Drive the J1600 manually to the spot you want to use.
2. Tap **Save location** and name the point.
3. Start sending pallets there autonomously.

That is the whole setup. A new point takes minutes, there is no software limit on the number of saved locations, and no tracks, wires, reflectors, or building changes are involved. See [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>) for the workflow in detail.

Working the temporary area

- **Filling:** pick each pallet manually, select the temporary point, and let the robot deliver at floor level. Choose **return to origin** to keep a steady loop going — see [Deliver and Return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>).
- **Emptying:** when the stock moves on, the same points work in reverse as origins for [delivery to production](https://info.mobilerobot.com/applications/use-cases/warehouse-to-production-transport/) (<https://info.mobilerobot.com/applications/use-cases/warehouse-to-production-transport/>), shipping, or permanent storage.
- **Combining:** temporary points combine freely with every other saved location, so they slot into [multi-point flows](https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/) (<https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/>) and [cross-docking](https://info.mobilerobot.com/applications/use-cases/cross-docking/) (<https://info.mobilerobot.com/applications/use-cases/cross-docking/>) without new tasks per pair.

Why this suits changing operations

Variable layouts, temporary storage, and a changing SKU mix are exactly the conditions that make rigid automation projects slow to adapt. Because the J1600 maps with [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) and continuously updates its understanding of the environment, a rearranged floor does not require reconfiguration by an automation expert — an operator drives, saves, and carries on. See [Brownfield Automation](https://info.mobilerobot.com/applications/use-cases/brownfield-automation/) and [Dynamic Route Changes](https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/).

Buffer zones that live between production steps follow the same pattern on a shorter clock — see [Buffer and Staging Management](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/).

Practical limits

Temporary storage points must sit on [level indoor floors along the autonomous route](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (automatic gradeability is 0%), within the J1600's [operating environment](https://info.mobilerobot.com/documentation/installation/operating-environment-requirements/) of 5–40 °C. Practical capacity is limited by warehouse space, not software. See the [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/).

Buffer and Staging Management

Buffers and staging areas absorb the timing differences between process steps: between two production lines, between production and [shipping](https://info.mobilerobot.com/applications/industries/shipping-and-dispatch/), or between [receiving](https://info.mobilerobot.com/applications/use-cases/inbound-receiving/) and putaway. Keeping them fed and cleared is constant, repetitive transport — the work the J1600 is built to take over.

How the flow works

The J1600 transports pallets between lines, staging areas, and storage zones. The operator [picks manually](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) where judgment is needed; the robot handles the travel:

1. Pick up the pallet at the line end, storage zone, or receiving area.
2. Select the saved buffer or staging point on the touchscreen.
3. Choose the post-delivery behavior — for staging work, **Stop and wait** keeps the robot at the staging area ready for redirection, while **return to origin** keeps a feeding loop running.
4. Confirm autonomous mode and step away.

See [Deliver and Wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/) and [Deliver and Return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) for the two patterns most used in buffer work.

Steadier flow as the goal

Moving buffer transport onto the robot gives the operation a steadier rhythm: deliveries repeat consistently instead of depending on whoever is free to walk. Steadier material flow and throughput, [more productive use of skilled labor](https://info.mobilerobot.com/applications/results/labor-reallocation/), and less [repetitive walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) are the core outcomes the J1600 targets in this role. [Production logistics](https://info.mobilerobot.com/applications/industries/internal-production-logistics/) and buffer management are among the primary applications the company designs and presents the product around.

Buffers move — so do saved points

Buffer zones are the most short-lived locations in a facility. When a staging lane shifts or a new buffer opens for a demand peak:

- add the point in minutes by driving there and tapping **Save location** — see [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>);
- recombine it freely with existing points for [multi-point flows](https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/) (<https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/>);
- longer-lived overflow areas follow the [Temporary Storage](https://info.mobilerobot.com/applications/use-cases/temporary-storage/) (<https://info.mobilerobot.com/applications/use-cases/temporary-storage/>) pattern.

There is no software limit on [saved locations](https://info.mobilerobot.com/documentation/user-guides/location-management/) (<https://info.mobilerobot.com/documentation/user-guides/location-management/>); floor space is the practical limit.

Fit and limits

Buffer and staging transport suits the J1600 when routes are indoor and level (automatic gradeability is 0%), drops are at floor level, and loads stay within 1,600 kg on an open-base carrier up to 1,250 × 1,250 mm including overhang. See [Open Cages and Alternative Load Carriers](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 the [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Adjacent flows: [Production Supply](https://info.mobilerobot.com/applications/use-cases/production-supply/) (<https://info.mobilerobot.com/applications/use-cases/production-supply/>) upstream, [Production-to-Shipping Transport](https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/) (<https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/>) downstream.

Warehouse-to-Production Transport

The chain from [goods receipt](https://info.mobilerobot.com/applications/industries/goods-receiving/) through storage into production is connected by long, repetitive travel segments. Those segments — not the nuanced handling at either end — are what the J1600 automates. The operator picks in the warehouse; the robot walks the distance.

The division of work

Operator	J1600
Pick the pallet in the warehouse, judging load stability and pallet condition	Carry up to 1,600 kg along the saved route at up to 5.4 km/h
Select the production-side destination and post-delivery behavior	Navigate with 3D LiDAR SLAM and avoid obstacles on the way
Confirm entry into autonomous mode	Drop the pallet at floor level at the line or cell
Handle exceptions and urgent priority changes	Return, park, continue to another point, or wait

This is [human-in-the-loop automation](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/) applied to the longest walks in the building.

Route length barely matters

The concept is the same whether the route is a few meters or well over 100 meters: [pick manually, send autonomously](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/). Longer routes simply return more [saved walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) per trip, which is why warehouse-to-production legs are often the highest-value routes to hand over. The J1600 is designed to remove [up to 80% of the operator time spent on this repetitive transport](https://info.mobilerobot.com/applications/results/productivity-improvements/).

Setting up the chain

1. Save the warehouse-side pickup areas, any intermediate buffer points, and the production-side drop points by driving to each once — see [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>).
2. For a simple feed, use [Deliver and Return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>): the robot brings the empty forks back to you in the warehouse.
3. For chained moves — warehouse to buffer, buffer to line — use [A-to-B-to-C Transport](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/) (<https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/>) or full [multi-point flows](https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/) (<https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/>).
4. Let line-side workers pull material on demand with [Come-to-Me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>).

Preferred travel zones can be defined so the autonomous leg keeps to safer corridors through production areas — see [Operation in Crowded Environments](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>).

Requirements

The autonomous leg needs [indoor, level floors](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>) (automatic gradeability is 0%; manual mode handles up to 5% unloaded, 3% at full load), floor quality to TR34 FM3 / FF 25–FL 20, bumps up to 25 mm, and gaps up to 20 mm. Operating temperature is 5–40 °C. Full details: [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Related flows: [Production Supply](https://info.mobilerobot.com/applications/use-cases/production-supply/) (<https://info.mobilerobot.com/applications/use-cases/production-supply/>) · [Buffer and Staging Management](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/) (<https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/>) · [Production-to-Shipping Transport](https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/) (<https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/>).

Production-to-Shipping Transport

At the end of the line, finished pallets need to reach [shipping](https://info.mobilerobot.com/applications/industries/shipping-and-dispatch/) or an outbound staging lane — a repetitive run that pulls operators away from the line every time. With the J1600, the line-end operator loads and sends; the robot makes the trip.

How the flow works

1. [Pick up the finished pallet manually](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) at the line end.
2. Select the saved shipping or staging drop point on the touchscreen.
3. Choose the post-delivery behavior:
 - **Return to origin** to come straight back for the next pallet — see [Deliver and Return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/);
 - **Stop and wait** to hold at the staging lane until redirected — see [Deliver and Wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/);
 - **Go to parking** when the run ends, keeping the vehicle out of the way — see [Deliver and Park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/).
4. [Confirm autonomous mode](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) with the start button and step clear.

The robot drops at floor level in the staging lane, which suits outbound lanes organized as floor positions. Loading the trailer itself stays manual: dock plates and trailer interiors exceed the 0% automatic gradeability, while manual mode handles up to 5% unloaded and 3% at full load.

Keeping the line productive

Every autonomous run keeps a person at the value-adding end of the process instead of [walking pallets](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) across the building. Steadier outbound flow, less non-value-added transport, and [more productive use of skilled labor](https://info.mobilerobot.com/applications/results/labor-reallocation/), are the outcomes this flow targets — [up to 80% of the operator time](#)

[s://info.mobilerobot.com/applications/results/productivity-improvements/](https://info.mobilerobot.com/applications/results/productivity-improvements/)) on the repetitive leg is designed out.

When shipping volumes spike, staged outbound freight crowds the floor. The J1600's 360-degree safety field and speed-dependent protective zones handle traffic on the way — see [Operation in Crowded Environments](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>) — and the operator takes over manually for the improvised moments, per [Handling Exceptions and Irregular Loads](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>).

Combining with upstream flows

One J1600 can serve both directions of the line in [dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (<https://info.mobilerobot.com/products/j1600/dual-mode/>): materials in via [Production Supply](https://info.mobilerobot.com/applications/use-cases/production-supply/) (<https://info.mobilerobot.com/applications/use-cases/production-supply/>), finished goods out via this flow, with [A-to-B-to-C tasks](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/) (<https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/>) chaining the legs. Outbound staging lanes are saved locations like any other, so they can be added or moved in minutes as the shipping schedule changes — see [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>) and [Buffer and Staging Management](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/) (<https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/>).

Load and route requirements

Up to 1,600 kg per trip on an open-base carrier within 1,250 × 1,250 mm including overhang, load height up to 1,700 mm from the floor, on [indoor level routes](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>) at 5–40 °C. Details: [Open Cages and Alternative Load Carriers](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/>) · [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Local Work-Cell Automation

Large facilities contain many small material flows: a cell that feeds one line, a packing station with its own loop, a subassembly area with a dedicated shuttle run. Each is too small — or changes too often — to justify a conventional fleet project. The J1600 serves these stand-alone flows one cell at a time.

The local-flow problem

A full automation project prices and plans for the whole site: fleet management, systems integration, infrastructure, and expert configuration. A local flow of a few pallet moves per hour cannot carry that overhead, so it stays manual by default. The J1600 inverts the economics:

- one vehicle, [deployed in hours or a day](https://info.mobilerobot.com/applications/results/faster-deployment/) (<https://info.mobilerobot.com/applications/results/faster-deployment/>); [depending on scope](https://info.mobilerobot.com/applications/planning/deployment-scope-examples/) (<https://info.mobilerobot.com/applications/planning/deployment-scope-examples/>);
- [no mandatory warehouse-management-system, fleet-manager, or IT integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>);
- [Wi-Fi optional for basic use](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>);
- no tracks, wires, reflectors, or building modifications;
- about 30 minutes of [training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>) for an operator who already uses an electric pallet jack.

The cell's own operator runs it: pick manually, send autonomously, take over any time. See [Manual Pickup and Autonomous Delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>), and [Mixed Manual and Autonomous Work](https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/) (<https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/>).

Typical cell patterns

- A loop between the cell and its supermarket or storage zone — [Deliver and Return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>).
- Feeding the cell on demand from a mobile or web call — [Come-to-Me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>).

- Clearing finished work to the next stage — [A-to-B-to-C Transport](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/) (<https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/>)
- Cell-adjacent buffers — [Buffer and Staging Management](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/) (<https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/>)

When the cell moves or the [layout changes](https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/) (<https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/>), the operator re-teaches the points by driving and saving — no automation expert required. See [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>).

Growing beyond one cell

Local automation does not box the site in. When more cells adopt the J1600, advanced automation adds automatic charging, come-to-me, [VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/) (<https://info.mobilerobot.com/products/software/vda-5050/>), fleet management, and [API integrations](https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/) (<https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/>), so single-cell deployments can later join a coordinated multi-vendor fleet. See [Automatic Charging](https://info.mobilerobot.com/applications/scenarios/automatic-charging/) (<https://info.mobilerobot.com/applications/scenarios/automatic-charging/>) and the [J1600 overview](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>).

Who this fits

Both larger sites with many small local flows and smaller operations running one to five pallet-jack operators on a single shift — [the segments the J1600 is primarily designed for](https://info.mobilerobot.com/company/about/markets-we-serve/) (<https://info.mobilerobot.com/company/about/markets-we-serve/>). For sites where the whole facility is the changing variable, see [Brownfield Automation](https://info.mobilerobot.com/applications/use-cases/brownfield-automation/) (<https://info.mobilerobot.com/applications/use-cases/brownfield-automation/>).

Brownfield Automation

A brownfield site is an existing facility whose processes and layout were not designed around new automation. Most [warehouses](https://info.mobilerobot.com/applications/industries/warehousing/) and [factories](https://info.mobilerobot.com/applications/industries/manufacturing/) are brownfield, and their realities — changing layouts, mixed traffic, imperfect floors, no appetite for a construction project — are exactly what the J1600 is designed for.

No infrastructure, by design

The J1600 needs nothing built, mounted, or embedded:

- no tracks, wires, magnets, or reflectors;
- no building modifications;
- [Wi-Fi optional for basic use](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/);
- [no mandatory warehouse-management-system, fleet-manager, or IT integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/);
- ready to use on delivery, with typical setup in hours or one day [depending on scope](https://info.mobilerobot.com/applications/planning/deployment-scope-examples/).

Navigation is [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) on an industrial NVIDIA Jetson AI computer: the robot builds and continuously updates a three-dimensional map while an operator drives it, then localizes and plans its own routes to saved destinations. 3D mapping is designed for greater precision and reliability than traditional 2D navigation in complex or changing environments, scanning environmental structures at heights reaching up to 70 m above the vehicle.

Living with a layout that moves

Brownfield floors change: pallets appear mid-aisle, racking moves, [seasonal areas](https://info.mobilerobot.com/applications/use-cases/temporary-storage/) open and close. The J1600 absorbs this in three ways:

1. **It routes around obstacles.** The environment model updates continuously, and the robot navigates around whatever is in the way — see [Dynamic Route Changes](https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/) (<https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/>).
2. **Operators re-teach in minutes.** A moved drop point is fixed by driving there and tapping **Save location** — no automation expert, no reprogramming project. See [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>).
3. **A person is always in the loop.** Anything the site throws up that automation should not guess at — a blocked aisle, a damaged pallet, an improvised storage spot — is handled by immediate manual takeover. See [Handling Exceptions and Irregular Loads](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>).

What the floor still has to provide

Brownfield tolerance has measured limits. Autonomous operation requires:

Requirement	Limit
Gradeability, automatic mode	0% — level floors only
Gradeability, manual mode	5% unloaded / 3% at full load
Maximum traversable bump	25 mm (1 in)
Maximum traversable gap	20 mm (0.8 in)
Floor flatness/levelness	TR34 FM3 / FF 25, FL 20
Temperature	5–40 °C (41–104 °F), indoor
Humidity	20–80%, non-condensing
Ingress protection	IP21

The company validates against rough conditions deliberately — its [Copenhagen test and demo facility](https://info.mobilerobot.com/company/locations/test-and-demonstration-facility/) (<https://info.mobilerobot.com/company/locations/test-and-demonstration-facility/>) uses intentionally uneven real-world flooring — but the limits above still govern deployments. Full details: [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Incremental by nature

Brownfield automation with the J1600 starts with one flow — often a single [work cell](https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/) (<https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/>), [receiving lane](https://info.mobilerobot.com/applications/use-cases/inbound-receiving/) (<https://info.mobilerobot.com/applications/use-cases/inbound-receiving/>), or [warehouse-to-production leg](https://info.mobilerobot.com/applications/use-cases/warehouse-to-production-transport/) (<https://info.mobilerobot.com/applications/use-cases/warehouse-to-production-transport/>) — and grows point by point. Advanced automation ([automatic charging](https://info.mobilerobot.com/applications/scenarios/automatic-charging/) (<https://info.mobilerobot.com/applications/scenarios/automatic-charging/>), [come-to-me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>), [VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/) (<https://info.mobilerobot.com/products/software/vda-5050/>) fleet management, APIs) is available when the application scales, never required on day one. See the [J1600 overview](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>).

Sensitive or Unstable Loads

Some loads should never be picked up on autopilot: barrels, liquid containers, top-heavy stacks, fragile goods, leaning pallets. The J1600's answer is to split the job. The operator applies experience and situational awareness during pickup and close maneuvering; the robot takes over only for the repetitive travel in between.

The manual half: judgment at the forks

In [manual mode](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>), the J1600 handles like a conventional electric pallet jack, and the operator controls every nuance:

- **Stability assessment** before lifting — recognizing a top-heavy, leaning, or poorly stacked load.
- **Condition checks** — spotting damaged pallets, crushed corners, or leaks before they travel.
- **Controlled lifting.** [Fork speeds](https://info.mobilerobot.com/products/j1600/dimensions-and-performance/) (<https://info.mobilerobot.com/products/j1600/dimensions-and-performance/>) are deliberate: 0.10 m/s lifting unloaded, 0.08 m/s lifting at full load, 0.08 m/s lowering unloaded, 0.12 m/s lowering at full load.
- **Confined maneuvering** around obstacles, other loads, and tight approaches, with pallet detection and height decisions under manual control.
- **Height where needed** — manual pick and drop up to 1,600 mm; barrels and cages at awkward positions are placed by hand.

Demonstrations of this use case show exactly this pattern with barrels: manual judgment for the sensitive part, then autonomous transport for the distance.

The autonomous half: smooth, predictable travel

Once the load is safely on the forks, the operator selects the destination, [confirms autonomous mode](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) (<https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/>), and steps away. The autonomous leg favors stability by design:

- floor-level delivery only — the load is never dropped from height autonomously;

- [level-floor operation](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (0% automatic gradeability) — no slopes or dock plates in autonomous mode;
- consistent, repeatable driving at up to 5.4 km/h with [obstacle avoidance](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/);
- a [load-detection sensor](https://info.mobilerobot.com/safety-compliance/safety-functions/load-detection/) (https://info.mobilerobot.com/safety-compliance/safety-functions/load-detection/) and speed-dependent 360-degree safety field throughout — see [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/).

The company's [Copenhagen test facility](https://info.mobilerobot.com/company/locations/test-and-demonstration-facility/) (https://info.mobilerobot.com/company/locations/test-and-demonstration-facility/) validates this behavior with deliberately difficult cases, including water-filled loads on uneven real-world flooring.

Supported carriers

Sensitive loads often arrive on non-standard carriers. The J1600 accepts any forkable open-base carrier within its envelope — open cages, barrels on open-base carriers, and formats beyond Euro pallets — subject to base geometry, size, stability, and operator judgment. No blanket approval exists for every carrier or for hazardous materials. See [Open Cages and Alternative Load Carriers](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/) for the exact limits.

Related reading

- The full pickup-to-delivery workflow: [Manual Pickup and Autonomous Delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/).
- Every judgment call that stays human: [Handling Exceptions and Irregular Loads](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/).
- The concept behind the split: [Dual Mode](https://info.mobilerobot.com/products/j1600/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/) (https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/).

Open Cages and Alternative Load Carriers

The J1600 is not limited to Euro pallets. It moves any forkable carrier with an **open base — no bottom deck board** — within its size envelope: open cages, barrels on open-base carriers, and custom formats. The working rule from the company's own demonstrations: everything that is open underneath can be picked up.

Compatibility limits

Parameter	Limit / support
Base requirement	Open base with no bottom deck board, so the forks can enter
Maximum load length, including overhang	1,250 mm (49 in)
Maximum load width, including overhang	1,250 mm (49 in)
Maximum load height from floor	1,700 mm (67 in)
Maximum payload	1,600 kg (approx. 3,500 lb)
EPAL support	EPAL Euro Pallet, EPAL 3, EPAL 6
GMA support	All GMA pallets with an open base
Custom carriers	Any forkable open-base carrier within the size limits

The exact envelope is 1,250 mm; some shorter product summaries round it to 1.2 m. Use 1,250 mm when checking a carrier.

Fork geometry

Whether a custom carrier is forkable depends on its base openings matching the fork dimensions:

Fork parameter	Value
Fork length	1,150 mm (45 in)
Fork width, each	180 mm (7 in)
Fork thickness	60 mm (2.4 in)
Outer distance across forks	680 mm (27 in)
Inner distance between forks	320 mm (13 in)
Lowest fork height	90 mm (3.5 in)
Highest fork position (manual)	1,600 mm (63 in)

Full dimensions: [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (https://info.mobilerobot.com/products/j1600/technical-specifications/).

Judgment still applies

Compatibility depends on base geometry, size, stability, and operator judgment — there is 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/) covering every carrier or any hazardous material. The operator assesses each carrier and load before pickup, which is one reason pallet pickup is always manual on the J1600. Unstable or awkward carriers get the treatment described in [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/).

AUTONOMOUS DELIVERY IS FLOOR LEVEL

Whatever the carrier, autonomous delivery is at floor level. The 1,600 mm pick and drop height is a manual-mode capability.

Where alternative carriers show up

Open cages and non-standard carriers are common in [production supply](https://info.mobilerobot.com/applications/use-cases/production-supply/) (https://info.mobilerobot.com/applications/use-cases/production-supply/), (component cages to the line), [inbound receiving](https://info.mobilerobot.com/applications/use-cases/inbound-receiving/) (https://info.mobilerobot.com/applications/use-cases/inbound-receiving/), (mixed inbound formats), and [grocery/FMCG distribution](https://info.mobilerobot.com/applications/industries/grocery-and-fmcg/) (https://info.mobilerobot.com/applications/industries/grocery-and-fmcg/), using GMA-format pallets. Because a carrier only needs to pass the envelope check once, alternative formats flow through [multi-point](https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/) (https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/), and [cross-docking](https://info.mobilerobot.com/applications/use-cases/cross-docking/) (https://info.mobilerobot.com/applications/use-cases/cross-docking/), tasks like any Euro pallet.

For questions on specific carriers, see the [product and capabilities FAQ](https://info.mobilerobot.com/support/faq/product-and-capabilities/) (https://info.mobilerobot.com/support/faq/product-and-capabilities/).

Multi-Point Pallet Transport

Real pallet flows are rarely a single A-to-B shuttle. Goods move from several origins to several destinations, and the mix changes daily. The J1600 handles this as multi-point-to-multi-point transport: every saved location can pair with every other, without demonstrating each combination.

The location model

- A location is created by driving the J1600 to the point manually and tapping **Save location**.
- There is no software limit on the number of [saved locations](https://info.mobilerobot.com/documentation/user-guides/location-management/) — practical limits come from available floor space.
- The robot navigates to any saved point from wherever it is. You do not teach routes between pairs; you teach points, and the [3D LiDAR SLAM navigation](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) plans each route itself.

That last property is what separates [teach-and-repeat](https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/) points from fixed-route automation: ten saved points already give you every pairing among them. See [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) and [Dynamic Route Changes](https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/).

Task patterns for multi-point work

Pattern	Behavior	Typical use
Deliver and return	Drop at B, come back to A	Repetitive feeding loops — see Deliver and Return (https://info.mobilerobot.com/applications/scenarios/deliver-and-return/)
A-to-B-to-C	Drop at B, continue empty to C	Chained flows, repositioning — see A-to-B-to-C Transport (https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/)
Deliver and wait	Drop at B, stay there	Staging lanes — see Deliver and Wait (https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/)
Deliver and park	Drop at B, go to parking	End of a run — see Deliver and Park (https://info.mobilerobot.com/applications/scenarios/deliver-and-park/)
Come-to-me	Robot comes to the caller	On-demand pickup — see Come-to-Me (https://info.mobilerobot.com/applications/scenarios/come-to-me/)

Each task starts the same way: manual pickup, destination and post-delivery behavior chosen on the touchscreen, autonomous mode confirmed with the physical start button. See [Manual Pickup and Autonomous Delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>).

Where multi-point flows pay off

- **[Cross-docking](https://info.mobilerobot.com/applications/use-cases/cross-docking/)** (<https://info.mobilerobot.com/applications/use-cases/cross-docking/>): shuffling pallets across multiple doors and lanes is the defining multi-point application.
- **[Buffer and staging management](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/)** (<https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/>): lines, buffers, and storage zones form a many-to-many network.
- **[Temporary storage](https://info.mobilerobot.com/applications/use-cases/temporary-storage/)** (<https://info.mobilerobot.com/applications/use-cases/temporary-storage/>): short-lived points join and leave the network without touching anything else.
- **Changing operations:** when flows change, you add points, not projects — a fit described in [Brownfield Automation](https://info.mobilerobot.com/applications/use-cases/brownfield-automation/) (<https://info.mobilerobot.com/applications/use-cases/brownfield-automation/>).

Capacity and limits

Each trip moves up to 1,600 kg at up to 5.4 km/h on indoor, level routes, dropping at floor level. Carriers must be open-base within 1,250 × 1,250 mm including overhang — see [Open Cages and Alternative Load Carriers](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 the [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Manual Pickup and Autonomous Delivery

Every J1600 task follows the same core pattern: a person picks up the pallet manually, and the robot delivers it autonomously. Pickup is always manual — that is where judgment lives — and autonomous delivery is always at floor level. This page walks through the pattern that every other scenario builds on.

The workflow

1. Manually pick up a supported pallet or load carrier, [using the tiller](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>), like a conventional electric pallet jack.
2. Open task creation on the 15-inch touchscreen.
3. Choose the task type and the saved drop destination.
4. Choose what happens after delivery: return to origin, go to another point or parking, or stop and wait.
5. Execute the task.
6. 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 LED start/resume button.
7. The interface instructs you to step away. Do so.
8. The J1600 [travels autonomously](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) (<https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/>), avoids obstacles, drops the pallet at floor level, and follows the selected post-delivery action.

The route can be a few meters or well over 100 meters — the concept is identical.

Mode indication and control

- White lights indicate manual mode; in automatic mode, blue light strips display the protected area around the vehicle.
- 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.
- Grab or move the tiller at any time to take back manual control immediately. Emergency-stop buttons and the tiller-position switches stop the vehicle — see

[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/>).

Why pickup stays manual

Fork placement, load stability, pallet condition, and tight approaches are judgment work. Keeping them manual is what lets the J1600 skip the integration, infrastructure, and controlled processes that full automation needs — the reasoning behind [dual mode](https://info.mobilerobot.com/products/j1600/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/) (<https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/>). Loads that need extra care get the treatment in [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/>).

How quickly a new operator learns this

[Training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>) takes about 30 minutes for someone who already operates an electric pallet jack. At a public test event, [a first-time user drove the J1600 manually](https://info.mobilerobot.com/applications/customer-stories/video-case-stories/) (<https://info.mobilerobot.com/applications/customer-stories/video-case-stories/>), saved a location, created a drop-and-return task, confirmed automatic mode, and watched the robot navigate around people — on first contact with the machine.

Variations on the pattern

The post-delivery choice in step 4 is what differentiates the [named task patterns](https://info.mobilerobot.com/documentation/user-guides/task-management/) (<https://info.mobilerobot.com/documentation/user-guides/task-management/>):

- [Deliver and Return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>) — the most common task
- [Deliver and Wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>)
- [Deliver and Park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-park/>)
- [A-to-B-to-C Transport](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/) (<https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/>)
- [Come-to-Me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>) — the robot comes to you first

Destinations are created as described in [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>). For the machine's full capabilities, see the [J1600 overview](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>).

Deliver and Return

Deliver and return — also called the **boomerang** task — sends the J1600 to a saved destination, drops the pallet at floor level, and brings the vehicle straight back to the origin or operator. It is the most commonly performed and demonstrated J1600 task, because it turns one operator plus one robot into a continuous loop.

How it works

1. Pick up the pallet manually.
2. Choose the saved drop destination on the touchscreen.
3. Choose **return to origin/operator** as the post-delivery behavior.
4. Confirm automatic mode with the start button and step away.
5. The robot delivers, drops at floor level, and returns empty to where it started.

While the robot is out, the operator prepares the next pallet. When it returns, the next cycle starts immediately — drop, go, repeat. The full task mechanics are described in [Manual Pickup and Autonomous Delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>).

Where the loop fits

The boomerang suits any flow where pallets keep leaving the same place:

- **Inbound receiving** (<https://info.mobilerobot.com/applications/use-cases/inbound-receiving/>): the operator stays at the trailer; the robot shuttles each pallet to inspection or storage and comes back.
- **Production supply** (<https://info.mobilerobot.com/applications/use-cases/production-supply/>): the kitting or supermarket operator loads; the robot feeds the line and returns.
- **Production-to-shipping** (<https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/>): the line-end operator keeps packing while finished pallets flow to staging.
- **Buffer feeding** (<https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/>): a steady loop keeps a buffer at level without anyone walking.

The longer the leg, the more [walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) each loop removes — the route can be a few meters or well over 100 meters.

Behavior on the way

On both the loaded outbound leg and the empty return, the robot navigates with [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) at up to 5.4 km/h, avoids obstacles, and protects its surroundings with a speed-dependent 360-degree safety field shown by blue light strips. The 2D safety LiDARs and certified safety functions support both forward and reverse travel — see [Operation in Crowded Environments](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/).

Alternatives

If the vehicle should stay at the destination instead of returning, use [Deliver and Wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/). If it should clear the floor after the last drop, use [Deliver and Park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/). To chain a second leg instead of returning, use [A-to-B-to-C Transport](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/).

Deliver and Wait

Deliver and wait — also called **drop and wait** — sends the J1600 to a saved destination, drops the pallet at floor level, and keeps the vehicle standing at that point until someone gives it a new task. Use it when the work continues at the destination, or when the next move is not yet known.

How it works

1. Pick up the pallet manually.
2. Choose the saved drop destination on the touchscreen.
3. Choose **Stop and wait** as the post-delivery behavior.
4. Confirm automatic mode with the start button and step away.
5. The robot delivers, drops, and waits at the destination.

From there, anyone at the destination can start the next task from the touchscreen, or simply take the tiller and continue manually — the handover works in both directions. See [Manual Pickup and Autonomous Delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) for the base workflow and [Mixed Manual and Autonomous Work](https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/) (https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/) for the mode change.

A demonstrated example

In a [public tutorial](https://info.mobilerobot.com/newsroom/videos/how-to-videos/) (https://info.mobilerobot.com/newsroom/videos/how-to-videos/), a location was saved and named `pallet1` ("Pallet Bay 1"), a task was created with **Drop Pallet at Location** and stop-and-wait selected, automatic mode was confirmed, and the robot delivered and stayed put. Creating the location and the task took minutes — see [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/).

When waiting beats returning

- **Staging lanes:** the pallet may need repositioning once the lane fills — keep the vehicle where the action is. See [Buffer and Staging Management](https://info.mobilerobot.com/applications/scenarios/staging-management/) (https://info.mobilerobot.com/applications/scenarios/staging-management/).

[obot.com/applications/use-cases/buffer-and-staging-management/](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/)).

- **Handovers between teams:** the receiving team sends; the production team takes over the waiting vehicle at their end.
- **One-way flows:** when nobody is left at the origin, returning empty would waste the trip.
- **Uncertain next steps:** in changing flows such as [cross-docking](https://info.mobilerobot.com/applications/use-cases/cross-docking/) (<https://info.mobilerobot.com/applications/use-cases/cross-docking/>), the next origin is often decided after the drop.

If the vehicle should come back for the next pallet instead, use [Deliver and Return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>). If it should clear the area after the drop, use [Deliver and Park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-park/>) or chain a leg with [A-to-B-to-C Transport](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/) (<https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/>). A waiting robot can also be summoned from elsewhere with [Come-to-Me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>).

While it waits

A waiting J1600 draws [approximately 2% battery per hour in standby](https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/>), so parking it at a destination between tasks costs little runtime. For charge management across a shift, see [Automatic Charging](https://info.mobilerobot.com/applications/scenarios/automatic-charging/) (<https://info.mobilerobot.com/applications/scenarios/automatic-charging/>).

Deliver and Park

Deliver and park completes the drop and then sends the J1600 to a defined parking location. Use it at the end of a run, between shifts, or whenever the vehicle should clear the working area instead of standing at the destination or returning empty.

How it works

1. Pick up the pallet manually.
2. Choose the saved drop destination on the touchscreen.
3. Choose **go to parking** as the post-delivery behavior.
4. Confirm automatic mode with the start button and step away.
5. The robot delivers, drops at floor level, and drives itself to the parking location.

The parking spot is a [saved location](https://info.mobilerobot.com/documentation/user-guides/location-management/) like any other — created once by driving there and tapping **Save location**. See [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) and the base workflow in [Manual Pickup and Autonomous Delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/).

Why park

- **Clear floors:** staging lanes, dock areas, and line-side spaces stay free of an idle vehicle — useful in the crowded conditions described in [Operation in Crowded Environments](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/).
- **Predictable pickup point:** the next operator always knows where the machine is.
- **End-of-shift discipline:** the last task of the day ends with the vehicle parked, not abandoned mid-floor.
- **Charging:** park near the charger for a manual plug-in during breaks, or combine parking behavior with an automatic charging station so idle time becomes charge time — see [Automatic Charging](https://info.mobilerobot.com/applications/scenarios/automatic-charging/).

A parked J1600 draws approximately 2% battery per hour in standby (<https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/>).

Calling it back

A parked robot does not need to be fetched on foot. With the come-to-me function, call it to your location from a mobile app or web interface — see [Come-to-Me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>). Otherwise, any operator can walk over, take the tiller, and start the next task.

Alternatives

To keep a loop running, use [Deliver and Return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>). To keep the vehicle at the destination, use [Deliver and Wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>). Parking can also be the final leg of a chained task — see [A-to-B-to-C Transport](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/) (<https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/>).

A-to-B-to-C Transport

The **simple ABC** task delivers a pallet from A to B and then sends the J1600 onward to a third point, C. It is the building block for chained flows: the vehicle ends each job where the next one starts, instead of returning to where the last one began.

How it works

1. Pick up the pallet manually at A.
2. Choose saved destination B on the touchscreen.
3. Choose **go to another point** as the post-delivery behavior and select C.
4. Confirm automatic mode with the start button and step away.
5. The robot delivers at B, drops at floor level, and continues empty to C.

C can be anything useful: the next pickup area, a parking spot, or a charging station. See [Manual Pickup and Autonomous Delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>), for the base workflow.

What ABC unlocks

- **Chained flows:** warehouse to line, then onward to the next pickup — the robot pre-positions itself where work continues. See [Warehouse-to-Production Transport](https://info.mobilerobot.com/applications/use-cases/warehouse-to-production-transport/) (<https://info.mobilerobot.com/applications/use-cases/warehouse-to-production-transport/>).
- **Two-ended operations:** deliver finished goods to shipping, then continue to the receiving area where inbound work is waiting — one vehicle serving both flows. See [Production-to-Shipping Transport](https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/) (<https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/>), and [Inbound Receiving](https://info.mobilerobot.com/applications/use-cases/inbound-receiving/) (<https://info.mobilerobot.com/applications/use-cases/inbound-receiving/>).
- **Repositioning without walking:** whoever needs the vehicle next does not fetch it; it arrives.
- **Charging in the flow:** end a run at the automatic charging station so idle minutes become charge — see [Automatic Charging](https://info.mobilerobot.com/applications/scenarios/automatic-charging/) (<https://info.mobilerobot.com/applications/scenarios/automatic-charging/>).

Points, not routes

A, B, and C are [saved locations](https://info.mobilerobot.com/documentation/user-guides/location-management/) (<https://info.mobilerobot.com/documentation/user-guides/location-management/>), and any saved location can play any role in any task. Because the J1600 plans its own route between points with [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>), ten locations already support every A-B-C combination among them — nothing is taught per combination. This is the same property behind [Multi-Point Pallet Transport](https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/) (<https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/>) and [cross-docking](https://info.mobilerobot.com/application/s/use-cases/cross-docking/) (<https://info.mobilerobot.com/application/s/use-cases/cross-docking/>); creating the points takes minutes each, per [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>).

Alternatives

- Vehicle should come back to A: [Deliver and Return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>).
- Vehicle should stay at B: [Deliver and Wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>).
- C is specifically the parking location: [Deliver and Park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-park/>).
- The robot should come to a person on demand: [Come-to-Me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>).

Come-to-Me

Come-to-me reverses the usual direction of a task: instead of sending the robot away with a pallet, you call it to where you are. The request comes from a mobile app or web interface, and the J1600 drives itself to you — no one walks across the building to fetch it.

How it works

1. Open the mobile app or web interface.
2. Call the robot to your location.
3. The J1600 plans its route with [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>), drives over autonomously, and arrives ready for work.
4. Take the tiller for manual pickup, or create the next task on the touchscreen.

Come-to-me is an **advanced automation** function, alongside [automatic charging](https://info.mobilerobot.com/applications/scenarios/automatic-charging/) (<https://info.mobilerobot.com/applications/scenarios/automatic-charging/>), [VDA 5050](https://info.mobilerobot.com/documentation/concepts/vda-5050-explained/) (<https://info.mobilerobot.com/documentation/concepts/vda-5050-explained/>), fleet management, and [API integrations](https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/) (<https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/>). Basic automation — on-screen tasks, saved locations, autonomous floor drop, return-to-me, and parking — works without it. See the [J1600 overview](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>) for the capability levels.

What it changes on the floor

- **Pull-based replenishment:** a line-side worker calls the robot when material is needed; the warehouse loads it; the line receives it. See [Production Supply](https://info.mobilerobot.com/applications/use-cases/production-supply/) (<https://info.mobilerobot.com/applications/use-cases/production-supply/>).
- **No dead-heading on foot:** a robot left waiting or parked elsewhere — after a [Deliver and Wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>) or [Deliver and Park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-park/>) task — is summoned instead of collected.
- **Shared vehicle, many users:** in a facility with several pickup areas, whoever needs transport next calls it, which suits the one-tool pattern described in [Mixed Manual and Autonomous Work](https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/) (<https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/>).

[-manual-and-autonomous-work/](#)) and [Local Work-Cell Automation](#) (<https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/>).

On the way to you

The empty vehicle travels like [any autonomous run](#) (<https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/>): up to 5.4 km/h, obstacle avoidance, speed-dependent 360-degree safety field with blue light strips showing the protected area. See [Operation in Crowded Environments](#) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>) and [how J1600 safety works](#) (<https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/>).

Your position must be reachable as a destination on [indoor, level floors](#) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>) — automatic mode has 0% gradeability, so the robot will not climb a ramp to reach you.

Related scenarios

Once the robot arrives, work continues with the standard pattern in [Manual Pickup and Autonomous Delivery](#) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>). Frequently used calling points can be saved as locations for regular tasks too — see [Temporary Location Setup](#) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>).

Automatic Charging

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/>), the J1600 keeps itself charged: it drives to the station, positions itself at the charger, and a charging interface extends to the charging plates on the vehicle. Idle minutes become charge — opportunity charging without anyone plugging in a cable.

How automatic charging works

1. The robot drives to the charging station and positions itself in front of the charger.
2. The charging interface extends from the station to the vehicle's charging plates.
3. Charging runs while the robot is not busy; the vehicle is available for work again when needed.

Automatic charging is an **advanced automation** capability, alongside come-to-me, [VDA 5050](https://info.mobilerobot.com/documentation/concepts/vda-5050-explained/) (<https://info.mobilerobot.com/documentation/concepts/vda-5050-explained/>), fleet management, and [API integrations](https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/) (<https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/>). When the automatic charger is purchased with the [installation and commissioning package](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>), its setup is part of on-site Day 1.

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 certified safety function rated Performance Level b — see [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/>).

Manual charging

Without the automatic station, charging works like any electric pallet jack: plug in the [manual charger](https://info.mobilerobot.com/products/chargers-and-accessories/manual-charger/) (<https://info.mobilerobot.com/products/chargers-and-accessories/manual-charger/>) during a break or whenever the machine is idle — before lunch, between waves, at shift end. Combining a manual charger with a saved parking spot near it keeps the routine simple — see [Deliver and Park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-park/>).

Battery, drain, and charge rates

Parameter	Value
Battery	24 V, 200 Ah lithium iron phosphate (LiFePO4)
Charging rate	approx. 47 percentage points per hour
Drain, driving fully loaded	approx. 13% per hour
Drain, driving unloaded	approx. 12% per hour
Drain, standby	approx. 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 roughly 7.7 hours of continuous fully loaded driving or 8.3 hours unloaded, but these are calculated figures — not guaranteed runtimes — before allowing for standby, lifting, duty cycle, battery reserve, and operating conditions. For a single-shift operation, a break-time plug-in or an opportunity-charging station comfortably covers the day.

Fitting charging into task flows

- End a run at the charger with [Deliver and Park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-park/>) or as the final leg of an [A-to-B-to-C task](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/) (<https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/>).
- A waiting robot ([Deliver and Wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>)) burns only ~2% per hour, so short waits rarely need a charge stop.
- Call the robot off the charger when work resumes with [Come-to-Me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>).

Charger list prices

Item	End-user list price (2026)
Manual charger	€3,600
Automatic charger	€8,400

Full electrical specifications: [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>). For charger questions, see the [product and capabilities FAQ](https://info.mobilerobot.com/support/fag/product-and-capabilities/) (<https://info.mobilerobot.com/support/fag/product-and-capabilities/>).

Temporary Location Setup

Adding a destination to the J1600 takes minutes and no expertise: drive there, tap **Save location**, name it, done. This is the mechanism behind every [flexible use](https://info.mobilerobot.com/applications/results/operational-flexibility/) of the machine — temporary storage, moved staging lanes, new work cells, seasonal areas — because a location that costs minutes to create can be treated as disposable.

Saving a location

1. Use the tiller to drive the J1600 manually to the desired point. It handles like a regular electric pallet jack, and the robot continuously learns and updates its 3D map while you drive.
2. Tap **Save location** on the touchscreen.
3. Name the point — for example `pallet1` or "Pallet Bay 1", as shown in the company's [public tutorial](https://info.mobilerobot.com/newsroom/videos/how-to-videos/).
4. Repeat for as many points as the operation needs.

There is **no software limit** on the number of [saved locations](https://info.mobilerobot.com/documentation/user-guides/location-management/); the practical limit is available floor space.

Using the new location

The point is immediately available in task creation: choose it as a drop destination, pair it with any post-delivery behavior, and execute — the full workflow is in [Manual Pickup and Autonomous Delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/). Because the robot plans routes itself, the new point works with every existing location at once; nothing is retaught pair by pair. See [Dynamic Route Changes](https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/).

First-time setup is the same operation

[Commissioning a J1600](https://info.mobilerobot.com/documentation/getting-started/first-time-setup/) is this procedure repeated: power on, follow the on-screen tutorial, [drive the](#)

[facility so the robot maps it](https://info.mobilerobot.com/documentation/getting-started/creating-the-first-map/) (<https://info.mobilerobot.com/documentation/getting-started/creating-the-first-map/>), and save each destination. No tracks, wires, reflectors, or building modifications are involved, and [Wi-Fi is optional for basic use](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>). [Typical setup takes hours to one day](https://info.mobilerobot.com/applications/results/faster-deployment/) (<https://info.mobilerobot.com/applications/results/faster-deployment/>). [depending on scope](https://info.mobilerobot.com/applications/planning/deployment-scope-examples/) (<https://info.mobilerobot.com/applications/planning/deployment-scope-examples/>). The optional five-day installation and commissioning package includes creation of up to 25 validated [drop points](https://info.mobilerobot.com/documentation/installation/mapping-and-drop-point-setup/) (<https://info.mobilerobot.com/documentation/installation/mapping-and-drop-point-setup/>) — see the [J1600 overview](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>).

Why operators own this

[Teaching routes](https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/) (<https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/>) is one of the jobs the company deliberately keeps human: driving to a new point and saving it replaces calling an automation expert to reprogram a map. That is what makes the J1600 practical in [brownfield sites](https://info.mobilerobot.com/applications/use-cases/brownfield-automation/) (<https://info.mobilerobot.com/applications/use-cases/brownfield-automation/>), [temporary storage](https://info.mobilerobot.com/applications/use-cases/temporary-storage/) (<https://info.mobilerobot.com/applications/use-cases/temporary-storage/>), [changing buffers](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/) (<https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/>), and [cross-docking lanes](https://info.mobilerobot.com/applications/use-cases/cross-docking/) (<https://info.mobilerobot.com/applications/use-cases/cross-docking/>) — layouts change, and the person on the floor keeps up. It is central to [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/>).

Placement requirements

A drop location must be on the [indoor, level portion of the facility](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>): automatic gradeability is 0%, floors to TR34 FM3, bumps up to 25 mm, gaps up to 20 mm, temperature 5–40 °C. See the [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Dynamic Route Changes

The J1600 does not follow fixed routes. It navigates to saved points, planning and re-planning its own path with [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>). When the floor changes — an obstacle appears, a lane moves, a whole area is rearranged — the response is automatic re-routing, a minute of [re-teaching](https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/) (<https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/>), or a human hand on the tiller, depending on the scale of the change.

Three layers of adaptation

1. The robot re-routes itself

The J1600 builds and continuously updates a three-dimensional map of the environment, scanning structures at heights reaching up to 70 m above the vehicle. It detects obstacles and drives around them in dynamic environments, so everyday changes — a pallet left in the aisle, a parked cart — do not require anyone to do anything. 3D mapping is designed for greater precision and reliability than traditional 2D navigation in complex or changing conditions.

Because navigation is point-based, the robot reaches any saved destination without having been taught every possible origin-destination combination. Preferred travel zones can be defined to keep autonomous traffic in safer corridors.

2. The operator re-teaches in minutes

When a destination itself moves — a staging lane shifts, a buffer opens somewhere new — the operator drives to the new point and taps **Save location**. No automation expert, no reprogramming project, no limit on saved locations. See [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>).

3. The human takes over

For changes that need judgment right now — a blocked area to improvise around, an urgent reprioritization — the operator grabs the tiller and drives. Route changes and crowded-floor improvisation are among the jobs deliberately kept human. See

[Handling Exceptions and Irregular Loads](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>) and [Mixed Manual and Autonomous Work](https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/) (<https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/>).

No infrastructure to move

Fixed-route automation embeds its routes in the building — tracks, wires, magnets, reflectors. The J1600 uses none of these, so a layout change never means construction work. This is the core of its fit for [brownfield sites](https://info.mobilerobot.com/applications/use-cases/brownfield-automation/) (<https://info.mobilerobot.com/applications/use-cases/brownfield-automation/>), [cross-docking](https://info.mobilerobot.com/applications/use-cases/cross-docking/) (<https://info.mobilerobot.com/applications/use-cases/cross-docking/>), and [temporary storage](https://info.mobilerobot.com/applications/use-cases/temporary-storage/) (<https://info.mobilerobot.com/applications/use-cases/temporary-storage/>).

Safety while re-routing

Obstacle avoidance belongs to the navigation stack; [personnel protection is separate and certified](https://info.mobilerobot.com/safety-compliance/safety-overview/navigation-sensor-s-vs-safety-sensors/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/navigation-sensor-s-vs-safety-sensors/>). Two 2D safety LiDARs, an independent safety controller, and a speed-dependent 360-degree protective field guard every route the robot chooses, with [person detection](https://info.mobilerobot.com/safety-compliance/safety-functions/person-detection/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/person-detection/>) and [braking](https://info.mobilerobot.com/safety-compliance/safety-functions/braking/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/braking/>) assigned Performance Level d. See [Operation in Crowded Environments](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>) and [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/>).

Limits

Re-routing happens within the operating envelope: [indoor, level floors](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>) (0% automatic gradeability), bumps up to 25 mm, gaps up to 20 mm, floors to TR34 FM3. No figures are published for minimum aisle width or localization tolerance — for site-specific feasibility, see the [product and capabilities FAQ](https://info.mobilerobot.com/support/faq/product-and-capabilities/) (<https://info.mobilerobot.com/support/faq/product-and-capabilities/>) and the [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Mixed Manual and Autonomous Work

The J1600 is one vehicle for two kinds of work. In the same shift — often in the same minute — it is a familiar manual pallet jack and an autonomous transporter. Mixing the modes freely, rather than choosing one, is how the machine earns its keep: judgment stays manual, distance goes autonomous.

The two modes

- **Manual mode:** a person controls the tiller and lift functions like a conventional electric pallet jack — nuanced pickup, handling up to 1,600 mm, difficult approaches, [sensitive loads](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/) (<https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/>), exceptions. White lights indicate manual mode.
- **Automatic mode:** after the operator selects a saved destination and confirms the [mode change](https://info.mobilerobot.com/documentation/getting-started/manual-and-autonomous-modes/) (<https://info.mobilerobot.com/documentation/getting-started/manual-and-autonomous-modes/>), the vehicle [drives itself](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) (<https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/>), drops at floor level, and follows its configured return, park, wait, or continue behavior. Blue light strips show the protected area.

This is [dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (<https://info.mobilerobot.com/products/j1600/dual-mode/>), the product's defining distinction.

Switching between modes

Into automatic: create or select the task on the touchscreen, execute, confirm with the physical LED start/resume button when the robot asks, and step clear when instructed.

Back to manual: grab or move the tiller — takeover is immediate. Tiller-position switches handle emergency stop and manual control, and a three-position key switch selects power off, manual only, or automatic mode. Safety controls are always available — see [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/>).

The full task workflow is in [Manual Pickup and Autonomous Delivery](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>).

A mixed shift in practice

A [receiving](https://info.mobilerobot.com/applications/use-cases/inbound-receiving/) operator's morning might look like this:

1. **Manual:** unload the trailer over the dock plate — [manual mode](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) handles gradients up to 5% unloaded, 3% loaded; automatic mode is level-floor only.
2. **Autonomous:** send each pallet to storage with [deliver and return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) while staying at the dock.
3. **Manual:** an awkward, part-damaged pallet gets hand-carried treatment — see [Handling Exceptions and Irregular Loads](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/).
4. **Autonomous:** the last pallet goes out with [deliver and park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/), leaving the vehicle at the charger.

One tool covers the whole sequence — no switching vehicles, no idle specialist machine. This one-tool utilization also suits [local work cells](https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/) and small teams where the same one to five operators do everything.

Why not full automation

Removing the manual half entirely would require [systems integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/), controlled processes, and expert configuration — and would still stall on the exceptions a person handles in seconds. Keeping the operator in the loop targets most of the [productivity gain](https://info.mobilerobot.com/applications/results/productivity-improvements/) at a fraction of the complexity; the reasoning is laid out in [human-in-the-loop automation](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/). [Training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) for the mixed role takes about 30 minutes for an existing pallet-jack operator.

Operation in Crowded Environments

Warehouse floors are shared spaces: people walking, pallet jacks crossing, freight staged where it fits. The J1600 is built to run autonomously in this traffic — with a certified protective field around the vehicle — and to hand the really chaotic moments back to a person.

The protective field

- A **360-degree safety field** surrounds the vehicle, supporting both forward and reverse autonomous travel.
- Two **2D safety LiDAR scanners**, front and rear, provide certified [personnel detection](https://info.mobilerobot.com/safety-compliance/safety-functions/person-detection/) — [separate from the 3D navigation LiDAR and RGB AI camera](https://info.mobilerobot.com/safety-compliance/safety-overview/navigation-sensors-vs-safety-sensors/), which belong to the navigation stack.
- The field is **speed-dependent**: it expands as travel speed increases and adjusts as the vehicle slows.
- **Blue light strips** project the current protected area onto the floor, so people nearby can see the zone at a glance. White lights mean the vehicle is in manual mode.

Person detection in the safety field and the [braking system](https://info.mobilerobot.com/safety-compliance/safety-functions/braking/) are rated [Performance Level d](https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/); [safety-field size adjustment](https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/) is also PL d. An independent safety controller, three emergency-stop buttons, a belly button for stop-and-reverse, and certified motor controllers and encoders complete the architecture — see [how J1600 safety works](https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/).

Navigating around people

At a public test event, [a first-time user sent the J1600 on a delivery](https://info.mobilerobot.com/applications/customer-stories/video-case-stories/) and watched it route around people on its way — standard behavior, not a stunt. The [3D LiDAR SLAM navigation](#)

[ps://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/)) continuously updates its environment model and drives around obstacles, moving or static, at up to 5.4 km/h. Preferred travel zones can be defined to keep autonomous traffic in safer corridors through busy production areas. See [Dynamic Route Changes](https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/) (<https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/>).

Before [any autonomous run](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) (<https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/>) starts, the operator [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/>) and the robot instructs them to step away — autonomy never starts by surprise.

When crowded becomes chaotic

There is a difference between traffic and gridlock. An overflowing receiving area with no clear lane is a job for human improvisation: take the tiller — takeover is immediate — and [drive the pallet through manually](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>). Navigating genuinely cluttered floors is one of the jobs deliberately kept human; see [Handling Exceptions and Irregular Loads](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>) and [Mixed Manual and Autonomous Work](https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/) (<https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/>).

Where this matters most

- [Cross-docking](https://info.mobilerobot.com/applications/use-cases/cross-docking/) (<https://info.mobilerobot.com/applications/use-cases/cross-docking/>) floors with staged freight and constant movement
- [Inbound receiving](https://info.mobilerobot.com/applications/use-cases/inbound-receiving/) (<https://info.mobilerobot.com/applications/use-cases/inbound-receiving/>) during unloading peaks
- [Production areas](https://info.mobilerobot.com/applications/use-cases/production-supply/) (<https://info.mobilerobot.com/applications/use-cases/production-supply/>) where autonomous traffic shares corridors with line workers
- Outbound [staging](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/) (<https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/>) as shipping waves build

No stopping-distance curves or safety-distance tables are published; current product documentation applies to deployment decisions. The layered design is intended to make transport more predictable and may [reduce workplace accidents](https://info.mobilerobot.com/applications/results/safety-improvements/) (<https://info.mobilerobot.com/applications/results/safety-improvements/>), compared with manual pallet handling.



Handling Exceptions and Irregular Loads

Warehouses are messy, dynamic, and unpredictable. The J1600 is designed around that fact: instead of treating every irregularity as a system error, it keeps a person in the loop who handles exceptions in seconds. This page lists the situations where the human half of [dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) does its best work.

The exception list

1. **Damaged pallets.** A broken bottom board or protruding nail is spotted before it becomes a safety hazard or a jam.
2. **Unstable loads.** A top-heavy, leaning, or poorly stacked load gets a judgment call before lifting — and manual handling if needed. See [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/>).
3. **Plastic-wrap snags.** A loose shrink-wrap tail is seen and tucked away before it catches a rack or doorframe.
4. **Misplaced pallets.** A pallet that is not exactly where the system expects is found by looking around — not reported as an error and abandoned.
5. **Damaged goods.** Leaks and crushed corners are caught before delivery to a customer or a production line.
6. **Steep dock plates.** Bumps, slopes, and trailer misalignment are manual work: automatic-mode gradeability is 0%, while [manual mode](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>) handles up to 5% unloaded and 3% at full load. See [Inbound Receiving](https://info.mobilerobot.com/applications/use-cases/inbound-receiving/) (<https://info.mobilerobot.com/applications/use-cases/inbound-receiving/>).
7. **Crowded floors.** An overflowing or cluttered area is crossed by improvising a safe route manually. See [Operation in Crowded Environments](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>).
8. **Urgent reprioritization.** When a production line is starving, the operator redirects immediately — no queue, no ticket. See [Production Supply](https://info.mobilerobot.com/applications/use-cases/production-supply/) (<https://info.mobilerobot.com/applications/use-cases/production-supply/>).
9. **Route and layout changes** (<https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/>). A new point is taught by driving there and tapping **Save location** — see [Temporary Location Setup](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>).

10. **Avoiding automation overhead.** Exceptions are the reason full automation gets expensive; handling them manually is what keeps the J1600 simple. The design targets up to 80% of the repetitive-transport gain (<https://info.mobilerobot.com/applications/results/productivity-improvements/>) without the integration burden (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>).

These are the company's design arguments — advocacy examples rather than comparative test results — and they explain the division of work in human-in-the-loop automation (<https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/>).

How takeover actually works

Exception handling relies on the handover being effortless in both directions:

- **To manual:** grab or move the tiller and the vehicle is immediately under manual control. Emergency-stop buttons, tiller-position switches, and the key switch (power off / manual only / automatic) are always available. See how J1600 safety works (<https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/>).
- **Back to autonomous:** once the exception is cleared, select the task, confirm with the start button, and step away. See Manual Pickup and Autonomous Delivery (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>) and Mixed Manual and Autonomous Work (<https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/>).

Irregular loads within the rules

Irregular is fine; incompatible is not. Whatever the exception, loads must stay within the hard limits: 1,600 kg maximum payload, open-base carrier within 1,250 × 1,250 mm including overhang, load height up to 1,700 mm. Carriers outside the envelope are not a judgment call — see Open Cages and Alternative Load Carriers (<https://info.mobilerobot.com/applications/use-cases/open-cages-and-alternative-load-carriers/>).

Manufacturing

Manufacturing is a primary target environment for the [J1600](https://info.mobilerobot.com/products/j1600/overview/) self-driving pallet jack. Small and medium manufacturers — and larger plants with many small, local material flows — use it to automate the repetitive travel between storage, production lines, staging areas, and shipping, while operators keep control of pickup and every maneuver that needs judgment.

The manufacturing fit

Most factories move pallets with manual pallet jacks because their flows are too small, too variable, or too budget-constrained for a conventional automation project. Full automation typically needs expert configuration, [systems integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/), infrastructure, and stable processes. The J1600's [dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) sits between the two: the operator picks up materials manually, then sends the vehicle on the repetitive drive autonomously.

Typical manufacturing flows it serves:

- **[Production supply](https://info.mobilerobot.com/applications/use-cases/production-supply/)**. An operator prepares or picks a pallet of materials or components; the J1600 delivers it to the production line on demand.
- **[Buffer and staging management](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/)**. Transport between lines, staging areas, and storage zones.
- **[Line-to-line and work-cell transport](https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/)**. Serve stand-alone flows inside a larger facility where a full fleet project would be excessive.
- **[Receiving-to-storage-to-production-to-shipping](https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/)**. Automate the long travel segments connecting standard zones.

Routes can be a few meters or more than 100 meters — the workflow is the same: [pick manually, select a saved destination, confirm autonomous mode, and step away](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/).

Why judgment stays with the operator

Production environments generate [exceptions](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) constantly: an urgent line-starvation reprioritization, an [unstable or sensitive load](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/), a congested aisle, a misplaced pallet. In [human-in-the-loop automation](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/), the operator handles these directly and can take over at any moment by grabbing the tiller. The robot handles the predictable part — the travel.

Practical constraints

- Autonomous driving requires [indoor, level floors](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (0% automatic gradeability); slopes and dock plates are manual tasks.
- Automatic pallet delivery is at floor level. [Manual mode](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) handles picks and drops up to 1,600 mm.
- [Operating temperature](https://info.mobilerobot.com/documentation/installation/operating-environment-requirements/) is 5–40 °C, ingress protection IP21.
- Loads must be [open-base carriers](https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/) within a 1,250 × 1,250 mm envelope and up to 1,600 kg.

See the [technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) for the full envelope.

Fitting an existing plant

The J1600 is designed for [brownfield sites](https://info.mobilerobot.com/applications/use-cases/brownfield-automation/). It navigates with [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) — no tracks, wires, reflectors, or building modifications — and operators [add or change destinations by driving to a point](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) and tapping **Save location**. Preferred travel zones can be defined for safer routing through production areas. Basic use requires [no Wi-Fi](https://info.mobilerobot.com/documentation/installation/net-work-and-wi-fi-requirements/), no warehouse-management-system connection, and no IT project; [VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/), a [REST API](https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/), and fleet management are available when a plant later scales up.

[Training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (https://info.mobilerobot.com/documentation/getting-started/operator-training/) for an existing electric-pallet-jack operator takes about 30 minutes, and [typical setup takes hours to one day](https://info.mobilerobot.com/applications/results/faster-deployment/) (https://info.mobilerobot.com/applications/results/faster-deployment/).

Related pages

- [Internal production logistics](https://info.mobilerobot.com/applications/industries/internal-production-logistics/) (https://info.mobilerobot.com/applications/industries/internal-production-logistics/) — the intra-plant flows in detail
- [Goods receiving](https://info.mobilerobot.com/applications/industries/goods-receiving/) (https://info.mobilerobot.com/applications/industries/goods-receiving/) and [Shipping and dispatch](https://info.mobilerobot.com/applications/industries/shipping-and-dispatch/) (https://info.mobilerobot.com/applications/industries/shipping-and-dispatch/) — the inbound and outbound ends of the flow
- [Productivity improvements](https://info.mobilerobot.com/applications/results/productivity-improvements/) (https://info.mobilerobot.com/applications/results/productivity-improvements/) and [ROI examples](https://info.mobilerobot.com/applications/results/roi-examples/) (https://info.mobilerobot.com/applications/results/roi-examples/) — what manufacturers gain

Warehousing

Warehouses are the J1600's home turf: horizontal, indoor, floor-to-floor pallet flows between receiving, storage, staging, and shipping. The [J1600](https://info.mobilerobot.com/products/j1600/overview/) automates the repetitive travel in these flows while operators keep manual control of pickup and [exceptions](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) — the [dual-mode](https://info.mobilerobot.com/products/j1600/dual-mode/) split that distinguishes it from both manual pallet jacks and conventional [AGVs](https://info.mobilerobot.com/documentation/concepts/mobile-robot-terminology/).

Who it targets

The [priority segment](https://info.mobilerobot.com/company/about/markets-we-serve/) is warehouse operators running roughly one to five pallet-jack operators on a single shift — sites that cannot justify a large automation project but lose hours every day to walking and travel time. Larger warehouses use it for [local work cells](https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/) and flows too small or changeable for a conventional fleet deployment.

Warehouse flows it serves

- **Zone-to-zone transport.** Automate the long travel segments connecting receiving, storage, production, and shipping.
- **[Temporary storage](https://info.mobilerobot.com/applications/use-cases/temporary-storage/)**. [Create short-lived storage points when demand changes](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) — drive to the spot once, tap **Save location**, and it is a destination.
- **[Cross-docking](https://info.mobilerobot.com/applications/use-cases/cross-docking/)**. Shuffle pallets across multiple origins and destinations without teaching every possible A-to-B combination; saved locations recombine freely.
- **[Buffer and staging](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/)**. Move pallets between staging areas and storage zones as flow requires.

There is no software limit on the number of [saved locations](https://info.mobilerobot.com/documentation/user-guides/location-management/) (<https://info.mobilerobot.com/documentation/user-guides/location-management/>); practical limits come from available floor space.

No infrastructure changes

The J1600 maps the warehouse with [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>) while an operator drives it. It needs no tracks, wires, reflectors, or building modifications, and it continuously updates its map as the environment changes — racking moved, pallets staged in new places, people in the aisles. Basic use needs [no Wi-Fi](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>), and [no warehouse-management-system integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>). When a site later wants orchestration, [Advanced software](https://info.mobilerobot.com/products/software/advanced-software/) (<https://info.mobilerobot.com/products/software/advanced-software/>) adds [VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/) (<https://info.mobilerobot.com/products/software/vda-5050/>), a [REST API](https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/) (<https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/>), and fleet management.

Operating envelope

- Payload up to 1,600 kg; manual picks and drops up to 1,600 mm; autonomous delivery at floor level.
- Top speed 5.4 km/h.
- [Indoor, level floors](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>) for autonomous mode; 5–40 °C; 20–80% non-condensing humidity; floor flatness to TR34 FM3 (FF 25 / FL 20).
- [Open-base pallets and carriers](https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/) (<https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/>) within 1,250 × 1,250 mm, load height up to 1,700 mm — EPAL Euro Pallet, EPAL 3, EPAL 6, open-base GMA pallets, and other forkable open-base carriers.

Full details are in the [technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Related pages

- [Goods receiving](https://info.mobilerobot.com/applications/industries/goods-receiving/) (https://info.mobilerobot.com/applications/industries/goods-receiving/) — the inbound end of the warehouse flow
- [Shipping and dispatch](https://info.mobilerobot.com/applications/industries/shipping-and-dispatch/) (https://info.mobilerobot.com/applications/industries/shipping-and-dispatch/) — the outbound end
- [Third-party logistics](https://info.mobilerobot.com/applications/industries/third-party-logistics/) (https://info.mobilerobot.com/applications/industries/third-party-logistics/) — warehousing on behalf of clients
- [Reduction in manual walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) (https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) and [Operational flexibility](https://info.mobilerobot.com/applications/results/operational-flexibility/) (https://info.mobilerobot.com/applications/results/operational-flexibility/) — the outcomes warehouses target

Third-Party Logistics

Third-party logistics (3PL) providers are a named [target segment](https://info.mobilerobot.com/company/about/markets-we-serve/) (<https://info.mobilerobot.com/company/about/markets-we-serve/>), for the [J1600](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>). Smaller 3PLs in particular face a structural problem with automation: their layouts, clients, and SKU mixes change too often for infrastructure-heavy systems, yet their margins are squeezed by exactly the repetitive pallet travel that automation removes.

The 3PL problem

A 3PL warehouse is rarely stable. Client contracts start and end, storage zones are reassigned, temporary buffers appear and disappear, and the SKU mix shifts with each client's season. Conventional automation assumes stable processes and pays back over years of unchanged operation — a poor match. Manual pallet jacks stay flexible but consume operator hours in [walking and travel](https://info.mobilerobot.com/application/s/results/reduction-in-manual-walking/) (<https://info.mobilerobot.com/application/s/results/reduction-in-manual-walking/>).

How the J1600 fits

The [dual-mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (<https://info.mobilerobot.com/products/j1600/dual-mode/>) approach keeps the flexibility and removes the travel:

- **Reconfiguration by the operator, not an engineer.** When a client's zone moves, the operator drives to the new point, taps **Save location**, and the flow is updated — no automation specialist, no code, no map project.
- **[Multi-point cross-docking](https://info.mobilerobot.com/applications/use-cases/cross-docking/)** (<https://info.mobilerobot.com/applications/use-cases/cross-docking/>). Saved locations recombine freely, so pallets can move across many origin-destination pairs without teaching each one.
- **[Temporary storage on demand](https://info.mobilerobot.com/applications/use-cases/temporary-storage/)** (<https://info.mobilerobot.com/applications/use-cases/temporary-storage/>). Short-lived buffer points are [created in minutes and abandoned just as easily](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>).
- **Manual handling where it matters.** Truck unloading, mixed and unstable client loads, and congested docks stay under operator control with immediate takeover via the tiller.

Economics for smaller 3PLs

The J1600 targets single-shift operations with roughly one to five pallet-jack operators — the scale where a full automation project (which can reach approximately €1 million for a fully integrated system) is out of reach. The J1600 lists at €65,000, deploys in hours to one day, and requires about 30 minutes of [operator training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>). A [two-week paid trial](https://info.mobilerobot.com/products/buying-and-deployment/two-week-trial/) (<https://info.mobilerobot.com/products/buying-and-deployment/two-week-trial/>) at €4,000 lets a 3PL validate a specific client flow before committing. See [ROI examples](https://info.mobilerobot.com/applications/results/roi-examples/) (<https://info.mobilerobot.com/applications/results/roi-examples/>).

Scaling with the business

A 3PL can start with one robot on one flow, with [no Wi-Fi](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>) or [systems integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>) required. When volume grows, [Advanced software](https://info.mobilerobot.com/products/software/advanced-software/) (<https://info.mobilerobot.com/products/software/advanced-software/>) adds [VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/) (<https://info.mobilerobot.com/products/software/vda-5050/>) interoperability, a [REST API](https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/) (<https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/>), and [Fleet Manager](https://info.mobilerobot.com/products/software/fleet-manager/) (<https://info.mobilerobot.com/products/software/fleet-manager/>), so the J1600 can join a multi-vendor fleet under a compatible fleet layer.

Load compatibility across clients

Client variety means carrier variety. The J1600 handles EPAL Euro Pallets, EPAL 3, EPAL 6, open-base GMA pallets, open cages, and other [forkable open-base carriers](https://info.mobilerobot.com/products/j1600/pallet-and-load-compatibility/) (<https://info.mobilerobot.com/products/j1600/pallet-and-load-compatibility/>) within a 1,250 × 1,250 mm envelope and 1,600 kg payload. Judgment about unusual or unstable client loads stays with the operator — 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/>).

Related pages

- [Warehousing](https://info.mobilerobot.com/applications/industries/warehousing/) (<https://info.mobilerobot.com/applications/industries/warehousing/>) — the underlying warehouse flows
- [E-commerce and fulfillment](https://info.mobilerobot.com/applications/industries/e-commerce-and-fulfillment/) (<https://info.mobilerobot.com/applications/industries/e-commerce-and-fulfillment/>) — a common 3PL service line

- [Operational flexibility \(https://info.mobilerobot.com/applications/results/operational-flexibility/\)](https://info.mobilerobot.com/applications/results/operational-flexibility/) — the core 3PL benefit in detail

Grocery and FMCG

Grocery and fast-moving consumer goods (FMCG) distribution is a named [priority segment](https://info.mobilerobot.com/company/about/markets-we-serve/) for the [J1600](https://info.mobilerobot.com/products/j1600/overview/) self-driving pallet jack. These operations move high pallet volumes on tight schedules, and much of that movement is repetitive travel between receiving, storage, staging, and [dispatch](https://info.mobilerobot.com/applications/industries/shipping-and-dispatch/) — exactly the portion the J1600 automates.

Why grocery and FMCG distribution

High-frequency replenishment makes pallet travel a constant cost. Demand shifts, promotions, and seasonal peaks change floor layouts and buffer locations faster than conventional automation can be reconfigured. The J1600's [dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) keeps operators in control of pickup and load judgment while [removing the walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/):

- **Dock-to-storage and storage-to-staging travel** runs autonomously after a manual pick.
- **Temporary buffers** [for promotions or peak periods are created by driving to a point](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/) [and tapping **Save location**](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) — and removed just as quickly.
- **Cross-docking** [across multiple origins and destinations works by recombining saved locations, without a bespoke task for every pair.](https://info.mobilerobot.com/applications/use-cases/cross-docking/)
- **Steadier material flow** comes from consistent, repeatable autonomous delivery runs.

Pallet compatibility

Grocery and FMCG networks run on standard pallet formats, and the J1600 supports the common ones directly:

Carrier	Support
EPAL Euro Pallet, EPAL 3, EPAL 6	Supported
GMA pallets	All GMA pallets with an open base
Other carriers	Any forkable open-base carrier within the size limits

The [load envelope](https://info.mobilerobot.com/products/j1600/pallet-and-load-compatibility/) (<https://info.mobilerobot.com/products/j1600/pallet-and-load-compatibility/>) is 1,250 × 1,250 mm including overhang, load height up to 1,700 mm from the floor, and payload up to 1,600 kg. Carriers must have an open base with no bottom deck board so the forks can enter. Compatibility for an unusual carrier depends on base geometry, size, stability, and operator judgment.

Handling the messy reality

FMCG warehouses see damaged pallets, loose stretch-wrap tails, leaking or crushed cartons, and [top-heavy mixed-SKU loads](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/) (<https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/>). These are the situations where [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/>) earns its place: the operator spots the problem at pickup, handles it manually, and hands only the predictable travel to the robot.

Environmental limits

The J1600 operates indoors at 5–40 °C with 20–80% non-condensing humidity and IP21 ingress protection. Ambient-temperature distribution areas are in range; chilled or frozen zones below 5 °C fall outside the specified [operating envelope](https://info.mobilerobot.com/documentation/installation/operating-environment-requirements/) (<https://info.mobilerobot.com/documentation/installation/operating-environment-requirements/>). Autonomous driving requires [level floors](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>) — dock plates and ramps remain manual. Full details are in the [technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Related pages

- [Warehousing](https://info.mobilerobot.com/applications/industries/warehousing/) (<https://info.mobilerobot.com/applications/industries/warehousing/>) — the general warehouse flows behind grocery distribution

- [Goods receiving](https://info.mobilerobot.com/applications/industries/goods-receiving/) (https://info.mobilerobot.com/applications/industries/goods-receiving/) — the inbound dock processes
- [Productivity improvements](https://info.mobilerobot.com/applications/results/productivity-improvements/) (https://info.mobilerobot.com/applications/results/productivity-improvements/) — throughput and flow outcomes

E-Commerce and Fulfillment

E-commerce and fulfillment operations are a [target segment](https://info.mobilerobot.com/company/about/markets-we-serve/) for the [J1600](https://info.mobilerobot.com/products/j1600/overview/) self-driving pallet jack. Fulfillment sites live on throughput and change constantly — two conditions that favor automation which deploys in hours and reconfigures in minutes rather than requiring an infrastructure project.

What fulfillment sites gain

The J1600 gives [factories](https://info.mobilerobot.com/applications/industries/manufacturing/), third-party-logistics warehouses, and e-commerce fulfillment centers four outcomes:

- **Reclaimed walk time** (<https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/>). Operators stop escorting pallets across the building; travel runs autonomously after a manual pick.
- **Stabilized material flow.** Repeatable autonomous delivery runs smooth out the peaks and gaps of manual transport.
- **Higher throughput without infrastructure overhaul.** No tracks, wires, reflectors, or building modifications — the robot maps the site with [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) while an operator drives it.
- **Deployment in hours rather than months.** Typical setup takes hours to one day, and [operator training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) takes about 30 minutes.

Built for facilities that change

Even the most automated fulfillment operations stay in motion. [Observations from a visit to a major e-commerce cross-docking facility](https://info.mobilerobot.com/newsroom/stories/behind-the-scenes/) shaped the J1600's flexibility-first design: layout, flow, buffer, and SKU-mix changes occurred several times per week; not every process was automated despite heavy robotics investment; and minor mechanical downtime happened several times a day. The conclusion — flexibility and robustness are business necessities even in highly automated facilities — is why the J1600 pairs

autonomy with immediate manual takeover instead of pursuing full automation. See [dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (<https://info.mobilerobot.com/products/j1600/dual-mode/>).

In practice this means:

- **Peak-season buffers** (<https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/>) are [saved as new locations in minutes](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>) and retired after the peak.
- **Cross-docking flows** (<https://info.mobilerobot.com/applications/use-cases/cross-docking/>) recombine saved origins and destinations without teaching every pair.
- **Exceptions** (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>) **stay human**. Congested aisles, urgent reprioritizations, and awkward loads are handled manually, with takeover available at any moment via the tiller.

Scale path

A fulfillment site can start with a single robot, [no Wi-Fi](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>), and [no warehouse-management-system integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>). When orchestration becomes worthwhile, the [Advanced software](https://info.mobilerobot.com/products/software/advanced-software/) (<https://info.mobilerobot.com/products/software/advanced-software/>) adds [VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/) (<https://info.mobilerobot.com/products/software/vda-5050/>) interoperability, a [REST API](https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/) (<https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/>), and [Fleet Manager](https://info.mobilerobot.com/products/software/fleet-manager/) (<https://info.mobilerobot.com/products/software/fleet-manager/>), letting the J1600 work alongside robots from other vendors under a compatible fleet layer.

Operating envelope

Payload up to 1,600 kg; autonomous delivery at floor level; [indoor, level floors](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>); 5–40 °C; [open-base carriers](https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/) (<https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/>) within 1,250 × 1,250 mm. See the [technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Related pages

- [Third-party logistics](https://info.mobilerobot.com/applications/industries/third-party-logistics/) (https://info.mobilerobot.com/applications/industries/third-party-logistics/) — fulfillment run as a service
- [Warehousing](https://info.mobilerobot.com/applications/industries/warehousing/) (https://info.mobilerobot.com/applications/industries/warehousing/) — the underlying zone-to-zone flows
- [Faster deployment](https://info.mobilerobot.com/applications/results/faster-deployment/) (https://info.mobilerobot.com/applications/results/faster-deployment/) and [Operational flexibility](https://info.mobilerobot.com/applications/results/operational-flexibility/) (https://info.mobilerobot.com/applications/results/operational-flexibility/) — the outcomes fulfillment sites value most

Goods Receiving

Goods receiving is one of the J1600's core applications and a clear illustration of its [dual-mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (<https://info.mobilerobot.com/products/j1600/dual-mode/>), [division of work](https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/) (<https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/>): the dock is human territory, the travel afterward is not. An operator [unloads the truck manually, then sends each pallet autonomously](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>) to inbound inspection or storage.

The receiving workflow

1. The operator unloads a pallet from the truck in [manual mode](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>), — the J1600 handles like a conventional walk-behind electric pallet jack.
2. On the touchscreen, the operator selects the saved destination (inspection area, storage zone, or staging point) and a post-delivery behavior.
3. The operator [confirms autonomous mode](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/) (<https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/>), with the physical start button and steps away.
4. The J1600 drives to the destination, avoids obstacles on the way, drops the pallet at floor level, and — in the common "[boomerang](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/)" [pattern](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>), — returns to the dock for the next pallet.

While the robot travels, the operator keeps unloading. The repetitive walk between dock and storage disappears from the operator's day.

Why the dock stays manual

Receiving concentrates the situations where human judgment beats automation:

- **Dock plates and trailer interiors.** Autonomous mode has 0% gradeability and requires [level floors](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>); bumps, slopes, and misaligned dock plates are handled manually (manual gradeability is 5% unloaded, 3% at full load, with a maximum traversable bump of 25 mm and gap of 20 mm).
- **Damaged pallets and goods.** A broken bottom board, protruding nail, leak, or crushed corner is spotted by the operator before it becomes a jam or a customer

problem.

- **Unstable and wrapped loads.** [Top-heavy stacks](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/) (<https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/>) and loose stretch-wrap tails get judged and fixed at pickup.
- **Crowded receiving floors** (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>). The operator improvises a safe route through congestion that would stall a fully automated vehicle.

This split is the practical case for [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/>).

Setting up a receiving flow

[Destinations are created by driving to the point once](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>) and tapping **Save location** — inspection lanes, storage aisles, and [temporary overflow areas](https://info.mobilerobot.com/applications/use-cases/temporary-storage/) (<https://info.mobilerobot.com/applications/use-cases/temporary-storage/>) can each be a named location, with no software limit on how many. Locations recombine freely, so receiving can feed multiple zones without teaching each dock-to-zone pair separately.

Load compatibility at the dock

Inbound freight arrives on varied carriers. The J1600 accepts EPAL Euro Pallets, EPAL 3, EPAL 6, open-base GMA pallets, and any [forkable open-base carrier](https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/) (<https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/>) within 1,250 × 1,250 mm and 1,600 kg. Carriers need an open base with no bottom deck board. Details in [technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Related pages

- [Warehousing](https://info.mobilerobot.com/applications/industries/warehousing/) (<https://info.mobilerobot.com/applications/industries/warehousing/>) — where the pallets go next
- [Shipping and dispatch](https://info.mobilerobot.com/applications/industries/shipping-and-dispatch/) (<https://info.mobilerobot.com/applications/industries/shipping-and-dispatch/>) — the mirror-image outbound process
- [Reduction in manual walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) (<https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/>) — the main receiving-area gain

Internal Production Logistics

Internal production logistics — the pallet flows that feed, connect, and clear production lines — is a named application sector for the **J1600** (<https://info.mobilerobot.com/products/j1600/overview/>). It covers the transport work between storage, staging, lines, and buffers that keeps a factory running but adds no value of its own.

Flows the J1600 automates

- **Line feeding on demand** (<https://info.mobilerobot.com/applications/use-cases/production-supply/>). An operator picks or prepares a pallet of materials or components; the J1600 delivers it to the production line autonomously.
- **Buffer and staging management** (<https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/>). Move pallets between lines, staging areas, and storage zones as production consumes them.
- **Line clearance**. Send finished or intermediate goods from the line to storage or the next process step.
- **Local work cells** (<https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/>). Serve a stand-alone flow inside a larger facility — a single cell, a single line pair — where a full fleet project would be excessive.

The common pattern is **manual pick, autonomous delivery** (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>), floor-level drop, and a configured follow-up: **return to the operator ("boomerang")** (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>), continue to another point, park, or **stop and wait** (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>). With Advanced software, **come-to-me** (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>) lets a line worker call the robot to their position from a mobile or web interface.

Production-floor behavior

Production areas mix people, forklifts, and changing obstacles. The J1600 navigates by **3D LiDAR SLAM** (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>), continuously updating its map, and avoids obstacles along the route. Preferred travel zones can be defined so autonomous traffic keeps to safer corridors through production areas. A 360-degree, speed-dependent safety field with certified

components protects the people around it — see [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/>).

[Urgency stays human](https://info.mobilerobot.com/safety-compliance/safety-overview/human-responsibilities/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/human-responsibilities/>): when a line is starving, the operator reprioritizes immediately instead of waiting on a system queue, and can take over any vehicle by grabbing the tiller.

Changing the flow without a project

Production layouts change with every new product and line rebalance. [Adding or moving a delivery point takes minutes](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>): drive there, tap **Save location**, name it. There is no software limit on saved locations, and no automation engineer is needed — the [design principle](https://info.mobilerobot.com/company/about/our-approach-to-automation/) (<https://info.mobilerobot.com/company/about/our-approach-to-automation/>) is that operators, not experts, reconfigure the flow. Basic use requires [no Wi-Fi](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>) and no connection to manufacturing IT systems; [VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/) (<https://info.mobilerobot.com/products/software/vda-5050/>), a [REST API](https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/) (<https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/>), and [Fleet Manager](https://info.mobilerobot.com/products/software/fleet-manager/) (<https://info.mobilerobot.com/products/software/fleet-manager/>) are available under [Advanced software](https://info.mobilerobot.com/products/software/advanced-software/) (<https://info.mobilerobot.com/products/software/advanced-software/>) when integration becomes worthwhile.

Constraints on the factory floor

Autonomous mode needs [indoor, level floors](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>) (0% gradeability) with flatness to TR34 FM3; ramps between halls are manual segments. Automatic delivery is at floor level; placing loads at height (up to 1,600 mm) is a [manual operation](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>). Operating range is 5–40 °C. See [technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Related pages

- [Manufacturing](https://info.mobilerobot.com/applications/industries/manufacturing/) (<https://info.mobilerobot.com/applications/industries/manufacturing/>) — the broader manufacturing context
- [Warehousing](https://info.mobilerobot.com/applications/industries/warehousing/) (<https://info.mobilerobot.com/applications/industries/warehousing/>) — the storage side of the flow

- [Labor reallocation](https://info.mobilerobot.com/applications/results/labor-reallocation/) (https://info.mobilerobot.com/applications/results/labor-reallocation/) — what production teams do with the recovered time

Shipping and Dispatch

Shipping is a named target environment for the [J1600](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>): the outbound end of the warehouse or factory, where pallets travel from storage, [production](https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/) (<https://info.mobilerobot.com/applications/use-cases/production-to-shipping-transport/>), or staging toward the dock. As in [goods receiving](https://info.mobilerobot.com/applications/industries/goods-receiving/) (<https://info.mobilerobot.com/applications/industries/goods-receiving/>), the J1600 automates the long travel segments and leaves the dock work to the operator.

The outbound workflow

1. An operator [picks the outbound pallet manually](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>) — from storage, a production line, or a staging lane.
2. On the touchscreen, the operator selects the saved destination in the shipping area and what the robot should do afterward.
3. After confirmation with the physical start button, the J1600 drives autonomously, avoids obstacles, and drops the pallet at floor level in the outbound zone.
4. The final movement into the truck or trailer is manual: dock plates and slopes are outside autonomous mode's 0% gradeability, and [loading judgment stays with the operator](https://info.mobilerobot.com/safety-compliance/safe-deployment/operator-responsibilities/) (<https://info.mobilerobot.com/safety-compliance/safe-deployment/operator-responsibilities/>).

Useful [post-delivery behaviors](https://info.mobilerobot.com/documentation/user-guides/task-management/) (<https://info.mobilerobot.com/documentation/user-guides/task-management/>) for dispatch flows:

- **[Drop and wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/)** (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>) — deliver to the staging lane and remain there until the operator arrives.
- **[Deliver and park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/)** (<https://info.mobilerobot.com/applications/scenarios/deliver-and-park/>) — complete the drop and proceed to a defined parking location out of the way of dock traffic.
- **[Boomerang](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/)** (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>) — return to the origin or operator for the next pallet.
- **[Simple ABC](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/)** (<https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/>) — deliver from A to B, then continue to C, chaining staging moves.

Staging that follows the schedule

[Outbound staging](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/) (<https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/>) is temporary by nature: lanes fill and empty with each departure, and peak days need extra buffer space. [New staging points are saved by driving to them once](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>) and tapping **Save location**, with no software limit on the number of locations. [Multi-point-to-multi-point combinations](https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/) (<https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/>) support [cross-docking-style flows](https://info.mobilerobot.com/applications/use-cases/cross-docking/) (<https://info.mobilerobot.com/applications/use-cases/cross-docking/>), where inbound pallets move directly toward outbound lanes.

Keeping the dock moving

While the J1600 shuttles pallets to the staging area, the operator stays at the dock loading, checking, and sequencing. Congested dock floors, last-minute order changes, and urgent reprioritization remain human decisions with immediate manual takeover via the tiller — the [human-in-the-loop](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/) (<https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/>), split applied to outbound flow. Routes of a few meters or well over 100 meters follow the same workflow.

Practical limits

Autonomous operation is [indoor and level-floor](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>); automatic delivery is at floor level; payload is up to 1,600 kg on [open-base carriers](https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/) (<https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/>) within a 1,250 × 1,250 mm envelope. Full data in the [technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Related pages

- [Warehousing](https://info.mobilerobot.com/applications/industries/warehousing/) (<https://info.mobilerobot.com/applications/industries/warehousing/>) — the zone-to-zone flows feeding dispatch
- [Goods receiving](https://info.mobilerobot.com/applications/industries/goods-receiving/) (<https://info.mobilerobot.com/applications/industries/goods-receiving/>) — the inbound mirror image
- [Productivity improvements](https://info.mobilerobot.com/applications/results/productivity-improvements/) (<https://info.mobilerobot.com/applications/results/productivity-improvements/>) — the throughput case for automating outbound travel



Partner-Led Customer Projects

The Mobile Robot Company sells the J1600 through an international network of [distributors, integrators, and service partners](https://info.mobilerobot.com/partners/program/partner-types/) (<https://info.mobilerobot.com/partners/program/partner-types/>). Partners run the local, hands-on part of every customer project: demonstrations, trials, deployment, service, and the ongoing customer relationship. This page describes how partner-led projects work and covers the partner activity in Italy with [ALCA Technologies](https://info.mobilerobot.com/company/collaborations/technology-collaborations/) (<https://info.mobilerobot.com/company/collaborations/technology-collaborations/>).

How a partner-led project runs

The [customer journey](https://info.mobilerobot.com/company/about/business-model/) (<https://info.mobilerobot.com/company/about/business-model/>) has four steps:

1. **Demonstration.** A 30–60 minute hands-on session at a partner experience center or at the customer site. A first-time visitor can typically create and launch an autonomous task within about 15 minutes.
2. **Trial.** A two-week paid trial at the customer's own facility, with free return at any time, no questions asked. See [Trial planning](https://info.mobilerobot.com/applications/planning/trial-planning/) (<https://info.mobilerobot.com/applications/planning/trial-planning/>).
3. **Purchase.** Full purchase of the robot and selected options.
4. **After-sales service.** An optional ongoing service and maintenance agreement, delivered locally by the partner.

Repeat customers can skip the demonstration and trial steps. Throughout the project, the partner provides local presence and responsive support while The Mobile Robot Company supplies robots, parts, software, technical support, and training.

By June 2026 the company had [distributor partnerships in eight countries](https://info.mobilerobot.com/company/history/growth-and-international-expansion/) (<https://info.mobilerobot.com/company/history/growth-and-international-expansion/>), with the network expanding. The EMEA distributor and integrator network runs plant trials and proofs of concept at customer sites; see [Proof-of-concept planning](https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/) (<https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/>).

ALCA Technologies collaboration

ALCA Technologies S.r.l. is a collaboration partner of The Mobile Robot Company in Italy. The collaboration, [highlighted in July 2026](https://info.mobilerobot.com/newsroom/press-releases/partner-announcements/) (<https://info.mobilerobot.com/newsroom/press-releases/partner-announcements/>), centers on the warehouse conditions that can disrupt rigid automation:

- broken pallets;
- loose strapping;
- hanging stretch wrap;
- dust and other imperfect or changing handling conditions.

The J1600 addresses these situations through [dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (<https://info.mobilerobot.com/products/j1600/dual-mode/>): the operator applies experience and situational awareness during pallet pickup, and the vehicle performs the repetitive autonomous transport. The outcomes presented from the collaboration are less [non-value-added walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) (<https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/>), safer pallet handling, smoother material flow, higher productivity, and better adaptability in dynamic warehouse environments.

United Symbol Open House 2026

The J1600 was demonstrated live at the [United Symbol Open House](https://info.mobilerobot.com/newsroom/events/past-events/) (<https://info.mobilerobot.com/newsroom/events/past-events/>) in Sassuolo, Modena, Italy, over three days ending 29 June 2026. United Symbol hosted the event, and ALCA Technologies provided local support. Visitors — industry leaders and end customers from multiple industries — saw manual and autonomous operation and discussed warehouse efficiency, reduced manual handling, scalable automation, and everyday intralogistics problems with the team.

Starting a project with a partner

Customer inquiries placed through [mobilerobot.com](https://www.mobilerobot.com) (<https://www.mobilerobot.com>) are routed to [the partner network](https://info.mobilerobot.com/products/buying-and-deployment/find-a-local-partner/) (<https://info.mobilerobot.com/products/buying-and-deployment/find-a-local-partner/>). To prepare for a first conversation, work through the [application qualification checklist](https://info.mobilerobot.com/applications/planning/application-qualification-checklist/) (<https://info.mobilerobot.com/applications/planning/application-qualification-checklist/>), and read [Is the J1600 right for my application?](https://info.mobilerobot.com/) (<https://info.mobilerobot.com/>)

[applications/planning/is-the-j1600-right-for-my-application/](#)) For the partner program itself, see [Partners](#) (<https://info.mobilerobot.com/category/partners/>).

Video Case Stories

The Mobile Robot Company publishes [videos](https://info.mobilerobot.com/newsroom/videos/full-video-library/) that show the J1600 operating in real settings — [live demonstrations](https://info.mobilerobot.com/newsroom/videos/product-demonstrations/) at [public events](https://info.mobilerobot.com/newsroom/events/trade-shows/), a first-time user creating an autonomous task, load-handling examples, and validation at the company's [Copenhagen test facility](https://info.mobilerobot.com/company/locations/test-and-demonstration-facility/). This page collects the stories those videos tell and links to each one.

A first-time user automates a pallet move

At [TEST CAMP INTRALOGISTICS 2026](https://info.mobilerobot.com/newsroom/events/test-camp/) in Dortmund, a visiting logistics professional who had used electric pallet jacks — but never the J1600 — tried the vehicle for the first time:

1. She drove the J1600 manually with the tiller, which handles like a conventional electric pallet jack. White lights indicate manual mode.
2. She drove to a drop point, tapped **Save location**, and named the location after her organization.
3. She created a task, chose "drop pallet at location," and selected return to origin as the post-delivery behavior.
4. She confirmed automatic mode and stepped away.
5. The J1600 traveled autonomously, [routed around people](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) using its 3D environment map, dropped the pallet at floor level, and returned.

There is no software limit to the number of saved locations. Watch: [Can Anyone Automate a Pallet Move in Minutes?](https://www.youtube.com/watch?v=PHBLT4XyvyI)

Live demonstration at TEST CAMP INTRALOGISTICS 2026

In an interview with a trade journalist, CEO Emil Hauch Jensen demonstrates the full working cycle live: manual pallet pickup, location saving, autonomous delivery with

drop-and-return, and the 360-degree safety field. He describes the three barriers that keep companies from full automation — price, flexibility, and complexity — and the J1600's proposition of automating [roughly 80% of the repetitive transport work](https://info.mobilerobot.com/applications/results/productivity-improvements/) rather than 100%, at a fraction of the cost of a full automation project. Start-up takes about one hour. Watch: [J1600 Live Demo at TEST CAMP 2026](https://www.youtube.com/watch?v=Ovffa1uGTQE).

Handling open cages, barrels, and sensitive loads

Two videos show the [flexibility](https://info.mobilerobot.com/applications/results/operational-flexibility/) of manual judgment combined with autonomous travel:

- The J1600 handles [open cages](https://info.mobilerobot.com/applications/use-cases/open-cages-and-alternative-load-carriers/), EPAL Euro pallets, and other open-base carriers within its size limits. Watch: [Dual Mode J1600 AMR: Flexible Handling of Open Cages and Euro Pallets](https://www.youtube.com/watch?v=ovlpXTxkn8Y)
- For [sensitive or unstable loads](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/), such as barrels, the operator uses manual control for pickup and confined maneuvering, then hands the long transport leg to autonomous mode. Watch: [What extra capabilities does the Dual Mode Pallet Jack J1600 offer?](https://www.youtube.com/watch?v=HKGv7uzNxlw)

For the load envelope, see [Pallet and load suitability](https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/).

Lifting and carrying at capacity

CTO Odin Kudahl Skovsted shows the J1600 picking from a height of 1.6 m in manual mode and carrying 1,600 kg. Watch: [How Our Mobile Robots Handle 1,600 kg Loads at 1.6 Meters](https://www.youtube.com/watch?v=7QXbmem2i2w).

Validation at the Copenhagen test facility

The company's Copenhagen demo and test area is built for intentionally real-world conditions: deliberately uneven flooring, water-filled test loads, and multiple simultaneous test setups. Customers can visit for demos and trials. Watch: [Inside Our Copenhagen Test Facility](https://www.youtube.com/watch?v=vrrAAjAMF-8)

For on-site evaluation options, see [Proof-of-concept planning](https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/) (<https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/>).

Short tutorials and answers

Topic	Video
Saving a drop location and creating a task	How to Add a Drop Location & Create Tasks on the J1600 (https://www.youtube.com/watch?v=OGiOVtdKbk8)
Manual and automatic charging	How to Charge Your Robot (https://www.youtube.com/watch?v=I6GJ07Kbi4Y)
The most common task pattern	What's the most common task our robot performs? (https://www.youtube.com/watch?v=b0aOQWWNlws)
What dual mode is	What is Dual Mode (https://www.youtube.com/watch?v=MgmWCbdoge8)
Brownfield sites	Does the J1600 work on brownfield sites? (https://www.youtube.com/watch?v=Qe5kres-lgY)

The most commonly demonstrated task 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](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>). The route can be a few meters or more than 100 meters — the concept is the same. More product questions are answered in the [product and capabilities FAQ](https://info.mobilerobot.com/support/faq/product-and-capabilities/) (<https://info.mobilerobot.com/support/faq/product-and-capabilities/>).

Productivity Improvements

The J1600's central productivity claim is precise: up to 80% reduction in manual work and operator time on repetitive pallet transport. It is a claim about the transport task the robot takes over — not an 80% improvement to every warehouse process.

Where the gain comes from

In a manual flow, the operator travels with every pallet: pick, walk the route, drop, walk back. With the [J1600](https://info.mobilerobot.com/products/j1600/overview/), the operator [picks manually, sends the robot](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/), and immediately starts the next value-adding task while the vehicle drives, drops at floor level, and follows its configured post-delivery behavior. The travel — a few meters or more than 100 meters — no longer consumes operator time.

The intended balance is roughly 80% automation rather than 100%. The last portion of pallet work (judging loads, placing forks, [handling exceptions](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/)) is disproportionately expensive to automate; leaving it with the operator keeps the system simple while capturing most of the labor benefit. 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/).

The three-model comparison

Model	Setup	Flexibility	Labor saving
Manual pallet jack	None	Full manual flexibility	None
J1600 dual mode	Hours	Manual control plus saved autonomous delivery	Up to 80% of operator time on target travel
Fully automated system	Weeks or a longer project	Preprogrammed, expert-configured	Up to 100% of task labor, if fully automated

Full automation can beat the J1600 on paper for a perfectly stable task — but it typically requires [warehouse-management-system and fleet integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>), infrastructure, and expert configuration, with investments that can reach approximately €1 million. The J1600 targets most of the benefit at a fraction of that cost and complexity.

Throughput and flow effects

Beyond recovered operator hours, consistent autonomous delivery runs produce steadier material flow and throughput: deliveries happen at a repeatable pace instead of depending on who is free to walk a pallet. Sustained operation is supported by a [24 V, 200 Ah LiFePO4 battery](https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/>) with runtime exceeding eight hours in a typical duty cycle, [opportunity charging](https://info.mobilerobot.com/applications/scenarios/automatic-charging/) (<https://info.mobilerobot.com/applications/scenarios/automatic-charging/>), (about 47 percentage points per hour), and a 5.4 km/h top speed.

Who captures the gain fastest

The economics are designed for single-shift operations running eight hours per day, five days per week, with roughly one to five pallet-jack operators — sites where recovered operator time converts directly into more picks, faster receiving, or a leaner shift. Larger facilities capture the same gain in [local work cells](https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/) (<https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/>), too small for a fleet project.

Related pages

- [Reduction in manual walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) (<https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/>) — the human side of the same gain
- [Labor reallocation](https://info.mobilerobot.com/applications/results/labor-reallocation/) (<https://info.mobilerobot.com/applications/results/labor-reallocation/>) — what teams do with the recovered time
- [ROI examples](https://info.mobilerobot.com/applications/results/roi-examples/) (<https://info.mobilerobot.com/applications/results/roi-examples/>) — converting the gain into payback
- [Manufacturing](https://info.mobilerobot.com/applications/industries/manufacturing/) (<https://info.mobilerobot.com/applications/industries/manufacturing/>) and [Warehousing](https://info.mobilerobot.com/applications/industries/warehousing/) (<https://info.mobilerobot.com/applications/industries/warehousing/>) — where the gain lands

Reduction in Manual Walking

"Automate the walking" is a core J1600 [design principle](https://info.mobilerobot.com/company/about/our-approach-to-automation/) (<https://info.mobilerobot.com/company/about/our-approach-to-automation/>). The product does not try to automate every nuance of pallet handling — it removes the repetitive travel that fills an operator's day without adding value.

The scale of the walking problem

Pallet transport is [a large, lightly automated activity](https://info.mobilerobot.com/documentation/concepts/pallet-automation-fundamentals/) (<https://info.mobilerobot.com/documentation/concepts/pallet-automation-fundamentals/>): more than one million pallet jacks are sold worldwide each year, more than 300,000 in Europe alone, and more than six million people use pallet jacks in their daily work. Only about 1% of pallet handling is automated. For most of those six million people, every pallet moved means walking the route with it — both ways.

What changes with the J1600

With the [J1600](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>), the walk disappears from the repetitive part of the task:

1. The operator [picks 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/>) — the judgment-heavy part.
2. The operator selects a saved destination on the touchscreen, confirms autonomous mode, and steps away.
3. The robot walks the route instead: it drives autonomously, avoids obstacles, drops at floor level, and returns, parks, waits, or continues as configured.

Whether the route is a few meters or more than 100 meters, the operator's share of it is now zero. In the common ["boomerang" pattern](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>), the robot returns to the operator for the next pallet while the operator keeps working at the pickup point — unloading a truck, picking the next load, or doing something else entirely.

The employee effect

Removing repetitive walking is an employee-satisfaction benefit, not only a cost line: less tiring, repetitive movement, and more time on work that uses judgment and skill. The company's position is that robots should assist rather than displace operators — the person keeps task authority, pickup, and [exception handling](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>), while the tedious transport is delegated. 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/>).

Walking that should remain

Not all movement belongs to the robot. Dock plates and slopes (autonomous gradeability is 0%), congested floors, misplaced pallets, and urgent reprioritizations are situations where a person walking over and taking the tiller is the fastest, safest answer. The J1600 supports immediate manual takeover precisely so this remaining walking stays rare and purposeful.

Related pages

- [Productivity improvements](https://info.mobilerobot.com/applications/results/productivity-improvements/) (<https://info.mobilerobot.com/applications/results/productivity-improvements/>) — the same effect measured in operator time
- [Safety improvements](https://info.mobilerobot.com/applications/results/safety-improvements/) (<https://info.mobilerobot.com/applications/results/safety-improvements/>) — fatigue and handling risk
- [Goods receiving](https://info.mobilerobot.com/applications/industries/goods-receiving/) (<https://info.mobilerobot.com/applications/industries/goods-receiving/>) — a flow where the dock-to-storage walk dominates

Labor Reallocation

The J1600 is built on the thesis that robots should assist rather than displace operators. Its business effect is reallocation: operator hours move from repetitive transport to the decisions and [exceptions](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) that require human context.

The division of work

[Dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) draws a clear line between what people do and what the robot does:

Human operator	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 at-height handling (up to 1,600 mm)	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

Where the recovered hours go

Time freed from walking pallets is redirected to work the robot cannot do: inspecting inbound goods, spotting damaged pallets and unstable loads before they become incidents, resolving congestion, reprioritizing when a production line is starving, and [handling sensitive or unusual loads](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/). These are exactly the situations where human context outperforms automation — the reasoning behind [human-in-the-loop automation](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/).

The result is more productive use of skilled labor: pallet-jack operators become flow managers of their area rather than couriers within it.

Responding to labor shortages

Labor shortage and high labor dependency are among the customer problems the J1600 targets. When hiring is hard, automating the transport portion lets an existing team cover more flow: one operator can keep loading or picking while the robot runs deliveries in parallel. Because [training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) takes about 30 minutes for an existing electric-pallet-jack operator and no automation specialist is needed for reconfiguration, the reallocation does not create a new dependency on scarce technical staff.

Not a people-free process

The desired outcome is explicitly not a warehouse without people. [Task initiation, pickup, and mode confirmation always sit with a person](https://info.mobilerobot.com/documentation/user-guides/operator-manual/), and manual takeover is immediate via the tiller. Sites that need full task-labor elimination are the domain of fully automated systems — with the integration, infrastructure, and cost that entails. See [productivity improvements](https://info.mobilerobot.com/applications/results/productivity-improvements/) for the comparison.

Related pages

- [Reduction in manual walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) — the mechanics of the freed-up time
- [Safety improvements](https://info.mobilerobot.com/applications/results/safety-improvements/) — the risk side of moving people out of repetitive transport
- [Internal production logistics](https://info.mobilerobot.com/applications/industries/internal-production-logistics/) — reallocation on the factory floor

Safety Improvements

Manual pallet handling is tiring, repetitive work performed among people, racking, and vehicle traffic. The J1600 addresses this on two fronts: it removes operators from repetitive transport, and it performs that transport with a [layered, certified safety architecture](https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/>).

Fewer exposure hours

Every hour an operator does not spend walking pallets through mixed traffic is an hour of removed exposure to collisions, strains, and fatigue-related mistakes. Reduced workplace accidents, injuries, and product damage are among the [non-labor benefits](https://info.mobilerobot.com/products/j1600/features-and-benefits/) (<https://info.mobilerobot.com/products/j1600/features-and-benefits/>) of a J1600 deployment, alongside less tiring work for employees. See [reduction in manual walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) (<https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/>).

Predictable machine behavior

An autonomous J1600 behaves consistently: it follows planned routes, respects its protective field, and repeats stored tasks the same way every time. Key elements of the safety system include:

- a 360-degree protective field covering forward and reverse autonomous travel;
- two 2D safety LiDAR scanners (front and rear) feeding an independent safety controller;
- [speed-dependent safety zones](https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/safety-field-adjustment/>) that expand as travel speed increases;
- [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 for stop-and-reverse;
- blue floor-light strips showing the currently protected area around the vehicle;
- safety-certified encoders and motor controllers;
- [tiller-position switches](https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/tiller-detection/>), for emergency stop and immediate manual takeover.

Safety functions carry defined [Performance Levels](https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/) — for example PL d for [braking](https://info.mobilerobot.com/safety-compliance/safety-functions/braking/), emergency stop, [person detection](https://info.mobilerobot.com/safety-compliance/safety-functions/person-detection/), and safety-field size adjustment. The full architecture is described in [how J1600 safety works](https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/).

The human contribution

Human control complements the certified systems rather than replacing them. The operator must confirm entry into autonomous mode, the robot instructs the person to step clear before starting, and grabbing the tiller returns the vehicle to manual control immediately. At pickup, [the operator catches hazards no sensor is asked to judge](https://info.mobilerobot.com/safety-compliance/safety-overview/human-responsibilities/): broken bottom boards, protruding nails, unstable stacks, loose stretch wrap. See [human-in-the-loop automation](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/).

Compliance foundation

The J1600 is [CE marked](https://info.mobilerobot.com/safety-compliance/certificates/ce-declaration-of-conformity/), with a [compliance list](https://info.mobilerobot.com/safety-compliance/certificates/compliance-statements/) that includes [EN ISO 3691-4:2023](https://info.mobilerobot.com/safety-compliance/standards/iso-3691-4/) and [ANSI/ITSDF B56.5-2024](https://info.mobilerobot.com/safety-compliance/standards/ansi-itsdf-b56-5/) — the key European and US standards for driverless industrial trucks — among other directives and standards.

USE CURRENT DOCUMENTATION FOR DEPLOYMENT DECISIONS

Accident-rate test data, stopping-distance curves, and validation reports are not available. Base [site-specific risk assessments](https://info.mobilerobot.com/safety-compliance/safe-deployment/site-risk-assessment/) and deployment decisions on the current product documentation.

Related pages

- [Labor reallocation](https://info.mobilerobot.com/applications/results/labor-reallocation/) (https://info.mobilerobot.com/applications/results/labor-reallocation/) — moving people from transport to judgment work
- [Goods receiving](https://info.mobilerobot.com/applications/industries/goods-receiving/) (https://info.mobilerobot.com/applications/industries/goods-receiving/) — a high-exposure area where the split applies
- [Safety overview](https://info.mobilerobot.com/category/safety-compliance/) (https://info.mobilerobot.com/category/safety-compliance/) — the full safety and compliance section

Faster Deployment

Deployment speed is one of the J1600's defining results. Where a conventional automation project is measured in weeks or months, a standard J1600 goes to work in hours to one day, with operators [trained in about 30 minutes](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>).

The deployment numbers

Milestone	Time
First autonomous task by a first-time user	Within roughly 15 minutes
Operator training (existing electric-pallet-jack operator)	About 30 minutes
Typical setup, depending on scope	Hours to one day
Adding a new destination later	Minutes — drive there and tap Save location

These times were [demonstrated publicly](https://info.mobilerobot.com/applications/customer-stories/video-case-stories/) (<https://info.mobilerobot.com/applications/customer-stories/video-case-stories/>): at an industry test event, a first-time user who had only ever driven ordinary electric pallet jacks saved a location, created a drop-and-return task, confirmed automatic mode, and watched the robot navigate around people.

Why it is fast

- **No infrastructure.** [3D LiDAR SLAM navigation](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>) needs no tracks, wires, reflectors, or building modifications. The robot learns the facility while an operator drives it.
- **No IT project.** [Wi-Fi is optional for basic use](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>); no warehouse-management-system, fleet-manager, or IT integration is required.
- **No code.** Tasks are created on the 15-inch touchscreen with [teach-and-repeat](https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/) (<https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/>): drive to a point, save it, combine saved points into tasks.

- **Familiar tool.** In manual mode the J1600 handles like a conventional walk-behind electric pallet jack, so existing operators start from what they know.
- **Ready out of the box.** The standard product is usable on delivery, with an on-device tutorial.

Structured go-live when you want it

For sites that prefer a formal project, an optional five-day [installation and commissioning package](https://info.mobilerobot.com/products/buying-and-deployment/installation-and-commissioning/) (€10,000 end-user list price) covers pre-installation feasibility, risk assessment and project planning, setup with up to 25 validated drop points, task and safety validation, group and individual operator training for up to six operators, monitoring, troubleshooting, acceptance testing, and handover. This is a go-live risk-reduction service — not a prerequisite for using the machine.

Low-risk evaluation first

A [two-week paid trial](https://info.mobilerobot.com/products/buying-and-deployment/two-week-trial/) (€4,000 including setup and support) puts a robot into your own flow with a full day of on-site deployment and training support, unlimited remote support, and free return at any time. See the [FAQ on product capabilities](https://info.mobilerobot.com/support/fag/product-and-capabilities/) and the [products section](https://info.mobilerobot.com/category/products/) for purchase paths.

Related pages

- [Lower integration complexity](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) — why there is no systems project
- [Operational flexibility](https://info.mobilerobot.com/applications/results/operational-flexibility/) — staying fast after go-live
- [E-commerce and fulfillment](https://info.mobilerobot.com/applications/industries/e-commerce-and-fulfillment/) — where deployment speed matters most

Lower Integration Complexity

Integration effort is the hidden cost of most automation projects. The J1600 is designed so that basic operation requires none of it — and so that [integration remains available, as an option](https://info.mobilerobot.com/documentation/technical-integration/integration-overview/) (<https://info.mobilerobot.com/documentation/technical-integration/integration-overview/>), when a site grows into it.

What the J1600 does not require

- **No mandatory Wi-Fi.** The basic out-of-box workflow runs [without a network connection](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>).
- **No warehouse-management-system or fleet-manager dependency.** Tasks are created and launched on the robot's own touchscreen.
- **No infrastructure changes.** [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>) replaces tracks, wires, reflectors, and marked target zones; certified safe reversing works without specially marked zones.
- **No code and no expert configuration.** [Teach-and-repeat](https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/) (<https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/>) setup is performed by the operator; new locations are saved by driving to them.
- **No integration project for changes.** [Layout changes](https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/) (<https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/>) are handled on the floor, in minutes.

This is what "works out of the box" means concretely: the machine is usable on delivery, and the standard software is deliberately reduced to essential functions.

The cost this avoids

Removing the human from the last part of pallet work is what drives integration cost in full automation: the system then needs warehouse-management-to-fleet-manager integration, precise load data, controlled processes, and expert configuration — investments that can reach approximately €1 million for a fully integrated system. By keeping the operator for judgment tasks, the [dual-mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (<https://info.mobilerobot.com/products/j1600/dual-mode/>) approach avoids that entire integration layer while capturing [up to 80% of the labor benefit](https://info.mobilerobot.com/applications/results/productivity-improvement) (<https://info.mobilerobot.com/applications/results/productivity-improvement>).

ovements/). 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/>).

Integration when you want it

Lower complexity does not mean a dead end. One J1600 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/>) — configuration-free teach-and-repeat for single-unit deployments.
- **Advanced software** (<https://info.mobilerobot.com/products/software/advanced-software/>) (€14,500 end-user list upgrade) — adds VDA 5050 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/products/software/fleet-manager/) (<https://info.mobilerobot.com/products/software/fleet-manager/>) (€6,500 per robot), advanced mission planning, and [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/>).

[VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/) (<https://info.mobilerobot.com/products/software/vda-5050/>) is fully supported, and the company works with established VDA 5050 fleet-management providers — so a J1600 can join a multi-vendor fleet under a compatible fleet layer when orchestration becomes worthwhile. The upgrade is easiest to install at the factory when the robot is ordered; a partner can perform it later.

UPGRADE INSTALLATION

The Advanced software upgrade is installed at the factory or by a partner. It is not customer-installable.

Related pages

- [Faster deployment](https://info.mobilerobot.com/applications/results/faster-deployment/) (<https://info.mobilerobot.com/applications/results/faster-deployment/>) — the go-live speed this enables
- [Operational flexibility](https://info.mobilerobot.com/applications/results/operational-flexibility/) (<https://info.mobilerobot.com/applications/results/operational-flexibility/>) — staying uncommitted to fixed processes
- [ROI examples](https://info.mobilerobot.com/applications/results/roi-examples/) (<https://info.mobilerobot.com/applications/results/roi-examples/>) — the cost comparison with integrated systems

- Third-party logistics (<https://info.mobilerobot.com/applications/industries/third-party-logistics/>) — a segment where integration overhead is fatal

Operational Flexibility

Flexibility is the property full automation usually trades away. The J1600 is designed to keep it: manual control is always one grab of the tiller away, and the automated flow is reconfigured by the operator in minutes, not by an engineer in weeks.

Why flexibility is the requirement, not a luxury

[Observations from a visit to a major e-commerce cross-docking facility](https://info.mobilerobot.com/newsroom/stories/behind-the-scenes/) (<https://info.mobilerobot.com/newsroom/stories/behind-the-scenes/>), shaped this [design philosophy](https://info.mobilerobot.com/company/about/our-approach-to-automation/) (<https://info.mobilerobot.com/company/about/our-approach-to-automation/>): even in a heavily automated, high-performing operation, layout, flow, buffer, and SKU-mix changes occurred several times per week, minor mechanical downtime occurred several times per day, and not every process was automated. The conclusion: flexibility and robustness are business necessities even at the top end of automation — and far more so in the SME facilities the J1600 targets.

The flexibility mechanisms

- **Immediate manual takeover.** Grabbing or moving the tiller returns the vehicle to manual control at once. [Exceptions](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>) never wait on a system.
- **Dual-mode handling.** Truck unloading, [unstable or sensitive loads](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/) (<https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/>) (open cages, barrels, wrapped goods), confined maneuvering, and dock plates are handled manually; the repetitive travel runs autonomously. See [dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (<https://info.mobilerobot.com/products/j1600/dual-mode/>).
- **Reconfiguration in minutes.** [Destinations are created by driving to a point](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>) and tapping **Save location** — no software limit on their number. Locations recombine into new tasks without teaching every origin-destination pair.
- **Brownfield navigation** (<https://info.mobilerobot.com/applications/use-cases/brownfield-automation/>). [3D LiDAR SLAM](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>) continuously updates the environment model and routes around obstacles, so moved racking, staged pallets, and people do not break the

flow. No fixed infrastructure means nothing physical to re-install after a [layout change](https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/) (<https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/>).

- **Task variety.** [Boomerang \(deliver and return\)](https://info.mobilerobot.com/application/s/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/application/s/scenarios/deliver-and-return/>), [simple ABC](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/) (<https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/>), [drop-and-wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>), [deliver-and-park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-park/>), and [multi-point combinations](https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/) (<https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/>) cover changing flows; [come-to-me](https://info.mobilerobot.com/applications/scenarios/come-to-me/) (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>) (an advanced function) calls the robot on demand.
- **Optional, not mandatory, integration.** Standard use has no Wi-Fi, WMS, or fleet dependency to constrain process changes; [VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/) (<https://info.mobilerobot.com/products/software/vda-5050/>) and APIs are added only when wanted.

Flexibility in load handling

The [carrier envelope](https://info.mobilerobot.com/products/j1600/pallet-and-load-compatibility/) (<https://info.mobilerobot.com/products/j1600/pallet-and-load-compatibility/>) is deliberately broad: EPAL Euro Pallet, EPAL 3, EPAL 6, open-base GMA pallets, open cages, barrels on open-base carriers — any forkable open-base carrier within 1,250 × 1,250 mm and 1,600 kg. Operator judgment covers the edge cases no compatibility table can, which is the point of keeping a [human in the loop](https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/) (<https://info.mobilerobot.com/documentation/concepts/human-in-the-loop-automation/>).

One tool, two jobs

Because the J1600 is also a fully functional manual electric pallet jack ([manual picks and drops up to 1,600 mm](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>)), it never sits idle when the automated flow pauses — it is simply used manually. This [one-tool utilization](https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/) (<https://info.mobilerobot.com/applications/scenarios/mixed-manual-and-autonomous-work/>) contrasts with dedicated automation that only earns its keep while its programmed process runs.

Related pages

- [Lower integration complexity](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>) — the systems side of staying flexible

- Faster deployment (<https://info.mobilerobot.com/applications/results/faster-deployment/>) — flexibility at go-live
- Third-party logistics (<https://info.mobilerobot.com/applications/industries/third-party-logistics/>) and E-commerce and fulfillment (<https://info.mobilerobot.com/applications/industries/e-commerce-and-fulfillment/>), — the fastest-changing environments

ROI Examples

The J1600's return-on-investment case rests on [list prices](https://info.mobilerobot.com/products/j1600/pricing-and-roi/) (<https://info.mobilerobot.com/products/j1600/pricing-and-roi/>), labor savings on repetitive transport, and economics designed for single-shift operations. This page collects the numbers.

The investment side

2026 end-user list prices:

Item	List price
J1600 self-driving pallet jack	€65,000
Manual charger	€3,600
Automatic charger	€8,400
Installation and commissioning (five-day package)	€10,000
Advanced software upgrade	€14,500
Fleet Manager, per robot	€6,500
Two-week paid trial, including setup and support	€4,000
Basic Care support, per robot per year	€4,900
Full Care support, per robot per year	€13,000
On-site support, per day plus travel	€2,400

Typical configurations:

- J1600 + manual charger + commissioning: **€78,600** list.
- J1600 + automatic charger + commissioning: **€83,400** list.

A typical customer configuration is expected to land around or below €80,000 — which corresponds to the manual-charger configuration. The €65,000 base price does not include a charger.

The comparison point

Full automation of the same task — removing the human entirely — typically requires warehouse-management-system-to-fleet-manager integration, infrastructure, and expert configuration, an investment that can reach approximately €1 million. The J1600 proposition is deliberately different: not 100% automation, but up to 80% of the labor benefit on repetitive transport, at a fraction of the price, running within hours. See [productivity improvements](https://info.mobilerobot.com/applications/results/productivity-improvements/) (https://info.mobilerobot.com/applications/results/productivity-improvements/).

The return side

- **Labor.** Up to 80% reduction in operator time on the repetitive transport the robot takes over. The economics are designed to work for a single-shift SME operating eight hours per day, five days per week, with one to five pallet-jack operators — no 24/7 operation needed for the numbers to work.
- **Immediate start.** Setup in hours to one day and about 30 minutes of [operator training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (https://info.mobilerobot.com/documentation/getting-started/operator-training/), mean the payback clock starts almost immediately; see [faster deployment](https://info.mobilerobot.com/applications/results/faster-deployment/) (https://info.mobilerobot.com/applications/results/faster-deployment/).
- **Low evaluation risk.** The €4,000 [two-week trial](https://info.mobilerobot.com/products/buying-and-deployment/two-week-trial/) (https://info.mobilerobot.com/products/buying-and-deployment/two-week-trial/), with free return at any time, prices the decision risk before the main investment.

Returns beyond labor cost

- [fewer workplace accidents, injuries](https://info.mobilerobot.com/applications/results/safety-improvements/) (https://info.mobilerobot.com/applications/results/safety-improvements/), and product damage;
- higher employee satisfaction from removing repetitive walking;
- improved inventory tracking and control in an automated process;
- steadier material flow and throughput;
- more productive use of skilled labor and easier response to labor shortages;
- less implementation and change risk than rigid full automation.

SITE-SPECIFIC PAYBACK

There is no standard payback model. Actual ROI depends on local wages, utilization, route lengths, shift patterns, and maintenance choices — figures a partner can help model for a specific site.

Related pages

- [Lower integration complexity](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>) — the avoided project costs
- [Labor reallocation](https://info.mobilerobot.com/applications/results/labor-reallocation/) (<https://info.mobilerobot.com/applications/results/labor-reallocation/>) — where the saved hours go
- [J1600 overview](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>) and the [products section](https://info.mobilerobot.com/category/products/) (<https://info.mobilerobot.com/category/products/>) — what the investment buys

Is the J1600 Right for My Application?

The J1600 is a dual-mode [self-driving pallet jack](https://info.mobilerobot.com/products/j1600/overview/) for indoor, floor-to-floor pallet transport. This page helps you decide quickly whether it fits your operation before you invest time in a demonstration or trial. For the full specification, see [technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/).

The application the J1600 is built for

The J1600 automates the repetitive travel portion of pallet transport. The operator [picks up the pallet manually](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) — with a tiller that handles like a conventional electric pallet jack — selects a saved destination on the touchscreen, [confirms autonomous mode](https://info.mobilerobot.com/documentation/user-guides/autonomous-operation/), and steps away. The robot drives to the destination, drops the pallet at floor level, and then returns, parks, waits, or continues to another point. 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/).

The intended balance is roughly 80% automation rather than 100%: judgment stays with the operator, travel goes to the robot, and the entry cost stays far below a full automation project.

Strong fit indicators

The J1600 suits your application if several of these apply:

- **Horizontal, indoor pallet flows** in [goods receiving](https://info.mobilerobot.com/applications/industries/goods-receiving/), storage, [production supply](https://info.mobilerobot.com/applications/use-cases/production-supply/), [staging](https://info.mobilerobot.com/applications/use-cases/buffer-and-staging-management/), [cross-docking](https://info.mobilerobot.com/applications/use-cases/cross-docking/), or [shipping](https://info.mobilerobot.com/applications/industries/shipping-and-dispatch/).
- **One to five pallet-jack operators** on a single shift — the [primary target segment](https://info.mobilerobot.com/company/about/markets-we-serve/). The economics are

designed to work for a single-shift SME running eight hours per day, five days per week.

- **Repetitive point-to-point transport** where operators spend significant time [walking](https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/) (<https://info.mobilerobot.com/applications/results/reduction-in-manual-walking/>). Routes can be a few meters or more than 100 meters.
- **Local work cells inside a larger site** (<https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/>) that are too small or too changeable for a conventional fleet project.
- **Brownfield facilities** (<https://info.mobilerobot.com/applications/use-cases/brownfield-automation/>) with changing layouts, [temporary storage](https://info.mobilerobot.com/applications/use-cases/temporary-storage/) (<https://info.mobilerobot.com/applications/use-cases/temporary-storage/>), and variable SKU mix. The [3D LiDAR SLAM navigation](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>) needs no tracks, wires, reflectors, or building modifications.
- **A need for fast deployment** (<https://info.mobilerobot.com/applications/results/faster-deployment/>) — typical setup takes hours to one day, and [operator training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>) takes about 30 minutes.
- **No appetite for an IT project** — [Wi-Fi is optional for basic use](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>), and [no warehouse-management-system or fleet integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>) is required.

Requirements at a glance

Requirement	Limit
Load weight	Up to 1,600 kg (about 3,500 lb)
Load carrier	Open base, no bottom deck board
Pallet/load footprint, including overhang	Up to 1,250 x 1,250 mm (49 x 49 in)
Load height from floor	Up to 1,700 mm (67 in)
Environment	Indoor, 5–40°C (41–104°F), 20–80% relative humidity non-condensing
Floors in autonomous mode	Level (0% gradeability), bumps up to 25 mm, gaps up to 20 mm
Autonomous delivery	Floor level only
Pallet pickup	Always manual

Work through the [application qualification checklist](https://info.mobilerobot.com/applications/planning/application-qualification-checklist/) (<https://info.mobilerobot.com/applications/planning/application-qualification-checklist/>) for the complete list, and see [site suitability](https://info.mobilerobot.com/applications/planning/site-suitability/) (<https://info.mobilerobot.com/applications/planning/site-suitability/>), [pallet and load suitability](https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/) (<https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/>), and [route and floor suitability](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>) for detail.

What stays manual

Dual mode assumes [an operator remains available for the judgment-heavy parts of pallet work](https://info.mobilerobot.com/safety-compliance/safe-deployment/operator-responsibilities/) (<https://info.mobilerobot.com/safety-compliance/safe-deployment/operator-responsibilities/>):

- pallet pickup and fork placement;
- lifts and drops above floor level, up to 1,600 mm, in [manual mode](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>);
- dock plates, ramps, and slopes — automatic-mode gradeability is 0%;

- [unstable, damaged, or sensitive loads](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/) (<https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-loads/>);
- [crowded or cluttered areas](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>) that call for improvisation;
- urgent reprioritization and [exceptions](https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/) (<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads/>).

If your process requires removing the operator entirely — including automated pickup — the J1600 is not designed for that. It occupies the tier between manual pallet jacks and fully automated systems.

Poor fits

- outdoor transport or unheated areas below 5°C, including cold storage at freezing temperatures;
- closed-deck pallets or carriers the forks cannot enter;
- loads over 1,600 kg or larger than the 1,250 x 1,250 mm envelope;
- autonomous delivery to racking, conveyors, or any height above floor level;
- routes that must cross slopes or dock plates in autonomous mode;
- wet or washdown environments — the [ingress protection rating is IP21](https://info.mobilerobot.com/documentation/installation/operating-environment-requirements/) (<https://info.mobilerobot.com/documentation/installation/operating-environment-requirements/>).

Some of these applications can still work in part: the robot handles the level, indoor travel leg while operators handle the rest manually.

Next steps

1. Complete the [application qualification checklist](https://info.mobilerobot.com/applications/planning/application-qualification-checklist/) (<https://info.mobilerobot.com/applications/planning/application-qualification-checklist/>).
2. Book a 30–60 minute hands-on demonstration [through a partner](https://info.mobilerobot.com/products/buying-and-deployment/find-a-local-partner/) (<https://info.mobilerobot.com/products/buying-and-deployment/find-a-local-partner/>).
3. Plan a [two-week trial](https://info.mobilerobot.com/applications/planning/trial-planning/) (<https://info.mobilerobot.com/applications/planning/trial-planning/>) or a [proof of concept](https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/) (<https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/>) at your own site.

Application Qualification Checklist

Use this checklist to qualify a J1600 application before a demonstration, trial, or purchase. Every item maps to a published limit or requirement. If you can answer yes to each applicable point, the application is a candidate for a [two-week trial](https://info.mobilerobot.com/applications/planning/trial-planning/); items you cannot confirm are the first things to validate in a [proof of concept](https://info.mobilerobot.com/applications/planning/pr-oof-of-concept-planning/).

Load and carrier

- ☐ Load weight is 1,600 kg (about 3,500 lb) or less.
- ☐ The carrier has an open base with no bottom deck board, so forks can enter.
- ☐ Pallet or load footprint, including overhang, is within 1,250 x 1,250 mm (49 x 49 in).
- ☐ Load height from the floor is 1,700 mm (67 in) or less.
- ☐ The carrier type is supported: EPAL Euro Pallet, EPAL 3, EPAL 6, GMA pallets with an open base, or another forkable open-base carrier within the size limits.
- ☐ Loads are stable enough for transport, or an operator can judge and handle [unstable loads](https://info.mobilerobot.com/applications/use-cases/sensitive-or-unstable-load-s/) manually.

Details: [Pallet and load suitability](https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/).

Facility and environment

- ☐ All autonomous routes are indoors.
- ☐ Ambient temperature stays within 5–40°C (41–104°F).
- ☐ Relative humidity stays within 20–80%, non-condensing.
- ☐ The environment is compatible with IP21 ingress protection — no washdown, spray, or standing water on the route.
- ☐ There is room for the vehicle: 1,893 mm long, 850 mm wide, 2,060 mm high with forks lowered, with a 1,501 mm turning radius.
- ☐ [A charging location is available](https://info.mobilerobot.com/documentation/installation/charger-installation/) — a wall outlet for the manual charger, or floor space for the optional

automatic charging station.

Details: [Site suitability](https://info.mobilerobot.com/applications/planning/site-suitability/) (https://info.mobilerobot.com/applications/planning/site-suitability/).

Floors and routes

- ☐ Autonomous routes are level — automatic-mode gradeability is 0%.
- ☐ Bumps along the route are 25 mm (1 in) or lower.
- ☐ Gaps along the route are 20 mm (0.8 in) or narrower.
- ☐ Floor flatness meets TR34 FM3 (FF 25 / FL 20).
- ☐ Dock plates, ramps, and slopes are handled manually — manual-mode gradeability is 5% unloaded and 3% at full load.
- ☐ Transport is floor-to-floor: pickup by the operator, autonomous drop at floor level.

Details: [Route and floor suitability](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/).

Process and tasks

- ☐ The repetitive work is point-to-point travel between locations that can be saved by driving there once.
- ☐ [An operator is available to pick up pallets manually and initiate tasks](https://info.mobilerobot.com/safety-compliance/safe-deployment/operator-responsibilities/) (https://info.mobilerobot.com/safety-compliance/safe-deployment/operator-responsibilities/) — pickup is always manual.
- ☐ The intended [task patterns](https://info.mobilerobot.com/documentation/user-guides/task-management/) (https://info.mobilerobot.com/documentation/user-guides/task-management/) are covered: [deliver and return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (boomerang), deliver then [continue to a third point](https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/) (https://info.mobilerobot.com/applications/scenarios/a-to-b-to-c-transport/), [drop and wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/) (https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/), [deliver and park](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/) (https://info.mobilerobot.com/applications/scenarios/deliver-and-park/), or [multi-point flows](https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/) (https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/) such as [cross-docking](https://info.mobilerobot.com/applications/use-cases/cross-docking/) (https://info.mobilerobot.com/applications/use-cases/cross-docking/).
- ☐ Floor-level drop-off is acceptable at every autonomous destination.

Connectivity and integration

- ☐ Basic use [requires no integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>) — confirm Wi-Fi is available only if you want [connected features](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>).
- ☐ If you plan fleet operation, third-party fleet managers, or system integration, note that [VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/) (<https://info.mobilerobot.com/products/software/vda-5050/>), [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/>), and advanced mission planning require the [Advanced software package](https://info.mobilerobot.com/products/software/advanced-software/) (<https://info.mobilerobot.com/products/software/advanced-software/>). See [Deployment scope examples](https://info.mobilerobot.com/applications/planning/deployment-scope-examples/) (<https://info.mobilerobot.com/applications/planning/deployment-scope-examples/>).

Team

- ☐ Operators are familiar with electric pallet jacks — [training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>) for the J1600 takes about 30 minutes.
- ☐ Someone on the team can [add or change destinations by driving to a point](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>) and tapping **Save location** — no automation expert is needed.

What the checklist does not cover

Hazardous materials and unusual carriers have 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/>); suitability depends on base geometry, size, stability, and operator judgment. Discuss special loads with your partner or the technical team, and validate them during the trial. If you are unsure whether the J1600 fits at all, start with [Is the J1600 right for my application?](https://info.mobilerobot.com/applications/planning/is-the-j1600-right-for-my-application/) (<https://info.mobilerobot.com/applications/planning/is-the-j1600-right-for-my-application/>).

Site Suitability

The J1600 is designed for existing indoor facilities and needs no building modifications, tracks, wires, or reflectors. A site still has to meet a set of environmental and physical requirements for autonomous operation. This page lists them so you can assess a facility before a trial or deployment.

PRELIMINARY SPECIFICATIONS

The January 2026 specifications on this page are preliminary and subject to change. Confirm limits against current product documentation before a deployment decision.

Environment

Parameter	Requirement
Location	Indoor
Operating temperature	5–40°C (41–104°F)
Relative humidity	20–80%, non-condensing
Ingress protection	IP21 — protected against objects over 12.5 mm and vertically dripping water

IP21 rules out washdown areas, spray, and standing water on the route. Unheated spaces that drop below 5°C — including frozen storage — are outside the [operating range](https://info.mobilerobot.com/documentation/installation/operating-environment-requirements/) (<https://info.mobilerobot.com/documentation/installation/operating-environment-requirements/>).

Floors

Parameter	Requirement
Gradeability, automatic mode	0° / 0% — level floors only
Gradeability, manual mode, no load	2.86° / 5%
Gradeability, manual mode, full load	1.72° / 3%
Maximum traversable bump height	25 mm (1 in)
Maximum traversable gap width	20 mm (0.8 in)
Floor flatness/levelness	TR34 FM3 (FF 25 / FL 20)

Autonomous mode is a level-floor application. Dock plates and slopes remain manual tasks. For route-level assessment, see [Route and floor suitability](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>).

Space and clearances

Plan aisles, doorways, and turning areas around [the vehicle's dimensions](https://info.mobilerobot.com/documentation/technical-reference/dimensions/) (<https://info.mobilerobot.com/documentation/technical-reference/dimensions/>):

Parameter	Metric	Imperial
Vehicle length	1,893 mm	75 in
Vehicle width	850 mm	33 in
Vehicle height, forks lowered	2,060 mm	81 in
Vehicle height, forks at maximum height	2,350 mm	93 in
Turning radius	1,501 mm	59 in
Ground clearance	30 mm	1.2 in

The 3D navigation LiDAR scans environmental structures at heights reaching up to 70 m above the vehicle, so the robot localizes from the building itself — including in facilities with high ceilings.

Charging locations

Plan one of [two charging arrangements](https://info.mobilerobot.com/documentation/user-guides/charging/) (<https://info.mobilerobot.com/documentation/user-guides/charging/>):

- **Manual charging:** a charger is plugged in during breaks or idle time, the same way an electric pallet jack is charged. Reserve a [parking spot](https://info.mobilerobot.com/applications/scenarios/deliver-and-park/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-park/>), near an outlet.
- **Automatic charging** (<https://info.mobilerobot.com/applications/scenarios/automatic-charging/>): with the optional automatic charger, the robot drives to the station and docks itself for opportunity charging. [Reserve floor space for the station](https://info.mobilerobot.com/documentation/installation/charger-installation/) (<https://info.mobilerobot.com/documentation/installation/charger-installation/>); setup is part of installation Day 1 when the automatic charger is purchased.

The battery is a [24 V, 200 Ah lithium iron phosphate \(LiFePO₄\) unit](https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/>) that charges at approximately 47 percentage points per hour. Runtime exceeds eight hours in a typical duty cycle. See [Charging details](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Connectivity

[Wi-Fi is optional for basic use](https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/) (<https://info.mobilerobot.com/documentation/installation/network-and-wi-fi-requirements/>), and [no warehouse-management-system, fleet manager, or IT integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>) is mandatory. Sites planning fleet operation or software integration need network coverage for the [Advanced software](https://info.mobilerobot.com/products/software/advanced-software/) (<https://info.mobilerobot.com/products/software/advanced-software/>) features; see [Deployment scope examples](https://info.mobilerobot.com/applications/planning/deployment-scope-examples/) (<https://info.mobilerobot.com/applications/planning/deployment-scope-examples/>).

Real-world site conditions

The J1600 is validated at the company's [Copenhagen test facility](https://info.mobilerobot.com/company/locations/test-and-demonstration-facility/) (<https://info.mobilerobot.com/company/locations/test-and-demonstration-facility/>) under intentionally imperfect conditions, including uneven flooring and water-filled test loads. Dynamic obstacles, people, and changing layouts are handled by [3D LiDAR SLAM navigation with obstacle avoidance](https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>) — but the limits above still apply. If your site is near a limit, validate it in a [trial](https://info.) (<https://info.>

[mobilerobot.com/applications/planning/trial-planning/](https://info.mobilerobot.com/applications/planning/trial-planning/)) or [proof of concept \(https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/\)](https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/).

Pallet and Load Suitability

The J1600 carries up to 1,600 kg on any forkable carrier with an open base. This page defines the load envelope, the supported pallet types, and the fork geometry you need to verify your own carriers against.

PRELIMINARY SPECIFICATIONS

The January 2026 specifications on this page are preliminary and subject to change. Confirm limits against current product documentation before a deployment decision.

The one hard requirement: an open base

The carrier must have an **open base with no bottom deck board** so the forks can enter. Closed-deck pallets are not supported. Beyond that, the carrier must fit the envelope below.

Load envelope

Parameter	Limit
Maximum load weight	1,600 kg (about 3,500 lb)
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)

Overhang counts: measure the load, not just the pallet. The exact envelope is 1,250 mm; some overview material rounds it to 1.2 m.

Supported carrier types

Carrier	Support
EPAL Euro Pallet	Supported
EPAL 3	Supported
EPAL 6	Supported
GMA pallets	All GMA pallets with an open base
Custom carriers	Any forkable open-base carrier within the size limits

Custom carriers include [open cages, barrels on open-base carriers, and other load carriers beyond Euro pallets](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/>). 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 — validate special loads with your partner, ideally during a [trial](https://info.mobilerobot.com/applications/planning/trial-planning/) (<https://info.mobilerobot.com/applications/planning/trial-planning/>).

Fork geometry

Check your carriers against the fork dimensions:

Parameter	Metric	Imperial
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 position	90 mm	3.5 in
Fork height, highest position	1,600 mm	63 in

Heights: manual versus autonomous

[Manual mode](https://info.mobilerobot.com/documentation/user-guides/manual-operation/) (<https://info.mobilerobot.com/documentation/user-guides/manual-operation/>) picks and drops at up to 1,600 mm (63 in). Autonomous delivery is always at floor level. Plan flows so every autonomous destination accepts a floor-level drop; any higher placement is an operator task. See [dual mode](https://info.mobilerobot.com/products/j1600/dual-mode/) (<https://info.mobilerobot.com/products/j1600/dual-mode/>).

Sensitive and unstable loads

[Loads that need judgment](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 loads, damaged pallets, liquids, or barrels — are exactly what the dual-mode split is for. The operator handles pickup and close maneuvering manually, then hands the repetitive travel to autonomous mode. Load stability remains an operator judgment; a [load-detection sensor](https://info.mobilerobot.com/safety-compliance/safety-functions/load-detection/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/load-detection/>) (Performance Level b) confirms the presence of a load. For the reasoning behind this division of 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/>).

Next step

Work the numbers above into the [application qualification checklist](https://info.mobilerobot.com/applications/planning/application-qualification-checklist/) (<https://info.mobilerobot.com/applications/planning/application-qualification-checklist/>), and check the rest of your facility with [Site suitability](https://info.mobilerobot.com/applications/planning/site-suitability/) (<https://info.mobilerobot.com/applications/planning/site-suitability/>).

Route and Floor Suitability

Autonomous J1600 operation is a level-floor, indoor application. This page covers what a route must look like physically and how routes are created, so you can walk your facility and qualify every intended path.

PRELIMINARY SPECIFICATIONS

The January 2026 specifications on this page are preliminary and subject to change. Confirm limits against current product documentation before a deployment decision.

Floor requirements along the route

Parameter	Requirement
Gradeability, automatic mode	0° / 0% — level floors only
Gradeability, manual mode, no load	2.86° / 5%
Gradeability, manual mode, full load	1.72° / 3%
Maximum traversable bump height	25 mm (1 in)
Maximum traversable gap width	20 mm (0.8 in)
Floor flatness/levelness	TR34 FM3 (FF 25 / FL 20)

Expansion joints, drain covers, and thresholds count against the bump and gap limits. Dock plates, ramps, and slopes are [manual territory](https://info.mobilerobot.com/documentation/user-guides/manual-operation/): an operator can take the vehicle up a 5% grade unloaded or 3% at full load, but no autonomous route may include a slope.

Clearances

Plan aisle widths, doorways, and turning areas around [these dimensions](https://info.mobilerobot.com/documentation/technical-reference/dimensions/):

Parameter	Metric	Imperial
Vehicle length	1,893 mm	75 in
Vehicle width	850 mm	33 in
Turning radius	1,501 mm	59 in
Vehicle height, forks lowered	2,060 mm	81 in

Top speed (<https://info.mobilerobot.com/products/j1600/dimensions-and-performance/>) is 5.4 km/h (1.5 m/s). The 360-degree safety field is speed-dependent and expands at higher speeds, and blue floor lights show the protected area around the vehicle. See **how J1600 safety works** (<https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/>).

How routes are created

There is no route programming. The J1600 maps the facility with **3D LiDAR SLAM** (<https://info.mobilerobot.com/products/j1600/navigation-and-obstacle-avoidance/>), while an operator drives it manually, then plans its own paths:

1. Drive the vehicle through the facility with the tiller. It continuously learns and updates its 3D environment model.
2. Drive to each intended **drop point** (<https://info.mobilerobot.com/documentation/installation/mapping-and-drop-point-setup/>) and tap **Save location**. There is no software limit to the number of saved locations.
3. Combine **saved locations** (<https://info.mobilerobot.com/documentation/user-guides/location-management/>) freely into tasks. The robot navigates to any saved point without teaching every possible origin-destination pair.

Because navigation needs no fixed tracks, wires, reflectors, or building changes, routes survive **layout changes** (<https://info.mobilerobot.com/applications/scenarios/dynamic-route-changes/>): the robot maps and avoids obstacles in dynamic environments, and preferred travel zones can be defined for safer routing through production areas.

Route length and traffic

A route can be a few meters or more than 100 meters — the working concept is the same. Along the route the robot detects and avoids obstacles and people; in a public

first-use demonstration it routed around bystanders on its own. [Persistently crowded or cluttered areas](https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/) (<https://info.mobilerobot.com/applications/scenarios/operation-in-crowded-environments/>), are still better handled manually: the operator improvises a path, then hands over to autonomous mode where the route is predictable. For the reasoning behind this split, 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/>).

Walking your facility: a route checklist

- ☐ The route is entirely indoors and level.
- ☐ No bump over 25 mm, no gap over 20 mm anywhere on the path.
- ☐ No dock plate, ramp, or slope on any autonomous segment.
- ☐ Doorways and aisles clear the 850 mm width with working margin, and turning points accommodate the 1,501 mm turning radius.
- ☐ Every autonomous destination accepts a floor-level pallet drop.
- ☐ Floor quality meets TR34 FM3 (FF 25 / FL 20), or the route will be validated during a trial.

Confirm the rest of the facility with [Site suitability](https://info.mobilerobot.com/applications/planning/site-suitability/) (<https://info.mobilerobot.com/applications/planning/site-suitability/>), then plan a [trial](https://info.mobilerobot.com/applications/planning/trial-planning/) (<https://info.mobilerobot.com/applications/planning/trial-planning/>) on your own floors.

Trial Planning

A two-week paid trial puts a J1600 in your own facility, on your own pallets and routes, with setup and support included. The trial is the standard second step of the evaluation journey, after a hands-on demonstration and before a purchase decision. The customer can return the robot at any time, free, no questions asked.

Trial at a glance

Item	Detail
Duration	14 calendar days
Price	€4,000 end-user list, including setup and support
Deployment	One full day of on-site deployment and training support
Support	Unlimited remote support during the trial
Follow-up	Weekly online or face-to-face check-in by the partner
Exit	Free return at any time, no questions asked

What the trial includes

- 1. Pre-trial feasibility assessment.** Before [the robot arrives](https://info.mobilerobot.com/documentation/getting-started/delivery-and-unpacking/) (<https://info.mobilerobot.com/documentation/getting-started/delivery-and-unpacking/>), the selected tasks are assessed for feasibility through a company-provided online tool, and the trial tasks are agreed.
- 2. Robot loan for 14 calendar days.**
- 3. One full day of on-site deployment and training.** The robot is set up, locations are saved, and operators are trained. [Training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>) an existing electric-pallet-jack operator takes about 30 minutes.
- 4. Unlimited remote support** from The Mobile Robot Company for the duration of the trial.

5. **Weekly check-ins** with your partner to assess trial progress against the agreed success criteria.

Before the trial: qualify and prepare

Get the most out of the 14 days by preparing before day one:

- Work through the [application qualification checklist](https://info.mobilerobot.com/applications/planning/application-qualification-checklist/) (<https://info.mobilerobot.com/applications/planning/application-qualification-checklist/>) and resolve open items.
- Walk the intended routes using the [route and floor checklist](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>).
- Verify your pallets and carriers against [pallet and load suitability](https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/) (<https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/>) — an open base within 1,250 x 1,250 mm, up to 1,600 kg.
- Choose the transport tasks to automate. Good first candidates are repetitive point-to-point flows: [deliver-and-return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>), [drop-and-wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>), or a [receiving-to-storage leg](https://info.mobilerobot.com/applications/use-cases/inbound-receiving/) (<https://info.mobilerobot.com/applications/use-cases/inbound-receiving/>).
- Decide who operates the robot. Any electric-pallet-jack operator is a candidate; no automation background is needed.
- Reserve a [charging spot near an outlet](https://info.mobilerobot.com/documentation/installation/charger-installation/) (<https://info.mobilerobot.com/documentation/installation/charger-installation/>) for manual charging during breaks.

During the trial

The basic workflow is [teach and repeat](https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/) (<https://info.mobilerobot.com/documentation/concepts/teach-and-repeat/>): drive manually, save locations, [pick pallets manually, and send the robot on autonomous deliveries](https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/) (<https://info.mobilerobot.com/applications/scenarios/manual-pickup-and-autonomous-delivery/>) from the touchscreen. Measure what matters to your business case — operator time reclaimed on the automated legs, task consistency, and how easily your team [adds or changes locations without outside help](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>). The headline figure to test against is [up to 80% reduction in operator time on repetitive transport](https://info.mobilerobot.com/applications/results/productivity-improvements/) (<https://info.mobilerobot.com/applications/results/productivity-improvements/>).

Start with a demonstration

Before committing to a trial, take a 30–60 minute hands-on demonstration at a partner experience center or your own site. First-time visitors typically create and launch an autonomous task within about 15 minutes. A public video shows a first-time user doing exactly that; see [video case stories](https://info.mobilerobot.com/applications/customer-stories/video-case-stories/) (<https://info.mobilerobot.com/applications/customer-stories/video-case-stories/>).

After the trial

If the trial succeeds, the path continues to purchase — optionally with the five-day [installation and commissioning package](https://info.mobilerobot.com/applications/planning/deployment-scope-examples/) (<https://info.mobilerobot.com/applications/planning/deployment-scope-examples/>) for a structured go-live — and an [after-sales service plan](https://info.mobilerobot.com/support/faq/service-and-warranty/) (<https://info.mobilerobot.com/support/faq/service-and-warranty/>). If the application needs deeper validation first, plan a [proof of concept](https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/) (<https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/>). Trials are arranged through the partner network; inquiries via [mobilerobot.com](https://www.mobilerobot.com) (<https://www.mobilerobot.com>) are routed to [a local partner](https://info.mobilerobot.com/products/buying-and-deployment/find-a-local-partner/) (<https://info.mobilerobot.com/products/buying-and-deployment/find-a-local-partner/>).

Proof-of-Concept Planning

A proof of concept (POC) validates the J1600 against your specific application before a wider purchase or deployment. It sits alongside two other evaluation routes — the hands-on demonstration and the two-week paid trial — and is the right choice when an application needs deeper or more controlled validation than a standard trial provides.

Choosing the right evaluation route

Route	What it is	Where
Demonstration	30–60 minutes hands-on; first autonomous task typically within about 15 minutes	Partner experience center or customer site
Paid trial	14 calendar days on your own tasks, with deployment day and support included	Your facility
Proof of concept	Validation scoped to your application, agreed individually	Copenhagen demo area, or your plant

Demonstrations prove ease of use. Trials prove the robot in your daily operation. A POC proves a specific application question — for example an unusual load carrier, a demanding route, or a throughput target — before you commit further. See [Trial planning](https://info.mobilerobot.com/applications/planning/trial-planning/) (<https://info.mobilerobot.com/applications/planning/trial-planning/>).

Two places to run a POC

The Copenhagen demo and test area

Prospects can run tests at the company's [Copenhagen demo and test area](https://info.mobilerobot.com/company/locations/test-and-demonstration-facility/) (<https://info.mobilerobot.com/company/locations/test-and-demonstration-facility/>). The facility is built for validation under intentionally real-world conditions: deliberately uneven flooring, water-filled test loads, and multiple test setups. Testing there is useful when you want to see your load types handled before moving anything into your own operation.

Your own plant

For a POC in your production environment, machines can be transported to your plant. The EMEA distributor and integrator network is experienced in running plant trials and POCs, and the sales and technical team scopes the test with you. POC scope, duration, and success criteria are agreed individually for each case.

What to validate in a POC

Focus the POC on the questions a demonstration cannot answer:

- **Loads:** your actual carriers against the open-base requirement and the 1,250 x 1,250 mm envelope — especially [open cages, barrels, or custom carriers](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/>). See [Pallet and load suitability](https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/) (<https://info.mobilerobot.com/applications/planning/pallet-and-load-suitability/>).
- **Floors and routes:** real bumps, gaps, flatness, and clearances on the intended paths. See [Route and floor suitability](https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/) (<https://info.mobilerobot.com/applications/planning/route-and-floor-suitability/>).
- **Environment:** temperature, humidity, and traffic conditions at the actual workstations. See [Site suitability](https://info.mobilerobot.com/applications/planning/site-suitability/) (<https://info.mobilerobot.com/applications/planning/site-suitability/>).
- **Tasks:** the exact [task patterns](https://info.mobilerobot.com/documentation/user-guides/task-management/) (<https://info.mobilerobot.com/documentation/user-guides/task-management/>) you plan to run — [deliver-and-return](https://info.mobilerobot.com/applications/scenarios/deliver-and-return/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-return/>), [drop-and-wait](https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/) (<https://info.mobilerobot.com/applications/scenarios/deliver-and-wait/>), [multi-point flows](https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/) (<https://info.mobilerobot.com/applications/use-cases/multi-point-pallet-transport/>) — and the post-delivery behaviors.
- **People:** how quickly your operators reach independent use. [Training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>) takes about 30 minutes for an existing electric-pallet-jack operator.
- **Throughput:** whether the automated legs reclaim the operator time your business case assumes, against the up-to-80% claim for repetitive transport.

Setting success criteria

Define pass criteria before the POC starts: which tasks must run, at what consistency, handled by whom, and what evidence the decision needs. The weekly-check-in

structure of the paid trial is a good template. Agree the criteria with your partner and the technical team when scoping the POC.

Arranging a POC

[Contact the sales and technical team](https://info.mobilerobot.com/company/locations/contact-information/) (<https://info.mobilerobot.com/company/locations/contact-information/>) or [your local partner](https://info.mobilerobot.com/products/buying-and-deployment/find-a-local-partner/) (<https://info.mobilerobot.com/products/buying-and-deployment/find-a-local-partner/>). Inquiries via [mobilerobot.com](https://www.mobilerobot.com) (<https://www.mobilerobot.com>) are routed to the partner network. If the POC succeeds, the next step is purchase — with the optional structured go-live described in [Deployment scope examples](https://info.mobilerobot.com/applications/planning/deployment-scope-examples/) (<https://info.mobilerobot.com/applications/planning/deployment-scope-examples/>).

Deployment Scope Examples

J1600 deployments range from a single robot unboxed and working the same day to commissioned, multi-robot, fleet-integrated installations. This page describes three representative scopes so you can match the deployment effort to your application.

Scope 1: out of the box, single unit

The standard J1600 is [ready to use on delivery](https://info.mobilerobot.com/documentation/getting-started/delivery-and-unpacking/) (<https://info.mobilerobot.com/documentation/getting-started/delivery-and-unpacking/>). A typical setup takes [hours to one day](https://info.mobilerobot.com/applications/results/faster-deployment/) (<https://info.mobilerobot.com/applications/results/faster-deployment/>), depending on scope:

- no building modifications, tracks, wires, or reflectors;
- Wi-Fi optional; [no mandatory WMS, fleet-manager, or IT integration](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<https://info.mobilerobot.com/applications/results/lower-integration-complexity/>);
- operator tutorial on the device or online;
- about 30 minutes of [training](https://info.mobilerobot.com/documentation/getting-started/operator-training/) (<https://info.mobilerobot.com/documentation/getting-started/operator-training/>) for an existing electric-pallet-jack operator;
- [locations added by driving to a point](https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/) (<https://info.mobilerobot.com/applications/scenarios/temporary-location-setup/>) and tapping **Save location**;
- [manual charging](https://info.mobilerobot.com/documentation/user-guides/charging/) (<https://info.mobilerobot.com/documentation/user-guides/charging/>) with a wall charger during breaks.

This scope fits a [single work cell](https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/) (<https://info.mobilerobot.com/applications/use-cases/local-work-cell-automation/>), or one repetitive flow — for example [production supply](https://info.mobilerobot.com/applications/use-cases/production-supply/) (<https://info.mobilerobot.com/applications/use-cases/production-supply/>) from a staging area, or a [receiving-to-storage leg](https://info.mobilerobot.com/applications/use-cases/inbound-receiving/) (<https://info.mobilerobot.com/applications/use-cases/inbound-receiving/>). It is the standard scope for SMEs with one to five pallet-jack operators on a single shift.

Scope 2: commissioned deployment

The [installation and commissioning package](https://info.mobilerobot.com/products/buying-and-deployment/installation-and-commissioning/) (<https://info.mobilerobot.com/products/buying-and-deployment/installation-and-commissioning/>) (€10,000 end-user list) is an optional five-day service that reduces go-live risk through structured preparation, validation, and handover:

Phase	Content
Pre-installation	Feasibility check for all selected tasks and loads; risk assessment; project plan
Day 1	Unboxing; Wi-Fi connection if desired; automatic-charging setup if purchased; creation of up to 25 drop points; task validation; safety validation
Day 2	Group training for all operators; individual hands-on practice for up to six operators
Days 3–4	Performance monitoring; on-site troubleshooting and support; additional operator training as needed
Day 5	Acceptance test; handover

Available add-ons: integration with other software or equipment, additional validated drop points, and Fleet Management System setup. The package should not be confused with the machine's basic out-of-box usability — it is a commercial deployment service for sites that want a validated, accepted go-live.

This scope fits deployments with many drop points, multiple operators and shifts of training needs, formal [risk-assessment requirements](https://info.mobilerobot.com/safety-compliance/safe-deployment/site-risk-assessment/) (<https://info.mobilerobot.com/safety-compliance/safe-deployment/site-risk-assessment/>), or automatic charging.

Scope 3: scaled and integrated

When the application grows, the same hardware platform scales through [software and infrastructure options](https://info.mobilerobot.com/documentation/technical-integration/integration-overview/) (<https://info.mobilerobot.com/documentation/technical-integration/integration-overview/>):

- **[Advanced software upgrade](https://info.mobilerobot.com/products/software/advanced-software/)** (<https://info.mobilerobot.com/products/software/advanced-software/>) (€14,500 list): VDA 5050 interoperability, [REST API](https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/) (<https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/>), Fleet Manager compatibility, advanced mission planning, and advanced system integration. The upgrade is easiest to install at the factory when the robot is ordered; a partner can perform it later, but a customer cannot.
- **[Fleet Manager](https://info.mobilerobot.com/products/software/fleet-manager/)** (<https://info.mobilerobot.com/products/software/fleet-manager/>) (€6,500 per robot, list): orchestrated multi-robot deployments.
- **[VDA 5050](https://info.mobilerobot.com/products/software/vda-5050/)** (<https://info.mobilerobot.com/products/software/vda-5050/>): full support, letting robots from different vendors work together under a compatible fleet layer.

The company works with established VDA 5050 fleet-management providers.

- **Automatic charging** (<https://info.mobilerobot.com/applications/scenarios/automatic-charging/>) (automatic charger €8,400 list; manual charger €3,600): the robot docks itself for opportunity charging, set up on installation Day 1 when purchased.
- **Come-to-me** (<https://info.mobilerobot.com/applications/scenarios/come-to-me/>): calling the robot via a mobile app or web interface, an advanced automation function.

This scope fits multi-robot flows, sites with existing mixed-vendor fleets, and applications that need [WMS or equipment integration](https://info.mobilerobot.com/documentation/technical-integration/external-system-integration/) (<https://info.mobilerobot.com/documentation/technical-integration/external-system-integration/>). See [software details](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>).

Matching scope to application

Application	Typical scope
One repetitive flow, one work cell, single shift	Out of the box
Cross-docking with many drop points	Commissioned
Formal acceptance and risk-assessment requirements	Commissioned
Multiple robots or mixed-vendor fleet	Scaled and integrated
High-utilization flows needing opportunity charging	Commissioned or scaled, with automatic charging

[Deployment](https://info.mobilerobot.com/documentation/installation/deployment-checklist/) (<https://info.mobilerobot.com/documentation/installation/deployment-checklist/>) starts with qualification: run the [application qualification checklist](https://info.mobilerobot.com/applications/planning/application-qualification-checklist/) (<https://info.mobilerobot.com/applications/planning/application-qualification-checklist/>), then validate with a [trial](https://info.mobilerobot.com/applications/planning/trial-planning/) (<https://info.mobilerobot.com/applications/planning/trial-planning/>) or [proof of concept](https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/) (<https://info.mobilerobot.com/applications/planning/proof-of-concept-planning/>). Prices above are 2026 end-user list prices; a robot purchase itself [starts at €65,000](https://info.mobilerobot.com/products/j1600/pricing-and-roi/) (<https://info.mobilerobot.com/products/j1600/pricing-and-roi/>).