



The Mobile Robot Company

Knowledge Center — Operational Flexibility · 2026-08-04

<https://info.mobilerobot.com/applications/results/operational-flexibility>

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