



The Mobile Robot Company

Knowledge Center — Handling Exceptions and Irregular Loads · 2026-08-04

<https://info.mobilerobot.com/applications/scenarios/handling-exceptions-and-irregular-loads>

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/) (<https://info.mobilerobot.com/applications/results/productivity-improvements/>) without the [integration burden](https://info.mobilerobot.com/applications/results/lower-integration-complexity/) (<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/) (<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/) (<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/) (<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/>).

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/) (<https://info.mobilerobot.com/applications/use-cases/open-cages-and-alternative-load-carriers/>).