

For maintenance, operations and executive leaders
in asset-intensive organisations

That spare has not moved in five years.

Can you afford to remove it?

Before releasing the cash, understand the failure it protects against, the operational problems behind the holding and who will own the risk when it is gone.

Challenge excess stock.
Protect operational readiness.

One spare. Three different answers.

A replacement drive has sat in the storeroom for five years. The inventory review flags it for removal. Finance sees cash tied up. The engineer remembers a difficult failure. Operations knows the supplier has missed delivery commitments before.

The meeting ends with the spare retained, but no recorded reason, review date or action on the supply problem. Next year, the same conversation returns.

This illustrative situation exposes the real question: what is the spare doing for the business today?

THREE POSSIBLE EXPLANATIONS

Valid protection

An infrequent failure would have serious consequences and no timely recovery option.

A process buffer

The holding compensates for uncertain supply, delayed repairs or unreliable planning.

An outdated decision

Equipment, quantities or requirements have changed, but the stock policy has not.

A stock reduction can move the problem elsewhere

Removing a buffer without addressing its cause can leave maintenance buying urgently, operations waiting for a part, or technicians looking for workarounds. Keeping every disputed item can preserve unnecessary cost and hide the same weaknesses.

This paper shows how to investigate the holding, compare recovery options and make a shared decision. Five years without a recorded issue is a reason to review. It is not, by itself, a reason to dispose.

No movement does not mean no purpose.

Some spares are held for rare but consequential failures. Others support planned work that has not happened. Some genuinely have no remaining purpose. An ageing report puts these different situations beside one another.

Separate insurance from excess

A valid need for one spare does not establish a need for every unit on the shelf. Review quantity, location and competing demands as well as the decision to stock. A shared spare may support several assets, but those assets can also need it at the same time.

Ask whether the history is complete

Check whether parts have been bought directly for jobs, issued under another code or moved without accurate records. Confirm what the report counts as movement. Apparent non-use may be a data problem, while frequent transfers may conceal very little actual consumption.

Look forward as well as back

Review equipment retirement plans, modifications, known defects and upcoming maintenance. Historical demand cannot describe an asset population that has changed. A spare for retired equipment may still fit another operating asset, but that compatibility needs confirmation.

Check that the protection is real

Verify condition, preservation requirements, completeness and compatibility. A drive with unsuitable firmware or a deteriorated seal kit may remain in the inventory balance without providing the recovery option people expect.

The first output should be a clear explanation of the holding, including uncertainties. Do not turn an incomplete record into a confident disposal recommendation.

Check the report first

Which movement?

Consumption, transfers and returns tell different stories.

Which part?

Reconcile duplicate codes and superseded references.

Which equipment?

Confirm the current installed base and configuration.

Which condition?

A stored item only provides protection if it remains usable.

What problem is your inventory absorbing?

Treat the following as investigation prompts. More than one can apply to the same item. The stock decision and the corrective action should be recorded together.

POSSIBLE CAUSE	WHAT TO INVESTIGATE	ACTION ALONGSIDE THE REVIEW
Deferred work	Parts were bought, but shutdown scope or access keeps changing.	Confirm the job, its priority and the next credible execution window.
Uncertain supply	Extra units cover late deliveries or unverified lead times.	Check actual supply performance and establish a dependable recovery option.
Slow repair loop	Serviceable replacements accumulate while failed units await assessment.	Resolve repair status, turnaround, ownership and return-to-stock controls.
Poor stock visibility	Duplicate codes or inaccurate balances encourage additional buying.	Reconcile physical stock, references and transactions before resetting quantities.
Project handover gaps	Commissioning spares arrive without an operating stocking policy.	Link each item to equipment, a requirement and a review owner.
Asset changes	Equipment is modified or retired, but its spares remain.	Validate remaining uses and update stock policy with the asset change.

Give temporary protection an expiry condition

If additional stock remains necessary while a process is repaired, name the owner and the condition that will trigger reassessment. Otherwise a temporary workaround can quietly become permanent policy.

When the KPIs disagree, who owns the risk?

An inventory manager may be asked to reduce ageing stock. An engineer may be held accountable when an asset cannot return to service. Procurement may focus on purchase price, while operations needs dependable recovery. These objectives can produce conflicting decisions about the same item.

Make the engineer's concern explicit

Retaining a spare can be a reasonable response to uncertain supply or severe failure consequences. Ask which failure it covers, which equipment depends on it and why alternatives are inadequate. Capture experience as evidence that others can understand and review.

Make the inventory challenge equally explicit

A criticality label should not close the discussion. Ask whether the quantity is justified, whether the item is still usable and whether a different arrangement can provide acceptable protection at lower total cost.

Assign one accountable decision owner

Engineering assesses technical consequences and compatibility. Operations confirms the effect on service or production. Supply chain validates stock and recovery options. Finance checks the cost comparison. An authorised business owner approves the trade-off and any remaining exposure.

Avoid rewarding risk transfer

Review reductions alongside parts-related delays, emergency expenditure and readiness. A lower stock balance alone cannot show whether the operation is better off. Equally, an absence of failures does not prove every retained item was necessary.

Use different expectations for routine consumables and rare-event insurance spares. Applying the same turnover target to both can encourage decisions that ignore why they are held.

Review both sides

Capital

Stock value, excess quantities and carrying costs.

Readiness

Availability of serviceable parts for agreed requirements.

Operational impact

Work delayed for parts and associated downtime.

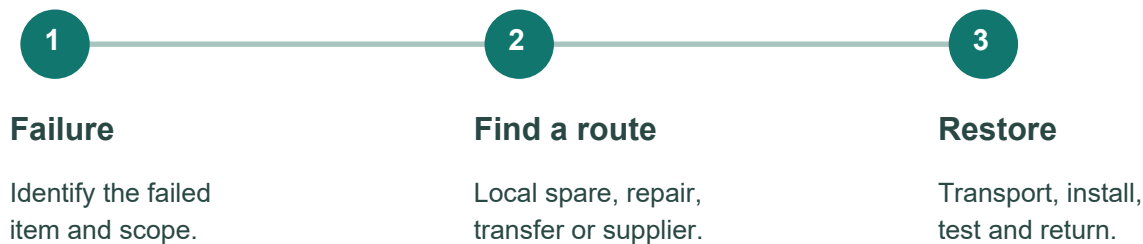
Hidden cost

Emergency buying, expediting and unresolved repairs.

What happens if the part is unavailable?

Return to the stored drive. The equipment is important, but that alone does not settle the stock decision. Establish the failure scenario, the available recovery paths and the time the operation can tolerate.

ILLUSTRATIVE RECOVERY PATH: NO ASSUMED DURATIONS



Compare recovery time with the consequence of waiting

Include diagnosis, confirmation of the correct part, transport, repair or procurement, installation and testing. A catalogue lead time is only one component. Establish whether standby equipment actually provides the required capacity and duration.

Assess the failure, not just the asset label

Which credible failure needs this exact part? How many installed units could demand it? Is there a qualified substitute? Could one event affect several units? Engineering should assess the evidence and uncertainty rather than infer future demand solely from five quiet years.

Compare whole costs and binding requirements

Consider holding and preservation costs, obsolescence, alternative supply costs and the operational consequences of waiting. Safety, environmental and other mandatory requirements must be satisfied before selecting a cheaper option. A simple expected-cost calculation cannot resolve every consequence.

Record assumptions that would change the decision, particularly supply time, redundancy, equipment life and part condition.

Keeping it and scrapping it are not the only choices.

Keep what you can justify

Retain local stock when it provides necessary recovery capability. Set a justified quantity, preservation requirements, replenishment rule and review trigger. The decision should explain the requirement rather than rely on the item's age or a historic criticality label.

Test shared and external coverage

Pooling across sites can reduce duplicate holdings, but only if access, transport time, compatibility and simultaneous demand are addressed. A part in another warehouse is not useful coverage if it cannot reach the asset when needed.

Supplier-held stock or a repair agreement may help where availability is demonstrable. Check allocation, response commitments, logistics and performance. A supplier catalogue listing is not proof that a serviceable unit is reserved for your operation.

Release stock with a complete follow-through

Where no valid need remains, consider return, redeployment, sale or disposal under company procedures. Update equipment links, reorder settings and purchasing controls so the same unwanted item is not bought again.

Keep the financial claim honest

Removing an item from a stock report does not necessarily release cash. A sale or return may recover value; a write-off has a different financial effect. Distinguish cash recovered, future purchases avoided, recurring costs reduced and risk changed.

The preferred option is the one that meets the agreed operational requirement at a defensible whole cost, with responsibilities that can actually be delivered.

For the stored drive

Retain

If the consequence and recovery gap justify local protection.

Reduce or share

If coverage remains credible with fewer units or another location.

Repair the process

If additional stock compensates for avoidable uncertainty.

Release

If no valid requirement remains after technical review.

Better decisions need more than a movement code.

Manufacturing: combine two perspectives

Teixeira, Lopes and Figueiredo developed a spare-parts classification method combining maintenance and logistics inputs in a multinational manufacturing company. The case describes movement and consumption measures that did not adequately represent the production consequences of a missing part. [1]

The practical lesson is to put the stocking discussion in the context of the equipment and the work it supports. A warehouse classification is useful input, but it does not settle the operational decision.

Petrochemicals: make criticality systematic

Molenaers and colleagues developed and implemented a multi-criteria spare-parts criticality method in a petrochemical plant. Their approach provides a structured basis for classifying parts and informing inventory policy. [2]

For a review team, the useful principle is to make the reasoning behind a criticality judgement visible. A classification still needs to translate into a justified stocking arrangement.

Offshore operations: connect the decision evidence

Didriksen and colleagues studied a spare-parts review in an offshore oil and gas company. Two earlier approaches struggled with fragmented information. An integrated data model connected equipment, maintenance, logistics and inventory records for a review of 10,843 spare parts. [3]

The review identified management-approved potential to reduce total stock value by 15.1%, subject to implementation. This was not demonstrated cash recovery or a transferable savings target. The relevant lesson is the shared evidence base behind the decisions.

What the evidence supports

Several criteria

Movement and purchase value alone leave out operational consequences.

Joined information

Equipment, maintenance and supply records need to inform the same review.

Clear limits

Individual cases do not establish a universal reduction target.

Before you remove the next spare.

Bring the following evidence to one review. Where it is missing, assign an owner and a completion date. Uncertainty should trigger investigation, with interim protection where justified, rather than automatic retention or disposal.

Requirement	Which operating assets and credible failures does this item support?
Stock reality	What quantity exists, where is it, and is it serviceable and compatible?
Operational cause	Does the holding reflect a valid need, deferred work, supply uncertainty or outdated records?
Recovery options	How long would each feasible route take, and what happens while the operation waits?
Chosen action	Retain, reduce, share, return, redeploy or dispose. What must change alongside it?
Accountability	Who approves the trade-off, owns the follow-through and accepts remaining exposure?
Review trigger	Revisit after asset changes, lead-time changes, failure experience or the agreed review date.

Start with a bounded review

Choose one equipment family or a manageable group of disputed holdings. Reconcile the records, inspect stock where needed and bring engineering, operations, supply chain and finance together. Track both the inventory action and the operational issue it exposes.

The decision should be explainable to the next manager: what we are protecting, why this arrangement is sufficient and what would cause us to change it.

Evidence behind the paper.

[1] Catarina Teixeira, Isabel Lopes and Manuel Figueiredo

Classification methodology for spare parts management combining maintenance and logistics perspectives. *Journal of Management Analytics*, 5(2), 2018, pp. 116 to 135. [Read source](#)

Manufacturing case and classification methodology. Supports combining operational and logistics criteria; it does not establish a universal stock-reduction target.

[2] An Molenaers, Herman Baets, Liliane Pintelon and Geert Waeyenbergh

Criticality classification of spare parts: A case study. *International Journal of Production Economics*, 140(2), 2012, pp. 570 to 578. [Read source](#)

Multi-criteria classification implemented in a petrochemical plant. Used here for its classification principle, not as proof that any particular part can be removed.

[3] Simon Klarskov Didriksen, Kristoffer Wernblad Sigsgaard, Niels Henrik Mortensen and Christian Brunbjerg Jespersen

An Empirical Data Model for Spare Parts Management: Linking Maintenance, Logistics, Inventory, and Equipment Data to Bridge Information Silos and Reduce Data-Gathering Efforts. *Applied Sciences*, 16(1), 94, 2026. Published online 21 December 2025. [Read source](#)

Longitudinal offshore oil and gas case. Reported stock-value results are specific to that implementation and should not be treated as predicted savings elsewhere.

How to use this paper

The stored-drive scenario, operational investigation prompts, governance recommendations and decision record are NextGenMaint's practical synthesis. They are not reported customer results or a validated scoring model.

The paper provides a structure for cross-functional review. Stocking quantities and disposal decisions require evidence about the actual equipment, failure consequences, available recovery arrangements and organisational requirements.

Prepared October 2026. Public sources reviewed 4 October 2026.