

Reorder Point Procedure: Demand-Triggered Ordering Based on the Reorder Level

The reorder point procedure is a classic method of material requirements planning in which an order is automatically triggered as soon as the stock level of an item falls below a defined reorder point. It is particularly suitable for consumables and C-items with relatively constant demand. In industrial procurement, it reduces planning effort while simultaneously ensuring supply capability. This article explains how the method works, its calculation, KPIs and limitations.

Key facts

- With the reorder point procedure, an order is placed as soon as the stock level reaches or falls below the reorder point (reorder level).
- The reorder point typically results from demand during the replenishment lead time plus safety stock.
- The order quantity is frequently determined using the optimum lot size or lot size optimisation.
- The method is suitable for items with constant, forecastable demand and low value-adding planning effort.
- Dynamic reorder points take account of changing demand and lead time developments and form the transition to demand planning.
- Alternative methods are demand-oriented planning based on dependent demand and the order cycle method.

Definition: reorder point procedure

The reorder point procedure is a consumption-based planning method in which the order quantity and timing are not determined by a forward demand calculation but by falling below a defined reorder point.

Distinction from requirements planning

In contrast to demand-oriented planning based on bills of materials (dependent demand), the reorder point procedure relies on historical consumption figures and statistical parameters. It is therefore suitable for independent demand such as operating and auxiliary materials, wear parts or trading goods. For product-related components with line-bound demand, it is usually unsuitable in practice, as it does not map variants and scheduling requirements.

Terminological classification

Synonyms include minimum stock method, reorder level method or, in English, reorder point procedure. The method belongs to the family of consumption-driven planning and is a component of virtually every standard ERP software as well as many e-procurement systems in procurement.

Calculation of reorder point and order quantity

The quality of the method stands and falls with the proper determination of its parameters. In practice,

simple formulas have become established and should be reviewed regularly.

Formula for the reorder point

The reorder point typically results from the product of average daily demand and replenishment lead time in days, plus safety stock. In the event of temporary bottlenecks in the supply chain, a dynamic safety stock is recommended, which is periodically re-evaluated based on current data to reflect lead time and demand fluctuations.

Order quantity and lot size

The order quantity is often defined as a fixed quantity determined through lot size optimisation. This involves weighing fixed procurement costs, inventory carrying costs and, where applicable, price breaks against one another. In practice, the commercially customary solution is often close to the classic economic order quantity, adjusted for packaging, shipping or pallet units.

Manual vs. automated planning

Smaller organisations monitor reorder points manually using stock lists, which is error-prone. Modern systems trigger the purchase order or purchase requisition automatically; in that case, the process should include a plausibility check by the buyer, especially for line items with high volumes.

Use cases and suitable item classes

Not every item is suitable for the reorder point procedure. Classification by consumption behaviour and value is the first step towards a sensible planning strategy.

Suitable item groups

Suitable items are those with relatively steady, independent demand: operating supplies, screws, lubricants, wear parts, standard tools and consumables. These are often C-items according to the ABC analysis, where administrative effort must be kept small.

Unfavourable constellations

With strongly seasonal, project-related or erratic demand, the method leads to shortages or excess stock. With long and variable replenishment lead times, or high-value parts subject to supply chain due diligence obligations, active planning is usually more sensible.

Distinction from the order cycle method

With the order cycle method, orders are placed at fixed time intervals, usually replenishing up to a target stock level. It reduces the number of orders per supplier but requires higher safety stocks. In practice, both methods are often combined: cycle-based planning for bundling items, reorder points for critical individual items.

Integration into procurement and warehousing processes

The reorder point procedure only unfolds its full effect within a cleanly organised process environment. Inventory management, master data quality and supplier integration are decisive for this.

Inventory accuracy as a prerequisite

Reliable reorder points presuppose accurate stock figures. Inventory methods such as cycle counting –

continuous, sample-based stocktaking – secure the data basis better than a one-off annual stocktake. Deviations should ideally feed into a regular data quality report, which also shows data quality KPIs for master data maintenance.

Link to suppliers and framework agreements

When the method is combined with a delivery schedule agreement, call-offs against a framework agreement are automatically generated from the reorder level. This reduces transaction costs and stabilises supply. The prerequisite is a unique supplier identifier in the master data, which prevents duplicates and misordered goods.

Roles and responsibilities

A clearly named data owner per item segment maintains reorder points, lot sizes and lead times. These responsibilities are essential, as outdated parameters silently lead to excess stock or supply failures.

Key KPIs for the reorder point procedure

Without regular KPI measurement, parameter quality drifts quickly. In practice, a few practical KPIs have become established.

Service level and stock levels

Core metrics are the service level (proportion of on-time, complete demand coverages) and inventory coverage or the capital tie-up share of P- and C-items. Both metrics must be assessed together, as they typically move in opposite directions.

Process metrics

In addition, it is worth monitoring the number of orders per item and month, the proportion of automated purchase requisitions and the number of parameter changes per period. A noticeable number of readjustments indicates unstable demand or lead time data.

Risks and controls in the reorder point procedure

The method operates automatically, but is not automatically correct. Incorrect parameters are carried forward for years and cause stock and supply problems.

Typical risks

Common sources of error are outdated demand rates after product changes, failure to update the replenishment lead time after a change of supplier, and unconsidered partial deliveries/remaining quantities for open orders. Engineering changes can also result in obsolete parts continuing to be planned.

Control instruments

Periodic parameter reviews per item class, exception lists for items with negative stock or excessive coverage, and a DPO impact simulation – with which the effect of changed reorder points on stock and service level can be tested in advance – have proven effective. Dual-source management and a clear supplier strategy help as complements against supply failures.

Compliance and documentation

Automated orders must comply with approval limits and procurement compliance rules. Reorder points must never serve as a means of circumventing approval processes; deadlines and approval levels must be configured accordingly.

Current developments: dynamisation and digitalisation

The reorder point procedure remains relevant, but is increasingly being made dynamic and combined with digital forecasting methods. The trend is moving from static parameters to continuously updated metrics.

Dynamic reorder points and demand sensing

Modern systems periodically adjust reorder points based on consumption and supply-side data. Demand sensing supplements the method with short-term demand signals from orders, consumption or market data, thereby shortening response times. Demand planning provides the medium-term foundation from which reorder point parameters can in turn be derived.

Incorporating market and price data

For raw and trading materials, coupling with a commodity index is worthwhile: rising market prices can economically justify an earlier or larger order. Discount dimensions such as dynamic early payment discounts can also be factored into the ordering timing, provided liquidity and inventory costs allow it.

Automation in e-procurement

E-procurement enables the fully automated conversion of reorder point alerts into purchase orders, including basket logic and catalogue binding. A limited number of manual control points remains important to rule out incorrect orders and compliance violations.

Typical metrics

Service level: > 98%

Proportion of on-time and complete demand coverages for reorder point items

Inventory coverage: typically 2–12 weeks

Depending on item class; high coverage indicates excessive reorder points

Inventory data quality: > 99%

Deviation between target and actual stock; prerequisite for the method

Degree of order automation: > 80%

Proportion of automatically triggered purchase requisitions for suitable items

Practical example

A medium-sized mechanical engineering company ordered lubricants, wear parts and standard screws from a paper catalogue and repeatedly suffered production peaks caused by stockouts. After an ABC/XYZ analysis, the company switched these item groups to the reorder point procedure and stored reorder points, fixed quantities and supplier assignments in its ERP system.

- Introduction of cycle counting for the affected storage locations to permanently secure inventory data quality.

- Periodic parameter review per item class with an exception list for critical coverage positions.
- Combination of the method with framework agreements and automatic call-offs with two main suppliers.
- Introduction of a monthly data quality report showing inventory deviations and open parameter adjustments.

Conclusion

The reorder point procedure is a proven, lean tool of material planning for consumables and C-items. Its strength lies in automation and low planning intensity; its limitation lies with erratic demand and long, uncertain lead times. Clean inventory data, regularly reviewed parameters and clear responsibilities in master data maintenance are decisive for success. Those who combine the method with dynamic safety stocks, framework agreements and selected KPI controls achieve a stable service level with moderate inventories in practice. For product-related components, however, it should always be interlinked with demand-oriented planning and not used as the sole instrument.

Frequently asked questions

What is the reorder point procedure?

This is a consumption-based planning method in which an order is automatically triggered as soon as the stock level falls below a defined reorder point. The reorder point covers demand during the replenishment lead time plus safety stock. The order quantity is usually fixed and determined via lot size optimisation.

How do you calculate the reorder point?

In its simplest form: $\text{reorder point} = \text{average daily demand} \times \text{replenishment lead time in days} + \text{safety stock}$. Fluctuations in demand and delivery time are covered by the safety stock or a dynamic safety stock. The parameters should be periodically adjusted to current consumption and delivery data.

Which items is the reorder point procedure suitable for?

It is suitable for items with relatively constant, independent demand such as operating supplies, wear parts or standard consumables – often C-items according to the ABC analysis. It is unsuitable for project-related, seasonal or line-bound demand. In these cases, demand-oriented planning is usually the better choice.

What is the difference between the reorder point procedure and the order cycle method?

With the reorder point procedure, orders are triggered by quantity as soon as a threshold is fallen below. With the order cycle method, orders are placed at fixed intervals, usually replenishing up to a target stock level. The cycle method reduces the number of order transactions but generally requires higher safety stocks.

Which KPIs are relevant for the reorder point procedure?

The key metrics are the service level, inventory coverage and capital tied up in stock. It is also worth monitoring order frequency per item and the number of parameter changes. Noticeable outliers indicate outdated reorder points or inaccurate inventory data.

How can the reorder point procedure be automated?

Modern ERP and e-procurement systems monitor reorder points automatically and generate purchase

requisitions or purchase orders including call-offs under framework agreements. This requires accurate inventory data, a unique supplier identifier and defined approval limits. Despite automation, exception lists and manual control points should remain in place.