

Supply Planner

User guide, including the maths and logic behind every number

Supply Planner reads the weekly factory forecast workbook in your browser and tells you which products the supply plan does not cover, what to order, and what to move. Nothing is uploaded anywhere — the file stays on your computer.

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1. Getting started

1.1 Uploading the weekly workbook

1. Open the Upload page and drag this week's .xlsx workbook onto the drop area, or choose the file from your computer.
2. The app reads the run date, the week number and every factory tab it recognises, and lists them with row counts.
3. Check the data-quality summary on the right: issues that change the answer, issues worth fixing, and notes.
4. Go to the Overview to see the position.

A sheet counts as a factory tab when row 2 contains the headers Model number, TRIGGER and a 12-M SO (or 6 MONTH SO) column. The factory name is the tab name without any -Closed suffix. Closed and stale factories are switched off by default and can be switched back on with the chips on the Overview page.

Everything is remembered on this computer: the last file, your settings, your decisions and any order changes. Uploading a new file discards all order changes and starts again from the orders in that file. A file with a new week number becomes the current week and the old one is kept for the week-to-week comparison.

1.2 The pages

Page	What it is for
Upload	Load the weekly workbook and check what was read.
Overview	Factory filter, top ten products at risk, and Reset changes.
Weekly availability	One product at a time: 16-week stock projection, add orders, move arrivals, see the factory order schedule.
Product list	Every planning product with its numbers, badges and notes; search, sort and filter.
Adjustments	Every proposed change grouped by factory and action, with Excel/CSV export and copy-as-email.
Week-to-week	Compares this week's gaps with last week's: better, worse, new, resolved.
Settings	Every multiplier, rounding step, lead time and horizon used by the calculations.
Reference	Read-only changes log, transfer plan and attach-ratio table.

2. Where the numbers come from

Each factory tab holds one row per product. A row is a planning row when it carries a TRIGGER value — usually the kit or base model. Rows underneath with a blank trigger are its variants. The planning row owns the plan; the variants roll up into it.

The hidden Reports tab holds the raw ERP pivots and is the preferred source of truth, because the pivots are keyed by variant part numbers while the factory tab shows only the parent. The app looks up the parent and all of its variants and adds them together.

Figure	ERP block used	Notes
Units shipped in the history window	Sum of Quantity	Drives average monthly demand.
Stock at the factory	Sum of On Hand Quantity	FORTH reads store T9, FUTABA F9, CENTRON C9.
Stock at the OES hub	Sum of On Hand Quantity	Store O9.
In transit	Sum of On Hand Quantity	Store OT, plus TT for FORTH.
Customer backlog	Sum of Balance Due	
Units on open order	OPO	
Order schedule by month	OPO - Schedules	Rebuilt when the tab shows a dash or disagrees.
Pending internal transfers	To Stores	Counted only if you switch it on in Settings.

The Reports setting controls this behaviour: Always prefer the ERP tables, Fill in what is missing (the default), or Off. Whenever a figure is rebuilt, the product shows where it came from in its detail panel and, where relevant, a badge.

2.1 Data issues the app never ignores

- Inventory position missing in the source: the planning row has a trigger but no total, so the sheet's own gap equals the whole trigger and shows a false shortage. The position is rebuilt from the ERP tables and flagged; if it cannot be rebuilt, the product is not counted as short.
- The same product on more than one factory tab: shown once per active factory and never added together.
- Order schedule lookups returning a dash: rebuilt from the ERP schedule block and badged.
- The typed next-month quantity disagreeing with the schedule for that month.
- Min/Max typed into the sheet rather than calculated.
- Mislabelled month headers, missing week columns, or the live week column carrying last week's number.

Every issue is listed with its tab, row and column heading on the Adjustments page under Fix data.

3. The monthly calculations

Q means the calendar quarter of the workbook's run date. Every multiplier and rounding step below is editable in Settings; "reset to spreadsheet defaults" puts them back.

3.1 Demand

average monthly demand = units shipped in the history window ÷ history months (default 12)

3.2 The band: minimum, target and maximum

Target is the trigger level — the stock the plan aims to hold.

target (trigger) = roundUp(average monthly demand × trigger multiplier[Q] , rounding step)

minimum = MIN from the tab, otherwise roundUp(average monthly demand , rounding step)

maximum = MAX from the tab, otherwise roundUp(average monthly demand × FG multiplier[Q] , rounding step)

Quarter of the run date	Trigger multiplier	FG multiplier (maximum)
Q1	1.25	1.5
Q2	1.5	2
Q3	2	3
Q4	2	3

The rounding step is 10 by default and 5 for FUTABA. Rounding is always upwards.

3.3 Stock position today

stock after backlog (IA) = factory stock + OES stock + in transit – customer backlog

Pending internal transfers are shown separately and added to the line above only when the setting "count pending transfers" is on.

covered supply = stock after backlog + next month's receipts

Next month's receipts come either from the typed next-month quantity (the default) or from the order schedule for that month, whichever the Settings page selects. Both are shown side by side so you can see a disagreement.

gap = target – covered supply (a positive gap is a shortage)

months of cover = covered supply ÷ average monthly demand

shortage value = max(0, gap) × standard cost

excess value = max(0, covered supply – maximum) × standard cost

3.4 The 12-month projection

Month 0 is the run month and is left flat: no receipts and no demand are applied to it, because part of it has already happened. From month 1 onwards:

$\text{closing}[m] = \text{closing}[m-1] + \text{receipts}[m] - \text{demand}[m]$

$\text{demand}[m] = \text{average monthly demand} + \max(0, \text{dated backlog in month } m - \text{average monthly demand})$

Only real open-order quantities count as receipts. Placeholder months in the workbook are shown separately as “suggested” and are excluded unless you switch them on in Settings. The horizon is 12 months by default.

4. How products are flagged

Flag	Raised when	Severity
Short now	gap > 0	High
Below minimum	covered supply < minimum	High
Backlog exceeds stock	stock after backlog < 0	High
Runs out in month X	first month whose closing stock is below zero	High within 3 months, otherwise Medium
Below trigger in month X	first month whose closing stock is below the target (and it never runs out)	Medium
Above maximum	covered supply > maximum, or closing stock stays above maximum for 3 months in a row	Low
Open order, no demand	average demand is zero and units are on open order	Low
Data issue	any defect on that row	Information

Short now and Below minimum are only raised for a product whose stock position is confirmed — either present in the sheet or successfully rebuilt from the ERP tables — so that a missing total never produces a false shortage.

Products are ranked by the severity of their worst flag and then by shortage value in dollars.

4.1 The traffic lights

- Red — action needed: any high-severity flag, a positive gap, or negative stock after backlog.
- Amber — marginal: any medium flag, covered supply below target, or a stockout inside the projection.
- Green — fine: none of the above.

5. Weekly availability

This page works one product at a time. Pick a product from the search dropdown; products are listed worst first, with a red, amber or green dot.

5.1 The weekly maths

$\text{weekly demand} = (\text{average monthly demand} \times 12) \div 52$

$\text{closing}[w] = \text{closing}[w-1] + \text{arriving}[w] - \text{weekly demand} - \text{dated backlog spread}$

Week 0 opens at stock after backlog. Existing factory orders land in the first week of their month (the run month is skipped, as in the monthly view). Dated backlog above the monthly average is spread evenly across the weeks of the month it falls in. An order you add arrives at the week it is placed plus its lead time.

The chart shows minimum, target and maximum as a shaded band and lines, so you can see at a glance where the projection leaves the band. The horizon is 16 weeks by default.

5.2 Adding an order

The Units box is pre-filled with a suggestion; overwrite it freely.

$\text{suggested order} = \text{roundUp}(\text{maximum} - \text{lowest projected week}, \text{minimum order quantity})$

Choose the week to place the order in and the lead time (pre-filled with the product's standard lead time). The arrival week is the placing week plus the lead time; if that falls beyond the chart the order list says so.

5.3 Changing what arrives

- Type over the Arriving figure in any week. Quantities are rounded up to the minimum order quantity.
- Weeks inside the lead time cannot be edited — that order would have had to be placed already.
- Drag the handle beside an arriving quantity onto another week to pull it in or push it out; locked weeks cannot be a source or a destination.
- Changed weeks turn amber, and the factory orders table underneath follows the change.

5.4 Factory orders, week by week

This table is a read-only view of the same data from the factory's point of view: the week the order must be placed, the week it arrives, the original quantity, the current quantity, the change and its value. All editing happens in the Arriving column above.

$\text{placing week} = \text{arrival week} - \text{lead time}$

Lead time is editable per row and pre-filled per factory (10 weeks for FORTH, 8 for FUTABA by default). One rule is enforced: the lead time in a week may not be more than one week shorter than the lead time in the week before it, so the schedule stays consistent. Where the placing week falls before the current week, it is greyed and the arriving quantity is locked.

6. The proposed adjustments

For every product that needs supply — short now, below minimum, running out, or dropping below target — the app works out the first month in trouble and proposes changes in this order.

1. Pull in. If a later month already has units on order, move them into the shortfall month first. Only enough to close the gap up to the target is moved, and at most the next two months with stock on order are raided.
2. Increase or new order. Whatever is still missing becomes an order for the shortfall month.

$\text{order quantity} = \text{roundUp}(\text{maximum} - \text{projected stock at the shortfall month}, \text{minimum order quantity})$

If the factory's monthly capacity is a number and the order exceeds it, the order is split across consecutive months at capacity each. It is labelled a new order when the product has nothing on open order, otherwise an increase.

3. Push out. When stock stays above the maximum for three months in a row, the surplus at the start of that run is deferred, capped at what actually arrives in that month.
4. Cancel or review. Raised when there is stock on open order but nothing shipped in the history window, or when the planner's note contains the word "cancel".
5. Fix data. One line per defect, naming the tab, row and column heading.

Each proposal can be Accepted (kept as it is), Modified (change the quantity or the month) or Rejected with a reason. Planner notes from the sheet travel with the proposal.

The Adjustments page exports to Excel with one sheet per factory plus a Data fixes sheet, exports to CSV, and can copy the list as email text.

7. Meetings and the change file

Start meeting in the header takes a snapshot of where you are. Work through the products as normal. End meeting downloads an Excel file listing only the orders that actually changed during the meeting — whether you accepted a proposal, edited one, or entered the change yourself. Rejected proposals are left out.

For each change the file records the product, the factory, the quantity before and after, the week the order must be placed, the week it arrives, the lead time used, and any note.

7.1 Resetting

- Reset changes on the Overview page discards every order change and decision and returns to the orders in the uploaded file.
- Uploading a new workbook does the same automatically.

8. Settings reference

Setting	Default	What it changes
History months	12	Divisor for average monthly demand.
Trigger multipliers	1.25 / 1.5 / 2 / 2	Target level by quarter of the run date.
FG multipliers	1.5 / 2 / 3 / 3	Maximum level by quarter.
Rounding step	10, FUTABA 5	Rounding applied to minimum, target and maximum.
Count pending transfers	Off	Whether pending internal transfers add to stock after backlog.
Next month's receipts	Typed quantity	Typed next-month figure or the order schedule.
Treat placeholders as supply	Off	Whether placeholder schedule months count as receipts.
Planning horizon	12 months	Length of the monthly projection.
Months above maximum for excess	3	Run length that triggers Above maximum.
Reports mode	Fill in what is missing	Always / fill in what is missing / off.
Lead times	8 weeks; FORTH 10, FUTABA 8	Default lead time used on the weekly page.
Weekly horizon	16 weeks	Length of the weekly projection.
Active factories	FORTH, FUTABA	Which factories are included everywhere.

9. Plain-English glossary

In the app	On the spreadsheet	Meaning
Stock after backlog	IA for SO shipment	What is genuinely available once customer backlog is taken out.
Covered supply	TOTAL (INV + 1MON)	Stock after backlog plus next month's receipts.
Target	TRIGGER	The stock level the plan aims to hold.
Gap	WKnn column	Target minus covered supply; positive means short.
Minimum order quantity	MOQ	The smallest quantity the factory will build.
Units on open order	TOTAL PO	Quantity already ordered and not yet received.
Arriving	PO schedule month	Units landing in a given week or month.