



PERSONAL PROJECT / PRODUCT SAMPLE

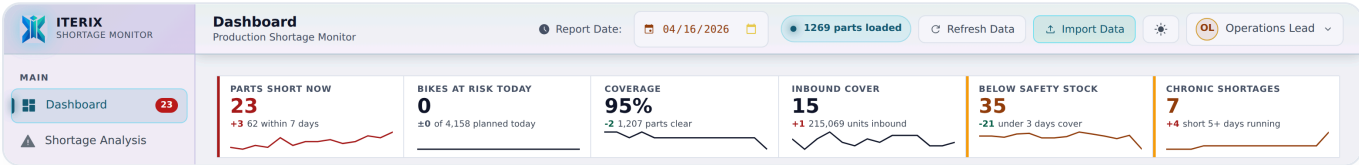
Shortage Monitor

Which parts will stop the line, when, and whether what is already on the road will get there in time.

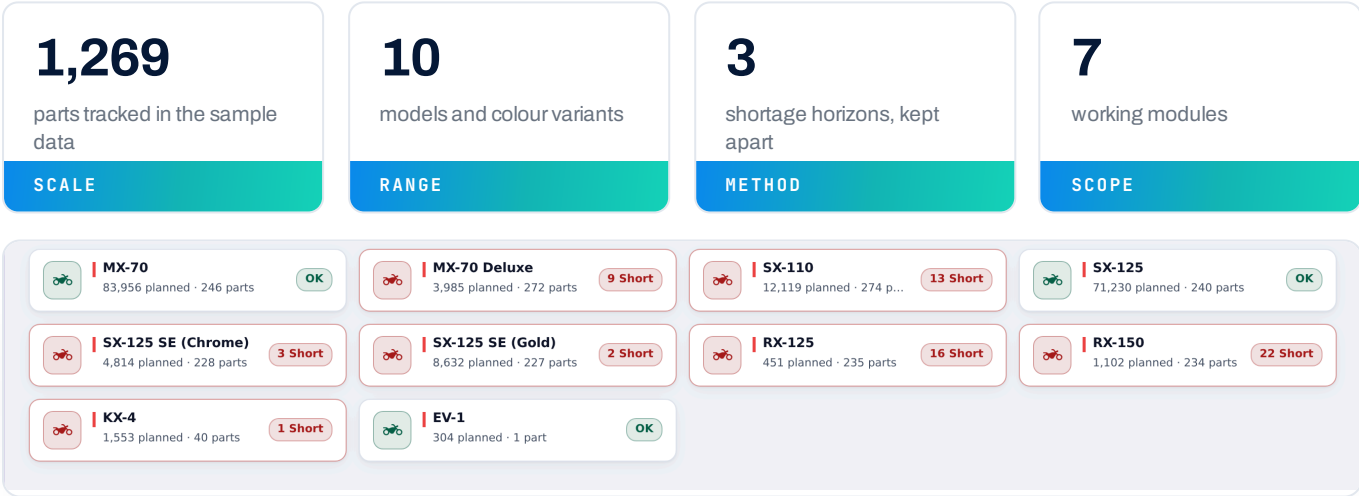
A shortage report that answers back

Most plants hold their shortage position in one spreadsheet that somebody rebuilds by hand every morning. It gives a number. It cannot tell you what moved that number, which supplier keeps failing, or whether tomorrow is worse than today.

The Shortage Monitor is that report rebuilt as a web portal. It reads current stock, the day by day production plan and every inbound lot, then runs the plant's own shortage arithmetic continuously across three separate horizons: where you stand today, where you stand tomorrow, and the worst point in the coming week. Those three are never collapsed into one figure, because a part that dips on Friday is a planning question and a part short right now is an emergency.



Six indicators, and the fortnight behind each one. Parts short now, units at risk today, coverage, inbound cover, parts below safety stock, and the count that has been short for days on end. The line under each number is the last two weeks, so you can see whether it is recovering or quietly getting worse.



And the same question by model. How many parts each line is short, against how many it plans to build, so the count means something to the person who has to run that line.

The morning check

One screen carries the whole plant position, from the parts that stop the line today to the ones quietly running down over the next fortnight.

Parts that need a decision today

Critical shortage alerts DASHBOARD

CRITICAL SHORTAGE ALERTS

26 short by tomorrow

Parts requiring immediate attention

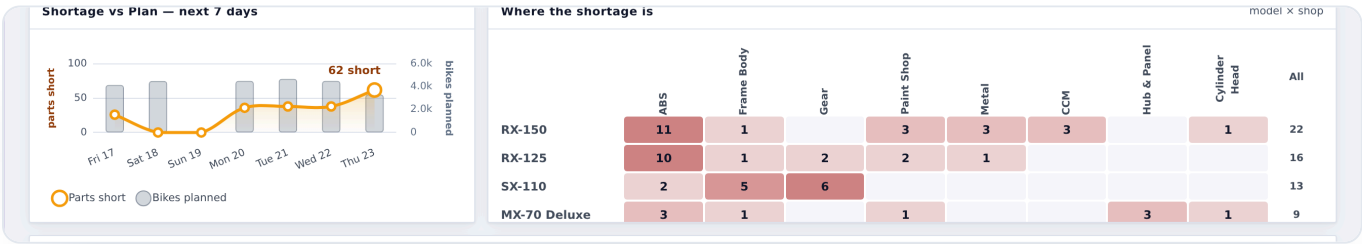
worst 12 of 26

View Full Analysis →

SHOP	PART CODE	DESCRIPTION	MODEL	REQUIRED	CLOSING BAL	SHORTAGE	COVER	PENDING ARRIVAL	AFTER ARRIVAL	CLEAR BY
Paint Shop	4309850816	RIGHT BODY PANEL (COMP.) ...	RX125 (RED)	84	-5	-5	today	0	-5	Nothing inbo
Cylinder Head	4611139373	UPPER COMPONENT (COMP.)	RX150	552	-5	-5	today	0	-5	Nothing inbo
CCM	4644694611	CENTRE COMPONENT (MAC...	RX150	276	-4	-4	today	0	-4	Nothing inbo
Metal	4495055268	LEFT GEAR (COMP.)	RX150	641	88	-3	1d	0	-3	Nothing inbo
Metal	4876128055	FRONT CYLINDER (COMP.)	RX125	4,151	330	-2	1d	0	-2	Nothing inbo
Paint Shop	4375438067	LOWER BODY PANEL (MACHI...	RX150 (RED)	138	-1	-1	today	0	-1	Nothing inbo
Frame Body	4911635992	FRONT BRACKET (COMP.)	SX110	3,652	-1	-1	today	0	-1	Nothing inbo
Frame Body	4928413612	UPPER STAY (MACHINED)	SX110	3,652	-1	-1	today	0	-1	Nothing inbo
Frame Body	4342540703	LEFT STAY (SEMI-MACH.)	SX110	3,652	-1	-1	today	0	-1	Nothing inbo
Frame Body	4359318323	FRONT COVER PLATE (COMP.)	SX110	3,652	-1	-1	today	0	-1	Nothing inbo
CCM	4232614012	LEFT CYLINDER (MACHINED)	SX125C	3,984	394	-1	1d	0	-1	Nothing inbo
ABS	4573836723	REAR COMPONENT (MACHIN...	RX125 (RED)	84	-1	-1	today	0	-1	Nothing inbo

Sorted worst first, with the closing balance, the size of the gap, what is already on the way and the day it clears. The rightmost column is the one people act on: if nothing inbound covers it, the row says so plainly rather than showing a blank.

Where the shortage actually is DASHBOARD



The seven day view on the left, and a model against shop grid on the right. The grid is the fastest way to see whether a problem belongs to one line or one department.

How opening became closing DASHBOARD



A spreadsheet gives you the closing figure. This gives you the five movements that produced it: what was received, what arrived, what production consumed, what was rejected and what was dispatched.

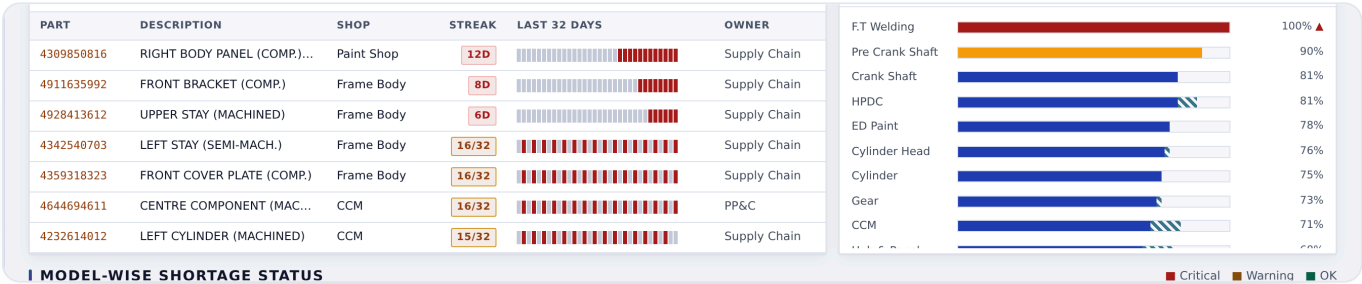
What lands, and what has been short for days

Inbound timeline DASHBOARD



Every lot on the road, drawn against the days it is expected to cover. Lots that arrive after the window they were meant to fix are marked as overdue and left out of the arrival calculation, so cover is never overstated.

Chronic shortages and store capacity DASHBOARD



A part short for twelve days running is a different problem from one that dipped once, so the system records each part's state daily and reads the streak back. Beside it, how full the store is by area, which is what decides whether the next truck can even be unloaded.

01

Short today

Stock has already gone past zero against what the line needs now. This is the emergency list, and it is what the alerts panel shows first.

02

Short tomorrow

Today is covered, tomorrow is not. Enough warning to pull a truck forward or reshuffle the build sequence.

03

Worst point this week

Fine now, dips on day six. That is a planning conversation, not a fire.

04

Never merged

The three stay apart on the dashboard, in every table and in every export, so a figure always tells you which horizon it belongs to.

Every part, one table

Eighteen columns of stock movement for the whole parts list, filterable by shop, model or status. The part code and description stay locked to the left while the rest scrolls sideways, so you never lose track of the row you are reading.

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SHORTAGE MONITOR

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Truck Management26

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Part Inquiry

Production Plan

CONFIG

Material Master

Shortage Analysis

Parts shortage detail view

Report Date:04/16/20261269 parts loadedRefresh DataImport DataOLOperations Lead

Search part code or description...All ShopsAll ModelsAll StatusAll parts (incl. local)Showing 1-25 of 1,269 parts

Stock Table7-Day View

Parts Shortage Analysis — Apr 16, 2026

26 Short7 At Risk1236 OK

SHOP	PART CODE	DESCRIPTION	MODEL	REQ QTY	MB52	IN-TRANSIT	WIP	TTL OPENING	RECEIVED	TOTAL STOCK	CONSUMPTION	CL
F.T Welding	4477613482	RIGHT FENDER (COMP.)	MX70	28718	805	0	0	805	51,324	52,129	28,718	
F.T Welding	4227460695	CENTRE MUFFLER (CO...	MX70	28718	5,566	0	0	6,371	56,018	62,389	28,718	
F.T Welding	4261015933	FRONT BOLT (MACHINED)	MX70	232664	162,292	0	0	168,732	670,640	839,372	232,664	
F.T Welding	4129234752	REAR BODY PANEL (CO...	SX125	23368	690	0	0	690	50,788	51,478	23,368	
F.T Welding	4533269945	RIGHT BODY PANEL (SE...	SX125	23368	6,496	0	0	7,186	39,318	46,504	23,368	
F.T Welding	4246199920	REAR WASHER (MACHI...	SX125	70104	2,988	0	0	29,731	381,294	411,025	70,104	
F.T Welding	4759409142	OUTER BOLT (COMP.)	SX125	186944	309,174	0	0	314,694	350,260	664,954	186,944	
F.T Welding	4566825181	OUTER TANK (SEMI-MA...	SX125	23368	8,370	0	0	9,060	38,657	47,717	23,368	
F.T Welding	4550047563	RIGHT TANK (MACHINE...	SX125	23368	7,519	0	0	8,209	39,620	47,829	23,368	
F.T Welding	4482937087	CENTRE FRAME (MACHI...	SX125	46736	12,351	0	0	13,731	79,186	92,917	46,736	
F.T Welding	4466159469	INNER FENDER (SEMI-M...	SX125	23368	9,604	0	0	10,294	39,595	49,889	23,368	
F.T Welding	4800433252	REAR BODY PANEL (MA...	MX70	28718	1,999	0	0	1,999	49,158	51,157	28,718	
F.T Welding	4940615471	RIGHT COVER PLATE (M...	MX70	30046	63,786	0	0	63,786	36,105	99,891	30,046	
F.T Welding	4688951186	RIGHT MUFFLER (SEMI-...	MX70	30046	26,100	7,055	0	26,100	45,069	71,169	30,046	
F.T Welding	4940762566	RIGHT MUFFLER (MACH...	MX70	30046	26,514	7,055	0	26,514	46,148	72,662	30,046	
F.T Welding	4974317804	REAR TUBE (MACHINED)	MX70	60092	37,539	8,715	0	37,539	108,315	145,854	60,092	
F.T Welding	4697581588	INNER PIPE (MACHINED)	MX70	57398	31,935	12,035	0	31,935	101,592	133,527	57,398	
F.T Welding	4635175334	OUTER FENDER (MACHI...	MX70	30046	8,897	3,486	0	8,897	56,938	65,835	30,046	

Three columns carry the weight. Short today, short tomorrow, and the worst point across the coming week, deliberately kept as separate columns. A seven day heatmap per part sits behind the same table on a second tab.

The same parts, seven days forward 7 DAY VIEW

Search part code or description...All ShopsAll ModelsAll StatusAll parts (incl. local)Showing 1-25 of 1,269 parts

Stock Table7-Day View

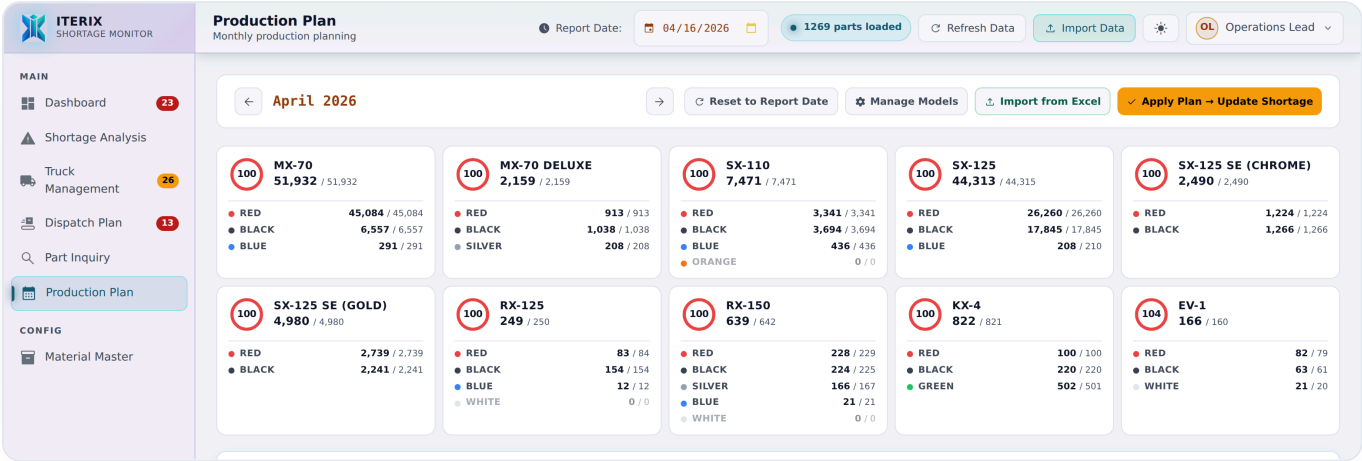
7-Day Stock Projection per Part

Short<1 day coverOKDays:71014

SHOP	PART CODE	MODEL	FRI 17	SAT 18	SUN 19	MON 20	TUE 21	WED 22	THU 23
F.T Welding	4477613482	MX70	17,901	OFF	OFF	14,083	12,219	10,725	8,899
F.T Welding	4227460695	MX70	23,203	OFF	OFF	19,385	17,521	16,027	14,201
F.T Welding	4261015933	MX70	377,101	OFF	OFF	345,829	330,917	318,965	304,357
F.T Welding	4129234752	SX125	26,269	OFF	OFF	22,996	21,427	19,077	18,504
F.T Welding	4533269945	SX125	21,025	OFF	OFF	17,752	16,183	13,833	13,260
F.T Welding	4246199920	SX125	297,390	OFF	OFF	287,571	282,864	275,814	274,095
F.T Welding	4759409142	SX125	186,944	OFF	OFF	186,944	186,944	186,944	186,944

A monthly average hides the day you stop

Most shortage reports take the month's target and divide it by working days. No plant runs that way. Here the plan is entered day by day, model by model and colour by colour, so weekends, ramp ups and changeovers are real. Change a figure and every shortage number behind it moves with it.



Plan against achieved for each model, with the colour split underneath.

MODEL	PLAN TOTAL	ACHIEVED	1 WED	2 THU	3 FRI	4 SAT	5 SUN	6 MON	7 TUE	8 WED	9 THU	10 FRI	11 SAT	12 SUN	13 MON	14 TUE	15 WED	16 THU
● MX-70 Red	45,084	45,084	2158	2490	1494	2071	0	1992	830	1660	1162	1411	2362	0	1494	1792	1826	1992
● MX-70 Black	6,557	6,557	332	332	332	332	0	166	332	166	332	332	166	0	166	332	166	332
● MX-70 Blue	291	291	0	0	0	0	0	0	0	0	0	83	0	0	0	83	0	0
● MX-70 Deluxe Red	913	913	0	0	0	166	0	0	166	0	83	0	0	0	0	166	0	0
● MX-70 Deluxe Black	1,038	1,038	0	0	0	83	0	0	166	0	166	0	0	0	0	166	0	0
● MX-70 Deluxe Silver	208	208	0	0	0	83	0	0	0	0	83	0	0	0	0	0	0	0
● SX-110 Red	3,341	3,341	0	0	166	0	0	166	166	166	166	166	166	0	166	62	166	166
● SX-110 Black	3,694	3,694	0	0	83	0	0	166	166	83	166	166	83	0	166	270	83	166
● SX-110 Blue	436	436	0	0	83	0	0	0	0	83	0	0	83	0	0	0	83	0
● SX-110 Orange	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
● SX-125 Red	26,260	26,260	996	1022	996	830	0	1022	1245	830	1262	863	739	0	1262	811	877	901
● SX-125 Black	17,845	17,845	664	664	664	830	0	664	664	830	664	664	664	0	830	498	664	664
● SX-125 Blue	210	208	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	42
● SX-125 SE (Chrome) Red	1,224	1,224	0	0	166	0	0	0	166	0	166	0	166	0	0	166	0	166
● SX-125 SE (Chrome) Black	1,266	1,266	0	0	166	0	0	0	166	0	166	0	166	0	0	166	0	166
● SX-125 SE (Gold) Red	2,739	2,739	0	0	0	166	0	166	0	332	0	166	0	0	166	0	166	0
● SX-125 SE (Gold) Black	2,241	2,241	0	0	0	166	0	166	0	0	0	166	0	0	166	0	166	0

The editable grid behind it. Each row is a model and colour, each column a day of the month, with a running daily total along the bottom.

Every lot, every ETA

Truck management INBOUND

MAIN

Dashboard

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Shortage Analysis

Truck Management

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Dispatch Plan

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Part Inquiry

Production Plan

CONFIG

Material Master

Truck Management

Lot & truck tracking

Report Date:

04/16/2026

1269 parts loaded

Refresh Data

Import Data

Operations Lead

11

Pending at Plant

Reached, not in SAP

15

In Transit

On the road to PB

0

Entered in SAP

This month (April)

ACTIVE TRUCK REGISTER

All Pending In Transit In SAP Import from Excel Add Truck

Lot / Truck Status Register

Click a row to view material details

LOT NO.	TRUCK NO.	MODE	VENDOR / SUPPLIER	DEPARTURE	ETA	PARTS COUNT	STATUS	ACTION
L0T-3584	TR-2392		Blue Route		2026-05-01	6	Pending	Update Status
L0T-5200	KL-5876		Northline Freight		2026-05-01	3	Pending	Update Status
L0T-2604	TR-8506		Northline Freight		2026-05-01	6	Pending	Update Status
L0T-4222	TR-9955		Redline Transport		2026-05-01	5	Pending	Update Status
L0T-7460	TR-7924		Blue Route		2026-05-01	27	Pending	Update Status
L0T-9080	TR-4440		Redline Transport		2026-05-01	13	Pending	Update Status
L0T-4936	TR-3858		Redline Transport		2026-05-01	14	Pending	Update Status
L0T-1956	TR-4449		Northline Freight		2026-05-02	3	Pending	Update Status
L0T-7919	TR-4554		Northline Freight		2026-04-30	14	Intransit	Update Status
L0T-9538	GH-6004		Blue Route		2026-04-30	13	Intransit	Update Status

Pending at plant, in transit, and entered in the system are three different states, and the shortage calculation treats each one differently. Counting them as one is how the same stock gets counted twice.

Dispatch plan OUTBOUND

COVER PRODUCTION FOR

2d

3d

4d

5d

6d

7d

10d

Plant A → Plant B · air lands next morning, fast truck usable D+3, container usable D+4

DEMO WEIGHTS

AIR CONSIGNMENT

1

1,343 pcs · 3.2T

FAST TRUCKS

0

20T each · 0.0T total

CONTAINERS

1

60T each · 12.1T total

PARTS TO SEND

30

of 556 Plant A-sourced

TOTAL WEIGHT

15.3T

across all modes

COVERING

4 days

of production forward

By Air

short on D+1 or D+2 · exact quantity only, no top-up

1,343

3.21T

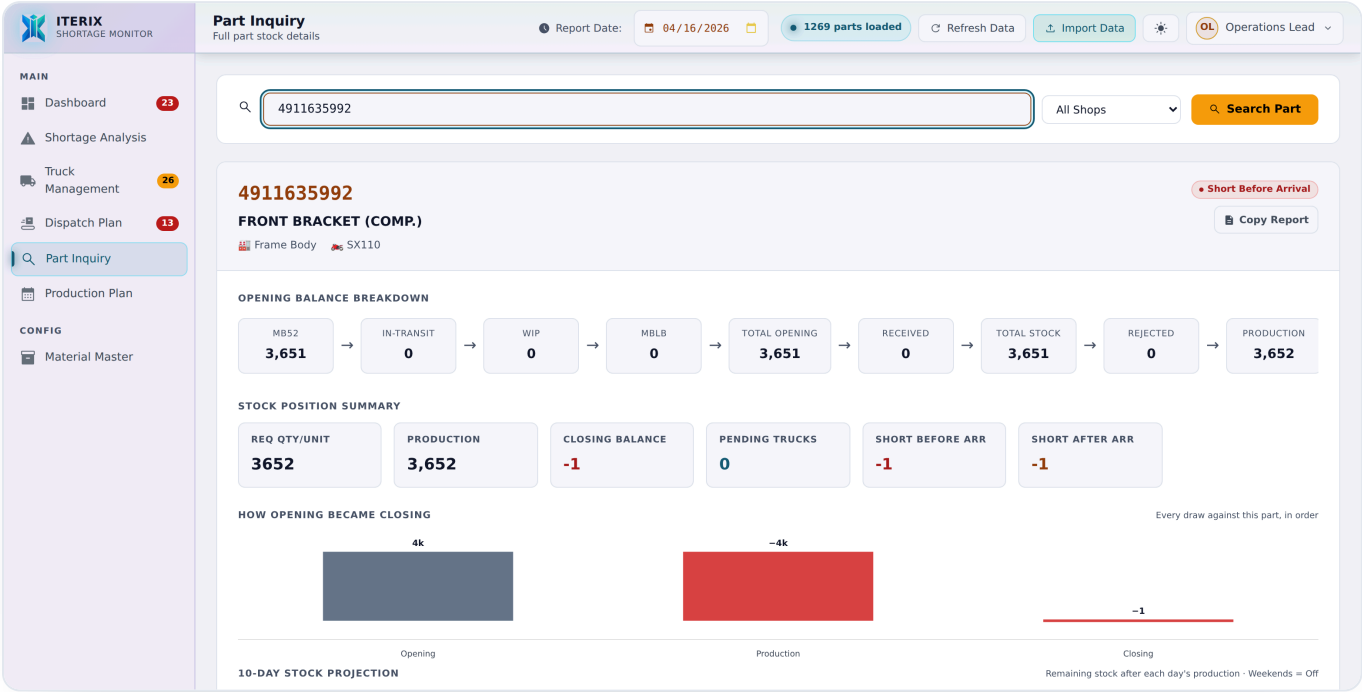
PIECES WEIGHT

PART	DESCRIPTION	SHOP	SHORT ON	QTY	WEIGHT	PALLET POS.
4611139373	UPPER COMPONENT (COMP.)	Cylinder Head	D+1	5	0.00T	1
4644694611	CENTRE COMPONENT (MACHINED)	CCM	D+1	4	0.00T	1
4644348741	LOWER BRAKE SHOE (COMP.)	Hub & Panel	D+1	1	0.00T	1
4871279223	REAR GEAR (SEMI-MACH.)	Gear	D+1	1	0.00T	1

What to send, by air or by container, sized against the pallet positions actually available. The horizon is a single click, from two days out to ten.

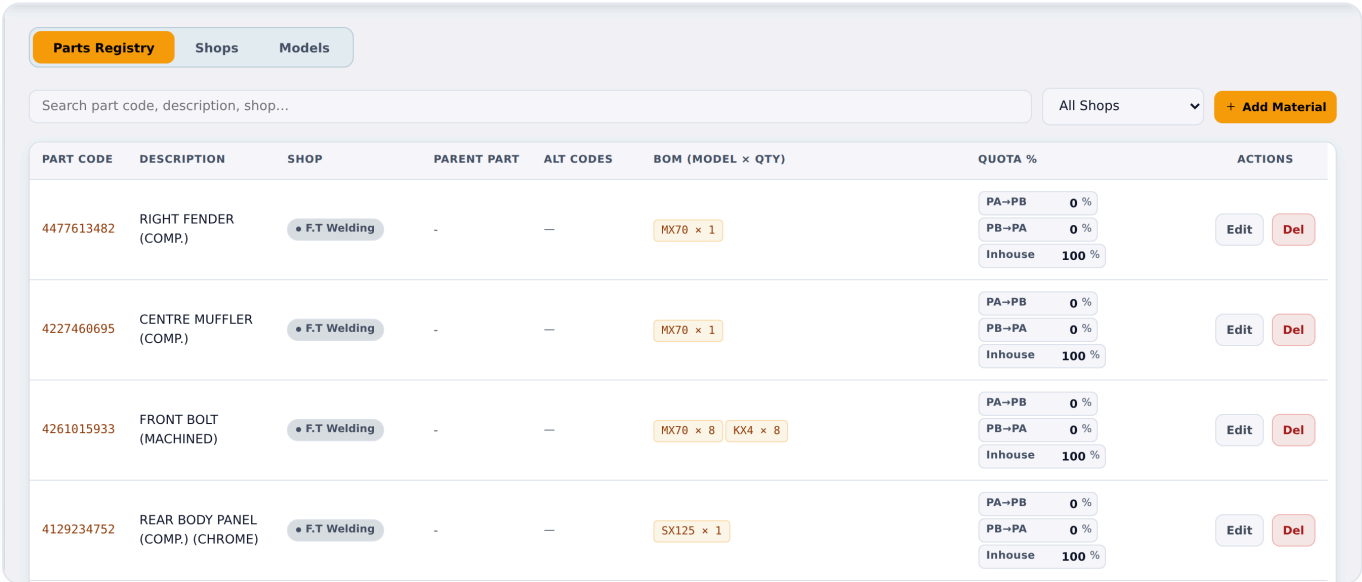
The two screens people live in

One part, one answer PART INQUIRY



Type a part code and get the full opening balance breakdown, the stock position, how opening became closing, a ten day projection and a status card that can be pasted straight into a chat. One screen instead of five lookups and a phone call.

The part nobody sees, doing the heavy lifting MATERIAL MASTER



Bill of materials per model and colour, sourcing quotas, alternate codes and parent to child conversion ratios. Paste the raw parent figure and the system does the conversion itself.

The jobs a workbook cannot do

WHAT YOU NEED	IN A WORKBOOK	IN THE PORTAL
Tell you a part has been short for weeks	No memory. Each morning starts blank.	Each part's daily state is recorded and read back as a streak, including parts that flip in and out.
Convert parent stock to child parts	Somebody works it out by hand before entry.	Done automatically from the quantity per parent ratio at the moment the figure is entered.
Warn you the store is full	Found out when the truck arrives at the gate.	Pallet specifications turn inbound volume into positions needed, raised before dispatch.
Separate today from next week	One shortage column, so both look the same.	Three horizons held apart, on the dashboard and in every table.
Let two people work at once	One file, one person, one version at a time.	Individual sign in, role based access, and every change recorded against the person who made it.
Keep a year of history	A new file each month, and no way to compare them.	A year of daily state stored in about seventy kilobytes. It does not grow with elapsed time.
Load the month in one pass	Sheet by sheet, with the joins done by hand.	Parts, bill of materials, colours, quotas, opening stock, plan and truck manifests read together.

On the numbers. Where a system replaces a workbook, every formula is counted across the whole file rather than read from one sample row, the dominant rule is implemented, and the result is checked back against the workbook's own cached output. Where the workbook disagrees with itself, and after years of hand editing it usually does, the divergence is documented with evidence rather than quietly corrected.

What the portal covers

CALCULATION

CAPABILITY	WHAT IT DOES	
Opening balance build	Alternate codes, system stock, work in progress, adjustments and parent stock	✓
Requirement from plan	Day wise plan summed to the report date, through the bill of materials and sourcing quota	✓
Consumption and closing	Rejection, requirement, dispatch and committed special demand	✓
Forward projection	Each day's production removed, each arrival added at its own estimated time	✓
Three horizons	Today, tomorrow, and the worst point across seven days	✓

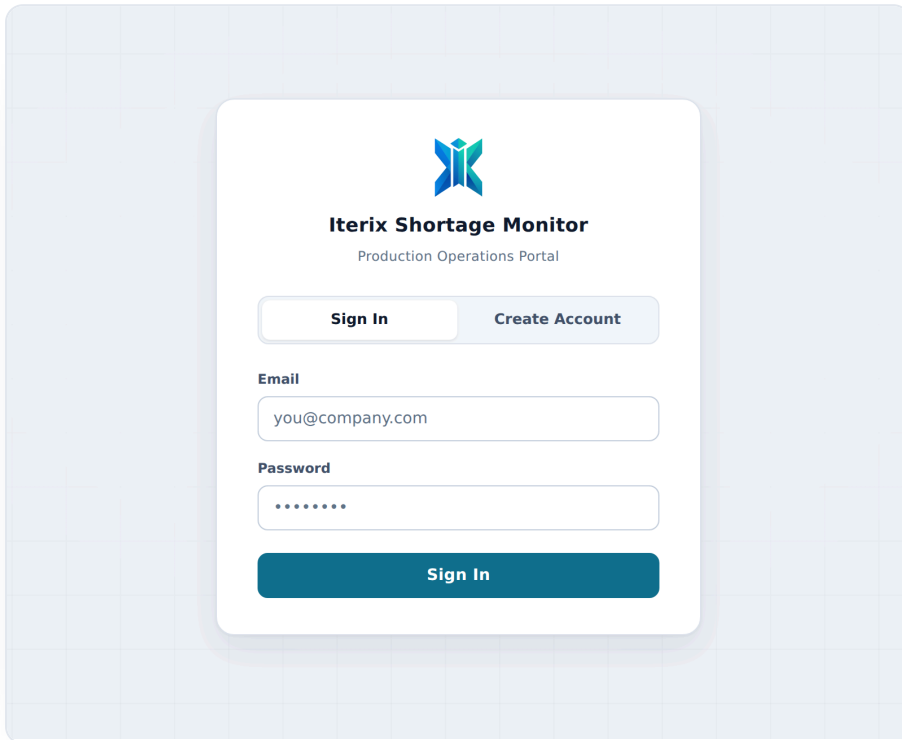
DAY TO DAY

CAPABILITY	WHAT IT DOES	
Live dashboard	Six indicators with trend, alerts, timeline, heatmap and stock bridge	✓
Shortage analysis	Whole parts list, filterable, with a seven day heatmap per part	✓
Production plan	Day wise editable grid per model and colour, with achieved to date	✓
Truck and dispatch	Lot level manifests, three states, and load sizing against pallet positions	✓
Part inquiry	Single part view with projection and a shareable status card	✓
Material master	Bill of materials, quotas, alternate codes, conversion ratios	✓
One file import	The monthly workbook read in a single pass	✓
Accounts and audit	Individual sign in, roles, and a record of every change	✓

Everything above is working software, not a specification. The screens in this document are the running application on sample data. Anything here can be adjusted, extended or laid out differently to suit how a particular plant actually works, and the calculation rules are written to be read and argued with rather than hidden.

Built to be checked, not just believed

The calculation engine is a set of pure functions with no interface dependencies, so it can be tested directly and verified against the source workbook's own results. Around it sits a Node and Express service with individual sign in and role based access, running on either a database or flat files, and a single page front end. It deploys to one small server or a managed host.



Individual accounts, three levels of access, and every plan edit, entry and import stored against the person who made it.

About this sample. Every part code, description, model name, carrier and quantity shown in this document is synthetic. Quantities are scaled by a single factor so that every shortage relationship, and therefore every conclusion the system draws, is preserved exactly. The calculation engine shown is the real one.

PRODUCT

Shortage Monitor

BUILT BY

Syed Ahmad Kamal

ENQUIRIES

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