



Velotics Inc. Inventory Analysis

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Inventory Analysis Synopsis

Purpose → Metrics → Data Analysis Findings →
Inventory Allocation → Conclusion



Purpose→

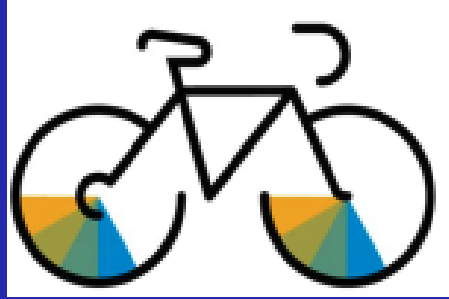


Purpose

The main purpose of the inventory analysis is to sample a day's inventory levels within Velotics' sellable completed product and analyze which models and what locations need optimization to run product movement efficiently within the company.

Therefore, improving stock, manufacturing and sales.

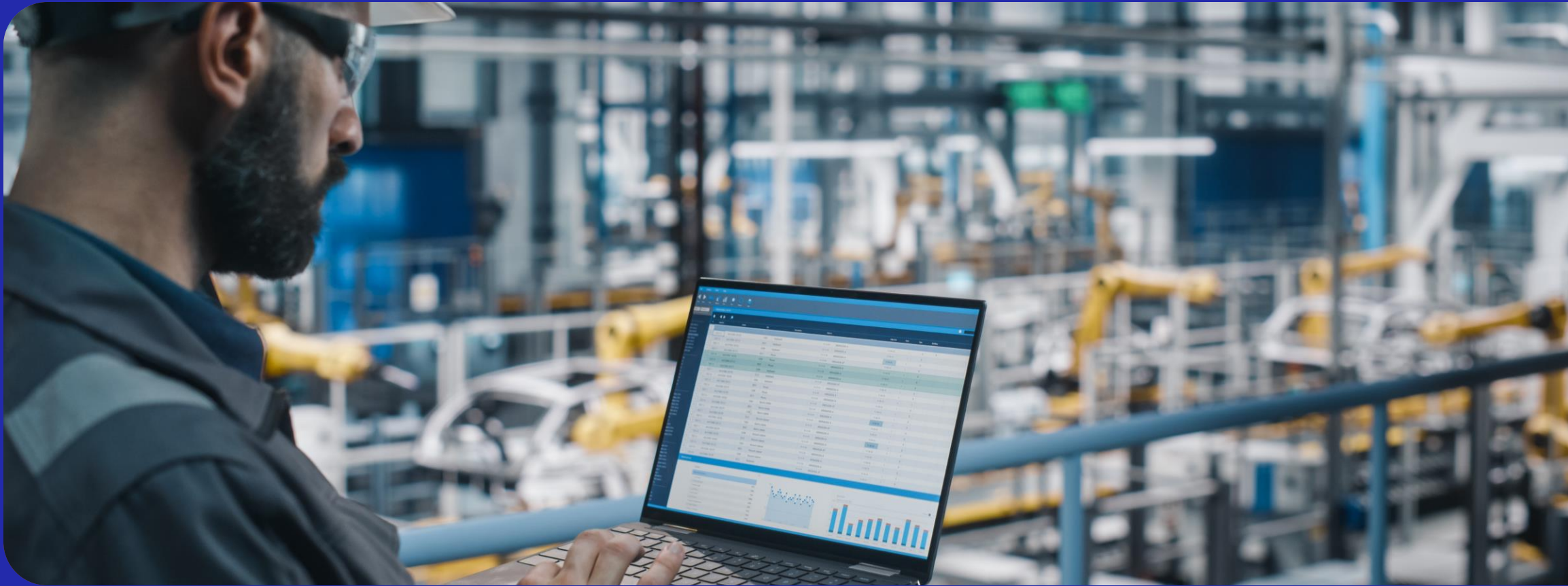




88,083

Total finished product models are in various locations within Velotics Inc. in need of inventory analysis.

(Within the scope of the present day)



Metrics→

The KPI's are:



Product Model



Order



Plant



Storage Location



Unrestricted-Use Stock



Blocked Stock



Quality Inspection Stock (QI Stock)



Range of Coverage in Days (30-day supply)

These are the main KPI's that will determine an inventory analysis based on critical information to gauge finished product movement. There are other metrics, however, this analysis will determine the main areas of inventory concern given what SAP shows for the day's stock inventory.

Finished Product Models



Product Line	Segment	Profit Center	Product Group	Product Model	Product
Racing Bikes	Z_SEG1	US10_PLR	ZRACING	MZ-FG-R300 MZ-FG-R200 MZ-FG-R100	High-End Racing Bike Mid-Range Racing Bike Low-End Racing Bike
Mountain Bikes	Z_SEG2	US10_PLM	ZMTN	MZ-FG-M550 MZ-FG-M525 MZ-FG-M500	High-End Mountain Bike Mid-Range Mountain Bike Low-End Mountain Bike
Cruise Bikes	Z_SEG3	US10_PLC	ZCRUISE	MZ-FG-C990 MZ-FG-C950 MZ-FG-C900	High-End Cruise Bike Mid-Range Cruise Bike Low-End Cruise Bike
Youth Bikes (Trading Goods)	Z_SEG4	US10_PLY	ZYOUTH	MZ-TG-Y240 MZ-TG-Y200 MZ-TG-Y120 TR-TG-Y300	High-End Youth Bike Mid-Range Youth Bike Low-End Youth Bike I Low-End Youth Bike II
E-Bikes	Z_SEG9	US10_PLE	ZELBK	MZ-FG-26EMN MZ-FG-26ECR MZ-FG-EB01	Mountain E-Bike Cruise E-Bike Standard E-Bike
Exercise Bikes	Z_SEG10	US10_PLX	ZEXBK	MZ-FG-26XR1	In Home Exercise Bike



Order

Placing work orders on fully assembled bikes based on inventory rate
(<0 in *Unrestricted storage against Standard Storage location*)

Plant

The focus of the inventory analysis is based on the following plant: **Plant 1 US 1710**





Storage Locations



Day Tank 171T

Warehouse 175W

Std. Storage 1 171A

KANBAN 171E

Main Tank 171Q

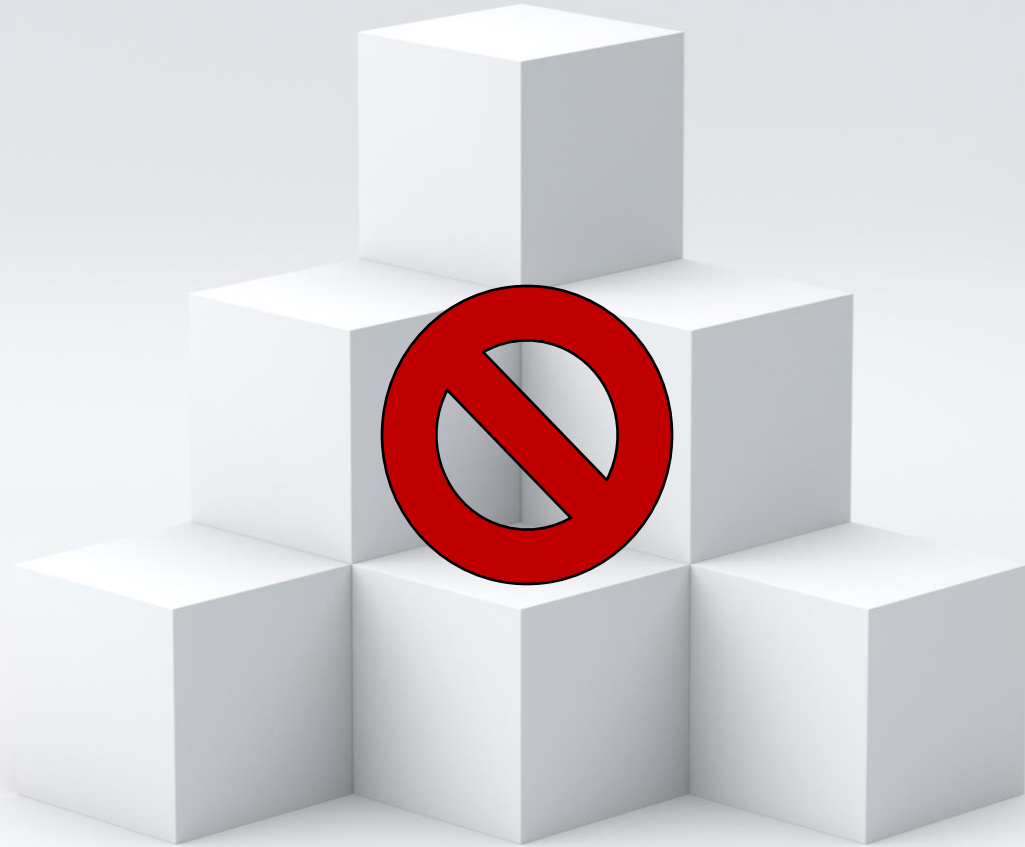
Returns 171R

Unrestricted-Use Stock

The final assembled bicycles/ product that is fully sellable after going through the entire production process.

This stock should ideally be a sellable volume that correlates with the Range of Coverage in Days without keeping items overstocked





Blocked Stock

Products that are not allowed to move forward due to the batch failing QI or other preventative measures to be sold.



Quality Inspection

Test batches of finished product check for quality measures.

Temporary holding inventory reciprocal (either **pass** or **reject**) that will fall into either **blocked stock** or **unrestricted-use stock**.

Range of Coverage in Days

An average supply measure of product quantity that meets sales of a 30-day period.

Optimal days in supply are >5 days and <30 days due to Velotics customer demands/fulfillment.





Data Analytics & Findings→

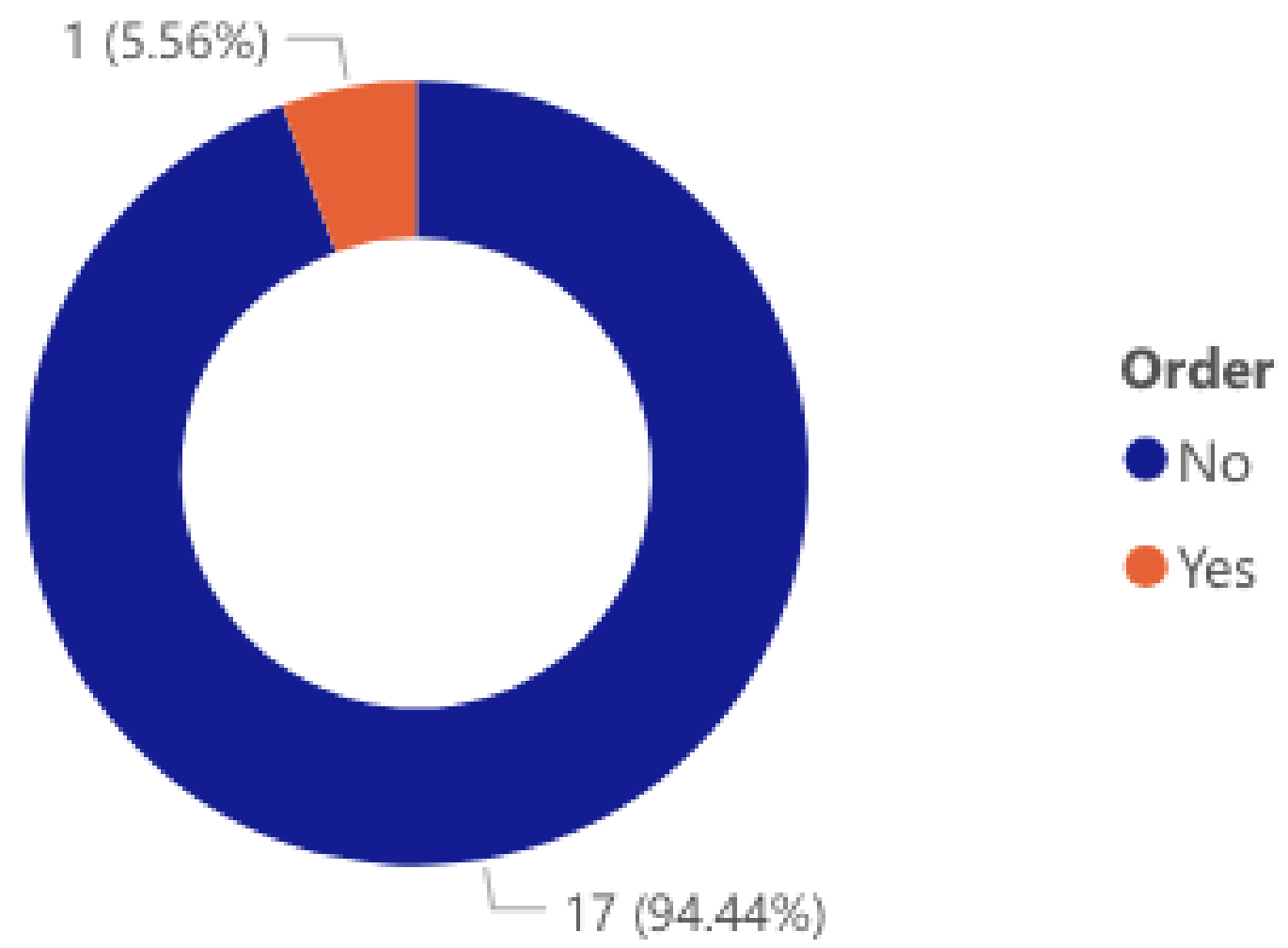
Mountain E-Bike has highest priority for finished product work orders



According to the Velotics Inc. FERT Daily Inventory List, we can see that MZ-FG-26EMN (Mountain E-Bike) needs a work order because of insufficient stock to meet its 3.57 Range of Coverage out of all finished products in inventory for that day.

Velotics Inc. FERT Daily Inventory list							
Daily Finished Product (FERT) Stock Report							
Order	Product Model	Plant	Storage Location	Unrestricted-Use Stock	Blocked Stock	QI Stock	Reorder Point
No	MZ-TG-Y240	Plant 1 US 1710	Std. storage 1 171A	3,724.00	0.00	0.00	
No	MZ-TG-Y200	Plant 1 US 1710	Std. storage 1 171A	5,476.00	0.00	0.00	
No	MZ-TG-Y120	Plant 1 US 1710	Std. storage 1 171A	3,068.00	0.00	0.00	
No	MZ-TG-Y120	Plant 1 US 1710	Warehouse 175W	14.00	0.00	1.00	
No	TR-TG-Y300	Plant 1 US 1710	Std. storage 1 171A	695.00	0.00	0.00	
No	TR-TG-Y300	Plant 1 US 1710	Day Tank 171T	48.00	0.00	0.00	
No	TR-TG-Y300	Plant 1 US 1710	Warehouse 175W	133.00	0.00	0.00	
Yes	MZ-FG-26EMN	Plant 1 US 1710	Std. storage 1 171A	0.00	0.00	0.00	
No	MZ-FG-26EMN	Plant 1 US 1710	KANBAN 171E	100.00	0.00	0.00	

Count of Product Model by Order











Optimal level of < 20% for Product Models need work order to meet supply demand.

As far as inventory levels for completed product, only 1 model (which accounts to 5.86%) out of 17 is both low on unrestricted-use stock and can't meet its Range of Coverage in 30 days' worth of inventory.

The
current average
Range of
Coverage is
about 16 days'
worth

Product Model	<input checked="" type="checkbox"/> Average of Range of Coverage in Days (30 Day Consumption)	
MZ-FG-26ECR	12.72	
MZ-FG-26EMN	3.57	
MZ-FG-26XR1	30.44	
MZ-FG-C900	23.62	
MZ-FG-C950	0.08	
MZ-FG-C990	49.80	
MZ-FG-EB01	66.19	
MZ-FG-M500	0.05	
MZ-FG-M525	13.61	
MZ-FG-M550	0.35	
MZ-FG-R100	0.00	
MZ-FG-R200	0.00	
MZ-FG-R300	19.04	
MZ-TG-Y120	2.04	
MZ-TG-Y200	5.35	
MZ-TG-Y240	3.87	
TR-TG-Y300	0.00	
Total Average range of Coverage		15.64

Racing bikes (MZ-FG-R product line) have no days' stock of inventory to meet sales demand while Cruise bikes (MZ-FG-C product line) & the standard E-bike have potential overstock supply.

Storage Location	 Sum of Unrestricted-Use Stock
Day Tank 171T	 548
KANBAN 171E	 109
Main Tank 171Q	 5
Raw Materials 171C	 200
Returns 171R	 51
Std. storage 1 171A	 86924
Warehouse 175W	 246
Inventory Total (finished product)	88083

98.68%

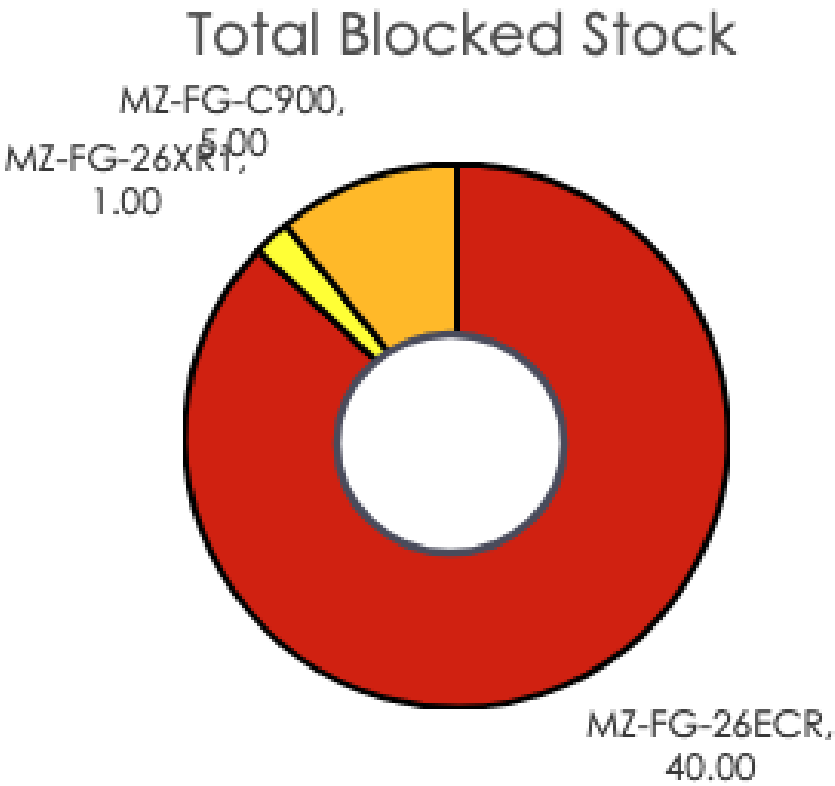
of all finished unrestricted-use bikes are in Standard Storage 1 171 A of Plant 1 US 1710. However, **Blocked**, **QI** or **Returned** stock can still be present in any storage location.

For instance:

Velotics Inc. FERT Daily Inventory list					
Daily Finished Product (FERT) Stock Report					
Product Model	Plant	Storage Location	Unrestricted-Use Stock	Blocked Stock	QI Stock
Daily Inventory Total	(Overall Stock)		88,083.00	46.00	11,438.00
		Available Unrestricted total	76,599.00		
		Pending Stock total	11,484.00		
		Average Coverage of Days	15.64		

Each Product Model has corresponding storage locations but differ when it comes to blocked, restricted, QI or return stock. Therefore, the true sellable inventory is **79,599** units. While 46 units are blocked and 11,438 units are undergoing QI. **Pending stock is 11,484** due to these impeding inventory factors.

Blocked stock count



Product Model	Sum of Blocked Stock
MZ-FG-26ECR	40.00
MZ-FG-26XR1	1.00
MZ-FG-C900	5.00
Grand Total	46.00

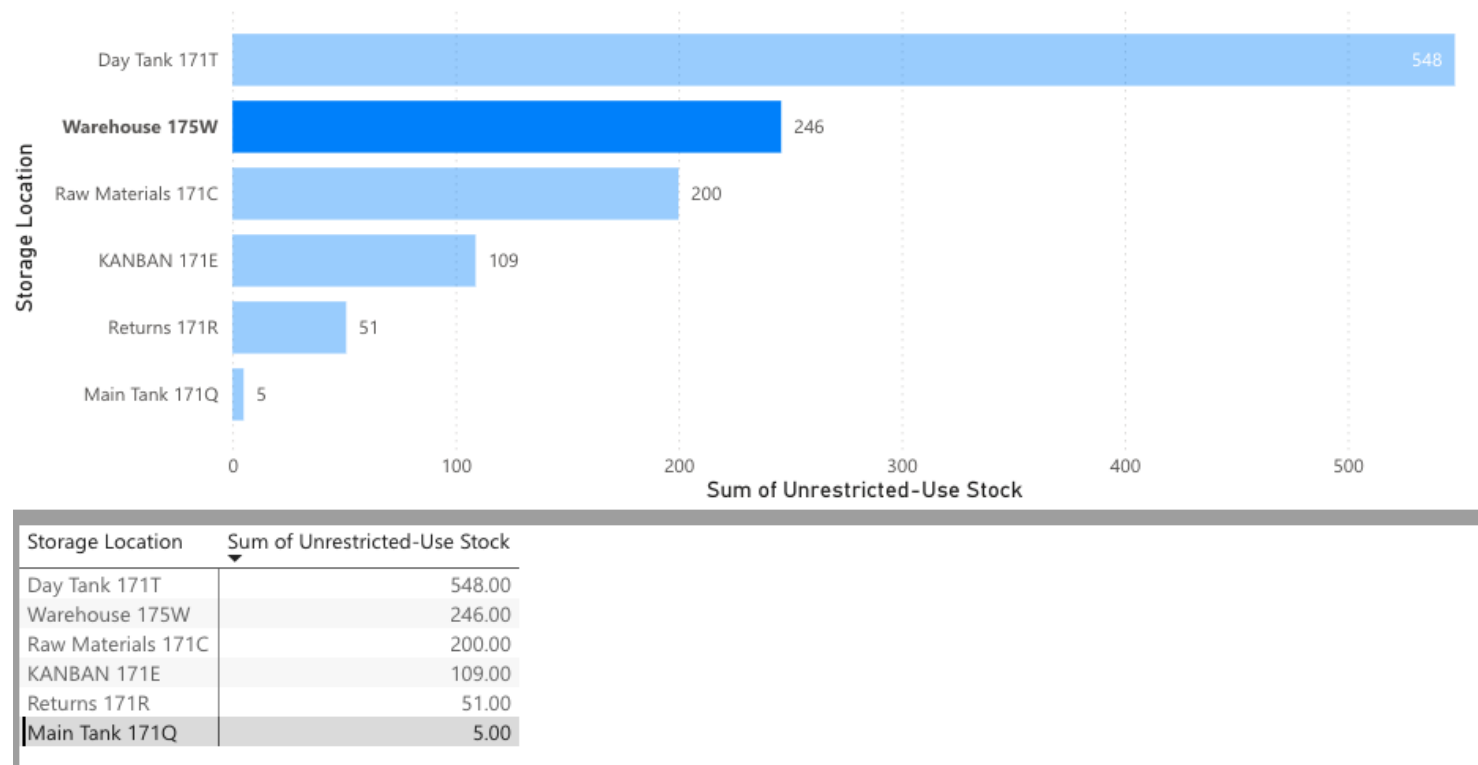
As the doughnut chart suggests, out of the 46 blocked units in inventory, **40 Cruise E-bikes are blocked**. By cross referencing the FERT Daily Inventory report, we see that the 40 Cruise E-Bikes are in Std. Storage 1 171A.

While **5 Low end cruise bikes** and just **1 cruise E-bike** have **blocked inventory status**. (*again, by cross referencing the FERT Daily inventory report, both items are in Std. Storage 1 171A*)

Non- Std. Storage inventory levels

According to SAP, the data shows that **Day Tank 171T & Warehouse 175W** account for the **majority of non-Std. Storage unrestricted-use stock** within the facility.

Whereas **Main tank 171Q & Returns** has **a quantity of >100 units** (count of 56 units) for unrestricted-use stock.





Currently, There is no negative inventory

No returns or other negative stock values have been reported as of the live SAP ERP inventory levels.



Inventory Allocation→

Out of 88083
finished products;

**MZ-FG-26EMN
(Mountain E-Bike)
has highest
inventory priority**

*Work orders need to coincide with
Mountain E-Bikes Range of Coverage
against its inventory levels due to
low stock and moderate demand.*



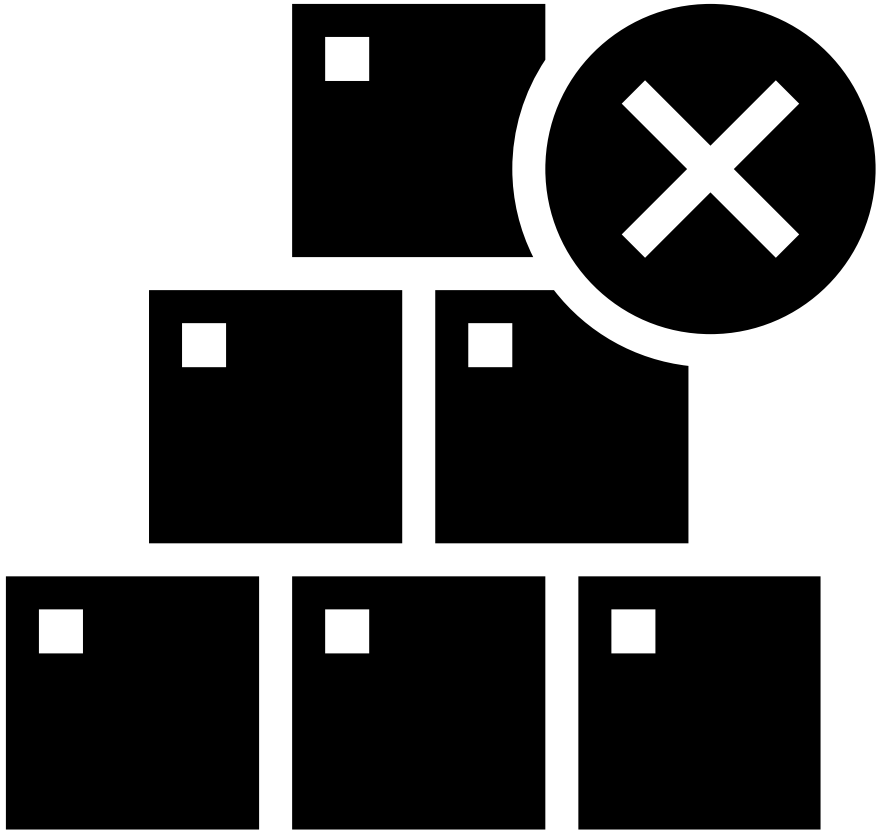


Out of 548 units from Day Tank 171 T are $\frac{1}{2}$ are being processed through QI testing; MZ-FG-M525 (Mid-Range Mountain Bike)

Allocate space for high selling item to Std. Storage when batch passes QI.



Conclusion→



46 units are blocked, all
within Std. Storage 1 171 A



~ 16-day supply in inventory



Out of 88,083 total finished products in US Plant 1, **86.96% are fully sellable product in stock.**

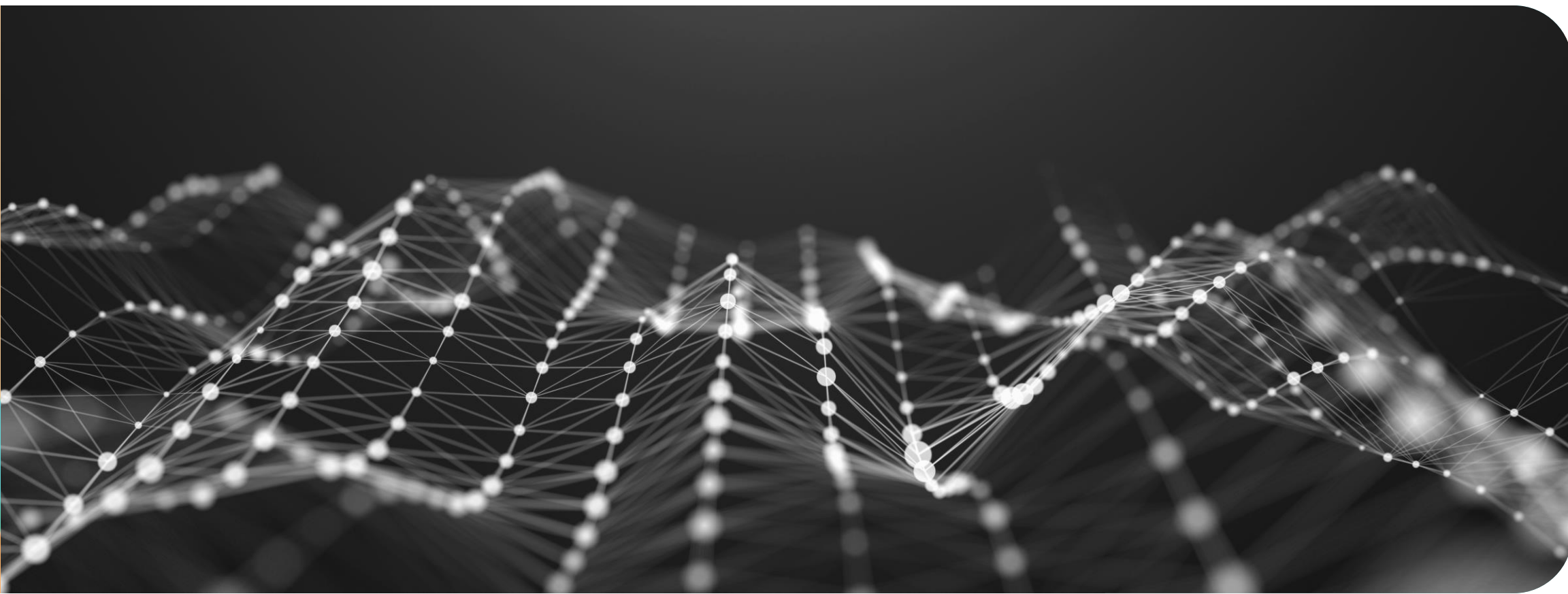
MZ-FG-M550 (High-end Mountain Bike) accounts for **most sufficient inventory at 10,000 units** in stock, while **MZ-FG-26EMN** (Mountain E-Bike) has **highest inventory priority due to low stock and high demand.**

In conclusion:

Inventory allocation is given towards Mountain E-Bike for the foreseeable future along with collaborating with the data analytics/ findings.

This will ensure Velotics Inc.'s inventory levels operating efficiently for the entire enterprise & stakeholders to continue making key business decisions based on finished product inventory.





Thank you