

CASE STUDY

New Warehouse Lean Layout

Crescent Parts & Equipment

CHALLENGE OF NEW W/H LAYOUT

Crescent Parts is a distributor of HVAC equipment and parts. They were growing and needed to expand warehouse space. They found an existing building that allowed them to combine 2 warehouses into one new larger warehouse. Many Lean Warehouse projects involve transforming an existing warehouse to a Lean layout. This project took the two smaller warehouses and moved them into a new building with a Lean layout.

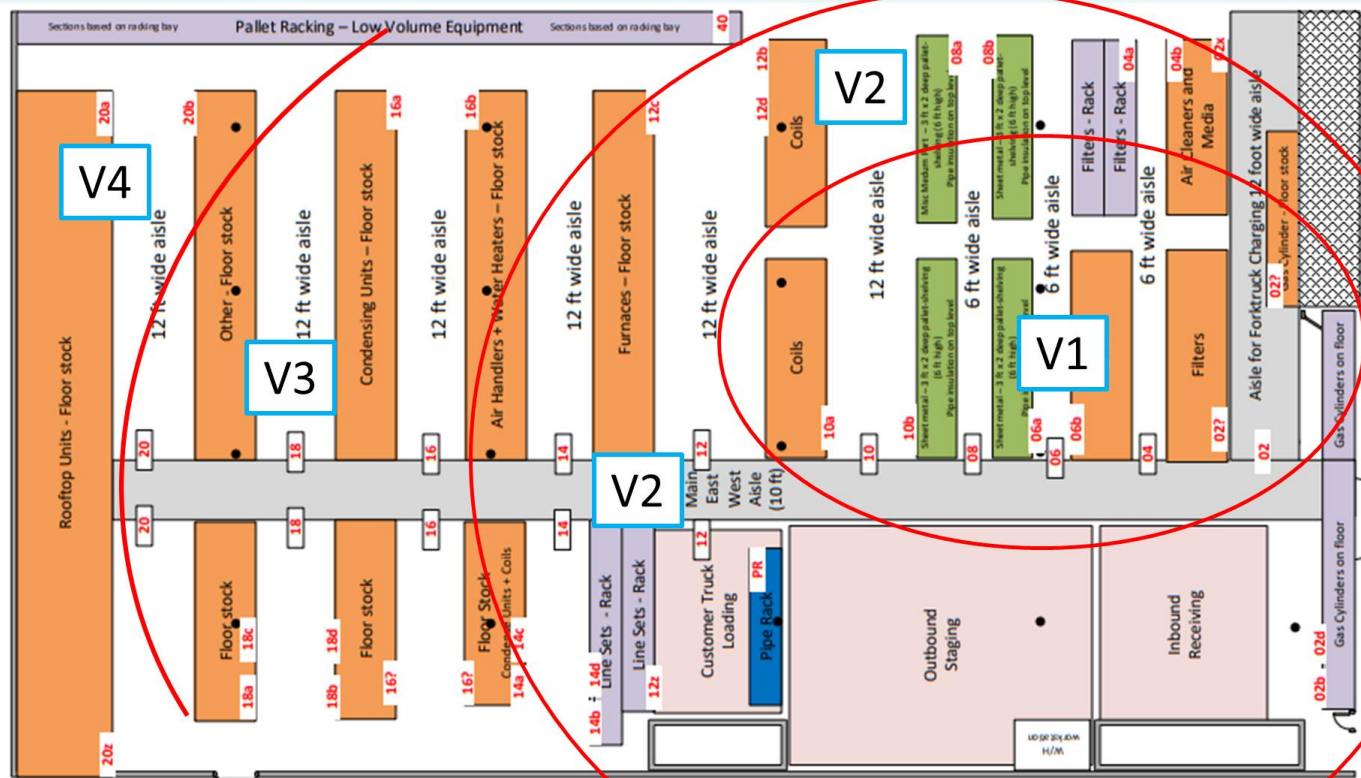
IMPLEMENTATION DETAILS: Inventory Sizing & Storage

- **Formed 5S Implementation Team to design and lead the 5S implementation**
 - Branch manager, Director of branch operations, Buyer
- **Determined what items would be stocked based on combined demand of both branches**
- **Calculated maximum inventory of all SKUs**
- **Calculated cubic feet and linear feet required to stock maximum inventory**
 - Validated calculations by back-calculating existing space requirements

SAMPLE OF PRODUCT CATEGORIES AND SPACE CALCULATIONS

Product Category	Stack Factor	Depth Factor	SizeClass	LinearFt
fans-blades-drives-beari	4	1	M	143.6
A Coils	3	3	ML	158.2
A/C American Standard	4	3	L	133.4
Furnaces	2	3	ML	171.9
A/H -fancoils & accessor	2	3	M	22.4
Pipe & Tubing	5	5	XL	87.1
Motors	4	2	M	68.5
Air Distribution	4	1	ML	160.4
Refrigeration Parts	1	4	S	14.9
A/C Ductless Resid	4	2	L	23.9
Air Cleaners media repla	4	1	M	37.5
UV/ Air purity	3	2	M	23.7

LEAN WAREHOUSE LAYOUT with SKU VELOCITY CODES



IMPLEMENTATION DETAILS: LEAN WAREHOUSE LAYOUT

- **CENTER OF GRAVITY:** The first step of the layout is to determine where most of the material movement will happen. On the right side of the drawing is the branch 'store' where HVAC repair technicians pick up small parts. The dock doors are on the bottom right side of the building.
- **STAGING AREA:** It is a best practice to leave a lot of space for staging. This prevents stashing of inbound or outbound pallets wherever room can be found. Staging areas are shown in a light pink color. Note the inbound and outbound areas in addition to a customer loading area

IMPLEMENTATION DETAILS: LEAN WAREHOUSE LAYOUT

- **MAIN AISLE (the highway of the warehouse):** We placed an aisle from right to left that would allow two forklifts to pass each other without stopping.
- **SKU LOCATION BY VELOCITY:** The fastest moving items, and those used most often by customers picking up from the branch 'store' are located in the V1 zone. Larger and hard-to-move items with medium velocity were located in V2. V3 items are to the left and back of the warehouse.
- **AISLE WIDTH:** Aisles are 6 feet wide for shelving and 12 feet wide for racking and floor stock.
- **PRODUCT FAMILY:** While we usually locate items by purely velocity the team decided to keep product families together. However, the faster moving items in a product family are located close to the main aisle.

Reference: Josh Cole, Director of Supply Chain
Jcole@crestpart.com

■ New Warehouse with Aisle Signage (Picture taken during Move-In)



■ AISLE SIGNAGE

- We benchmarked grocery stores as example for aisle signage, making it easy for new employees to find locations
- Only even numbers are used so aisles can be added, if needed, in the future.
- Aisle-bin-level coding supports snaking through the aisles to minimize the pick patch

RESULTS

- **The move from the two branches to the new warehouse happened in 4 days**
- **100%+ labor productivity improvement**
 - **Needed to staff with the employees from just one branch, even though this project combined two branches into the new warehouse**
- **Center of Gravity concept streamlined picking and receiving-putaway**

Customer Testimonial

"I strongly recommend Supply Velocity and their outstanding work in implementing Lean Warehouses and processes at Crescent Parts & Equipment. With their data-first focus and exceptional coaching and experience, they transformed our business into a more supply chain-oriented organization, enabling us to grow while also prioritizing employee safety and creating a better workplace. Supply Velocity's expertise in Lean methodologies has been instrumental in improving operations and increasing customer satisfaction. We highly recommend Supply Velocity to any company seeking to implement Lean processes and enhance their supply chain efficiency."

Josh Cole, Director of Supply Chain, Crescent