

stockMAP

MORE THAN A LAYOUT

Storage Assignment Rules

1. **High-Density Drawers:**
 - **Dimensions:** Assign parts that fit within **6" height, 24" depth**, and:
 - **9" width** (for 36" drawers with 4 compartments).
 - **12" width** (for 48" drawers with 4 compartments).
 - **8" width** (for 48" drawers with 6 compartments).
2. **Clip Shelving:**
 - **Height:** Assign parts **15" or less in height**.
 - **Depth:** Choose the smallest shelf depth that accommodates the part:
 - **12-inch shelf:** Parts up to **12 inches deep**.
 - **18-inch shelf:** Parts up to **18 inches deep**.
 - **24-inch shelf:** Parts up to **24 inches deep**.
 - **Width:** Assign to a shelf based on part width:
 - **36-inch shelf:** Parts up to **36 inches wide**.
 - **48-inch shelf:** Parts up to **48 inches wide**.
3. **Bulk Storage:**
 - **Height:** Assign parts **12 inches or more in height**.
 - **Depth:** Choose the smallest depth option that fits the part:
 - **24, 36, 42, 48, 72, or 96 inches**.
 - **Width:** Select the appropriate shelf width:

- **48, 72, or 96 inches.**

4. **Specialty Storage Requirements:**

- **Battery Storage:**
 - **Dimensions:** Use 3-level sloped shelving, **48 inches width** and **48 inches depth**.
 - **SKU Width Check:** Each battery's width is checked to determine how many can fit along the 48-inch shelf depth.
- **Tire Storage:**
 - **Linear Width Calculation:** Tires are stored on racks with widths of **48 inches** or **72 inches**.
 - **Tire Carousel Grouping:**
 - Group by tire diameter:
 - **28 inches and under.**
 - **Between 28 and 33 inches.**
 - **Above 33 inches.**
 - Determine linear inches needed for each diameter range to select the appropriate carousel model.
 - **Carousel Model Selection:**
 - **If 90% of tires are 28 inches or less**, use a standard model for smaller tires.
 - **If 50% of tires are 33 inches**, choose a model suited for larger diameters.
- **Hanging Storage:**
 - **Linear Inch Calculation:** Assign long, thin parts to hanging storage if they exceed 24 inches in one dimension and are less than 4 inches in another.
 - **Hook Length Based on SKU Count:**
 - **6-inch hooks:** For SKUs with **10 items or fewer**.
 - **12-inch hooks:** For SKUs with **10–20 items**.
- **Bumper Cover Storage:**
 - **Count-Based Allocation:** Bumper covers will be counted, and storage is calculated based on total SKU count, using racks sized accordingly.

Summary of Rules for Storage Assignment

1. **High-Density Drawers:** Parts under 6" x 24" x 9"/12"/8".
2. **Clip Shelving:** Parts up to 15" high, with specific depths and widths per shelf size.
3. **Bulk Storage:** Parts 12" or more in height, with depth and width matched to shelving options.
4. **Specialty Storage:**
 - Batteries on sloped 48" x 48" shelves.
 - Tires stored on racks by width and grouped by diameter.
 - Hanging items with linear inch requirements by SKU count.
 - Bumper covers stored by SKU count on designated racks.

Zoning Rules by Frequency

The zoning system is based on dividing parts into **five zones**, with each zone representing 20% of the total sales frequency:

1. **Red Hot Zone (Top 20%):**
 - **Definition:** Parts with the highest sales frequency (top 20% of total sales volume).
 - **Storage Priorities:**
 - Small and medium-sized parts are prioritized for **high-density drawers**.
 - Other parts in this zone are stored closest to the counter for fast access.
 - Large or specialty items are stored in nearby shelving or specialty storage (e.g., battery racks, tire racks).
 - **Rule:** Only parts in this zone are eligible for high-density drawer storage.
2. **Orange Zone (Next 20%):**
 - **Definition:** Parts with medium-high sales frequency (next 20%).
 - **Storage Priorities:**
 - Stored on **clip shelving** or **bulk shelving**, depending on size.
 - Positioned in mid-access areas—still close to the counter but not as accessible as Red Hot Zone parts.
3. **Yellow Zone (Next 20%):**
 - **Definition:** Parts with medium sales frequency (next 20%).
 - **Storage Priorities:**
 - Primarily stored on **clip shelving** or **bulk shelving**.

- Located in areas requiring slightly more effort to access than the Orange Zone.
4. **Green Zone (Next 20%):**
 - **Definition:** Parts with medium-low sales frequency (next 20%).
 - **Storage Priorities:**
 - Stored on **bulk shelving** or in designated storage areas further away from the counter.
 - Focused on maximizing space efficiency rather than speed of access.
 5. **Blue Zone (Bottom 20%):**
 - **Definition:** Parts with the lowest sales frequency (final 20%).
 - **Storage Priorities:**
 - Stored in the **least accessible areas**.
 - Bulk shelving is the primary storage type, with parts grouped by size for space efficiency.

High-Density Drawer Rules

1. **Eligibility for High-Density Drawers:**
 - A part **must belong to the Red Hot Zone** (Top 20% of sales) to qualify for high-density drawer storage.
 - Parts must meet the size criteria:
 - **$H \leq 6''$, $W \leq 12''$, $D \leq 24''$** (or equivalent permutations of dimensions).
 - Parts exceeding these dimensions should be assigned to clip shelving or other appropriate storage.
2. **Drawer Assignment:**
 - Small parts (e.g., fuses, filters, spark plugs) with high turnover are prioritized for drawer compartments.
 - Assign parts based on cubic volume to maximize drawer utilization, grouping SKUs with similar dimensions.
3. **Overflow Rule:**
 - If drawer capacity is exceeded, excess parts are stored in **clip shelving** or **nearby bulk storage**, but still within the Red Hot Zone.

General Storage Assignment Rules

1. **Clip Shelving:**

- Primary storage for **Orange Zone** and **Yellow Zone** parts.
 - Suitable for small to medium-sized parts that don't fit into high-density drawers but still require accessibility.
 - Depth options: 12", 18", 24". Shelves are spaced no more than 15" apart vertically.
2. **Bulk Shelving:**
- Primary storage for **Green Zone** and **Blue Zone** parts.
 - Suitable for large, low-turnover items (e.g., engine blocks, bumpers, tires).
 - Configurations: Widths of 48", 72", or 96", and depths of 24", 36", 42", 48", or 72".
3. **Specialty Storage:**
- **Battery Racks:** 48" wide x 48" deep, sloped shelves for proper storage and SKU separation.
 - **Tire Racks:**
 - Tires grouped by diameter: $\leq 28"$, 28"-33", $> 33"$.
 - Linear inches calculated for storage.
 - **Hanging Storage:** Small items like hoses or lightweight, irregularly shaped parts requiring hanging hooks:
 - ≤ 10 SKUs per hook: 6" hooks.
 - 10–20 SKUs per hook: 12" hooks.
4. **Proximity to Counter:**
- Red Hot Zone: Closest to the counter for immediate access.
 - Orange and Yellow Zones: Within quick walking distance.
 - Green and Blue Zones: Located in further or less accessible areas.

Next Steps

1. **Apply Zoning:**
 - Analyze sales frequency data and assign parts to zones (Red Hot, Orange, Yellow, Green, Blue).
2. **Assign Storage:**
 - Match parts in each zone to the appropriate storage type using the rules above.
3. **Optimize Layout:**
 - Map the storage zones to the dealership layout, prioritizing proximity and accessibility for Red Hot Zone parts.

4. **Test and Refine:**

- Conduct a trial run with sample data and adjust zoning rules or storage allocations as needed.