

Example Configurations

These examples show typical Shelfbot configurations for different operation sizes, from small (500 SKUs) to high-volume (10,000+ SKUs). Examples include both **single row** and **double row** configurations.

Small Operation (500 SKUs)

Profile:

- 500 active SKUs
- ~100 orders/day (~250 line items)
- Single-shift operation

Small configuration:

- **Bins:** ~975 bins (room for ~2 bins per SKU on average)
- **Aisles/Robots:** 2 robots in 2 aisles
- **Racking:** 2 aisles, 5 bays (13.5m), 13 levels (5.9m high)
- **Footprint:** 13.5m × 4.4m × 5.9m (L × W × H)
- **Throughput capacity:** 120 presentations/hour (2 robots × 60 presentations/hour per robot)
- **Operators:** 1 operator (works across 2 stations)
- **Sufficient for:** 100 orders/day (~30-40 presentations/hour with buffer)

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Medium Operation (2,500 SKUs)

Profile:

- 2,500 active SKUs
- ~400 orders/day (~1,000 line items)
- Single-shift operation

Medium configuration:

- **Bins:** ~2,600 bins (assumes ~1 bin per SKU on average)
- **Aisles/Robots:** 3 robots in 3 aisles
- **Racking:** 3 aisles, 10 bays (26.9m), 13 levels (5.9m high)
- **Footprint:** 26.9m × 6.2m × 5.9m (L × W × H)
- **Throughput capacity:** 180 presentations/hour (3 robots × 60 presentations/hour per robot)
- **Operators:** 1 operator (works across 3 stations)
- **Sufficient for:** 400 orders/day (~125-150 presentations/hour with buffer)

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Growth-Ready (5,000+ SKUs)

Profile:

- 5,000+ active SKUs
- ~800 orders/day (~2,000 line items)
- Single-shift operation with seasonal peaks

Double row configuration:

- **Double rows:** 10 rows (2 rows per robot — each robot serves both sides of its aisle)
- **Bins:** ~8,450 bins (high-density storage)
- **Aisles/Robots:** 5 robots in 5 aisles
- **Racking:** 5 aisles with 10 rows, 13 bays (35m), 13 levels (5.9m high)
- **Footprint:** 35m × 13.5m × 5.9m (L × W × H)
- **Throughput capacity:** 300 presentations/hour (5 robots × 60 presentations/hour per robot)
- **Operators:** 1 operator (works across 5 stations)
- **Advantage:** Higher storage density — each robot serves two dedicated rows instead of sharing a row

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High-Volume (10,000+ SKUs)

Profile:

- 10,000+ active SKUs
- ~1,600 orders/day (~4,000 line items)
- Multi-shift operation

High-volume configuration:

- **Bins:** ~10,000+ bins
 - **Aisles/Robots:** 10 robots in 10 aisles (2 operators, 5 robots each)
 - **Racking:** 10 aisles, 13 bays (35m), 13 levels (5.9m high)
 - **Footprint:** 35m × 18.6m × 5.9m (L × W × H)
 - **Throughput capacity:** 600 presentations/hour (10 robots × 60 presentations/hour per robot)
 - **Operators:** 2 operators (each works across 5 stations)
 - **Supports:** Peak throughput up to 1,600 orders/day
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Understanding the Numbers

How bins are calculated

- **Formula:** Rows × Levels × Bays × 5 bins per bay
 - **Single row mode:** (N+1) rows where N = number of bots

- **Double row mode:** 2N rows where N = number of bots (higher density)
- **Bins per SKU:** Most operations average ~1 bin per SKU, but this varies:
 - Fast-movers or high-stock items may need 2-3 bins
 - Slow-movers or small items may share a bin
- **Safety stock:** Add 10-20% extra bins for growth and flexibility

How throughput scales

- **Per robot:** 60 presentations/hour
- **Per operator:** Up to 300 presentations/hour (with 5 robots)
- **Multiple operators:** Each operator works with their own cluster of 5 aisles
- **Order line multiplier:** Depending on your order profile, each bin presentation may fulfill 2-3 order lines — effectively doubling or tripling the pick rate relative to presentations

Footprint breakdown

- **Length (L):** Number of bays × 2.69m per bay
- **Width (W):** Depends on row mode
 - **Single row mode:** (N+1) rows where N = number of bots
 - Formula: $(N \times 2.04\text{m}) + 0.84\text{m}$
 - 2 bots = 4.9m, 3 bots = 7.0m, 5 bots = 11.0m, 10 bots = 21.2m
 - **Double row mode:** 2N rows where N = number of bots (each robot serves 2 dedicated rows)
 - Formula: $2.88\text{m} + (N-1) \times 3.03\text{m}$
 - 5 bots = 15.0m, 10 bots = 30.1m
- **Height (H):** Number of levels × 0.385m + base height
 - 13 levels = 5.9m (fits under 6m ceiling)
 - 16 levels = 7.3m (requires higher ceiling)

Need Help Sizing Your System?

The fastest path is a **data dive**: send us your SKU master data + order history, and we'll provide a detailed sizing report within 5-10 business days.

What to send:

- SKU master (SKU, description, dimensions, weight, stock on hand)
- Order history (12 months preferred; minimum 30 days)

[Read the Data Dive Specification](#)

Or contact us directly:

- Email: sales@shelfbot.com
- Phone: +61 3 9069 5000
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