

The Evolution of Robotics in the Industrial Market

Collaborative robots

have become the answer
for companies who
want to automate
their processes



Solving key problems with robotics

Labor recruitment and worker productivity are top concerns for **60%** of warehouse operators.¹



A clean work environment **increases productivity.**

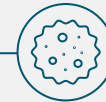


94% of workers feel more productive²

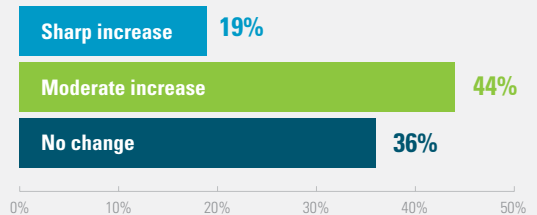


77% felt they produce higher quality work²

The importance of **robotic automation** has changed due to factors that emerged during the COVID-19 pandemic.³



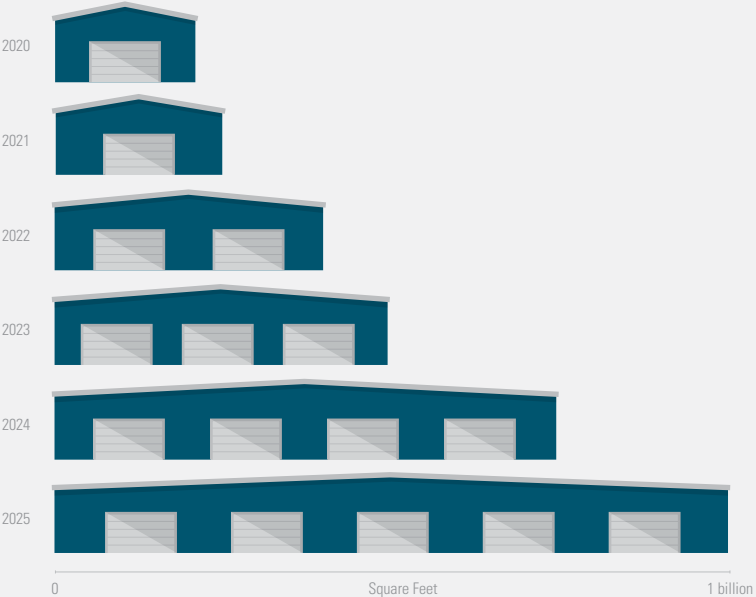
63% of facility managers say they have seen a moderate or sharp increase of importance in warehouses and DCs.



Robots on the rise

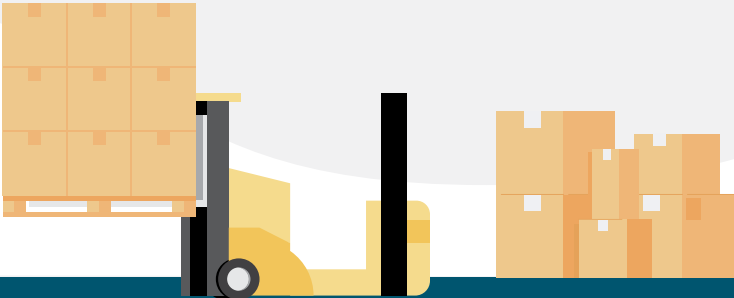
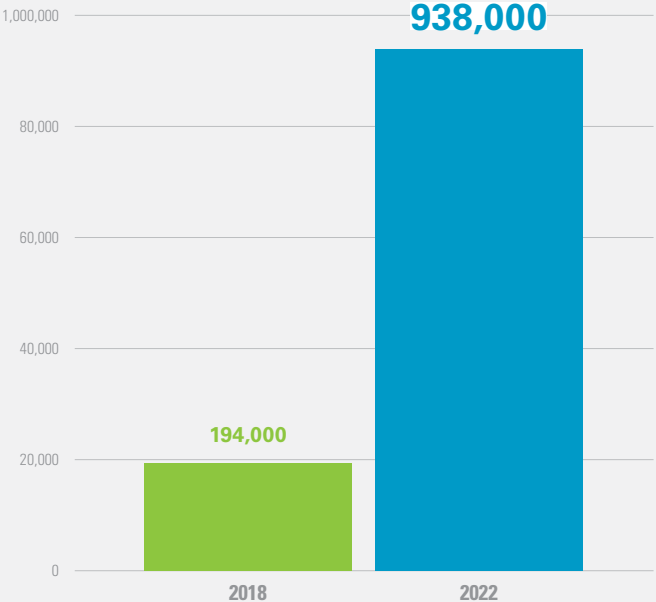
Increased Demand for Industrial Real Estate

E-commerce sales could hit **\$1.5 trillion** by 2025 increasing demand for industrial real estate to an additional **1 billion sq ft.**⁴



Increase of Robots in Warehouses

The number of robots deployed in warehouses and manufacturing facilities will reach **938,000** by 2022, up from 194,000 in 2018.⁵



Robots on the rise

The Robotics Industry is Growing



30% increase in productivity due to robotics across all industries, including cleaning, in the next 10 years.⁶



Mobile robot shipments in warehouses will have a Compound Annual Growth Rate (CAGR) of almost **40%** from 2021 to 2030 and exceed 500,000 global shipments in 2030.⁶

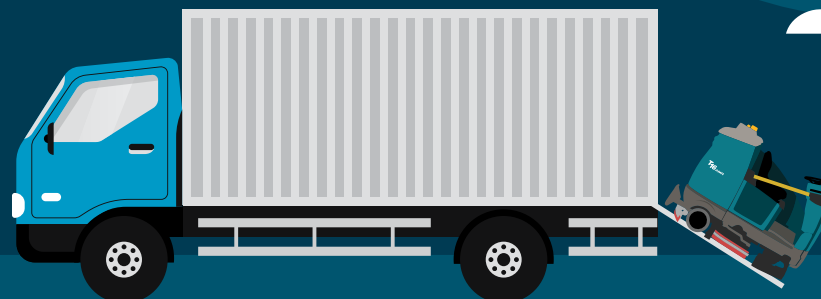
Autonomous Cleaning Robot Demand is Growing



Demand for professional cleaning robots grew by **92%** in terms of units sold from 2020 to 2021 to **34,400** units sold.⁷



Sales of professional service robots rose an impressive **41%** to **131,800** units in 2020 and are expected to grow by **double-digit rates** on average each year from 2021 to 2024.⁷



Building a continuous cycle of robotics value



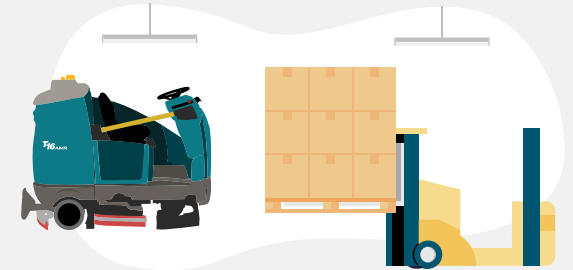
Effectively managing costs

With rising labor costs and challenges to find skilled staff, automating floor cleaning and inventory data collection can help optimize operational costs and leverage the data for more effective cleaning and inventory management processes.



Improving operational consistency

Robots are great at consistently repeating tasks and providing data as proof of completion. Using robots to execute routine tasks, like floor scrubbing and shelf scanning, can help provide consistent and positive experiences to customers/employees, which can lead to increased loyalty.



Improving CX

Meet customer/employee expectations by creating consistently clean spaces, helping customers/employees find the items they want and boosting brand image by demonstrating your commitment to innovation with robotic technologies.



Data-driven insights

Act on data-driven insights captured by autonomous technologies to improve facility operations – from smarter inventory optimization, to opportunities to drive labor efficiency – and ultimately reinforce efforts to enhance customer experience.



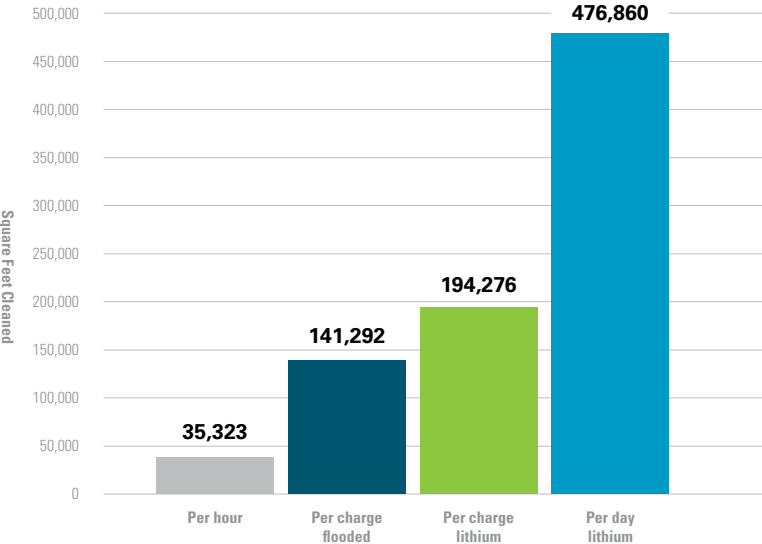
Re-deploying labor to add more business value

Free up time for staff to focus on other tasks and strategic initiatives that add value to the business and provide staff new skills that increase employee engagement – enhancing labor efficiency and improving employee satisfaction.

Real-world robotic results

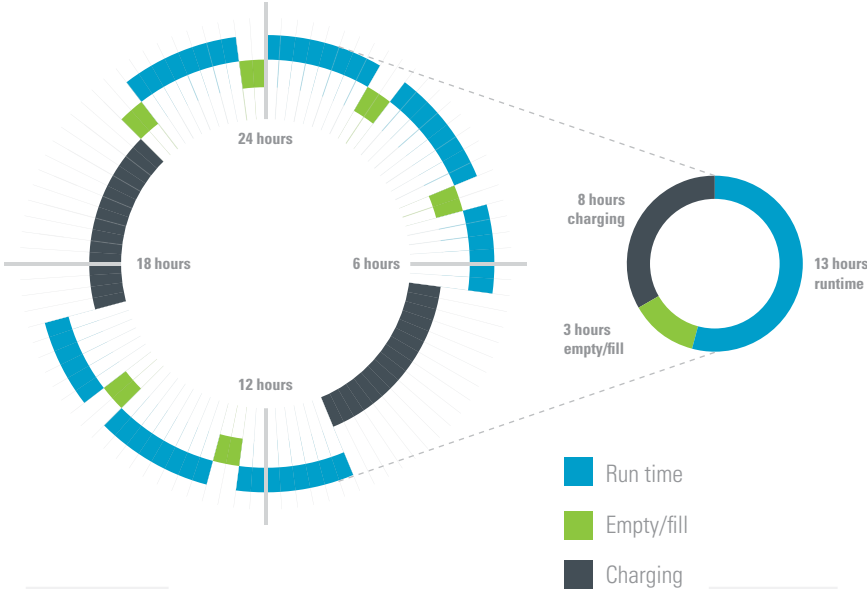
More cleaning capacity

The T16AMR, at a speed of 2.23 mph, has a daily cleaning capacity of almost **500,000 ft²**.



More cleaning time

The T16AMR with high-capacity lithium ion battery has a run time of up to **13 hours** in a 24-hour period.



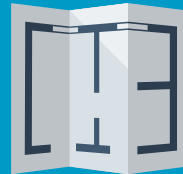
World leader in autonomous mobile robots



Over
**5 million
hours**
in autonomous
mode



5,000+
units deployed



Over
**55 billion
square feet**
scrubbed



Shipped to
50 states
and
**6 Canadian
Provinces**



Over
300
unique
customers

= trusted robotics partner

Contact us today to set up a meeting with a Tennant expert.

Ask about our free site survey & robotic scrubber demonstration.

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For additional information, call **+1.800.553.8033**
or email info@tennantco.com



Resources

¹ 2024 Warehousing Vision Study by Zebra Technologies. https://www.zebra.com/content/dam/zebra_new_ia/en-us/solutions-verticals/vertical-solutions/warehouse-management/vision-study/2024/warehouse-vision-study-en-us.pdf

² Staples Corporation study: <https://www.gccfm.com/how-a-clean-office-boosts-your-workforce-productivity/>

³ <https://retailwire.com/wp-content/uploads/2021/04/robotics-in-retail-exec-sum.pdf>

⁴ <https://www.us.jll.com/en/newsroom/industrial-real-estate-demand-to-grow-to-1b-sf-by-2025>

⁵ <https://omdia.tech.informa.com/OM011988/Warehousing-and-Logistics-Robots>

⁶ <https://www.abiresearch.com/press/over-half-million-mobile-robots-be-shipped-warehouses-globally-2030/>
<https://www.buildings.com/articles/43101/autonomous-mobile-robot-scrubbers>

⁷ <https://www.businesswire.com/news/home/20211108005465/en/International-Federation-of-Robotics-%E2%80%9CService-Robots%E2%80%9D-Hit-Double-Digit-Growth-Worldwide>