



RIGHTHAND[™]
ROBOTICS

RightPick[™] 3

System Overview

RightPick™ 3

The RightPick 3 system comes equipped with all components necessary to integrate with existing order fulfillment automation in your warehouse. In addition to the hardware, RightPick 3 includes a robust & flexible API (RightPick MCP) to allow easy integration with existing warehouse automation workflows.

Compliant with relevant industrial safety standards, RightPick 3 also comes equipped with a configurable safety interface making robotic work cells safe when human interaction is required.

RightPick 3 is powered by RightPick AI software providing model-free picking that incorporates advanced machine-learning to improve over time.

Advanced skills include the ability to grasp items gently while picking, orient the placement of items to optimize volume utilization or stack items during placement.

Coupled with proprietary smart grippers that provide feedback on grasp success and ensure pick accuracy, RightPick 3 achieves low error rates and reduces the number of manual “touches” for order fulfillment or replenishment.

Our well-defined system boundaries, along with a plug and play suite of system modules, simplify the process for identifying picking efficiency opportunities based on data from millions of picks across the RightPick fleet. Software updates allow users to enjoy continuous improvement with reliable performance that is scalable across workflows and facilities.

RightPick 3 provides the necessary tools to support operations in their pursuit to improve efficiencies gained by robotic piece-picking. The RightPick Fleet Management system presents real-time operational data to human operators stationed away from the active systems in order to resolve exceptions quickly and efficiently.

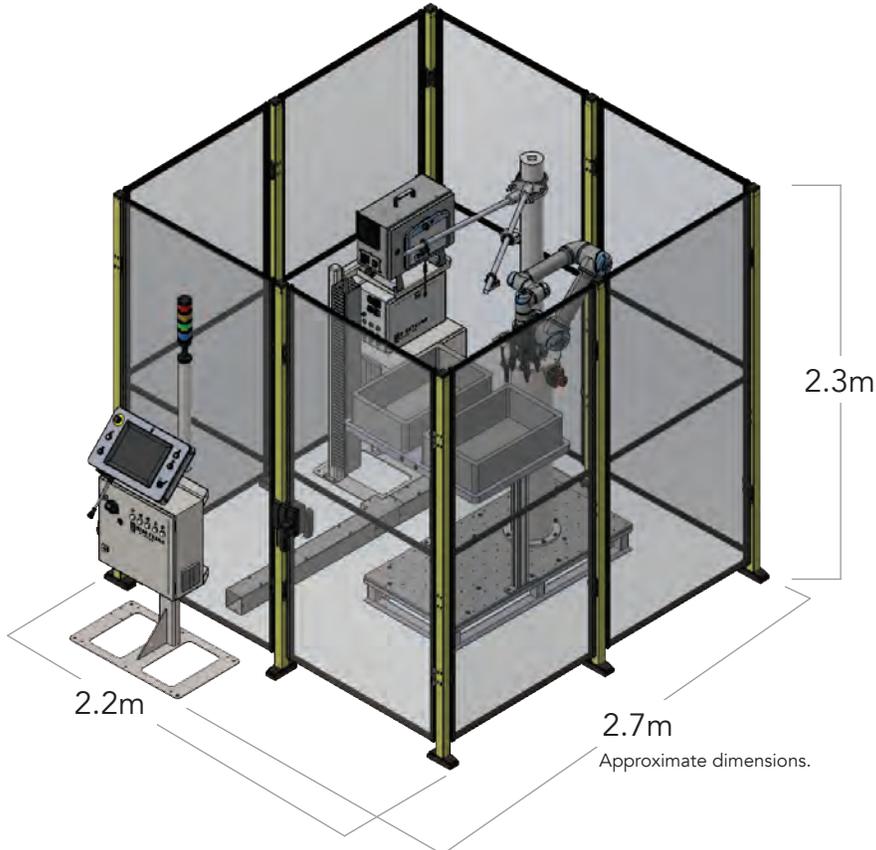
The item qualification process ensures every item routed to RightPick 3 during production is set up for piece-picking success. Performance dashboards enable warehouse operations to visualize current and historical data related to RightPick 3 and identify process improvements to drive overall facility metrics.

Realize the benefits of reliable robotic piece-picking without worrying about integrating all the pieces.



RightPick™ Specifications

Type	Autonomous item-handling industrial robot system
Range of Pick Items ¹	Up to 2kg Min. 1cm - max. 30cm
▶ Weight	Up to 2kg
▶ Dimensions	Min. 1cm - max. 30cm
Pick Rate	Up to 1,200 items per hour ²
Pick Reliability	Level 4 autonomy; >99%
Software	RightPick AI software enables handling thousands of SKUs from totes, bins, boxes, and cases.
Integration	RightPick MCP (standard API) to WMS, WCS, WES Digital I/O to PLC ³
Industrial Robot Arm	▶ Universal Robots UR5e or UR10e ▶ Other industrial robot arm integrations available
Vision	Intel® RealSense™ Depth Camera D415



Installation Requirements

Network	10-30 Mbps Ethernet internet connection for software updates and support
Power	100-240V AC, 1 phase, 50-60Hz. 1500W (nominal) / 3000W (peak)
Compressed Air Supply	100 PSI, 3.5 SCFM, ISO 8573 Class 2:4:2 or better

Safety Considerations

- ▶ Configurable with safety sensors and systems
- ▶ E-stop buttons included
- ▶ Safeguard reset function included

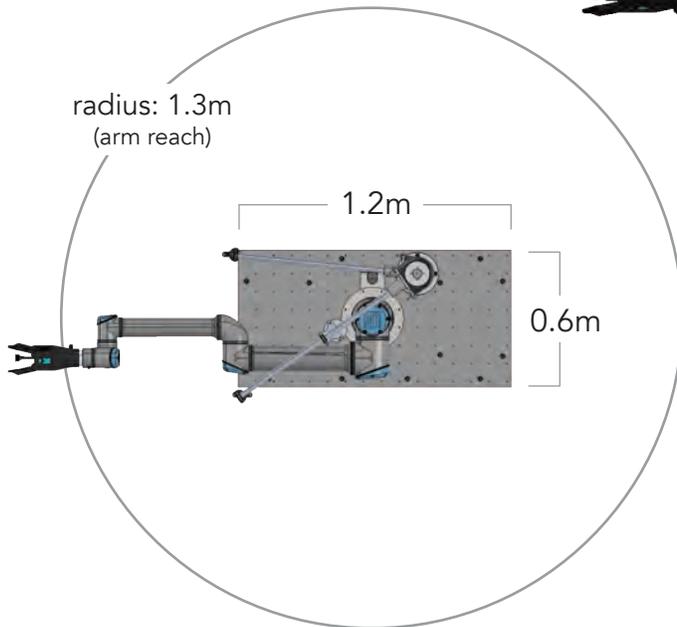


1 Range can vary with different suction cup shapes and sizes. If you are interested in autonomous item-handling for items greater than 2kg, contact us directly for more information.

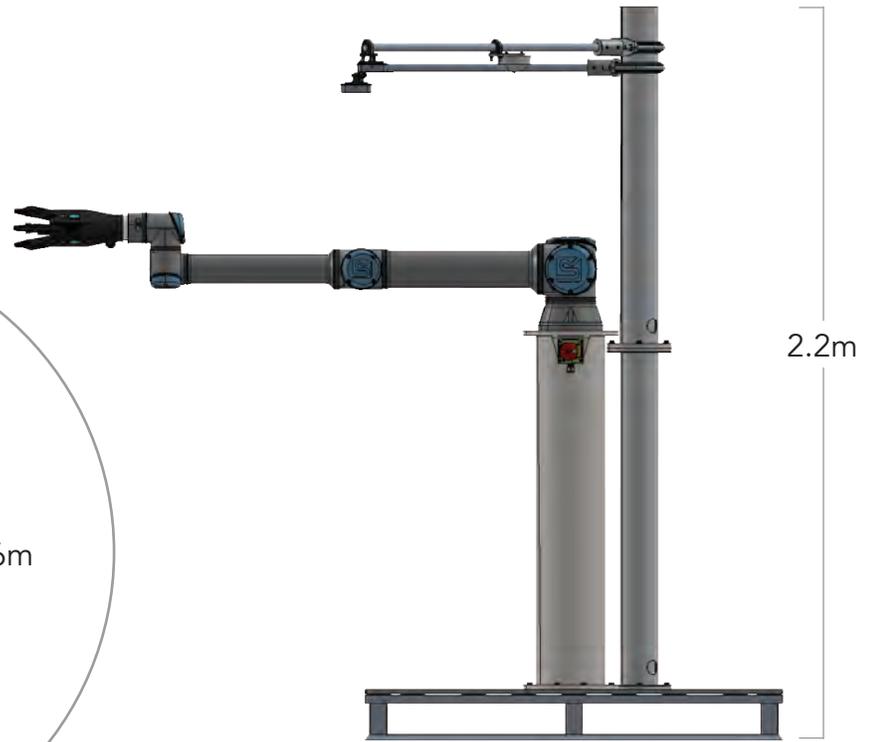
2 Process throughput rate will depend on specific workflow implementation details.

3 Example code and testing simulator available.

Dimensions and Motion Range

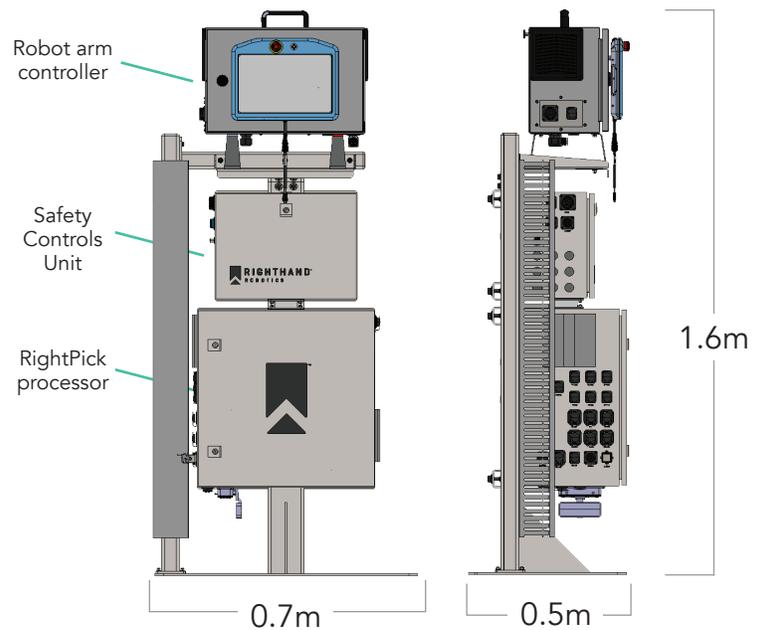
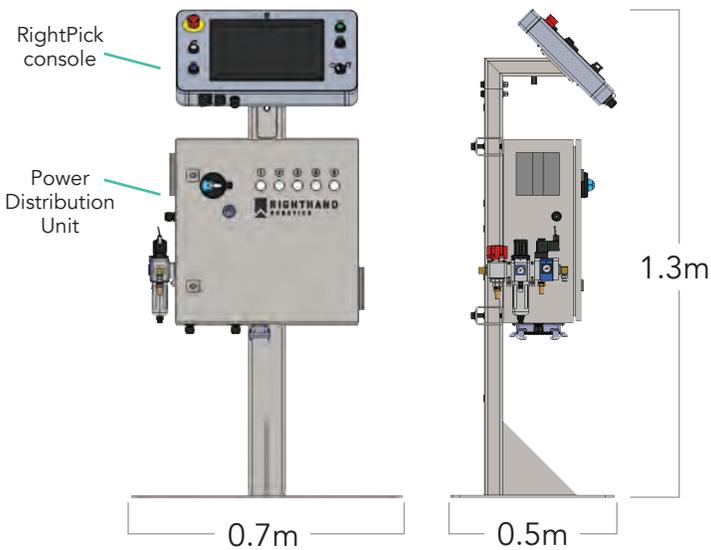


A UR10e robot arm (1.3m reach).
A UR5e robot arm (0.85m reach).



RightPick™ controller

RightPick™ kiosk



RightPick™ MCP

RightPick MCP enables the warehouse software (WMS, WCS, or WES) to command the RightPick system over a TCP/IP network connection. A robust, flexible and easy-to-use API, RightPick MCP allows for a fast integration of piece-picking technology across a variety of warehouse workflows in multiple industries.

Fast deployment:

The RightPick system, like any piece of standalone automation equipment, needs to be integrated with the rest of warehouse automation in order to add value to your piece-picking workflow. Enter the **RightPick Mission Control Protocol (RightPick MCP)**.

With its standard API, RightPick MCP can be easily configured and integrated with existing warehouse software systems using JSON over TCP/IP. Detailed documentation and a simulator developed by RightHand Robotics allow integrators to build & test the integration before deployment. This results in a robust integration, typically within four weeks from starting the process.

Accurate orders:

Everytime the RightPick system executes a piece-picking operation, it communicates the status back to the warehouse software. The API is designed such that the warehouse software always has a real-time understanding of the task and inventory status as items flow through RightPick cells, resulting in accurate orders and overall customer satisfaction.

Optimized throughput:

RightPick MCP helps manage the interaction with relevant material handling equipment (MHE), like ASRS or sortation systems to optimize the overall pick and place cycle. By planning the RightPick system tasks, such as barcode scanning, and robot arm movements around the source and destination tote exchange phases, RightPick MCP optimizes cycle time efficiencies resulting in optimized throughput in piece-picking workflows.

Flexibility in integration:

RightPick MCP provides the flexibility to automate a variety of order fulfillment workflows. Use the RightPick MCP API to configure where you want the RightPick system to pick from (location, tote, or other container, with or without subdivisions) and place to (location, tote, carton, or other container), implement any barcode confirmation workflows, and other workflow details to get your robotic piece-picking up and running.

In addition to the primary workflows, you can choose to implement the right level of system autonomy for exception handling, maximizing automatic recovery and minimizing operator intervention, with processes that fit for your operations.

RightPick™ Fleet Management

A fleet management system including the RightPick Control Center, Item Management Services, and Performance Dashboards simplifies site operations and provides added value to your robot investment.

Centralized monitoring of RightPick system operations

RightPick Fleet Management aggregates operational data from every RightPick system in your facility and provides it via an easy to use interface for your operations team. Monitor the status and health of each RightPick system and respond to visual notifications alerting you to potential operational issues affecting RightPick system performance.

Empower your operations team to resolve exceptions and increase overall RightPick system effectiveness

RightPick Fleet Management combines the capabilities of piece-picking technology with remote exception handling. Monitor each RightPick system for issues affecting calibration, warehouse software connection or exceptions affecting picking operations. Augment basic numerical data with images & video captured by machine vision and support cameras to get a contextual understanding of the exceptions which can be resolved remotely with a simple mouse click.

RightPick Fleet Management makes RightPick operations more reliable and predictable. Ask about RightCare Service & Support options that deliver peace of mind as part of the overall RightPick ownership experience.



RightHand Robotics builds a data-driven intelligent picking platform, providing flexible and scalable automation for predictable order fulfillment. The software-driven, hardware-enabled modular solution is capable of adapting to any picking situation bringing reliability to order fulfillment in growing industries such as electronics, apparel, grocery, pharmaceuticals, and more. RightHand Robotics was founded in 2015 by a DARPA challenge-winning team from the Harvard Biorobotics Lab, the Yale GRAB Lab, and MIT, intent on bringing grasping intelligence powered by computer vision and applied machine learning to bear on real-world problems. The company is based in the U.S. near Boston, Massachusetts, with offices in Nürnberg, Germany and Tokyo, Japan.

For more information, visit www.righthandrobotics.com or follow the company on Twitter and LinkedIn.



237 Washington Street
Somerville, MA 02143
info@righthandrobotics.com



righthandrobotics.com

RightHand Robotics, the RightHand Robotics logo, and RightPick are trademarks of RightHand Robotics, Inc. in the U.S. and/or other countries. All other trademarks are the property of their respective owners.

Copyright © 2021, RightHand Robotics, Inc. All Rights Reserved.