

Accurate Box Company

SOLVES THROUGHPUT BOTTLENECK

in the Corrugated Box
Finishing Process



 RIGOROUS

BOX HOPPER

Pre-feeding robot, the Box Hopper, was the missing piece for high-speed folder-gluer line.

THE CHALLENGE

UPTIME IS EVERYTHING

For Accurate Box, uptime is everything, and the greatest risk to uptime and throughput in finishing is hiring and retaining employees to load the glue lines.

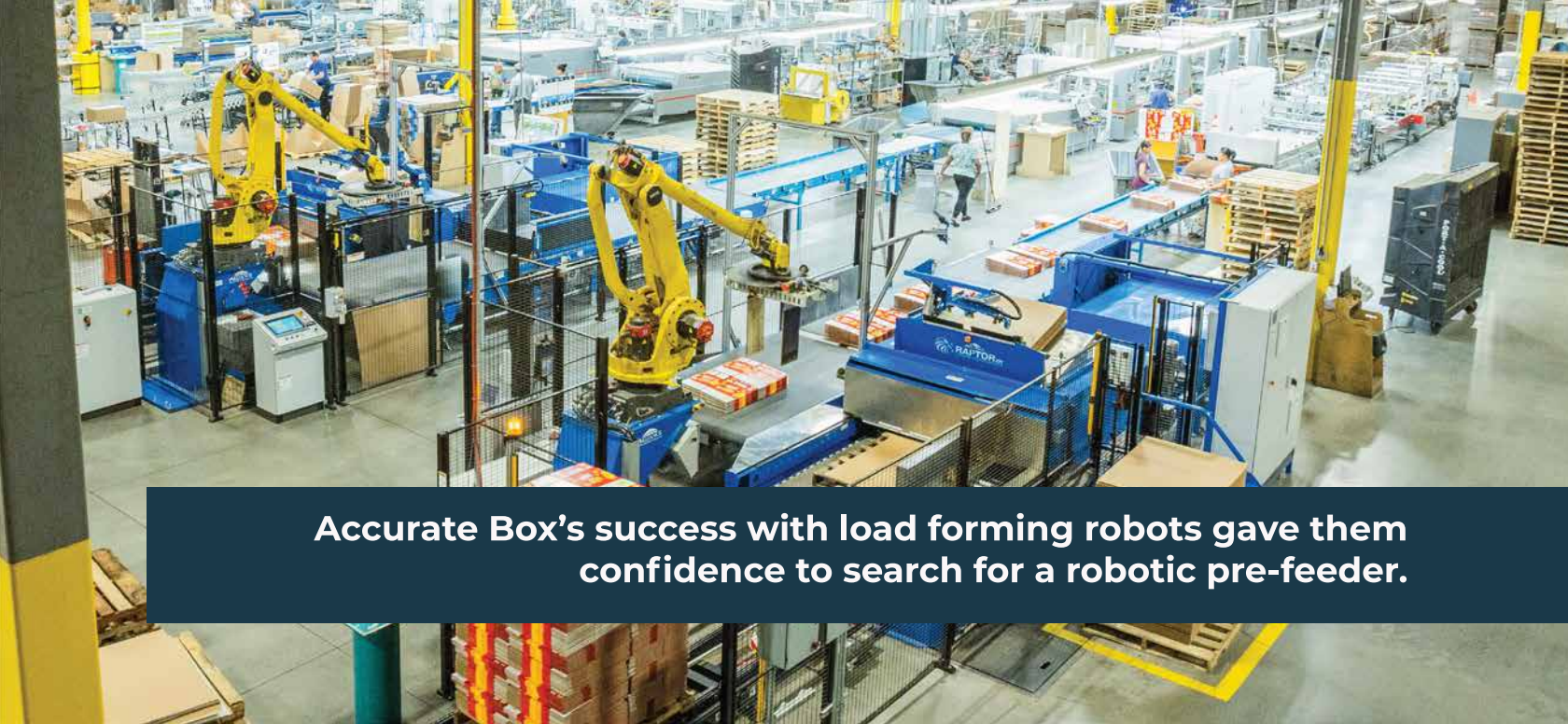
This difficult-to-staff task involves loading boxes onto its nine folder-gluer machines which is highly physically demanding and repetitive.

For its high-speed Koenig & Bauer Omega All Pro, a team of two line workers were stacking 7,000+ pounds of boxes each hour onto the glue line hopper.

A HOLISTIC APPROACH

As a family-owned and operated company that cares deeply about its employees and the commitments to its customers, Accurate Box began searching for an automation solution to feed its folder-gluer.





Accurate Box's success with load forming robots gave them confidence to search for a robotic pre-feeder.

ROBOTIC AUTOMATION

The Accurate Box team had successfully integrated two load forming robots on the end of its high-speed glue lines which gave them the confidence and network to search for a robotic solution.

Yet, every door they knocked on to purchase or commission a robotic pre-feeder resulted in the same answer: What they were asking for wasn't possible.

KEY REQUIREMENTS

Accurate Box didn't want to compromise on the functionality necessary to its operation, which included pallet management and a mode for optional manual loading.

Accurate Box produces the highest quality printed boxes in the industry and has a very low tolerance for waste, so they had to be sure the robot wouldn't damage the boxes during high-speed loading.

Finally, ease of use was a key concern, and they wanted to find a system with operator-friendly controls that would be well supported once it was deployed.

2
operators per shift

7,000+
pounds per hour

ACCURATE BOX

INDUSTRY LEADER

Accurate Box, a fourth-generation manufacturer of litho-laminated corrugated packaging, is known for its innovative designs, superior graphics, box strength, and sustainability initiatives.

An industry leader, Accurate Box achieves best-in-class quality at a competitive price by strategically investing in process improvements, advanced technology, and state-of-the-art equipment.



INTEGRATION GOALS



Increase throughput on high speed folder-gluer



Relieve repetitive labor burden on staff



Avoid damage and minimize waste of printed boxes



Accurate Box, founded in 1944, is a women-owned business certified in an impressive number of industry standards, including:



**ISO 9001 for
Quality Systems**



**FSSC 22000 for
Food Safety**



**SFI® & FSC® for
Sustainability**



**GMI & G7
Master Colorspace
for Graphics**

Located just 15 miles from New York City, Accurate Box serves clients throughout all of North America from its 400,000 square foot plant in New Jersey.

THE SOLUTION

15%

INCREASE IN
THROUGHPUT

18,500

CARTONS/HOUR
B FLUTE

STARTS WITH REQUIREMENTS

Rigorous worked closely with Accurate Box to understand the scope of work the robot would need to perform, as well as the operational factors for success.

Lisa Hirsh, President and CEO of Accurate Box, was very clear that there is no tolerance for reduced throughput.

At the end of the day, if a robot can't meet or exceed the performance of human operators, it's a fail.

- Lisa Hirsh

THE BOX HOPPER

The Box Hopper by Rigorous is a glue line pre-feeding robot.

Pallets of boxes enter the robotic cell and empty pallets exit the cell.

In between, the Box Hopper picks the boxes and places them onto the hopper of the folder-gluer.

Once the pallet is empty, the Box Hopper sweeps the waste into a bin and then stacks the empty pallet on an automatic outbound conveyor.

The Box Hopper contains four vision systems to sense the inputs and outputs of the cell, as well as automatic fault detection and resolution for missed picks.



Rigorous installed the Box Hopper at Accurate Box in November 2022. Since then, a single team member has been operating the system with increased throughput and no significant downtime.



COMPACT FOOTPRINT

The dimensions of Accurate Box's robotic cell, including conveyors, are just 20' x 38' to fit within available floor space.



HIGH SPEED

Accurate Box has found that its optimal B-flute speed is around 14,000 cartons/hour and has run up to 18,500 cartons/hour.



OPERATOR-FRIENDLY CONTROLS

Rigorous designs robots to operate like machines, with a no-code touchscreen control panel.



FLEXIBLE CONFIGURATION

The Box Hopper can process an unlimited number of carton sizes within a designated min-max range with quick make-ready for product changeovers.

WHAT'S NEXT

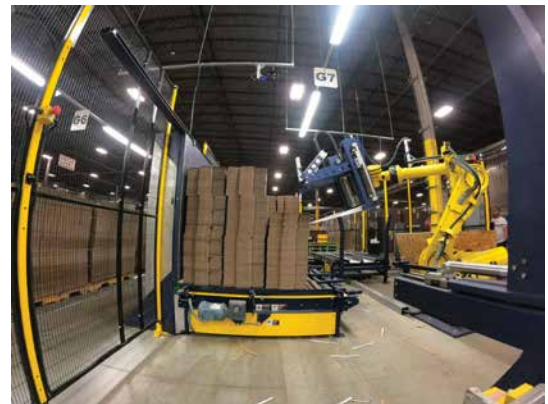
SIX MONTHS LATER

Rigorous continues to partner with Accurate Box on the support, maintenance, and upgrades of the novel Box Hopper product.

After six months, the Box Hopper had processed more than 20,000,000 boxes and counting.

Rigorous is productizing the system and plans to deploy two Box Hoppers to a West Coast corrugated box manufacturer at the end of 2023.

As companies such as Koenig & Bauer deploy faster folder-glueers, the Box Hopper pre-feeding system can scale with them.



LOOKING TO ACHIEVE SIMILAR RESULTS?

Reach out to sales@rigoroustech.com

RIGOROUS

DEPLOYING ROBOTS THAT WORK LIKE MACHINES

Rigorous is an industrial robotics company with a mission to increase access to automation for manufacturers.

We do so by providing turnkey systems that are field-tested and fully supported.

Laser focused on the operator experience, Rigorous systems are easy to use with embedded safety systems.

Rigorous integrations are successful when our customers are effectively operating their robots day-after-day, shift-after-shift.



FULLY SUPPORTED

Customers can rely on remote support, field calls, preventative maintenance, and production data analysis from the Rigorous team.



TAILORED TURNKEY

We work with your team to understand your workflows, product and preferences to ensure the system delivered fits your operational requirements.



NO-CODE

Modern user interface designed for the operator experience.



RIGOROUS



rigorous.co



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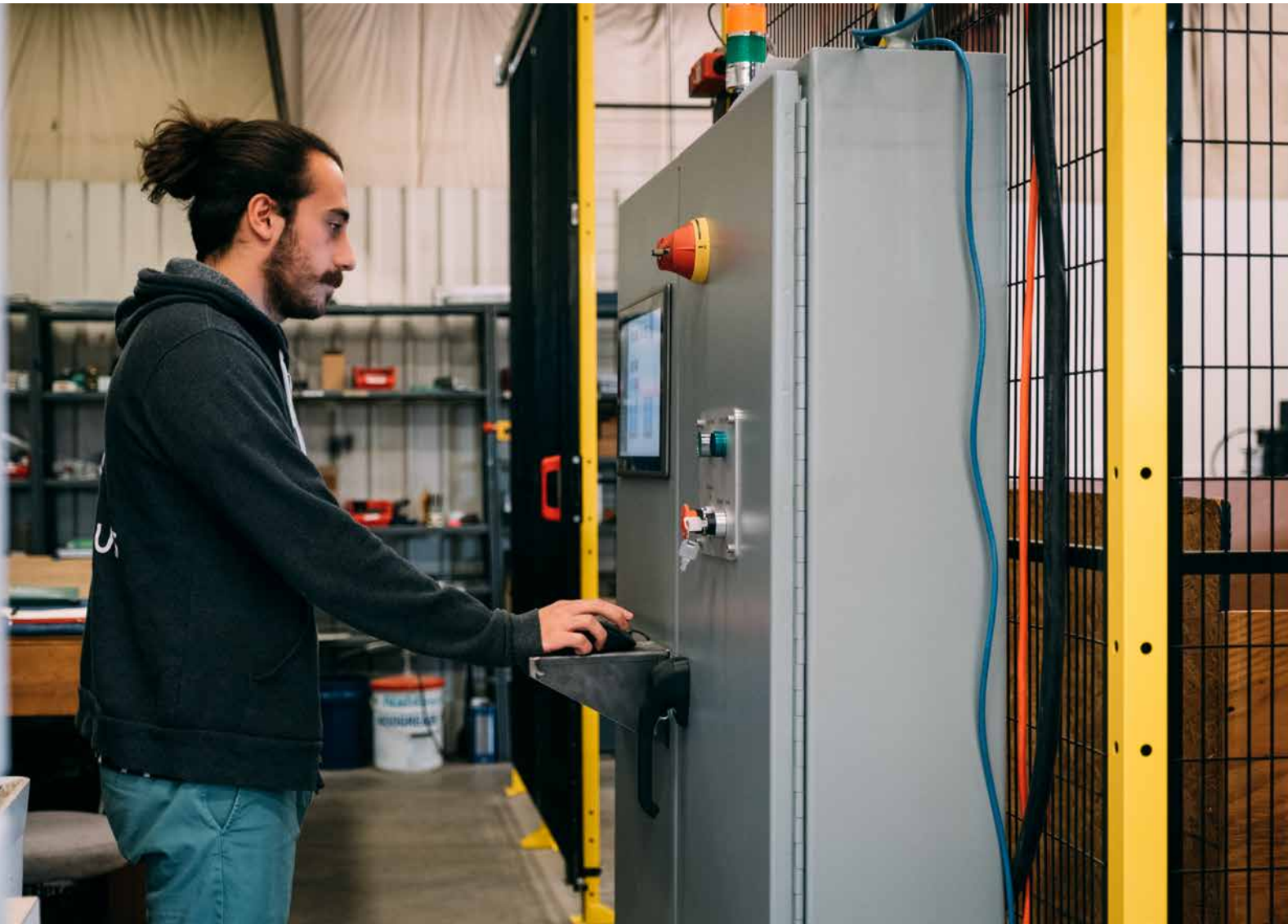
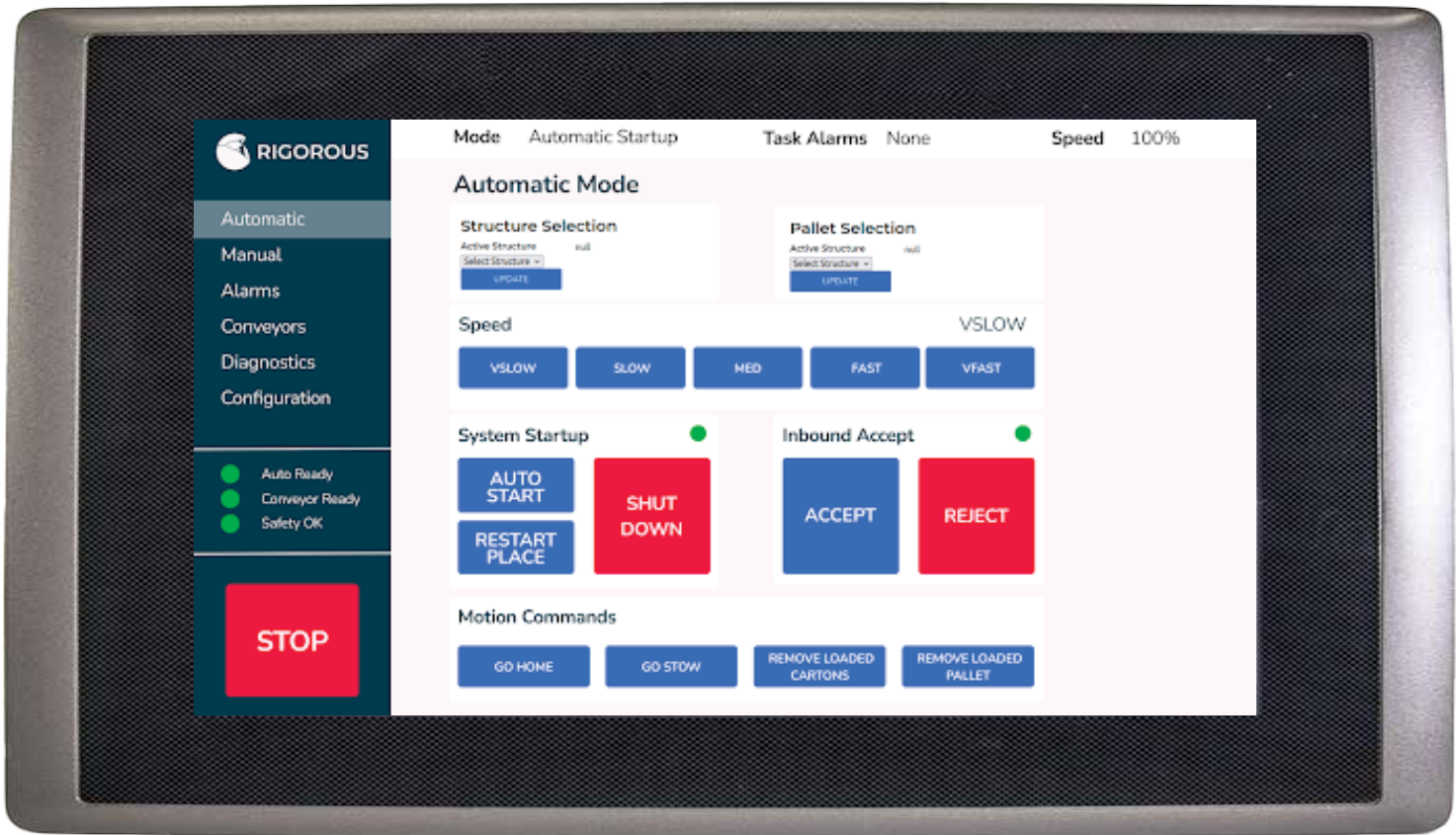


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BOX HOPPER

Leave the heavy lifting to the robot.



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