



## An Automated Packaging Solution that Checks All the Boxes:

Cohesive | Simply-Managed | Reliable | Highly-Flexible

Bottles of Vitamins

### Project Overview

When a leading vitamin manufacturer introduced a new product, their New York based co-packer came to Pearson for a dedicated packaging line that would be installed at a new facility.

They wanted to keep internal resources devoted to managing the project minimal, and would need the equipment to be fairly uniform so employees could easily operate and maintain any machine on the line.

Additionally, they needed assurance that the line would operate reliably and with a high-level of flexibility to handle their various product and case packs, as well as the ability to easily accommodate future production changes.

## Customer Objectives

### Simple line operation & project management

Case erecting, product packing, case labeling, case sealing, check weighing, barcode reading, and palletizing functions would need to be carried out. And, consistency across the entire line was crucial so a limited staff of operators and maintenance techs could carry out tasks universally.

Additionally, the co-packer hoped to keep the amount of internal resources devoted to project and vendor management to a minimum.

### Reduced risk through proof of concept

To ensure they could fulfill their commitment to their client, with rates reaching 400 products per minute, the co-packer needed assurance that the OEM they selected could deliver a high-performing, reliable solution for their demanding 7-days a week/3 shifts a day operation.

The co-packer wanted evidence of past experience handling similar product types, and also assurance that the tailored solution would meet their unique needs.

### Current & future line flexibility

With 12 unique pack recipes and the same number of unique pallet configurations running on a shared line, changeovers would need to be quick and simple to execute so the co-packer's limited resources would not have to devote valuable time learning and executing changeover sequences.

The co-packer also anticipated future packaging changes by their client and hoped for a system that could easily incorporate new recipes.

## Pearson Solutions

Pearson was able to supply all the major pieces of equipment from its extensive portfolio. All machines are equipped with a uniform and easy-to use HMI for consistency across the line so employees can work on any machine. The labeling, check weighing, and barcode reading equipment was sourced from trusted partners and seamlessly integrated.

Pearson assumed responsibility for the comprehensive execution of the project, eliminating the headache of dealing with multiple OEMs, ownership over technical issues, fluctuating schedules, etc. for the co-packer.

Specialized in high-volume operations similar to the customer's, Pearson presented videos of past bottle applications and also used simulations and emulations with digital twin technology to validate design concepts. The ability to proactively identify and correct potential errors before building the equipment led to a better-performing solution and also a faster turnaround.

The innately flexible robotic packer and palletizer have pre-programmed changeovers that can be easily selected with the click of a button on the HMIs. Recipes can be easily adjusted or added through the HMIs, as well.

The packer utilizes different end-of-arm tools that can be swapped out in seconds by unscrewing, then re-securing the vacuum plates without the need for tools.

And, the case erectors and sealers are equipped to handle a range of case sizes, with easily-identifiable mechanical adjustment points supported by images, maps, and step-by-step instructions, also accessible within the machines' HMI.

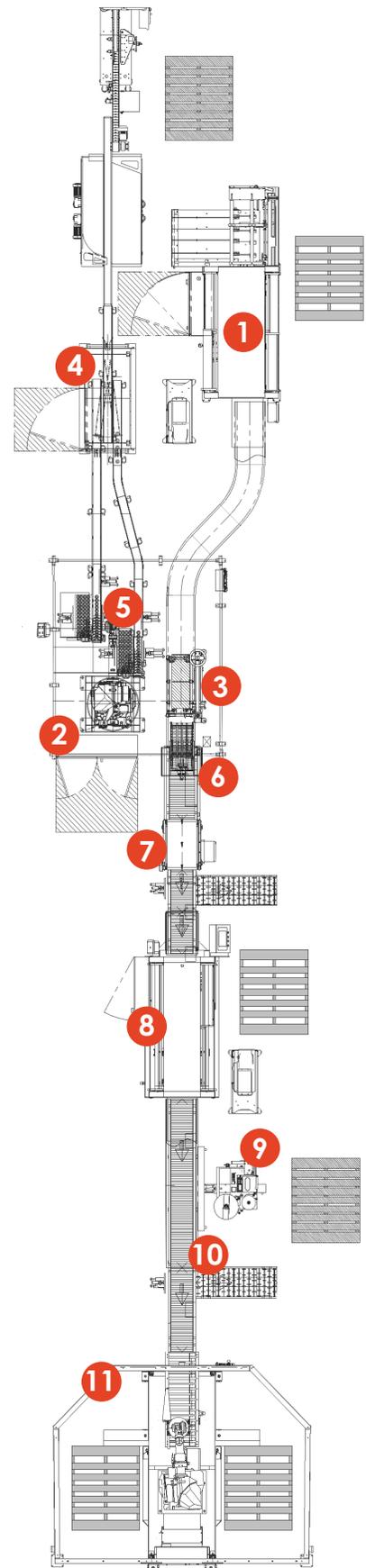


### Sequence of Operation:

Cases are formed and bottom sealed by a Pearson CE25-G case erector (1) and travel on a conveyor toward the Pearson RTL robotic top loader (2). Cases are side clamped when they arrive at the loading station (3) and flap spreaders actuate down to support smooth product placement into the case. Product flows into a lane diverter (4) that distributes the bottles into two lanes. When a full row of product has accumulated at the end of an infeed conveyor, a stop deploys and the row is pushed into the collating area (5) until a full layer is built. Then, the robot picks and places layered products into the empty cases until the cases are full.

Filled cases are singulated as they exit the packing cell and travel to the third-party sheet inserter (6) where they receive a leaflet as a vision system verifies proper application and positioning. The cases flow through a third-party check weigher (7) where cases that do not fall within range are rejected - otherwise traveling to the Pearson CS25-42G case sealer (8) where they are top sealed with hot melt glue. The sealed cases then travel to a third-party labeler (9) for label application, and a third-party bar code reader (10) verifies the label was properly applied before the cases enter the Pearson RTL-DF dual floor robotic palletizer (11). If a case does not have a label, it is rejected prior to entering the palletizer.

In the robotic palletizing cell, cases are picked and placed to form the selected pallet pattern, and complete pallet stacks are removed from one side of the cell as the robot continues to operate on the other side.



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| <b>1</b> Pearson CE25-G Case Erector    | <b>7</b> Third-party check weigher             |
| <b>2</b> Pearson RTL Robotic Top Loader | <b>8</b> Pearson CS25-42G Case Sealer          |
| <b>3</b> Case loading station           | <b>9</b> Third-party labeler                   |
| <b>4</b> Product diverter               | <b>10</b> Third-party barcode reader           |
| <b>5</b> Collating area                 | <b>11</b> Pearson RTL-DF Dual Floor Palletizer |
| <b>6</b> Third-party sheet inserter     |  |

