

BOTTOMS UP FOR LIQUID PACK AND NHP

Introduction

Whether it be dairy products, wine, oils, detergents or industrial chemicals, next time you pick up a container of liquid, you may be interested to know that a lot of engineering has helped get that particular product in your hand. Or if Melbourne-based OEM, Liquid Pack, had anything to do with it, a lot of market leading local know-how, design and manufacture expertise as well - all from within Australian shores.

Project Overview

With that in mind, Liquid Pack, who specialise in custom made, cost effective liquid filling and packaging equipment, recently teamed up with NHP to deliver a weigh filling system for a local End User in the water treatment industry.

Due to substantial company growth, the filling system was to be installed in a new manufacturing facility for the End User which was commissioned to not only cater for current demands but also for future growth.

"The customer previously filled containers using a semi-automatic single head filling machine, however they experienced issues with dripping. This resulted in manually cleaning the containers prior to shipping and in turn, an OH&S issue due to the caustic contents and also took up to two days for the containers to dry prior to being shipped," said Liquid Pack Director, Russell Jones.

One of the key benefits of the Liquid Pack solution included the twin-head filling machine capable of filling containers ranging from 5lt to 20lt. Filling directly from the tank farm, the machine bottom fills and measures by weight instead of volume, providing consistent and accurate fills. The machine also adopted servo driven method which is electrically driven and further provides consistent and repeatable positional accuracy. This method was preferred over pneumatic filling heads which are subject to variations caused by air pressure, humidity, altitude and temperature.

"The vertical movement of the filling head is servo driven as opposed to pneumatically driven and this provides repeatability and ensures accurate filling. The machines can detect when containers are not present and also if the container is incorrectly positioned - this is done via real time data transmitted from the servo controller and prevents damage to the filling heads and any subsequent downtime," he continued.

With over 25 years of industry experience, Liquid Pack spent close to one year developing and refining the technology used within the Weigh Filling Machine.

Once they were ready for production, it made sense partnering with another local company with an extensive commercial support and knowledge network - that partner was NHP.

The Solution

With a local stock holding of close to \$60M, NHP formed a one-stop-shop for product and service support, providing a stainless steel enclosure, Dinsafe and MOD6 circuit breakers, Finder relays and an eWon wireless access router.

As an authorised distributor for Rockwell Automation, the hardware solution also included a midrange Rockwell Automation solution based on CompactLogix® L16, PanelView® Plus 7, Kinetix 300® and a PowerFlex® 525 Variable Speed Drive.

The single design environment was created using Logix5000® which significantly cut down the time required to design, develop and deliver the overall solution. In addition, the ethernet connectivity between the PLC, HMI, Servos and drives reduced wiring complexity, panel space and commissioning times.

"To ensure the overall safety of the plant's operations, NHP provided experts to deliver Risk Assessments, offering guidance on a wide range of risk reduction techniques that encompass process redesign, guarding, awareness means, training and administrative requirements, and personal protection equipment. NHP's commitment and support to local OEM, Liquid Pack, promises to continue for future projects," said NHP's Jarrod Grech, Automation - Business Development.

With plans to expand their offering to include four headed filling machines and a specified Hazardous Area Exd twin-head system in addition to the twin-head system used in this project, NHP look forward to continuing to support Liquid Pack and their market leading filling and packaging equipment offering.



Project Fact File

Project: Liquid Pack

Location: Melbourne, Victoria

Details: To deliver a weigh filling system for a local End User in the water treatment industry.

NHP Products/Services:

- Dinsafe and MOD6 circuit breakers
- Finder relays
- eWon wireless access router
- A midrange Rockwell Automation solution based on CompactLogix® L16, PanelView® Plus 7, Kinetix 300® and a PowerFlex® 525 Variable Speed Drive
- Rockwell Automation Logix5000®

