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bürkert
FLUID CONTROL SYSTEMS

SUCCESS STORY

Bürkert < > Unither

New automated production line at Unither Pharmaceuticals

Set of valves on a preparation tank. Tank bottom valve system with integrated level sensor

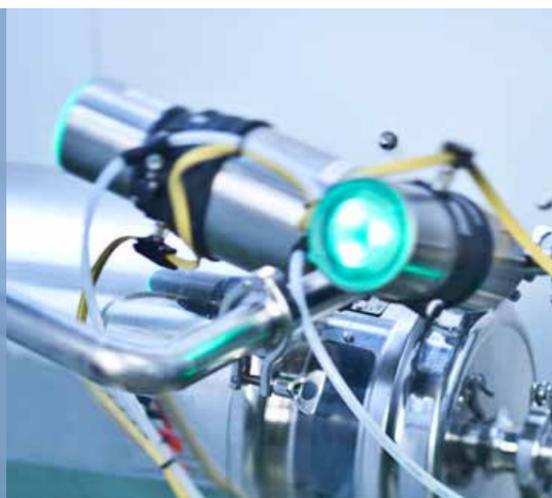


Diaphragm valves for an automated production line at Unither

Unither is a world leader in the manufacture of formulations for the pharmaceutical industry. Its plant at Gannat, in the Department of Allier, is a specialised production site for manufacture of pharmaceuticals. The company wished to modernise its production equipment and therefore took the decision to fully automate the production line, from the raw materials preparation tank right through to the packaging machine. The new installation is equipped with ELEMENT diaphragm valves from Bürkert, offering a high degree of modularity with embedded diagnostic tools guaranteeing maximum reliability and safety. Limit switch devices with AS-i communication are installed on each pneumatic valve.



*Clean In Place station
(CIP)*



*Automated diaphragm valve
on CIP station*



*Manual diaphragm valve with
integrated electrical feedback
on the packaging line*

A manufacturer of pharmaceutical formulations for laboratories

With 5 production sites, a research and development centre, and commercial offices in Paris, Unither is currently the world leader in the manufacture of pharmaceutical formulations used by European pharmaceutical laboratories and producers of generic drugs (in particular, eye drops, physiological saline solutions and anti-asthma drugs in sterile soluble unit doses). It has a turnover of 151 million euros with a workforce of 850 people.

Created in 1993, following the buyout of a pharmaceutical formulating plant from the Sanofi Group, Unither quickly developed with the support of its local historic financial partners. In 2000, the management team took part in a first round table discussion in order to accelerate the development of the Group, particularly through external growth. Unither thus acquired a second production site in 2002 in its historical specialist field, which was sterile unit doses. It then diversified its activity by entering the specialist area of soluble products, with the purchase in November 2005 of the Creapharm Group, specialising in the manufacture of soluble tablets and the development of pharmaceutical formulations.

In 2009, Unither purchased Sanofi Aventis, the site at Colomiers, ensuring a large production of stick packs. Today, Unither continues to develop in France and in Europe; supported by its offices in Paris; its five production sites in France (Amiens, Bordeaux, Colomiers, Coutances, Gannat) and its research and development site at Bordeaux. The Gannat site, in the Department of Allier, employs around 150 people. It manufactures and packages drugs for laboratories which market them under their own brands. The specialities of this site are soluble tablets, dry formulations and suppositories.

Modernisation of the manufacturing line for suppositories

A section of the production at the Gannat site is dedicated to the manufacture of suppositories. The site recently decided to make the investments required to modernise this production line, in order to increase production efficiency, increase safety and to meet the strictest pharmaceutical standards. The aim was to fully automate the production line, from the raw materials preparation tank right through to the packaging machine. Unither also wished to develop an AS-i communication bus. The operators of the site approached Bürkert, in particular because of its know-how in terms of pharmaceutical processes. For this project, Bürkert designed and produced special valve blocks which reduced as far as possible the dead volume where bacteriological growth could potentially occur.

The highly innovative range of ELEMENT diaphragm valves from Bürkert, offers a large degree of modularity with embedded diagnostic tools guaranteeing maximum reliability and safety. Furthermore, Bürkert was the only manufacturer of components and solutions that was capable of responding to all of Unither's needs in terms of valves and instrumentation, as well as BBS-type pipework accessories, such as viewing windows and filters.



Display from PLC system at
preparation Tank

ELEMENT type 8691



The equipment provided

The new installation consists of a tank bottom drain valve type 2105, zero static T-valve type 2104, a 2-way manual and automatic diaphragm valve types 3233 and 2103, as well as the multi-port ELEMENT valve block, type 2034. The tank bottom drain valve is designed for regulation of ultra-pure, sterile or aggressive fluids. It guarantees total draining of the tank and offers optimum possibilities for refilling. ELEMENT type 8691 control head with AS-i communication are installed on each pneumatic valve.

Among the advantages offered by this new installation are the stainless steel design of all valve types and the AS-i type 8691 control head with multi-colour position indicator for visualisation of the position from a distance, which particularly impressed the operators of the Gannat site.

Characteristics of diaphragm valves

The ELEMENT range of diaphragm valves was designed by Bürkert to provide maximum reliability and safety for the most exacting users. They are very easy to use: with simplified adjustment and assembly of accessories, diagnostics, visualisation, ergonomics, safety of use, adaptability, electrical and pneumatic connection. Start-up times are reduced by simple automatic regulation of the valve stroke limits (auto-tune function). Start-up is further secured by an integrated filter on the pneumatic supply.

The lifespan of the actuator and control heads is increased through use of a self ventilated system (Fresh Air design). With the specific block solution provided to Unither, the overall footprint is also reduced. This intelligent valve is fitted with self adjusting valve stroke limits, communication by fieldbus and position regulators. Furthermore, this equipment is easy to maintain (diagnostics, electrical and pneumatic connection, optimised packaging and storage life of the diaphragms).

The 2-way diaphragm valves, zero static T-valves and the tank bottom drain valves type 2105 used at Unither, are available in nominal diameters from 8 to 150 mm. The FDA and USP class VI approved membrane is made from EPDM or advanced EPDM. These valves can operate at pressures of up to 10 bar and a fluid temperature between -10° C and +150° C.