



# FOOD & PACKAGING ADVANTAGE





# PACKAGING EXPERTISE – ENGINEERING UPTIME

NORGREN PROVIDES **EXTENSIVE, SPECIALISED EXPERTISE** ACROSS THE RANGE OF PACKAGING REQUIREMENTS:

Norgren’s applications expertise extends from primary applications (filling, closing and sealing) to secondary and tertiary processes (wrapping, cartoning, packing and palletising).

Whatever the application, Norgren is committed to helping OEM customers and their end users to achieve optimum reliability and machine uptime.

Faster cycle times, reduced set-up and changeover times, proportional technology to avoid excess pressure and deliver long component life, can all actively contribute to machine optimisation.



>> **GLENN MATHEWS**  
KEY ACCOUNT MANAGER,  
UK

- >> 01 SPECIALISED LIQUID FILLING MACHINERY, MASTERFIL, UK
- 02 AUTOMATED ROTARY CEMENT BAGGING MACHINE, HAVER & BOECKER, BRAZIL
- 03 HANDLING AND PACKAGING PRODUCTS, PROINVENT A/S TECHNOLOGY, DENMARK
- 04 HIGH SPEED BOXED PAPER PALLETISING, ROBOTIC AUTOMATION PTY LTD, AUSTRALIA
- 05 CUSTOM BUILT BOTTLE PALLETISING, JOHNSON CONTROL, BELGIUM
- 06 NEW GENERATION OF PRINT AND APPLY AUTOMATIC PALLET LABELLING, ENGINEERING VAN DURME, BELGIUM

01 02 03 04 05 06

>>

PRIMARY APPLICATIONS - FILLING, CLOSING, SEALING  
 SECONDARY APPLICATIONS – WRAPPING AND CARTONING  
 TERTIARY APPLICATIONS - CASE PACKING AND PALLETISING  
 INSPECTION, LABELLING AND CODING, SORTING AND REJECTING

# >> PET BOTTLING EXPERTISE

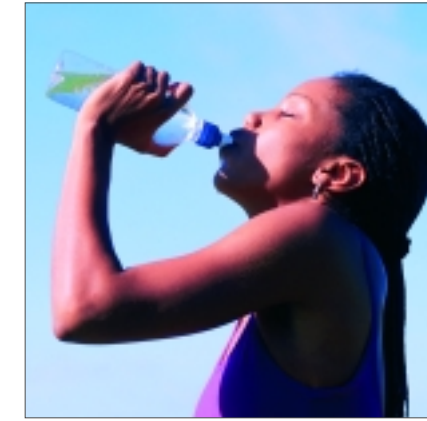


01



02

>> NORGREN OFFERS CLEAN AND SAFE SOLUTIONS



Norgren is a market leader in specialised technology for the production of PET bottles – increasingly popular for their convenience, recyclability and merchandising value. Norgren solutions facilitate the stretching and blowing process at variable pressures and high pressure up to 40 bar.

Technology differentiation is a key requirement, including the capability to handle any shape and size of bottle. Key customer parameters include high flow, long life, time/throughput, temperature and pressure. Special developments include aseptic solutions for milk and juices, and special gas protection coatings for beer.

>> FRANK SCHNUR  
TECHNICAL MANAGER, PET BOTTLING  
GERMANY



<< 01 VALVE BLOWING BLOCK OPERATES AT VARIABLE PRESSURES UP TO 40 BAR  
02 STRETCH CYLINDER USED FOR THE BOTTLE FORMING PROCESS



>> **NEW SMOOTH LINE CYLINDER**  
 SEALED SENSING ALLOWS WASHDOWN AND CONTROL IN ONE SEALED PACKAGE  
 SEALING CONFORMS TO HYGIENE DESIGN STANDARD EN1672-2  
 ADJUSTABLE SWITCHES INSIDE

# CLEANLINE SOLUTIONS

## ENGINEERING ADVANTAGE IN THE KEY FOOD AREAS

Norgren engineers listen, understand, interpret and engineer fresh solutions that address the latest European and US legislation.

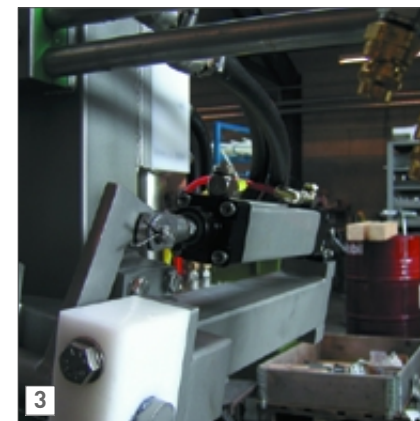
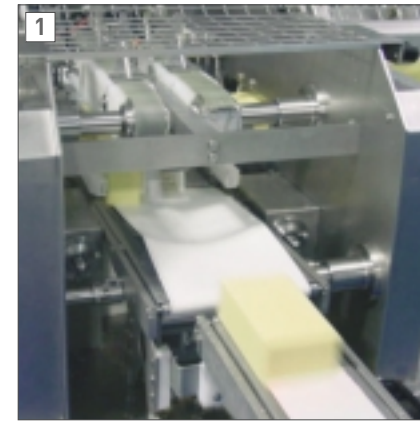
Drawing on industry and applications expertise Norgren addresses the key areas within the European standard EN1672-2, as well as US standards 21CFR110.80 (processes and controls) and 21CFR110.40 (equipment and utensils).

EN1672-2 defines the hygiene requirements for OEMs who design and build machinery for the food industry. This legislation governs three distinct areas and indicates "best practice" guidelines for design.



>> **01 VM10 SUITABLE FOR WASHDOWN**  
**02 AUTO PAC TRAY DISPENSE IN USE AT STEMILT IN WENATCHEE, WASHINGTON, USA**  
**03 SMOOTH LINE CYLINDER WITH EXCELLENT WASHDOWN CAPABILITIES**

- >> **01 ULTRASONIC HIGH SPEED CHEESE CUTTER, RYAN MANUFACTURING LTD. NEW ZEALAND**
- 02 HIGH PRESSURE PASTEURISATION PROCESS, ALSTOM, FRANCE**
- 03 FOOD GRADE SOLUTIONS TO IMPROVE HYGIENE STANDARDS, SFK-DANFOTECH, DENMARK**
- 04 ENDIVES AUTOMATIC HANDLING, TEBULO, NETHERLANDS**



## NORGREN OFFERS ENGINEERED SOLUTIONS FOR EACH AREA:

### FOOD AREA:

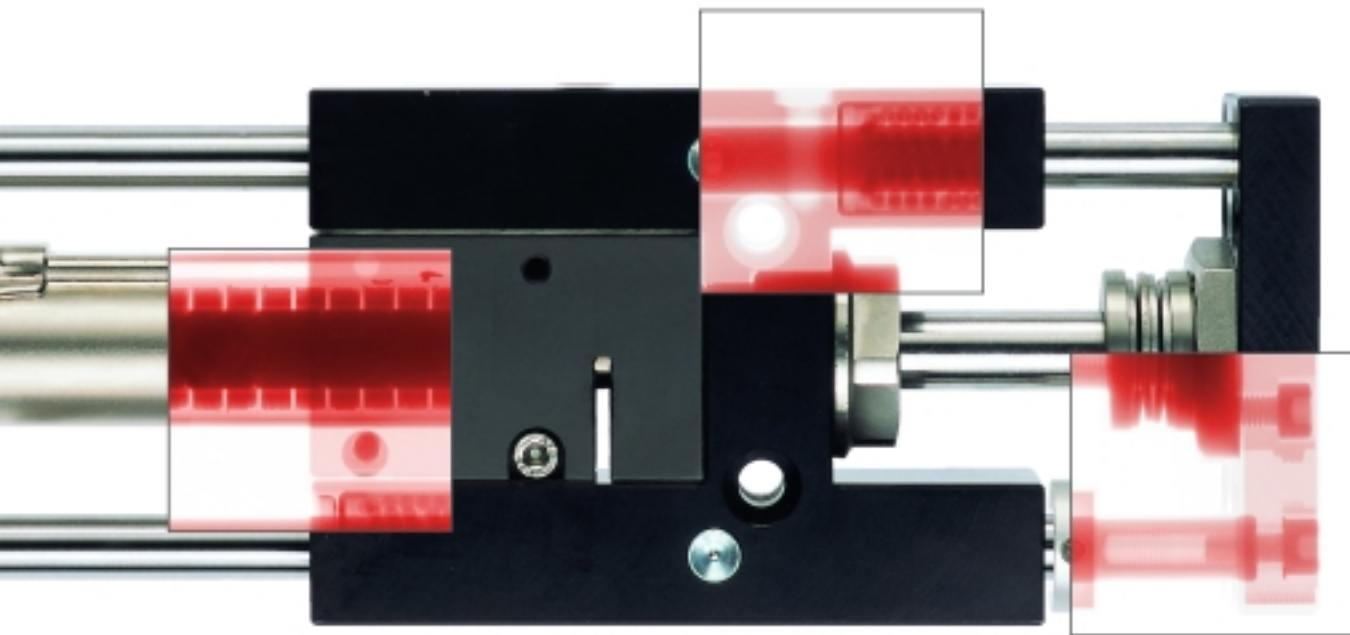
System components that are both directly and indirectly in contact with the main product flow should be engineered from corrosion resistant, non-toxic and non-absorbent material to avoid the possibility of contamination to the end product. Paying attention to detail in the design phase, Norgren engineered solutions are 'clean line' and eliminate cavities, crevices and sharp corners where food particles could adhere. They are also self-draining thus allowing liquids to simply run off. Utilising materials that are both corrosion resistant and suitable for wash down processes, Norgren have optimised the design of solutions like the Smooth line cylinder and a range of stainless steel shut off valves to be examples of best practice for this area.

### SPLASH AREA:

All system parts in this area are liable to splash contacts from foodstuffs but are not reintroduced into the main product flow. The design of solutions needs to be similar to the food area but reduced material requirements allow the use of anodised aluminium and engineered polymers in component design. This is only applicable as long as there is definitely no risk of adverse effects on the food product.

### NON-FOOD AREA:

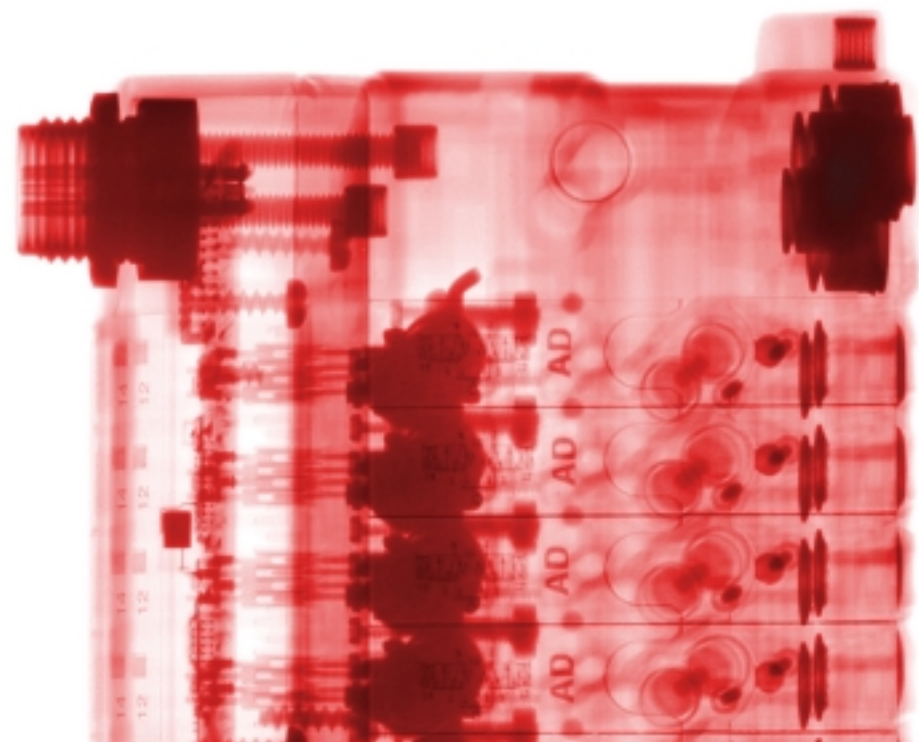
In this area there is no contact with food but this does not mean that Norgren engineers compromise on the quality of design. They maintain the same high standards utilising materials that are easy to clean and resistant to corrosion.



>> PRECISION AND FUNCTIONALITY ARE AT THE HEART OF THE DESIGN OF NORGREN'S MULTI-POSITION AIRLESS CYLINDER

## COMPREHENSIVE RANGE

Norgren provides a comprehensive range of proven, reliable motion and fluid control solutions. From small, light automation components to heavy duty rodless cylinders, we are committed to optimising technological performance for our customers' benefit. Integrated systems are engineered for flexibility, based on strong product fundamentals. Application-specific solutions frequently involve modular combinations of actuator, control valve and air preparation technologies.



>> VM10 HIGH PERFORMANCE MODULAR VALVES ARE FLEXIBLE AND EASY TO CONFIGURE

## PROVEN, RELIABLE AND DURABLE

	<p>&gt;&gt; <b>VM10 MODULAR SYSTEM VALVES</b> High performance, flexible and compact</p>		<p>&gt;&gt; <b>MINIATURE ROUNDLINE CYLINDERS</b> Ideal for very light load applications</p>
	<p>&gt;&gt; <b>VS18/26 GLANDLESS SPOOL VALVES</b> Two unique spool technologies provide maximum reliability, versatility and long life. ISO/VDMA valves</p>		<p>&gt;&gt; <b>LINEAR SLIDE TABLES</b> Wide range of sizes with high operating speeds and cycle rates</p>
	<p>&gt;&gt; <b>FIELDBUS I/O SYSTEMS</b> IP67 ingress protection, reduced cabling and simple installation, single point diagnostics</p>		<p>&gt;&gt; <b>PNEUMATIC GRIPPERS</b> Wide range and excellent long life. From long stroke types to three jaw options or low profile types amongst other versions</p>
	<p>&gt;&gt; <b>VP23 &amp; VP60 PROPORTIONAL FLOW CONTROL VALVES</b> Low air consumption, fast and stable response. High accuracy and operating pressure</p>		<p>&gt;&gt; <b>VMAA SMART PUMP</b> Dual module vacuum generator with high vacuum flow, low air consumption and wide pressure range</p>
	<p>&gt;&gt; <b>V18 MONITORED DUMP VALVE</b> Meets machinery directive 89/392/EEC, EN954-1 and BS EN 292</p>		<p>&gt;&gt; <b>84520 SERIES ANGLE SEAT VALVE</b> High flow for steam and aggressive fluids</p>
	<p>&gt;&gt; <b>MULTI-POSITION AIRLESS CYLINDER</b> High speed and acceleration, multiple positions, simple programming</p>		<p>&gt;&gt; <b>PRESSURE SWITCHES AND SENSORS</b> Comprehensive range for all type of applications</p>
	<p>&gt;&gt; <b>SMOOTH LINE CYLINDER</b> Cleanline construction, sealing conforming EN1672-2. Adjustable switches inside</p>		<p>&gt;&gt; <b>STAINLESS STEEL SOLUTIONS</b> Wide range of corrosion resistant products including air preparation equipment (B38 &amp; R38 range) and actuators (KM/55001 range of roundlines)</p>
	<p>&gt;&gt; <b>MINIATURE ROTARY ACTUATORS</b> Compact, lightweight, smooth operation</p>		<p>&gt;&gt; <b>PNEUFIT C &amp; PNEUFIT M FITTINGS</b> More than 1000 composite push-in fittings including the miniature ultra-compact Pneufit M</p>

**mb air systems ltd** was born following the management buyout of the business and assets of Motherwell Bridge Air Systems Limited in 2002, which was originally established in 1973, from the Motherwell Bridge Group.

Our operations, with over 30 years of expertise and service to a wide range of clients, specialise in the fields of Compressed Air, Material Handling, Power Tools, Pneumatics and Product Finishing Systems.

Our Service and Technical teams, through a structured network of branches in the United Kingdom, will provide clients with customised Maintenance Solutions to meet your exact requirements. This will also include Condition Monitoring and Energy Efficiency Programmes designed to achieve optimum equipment and systems operation.

The Company, in partnership with our principals, Ingersoll-Rand, domnick hunter, IMI Norgren, ITW Finishing and Dresser Roots are committed to bringing added value to your business. This will be achieved through the provision of innovative solutions and the highest standard of service and customer care.



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