IVAC CYLINDERS
INNOVATION TO REDUCE
ENERGY USAGE AND
OPERATING COSTS

YOU CAN SEE
OUR THINKING

www.norgren.com
Norgren has worked closely with customers in key industry sectors to understand what improvements they wanted from their pneumatic controls. The response highlighted a widespread need for improved energy efficiency, reduced downtime, reduced installation time and improved aesthetics.

**THE IVAC CYLINDER FROM NORGREN ANSWERS THESE NEEDS.**

A family of products incorporating proven Norgren technologies, IVAC is a weight-optimised actuator featuring integrated valve and magnetically operated switches for complete actuator control. It can be retrofitted or integrated within new systems and, compared with conventional pneumatic systems, can help reduce energy consumption by up to 50%.

IVAC has been rigorously tested in operational conditions by customers in a wide range of industries. The feedback has been exceptional.

**THIS UNIQUE PATENTED DESIGN DELIVERS SIGNIFICANT BENEFITS:**

- **REDUCED ENERGY USAGE**
- **LOWER OPERATING COSTS**
- **FASTER ACTUATOR RESPONSE TIMES**
- **OPTIMUM SPACE USAGE** (DIMENSIONS ARE IN LINE WITH ISO 15552 / VDMA 24562)
- **CLEANLINE VERSIONS FOR RAPID WASHDOWN**
- **SIMPLIFIED SELECTION AND ORDERING**
- **REDUCED INSTALLATION AND LOGISTICS COSTS**
- **IMPROVED MACHINE AESTHETICS**

**WITH A SALES AND SERVICE NETWORK IN 75 COUNTRIES – AS WELL AS MANUFACTURING CAPABILITY IN THE USA, GERMANY, CHINA, UK, SWITZERLAND, CZECH REPUBLIC, MEXICO AND BRAZIL – WE HAVE GENUINE GLOBAL CAPABILITY.**

We also think local and niche: on focusing our resources on delivering a specific product, solution or service to meet our customers’ needs.

As a responsible business, we’re committed to working practices which contribute positively to the environments in which we work. Our products – including our brand new IVAC – are setting new standards for efficiency, helping customers reduce air usage and energy costs while improving overall performance. We offer:

- **INNOVATION & TECHNICAL EXCELLENCE** through four global technical centres and the experience of specialist engineering teams. We have a portfolio of patented solutions, and are always developing new and cost-effective technologies
- **HIGH PERFORMANCE PRODUCTS** covering pneumatic actuators, airline preparation, fittings and valves. We can supply these either singly to meet MRO needs, or combined in powerful customised solutions
- **EXCEPTIONAL LOCAL SERVICE** delivered through Key Account Management teams and sector specialists committed to understanding and meeting our customers’ engineering challenges, wherever they are

A WORLD LEADER IN MOTION AND FLUID CONTROL TECHNOLOGIES, NORGREN WORKS CLOSELY WITH CUSTOMERS TO GAIN A DEEPER UNDERSTANDING OF THEIR ENGINEERING NEEDS, AND THEN CONNECTS ITS PEOPLE, PRODUCTS AND EXPERTISE TO GIVE THEIR EQUIPMENT AND THEIR BUSINESS A CLEAR ADVANTAGE. WE CALL THIS ENGINEERING ADVANTAGE
IVAC INNOVATION TO REDUCE ENERGY USAGE AND OPERATING COSTS

A UNIQUE & SUSTAINABLE ENERGY IMPROVEMENT

→ REDUCE COMPONENTS
→ REDUCE OPERATING COSTS
→ SIMPLIFY ORDERING, INSTALLATION AND MAINTENANCE
→ CLEANLINE VERSIONS
→ REDUCE MACHINE DOWNTIME

→ IVAC CLEANLINE
IP67, integrated valve, switches & flow controls for fast installation and easy washdown
→ IVAC INDUSTRIAL
IP65, integrated valve & flow controls for fast installation
→ Adjustable & buffer cushioning for end of stroke damping
→ Fully integrated sensor adjustment
→ 1 single M12 connection
→ Fully integrated flow controls
→ 1 single air connection, 1 single exhaust port
→ Integrated pressure protection
→ Long life glandless valve technology
→ ISO VDMA footprint

By reducing CO₂ emissions and KW Hrs, IVAC helps towards Energy targets & KPI’s

Reduced air means the cost per mm of stroke is significantly reduced (the air savings effectively pay for replacements)

Consolidation of parts and patent protected design reduces energy consumption by minimising dead volume (it only uses the air in the cylinder, NOT the air in the tubing)

Simple selection and ordering with reduced installation and commissioning time
Using an energy efficient design, it performs strongly in both areas. IVAC is a sustainable energy improvement - it reduces costs – but environmental impact. IVAC optimises cylinder air consumption and reduces your energy targets and KWh hours and helps lower CO2 while reducing the overall cost per mm. Eight different components are used, giving a complete and ready-to-fit, versatile, complete, and easy solution. Norgren has engineered a solution that can deliver a range of measurable benefits.

Full modularity design with key benefits

This IVAC can be removed and replaced without any design changes, dimensional standards meaning there is no need for any design changes, consolidation of parts and significantly smaller control cabinet can be used, making IVAC ideal for retrofitting to existing installations. Consolidation of parts and significantly smaller control cabinet can be used, making IVAC ideal for retrofitting to existing installations. IVAC can be removed and replaced for maintenance or modification. IVAC is available with four different valve configurations offering maximum design flexibility. IVAC can be removed and replaced for maintenance or modification. IVAC is available with four different valve configurations offering maximum design flexibility.

IVAC - the solution for responsible businesses

Incorporating tried and tested Norgren solenoid piloted control valve, position switches are integrated as standard, the integral valve provides much quicker response times. An integrated valve provides much quicker response times. An integrated valve provides much quicker response times. An integrated valve provides much quicker response times. An integrated valve provides much quicker response times.

Adverse conditions, dust, dirt, and vibration

The IVAC is insensitive to adverse conditions, dust, dirt, and vibration. The IVAC is insensitive to adverse conditions, dust, dirt, and vibration. The IVAC is insensitive to adverse conditions, dust, dirt, and vibration. The IVAC is insensitive to adverse conditions, dust, dirt, and vibration. The IVAC is insensitive to adverse conditions, dust, dirt, and vibration. The IVAC is insensitive to adverse conditions, dust, dirt, and vibration.

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Pneumatic cushioning

IVAC uses less tubing and fittings than a conventional separate arrangement, see table, 5m installation length. Pneumatic cushioning increases uptime. Fast cycling: Physical and air pressure cushioning increase cycling speed. Faster cycling: Physical and air pressure cushioning increase cycling speed. Faster cycling: Physical and air pressure cushioning increase cycling speed. Faster cycling: Physical and air pressure cushioning increase cycling speed. Faster cycling: Physical and air pressure cushioning increase cycling speed.

Full modularity design with key benefits

IVAC - a sustainable energy improvement

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Using an energy efficient design, it performs strongly in both areas – but environmental impact. IVAC is a fully integrated unit, incorporating valves, sensors, a control module, tubing and no valves reduces time and cost.

IVAC – THE SOLUTION FOR RESPONSIBLE BUSINESSES

SIMPLIFIED MAINTENANCE
IVAC can be removed and replaced by up to 50%.

NO MECHANICAL DESIGN CHANGES:
Separate valves are not required so a smaller control cabinet can be used, while IVAC uses less tubing and fittings.

IMPROVED AESTHETICS:
There is only one M12 connection for hardwired or fieldbus systems, making IVAC ideal for retrofitting to existing installations.

ADDED SAFETY:
Built in pressure protection ensures safe operation. This means that no retest is necessary for new machines or after the machine cleaning cycle and tubing and no valves reduces the risk of incorrect or new machine functions.

INCREASED ENERGY EFFICIENCY:
An integrated valve provides much improved and more precise speed control.

FULLY MODULAR DESIGN WITH KEY BENEFITS
FASTER, MORE CONSISTENT RESPONSE:
IVAC uses just four.

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IN-DEPTH UNDERSTANDING TO MATCH BREADTH OF SERVICE

Norgren has a commitment to developing emerging technologies which set new standards for performance.

We focus our expertise in key sectors where our knowledge and understanding of legislation and engineering means we can make a real difference to our customers’ business.

These sectors are increasing as we develop new cross-over products and build up a track-record of cost-effective solutions and services.

CURRENT SECTOR EXPERTISE

Using our deep understanding of legislation, standards and specifications, our Engineers and local Key Account Management teams use their expertise to:

- Create tailor-made solutions for individual customers
- Develop platform products that we make available to other businesses in the sector

Currently, our expertise covers the following key sectors:

- COMMERCIAL VEHICLES
- ENERGY
- FOOD & BEVERAGE
- LIFE SCIENCES
- RAIL
- INDUSTRIAL AUTOMATION

IVAC CUSTOMER APPLICATIONS

PET BOTTLING
MACHINERY – CHINA
Main Customer Benefits –
- Improved overall aesthetics of the machine with much reduced tubing and cabling
- Lower energy consumption and running costs

KEGGING / FILLING MACHINERY – USA
Main Customer Benefits –
- Reduced installation time
- Reduced washdown time
- Improved machine aesthetics
- Lower running costs

CONVEYORISED HANDLING SYSTEMS – GERMANY
Main Customer Benefits –
- Easier installation and much simplified commissioning
- Lower air usage and running costs