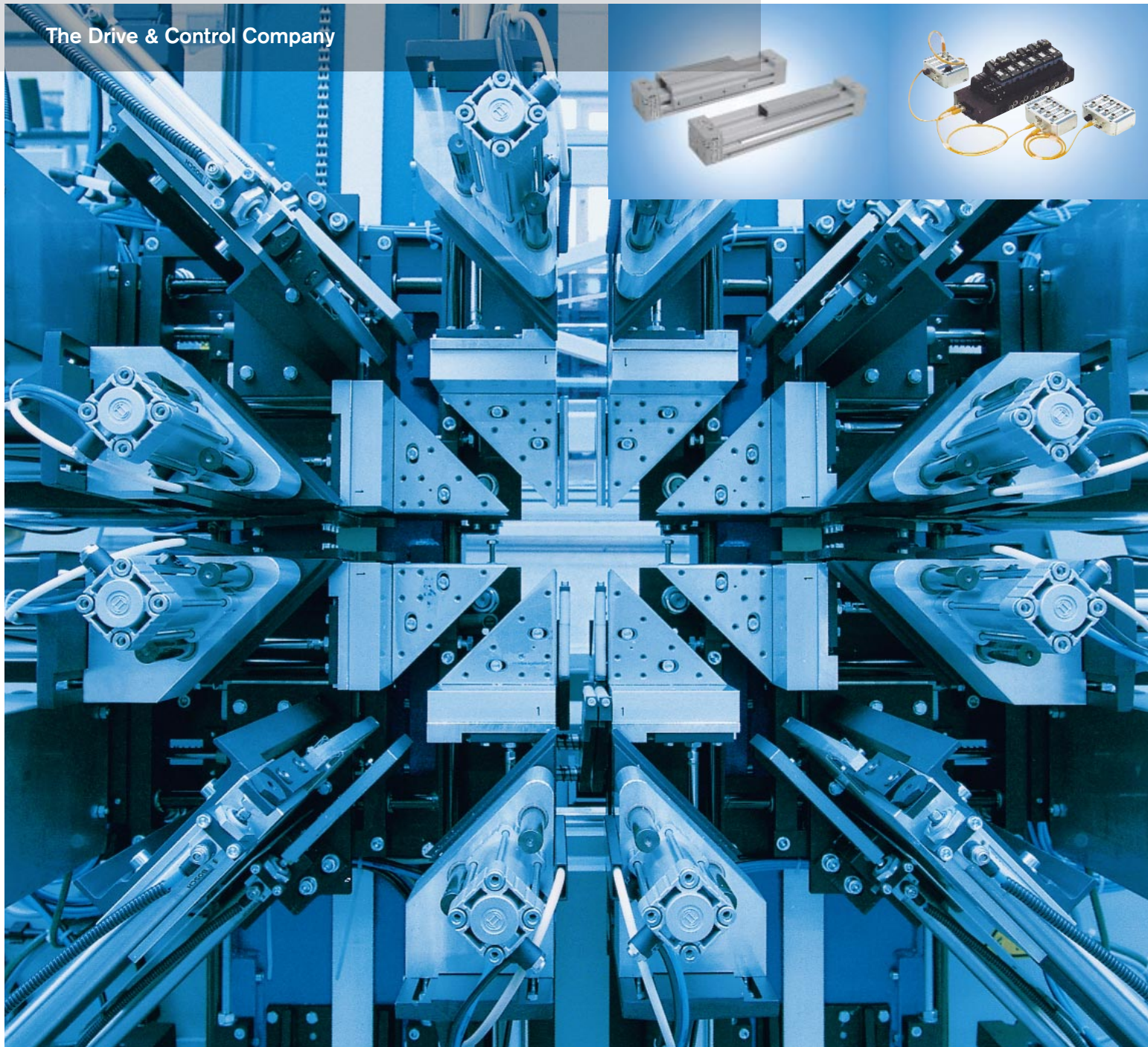


World-class pneumatics from Rexroth. Product overview

The Drive & Control Company



Our expertise is your competitive advantage

Experience and expertise combined with world-class products. Working with Rexroth means working with a partner who can show you how to apply pneumatics for your competitive advantage.

Producing movement with air—that's pneumatics from Rexroth. We can show you how to do more with air—to achieve higher productivity, greater precision, and higher reliability. And with a complete portfolio of pneumatic, hydraulic, mechanical, electronic, and electro-pneumatic components and systems, Rexroth is your global source of industrial automation solutions.



Standard or custom

Providing a sophisticated and extensive standard product line in both NPT and ISO G (BSPP) port configurations, our products include pneumatic valves and actuators, pneumatic and hydraulic cylinders, pneumatic fieldbus valve manifolds, electro-pneumatic valves and positioners, FRLs, tubing and fittings, vacuum components, industrial shock absorbers, and tooth chain products.

We can also customize products to produce application-specific solutions. Our experience in materials, design and manufacturing, and machine knowledge gives us the flexibility to work with you to craft the exact solution you need.

Versatile, modular, precise

Our products are designed with market-specific needs in mind. You'll find what you need rather than trying to force-fit a close cousin. Or we'll give you the custom solution you need. Our modular approach means greater versatility and flexibility in application and customization. What's more, the modularity allows easier integration and greater cost savings.

Customer-based product development

Our products have always been state-of-the-art technology. We are constantly developing new products and improving existing ones—while working with customers globally to understand evolving needs. By focusing our product development on your real-world needs, we create products that give you a competitive edge in reliability, capabilities, and easy use.

Worldwide presence

Global presence, global availability, global application— with Rexroth you have an international supplier who can support you worldwide. Five development centers— in Lexington, Kentucky; Hannover and Schwieberdingen, Germany; Stockholm, Sweden; and Bonneville, France— serve as centers of competence for advancing the state of the art in pneumatics in an ISO 9001-certified design and production environment.

Industry-specific solutions

One size pneumatic solutions don't fit all application needs. Different industries have decidedly different needs. The requirements of the food processing industry, for example, differ enormously from those

of the automotive industry or the challenges of system automation. Our application specialists have experience in your market, understand your specific needs, and can work with you to find the proper products.



Pneumatic directional control valves

Because we are involved in all industries, we have developed pneumatic directional control valves to handle almost any application. From various valve types, such as poppet or spool valves, to sliding ceramic plates, to flow ranges from C_v of .022 to 15.75, Rexroth has the valve for you. Most Rexroth valves are prelubricated, meaning they can operate with or without line lubrication.

Ceram™ and Series 581 ISO 5599/1 valves



Pneumatic 4-way directional control valves in ISO sizes 1 through 4 are available in various solenoid and air pilot versions. Known as the valve for rugged conditions or dirty air, the Ceram valve uses ceramic plates for sealing and stick-free operation. The near diamond hard ceramic plates shrug off contaminants and are warranted for the life of the valve. A very economical solution for ISO valve installations, the Series 581 valve uses a balanced spool and sleeve design. Both lines offer dozens of accessories and options. Porting is 1/4" to 1" NPT or BSPP.

Plug-in valves—fieldbus solutions



A wide range of plug-in 4-way valves combine with flexible fieldbus solutions to set Rexroth apart from the competition. Choose from centralized bus solutions located directly on the valve manifolds or decentralized systems with our F-Design bus components. To reduce machine downtime and troubleshooting, our Drive Diagnostic Link provides manifold-level diagnostics. Fieldbus-enabled valves include V-15 polymer-bodied 15 mm valves with flow rates to .75 C_v , Cube Line 10 valves with a 10 mm wide body, with flows to .3 C_v , Series 261 plug-in valves in ISO sizes 1–3 and flows to 4.8 C_v , and Plug-in 20 valves with flows to .55 C_v . Configure factory-assembled custom manifolds on our Web site. Many of our other industrial valves such as Ceram™ and Type 740 valves can be adapted to fieldbus using our contact bridge system.

HF Series plug-in valves



Expand the modular HF02 and HF03 valve block system in single-station increments up to 16 stations, providing up to 32 valve functions. Save space with no sacrifice of flow: the HF02 is 20 mm wide with 1.4 C_v flow rate and the HF03 is 16 mm wide at .7 C_v . Power consumption is only .35 W per 24-VDC solenoid. The two series can combine on the same manifold. The HF04 valves—only 11.3 mm wide—deliver a flow of .4 C_v . The LP04 low-profile version is 49 mm high with a flow of .2 C_v . HF Series valves used with our bus modules are compatible with all the major protocols.



Ceram™ valves withstand harsh conditions and dirty air without "sticking".

Series 554 directional control valves



The compact, space-saving Series 554 3-way valves offer long life and high reliability. The direct-acting poppet valve has a flow rate of .022 C_v . Rated for 12 and 24 VDC, the valves feature a green LED and optional quick-disconnect electrical connection. Manifold banks are available with a single row or double row of valves. The valve and manifolds can be purchased separately or as factory-assembled valve banks.

Polymer-bodied valves



These lightweight, compact valve lines offer excellent corrosion resistance. With solenoid or air pilot versions, the Type 840 (C_v of .2) and Type 740 (C_v of 1.3) are 4-way valves used in-line or on our snap-on manifold system. They feature integrated fittings for plastic tubing and a diaphragm/poppet design. Series 590 4-way valves are rated IP67 for washdown applications. Our new TC series valves are available in either in-line or manifold mounts, with body widths of 17 mm at .8 C_v or 21 mm at 1.5 C_v , with IP65 protection available. Type 579 valves are 3-way valves with push-in inch or metric fittings and C_v up to .85 that use a dovetail joint to assemble modular valve manifolds. Our Snap valves are panel-mounted 3-way manual valves with a variety of operators.

Other valves



Our Rotair® Block valves are 1/8", 1/4" and 3/8" NPT ported valves with a manual rotary handle and a C_v of up to 1.2. CD-7 1/4" NPT in-line valves are offered in solenoid, manual, and air pilot versions with a C_v of 1.1. Subbase-mounted TaskMaster® valves are 1/4" and 1/2" NPT ported with C_v of 1.0 and feature solenoid, air pilot, lever and button operators. PowerMaster® tapped body valves come in 1/4" through 1-1/4" NPT ports with C_v from 2.4 to 15.8 and are available with solenoid, air pilot and mechanical operators. Our Type 830 3-way solenoid valve is very economical and compact, subbase or manifold mounted, with a C_v of .06.

10 mm and 18 mm body width valves



The VDMA Size 04 valve is only 10 mm wide, but provides flows (C_v) of .07 for the M3 version and .11 for the M5 version. Available in 5/2 or 5/3 functions in 24 VDC, it can be independently mounted as well as subbase or manifold mounted. The 18 mm wide valve (VDMA size 02) has flows as high as .5 C_v and is available in air or solenoid piloted versions in 5/2, 5/3 or in three combinations of the unique dual 3/2 version. This valve can be in-line, subbase or manifold mounted. The solenoid versions are available in all of the popular voltage versions including a 1-watt low-power offering.

Pneumatic cylinders

Rexroth has an extensive line of industrial cylinders to provide solutions to applications large and small. Bore sizes range from 2.5 mm to over 20", with a wide variety of models and materials. From food processing to heavy industry, Rexroth cylinders meet the demands of our customers worldwide.



RexMover™ rodless cylinders



The RexMover employs a new generation shuttle cylinder design ideal for applications requiring high precision over a long stroke length. Yet the installed length is just over half that of conventional piston rod cylinders. RexMover operates

at a fast 16 feet/second, thanks to optimized air channels. Bore sizes are from 16 mm to 80 mm, and four versions are available—integral guiding, slide bearing guide, mini guide and heavy-duty guide. Choose from NPT or ISO-G (BSPP) ports.

NFPA pneumatic, hydraulic cylinders and positioners



Industry-proven NFPA steel PowerMaster® pneumatic and medium-pressure hydraulic cylinders plus PressureMaster® high-pressure hydraulic cylinders offer total flexibility in system design. Fully interchangeable with other NFPA cylinders, they

are available with custom modifications, transducer feedback, and integral valve mounting. Our pneumatic servo valve can be mounted directly on the cylinder to make a positioner. NFPA cylinders are backed by fast shipping, worldwide service, and CAD drawings on PartSpec®. Standard bore sizes are 1-1/2" through 14", with larger sizes available to over 20".

TaskMaster® pneumatic cylinders



The TaskMaster has been the standard in industry for 40 years with its integral tie rod design. The line has two distinct model choices: the TM-1 series matches NFPA rod thread and port dimensions, while the TM-8 series offers an exact

replacement for the original line. Features include standard magnetic piston, oversize rod options, and port and cushion options. The aluminum-bodied cylinder is available in 1-1/2" through 6" bores.



ISO/VDMA cylinders with optional rod brake

Choose from two different series of ISO/VDMA cylinders. These aluminum-bodied cylinders are available in four designs: traditional tie rod, hygienic-internal sensor, robust protected sensor, and dovetail groove for sensor. The optional rod brake can operate pneumatically or manually. Bore sizes 32 mm to 320 mm. NPT ports are available.

Compact cylinders

The modular design of these compact single- and double-acting cylinders allows flexible variations. Variations include male or female threaded piston rod, single or double rod end versions, hollow piston rods, torsion protection, metal rod scrapers, high-temperature versions, reinforced piston rods, and corrosion protection. Other models include multiposition and tandem cylinder combinations. Flush-mounted proximity switches can be mounted on all four sides. The compact cylinders are available from 16 mm through 100 mm bore sizes with strokes to 400 mm.

Stainless steel cylinders



Our Rextreme™ and Mecstre™ stainless steel (316 or 304 grade) pneumatic cylinders meet all levels of corrosion resistance. Their hygienic design has smooth, cavity-free surfaces for easy clean up. The cylinders are lubricated

with edible grease to allow direct contact with food. Bore sizes available from 25 mm to 125 mm.



Octagon ISO cylinders

These aluminum-bodied ISO cylinders feature an octagon-shaped piston providing more force than a standard round piston. Stainless steel nonrotating or rotating piston rods are provided. Heads and caps are made of polyamide; bore sizes are 8 mm through 32 mm.

Mini ISO cylinders

Single- and double-acting ISO cylinders feature stainless steel tubes and piston rods with anodized aluminum end caps. Bore sizes from 10 mm to 25 mm, with stroke lengths up to 1000 mm.

Series M mini cylinders

Mini cylinders feature stainless steel tubes and aluminum heads and caps. Bore sizes range from 5/16" to 3" NPT. Twenty-seven mounting styles, magnetic pistons, and a wide variety of mounting accessories are available. Interchangeable with other major brands.

Micro cylinders

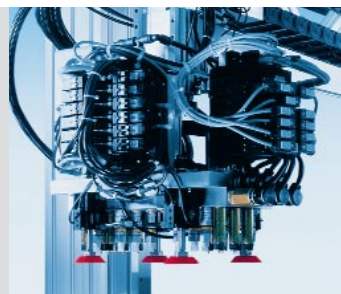


For the smallest cylinder applications, Series 131 start at 2.5 mm bore size. Featuring stainless steel piston rods and bodies, along with brass pistons, the Series 131 can withstand corrosive conditions also. End covers are brass or aluminum.

Single-acting models range from 2.5 mm to 10 mm bores, while double-acting models range from 6 mm to 10 mm bores.

Automation/handling devices

Rexroth provides automation building block solutions to allow custom applications at standard component prices. Compactness, light weight, and efficiency describe our products used in applications like material handling, assembly, and other precision applications.



Mini slides

Pneumatic mini slides feature an integrated Ball Rail® guide smooth, light movement while offering high load capacity and rigidity. The 272 series features three different models with bore sizes from 8 mm to 25 mm. The ZSC series is available in 6 mm to 25 mm bore sizes. They feature stroke lengths from 10 to 100 mm, anodized aluminum bodies, stainless steel piston rods, and magnetic pistons for sensors.

Rotary actuators

Two series of durable rotary actuators are offered. The RAP series is a double rack and pinion design with torque values from 0.1 Nm to 2.4 Nm, and rotation angles from 90 degrees to 360 degrees. The RAN series is a vane type with torque values from 0.16 Nm to 2.6 Nm and rotation angles from 90 degrees to 275 degrees.

Vacuum products

Choose from a wide variety of vacuum cup styles, vacuum generators and accessory devices. Cup sizes range from 1/4" to 12" O.D., with holding forces up to 575 lb at 60% vacuum. Cup styles include standard, tube mounted, bellows, oval and cups for rough surfaces.

Index tables

Our index tables feature continuous stepwise rotation and come in increments of: 8 x 45 degrees, 6 x 60 degrees or 4 x 90 degrees, clockwise or counterclockwise. Torque rating is 1 Nm at 60 psi. Sensors are available for position indication.

Non-contact transfer units

These devices allow lifting of small objects without touching the surface. Airflow under the device creates a vacuum, and thus a lifting force. They are maintenance free with a long life because of no moving parts and are ideal for highly sensitive objects such as electronic industry applications.

Grippers

A wide variety of pneumatic grippers in parallel and angle versions provide a secure and precise hold at the end of the axes in a material handling system.

Block cylinders and duo linear actuators

Block cylinders have multiple mounting options which enable ease of use with other axis components. They are available in strokes up to 50 mm and bore sizes from 8 mm to 25 mm. Duo linear actuators are compact, twin-piston cylinders with strokes up to 100 mm and bore sizes from 16 mm to 32 mm. Both series have hollow rods available for vacuum cups.

GPC—guide precision cylinder



The GPC makes it easier to design and build machines by reducing the need for external guides on cylinders. A reinforced guide rod provides high stability, high side-load capacity and nonrotation. GPCs can be combined

without the use of adapter plates to make a 2-axis system. A magnetic piston and polymer impact cushions are standard.

Accessories/FRLs

To complete a pneumatic application, you need more than just valves and cylinders. That's why Rexroth offers an extensive line of fittings, tubing, air preparation and accessory devices. These accessory devices allow for easier, cleaner installations.



Fittings, tubing and silencers



A wide variety of inch and metric fittings, tubing, adapters and silencers are available. Push-in fittings provide quick, easy connection to plastic tubing. Stainless steel fittings provide corrosion resistance when necessary.

Choose from polyethylene, polyurethane, or Teflon tubing. Silencers for exhaust ports come in several styles and materials.

Flow control valves

Flow controls are offered in right-angle or in-line configurations, and with inch or metric porting. Models with push-in connection or threaded ports are available. Port sizes go up to 1" NPT and G1/2 BSPP.

Accessory valves

Quick exhaust valves with aluminum or plastic bodies range in port size from 1/4" to 1" NPT. Aluminum bodied shuttle valves come with 1/8" to 1/2" NPT ports. In-line aluminum check valves are available in 1/8" to 1" NPT. Right-angle check valves range from 1/8" to 1/2" NPT.

Relay valves

The "S" relay valve is a pilot-operated, 3-way, pneumatic pressure control valve with open exhaust. Ideal as a volume booster, port sizes range from 3/8" to 1" NPT, with supply and pilot pressure to 250 psi.

Shock absorbers

Shock absorbers for energy absorption or to function as a mechanical stop come in self-compensating and adjustable models. Maximum energy absorption ratings range from 1700 to 248,000 Nm.

Filters-regulators-lubricators

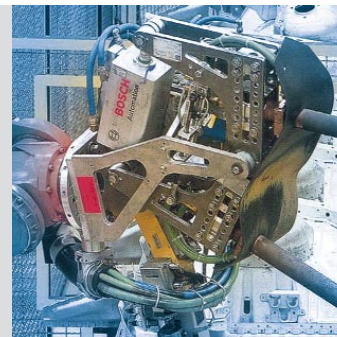


Wide range of FRL's include choices of NPT or ISO-G (BSPP) ports. Combination units are available from 1/8" to 1" ports, and regulators available from 1/8" to 2" ports.

Standard and coalescing filters range from 1/8" to 3" ports. Many options and accessories available include lock-out valves, emergency stop valves, adjustable or piloted progressive start-up valves, sequencing and balancing valves, reverse flow regulators and pilot operated regulators. Our unique Combi FRL combines all functions of a traditional FRL in a single compact package.

Electro-pneumatic devices

Rexroth electro-pneumatic (E-P) devices bridge the gap between electronics and pneumatics by converting an electrical signal proportionally into pneumatic pressure. They are used where electrical control is required to act directly on a change of pressure or force. A serial interface option is available on some models that allows an E-P to be fieldbus compatible.



ND-4 E-P pressure control valves

These analog E-Ps offer flow rates up to 12.4 SCFM. Inputs can be between 0–10 VDC, 0–20 mA, or a potentiometer. The output pressure range of the pilot control version is up to 150 psi with a hysteresis of less than .2 psi, while the proportional solenoid version reaches 87 psi with a hysteresis of less than .9 psi. Universal port threads allow ISO G 1/8 or 1/8" NPT ports.

ND-5 E-P pressure control valves

The ND-5 E-Ps feature flow rates up to 28 SCFM with output pressure ranges up to 150 psi. Command signals include between 0–10 VDC, 0–20 mA, or a potentiometer. Choose between analog or fieldbus compatible models. Hysteresis is .87 psi.

ND-7 E-P pressure control valves

Six models of ND-7 are available with flows of up to 28 SCFM (G 1/4 or 1/4 NPT) or 45 SCFM (G 3/8). The versions include a variety of analog and fieldbus-compatible link-pilot and link-proportional designs.

ND-12 E-P pressure control valve

The high flow ND-12 reaches up to 92 SCFM. This analog, proportional solenoid E-P accepts command signals of between 1–10 VDC, 0–20 mA, or a potentiometer. Hysteresis is .44 psi.

Accu-Air™ E-P pressure control valves

The Accu-Air EP-1 features flow up to 1 SCFM and output pressure of up to 150 psi, while accepting between 0–10 VDC or 0–20 mA command signals. The EP-300 offers flows up to 300 SCFM and output pressure to 250 psi, while accepting between 1–5 VDC or 4–20 mA command signals.

E-P positioner

The E-P positioner delivers a proportional position based on a command signal of between 0–10 VDC, 0–20 mA, or a potentiometer. Available in bore sizes 1-1/2" through 5" and standard strokes up to 18" (longer strokes available), accuracy is ± 0.050 " or 1% of stroke, whichever is greater. The positioner consists of a cylinder with integral sensor, optimized valving, and an electronic controller.

ND-1 and ND-1.8 E-P flow control valves

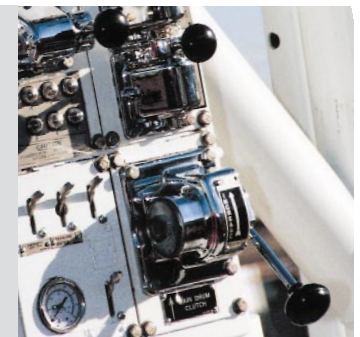
These valves allow air flow to be controlled proportionally by varying a 40–140mA command signal. Maximum input pressure is 150 psi for the ND-1 and 36 psi for the ND-1.8. Ports are M5 (10–32).

Electronic flowmeter

This electronic volume meter accurately measures volume flow rates. A selectable output electrical signal of 200–1200 Hz, 0–10 VDC or 4–20 mA is proportional to the flow rate measurement. Maximum operating pressure is 145 psi. Three sizes are available with flow ranges up to 1 C_v.

Mobile/oilfield valves

Rexroth pneumatic valves for mobile and oilfield applications have been the industry leader for decades due to their rugged, proven reliability and precise control. These directional and pressure control valves control oilfield equipment, vehicle transmission shifting, cranes, construction equipment, rail car hopper gates, etc.



Type "A" Pilotair® directional control valves

These valves are panel-mounted, poppet-type valves that open, close and vent an air circuit. It is ideal for frequent use because of ease of operation, fast response and ability to tolerate contaminated air. Maximum pressure is 250 psi, C_v of 1.0, 1/4" NPT ports, with 3-way, 4-way and multiple 3-way functions. Handle-operated or block-style valves with variety of air pilot or mechanical operators are available.

Type "P" Rotair® directional control valves

This valve has single-handle operation, with up to eight distinct handle positions, and is ideal for transfer valves and control of multiposition cylinders on vehicle transmissions. Maximum supply pressure is 150 psi. Multiple 3-way functions, 1/4" NPT ports.

Type "D" Pilotair® directional control valves

A custom valve for a standard price, the "D" Pilotair is easily tailored to your installation. Nine basic valves and nine basic operators in both 1/4" and 1/2" NPT port sizes, along with various operator spring return and holding functions are available. The operators and valve segments can be rotated at 90-degree increments to fit most any application problem, with flows of 2.1 and 5.1 C_v, 2-way, 3-way and 4-way functions.

SuperSpool™ directional valves

These valves come in manual or solenoid operated models, subplate or tapped body mounting, single or double solenoid, and in 1/4", 3/8", 1/2" and 3/4" NPT ports. Limited models are available with 1" and 1-1/4" NPT ports with C_v up to 15.75. Some of our popular 3/4" NPT models are used to control rail car cylinders on bottom dump coal cars.



Type "M" Plus™ pressure control valves

Designed for short-distance (up to 50 feet), low-force pressure control applications, this valve offers economical and accurate control. Operators include hand lever, foot pedal and mechanical plunger. Maximum supply pressure is 150 psi, with choice of two controllable output pressure ranges, 0–60 or 0–100 psi. Sensitivity is 2% of range, and ports are 1/8" NPT.

Flexair® pressure regulating valves

The Flexair valve gives 3-way, precise control of the various functions performed during the operation of oil drilling rigs, excavating machinery, hoists, dredges and production machines. Handle options include various lengths, self-holding, self-returning, and detent in extreme positions. Handle guide arrangements are available to operate one, two or three pressure or directional control lines separately or in combinations. Maximum pressure is 150 psi.

Type "H" Controlair® valves

Hand, foot or mechanically operated, these valves can control both pressure and flow of air. Some models control functions in separate and independent air circuits or in branches of the same circuit. Other models control these functions either selectively or simultaneously in three separate and independent branches of an air circuit. Outlet pressures are controllable between 0–175 psi, and can maintain pressure within 1.5 psi.

Mobile/oilfield actuators & cylinders

Rexroth actuator/positioners are compact, pneumatically operated devices used for accurate positioning of diesel engine governor control arms, butterfly valves, carburetors and other low-force mechanisms. Applications for our mobile cylinders include transmissions, positioning hydraulic valves, clutches, brakes, rail car hopper control, etc.



A-2-H actuators

These diaphragm-lever actuators have a power rating of 410 in-lb-degrees and come in four pressure range choices up to 90 psi. The A-2-H has a nominal stroke of 2", adjustable from 1-7/8" to 2-1/4".

AA Type actuators

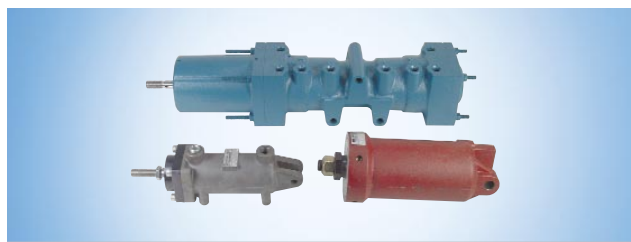
These powerful diaphragm-lever type actuators have a force rating up to 1125 in-lb-degrees. Single and two-direction models are available, as well as models with a separately controlled stop cylinder. Output travel is adjustable from 7/8" to 2-1/4", with a pressure range of 0-60 psi.

A-3 actuators

The compact A3 actuators are single direction, piston actuated positioners. Positioning can be linear with the A-3L model, with a force rating of 12 lb through .50". Radial positioning is obtained with the A-3R, rated at 345 in-lb-degrees. Operating pressure is 10-60 psi.

Two-direction positioners

These versatile linear positioners move one-half their total stroke length in each direction from a center "zero" position. They feature three total stroke lengths, 1", 1-1/2" and 2". Force ratings range from 410 to 820 in-lb-degrees, and four pressure range choices up to 115 psi are available.



Type C linear positioners

These small linear piston types have integral female clevises for easy mounting. Two sizes are offered, with force ratings of 650 and 1400 in-lb-degrees. Strokes are 1-1/2" or 3" and operating pressure ranges from 0-60 psi.

Multiposition transmission cylinders

These air cylinders are discreet positioning devices which can be controlled by "A" or "D" Pilotair® or "P" Rotair® valves depending on number of positions. Two through eight position models have various stroke lengths, available in 1/16" increments. Maximum operating pressure can be up to 250 psi depending on model.

Construction grade (cast iron) cylinders

Constructed of unyielding semisteel, these durable cylinders are unequaled for clutch and brake applications. The cylinders feature an integral female clevis mounting. Operating pressure is 120 psi, and strokes range from 2-1/2" to 7". Single- and double-acting models, and bore sizes from 2-1/2" to 4-1/2" are offered.

Hopper dump rail car cylinders

These heavy-duty 12" or 14" bore air cylinders operate hopper gates. Cast ductile iron heads and caps are standard, with stroke lengths from 17" to 30". The cylinder tubing can be chrome plated I.D. steel, or lightweight fiberglass. NFPA type MP1 and MS4, or customized mounts are available.



Marine controls

We were the pioneer in the field of pneumatic remote controls for marine propulsion systems. Today, we provide both pneumatic and electronic controls for a broad spectrum of vessels, from pleasure and fishing boats, to tugs, offshore supply and military ships.



Pneumatic control systems



Factory assembled and tested Rexroth control systems are ready for shipboard installation and operation. They incorporate pneumatic pressure interlocks and protective circuits for proper engine and reverse gear operation without relying on operator judgment to time or anticipate propulsion machinery functions. Standard systems include LogicMaster® air clutch (1,000 to 4,000 hp engines) and hydraulic clutch (800 to 2,000 hp) units, along with GearMaster® (200 to 1200 hp) air and hydraulic clutch control units.

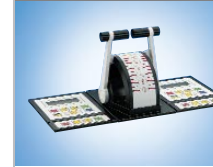
Pneumatic clutch and throttle valves

We offer a very large selection of rugged, panel-mounted marine Controlair® valves, all corrosion resistant and with proven dependability. Choose from single or double handle models, and plenty of position and pressure options. Models with chrome plated bronze covers and handles are available for open deck or other applications.

Air logic valves and accessories

A wide variety of other special marine components are available to complete installations. These include shuttle, check and flow control valves, gage blocks, timers, positioners, multifunction valves and pressure regulators.

Marex OS electronic marine control systems



These microprocessor-controlled systems feature a high level of flexibility, and the ability to transfer data via CANbus. The modular concept enables specific requirements of a ship to be met with a minimum of design and installation work. Clear text information via a display aids in programming functions and troubleshooting.

Mini-Marex electronic marine control systems

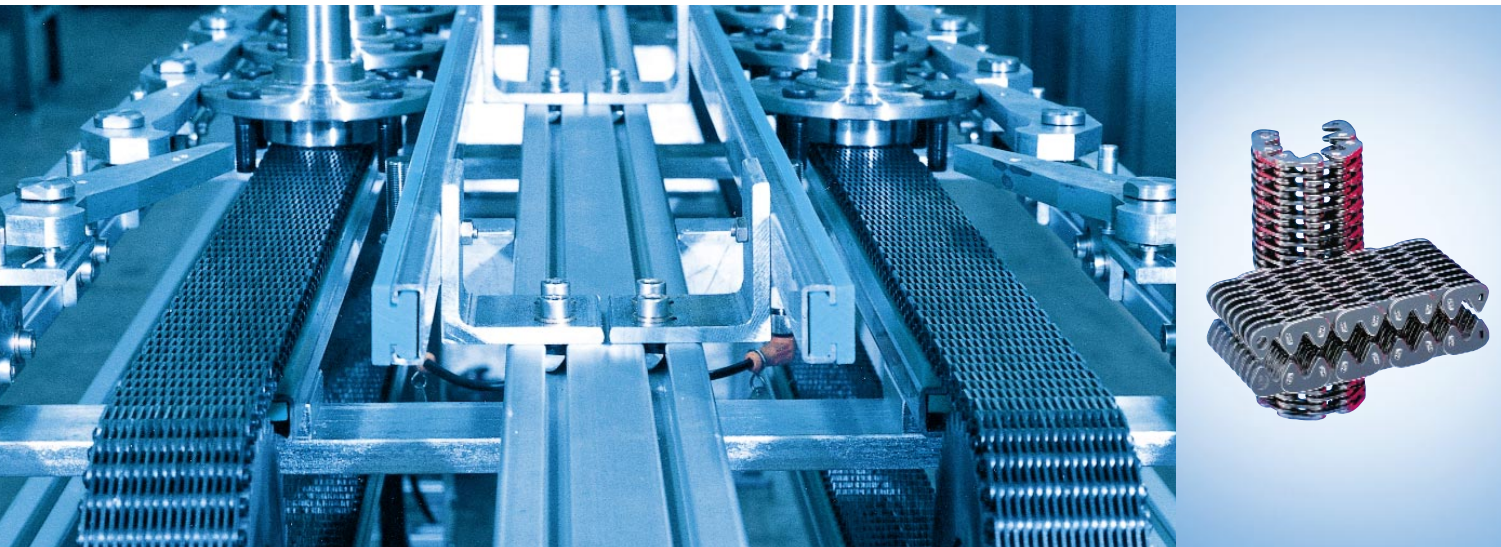


Also microprocessor controlled, the Mini Marex offers a lower cost system than the Marex OS with less flexibility, yet packed full of features including high control accuracy, single lever operation of engine speed and reverse gear, engine warm-up, operation of up to four stations and simplified fault diagnosis.

Marex SB electronic marine control systems

The most economical electronic controls we offer, the SB is a basic single lever operation control system with high control accuracy. It is ideal for retrofitting, as it can directly replace mechanical cables.

Inverted tooth chain drives



Inverted tooth chains differ considerably in their design from other steel sprocket chains. The plates form a positive locking contact with the wheels of the chain, at the same time taking on the tensile force. In this way, inverted tooth chains transmit higher torques and power in confined installation spaces. The main design characteristic is the cradle-type joint made of two profile trunnions. This provides benefits such as: low-noise operation, speeds of to 50 m/s, 99% efficient non-slip operation, high load capacity, extra long service life, and smooth operation.



www.boschrexroth-us.com

The U.S. Internet site for pneumatics and other Rexroth products and services supplies valuable information and resources twenty-four hours a day. Everything from on-line and downloadable catalogs, to CAD files, product calculation programs, and configurators. Use our product configurators to put together your own custom valve manifolds or cylinders for many product lines.

Rexroth is the global supplier with comprehensive solutions spanning all relevant technologies for drive, control, and motion.



	Industrial Hydraulics	Rexroth is the technology and market leader in industrial hydraulics with an extensive range of products and in-depth application knowledge. Here, you receive the world's most extensive range of standard products, application related systems and high-quality custom solutions in hydraulics. Complete systems are planned and handed over in a turnkey condition by globally operating teams. Rexroth is the ideal development partner for you for highly efficient machines and production facilities—from the first contact to commissioning and throughout the entire service life of the system.
	Electric Drives and Controls	In electric drives and controls, Rexroth offers industry-specific systems for the efficient automation of production processes. With a comprehensive, perfectly matched modular system of highly dynamic drives, open control systems and intelligent software packages, we offer you comprehensive and scalable system solutions. Universally applicable frequency converters, modular bolting and insertion systems, as well as complete system solutions for resistance welding round out the extensive portfolio of products.
	Linear Motion and Assembly Technologies	<p>Reliable guiding and precise positioning—this is the comprehensive expertise of Rexroth in linear motion and assembly technologies. For example, rail guides, ball screw drives, linear modules and other components act as an interface between stationary and moving machine parts.</p> <p>In addition, we offer aluminum profile systems, complete assembly workstations and transfer systems as well as SCARA robots for creating production plants. All components, modules and systems are absolute top of the line worldwide with regard to their variety and functionality.</p>
	Pneumatics	In pneumatics, Rexroth provides motion with air. With pneumatic, electronic and electro-pneumatic components and systems for the automation of machines and production facilities, we offer a broad range of standard products and application-specific solutions. From food processing to foundries, we're involved in all of the industrial sectors, and in addition, we serve the oilfield, mobile/construction and marine markets. As a full-line supplier, with more than just valves and cylinders, we have automation components, FRL's, accessories and more to complete your installation from one source.
	Service Automation	Rexroth unites the customer service and training activities of the technology areas Industrial Hydraulics, Electric Drives and Controls, Linear Motion and Assembly Technologies as well as Pneumatics under a single roof. Thus, all services required for the entire product range of industrial and factory automation worldwide are bundled in a single organization. Our globally active teams and experts are there for you in more than 80 countries.
	Mobile Hydraulics	Rexroth develops and produces mobile hydraulic systems for the largest machine manufacturers in the world. You profit from the expertise and experience of the world leader for all drive and control solutions for every aspect of mobile machines. With a portfolio of products containing hydraulic drives and controls, planetary transmission, our own electronics expertise and global mobile service unique to the market, we increase the success of our customers. Rexroth has bundled comprehensive system knowledge into application centers for a wide variety of industries for you.

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