Intelligent automation

HOERBIGER
Top performance for today and tomorrow

Technical competency, Innovative products, System performance, Services. This strong foundation has placed Hoerbiger in a leading position in both technology and market terms and is the basis for its future expansion.

Compression Technology Group

In the field of compressor technology we are the world-wide leading manufacturer of valves and controls for piston compressors. By consistently taking into account the individual requirements of our customers, we offer an exemplary range of components, systems, and services enabling the efficient, safe, energy-saving and environmentally friendly operation of compressors and complete compressor plants.

Drive Technology Group

In the field of drive technology we convince by combining our core competencies in tribology, metal forming, application knowledge, and system competence. As an internationally leading manufacturer of components and system solutions for power trains in cars and commercial vehicles HOERBIGER convinces the vehicle and transmission industry globally.

Automation Technology Group

In the field of automation technology HOERBIGER is the market leader in specific hydraulic, pneumatic and electronic fields of application. By combining our know-how we develop outstanding customised niche solutions for the automotive industry and for cross-technology system engineering in special segments of machine and plant construction.

Automation Technology Group

- Business Division
  Industrial Pneumatics
- Business Division
  Application systems
- Business Division
  Automotive comfort systems

Customised Industrial Pneumatics
Customised Industrial Pneumatics

Fast, flexible, and highly competent: the whole structure of HOERBIGER-ORIGA is organised to provide optimal and adaptable client solutions at all levels of complexity.

Components ➔ Macro-components ➔ Systems

A wide range of application-oriented components are offered as standard. For more demanding requirements we also provide intelligent product combinations and assemblies in the form of macro-components.

ATEX - safety in explosive areas

Where flammable gases, vapours, liquids, or dust are produced, stored or transported, there is generally a risk of explosion. ATEX certified products contribute to the effective prevention of this risk. We have tested our complete product range in this respect and almost all product groups meet the current ATEX guidelines.

Components

- Redless cylinder OSP-P
- Electric linear drive OSP-E
- Piston rod cylinder
- Valves
- Compressed air treatment
- Accessories

Customised solutions make economic sense

While standard components may be cheaper to buy, additional consequential expenses are frequently incurred when they do not completely fulfil the application requirements. HOERBIGER-ORIGA offers a more efficient approach, with customer and application-oriented modifications and adaptations of standard products. From simple changes to new developments of components, macro-components and complete systems: the optimised functionality reduces effort and provides for greater economy.

Our speciality: Application specific special developments based on our standard products

Clean room cylinder OSP-P

Wear resistant, non-abrasive components and an integrated vacuum supply eliminate particle emissions. Due to its excellent characteristics it was the first clean room cylinder to be certified with the IPA certificate (test criteria according to DIN EN ISO 146 44-1).

Customised solutions add value - by developing new applications and solutions of standard products. From simple changes to new developments of components, macro-components and complete systems: the optimised functionality reduces effort and provides for greater economy.
The rodless pneumatic cylinder OSP-P is the ideal system carrier for performance-optimised macro-components and systems.

Guidance systems

Sideways roller guide
- Cast-elliptical friction guide for medium loads
- Anodised aluminium
- Guided roller with adjusted roller tracks
- Integrated wipers
- For heavy loads and advance operating conditions

Power-side roller guide
- The compact guide for high loads and speeds
- Machined and hardened stainless steel guide shafts
- Integrated wiper system
- Very compact
- Optional corrosion resistant version
- Very smooth and precise performance
- High load and torque capacity in all directions
- Available with active and passive brake options

Proline aluminium roller guide
- For heavy loads and advance operating conditions
- Machined and hardened stainless steel guide shafts
- Integrated wiper system
- Very compact
- Optional corrosion resistant version
- Very smooth and precise performance
- High load and torque capacity in all directions
- Available with active and passive brake options

Guidance ball bushing guide
- with linear ball bearing for high loads and precision
- Machined and hardened stainless steel guide shafts
- Precision linear ball bearing
- Large mounting surface
- All guide rail
- High load in all directions
- Smooth operation

ORIGA SYSTEM PLUS
- Optimised functionality through intelligent modularity
- The modular ORIGA SYSTEM PLUS is the core of standard series and special solutions. Its unique modularity is unmatched by any other product on the market.
OSP-P: The multitalented pneumatic cylinder

Flexibility was the primary construction principle in developing the pneumatic rodless cylinder OSP-P, making it the first choice for special applications.

- High-speed design: For piston speeds up to 30 m/s
- Slow-speed design: Absolutely smooth operation even at 0.005 m/s made possible by the highly flexible stainless sealing bands and special lubrication
- Clean room design: Non-abrasive components and the integrated vacuum system eliminate all particle emissions
- High temperature design: Safe operation up to +120°C through selected materials and temperature resistance of the sealing band
- Low temperature design: Problem free operation down to –40°C
- ATEX design: Safety in explosive areas with the OSP-P and Slideline plain bearing guide
- Extra long design: Up to 15 m cylinder length

Special strengths for special applications

- Integrated active brakes
  - Active brakes for standard cylinders, plain bearing guide Slideline and aluminium roller guide Proline.
  - Brake actuation through compressed air
  - Brake return through spring force
  - Completely corrosion resistant
  - Position retention even with changing loads

- Integrated passive brakes
  - Plain bearing guide Slideline and aluminium roller guide Proline with integrated passive brakes
  - Blocking function for energy failure
  - Actuation through spring force
  - Release through compressed air
  - Completely corrosion resistant
  - Indexing of intermediate positions during movement possible

- Servo pneumatics
  - SERVOTEC servo-pneumatic positioning system, easy to program with analogue and binary signals
  - Precise and dynamic
  - Freely selectable stroke length up to 3000 mm
  - Absolute measuring method

- Tandem cylinders
  - Cylinder with two pistons for accepting higher torques
  - Higher load capacity
  - Increased support
  - Any length of stroke

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size Ø (mm)</td>
<td>25 – 80</td>
</tr>
<tr>
<td>Max. holding load</td>
<td>Up to 4000 N at 6 bar</td>
</tr>
<tr>
<td>Brake surface</td>
<td>Dry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size Ø (mm)</td>
<td>25, 32</td>
</tr>
<tr>
<td>Speed</td>
<td>2.5 m/s</td>
</tr>
<tr>
<td>Repeat accuracy</td>
<td>± 0.1 mm/m</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size Ø (mm)</td>
<td>10 – 80</td>
</tr>
<tr>
<td>Stroke lengths</td>
<td>Up to 6000 mm</td>
</tr>
<tr>
<td>Eff. actuator force</td>
<td>Up to 3460 N at 8 bar</td>
</tr>
</tbody>
</table>
OSP-E: A full spectrum of electrical linear drives

High speeds, absolute reliability, precise movements: the latest technology transforms OSP-E electric linear drives into universally adaptable actuators.

Whether individual or industry specific requirements: OSP-E electric linear drives offer a family of modular components for complete system solutions.

ORIGA SYSTEM PLUS

Simple solutions for difficult tasks

As a most adaptable system carrier the OSP-E electric linear drive with guidance module is suited for the most varied application profiles:

- **Guidance systems to measure:**
  - SLIDELINE plain bearing guide for medium load and speed
  - GUIDELINE linear guide with linear ball bearing for heavy loads and high indexing accuracy
  - PROLINE aluminium roller guide for high loads, high acceleration, and high speed
  - POWERSLIDE roller guide for high loads and arduous environmental conditions

Screw drives - trapezoidal and ball screw

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>OSP-E B</th>
<th>OSP-E S</th>
</tr>
</thead>
<tbody>
<tr>
<td>F (N)</td>
<td>3120</td>
<td>425</td>
</tr>
<tr>
<td>v (m/s)</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Stroke (mm)</td>
<td>5700</td>
<td>5700</td>
</tr>
</tbody>
</table>

Toothed belt drives

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>OSP-E 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>F (N)</td>
<td>425</td>
</tr>
<tr>
<td>v (m/s)</td>
<td>5</td>
</tr>
<tr>
<td>Stroke (mm)</td>
<td>5700</td>
</tr>
</tbody>
</table>

The powerful motor, transmission and controller programme is specifically targeted to individual applications. All common bus and control systems can easily be accommodated.

All electrical linear drives OSP-E in the sizes 25, 32, and 50
Piston rod cylinders:
Top quality for top performances

High performance integrity, high service-life, low maintenance: The leading quality of piston rod cylinders from HOERBIGER-ORIGA is the result of decades of experience. It also promotes the implementation of application-optimised special solutions.

Selected cylinder concepts with excellent running features characterise the programme of piston rod cylinders from HOERBIGER-ORIGA. The associated advantages are an important prerequisite for the smooth deployment within a system. They enable the highest levels of efficiency for modern automation and provide the basis for special solutions developed for individual projects.

- Low break-away pressure
- Low-friction sealing elements and guides capable to carry heavy loads
- Corrosion-proof
- High service-life
- Compact design
- Exceptionally smooth operation
- Conformance to ISO/VDMA
- ATEX variants

- Double and single action
- With and without end of stroke cushioning
- Remote position sensing
- Through-rod versions
- Non-rotational cylinders
- Blocking cylinders
- Guide cylinders
- Multi-position cylinders
- Blocking units
- Single-end air connection
- Low pressure hydraulics
- High temperature variants

From an excellent standard to a unique special solution

Nominal size Description
Design Piston rod cylinder
Diameter 2.5 – 320 mm
Operating pressures range 0.5 – 10 bar dependent on series
Temperature range -10 – +70 °C or -20 – +80 °C dependent on series
High temperature variants upon request
Stroke lengths All popular standard stroke lengths max stroke lengths dependent on series
Actuator forces 0.026 – 26.5 kN at 6 bar, dependent on diameter

Blockage cylinder DZB Mountings according to ISO 6431 or ISO 15552 Ø 12 – 120 mm

DZ tie rod cylinder according to ISO 6431/VDMA or ISO 15552 Ø 12 – 100 mm

NZK cylinder according to ISO 6431/VDMA or ISO 15552 Ø 32 – 100 mm

AZ cylinder according to ISO 6431 or ISO 15552 VDMA 24562 Ø 32 – 100 mm

SZ compact cylinders Ø 12 – 100 mm

R round cylinder according to ISO 8432 Ø 2.5 – 63 mm
Standard valves with impressive possibilities

Even the smallest components can contribute significantly to the efficiency and economy of whole systems. Valves from HOERBIGER-ORIGA are a perfect example of this:

**S9 - robust and heavy duty modular valves:** The S9 range of standard and special valves are designed for durability, versatility and efficiency for the most diverse pneumatic requirements.

- High flow rates
- Low actuating forces
- Robust and reliable
- Mechanical, electrical, pneumatic, piezo-electronic actuation
- In-line valves
- Panel mounted versions
- ISO/VDMA valves
- NAMUR mountings
- Can be mounted in series

**Connection size:** G1/8 to G1/2, ISO 1-3, VDMA 01

**Spec pressure range:** 0-10 bar (dependent on design)

**Operating temperature:** -10 to +40°C (dependent on design)

**S9 special valves:**
- ATEX variants
- Valve islands with multipole and field bus designs

**S10 compact valves**

Reliable, maintenance-free and long-lasting: The S10 valve series represents compact precision which is also economical.

- Thread connections G1/8
- Instant plug-in connections
- 2 x 3/2, 5/2, 5/3 port
- Nominal flow rate 650 l/min nominal power 1.1 W
- Compact dimensions
- Pneumatically actuated
- Electrically actuated
- AS interface connection upon request

**Valve island IM10 with multipole design**
- Modular construction
- Accepts up to 18 monostable valves
- Accommodates multiple pressure stages
- Access to Profibus DP, Interbus S, DeviceNet, etc via a field bus hub
- Compact and lightweight

**Piezo valves**

Lowest possible power consumption, extremely fast response and intrinsically safe: The extraordinary benefits of the Piezo valve make it the first choice for many areas of application, especially in Ex protected zones and for low energy applications.

- Compact
- No heat generation
- Anti-magnetic
- CNOMO/NAMUR mountings
- Ex certified versions on request
- Compatible with most popular Ex and standard plc control systems
- For intrinsically safe bus systems

**ISO valves, series S20 in size 1, 2, 3 and VDMA 01**

**S9 special valves:**
- Logical superstructures
- With time-delay
- Oscillating valves
- Two-hand operation
- NAMUR mountings
- Diverse special actuators

**Connection size:** G1/8 to G1/2, ISO 1-3, VDMA 01

**Oper. pressure range:** 0 - 10 bar (dependent on design)

**Temperature range:** -10 to +60ºC (dependent on design)**

14 15
The complete world of modern compressed air management

Modern automation technology would not be possible without efficient compressed air treatment. With the comprehensive abrit series HOERBIGER-ORIGA is an established leader for compressed air management systems.

abrit components are completely modular, enabling highly specialised system solutions for specific applications to be produced, even in the smallest of quantities.
- Stop valves
- Pressure control valves
- Filter water separators
- Oil mist lubricators
- Start/stop valves
- Microfilters
- Activated carbon filters
- Central lubricators
- Injection lubricators
- Prop. pressure regulators
- Comprehensive accessories...in all connection sizes and with many options.

abrit also available as ATEX version
- with special functions
- with special pressure ranges (up to 45 bar and more)
- with special temperature ranges (-40 to +120°C)
- for special media e.g. oxygen, nitrogen, etc.

Lubrication systems for mains air supply lines, individual devices and group device control

Membrane dryer abrit dry
The innovative membrane technology and especially the patented purge air control makes the membrane dryer abrit dry, one of the leading devices of its kind. As an ideal end-of-line solution, it is particularly suited for highly sensitive areas like medical technology, electronics, as well as mobile pneumatic applications and industrial automation. Exceptional performance is guaranteed, even in the most arduous environmental conditions.
- No electrical connection
- No additional sensors or control elements
- No wear and tear due to the absence of mechanically moving parts
- Practically silent
- No alteration of the air composition
- Flexible depending on drying purpose
- Fast response
- Up to 16 bar

Microfilter MF - filtration efficiency 99.999%. Activated carbon filter MC - residual oil content 0.003 ppm

Special devices upon customer request: valve maintenance combination unit

Mains line devices for pressurised lifting gear in the offshore region, blow moulding machines, etc.

magnum

abrit also available as ATEX version
- with special functions
- with special pressure ranges (up to 45 bar and more)
- with special temperature ranges (-40 to +120°C)
- for special media e.g. oxygen, nitrogen, etc.

Lubrication systems for mains air supply lines, individual devices and group device control

Membrane dryer abrit dry
The innovative membrane technology and especially the patented purge air control makes the membrane dryer abrit dry, one of the leading devices of its kind. As an ideal end-of-line solution, it is particularly suited for highly sensitive areas like medical technology, electronics, as well as mobile pneumatic applications and industrial automation. Exceptional performance is guaranteed, even in the most arduous environmental conditions.
- No electrical connection
- No additional sensors or control elements
- No wear and tear due to the absence of mechanically moving parts
- Practically silent
- No alteration of the air composition
- Flexible depending on drying purpose
- Fast response
- Up to 16 bar

Microfilter MF - filtration efficiency 99.999%. Activated carbon filter MC - residual oil content 0.003 ppm

Special devices upon customer request: valve maintenance combination unit

Mains line devices for pressurised lifting gear in the offshore region, blow moulding machines, etc.

magnum

abrit also available as ATEX version
- with special functions
- with special pressure ranges (up to 45 bar and more)
- with special temperature ranges (-40 to +120°C)
- for special media e.g. oxygen, nitrogen, etc.
Proportional pressure regulators for any requirement

Extremely fast and precise response: These are common advantages to all proportional pressure regulators from HOERBIGER-ORIGA, however, each series offers individual strengths for specific applications.

SRE and CRE
For large and rapidly changing pressure differences the electromagnetically pilot controlled proportional pressure regulators airfit SRE (G1/4 and G 3/8) and airfit CRE (G3/8 and G 1/2) give exceptional performance.

tecno
Thanks to Piezo technology the airfit tecno is unrivalled in speed, precision and especially compactness.

SRE and CRE
- No permanent air consumption
- Precise control
- High dynamics
- Long service-life
- No stick/slip effect
- High flow volumes
- Ideal for welding robots, erosion machines, multiple screwdrivers, test and measuring technology (liquids and gases), strip edge control and polishing lines.

tecno
- Highly precise control
- Extremely fast response
- Exceptionally compact and light weight
- Long service-life
- Low power consumption
- Available as an OEM version
- Can be mounted in series

Special solutions
For special requirements HOERBIGER-ORIGA also offers proportional pressure regulators that operate beyond the normal parameters, e.g. in pressure ranges up to 46 bar, in temperature ranges between -40°C and +120°C or for media like oxygen, nitrogen, etc.

Accessories made by professionals for professionals

Easily and safely assembled systems: all necessary accessories compliment the HOERBIGER-ORIGA programme to provide a complete system solution.

- Check and throttle valves
- Silencers
- Pressure switches
- Pressure relief valves
- Shut-off valves
- Timers

- Compression fittings
- Metal push-in fittings
- Plastic push-in fittings
- Tube/hose fittings
- Fittings and accessories

- Tubing and accessories
- Ball valves
- Aluminium roller guides
- Shock absorbers

Airfit CRE
in G3/8 and G1/2

Airfit SRE
in G1/4 and G3/8

Series CRE
in G3/8, NW 2.5

... with the new, highly efficient fast push-in fittings

Shock absorber series SA
- Fixed shock absorber
- Adjustable shock absorber
- For effective masses from 1 to 64,000 kg
- Increased operating speed
- Eliminates shock loading

Airfit tecno
- Highly precise control
- Extremely fast response
- Exceptionally compact
- and light weight
- Long service-life
- Low power consumption
- Available as an OEM version
- Can be mounted in series

Special solutions
For special requirements HOERBIGER-ORIGA also offers proportional pressure regulators that operate beyond the normal parameters, e.g. in pressure ranges up to 46 bar, in temperature ranges between -40°C and +120°C or for media like oxygen, nitrogen, etc.

Highly precise control
- Extremely fast response
- Exceptionally compact
- and light weight
- Long service-life
- Low power consumption
- Available as an OEM version
- Can be mounted in series

Special solutions
For special requirements HOERBIGER-ORIGA also offers proportional pressure regulators that operate beyond the normal parameters, e.g. in pressure ranges up to 46 bar, in temperature ranges between -40°C and +120°C or for media like oxygen, nitrogen, etc.
System solutions in industrial use

Efficient customer solutions - implemented by the intelligent combination of components and tailor-made special solutions with engineering experience.

HOERBIGER-ORIGA – Your competent partner for pneumatic and electric system solutions.

High frequency sliding system in X-Y layout

- **X axis:** Rodless cylinder with roller guide, hydraulic shock absorber and special mounting adapters.
- **Y axis:** Round cylinder with U guide and integrated slide bushing. Control via 2 off 5/3 way directional valves, completely assembled with tubing and tested.

Cylinder/valve combination

A clamping cylinder for tool change systems.

Consisting of:
- Cylinder diameter 125 mm, stroke 250 mm
- Filter, regulator, lubricator unit
- 5/3 way directional control valve. Connected with copper tubing and hydraulic screw-in fittings

Modular pneumatic panel for the control of a wood working machine

- Central air treatment with a special maintenance unit
- 4 x 7 valve manifolds with 5/2 way directional valves. (modular extensions are possible)
- individual actuation of different components with regard to time and pressure
- Completely wired and tested, ready for installation

Two-axis handling system for the process industry

Handling of electronic components into various immersion baths. The components are vertically oscillated in the immersion baths and then transferred to the next immersion bath. The handling utilises a vertical axis and a rotating axis. The vertical axis, with integrated spindle and recirculating bearings, is driven by a stepper motor and belt transmission. The rotating axis is similarly driven via a stepper motor and belt transmission. All electric components are wired to a terminal rail.

Three-axis handling system for parcel palletising

This handling system stacks parcels in defined positions on a transport pallet. When fully stacked the pallet is moved from the stacking position on a roller conveyor and an empty pallet is positioned in it’s place. The handling operation utilises two electric horizontal axes in X,Y coordinates; an electric vertical axis in the Z coordinate; and a pneumatic rotational axis. The 2 x X and 1 x Y axes are driven by servo motors via planetary gears.
ORIGA Service

3 ways to effective maintenance
- fast, efficient, economic

ORIGA - a new lease of life for your rodless cylinders. The original rodless pneumatic cylinder still offers unique performance characteristics and unrivalled service life. However, even OSP-P wear and tear parts are subject to deterioration. The ORIGA Service from HOERBIGER-ORIGA will return your OSP-P cylinder to its original performance condition.

1 Service pack and spare parts
Due to the simple construction of ORIGA rodless cylinders, you can readily carry out your own maintenance and repair using original spare parts.

- At www.origa-service.com you will find the service partner nearest to you; provide them with the type designation of your cylinder (type plate under the labelled cover strip), and within 2 to 3 working days you can receive the relevant service packs or spare parts by express delivery.
- The fitting instructions show you, in simple steps, how to repair the cylinder yourself using standard tools, to retain its original performance characteristics.

2 Standard service with warranty
We recommend our standard service; the complete, expert reconditioning includes our manufacturers warranty for another 6000 km service life.

- Simply send your cylinder to your nearest service partner. You will find the contact details at www.origa-service.com. We guarantee that the reconditioned cylinder will be returned to you within 2 to 3 working days of the acceptance date.
- An emergency same day service is available on request.
- ORIGA service - an economic benchmark. To ensure your global support, uniform charges for our standard service are maintained worldwide.

3 Cylinder service in the field
For cylinders running under critical conditions and for those with extremely long strokes, it is sometimes more convenient to have them serviced in the field.

- Contact us and agree an appointment. At www.origa-service.com you will find the service partner nearest to you.
- Our service team can carry out all standard service work on site - preferably during the routine general overhaul of your machine or production line.

... added value for our customers

- Disassembly, cleaning, inspection of all cylinder components
- Replacement of all sealing and wear components
- Re-assembly and re-lubrication
- Restoring to original performance specification

Free spare part catalogue upon request.

www.origa-service.com
The Strategic Business Units of the HOERBIGER Group

SBU Compression Technology
SBU Automation Technology
SBU Drive Technology

with global service and distribution

for more information visit the following web sites
www.hoerbiger-origa.com
www.airfit.com
www.hoerbiger.com

or contact your local HOERBIGER-ORIGA company