



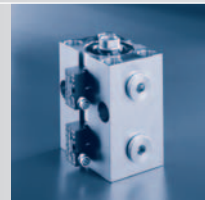
PROGRAM SUMMARY

Elements and systems for production engineering

Power workholding



Hydraulic cylinders



Hydraulic pressure generators
Clamping and industrial power units



Assembly and handling technology



Drive technology

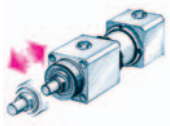


System solutions for production engineering



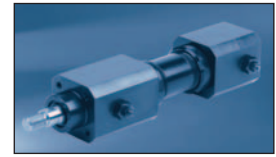


Hydraulic cylinders



Hydro-cylinders

Hydraulic cylinder, design with tube
piston diameter from 25 to 80 mm
stroke from 60 to 1,200 mm
max. operating pressure 200 / 250 bar



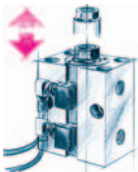
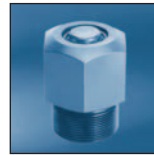
Universal cylinders

Hydraulic cylinders with round housing
piston diameter from 10 to 63 mm
stroke from 8 to 100 mm
max. operating pressure from 200 to 500 bar



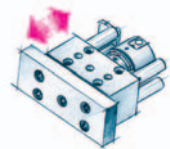
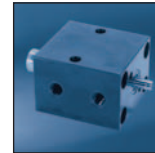
Threaded-body cylinders

Hydraulic cylinders and pistons for direct screwing-in in the fixture body
piston diameter from 4 to 50 mm
stroke from 4 to 40 mm
max. operating pressure from 160 to 500 bar



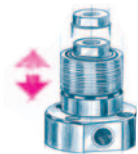
Block cylinders

Hydraulic cylinders with block-type body made of steel, aluminium or bronze
piston diameter from 16 to 200 mm
stroke from 8 to 200 mm
max. operating pressure from 160 to 500 bar



Hydraulic slides

Hydraulic cylinders with integrated guide rods and front block
piston diameter from 25 to 100 mm
stroke from 8 to 200 mm
max. operating pressure 250 / 500 bar



Hollow-piston cylinder

Hydraulic cylinders with extended piston rod and through hole with internal thread
piston diameter from 20 to 80 mm
stroke from 6 to 40 mm
max. operating pressure 500 bar

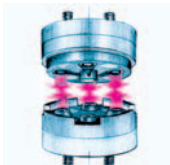


Elements for oil supply



Rotary couplings

Rotary couplings and rotary valve couplings for supply of pressure oil to rotating and swivelling installations
max. operating pressure 250 / 500 bar



Couplings

Couplings to separate and connect hydraulic, pneumatic and vacuum lines
single elements and multi-couplings
nominal diameter 3, 5 and 8
max. operating pressure 300 up to 500 bar



Tubing elements

Fittings, hydraulic oil, precision steel tubes, connecting inserts, pressure gauges, tube clamps, high-pressure hydraulic hoses, high-pressure filters, hydraulic accumulators, pressure switches

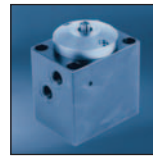


Hydraulic clamping elements



Bore clamps

Clamping elements for clamping in bore holes
 Max. low clamping forces up to 9.8 kN
 Bore diameter from 7.8 up to 46 mm
 Max. operating pressure from 50 to 500 bar



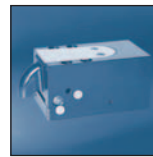
PosiFlex clamping elements

Clamping elements for the position flexible or »floating« clamping of workpieces
 max. clamping force from 5.0 kN to 25.5 kN
 clamping stroke/pendulum range from 4 to 12 mm
 max. operating pressure from 250 to 500 bar



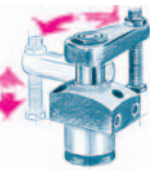
Clamps / clamping cylinders

Hydraulic clamps and clamping cylinders
 max. clamping force from 2.2 to 50 kN
 clamping stroke from 3 to 16 mm
 max. operating pressure from 100 to 500 bar



Hinge clamps

Clamping elements with reverse swing clamping lever
 Max. clamping forces from 2.2 up to 15 kN
 Clamping stroke from 3 up to 7 mm
 Max. operating pressure from 70 to 250 bar

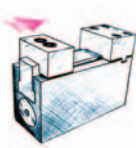


Swing clamps

Clamping elements with swing piston
 max. clamping force from 0.6 to 41.0 kN
 clamping stroke from 6 to 50 mm
 max. operating pressure from 150 to 500 bar



Fixture clamps

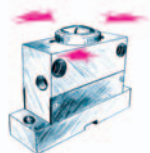


Fixture clamps

Compact hydraulic machine vices with fixed jaw, concentric or position flexible
 max. clamping force from 4 to 15 kN
 clamping stroke from 5 to 45 mm
 max. operating pressure 250 bar



Concentric clamping elements

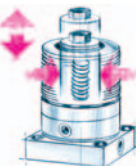


Concentric clamping elements

Hydraulically operated elements for concentric positioning and clamping of workpieces
 for interior or exterior clamping
 max. clamping force from 2.8 to 85 kN
 repetitive accuracy of clamping force up to ± 0.005 mm

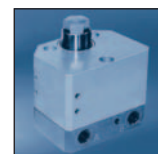


Hydraulic work supports



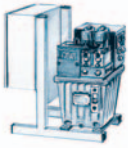
Work supports

Hydraulic work supports to support workpieces
 max. support force from 6 to 102 kN
 plunger stroke from 6 to 20 mm
 max. operating pressure 500 bar



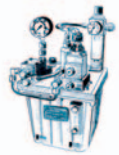


Hydraulic pressure generators | Clamping and industrial power units



Power units

Completely equipped standard power units with gear pumps or radial piston pumps with programmable control, electric control or terminal box
max. flow rate from 0.82 to 24.0 l/min
operating pressure from 50 to 500 bar



Hydro-pneumatic pump units

Pneumatically-operated pumps to generate hydraulic pressure for single and double acting cylinders
max. flow rate from 0.85 to 1.5 l/min
max. operating pressure 500 bar



Intensifiers

Hydraulic and pneumatic-hydraulic intensifiers for single and double acting cylinders
max. output pressure from 300 to 500 bar



Manually-operated pumps

Pumps for clamping fixtures and every kind of operations
operation by hand or foot lever
displacement per stroke from 2 to 12 cm³
screw pumps with displacement 21 cm³



Hydraulic valves



Hydraulic valves

Directional control valves, shut-off valves, flow control valves, pilot operated check valves, pressure relief valves, pressure reducing valves, sequence valves, valve module combinations



Pneumatic elements



Pneumatic swing clamps

Swing clamps in three different aluminium housings for adjustable magnetic sensors
max. clamping force from 140 to 1400 N
clamping stroke from 7 to 18 mm
max. operating pressure 7 bar



Pneumatic rotary couplings

Rotary valve couplings for air supply to rotating and swivelling installations
max. operating pressure 10 bar



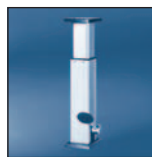


Assembly and handling technology



modulog modular system

Modules for lifting, rotating, tilting and moving of workpieces up to 1,000 kg
All modules are complete functional units that can be easily combined to built multi-functional units.



Press units

Hydraulic press-in devices for power-operated processes
with O-shaped or C-shaped press-in frame
cylinder stroke 100 to 500 mm
nominal pressure force 25 to 150 kN



Drive technology



Electrically-operated linear actuators

Electro-mechanical linear actuators for adjusting procedures in industry and automotive engineering
max. lifting force 0.3 up to 6.0 kN
strokes from 100 to 600 mm
power supply 12 or 24 VDC



Manually-operated linear actuators

Hydro-mechanical linear actuators for adjusting procedures in medical-technical devices and beds
max. lifting force 4.5 up to 12.5 kN
strokes 140 and 200 mm

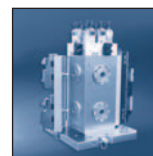
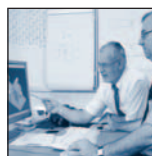


System solutions for production engineering



Consultation, design, engineering, delivery and service of clamping and positioning systems

- Modular clamping and fixture systems
- Customer-specific clamping and positioning systems

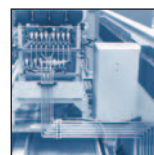


Service



Technical service for customers

- Maintenance, mounting and repair**
- maintenance works at hydraulic fixtures and hydraulic power units
 - assembly of hydraulic fixtures
 - repair works





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Elements and systems for production engineering

- Power workholding
- Hydraulic cylinders
- Hydraulic pressure generators | Clamping and industrial power units
- Assembly and handling technology
- Linear actuator technology
- System solutions for production engineering



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- Plates, angle brackets and cubes



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Clamping systems and standard fixtures for metal cutting and non-cutting manufacturing

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- Tool clamping and changing systems for deformation tools
- Magnetic power workholding for plastic and rubber industry



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