ROEMHELD
HILMA ▪ STARK

PROGRAM SUMMARY

ROEMHELD Group

WORKHOLDING

Workpiece clamping technology
Zero-point clamping technology
Power units and clamping pumps
Hydraulic cylinders

ws.roemheld.com

QUICK DIE CHANGE

Die clamping technology
Magnetic clamping technology
Quick die changing technology
Locking cylinders

wz.roemheld.com

ASSEMBLY AND HANDLING

moduhub handling technology
Bearing presses
Linear actuators

mh.roemheld.com

www.roemheld.com

Quality
as an obligation

To take a leadership role in the national as well as international quality competition the ROEMHELD Group feels obliged to a continuous process of improvements. Thereby the high quality of the processes and products is always guaranteed even with continuously changing demands on the market.
Certification as per EN ISO 9001:2000 guarantees the compliance with standard guidelines.
In addition, it is a stated objective to make the products and services of the ROEMHELD Group an established idea of quality. This will be a long-term guarantee that the ROEMHELD Group will offer efficient and economic products and will contribute to a considerable extent to the success of its customers.

Solutions
from the catalogue or as a customer-specific design

In addition to the most comprehensive range of catalogue elements and systems, available in clamping technology, the ROEMHELD Group permanently develops, designs, manufactures and supplies customer-specific solutions in cooperation with their customers.
This program summary of the product range of the ROEMHELD Group shows essentially the catalogue program.
Please contact for customer-specific designs the corresponding companies of the ROEMHELD Group.

International
aimed at global presence

Beside national customers, which are well looked after by 17 sales partners in Germany, export is more and more important. Already today the ROEMHELD Group shows an export share of approx. 50 %, which increases to more than 65 % because of indirect exports.
Subsidiaries in Great Britain, France, USA, China, Japan, and South Korea as well as numerous sales partners guarantee worldwide an intensive consultation, an efficient sale and an extensive service for the customers of the ROEMHELD Group.

Sustainability
The protection of the environment is important to us

The companies of the ROEMHELD Group have their own environmental management systems. These ensure that the impact of the production on the outside world is kept to a minimum, only the necessary extent of emissions occur and resources such as energy, water, air and raw materials are used as carefully as possible.
The environmental management system of ROEMHELD is certified according to EN ISO 14001.

Content

ROEMHELD a strong Group

Römheld forms together with the specialists in clamping technology Hilma-Römheld and Stark Spannsysteme a group of companies, which offers an extensive product range in the field of clamping technology for production engineering.

The product range is supplemented by numerous hydraulic elements for general industrial use, as well as components and systems of the assembly and drive technology.

The ROEMHELD Group comprises about 500 employees with an annual turnover of approx. 105 million Euro.

Römheld GmbH Friedrichshütte

Römheldstraße 1 – 5
35321 Laubach
Deutschland

www.roemheld.com

Hilma-Römheld GmbH

Auf der Landeskrone 2
57234 Wilnsdorf-Wilden
Deutschland

www.roemheld.com

Stark Spannsysteme GmbH

Römergrund 14
6830 Rankweil
Austria

www.stark-roemheld.com

Hydraulic cylinders | Hydraulic workholding elements

Hydraulic cylinders for linear motions of every type
operating pressure: up to 500 bar

Swing clamps

Clamping elements with swing piston
with/without position monitoring
max. clamping force: 0.6 … 41 kN
clamping stroke: 6 … 50 mm

Swing clamps, configurable

Configurable swing clamping
Bottom flange, top flange, threaded-body type
Right or left swivelling or non-swivelling

Work supports

Elements to support workpieces
single or double acting
max. load force: 4 … 102 kN
plunger diameter: 16 … 50 mm
plunger stroke: 6 … 20 mm

Bore clamps

Clamping elements for clamping in bore holes
with/without centring function / with pull-down clamping
with/without seat check
bore hole diameter: 6.6 … 46 mm
max. low-clamping force 0.6 … 24.5 kN

Hinge clamps

Clamping elements with operation of a clamping lever
with/without position monitoring
max. clamping force: 1.3 … 21.5 kN
clamping stroke/clamping range: 2.0 … 9.0 mm

Concentric clamping elements

Clamping elements for concentric positioning and clamping
for exterior and interior clamping
max. clamping force: 5 … 44 kN
repetitive clamping accuracy : ± 0.005 mm

Fixture clamps

Compact standard clamping systems for use on fixtures
with fixed jaw, concentric or position flexible
max. clamping force: 6.5 … 15 kN
jaw width: 40 … 65 mm

Position flexible clamping elements

Clamping elements for "floating" clamping
for exterior and interior clamping
with/without position monitoring
max. clamping force: 7.5 kN

Threaded-body cylinders

Compact hydraulic cylinders and built-in pistons for screwing in
piston diameter: 8 … 50 mm
stroke: 4 … 40 mm

Clamps / clamping cylinders

Clamping elements for clamping in small recesses
with/without position monitoring
with/without self-locking
max. clamping force: 2.5 …50 kN

Block cylinders

Hydraulic cylinders with block-type body made of steel, aluminium or bronze
with/without end position monitoring
Optional:
With position measuring system, ice scraper, stainless steel, cooling, multiple pistons, tandem cylinder, high temperature and much more.
piston diameter: 16 … 200 mm
stroke: 8 … 200 mm

Hydraulic slides

Hydraulic cylinders with integrated guides
with/without end position monitoring
piston diameter: 25 … 100 mm
stroke: 20 … 200 mm

Hydraulic cylinders

Hydraulic cylinders, design with tube
with/without end position monitoring
piston diameter: 25 … 80 mm
stroke: 60 … 1200 mm

Universal cylinders

Hydraulic cylinders with round housing
for axial adjustability
piston diameter: 10 … 63 mm
stroke: 8 … 100 mm

Hollow-piston cylinders

Clamping cylinders with through hole in the piston
piston diameter: 20 … 80 mm
max. push force: 10 … 153 kN
clamping stroke: 6 … 40 mm

Workholding systems | Machine vices

Mechanically, mechanically-hydraulically or hydraulically operated standard fixtures for workpieces

Machine vices

HILMA.NC

mechanically-hydraulically or hydraulically operated clamping against the fixed jaw
- with hydraulic power transmission
- completely encapsulated lead screw area

sizes: 100, 125 und 160 mm
max. clamping width: 1227 mm

5-axis workholding systems

HILMA.MCP | HILMA.SCS | HILMA.UC

mechanically or hydraulically operated clamping against the fixed jaw or concentric clamping
- compact design
- collision-free tool paths

sizes: 60…125 mm
max. clamping width: 1000 mm

Double workholding systems

HILMA.DS | HILMA.NC | HILMA.DUO

mechanically, mechanically-hydraulically or hydraulically operated clamping against the fixed jaw
- safe loading and unloading by 3rd-hand function

max. clamping width: 80…160 mm

Multiple workholding systems — HILMA.MSH

mechanically operated
clamping against the fixed jaw
- compact design
- modular design

max. clamping width: 24 and 120 mm

Concentric workholding systems — HILMA.ZH

hydraulically operated, double acting
concentric clamping
- high repetitive clamping repeatability ± 0.01 mm
- fixing and mounting possibilities for customer-specific clamping jaws

max. clamping width: 100, 125 and 160 mm

Automation — HILMA.ASH

hydraulically operated, double acting
clamping against the fixed jaw
- also available with position measuring system (electrically or via flow rate)
- setups can be automated

sizes: 100…125 mm
hydraulic stroke: up to 250 mm

Clamping jaws (Extract)

top jaws with grip
spacer jaws
precision step reversible jaws
precise step bars
formed jaws
central jaws
pendulum jaws
precision step jaws
Vee jaws
QIS base jaws
with permanent magnets
QIS interchangeable jaws, smooth
QIS interchangeable jaws, serrated
QIS interchangeable jaws, crowned
QIS interchangeable jaws, stepped
QIS interchangeable jaws, prismatic
QIS interchangeable jaws, soft
floating central jaws
SlimFex jaws
clamping jaws, soft
clamping jaws, extra high
clamping jaws, extra large
clamping jaws with grip bar
special grip jaws
reversible step jaws
interchangeable inserts, round, with grip
interchangeable inserts with grip / smooth
interchangeable inserts
with hard-metal coating / smooth
reversible jaws

Tower workholding systems — HILMA.TS TriStar — HILMA.TS — HILMA.SCT

clamping against the fixed jaw
HILMA.TS TriStar with 3 clamping sides
HILMA.TS with 4 clamping sides
mechanically operated
jaw opening: 80, 100 and 125 mm

Zero point clamping systems

Clamping systems for exact zero point positioning and clamping of the workpieces and fixtures

STARK.classic

single acting, hydraulically or pneumatically
clamping control, mount control, blow-out, media duct
max. insertion force: 30 kN
max. retention force: 55 kN

STARK.balance

single acting, hydraulically
clamping: mechanically
unclamping: pneumatically
max. insertion force: 20 kN
max. retention force: 38 kN

STARK.hydratec

double acting, hydraulically
clamping: hydraulically
unclamping: hydraulically
max. clamping force: 20 kN
max. retention force: 38 kN

STARK.sweeper

clamping: mechanically
unclamping: hydraulically or pneumatically
max. pull-in force: 20 kN
max. retention force: 38 kN

STARK.plaintec

double acting, hydraulically
clamping: hydraulically
unclamping: hydraulically
max. clamping force: 50 kN

STARK.easyclick

single acting, pneumatically
clamping: mechanically
unclamping: pneumatically
max. clamping force: 5 kN
max. retention force: 10 kN

STARK.basic

single acting, pneumatically
clamping: pneumatically
unclamping: mechanically
max. retention force: 1,5 ... 9 kN

STARK.airtec

single acting, pneumatically
clamping: mechanically
unclamping: pneumatically
max. clamping force: 20 kN
max. retention force: 55 kN

STARK.connect

single acting, pneumatically
clamping: mechanically
unclamping: pneumatically
max. pull-in force: 3 … 10 kN
max. retention force: 10 … 30 kN

STARK.metec

Mechanical zero-point clamping system
clamping: mechanically
unclamping: mechanically
max. retention force: 12 … 50 kN

Couplings

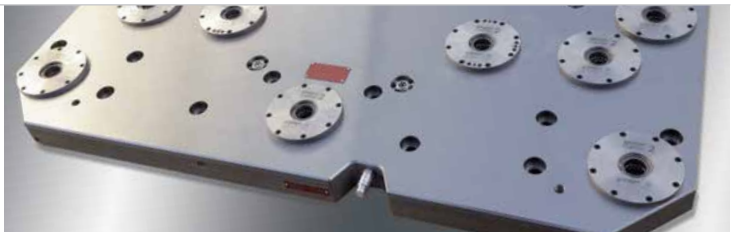
universal and compact for hydraulics, pneumatics, vacuum and electrics

Plates – Angles – Cubes

From standard elements to systems for flexible use - with minimum set-up time
– mechanical – hydraulic – pneumatic – electrical – single acting – double acting –

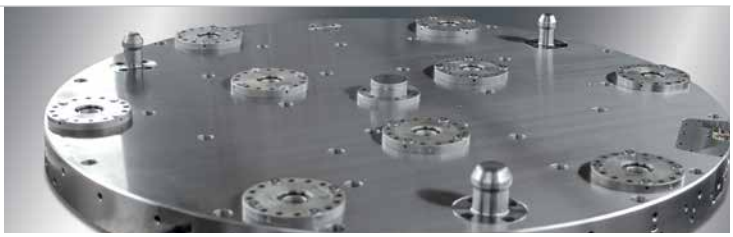
Quick-locking plates

for milling machining
from standard components, adapted to the machine and machining task
- fully assembled with 3D dimensional and functional test



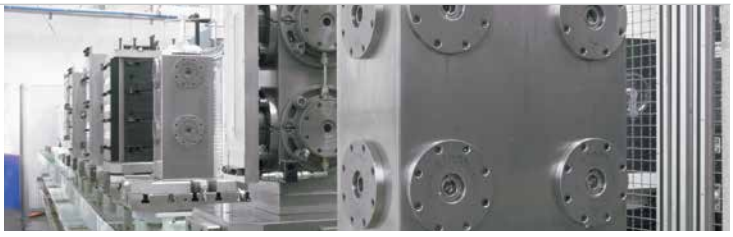
Quick-locking plates

for turning machining
from standard components, adapted to the machine and the machining task
- standard clamping monitoring
- applicator for pre-centring



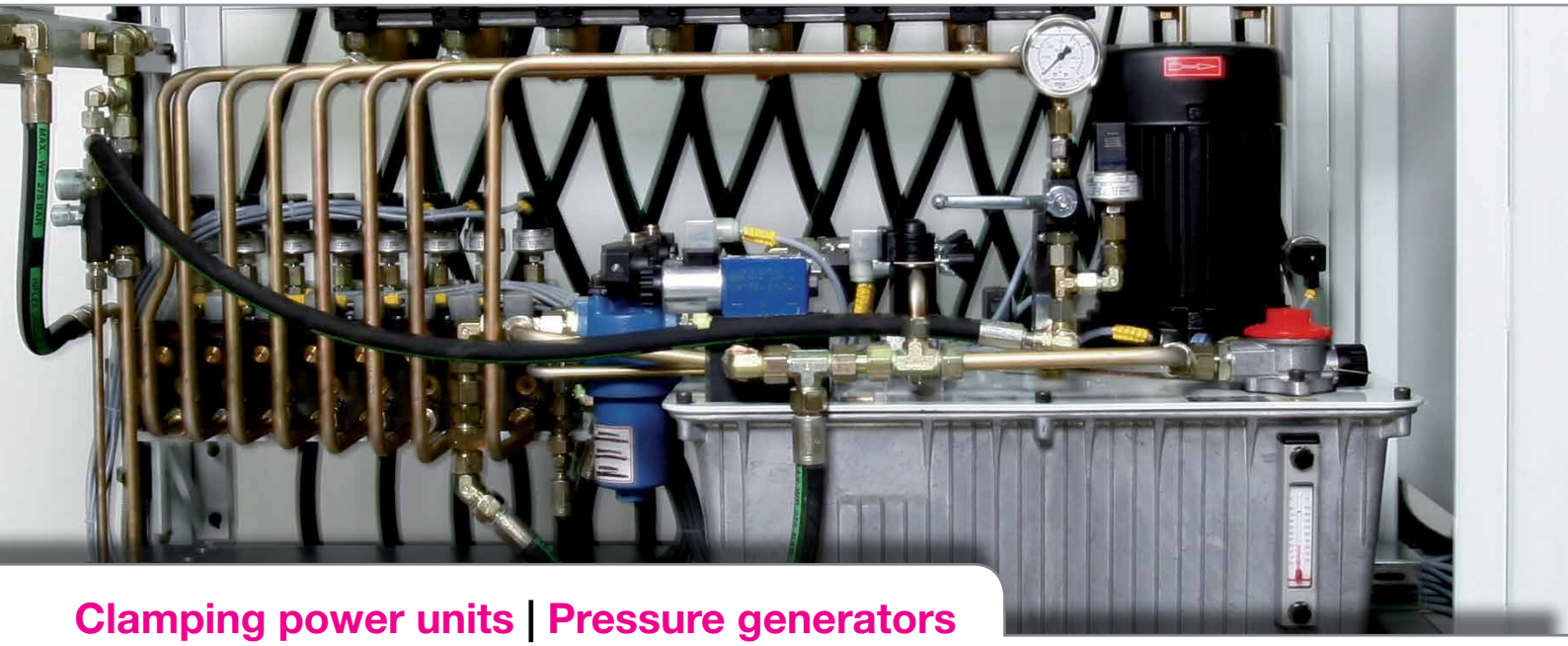
Quick-locking cubes

for milling machining
from standard components, adapted to the machine and the machining task
- 3rd-hand-function (DHF) prevents the dropping of the parts



Quick-locking plates

for the automation
from standard components, adapted to the machine and machining task
- flow power as interface for pneumatic or hydraulic clamping fixtures and signal queries



Clamping power units | Pressure generators

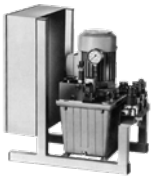
Clamping power units, hydraulic power units, hydro-pneumatic pump units and manually-operated pumps to generate and control hydraulic pressure

Power units D 8.013

with two-hand operator console
flow rate: 0.9 … 4.5 l/min
max. operating pressure: 50 … 500 bar
reservoir volume: approx. 11 l
voltage: 400 VAC

Power units D 8.015

with proportional pressure adjustment
flow rate: 0.9 l/min
max. operating pressure: 500 bar
reservoir volume: approx. 11 l
voltage: 400 VAC



Power units D 8.031

basic versions
flow rate: 0.9 … 24 l/min
max. operating pressure: 50 … 500 bar
reservoir volume: 11, 27, 40 and 63 l
voltage: 400 VAC

Power units D 8.026

modular design
flow rate: 0.9 … 24 l/min
max. operating pressure: 120 … 500 bar
reservoir volume: 11, 27, 40 and 63 l
voltage: 400 VAC

Power units D 8.0115

ready for connection
energy-saving intermittent cycling
flow rate: 0.8 … 3.5 l/min
max. operating pressure: 160 … 500 bar
reservoir volume: approx. 5 l
voltage: 400 VAC

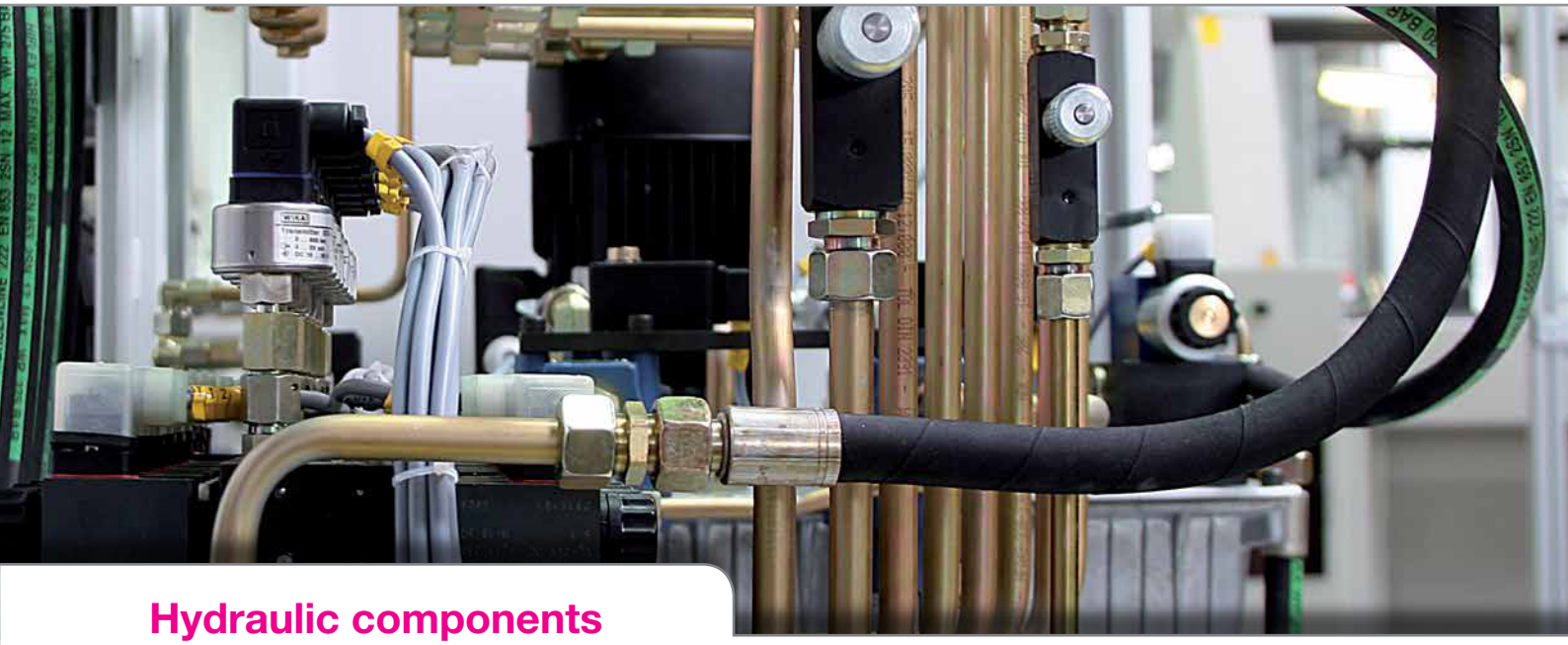
Manually-operated pumps

Hydraulic pumps
for single-acting cylinders
operation by hand or foot lever
displacement per stroke: 2 … 12 cm^3

Screw pumps
displacement: 21 cm^3

Hydro-pneumatic pump units

for single and double acting cylinders
flow rate: 0.85 … 1.5 l/min
air pressure: 0.85 … 5.0 bar
max. operating pressure: 500 bar



Hydraulic components

Elements for oil supply and control to hydraulic elements

Hydraulic valves

Directional control and shut-off valves
Throttle and pressure control valves
Pressure relief valves
Check valves
Sequence valves
Valve combinations

Hydraulic accumulator

Diaphragm accumulator for hydraulic oil with nitrogen gas filling
nominal volume: 13 … 750 cm^3
ports: G¼ … G½
max. operating pressure: 250 … 500 bar

Rotary couplings

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

Intensifiers

hydraulic-hydraulic or pneumatic-hydraulic
single and double acting
max. output pressure: 500 bar

Pressure transducer

piston pressure switch
with continuously adjustable switching point
manifold mounting or G¼

pressure sensors with radio transmission
receiver units with data interfaces

Coupling elements

for hydraulic oil, compressed air and vacuum
nominal diameter: ND 3 … 8
max. flow rate: 8 … 35 l/min
max. operating pressure: 300 … 500 bar

Multi-couplings

2 to 12 passages
nominal diameter: ND 5 … 8
depressurised coupling
or coupling against pressure
max. operating pressure: 300 bar

High-pressure filters

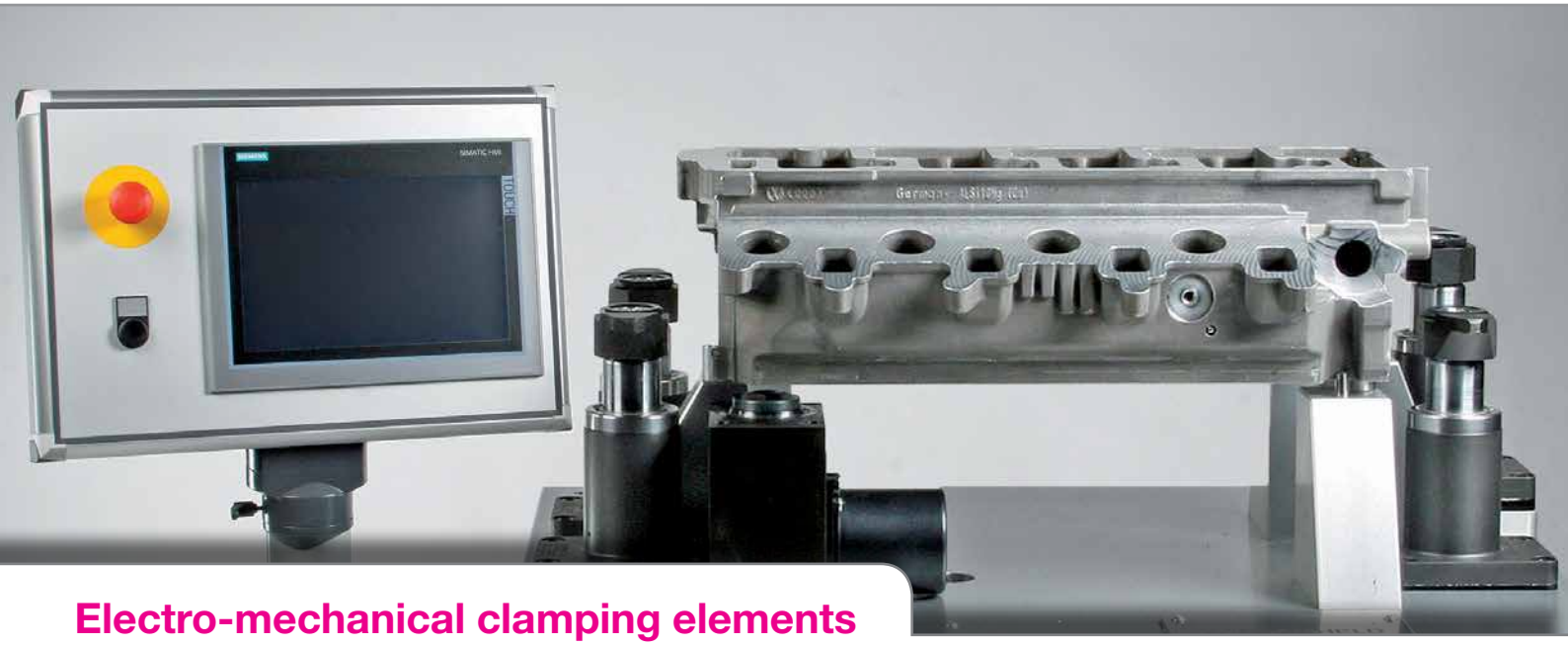
In-line filters, plug-in filters and rectifier filter
filter fineness: 10 and 100 µm
material: stainless steel and steel
max. operating pressure: 350 and 500 bar

Coupling units and systems

manually or automatically operated
for single or double acting elements
max. operating pressure: 400 and 500 bar

Piping elements

Fittings
Hydraulic hoses / Hydraulic oil
Precision steel pipes
Plug-in connectors
Pressure gauges / pipe clamps



Electro-mechanical clamping elements

Electric swing clamps

max. clamping force: 7 kN
clamping stroke: 23 mm
swing angle: max. 180°
voltage: 24 VDC

Electric wedge clamps

max. retention force: 130 … 320 kN
clamping stroke: 20 mm
voltage: 24 VDC

FSS clamping systems

Flexible clamping and support elements for clamping of thin-walled workpieces with free-form surfaces

Clamping and supporting elements

elements with their own linear actuator and vacuum clamping technology
piston rod Ø: up to 70 mm
strokes: 100 to 1000 mm
max. axial support force: 1.2 … 12.0 kN

The core elements of a FSS clamping system are the clamping and support elements that can be used in unlimited quantity and that together form the contact surface of the workpiece.
Since each element can be positioned individually on the relevant workpiece geometry, FSS clamping systems allow for a flexible configuration of individual surfaces to clamp and support workpieces.
Depending on the workpiece surface and geometry, clamping forces of 300 N per element and more can be obtained.

Handling technology

Rotating modules – horizontal axis

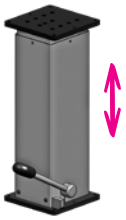
for tilting or swivelling of the workpiece around the horizontal axis
manually or electrically operated
option: indexing
option: flow power
workpiece weight: up to 200 kg

Rotating modules – vertical axis

for rotation of the workpiece around the vertical axis
manually or electrically operated
option: indexing
option: flow power
workpiece weight: up to 1000 kg

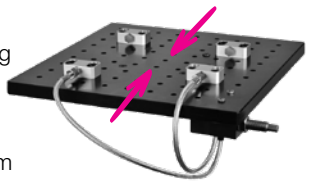
Lifting modules

for guided lifting and lowering of the workpiece
operated by a hydraulic or electrical actuator
workpiece weight: up to 600 kg
max. strokes: 200 … 1000 mm



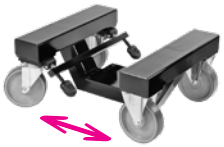
Clamping fixtures

to clamp workpieces on *moduhub* modules
- hydraulic and mechanical clamping elements with universal clamping plate
- quick-change mounting plate with STARK zero point clamping system



Cart modules

to displace manually individual modules or module combinations
with parking brake
max. load: 2000 and 6000 N



Accessories

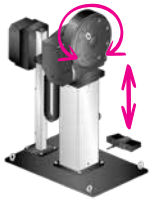
Base plates, Adaptor plates, Flange plate, Table plates, Supply units, Hand panel, Foot switch, Operating panels, Power supply for mobile systems, Command modules

Floor modules

base frame for 1 or 2 modules
to compensate unevenness of the floor space and good stability
max. load: 6000 and 8000 N

Stationary Systems

for lifting, rotating and tilting workpieces for safe handling in manual assembly
Workpiece weights up to 400 kg

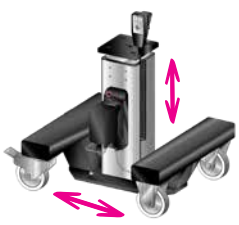


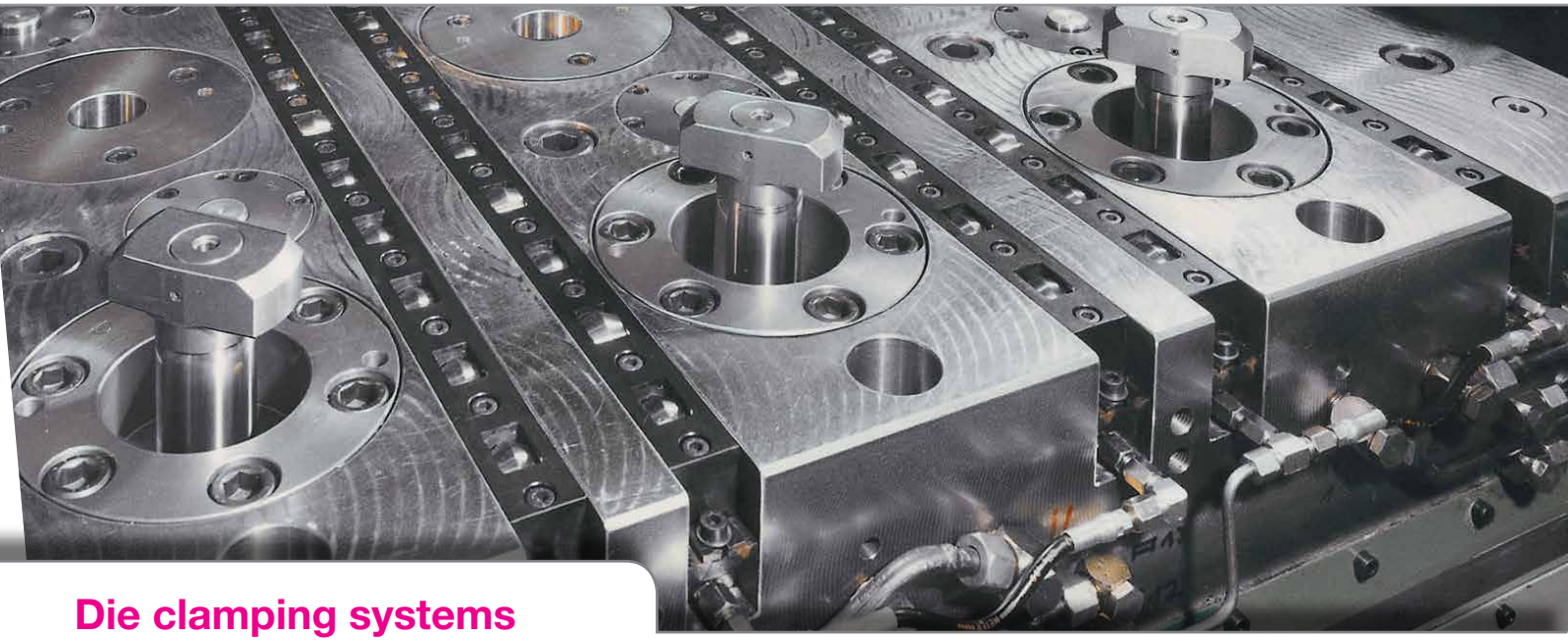
Bearing presss

Hydraulic retraction device for bearing installation
Horizontal design for attachment to a crane or balancer
max. pulling force: 100 kN
max. strokes: up to 200 mm

Mobile Systems

for transporting and assembling workpieces
Eliminating transfer processes increases work safety and throughput.
Workpiece weights up to 600 kg





Die clamping systems

Die clamping and changing systems for press automation

Hydraulic clamping elements

Hollow-piston cylinders
for retrofitting on press bed and ram

Spring clamping cylinders
for spring-loaded long-term clamping

Angular clamps
for clamping on small clamping edges

Clamping bars
flat clamping element for bed and ram
max. clamping force: 30 … 116 kN, piston stroke: up to 8 mm

Double-T clamping bars
to use the complete bed or ram surface
max. clamping force: 16 … 320 kN

Sliding clamps
for insertion in T-slots
max. clamping force: 19 … 78 kN, piston stroke: up to 12 mm

Swivel and pull clamps
clamping cylinders with tie rods

Wedge clamps
sturdy clamping elements for straight or inclined clamping edge
max. clamping force: 1250 kN

Block clamps
with self-locking mechanical lock
max. clamping force: 200 kN

Pivot and pull clamps
max. clamping force: 104 … 160 kN

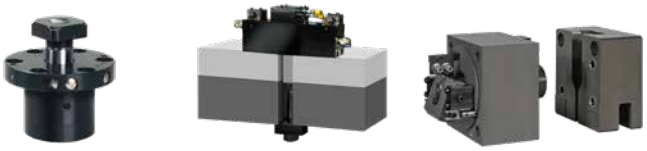
Swing / swing sink clamps
without interfering edges when inserting the die
max. clamping force: 60 … 164 kN

Rapid clamping systems
automatic travelling units with clamping element

Pull clamps
pull-type cylinder with tie rod for inaccessible points

Wedge swing clamps
with mechanical lock

Grip rail couplings
Rapid clamping systems for grip rails



Electro-mechanical clamping elements

Tenon-type clamps
clamping by grip and pull movement
Swivel and pull clamps
clamping by swivel and lifting movement
Swing clamps
clamping by swing and lifting movement

max. clamping force: 70 … 160 kN

Wedge clamps
compact electro-mechanical power package
max. clamping force: 160 kN, retention force: 300 kN

Mechanical clamping elements

Sliding clamps
max. clamping force: 40 … 80 kN
High-pressure spindles
max. clamping force: 40 … 140 kN
Clamping nuts, mechanical
max. clamping force: 60 … 200 kN
Clamping nuts, hydro-mechanical
max. clamping force: 60 … 150 kN

Die changing technology

Roller and ball bars
hydraulic or spring-loaded
Roller conveyors
without lifting
Roller and ball inserts
spring-loaded

Carrying consoles, hanging
max. load per pair: 5 … 30 kN
Carrying consoles, supported
max. load per pair: 20 … 250 kN
Carrying consoles, swivelling
max. load per pair: 10 … 60 kN

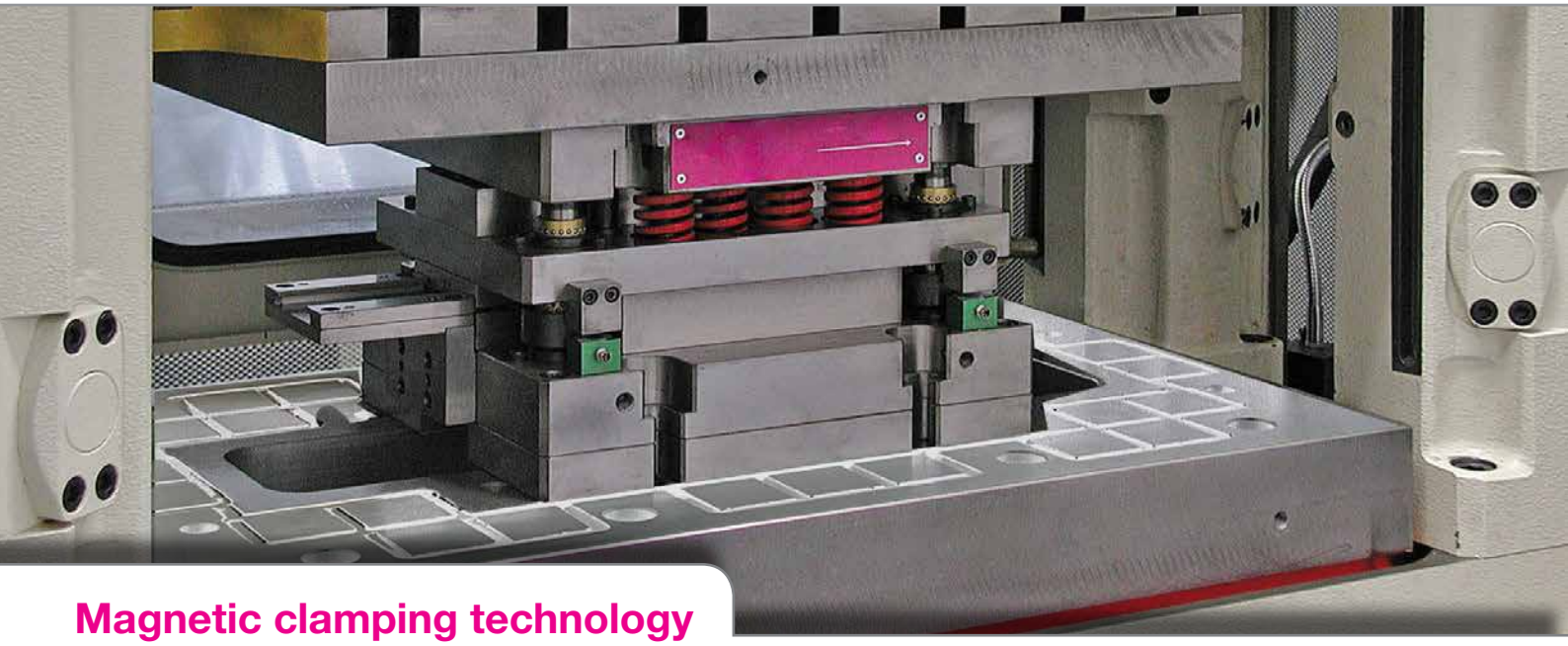
Changing carts
for handling of dies up to 500 kg
with ball table, hydraulic height adjustment
and safety docking station
Die changing consoles
with drive system for die weights up to 250 kN
Push Chain Direct System with Push-Pull System
electrically driven, with push chain drive
die weight up to 40 tons

Locking cylinders

To fix rotors of on- and offshore wind power plants for maintenance works

Rotorlock

hydraulic, mechanical
or electro-mechanical
sizes: up to 7500 kN side load
with position monitoring
corrosion protection as per DIN ISO 12944
max. temperature range: –40 … +70 °C

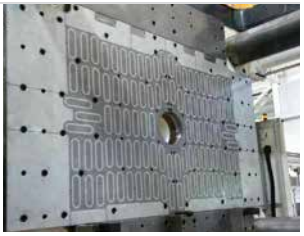


Magnetic clamping technology

R-MAG magnetic clamping plates and systems for injection moulding machines, forming presses for sheet metal forming, rubber presses and mould carriers or die casting machines

R-MAG-P

for the plastics industry
operating temperature up to 150 °C
plate thickness: 38 or 55 mm

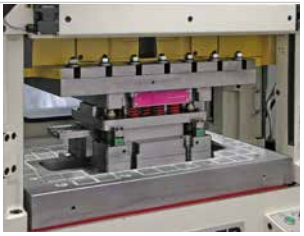


R-MAG-F

For mould carriers and special applications
operating temperature up to 100 °C
plate thickness: 38 or 55 mm

R-MAG-M

for sheet metal forming
operating temperature up to 100 °C
plate thickness: 38 or 55 mm

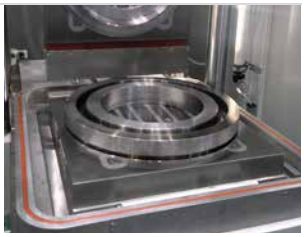


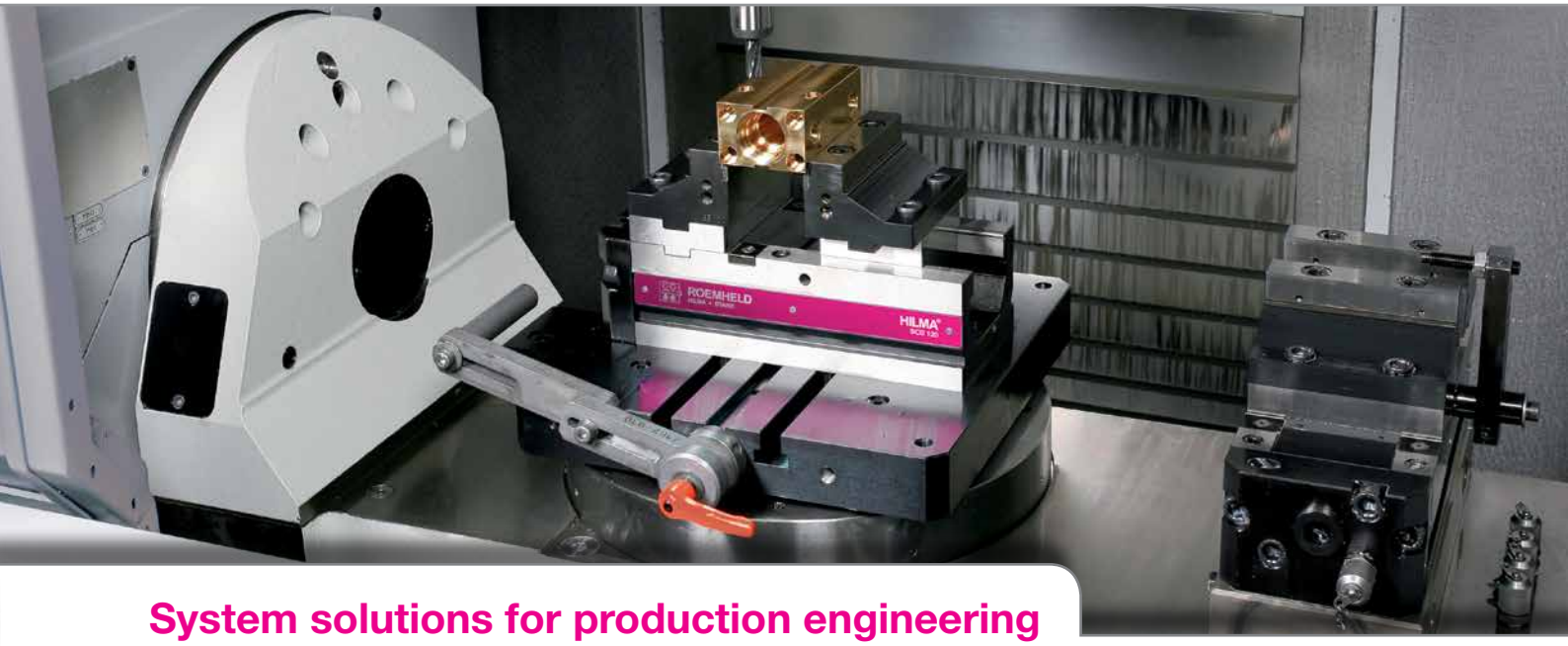
R-MAG-D

for die casting machines
operating temperature up to 200 °C
Plattenstärke: 55 mm

R-MAG-R

for the rubber and Duroplast industry
operating temperature up to 230 °C
plate thickness: 55 mm





System solutions for production engineering

Consulting, design, planning, engineering, construction design, production, delivery, commissioning and maintenance of clamping and positioning systems.

All from a single source

From the idea to the engineering up to start up and maintenance
If it is the matter of planning of clamping systems for a new machine tool or of optimising and transition to flexible of already existing clamping processes, we give you our advice and support.
Based on your demands, we develop for you ideas and support you in engineering, start up and maintenance.

Expert know-how on call

Individual consultation and services
From the first consultation free of cost up to order-related services, our activities for all tasks are adapted to your requests and objectives.
If it is a matter of preparation of concepts or constructional sketches for partial or complete solutions or calculations of amortisations or detailed designs:
You decide yourself which services you would like to use.

Approved and reliable solutions

Clamping and fixture systems made of standard modules
With the experience in realising versatile individual projects in the individual companies of the ROEMHELD Group, we are now in the position to offer an unique, modular product range of clamping and fixture systems.
The use of approved and reliable standard modules is the key for optimised production and engineering costs and guarantees the realisation of individual system solutions without risks.

System solutions – directly from the manufacturer of power workholding

Customer-specific clamping and positioning systems
Our engineering know-how and the huge number of fully-developed clamping and positioning technologies in the ROEMHELD Group allows us to produce and to deliver customer-specific systems.
Due to design and production of the relevant components within the ROEMHELD Group we have access to extended know-how and well-proven production engineering, which together with our engineering know-how guarantees a fully-developed and reliable function of the complete system.

Drive technology

Electrically and manually operated linear actuators for adjusting procedures under demanding conditions in industry, automotive engineering and medicine technology

Electrically-operated linear actuators

version with limit switches or stroke measuring system
max. lifting force: 0.3 … 6.0 kN
stroke: 100 … 600 mm
voltage: 12 or 24 VDC

Manually-operated linear actuators

manual-hydraulic version
max. lifting force: 4.5 … 12.5 kN
stroke: 140 … 600 mm

ROEMHELD
HILMA ▪ STARK

INNOVATIVE SOLUTIONS AND PIONEERING TRENDS

Innovative and smart clamping technology solutions for workpieces as well as for tools in forming technology and plastics processing form the core of the continuously growing portfolio. It is supplemented by components and systems for assembly and handling technology, drive technology and automation, as well as locking systems for wind turbine rotors.

WORKHOLDING

Elements and systems for workpiece clamping, hydraulic components and hydraulic cylinders

ws.roemheld.com

QUICK DIE CHANGE

Elements and systems for clamping and changing tools and moulds on presses, punches and injection moulding machines

wz.roemheld.com

ASSEMBLY & HANDLING

Devices and equipment for turning, lifting, tilting and moving heavy workpieces as well as press-fit devices, linear drives and assembly devices for bicycles

mh.roemheld.com

Römheld GmbH
Friedrichshütte
Römheldstraße 1–5
35321 Laubach
Germany

Phone +49 6405 / 89-0
info@roemheld.de
www.roemheld.com

08-2025

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