ROEMHELD Group Program Summary

PRODUCTS FOR PRODUCTIVITY

Workholding elements Hydraulic cylinders





Handling technology



Die clamping systems



Workholding systems Machine vises



Hydraulic components



Press-in devices



Magnetic clamping technology



Zero point clamping systems



Pneumatic elements



Drive technology



System solutions







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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. ROEMHELD has achieved ISO 9001:2000 certification, which guarantees 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 longterm 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 catalog or as a customer-specific design

In addition to the most comprehensive range of catalog 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 catalog program.

Please contact Carr Lane Roemheld for customer-specific designs in North America.

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.

Environment

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.

ROEMHELD — a strong Group



ROEMHELD forms together with the specialists in clamping technology HILMA and STARK 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. 98 million Euro.

Römheld GmbH Friedrichshütte

Germany





Hilma-Römheld GmbH

Germany





Stark Spannsysteme GmbH

Austria







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

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







Threaded-body cylinders

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







Block cylinders

Hydraulic cylinders with block-type body made of steel, aluminium or bronze

with/without end position monitoring 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 elements for positioning and clamping of workpieces. Operating pressure: up to 500 bar

Bore clamps

Clamping elements for clamping in bore holes

with/without centering 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







Position flexible clamping elements

Clamping elements for "floating" clamping

for exterior and interior clamping with/without position monitoring, max. clamping force: 7.5 kN







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







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







Swing clamps

Clamping elements with swing piston

with/without position monitoring max. clamping force: 0.6...41 kN, clamping stroke: 6...50 mm







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







Concentric clamping elements

Clamping elements for concentric positioning and clamping

for exterior and interior clamping , max. clamping force: 5...44 kN repetitive clamping accuracy : \pm 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







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









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

Mechanically-hydraulically

Machine vises

or hydraulically operated clamping against the fixed jaw

• with hydraulic power transmission

• completely encapsulated lead screw area sizes: 100...160 mm

max. clamping force: 25 ... 50 kN

Series EL Series NC Series KNC







5-axis clamping systems

Mechanically or hydraulically operated clamping against the fixed jaw or concentric clamping

- compact design
- collision-free tool paths sizes: 40 ... 125 mm

max. clamping force: 8...35 kN

Series MC Series SCS Series PC







Double and multiple clamping systems

Mechanically, mechanically-hydraulically or hydraulically-operated clamping against the fixed jaw

• safe loading and unloading by 3rd-hand function sizes: 24...160 mm

max. clamping force: 25 ... 63 kN

Series DS Series DF Series MSH







Compact clamping systems

Single and double clamping systems mechanically or hydraulically operated clamping against the fixed jaw

- compact design
- different overall lengths

sizes: 80 mm, max. clamping force: 12...20 kN

Series CS



Series **DUO**











Variant clamping system VarioLine

Mechanically-hydraulically or hydraulically operated clamping against the fixed jaw

- option: clamping force display
- · system with variants for customized machine vises sizes: 100 ... 160 mm

max. clamping force: 25 ... 60 kN length of base: up to 750 mm



Series VL

Concentric clamping systems

Hydraulically operated, double acting concentric clamping

- high repetitive clamping repeatability ± 0.01 mm
- fixing and mounting possibilities for customer-specific clamping jaws sizes: 100 ... 160 mm

max. clamping force: 16...64 kN





Automation

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 max. clamping force: 32 kN

Series ASH



Clamping jaws

top jaws with grip spacer jaws precision step reversible jaws precise step bars formed jaws central jaws pendulum jaws precision step iaws 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 SlimFlex 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 clamping systems

Arrangement of the clamping points: TS: 4 x 90° | TS-TriStar: 3 x 120° mechanically operated clamping against the central fixed jaw

- for 4, 8 or 16 workpieces
- 3rd-hand function for safe loading and unloading sizes: 24 ... 160 mm

max. clamping force: 12...60 kN

Series TS





Series KK

Box jaws, mechanically operated

Milling and turning machining

- lead screw and nut completely encapsulated
- easy pre-adjustment using a scale

track: 150 and 180 mm

max. clamping force: 30 ... 63 kN

Series MTECS V





• 5-sided workpiece machining

square poles: 50 or 70 mm

plate thickness: 310x250 to 1000x610 mm (and specials)

Magnetic clamping systems M-TECS

max. retention force: 350 ... 750 daN/Pol









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

SPEEDY metec

Easy, compact and sturdy

clamping: mechanically unclamping: mechanically max. retention force: 12...50 kN



SPEEDY airtec

Quick and precise

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



SPEEDY hydratec

Quick and flexible

clamping: hydraulically unclamping: hydraulically max. clamping force: 20 kN max. retention force: 38 kN



System 3000

Strong and unique

clamping: hydraulically unclamping: hydraulically max. clamping force: 50 kN



SPEEDY classic

Clamping force monitoring, seat check,

blast cleaning, flow power

clamping: mechanically unclamping: hydraulically or pneumatically

max. insertion force: 30 kN max. retention force: 55 kN



SPEEDY easy click

Clamping by pressing

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



SPEEDY sweeper

For automation

clamping: mechanically unclamping: hydraulically or pneumatically

max. insertion force: 20 kN max. retention force: 38 kN



Couplings

Universal and compact for hydraulics, pneumatics vacuum and electrics

nominal diameters: 3...8 mm









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-centering



Quick-locking cubes

For milling machining

from standard components, adapted to the machine and the machining task

• 3rd-hand-function (DHF) prevents dropping parts



Quick-locking plates

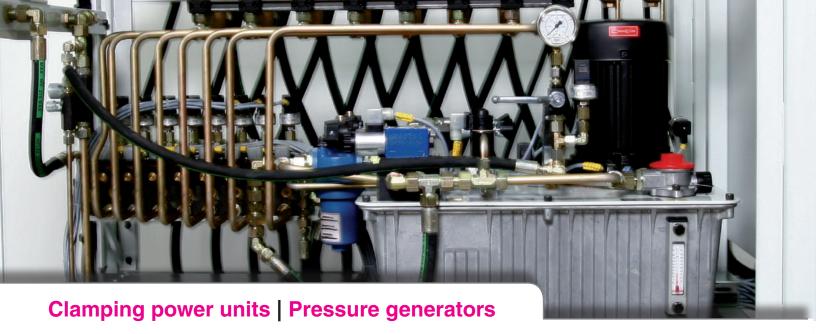
For automation

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

Power units D 8.010

Compact and lightweight energy-saving intermittent cycling

flow rate: 0.5...0.8 l/min max. operating pressure: 200 bar reservoir volume approx. 3.5 l voltage: 400 VAC or 24 VDC



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



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 **D8.015** | **D8.018**

With proportional pressure adjustment

flow rate: 0.9 ... 4.5 l/min max. operating pressure: 200 ... 500 bar

reservoir volume approx. 11 l

voltage: 400 VAC



Power units D 8.021

Basic version

flow rate: 0.9...6.2 l/min max. operating pressure: 50...500 har

reservoir volume approx. 11 l

voltage: 400 VAC



Power units D 8.031

Oil reservoir V = 27 I, 40 I and 63 I

flow rate: 4.5 ... 24 l/min

max. operating pressure: 50 ... 500 bar

voltage: 400 VAC



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



Manually-operated pumps

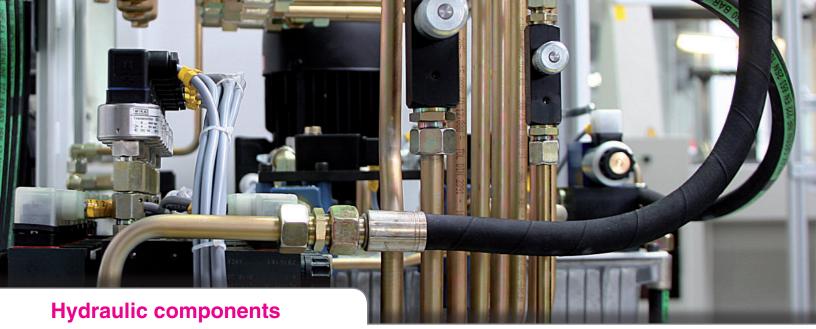
Hydraulic pumps for single-acting cylinders

operation by hand or foot lever displacement per stroke: 2...12 cm³

Screw pumps displacement: 21 cm³







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 cm3 connections: G1/4 ... G1/2

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 G1/4



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







Electric swing clamps

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

Electric work supports

max. load force 20 kN plunger stroke: 20 mm voltage: 24 V DC



Electric block cylinders

max. clamping force: 10...20 kN stroke: 100 mm voltage: 24 / 48 V DC



Electric wedge clamping elements

max. retention force: 130 ... 320 kN clamping stroke: 20 mm voltage: 24 V DC





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 up 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.







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

Electrically-operated linear actuators

Voltage: 12 or 24 VDC version with limit switches or stroke measuring system

max. force: 0.3 ... 6.0 kN stroke: 100 ... 600 mm

Manually-operated linear actuators

Manual-hydraulic version

max. force: 4.5 ... 12.5 kN stroke: 80 ... 600 mm





Pneumatic swing clamps

With adjustable magnetic sensors

double acting

max. clamping force: 140 ... 1400 N max. operating pressure: 7 bar



Pneumatic rotary valve couplings

Number of stations: 5...8

nominal diameter 3

max. operating pressure: 10 bar







Modular Units program – modules for rotating, lifting, tilting and moving of heavy workpieces Individual modules can be easily combined to built multi-functional units

Rotating modules horizontal axis

For rotation 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

For rotation of the workpiece around the vertical axis

manually or electrically operated option: indexing option: flow power

workpiece weight: up to 1000 kg

For tilting or swivelling of the

the final positions 0° and 90°

manually or electrically operated

workpiece weight: up to 100 kg

workpiece around an axis between

Tilting modules



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



Cart modules

To displace manually individual modules or module combinations

with parking brake max. load: 2000 and 6000 N



Floor modules

option: indexing

Base frame for 1 or 2 modules

to compensate unevenness of the floor space and good stability max. load: 6000 and 8000 N



Clamping fixtures

To clamp workpieces on modular fixtures

· hydraulic and mechanical clamping elements with universal clamping plate

 quick-change mounting plate with STARK zero point clamping system



Accessories

Base plates, Adaptor plates, Flange plates, Table plates, Supply units, Hand panels, Foot switches, Operating panels, Power supply for mobile systems, **Command modules**







modupress module program – hydraulically or electrically-operated press in devices for power-operated processes such as jointing, pressing-in, jolting, deforming and riveting

Press-in devices P1.100

Portal design hydraulic drive

creep/rapid speed control with optional force/stroke monitoring max. press-in force: 40...100 kN



Press-in devices P1.200

C-frame design hydraulic drive

creep/rapid speed control with optional force/stroke monitoring max. press-in force: 40...100 kN



Press-in devices P1.101

Portal design electrical drive

creep/rapid speed control with optional force/stroke monitoring max. press-in force: 7 and 25 kN



Press-in devices P1.201

C-frame design electrical drive

creep/rapid speed control with optional force/stroke monitoring max. press-in force: 7 and 25 kN



Press-in devices P1.102

Portal design hydraulic drive

creep/rapid speed control with programming of the operating time max. press-in force: 40...100 kN



Press-in devices P1.202

C-frame design hydraulic drive

creep/rapid speed control with programming of the operating time max. press-in force: 40...100 kN



Press-in devices P1.220

C-frame compact design table-top version hydraulic drive

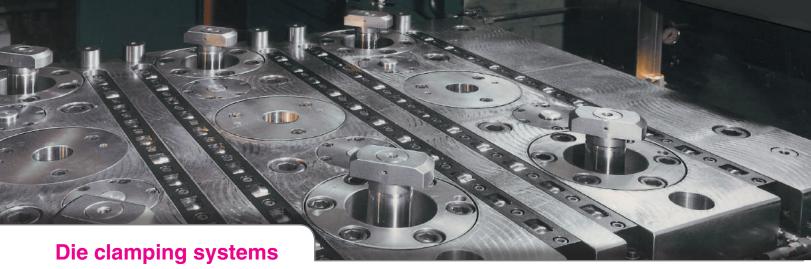
with integrated power unit and pressure switching max. press-in force: 40 ... 100 kN



Accessories

Protection cabins, Light grids, Sliding tables, Sensor technology, Quick-disconnect couplings





Die clamping and changing systems for press automation Quick changing systems for machines, presses and equipments

Hydraulic workholding 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

Pull-type clamping element

max. clamping force: 104 ... 160 kN, clamping stroke: 10 mm

Swing/swing sink clamping elements

without interfering edges when inserting the die max. clamping force: 60 ... 164 kN

Rapid clamping systems

automatic travelling units with clamping element

Pull-type cylinders

pull-type cylinder with tie rod for inaccessible points

Wedge swing clamps

with mechanical lock

Grip rail couplings

rapid clamping system for grip rails



































Electro-mechanical clamping elements

Tenon-type clamping elements

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 clamping elements

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

Angular clamps

clamping in any position of the travelling path max. clamping force: 50 kN, retention force 320 kN



Mechanical clamping elements

Sliding clamps

with integral high-pressure spindle

Clamping blocks with high-pressure spindle

with integral high-pressure spindle

High-pressure spindles, separate

with integral wedge system

max. clamping force: 40 ... 120 kN







Clamping nuts, mechanical

without / with clamping force display max. clamping force: $60 \dots 200 \text{ kN}$

Clamping nuts, hydro-mechanical with integral hydraulic cushion

max. clamping force: 60 ... 150 kN





Die changing technology

Roller bars

hydraulic or spring-loaded

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



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M-TECS magnetic clamping plates and systems for injection molding machines, forming presses, rubber presses, mould carriers, milling machines and machining centers

M-TECS 130-K

For the plastics industry max. temperature range: 130 °C plate thickness: 47 mm



M-TECS 240-D

For die-casting machines max. temperature range: 240 °C plate thickness: 55 mm



M-TECS 80-F

For mold carrier systems max. temperature range: 80 °C plate thickness: 47 mm



M-TECS 80-B

For sheet metal forming max. temperature range: 80°C plate thickness: 55...67 mm



M-TECS 240-G

For the rubber and Duroplast industry

max. temperature range: 240 °C plate thickness: 55...75 mm



M-TECS 40-F

For machining

max. temperature range: 40 °C plate thickness: 55 ... 67 mm



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



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Consulting, design, planning, engineering, construction design, production, delivery, start up 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 optimizing 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 amortizations 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 realizing versatile individual projects in the individual companies of the ROEMHELD Group, we are now in the position to offer a unique, modular product range of clamping and fixture systems.

The use of approved and reliable standard modules is the key for optimized production and engineering costs and guarantees the realization 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.





ROEMHELD Product Lines:



- Power workholding devices
- Quick die change for stamping
- CNC machining center vises
- Quick mold change for plastics and rubber
- Zero point mounting systems
- Assembly devices



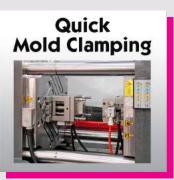














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