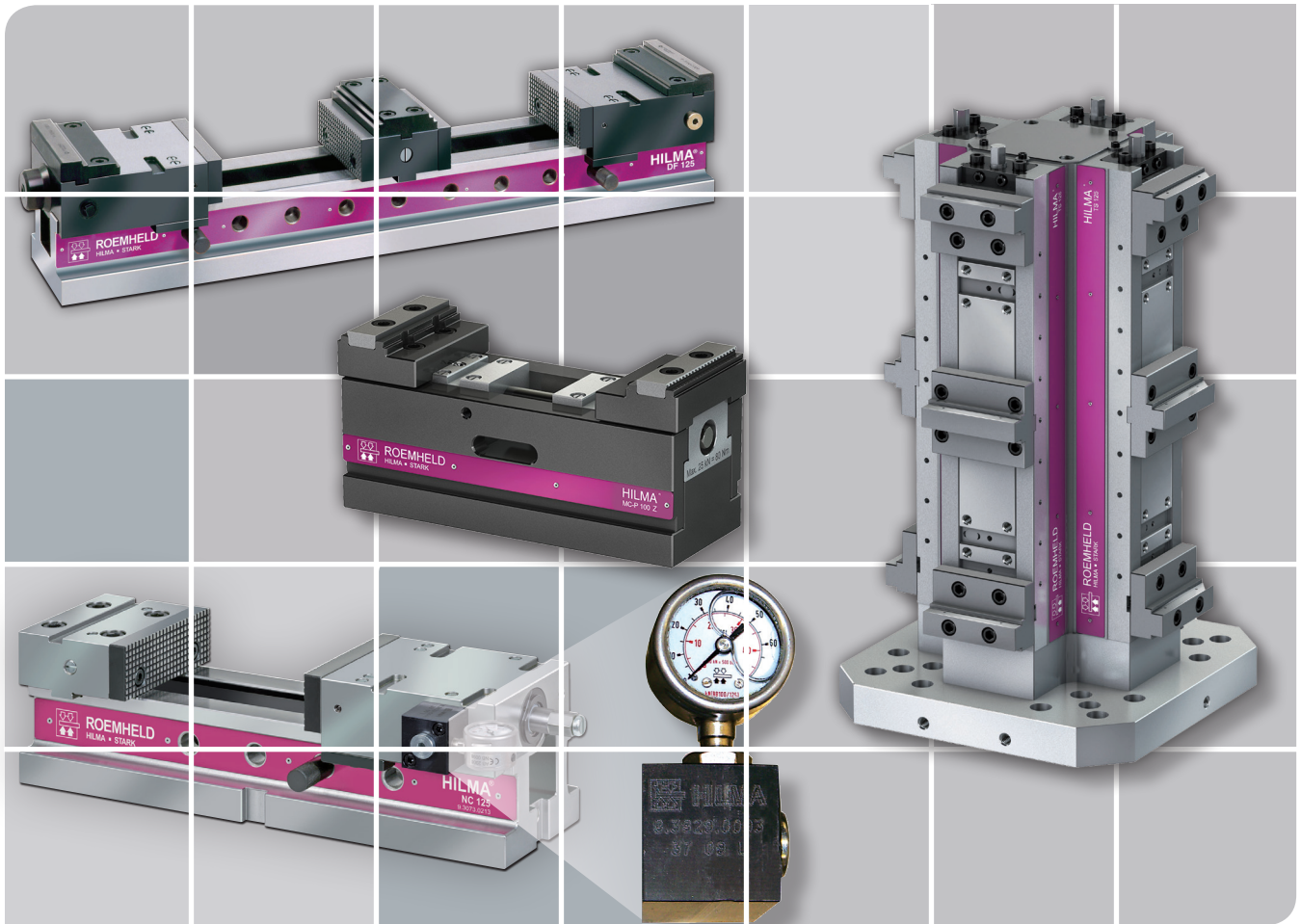


Precision Machine Vises

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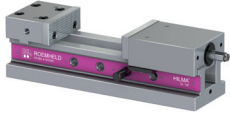
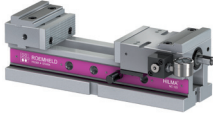
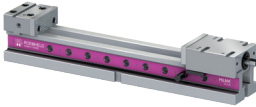
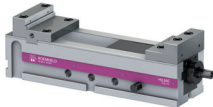
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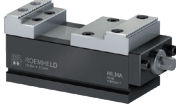
Carr Lane Roemheld Mfg. Co.

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Flexible workholding systems

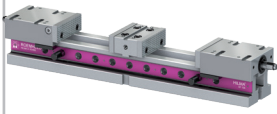
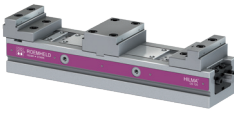


Series	EL	NC	VL	KNC
				
Jaw widths (max. clamping force)	100 mm (25 kN) 125 mm (40 kN) 160 mm (50 kN)	100 mm (25 kN) 125 mm (40 kN) 160 mm (50 kN)	100 mm (25 kN) 125 mm (40 kN) 160 mm (50 kN)	100 mm (25 kN) 125 mm (40 kN) 160 mm (50 kN)
Operation mechanical	-	-	-	-
with hydraulic force transmission	with hydraulic force transmission	with hydraulic force transmission	with hydraulic force transmission	with hydraulic force transmission
hydraulic	-	single acting	single acting	-
Clamping principle	clamping against the fixed jaw	clamping against the fixed jaw	clamping against the fixed jaw	clamping against the fixed jaw
Application	manual loading	manual loading	manual loading	manual loading
Machining centre	vertical	vertical	vertical/horizontal	vertical/horizontal
Special features/ Options	· basic system	· clamping force display · step jaw inserts	· clamping force display · variable overall length · step jaw inserts	· completely encapsulated
Overall lengths	380 - 750 mm	380 - 550 mm	380 - 750 mm	300 - 540 mm

5-axis machining

Series	MC-P	MC-P Z MC-P ZB	SCS	PC
				
Jaw widths (max. clamping force)	40 mm (7.5 kN) 60 mm (15 kN) 100 mm (25 kN) 125 mm (35 kN)	40 mm (7.5 kN) 60 mm (15 kN) 100 mm (25 kN) 125 mm (35 kN)	80 mm (25 kN) 120 mm (40 kN)	80 mm (20 kN)
Operation mechanical	mechanical	mechanical	mechanical	mechanical
hydraulic	on request	double acting	single acting	-
Clamping principle	clamping against the fixed jaw	concentric clamping / position flexible	clamping against the fixed jaw	clamping against the fixed jaw or concentric clamping
Application	manual loading / automation	manual loading / automation	manual loading / automation	manual loading
Machining centre	5-axis / pallets	5-axis / pallets	5-axis / pallets	5-axis / pallets
Special features/ Options	· patented design · compact design	· patented design · clamping without deformation (MC-P ZB) · compact design	· covered spindle area · displaceable fixed jaw	· basic system
Overall lengths	110 - 283 mm	110 - 485 mm	206 - 282 mm	170 mm






Double and multiple workholding systems

Series	DF	DS	DUO	MSH
				
Jaw widths (max. clamping force)	100 mm (25 kN) 125 mm (40 kN) 160 mm (50 kN)	100 mm (25 kN) 125 mm (40 kN)	80 mm (20 kN)	24 mm (15 kN) 40 mm (20 kN) 60 mm (25 kN) 100 mm (25 kN)
Operation mechanical	-	mechanical	mechanical	mechanical
with hydraulic force transmission	with hydraulic force transmission	-	-	-
hydraulic	single acting	single acting	-	-
Clamping principle	clamping against the fixed jaw	clamping against the fixed jaw	clamping against the fixed jaw	clamping against the fixed jaw
Application	manual loading	manual loading / automation	manual loading / automation	manual loading
Machining centre	vertical	vertical/horizontal	vertical/horizontal	vertical/horizontal
Special features/ Options	<ul style="list-style-type: none"> clamping force display step jaw inserts operation with 2 spindles 	<ul style="list-style-type: none"> operation with 1 spindle with 3rd-hand function Vector design on request 	<ul style="list-style-type: none"> compact workholding system 	<ul style="list-style-type: none"> MSH variant stainless locking via eccentric
Overall lengths	540 - 750 mm	420 - 510 mm	240 mm	250 - 750 mm

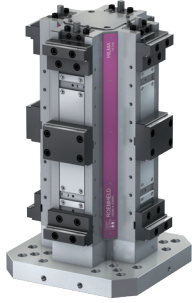

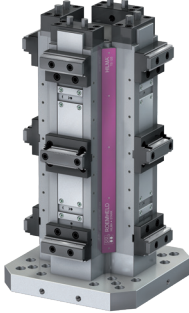

Concentric workholding systems

Automation

Box jaws

Series	ZH	ASH	KK
			
Jaw widths (max. clamping force)	100 mm (16 kN) 125 mm (25 kN) 160 mm (40 kN)	100 mm (25 kN) 125 mm (32 kN)	KK 150 (30 kN) KK 180 (63 kN)
Operation mechanical	-	-	mechanical
hydraulic	double acting	double acting	-
Clamping principle	concentric clamping	clamping against the fixed jaw	-
Application	manual loading / automation	manual loading / automation	manual loading
Machining centre	vertical/horizontal	vertical/horizontal	turning/milling centres
Special features/ Options	<ul style="list-style-type: none"> completely encapsulated 	<ul style="list-style-type: none"> option: stroke measuring system clamping stroke up to 250 mm completely encapsulated 	<ul style="list-style-type: none"> completely encapsulated
Overall lengths	395-605 mm	application-specific	-

Tower workholding systems

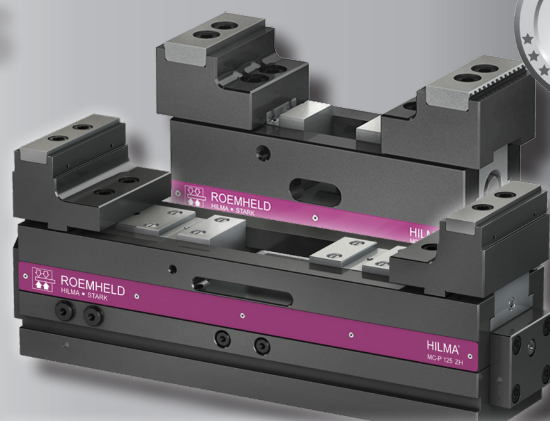
Series	TS	TS TriStar	TS Vector	TS TriStar Vector
				
Jaw widths (max. clamping force)	100 mm (25 kN) 125 mm (40 kN)	80 mm (20 kN) 100 mm (25 kN) 125 mm (40 kN)	100 mm (25 kN) 125 mm (40 kN)	100 mm (25 kN) 125 mm (40 kN)
Operation	mechanical	mechanical	mechanical	mechanical
hydraulic	—	—	on request	—
Clamping principle	clamping against the fixed jaw	clamping against the fixed jaw	clamping against the fixed jaw	clamping against the fixed jaw
Application	manual loading	manual loading	manual loading / automation	manual loading / automation
Machining centre	horizontal	horizontal	horizontal	horizontal
Special features/ Options	<ul style="list-style-type: none"> patented guide and sealing system with 4 clamping sides - 4 x 90° operation with 1 spindle per side with 3rd-hand function 	<ul style="list-style-type: none"> patented guide and sealing system with 3 clamping sides - 3 x 120° operation with 1 spindle per side with 3rd-hand function 	<ul style="list-style-type: none"> patented guide and sealing system with 4 clamping sides - 4 x 90° operation with 2 spindles (transmission of different clamping forces) with central fixed jaw or 2 x fixed jaw 	<ul style="list-style-type: none"> patented guide and sealing system with 3 clamping sides - 3 x 120° operation with 2 spindles (transmission of different clamping forces) with central fixed jaw or 2 x fixed jaw
Overall heights	562 - 707 mm	248 - 707 mm	599 - 750 mm	599 - 750 mm

MC-P 5-Axis Vises

Worry FREE Clamping

The MC-P series vises combine a very compact, fully enclosed design with a patented sliding-jaw segment design. Thanks to the adjusting spindle arranged in the upper part of the housing, deformation in the base during clamping is reduced to a minimum, providing high rigidity of the entire workholding system. The patented segment design ensures a high degree of precision and stability, reducing guiding clearance to nearly zero. The MC-P 100/125 are equipped to use on zero point clamping systems with threads for retractable nipples at the bottom side of the housing.

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Accessories

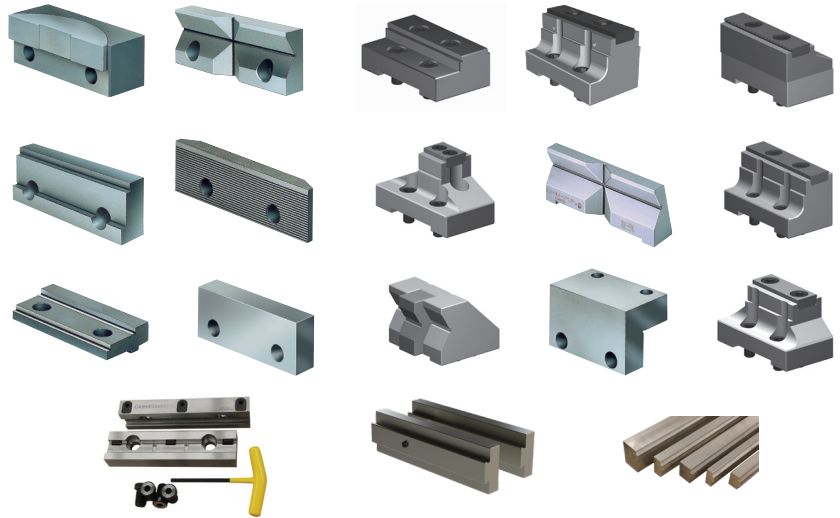
Clamping jaws

Clamping jaws have a great influence on the clamping quality and safety and thus also on the machining results.

We offer a large catalogue range of clamping jaws for each clamping system.

If you do not find the desired clamping jaw in our catalogue range, please contact us. Besides the catalogue range, we also manufacture customised clamping jaws. We would be pleased to advise you on the selection of optimum clamping jaws.

- Clamping jaws with or without jaw inserts
- Clamping jaws, extra wide or extra high
- Step jaws
- Reversible jaws / reversible step jaws
- Step jaw inserts
- Block jaws
- Vee jaws
- Pendulum jaws
- Central jaws, fixed or floating
- QIS clamping jaw system
- SlimFlex clamping jaw system
- Special grip jaws
- Clamping modules for multiple clamping systems
- **CARVESMART™** steel master jaw set
- **CARVESMART™** PERMAjaw
- **CARVESMART™** aluminium jaw stock



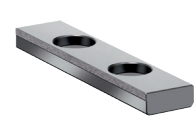
Jaw inserts

Jaw inserts allow the clamping of blanks and finished parts with the same clamping jaws or the same clamping system.

Jaw inserts
grip serrated



Jaw inserts
with coatings



Clamping power units

For the hydraulic supply and control of hydraulic clamping systems, we offer the suitable clamping power units. Completely equipped with the necessary electrical and hydraulic control, the desired operating element such as hand panel or foot switch as well as the integration into the machine control. Dependent on the application and the desired functions, we select the suitable clamping power unit for you. Please contact us.



Rapid change block Quintus

The rapid change block Quintus is used to fix the workholding systems for 5-axis machining on the machine table, alternatively with or without integrated mechanical STARK zero point clamping system "SPEEDY metec". It ensures a good accessibility of the machining tools to the workpiece.

Rapid change block Quintus
without zero point clamping
system



Rapid change block Quintus
with zero point clamping
system



Other accessories

- Clamping claws
- Workpiece stops
- Clamping force preselection
- T-nuts
- Angle drives
- Torque wrenches

Machine Vise Pressure Gauges Provide Enhanced Precision

Problem: Machine vises have many benefits, including precision, accuracy, and repeatability. The quandary, though, can be knowing how much pressure to apply to the crank handle to generate clamping force. Depending on the equipment and set up, if too much pressure is applied, a shop may experience tool breakage and machine downtime.

Solution: A HILMA machine vise with a pressure gauge allows parts to be safely clamped ready for machining. This helps avoid clamping forces which are too low or excessive, thus enhancing process safety.

Pressure Gages Deliver Accurate Clamping Force:

Machine vises have long been a boon to manufacturing, but engineers often have had problems with knowing how much pressure to apply to the crank handle to generate clamping force. Too much clamping force results in tool breakage and machine downtime.

This was the problem at Atlas Copco Construction Tools of Essen, Germany, especially after a change of metal cutting machines. Michael Beer, equipment engineer for fixture construction at Atlas Copco, explained. "With the old equipment, parts were machined on two sides at a time, but the new system only machined them on one side. As pressure came only from one side, the workpiece moved.



varying in length from 1000 to 1900 mm, consists of a total of 13 variants of the ›MB‹ and ›HB‹ series. Some 250 employees are involved in producing hydraulic add-ons to be used in mining, demolition, clearance and other tasks in the construction industry.

Precision clamping

As the forgings have an uneven surface, this is milled by about 15 mm. During machining, HILMA Varioline VL 160 machine vises, which have a clamping force of five tons, ensure the components are safely held in place.

Michael Beer first assumed that a defect in the clamping systems might be the reason for the tools breaking. Another issue was that some operators felt that the more you pull the crank of the machine vise, the more clamping force you generate. This however is not true and led to several cranks becoming defective and having to be replaced. Andreas Menn of Roemheld's fitter team helped Mr. Beer to identify the root cause. Mr. Menn was quick to find out that the workpiece supports with grip inserts used by Atlas Copco were the true cause for the breakage. All workpieces shifted during clamping, which meant they were not held with the full clamping force.

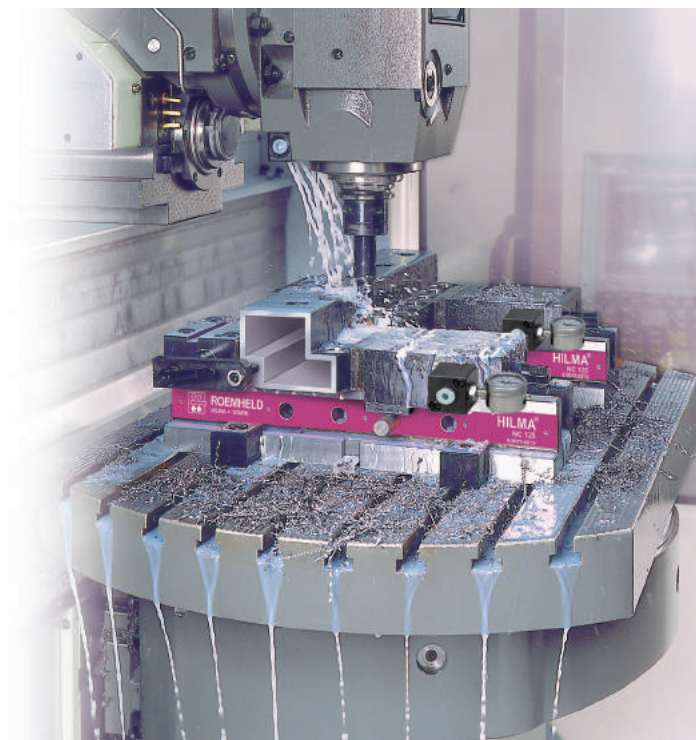
Safe processes

Mr. Menn suggested retrofitting the HILMA machine vises with pressure gauges, which is an option thanks to the mechanical-hydraulic power transmission of the clamps. The clamping force indication allows the required force, which can be read throughout the



"This issue occurred when machining steel forgings weighing up to 1.2 tons, which are used to produce the main components of hydraulic hammers. The largest parts are up to 900 mm long with side lengths of 490 mm. The hydraulic hammer range, which has tools





Hilma machine vises are sold in a variety of models and sizes in North America by Carr Lane Roemheld Mfg. Co.

The success of HILMA machine vises with a pressure gauge was quickly apparent: Since these solutions have been in place, no tools have broken. Michael Beer is enthusiastic: "If I had known before that VL 160 with a pressure gauge costs just (\$250) or so more but offers such a great value for money, I would have ordered all the vises with this add-on upfront." The remaining four vises were retrofitted during production.

The extra cost has already paid for itself in the fact that there has been no tool breakage.

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machining process, to be precisely applied. This helps avoid clamping forces which are too low or excessive, thus enhancing process safety.

For roughing, the workpiece is clamped with full force, but the clamping force can be sensitively and precisely adjusted for finishing. For repeat orders, the required clamping force can be precisely reproduced so that the unique conditions ensure production of the same high quality. If the workpiece is a housing or a similar part or if soft materials have to be clamped, the pressure gauge helps avoid deformation resulting from excessive clamping pressure.

Michael Beer was immediately struck by the benefits demonstrated by the fitter. What is more, he suggested the use of clamping jaws with specific coating. Their rough surface would clearly enhance their holding power so that the workpiece can be held safely and precisely even at a reduced clamping force. With this approach, higher machining forces may be applied during production.

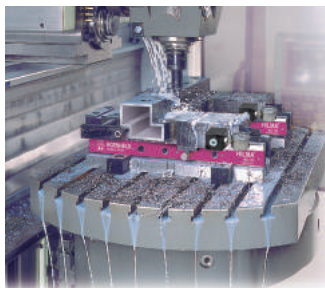
Atlas Copco had been using Hilma/Roemheld clamps for over two decades, recalls Mr. Beer: "I do know that HILMA's products are a bit more expensive, but they are better and they offer great, fast and cheap service."

HEARD FROM YOUR VISES LATELY?



Ours Tells You How Well It's Working

Our NC vise is available with an *integrated force gauge* which tells you how much holding force is being applied to your workpiece. Minimal effort on the crank handle results in extremely high holding force because of the built-in hydraulic power of the vise. Now you'll know if your part is being held properly.



- Better clamping quality
- Correct clamping force every time
- Consistent process control
- Reduced tool breakage
- Workpiece deformation reduced
- Ideal for roughing and finishing
- Reduced operator fatigue

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This comprehensive system utilizes clamping components and insertion nipples, which provide an immediate zero point orientation.

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- Existing fixtures can be easily adapted
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