

INNOVATION



Premium Quality by Hoffmann Group

EXCITING PROSPECTS FOR THE FUTURE.

GARANT ZeroClamp – flexible, versatile and ready
for the challenges of Industry 4.0

 **Hoffmann Group**[®]
Tools to make you better

One basic unit – outstanding flexibility

THE ZERO POINT CLAMPING SYSTEM FOR A WIDE RANGE OF APPLICATIONS

Witte Vacuum clamping technology

GARANT Multi-point clamping rails 80 and 120

GARANT XPent 5-axis vice

Pneumatic centring vice

GARANT ZeroClamp Base plate

GARANT ZeroClamp extension base

GARANT magnetic clamping plate

GARANT Centring vice

GARANT HiPo NC high-pressure vice

ALLMATIC "T-REX"

GARANT ZeroClamp clamping pot socket

GARANT ZeroClamp extension base with pot

Ensure your competitiveness

EVEN ON TOMORROW'S COMPLEX JOBS – PRECISE AND RELIABLE CLAMPING

The growing complexity of production and the increasing diversity of components pose new challenges for the production process. Garant ZeroClamp scores highly thanks to its **simple design, high flexibility and unlimited range of applications**. Thermal expansion is compensated by acting always in relation to the centre axis, so you need only one type of clamping stud. This offers you a great degree of freedom when arranging the clamping points, and also simplifies handling at all stages of production.

The Garant ZeroClamp was launched on to the market ten years ago and has now become well established. Our satisfied customers already have more than 55,000 clamping pots in use, each one saving hard cash.

GARANT ZeroClamp is the best way of setting up for production. As Europe's leading system partner for quality tools, the Hoffmann Group offers you reliability, stability, advice and on-site service.

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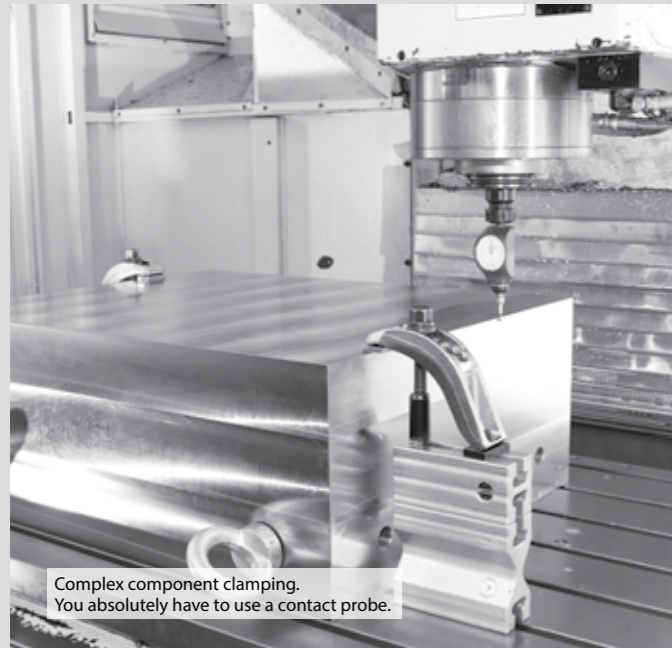


Why use zero point clamping?

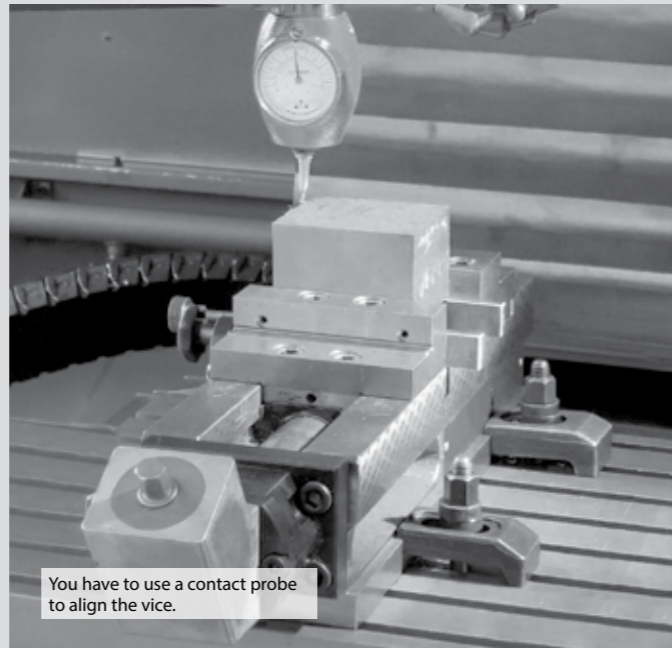
JOIN THE MOVEMENT TO MODERN CLAMPING TECHNOLOGY



Is this what your production looks like, and are you still using conventional clamping?



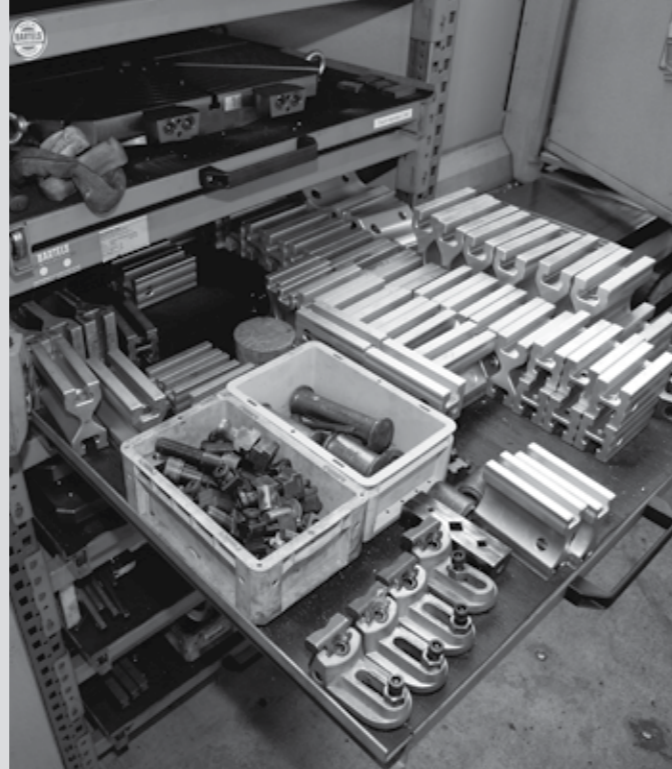
Complex component clamping. You absolutely have to use a contact probe.



You have to use a contact probe to align the vice.



Unmanageable collection of mechanical clamping elements. Long and complicated clamping procedures and alignment of the component.



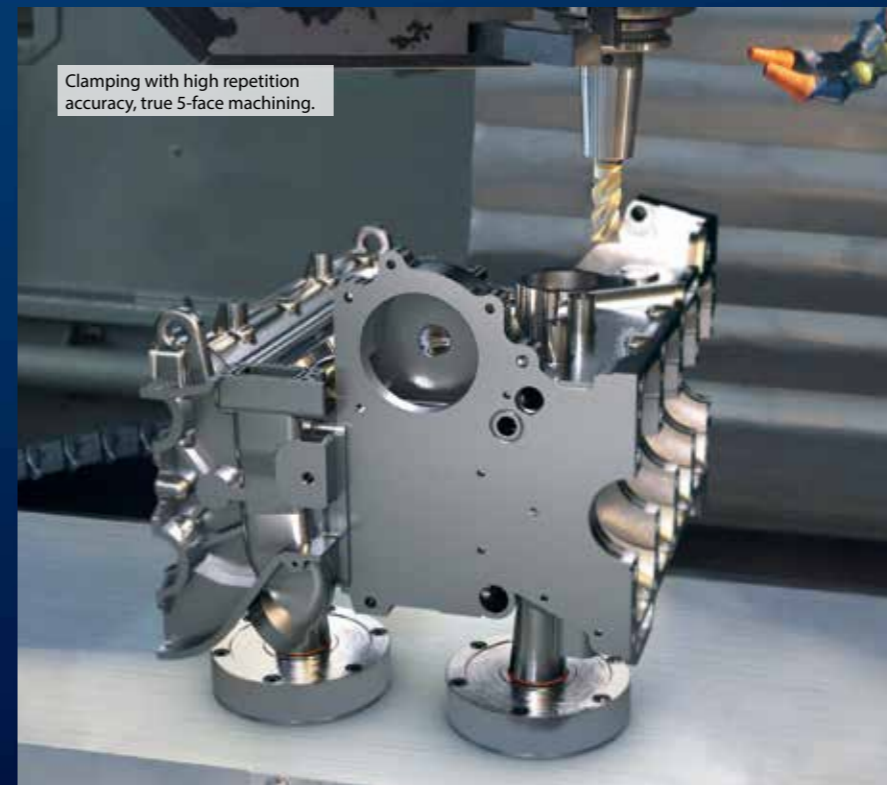
GARANT ZeroClamp allows you to simplify your processes



Quick, easy, good accessibility.

Quick and easy clamping using the GARANT ZeroClamp zero point clamping system: for instance NC vices secured to base plates by means of clamping studs, or (as illustrated) the work-piece is clamped directly to the clamping pot using an extension base.

Individual fastening options for precise clamping with high repetition accuracy



Clamping with high repetition accuracy, true 5-face machining.

Using the GARANT ZeroClamp zero point clamping system will increase the productivity of your manufacturing. Long set-up times are a thing of the past. Reducing machine downtimes allows you to produce more components at a lower unit cost. If the measurement process shows the component needs further machining you can position the component on the machine quickly, precisely and with high repetition accuracy – be it for a small batch or a one-off item.

Simply brilliant

ONLY 5.5 BAR COMPRESSED AIR IS NECESSARY TO RELEASE THE CLAMPING STUDS – LOCKING IS BY SPRING PRESSURE

- 25 kN clamping force with clamping pot Ø 120 mm (40 kN at Ø 138 mm), not self-locking.
- Low-maintenance sealed system without hydraulic oil: no leakage, unaffected by chips.
- Process reliability thanks to easy application.

Operating principle in cross-section



The pallet is simply placed on the open GARANT ZeroClamp clamping pot. Therefore there is no risk of jamming.



The spring elements keep the locking unit (clamping wedges) open due to the air pressure (5.5 bar) in the air hose.



When the pressure in the air hose is released, GARANT ZeroClamp positions the workpiece on the flat face with a clamping force of 25 kN (Ø 120 mm) and 2.5 µm repetition accuracy.

The centrepiece

ONLY 8 PARTS FOR RELIABLE CLAMPING FORCE

Centring clamping, free of backlash
within the hardened steel taper

Radial springs
mounted in NBR.

All components are made of
stainless steel, or steel with corrosion protection

Non-wearing technology
an air hose and clamping plates
provide the required clamping force.

Locking unit

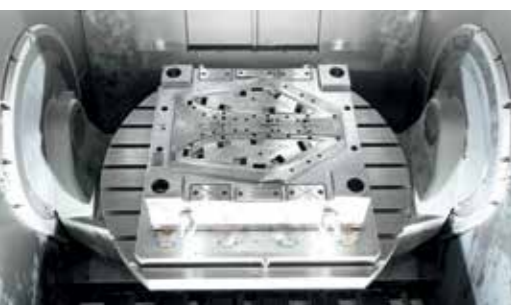
Air connection for release

Easy handling

Low weight and small size
(base plate made from high-strength
aluminium, surface-treated).



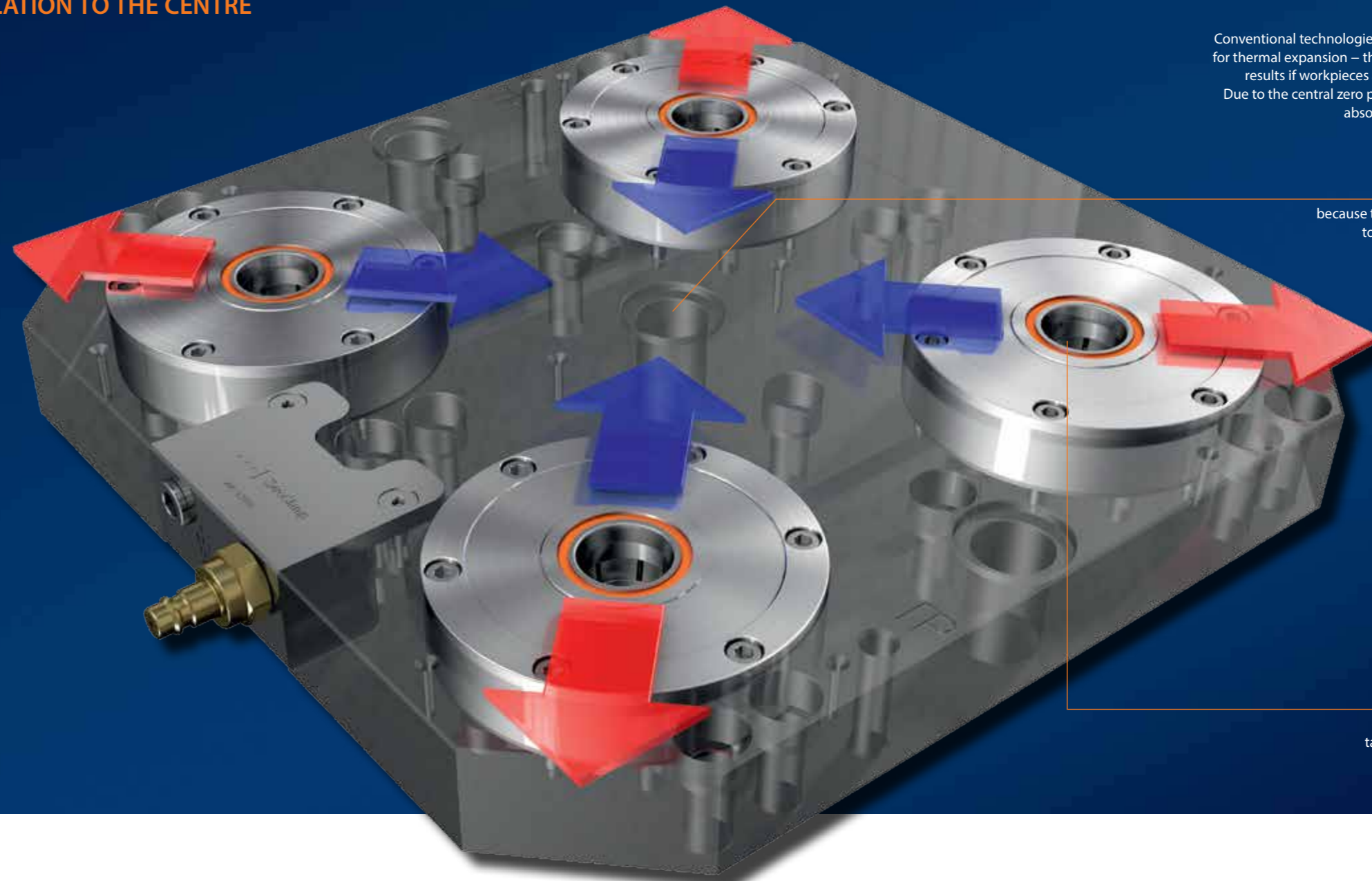
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The key advantage

THERMAL SYMMETRY – ALWAYS IN RELATION TO THE CENTRE

- The absolute zero point: Compensation for thermal expansion is always symmetrical about the centre axis.
- Special zero-play clamping tapers for low-vibration operation.
- No sword studs, no floating studs.



Conventional technologies use floating studs to compensate for thermal expansion – this produces particularly inaccurate results if workpieces are rotated around the central axis. Due to the central zero point, GARANT ZeroClamp provides absolute thermal symmetry at all times.

Absolute zero

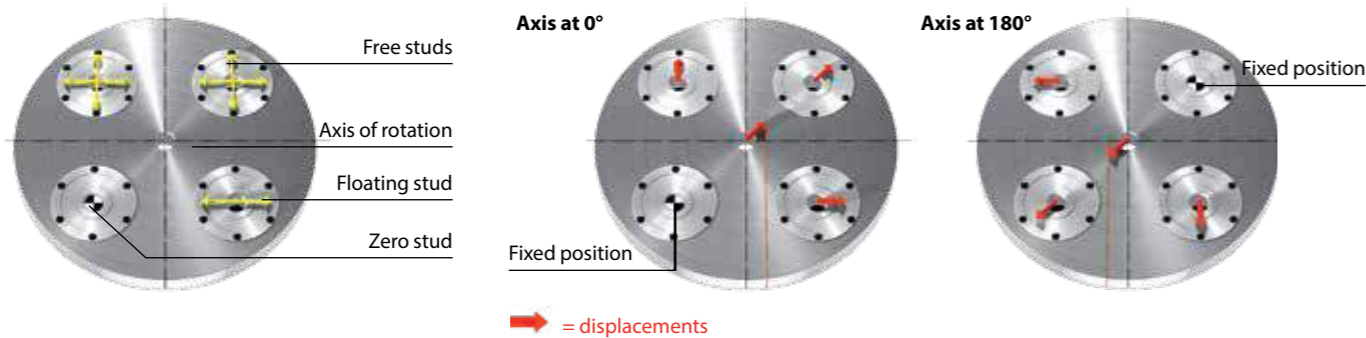
because thermal compensation is in relation to the zero point and axis of rotation.

Precision taper

on insertion, the resiliently sprung taper of the socket expands slightly towards the flat face.



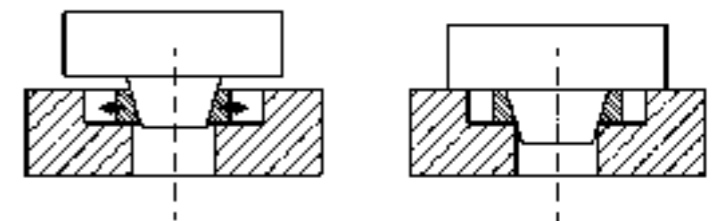
The disadvantage of classic zero point clamping systems



In conventional systems, thermal compensation can be achieved only by using different types of studs.

For a circular axis for instance the error clearly leads to a deviation from the axis of rotation.

HSK principle



The system operates in a similar way to a HSK tool taper. The elasticity of the interface ensures freedom from radial play together with the axial position relative to the flat face.

Unlimited applications

BE IT MILLING, TURNING, SPARK EROSION, MEASUREMENT, GRINDING OR PRESETTING – THE LATEST CLAMPING TECHNOLOGY IN ALL SITUATIONS

- Comprehensive system, suitable for spark erosion machines.
- A clamping system also for turning.
- Better usage of measuring machines by increasing the productive time

Pure productivity

REVOLUTIONARY INCREASES IN EFFICIENCY, PRECISION, AND VARIABILITY WITH THE INNOVATIVE ZERO POINT CLAMPING SYSTEM.

Automation

Precision when loading the machine



Turning

The productivity advantages are also used to the optimum when turning. Additional security (positive fit) against centrifugal force offers security when turning.



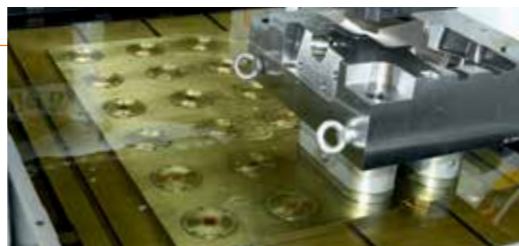
Ideally suited to measuring machines

Checking before the final operation.
100 % inspection of all finished assemblies.
Repeatability < 5 µm offers certainty.



Spark erosion

GARANT ZeroClamp – reliable performance even for spark erosion.



Milling

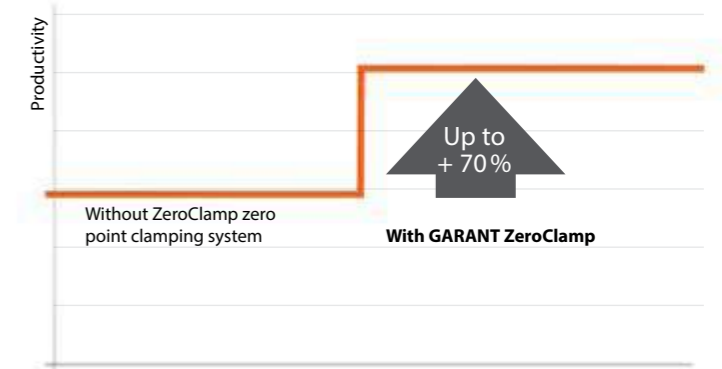
High clamping forces and process reliability even where heavy forces prevail.



Time saving



Increased productivity



Increasing the machine running time is key to success. GARANT ZeroClamp is the efficient zero point clamping system: It combines high speed, high force, and very high precision to achieve reduced set-up times, changeover times and ancillary times.



A wide variety of clamping pot applications

FROM STANDARD APPLICATIONS THROUGH TO AUTOMATION

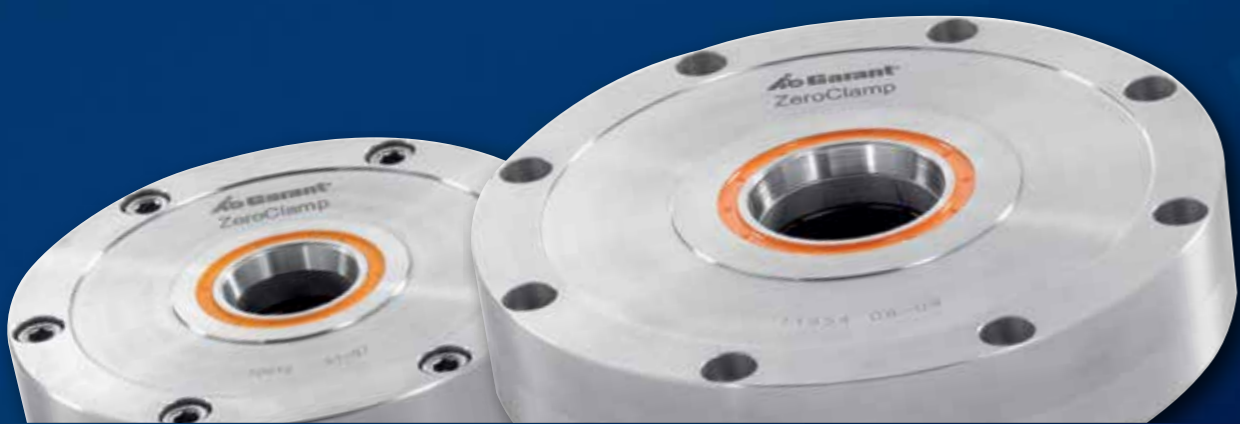


STANDARD CLAMPING POTS

CLAMPING POTS WITH ADDITIONAL FUNCTIONS

CLAMPING POTS FOR AUTOMATED PROCESSES

Clamping pot diameter in mm	Ø 90 mm	Standard	indexed							Clamping pot diameter in mm
	Ø 120 mm	Standard	indexed	Check function	Check function, indexed			4-channel	4-channel, indexed	
	Ø 138 mm	Standard	indexed	Check function	Check function, indexed	Position check prepared for sensor	Position check, indexed prepared for sensor	4-channel	4-channel, indexed	
	Ø 190 mm	Standard	Standard							



LEGEND:

Indexed

= capable of achieving exact radial positioning

Check function

= Checking the flat face position by an integral valve for evaluating the clamped situation by means of dynamic pressure monitoring

Check function prepared for sensor

= Prepared for analogue / digital evaluation of the clamped situation (customer to provide evaluation mechatronics)

4-channel

= media transfer for automation / actuators (compressed air / 4 channels)



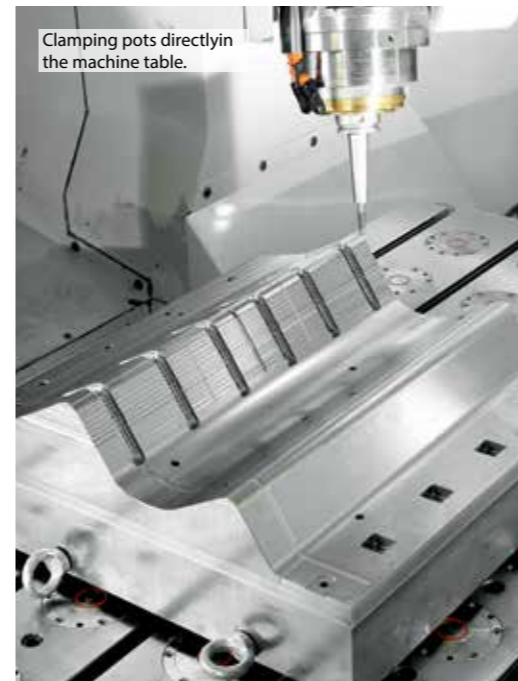
1. Clamping in a centring vice on a clamping rail.



Clamping rails on a clamping pillar machining complex components.



Workpiece direct clamping on 45° special extension base.



Clamping pots directly in the machine table.



Use for spark erosion.



Clamping on an angled extension base.



Machining a casting mould on a horizontal machining centre.



Workpiece clamping with a jig on a horizontal machining centre.



Combination with magnetic clamping on a machining centre, with change-over system.

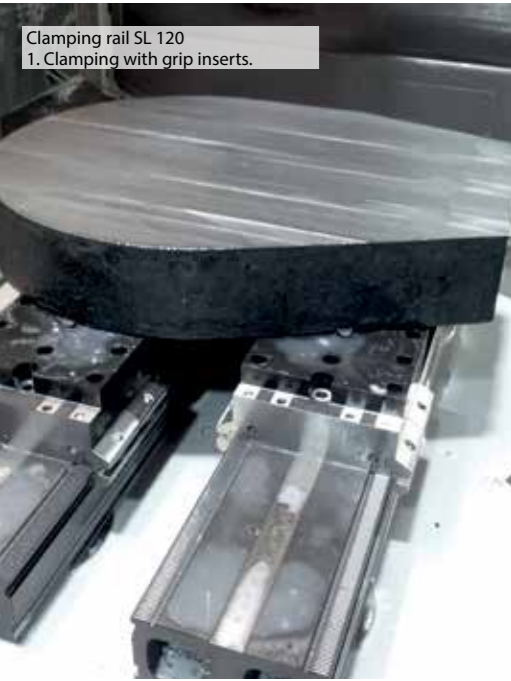
Garant
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Application examples

GARANT ZEROCLAMP CLAMPING RAIL AND WORKPIECE CLAMPING



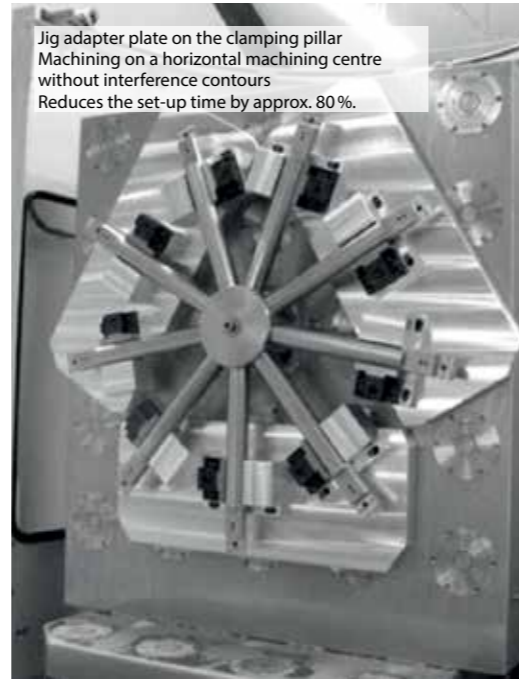
Manual clamping situation in combination with zero point clamping system (pillar).



Clamping rail SL 120
1. Clamping with grip inserts.



Machining an aluminium press tool on a 5-axis milling machine.



Jig adapter plate on the clamping pillar
Machining on a horizontal machining centre without interference contours
Reduces the set-up time by approx. 80%.



48 clamping pots. Allows direct mounting of the component.



Clamping rails each with five clamping jaws for multi-part clamping of small parts.



SK 40 adapter on the base plate.
Machining on vertical machining centres without interference contours.

The customer's opinion

"Extreme reduction in set-up times!"

WITH GARANT ZEROCLAMP WE NO LONGER NEED DESIGN SPECIAL JIGS AND FIXTURES; THIS HAS ALLOWED US TO DRASTICALLY REDUCE SET-UP TIMES.



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The company was founded in 1988, and develops, plans and builds injection moulds, press tools and special machines, with delivery to the required due dates and technical quality. For Gehmacher it's all in a day's work, whether the parts are one-off, short series or 5-axis milled parts for complex and complicated moulds.

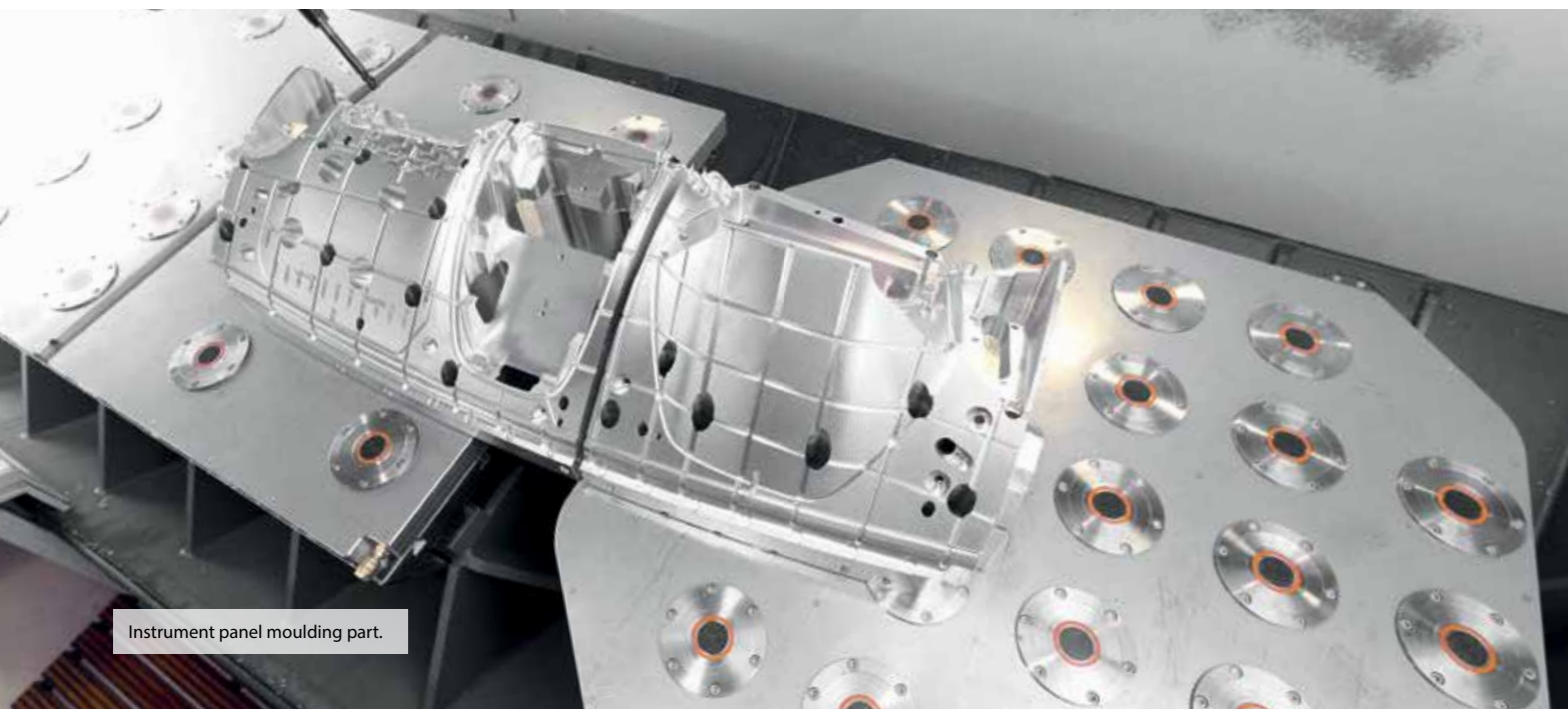
The long-term aim of the company is to optimise machine cycle times whilst ensuring a high standard of quality. **"Our customers range across many sectors such as auto-motive, electrical equipment, electronics and environmental technology. They demand the best price-benefit ratios coupled with first-class support and advice, on short delivery times,"** reports the owner, Sebastian Gehmacher.

Our system partner for quality tools and tool management is the Hoffmann Group, who have supported us with advice and assistance ever since we founded the company.

We have benefited from the continual advice and shared suggestions of solutions provided by the Hoffmann application engineers says Gehmacher. We started using GARANT ZeroClamp in 2012, and now every machine we have is equipped with this system. It was the combination of ease of use and good accessibility to the workpiece that convinced us to commit to this system. In everyday operation we clamp the components directly via base extensions, via NC vices or a via combination of conventional clamping devices with GARANT ZeroClamp. This eliminates the need for additional intermediate adapters, giving us a huge advantage in terms of time and thus making huge savings on machine downtime. Since our components have to be clamped multiple times, this generates extreme reductions in set-up times. Without GARANT ZeroClamp we could no longer perform our professional high-tech machining. In future every machine that we acquire will be fitted with GARANT ZeroClamp.



from left: Florian Gehmacher (Project Management), Sebastian Gehmacher (Owner), Robert Zerhoch (Application Engineer, Hoffmann Group).



Instrument panel moulding part.



5- axis simultaneous machining of a finished mould slide.

GEHMACHER – METAL MACHINING AND PROCESSING OF THE HIGHEST QUALITY

With our team of 20 highly-qualified specialists we are able to cover all aspects of metal machining and processing. We undertake development, planning, building and delivery to the due dates and technical quality required to satisfy customers' orders. As an innovative supplier making on-time deliveries to highly demanding standards of quality, our goal is to solve all the problems presented by our customers. With our modern CAD systems and NC milling software we can convert all the data from design into tools. We can offer sizes up to X 2940 mm Y 1200 mm Z 800 mm.

We work with VISI -CAD, Solid-Works, Mech Desktop and Hypermill and can process all commonly-used data formats.

TÜV certified, audited to DIN EN ISO 9100:2008

Gehmacher GmbH
Gewerbestr.11
83346 Bergen

www.gehmacher-gmbh.de



The customer's opinion

"Simple system structures and maximum flexibility!"

MOTOR SPORT SUPPLIER GRÜNEWALD GOES FOR TOP SPEED IN PRODUCTION, WITH GARANT ZEROCLAMP.



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Grünewald is a certified supplier to the automobile and machine tool industries. The company has more than 300 employees and sells transmission shafts and gear shafts, together with axle and wheel suspensions and steering components throughout the world in very small series or in large series. Our high flexibility, with our own design team for jigs, fixtures and prototypes, constitutes a gigantic advantage over our competitors.

When you are the best, you use the best tools. For 12 months we have been using GARANT ZeroClamp in 24/7 operation and we have already reduced our set-up times by more than 75 %. The greatest benefit to us has been the capability to offer quick response times. The performance spectrum matches our requirements perfectly. We have to be able to set up quickly between successive jobs. Especially in motor sport, very quick delivery of spare parts is critical. We

can change over from series production to single parts or vice versa in just a few minutes. Our components are clamped using GARANT ZeroClamp by means of fixtures we have designed ourselves. **"We did test products from other manufacturers, but it was evident they had never been developed as integrated systems."**, says Managing Director Markus Grünewald.

Advice from the Application Engineer of the Hoffmann Group, Mario Pittner, and a visit to the manufacturer confirmed our first impression – a simple modular system with maximum flexibility. We currently have some new projects in preparation. The fixtures for them **have already been designed to fit the GARANT ZeroClamp.** Our concentration in the automobile sector is still on the development of prototype building through to series production in which we promote our competence towards system suppliers.



GRÜNEWALD
The transmission shaft and gear shaft specialist

- 1946** Founded by Josef Grünewald and his sons Hans and Werner
- 1952** Expansion into large series production of synchronised shafts and Cardan shafts
- 1970** Second factory opened, in Weilmünster
- 1996** The 3rd generation takes over running the company
- 2016** New production shop built in Grävenwiesbach for large series production

Grünewald Feinmaschinenbau GmbH & Co. KG
Industriestr. 4
61279 Grävenwiesbach
www.gelenkwellen.de



from the left: Mario Pittner, Application Engineer of the Hoffmann Group, Jürgen Becker, Department Manager, BAZ Works 1 Grünewald Feinmaschinenbau GmbH & Co. KG.

Assembled GARANT ZeroClamp with a fixture for machining complex hydraulic pistons of GGG70. This demands the highest repetition accuracy for production of bores and threads in the pre-machined part.



Multiple fixtures for finish machining a pre-turned wheel flange of 42CrMo4V.



The customer's opinion

"Suitable for a wide range of special jobs!"

THE SAVING OF TIME AND RESULTING INCREASE IN CAPACITY IN OUR OWN JIG AND TOOL PRODUCTION HAS ALLOWED US TO DRASTICALLY REDUCE THE EXTERNAL PURCHASE SPEND ON JIGS AND FIXTURES



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Horizontal multi-point clamping of pump bodies.

The perfect range, in OEM quality

From production of parts for steering, engine, brakes, chassis and wheel fastenings, through to vehicle electrics, pneumatics and our "febi plus" range - at febi bilstein you will find everything for the professional repair of vehicles, including cars, HGVs, buses, trailers and small transporters for all popular makes and models. As a strong partner for wholesalers and workshops, we are emphatically committed to the free market for spare parts. And not just as a supplier. Also as a manufacturer we use our long experience and state-of-the-art production technologies, and we continually invest in the extension of our in-house production capabilities.

The GARANT zero point clamping system has been in use at febi bilstein since 2014, primarily for turning, milling and drilling various materials such as cast iron, aluminium and alloyed steels. Product groups include spare parts for cars, focussing primarily on engine components such as oil pumps, water pumps and chain tensioners. 90% of all recently made fixtures have been planned and manufactured on the basis of the GARANT ZeroClamp zero point clamping system.

Why did we decide to choose GARANT ZeroClamp? "We started by reviewing all the popular zero point clamping systems.", says the Technical Manager, Detlev Bankstahl. As the review progressed, and after a final analysis of the benefits, the choice fell on GARANT ZeroClamp. The crucial plus points lay in the criteria of efficiency and flexibility, high modularity, wide range of applications, suitability for a wide range of special tasks, high accuracy, reliability and low susceptibility to errors, and the elimination of hydraulic oil.

The outstanding competence and solution orientation of the Hoffmann Group was also decisive.

In parallel with building of the new production location and planning the relocation of production, the Industrial Engineering Department of febi Präzisionstechnik was tasked with planning the investment and conception of a comprehensive optimisation of the machining centres within the production area.

The goal was efficient combination of several new 5-axis machining centres with appropriate automation solutions incorporating – and thus extending the use of – the GARANT ZeroClamp zero point clamping system.

During this work, the 4-axis loading robots developed by the GARANT ZeroClamp team were considered as possible automation solutions.



from the left: Technical manager Detlev Bankstahl and Application Engineer of the Hoffmann Group José Ferrinho.



Solutions "Made in Germany" – but at home throughout the world

febi bilstein is one of the leading manufacturers and suppliers of car and HGV spare parts in the independent after-market throughout the world. For more than 170 years our brand has stood for continuity, quality, service, reliability and innovation.

As a traditional family-owned company independent of any major group we are proud to offer a continually growing range of more than 47,000 technical wear-related components – available in more than 140 countries. In addition, in more than 69 countries febi also has its own local subsidiaries or is represented by selected local partners.

And since every second counts, we have more than 100 million parts available in our highly modern logistics centre at our Ennepetal location, ready for dispatch to all four corners of the world.

bilsteingroup

Ferdinand Bilstein GmbH + Co.KG
Wilhelmstraße 47
58256 Ennepetal

www.febi.com



Large-scale automation, but very compact!

INDIVIDUAL POPULATIONS FOR RACKS, AN EASILY PROGRAMMABLE ROBOT – AND NOW YOU CAN FULLY AUTOMATE YOUR PRODUCTION PROCESS



Multi-function racks

- High capacity: Picking up a large number of different elements. Can accept workpieces up to 600x400 mm.
- Extremely small footprint: Extends **upwards**, not outwards.
- Quick and flexible placing using pallet trucks – and still offering high repetition accuracy and precision at the machine.
- Many options: Picking up workpieces, tools, clamping tools, grippers.
- Individual arrangement of the racks (height adjustable in 50 mm steps, uncomplicated adjustment of the clamping bracket with just a few movements of the hand).



Rack easily positioned using a pallet truck



Sturdy 4-axis loading robot

Lifts up to 100 kg.

Grippers can be changed automatically.

Multi-flexible grippers.

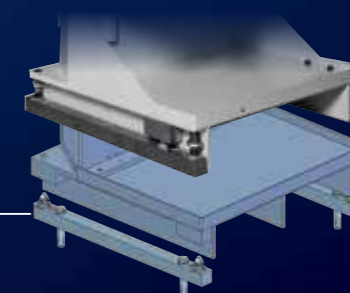


Handling different plate sizes.



Direct handling of centring vices without additional pallets.

Exactly repeatable mounting using centring studs.



Blank parts are gripped directly and exchanged.

Seamless chain of automation!



A NEW PRODUCTION JOB IS SET UP IN JUST A FEW STEPS.

1. Set up the machine and rack ...



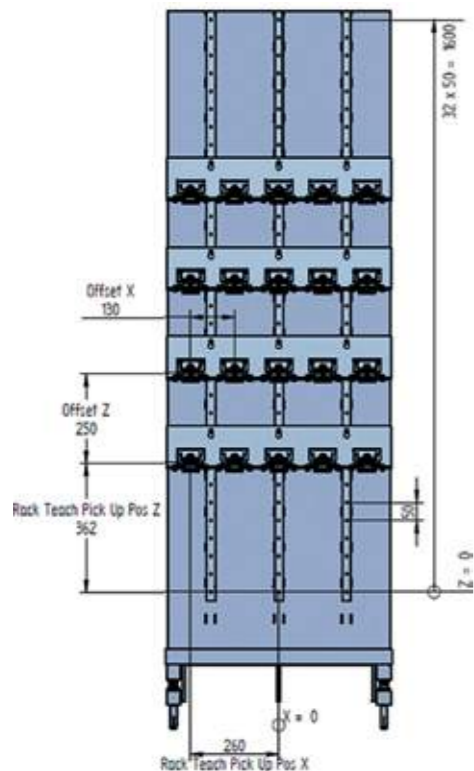
2. Generate the job ...



3. Simple teach the robot by manual guidance... 4. Start!



Free arrangement and population of the rack.



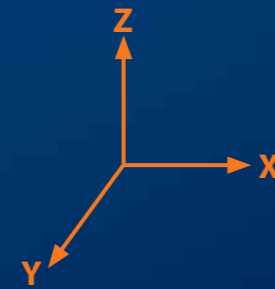
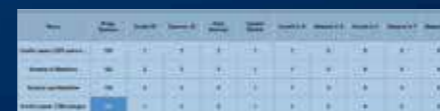
1. Select one of the available programs e.g. blank part selection or pallet movement.



2. Select suitable grippers with pre-defined parameters for instance double active grippers for picking up blank parts.

3. Select suitable clamping tools with pre-defined parameters for instance double active grippers for picking up blank parts.

4. Input the total number of parts, and the number of parts in a row, with the spacing between them.



When the first workpiece is being taught, the loading robot calculates all the remaining positions automatically.

Rack Positionen		Roboter Positionen		Maschinen Positionen		Extras
Rack Sicherheitsposition aufnehmen		Rack Aufnahmeposition aufnehmen				
Rack sichere Pos. X	Rack sichere Pos. Y	Rack sichere Pos. Z	Rack Aufnahme Pos. X	Rack Aufnahme Pos. Y	Rack Aufnahme Pos. Z	
283,434	-544,51	173,657	258,407	-177,855	103,123	

The only positions that need be taught are the pick-up positions, the safety positions and a waiting position. The robot automatically selects the shortest path between the taught points.



Save the job and load it.



THE PRODUCTION JOB CAN NOW BE STARTED.

Standard base plates



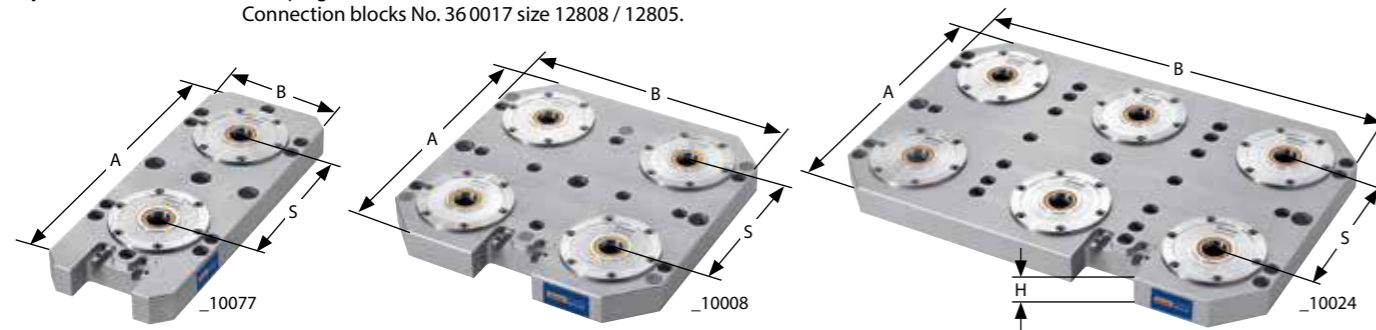
Machine type-related base plates

Garant ZeroClamp, standard clamping system

All holes for T-slot pitches at intervals of **63, 100, 125 mm**.
Centre bore $\varnothing 25$ H7 to receive a centring set.

Material: **Base plate** of high-tensile aluminium, surface treated.
All components of the clamping pot are of stainless steel, or steel with corrosion protection.

Optional accessories: Clamping stud No. 360025.
Connection blocks No. 360017 size 12808 / 12805.



Type	10077	10008	10024	11058
310 36 0012 ZeroClamp base plate for vertical machines	XXX	XXX	XXX	XXX
Clamping pot \varnothing	mm 120			
Number of clamping pots	2	4	6	8
B	166	366	566	766
A	416	366	366	366
H	mm 44			
Pitch S	mm 200			

Type	21782	21521	25438	25440
310 36 0012 ZeroClamp base plate for vertical machines	XXX	XXX	XXX	XXX
Clamping pot \varnothing	mm 138			
Number of clamping pots	2	4	6	8
B	196	396	596	796
A	446	396	396	396
H	mm 54			
Pitch S	mm 200			

Garant ZeroClamp, adapted clamping system for 3/5-axis machines (according to machine type)

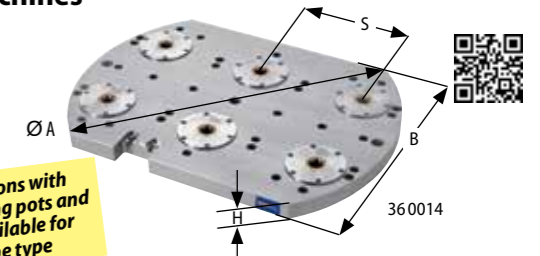
Centre bore $\varnothing 25$ H7 to take the centring set.

Material: **Base plate** of high-tensile aluminium, surface treated. All components of the clamping pot are of stainless steel, or steel with corrosion protection.

Optional accessories: Clamping stud No. 360025, connection blocks No. 360017 size 12808 / 12805.

Note: Depending on the machine type, the arrangement may differ from that in the photograph.

Individual solutions with additional clamping pots and special sizes available for every machine type



Type	14014	10355	10831	14507	10089	10477	10405	15852	10933	10009
310 36 0014 ZeroClamp base plate (based on machine type)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Suitable for machine type	MAZAK VARIAX 500	Hermle C600U	DMG DMU 50Evo	Hermle C40U	DMG DMU 50	MazakVariax 630	DMG DMU 70Evo	DMG DMC 635V	DMG DMC 1035V	DMG DMU 80P
Clamping pot \varnothing	mm 120									
Number of clamping pots	4	2	4	5	6	6	6	6	10	12
\varnothing A	500	280	500	420	630	630	700	790	1000	900
B	400	—	380	—	500	500	500	560	560	630
H	mm 44									
Pitch S	200	150	200	200	200	200	200	200	200	200

Garant Cover plates for base plates (based on machine type)

The cover plates are made of 1 mm stainless steel 1.4301 for covering the base units. (protect the surface + cover the location holes.)



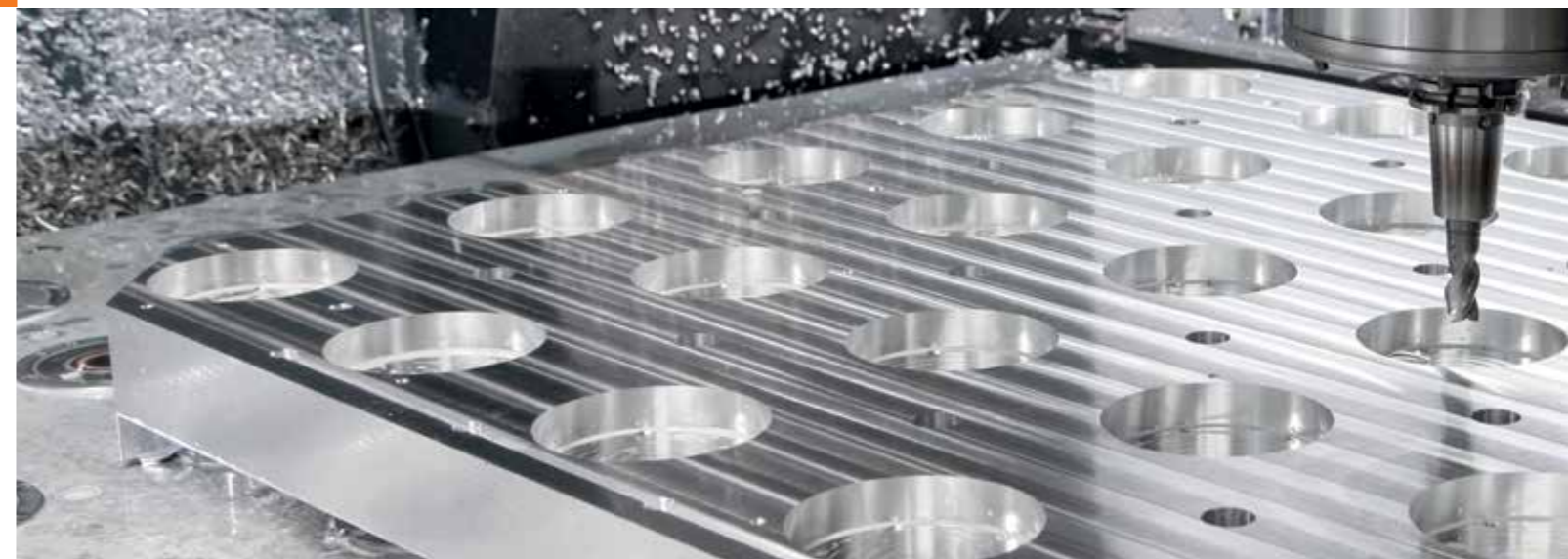
Type	18290	11969	11991	14085	11648	11346	16014	12452	14846
310 36 0021 ZeroClamp cover plate for base plate	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Suitable for base plate 360014	Size 14014	Size 10355	Size 10831	Size 10933	Size 10089 / 10477	Size 10405	Size 15852	Size 10009	Size 14507

Garant Cover plates for base plates

The cover plates are made of 1 mm stainless steel 1.4301 for covering the base units. (protect the surface + cover the location holes.)



Type	11356	11355	11354	11396
310 36 0013 ZeroClamp cover plate for base plate	XXX	XXX	XXX	XXX
Suitable for base plate 360012	Size 10077	Size 10008	Size 10024	Size 11058
Type	21872	24311	25449	25442
310 36 0013 ZeroClamp cover plate for base plate	XXX	XXX	XXX	XXX
Suitable for base plate 360012	Size 21782	Size 21521	Size 25438	Size 25440



Base plates, pillars and accessories

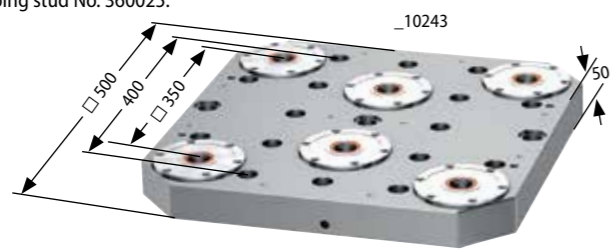
Garant ZeroClamp base plate / pillar / accessories

Clamping pot Ø 120 mm.

Size 10243 – Base plate with 6 clamping pots to accept the clamping pillars. Drilled for T-slots at 100 mm intervals, centre hole Ø 25 H7 to accept a centring set.

Size 10397; 15705 – Clamping pillar is mounted on base plate size 10243. Clamping pillars are equipped laterally with clamping pots that can be individually activated and indexed.

Optional accessories: Clamping stud No. 360025.



Type		10243	15705	10397
310 36 0022	ZeroClamp 6-pot base plate or clamping pillars for horizontal machines	XXX	XXX	XXX
	Number of clamping pots	6	12	12
	Pitch S	mm 350 (4x), 200 (2x)	200	200

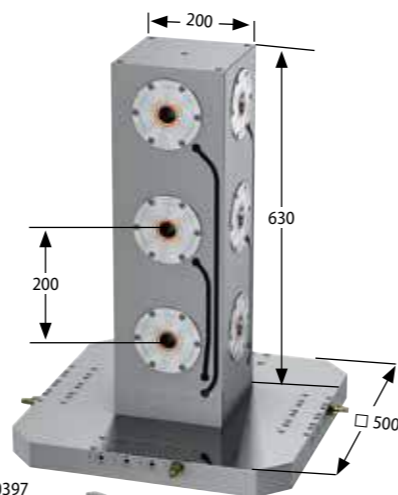
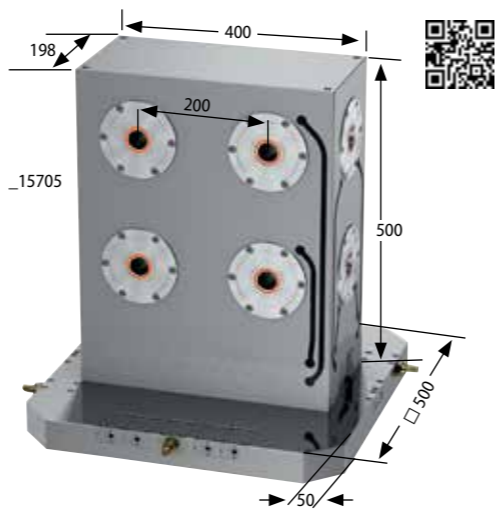
SK40 adapters

Suitable for: Clamping pots Ø 90, Ø 120 or Ø 138 mm with indexing hole.

Application: Can be used horizontally and vertically. Clamping workpieces via an SK40 (DIN 69871) tool arbor (such as ER, OZ etc.). Clamping studs are bolted through the adapter from below to secure the arbor. Especially suitable for small, delicate or round workpieces.

Note: Clamping stud No. 360025 size 14M12/90 for Ø 90 mm.
Clamping stud No. 360025 size 18M12 for Ø 120 mm.
Clamping stud No. 360025 size 18M12/138 for Ø 138 mm.
Must be ordered separately!

Suitable for clamping pot Ø	mm	90	120	138
310 36 0042	ZeroClamp adapter for SK40 (DIN 69871) arbors	XXX	XXX	XXX
	H		77	
	Number of location holes for clamping studs		1	



360042

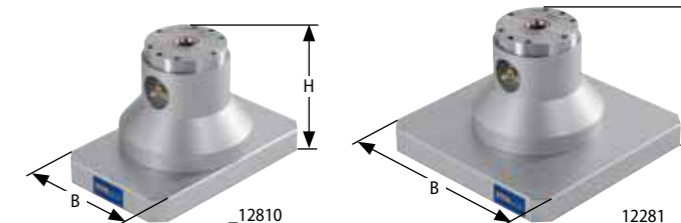
1-pot extension bases

Clamping pot Ø 120 mm, indexed.

Suitable for: For base plates with pitch 200.

Supplied with: Including coupling plug and clamping stud No. 360025 size 18M16.

Optional accessories: Quick-release coupling No. 360019 size 10241 / 10003.



Type		19619	12809	12810	12811	14617	12281
310 36 0030	ZeroClamp extension base with 1 clamping point	XXX	XXX	XXX	XXX	XXX	XXX
	B	mm 198	198	198	330	330	330
	H	mm 120	150	200	150	100	200
	Number of clamping studs	2	2	2	4	4	4

2-pot extension bases

With 2 clamping pots.

Suitable for: For base plates with pitch 200.

Supplied with: Including coupling plug and clamping stud No. 360025 size 18M16.

Optional accessories: Quick-release coupling No. 360019 size 10003.



Type		12813	12814	12815	12816	12732	12735	12736	12126	14523	25067	21033
310 36 0031	ZeroClamp extension base with 200 pitch	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
	Clamping pot Ø	mm 120	120	120	120	120	120	120	120	120	138	138
	H	mm 70	100	120	160	200	160	200	150	150	120	200
	Number of clamping studs	2	2	2	2	2	4	4	2	4	2	2



Precision down to the last detail

MATCHING ADD-ON COMPONENTS.

Closure stud

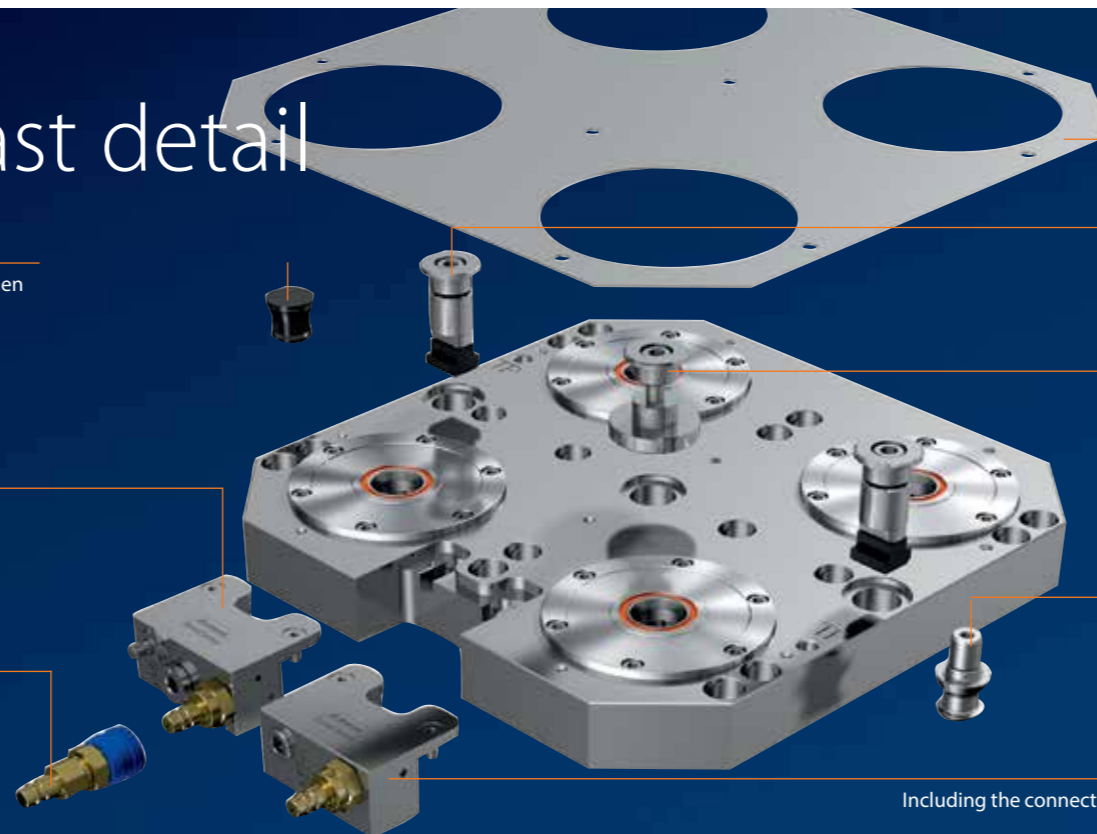
For closing off clamping points when they are not in use
No. 36 0035

Connection block "Comfort"

Clamp/release changeover function, blow-out function via push button
no. 36 0017

Quick-release coupling

Intermediate piece as connection to the compressed air supply
No. 36 0019



Alignment set

Assists the prepositioning of the base units
no. 36 0015

Centring set

Prepositioning via centre bore
no. 36 0016

Clamping stud

No. 36 0025

Connection block "Standard"

Including the connection for monitoring and blow-out function **no. 36 0017**

Cover plate

Attached with countersunk screws protects the surface closes chip nesting points
no. 36 0021



Alignment sets

Application: For parallel alignment in the T-slots.

Slot width B / clamping thickness S	mm	10/40	12/40	14/40	14/50	16/40	18/40	22/40
310 36 0015 ZeroClamp alignment set		XXX	XXX	XXX	XXX	XXX	XXX	XXX

Centring sets

Application: For centralised alignment in the centre bore. For basic units with 40-50 mm thickness.

Centring Ø A / centring height B	mm	30/10	32/10	50/10	50/20
310 36 0016 ZeroClamp centring set		XXX	XXX	XXX	XXX

Tee-nut with Tee-bolt

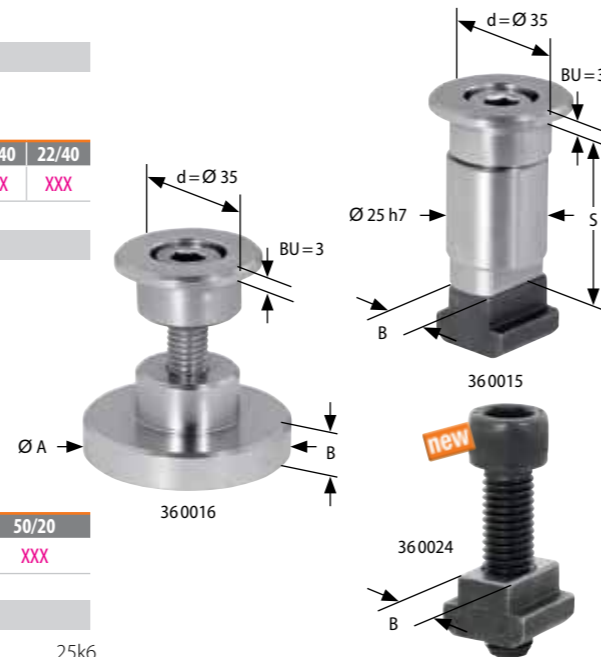
Socket-head screw with hexagon socket to DIN912, strength class 12.9.

Slot width B / clamping thickness S	mm	12/40	14/40	16/40	18/40	22/40	12/50	14/50	16/50	18/50	22/50
310 36 0024 Tee-nut with Tee-bolt		XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
M		M10	M12	M14	M16	M20	M10	M12	M14	M16	M20
Tee-bolt length	mm	45	45	50	50	55	55	55	60	60	65

Connection blocks

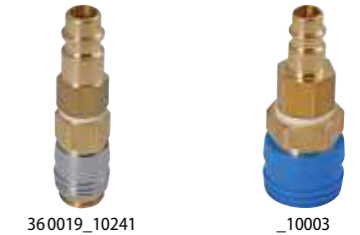
- Size 12806 - With a G 1/8" connection thread for connection of compressed air via a quick-release coupling No. 360019 size 10241. Especially for use on round plates. Recessed into the plate. The connection block has a manual valve for releasing, clamping, and also blowing out.
- Size 12808 - With 2 connection ports G 1/4" for the connection of release and blow-out air hoses.
- Size 12805 - With one connection port G 1/4" for connecting the compressed air. The connection block has a manual valve for releasing, clamping, and also blowing out.

Type		12806	12808	12805
310 36 0017 ZeroClamp connection block		XXX	XXX	XXX



Quick-release couplings

Type		10241	10003
310 36 0019 ZeroClamp quick-release coupling		XXX	XXX
Connection thread	inch	1/8	1/4

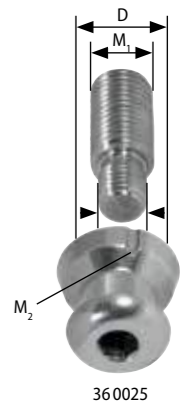


Clamping stud

With internal thread including a suitable threaded stud.

Type		12M10/90	14M12/90	16M8	16M10	18M12	12M10	18M16
310 36 0025 ZeroClamp clamping stud with internal thread		XXX	XXX	XXX	XXX	XXX	XXX	XXX
Ø D	mm	12k6	14k6	16k6	16k6	18k6	12k6	18k6
M ₁		M10	M12	M8	M10	M10	M10	M16
M ₂		M8	M8	M8	M10	M12	M10	M12
suitable for clamping pot Ø	mm	90	90	120	120	120	120	120

Type		12M10/138	18M12/138	18M16/138	25M16/138	12M10/190	18M16/190	30M24/190
310 36 0025 ZeroClamp clamping stud with internal thread		XXX	XXX	XXX	XXX	XXX	XXX	XXX
Ø D	mm	12k6	18k6	18k6	25k6	12k6	18k6	30k6
M ₁		M10	M12	M16	M16	M10	M16	M24
M ₂		M10	M12	M12	M16	M10	M16	M20
suitable for clamping pot Ø	mm	138	138	138	138	190	190	190



Closure stud

Application: To protect unused clamping points against dirt and swarf.

Clamping pot Ø	mm	90	120	138	190	90C	120C	138C
310 36 0029 Closure stud		XXX		XXX	XXX	XXX	XXX	XXX
310 36 0035 ZeroClamp original closure stud		XXX	XXX	XXX	XXX	XXX	XXX	XXX



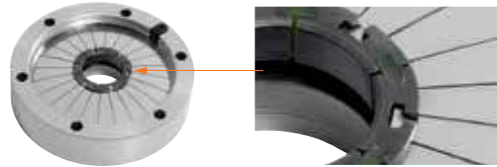
Clamping pots and accessories

Vice and angled extension bases

Fit for the future

Process reliability due to the 138 mm Ø clamping pot.
High stiffness and 40 kN clamping force.

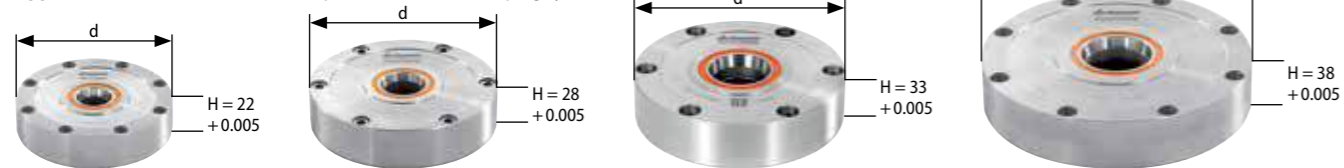
- Even more flexible: Mounting for various checking sensors.
- 40 kN clamping force allows process reliability of heavy-duty machining even with very high transverse forces.
- 100% process reliability, mechanical withdrawal of the locking elements when the clamping pot is opened.



Clamping pots

All components made of stainless steel, or steel with corrosion protection.

Application: For individual incorporation into the clamping system.



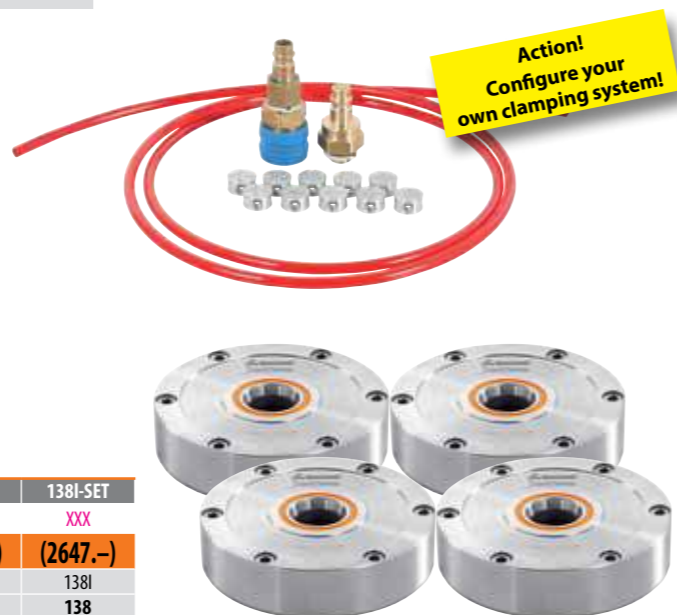
Type	11886/90	12987/90I	10012	10148	138	138I	11954/190	12984/190I
310 36 0040 ZeroClamp clamping pot	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Clamping force	kN	12.5	12.5	25	25	40	40	60
Clamping pot Ø d	mm	90	90	120	120	138	138	190
Indexing hole available		no	yes	no	yes	no	yes	no

Clamping pot starter kit

Application: For individual incorporation into the clamping system.

Supplied with: 4 clamping pots each.
10x adapters for the compressed air line.
1.5 m compressed air line.
1x Quick-release coupling No. 360019 size 10003.
1x Coupling adapter (suitable for quick-release coupling).

Note: Drawings and instructions for configuring your own clamping system are included in the scope of supply. 2-component epoxy resin may be used to fill in the milled slots.



Type	10012-SET	10148-SET	138-SET	138I-SET
310 36 0040 ZeroClamp clamping pot set	XXX	XXX	XXX	XXX
	(2179.-)	(2349.-)	(2440.-)	(2647.-)
Clamping pot No. 36 0040	size	10012	10148	138
Clamping pot Ø d	mm	120	120	138

Angled extension base, 2-pot

Application: For mounting in base plates with 200 mm pitch. 45° and 90° clamping available.

Supplied with: With clamping stud No. 360025 size 18M16.

Optional accessories: Clamping stud No. 360025 size 18M16.
Connection blocks No. 360017 size 12808 / 12805.

Type	10035	
310 36 0034 ZeroClamp angled extension base with 200 mm pitch	XXX	
Pitch	mm	200
Clamping pot Ø	mm	120
H	mm	230
Number of location holes for clamping studs		4



Extension bases for "T-Rex"

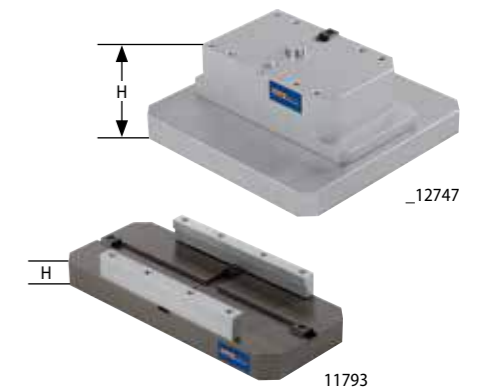
With location holes for clamping studs on the underside.

Suitable for: High pressure vice "T-Rex" No. 361202.

Supplied with: Centring stud and Tee-nut.

Optional accessories: Clamping stud No. 360025 size 18M16.

Type	10376	12747
310 36 0036 ZeroClamp extension base for NC high pressure vice "T-Rex" No. 361202	XXX	XXX
H	mm	85
Number of location holes for clamping studs		2



Extension bases for NC high pressure vice / centring vice

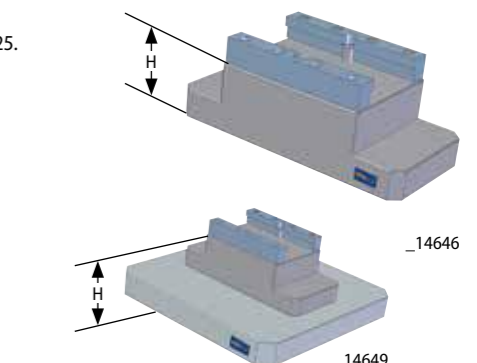
With location holes for clamping studs on the underside.

Suitable for: Size 11793 for high-pressure vices No. 360400 / 0465 / 0500 / 0510 / 1302 / 1304 size 125.
Sizes 14646, 14649 for Hemo centring vice No. 362065, 362066 size 100, 150, 200.

Supplied with: Tenon and centring pins.

Optional accessories: Clamping stud No. 360025 size 18M16.

Type	11793	14646	14649
310 36 0037 ZeroClamp extension base for NC high pressure vice / Hemo centring vice	XXX	XXX	XXX
H	mm	40	70
Number of location holes for clamping studs		2	4



The single clamping pot

UNIVERSAL AND QUICK

For use as

- a single clamping station, i.e. only 1 clamping pot (e.g. for clamping a workpiece). Ask us about indexed pot variants.
- a multiple clamping station, e.g. with ≥ 2 clamping pots for clamping workpieces or a clamping tool. No indexing necessary.

Very good accessibility

to the workpiece that is being machined.



Clamping pot support

for clamping with table clamps.



Clamping pot-Ø

120 mm (25 kN) and 138 mm (40 kN) available.

Installed height

is very low

Single clamping pot with support

Supplied with: 1×single clamping pot with support
1×coupling plug
3×table clamps

Type		120	120I	138	138 I
310 36 0026	Single clamping pot	XXX	XXX	XXX	XXX
Clamping pot Ø d	mm	120	120	138	138
Support Ø	mm	140	140	160	160
Height	mm	44	44	54	54
Clamping force	kN	25	25	40	40
Indexing hole			yes		yes



Free and quick placing on the machine table using the T-slots.

Centring mandrel on the machine spindle

Application: permits a quick approach to a point on the machine table and alignment of the clamping pot.
Suitable for: Clamping pots size 120 and 138

Type		120/138
310 36 0027	Centring mandrel	XXX
Shank Ø	mm	26
Shaft length	mm	50
Overall length	mm	150



Clamping shank

For mounting in collets, hydraulic chucks, etc.

Centring face

for clamping pot Ø 138 mm.

Centring face

for clamping pot Ø 120 mm.

The double clamping pot

DEFINE YOUR OWN ZERO POINT

Version: Double-ended clamping pot.

To take clamping tools (vices etc.) or for workpiece direct clamping.

Note:

Double clamping pots are supplied as standard as an indexed version.

Absolute power

with the pot Ø 120 mm or 138 mm at 25 kN or 40 kN.



Clamping/releasing

Top clamping pot.

Clamping/releasing

Bottom clamping pot.

Double clamping pot

Supplied with: 2 clamping pots, 2 coupling plugs

Application: For free positioning of the double-ended clamping pot on grid plates, clamping pillars etc. In this way you turn a threaded socket on your grid plate into a defined zero point / reference point!

Optional accessories: Clamping stud No. 36 0025

Note: Further heights up to 200 mm available on request.



Type		120	138
310 36 0028	Double clamping pot	XXX	XXX
Clamping pot Ø d	mm	120	138
Height	mm	100	150
Clamping force	kN	25	40
Indexing hole		yes	yes

Expand your scope and discover new dimensions.

THE NEW XPENT GARANT 5-AXIS VICE OFFERS YOU UNEXPECTED POSSIBILITIES.

- Very good accessibility.
- Perfectly symmetrical.
- All mating faces hardened and ground.
- Clamping force, up to 40 kN at 90 Nm torque
- Variable clamping and adjustment range.
- Quick to use and intuitive in operation.
- Optimum for 5-face machining.
- Made in Germany.



Quick adjustment of the clamping range

- More than 100 mm travel without conversion.
- Ideal for components from 6 –208 mm.

Spindle Quick Change (SQC) system

- The spindle can be taken out in seconds
- Further details on page 4.

QR code to call up important information

- Instruction Manual
- Accessories / maintenance

GARANT ZeroClamp holes

- Standard sizes 450 and 550
- Sizes larger than 650 on request

Workpiece programming from the centre

- Interference contours identical on each side.

Laser-engraved graduations

- Navigation aid for central alignment of the clamping modules.

Spindle

- Individual extensions available up to 1000 mm.
- The spindle does not project beyond the clamping modules in any clamping situation.

Intelligent jaw system

- Extremely wide variety
- Top jaws with attachment holes for front jaws, with a 2-step concept

Quick release of the fixed clamping module

- Both clamping modules can be moved.
- Clamping via 2 screws exclusively on the fixed clamping module.



Premium Quality by Hoffmann Group



A problem-solver & productivity driver

MODULAR WORKPIECE CLAMPING

The GARANT clamping rail system offers impressive flexibility and versatility.

Clamping of:

- Both large and small components.
- Symmetrical and asymmetrical workpieces.
- Individual components and series production runs.
- Blank part clamping and finished part clamping.
- Wide range of accessories:
Wide range of jaws and centring vices.



Extremely versatile.

- Large range of jaws.
- Clamping rails can be joined together.
- Clamping range from 0 to ∞
- Suitable for single and multiple clamping



Large components.



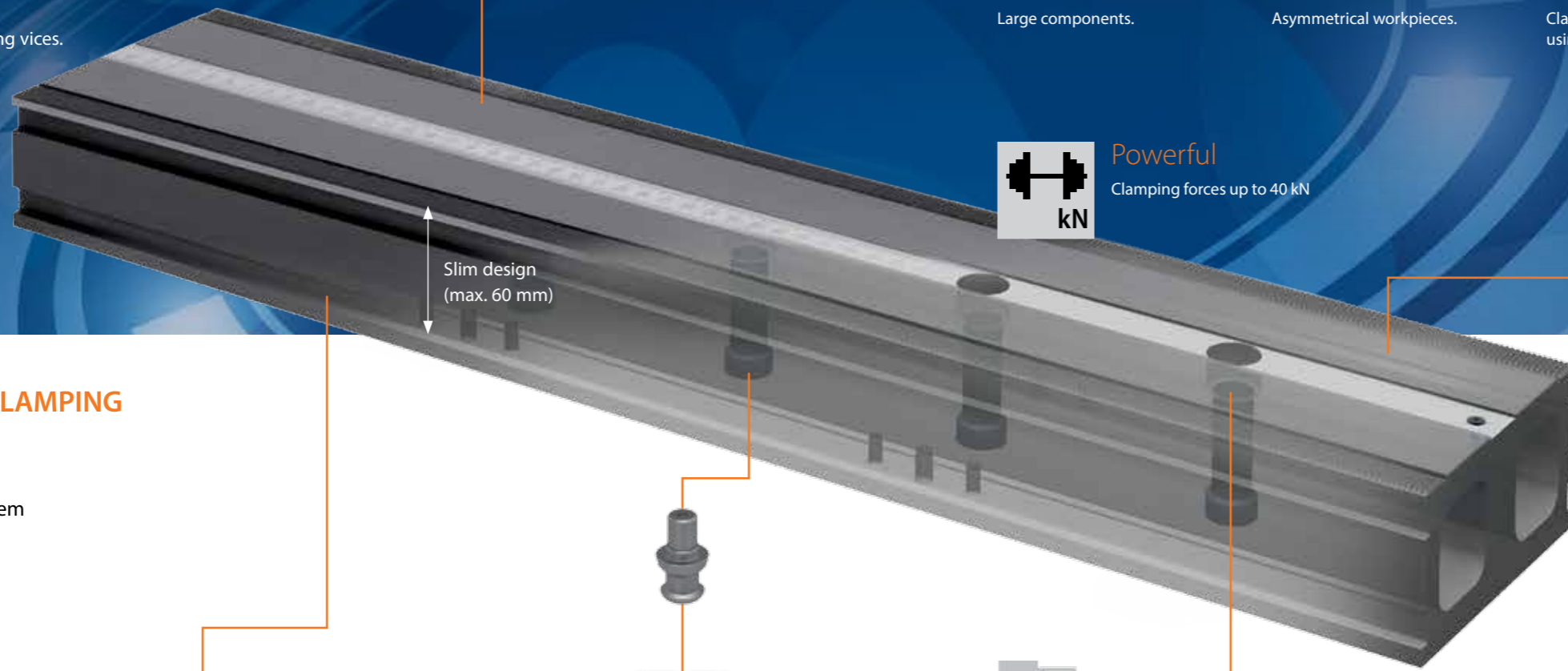
Asymmetrical workpieces.



Clamping finished parts for instance using front pull-down jaws.



Clamping blank parts
A wide range of grip jaws.



Slim design
(max. 60 mm)



Powerful

Clamping forces up to 40 kN



Cost-effective

Accepts several components in a single clamping.

FLEXIBLE MACHINE CLAMPING

Many different ways to mount the GARANT clamping rail system on the machine:

- Table clamps
- Direct clamping
- Zero point clamping

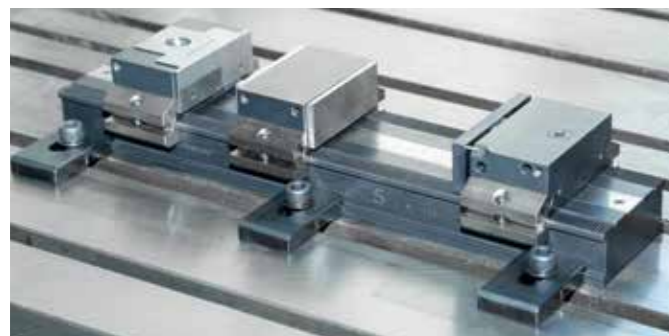
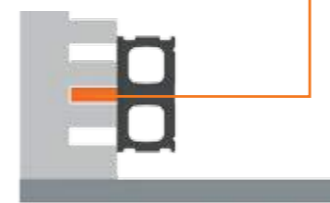
Direct clamping to the machine table.



Clamping via the zero point clamping system (clamping pot).



Mounting on a pillar (for instance directly clamped)



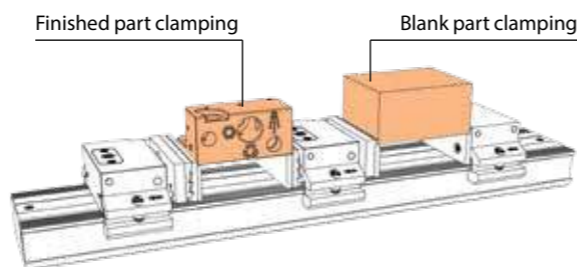
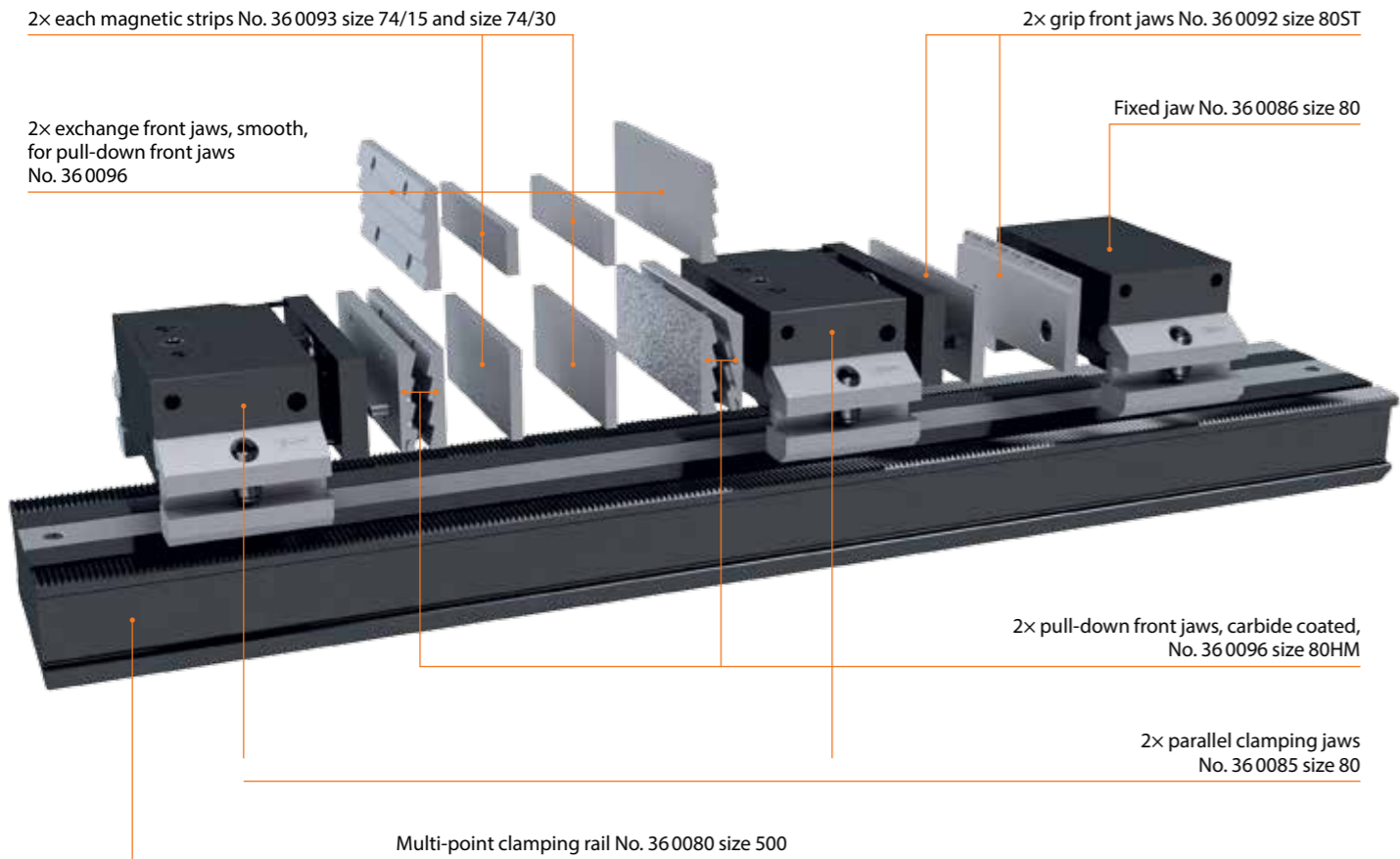
The GARANT clamping rail system offers highly impressive cost-effectiveness because of the extremely wide range of workpiece clamping options and the individual customer options for machine table clamping.

Multiple clamping rail starter set

Application: Comprehensive starter kit consisting of a multi-point clamping rail, range of jaws and mounting strips. Multi-functional uses: Clamping large components, clamping multiple parts, clamping blank parts, clamping finished parts, and much more.
Clamping rails for mounting directly on the machine table **or** via zero point clamping systems.

TOP price!

Multi-point clamping rail starter set 80 mm

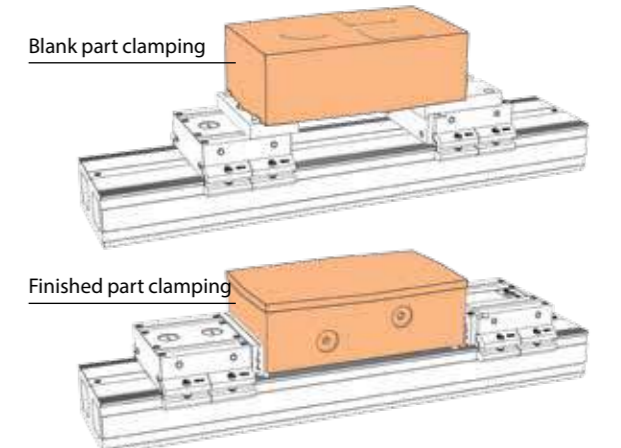
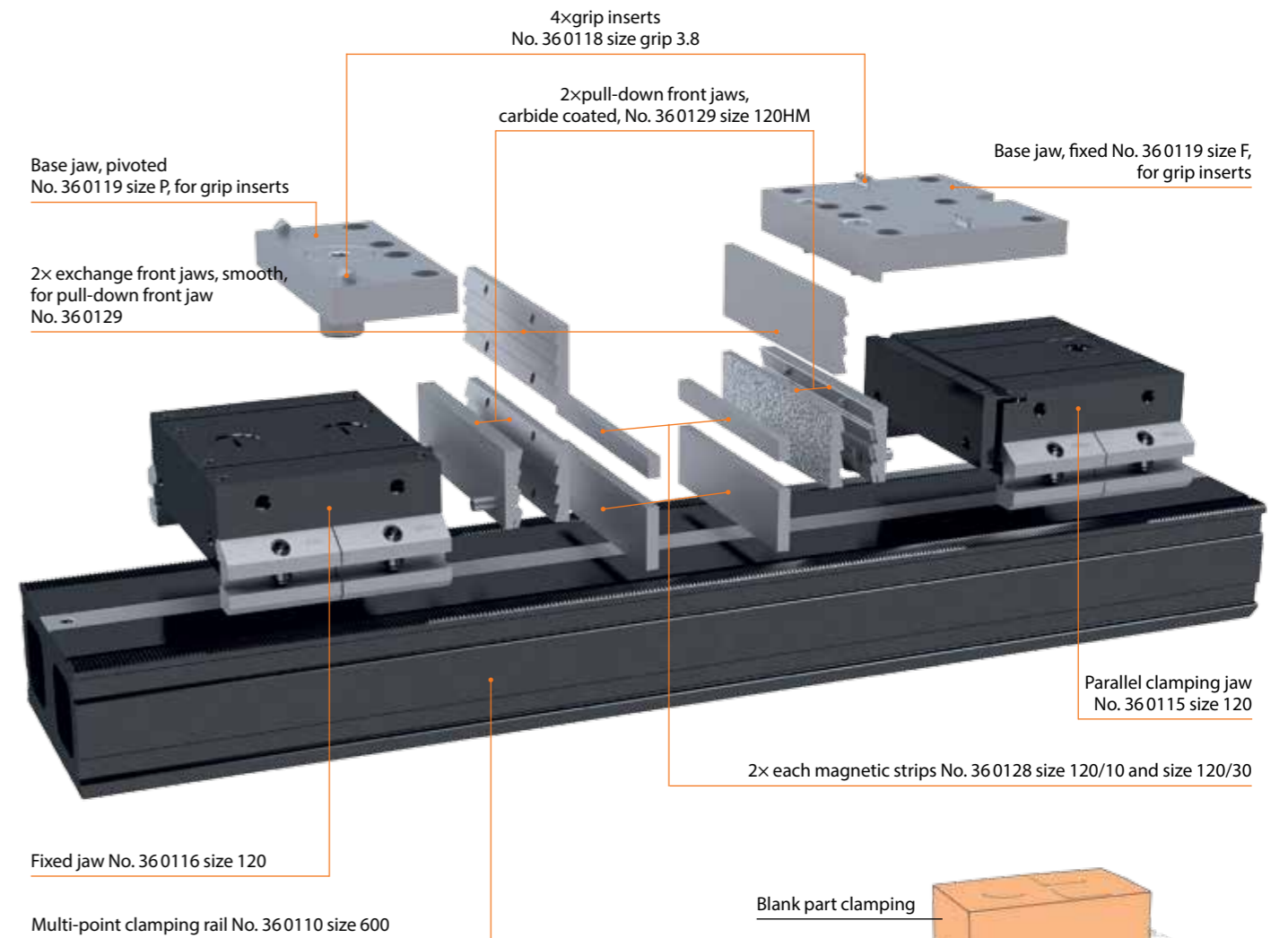


new

Rail length	mm	500SET
310 36 0080	Multi-point clamping rail 80 mm starter set	XXX (2375.-)
LxWxH	mm	500x80x35

Multi-point clamping rail starter set 120 mm

TOP price!



new

Rail length	mm	600SET
310 36 0110	Multi-point clamping rail 120 mm starter set	XXX (3030.-)
LxWxH	mm	600x80x35

Multi-point clamping rail 80 mm

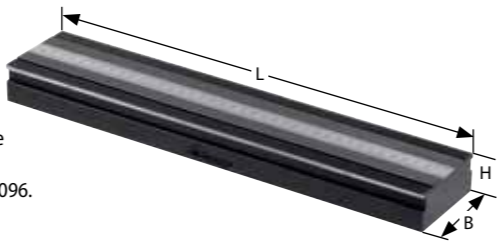
Garant Multi-point clamping rails 80 mm

- All functional faces precision ground, pairing accuracy 0.03 mm.
- Base rail and jaws case hardened.
- Compact modular design, **high clamping force up to 20 kN**, maximum tightening torque 25 Nm.
- Attachment hole pattern for **GARANT ZeroClamp zero point clamping system** (200 mm pitch) as standard, can be mounted on clamping plates or matrix tables, or using table clamps.
- Ruler inset into the top face permits repeatable positioning of the clamp attachments in the serrations of the clamping rail.
- Easily clamped using a torque wrench.

Application: 5-face machining on multi-axis machining centres.

- As a cost-effective clamping solution for use with the GARANT ZeroClamp zero point clamping system or with pallet and automated systems, or directly on to the machine table or clamping pillars.

Optional accessories: Clamping jaw variants, magnetic strip, workpiece backstops see No. 360084 to 360096. Torque wrench No. 656050 size 60. Clamping stud No. 360025 size 12M10.



Rail length	mm	260	400	500	600
310 36 0080 Multi-point clamping rail		XXX	XXX	XXX	XXX
L	mm	260	400	500	600
B	mm			80	
H	mm			35	

Accessories

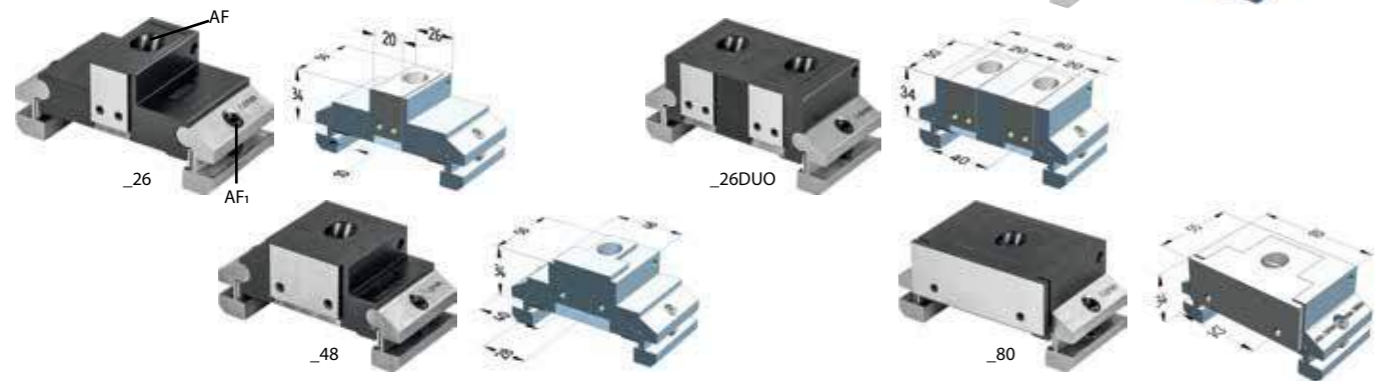
Suitable for: Clamping rail No. 36 0080.

Application: Variable pitches can be achieved using crossed clamping rails.

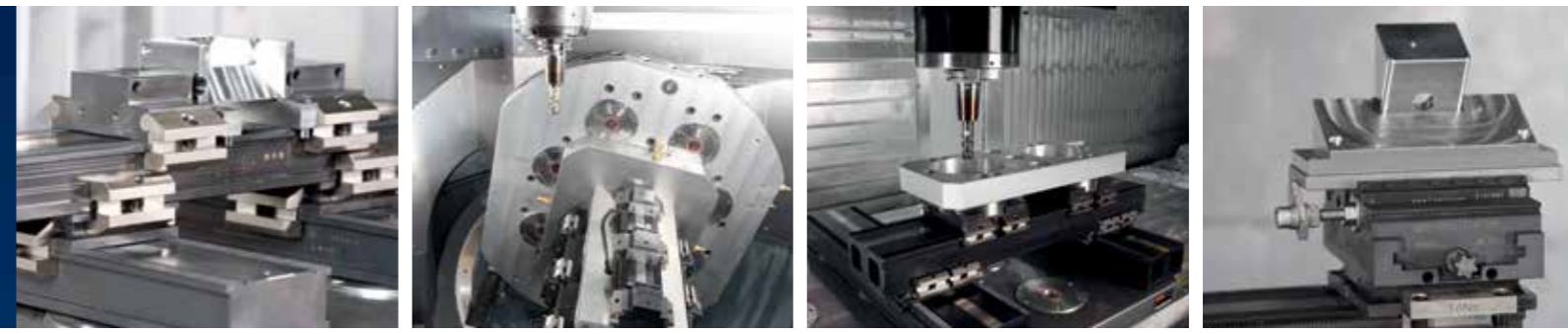
Note: For use with clamping rails from revision 3 onwards (see illustration) Section on multi-point clamping rails must not be wider than 5 mm.



310 36 0082	Cross connector	XXX
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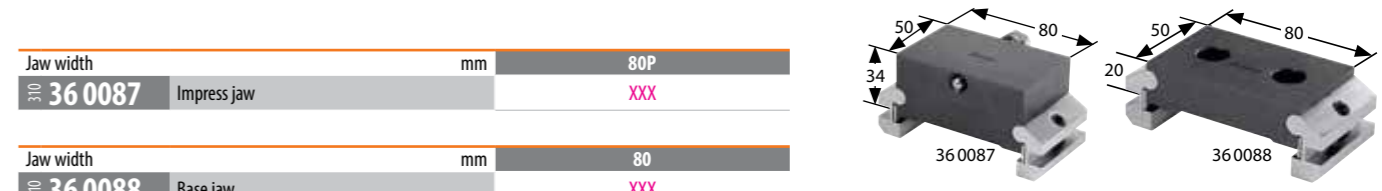
Jaw width	mm	26	26DUO	48	80
310 36 0084 Pull-down jaw		XXX	XXX	XXX	XXX
Clamping force	kN			5; 10; 15; 20	
Torque	N m	6; 12; 17.5; 25	6; 8; 10; 14	6; 12; 17.5; 25	6; 12; 17.5; 25
max. stroke	mm			3	
Tee-bolt AF	mm			6	
Shank screw AF _i	mm			4	



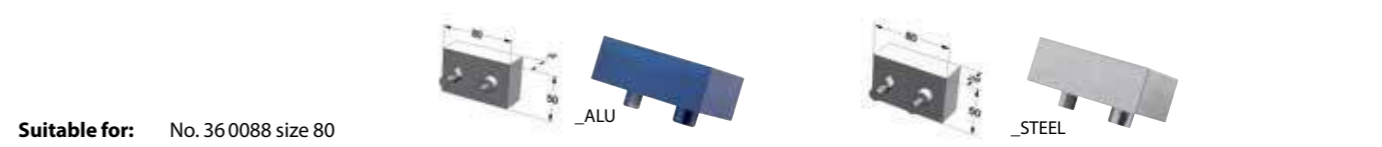
Jaw width	mm	48	80
310 36 0085 Parallel clamping jaw		XXX	XXX
Clamping force	kN		5; 10; 15; 20
Torque	N m		5; 10; 15; 20
max. stroke	mm	3	3.5
Tee-bolt AF	mm	5	5
Shank screw AF _i	mm	4	4



Jaw width	mm	26	48	80
310 36 0086 Fixed jaw		XXX	XXX	XXX



Jaw width	mm	80P
310 36 0087 Impress jaw		XXX
Jaw width	mm	80
310 36 0088 Base jaw		XXX



Material	ALU	STEEL
310 36 0089 Top jaw	XXX	XXX

Application: For clamping individual workpiece contours.

Jaw width / material	mm	48ALU	80ALU	48STEEL	80STEEL
310 36 0090 Front jaw for parallel jaw		XXX	XXX	XXX	XXX
Length	mm	58	90	58	90
Height	mm			49	90
Width	mm			29	

Suitable for: Size 26, 80, 80ST: No. 36 0084 / 0085 / 0086, size 48P: No. 36 0085 size 48, size 48NF: No. 36 0084 size 48, 36 0086 size 48.

Jaw width	310	36 0091	310	36 0092
mm		Carbide-coated front jaw		Gripper front jaw
26		XXX		XXX
48P		XXX		XXX
48NF		XXX		XXX
80		XXX		XXX
80ST		XXX		XXX



Accessories for 80 mm clamping rail

Suitable for: No. 36 0084 / 0085 / 0086.
Application: Prevents removal of the component and ensures contact seating.



Jaw width	mm	48 G	48 HM	80G	80HM
310 36 0096	Pull-down front jaw	XXX	XXX	XXX	XXX
Version		Smooth	Carbide coated	Smooth	Carbide coated

Jaw width / jaw height mm	310 36 0093
	Magnetic strip
74/10	XXX
74/15	XXX
74/20	XXX
74/25	XXX
74/30	XXX
94/10	XXX
94/15	XXX

Version	310 36 0094	Version
	Component backstop	
F	XXX	fixed
V	XXX	adjustable
M	XXX	magnetic



Multi-point clamping rail 120 mm

Multi-point clamping rail 120 mm – accessories

- Version:**
- All functional faces precision ground, pairing accuracy 0.03 mm.
 - Base rail and jaws case hardened.
 - Compact modular design, **high clamping force up to 40 kN**, maximum tightening torque 50 Nm.
 - Attachment hole pattern for **GARANT ZeroClamp zero point clamping system** (200 mm pitch) as standard, can be mounted on **clamping plates or matrix tables, or using table clamps**.
 - Ruler inset into the top face permits repeatable positioning of the clamp attachments in the serrations of the clamping rail.
 - Variable pitches can be achieved using cross connectors.
 - Conventional and grip clamping available.
 - Clamping range can be extended individually.
 - Easily clamped using a torque wrench.
- Application:**
- 5-face machining on multi-axis machining centres.
 - As a cost-effective clamping solution for use with the GARANT ZeroClamp zero point clamping system or with pallet and automated systems, or directly on to the machine table or clamping pillars.

Optional accessories: Clamping jaw variants, magnetic strip, workpiece backstops see No. 36 0112 to 36 0129. Torque wrench No. 65 6050 size 60. Clamping stud No. 36 0025 size 18M16.

Rail length	mm	300	600	800
310 36 0110	Clamping rail 120	XXX	XXX	XXX
L	mm	300	600	800
B	mm		120	
H	mm		60	

Accessories

Suitable for: Clamping rail No. 36 0110.
Application: Variable pitches can be achieved using crossed clamping rails.

310 36 0112	Cross connector	XXX
Note:	Torque and clamping force are standard values and are only indicative values (material-dependent).	

Jaw width	mm	120
310 36 0114	Pull-down jaw	XXX
Clamping force	kN	10; 20; 30
Torque	N m	17; 30; 50
max. stroke	mm	4
Tee-bolt AF	mm	8
Shank screw AF ₁	mm	4

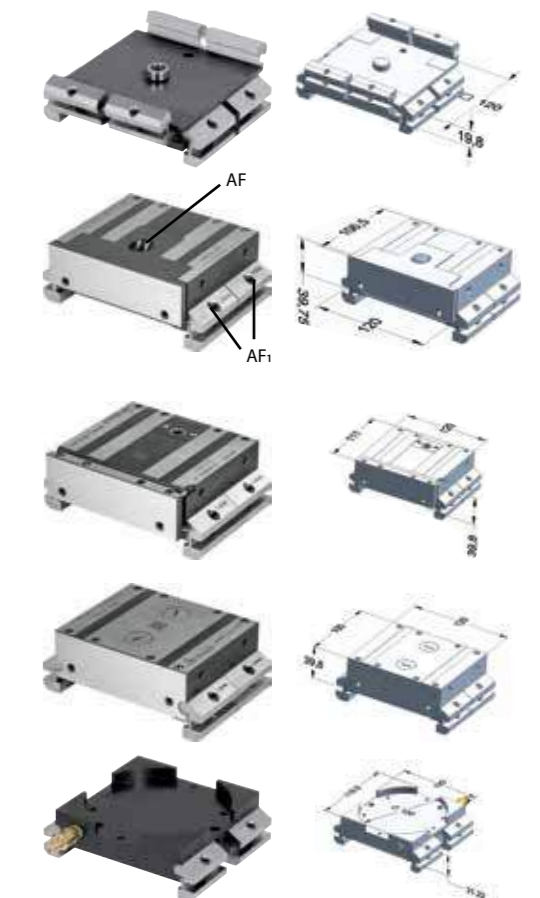
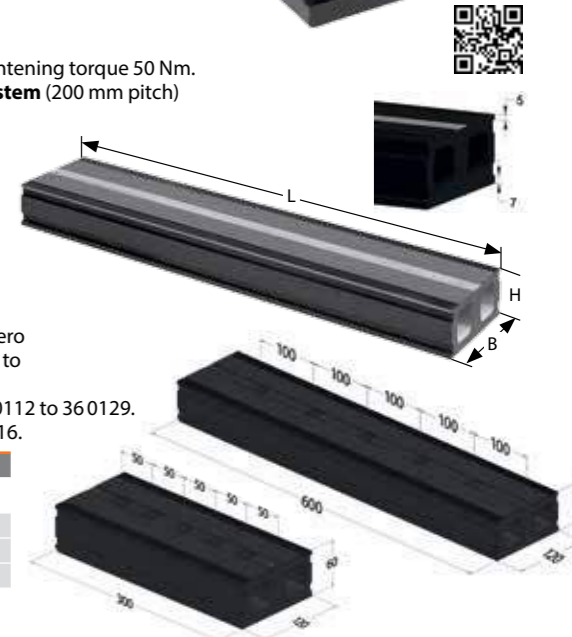
Jaw width	mm	120
310 36 0115	Parallel clamping jaw	XXX
Clamping force	kN	10; 20; 30; 40
Torque	N m	10; 20; 30; 40
max. stroke	mm	4
Tee-bolt AF	mm	8
Shank screw AF ₁	mm	4

Suitable for: Base jaw No. 36 0119 size P, front jaws / top jaws No. 36 0122 – 0129.

Jaw width	mm	120
310 36 0116	Fixed jaw	XXX

Suitable for: Clamping pot No. 36 0040 size 10012 and 10148.
Application: zero point clamping system with variable pitches.

Jaw width	mm	120
310 36 0117	Clamping pot socket	XXX



Accessories for 120 mm clamping rail



Suitable for: Base jaw No. 36 0119.

Type	GLATT-HM	GRIPP-1.8	GRIPP-3.8
310 36 0118 Grip insert	XXX	XXX	XXX
Height	mm 5.5	1.8	3.8
Version	Smooth	Grip	Grip



Suitable for: No. 36 0119 size P – No. 36 0116 size 120.
No. 36 0119 size F – No. 36 0115 size 120.

Application: Conventional clamping or clamping with grip inserts.

Type	P	F
310 36 0119 Base jaw	XXX	XXX
Function	pivoting	fixed

Suitable for: Parallel clamping jaw No. 36 0115, fixed jaw No. 36 0116.
Application: 5-axis machining **without interference contours.**

Note: Matching grip front jaw No. 36 0121 size 25.

310 36 0120 Pair of 5-AXIS base jaws	XXX	312.–
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Suitable for: Base jaw No. 36 0120.

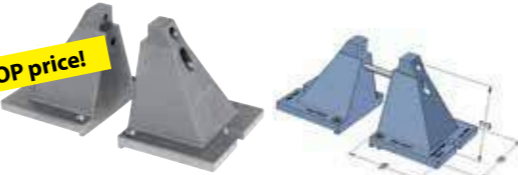
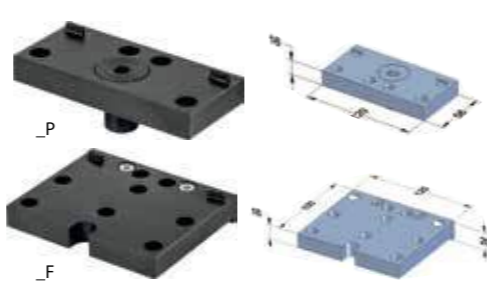
Jaw width	mm	25
310 36 0121 Pair of gripper front jaws	XXX	81.–

Suitable for: Pull-down jaw No. 36 0114, parallel clamping jaws No. 36 0115, and fixed jaw No. 36 0116.

Jaw width	mm	120
310 36 0124 Carbide-coated front jaw	XXX	

Suitable for: Size 120 – Pull-down jaw No. 36 0114, parallel clamping jaws No. 36 0115, and fixed jaw No. 36 0116.
Size 120ST – No. 36 0115 / 0116.

Jaw width	mm	120	120ST
310 36 0125 Gripper front jaw	XXX	XXX	XXX



Suitable for: No. 36 0114 / 0115 / 0116.

Jaw width	mm	120G	120HM
310 36 0129 Pull-down front jaw	XXX	XXX	XXX
Version		Smooth	Carbide coated

Application: For clamping individual workpiece contours.

Suitable for: Parallel clamping jaw No. 36 0115 and fixed jaw No. 36 0116.

Jaw width	mm	120
310 36 0122 Front jaw alu	XXX	

Suitable for: Parallel clamping jaw No. 36 0115 and fixed jaw No. 36 0116.

Jaw width	mm	90
310 36 0123 Top jaw	XXX	

Note: For general applications.

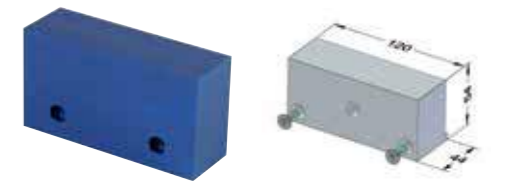
310 36 0126 Workpiece backstop, magnetic	XXX	
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Suitable for: Clamping rail No. 36 0110 size 600.

Application: For conventional fastening to the machine table.

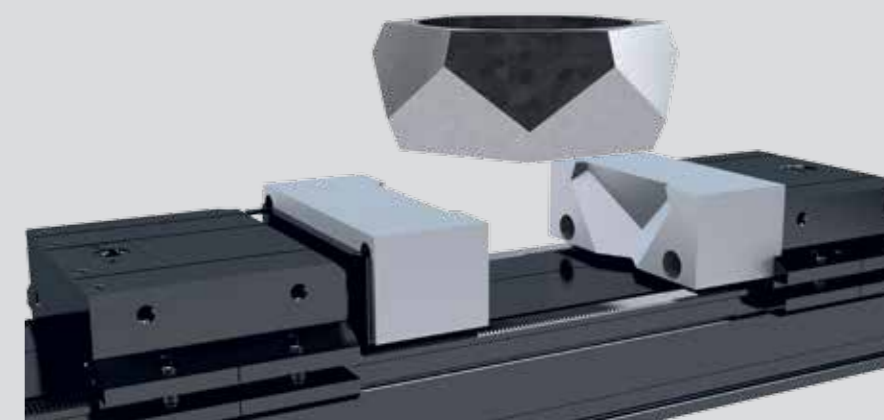
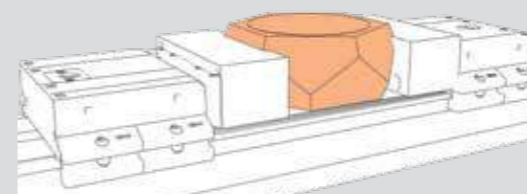
310 36 0127 Table clamp set 6-piece	XXX	
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Jaw width / jaw height	mm	120/10	120/20	120/30	120/38
310 36 0128 Magnetic strip 6 mm thick	XXX	XXX	XXX	XXX	XXX



Clamping that matches the contour

This is becoming increasingly important: for instance finish machining of 3D-printed parts.



Clamping in a centring vice – precise and flexible

CENTRING VICE JAW WIDTH 80 MM AND 120 MM, VARIABLE RANGE OF JAWS.

Variations

Jaw range for clamping blanks and finished parts

Positive engagement

prevents the jaws lifting

Flexible base

Suitable for

- Multi-point clamping rail 80 mm or 120 mm
- Clamping pot Ø 90 for size 80, Ø 120 or 138 for size 120
- Extension bases



360130_120



Quick change

Switch by 90° with just a few simple steps

Powerful

Clamping force up to 17 kN (size 80) or 25.5 kN (size 120)

Precision

variable central alignment ± 0.02 mm



GARANT centring vice with soft jaws (for specific contours)

Garant Centring vice and accessories

Centring vice for flexible applications.

- Absolute operational reliability thanks to enclosure.
- High repetition accuracy 0.02 mm.
- Variable central alignment ± 0.02 mm.
- User-friendly design, versatile range of jaws.
- Functional faces hardened.
- Sturdy design of tool steel, surface protection by brief exposure nitriding.

Advantage:

- Flexible, lightweight
- Multi-functional uses.

360130 – Clamping rail (80 mm or 120 mm, extension base or clamping pots (Ø 90 for size 80 and Ø 120 or 138 for size 120: pre-prepared connection hole).

360133 – Directly on the machine bed, exchange pallets or extension base (360156).

Application: Ideal for 5-face machining, perfect for clamping blank parts. Extremely versatile, wide range of applications: Pallet and automated systems, multiple clamping for instance on clamping rails, individual clamping on extension bases or directly on the machine.

Supplied with: Socket insert No. 642700 E12.

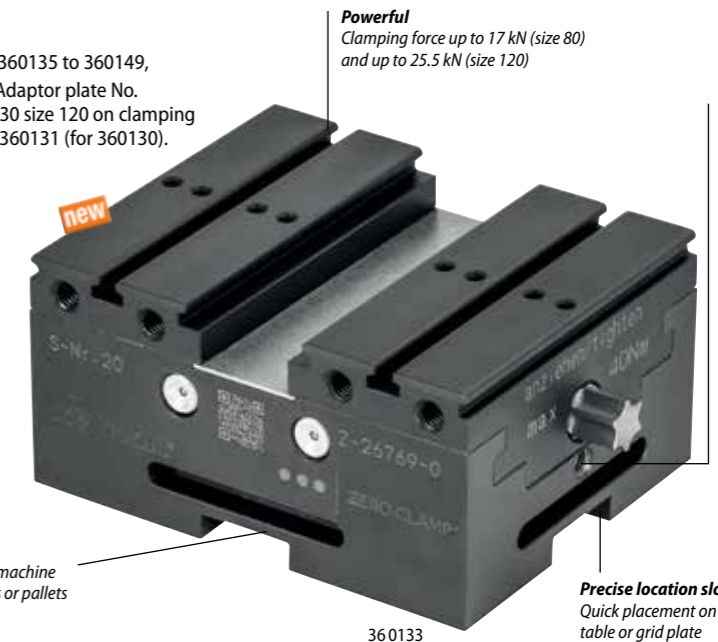
360133 – Including 2 table clamps.

Optional accessories: For clamping jaw variants see No. 360135 to 360149,

360130 – Extension base No. 360152 or 360154. Adaptor plate No. 360132 is necessary to mount No. 360130 size 120 on clamping pot Ø 120 mm, special clamping studs 360131 (for 360130).



360130_80



Powerful
Clamping force up to 17 kN (size 80) and up to 25.5 kN (size 120)

Precision
Variable centre adjustment ± 0.02 mm

Neutral interface
Flexible clamping on machine table, extension bases or pallets
Grid plates

Precise location slots
Quick placement on the table or grid plate

Jaw width A	310 360130	310 360133	Clamping force up to maximum	Torque	Stroke	Weight	A	Length	Width	Height
mm	Centring vice	Neutral centring vice	kN	N-m	mm	kg	mm	mm	mm	mm
80	XXX	XXX	17	40	22	2.5	80	114	80	51.4
120	XXX	XXX	25.5	60	25	5.1	120	130	120	51

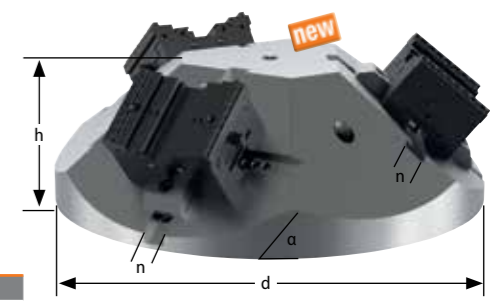
Garant 3-way extension base for centring vice

Clamping on the centring vice on the three-way extension base via table clamps. Double slot on each clamping face, so that the centring vice can optionally be displaced by 90°. The extension base is mounted on the machine table either via zero point clamping by the GARANT ZeroClamp (attachment holes and pre-prepared for studs No. 360025_18M16) or by tenons directly on to the machine table.

Suitable for: Centring vice No. 360133.

Material: High-tensile aluminium, hard anodised.

Supplied with: Including 6 Tee nuts for alignment

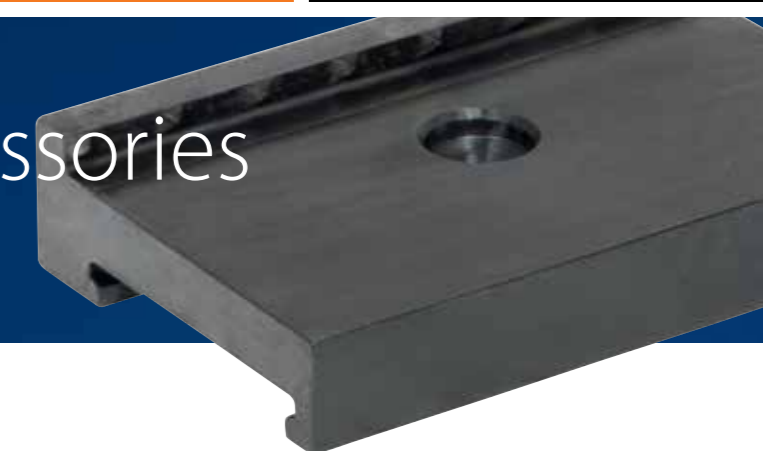


Supplied without the centring vice.

for type		80/120
310 360156	3-way extension base for centring vice	XXX
Ø D	mm	400
h	mm	140
n H7	mm	20
Angle α	degrees	45

Centring vice accessories

Centring vice accessories



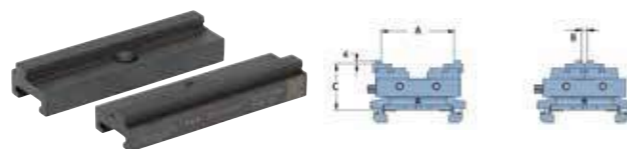
Garant Centring vice accessories

Material: Hardened tool steel with brief exposure nitriding.
Supplied with: fastening screw.



Top jaws for centring vices

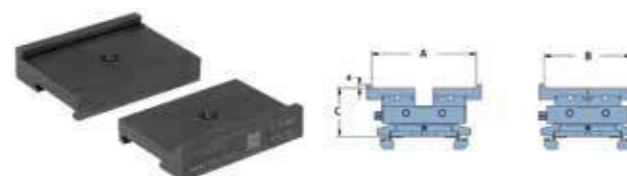
for type	80	120
310 36 0135 Pair of carbide top jaws	XXX	XXX
Jaw width b	mm 80	120
A	mm 88	107
B	mm 7	7
C	mm 54.95	57



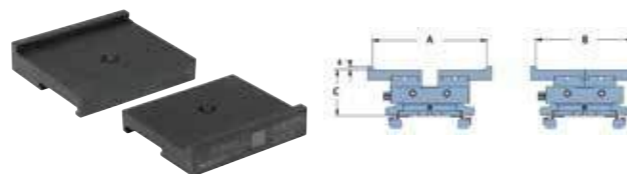
for type	80	120
310 36 0136 Pair of carbide top jaws	XXX	XXX
Jaw width b	mm 80	120
A	mm 108	132
B	mm 88	106
C	mm 57.95	60



for type	80	120
310 36 0137 Pair of carbide top jaws	XXX	XXX
Jaw width b	mm 80	120
A	mm 128	157
B	mm 108	131
C	mm 58.95	61



for type	80	120
310 36 0138 Pair of carbide top jaws	XXX	XXX
Jaw width b	mm 80	120
A	mm 148	182
B	mm 128	156
C	mm 58.95	62



for type	80	120
310 36 0140 Pair of grip top jaws	XXX	XXX
Jaw width b	mm 80	120
A	mm 87	107
B	mm 6	6
C	mm 54.95	57



Clamping studs for centring vices

Version: With internal thread including a suitable threaded stud.



Type	14M12/90	18M12/120	18M12/138
310 36 0131 Clamping studs for centring vices	XXX	XXX	XXX
for type	80	120	120
Centring Ø	mm 14	18	18
for clamping pot Ø	mm 90	120	138
M ₁		M12	

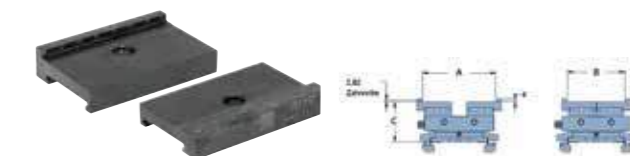


Garant Centring vice accessories

Top jaws for centring vices

Version: Hardened.
Material: Tool steel with brief exposure nitriding.
Supplied with: fastening screw. One pair of jaws in each case.

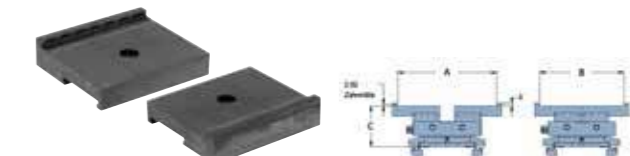
for type	80	120
310 36 0141 Pair of grip top jaws	XXX	XXX
Jaw width b	mm 80	120
A	mm 107	132
B	mm 87	107
C	mm 57.95	60



for type	80	120
310 36 0142 Pair of grip top jaws	XXX	XXX
Jaw width b	mm 80	120
A	mm 127	157
B	mm 107	132
C	mm 58.95	61



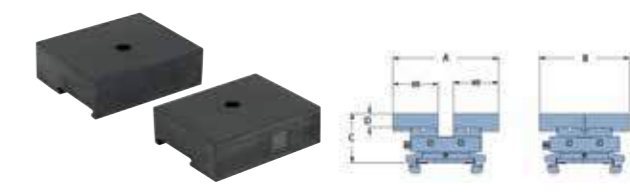
for type	80	120
310 36 0143 Pair of grip top jaws	XXX	XXX
Jaw width b	mm 80	120
A	mm 147	182
B	mm 127	157
C	mm 59.95	62



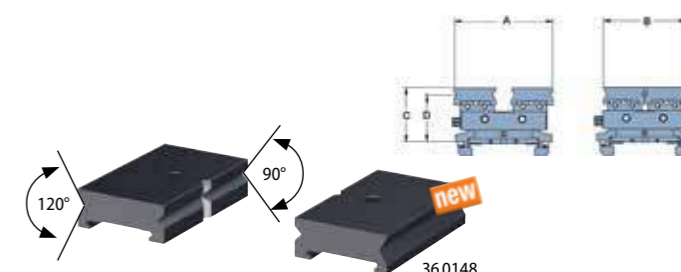
for type	80	120
310 36 0145 Pair of soft top jaws	XXX	XXX
Jaw width b	mm 80	120
A	mm 123	153
B	mm 100	125
C	mm 49.95	50
D	mm 20	25



for type	80	120
310 36 0146 Pair of soft top jaws	XXX	XXX
Jaw width b	mm 80	120
A	mm 153	183
B	mm 130	155
C	mm 49.95	50
D	mm 20	25



for type	80	120
310 36 0148 Pair of Vee jaws	XXX	XXX
A	mm 25	
B	mm 3.6	
C	mm 56.95	57
D	mm 15	
Clamping Ø 90°	mm 6-8	8-22
Clamping Ø 120°	mm 6-8	8-26



The pneumatic centring vice – powerful and universal

ACTIVE CLAMPING ELEMENT BEST SUITED FOR AUTOMATED PRODUCTION: CAN ALSO BE OPERATED MANUALLY!

Versatility

Comprehensive grip jaw range for clamping blank parts

Proven basis

Suitable for use on GARANT ZeroClamp base units

Precision

Variable centre adjustment ± 0.02 mm

Air delivery

Air delivery via the clamping pot in automatic mode

Power

Clamping force up to 40 kN

Low-maintenance

One hundred percent encapsulated for protection against dirt and swarf.

**On request
Price from 3525.- EUR**

Air connection

At standard compressed air gun can be used for manual opening and closing

Extension bases for centring vice

COST-EFFECTIVE CLAMPING SOLUTION FOR USE WITH THE GARANT ZEROCLAMP ZERO POINT CLAMPING SYSTEM OR WITH PALLET AND AUTOMATED SYSTEMS.

Tooth profile

For secure positioning and fixing of the centring vice.

Clamping slots

To accept centring vice clamps.

Accessibility

Raising the centring vice achieves better accessibility to the spindle. Facilitates 5-face machining.

Mounting using the zero point clamping system

2 location holes for clamping studs No. 360025_18M16 (pitch 200 mm).

Mounting on T-slots

M12 bolt

Accessories for the centring vice

Suitable for: No. 360130 size 120.
Application: For mounting the centring vice size 120 on the clamping pot \varnothing 120 mm or 138 mm.



310 36 0132 Centring plate 120/138 XXX

Extension base for centring vice

With 2 holes for clamping studs No. 360025 18M16. Alternative attachment via stepless adjustable clamps or an M12 bolt in the T-slot. Attachment hole pattern for **GARANT ZeroClamp zero point clamping system** (pitch 200 mm).

Suitable for: Centring vice No. 360130.
Material: Steel
Application:

- 5-face machining on multi-axis machining centres.
- As a cost-effective clamping solution for use with the GARANT ZeroClamp zero point clamping system or with pallet and automated systems, or directly on to the machine table.

for type		80	120
310 36 0152	Extension base for centring vice	XXX	XXX
LxWxH	mm	250x120x125	
Clamping stud pitch	mm	200	
Location holes for clamping studs		2	2



Intelligent

PERFECT FOR USE IN AN
AUTOMATED PRODUCTION CELL

Application examples

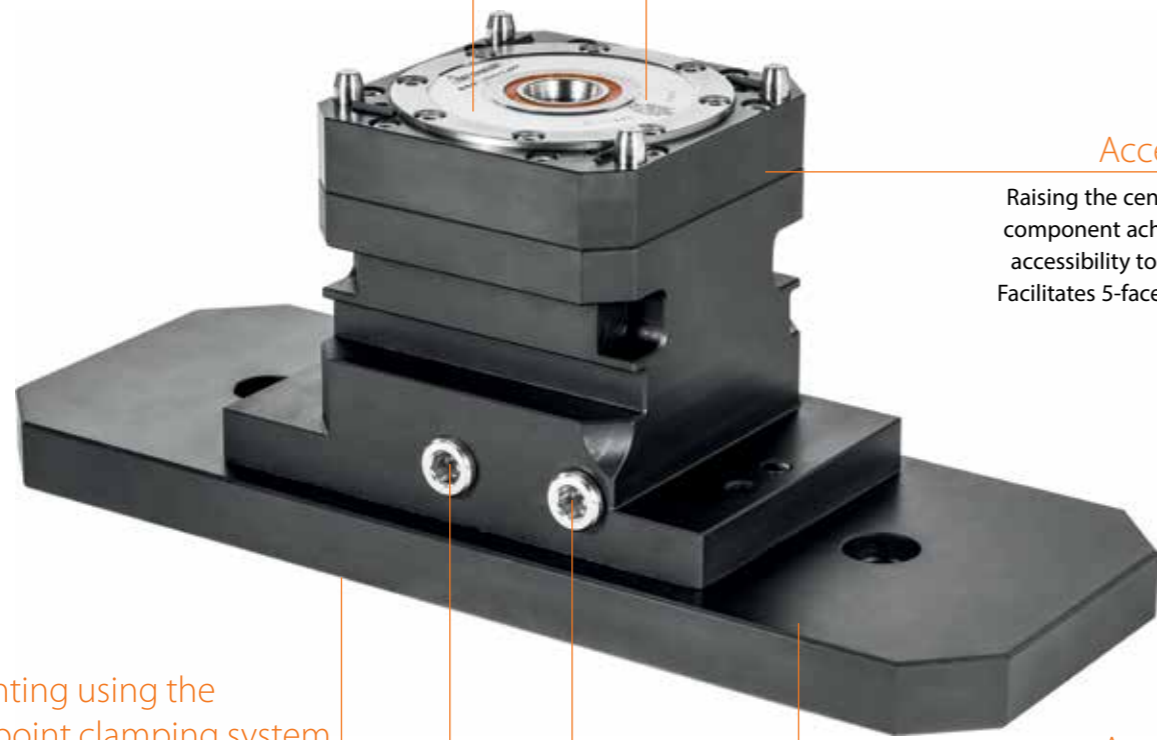


GARANT ZEROCLAMP CENTRING VICE

Flexibility

Accepts the centring vice 360130 size 80 or 120 mm.

Clamping pot-Ø 90 mm or 120 mm



Mounting using the
zero point clamping system

Switch point

Back pressure check or blow-out function.

Accessibility

Raising the centring vice or component achieves better accessibility to the spindle. Facilitates 5-face machining.

Attachment

can also be secured using table clamps

Air delivery

Via the machine table or manually via the side connection.

Extension base with clamping pot for mounting the centring vice

With holes for clamping studs No. 360025 18M16. Alternative attachment via stepless adjustable clamps or an M12 bolt in the T-slot. Attachment hole pattern for **GARANT ZeroClamp zero point clamping system** (pitch 200 mm). Manual operation or air cushion movement across the machine table. Clamping pot with Ø 90 mm or 120 mm for mounting the centring vice No. 360130.

Suitable for: Centring vice No. 360130.
Material: Steel

- Application:**
- 5-face machining on multi-axis machining centres.
 - As a cost-effective clamping solution for use with the GARANT ZeroClamp zero point clamping system or with pallet and automated systems, or directly on to the machine table.

Note: An adapter plate for the centring vice size 80 on clamping pot size 120 is available on request. Size 80/4 – 120/4 – higher support torque for maximum stability.

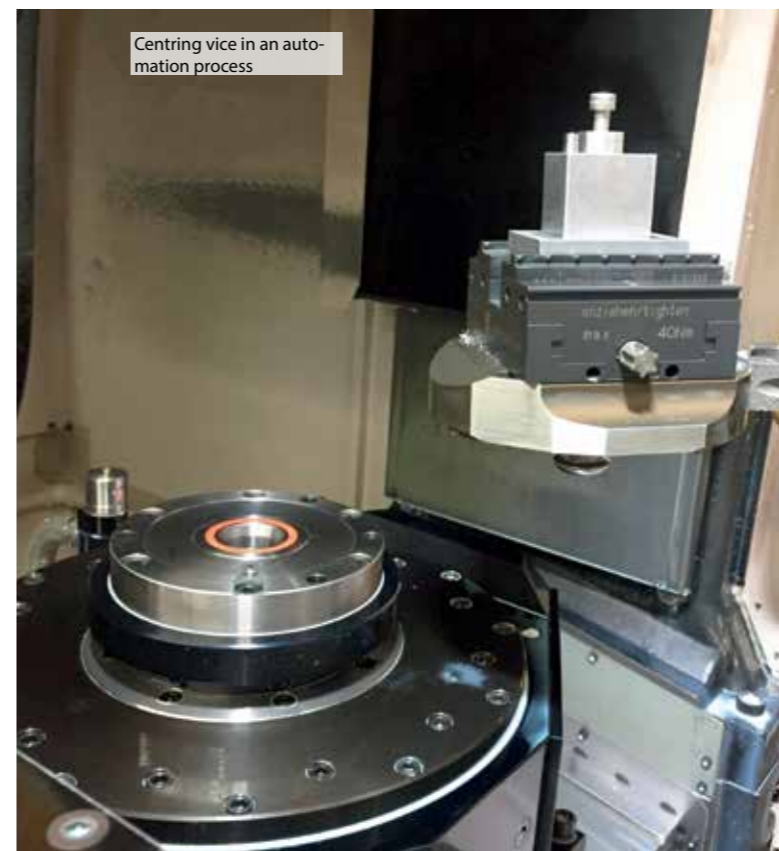
for type		80	120	80/4	120/4
310 360154	Extension base with clamping pot	XXX	XXX	XXX	XXX
LxWxH	mm	320x120x125		320x240x125	
Clamping stud pitch	mm	200			
Clamping pot Ø	mm	90	120	90	120
Location holes for clamping studs		2	2	4	4



Centring vice on an extension base with a clamping pot



Centring vice on a serrated extension base



Centring vice in an automation process



Centring vice with grip top jaws

The flexible clamp

MECHANICAL ZERO POINT CLAMPING

Thermal symmetry via the taper ring

- Deformable solid steel taper ring
- Vibration damping properties
- Patent application submitted for the system.

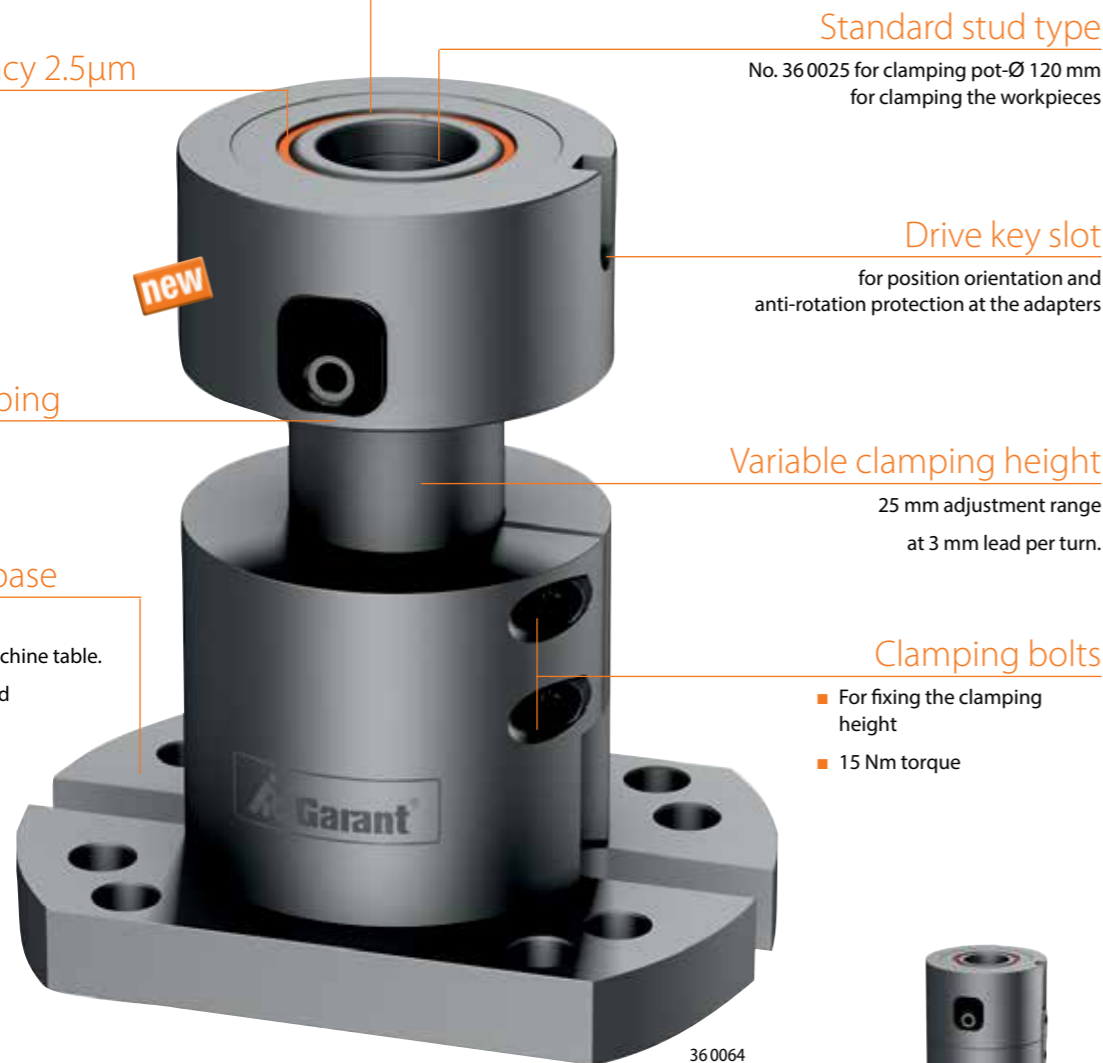
Repetition accuracy 2.5µm

Mechanical clamping

- 10 Nm torque
- Tee-bolt 5 AF

Multi-functional base

- Flexible positioning
- Direct clamping on the machine table.
- With hole for clamping stud No. 36 0066 18M12.



Flexible clamp on a T-slot machine table



Flexible clamp on a GARANT ZeroClamp zero point clamping system



Flexible clamp No. 36 0064 with 2 height elements No. 36 0068.

Flexible clamps and accessories

Garant Flexible clamps

- ∩ Steel base body with integral solid steel taper.
 - ∩ Mechanical clamping mechanism.
 - ∩ Tightening the lateral clamping bolt axially draws the component in with the respective clamping stud via 2 clamping wedges, and clamps it.
 - ∩ Can be secured using table clamps, T-nuts or zero point clamping system using clamping studs No. 36 0066.
- Pre-drilled for the zero point clamping system.
- Application:** Simple and exact positioning on the machine table. Clamping of complex components, e.g. mould making.
- Optional accessories:** Clamping stud No. 36 0025 for clamping pot-Ø 120 mm, torque wrench No. 65 6050 size 60, height element No. 36 0068

Fixed flexible clamp

Type		1	2
310 36 0060	Fixed flexible clamp	XXX	XXX
Ø D	mm	80	
LxW	mm	144x99	
H	mm	100	125
Torque	Nm	10	10

Flexible clamp, moveable

- Height adjustment with 3 mm lead per turn.
Maximum travel 25 mm
- Application:** For compensating deformed components.

Type		1	2
310 36 0064	Flexible clamp, moveable	XXX	XXX
Ø D	mm	80	
LxW	mm	144x99	
Torque	Nm	10	10
Clamping height	mm	125-150	150-175

Clamping stud for attachment to zero point clamping system

- Application:** For attaching the flexible clamp to the ZeroClamp zero point clamping system.

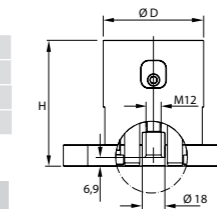
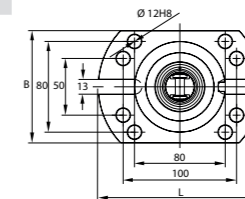
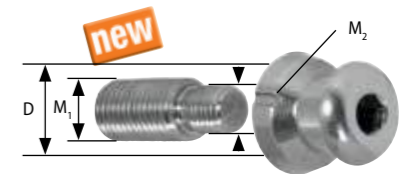
Suitable for: Flexible clamp No. 36 0060 and 36 0064

Type		18M12	18M12/138
310 36 0066	ZeroClamp clamping stud	XXX	XXX
Ø D	mm	18k6	18k6
M ₁	mm	M12	M12
M ₂	mm	M12	M12
suitable for clamping pot Ø	mm	120	138

Garant Height element

- Application:** For extending the flexible clamp. Up to 5 height elements adaptable one over another.
- Suitable for:** Flexible clamp No. 36 0060 and 36 0064
- Optional accessories:** Clamping stud No. 36 0025 for clamping pot-Ø 120 mm, torque wrench No. 65 050 size 60
- Supplied with:** Anti-rotation protection and clamping stud No. 36 0131 18M12/120

Type		1
310 36 0068	Height element	XXX
Ø D	mm	80
H	mm	50
Torque	Nm	10





Perschmann presents

MACHINING AND CLAMPING LIVE EXPERIENCE – IN THE NEW TOOLING WORLD.

In our demonstration centres you can form your own opinion of our clamping technology and machining competence!

At the beginning of the year, Hch. Perschmann GmbH, the Hoffmann Group partner based in Braunschweig, opened its new tooling world. In an area of 400 sq m, all the highlights associated with our catalogue are presented, together with innovative solutions for optimising the production and ordering processes.



High-quality measurement tools in conjunction with our GARANT ZeroClamp System ensure very high precision and very easy handling.



A GARANT ZeroClamp round table with side wing is used on a Hurco VMX. Ideal for 5-face machining.



Side wing with NC vice, round table with 1-pot extension base and directly clamped component.

WE HAVE OTHER SHOWROOMS IN OUR 12 REGIONAL TEST AND DEMONSTRATION CENTRES



At the Bremen location



At the Göppingen location



At our partner Götde at the Cologne location



At the Munich location

Hch. Perschmann GmbH
Hauptstraße 46 d
38110 Braunschweig



GARANT SU1 shrink-fitting unit and GARANT CU1 cooling unit.

PERFECT COMBINATION OF TECHNOLOGY AND DESIGN

- Shrink-fitting unit with integral air cooling at the shrink-fit position.
- Maximum shrink-fit tool length 500 mm.
- Storage for screening plates.
- Cooling unit with a shelf for cooling inserts
- Stand-alone variant.
- 2x positively driven contact coolers (no damage to the tool).



Contact your Hoffmann Group support office.



ho7.eu/ba-su1

→ Further information on our home page www.hoffmann-group.com



Premium Quality by Hoffmann Group