

PRECISION CLAMPING.

GARANT ZeroClamp – the versatile zero point clamping system is the answer to even the most demanding challenges.



One basic unit – outstanding flexibility

THE ZERO POINT CLAMPING SYSTEM FOR A WIDE RANGE OF APPLICATIONS



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GARANT ZeroClamp base plate GARANT ZeroClamp extension base **GARANT** magnetic clamping plate **GARANT** centring vice **A** Garant •

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 60,000 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.

Contents

Brilliantly simple – precise modularity	8
Thermal symmetry – the key advantage	10
Applications – clamping examples	14
Enthusiastic customers: GARANT ZeroClamp in practice	16
Automation	22
Innovative products from GARANT ZeroClamp	
Hoffmann Group test and demonstration centre – Oltrogge	58

Your key to success:

EFFICIENT AND PRECISE CLAMPING WITH GREATER VARIABILITY WITH THE INNOVATIVE GARANT ZERO POINT CLAMPING SYSTEM

Time saving



Up to 90% time saving due to reduced set-up, changeover and non-productive times.



Up to 70% increase in productivity in your production process.

... or take the next step and start to automate.

- Reliable production
- Significant increase of spindle running times
- Ideally unmanned production



More on page 22 – 25

Unlimited applications

BE IT MILLING, TURNING, SPARK EROSION, MEASUREMENT, GRINDING OR PRE-SETTING – 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.

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.

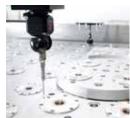




Ideally suited to measuring machines

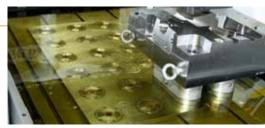
Checking before the final operation. 100 % inspection of all finished assemblies. Repeatability $< 2.5 \, \mu m$ offers certainty.





Spark erosion

GARANT ZeroClamp – reliable performance even for spark erosion.



Milling

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



Grinding

Best parallelism and accuracy in combination with magnetic clamping technology.

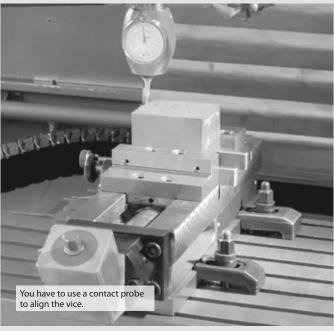


Why use zero point clamping?

JOIN THE MOVEMENT TO MODERN CLAMPING TECHNOLOGY

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









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 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 workpiece is clamped directly to the clamping pot using an extension base.

Individual fastening options for precise clamping with high repetition accuracy



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 oneoff item.

Simply brilliant

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

- \blacksquare 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 swarf.
- 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 (\varnothing 120 mm) and 2.5 μ m repetition accuracy.







The centrepiece

ONLY 8 PARTS FOR RELIABLE CLAMPING FORCE

Centred clamping with zero play

in the hardened steel taper

Radial springs

mounted in Viton, high resistance to cooling lubricants

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).





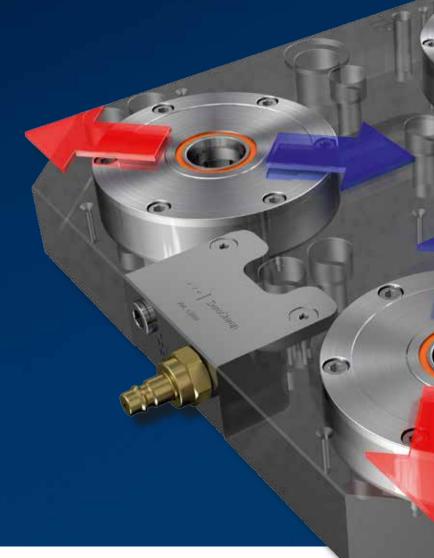




The key advantage

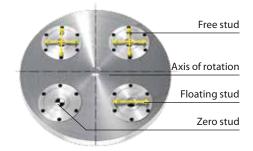
THERMAL SYMMETRY - ALWAYS IN RELATION TO THE CENTRE

- 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 free bolts, no floating studs.

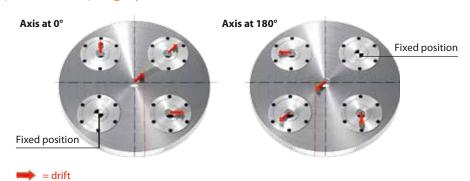




The disadvantage of classic zero point clamping systems



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



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



Only one type of stud

- Process-reliable use.
- No tilting in inclined positions.
- User-friendly even for heavy and asymmetricc components.



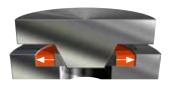






HSK principle

- Operates like a HSK tool taper.
- Freedom from radial play together with the axial position relative to the flat face.
- Repeatability < 2.5 μm.





A wide variety of clamping pot applications

FROM STANDARD APPLICATIONS THROUGH TO AUTOMATION

STANDARD CLAMPING POTS Check function indexed **Check function** Standard Indexed Clamping pot diameter in mm

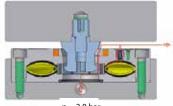
Indexed

Anti-rotation protection when using only one clamping pot. Thus assuring exact radial positioning.



Check function

Additional safety due to a check of the clamping situation. Checking the flat face position of the component and the clamped situation by means of dynamic pressure monitoring.



p = 2.0 bar



Position check prepared for sensor Position check indexed prepared for sensor

AUTOMATED PROCESSES

4-channel 4-channel indexed













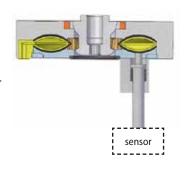




Clamping pot diameter in mm

Check function

Prepared for analogue or digital evaluation of the clamped situation. Evaluation can take place via two openings on the underside. Evaluation with a tappet.



4-channel technology

Pneumatic control of second tier clamping elements.

1st channel = open 1st level.

2nd channel = dynamic pressure monitoring and blow-out function.

3rd channel = operation/special function 2nd tier.

4th channel = operation/special function 2nd tier.





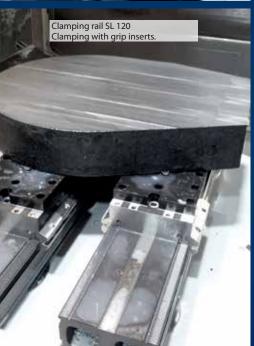




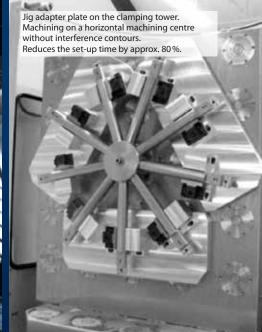


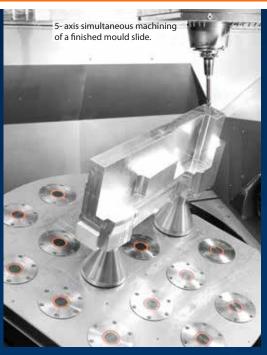


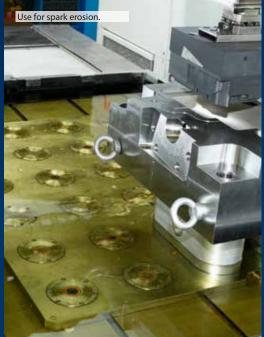
















Application examples

GARANT ZEROCLAMP CLAMPING RAIL AND WORKPIECE CLAMPING









10 years of the zero point clamping system GARANT ZeroClamp

"This is what long-standing customers say"

THE ZERO POINT CLAMPING SYSTEM GARANT ZEROCLAMP IS WINNING CUSTOMERS OVER DUE TO A BASE THAT HAS REMAINED VIRTUALLY UNCHANGED SINCE ITS LAUNCH ON THE MARKET AND A SIGNIFICANT INCREASE IN AVAILABLE CLAMPING POT SIZES.

Long-standing customers intend to continue using GARANT ZeroClamp, as the system is ideally suited for any future automation strategies.

This year GARANT ZeroClamp is celebrating its tenth anniversary.



"We have been working with GARANT ZeroClamp for ten years now and we have no regrets about this investment. Over the years the GARANT ZeroClamp product family has continued to grow steadily.

At the beginning, only one clamping pot size was available, nowadays there is a choice of four. With only one type of clamping stud many additional components such as the GARANT multi-point clamping rail, extension bases, NC vices or parts can be positioned directly on the zero point clamping system with an accuracy in the micrometer range. This makes the system flexible and easy to use. We have remained faithful to the zero point clamping system, because there is nothing to match it.

With GARANT ZeroClamp we are also ideally positioned to implement any future automation strategies."

Albert Geßler, Production Manager at TELAIR International

TELAIR International GmbH

TELAIR International GmbH, based in Miesbach, Germany, is the one-stop-shop for the design, manufacture and support of containerised cargo handling systems and a full range of unit load devices. Innovative designs combined with lean manufacturing and outstanding customer support, make the company a strong partner for customers like Airbus and Boeing.

TELAIR International GmbH Bodenschneidstr. 2 D-83714 Miesbach

www.telair.com







Happy Birthday 10 years GARANT ZeroClamp 2007 – 2017



"GARANT ZeroClamp impressed us right from the start. We have been using the zero point clamping system for 10 years now and were able to significantly reduce our set-up times. GARANT ZeroClamp offers us the flexibility we need to react to new challenges quickly. This is the reason why, as a rule, we equip all new machines with it. In the Hoffmann Group we have found a competent partner to support and advise us in all areas."

Karlheinz Hahn, Managing Director, Konstruktion & Entwicklung Produktions GmbH

Karlheinz Hahn Konstruktion & Entwicklung Produktions GmbH

Karlheinz Hahn Konstruktion & Entwicklung Produktions GmbH in Straubing, Germany, specialises on the mechanical processing of aluminium, steel, titanium, magnesium, brass, copper and plastic. Apart from small- and medium-sized series production, the company will also carry out prototyping and support its customers during the design phase.

Meißener Str. 6 · D-94315 Straubing

www.kh-hahn.de





"We chose GARANT ZeroClamp, because we were won over by the excellent consulting expertise of the Hoffmann Group. Our set-up times have been demonstrably reduced, and we were able to increase our flexibility. Unlike other zero point clamping systems, GARANT ZeroClamp always draws the centre of the workpiece back into the centre. This increases the precision of the production process and reduces the number of rejects."

Stefan Kulzer, Managing Partner, Stangl & Co. GmbH

Stangl & Co. GmbH Präzisionstechnik

Stangl & Co., based in Roding, Germany, produces prototypes, pilot lots or small batches of components, and series of milled or turned parts to customer specification. This requires high tech machinery able to meet all technical demands.

Stangl & Co. GmbH Wernher-von-Braun-Str. 4 D-93426 Roding

www.stangl-co.de



Customer opinion

"Highly flexible clamping technology ideally suited to our 5-axis machine!"

WITHIN A VERY SHORT TIME, A REDUCTION OF NON-PRODUCTIVE TIMES AND A SIGNIFIC



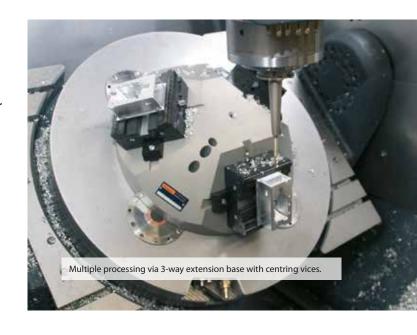
The core business of Swierzy CNC Produktionstechnik is contract manufacturing of high-quality milled components of varying complexity – from individual parts right up to large series. Amongst their customers are companies form various sectors such as mechanical engineering, medical technology, the automotive industry and the food industry. A bicyle manufacturer are also amongst their customers.

In November 2015 the company moved to newly built premises, and in September 2016 they acquired their first 5-axis machining centre.

We were looking for a highly flexible clamping system, which would be ideally suited to our 5-axis machine and our components. It needed to be precise, versatile in its applications and, moreover, easy to use. We also wanted it to reduce set-up times.

Right from the outset, the Hoffmann Group was a much appreciated and reliable partner who visited us on a regular basis, looked after us and introduced the GARANT ZeroClamp system early on – at a point in time when we hadn't even recognised the need for it. The application engineers of the Hoffmann Group showed us the efficiency and the simplicity of the system.

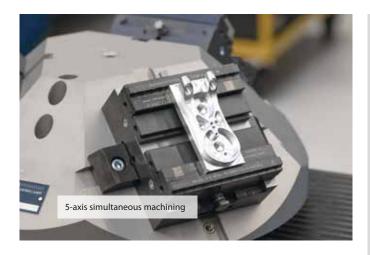
We have been working with the zero point clamping system since the commissioning of our new 5-axis machining centre in September 2016. As GARANT ZeroClamp is the base on the machine, the system is being used for any work and material.



which is



ANT INCREASE OF THE SPINDLE RUNTIME WERE BECOMING APPARENT.



We use GARANT ZeroClamp several times per day. Whether for direct clamping, as a base for vices, centring vices or 3-way extension bases.

Our employees think and live GARANT ZeroClamp and don't want to use any other clamping system.

The simple and efficient design with just a minimum of mechanics, the easy handling e.g. by using just one type of stud and also the fact that thermal symmetry is assured, were the decisive factors influencing our decision. Another factor that convinced us was the wide range and consistent range of available accessories.

The reduction of non-productive times and thus a significant increase in spindle running time was noticeable after just a short time. Another advantage that we benefit from on a daily basis is the opportunity to act more flexibly as the zero points can be replicated.

We have the basis for the GARANT ZeroClamp system, which will now be expanded and installed on more machines.

For us, GARANT ZeroClamp is the best system on the market.

Swierzy CNC-Produktionstechnik was founded in 2010 by Benjamin Swierzy, and since then has been synonymous with individual, precisely executed customer solutions, on-time deliveries and high quality milling.

Their portfolio includes a variety of made-to-order milled parts – ranging from prototypes and individual parts right through to large series. The products are made to the customers' exact requirements.

The company operates mainly regionally in East Westphalia and in the adjoining Lower Saxony, but also throughout the rest of Germany and worldwide, for example in Iceland and Sweden.

Apart from mechanical processing, Swierzy CNC-Produktionstechnik together with its production partners also offers its customers various options for further processing. The tried and tested regional supplier network makes prompt execution of all orders possible. In 2016, the qualified staff of eight achieved an annual turnover of 1.2 million euros.

Swierzy CNC Produktionstechnik

Rahdener Straße 121 32312 Lübbecke, Germany

www.swierzy-cnc-produktionstechnik.de



Customer opinion

"ZeroClamp is an important, indispensable part of our production!"

PUTTING AN END TO LABORIOUS AND LONG SET-UP TIMES FOR MILLLING OPERATIONS.

As a contract manufacturer, we here at BURGHARDT Zerspanungs GmbH & Co. KG are constantly faced with the challenge of keeping set-up, changeover and non-productive times to a minimum. Turning, milling, grinding, drilling and measuring are a regular part of many of our Hessian, family-owned company's production orders. Our customers include manufacturers of packaging and special machines, as well as suppliers of door systems, for whom we frequently produce elaborate small series or individual parts.

"We continually invest in modern machines and factory equipment to guarantee and further enhance our high standard of service", explains Managing Partner Tanja Siebert. That is why, in the first quarter of 2016, a flexible manufacturing cell with two horizontal machining centres and a 24-station pallet pool was put into operation. It is here that the

GARANT ZeroClamp zero point clamping system is used primarily for milling. Qualified support was given right from the start of the purchasing process by application engineer Jeannette Arndt-Hoffmann and account manager Andreas Rosengarten of Perschmann, the regional Hoffmann Group partner.

We have been collaborating and putting our trust in the tool specialist for more than 20 year. We were able to get a personal impression of the product before purchasing it when we were taken on a visit to the manufacturer ZeroClamp in Icking.

What we particularly like about the GARANT ZeroClamp zero point clamping system are the high clamping forces, the individual production which took into account our requirements, the easy handling, excellent positioning and repeatability,





as well as the low maintenance requirements. In the past, we used conventional vices and T-slot plates for clamping. The components had to be aligned by hand and re-measured. Now we can position the components with high precision and quickly dock on processing devices. This does not only save time on a daily basis, but also ensures high process reliability. "At the end of the day, the clamping system has to work reliably at all times and that's what it does. We have not had any malfunctions", says Nico Siebert, studying for a Masters Degree in Mechanical Engineering and prospective 3rd generation company successor.

By investing in the new system the productivity of our production has increased significantly.

ZeroClamp is an important, indispensable part of this process. We are very grateful for the continuous solution-oriented approach and advice by Hoffmann Group Perschmann.





from left.: Nico Siebert (Junior manager BURGHARDT Zerspanungs GmbH & Co. KG), Andreas Rosengarten (Area Sales Manager Hoffmann Group Perschmann), Tanja Siebert (owner BURGHARDT Zerspanungs GmbH & Co. KG)



BURGHARDT Zerspanungs GmbH & Co. KG – Your precise partner for machining tasks

Our family-owned company BURGHARDT Zerspanungs GmbH & Co. KG has a large, ultra-modern pool of machinery amounting to more than 2,000 square metres at its disposal. Since 1974 we have been specialised on turning, milling and grinding of workpieces. We attach particular importance to quality and delivery reliability. From our base in Northern Hesse we supply customers all over Germany with components of varying complexity. We employ approx. 40 specialised staff who work on our machining centres, CNC lathes, grinding machines etc. to produce individual solutions for our customers, either as one-off items or in series production. All workpieces undergo stringent quality controls.

BURGHARDT Zerspanungs GmbH & Co. KG Am Milchberg 18 37276 Meinhard-Jestädt, Germany www.burghardt-zerspanung.de

Large-scale automation, but very compact!

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



Optimum use of space, thanks to rotatable double rack.



The current operating status is displayed on the LED panel at the side.



The complete automation is compatible with pallet trucks and can be changed quickly. Ideal, to use one automation for several machines.



Integral industrial PC with large memory for loading programmes.





The machine is freely accessible when in manual operation.

Lifts up to 100 kg.

Grippers can be changed automatically.

Multi-flexible gripper.



Handling different pallet sizes.



Direct handling of centring vices without additional pallets.



Blank parts are gripped directly and exchanged.

Seamless chain of automation!

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

. Set up the machine and rack ...

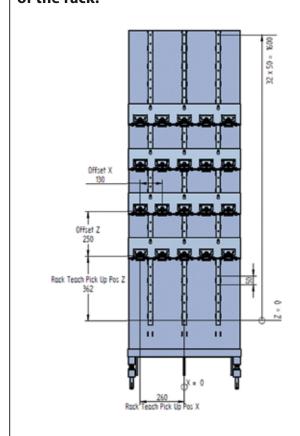




2. Generate the job ...



Free arrangement and configuration of the rack.





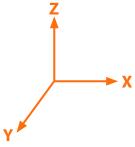
- 2. Select suitable grippers with predefined parameters
 - e.g. active grippers for picking up blank parts.
- 3. Select suitable clamping tools with predefined parameters
 - e.g. pneumatic drive for picking up blank parts.
- 4. Input the total number of parts, and the number of parts in a row, with the spacing between them.

1.8	=		-	-	=			-	-	-
-	- (a.		-	4.	-4-	-				-
-		7		1.	-	-	- 7	17	-	
	-	- 0			10			10		
-				+	(+)	1		0.9	10	

Simply teach the robot by manual guidance ... 4. Start!







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

Rack for	nemetoposition as	Mehrheir	Reix Authabmeposition autherman				
Reck sichere Poe. X	Rack sichere Pos. Y	Reck eichere Pox. 2	Rack Autroheme Pos. X	Rack Aufnature Pee, Y	Reck Autoabste Pos. 2		
243,414	-564,51	173,657	-250.A27	.127,055	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.



Standard base plates



ZeroClamp, Standard-Spannsystem

All holes for T-slot pitches 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.

Application: For vertical/horizontal machines. Optional accessories: Clamping stud No. 360025.

Connection blocks No. 360017 size 12808 / 12805.



A A A A A A A A A A A A A A A A A A A		B 5 5 10008	A	H	S
Туре		10077	10008	10024	11058
≅ 36 0012 ZeroClamp base plate		(1834.47)	(3261.06)	(4642.11)	(6004.35)
Clamping pot Ø	mm		120)	
Number of clamping pots		2	4	6	8
В	mm	166	366	566	766
A	mm	416	366	366	366
Н	mm		44		
Pitch S	mm		200		
Туре		21782	21521	25438	25440
≅ 36 0012 ZeroClamp base plate		(2067.12)	(3693.69)	(5271.75)	(6830.01)
Clamping pot ∅	mm		138	3	
Number of clamping pots		2	4	6	8
В	mm	196	396	596	796
A	mm	446	396	396	396
Н	mm		54		
Pitch S	mm		200)	

Cover plates for base plates

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



_11356	5
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Туре	11356	11355	11354	11396	
≅ 36 0013 ZeroClamp cover plate for base plate	(55.24)	(90.88)	(109.89)	(128.70)	
Suitable for base plate 360012	Size 10077	Size 10008	Size 10024	Size 11058	
Type	21872	24311	25449	25442	
Type ≈ 36 0013 ZeroClamp cover plate for base plate	(76.82)	24311 (112.37)	(130.68)	25442 (149.49)	

Base plates with diagonal pitch, adapted according to machine type



Advantages:

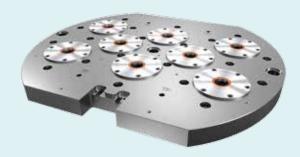
Version 1 see No. 36 0014



- Maximum stability due to central support, therefore high support moment.
- Higher clamping force due to four clamping pots.
- Higher flexibility to accept more devices and components.

Version 2 with dummy pots

- Maximum stability due to central support, therefore high support moment.
- Prepared clamping positions (clamping pots can be fitted at a later stage).
- Economical alternative to conventional clamping pots.





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



Centre bore Ø 25 H7 to accept the centring set.

Base plate of high-tensile aluminium, surface treated. **Material:**

All components of the clamping pot of stainless or

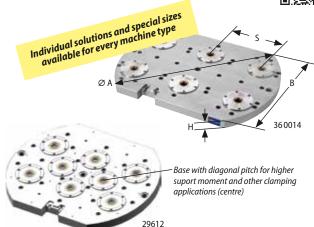
corrosion-resistant steel.

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.



		new	new			new	new		new	new
Туре	14014	29601	29607	10089	10477	29612	29598	10009	29595	29614
≅ 36 0014 ZeroClamp base plate (based on machine type)	(4256.01)	(4257.99)	(4303.53)	(5710.32)	(5782.59)	(7834.86)	(7703.19)	(10324.71)	(12340.35)	(12194.82)
Suitable for machine type	MAZAK VARIAX 500	DMG DMU 40 eVo	Hermle C12 / 22 / 250	DMG DMU 50	Mazak Variax 630	Hermle C 32	DMG DMU 60eV0	DMG DMU 80P	DMG DMU 80 eVo	Hermle C42
Clamping pot ∅ mm					12	20				
Number of clamping pots	4	4	4	6	6	8	8	12	13	13
Ø A mm	500	480	280	630	630	650	630	900	830	800
B mm	400	400	-	500	500	540	500	630	700	630
H mm	44									
Pitch S mm		200								
Diagonal pitch	no	yes	yes	no	no	yes	no	nein	yes	no

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. (Surface protection + cover for location holes.)





		new	new		new	new		new	new
Туре	18290	29605	29611	11648	29610	29606	12452	29604	29609
≅ 36 0021 ZeroClamp cover plate for base plate	(114.84)	(149.49)	(112.86)	(109.89)	(149.49)	(112.86)	(211.86)	(229.68)	(229.68)
Suitable for base plate 360014	Size 14014	Size 29601	Size 29607	Size 10089 / 10477	Size 29612	Size 29598	Size 10009	Size 29595	Size 29614

Base plates, towers and adapters

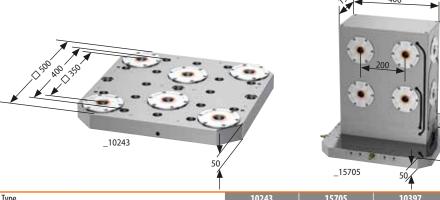
ZeroClamp base plates / towers / adapters

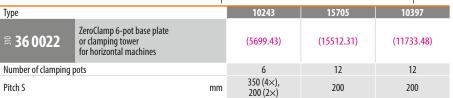
Clamping pot Ø 120 mm.

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

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

Optional accessories: Clamping stud No. 360025.





SK40 adapter

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

Can be used horizontally and vertically. Clamping workpieces via an SK40 (DIN 69871) tool Application:

arbors (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 \varnothing 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!

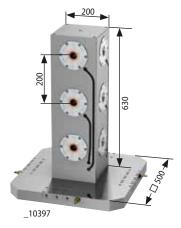
Suitable for clamping	j pot Ø	mm	90	120	138		
≅ 36 0042	ZeroClamp adapter for SK40 (DIN 69871) arbors		(339.57)	(339.57)	(410.85)		
Н		mm		77			
Number of location holes for clamping studs			1				















Extension bases

ZeroClamp extension base

1-pot extension bases

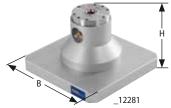
Clamping pot \varnothing 120 mm, indexed.

Suitable for: For base plates with pitch 200. Supplied with: Coupling plug and clamping stud

No. 360025 size 18M16.

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





Туре		19619	12809	12810	12811	14617	12281
₹ 36 0030 ZeroClamp extension pot with 1 clamping point		(2104.74)	(2130.48)	(2172.06)	(2346.30)	(2305.71)	(2379.96)
В	mm	198	198	198	330	330	330
Н	mm	120	150	200	150	100	200
Number of clamping studs		2	2	2	4	4	4
Diagonal pitch		-	-	-	yes	yes	yes

2-pot extension bases

With 2 clamping pots.

Suitable for: For base plates with pitch 200. Coupling plug and clamping stud Supplied with: No. 360025 size 18M16.

Optional accessories: Quick-release coupling

No. 360019 size 10003.





Туре		12813	12814	12815	12816	12732	12735	12736	12126	14523	25067	21033
≈ 36 0031 ZeroClamp extension pot with pitch 200		(2400.75)	(2496.78)	(2533.41)	(2646.27)	(2721.51)	(3186.81)	(3307.59)	(2689.83)	(3288.78)	(2672.01)	(2864.07)
Clamping pot ∅	mm	120	120	120	120	120	120	120	120	120	138	138
Н	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
Diagonal pitch		_	_	_	_	_	ves	ves	_	ves	_	_

Angled extension base, 2-pot

Application: For mounting in base plates with pitch 200 mm.

Can be clamped at 45° and 90°. **Supplied with:** Clamping stud No. 360025 size 18M16. **Optional accessories:** Clamping stud No. 360025 size 18M16. Connection blocks No. 360017 size 12808 / 12805.

Туре		10035
≥ 36 0034 ZeroClamp angled extensivith pitch 200 mm	sion base	(3110.58)
Pitch	mm	200
Clamping pot ∅	mm	120
Н	mm	230
Number of location holes for clamping studs		4





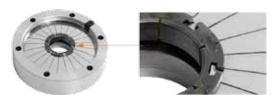


Clamping pots and accessories

Fit for the future

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

- 40 kN clamping force allows process reliability of heavy-duty milling machining even with very high transverse forces.
- 100% process reliability, mechanical withdrawal of the locking elements when the clamping pot is opened.





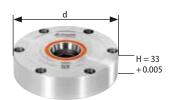
Legislation ZeroClamp zero point clamping system – accessories

Clamping pots

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

For individual incorporation into the clamping system.







Ao Garant ZeroClamp

Ø 138 mm

Туре	_		11886/90	12987/90 I	10012	10148	138	138I	11954/190	12984/1901
≅ 36 0040	ZeroClamp clamping pot		541.53	587.57	565.29	608.85	634.59	692.01	(1218.69)	(1286.01)
Clamping force		kN	12,5	12,5	25	25	40	40	60	60
Clamping pot Ø d		mm	90	90	120	120	138	138	190	190
Indexing hole availab	le		no	yes	no	yes	no	yes	no	yes

Closure stud

Size 120C – Circular cover with seal covers the complete clamping pot including the closure stud.

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



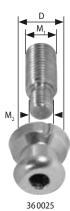
Clamping pot \varnothing	mm	90	120	138	190	90C	120C	138C
≅ 36 0029	Closure stud	_	_	_	_	50.49	63.56	80.78
≘ 36 0035	ZeroClamp original closure stud	28.31	33.46	45.05	(85.93)	_	_	_

Clamping stud

With internal thread including a suitable threaded pin.

Туре			12M10/90	14M12/90	16M8	16M10	18M12	12M10	18M16	25M10
≈ 36 0025	ZeroClamp clamping stud with internal thread		41.38	41.38	47.72	47.72	47.72	47.72	47.72	47.22
ØD		mm	12k6	14k6	16k6	16k6	18k6	12k6	18k6	25h7
M,			M10	M12	M8	M10	M12	M10	M16	M10
M,			M8	M8	M8	M10	M12	M10	M12	M10
Suitable for clamping	pot Ø	mm	90	90	120	120	120	120	120	120
Туре			12M10/138	18M12/138	25M10/138	25M16/138	18M16/138	12M10/190	18M16/190	30M24/190

Туре	12M10/138	18M12/138	25M10/138	25M16/138	18M16/138	12M10/190	18M16/190	30M24/190
≅ 36 0025 ZeroClamp clamping stud with internal thread	57.62	57.62	57.02	57.62	57.62	(99.40)	(99.40)	(99.40)
\varnothing D mm	12k6	18k6	25h7	25k6	18k6	12k6	18k6	30k6
M_1	M10	M12	M10	M16	M16	M10	M16	M24
M,	M16	M12	M10	M16	M12	M10	M16	M20
Suitable for clamping pot \varnothing mm	138	138	138	138	138	190	190	190



Clamping pot starter kit

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

Application: For individual incorporation into the clamping system. **Supplied with:**

Size 10012-SET-138I-SET-4 clamping pots each.

 $10 \times \text{adapters}$ for the air line.

1.5 m air line.

 $1 \times$ quick-release coupling No. 360019 size 10003.

 $1 \times$ male coupling (suitable for quick-release coupling).

Note:

Size 10012-SET-138I-SET – 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.



Туре	10012-SET	10148-SET	138-SET	138I-SET
≅ 36 0040 ZeroClamp clamping pot	(2445.30)	(2635.38)	(2737.35)	(2969.01)
Clamping pot No. 360040	10012	10148	138	1381
Clamping pot ∅ d mm	120	120	138	138
Indexing hole available mm	no	no	no	yes

.

Just a few steps to your own zero point clamping system:



1. Use an aluminium or steel plate as the basis.



2. Attach channels for the air supply at the rear.



.......................

3. Mill recesses for the clamping pots.



4. Insert air lines and connection pieces.



5. Fit and mount clamping pots.

More information can be found at: www.ho7.eu/P36000



Individual zero point clamping system is ready for use.

Unique advantages:

- Individual fitting
- Adaptation to specific needs
- Virtually limitless applications
- User-selected variable pitch
- Cost-effective solution
- Especially versatile for jig and tool making



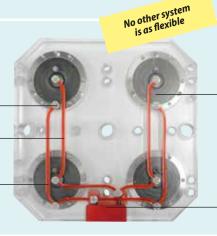
Connectors

Air duct for

blowing out and dynamic pressure monitoring

Air duct for opening

of the clamping pots



.



Air feed from below

Various connection blocks

Precision down to the last detail

MATCHING ADD-ON COMPONENTS.

Locking bolt

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 sets

Application: For parallel alignment in the T-slots.

Slot width B / clamping thickness S mm		mm	10/40	12/40	14/40	14/50	16/40	18/40	22/40
≅ 36 0015	ZeroClamp alignment set		(88.90)	(88.90)	(88.90)	(88.90)	(88.90)	(88.90)	(88.90)



Centring sets

Application: For centralised alignment in the centre bore.

For basic units with 40-50 mm thickness

Centring Ø A / centring	ng height B m	m 30/10	32/10	50/10	50/20
≅ 36 0016	ZeroClamp centring set	(79.00)	(79.00)	(79.00)	(79.00)

79.00) Ø A

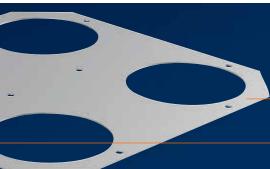
BU=3 36 0016 BU=3

T-nut with clamping screw

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

36 0024

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
≅ 36 0024 T-nut with clamping screw		6.09	8.12	12.13	12.13	20.20	6.09	8.12	12.13	12.13	20.20
M		M10	M12	M14	M16	M20	M10	M12	M14	M16	M20
Clamping screw length	mm	45	45	50	50	55	55	55	60	60	65



Alignment set

Assists the prepositioning of the base units **No. 36 0015**

Cover plate

Attached with countersunk screws protects the surface avoids swarf accumulation No. 36 0021



Prepositioning via centre bore **No. 36 0016**



Connection block "Standard"

Garant®

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

Connection blocks

Size 12808 – With 2 connection ports G $1/4^{\prime\prime}$ 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.



Туре	12808	12805
≅ 36 0017 ZeroClamp connection block	(220.77)	(355.41)



Quick-release coupling nipple

- 51A11117A	ZeroClamp quick-release coupling nipple		(22.28)
Connection thread		inch	1/4



Quick-release couplings

Туре			10241	10003
≈ 36 0019	ZeroClamp Quick-release coupling		(40.29)	(40.29)
Connection thread		inch	1/8	1/4





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).

■ A multiple clamping station, e.g. with \geq 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 clamping claws.

Clamping pot Ø

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

Overall height

is very low.

Single clamping pot with support

Supplied with: 1×single clamping pot with support

supplica with.	1/3111gic clairiping pot with 30
	1×coupling plug
	3×clamping claws

Туре		120	120 l	138	138 I
≋ 36 0026	Single clamping pot	(999.90)	(1061.28)	(1302.84)	(1363.23)
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		no	yes	no	yes

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.

For clamping pot \varnothing 120/138 ≅ 36 0027 Centring mandrel (145.53)Shank Ø 26 mm Shank length 50 Overall length 150 mm



ADESTAN

LeroClamp

for clamping pot Ø 120 mm and 138 mm.

Place clamping pot on machine table



If necessary, align further clamping pots and affix them on the T-slot table using clamping claws.



Step 4.2: Or clamp one workpiece using several clamping



The double clamping pot

DEFINE YOUR OWN ZERO POINT

Version: Double-ended clamping pot. To take clamping tools (vices etc.) or for direct clamping of workpieces. Note:

As standard, double clamping pots are supplied as an indexed version.

Absolute power

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

Clamping / releasing
Upper clamping pot.

Clamping / releasing

Lower 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 towers 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.



Туре		120	138
≅ 36 0028	Double clamping pot	(1636.47)	(2030.49)
Clamping pot Ø d	mm	120	138
Height	mm	100	150
Clamping force	kN	25	40
Indexing hole		yes	yes



The flexible clamp

MECHANICAL ZERO POINT CLAMPING

Advantage: Individual clamping of complex workpieces. Especially suitable for mould making. Milling from the sixth side is possible.

This reduces set-up costs and loss of accuracy due to frequent re-clamping.

Thermal symmetry via the taper ring

■ Deformable solid steel taper ring

Vibration damping properties

Patent application submitted for the system

Repetition accuracy 2.5 µm

50 kN clamping force

Standard stud type

No. 36 0025 for clamping pot \varnothing 120 mm for clamping the workpieces

Drive key slot

For position orientation and anti-rotation protection at the adapters

Variable clamping height

25 mm adjustment range at 3 mm lead per turn

Clamping scews

- For fixing the clamping height
- 15 Nm torque



- 10 Nm torque
- Clamping screw SW5

Multi-functional base

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









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

Flexible clamp and accessories

Flexible clamp

- Steel base body with integral solid steel taper.
- Mechanical clamping mechanism.
- Tightening the lateral clamping screw axially draws the component in with the respective clamping stud via 2 clamping wedges, and clamps it.
- Can be secured using clamping claws, T-nuts or zero point clamping system using clamping stud No. 360066.
- 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. 360025 for size 120, torque wrench No. 656050 size 60, height element No. 360068.

Flexible clamp, fixed

Туре			1	2
≅ 36 0060	Flexible clamp, fixed		(709.83)	(745.47)
Ø D		mm	8	0
L		mm	14	14
W		mm	9	9
Н		mm	100	125
Torque		N⋅m	1	0

Flexible clamp, variable

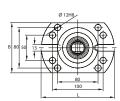
Height adjustment with 3 mm lead per turn.

Maximum travel 25 mm.

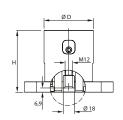
Application: For compensating deformed components.

Туре			1	2
≅ 36 0064	Flexible clamp, variable		(1076.13)	(1119.69)
Ø D		mm	8	0
L		mm	14	14
W		mm	9	9
Torque		N⋅m	1	0
Clamping height		mm	125 - 150	150 - 175









ACCEPTANT Height element

Suitable for: Flexible clamp No. 360060 and 360064. **Application:** For extending the flexible clamp.

Up to 5 height elements adaptable one over another.

Supplied with: Anti-rotation protection and clamping stud

No. 360131 18M12/120.

Optional accessories: Clamping stud No. 360025 for size 120. Torque wrench No. 656050 size 60.

Туре		1
≅ 36 0068	Height element	(608.85)
Ø D	mm	80
Н	mm	50
Torque	mm	10









The flexible clamp

MECHANICAL ZERO POINT CLAMPING

∕o Garant*

Clamping stud for flexible clamp

Suitable for:

Flexible clamp No. 360060 and 360064.

Application:

For attaching the flexible clamp to the ZeroClamp

zero point clamping system.

Туре			18M12	18M12/138
≅ 36 0066	ZeroClamp clamping stud		(47.72)	(57.62)
Ø D		mm	18	SK6
M,			M	12
M,			M	12
Suitable for clamping pot Ø mm			120	138



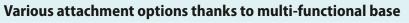
Centring pin for centring on grid pallets

Suitable for: **Application:** Flexible clamp No. 360060 und 360064. For centring the flexible clamp on grid pallets.

Fixed using screws via the base plate of the flexible clamp.

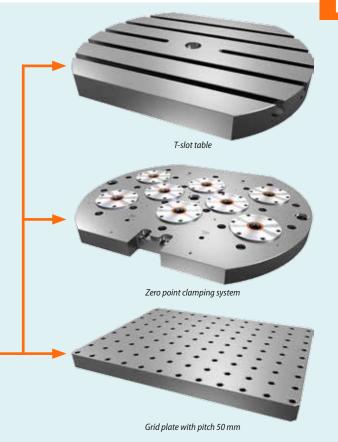
Туре		18k6/12k6
≋ 36 0067	ZeroClamp centring pin	(32.37)
D,	mm	18k6
D,	mm	12k6
Overall length L	mm	19
L,	mm	5





Flexible clamps are synonymous with providing a machining space free from interference contours and for high flexibility thanks to the modular design of their clamping elements and the variable clamping heights. Ideal for complex workpieces.





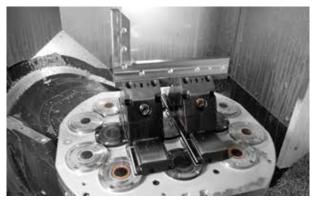
Special solutions

FOR EVERY APPLICATION THE RIGHT BASE PLATE

Dummy clamping pots



- Prepared clamping points for later retrofitting.
- Economical add-on.
- For supporting extension bases, vices etc.
- Later fitting of clamping pots possible.

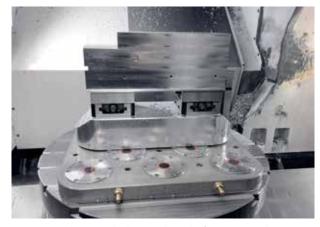


- Ideal in combination with the GARANT-Xpent.
- Best possible stability for direct clamping.

Special pitches



- Individual arrangement and matched to every situation
- Realisation of complex clamping situations.



 Special base with diagonal pitch, for increased flexibility and support moment.

Withdrawal unit



- Self-locking withdrawal unit.
- Additional safety device.
- Pulling of the counterpart, up to 3 mm.



Ideal for turning.

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

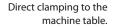
- Large range of jaws.
- Clamping rails can be joined together.
- Clamping range from 0 to ∞
- Suitable for single and multiple clamping.

Slim design (max. 60 mm)

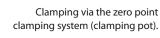
FLEXIBLE MACHINE CLAMPING

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

- Clamping claws
- Direct clamping
- Zero point clamping











A Garant®



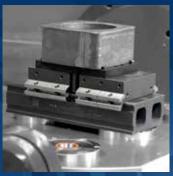
Large components.



Asymmetrical workpieces.



Clamping finished parts, e.g. using front pull-down jaws.



Clamping blank parts. A wide range of grip jaws.



Powerful

Clamping forces up to 40 kN



Cost-effective

Accepts several components in a single clamping.



Mounting on a clamping tower (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.

Multi-point clamping rail starter set

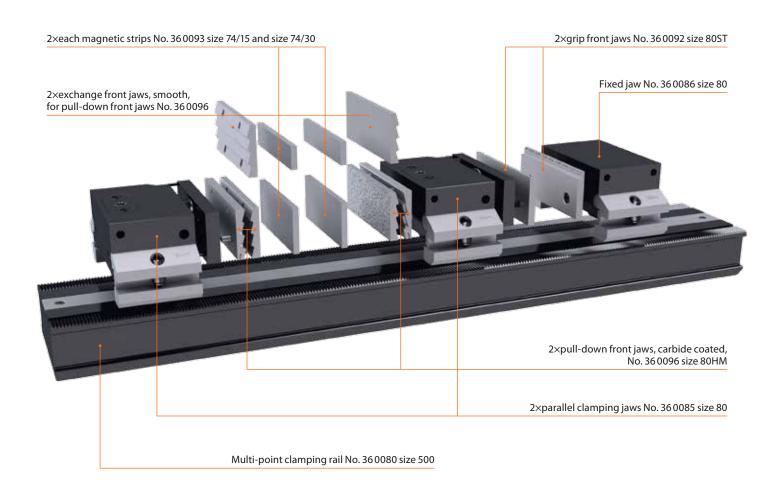
Application:

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.

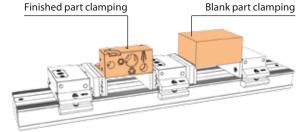
Clamping rails for mounting directly on the machine table **or** via zero point clamping systems.

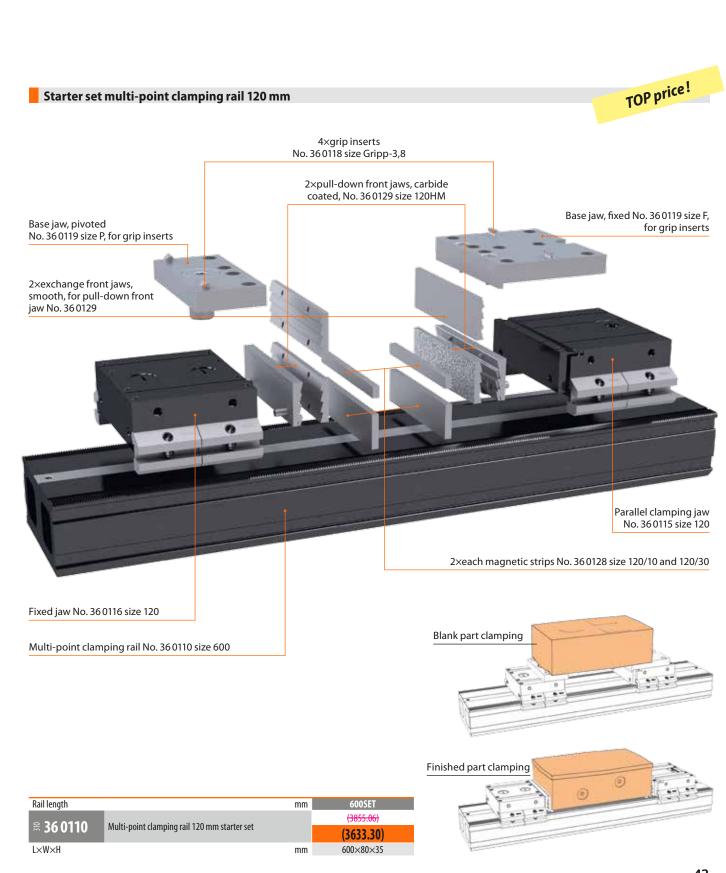
Starter set multi-point clamping rail 80 mm

TOP price!









Multi-point clamping rail 80 mm – accessories

Multi-point clamping rail 80 mm – accessories

- 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 clamping claws.
- 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 towers.

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, clamp No. 360127.



_260		_400		_500		_600
Rail length		mm	260	400	500	600
≘ 36 0080	Multi-point clamping rail		575.19	912.78	1083.06	1249.38
L		mm	260	400	500	600
W		mm			30	
Н		mm			35	

Accessories	5					
Suitable for: Application:	Clamping rail No. 360080. Variable pitches can be achieve	ed using crossed clamping I	rails.			
Note:	For use with clamping rails fro Attachment bar on multi-poin					
≈ 36 0082	Cross connector		(385.11)	360082	2	· //
_20	AF 20 AF	- Th-	_26DUO			
	48			*	80	
Jaw width		mm	26	26DU0	48	80
≘ 36 0084	Pull-down jaw		293.04	346.50	312.84	326.70
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	
T-bolt AF		mm			6	

mm

Shank screw AF1

















mm	48	80
	445.50	479.16
kN	5; 1); 15; 20
N⋅m	5;1); 15; 20
mm	3	3,5
mm		5
mm		4
	kN N·m mm mm	445.50 kN 5; 10 N·m 5; 10 mm 3 mm





Jaw width	mm	26	48	80
≈ 36 0086 Fixed jaw		260.37	260.37	260.37

Jaw width	mm	80
≅ 36 0088	Base jaw	248.49





Suitable for: No. 360088 size 80

Application: For clamping individual workpiece contours.

• •		·		
Material			ALU	STAHL
€ 36 0089	Top iaw		39.60	52.67





Parallel clamping jaw No. 360085 and fixed jaw No.360086. Suitable for:

Application: For clamping individual workpiece contours.





Jaw width / material	mm	48ALU	80ALU	48STAHL	80STAHL
		47.22	54.65	47.22	54.65
Length	mm	58	90	58	90
Height	mm		4	9	
Width	mm		2	9	

No. 360084 / 0085 / 0086. Suitable for:

Application: Prevents removal of the component and ensures contact seating

	•	-
Jaw width	≅ 36 0096	Version
mm	Pull-down front jaw	
48G	(78.61)	Smooth
80G	(86.72)	Smooth
48HM	(91.97)	Carbide coated
80HM	(98.01)	Carbide coated





Multi-point clamping rail 80 mm – accessories

Suitable for:

Size 48P – No. 360085 size 48 Size 48NF – No. 360084 size 48, 360086 size 48

Size 26; 80; 80ST – No. 360084 / 0085 / 0086

	Jaw width	≘ 36 0091	≅ 36 0092
	mm	Carbide coated front jaw	Gripper front jaw
	26	35.44	35.44
ĺ	48P	40.89	40.89
	48NF	40.89	40.89
ĺ	80	47.22	47.22
ĺ	80ST	_	78.80

jaw height Magnetic strip 74/10 21.38 74/15 21.38 74/20 21.38 74/25 21.38 74/30 21.38		
mm Magnetic strip 74/10 21.38 74/15 21.38 74/20 21.38 74/25 21.38 74/30 21.38	Jaw width /	≋ 36 0093
74/10 21.38 74/15 21.38 74/20 21.38 74/25 21.38 74/30 21.38	jaw neight	
74/15 21.38 74/20 21.38 74/25 21.38 74/30 21.38	mm	Magnetic strip
74/20 21.38 74/25 21.38 74/30 21.38	74/10	21.38
74/25 21.38 74/30 21.38	74/15	21.38
74/30 21.38	74/20	21.38
	74/25	21.38
	74/30	21.38
94/10 21.38	94/10	21.38
94/15 21.38	94/15	21.38

Version	≘ 36 0094 Component backstop	Version
F	18.22	fixed
V	33.17	adjustable
M	58.21	magnetic









Multi-point clamping rail 120 mm – accessories

Multi-point clamping rail 120 mm – accessories

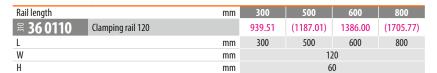
- All functional faces precision ground, pairing accuracy 0.03 mm.
- Base rail and jaws case hardened.
- Compact modular design, high clamping force up to 40 kN, maximum tightening torque 50 Nm.
- Attachment hole pattern for **GARANT ZeroClamp zero point clamping system** (200 mm pitch) as standard, can be mounted on clamping plates or matrix tables, or using clamping claws.
- 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 towers.

Optional accessories: Clamping jaw variants, magnetic strip, workpiece backstops see No. 360112 to 360129. Torque wrench No. 656050 size 60, clamping stud No. 360025 size 18M16, clamp No. 360127.



Accessories

Suitable for: Clamping rail No. 360110.

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

Note: Torque and clamping force are standard values and are only indicative values (material-dependent).

Jaw width		mm	120	
≅ 36 0114	Pull-down jaw		492.03	
Clamping force		kN	10; 20; 30	
Torque		N⋅m	17; 30; 50	
max. stroke		mm	4	
T-bolt AF		mm	8	
Shank screw AF1		mm	4	

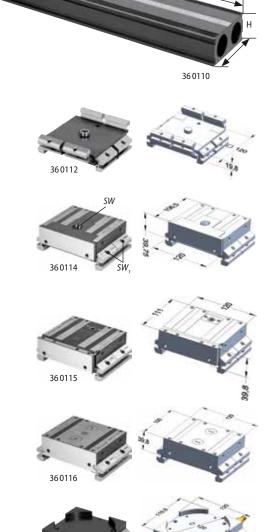
Jaw width		mm	120
≅ 36 0115	Parallel clamping jaw		736.56
Clamping force		kN	10; 20; 30; 40
Torque		N⋅m	10; 20; 30; 40
max. stroke		mm	4
T-bolt AF		mm	8
Shank screw AF1		mm	4

Suitable for: Base jaw No. 360119 size P, front jaws / top jaws No. 360122 – 0129.

Jaw width	mm	120
≘ 36 0116 Fixed jaw		396.00

Suitable for: Clamping pot No. 360040 size 10012 and 10148. **Application:** Zero point clamping system with variable pitches.

Jaw width	mm	120
≈ 36 0117	Clamping pot socket	460.35



Multi-point clamping rail 120 mm – accessories

Application: Size BLIND – blind plug set to close off the bores.

Suitable for: Base jaws No. 360119.

Туре		GLATT-HM	GRIPP-1,8	GRIPP-3,8	BLIND
≅ 36 0118	Grip insert	34.75	27.62	27.62	(37.62)
Height	mm	5,5	1,8	3,8	15
Version		Smooth	Grip	Grip	Blind
Number of pieces		1	1	1	4

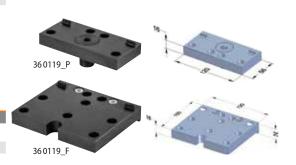


Suitable for: No. 360119 size P - No. 360116 size 120. No. 360119 size F - No. 360115 size 120.

Application: Conventional clamping or clamping with grip inserts.

Supplied with: 2 grip inserts No. 360118 GRIPP-3,8.

Туре		P	F
≅ 36 0119	Base jaw	317.79	380.16
Function		pivoting	fixed



Suitable for: Clamping rail No. 360110.

Jaw width	mm	120
≅ 36 0161	Base jaw	384.12



Suitable for: No. 360161 size 120.

Application: For clamping individual workpiece contours.

Material		ALU	STAHL
≋ 36 0162	Top jaw	90.88	133.25



Suitable for: Pull-down jaw No. 360114, parallel clamping jaw No. 360115

and fixed jaw No. 360116.

Jaw width		mm	120
≈ 36 0124	Carbide-coated front jaw		63.95









Suitable for:

Size 120 – Pull-down jaw No. 360114, parallel clamping jaws No. 360115

and fixed jaws No. 360116.

Size 120ST - No. 360115 / 0116.

Jaw width	mm	120	120ST
≋ 36 0125	Grip front jaw	52.07	98.01

Suitable for: Parallel clamping jaws No. 360115 and fixed jaw No. 360116.

For clamping individual workpiece contours. Application:

Jaw width	mm	120	
≘ 36 0122	Front jaw Alu	60.19	

Suitable for: No. 360114 / 0115 / 0116.

Application: Prevents removal of the component and ensures a flat face contact seating.

Jaw width	m	ım	120G	120HM
≅ 36 0129	Pull-down front jaw		(97.02)	(106.92)
Version			Smooth	Carbide-coated



Suitable for: Parallel clamping jaw No. 360115 and fixed jaw No. 360116.

Jaw width	mm	90
≘ 36 0123	Top jaw	139.59

Note:	General applications.	
≘ 36 0126	Component backstop magnetic	128.21



 $36\,0127-$ Clamping rail No. 360110.

Application:

 $36\,0127$ – For conventional fixing to the machine table.

≈ 36 0127 Clamp set 6 pieces	145.53
------------------------------	--------

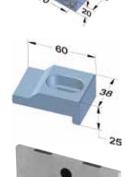
Jaw width / jaw heigh	t	mm	120/10	120/20	120/30	120/38
≘ 36 0128	Magnetic strip 6 mm thick		30.00	30.00	30.00	30.00













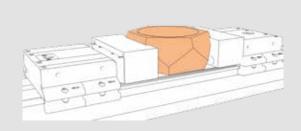
36 0127

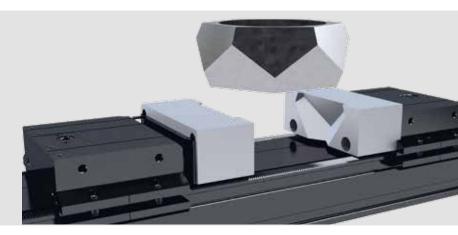




Clamping that matches the contour

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

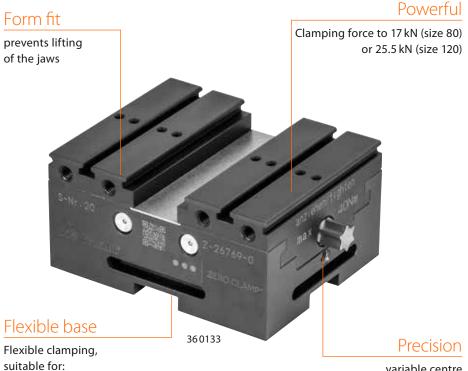




Clamping in a centring vice – precise and flexible

CENTRING VICE JAW WIDTH 80 MM AND 120 MM.

V1: Neutral centring vice, T-slot



Machine tables, pallets, grid plates

variable centre adjustment ± 0.02 mm

Application examples



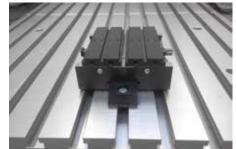
3-way extension pot No. 36 0156



Pallet system



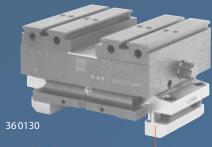
Special extension pots



Directly on the machine table

V2.1: centring vice for...

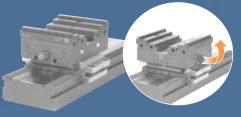
... multi-point clamping rail



With clamp

Suitable for:

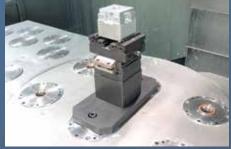
- Extension base without clamping pot
- Multi-point clamping rails



Quick change, can easily be rotated by 90° requiring only a few moves

... Extension base without clamping pot





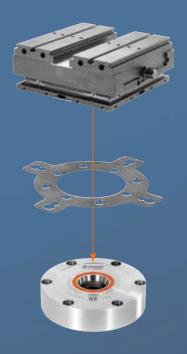
Centring vice on a serrated extension base

Adaptation as required V1, V2.1 and V2.2

...or directly on clamping pots by quick and easy modification



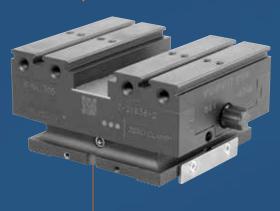
Remove clamp from the guide rail by pulling it out to the side





Clamping directly on an indexed clamping pot

V2.2: centring vice, clamps removed



360130

With centre hore

Suitable for:

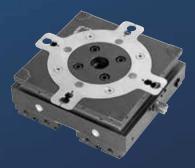
- Extension base with clamping pot
- Clamping pot Ø 90 or 138 mm for size 80
- Clamping pot Ø 120 or 138 mm for size 120

Use of adapter plate

With the suitable adapter plate No. 360132 the centring vice can be clamped directly on the clamping pots and extension bases.



Adapter plate size T1 mounted on centring vice No. 36 0130 size 80.



Adapter plate size T2 mounted on centring vice No. 36 0130 size 120.



36 0040



Centring vice

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.

36 0130 - Clamping rail (80 mm or 120mm), extension base or clamping pots (Ø 90 for size 80 and Ø120 or 138 for size 120:

pre-prepared connection hole).

36 0133 - 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.

Socket insert No. 642700 E12. Supplied with:

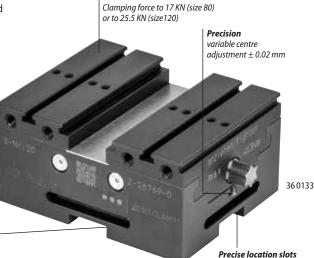
36 0133 - 2 clamping claws.

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

36 0130 - Extension base No. 360152 or 360154, centring / adapter plate No. 360132 is required to mount the centring vice on the clamping pots (spare parts list), special clamping stud 360131

(for 360130).





Jaw width Clamping force Torque Stroke Weight Length Width Height 36 0130 36 0133 up to maximum Centring vice Centring vice T-slot kΝ kg mm N·m mm mm mm mm mm 703.89 597.96 17 40 22 2.5 80 114 80 51.4 697.95 60 25 5.1 120 130 120 844,47 25.5 51

Neutral interface ■ Flexible clamping on machine table ■ Extension bases or pallets

■ Grid plates

Clamping stud for centring vice

With internal thread including a suitable threaded pin.

Туре			14M12/90	18M12/120	18M12/138
≅ 36 0131	Clamping stud for centring vice		41.48	47.22	73.85
For type			80	120	120
Centre Ø		mm	14	18	18
For clamping pot Ø		mm	90	120	138
Μ,				M12	





Quick placement on the table

or grid plate



Accessories for centring vice

Suitable for:

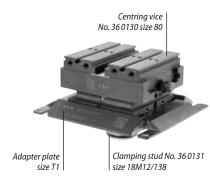
No. 360130.

Application:

Size T1 – For mounting the centring vice size 80 on clamping pot \varnothing 138 mm.

Size T2 – For mounting the centring vice size 120 on clamping pot Ø 120 mm

or 138 mm.

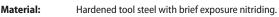








Accessories for centring vice



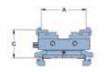
Supplied with: Fastening screw.

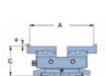


Top jaws for centring vices









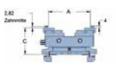












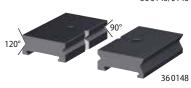


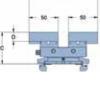


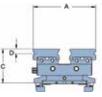


















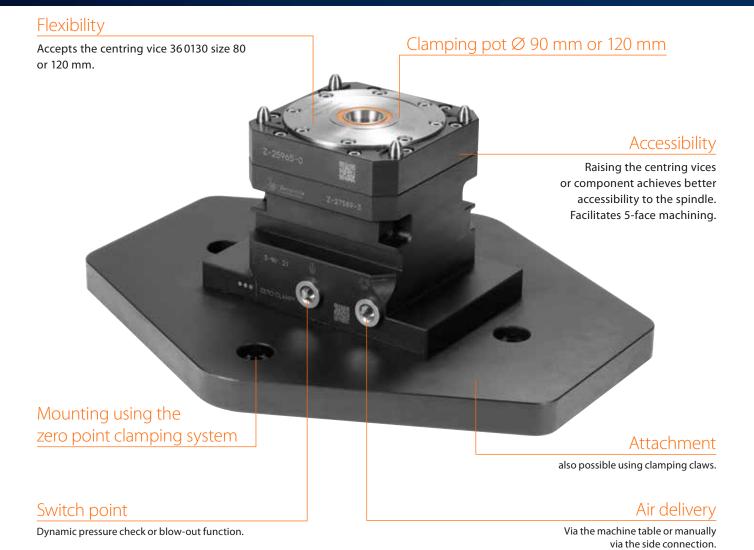
for type		80	120
≅ 36 0135		151.97	183.15
≈ 36 0136	Carbide top jaws, pair	173.25	207.90
≈ 36 0137		183.15	219.78
≅ 36 0138		202.95	245.52
Jaw width b	mm	80	120
Clamping range (36 0135)	mm	7-88	7-107
Clamping range (36 0136)	mm	88-108	106-132
Clamping range (36 0137)	mm	108-128	131-157
Clamping range (36 0138)	mm	128-148	156-182
C (36 0135)	mm	54.95	57
C (36 0136)	mm	57.95	60
C (36 0137)	mm	58.95	61
C (36 0138)	mm	58.95	62

for type		80	120
≈ 36 0148 Pair of Vee jaws		213.84	230.67
Clamping range	mm	3.6-25	
C	mm	56.95	57
D	mm	15	
Clamping Ø 90°	mm	6 - 8	8 - 22
Clamping Ø 120°	mm	6-8	8 - 26

for type			80	120
≈ 36 0140	Pair of grip top jaws		132.17	158.40
≅ 36 0141			151.97	183.15
≅ 36 0142			162.36	195.03
≅ 36 0143			183.15	219.78
≅ 36 0145	Pair of soft top jaws		91.08	109.40
≅ 36 0146			111.38	134.15
Jaw width b mm		mm	80	120
Clamping range (36 0140) mr		mm	6-87	6-107
Clamping range (36 0141)		mm	87-107	107-132
Clamping range (36 0142)		mm	107-127	132-157
Clamping range (36 0143) mr		mm	127-147	157-182
Clamping range (36 0145) mm		mm	100-123	125-153
Clamping range (36 0146) mm		mm	130-153	155-183
C (36 0145, 36 0146) mm		mm	49.95	50
C (36 0140) n		mm	54.95	57
C (36 0141) m		mm	57.95	60
C (36 0142) mm		mm	58.95	61
C (36 0143) mm		mm	59.95	62
D (36 0145, 36 0146) mm		mm	20	25

Intelligent

PERFECT FOR USE IN AN AUTOMATED PRODUCTION CELL.



ADELITATION Extension base for centring vice with clamping pot

With holes for clamping stud No. 360025 18M16. Alternative attachment using clamping claws 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. Includes clamping pot with Ø 90 mm or 120 mm for mounting the centring vice No. 360130.

Suitable for: Centring vice No. 360130.

Material: Stee

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: Size 80/4 – size120/4 – attachment using diagonal pitch 200.

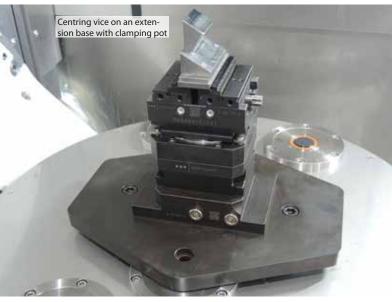
			иеля	UGAA
for type	80	120	80/4	120/4
≅ 36 0154 Extension base with clamping pot	1507.77	1709.73	(1678.05)	(1891.89)
Length mm		32	20	
Width mm	120	120	240	240
Height mm		1:	25	
Pitch clamping stud mm		20	00	
Clamping pot Ø mm	90	138	90	138
Number of holes for clamping stud	2	2	4	4

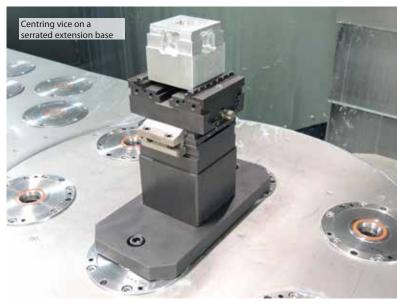


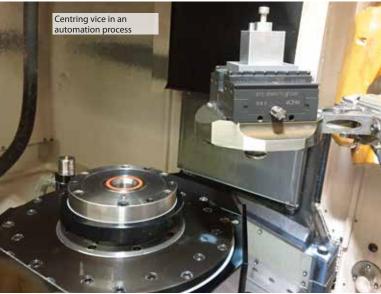
Application examples



GARANT ZEROCLAMP CENTRING VICE









√o Garant

3-way extension base for centring vice

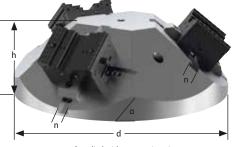
Clamping on the centring vice on the 3-way extension base using clamping claws. Double slot on each clamping face, so that the centring vice can optionally be displaced by 90°. The extension base is mounted on the machine table either via the zero point clamping system GARANT ZeroClamp (attachment holes are prepared for clamping studs No. 360025_18M16) or by slot nut directly on to the machine table.

Suitable for: Centring vice No. 360133.

Material: High-tensile aluminium, hard anodised.

Supplied with: 6 slot nuts for alignment.

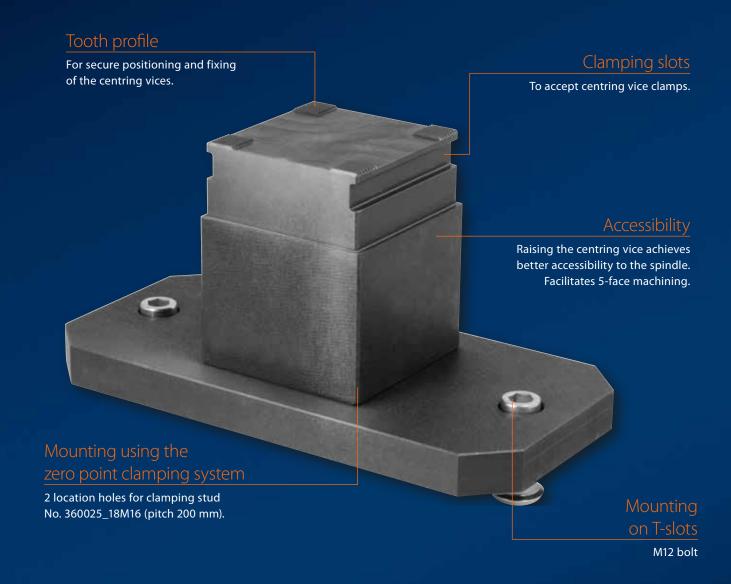
for type		80/120
≅ 36 0156	3-way extension base for centring vice	(1764.18)
Ød	mm	400
h	mm	140
n H7	mm	20
Angle a	degrees	45





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.



Extension base for centring vice

With holes for clamping stud No. 360025 18M16. Alternative attachment via clamping claws or 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: Stee

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.

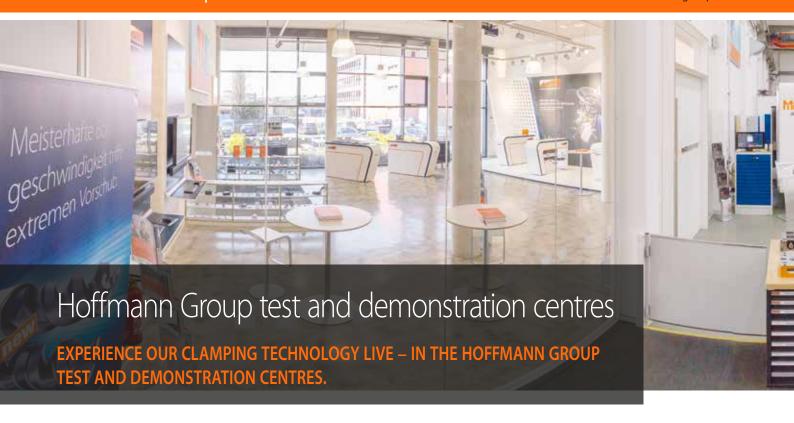
for type	80	120
≅ 36 0152 Extension base for centring vice	810.81	903.87
Length mm	2.	50
Width mm	1:	20
Height mm	1:	25
Pitch clamping stud mm	2	00
Number of holes for clamping stud	2	



The pneumatic centring vice – powerful and universal

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





Oltrogge & Co. KG, the Hoffmann Group partner based in Bielefeld, has an impressive competence centre of 500 sqm including a GARANT showroom, which was completely refurbished in 2016.

The clamping technology exhibition showcases innovative tool clamping systems that can be used to significantly increase process reliability and the metal removal rate.





The air-condition metrology laboratory and the ultra-modern seminar room.

FURTHER SHOWROOMS:









A diverse **seminar programme** is developed by application engineers and industry experts. Use the extensive advanced training on offer and find out about innovative tool technologies, trends and future issues, as well as specific solutions to current problems.



Mazak 5-axis machining centre VARIAXIS i-700. Its simultaneous 5-axis machining capabilities and our GARANT ZeroClamp system allow accurate processing of parts with complex profiled surfaces in a single setup.



GARANT ZeroClamp rotary table with 5-axis vice GARANT Xpent.













NOW WE OFFER THEM FOR YOUR PRODUCTION SYSTEMS.



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