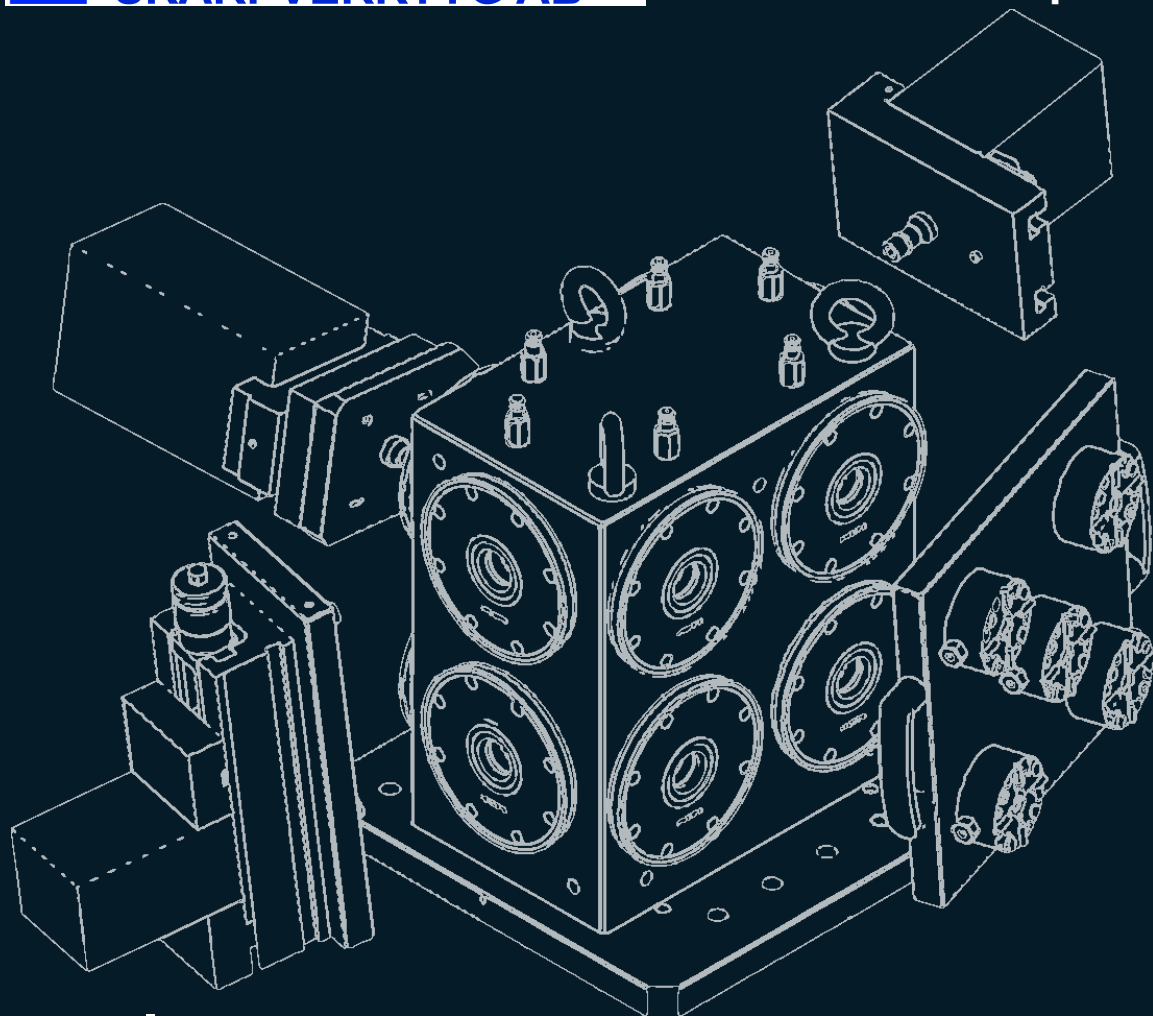




SKÄRPVERKTYG AB

the **precision** benchmark



Clamping System 9000

Modular zero point Clamping System

**CARL
HIRSCH
MANN®**

Carl Hirschmann GmbH

Precision as Passion

Highest precision is the distinctive trademark of our clamping systems. With great passion and deep special know how we develop and manufacture trendsetting products for your ambitious requirements – since decades and with increasing enthusiasm. As leading manufacturer in clamping technology for EDM, milling, turning and measuring machines as well as for machining centers we convince with competence in solutions and innovative conceptional results. We are the system provider with perfected engineering for clamping projects.

Carl Hirschmann – the precision benchmark

Our Clamping System 9000 allows exact positioning of fixtures and workpieces on all metal-cutting machines, machining centers, measuring machines and sinking EDM. Already our standard assortment covers a wide range. For your specific requirements we design and produce individual configured palletizing and clamping systems up to assembling in the metal-cutting machine. The tight cooperation with the customer guarantees perfect results even for complex challenges.

Take benefit of our full service out of one source. Our Clamping System 9000 offers you unbeatable advantages on global market.



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Operation

Most tools are supplied together with an operating guide. Correct operation cannot be ensured and danger to personnel and machine cannot be excluded unless these operating instructions or information given in this catalogue are observed.

Precision

The individual tool planes incorporate a hardened and precision ground Zero Point centering or compensating journal and separate Z- supports. This assures accurate positioning of each fixture with repetitive accuracy.

Service and Maintenance

Since the Clamping System is subject to chemical and physical influences, maintenance and service has to be performed with special care.

Technical Modification

All products shown in this catalogue are subject to ongoing improvements and developments; we reserve the right to make modifications without notice.

Quality according to ISO 9001 and EN 9100

All products of Carl Hirschmann GmbH are manufactured using the latest production methods. All products are submitted for ISO 9001 and EN 9100 (aero and space industry standard) quality assurance.

Warranty

We provide a 12 month warranty for all clamping system parts starting from the invoice date, and assuming correct use and maintenance as specified has been observed.

The warranty is restricted to replacement or repair, free of charge, of any defective parts. Claims arising from improper use or handling shall not be considered. Warranty claims must be submitted in writing.

Registered trademark

Viton® is a registered trademark of DuPont Performance Elastomers.

Clamping System 9000

Modular zero point clamping system

Applications

Fast, precise clamping and referencing of fixtures and components on all metal cutting machine tools, machining centers, EDM machines and measuring equipment.

Your benefit

Higher productive machining time by full-time parallel setup of fixtures and workpiece blanks on universal, even automatically exchangeable pallets and holders.

Our strengths

Decades of experience in innovative and practical clamping technology and customized solutions "Made by Carl Hirschmann / Germany".



[Milling]

Features

- Repetitive accuracy $\leq 0,005$ mm
- up to 30000 N clamping force/clamper
- 1000 kg axial load/clamper



[Sinking EDM]



[High Speed Cutting - HSC]

Clamper overview

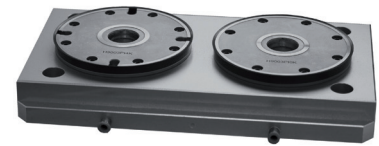
Clampers are available as built-on or built-in version with diameter 90 (3,54") and 129 mm (5,08"). Built-on clampers are fixed to machine table with clamping jaws. Built-in clampers are integrated in machine table or in clamping plates.



On desk clamper



Integratable clamper

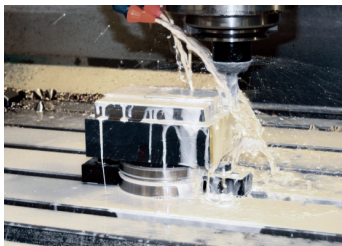


Two-fold clamping base

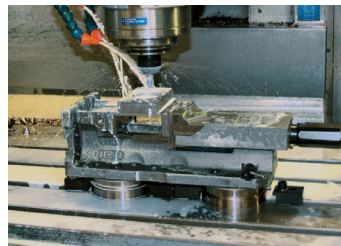
Single clamping / multiple clamping

Clampers can be used as single ones or in modular groups with two or more clampers for larger workpieces and higher clamping forces.

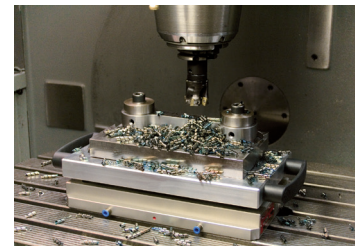
- For single clamping we recommend built-on clamper H9001PI4K or built-in clamper H9003PI4K with indexing slots for XY positioning of pallets or work pieces.
- For double or multiple clamping built-on clampers (H9001PI0K, H9001PI4K) can be used as well as built-in clampers (H9003PI0K, H9003PI4K) with or without indexing slots. XY positioning of the pallet or work piece by second clamper.



Single clamping application



Double clamping application

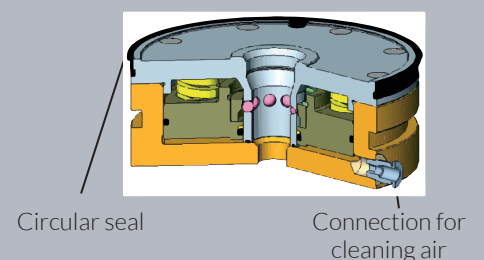


Double clamp fixture with clamping plate

Process safety and reliability

Automated systems demand high process safety. Clamping systems must be sealed against penetration of dirt and swarf and reliable work and monitoring of clamping function must be guaranteed.

- A peripheral seal and sealing air reliably prevent penetration of dirt and swarf.
- Machine control system ensures check of clamping function by pressure control of sealing air.



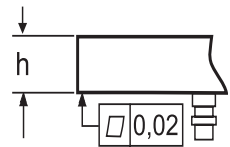
Application instructions

Clamper / clamper journal arrangement

The modular layout of one or more clampers permits full flexible use of the machine tool. Small to large workpieces, fixtures and pallets can be easily configured for maximum use of the machine table.

- Is only one clamper (H900xxx4K) used (single clamping), the X- and Y- positioning of the workpieces and pallets is accomplished by using one Centering Journal H9030.1K and two dowel pins.
- Are two (double clamping) or more clampers (multiclamping) (H900xxx0K or H900xxx4K) used, one Centering Journal H9030.1K has to be used at the position of the reference clamper and one Compensating Journal H9031.1K at the second clamper. For all additional clampers Clamping Journals H9032.1K have to be inserted.

Uses	
For: HSM-, horizontal and vertical milling-, turning-, boring-, EDM-, measuring etc.	For clamping of work pieces, fixtures and pallets with minimum square or diameter $\geq 135\text{ mm}$ (5,32") Height $h: \geq 25\text{ mm}$ (1.0") Flatness: $\leq 0.02\text{ mm}$ (0.0001") on $200 \times 200\text{ mm}$ (7.9") Max. axial load: $\leq 1000\text{ kg}$ (2200 lb)/per clamper



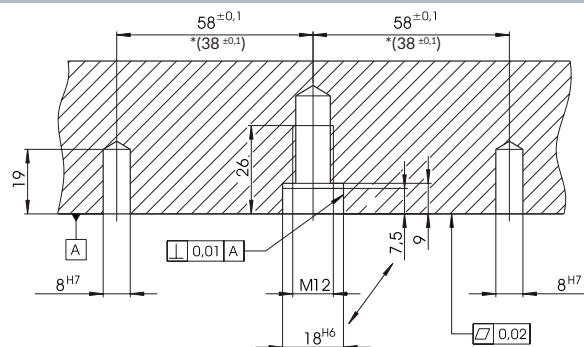
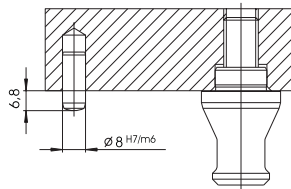
Clamper arrangement (examples)				
Zero Point center distance: (D) Minimum: $D = 135\text{ mm}$ (5.315") Standards: $D = 150\text{ mm}$ (5.905") $D = 200\text{ mm}$ (7.874") $D = 250\text{ mm}$ (9.842")				
Used clamper(s) (● reference point clamper)	H900xxx4K	H900xxx0K H900xxx4K	H900xxx0K H900xxx4K	H900xxx0K H900xxx4K

Journal (clamping stud) requirements (type and number of journals for workpieces, fixtures and pallets)				
Journal centerline distance Tolerance of D dimension $\pm 0.01\text{ mm}$ (● = reference point = centering journal H9030.1K position)				
Centering Journal H9030.1K (X, Y center position)	1	1	1	1
Compensating Journal H9031.1K or H9031.4K (Y - position)	-	1	1	1
Clamping Journal H9032.1K (non-positioning)	-	-	2	4
Dowel Pin $\varnothing 8\text{ m6} \times 25$ DIN EN 28734	2	-	-	-

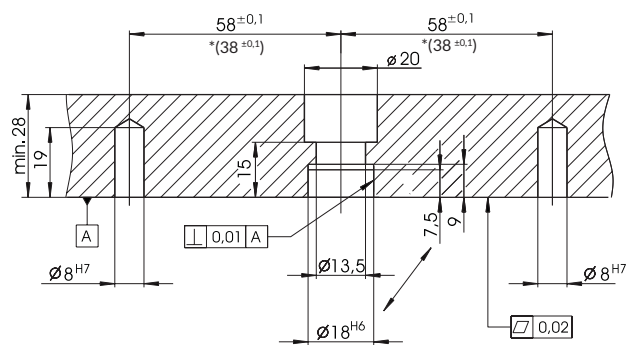
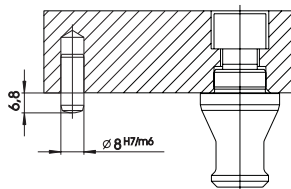
- To achieve the highest positioning accuracy, the centering journal H9030.1K must be assembled to the clamper reference mark position!

Manufacturing drawings for single clamper use (Centering Journal and dowel pin data)

Single clamper use with:
Centering Journal H9030 .1K
Connection from below with stud
screw M12
(Thread in workpiece, fixture or pallet)

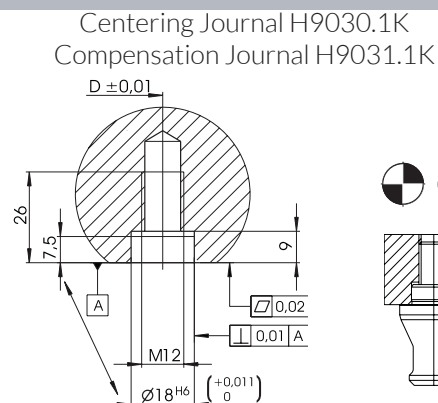


Single clamper use with:
Centering Journal H9030.1K
Connection from above with screw M12
(Thread in journal)
Screw strength class 10.9

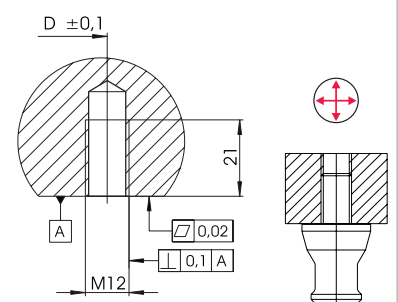


Manufacturing drawings for multiple clamber use (Centering, Compensation and Clamping Journal)

Multiple Clamper use with:
Centering Journal H9030.1K
Compensating Journal H9031.1K
Clamping Journal H9032.1K
Connection from below with
stud screw
(Thread in workpiece, fixture or pallet)

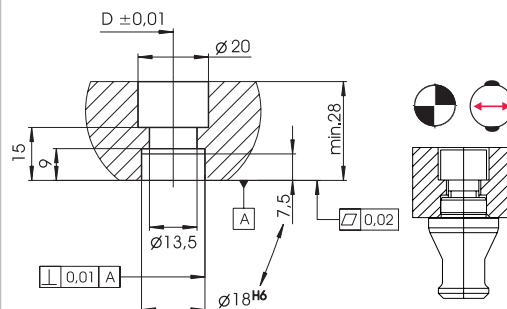


Clamping Journal H9032.1K

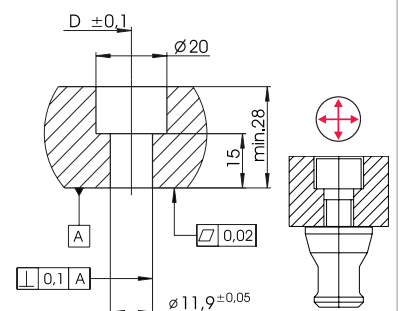


Multiple Clamper use with:
Centering Journal H9030.1K
Compensating Journal H9031.1K,
H9031.4k
Clamping Journal H9032.1K
Connection from above with
screw M12 (Thread in journal)
Screw strength class 10.9

Centering Journal H9030.1K
Compensation Journal H9031.1K
Compensation Journal H9031.4K



Clamping Journal H9032.1K



Pneumatic clamber

Series H9001.. / H9003.. - outer diameter 129 mm (5.08")

The clammers are designed as modular on desk clamber (H9001xxxK) or integratable clamber (H9003xxxK). On desk clammers can be mounted onto the machine table with toe clamps (H 9040). Integratable clammers can be integrated into the machine table of the machine tool, into base plates or in tomb stones.

The clamping force is provided by spring pressure. Pneumatic clammers (H9001Pxx series) open via pneumatic pressure (6 bar). Hydraulic clammers (H9001H xx series) have heavier springs and require a hydraulic pressure (20 – 50 bar) to open. The hydraulic series are only provided with Viton® seals.

Two types of clamber configurations are available, one without radial alignment slots (H900xxx0K) and one with 4 precision radial alignment slots (H900xxx4K). Clammers without slots are used when two or more clammers are used to clamp a pallet or a workpiece. Clammers with 4 slots can be used individually for both single workpieces or together for larger pallets. Clamber with 4 slots can be used to index a workpiece or pallet every 90°.

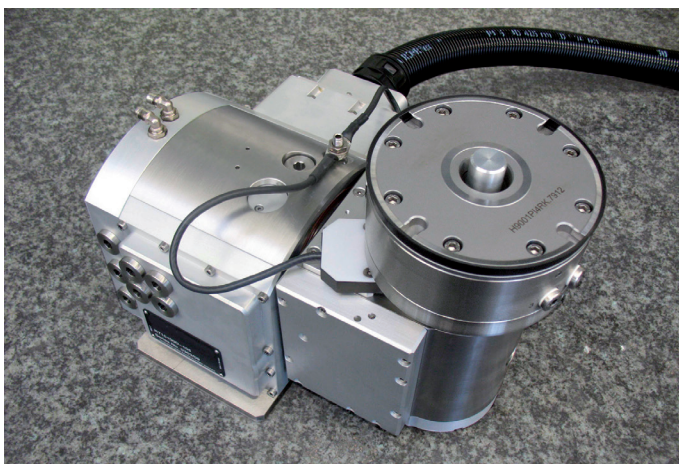
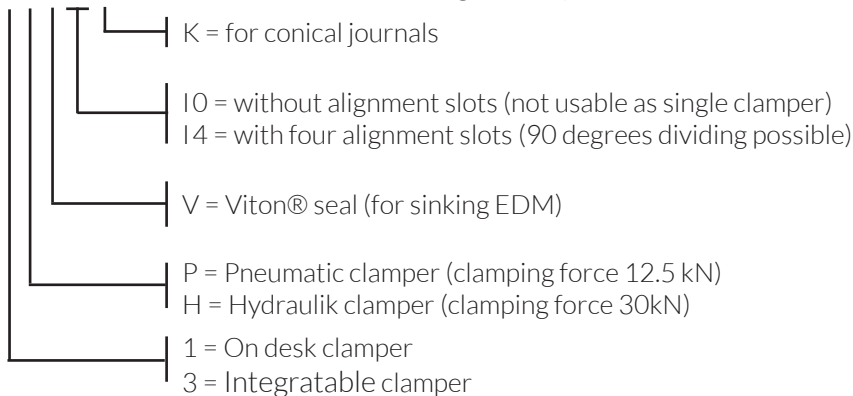
Characteristics

- Used for HSM- milling- turning- EDM – Measuring machines, etc
- Repetitive accuracy ≤ 0.005 mm (0.0002")
- 1000 kg (2,800 lbs) axial load and up to 30000N clamping force per clamber
- Clamps via springs, opens via pneumatic or hydraulic pressure
- Uses replaceable seals and air blow to protect against cooling agents
- Integrated X-, Y- and Z-referencing
- Anti-vibration



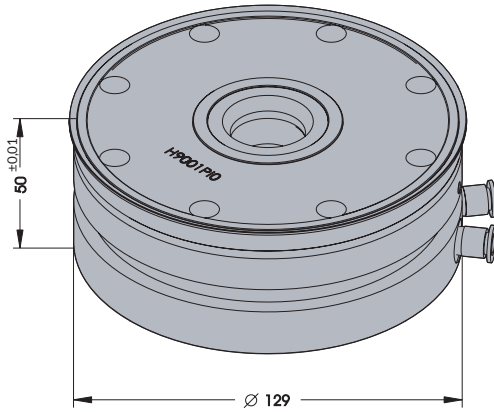
Ordering code for clamber

H9001PVI4K = Pneumatic modular single clamber with Viton® seals and four alignment slots



On desk clamber

Series H9001.. - outer diameter 129 mm (5.08')



H 9001PI0K Pneumatic Clamper

Without radial slots for multiple use only, with NBR seals

Clamping force (by springs)	12500 N (2,800 lbs)
Repetitive accuracy	≤ 0.005 mm (.0002")
Pneumatic pressure for opening	6 bar (87 psi)
Max. axial load / clamper	1000 kg (2,200 lbs)

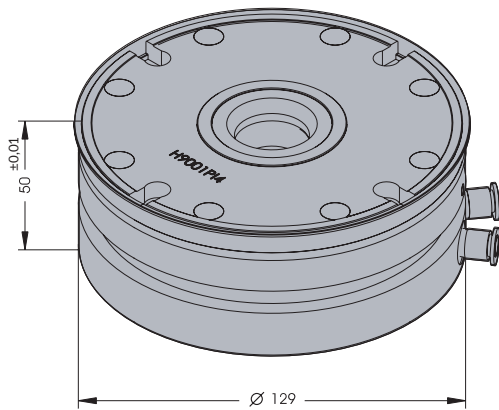
H 9001PVI0K Pneumatic Clamper

Same as H 9001PI0K but with Viton® seals for sink EDM-machines.

H 9001HI0K Hydraulic Clamper

Same as H 9001PVI0K but requires hydraulic pressure for opening.

Clamping force (by springs)	30000 N (6,750 lbs)
Hydraulic pressure for opening	min. 20 – max. 50 bar



H 9001PI4K Pneumatic Clamper

With 4 radial slots for 90° indexing.

Single or multiple use with NBR seals

Clamping force (by springs)	12500 N (2,800 lbs)
Repetitive accuracy	≤ 0.005 mm (.00019")
Pneumatic pressure for opening	6 bar (87 psi.)
Max. axial load / clamper	1000 kg (2,200 lbs)

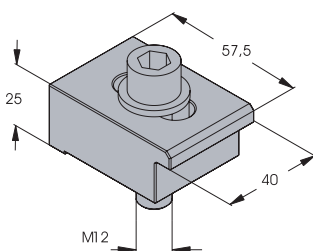
H 90001PVI4K Pneumatic Clamper

Same as H 9001PI4K but with Viton® seals for sink EDM machines

H 9001HI4K Hydraulic Clamper

Same as H 9001PVI4K but requires hydraulic pressure for opening.

Clamping force (by springs)	30000 N (6,750 lbs)
Hydraulic pressure for opening	min. 20 – max. 50 bar



H 9040 Toe Clamp Set (4 pcs)

Toe clamps including M12x45 screws for mounting the H 9001 series clammers to the machine table.

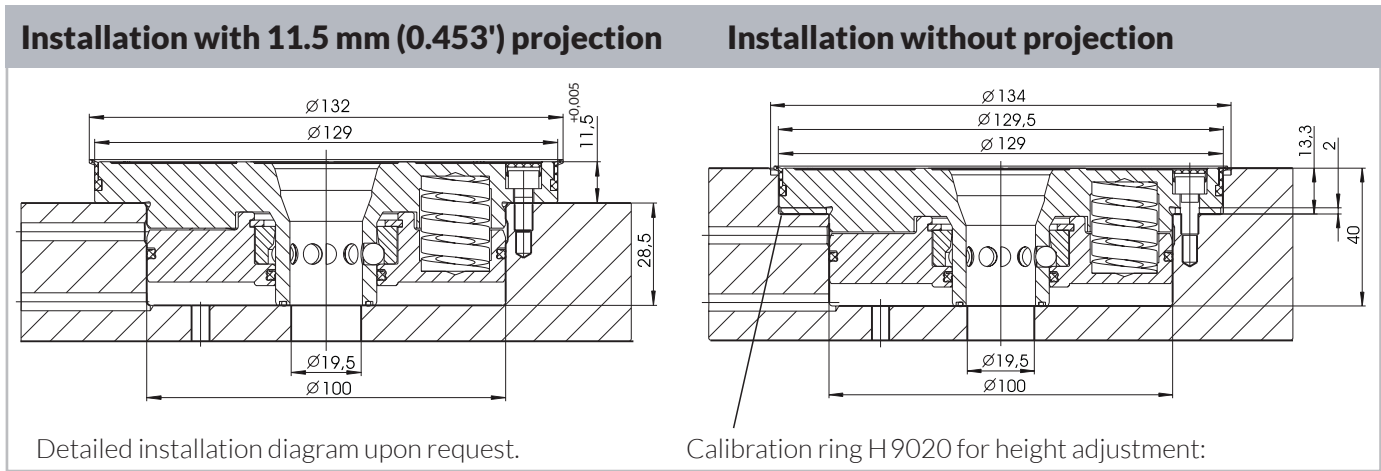
Integratable clamber

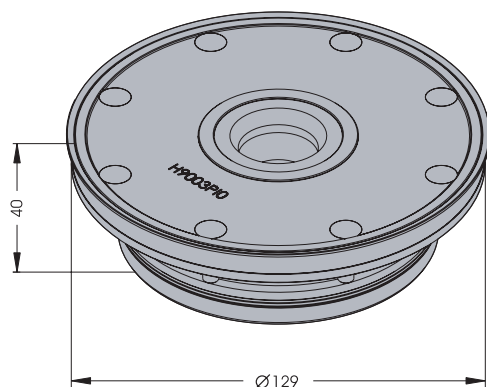
Series H9003.. - outer diameter 129 mm (5.08")

The H9003xxK series claspers come ready to be integrated into devices like pallet bases, tombstones, machine tool tables, etc. They can be mounted with the clamping surface projected above or even with the device surface. When provided with Viton® seals, the clasper series H9003PVIXK can be used for single or multiple clamping of workpieces in sink EDM applications.

The H9003PxK series are actuated in the same manner as the H9001xK claspers. The pallet bases, tombstones, machine tool tables etc. must be constructed with the necessary pneumatic or hydraulic lines and connections.

Common characteristics and ordering code see page 8.





H9003PI0K Pneumatic Integratable Clamper

Without radial slots for multiple use only
With NBR seals

Clamping force (by springs)	12500 N (2,800 lbs)
Repetitive accuracy	≤ 0.005 mm (.00019")
Pneumatic pressure for opening	6 bar (87 psi)
Max. axial load	1000 kg (2,200 lbs)

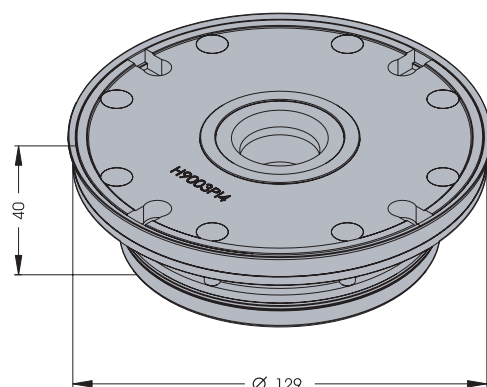
H9003PVI0K Pneumatic Integratable Clamper

Same as H9003PI0K but with Viton® seals for sink EDM machines

H9003HI0K Hydraulic Integratable Clamper

Same as H9003PVI0K but requires hydraulic pressure for opening

Clamping force (by springs)	30000 N (6,750 lbs)
Hydraulic pressure for opening	min. 20 – max. 50 bar



H9003PI4K Pneumatic Integratable Clamper

With 4 radial slots for 90° indexing
Single or multiple use with NBR seals

Clamping force (by springs)	12500 N (2,800 lbs)
Repetitive accuracy	≤ 0.005 mm (.00019")
Pneumatic pressure for opening	6 bar (87 psi.)
Max. axial load	1000 kg (2,200 lbs)

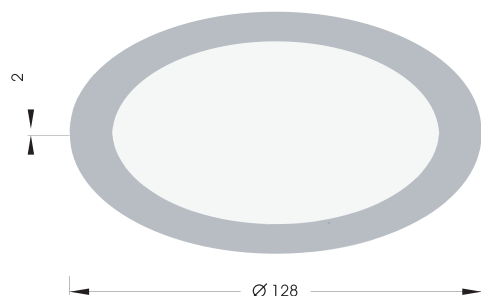
H9003PVI4K Pneumatic Integratable Clamper

Same as H9003PI4K but with Viton® seals for sink EDM-machines

H9003HI4K Hydraulic Integratable Clamper

Same as H9003PVI4K but requires hydraulic pressure for opening.

Clamping force (by springs)	30000 N (6,750 lbs)
Hydraulic pressure for opening	min. 20 – max. 50 bar



H9020 Calibration ring

Used to calibrate the height of H9003xxK integral clampers installed without projection

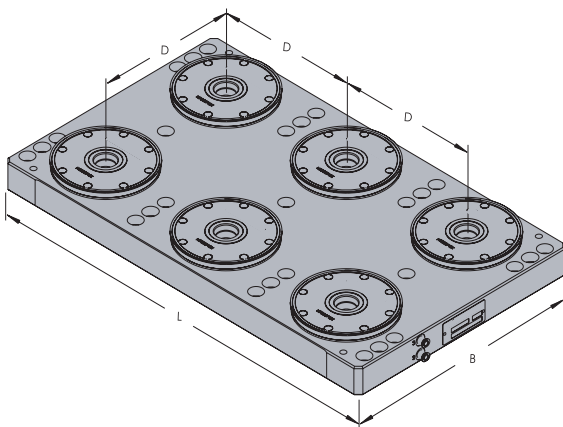
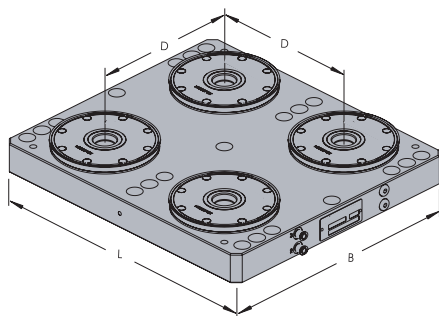
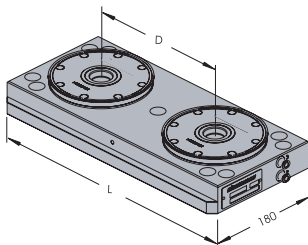
Clamping bases

Material G-ALU340

Carl Hirschmann offers standard clamping bases with two, four or six integrated clampers. The bases can be readily secured to a machine table by toe clamping or integral screws located above the table slots. Standard overall height of the bases is $50 \pm 0,025$ mm ($1.97' \pm 0.001$), the flatness of the outer Z-surfaces ($\varnothing 126$ mm/4.96") is $\leq 0,02$ mm (0.00079"). Standard clamber centerline distances are 200 and 250 mm. Other distances and configurations available upon request.

Characteristics

- Repetitive accuracy $\leq 0,005$ mm (≤ 0.0002 ")
- 1000 kg (2200 lbs) axial load per clamber
- Clamping base height $50 \pm 0,025$ mm ($1.97' \pm 0.001$)
- Flatness of the outer Z-surfaces ($\varnothing 126$ mm/4.96") in assembled state is $\leq 0,02$ mm (≤ 0.0008 ")



- Clamps via springs, open via pneumatic pressure
- Reference surface to align the clamber base
- Integrated fastening holes for T-slots with 63, 100 and 125 mm (2.48/3.94/4.88") distance

H93P.20.20K Two position clamber base

With 2 pneumatic clampers H9003PI0K

Clamber centerline distance D	200 mm (7.874')
Dimensions (L x B)	370 x 180 mm (14.57x7.09')
Clamping force	(2 x 12500 N) 25000N
Positioning accuracy	≤ 0.005 mm (.00019")
Max. axial load/clamber	(2 x 1000 kg) 2000 kg (4,400 lbs)

H93P.20.25K Two position clamber base

Same as H93P.20.20K but with clamber centerline

Distance D	250 mm (9.843')
Dimensions (L x B)	420 x 180 mm (16.53x7.09')

H93P.40.20K Four position clamber base

With 4 pneumatic clampers H9003PI0K

Clamber centerline distance D	200 mm (7.874')
Dimensions (L x B)	390 x 350 mm (15.35x13.78')
Clamping force	(4 x 12500 N) 50000 N
Positioning accuracy	≤ 0.005 mm (.00019")
Max. axial load/clamber	(4 x 1000 kg) 4000 kg (8,8000 lbs)

H93P.40.25K Four position clamber base

Same as H93P.40.20K but with clamber centerline

Distance D	250 mm (9.843')
Dimensions (L x B)	440 x 400 mm (17.33x15.75')

H93P.60.20K Six position clamber base

With 6 pneumatic clampers H9003PI0K

Clamber centerline distance D	200 mm (7.874')
Dimensions (L x B)	590 x 350 mm (23.23x13.78')
Clamping force	(6 x 12500 N) 75,000 N
Positioning accuracy	≤ 0.005 mm (.00019")
Max. axial load/clamber	(6 x 1000 kg) 6,000 kg (13,200 lbs)

H93P.60.25K Six position clamber base

Same as H93P.60.20K but with clamber centerline

Distance D	250 mm (9.843')
Dimensions (L x B)	690 x 400 mm (27.17x15.75')

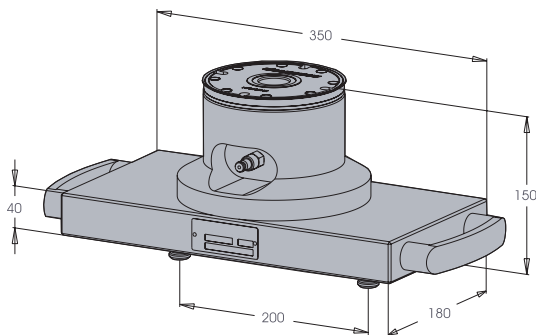
Other centerline distance available upon request.

The clamber bases can be equipped optionally with pneumatic clampers H9003PI4K (with 4 radial slots for 90° indexing).

Spacer

Distance units

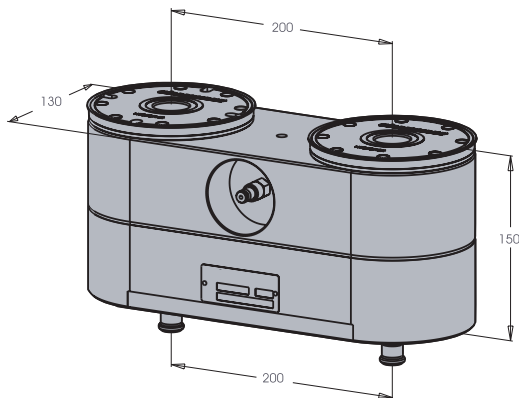
Spacers are distance units for raised clamping of workpieces. They are mainly used for horizontal or 5-axis machining.



H93P.14.20K-15 Spacer 1-fold

With pneumatic clamber H 9003PI4K and two journals (H9030.1K and H9031.1K).

Positioning accuracy	$\leq 0.005 \text{ mm } (.00019")$
Heightening	150 mm (5.91')
Clamping journal distance	200 mm (7.874')
Clamping force	12500N
Pneumatic pressure for opening	6 bar (87 psi)
Max. axial load	1000 kg (2,200 lbs)



H93P.1014.20K-15 Spacer 2-fold

With two pneumatic clammers (1xH9003PI4K, 1xH9003PI0K) and two journals (H9030.1K and H9031.1K).

Positioning accuracy	$\leq 0.005 \text{ mm } (.00019")$
Heightening	150 mm (5.91')
Distance clamping journal/clamper	200 mm (7.874')
Clamping force	(2 x 12500 N) 25000N
Pneumatic pressure for opening	6 bar (87 psi)
Max. axial load/clamper	(2 x 1000 kg) 2000 kg (4,400 lbs)

Compact on desk and integratable clamber

Series H9001S../H9003S.. - outer diameter 90 mm (3.543")

The clammers of the H900xSxxK series offers the same features as the standard series (see page 8) but the outer diameter is only 90 mm (3.543").

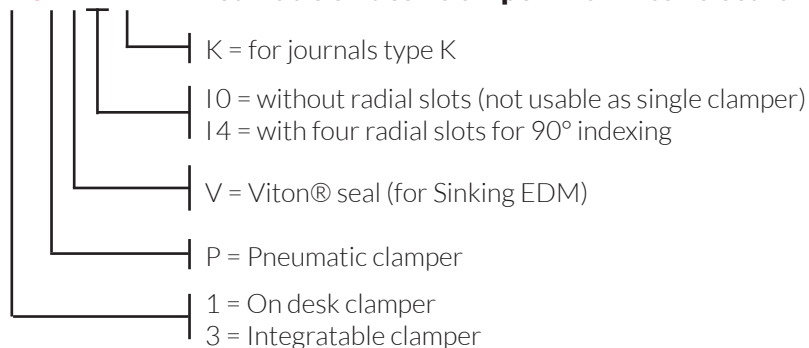
Characteristics

- Clamber diameter 90 mm (3.543")
- Repetitive accuracy $\leq 0,005$ mm (.00019")
- 1000 kg (2.2 lbs) axial load per clamber
- Clamps via springs, open via pneumatic pressure
- Replaceable seals to protect against cooling agents
- Integrated X-, Y-, Z- references
- Anti-vibration

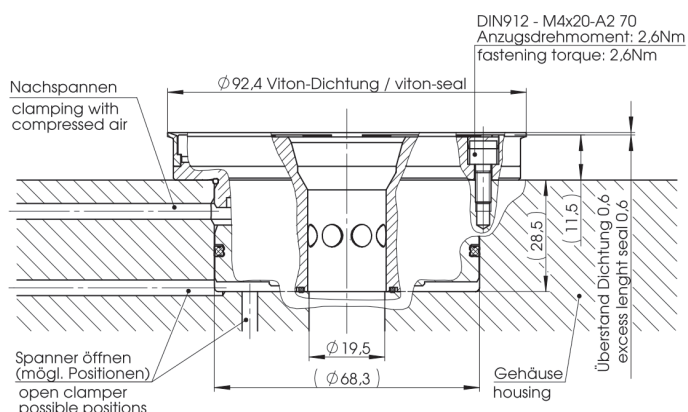


Ordering key

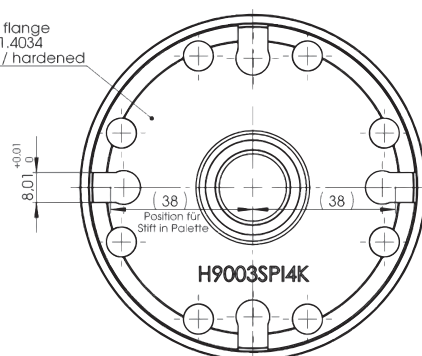
H9001SPVI4K = Pneumatic on desk clamber with Viton® seal and four radial slots

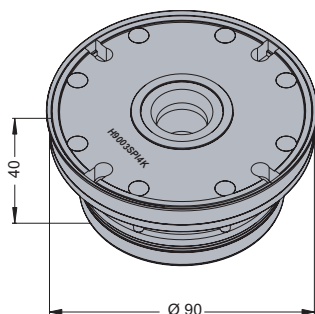
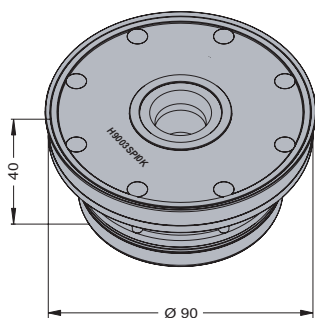
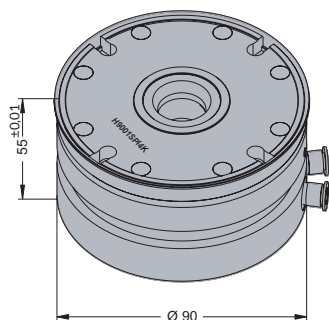
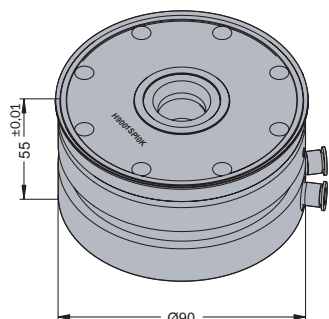


INSTALLATION H9003S..K



Flansch / flange
Material 1.4034
gehärtet / hardened





H9001SPI0K Pneumatic Clamper

Without radial slots for multiple use only, with NBR seals

Clamping force by springs	4000 N
Clamping force with pneumatic assistance	10000 N
Repetitive accuracy	≤ 0.005 mm (.00019")
Pneumatic pressure for opening	6 bar (87 psi)
Max. axial load / clamper	1000 kg (2,200 lbs)

H 9001SPI0K.5 Pneumatic Clamper

Same as H 9001SPI0K but with higher clamping force

Clamping force by springs	8000 N
Pneumatic pressure for opening	10 bar (145 psi)

H9001SPI4K Pneumatic Clamper

Same as H 9001SPI0K but with four radial slots for 90° indexing.

H9001SPI4K.5 Pneumatic Clamper

Same as H 9001SPI0K.5 but with four radial slots for 90° indexing.

H9003SPI0K Pneumatic Integratable Clamper

Without radial slots for multiple use only, with NBR seals

Clamping force by springs	4000 N
Clamping force with pneumatic assistance	10000 N
Repetitive accuracy	≤ 0.005 mm (.00019")
Pneumatic pressure for opening	6 bar (87 psi)
Max. axial load / clamper	1000 kg (2,200 lbs)

H9003SPI0K.5 Pneumatic Integratable Clamper

Without radial slots for multiple use only, with NBR seals

Clamping force by springs	8000 N
Repetitive accuracy	≤ 0.005 mm (.00019")
Pneumatic pressure for opening	10 bar (145 psi)
Max. axial load / clamper	1000 kg (2,200 lbs)

H9003SPI4K Pneumatic Integratable Clamper

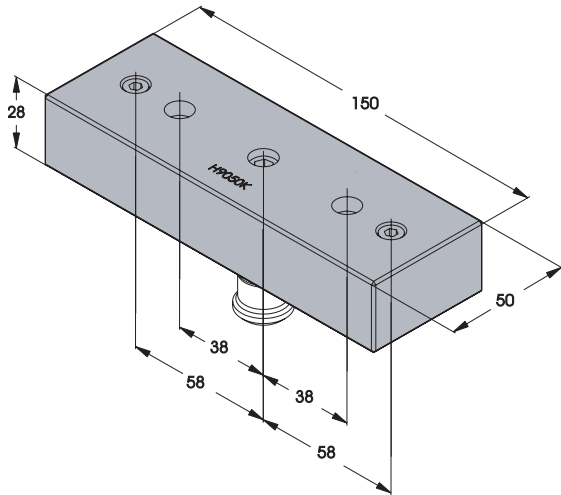
Same as H 9003SPI0K but with 4 radial slots for 90° indexing.

H9003SPI4K5 Pneumatic Integratable Clamper

Same as H9003SPI0K.5 but with 4 radial slots for 90° indexing.

Clamping System 9000

Clamper accessories



H9050K Alignment Gauge

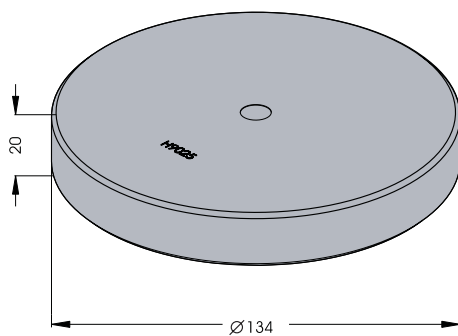
Used to align H9001xx4K and H9003xx4K clampers in X and Y direction.

Distance between center and dowel pin 58 mm (2.283')

H9050SK Alignment Gauge

Used to align H9001Sxx4K and H9003Sxx4K clampers in X and Y direction.

Distance between center and dowel pin 38 mm (1.496')

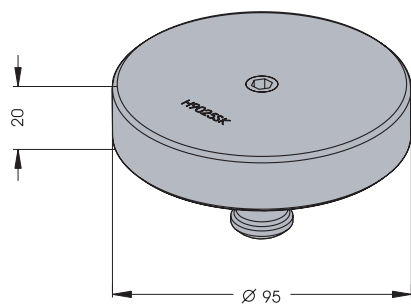


H9025K Cover

Cover with H9032.1K clamping journal. Protects the seal and the clamping area of the H9001xxx and H9003xxx clampers while not used.

Outer Diameter 134 mm (5.28')

Height 20 mm (0.79')

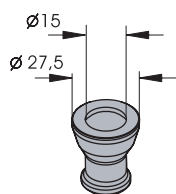


H9025SK Cover for compact clamper

Cover for clamper series H900xSxxK., with clamping journal. Protects the seal and the clamping area of the compact clampers while not used.

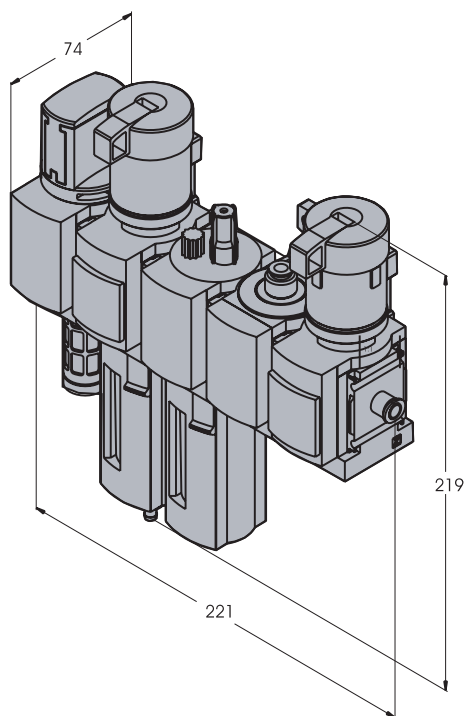
Outer Diameter 95 mm (3.74')

Height 20 mm (0.79')



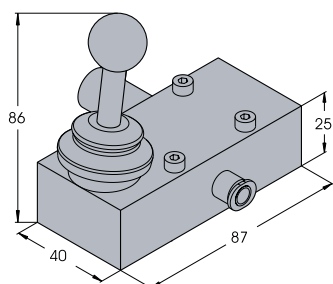
H9026K Sealing journal

with blind hole Ø15 (0.59') and thread M5 for removing from the clamper. Protects the clamping journal area while not in use.



H9060P Pneumatic service unit

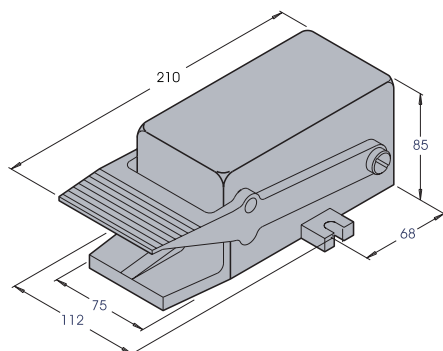
Filter, dryer, oiler, pressure regulator unit with separate adjustment for clamping and blocking air.



H9061P Pneumatic control unit

Manual control unit for opening and closing of pneumatic claspers H 9001Pxx and H 9003Pxx.

Max. input pressure 7 bar (100psi)



H9062P Foot switch

Manual foot control unit for opening and closing of pneumatic claspers H 9001P ...and H 9003P...

Max. input pressure 7 bar (100psi)

H9070H Hydraulic unit (without picture)

Operates the hydraulic clamp H 9001Hxx and H 9003Hxx.

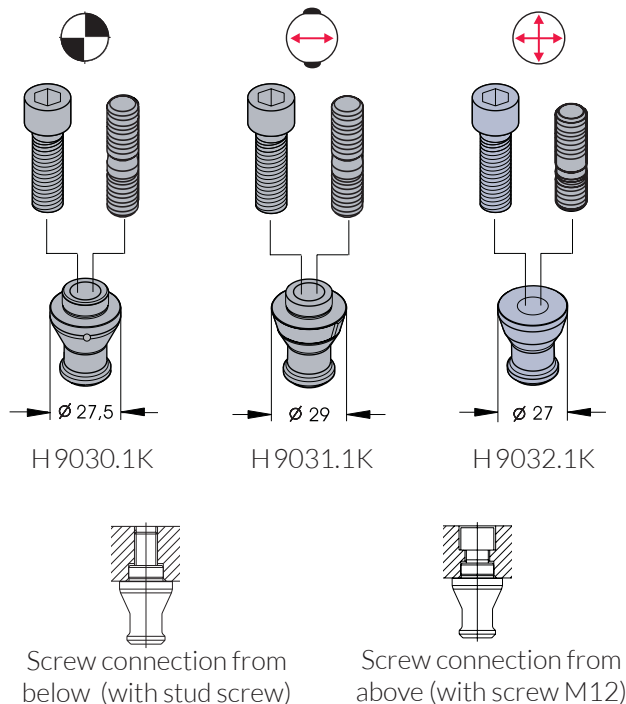
Hydraulic pressure 40 bar (580psi)

Operating voltage 230V/400W

Clamping System 9000

Centering, compensating and clamping journals

The screwing of the centering, compensating and clamping journals of the H 903x1K series can be done both, from above (with M12 screw) or from below (with M12 stud screw).



H 9030.1K Centering Journal

Clamping and centering journal (X-, Y-positioning) . One required per set-up. Includes one M12x30 DIN912 screw (strength class 10.9) and one M12x25 DIN939 stud screw (strength class 10.9).

H 9031.1K Compensating Journal (two-parts)

Clamping and locating journal used for radial alignment when two or more clampers are used for one fixture. One required per multiple clamber fixture. Includes one M12x30 DIN912 screw (strength class 10.9) and one M12x25 DIN939 stud screw (strength class 10.9).

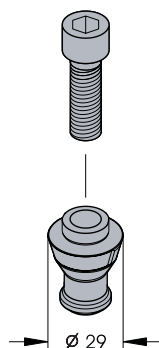
H 9032.1K Clamping Journal

Clamping journal without alignment. Used for clamping when three or more clampers are used for one fixture. Required for the third and additional clampers. Includes one M12x30 screw (strength class 10.9) and one M12x25 (DIN938) stud screw (strength class 10.9)

H 9031.4K Compensating Journal (one-piece)

Low cost clamping and locating journal (positioning in one direction). Screwing only from above.

Includes one M12x30 DIN912 screw (strength class 10.9)

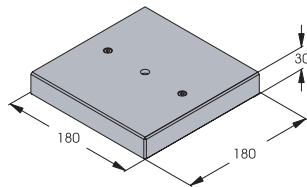


Note

The cylindrical centering journals H9030, H9030.1, the compensation journals H9031, H9031.1 and the clamping journals H9032, H9032.1 for clampers of the H9001xx- and H9003xx series with cylindrical clamping element are still available.

Pallets

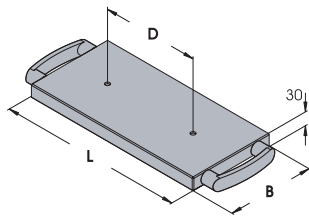
Material G-ALU25



H9.1818K Pallet

Aluminum pallet including one H 9030.1K journal and two pins. For pneumatic single clamber base.

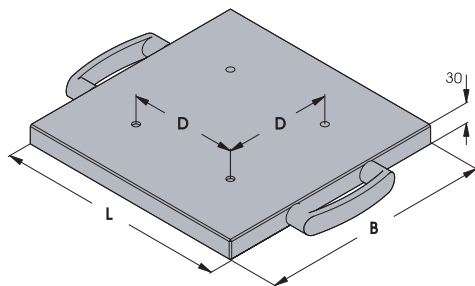
Dimensions (L x B)	180 x 180 mm (7.09x7.09')
Parallelism	0.1 mm (0.004')
Weight	about 3 kg



H9.3818.20K Pallet

Aluminum pallet including one H 9030.1K and one H 9031.1K journal. Suitable for pneumatic clamps.

Dimension (L x B)	380 x 180 mm (14.96x7.09')
Journal centerline distance (D)	200 mm (7.874')
Parallelism	0.1 mm (0.004')
Weight	about 6 kg



H9.3838.20K Pallet

Aluminum pallet including one H 9030.1K, one H 9031.1K and two H 9032.1K journals. Suitable for pneumatic clamps.

Dimensions (L x B)	380 x 380 mm (14.96x14.96')
Journal centerline distance (D)	200 mm (7.874')
Parallelism	0.1 mm (0.004')
Weight	about 13 kg

Clamping System 9000

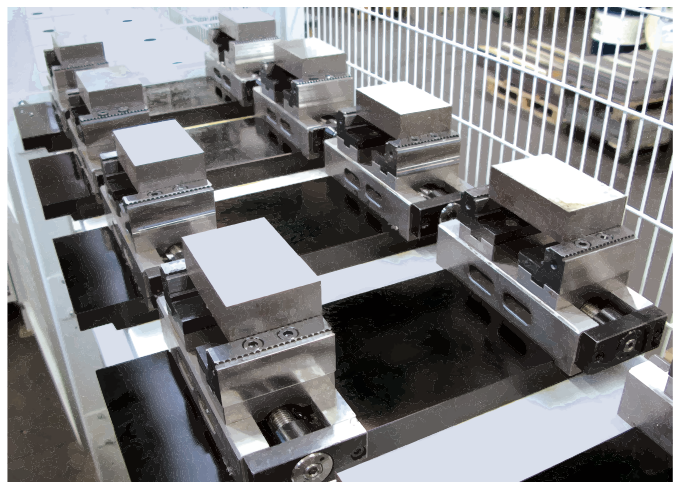
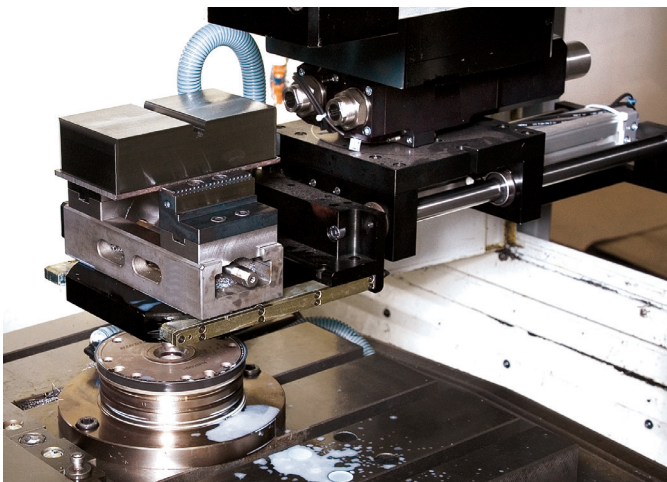
Self centering vice

The Self Centering Vice is a cost-effective and all-purpose workpiece clamping solution for five side machining. The Zero-Point Clamping System 9000 used as base warrants always the same reference point. This is an absolute need for automatic loading.

The 80 (3.15') mm wide reverse jaws and grip-strips already allow many clamping variations. For special clamping jobs it is possible to mount 125 mm (4.92') wide reverse jaws, as well as prism or raw jaws.

Features

- Centering accuracy 0,020 mm
- Clamping force up to 16000 N
- Clamping area 0 - 214 mm (0 - 8.42') with universal jaws
- Reverse jaws allow a wide clamping area
- Dual clamping with twinload jaw

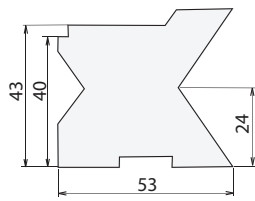




H9.1613ZSK Self Centering Vice

Precise self centering vice with grinded reverse jaws H9.GB80P and grip-strips, assembled on a pallet for single clamping use. Incl. Centering Journal H 9030.1K.

Jaw width	80 mm (3.15')
Clamping area (Reverse jaw)	0 – 190 mm (0-7.48')
Centering accuracy	0,015 mm (0.0006')
Clamping force (at 80 Nm tension force)	16000 N
Total length	246 mm (9.69')
Clamping slide width	80 mm (3.15')
Bed length	230 mm (9.05')
Weight	approx. 9 kg



H9.PB80 Prism Jaw

Prism reverse jaw with two 110° Prisms and one 3x3mm (0.118x0.118') clamping rest area surface.

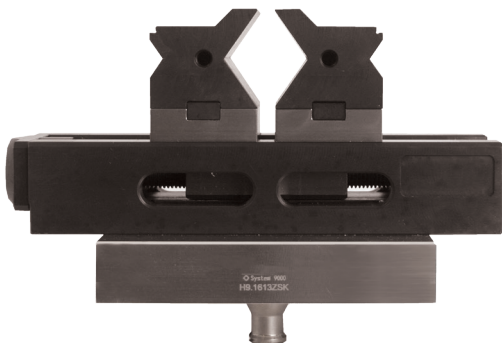
Clamping range (small prism)	ø11-30 (0.43-1.18')
(large prism)	ø28-78 mm (1.1-3.1')
Clamping range (3x3 mm face)	6,5-130 mm (0.26x5.12')
Jaw width	80 mm (3.15')



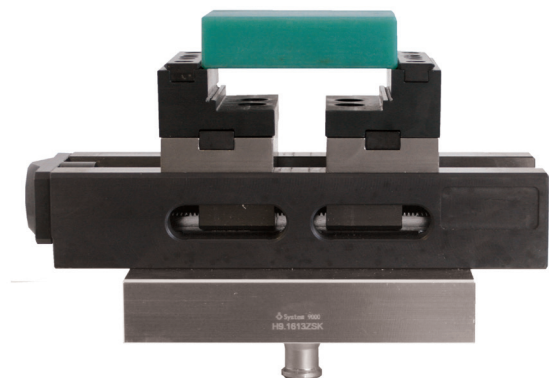
H9.HK-SK12 Hand Crank

for H9.1613ZSK Self Centering Vice

Additional accessories and clamping jaws are available upon request.



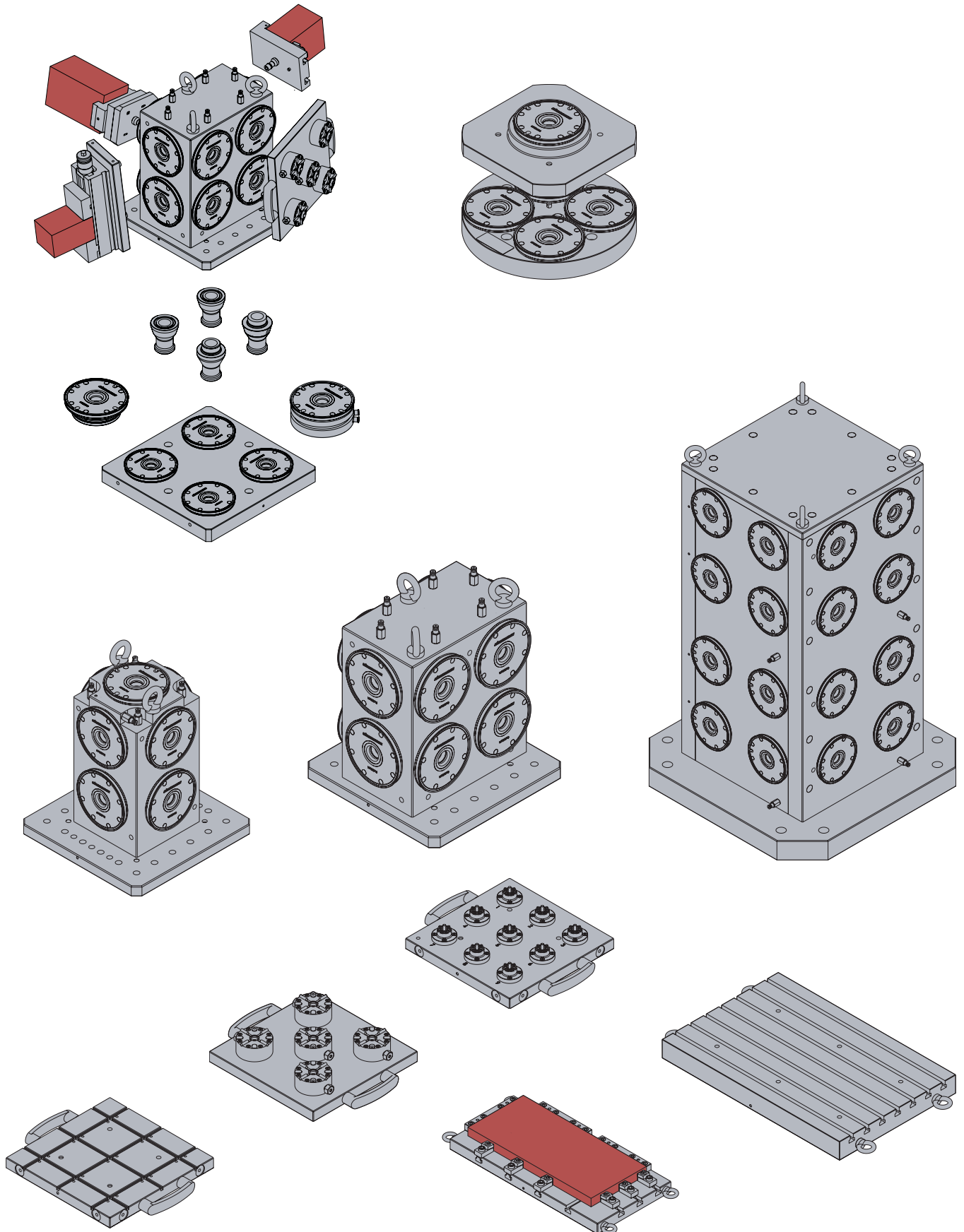
H9.1613ZSK equipped with prism jaw



H9.1613ZSK equipped with reverse jaws

Clamping System 9000

Examples customer solutions



Our Clamping Systems

Overview

Clamping System	4000	5000	8000	9000	μ-Prisfix
Use for	Workpiece clamping and palletizing for wire EDM	Electrode / workpiece clamping and palletizing	Workpiece and fixture palletizing	Workpiece and fixture palletizing	Micro clamping system for high precision part manufacturing
Wire EDM	x				x
Sinking EDM		x	x	x	x
Micro manufacturing		x			x
Chipping		x	x	x	x
Laser machines		x	x	x	x
Mounting		x	x	x	x
Measurement technique		x	x		x
Repetitive accuracy	≤ 0.002 mm ≤ 0.00008"	≤ 0.002 mm ≤ 0.00008"	≤ 0.002 mm ≤ 0.00008"	≤ 0.005 mm ≤ 0.0002"	≤ 0.0001mm ≤ 0.000004"
Max. workpiece weight	150 kg	100 kg	300 kg	1000 kg / chuck	
Clamping force	---	18.000 N	60.000 N	30.000 N / chuck	500 N
Automatic changable with handling units	x	x	x	x	x

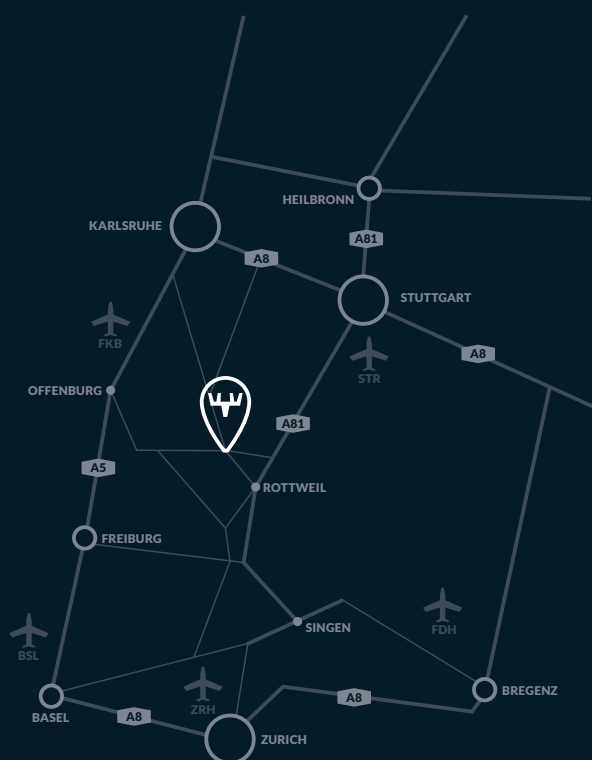
Detailed information you can find in our catalogues and on our homepage www.carlhirschmann.de. For questions and detailed advice please contact our sales staff.

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Germany



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