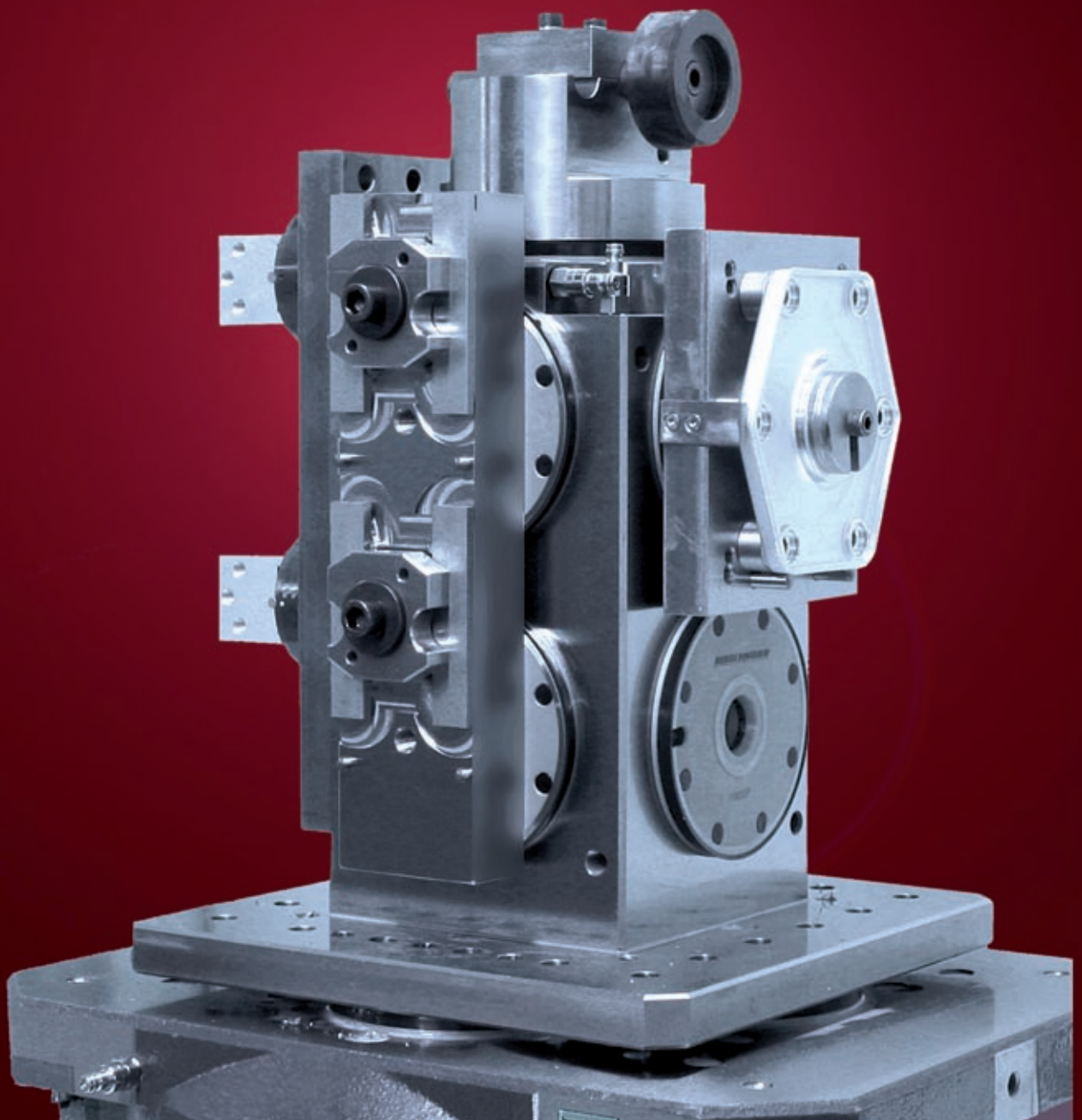


**REFERENCE SYSTEM 9000**

**Modular Zero-Point Fixturing for  
Pallets, Workpieces and Fixtures**



## ■ Company

- We about us

### Confidence in reference systems

We have developed and produced innovative high precision products around clamping technologies for more than 50 years. Our customers around the world trust in our system solutions because of new approaches and continuous development. HIRSCHMANN REFERENCE SYSTEMS represents "Quality made in Germany"

### Ideas for customer benefits

As your partner we search together with you for the best solution for your workpiece / tool clamping problem. Here we create the standard for an optimal and future-oriented workflow. We offer system components with excellent cost-benefit saving ratios in the highest quality with long running times. Our qualified staff in our design, manufacturing and sales department work hand in hand in accordance to international quality standards (ISO9001/EN9100).





## ■ General

### - Table of contents

#### Operation reliability

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 plans 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 Fixturing System is subject to chemical and physical influences, maintenance and service has to be performed with special care.

#### Technical Modifications

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 HIRSCHMANN GMBH are manufactured using the latest production methods. All products are submitted for ISO 9001 and EN 9100 (air and space industry standard) quality assurance.

#### Warranty

We provide a 12 month warranty for all Fixturing 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.

Service, Maintenance, Quality, Warranty	3
Process reliability	4
System characteristics	5
Application instructions	6-7
On desk clamper Ø 129 mm	8-9
Integral clamper Ø 129 mm	10-11
Clamping bases	12
Spacer	13
Compact Clamper Ø 90 mm	14-15
Clammpers Accessories	16-17
Journals	18
Pallets	19
Self-Centering Vice	20-21
Solutions	22-23

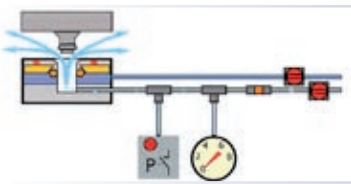


## ■ Process reliability

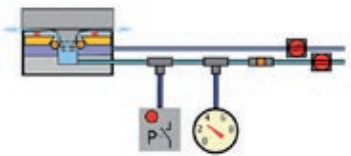
### - Clamping control

Automated systems require a high level of process safety. The HIRSCHMANN clampers of the reference system 9000 are protected with a seal against penetration of dirt and the clampers can be equipped with an additional pneumatic connection for air cleaning and clamping monitoring. This allows the monitoring of the correct clamping functions by the machine control.

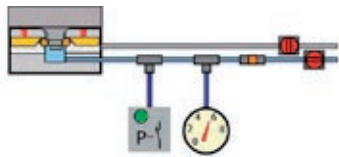
#### - Function description of clamping monitoring



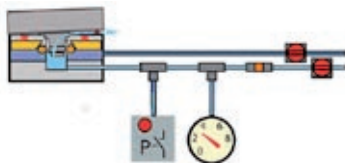
Clamping monitoring will be done via the cleaning connection by blowing compressed air with a constant flow rate (throttle) into the clamping area. Without a pallet in the clamber, the air can flow freely. This causes only a very low increasing of the pressure in the air pipe and the pressure switch doesn't give a clamping confirmation signal to the machine control.



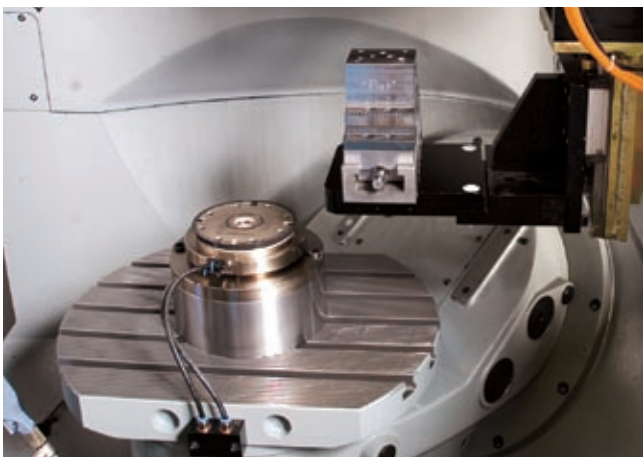
If a pallet is moved to the clamber, the gap between clamber and pallet gets smaller and smaller and the freely air flow will be more and more limited. Thereby the pressure in the air pipe increases but is still below the switching point of the pressure switch. At the same time the flowing air cleans the contact surface of the clamber.



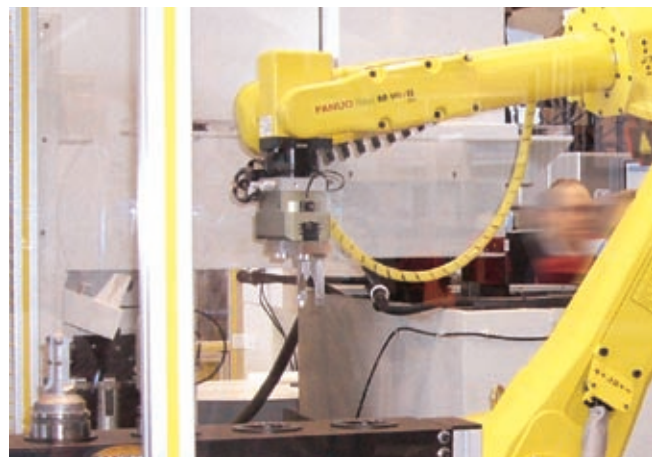
As soon as the pallet is clamped perfectly, the air flow will be interrupted and the pressure in the air pipe increases to the network pressure which is above the pressure switching point. The pressure switch is switched on and gives a clamping confirmation signal to the machine control



If there are chips on the Z-surface of the clamber, the pallet won't be clamped perfectly. There will remain a small gap between clamber and pallet which allows the air to escape. The pressure in the air pipe remains below the switching point of the pressure switch and the machine control doesn't receive a clamping confirmation signal.



Automatic workpiece load with handling unit



Automatic workpiece load with robot



## ■ Reference System 9000

### - Characteristics

#### ■ Applications

Fast, precise clamping and referencing of devices 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 HIRSCHMANN / Germany".



[Milling]



[Sinking EDM]



[High Speed Cutting - HSC]



[Automatic load]

### - Features

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

# ■ Application instructions

## - Clamper / Clamping journal arrangement

The modular layout of single or multiple Zero Point clamping devices 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.

If only one clamper (H900xxx4K) is used, the X- and Y- positioning of the workpieces and pallets is accomplished by using one Centering Journal H9030.1K and two dowel pins.

If two or more clampers (H900xxx0K or H900xxx4K) are 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.

To achieve the highest positioning accuracy it is necessary to put the Centering Journal H9030.1K to the reference point clamper position (see below).

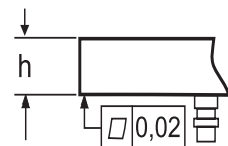
### Uses

#### For:

HSM-, horizontal and vertical milling-, turning-, boring-, EDM-, measuring etc.

#### For clamping of

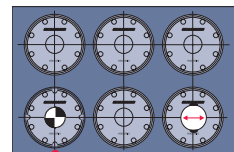
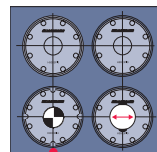
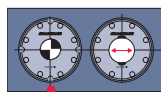
work pieces, devices, and pallets with  
minimum square or diameter  $\geq 135\text{mm}$   
Height  $h: \geq 25\text{ mm}$   
Flatness:  $\leq 0.02\text{ mm}$  on  $200 \times 200\text{ mm}$   
Max. axial load:  $\leq 1000\text{ kg./per clamper}$



### Clamper arrangement (examples)

#### Zero Point center distance: (D)

Minimum: 135 mm  
Standards: D=150 mm,  
D=200 mm, D=250 mm  
(• = reference point clamper)



Used clamper(s)

H900xxx4K

H900xxx0K  
H900xxx4K

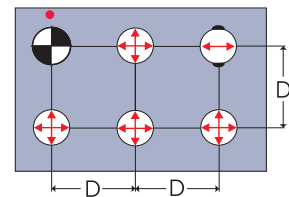
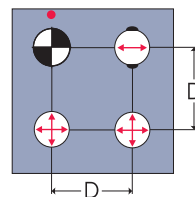
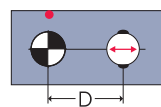
H900xxx0K  
H900xxx4K

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

-

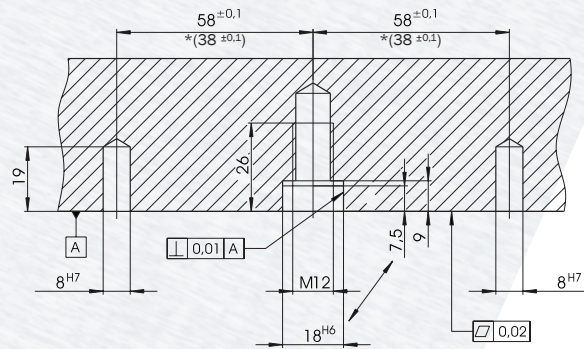
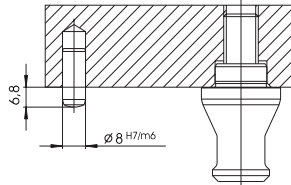
-

-

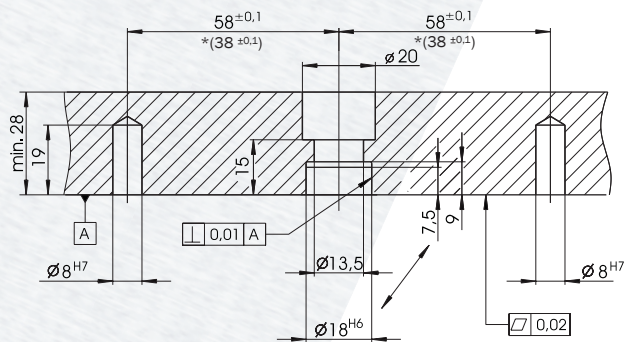
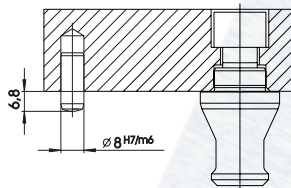


**Manufacturing drawings for single clamber use.** (Centering Journal and dowel pin data)

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

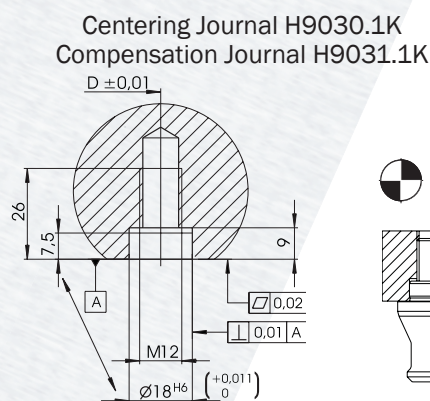


**Single clamber use with:  
Centering Journal H9030.1K**  
Connection from above with screw M12  
(Thread in journal)  
Screw strength class 10.9

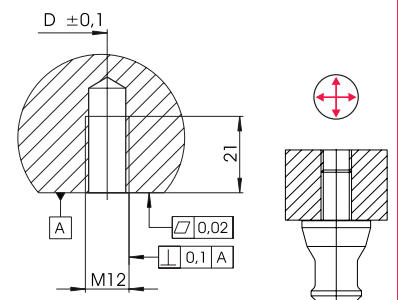


**Manufacturing drawings for multiple clamber use.** (Centering, Compensation and Clamping Journal data)

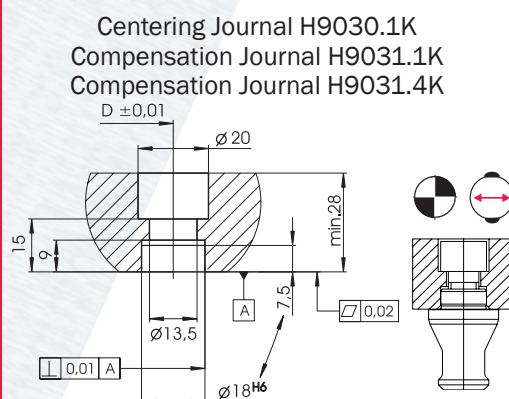
**Multiple Clamber use with:  
Centering Journal H9030.1K  
Compensating Journal H9031.1K  
Clamping Journal H9032.1K**  
Connection from below with stud  
screw  
(Thread in workpiece, fixture or pallet)



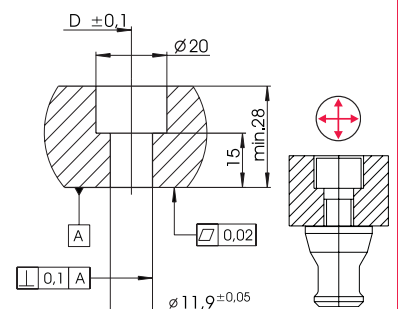
**Clamping Journal H9032.1K**



**Multiple Clamber 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



**Clamping Journal H9032.1K**



## ■ Pneumatic clamber

- Outer diameter 129 mm

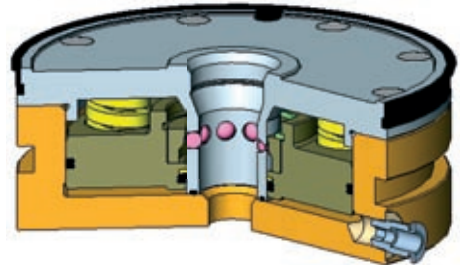
The clammers are designed as modular on desk clamber (H9001xxxK) or integrable clamber (H9003xxxK). On desk clammers can be mounted onto the machine table with toe clamps (H9040). Integrable clammers can be integrated into the machine table of the machine tool, into base plates or in tomb stones.

The clamping force is provided by spring pressure. Pneumatic clammers (H9001Pxx series) open via pneumatic pressure (6 bar). Hydraulic clammers (H9001Hxx 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°.

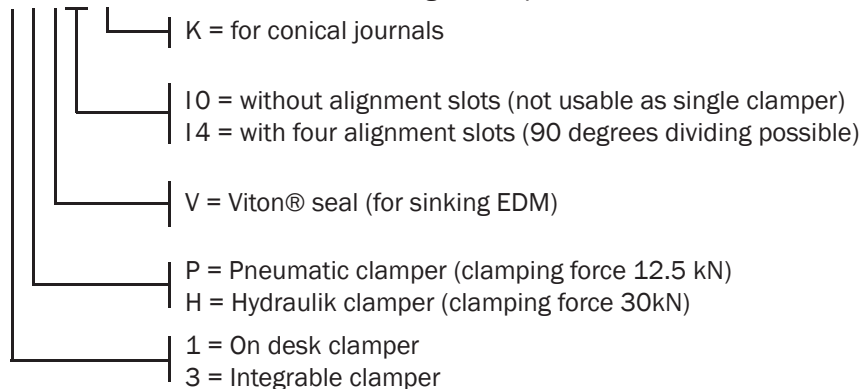
### Common characteristics:

- Used for HSM- milling- turning- EDM – Measuring machines, etc
- Repetitive accuracy  $\leq 0.005$  mm
- 1000 kg 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

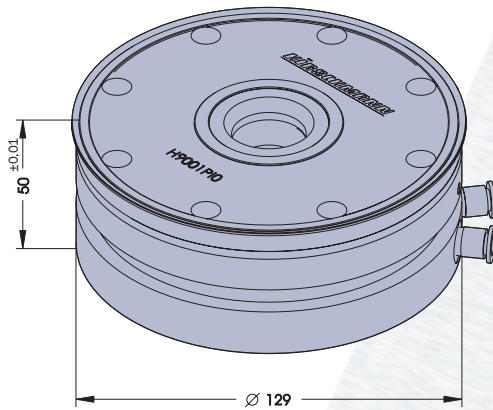


### Ordering code for pneumatic clamber (Ø129 mm )

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







### H 9001PI0K Pneumatic Clamper

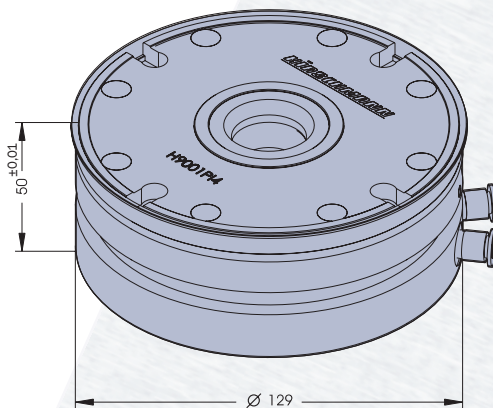
Without radial slots for multiple use only, with NBR seals  
 Clamping force (by springs) 12500 N (2,800 lbs)  
 Repetitive accuracy  $\leq 0.005$  mm (.00019")  
 Pneumatic pressure for opening 6 bar (87 psi)  
 Max. axial load / clamper 1000 kg (2,200 lbs)

### 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

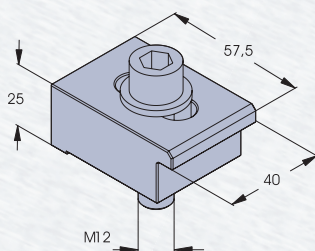
With 4 radial slots for 90° indexing.  
 Single or multiple use with NBR seals  
 Clamping force (by springs) 12500 N (2,800 lbs)  
 Repetitive accuracy  $\leq 0.005$  mm (.00019")  
 Pneumatic pressure for opening 6 bar (87 psi.)  
 Max. axial load / clamper 1000 kg (2,200 lbs)

### H 90001PVI4K Pneumatic Clamper

Same as H9001PI4K but with Viton® seals for sink EDM-machines

### H 9001HI4K Hydraulic Clamper

Same as H9001PVI4K 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 clampers to the machine table.

## ■ Pneumatic clamber H9003..

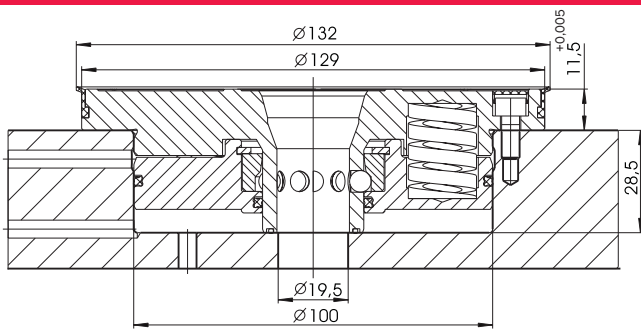
- for integration

The H9003xxK series claspers come ready to be integrated into devises like pallet bases, tombstones, machine tool tables, etc. They can be mounted with the clamping surface projected above or even with the devise 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.

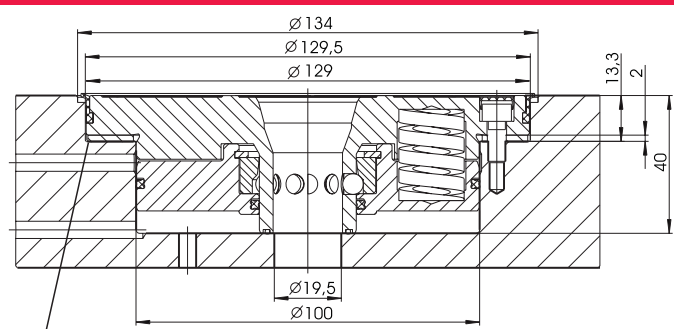
Common characteristics and ordering code see page 8.

### Installation with 11.5 mm projection



Detailed installation diagram upon request.

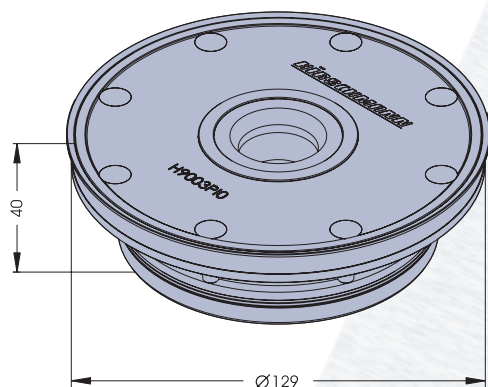
### Installation without projection



Calibration ring H 9020 for height adjustment







### H9003PI0K Pneumatic Integral 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)

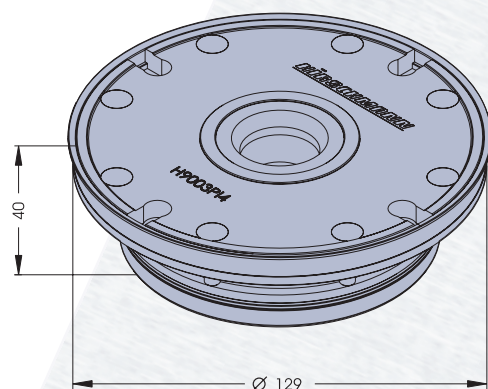
### H9003PVI0K Pneumatic Integral Clamper

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

### H9003HI0K Hydraulic Integral 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 Integral 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)

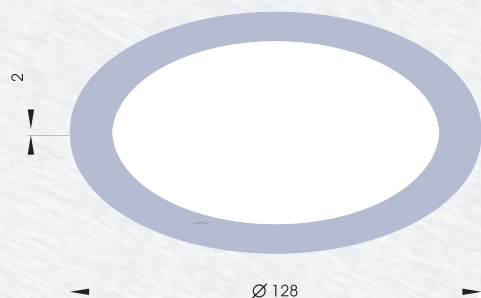
### H9003PVI4K Pneumatic Integral Clamper

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

### H9003HI4K Hydraulic Integral 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 clamps installed without projection

# ■ Clamping bases

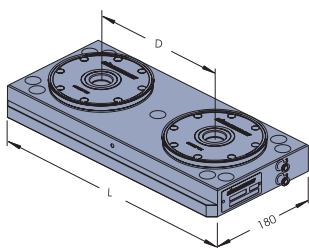
- Material G-Alu340

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, the flatness of the outer Z-surfaces ( $\varnothing 126\text{mm}/4.96''$ ) is  $\leq 0,02$  mm (0.00079"). Standard clamber centerline distances are 200 and 250 mm. Other distances and configurations available upon request.

## Common characteristics

- Repetitive accuracy  $\leq 0,005$  mm (.00019")
- 1000 kg (2200 lbs) axial load per clamber
- Clamping base height  $50 \pm 0,025$  mm
- Flatness of the outer Z-surfaces ( $\varnothing 126\text{mm}/4.96''$ ) in assembled state is  $\leq 0,02$  mm (0.000787")

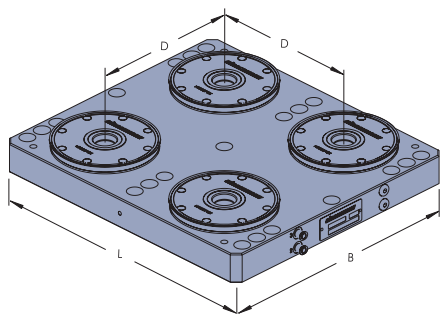
- Clamps via springs, open via pneumatic pressure
- Reference surface to align the clamber base
- Integrated fastening holes for T-slots with 63, 100 and 125 mm ( 2.48/3.94/4.88") distance



### H93P.20.20K Two position clamber base

With 2 pneumatic clampers H9003PI0K

Clamber centerline distance D	200 mm
Dimensions (L x B)	370 x 180 mm
Clamping force	(2 x 12500 N) 25000N
Positioning accuracy	$\leq 0.005$ 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
Dimensions (L x B)	420 x 180 mm

### H93P.40.20K Four position clamber base

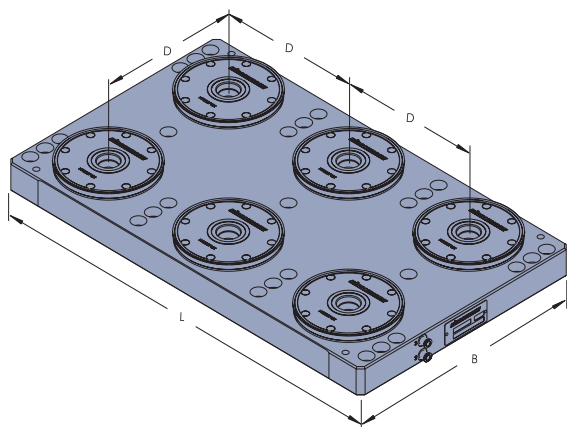
With 4 pneumatic clampers H9003PI0K

Clamber centerline distance D	200 mm
Dimensions (L x B)	390 x 350 mm
Clamping force	(4 x 12500 N) 50000 N
Positioning accuracy	$\leq 0.005$ 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	
Dimensions (L x B)	440 x 400 mm distance



### H93P.60.20K Six position clamber base

With 6 pneumatic clampers H9003PI0K

Clamber centerline distance D	200 mm
Dimensions (L x B)	590 x 350 mm
Clamping force	(6 x 12500 N) 75,000 N
Positioning accuracy	$\leq 0.005$ 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	
Dimensions (L x B)	690 x 400 mm

Other centerline distance available upon request.

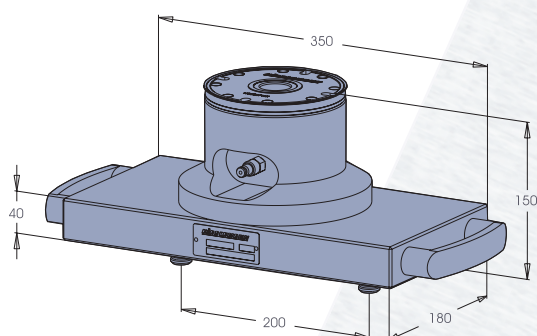
The clamber bases can be equipped optionally with pneumatic clampers H9003PI4K (with 4 radial slots for 90° indexing).



## ■ Spacer

- distance units

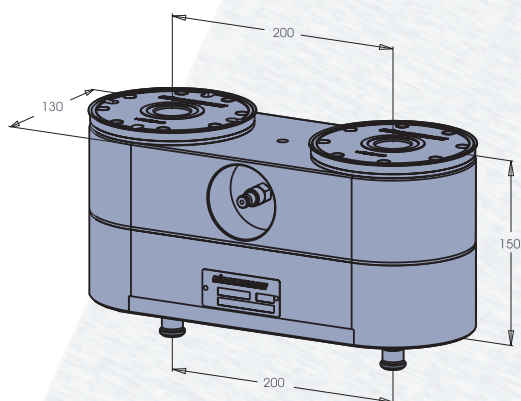
Spacers are distance units for raised clamping of workpieces. They are mainly used for horizontal or 5-axis machining.



### H93P.14.20K-15 Spacer 1-fold

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

Positioning accuracy	≤ 0.005 mm (.00019")
Heightening	150 mm
Clamping journal distance	200 mm
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	≤ 0.005 mm (.00019")
Heightening	150 mm
Distance clamping journal/clamper	200 mm
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 clamper H9001S.., H9003S..

- Outer diameter 90 mm

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").

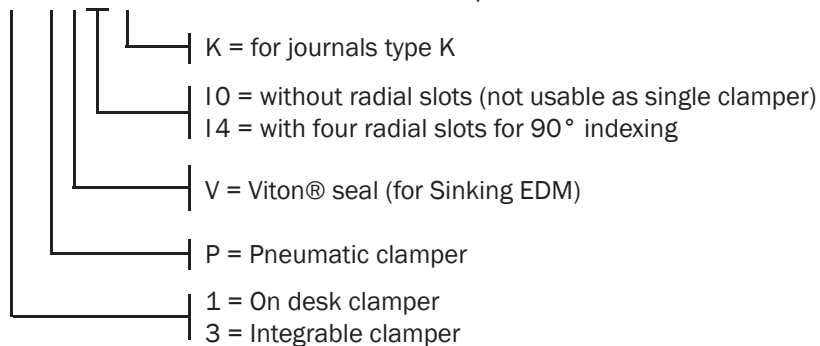
### Common characteristics

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

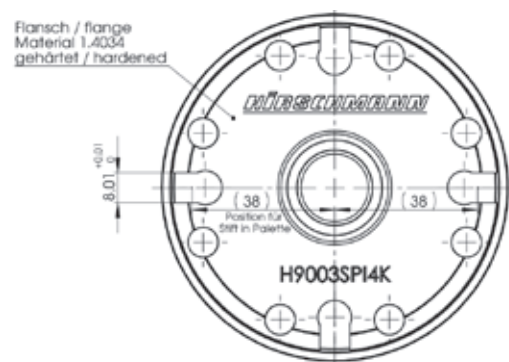
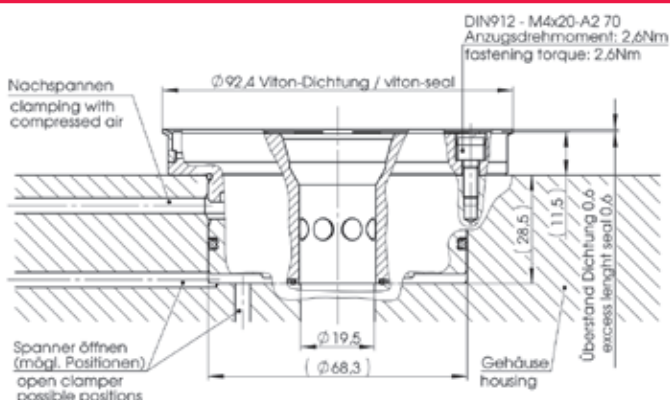


### Ordering key for compact pneumatic clamper

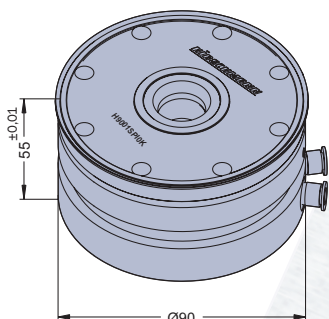
**H9001SPVI4K** = Pneumatic on desk clamper with Viton seal and four radial slots



### Integration H9003S..K





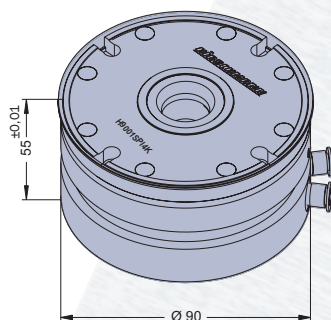


### H9001SPI0K Pneumatic Clamper

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  $\leq 0.005$  mm (.00019")  
 Pneumatic pressure for opening 6 bar (87 psi)  
 Max. axial load / clamper 1000 kg (2,200 lbs)

### H9001SPI0K.5 Pneumatic Clamper

Same as H9001SPI0K but with higher clamping force  
 Clamping force by springs 8000 N  
 Pneumatic pressure for opening 10 bar (145 psi)

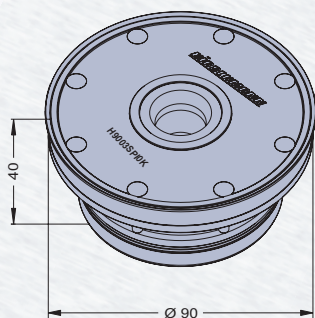


### H9001SPI4K Pneumatic Clamper

Same as H9001SPI0K but with four radial slots for 90° indexing.

### H9001SPI4K.5 Pneumatic Clamper

Same as H9001SPI0K.5 but with four radial slots for 90° indexing.

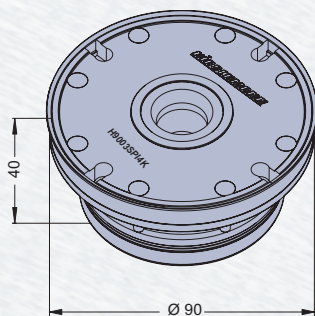


### H9003SPI0K Pneumatic Integral Clamper

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  $\leq 0.005$  mm (.00019")  
 Pneumatic pressure for opening 6 bar (87 psi)  
 Max. axial load / clamper 1000 kg (2,200 lbs)

### H9003SPI0K.5 Pneumatic Integral Clamper

Without radial slots for multiple use only, with NBR seals  
 Clamping force by springs 8000 N  
 Repetitive accuracy  $\leq 0.005$  mm (.00019")  
 Pneumatic pressure for opening 10 bar (145 psi)  
 Max. axial load / clamper 1000 kg (2,200 lbs)



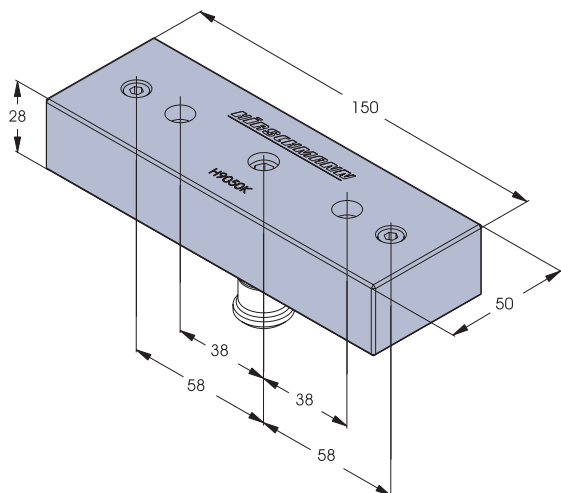
### H9003SPI4K Pneumatic Integral Clamper

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

### H9003SPI4K.5 Pneumatic Integral Clamper

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

## ■ Clamper accessories



### H9050K Alignment Gauge

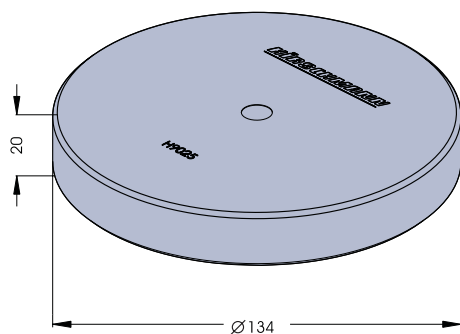
Used to align H9001xx4K and H9003xx4K clampers in X and Y direction.

Distance between center and dowel pin 58 mm

### H9050SK Alignment Gauge

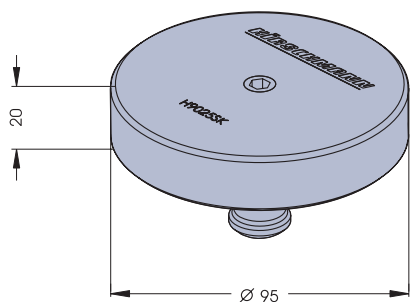
Used to align H9001Sxx4K and H9003Sxx4K clampers in X and Y direction.

Distance between center and dowel pin 38 mm



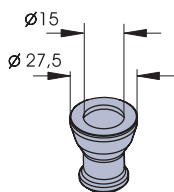
### H9025K Cover

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



### H9025SK Cover for compact clamper

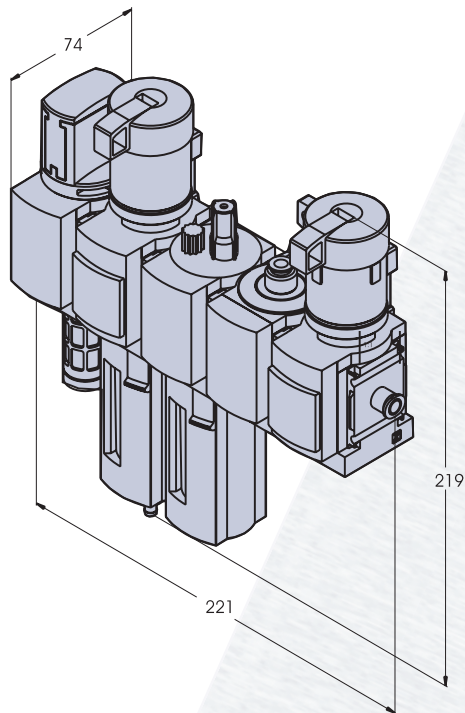
Cover for clamper series H900xSxxK., with clamping journal. Protects the seal and the clamping area of the compact clampers while not used.



### H9026K Sealing journal

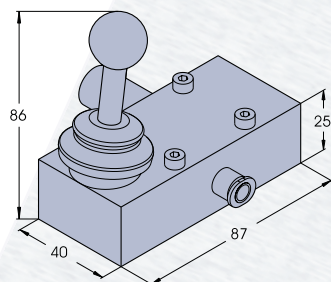
with blind hole  $\varnothing 15$  and thread M5 for removing from the clamper. Protects the clamping journal area while not in use.





### **H 9060P Pneumatic service unit**

Filter, dryer, oiler, pressure regulator unit with separate adjustment for clamping (6 bar) and blocking air.

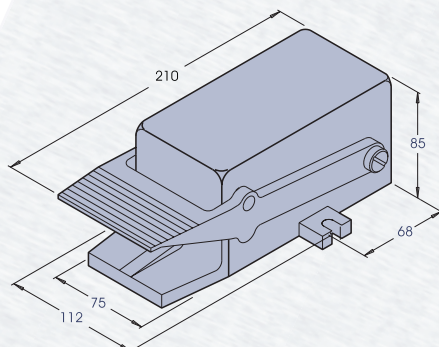


### **H 9061P Pneumatic control unit**

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

Max. input pressure

7 bar



### **H 9062P Foot switch**

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

Max. input pressure

7 bar

### **H 9070H Hydraulic unit (without picture)**

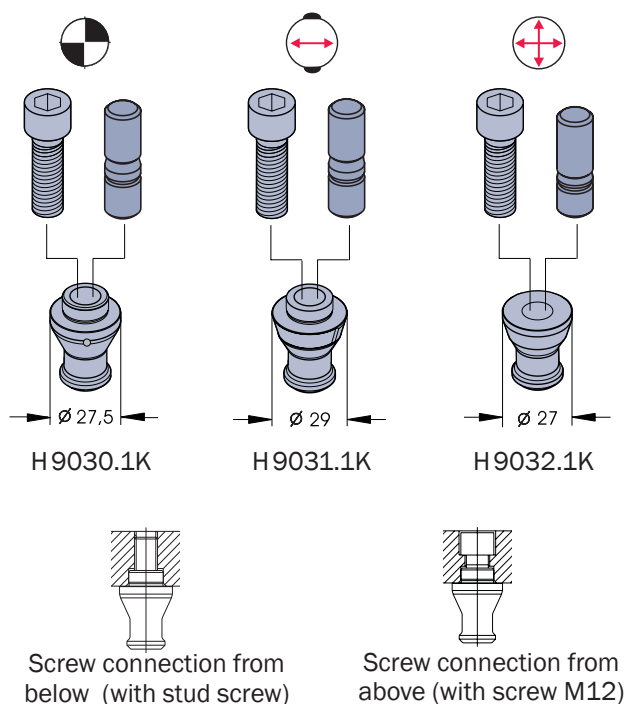
Operates the hydraulic clamp H 9001Hxx and H 9003Hxx.  
Hydraulic pressure

40 bar

# ■ Journals

- for pallets and fixtures

The screwing of the centering, compensating and clamping journals of the H903x1K series can be done both, from above (with M12 screw) or from below (with M12 stud screw).



## H9030.1K Centering Journal

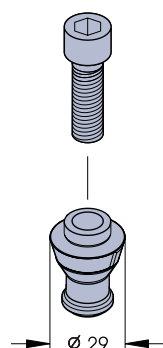
Clamping and centering journal (X-, Y-positioning) . One required per set-up. Includes one M12x30 DIN912 screw (strength class 10.9) and one M12x25 DIN939 stud screw (strength class 10.9).

## H9031.1K 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).

## H9032.1K 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)



## H9031.4K 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)

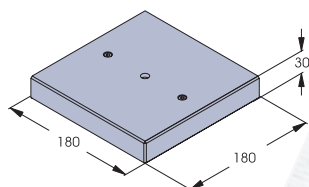
## Note

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

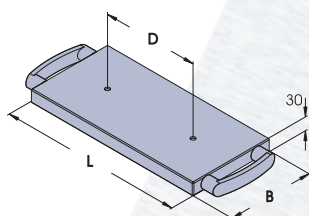
- Material G-Alu25



### H9.1818K Pallet

Aluminum pallet including one H9030.1K journal and two pins. For pneumatic single clamber base.

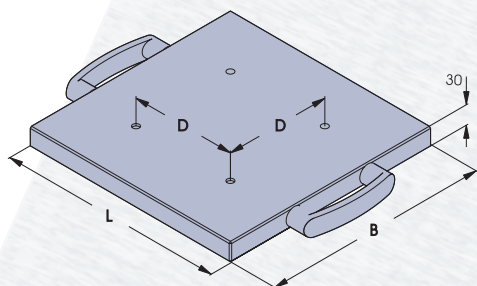
Dimensions (L x B)	180 x 180 mm
Parallelism	0.1 mm
Weight	about 3 kg



### H9.3818.20K Pallet

Aluminum pallet including one H9030.1K and one H9031.1K journal. Suitable for pneumatic clamps.

Dimension (L x B)	380 x 180 mm
Journal centerline distance (D)	200 mm
Parallelism	0.1 mm
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
Journal centerline distance (D)	200 mm
Parallelism	0.1 mm
Weight	about 13 kg

## ■ Self Centering Vice

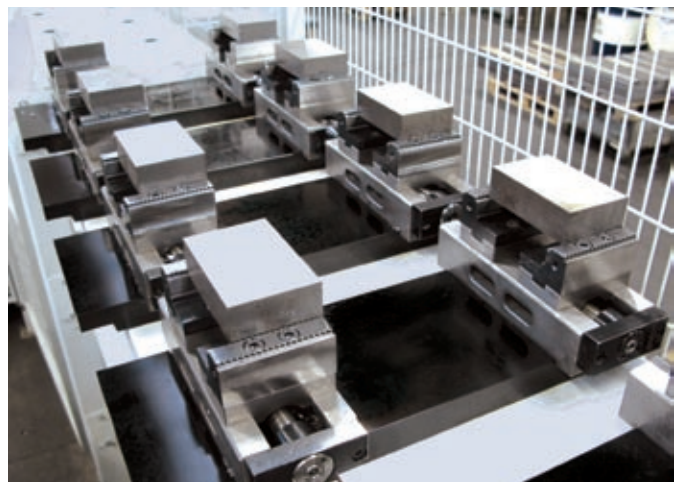
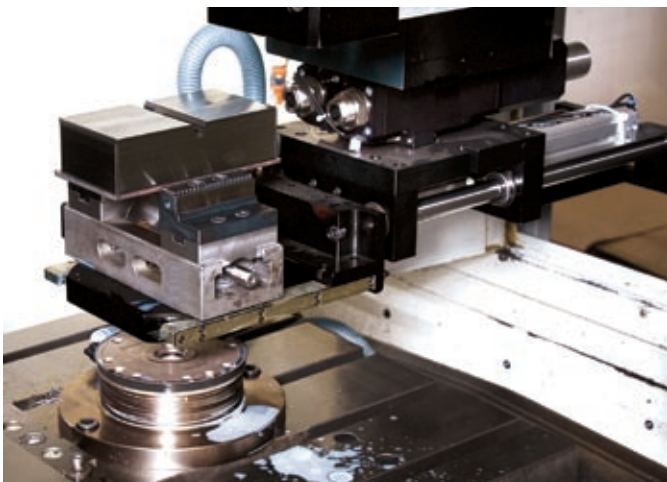
- universal workpiece clamping solution

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.

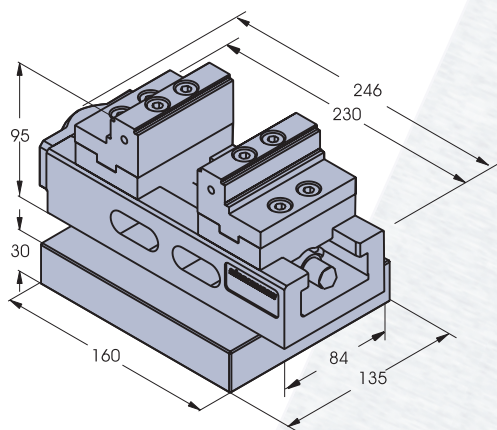
The 80 mm wide reverse jaws and grip-strips already allow many clamping variations. For special clamping jobs it is possible to mount 125 mm wide reverse jaws, as well as prism or raw jaws.

### Features:

- Centering accuracy 0,020 mm
- Clamping force up to 16000 N
- Clamping area 0 until 214 mm (Universal Jaws)
- Reverse jaws allow a wide clamping area
- Dual clamping with Twinload-Jaw



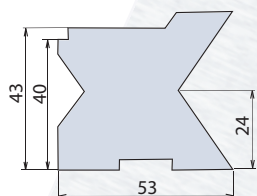




### H9.1613ZSK Self Centering Vice

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



### H9.PB80 Prism Jaw

Prism reverse jaw with two 110° Prisms and one 3x3 mm clamping rest area surface.

Clamping range (Prism)	Ø 11-30 / Ø 28-78 mm
Clamping range ( 3x3 mm face)	6,5 - 130 mm
Jaw width	80 mm



### H9.HK-SK12 Hand Crank

with 12 mm hexagon bore for H9.1613ZSK Self Centering Vice

Additional accessories and clamping jaws are available upon request.



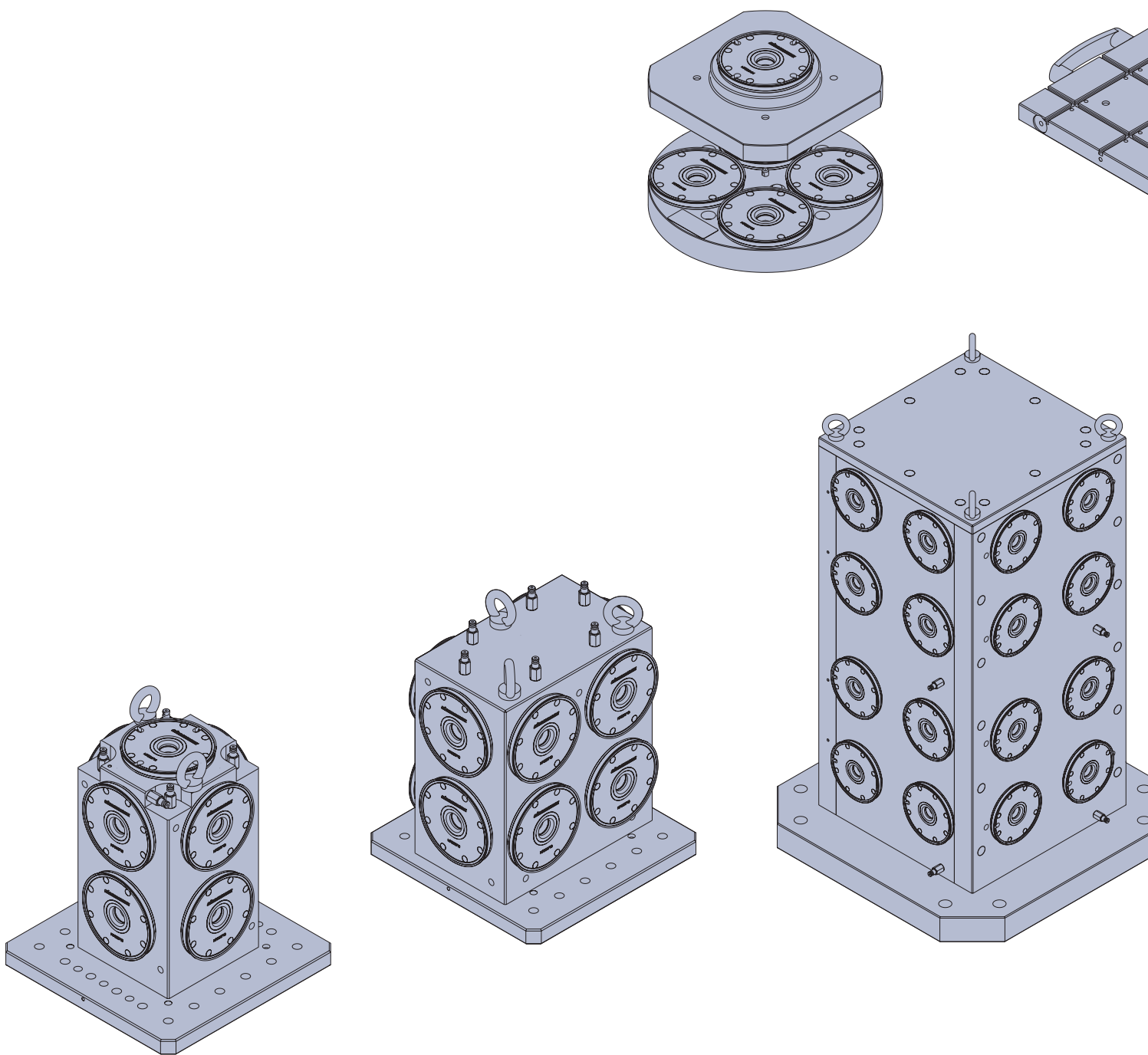
H9.1613ZSK equipped with Prism jaw



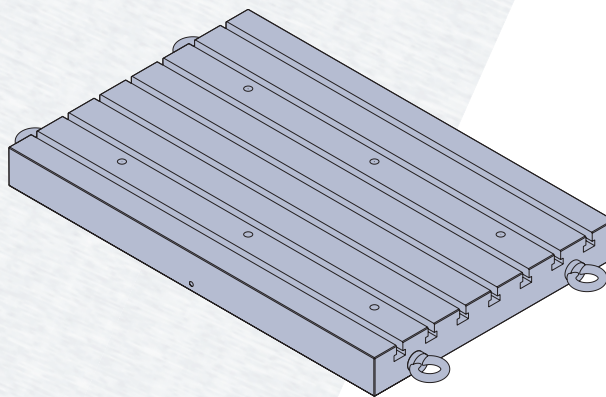
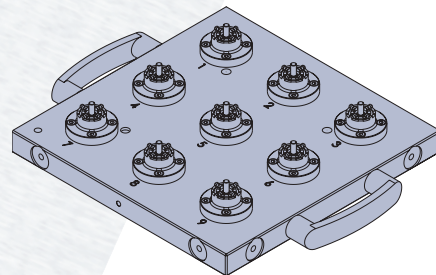
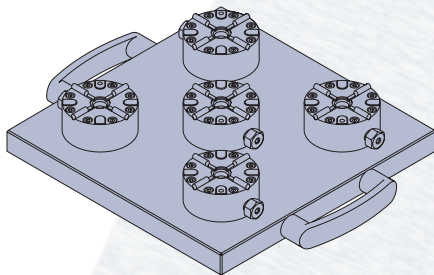
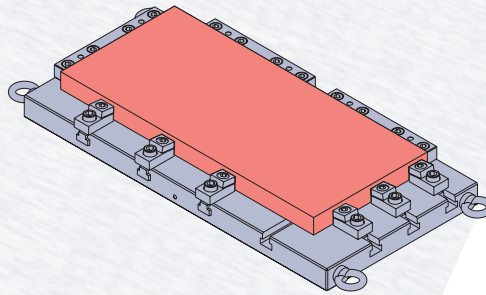
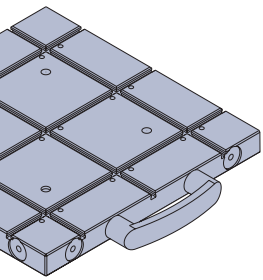
H9.1613ZSK equipped with reverse jaws

# ■ Solutions

- overview







# **HIRSCHMANN**

## **REFERENCE SYSTEMS**

### **REFERENCE SYSTEM 9000**

**Modular Zero-Point Fixturing System**



## **PRODUCT OVERVIEW**

### **REFERENCE SYSTEM $\mu$ -PrisFix** for precise small part manufacturing



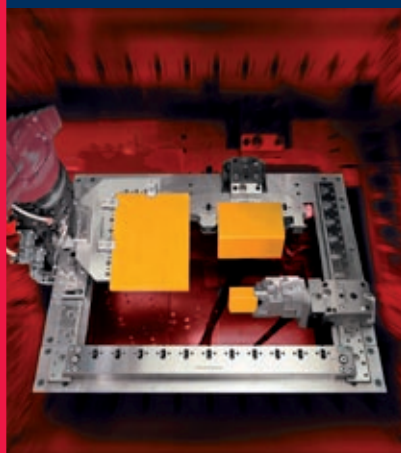
### **REFERENCE SYSTEM 5000** for Sinking EDM



### **REFERENCE SYSTEM 8000** for Machine Tools



### **REFERENCE SYSTEM 4000** for Wire EDM



### **Representatives, consultants and distributors in:**

Australia · Austria  
Belgium · Brazil · Bulgaria  
Canada · China · Croatia  
Czech Republic  
Denmark  
Finland · France  
Great Britain  
Hong Kong · Hungary  
India · Indonesia · Israel · Italy  
Japan · Korea · Malaysia  
Netherlands · Norway · New Zealand  
Philippines · Poland · Portugal  
Singapore · Slovakia · Slovenia  
Spain · Sweden · Switzerland  
Taiwan · Thailand · Turkey  
United States

Catalogues upon request

### **ROTARY INDEXING TABLES/SPINDLES** for Wire and Sinking EDM



**HIRSCHMANN GMBH · KIRCHENTANNENSTRASSE 9 · 78737 FLUORN-WINZELN · GERMANY**

FON +49 7402 183-0 · FAX +49 7402 18310 · [www.hirschmannngmbh.com](http://www.hirschmannngmbh.com) · [info@hirschmannngmbh.com](mailto:info@hirschmannngmbh.com)