

No. 6383ZEK

## Centring clamp with ball

Can be used from above.  
 Repeatability  $\pm 0.025$  mm  
 Concentricity  $\pm 0.050$  mm



Order no.	D min.	D max.	A min.	A max.	H	P [kN]	Weight [g]
373357	11,7	14,2	3,2	3,9	10,0	0,5	8,2
373365	14,5	18,5	8,6	9,8	14,2	3,5	19
373373	18,5	22,5	10,4	11,6	16,5	4,5	40
373381	22,5	26,5	12,9	14,1	19,6	5,0	73
373399	26,5	30,5	13,0	14,1	19,8	5,0	93
373407	30,5	38,5	11,8	14,1	23,2	5,0	118
373415	38,5	46,5	15,7	18,0	27,2	6,5	249
373423	46,5	54,5	15,7	18,0	27,1	6,5	342
373431	54,5	70,5	19,1	23,7	40,6	8,0	652
373449	70,5	86,5	23,7	28,3	46,1	10,0	1303
373456	86,5	102,5	25,6	30,3	51,2	10,0	1765

### Application:

For centric positioning and clamping in holes, where light ball imprints can be accepted.

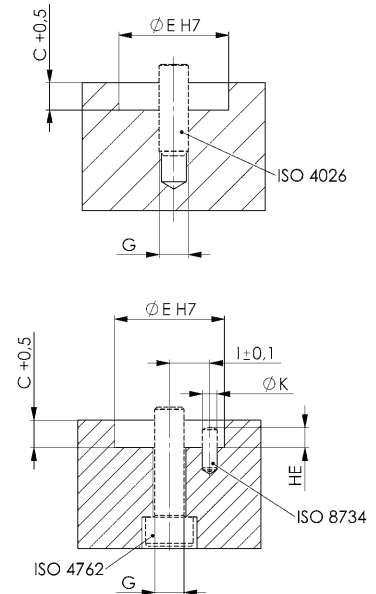
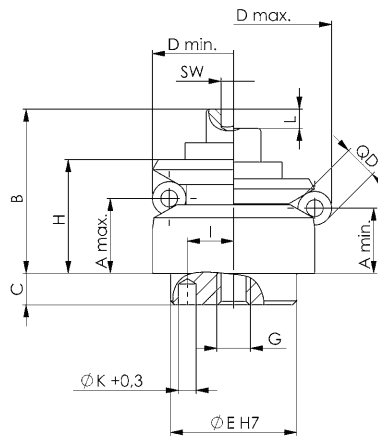
### Advantage:

- Low installation height
- Clamping in the zero point
- Pull-down effect
- Distortion-free clamping

### Note:

For deep installation, clearance D max. must be provided.

Installation tool: Retaining pin for determining the precise position of the balls. (supplied without installation tool)



### Dimensions:

Order no.	B	C	E f7	G	HE	I $\pm 0,1$	K	L	Q	QD	SW
373357	14,7	3,5	10	M4	2,0	3,5	1,5	1,3	3	2,5	3
373365	19,2	5,5	12	M4	2,5	4,5	2,0	2,3	3	4,0	3
373373	22,7	7,5	15	M5	3,5	5,5	2,5	2,3	3	4,0	4
373381	28,6	6,0	20	M6	3,5	7,0	3,0	2,3	3	4,0	5
373399	28,8	6,0	20	M6	3,5	7,0	3,0	2,3	3	4,0	5
373407	32,2	7,0	25	M6	3,5	9,0	4,0	4,6	3	8,0	5
373415	39,2	7,5	30	M8	4,5	11,0	4,0	4,6	6	8,0	6
373423	39,2	7,5	30	M8	6,5	11,0	4,0	4,6	6	8,0	6
373431	54,6	9,0	45	M10	6,5	15,0	5,0	9,2	6	16,0	8
373449	63,1	10,0	60	M12	6,5	17,0	5,0	9,2	6	16,0	10
373456	72,2	10,0	60	M16	6,5	25,0	5,0	9,2	6	16,0	14

Q = number of balls

Subject to technical alterations.

## No. 6383ZES

### Centring clamp with protective segments

Can be used from above.  
 Repeatability  $\pm 0.025$  mm  
 Concentricity  $\pm 0.050$  mm



Order no.	D min.	D max.	A min.	A max.	H	P [kN]	Weight [g]
373464	14,5	18,5	8,6	9,8	14,3	3,5	26
373472	18,5	22,5	10,4	11,5	16,6	4,5	45
373480	22,5	26,5	13,0	14,1	19,7	5,0	73
373498	26,5	30,5	13,0	14,2	19,9	5,0	95
373506	30,5	38,5	11,7	14,0	23,2	5,0	131
373514	38,5	46,5	15,5	18,0	27,2	6,5	259
373522	46,5	54,5	15,7	18,0	27,2	6,5	343
373530	54,5	70,5	19,1	23,7	40,7	8,0	675
373548	70,5	86,5	23,6	28,3	46,0	10,0	1347
373555	86,5	102,5	25,6	30,3	51,1	10,0	2099

### Application:

For surface-protecting and centric positioning and clamping in holes.

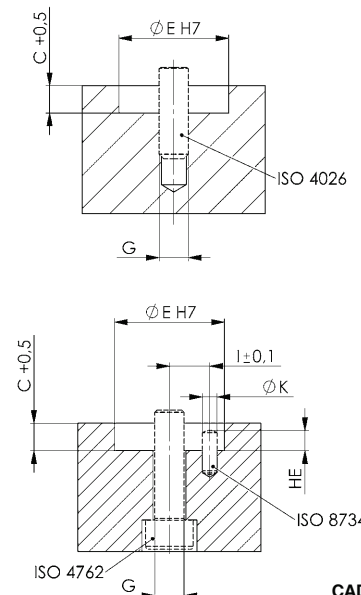
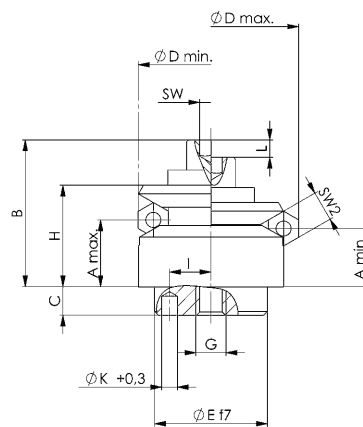
### Advantage:

- Low installation height
- Clamping in the zero point
- Pull-down effect
- Distortion-free clamping

### Note:

For deep installation, clearance D max. must be provided.

Installation tool: Retaining pin for determining the precise position of the segments. (supplied without installation tool)



### Dimensions:

Order no.	B	C	E f7	G	HE	I ±0,1	K	L	Q	QD	SW	SW2
373464	19,3	5,5	12	M4	2,0	4,5	2,0	2,3	3	4	3	4
373472	22,8	7,5	15	M5	2,5	5,5	2,5	2,3	3	4	4	4
373480	28,7	6,0	20	M6	3,0	7,0	3,0	2,3	3	4	5	4
373498	28,9	6,0	20	M6	3,0	7,0	3,0	2,3	3	4	5	4
373506	32,2	7,0	25	M6	4,0	9,0	4,0	4,6	3	8	5	8
373514	39,2	7,5	30	M8	4,0	11,0	4,0	4,6	6	8	6	8
373522	39,2	7,5	30	M8	4,0	11,0	4,0	4,6	6	8	6	8
373530	54,7	9,0	45	M10	5,0	15,0	5,0	9,2	6	16	8	16
373548	63,0	10,0	60	M12	5,0	17,0	5,0	9,2	6	16	10	16
373555	72,1	10,0	60	M16	5,0	25,0	5,0	9,2	6	16	14	16

Q = number of segments

## No. 6383ZUK

### Centring clamp with ball

Can be used from below.  
 Repeatability  $\pm 0.025$  mm  
 Concentricity  $\pm 0.050$  mm



Order no.	D min.	D max.	A min.	A max.	H	P [kN]	Weight [g]
373563	11,7	14,2	3,2	3,9	9,9	0,5	12
373571	14,5	18,5	8,6	9,8	14,2	3,5	21
373589	18,5	22,5	10,4	11,6	16,5	4,0	52
373597	22,5	26,5	12,9	14,1	19,6	4,5	77
373605	26,5	30,5	13,0	14,1	19,8	4,5	103
373613	30,5	38,5	11,8	14,1	23,2	4,5	155
373621	38,5	46,5	15,5	18,0	27,1	6,5	268
373639	46,5	54,5	15,7	18,0	27,2	6,5	355
373647	54,5	70,5	19,1	23,7	40,6	8,0	702
373654	70,5	86,5	23,7	28,3	46,1	10,0	1332
373662	86,5	102,5	25,7	30,3	51,2	12,5	1880

### Application:

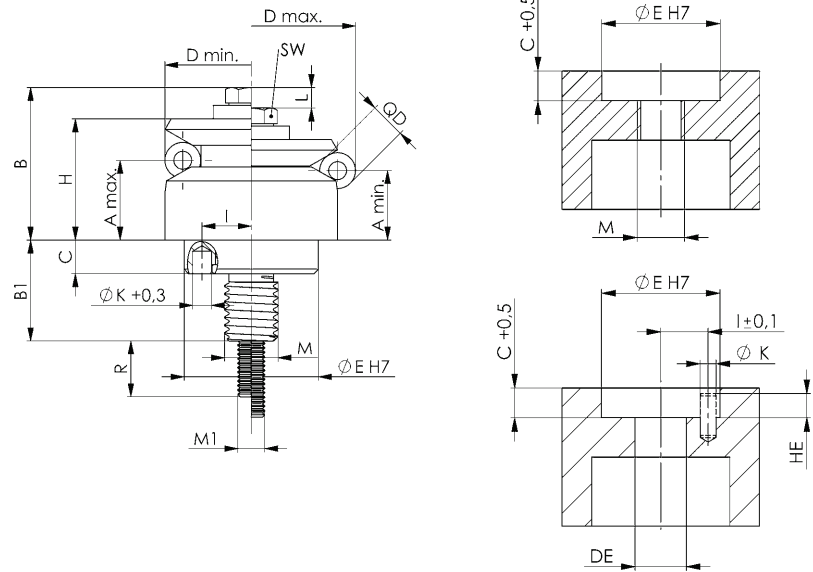
For central positioning and clamping in blind holes where slight ball impressions are acceptable. Operation from below, automated or manual.

### Advantage:

- Low installation height
- Clamping in the zero point
- Pull-down effect
- Distortion-free clamping

### Note:

For deep installation, clearance D max. must be provided.  
 Installation tool: Hole K for retaining pin for determining the precise position of the balls. (supplied without installation tool)



### Dimensions:

Order no.	B	B1	C	DE	E f7	HE	I $\pm 0,1$	K	L	M	M1	Q	QD	R	SW
373563	12,7	11,0	3,5	5	10	2,0	3,5	1,5	1,3	M5	M3	3	2,5	10	5,5
373571	17,0	14,1	5,5	6	12	2,5	4,5	2,0	1,3	M6	M3	3	4,0	12	5,5
373589	20,4	18,2	7,5	8	15	3,5	5,5	2,5	2,3	M8	M4	3	4,0	14	7,0
373597	24,3	17,4	6,0	10	20	3,5	7,0	3,0	2,3	M10	M5	3	4,0	15	8,0
373605	24,5	17,4	6,0	10	20	3,5	7,0	3,0	2,3	M10	M5	3	4,0	15	8,0
373613	28,8	21,9	7,0	12	25	3,5	9,0	4,0	4,6	M12	M6	3	8,0	20	10,0
373621	33,0	22,5	7,5	12	30	4,5	11,0	4,0	4,6	M12	M6	6	8,0	20	10,0
373639	33,1	22,5	7,5	12	30	6,5	11,0	4,0	4,6	M12	M6	6	8,0	20	10,0
373647	49,9	24,5	9,0	14	45	6,5	15,0	5,0	9,2	M14 x 1,5	M8	6	16,0	32	13,0
373654	55,4	29,4	10,0	16	60	6,5	17,0	5,0	9,2	M16 x 1,5	M8	6	16,0	20	13,0
373662	61,6	29,4	10,0	16	60	6,5	25,0	5,0	9,2	M16 x 1,5	M10	6	16,0	25	16,0

Q = number of balls

## No. 6383ZUS

### Centring clamp with protective segments

Can be used from below.  
 Repeatability  $\pm 0.025$  mm  
 Concentricity  $\pm 0.025$  mm



Order no.	D min.	D max.	A min.	A max.	H	P [kN]	Weight [g]
373670	14,5	18,5	8,6	9,8	14,2	3,5	21
373688	18,5	22,5	10,4	11,5	16,6	4,0	51
373696	22,5	26,5	13,0	14,1	19,7	4,5	83
373704	26,5	30,5	13,0	14,2	19,9	4,5	102
373712	30,5	38,5	11,7	14,0	23,2	4,5	139
373720	38,5	46,5	15,5	18,0	27,2	6,5	274
373738	46,5	54,5	15,7	18,0	27,2	6,5	339
373746	54,5	70,5	19,1	23,7	40,7	8,0	690
373753	70,5	86,5	23,5	28,1	46,0	10,0	1349
373761	86,5	102,5	25,5	30,1	51,1	12,5	2028

### Application:

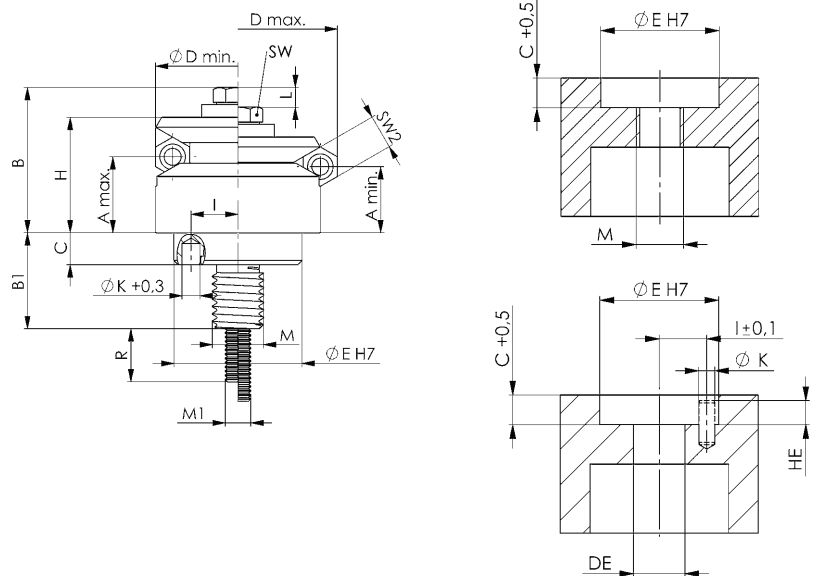
For unmarred surfaces with central positioning and clamping in blind holes. Operation from below, automated or manual.

### Advantage:

- Low installation height
- Clamping in the zero point
- Pull-down effect
- Distortion-free clamping

### Note:

For deep installation, clearance D max. must be provided.  
 Installation tool: Hole K for retaining pin for determining the precise position of the segments. (supplied without installation tool)



### Dimensions:

Order no.	B	B1	C	DE	E f7	HE	I $\pm 0,1$	K	L	M	M1	Q	R	SW	SW2
373670	17,0	14,1	5,5	6	12	2,5	4,5	2,0	2,3	M6	M3	3	12	5,5	4
373688	20,5	18,2	7,5	8	15	3,5	5,5	2,5	2,3	M8	M4	3	14	7,0	4
373696	24,4	17,4	6,0	10	20	3,5	7,0	3,0	2,3	M10	M5	3	15	8,0	4
373704	24,6	17,4	6,0	10	20	3,5	7,0	3,0	2,3	M10	M5	3	15	8,0	4
373712	28,8	21,9	7,0	12	25	3,5	9,0	4,0	4,6	M12	M6	3	20	10,0	8
373720	33,1	22,5	7,5	12	30	4,5	11,0	4,0	4,6	M12	M6	6	20	10,0	8
373738	33,1	22,5	7,5	12	30	6,5	11,0	4,0	4,6	M12	M6	6	20	10,0	8
373746	50,0	24,5	9,0	14	45	6,5	15,0	5,0	9,2	M14 x 1,5	M8	6	32	13,0	16
373753	55,3	29,4	10,0	16	60	6,5	17,0	5,0	9,2	M16 x 1,5	M8	6	20	13,0	16
373761	61,5	29,4	10,0	16	60	6,5	25,0	5,0	9,2	M16 x 1,5	M10	6	25	16,0	16

Q = number of segments

# THE FIRST STEP FOR USE AND EMPLOYMENT OF SIDE THRUST PIECES:

- > What is being positioned or clamped?
- > Which side thrust pieces will be used?
- > What size corresponds to the workpiece?
- > What tolerance does the workpiece have?
- > How large is the dimension Y? (Workpiece height)
- > How large is the dimension X? (See table)
- > Should the spring deflection be completely used?
- > How is the coordinate dimension determined?

## EXAMPLE: POSITIONING OR CLAMPING A PLATE 100 X 50 X 8 MM

### Should the pin diameter be 5, 6 or 8 mm?

- > If nothing may extend over the plate 5 mm
- > If projection would not be a problem 6 or 8 mm
- > If clamping will be done additionally 6 mm
- > If drilling will be performed without additional clamping 8 mm

### Workpiece height Y?

The tolerance can be ignored

### What force should be selected?

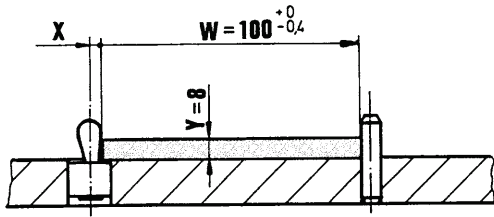
- > For positioning tasks 30 - 60 N
- > For clamping forces 90 - 150 N

### Length / width of the workpiece?

- > Length =  $100 +0/-0.4$  = medium dimension 99,8 mm
- > Width =  $50 +0,2/-0.2$  = medium dimension 50,0 mm

### Dimension X for side thrust pieces with steel spring?

- > See table or formula below



W = workpiece (+/- tolerance)  
- F = pre-tension  
F = (-F) + (+F)

Y = workpiece height  
+ F = clamping force (spring deflection for tolerance)  
T = tolerance

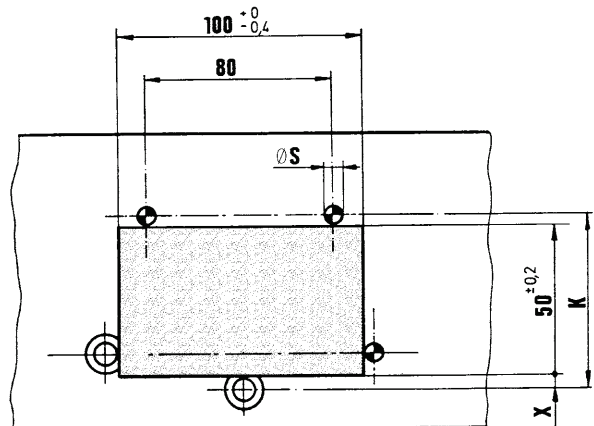
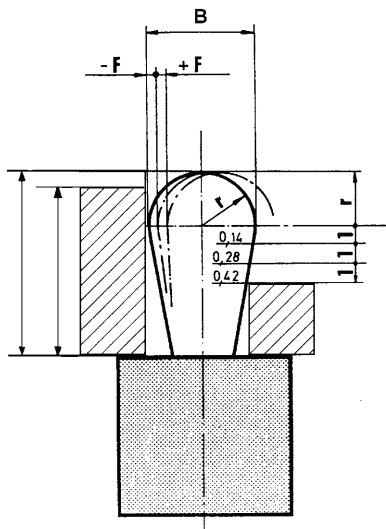
For workpieces that are higher than C minus r, the table values for dimension X or the formula  $X = B/2 - (-F)$  apply.

For workpieces that are smaller than C minus r, the table values for dimension X or the formula  $X = B/2 - (-F) - [(C - r - Y) \times 0,123]$  apply.

Formula for coordinates:

$$K = W - T/2 + x + S/2$$

The table values are standard values that should ideally be checked using a sample clamping.



## No. 6380D

### Side thrust piece, with seal

against chips and dirt.

Steel pin for clamping: hardened and galvanised

Sleeve: Aluminium

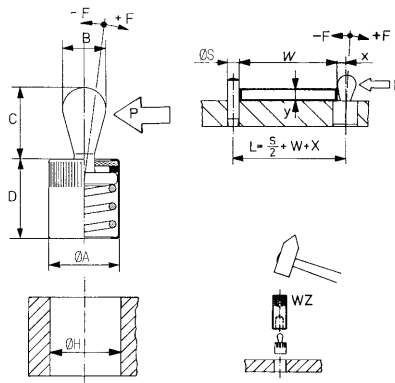


Order no.	dia. A	B	~P Spring force [N]	C	D-1	ØH H8	F	X	Tool 6380WZ	Weight [g]
373159	6	3	10	4	7	6	±0,5	0,9	03	0,6
373167	6	3	20	4	7	6	±0,5	0,9	03	0,6
373175	6	3	40	4	7	6	±0,5	0,9	03	0,7
373183	10	5	20	6	12	10	±0,8	1,6	05	2,7
373191	10	5	50	6	12	10	±0,8	1,6	05	2,9
373209	10	5	100	6	12	10	±0,8	1,6	05	2,9
373217	10	6	40	10	12	10	±1,0	1,8	06	3,1
373225	10	6	75	10	12	10	±1,0	1,8	06	3,6
373233	10	6	150	10	12	10	±1,0	1,8	06	3,7
373241	12	8	50	13	14	12	±1,3	2,6	08	3,9
373258	12	8	100	13	14	12	±1,3	2,6	08	7,1
373266	12	8	200	13	14	12	±1,3	2,6	08	7,3
373274	16	10	100	16	18	16	±1,6	3,2	10	7,6
373282	16	10	200	16	18	16	±1,6	3,2	10	15
373290	16	10	300	16	18	16	±1,6	3,2	10	15,4

### Note:

With sealing for chip-producing operations with dirt, temperature-resistant up to 150°C.

Sealing: CR, black, 60 Shore. Installation by pressing in.



### Recommendations



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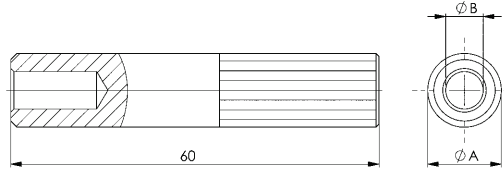
## No. 6380WZ

### Insertion tool

for pressing in the lateral pressure pad.



Order no.	Size	dia. A	B	Weight [g]
373308	03	8	3,1	16
373316	05/06	12	6,1	19
373332	08	14	8,1	64
373340	10	18	10,2	105



## No. 6387

### Eccentric clamping bolt

clamp in x-y direction with pull down effect.  
Hardened steel 56±1 HRC.



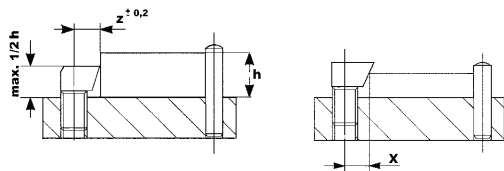
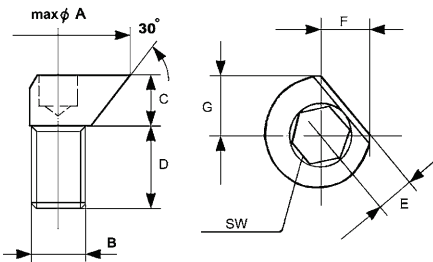
Order no.	dia. A	B	C	D	E	F	G	SW	X	Z	max. holding force [kN]	Md [Nm]	Weight [g]
373779	9,2	M4	3	8	3,0	4,6	4,0	2,5	3,5	4,2	0,09	1,5	2
373787	14,2	M6	5	12	4,5	7,1	6,1	4,0	5,4	6,4	0,3	5,0	6
373795	18,0	M8	6	16	5,5	8,9	7,7	5,0	6,6	8,0	2,7	22,0	9
373803	22,2	M10	7	20	6,5	11,1	9,4	6,0	8,3	9,8	4,0	35,0	16
373811	27,0	M12	9	24	8,0	13,5	11,6	8,0	10,1	12,0	5,4	45,0	31

### Application:

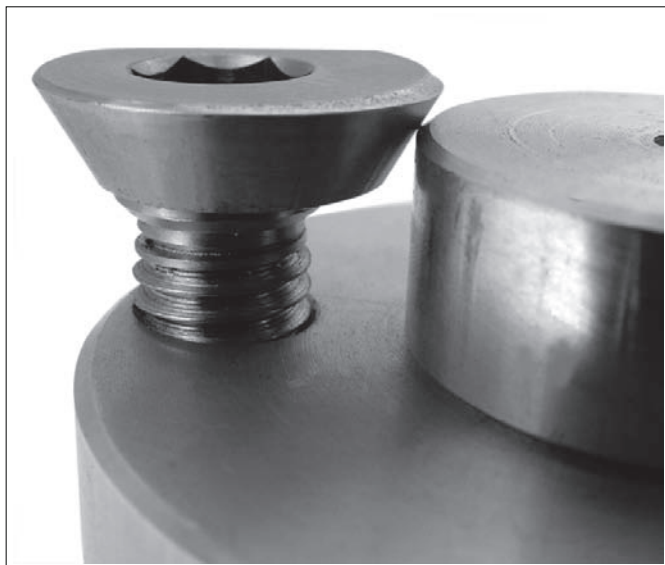
- Clamping above the machining surface
- Clamping below the machining surface
- Clamping in holes.

### Advantage:

- stepless adjustment with eccentric
- high wear resistance.



### Clamping above the machining surface



### Clamping below the machining surface



Subject to technical alterations.