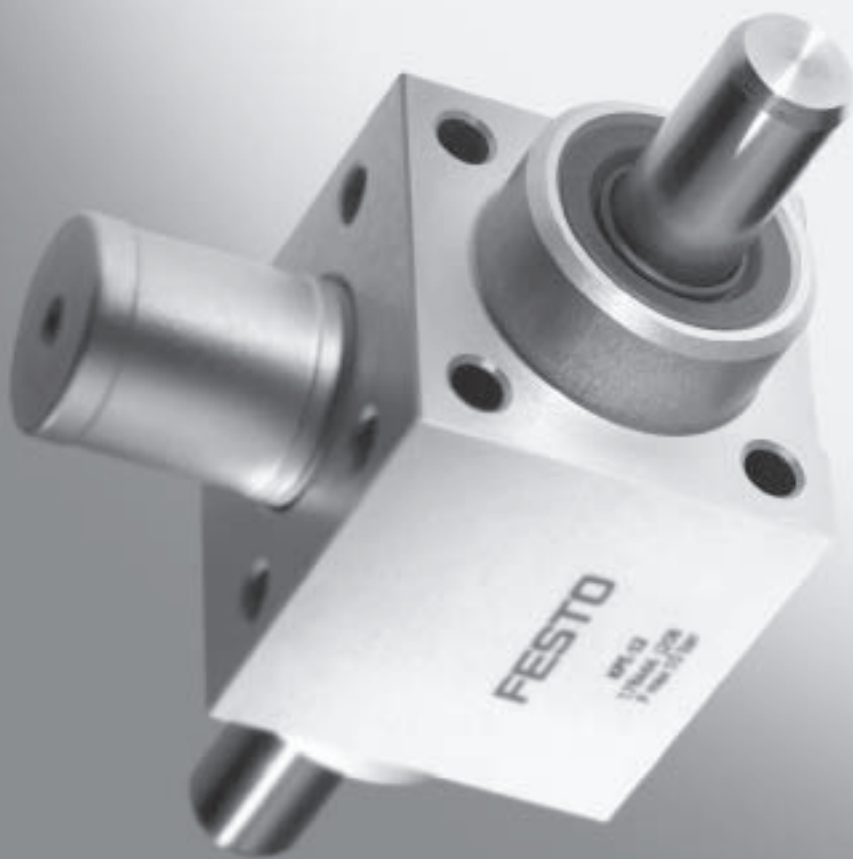


## Clamping units/cartridges

FESTO

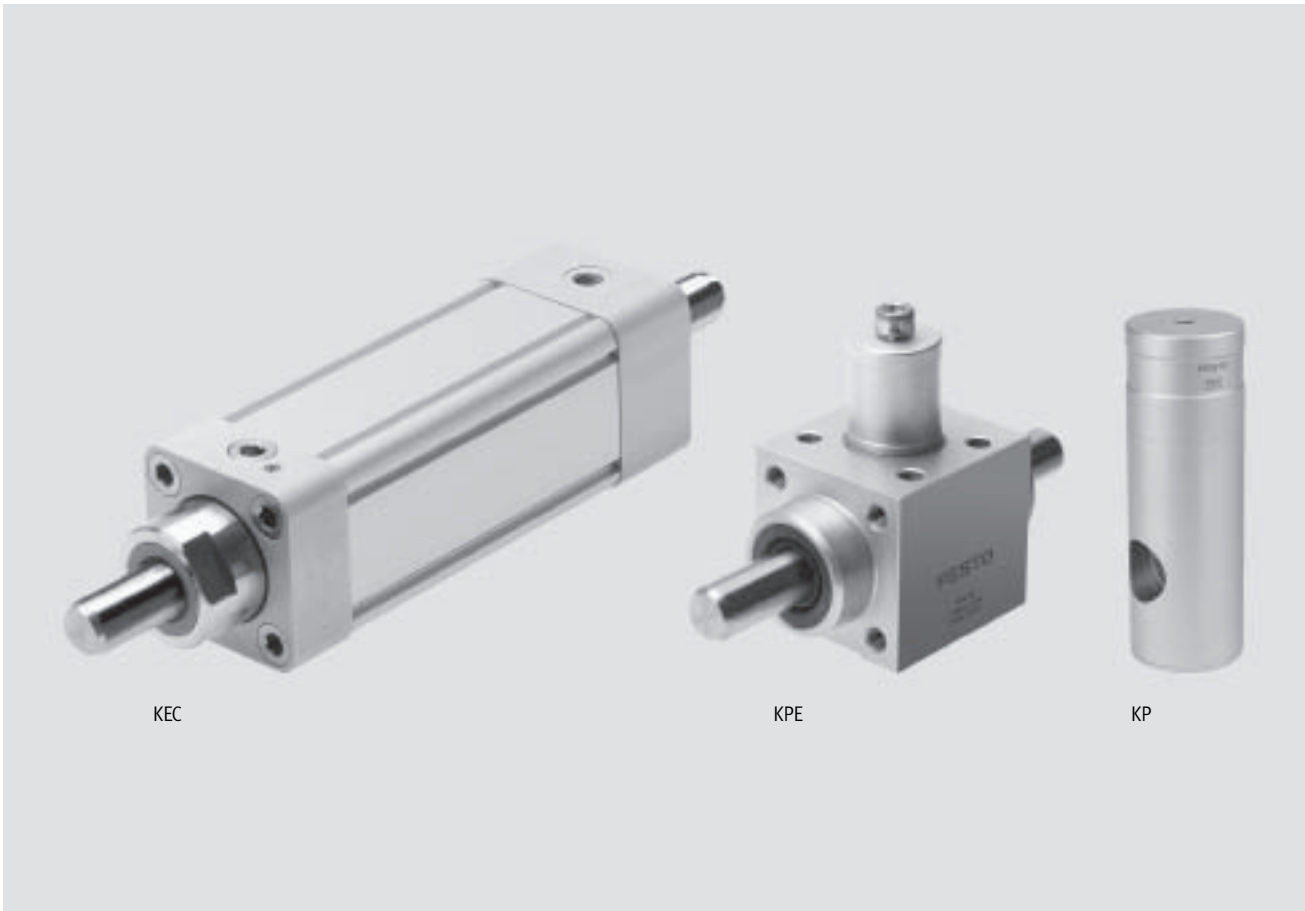


- Holding of round material using spring force
- Holding in the event of power failure
- Any mounting position

# Clamping units/cartridges

Key features

FESTO



KEC

KPE


KP

Drive accessories  
Clamping cartridges/units

## 10.5

### Holding of round material

- Holding in the event of power failure
- Able to hold and retain material for long periods, even in applications involving varying loads, fluctuating operating pressure and system leaks.
- The clamping units KEC, KPE and clamping cartridge KP are discrete components and are not intended for use as attachments for pneumatic cylinders.
- They use spring force to hold round material in any desired position.
- The clamping force is released by pressurising the clamping cartridge.
- The clamping units and clamping cartridges can be installed in any desired position.
- They are not suitable for use as positioning devices.
- In their clamped state, the clamping units and clamping cartridges are not free of backlash when their piston rods are subjected to alternating loads.

 Note  
Clamping cartridges must not be used in safety devices.  
When installing clamping cartridges, appropriate clearance must be provided.  
Dimensions → 1 / 10.5-9

# Clamping units/cartridges

Key features and type code

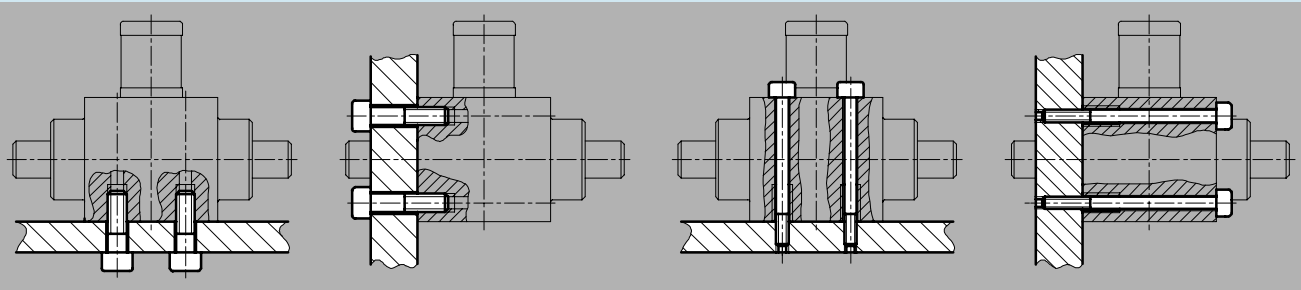
## Requirements for round material to be clamped

- Hardened (min. HRC 60) or hard chrome-plated steel (coating thickness min. 20 µm).
- Rolled steel:  
Tensile strength > 650 (N/mm<sup>2</sup>),  
hardness (HB30) > 175
- The nominal diameter must lie in the tolerance zone h8.
- The surface roughness  $R_{max}$  must not exceed 2.5 µm.
- The specified holding forces refer to a static load. If these values are exceeded, slippage may occur.
- Dynamic forces occurring during operation must not exceed the static holding force.

## Mounting options for clamping units KPE

Short screws

Through-screws



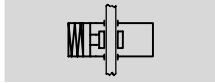
## Type codes


	KP	4	80
<b>Type</b>			
KEC	Clamping unit		
KPE			
KP	Clamping cartridge		
<b>Round material to be clamped <math>\varnothing</math> [mm]</b>			
<b>Static holding force with KP [N]</b>			


# Clamping units KEC

Technical data

Function



 Diameter of round material to be clamped:  
16 ... 25 mm

 Force  
1,300 ... 8,000 N

General technical data			
Round material $\varnothing$	16	20	25
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$
Operating medium	Filtered compressed air, lubricated or unlubricated		
Clamping type with effective direction	Spring $\rightarrow$ compressed air, both ends		
Type of mounting	Via accessories $\rightarrow$ 1 / 10.5-10		
Mounting position	Any		

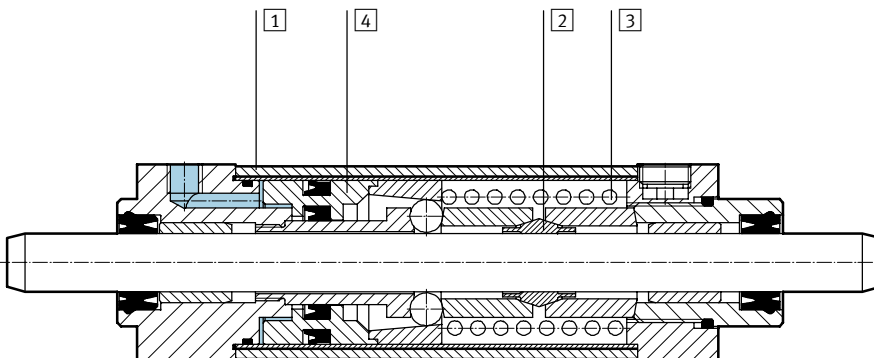
Operating and environmental conditions			
Round material $\varnothing$	16	20	25
Operating pressure [bar]	3.8 ... 10		
Temperature range [°C]	-20 ... +80		
Corrosion resistance class CRC <sup>1)</sup>	2		

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Forces [N]			
Round material $\varnothing$	16	20	25
Static holding force	1,300	3,200	8,000

## Materials

Sectional view



Clamping unit	
1 Housing	Wrought aluminium alloy
2 Collet	Tool steel
3 Spring	High-alloy steel
4 Piston	Wrought aluminium alloy
- Seals	Nitrile rubber, polyurethane

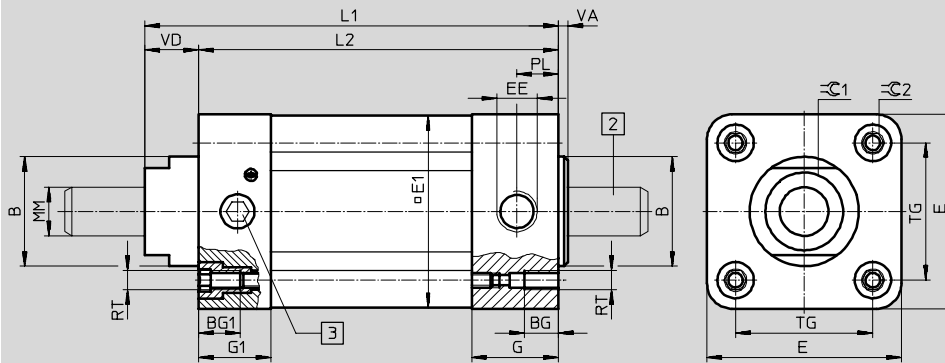
# Clamping units KEC

Technical data

**Dimensions and ordering data**

Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)




For round material  $\varnothing$  16 ... 25 mm



2 The clamping unit must not be exhausted without round material being present.

3 Locking screw

For $\varnothing$ [mm]	B $\varnothing$ f8	BG	BG1	E	E1	EE	G	G1	L1	L2	MM $\varnothing$ f7-h7
16	35	15	15	54	53	G $\frac{1}{8}$	27	22	178	160	16
20	45	14	17	80	79	G $\frac{1}{4}$	30	29.5	208.5	187	20
25	55	17	17	126	126	G $\frac{3}{8}$	32.5	32.5	287	258	25

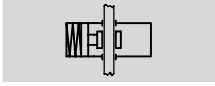
For $\varnothing$ [mm]	PL	RT	TG	VA	VD	$\text{C1}$	$\text{C2}$	Weight [g]	Part No.	Type
16	13	M6	38	5.5	18	30	6	1,860	527 492	KEC-16 
20	15.5	M8	56.5	6	21.5	36	8	4,515	527 493	KEC-20 
25	17	M10	89	7	29	41	10	15 600	527 494	KEC-25 

# Clamping units KPE

Technical data

FESTO

Function



[www.festo.com/en/Spare\\_parts\\_service](http://www.festo.com/en/Spare_parts_service)



∅ - Diameter of round material to be clamped:  
4 ... 32 mm

≡ - Force  
80 ... 7,500 N

General technical data										
Round material ∅	4	6	8	10	12	16	20	25	32	
Pneumatic connection	M5					G1/8				
Operating medium	Filtered compressed air, lubricated or unlubricated									
Clamping type with effective direction	Spring → compressed air, both ends									
Type of mounting	Short screws									
	Through-screws									
Mounting position	Any									

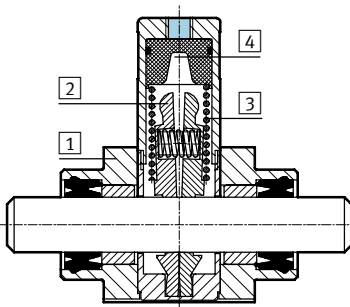
Operating and environmental conditions									
Round material ∅	4	6	8	10	12	16	20	25	32
Operating pressure [bar]	3 ... 10								
Temperature range [°C]	-10 ... +80								
Corrosion resistance class CRC <sup>1)</sup>	2								

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Forces [N]									
Round material ∅	4	6	8	10	12	16	20	25	32
Static holding force	80	180	350	350	600	1,000	1,400	5,000	7,500

## Materials

Sectional view



Clamping unit	
1	Housing Anodised aluminium
2	Clamping jaws Brass
3	Spring Spring steel
4	Piston Polyacetal
-	Seals Nitrile rubber

# Clamping units KPE

Technical data

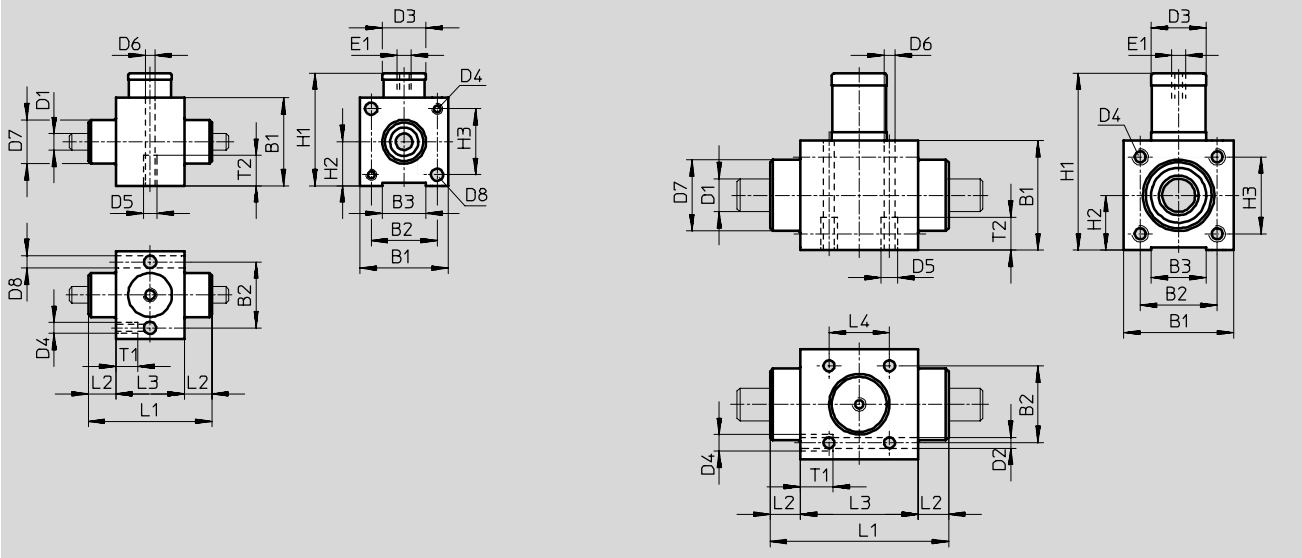


## Dimensions and ordering data

Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)

For round material  $\varnothing$  4 ... 6 mm

For round material  $\varnothing$  8 ... 32 mm



For $\varnothing$ [mm]	B1	B2	B3	D1 $\varnothing$	D2 $\varnothing$	D3 $\varnothing$	D4	D5	D6 $\varnothing$	D7 $\varnothing$	D8 $\varnothing$	E1	H1	H2
4	27	19.5	12	4	-	12	-	M5	4.2	12	4.5	M5	34.5	13.5
6	32	24	16	6	-	16	-	M5	4.2	16	4.5	M5	41	16
8	36	27	20	8	4.2	20	M5	M5	4.2	22	-	M5	62.5	18
10	36	27	20	10	4.2	20	M5	M5	4.2	22	-	M5	62.5	18
12	40	28	20	12	5.2	20	M6	M6	5.2	28	-	M5	64.5	20
16	45	32.5	25	16	5.2	24	M6	M6	5.2	32	-	G $\frac{1}{8}$	83.5	22.5
20	65	50	38	20	6.5	38	M8	M8	6.5	45	-	G $\frac{1}{8}$	118	32.5
25	88	65	50	25	8.5	48	M10	M10	8.5	55	-	G $\frac{1}{8}$	163	44
32	118	90	70	32	10.3	65	M12	M12	10.3	60	-	G $\frac{1}{8}$	199	59

For $\varnothing$ [mm]	H3	L1	L2	L3	L4	T1	T2	Max. axial backlash of clamped round material	Weight [g]	Part No.	Type
4	19.5	33	7.5	18	-	9	11	0.2	100	178 462	KPE-4
6	24	45	10	25	-	9	11	0.2	150	178 463	KPE-6
8	27	58	10	38	20	10	11	0.25	240	178 464	KPE-8
10	27	62	12	38	20	10	11	0.25	260	178 465	KPE-10
12	28	65	11	43	22	12	12	0.25	270	178 466	KPE-12
16	32.5	69	12.5	44	22	12	12	0.25	410	178 467	KPE-16
20	50	83	12.5	58	30	16	16	0.3	930	178 468	KPE-20
25	65	100	15	70	34	20	20	0.3	2,000	178 469	KPE-25
32	90	154	25	104	60	24	24	0.3	4,600	178 470	KPE-32

Drive accessories  
Clamping cartridges/units

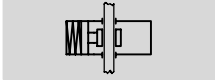
10.5

# Clamping cartridges KP

Technical data

FESTO

## Function



- $\varnothing$  - Diameter of round material to be clamped:  
4 ... 32 mm
- - Force  
80 ... 7 500 N



General technical data										
Round material $\varnothing$	4	6	8	10	12	16	20	25	32	
Pneumatic connection	M5					G $\frac{1}{8}$				
Operating medium	Filtered compressed air, lubricated or unlubricated									
Clamping type with effective direction	Spring $\rightarrow$ compressed air, both ends									
Type of mounting	Via self-configured housing									
Mounting position	Any									

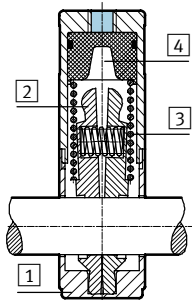
Operating and environmental conditions									
Round material $\varnothing$	4	6	8	10	12	16	20	25	32
Operating pressure [bar]	3 ... 10								
Temperature range [°C]	-10 ... +80								
Corrosion resistance class CRC <sup>1)</sup>	2								

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Forces [N]										
Round material $\varnothing$	4	6	8	10	12	16	20	25	32	
Static holding force	80	180	350	350	600	1,000	1,400	2,000	5,000	7,500

## Materials

Sectional view



Clamping cartridge	
1	Housing Anodised aluminium
2	Clamping jaws Brass
3	Spring Spring steel
4	Piston Polyacetal
-	Seals Nitrile rubber



# Clamping cartridges KP

Technical data

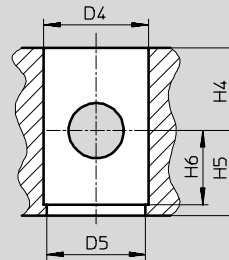
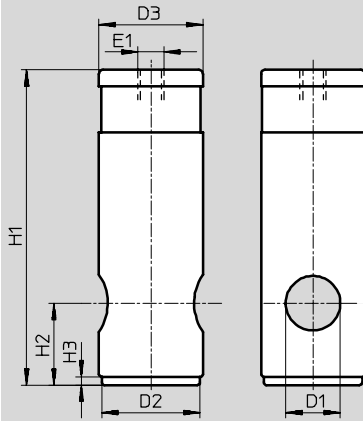
FESTO

## Dimensions and ordering data

For round material  $\varnothing$  4 ... 32 mm

Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)

Housing recess



- Note

The clamping cartridge can also be integrated in a separate housing or component. In this case, it must be ensured that a plain bearing is integrated on both sides of the separate housing.

For $\varnothing$ [mm]	D1 $\varnothing$	D2 $\varnothing$ h12	D3 $\varnothing$ f9	D4 $\varnothing$ D9	D5 $\varnothing$	E1	H1	H2
4	4	10	12	12	11	M5	28	7
6	6	14	16	16	15	M5	35	10
8	8	18	20	20	19	M5	62	17.5
10	10	18	20	20	19	M5	62	17.5
12	12	18	20	20	19	M5	62	17.5
16	16	22	24	24	23	G $\frac{1}{8}$	83	22
20	20	28	30	30	29	G $\frac{1}{8}$	100	25
	20	36	38	38	37	G $\frac{1}{8}$	115.5	30
25	25	46	48	48	47	G $\frac{1}{8}$	155	36
32	32	63	65	65	64	G $\frac{1}{8}$	195	55

For $\varnothing$ [mm]	H3	H4 min.	H5 min.	H6	Max. axial backlash of clamped round material	Weight [g]	Part No.	Type
4	2	9	7	6	0.2	10	178 452	KP-4-80
6	3	10	11	8	0.2	15	178 453	KP-6-180
8	3	18	18.5	15.5	0.25	50	178 454	KP-8-350
10	3	18	18.5	15.5	0.25	50	178 455	KP-10-350
12	3	18	18.5	15.5	0.25	50	178 456	KP-12-600
16	3	22	23	20	0.25	90	178 457	KP-16-1000
20	3	25	26	23	0.3	170	178 458	KP-20-1400
	3	30	31	28	0.3	170	178 459	KP-20-2000
25	3	36	37	34	0.3	700	178 460	KP-25-5000
32	3	55	56	53	0.3	1,600	178 461	KP-32-7500

Drive accessories  
Clamping cartridges / units

10.5

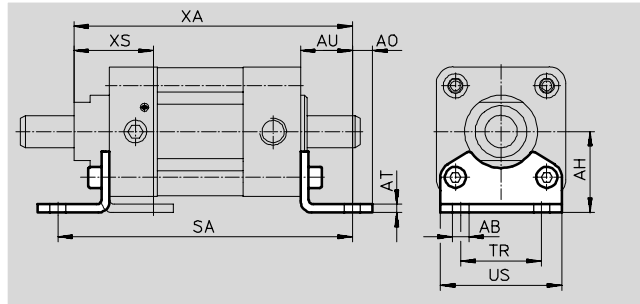
# Clamping units KEK

Accessories



## Foot mounting HNC

Material:  
Galvanised steel  
Free of copper, PTFE and silicone

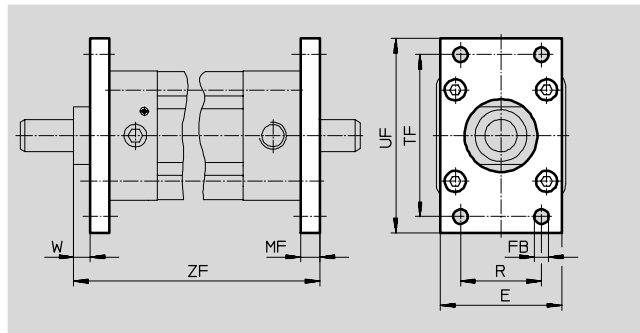


Dimensions and ordering data														
For $\varnothing$	AB	AH	A0	AT	AU	SA	TR	US	XA	XS	CRC <sup>1)</sup>	Weight	Part No.	Type
[mm]	$\varnothing$											[g]		
16	10	36	9	5	28	216	36	54	206	42	2	180	174 370	HNC-40
20	10	50	12.5	6	32	251	50	75	240.5	48.5	2	405	174 372	HNC-63
25	14.5	71	17.5	6	41	340	75	110	328	64	2	1,000	174 374	HNC-100

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

## Flange mounting FNC

Material:  
Galvanised steel  
Free of copper, PTFE and silicone



Dimensions and ordering data													
For $\varnothing$	E	FB	MF	R	TF	UF	W	ZF	CRC <sup>1)</sup>	Weight	Part No.	Type	
[mm]		$\varnothing$ H13								[g]			
16	54	9	10	36	72	90	8	188	2	280	174 377	FNC-40	
20	75	9	12	50	100	120	9.5	220.5	2	690	174 379	FNC-63	
25	110	14	16	75	150	175	13	303	2	2,400	174 381	FNC-100	

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Core Range