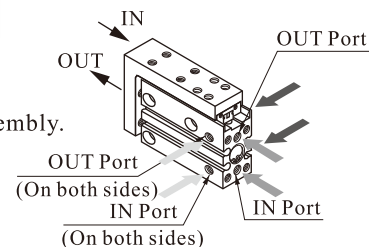


Slide table cylinder——HLH Series

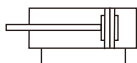


Product feature

1. Miniature linear roller ball bearing integrated wise cylinder.
2. With the excellent straightness and non-rotation precision, it is more suitable for precision assembly.
3. Mounting is possible from 4 directions.
4. Piping is possible from 3 directions.



Symbol



Specification

Bore size(mm)	6	10	16	20
Acting type	Double acting			
Fluid	Air(to be filtered by 40μm filter element)			
Operating pressure	0.15~0.7MPa(22~100psi)(1.5~7.0bar)			
Proof pressure	1.2MPa(175psi)(12.0bar)			
Temperature °C	-20~70			
Speed range mm/s	50~500			
Allowable kinetic energy J	0.008	0.025	0.05	0.1
Stroke tolerance	$+1.0$ 0			
Cushion type	Bumper			
Sensor switches [Note1]	CM5H, DMSH(S)			
Port size	M5×0.8			

Stroke

Bore size (mm)	Standard stroke (mm)	Max.std stroke
6	5 10 15 20 25 30	30
10	5 10 15 20 25 30 40 50	50
16	5 10 15 20 25 30 40 50 60	60
20	5 10 15 20 25 30 40 50 60	60

[Note] Consult us for non-standard stroke.

Criteria for selection: Cylinder thrust

Unit: Newton(N)

Bore size	Rod size	Acting type	Pressure area(mm ²)	Operating pressure(MPa)							
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	
6	3	Double acting	Push-side	28.3	-	5.7	8.5	11.3	14.2	17.0	19.8
			Pull-side	21.2	-	4.2	6.4	8.5	10.6	12.7	14.8
10	4	Double acting	Push-side	78.5	7.9	15.7	23.6	31.4	39.3	47.1	55.0
			Pull-side	66.0	6.6	13.2	19.8	26.4	33.0	39.6	46.2
16	6	Double acting	Push-side	201.0	20.1	40.2	60.3	80.4	100.5	120.6	140.7
			Pull-side	172.7	17.3	34.5	51.8	69.1	86.4	103.6	120.9
20	8	Double acting	Push-side	314.0	31.4	62.8	94.2	125.6	157.0	188.4	219.8
			Pull-side	263.8	26.4	52.8	79.1	105.5	131.9	158.3	184.7

Slide table cylinder——HLH Series

Ordering code

HLH 20 × 30 S

①

②

③

④

③Stroke

Refer to stroke table for details

①Model

HLH: Slide table cylinder(Double acting type)

②Bore size

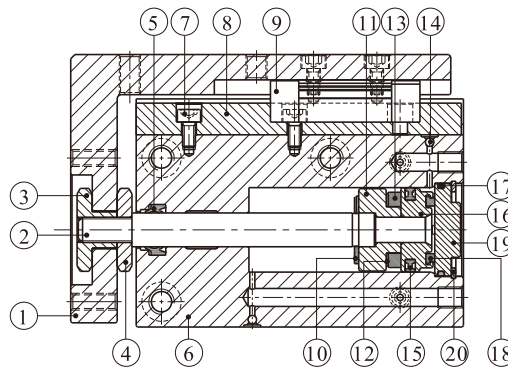
6 10 16 20

④Magnet

S: With magnet

Inner structure and material of major parts

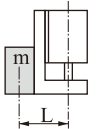
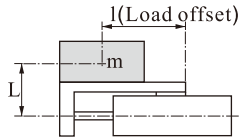
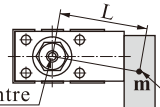
HLH



NO.	Item	Material	NO.	Item	Material
1	Slide table	Aluminum alloy	11	Magnet holder	Aluminum alloy
2	Piston rod	Stainless steel	12	Magnet washer	NBR
3	Hexagon nut	Carbon steel	13	Magnet	Sintered metal(Neodymium-iron-boron)
4	Hexagon nut	Carbon steel	14	Steel ball	SUS304
5	Rod seal	NBR	15	Piston seal	NBR
6	Body	Aluminum alloy	16	Piston	Aluminum alloy
7	Screw	Carbon steel	17	O-ring	NBR
8	Linear guide	Stainless steel	18	Bumper	TPU
9	Slide block		19	Back cover	Aluminum alloy
10	Bumper	TPU	20	C clip	Spring steel

Model Selection Method

1. Select the bore size according to the thrust and practicality. Refer to the table on page 195.
2. Determine the selection conditions in order, starting from the upper row in the table below, and choose one of the selection graphs to be used.

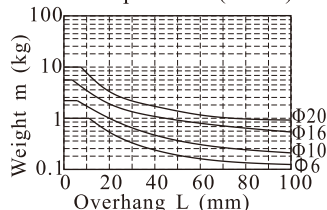
	Vertical			Horizontal								
Mounting position												
Maximum speed(mm/s)	≤100	≤300	≤500	≤100	≤300	≤500						
Load offset l(mm)	-	-	-	50	100	200	50	100	200	50	100	200
Selection graph	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
L: Overhang (the distance from the cylinder shaft centre to the load centre of gravity)												
												

- 2.1) The relation between loading and overhang(Selection graphs)

Slide table cylinder——HLH Series

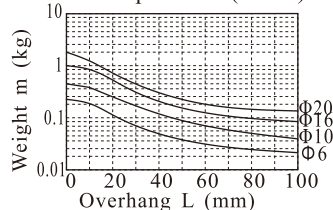
Selection Graphs(1)

Maximum speed 100(mm/s) or less



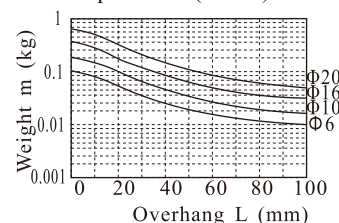
Selection Graphs(2)

Maximum speed 300(mm/s) or less



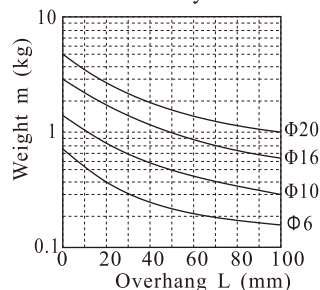
Selection Graphs(3)

Maximum speed 500(mm/s) or less



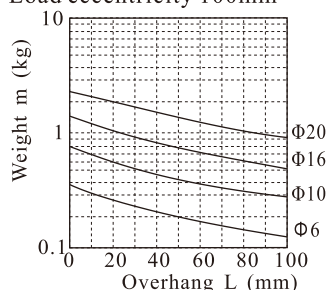
Selection Graphs(4)

Maximum speed 100(mm/s) or less
Load eccentricity 50mm



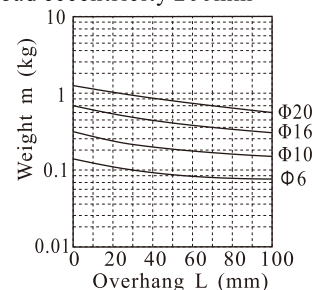
Selection Graphs(5)

Maximum speed 100(mm/s) or less
Load eccentricity 100mm



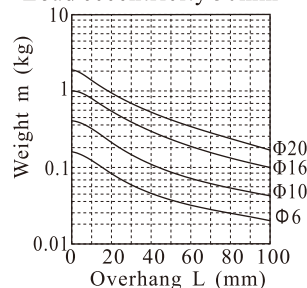
Selection Graphs(6)

Maximum speed 100(mm/s) or less
Load eccentricity 200mm



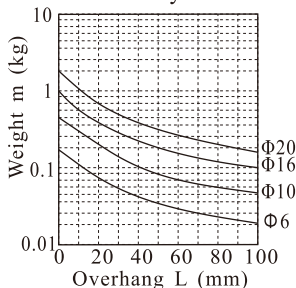
Selection Graphs(7)

Maximum speed 300(mm/s) or less
Load eccentricity 50mm



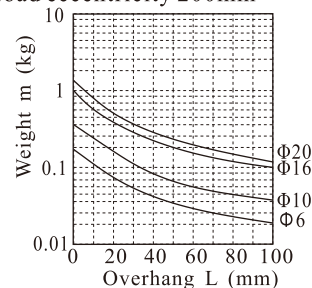
Selection Graphs(8)

Maximum speed 300(mm/s) or less
Load eccentricity 100mm



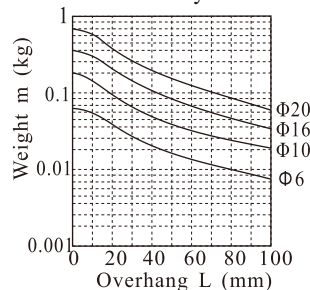
Selection Graphs(9)

Maximum speed 300(mm/s) or less
Load eccentricity 200mm



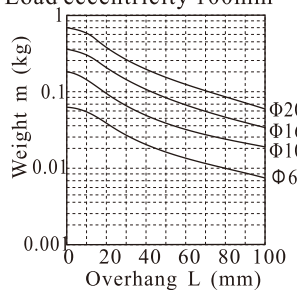
Selection Graphs(10)

Maximum speed 500(mm/s) or less
Load eccentricity 50mm



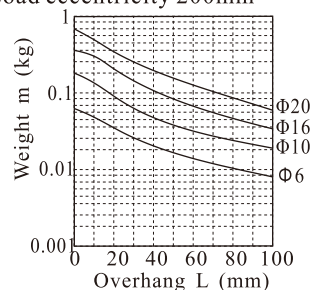
Selection Graphs(11)

Maximum speed 500(mm/s) or less
Load eccentricity 100mm



Selection Graphs(12)

Maximum speed 500(mm/s) or less
Load eccentricity 200mm



2.2) Selection Examples

Example ①: Mounting: Vertical Maximum speed: 500mm/s Overhang: 40mm Load weight: 0.1Kg
Refer to Graph based on vertical mounting and a speed of 500mm/s. In Graph , find the intersection of a 40mm overhang and load weight of 0.1Kg, which results in a selection of ø20.

Example ②: Mounting: Horizontal Maximum speed: 500mm/s Load eccentricity: 50mm Overhang: 30mm
Load weight: 0.1Kg

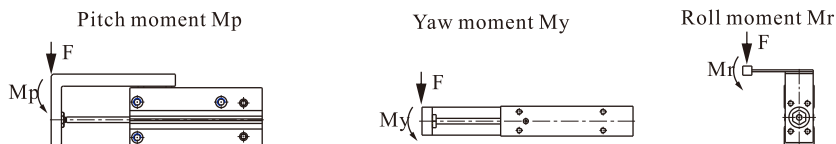
Refer to Graph based on horizontal mounting, a speed of 500mm/s and load eccentricity of 50mm. In Graph , find the intersection of a 30mm overhang and load weight of 0.1Kg, which results in a selection of ø16.

Slide table cylinder——HLH Series

Installation and application

1. The actual loading and moment of cylinder must be less than it's allowable loading and moment:

1.1) The allowable moment of cylinder



Model/Allowable torque (Nm)	Pitch moment M_p	Yaw moment M_y	Roll moment M_r
HLH6	0.25	0.25	0.41
HLH10	0.95	0.95	1.49
HLH16	3.28	3.28	3.45
HLH20	6.29	6.29	6.61

1.2) When the cylinder is subjected to different type of moment, there will be different degree of shift in performance, please refer to the following table for details.

Table deflection due to pitch moment

Table deflection (arrow) when a load acts upon the section marked with the arrow at the full stroke of the compact slide.

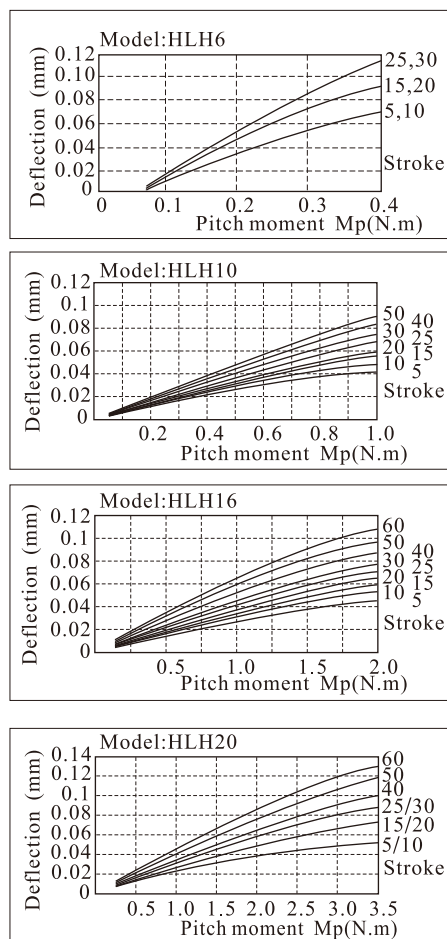
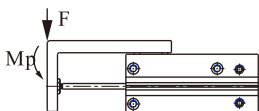


Table deflection due to yaw moment

Table deflection (arrow) when a load acts upon the section marked with the arrow at the full stroke of the compact slide.

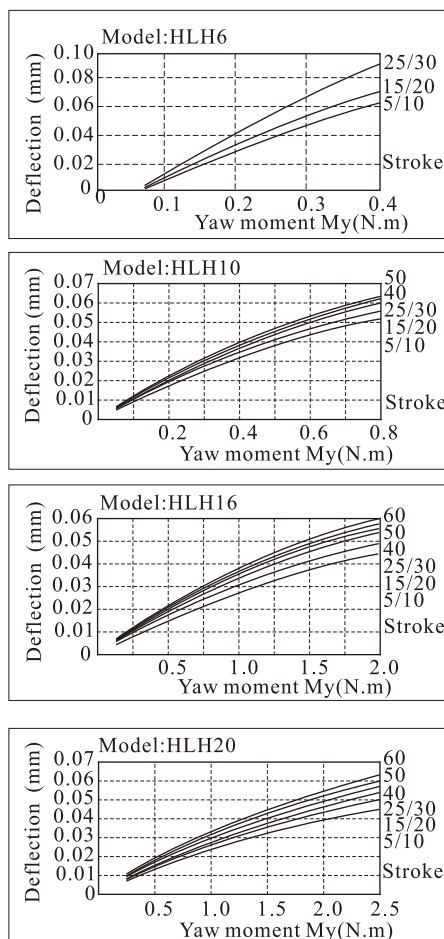
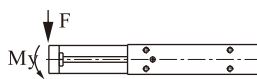
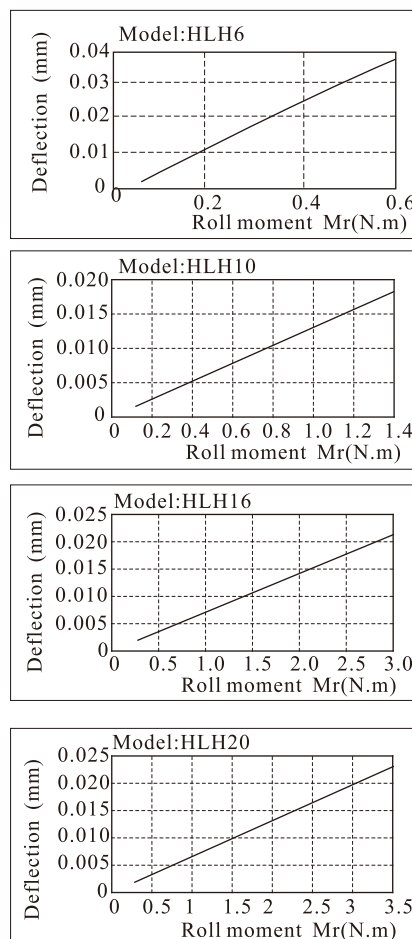
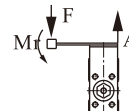


Table deflection due to roll moment

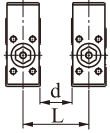
Table deflection (at A) when a load acts upon section F at the full stroke of the compact slide.



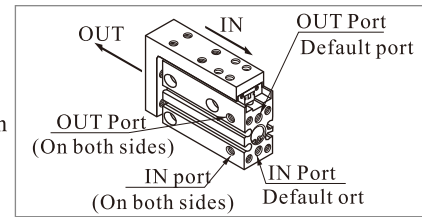
Slide table cylinder——HLH Series

2. The compact slide can be piped from 3 directions. Confirm the pressure ports and operating direction. (See drawing right)

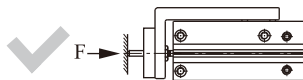
3. In compact slides with sensor switch, there is a danger of sensor switch malfunction if the mounting pitch is less than the dimensions shown in Table right.
Be sure to allow at least the indicated interval.



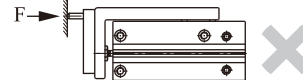
At least indicated interval (mm)/Model	HLH6	HLH10	HLH16	HLH20
d	5	5	10	15
L	21	25	35	47



4. When the output of the compact slide will be directly applied to the table, it should be applied along the rod axis.



The loading and piston rod are coaxial

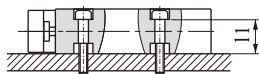


The loading and piston rod are offset

5. Be sure to use a flow control value, and adjust the speed to 500mm/s or less.

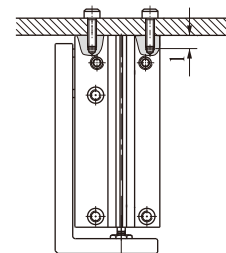
6. A compact slide can be mounted from 4 directions. Don't exceed the max.fastening torque then tightening the mounting bolts.

Lateral Mounting(Through Holes)

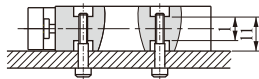


Model	Bolts	Max.fastening torque	L1
HLH6	M3×0.5	1.1(Nm)	12.7
HLH10	M4×0.7	2.5(Nm)	15.6
HLH16	M4×0.7	2.5(Nm)	20.6
HLH20	M5×0.8	5.1(Nm)	24.0

Axial Mounting(Tapped Holes)

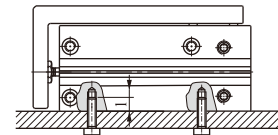


Lateral Mounting(Tapped Holes)



Model	Bolts	Max.fastening torque	L1	L
HLH6	M4×0.7	2.5(Nm)	12.7	9.4
HLH10	M5×0.8	5.1(Nm)	15.6	11.2
HLH16	M5×0.8	5.1(Nm)	20.6	16.2
HLH20	M6×1.0	8.1(Nm)	24.0	16.0

Vertical Mounting(Tapped Holes)

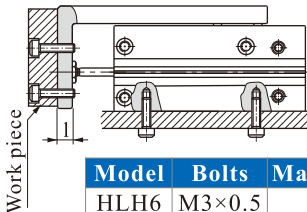


Model	Bolts	Max.fastening torque	L
HLH6	M3×0.5	1.1(Nm)	5
HLH10	M4×0.7	2.5(Nm)	6
HLH16	M4×0.7	2.5(Nm)	6
HLH20	M5×0.8	5.1(Nm)	8

7. Work Piece Mounting

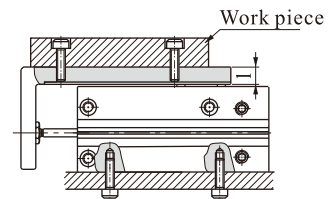
7.1) Work pieces can be mounted on 2 surfaces of the compact slide. When mounting a work piece, tighten the bolts properly at a torque value within the limiting range.

Front Mounting



Model	Bolts	Max.fastening torque	L
HLH6	M3×0.5	1.1(Nm)	5.5
HLH10	M4×0.7	2.5(Nm)	7.5
HLH16	M4×0.7	2.5(Nm)	10
HLH20	M5×0.8	5.1(Nm)	11

Top Mounting



Model	Bolts	Max.fastening torque	L
HLH6	M3×0.5	1.1(Nm)	6.5
HLH10	M4×0.7	2.5(Nm)	8
HLH16	M4×0.7	2.5(Nm)	9
HLH20	M5×0.8	5.1(Nm)	9.5

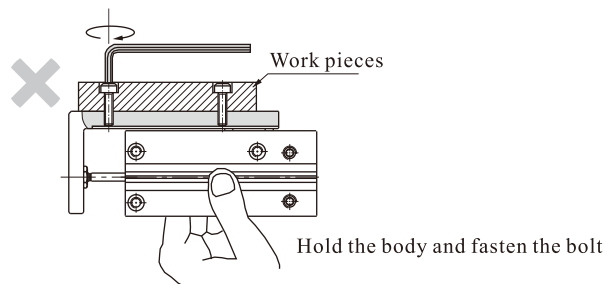
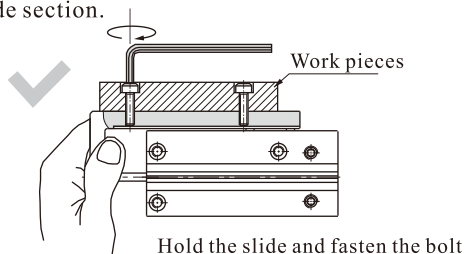
7.2) Since the table is supported by the linear guide, take care not to apply strong impact or large moment to the guide section.

7.3) Hold the slide when fastening work pieces with bolts, If the body is held while tightening bolts, excessive moment may damage guide section.

Slide table cylinder——HLH Series

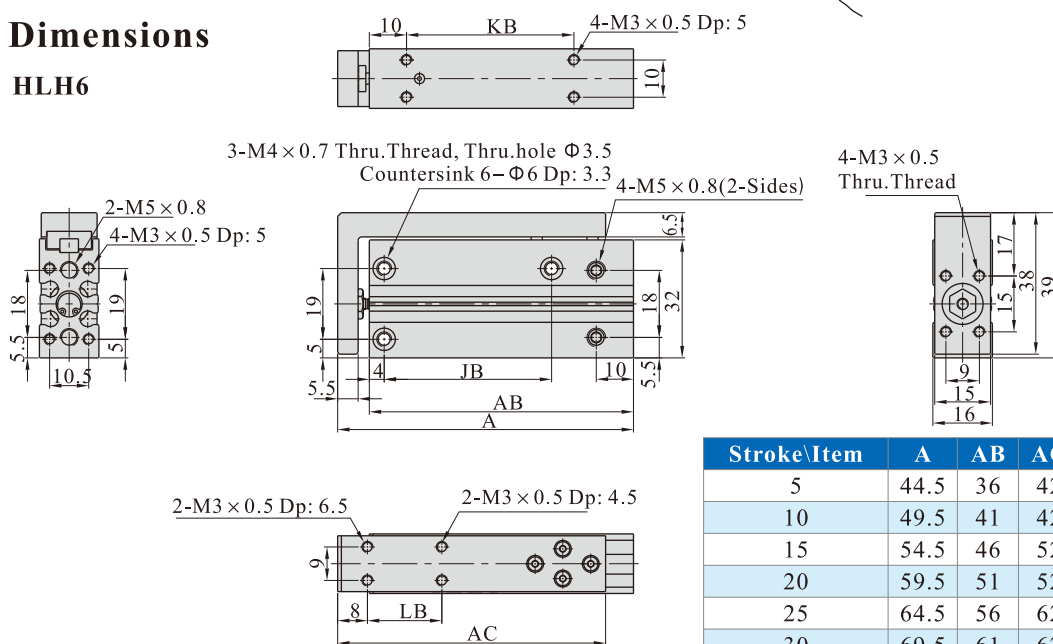
7.2) Since the table is supported by the linear guide, take care not to apply strong impact or large moment to the guide section.

7.3) Hold the slide when fastening work pieces with bolts, If the body is held while tightening bolts, excessive moment may damage guide section.



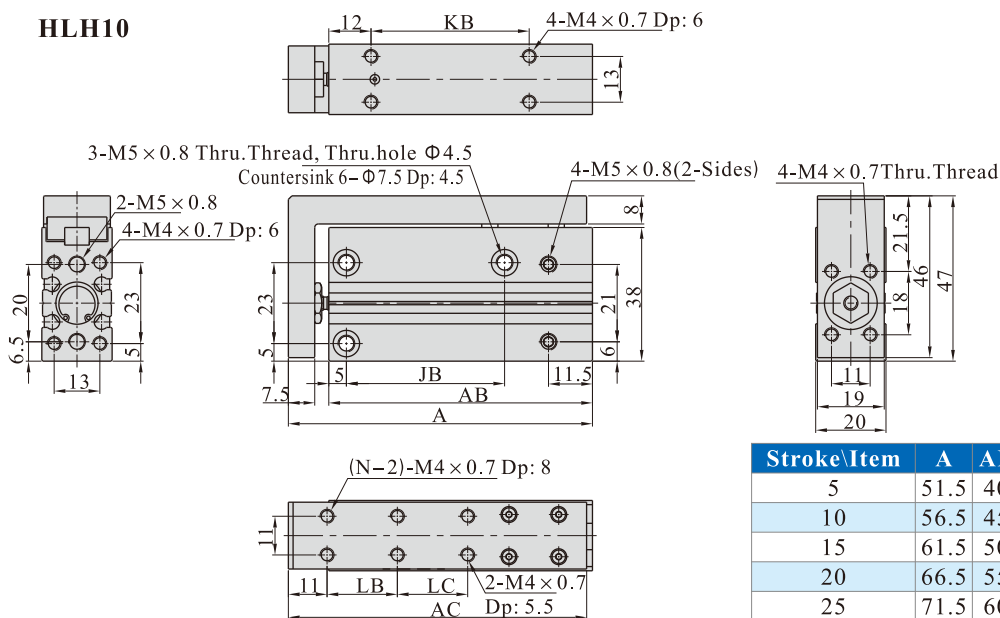
Dimensions

HLH6



Stroke\Item	A	AB	AC	JB	KB	LB
5	44.5	36	42	14	10	10
10	49.5	41	42	14	15	10
15	54.5	46	52	24	20	20
20	59.5	51	52	24	25	20
25	64.5	56	62	30	30	30
30	69.5	61	62	30	35	30

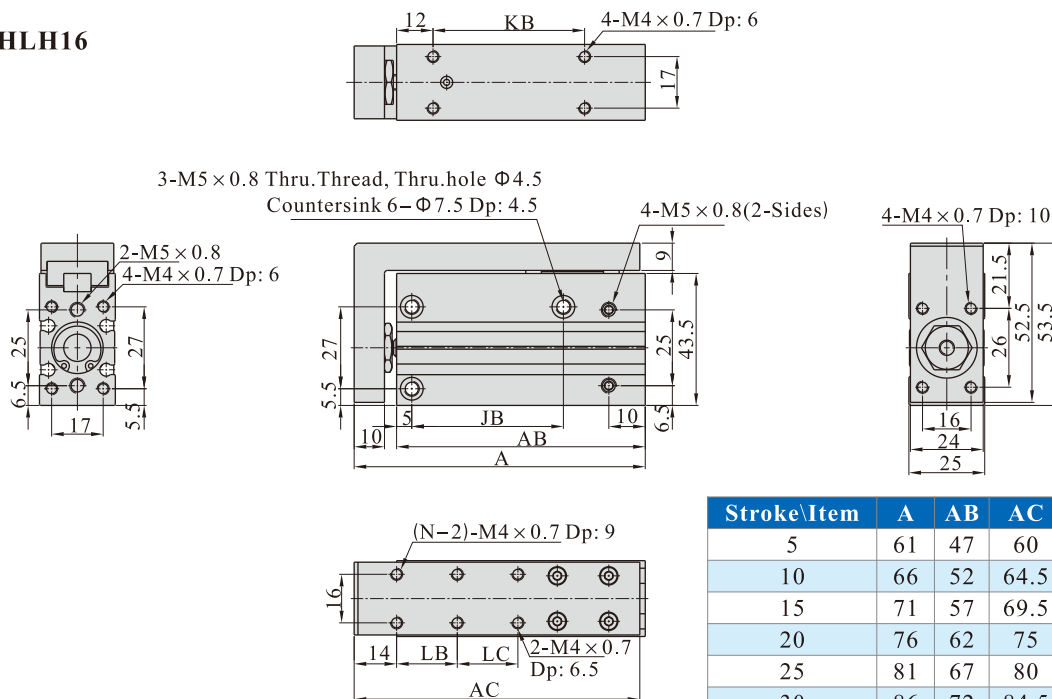
HLH10



Stroke\Item	A	AB	AC	JB	KB	LB	LC	N
5	51.5	40	50	14	10	10	-	4
10	56.5	45	55	14	15	10	-	4
15	61.5	50	60.5	24	20	20	-	4
20	66.5	55	63	24	25	20	-	4
25	71.5	60	70.5	30	30	30	-	4
30	76.5	65	75.5	30	35	30	-	4
40	86.5	75	85.5	45	45	20	20	6
50	96.5	85	93	55	55	25	25	6

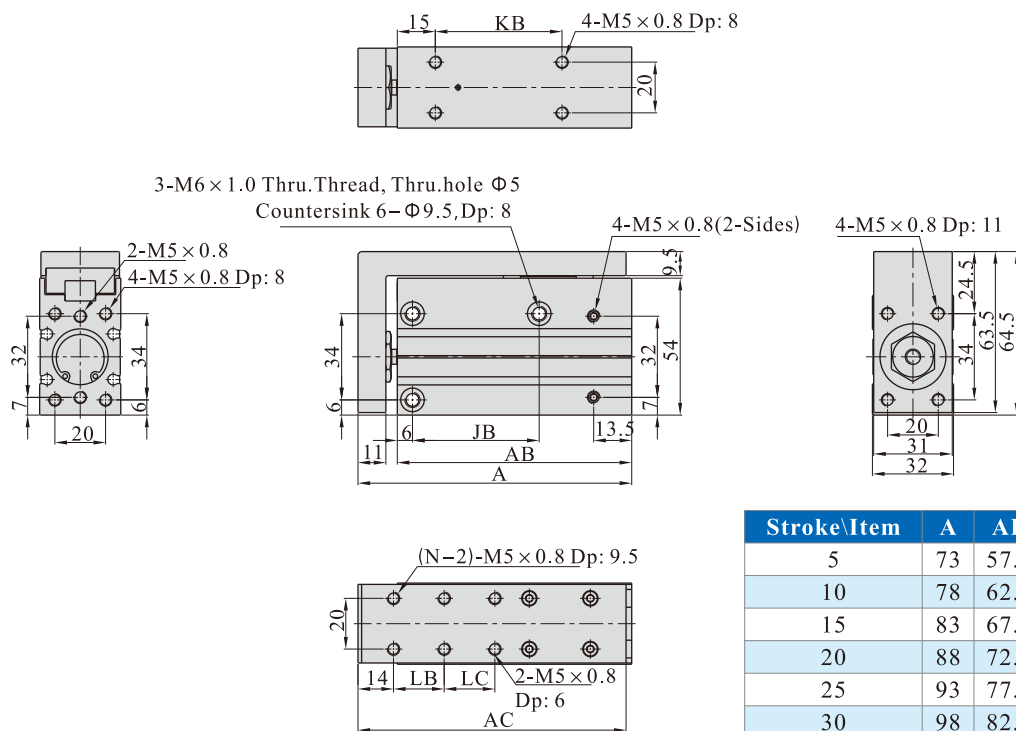
Slide table cylinder——HLH Series

HLH16



Stroke\Item	A	AB	AC	JB	KB	LB	LC	N
5	61	47	60	20	15	10	-	4
10	66	52	64.5	20	20	10	-	4
15	71	57	69.5	30	25	20	-	4
20	76	62	75	30	30	20	-	4
25	81	67	80	40	35	30	-	4
30	86	72	84.5	40	40	30	-	4
40	96	82	95	50	50	20	20	6
50	106	92	104.5	60	60	25	25	6
60	116	102	114.5	60	70	30	30	6

HLH20



Stroke\Item	A	AB	AC	JB	KB	LB	LC	N
5	73	57.5	72	20	15	10	-	4
10	78	62.5	72	20	20	10	-	4
15	83	67.5	82	25	25	20	-	4
20	88	72.5	82	25	30	20	-	4
25	93	77.5	92	40	35	30	-	4
30	98	82.5	92	40	40	30	-	4
40	108	92.5	101.5	50	50	20	20	6
50	118	102.5	113.5	70	60	25	25	6
60	128	112.5	122.5	70	70	30	30	6

Air gripper——HFK Series

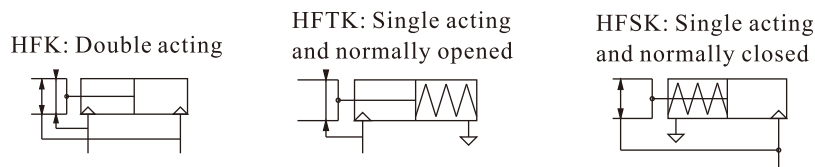
Parallel style with guide track——roller bearing



Product feature

1. Integrated design of linear guide roller, high rigidity and high precision.
2. A positioning pin is attached to the bottom of the linear guide rail, which can prevent the deviation of the positioning rail and body.
3. With squareness magnetic switch slots and roundness magnetic switch slots.
4. The positioning hole can improve the precision and the consistency of repeated dismounting and positioning.
5. According to the actual using requirements of customers, the initial position of clamping jaw can be customized to meet the different needs under different working conditions.
6. Can be mounted from three directions.

Symbol



Specification

Bore size (mm)			10	16	20	25	32	40
Acting type			Double acting Single acting					
Fluid			Air(to be filtered by 40μm filter element)					
Operating pressure	Double acting	Φ10	0.2~0.7MPa(28~100psi)(2.0~7.0bar)					
		Others	0.15~0.7MPa(22~100psi)(1.5~7.0bar)					
	Single acting	Φ10	0.35~0.7MPa(50~100psi)(3.5~7.0bar)					
		Others	0.25~0.7MPa(36~100psi)(2.5~7.0bar)					
Temperature ℃			-20~70					
Lubrication			Not required					
Repeatability mm			±0.01				±0.02	
Max. frequency			180(c.p.m)				60(c.p.m)	
Port size			M3×0.5	M5×0.8				

Gripping force and stroke

Acting type		Double acting(HFK)						Single acting_NO (HFTK)						Single acting_NC (HFSK)					
Bore size		10	16	20	25	32	40	10	16	20	25	32	40	10	16	20	25	32	40
Gripping force per finger Effective value(N)	External	11	34	45	69	160	255	7	27	35	55	133	220	-	-	-	-	-	-
	Internal	17	45	68	102	195	320	-	-	-	-	-	-	13	38	59	87	163	270
Opening/Closing stroke(Both sides)(mm)		4	6	10	14	22	30	4	6	10	14	22	30	4	6	10	14	22	30
Weight (g)	F Type	56	124	236	418	750	1340	57	125	238	420	799	1437	57	125	238	420	799	1437
	Others	56	124	236	428	729	1268	57	125	238	430	778	1365	57	125	238	430	778	1365

[Note] The gripping force in the above table is in the working pressure of 0.5MPa, and with a gripping point of L=20mm.

Air gripper——HFK Series

Parallel style with guide track——roller bearing

Ordering code

HFK - 20 □

① ② ③

③ Finger Style

Blank: Standard

B: Side mounting type

R: Narrow type

F: Bottom mounting type

N: Thru.hole mounting type

W: Side mounting and narrow type

M: Thru.hole mounting and narrow type

① Model

HFK: Air finger(Double acting)

HFSK: Air finger(Single acting and nrmally closed)

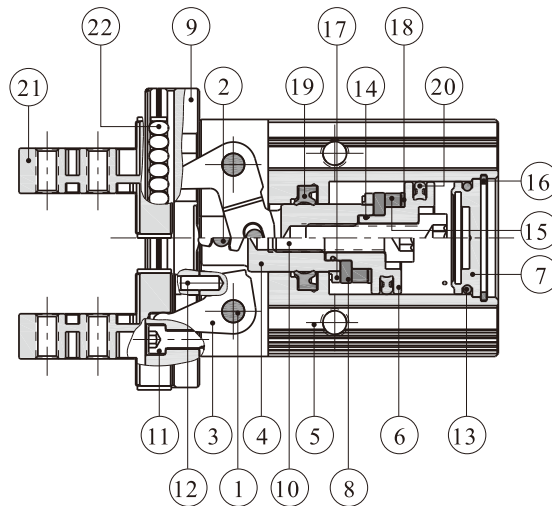
HFTK: Air finger(Single acting and normally opened)

② Bore size

Bore size	Series
10 16 20 25 32 40	HFK
10 16 20 25	HFSK HFTK

Note) HFK series are all attached with magnet.

Inner structure and material of major parts



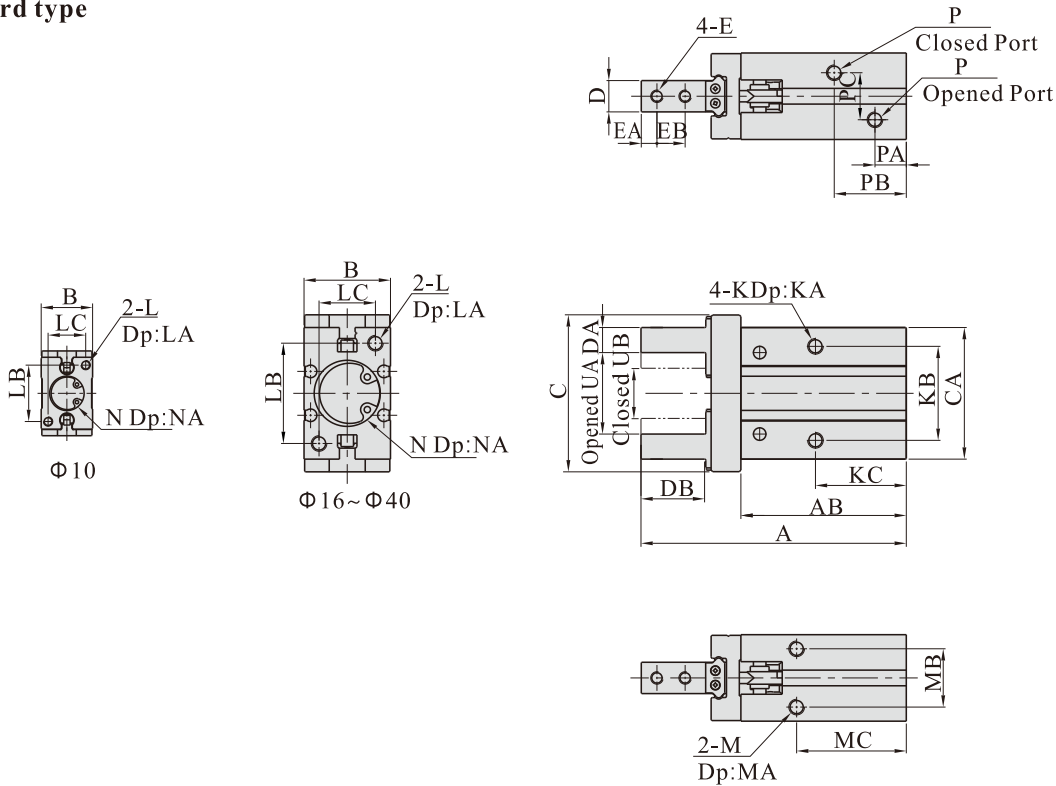
NO.	Item	Material	NO.	Item	Material
1	Pin	Stainless steel	12	Pin	Bearing steel
2	Pin	Stainless steel	13	O-ring	NBR
3	Curved bar	Stainless steel	14	O-ring	NBR
4	Piston rod	Aluminum alloy/Stainless steel	15	Magnet	Sintered metal(Neodymium-iron-boron)
5	Body	Aluminum alloy	16	C clip	Spring steel
6	Piston	Aluminum alloy/Stainless steel	17	Bumper	TPU
7	Back cover	Brass/Aluminum alloy	18	Magnet washer	NBR
8	Magnet fixed flake	Aluminum alloy/Stainless steel	19	Rod packing	NBR
9	Bearing steel	Stainless steel	20	Piston seal	NBR
10	Countersink screw	Carbon steel	21	Clamping jaw	Bearing steel
11	Countersink screw	Carbon steel	22	Guide roller	Bearing steel

Air gripper——HFK Series

Parallel style with guide track——roller bearing

Dimensions

Standard type



Model\Item	A	AB	B	C	CA	D	DA	DB	E	EA
HFK10	57	37.5	16.5	30	23	5 ⁰ _{-0.05}	4 ⁰ _{-0.05}	12	M2.5×0.45	3
HFK16	67.5	42.5	23.5	39	30.5	8	5	15	M3×0.5	4
HFK20	85	53	27.5	53	42	10 ⁰ _{-0.05}	8 ⁰ _{-0.05}	20	M4×0.7	5
HFK25	103	64	33.5	71	52	12	10	25	M5×0.8	6
HFK32	113(122)	67(76)	40	106	60	15 ⁰ _{-0.05}	12 ⁰ _{-0.05}	29	M6×1.0	7
HFK40	139(152)	83(96)	48	132	72	18	14	36	M8×1.25	9

Model\Item	EB	K	KA	KB	KC	L	LA	LB	LC	M	MA	MB
HFK10	5.7	M3×0.5	5	16	23	M3×0.5	6	18	12	M3×0.5	6	11.5
HFK16	7	M4×0.7	7	24	24.5	M4×0.7	8	22	15	M4×0.7	4.5	16
HFK20	9	M5×0.8	8	30	29	M5×0.8	10	32	18	M5×0.8	8	18.5
HFK25	12	M6×1.0	10	36	30	M6×1.0	12	40	22	M6×1.0	10	22
HFK32	14	M6×1.0	10	46	40(49)	M6×1.0	12	46	26	M6×1.0	10	26
HFK40	17	M8×1.25	12	56	49(62)	M8×1.25	16	56	32	M8×1.25	12	32

Model\Item	MC	N	NA	P	PA	PB	PC	UA(Opened)	UB(Closed)
HFK10	27	Φ11 ^{+0.05} ₀	1.5	M3×0.5	7	19	10	15.5 ⁺² ₀	11.5 ⁰ ₋₁
HFK16	30	Φ17 ^{+0.05} ₀	1.5	M5×0.8	7.5	19	13	21	15
HFK20	35	Φ21 ^{+0.05} ₀	2	M5×0.8	9.5	23	15	26.5 ⁺² ₀	16.5 ⁰ ₋₁
HFK25	36.5	Φ26 ^{+0.05} ₀	2	M5×0.8	9	24	20	33.5	19.5
HFK32	48(57)	Φ34 ^{+0.05} ₀	2.5	M5×0.8	9.5	31(40)	24	48 ^{+2.5} ₀	26 ⁰ ₋₁
HFK40	58(71)	Φ42 ^{+0.05} ₀	2.5	M5×0.8	10.5	38(50)	28	60	30

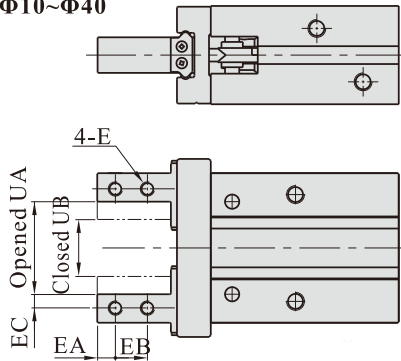
[Note] The values in “()” in the above table are single acting type sizes.

Air gripper——HFK Series

Parallel style with guide track——roller bearing

Side mounting type(B type)

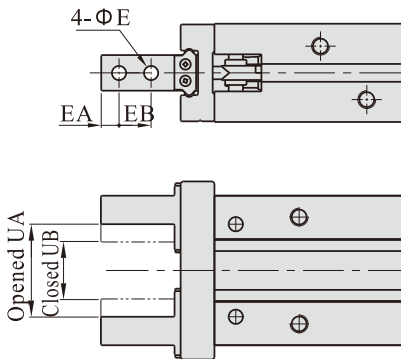
Φ10~Φ40



Model\Item	E	EA	EB	EC	UA(Opened)	UB(Closed)
HFK10-B	M2.5×0.45	3	5.7	2	15.5 ^{+2.0} ₀	11.5 ⁰ ₋₁
HFK16-B	M3×0.5	4	7	2.5	21 ^{+2.0} ₀	15 ⁰ ₋₁
HFK20-B	M4×0.7	5	9	4	26.5 ^{+2.0} ₀	16.5 ⁰ ₋₁
HFK25-B	M5×0.8	6	12	5	33.5 ^{+2.0} ₀	19.5 ⁰ ₋₁
HFK32-B	M6×1.0	7	14	6	48 ^{+2.5} ₀	26 ⁰ ₋₁
HFK40-B	M8×1.25	9	17	7	60 ^{+2.5} ₀	30 ⁰ ₋₁

Thru.hole mounting type(N type)

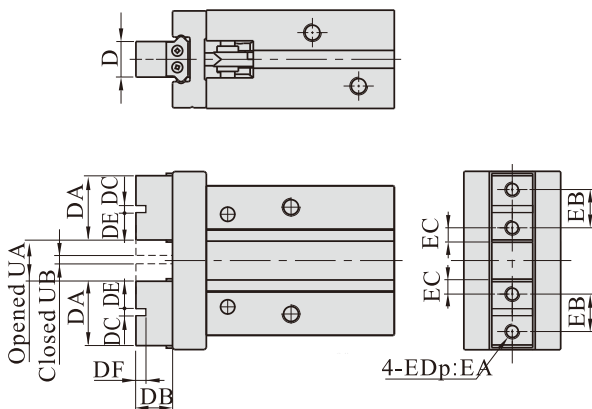
Φ10~Φ40



Model\Item	E	EA	EB	UA(Opened)	UB(Closed)
HFK10-N	2.8	3	5.7	15.5 ^{+2.0} ₀	11.5 ⁰ ₋₁
HFK16-N	3.3	4	7	21 ^{+2.0} ₀	15 ⁰ ₋₁
HFK20-N	4.5	5	9	26.5 ^{+2.0} ₀	16.5 ⁰ ₋₁
HFK25-N	5.5	6	12	33.5 ^{+2.0} ₀	19.5 ⁰ ₋₁
HFK32-N	6.5	7	14	48 ^{+2.5} ₀	26 ⁰ ₋₁
HFK40-N	9	9	17	60 ^{+2.5} ₀	30 ⁰ ₋₁

Bottom mounting type(F type)

Φ10~Φ40



Model\Item	D	DA	DB	DC	DE	E
HFK10-F	5 ⁰ _{-0.05}	11	5	2 ^{+0.04} _{+0.01}	4.5	M2.5×0.45
HFK16-F	8 ⁰ _{-0.05}	14	8	2.5 ^{+0.04} _{+0.01}	5.8	M3×0.5
HFK20-F	10 ⁰ _{-0.05}	18	10.5	3 ^{+0.04} _{+0.01}	7.5	M4×0.7
HFK25-F	12 ⁰ _{-0.05}	22	13	4 ^{+0.04} _{+0.01}	9	M5×0.8
HFK32-F	15 ⁰ _{-0.05}	34.5	18	5 ^{+0.04} _{+0.01}	14.8	M6×1.0
HFK40-F	18 ⁰ _{-0.05}	41.5	22	6 ^{+0.04} _{+0.01}	17.7	M8×1.25

Model\Item	DF	EA	EB	EC	UA(Opened)	UB(Closed)
HFK10-F	2	4	6	2.45	5.5 ^{+2.0} ₀	1.8 ⁰ _{-0.5}
HFK16-F	2.5	6	8	3.05	7.5 ^{+2.0} ₀	1.8 ⁰ _{-0.5}
HFK20-F	3	8	10	3.95	11.5 ^{+2.0} ₀	1.8 ⁰ _{-0.5}
HFK25-F	4	10	12	4.9	16 ^{+2.5} ₀	2.4 ⁰ _{-0.5}
HFK32-F	5	12	20	7.3	25 ^{+2.5} ₀	3.4 ⁰ _{-0.5}
HFK40-F	6	16	24	8.7	33 ^{+3.0} ₀	3.4 ⁰ _{-0.5}

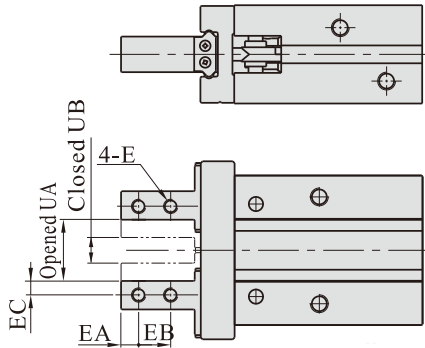
[Note] The other dimensions are the same as standard type.

Air gripper——HFK Series

Parallel style with guide track——roller bearing

Side mounting and narrow type(W type)

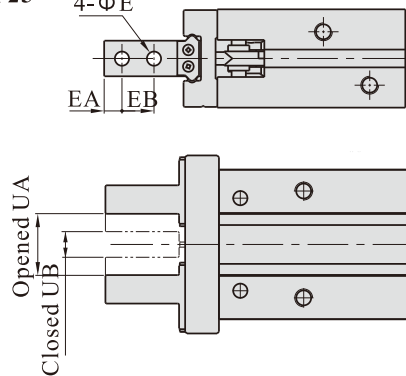
Φ10~Φ25



Model\Item	E	EA	EB	EC	UA(Opened)	UB(Closed)
HFK10-W	M2.5×0.45	3	5.7	2	10 $^{+2}_0$	6 $^{0}_{-1}$
HFK16-W	M3×0.5	4	7	2.5	12.5 $^{+2}_0$	6.5 $^{0}_{-1}$
HFK20-W	M4×0.7	5	9	4	17 $^{+2}_0$	7 $^{0}_{-1}$
HFK25-W	M5×0.8	6	12	5	23 $^{+2.5}_0$	9 $^{0}_{-1}$

Thru-hole mounting and narrow type(M type)

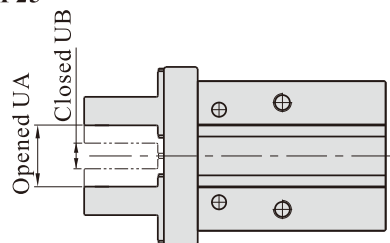
Φ10~Φ25



Model\Item	E	EA	EB	UA(Opened)	UB(Closed)
HFK10-M	2.8	3	5.7	10 $^{+2}_0$	6 $^{0}_{-1}$
HFK16-M	3.3	4	7	12.5 $^{+2}_0$	6.5 $^{0}_{-1}$
HFK20-M	4.5	5	9	17 $^{+2}_0$	7 $^{0}_{-1}$
HFK25-M	5.5	6	12	23 $^{+2.5}_0$	9 $^{0}_{-1}$

Narrow type(R type)

Φ10~Φ25



Model\Item	UA(Opened)	UB(Closed)
HFK10-R	10 $^{+2}_0$	6 $^{0}_{-1}$
HFK16-R	12.5 $^{+2}_0$	6.5 $^{0}_{-1}$
HFK20-R	17 $^{+2}_0$	7 $^{0}_{-1}$
HFK25-R	23 $^{+2.5}_0$	9 $^{0}_{-1}$

[Note] The other dimensions are the same as standard type.

Air gripper——HFZ Series

Parallel style with guide track——ball bearing

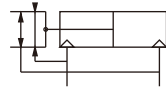


Product feature

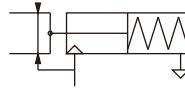
1. Integrated design of linear guide roller, high rigidity and high precision.
2. A positioning pin is attached to the bottom of the linear guide rail, which can prevent the deviation of the positioning rail and body.
3. With squareness magnetic switch slots and roundness magnetic switch slots.
4. The positioning hole can improve the precision and the consistency of repeated dismounting and positioning.
5. According to the actual using requirements of customers, the initial position of clamping jaw can be customized to meet the different needs under different working conditions.
6. Can be mounted from three directions.

Symbol

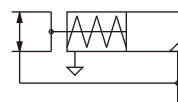
HFZ: Double acting



HFTZ: Single acting and normally opened



HFSZ: Single acting and normally closed



Specification

Bore size (mm)			6	10	16	20	25	32	40
Acting type			Double acting Single acting						
Fluid			Air(to be filtered by 40μm filter element)						
Operating pressure	Double acting	Φ6, Φ10	0.2~0.7MPa(28~100psi)(2.0~7.0bar)						
		Others	0.15~0.7MPa(22~100psi)(1.5~7.0bar)						
	Single acting	Φ6, Φ10	0.35~0.7MPa(50~100psi)(3.5~7.0bar)						
		Others	0.25~0.7MPa(36~100psi)(2.5~7.0bar)						
Temperature □			-20~70						
Lubrication			Not required						
Repeatability mm			±0.01					±0.02	
Max. frequency			180(c.p.m)					60(c.p.m)	
Port size			M3×0.5			M5×0.8			

Gripping force and stroke

Acting type			Double acting(HFZ)							Single acting_NO (HFTZ)							Single acting_NC (HFSZ)						
Bore size			6	10	16	20	25	32	40	6	10	16	20	25	32	40	6	10	16	20	25	32	40
Gripping force per finger Effective value(N)	External		3.3	11	34	45	69	160	255	1.9	7	27	35	55	133	220	-	-	-	-	-	-	-
	Internal		6.1	17	45	68	102	195	320	-	-	-	-	-	-	-	3.7	13	38	59	87	163	270
Opening/Closing stroke(Both sides)(mm)			3	4	6	10	14	22	30	3	4	6	10	14	22	30	3	4	6	10	14	22	30
Weight (g)	F Type		24	-	-	-	-	-	-	25	-	-	-	-	-	-	25	-	-	-	-	-	-
	Others		25	56	124	236	428	729	1268	26	57	125	238	430	778	136	26	57	125	238	430	778	1365

[Note] The gripping force in the above table is in the working pressure of 0.5MPa, and with a gripping point of L=20mm.

Air gripper——HFZ Series

Parallel style with guide track——ball bearing

Ordering code

HFZ - 20 □

① ② ③

③ Finger Style

Finger style	Bore size
Blank: Standard	6 10 16 20 25 32 40
B: Side mounting type	6
N: Thru.hole mounting type	
F: Bottom mounting type	

① Model

HFZ: Air finger(Double acting)

HFSZ: Air finger(Single acting and nrmally closed)

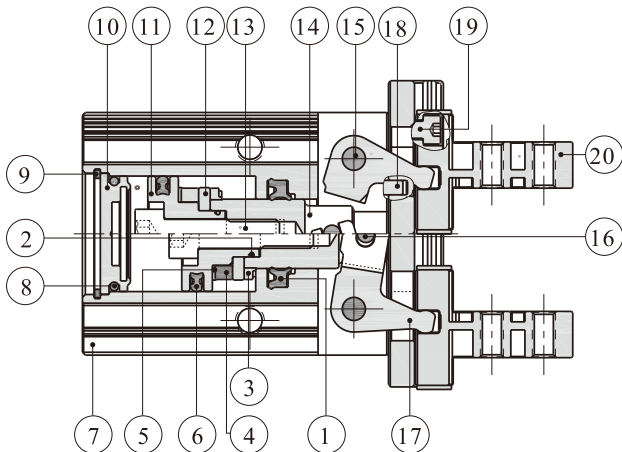
HFTZ: Air finger(Single acting and normally opened)

② Bore size

6 10 16 20 25 32 40

Note) HFZ series are all attached with magnet.

Inner structure and material of major parts

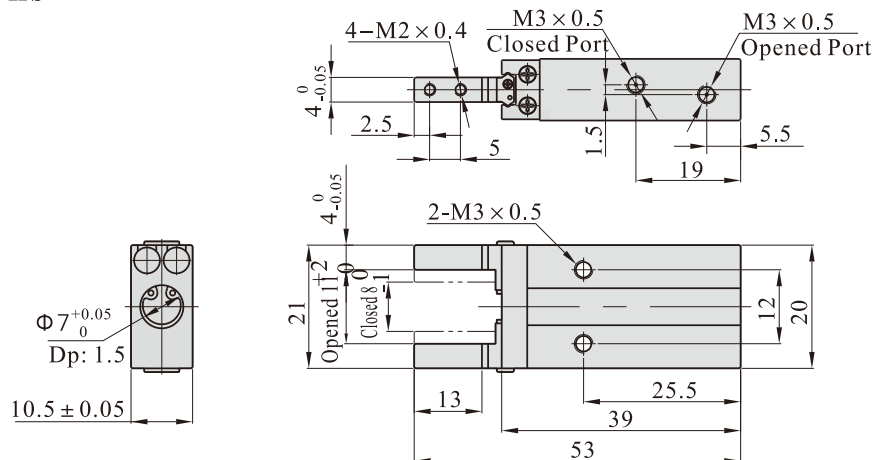


NO.	Item	Material
1	Rod packing	NBR
2	O-ring	NBR
3	Bumper	TPU
4	Magnet	Sintered metal (Neodymium-iron-boron)
5	Magnet washer	NBR
6	Piston seal	NBR
7	Body	Aluminum alloy
8	O-ring	NBR
9	C clip	Spring steel
10	Back cover	Aluminum alloy
11	Piston	Aluminum alloy/Stainless steel
12	Magnet fixed flake	Stainless steel
13	Screw	Carbon steel
14	Piston rod	Aluminum alloy/Stainless steel
15	Pin	Stainless steel
16	Pin	Stainless steel
17	Curved bar	Stainless steel
18	Pin	Stainless steel
19	Countersink screw	Carbon steel
20	Assembly of clamping jaw and guide rail	Stainless steel

Dimensions

Standard type

Φ6



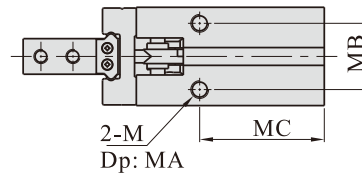
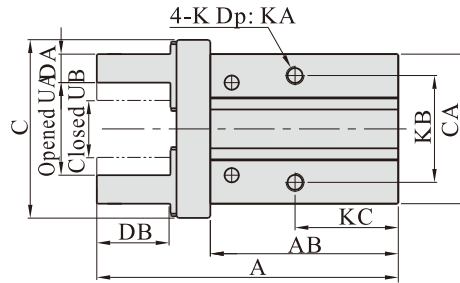
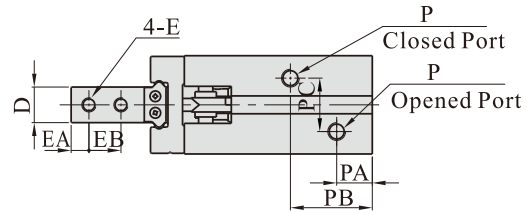
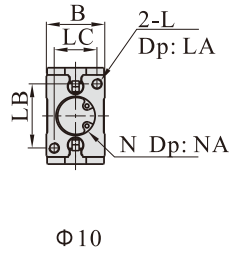
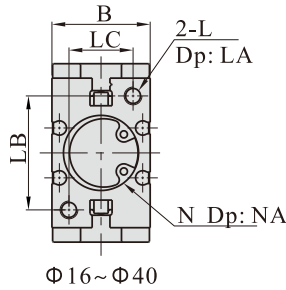
Air gripper——HFZ Series

Parallel style with guide track——ball bearing

Dimensions

Standard type

Φ10~Φ40



Model\Item	A	AB	B	C	CA	D	DA	DB	E	EA
HFZ10	57	37.5	16.5	30	23	5 _{-0.05} ⁰	4 _{-0.05} ⁰	12	M2.5×0.45	3
HFZ16	67.5	42.5	23.5	39	30.5	8	5	15	M3×0.5	4
HFZ20	85	53	27.5	53	42	10 _{-0.05} ⁰	8 _{-0.05} ⁰	20	M4×0.7	5
HFZ25	103	64	33.5	71	52	12	10	25	M5×0.8	6
HFZ32	113(122)	67(76)	40	106	60	15 _{-0.05} ⁰	12 _{-0.05} ⁰	29	M6×1.0	7
HFZ40	139(152)	83(96)	48	132	72	18	14	36	M8×1.25	9

Model\Item	EB	K	KA	KB	KC	L	LA	LB	LC	M	MA	MB
HFZ10	5.7	M3×0.5	5	16	23	M3×0.5	6	18	12	M3×0.5	6	11.5
HFZ16	7	M4×0.7	7	24	24.5	M4×0.7	8	22	15	M4×0.7	4.5	16
HFZ20	9	M5×0.8	8	30	29	M5×0.8	10	32	18	M5×0.8	8	18.5
HFZ25	12	M6×1.0	10	36	30	M6×1.0	12	40	22	M6×1.0	10	22
HFZ32	14	M6×1.0	10	46	40(49)	M6×1.0	12	46	26	M6×1.0	10	26
HFZ40	17	M8×1.25	12	56	49(62)	M8×1.25	16	56	32	M8×1.25	12	32

Model\Item	MC	N	NA	P	PA	PB	PC	UA(Opened)	UB(Closed)
HFZ10	27	Φ11 ₀ ^{+0.05}	1.5	M3×0.5	7	19	10	15.5 ₀ ⁺²	11.5 ₋₁ ⁰
HFZ16	30	Φ17	1.5	M5×0.8	7.5	19	13	21	15
HFZ20	35	Φ21 ₀ ^{+0.05}	2	M5×0.8	9.5	23	15	26.5 ₀ ⁺²	16.5 ₋₁ ⁰
HFZ25	36.5	Φ26	2	M5×0.8	9	24	20	33.5	19.5
HFZ32	48(57)	Φ34 ₀ ^{+0.05}	2.5	M5×0.8	9.5	31(40)	24	48 ₀ ^{+2.5}	26 ₋₁ ⁰
HFZ40	58(71)	Φ42	2.5	M5×0.8	10.5	38(50)	28	60	30

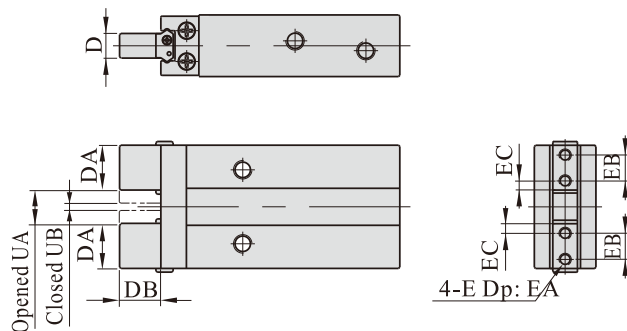
[Note] The values in “()” in the above table are single acting type sizes.

Air gripper——HFZ Series

Parallel style with guide track——ball bearing

Bottom mounting type(F type)

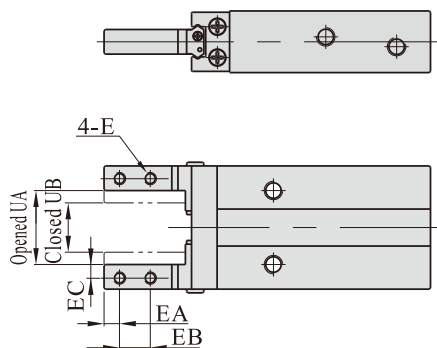
Φ6



Model\Item	D	DA	DB	EA	EB	E
HFZ6-F	4 ⁰ _{-0.05}	7.5	7	3	3.5	M2×0.4
Model\Item	UA(Opened)		UB(Closed)			
HFZ6-F	5 ^{+1.5} ₀		1.8 ⁰ _{-0.5}			

Side mounting type(B type)

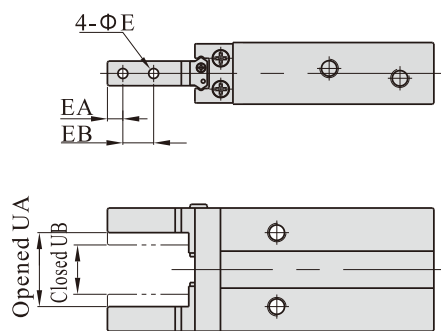
Φ6



Model\Item	E	EA	EB	EC
HFZ6-B	M2×0.4	2.5	5	2
Model\Item	UA(Opened)		UB(Closed)	
HFZ6-B	11 ⁺² ₀		8 ⁰ ₋₁	

Thru.hole mounting type(N type)

Φ6



Model\Item	E	EA	EB
HFZ6-N	2.3	2.5	5
Model\Item	UA(Opened)		UB(Closed)
HFZ6-N	11 ⁺² ₀		8 ⁰ ₋₁

[Note] The other dimensions are the same as standard type.

Clamping Cartridges

Selection aid

1) Clamping cartridge KP

- For in-house assembly of clamping units
- Not certified for use in safety-related control systems



2) Clamping unit KPE

- Ready-to-install combination of clamping cartridge KP and housing
- Wide range of mounting options → 9
- Not certified for use in safety-related control systems



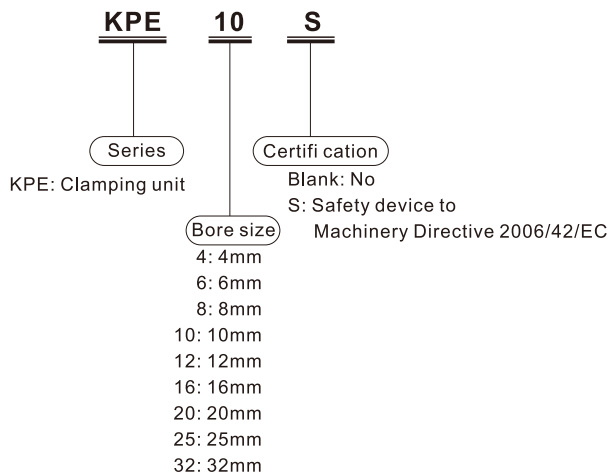
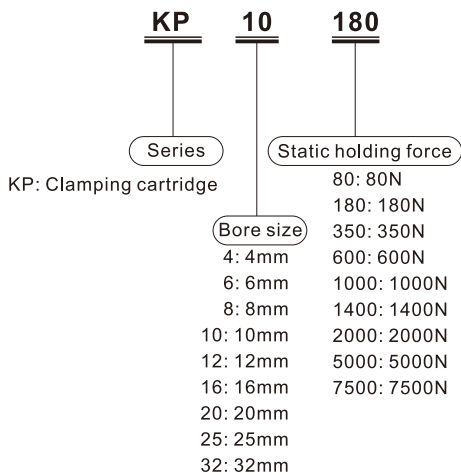
Characteristics: At a glance

- The clamping cartridges/units use spring force to hold round material in any required position.
- They can stop and hold material for long periods, even in applications with varying loads, fluctuating operating pressure and system leaks.
- The clamping force is released by pressurising the clamping cartridge.
- The clamping cartridges/units can be mounted in any position.
- Clamping cartridges/units are not suitable for positioning.
- The clamping cartridge KP and the clamping units KPE, KEC, KEC-S are standalone components.
- Cylinders with integrated clamping unit
 - ADNKP
 - DSNU-...-KP
 - DSBC-...-C
 - DNCKE/DNCKE-S
- Zero backlash in clamped condition with varying loads on the piston rod:
 - Clamping cartridge/unit
 - KP/KPE: no
 - Clamping unit
 - KEC/KECS: yes

Requirements for the round material to be clamped

In combination with clamping cartridge KP or clamping unit KPE

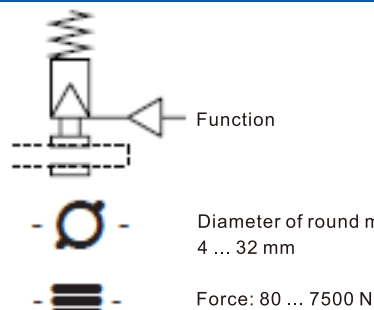
- **Material:**
 - Hard-chrome-plated steel
 - Hardened steel
 - Rolled steel: Tensile strength $> 650 \text{ N/mm}^2$, hardness (HB30) > 175
- **Diameter tolerance:** h8
- **Surface roughness:** $R_{\text{max.}} = 4 \text{ }\mu\text{m}$
- The specified holding forces refer to a static load. If these values are exceeded, slippage may occur.
- Clamping cartridge KP and clamping unit KPE are not suitable for dynamic operation.

Ordering Code

Clamping Cartridges — KP Series



Symbol



Note

Additional measures are required for use in safety-related applications; in Europe, for example, the standards listed under the EC Machinery Directive must be observed. Without additional measures in accordance with statutory minimum requirements, the product is not suitable as a safety-related part of control systems.

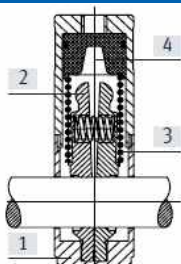
General technical data

For round material diameter	4	6	8	10	12	16	20	25	32
Pneumatic connection	M5 x 0.8					G1/8			
Design	Tilting plates								
Type of mounting	Via self-configured housing								
Type of clamping with active direction	At both ends, Clamping via spring force, compressed air to release								
Static holding force [N]	80	180	350	350	600	1000	1400/2000	5000	7500
Axial play under load [mm]	0.2	0.3	0.5			0.8		1.8	
Min. release pressure [bar]	3								
Mounting position	Any								
Product weight [g]	10	15	50	50	50	90	170	700	1600
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]								
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)								
Operating pressure [bar]			≤10						
Ambient temperature1) [°C]	−10 ~ +80								
Corrosion resistance class CRC*	2								

* Corrosion resistance class CRC 2 to Festo standard FN 940070 Moderate corrosion stress.

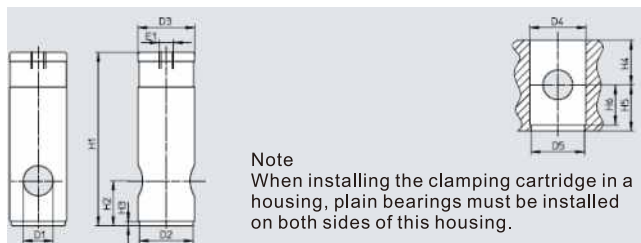
Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Materials



No.	Name	Material
1	Housing	Anodised aluminium
2	Clamping jaws	Brass
3	Spring	Spring steel
4	Piston	POM
-	Seals	NBR, TPE-U(PU)

Dimensions and ordering data

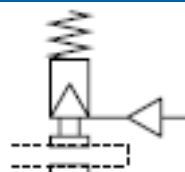


Bore size mm	D1	D2 h12	D3 f9	D4 D9	D5	E1	H1	H2	H3	H4 min.	H5 min.	H6	Weight (g)	Type
4	4	10	12	12	11	M5	28	7	2	9	7.5	6	10	KP-4-80
6	6	14	16	16	15	M5	35	10	3	10	11	8	15	KP-6-180
8	8	18	20	20	19	M5	62	17.5	3	18	18.5	15.5	50	KP-8-350
10	10	18	20	20	19	M5	62	17.5	3	18	18.5	15.5	50	KP-10-350
12	12	18	20	20	19	G1/8	62	17.5	3	18	18.5	15.5	50	KP-12-600
16	16	22	24	24	23	G1/8	83	22	3	22	23	20	90	KP-16-1000
20	20	28	30	30	29	G1/8	100	25	3	25	26	23	170	KP-20-1400
	20	36	38	38	37	G1/8	115.5	30	3	30	31	28	170	KP-20-2000
25	25	46	48	48	47	G1/8	155	36	3	36	37	34	700	KP-25-5000
32	32	63	65	65	64	G1/8	195	55	3	55	56	53	1600	KP-32-7500

Clamping Units — KPE Series



Symbol



Function



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



Force: 80 ... 7500 N

Note

Additional measures are required for use in safety-related applications; in Europe, for example, the standards listed under the EC Machinery Directive must be observed. Without additional measures in accordance with statutory minimum requirements, the product is not suitable as a safety-related part of control systems.

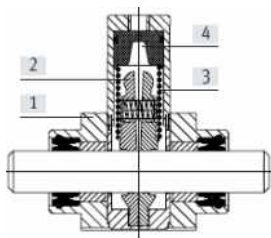
General technical data

General technical data									
For round material diameter	4	6	8	10	12	16	20	25	32
Pneumatic connection	M5 x 0.8					G1/8			
Design	Tilting plates								
Type of mounting	With mounting thread, With through-hole								
Type of clamping with active direction	At both ends, Clamping via spring force, compressed air to release								
Static holding force [N]	80	180	350	350	600	1000	2000	5000	7500
Axial play under load [mm]	0.2	0.3		0.5			0.8		1.8
Min. release pressure [bar]	3								
Mounting position	Any								
Product weight [g]	100	150	240	260	270	410	930	2000	4600
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]								
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)								
Operating pressure [bar]			≤10						
Ambient temperature1) [°C]	-10 ~ +80								
Corrosion resistance class CRC*	2								

* Corrosion resistance class CRC 2 to Festo standard FN 940070 Moderate corrosion stress.

Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Materials

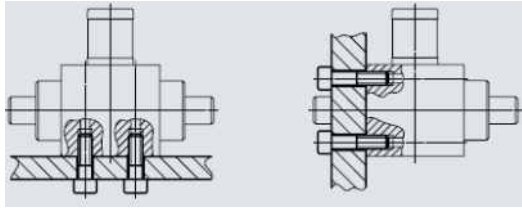


No.	Name	Material
1	Retaining bracket	Anodised aluminium
2	Clamping jaws	Brass
3	Spring	Spring steel
4	Piston	POM
-	Seals	NBR, TPE-U(PU)

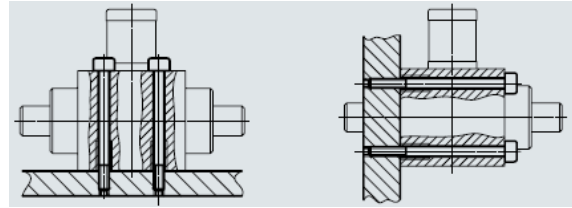
Clamping Units — KPE Series

Mounting options

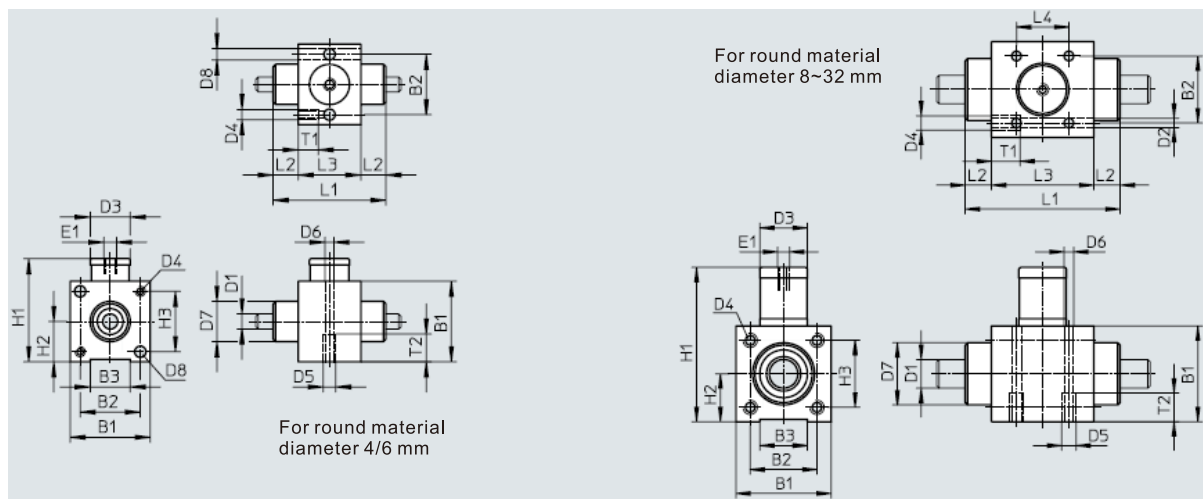
With mounting thread



With through-hole



Dimensions and ordering data



Bore size mm	B1	B2	B3	D1	D2	D3	D4	D5	D6	D7 d11	D8	E1	H1	H2	H3	L1	L2	L3	L4	T1	T2	Weight (g)	Type
4	27	19.5	12	4	-	12	-	M5	4.2	12	4.5	M5	34.5	13.5	19.5	33	7.5	18	-	9	11	100	KPE-4
6	32	24	16	6	-	16	-	M5	4.2	16	4.5	M5	41	16	24	45	10	25	-	9	11	150	KPE-6
8	36	27	20	8	4.2	20	M5	M5	4.2	22	-	M5	62.5	18	27	58	10	38	20	10	11	240	KPE-8
10	36	27	20	10	4.2	20	M5	M5	4.2	22	-	M5	62.5	18	27	62	12	38	20	10	11	260	KPE-10
12	40	28	20	12	5.2	20	M6	M6	5.2	28	-	G1/8	64.5	20	28	65	11	43	22	12	12	270	KPE-12
16	45	32.5	25	16	5.2	24	M6	M6	5.2	32	-	G1/8	83.5	22.5	32.5	69	12.5	44	22	12	12	410	KPE-16
20	65	50	38	20	6.5	38	M8	M8	6.5	45	-	G1/8	118	32.5	50	83	12.5	58	30	16	16	930	KPE-2
25	88	65	50	25	8.5	48	M10	M10	8.5	55	-	G1/8	163	44	65	100	15	70	34	20	20	2000	KPE-25
32	118	90	70	32	10.3	65	M12	M12	10.3	60	-	G1/8	199	59	90	154	25	104	60	24	24	4600	KPE-32

Cylinder accessories

I Knuckle and Y Knuckle



Ordering code

F - M16 × 150 I

① ② ③ ④

① Accessories

F: cylinder accessories

④ Code

I: I Knuckle

Y: Y Knuckle

□ Screw thread

M3: M3

M4: M4

M5: M5

M6: M6

M8: M8

M10: M10

M12: M12

M14: M14

M16: M16

M18: M18

M20: M20

M22: M22

M26: M26

M27: M27

M36: M36

M42: M42

□ Thread pitch

050: 0.5mm

070: 0.7mm

080: 0.8mm

100: 1.0mm

125: 1.25mm

150: 1.5mm

200: 2.0mm

Table for I knuckle and cylinder

Cylinder Accessory	CP96/C96/DNC/DNG/SC							DNG/SC		DNG				SI						
	32	40	50	63	80	100	125	160	200	250	320	32	40	50	63	80	100	125	160	200
F-M10X125I(Y)	●											●								
F-M12X125I(Y)		●											●							
F-M16X150I(Y)			●	●										●	●					
F-M20X150I(Y)					●	●										●	●			
F-M27X200I(Y)							●											●		
F-M36X200I(Y)								●	●										●	●
F-M42X200I(Y)										●										
F-M48X200I(Y)											●									

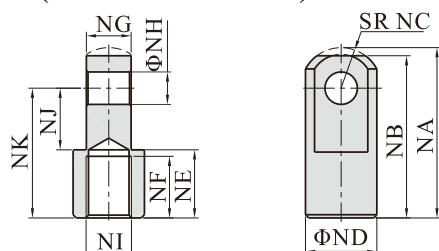
Cylinder Accessory	JSI/MB							SCE							MI						
	32	40	50	63	80	100	125	32	40	50	63	80	100	8	10	12	16	20	25	32	40
F-M4X070I(Y)														●	●						
F-M6X100I(Y)																●	●				
F-M8X125I(Y)																		●			
F-M10X125I(Y)	●							●											●	●	
F-M12X125I(Y)									●												●
F-M14X150I(Y)		●																			
F-M16X150I(Y)										●	●										
F-M18X150I(Y)			●	●																	
F-M20X150I(Y)												●	●								
F-M22X150I(Y)					●																
F-M26X150I(Y)						●															
F-M27X200I(Y)							●														

Cylinder accessories

I Knuckle and Y Knuckle

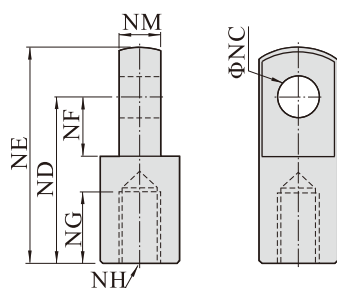
Dimensions

I Knuckle(M14\M18\M22\M26)



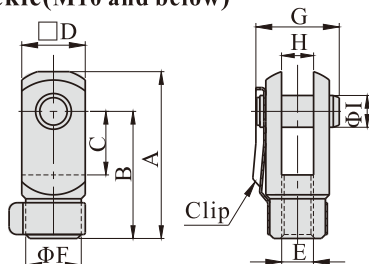
Type\Item	NA	NB	NC	ND	NE	NF	NG	NH	NJ	NK	NI
F-M14X150I	52.5	50	12.5	22	21	19	13.8	10	19	40	M14×1.5
F-M18X150I	66.5	64	16.5	28	27	24	19.8	14	24	50	M18×1.5
F-M22X150I	83.5	80	23.5	40	29	26	29.8	22	34	60	M22×1.5
F-M26X150I	83.5	80	23.5	40	29	26	29.8	22	34	60	M26×1.5

I Knuckle(Others)



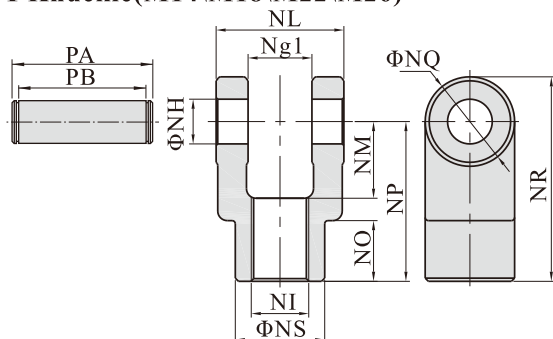
Type\Item	NC	ND	NE	NF	NG	NH	NM
F-M3x050I	3	12	15.5	5	5	M3×0.5	3
F-M4x070I	4	16	21	6.8	8	M4×0.7	4
F-M5x080I	5	25	32	14.1	7.5	M5×0.8	6.3
F-M6x100I	6	21	28	8.5	8	M6×1.0	6
F-M8x125I	8	30	40	11	15	M8×1.25	8
F-M10x125I	10	40	50	15	20	M10×1.25	10
F-M12x125I	12	48	62	24	20	M12×1.25	12
F-M16x150I	16	64	82	32	23	M16×1.5	16
F-M20x150I	20	80	102	40	30	M20×1.5	20
F-M27x200I	30	110	139	51	45	M27×2.0	30
F-M36x200I	35	144	181	65	55	M36×2.0	35
F-M42x200I	40	168	211	85	62	M42×2.0	40

Y Knuckle(M10 and below)



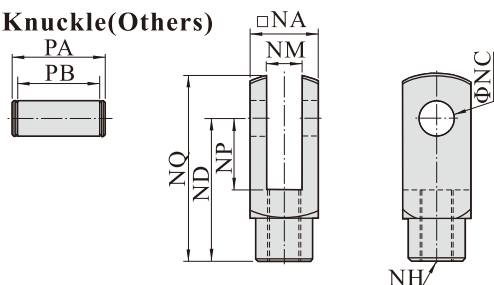
Type\Item	A	B	C	D	F	E	G	H	I
F-M3X050Y	15.5	12	5	6	6	M3×0.5	9	3	3
F-M4X070Y	22	16	8	8	7	M4×0.7	11.5	4	4
F-M5X080Y	28	21	10.2	12	10	M5×0.8	15.5	6.5	5
F-M6X100Y	32	24	12	12	10	M6×1.0	16	6	6
F-M8X125Y	42	32	16	16	14	M8×1.25	21	8	8
F-M10X125Y	52	40	20	19	18	M10×1.25	25	10	10

Y Knuckle(M14\M18\M22\M26)



Type\Item	NG1	NH	NI	NL	NM	NO	NP	NQ	NR	NS	PA	PB
F-M14X150Y	14.2	10	M14×1.5	27.8	19	17	40	22	51	22	34.6	28.8
F-M18X150Y	20.2	14	M18×1.5	39.8	24	19	50	28	64	28	47	40.8
F-M22X150Y	30.2	22	M22×1.5	59.8	34	20	65	40	85	40	69.2	60.8
F-M26X150Y	30.2	22	M26×1.5	59.8	34	20	65	40	85	40	69.2	60.8

Y Knuckle(Others)



Type\Item	NA	NC	ND	NP	NQ	NM	NH	PA	PB
F-M12X125Y	25.4	12	48	24	62	12	M12×1.25	32.4	26.2
F-M16X150Y	32	16	64	32	80	16	M16×1.5	39	32.8
F-M20X150Y	44.4	20	80	40	101	20	M20×1.5	53.4	45.2
F-M27X200Y	54	30	110	55	139	30	M27×2.0	64.2	54.8
F-M36X200Y	70	35	144	73	179	35	M36×2.0	80.2	70.8
F-M42X200Y	85	40	168	86	211	40.3	M42×2.0	115	93

Cylinder accessories

— Floating joint and Universal joint



Ordering code

F - M22 × 150 F

① ② ③ ④

① Accessories

F: cylinder accessories

④ Code

F: Floating joint

U: Universal joint

□ Screw thread	□ Thread pitch
M3: M3	050: 0.5mm
M4: M4	070: 0.7mm
M5: M5	080: 0.8mm
M6: M6	100: 1.0mm
M8: M8	125: 1.25mm
M10: M10	
M12: M12	
M14: M14	
M16: M16	
M18: M18	
M20: M20	150: 1.5mm
M22: M22	
M26: M26	
M27: M27	200: 2.0mm
M36: M36	
M42: M42	

Table for I knuckle and cylinder

Cylinder	CP96/C96/DNC/DNG/SC							DNG/SC		DNG			SI							
Accessory	32	40	50	63	80	100	125	160	200	250	320	32	40	50	63	80	100	125	160	200
F-M10X125F(U)	●											●								
F-M12X125F(U)		●											●							
F-M16X150F(U)			●	●										●	●					
F-M20X150F(U)					●	●										●	●			
F-M27X200F(U)							●											●		
F-M36X200F(U)								●	●										●	●
F-M42X200F(U)										●										
F-M48X200F(U)											●									

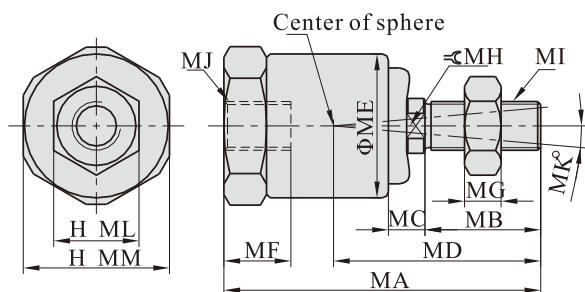
Cylinder	JSI/MB							SCE							MI							JSI/MB									
Accessory	32	40	50	63	80	100	125	32	40	50	63	80	100	8	10	12	16	20	25	32	40	12	16	20	25	32	40	50	63	80	100
F-M4X070F(U)														●	●																
F-M6X100F(U)																●	●														
F-M8X125F(U)																	●							●							
F-M10X125F(U)	●							●											●	●					●						
F-M12X125F(U)									●												●										
F-M14X150F(U)		●																									●	●			
F-M16X150F(U)										●	●																				
F-M18X150F(U)			●	●																								●	●		
F-M20X150F(U)											●	●																			
F-M22X150F(U)					●																								●		
F-M26X150F(U)						●																								●	
F-M27X200F(U)						●																									

Cylinder accessories

— Floating joint and Universal joint

Dimensions

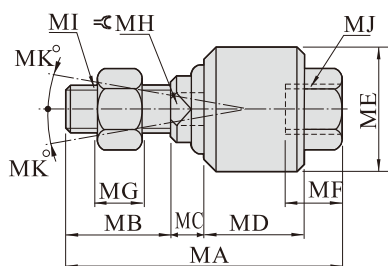
Floating joint(M6 and below)



Type\Item	MA	MB	MC	MD	ME	MF	MG	MH	MI/MJ	ML	MM
F-M3X050F	23.5	7.5	3	15	12.8	5.5	2.4	4	M3×0.5	5.5	13
F-M4X070F	26	9.5	3	17	12.8	6	3	4	M4×0.7	7	13
F-M5X080F	34.5	13.5	3.5	22.8	13.8	8	4	6	M5×0.8	8	14
F-M6X100F	34.5	13.5	3.5	22.8	13.8	8	4	6	M6×1.0	10	14

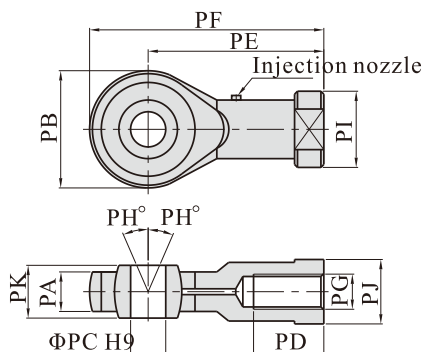
Note: Angle compensation: $\pm 5^\circ$. Radial direction compensation: 0.5

Floating joint(M8 and above)



Type\Item	MA	MB	MC	MD	ME	MF	MG	MH	MI/MJ	MK
F-M8X125F	51	20	6	17	24	10.5	6	8	M8×1.25	13
F-M10X125F	58	22	7	21	26	11	6	10	M10×1.25	12
F-M12X125F	58	22	8	21	28	11.5	7	12	M12×1.25	12
F-M14X150F	70	22.5	8.5	28	34.5	16	8	15	M14×1.5	12
F-M16X150F	90	27	10	41	44.5	19	8	17	M16×1.5	7
F-M18X150F	92	27	10	41	44.5	21	11	18	M18×1.5	7
F-M20X150F	102	29	13	46	53	22	10	22	M20×1.5	10
F-M22X150F	108	32	13	46	53	25	13	22	M22×1.5	5
F-M26X150F	120	32	14.5	52.5	59.5	25	13	27	M26×1.5	5
F-M27X200F	136.5	40	14.5	52.5	59.5	40	13.5	27	M27×2.0	5
F-M36X200F	194.5	60	20.5	77.5	84	54	18	36	M36×2.0	5

Universal joint(M8 and below)



Type\Item	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK
F-M4X070U	6	18	5	10	27	36	M4×0.7	13	12.5	10	8
F-M5X080U	6	18	5	10	27	36	M5×0.8	13	12.5	10	8
F-M6X100U	6.8	20	6	12	30	40	M6×1.0	13	13	11	9
F-M8X125U	9	24	8	16	36	48	M8×1.25	13	16	14	12
F-M10X125U	11	26	10	20	43	56	M10×1.25	13	19	17	14
F-M12X125U	12	32	12	22	50	66	M12×1.25	13	22	19	16
F-M14X150U	14	36	14	28	57	75	M14×1.5	13	25	22	19
F-M16X150U	15	40	16	28	64	84	M16×1.5	15	27	22	21
F-M18X150U	16.5	46	18	30	71	94	M18×1.5	15	31	27	23
F-M20X150U	18	46	20	33	77	100	M20×1.5	15	34	30	25
F-M26X150U	22	60	25	48	94	124	M26×1.5	15	42	36	31
F-M27X200U	25	70	30	51	110	145	M27×2.0	15	50	41	37
F-M36X200U	27.5	80	35	56	125	165	M36×2.0	15	57.5	50	43

Universal joint(M10 and above)

