



# Air gripper—HFK Series

Parallel style with guide track—roller bearing

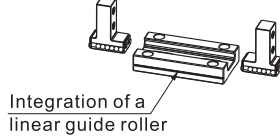
## Compendium of HFK Series

### Six kinds of bore size and three kinds of type

Bore size: 10、16、20、25、32、40,  
HFK: Double acting、HFSK: Single acting and normally closed  
HFTK: Single acting and normally opened

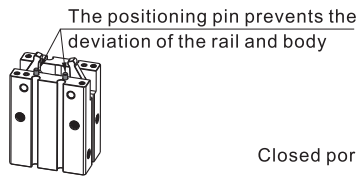
### Integrated design of linear guide roller

Integrated design of linear guide roller,  
high rigidity and high precision.



### With positioning pin

A positioning pin is attached to the bottom  
of the linear guide rail, which can prevent  
the deviation of the positioning rail and body.



### With squareness magnetic switch slots

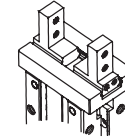
The squareness magnetic switch slots convenient  
to install DS1-G/CS1-G type inducting switch.

### With roundness magnetic switch slots

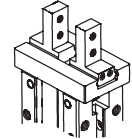
The squareness magnetic switch slots convenient  
to install DS1-H type inducting switch.

### Seven kinds of finger type

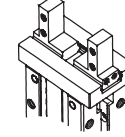
Standard type



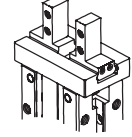
Narrow type(R)



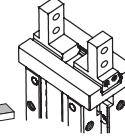
Side mounting  
type(B)



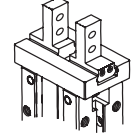
Side mounting and  
narrow type(W)



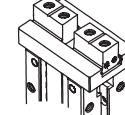
Thru.hole  
mounting type(N)



Thru.hole mounting  
and narrow type(M)



Bottom mounting  
type(F)

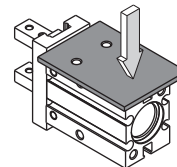


According to the actual using requirements of  
customers, the initial position of clamping jaw  
can be customized to meet the different needs  
under different working conditions.

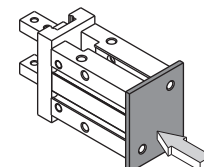
### Can be mounted from three directions

With mounting holes on the side and tail.

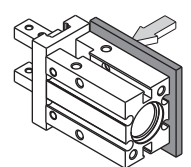
Surface installation



Tail installation

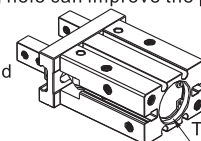


Front installation



### With positioning hole

The positioning hole can improve the precision and the  
consistency of  
repeated  
dismounting and  
positioning.



The positioning hole

Bore size (mm)		10	16	20	25	32	40
Acting type		Double acting		Single acting			
Fluid		Air(to be filtered by 40 μm 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 °C		-20~70					
Lubrication		Not required					
Repeatability mm		±0.01			±0.02		
Max. frequency		180(c.p.m)			60(c.p.m)		
Sensor switches		DS1-H	CS1-G, DS1-G, DS1-H				
Port size		M3×0.5	M5×0.8				



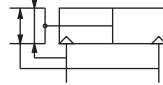
# Air gripper(parallel style—roller bearing)

## HFK Series

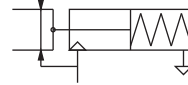


### Symbol

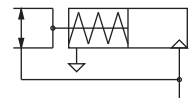
HFK: Double acting



HFTK: Single acting and normally opened



HFSK: Single acting and normally closed



### 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.

Add) Please refer to page 376 for the definition of "L".

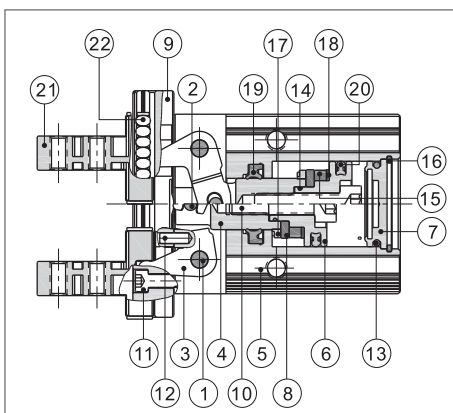
### Ordering code

HFK 20 □

① ② ③

① Model	② Bore size	③ Finger type			
HFK: Air finger(Double acting) HFSK: Air finger (Single acting and normally closed) HFTK: Air finger (Single acting and normally opened)	10 16 20 25 32 40	Blank: Standard 	B: Side mounting type 	R: Narrow type 	F: Bottom mounting type 
	10 16 20 25	N: Thru.hole mounting type 	W: Side mounting and narrow type 	M: Thru.hole mounting and narrow type 	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	
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

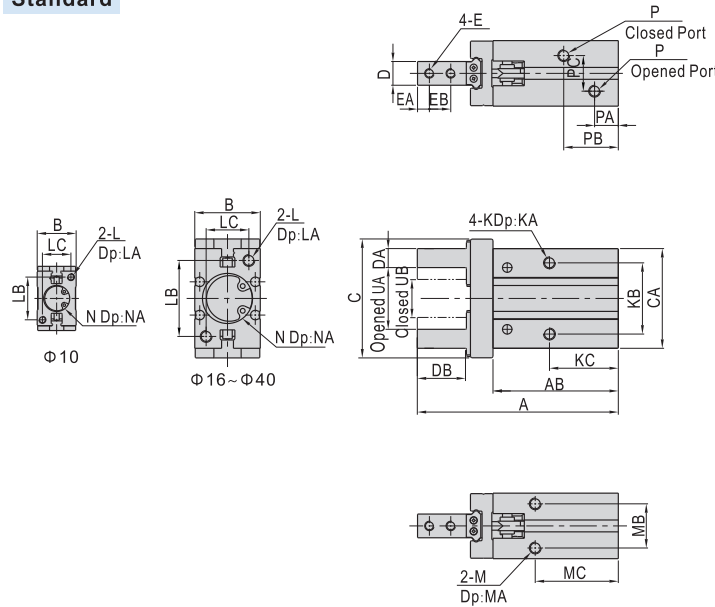
# Air gripper(parallel style—roller bearing)



## HFK Series

### Dimensions

#### Standard



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

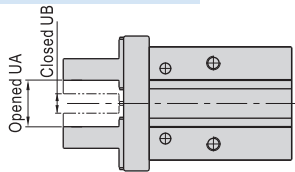
Model\Item	EB	K	KA	KB	KC	L	LA	LB	LC	M	MA	MB
HFK10	5.7	M3×0.5	5	16	23	M3×0.5	6	18	12	M3×0.5	6	11.5
HFK16	7	M4×0.7	7	24	24.5	M4×0.7	8	22	15	M4×0.7	4.5	16
HFK20	9	M5×0.8	8	30	29	M5×0.8	10	32	18	M5×0.8	8	18.5
HFK25	12	M6×1.0	10	36	30	M6×1.0	12	40	22	M6×1.0	10	22
HFK32	14	M6×1.0	10	46	40(49)	M6×1.0	12	46	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 <sup>+0.05</sup> <sub>0</sub>	1.5	M3×0.5	7	19	10	15.5 <sup>+2</sup> <sub>0</sub>	11.5 <sup>-0</sup> <sub>0</sub>
HFK16	30	Φ17 <sup>+0.05</sup> <sub>0</sub>	1.5	M5×0.8	7.5	19	13	21 <sup>+2</sup> <sub>0</sub>	15 <sup>-0</sup> <sub>0</sub>
HFK20	35	Φ21 <sup>+0.05</sup> <sub>0</sub>	2	M5×0.8	9.5	23	15	26.5 <sup>+2</sup> <sub>0</sub>	16.5 <sup>-0</sup> <sub>0</sub>
HFK25	36.5	Φ26 <sup>+0.05</sup> <sub>0</sub>	2	M5×0.8	9	24	20	33.5 <sup>+2</sup> <sub>0</sub>	19.5 <sup>-0</sup> <sub>0</sub>
HFK32	48(57)	Φ34 <sup>+0.05</sup> <sub>0</sub>	2.5	M5×0.8	9.5	31(40)	24	48 <sup>+2.5</sup> <sub>0</sub>	26 <sup>-0</sup> <sub>0</sub>
HFK40	58(71)	Φ42 <sup>+0.05</sup> <sub>0</sub>	2.5	M5×0.8	10.5	38(50)	28	60 <sup>+2.5</sup> <sub>0</sub>	30 <sup>-0</sup> <sub>0</sub>

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

#### Narrow type(R type)

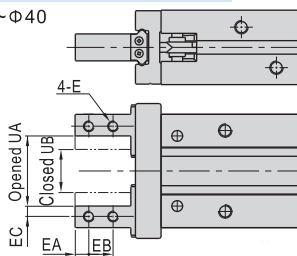
Φ10~Φ25



Model\Item	UA(Opened)	UB(Closed)
HFK10-R	10 <sup>+2</sup> <sub>0</sub>	6 <sup>-0</sup> <sub>0</sub>
HFK16-R	12.5 <sup>+2</sup> <sub>0</sub>	6.5 <sup>-0</sup> <sub>0</sub>
HFK20-R	17 <sup>+2</sup> <sub>0</sub>	7 <sup>-0</sup> <sub>0</sub>
HFK25-R	23 <sup>+2.5</sup> <sub>0</sub>	9 <sup>-0</sup> <sub>0</sub>

#### Side mounting type(B type)

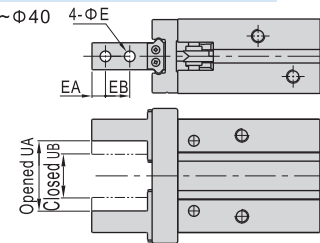
Φ10~Φ40



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

#### Thru-hole mounting type(N type)

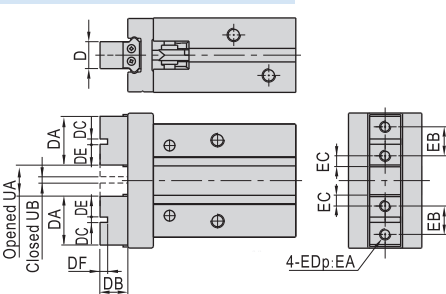
Φ10~Φ40



Model\Item	E	EA	EB	UA(Opened)	UB(Closed)
HFK10-N	2.8	3	5.7	15.5 <sup>+2</sup> <sub>0</sub>	11.5 <sup>-0</sup> <sub>0</sub>
HFK16-N	3.3	4	7	21 <sup>+2</sup> <sub>0</sub>	15 <sup>-0</sup> <sub>0</sub>
HFK20-N	4.5	5	9	26.5 <sup>+2</sup> <sub>0</sub>	16.5 <sup>-0</sup> <sub>0</sub>
HFK25-N	5.5	6	12	33.5 <sup>+2</sup> <sub>0</sub>	19.5 <sup>-0</sup> <sub>0</sub>
HFK32-N	6.5	7	14	48 <sup>+2.5</sup> <sub>0</sub>	26 <sup>-0</sup> <sub>0</sub>
HFK40-N	9	9	17	60 <sup>+2.5</sup> <sub>0</sub>	30 <sup>-0</sup> <sub>0</sub>

#### Bottom mounting type(F type)

Φ10~Φ40

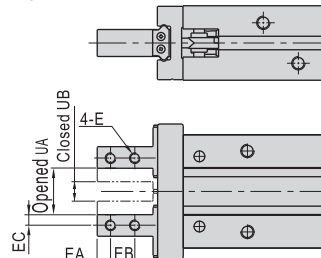


Model\Item	D	DA	DB	DC	DE	E
HFK10-F	5 <sup>-0.05</sup> <sub>0</sub>	11	5	2 <sup>+0.04</sup> <sub>0</sub>	4.5	M2.5×0.45
HFK16-F	8 <sup>-0.05</sup> <sub>0</sub>	14	8	2.5 <sup>+0.04</sup> <sub>0</sub>	5.8	M3×0.5
HFK20-F	10 <sup>-0.05</sup> <sub>0</sub>	18	10.5	3 <sup>+0.04</sup> <sub>0</sub>	7.5	M4×0.7
HFK25-F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

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

#### Side mounting and narrow type(W type)

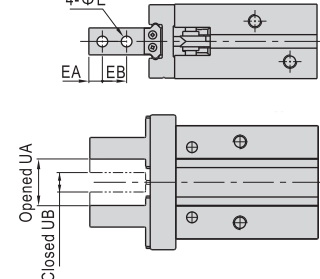
Φ10~Φ25



Model\Item	E	EA	EB	EC	UA(Opened)	UB(Closed)
HFK10-W	M2.5×0.45	3	5.7	2	10 <sup>+2</sup> <sub>0</sub>	6 <sup>-0</sup> <sub>0</sub>
HFK16-W	M3×0.5	4	7	2.5	12.5 <sup>+2</sup> <sub>0</sub>	6.5 <sup>-0</sup> <sub>0</sub>
HFK20-W	M4×0.7	5	9	4	17 <sup>+2</sup> <sub>0</sub>	7 <sup>-0</sup> <sub>0</sub>
HFK25-W	M5×0.8	6	12	5	23 <sup>+2.5</sup> <sub>0</sub>	9 <sup>-0</sup> <sub>0</sub>

#### 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 <sup>+2</sup> <sub>0</sub>	6 <sup>-0</sup> <sub>0</sub>
HFK16-M	3.3	4	7	12.5 <sup>+2</sup> <sub>0</sub>	6.5 <sup>-0</sup> <sub>0</sub>
HFK20-M	4.5	5	9	17 <sup>+2</sup> <sub>0</sub>	7 <sup>-0</sup> <sub>0</sub>
HFK25-M	5.5	6	12	23 <sup>+2.5</sup> <sub>0</sub>	9 <sup>-0</sup> <sub>0</sub>

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

