

# AirTAC INTERNATIONAL GROUP


## R&D Center


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KA0205-RD06-01

### HFT Wide Type Parallel Gripper Listing Description

Compiled by: Yao Ming

Reviewed by:  11/10

Approved by: 

Release Date: 2016.11.04

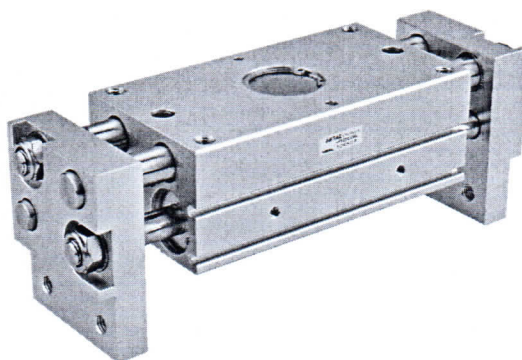
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The newly developed HFT Wide Type Parallel Gripper has been tested rigorously in our pneumatic lab, and can be listed for sale formally. The product description is as follows.

### Product Features:

- Long stroke to handle work pieces with large volume;
- Driven by double pistons, gripping force is increased.
- Fingers synchronized by a rack and pinion mechanism. High repeatability.
- All series include magnet for convenient control.

### 1. Product Picture



Note: The picture above is for reference only, please consult with the real product.

### 2. Ordering Code

HFT 10 × 20 S □				
① ② ③ ④ ⑤				
①Model	②Bore size	③Stroke	④Magnet	⑤Thread type
HFT: Wide type parallel gripper (double acting)	10	20 30 40 60	S:With magnet	No this code
	16	30 40 60 80		
	20	40 60 80 100		
	25	40 60 80 100		
	32	60 80 100 150		Blank: PT; G:G; T:NPT

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### 3. Specifications

Bore size(mm)	10	16	20	25	32
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μ m filter element)				
Operating pressure	0.15~0.7MPa(22~100psi)				
Proof pressure	1.2MPa(175psi)				
Temperature	-20~70℃				
Lubrication	Cylinder:Not required; Guide and Pinion:Lubricate grease				
Cushion type	Bumper				
Repeatability	± 0.1mm				
Effective gripping force(N) ①	14	45	74	131	228
Max.frequency	40(c.p.m)				20(c.p.m)
Sensor switches	DS1-H、DS1-HL				
Port size	M5 × 0.8				PT1/8

① At 0.5 Mpa, Gripping point=Bore size10,16,20,25: 40mm,Bore size 32: 80mm.

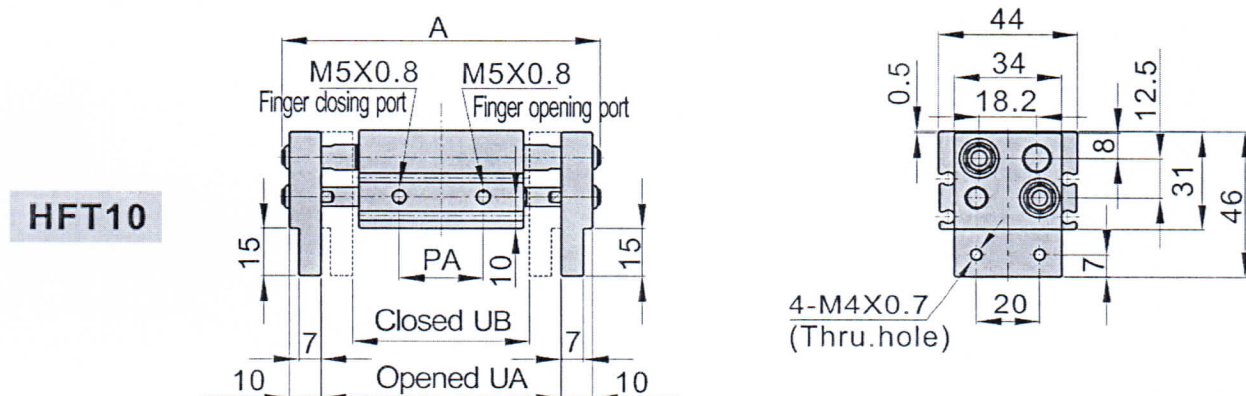
### Stroke

Bore size(mm)	Standard stroke(mm)	Max.std stroke
10	20 30 40 60	60
16	30 40 60 80	80
20	40 60 80 100	100
25	40 60 80 100	100
32	60 80 100 150	150

Note) Please contact the company for other special strokes.

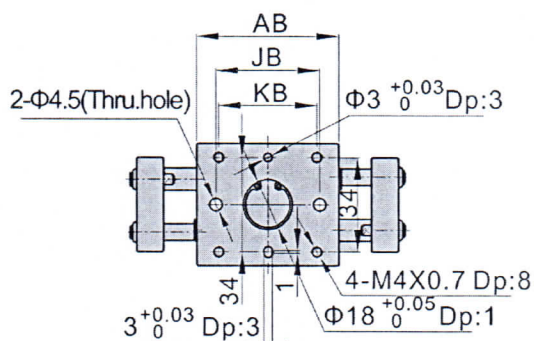
### 4. Dimensions

#### 4.1 Our product's dimensions

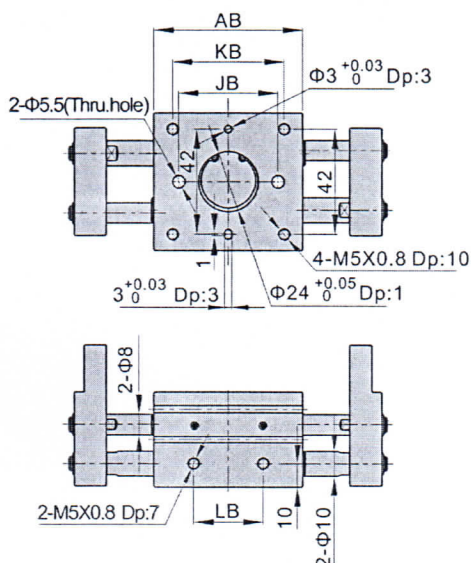
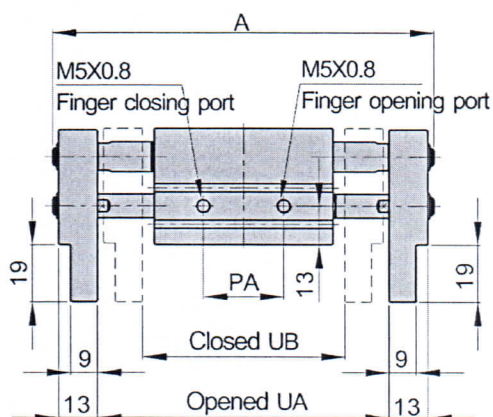


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Item\Stroke	20	30	40	60
A	101	121	141	181
AB	52	60	68	86
JB	38	46	54	72
KB	36	44	52	70
LB	26	34	42	60
PA	23	30	35	45
UA(Opened)	76	96	116	156
UB(Closed)	56	66	76	96

**HFT16**


Item\Stroke	30	40	60	80
A	128	148	194	234
AB	60	70	90	110
JB	40	50	70	90
KB	45	55	75	95
LB	28	38	58	78
PA	27.5	32.5	42.5	52.5
UA(Opened)	98	118	164	204
UB(Closed)	68	78	104	124

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Reviewed by

Compiled by

Yao Ming

Date

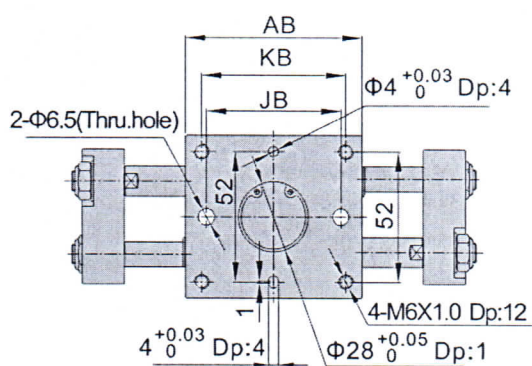
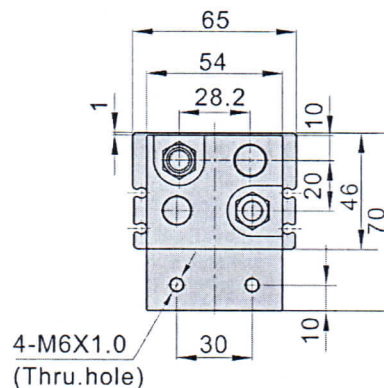
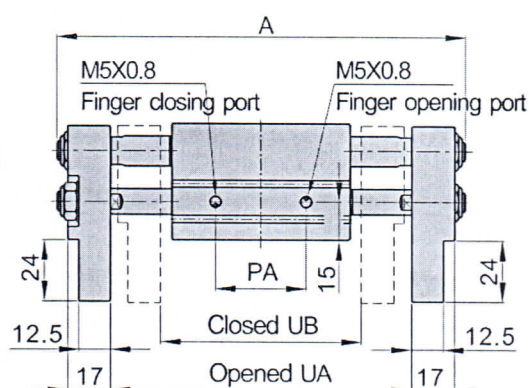
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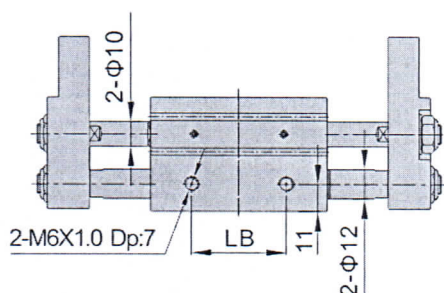
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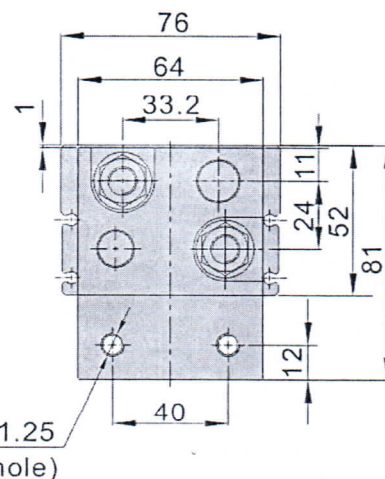
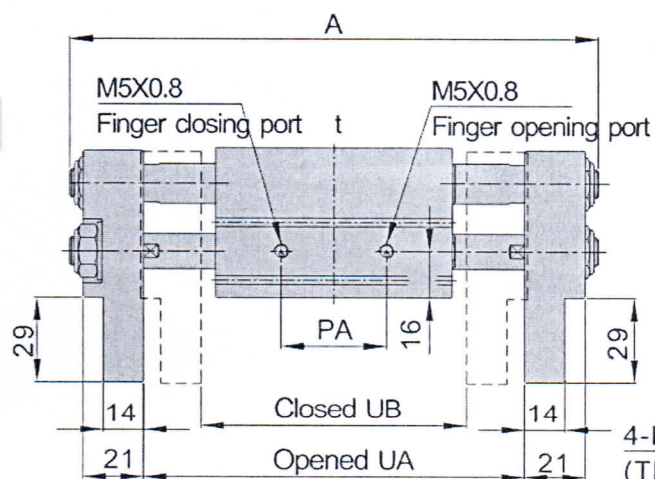
### HFT20



Item\Stroke	40	60	80	100
A	163	203	255	295
AB	71	91	113	133
JB	54	74	96	116
KB	58	78	100	120
LB	38	58	80	100
PA	36	46	56	66
UA(Opened)	120	160	212	252
UB(Closed)	80	100	132	152



### HFT25



Approve by

蕭裕健

Reviewed by

陳早明

Compiled by

Yao Ming

Date

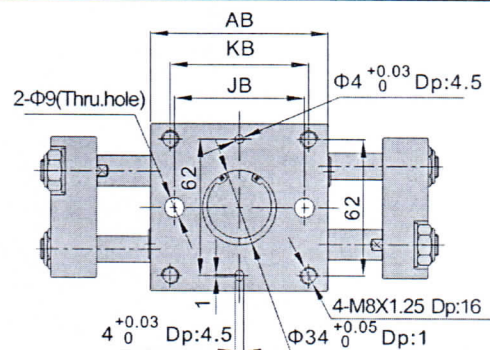
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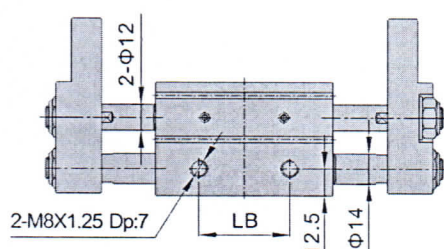
Date

2016-10-10

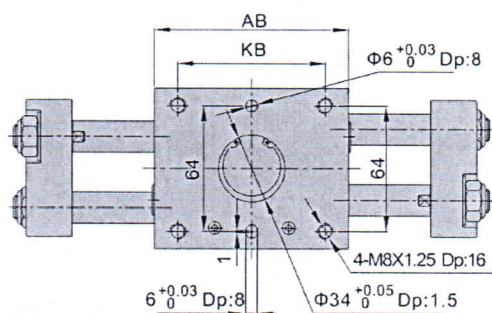
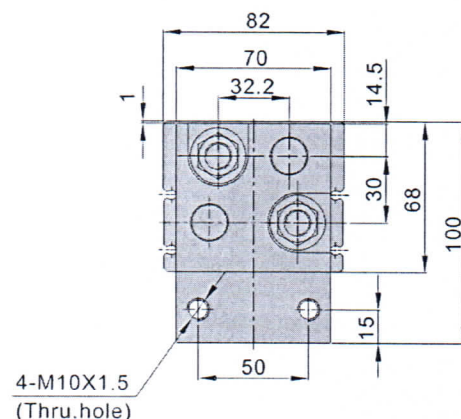
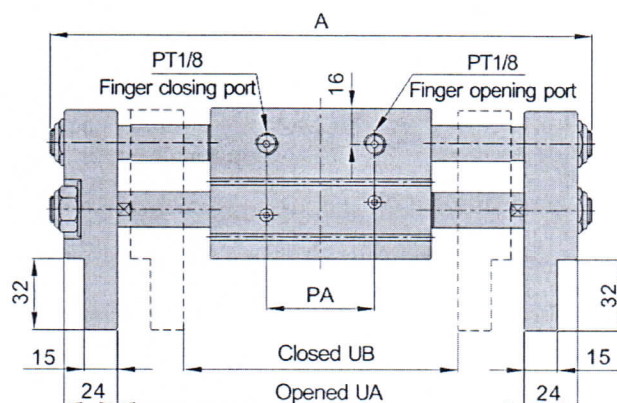




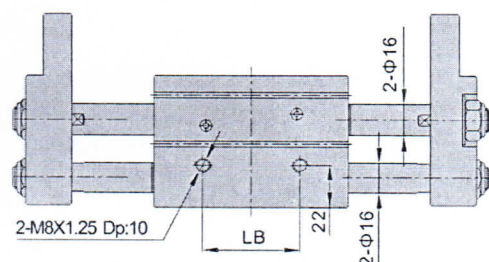
Item\Stroke	40	60	80	100
A	183	223	277	317
AB	82	102	122	142
JB	56	66	100	120
KB	60	70	104	124
LB	38	48	82	102
PA	36.5	46.5	56.5	66.5
UA(Opened)	132	172	226	266
UB(Closed)	92	112	146	166



### HFT32



Stroke\Item	A	AB	KB	LB	PA	UA(Opened)	UB(Closed)
60	245	100	76	50	48	184	124
80	285	120	86	60	58	224	144
100	343	158	134	108	68	282	182
150	443	208	184	158	93	382	232



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蕭裕健

Reviewed by

陈早阳

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Date

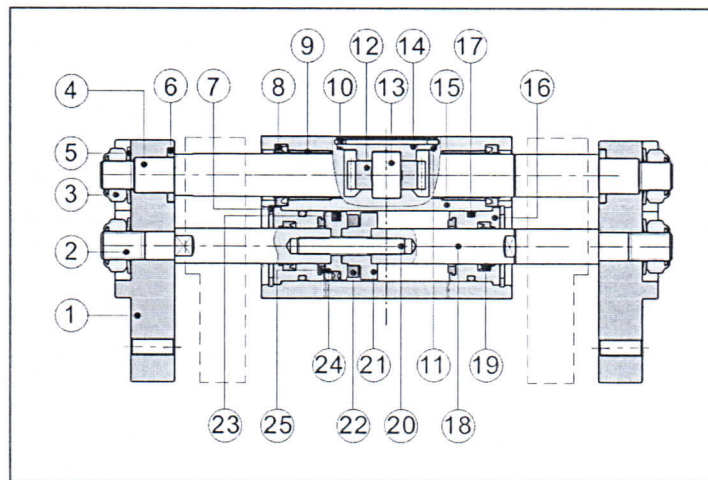
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## 4.2 Comparison with other companies' product

Bore size	Specification	Dimensions					Thread for mounting attachment
		UB at closing				Mounting thread	
Φ10	Stroke	20	30	40	60	Same for the same stroke	Same
	AirTAC	56	66	76	96		
	Company S	56	none	78	96		
Φ16	Stroke	30	40	60	80	Same for the same stroke	Same
	AirTAC	68	78	104	124		
	Company S	68	none	110	130		
Φ20	Stroke	40	60	80	100	Same for the same stroke	Same
	AirTAC	80	100	132	152		
	Company S	82	none	142	162		
Φ25	Stroke	40	60	80	100	The stroke 60 and the stroke 50 of company S have the same dimension; The same for the same stroke	Same
	AirTAC	92	112	146	166		
	Company S	none	none	none	182		
Φ32	Stroke	60	80	100	150	The stroke 80 and the stroke 70 of company S have the same dimension .The stroke 100 and the stroke 120 of company S have the same dimension.	Same
	AirTAC	124	144	182	232		
	Company S	none	none	none	none		

## 5. Inner Structure



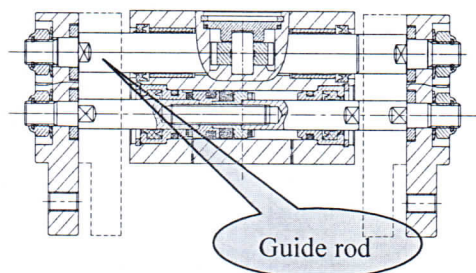
NO.	Item	Material	NO.	Item	Material
1	Panel	Aluminum alloy	14	Pinion cover	Carbon steel
2	Piston rod A	Stainless steel	15	Body	Aluminum alloy
3	Lock nut	Alloy steel	16	Front cover	Aluminum alloy
4	Guide rod	Stainless steel	17	O-ring	NBR
5	Washer	Spring steel	18	Piston rod B	Stainless steel
6	Washer	Carbon steel	19	Rod seal	NBR
7	Circlip	Spring steel	20	Joint screw	Stainless steel
8	Wiper ring	TPU	21	Magnet holder	Brass/Aluminum alloy
9	Bushing	Low carbon steel+composite material	22	Magnet	Sintered metal(Neodymium-iron-boron)
10	Circlip	Spring steel	23	Piston seal	NBR
11	O-ring	NBR	24	Piston	Brass/Aluminum alloy
12	Pinion	Chrome molybdenum	25	Bumper	TPU
13	Pinion axis	Bearing steel			

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## 6. Advantages



### ◆ Thicker guide rod

Bore size		φ10	φ16	φ20	φ25	φ32
Manufacturer						
Guide rod diameter	AirTAC	8	10	12	14	16
	Company S	6	8	10	12	14
Bending strength increase		77%	56%	44%	36%	30%

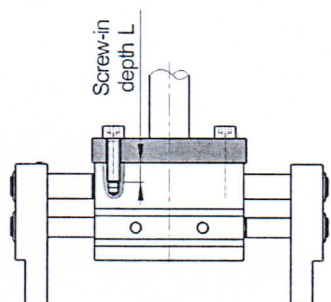
Note: thicker guide rod increases the stiffness and effectively prevents toe-out of fingers.

### ◆ More diversified strokes

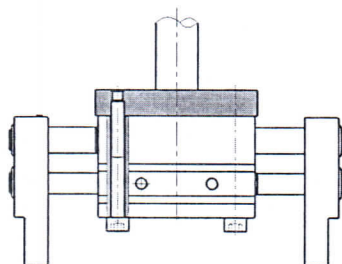
Bore size		φ10	φ16	φ20	φ25	φ32
Stroke	AirTAC	20、30、40、60	30、40、60、80	40、60、80、100	40、60、80、100	60、80、100、150
	Company S	20、40、60	30、60、80	40、80、100	50、100、120	70、120、160

## 7. Installation and Application

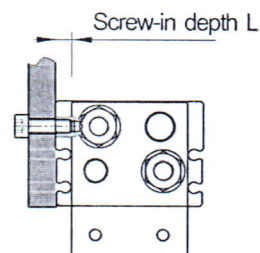
1. When fixing the gripping jaw parts, don't twist the gripping jaw.
2. There are several kinds of installation method, and the locking torque of fastening screw must be within the prescribed torque range shown in the below chart. If the locking torque is too large, it will cause malfunction. If the locking torque is too small, it will cause position deviation and drop.



Axial threaded hole mounting



Axial through hole mounting



Side mounting

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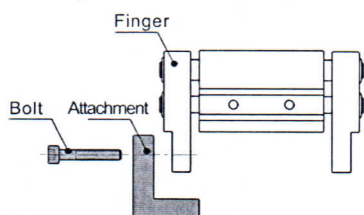


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Bore size	Applicable bolts	Max.tightening torque(N.m)	Max.screw-in depth(L)	Bore size	Applicable bolts	Max.tightening torque(N.m)	Bore size	Applicable bolts	Max.tightening torque(N.m)	Max.screw-in depth(L)
10	M4×0.7	2.1	8	10	M4×0.7	2.1	10	M4×0.7	1.4	5
16	M5×0.8	4.3	10	16	M5×0.8	4.3	16	M5×0.8	2.8	7
20	M6×1.0	7.3	12	20	M6×1.0	7.3	20	M6×1.0	4.8	7
25	M8×1.25	17.7	16	25	M8×1.25	17.7	25	M8×1.25	12	7
32	M8×1.25	17.7	16	Note: no this mounting type for Φ32.			32	M8×1.25	12	10

### 3.The installation method of the gripping jaw fittings

When install the gripping jaw fittings , you have to pay particular attention that make sure to install it when the rods are closing to avoid scratching of the rod and leading to the damage of sealing elements, which will cause air leakage or disoperation.

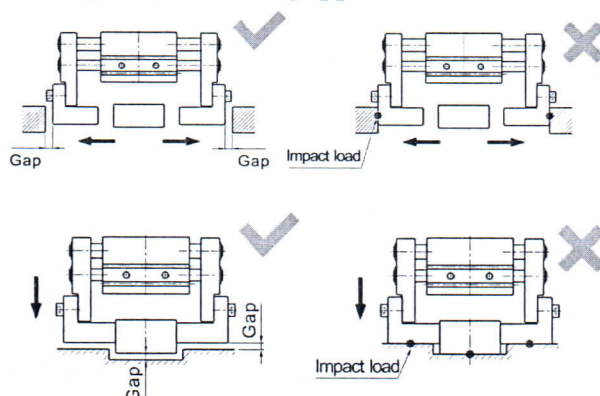


Bore size	Applicable bolts	Max.tightening torque(N.m)
10	M4×0.7	1.4
16	M5×0.8	2.8
20	M6×1.0	4.8
25	M8×1.25	12
32	M10×1.5	24

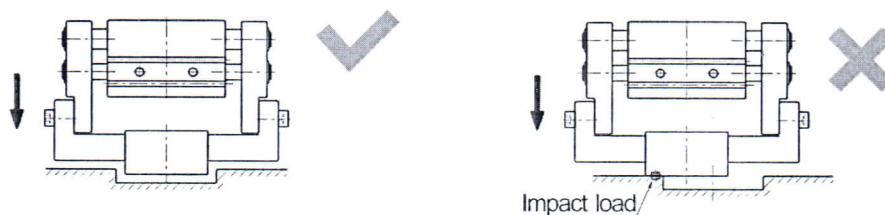
### 4. Confirm that there are no external forces exerted on the gripping jaw.

Transverse load acts on the gripping jaw, which will cause impact load and leads to the shaking and damage of gripping jaw. Equip with gaps so that the air gripper will not crash into work-pieces and accessories at the end of its trip.

The end of stroke under the open state of air gripper:



5. When the work-pieces are inserted, the center line should be coaxial, no offset, in case there are external forces generated on gripping jaw. When testing, it is specially required that the manual operation pressure should be used to operate at a low speed and guarantee safety and no impact.



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6. Please use the flow control valve to adjust the opening and closing speed of gripping jaw if too fast.

7. People must not enter the moving path of air gripper and articles must not be placed on the path either.

8. Before removing the air gripper, please confirm that it is off working state, and then discharge of compressed air.

**8. Other**

The description will take effect after being signed.

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