



Twist clamp cylinder—ACK Series

Installation and application


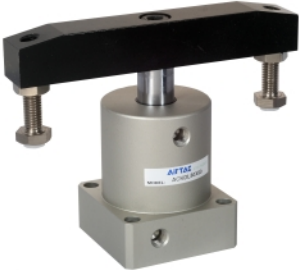
- 1、Clamping operation of the cylinder must be carried out within the clamping stroke and can not be performed within the swivel stroke;
- 2、Clamping plane must be vertical to the cylinder axes. After the components are clamped, don't move the components;
- 3、Before the cylinder is connected to pipeline, sundries in the pipe must be cleared away to prevent sundries entering the cylinder;
- 4、The medium used by cylinder shall be filtered by the filter core of at least 40um;
- 5、Under high temperature environment, the cylinder of high-temperature resistance shall be selected. Anti-freezing measure shall be adopted under low temperature environment to prevent the water freezing in cylinder;
- 6、If the cylinder is dismantled and stored for a long time, please conduct anti-rust treatment to the surface. Anti-dust cap shall be added in inlet and outlet. The end of piston shall be coated with antirust oil.

Theoretical clamping force

Unit: Newton (N)

Bore size (mm)		25	32	40	50	63
Rod size (mm)		14	16	16	20	20
Operating pressure (MPa)	0.1	-	60.3	105.6	164.9	280.3
	0.2	67.4	120.6	211.1	329.9	560.6
	0.3	101.1	181.0	316.7	494.8	840.9
	0.4	134.8	241.3	422.2	659.7	1121.2
	0.5	168.5	301.6	527.8	824.7	1401.5
	0.6	202.2	361.9	633.3	989.6	1681.9
	0.7	235.9	422.2	738.9	1154.5	1962.2

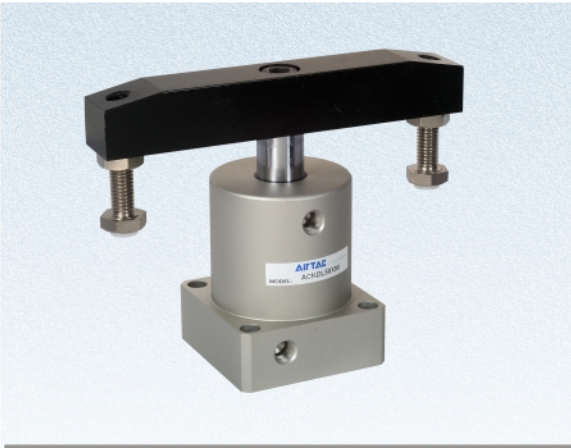
Product series

	ACK Series	ACKD Series	Acting type	Bore size
			Double acting	25
				32
				40
				50
				63
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Twist clamp cylinder

ACK Series

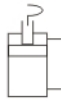


Specification

Bore size (mm)	25	32	40	50	63
Acting type	Double acting type				
Fluid	Air(to be filtered by 40m filter element)				
Operating pressure	0.15~1.0MPa(23~148Psi)				
Proof pressure	1.5MPa(215Psi)				
Temperature °C	-20~80				
Speed range mm/s	30~300				
Stroke tolerance	+1.0 0				
Rotary angle tolerance	± 1.5°				
Cushion type ①	No				
Port size ②	M5 x 0.8		1/8"		

- ①: If there is no buffering device, exhaust throttle shall be added to achieve buffering effect.
 ②: PT thread, NPT and G thread are available.

Symbol



Product feature

- The material of seals guarantees the reliable performance of the cylinder that is used under various conditions;
- Three-slot guide structure leads to high guide precision.
- There are single and double side clamping fingers can be selected (90°);
- Levorotatory and dextrorotary are available; 90° and 180°;
- The material of piston rod is made by special alloy steel, which has longer service life after heat treatment.

Stroke

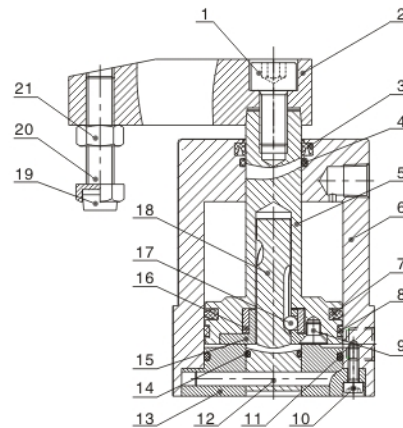
Bore size (mm)	Stroke type	90°	180°	Total stroke (90° /180°)
25, 32	Rotation stroke	14	20	26
	Clamping stroke	12	6	
40	Rotation stroke	15	21	27
	Clamping stroke	12	6	
50, 63	Rotation stroke	15	21	29
	Clamping stroke	14	8	

Ordering code

ACK		L	—	25	x	90	—	P
Model		Rotation direction		Bore size		Rotation angle		Thread type ①
ACK: Twist clamp cylinder (Double acting type)		L: Push and turn left R: Push and turn right				90: 90° 180: 180°		P: PT T: NPT G: G
ACKD: Twist clamp cylinder (Double push plate type, only for 90°)								

① When it is M5 thread, it is blank here.

Inner structure and material of major parts



NO.	Item	Material	NO.	Item	Material
1	Screw	Carbon steel	12	Fixed pin	S45C
2	Rocker	Free cutting steel	13	Back cover	Aluminum alloy
3	Rod packing	NBR	14	O-ring	NBR
4	O-ring	NBR	15	Push block	SCr440
5	Piston rod	Carbon steel with 20u hard chrome plated	16	Bushing	Scr440
6	Body	Aluminum alloy	17	Steel ball	Carbon steel
7	Piston O-ring	NBR	18	Rotation axis	SCr440
8	Wear ring	Wear resistant material	19	Bumper	PTFE
9	Screw	Carbon steel	20	Screw	Carbon steel
10	Screw	Carbon steel	21	Nut	Carbon steel
11	O-ring	NBR			



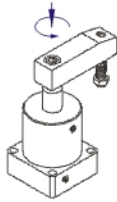
Twist clamp cylinder

ACK Series

- The definition of swivel direction
- Dimensions

Levorotatory

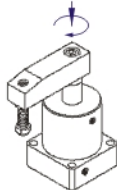
When the piston of cylinder moves downward, the swivel arms moves anticlockwise, this is called levorotatory.



The order code is L.

Dextrorotary

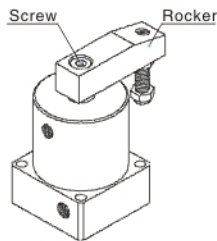
When the piston of cylinder moves downward, the swivel arms moves clockwise, this is called dextrorotary. The order code is R.



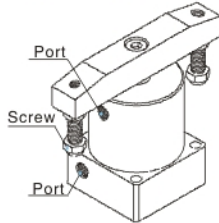
How to mount and use

Rocking shaft initial point adjustment

In according to the actual need, loosens screw, may adjust the rocking shaft initial point.

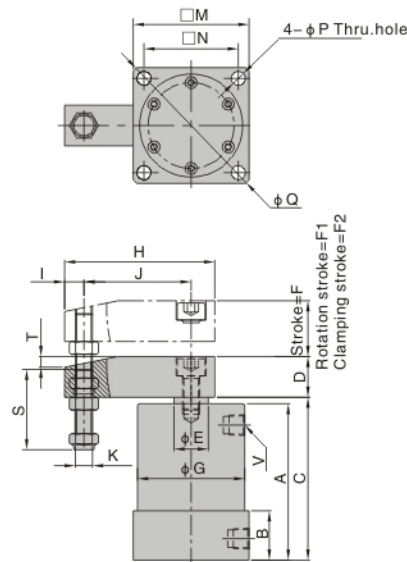


How to select the fitting for body's port

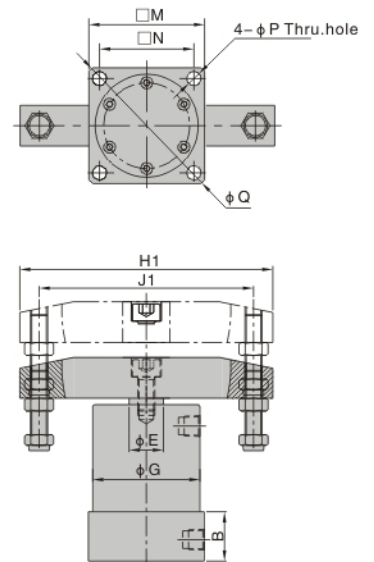


If you select ACK series and the rotation angle is 90° or ACKD series, you must use mini fitting for body's ports, Otherwise the fitting and the screw maybe touched and can't be used normally.

ACK Series



ACKD Series



Bore size\Item	A	B	C	D	E	G	H	H1	I	J	J1	K	M	N	P	Q
25	65	23	69	16	14	35	48	76	8	30	60	M6 × 1.0	40	30	4.5	52
32	73	23	76	19	16	50	70	118	9	50	100	M8 × 1.25	54	44	6.5	74
40	74	26	78	19	16	55	70	118	9	50	100	M8 × 1.25	58	48	6.5	79
50	80	26	84	25.4	20	60	93	160	10	70	140	M10 × 1.5	68	55	8.5	91
63	86	30	90	25.4	20	70	93	160	10	70	140	M10 × 1.5	82	64	8.5	108

Bore size\Item	F(90°/180°)	F1(90°)	F2(90°)	F1(180°)	F2(180°)	S	V
25	26	14	12	20	6	29.5	M5 × 0.8
32	26	14	12	20	6	37.5	1/8"
40	27	15	12	21	6	37.5	1/8"
50	29	15	14	21	8	45	1/8"
63	29	15	14	21	8	45	1/8"