Stopper cylinder

TWH, TWM Series

Symbol

TWH(TWM)

TWH-S(TWM-S)

TTH(TTM)

TTH-S(TTM-S)

TDH(TDM)

TDH-S(TDM-S)

Product feature

1. JIS standard is implemented.
2. Widening the piston rod can effectively improve the impact resistance ability of the cylinder.
3. Heavy type stopper cylinder has shock absorber adjustable shock absorber, which can reliably absorb the impact energy.
4. Shockless stopper cylinder is equipped with self-lock device, which can prevent the returning of rebound of rocker caused by bar objects.
5. Several series and specifications for stopper cylinders can be selected.

Ordering code

Model can to be changed Ordering code. Example:
Production type: TWH
Magnet: With magnet
Bore size: 50mm
Stroke: 30mm
Stopper: Shockless stopper(adjustble absorber)
Self-lock function: With self-lock
Sensor switch: With sensor switch
Thread type: NPT

Model: TWH-S-50×30-KF-1-T

Ordering code: TWH S 50 K F 0030 1 T

Model

Magnet
- Blank: Without magnet
- S: With magnet

Bore size
- 20: Φ20mm
- 25: Φ25mm
- 32: Φ32mm
- 40: Φ40mm
- 50: Φ50mm
- 63: Φ63mm
- 80: Φ80mm

Stroke
In 4 digits

Self-lock function
- Blank: Without self-lock
- F: With self-lock

Stopper
- L: shockless stopper (Non-adjustable absorber)
- K: Shockless stopper (adjustble absorber)

Thread type
- P: PT
- T: NPT
- G: G

Sensor switch
- Blank: Without sensor switch
- 1: With sensor switch

Specification

Series		TWH							TWM
Bore size(mm)		20	25	32	40	50	63	80	50
Fluid		Air(to be filtered by 40 μ m filter element)							
Action		Double acting type、Single acting-pull type							
Operating pressure	Double acting type	0.15~1.0MPa(23~145psi)							
	Single acting-pull type	Φ20:0.25~1.0MPa(35~145psi) Others:0.2~1.0MPa(28~145psi)							
Proof pressure		1.5MPa(215psi)							
Temperature ℃		-20~80							
Range of stroke tolerance		$^{+1.0}_{0}$							
Cushion type		Bumper							
Lubrication		Non required							
Mounting type		Flange							
Stopper type		Shock less stopper(With non adjustable absorber)		Shock less stopper(With adjustable absorber)					
Port size ①		M5×0.8		1/8"		1/4"		1/8"	
Sensor's thread		M5×0.5				M8×1.0			

① PT thread, NPT thread and G thread are available. Add) Refer to Page 403~426 for details of sensor switch.

Example of model

TWH-S-50×30-K□-1-P

Model
- TWH: Stopper cylinder(Double acting type)
- TDH: Stopper cylinder (Built-in spring double acting type)
- TTH: Stopper cylinder(Single acting-Pull type)
- TWM: Stopper cylinder(Double acting type)
- TDM: Stopper cylinder (Built-in spring double acting type)
- TTM: Stopper cylinder(Single acting-Pull type)

Magnet
- Blank: Without magnet
- S: With magnet

Bore size

Model	Bore size
TWH, TDH, TTH	20 25 32 40 50 63 80
TWM, TDM, TTM	50

Stroke

Bore size	Standard stroke (mm)
20, 25	15
32	20
40, 50, 63	30
80	40

① **Thread type**
- P: PT
- T: NPT
- G: G

Sensor switch
- Blank: Without sensor switch
- 1: With sensor switch

Self-lock function
- Blank: Without self-lock
- F: With self-lock

Stopper

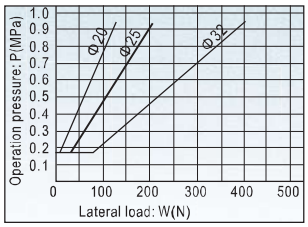
Model	Stopper
TWH TDH TTH	L: shockless stopper (Non-adjustable absorber)
	K: Shockless stopper (adjustble absorber)
TWM, TDM TTM	K: Shockless stopper (adjustble absorber)

① When the thread is standard, the code is blank.

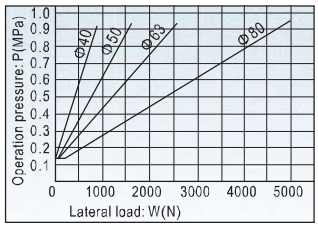
Note) The buffer is not adjustable if the bore size is 20 and 25. It is adjustable if the bore is over 32.

Lateral Load and Operation pressure

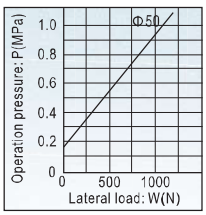
TWH20, 25, 32



TWH40, 50, 63, 80



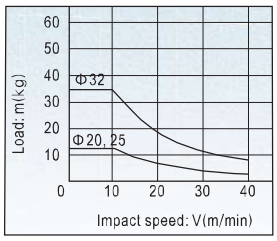
TWM50

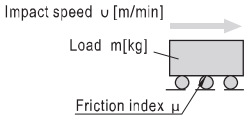


How to select

Drawing I

Bore size Φ20, Φ25, Φ32. Friction index μ =0.1

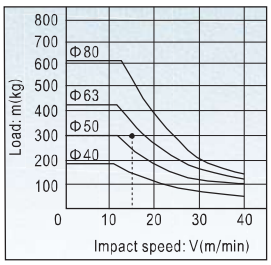




Note:
When the speed is the same, the friction index more higher, the Load more lighter. so the rubbing surface is smoother is better.

Drawing II

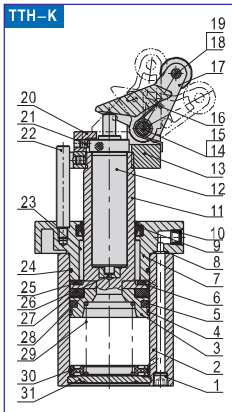
Bore size Φ40, Φ50, Φ63, Φ80. Friction index μ =0.1



Selection way:
When load is 300kg, speed is 15m/min, and friction factor is 0.1, draw a horizontal line in the 300 position of Y axis in Table 3 to join with X axis' .15m/min φ63 cylinder used in this application will be selected.

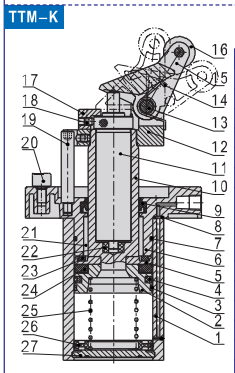
Inner structure and material of major parts

TTH-K



No.	Item	Material	No.	Item	Material
1	Countersink screw	Carbon steel	17	Rocker	Cast steel\ Nodular Cast iron
2	Body	Aluminum alloy	18	PIN	S45C grinding rod
3	Piston	Aluminum alloy	19	PIN gasket	S45C grinding rod
4	Wear ring	Wear resistant material	20	Obstruct block	Powder metallurgy
5	Piston seal	NBR	21	Countersink screw	Carbon steel
6	Magnet washer	Aluminum alloy	22	Leader	S45C grinding rod
7	Front cover	Aluminum alloy	23	Sliding bushing	Wear resistant material
8	O-ring	NBR	24	O-ring	NBR
9	Packing	NBR	25	Bumper	TPU
10	Silencer	Sintered bronze particle	26	Absorber fix and adjust seat	POM
11	Piston rod	S45C grinding rod			
12	Shock absorber		27	Magnet	Plastic
13	Fixed seat	Nodular Cast iron	28	Magnet washer	NBR
14	PIN	S45C grinding rod	29	Spring	Spring steel
15	Clip	Spring steel	30	Cushion	POM
16	Torsion spring	Spring steel	31	Back cover	Aluminum alloy

TTM-K

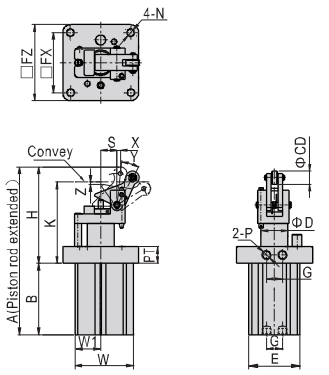


No.	Item	Material	No.	Item	Material
1	Body	Aluminum alloy	15	Rocker	Nodular cast iron
2	Piston	Aluminum alloy	16	Roller	Powder metallurgy
3	Wear ring	Wear resistant material	17	Obstruct black	Powder metallurgy
4	Piston seal	NBR	18	Countersink screw	Carbon steel
5	Magnet washer	Aluminum alloy	19	Leader	S45C grinding rod
6	Front cover	Aluminum alloy	20	Cancel cap	Aluminum alloy
7	O-ring	NBR	21	Sliding bushing	Bronze powder metallurgy
8	O-ring	NBR	22	Absorber fix and adjust seat	POM
9	Gasket	NBR	23	Bumper	TPU
10	Piston rod	S45C grinding rod	24	Magnet	Plastic
11	Shock absorber		25	Spring	Spring steel
12	Mounting seat	Nodular cast iron	26	Bumper	TPU
13	PIN	S45C grinding rod	27	Back cover	Aluminum alloy
14	Torsion spring	Spring steel			

Dimensions

Non-adjustable absorber(TWH-L(F), TDH-L(F), TTH-L(F))

Φ20, Φ25



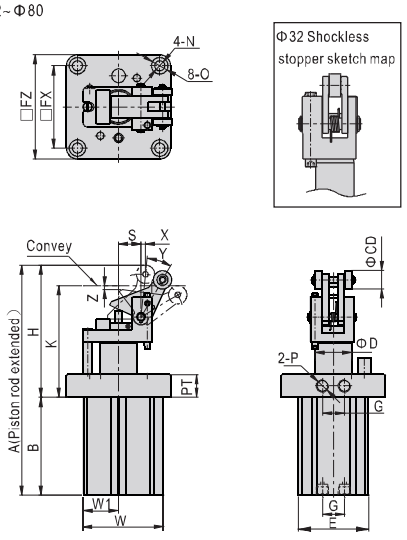
Bore size\Item	A	B	CD	D	E	PT	FX	FZ	G	H
20	129	55	12	16	36	8	40	48	12	74
25	135.5	57.5	12	16	40	12	47	58	16	78

Bore size\Item	K	N	P	S	X	Y	W	Z	W1
20	59.8	4.5	M5	12	4	28	40	2.4	18
25	63.8	6.6	M5	12	4	28	45	2.4	20

Note:The type with magnet and the type without magnet have the same dimension.
The type with self-lock and the type without selflock have the same dimension.

Adjustable absorber(TWH-K(F),TDH-K(F),TTH-K(F))

Φ32~Φ80



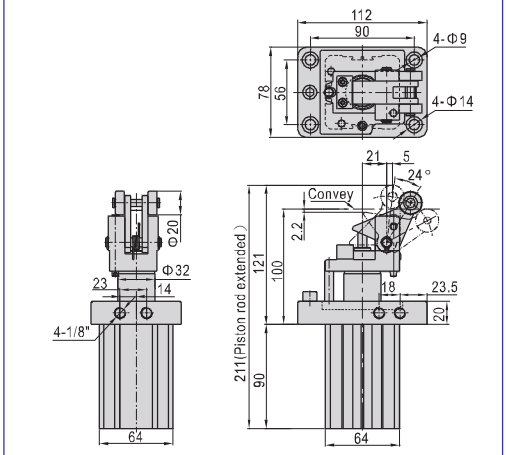
Bore size\Item	A	B	CD	D	E	PT	FX	FZ	G	H
32	152.5	65.5	12	20	46	16	53	67	16	87
40	191	79	20	25	53	16	65	82	16	112
50	211	83	20	32	64	20	73	93	18	128
63	245.5	101	20	40	77	25	90	114	24	144.5
80	299.5	128	25	50	98	25	110	138	30	171.5

Bore size\Item	K	N	O	P	S	X	Y	W	Z	W1
32	73.4	6.6	11	1/8"	12	3.5	28	51.5	1.7	23
40	92.3	6.6	11	1/8"	16	5	26	62	3.7	26.5
50	107.4	9	14	1/8"	21	5	24	72	2.2	32
63	122	11	18	1/4"	25	5	24	87.5	3.2	38.5
80	145.4	13	20	1/4"	31	6	23	109	3.6	49

Note:The type with magnet and the type without magnet have the same dimension.
The type with self-lock and the type without selflock have the same dimension.

Dimensions

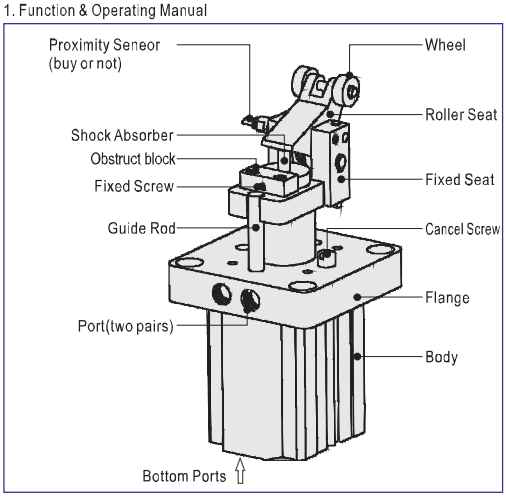
Adjustable absorber(TWM-K(F), TDM-K(F), TTM-K(F))



Note: The type with magnet and the type without magnet have the same dimension.

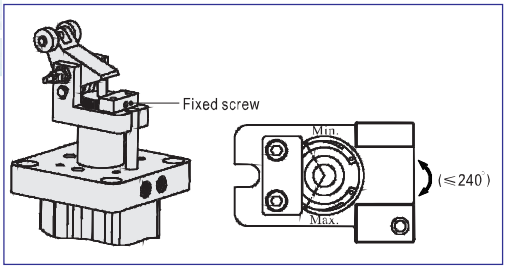
Installation and application

1. Function & Operating Manual



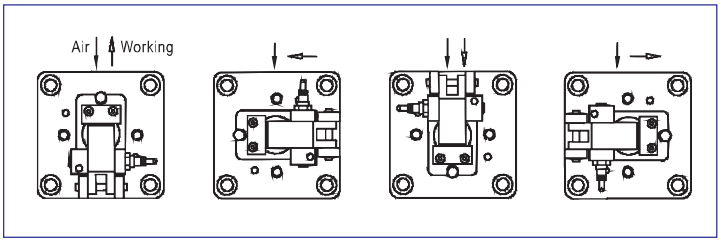
2. Adjustment of Shock Absorber

2.1) The Shock Absorber had been adjusted before the cylinder finished.
2.2) The client can adjust it if necessary.
2.3) The steps are as following.
a. Loose the fixed screw.
b. Turn the Shock Absorber to adjust the cushion ability.
c. Fasten the fixed screw.



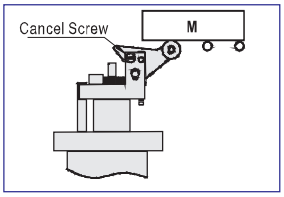
3. Multi-working position

Even the flange is fixed, just adjust the mounting position of guide rod will be changed the working direction of the stopper cylinder.



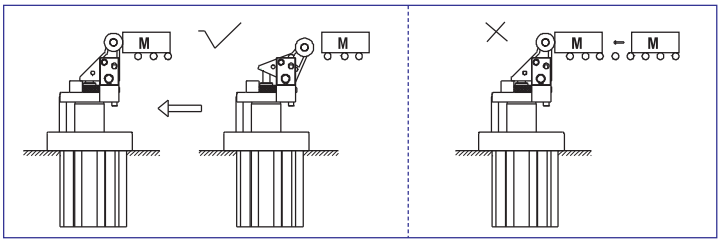
4. Working Forbidden

4.1) This function is used to cancel the stop action of the cylinder, and make the work piece pass easy.
4.2) The steps are as following.
a. Screw off the cancel screw from the flange.
b. Put the roller seat down.
c. Fasten the cancel screw in the screw hole on the fixed seat and the tail of the cancel screw should be inserted in the hole made on the roller seat.



5. How to use stopper function

5.1) When the shock absorber is impacted deeply, added impact energy must be avoided. The cylinder without shock absorber cann't be impacted by load, otherwise mechanical failure may be caused.
5.2) The maximum impact kinetic energy acting on the piston rod cann't exceed the allowable maximum values, otherwise mechanical failure may be caused.



6. Self-locking

Unusually, when the stopper cylinder is operating, work piece will be rebound as the effect of shocker absorber. In order to keep the work piece steady, we have developed this self-locking device.

The auto-lock equipment can lock the rocker arm to avoid the products jumping back