Compendium of TWH\TWM Series

Shockless stopper cylinder

Shockless stopper cylinder with JIS standard.

With self-lock device

With self-lock device, which can prevent the returning of rebound of rocker caused by bar objects.

Widening piston rod

Widening the piston rod can effectively improve the impact resistance ability of the cylinder.

Seven kinds of bore size can be selected

Bore size: 20, 25, 32, 40, 50, 63, 80

Heavy type with shock absorber

Heavy type stopper cylinder has shock absorber adjustable shock absorber, which can reliably absorb the impact energy.

Magnetic switch slots around the cylinder body

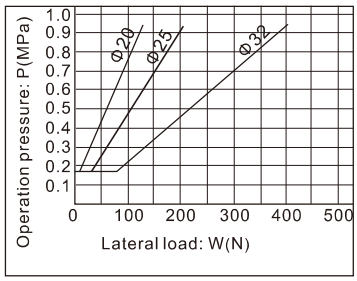
There are magnetic switch slots around the cylinder body convenient to install inducting switch.

Installation and application

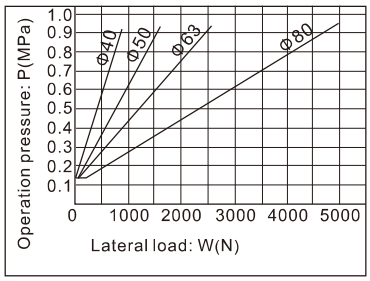
1. When load changes in the work, the cylinder with abundant output capacity shall be selected.
2. Relative cylinder with high temperature resistance or corrosion resistance shall be chosen under the condition of high temperature or corrosion.
3. Necessary protection measure shall be taken in the environment with higher humidity, much dust or water drops, oil dust and welding dregs.
4. Dirty substances in the pipe must be eliminated before cylinder is connected with pipeline. Impurities must be prevented from entering the cylinder.
5. The medium used by cylinder shall be filtered to 40μm or below.
6. The lateral load of the cylinder shall not exceed the allowable value in operation so as to maintain its normal operation and extend its service life.
7. Anti-freezing measure shall be adopted under low temperature environment to prevent the water freezing in cylinder.
8. If the cylinder is dismantled and stored for a long time, please conduct anti-rust treatment to the surface. Anti-dust caps shall be added in air inlet and outlet ports.

Lateral Load and Operation pressure

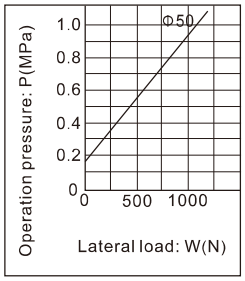
TWH20□ 25□ 32



TWH40□ 50□ 63□ 80



TWM50



Stopper cylinder

TWH, TWM Series

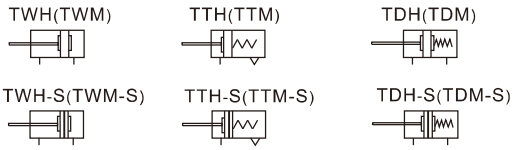
Specification

Series		TWH							TWM
Bore size(mm)		20	25	32	40	50	63	80	50
Fluid		Air(to be filtered by 40μm 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 □		-20~70							
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 [Note1]		M5×0.8		1/8"		1/4"			1/8"
Sensor's thread		M5×0.5				M8×1.0			

[Note1] PT thread, G thread and NPT thread are available.

Add) Refer to Page 338 for details of sensor switch.

Symbol



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

TWH 50×30 S K □ □

① ② ③ ④ ⑤ ⑥ ⑦

①Model	②Bore size	③Stroke	④Magnet	⑤Stopper [Note1]	⑥Self-lock function	⑦Thread type [Note2]
TWH: Stopper cylinder(Double acting type) TDH: Stopper cylinder (Built–in spring double acting type) TTH: Stopper cylinder(Single acting-Pull type)	20 25	15	Blank: Without magnet S: With magnet	L: shockless stopper (Non-adjustable absorber) K: Shockless stopper (adjustble absorber)	Blank: Without self-lock F: With self-lock	Blank: PT G: G T: NPT
	32	20				
	40 50 63	30				
	80	40				
TWM: Stopper cylinder(Double acting type) TDM: Stopper cylinder (Built-in spring double acting type) TTM: Stopper cylinder(Single acting-Pull type)	50	30		K: Shockless stopper (adjustble absorber)		

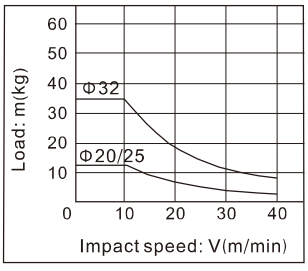
[Note1]The buffer is not adjustable if the bore size is 20 and 25. It is adjustable if the bore is over 32.

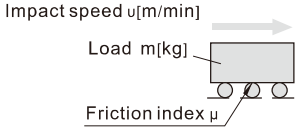
[Note2] When the thread is standard, the code is blank.

How to select

Drawing I Max. load

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

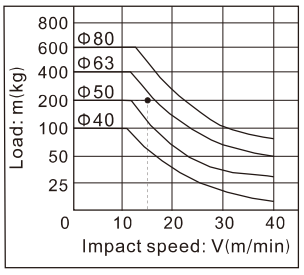




Note:
When the speed is the same, the friction index more higher, the Load more lighter. so the rubbing surface is smoother is better.

Drawing II Max. load

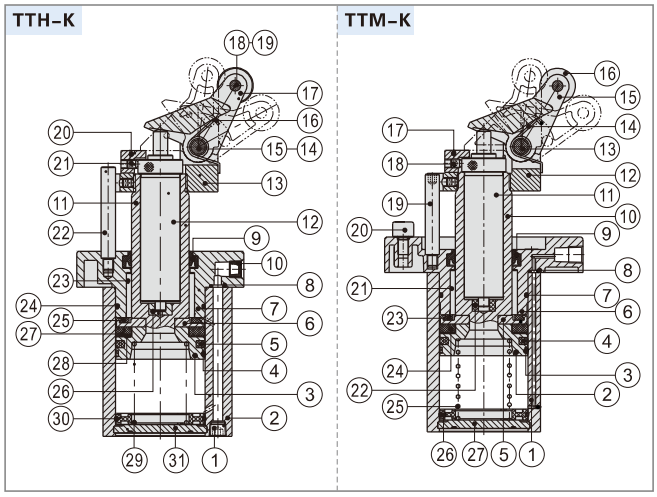
Bore size Φ40, Φ50, Φ63, Φ80. Friction index μ =0.1



Selection way:
When load is 200kg, speed is 15m/min, and friction factor is 0.1, draw a horizontal line in the 200 position of Y axis in Table 3 to join with X axis' . 15m/min φ63 cylinder used in this application will be selected.

Please refer to "Installation and application " for details.

Installation and application



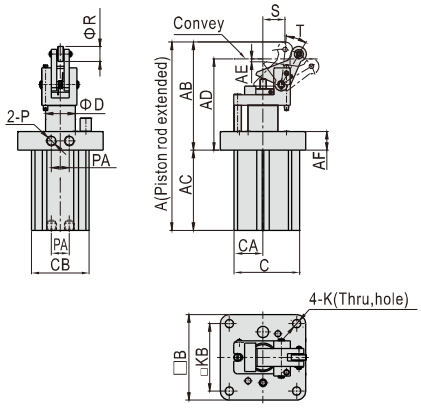
No.	Item	Material	No.	Item	Material
1	Countersink screw	Carbon steel	17	Rocker	Cast steel\
2	Body	Aluminum alloy	18	PIN	S45C grinding rod
3	Piston	Aluminum alloy	19	PIN gasket	S45C grinding rod
4	Wear ring	Wear resistant material	20	Obstruct block	Powder metallurgy
5	Piston seal	NBR	21	Countersink screw	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

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



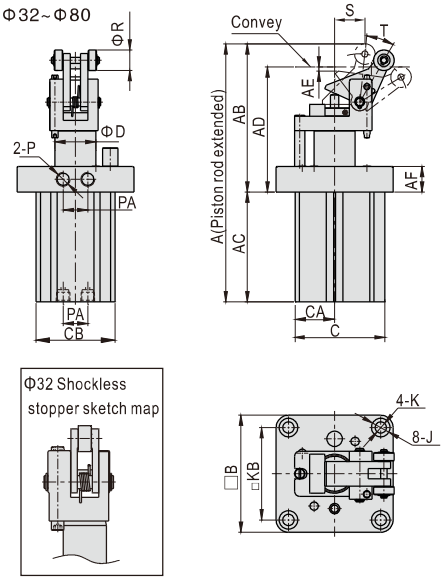
Bore size\Item	A	AB	AC	AD	AE	AF	B
20	129	74	55	60	2.5	8	48
25	135.5	78	57.5	64	2.5	12	58

Bore size\Item	C	CA	CB	D	K	KB
20	40	18	36	16	4.5	40
25	45	20	40	16	6.5	47

Bore size\Item	P	PA	R	S	T
20	M5×0.8	12	12	16	28
25	M5×0.8	16	12	16	28

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

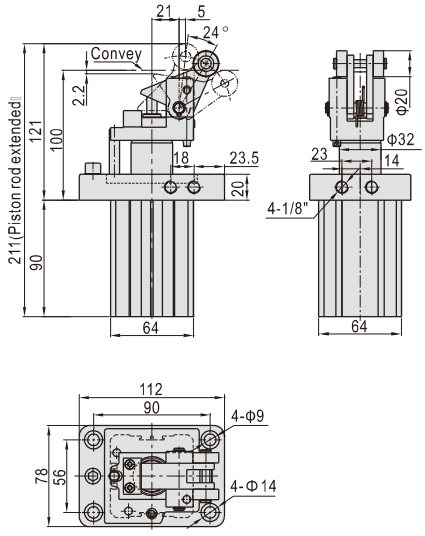
Φ32~Φ80



Bore size\Item	A	AB	AC	AD	AE	AF	B	C	CA
32	152.5	87	65.5	73.5	1.5	16	67	51.5	23
40	191	112	79	92.5	3.5	16	82	62	26.5
50	211	128	83	107.5	2	20	93	72	32
63	245.5	144.5	101	122	3.5	25	114	87.5	38.5
80	299.5	171.5	128	145.5	3.5	25	138	109	49

Bore size\Item	CB	D	J	K	KB	P	PA	R	S	T
32	46	20	11	6.5	53	1/8"	16	12	18.5	28
40	53	25	11	6.5	65	1/8"	16	20	21	26
50	64	32	14	9	73	1/8"	18	20	26	24
63	77	40	18	11	90	1/4"	24	20	30	24
80	98	50	20	13	110	1/4"	30	25	37	23

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

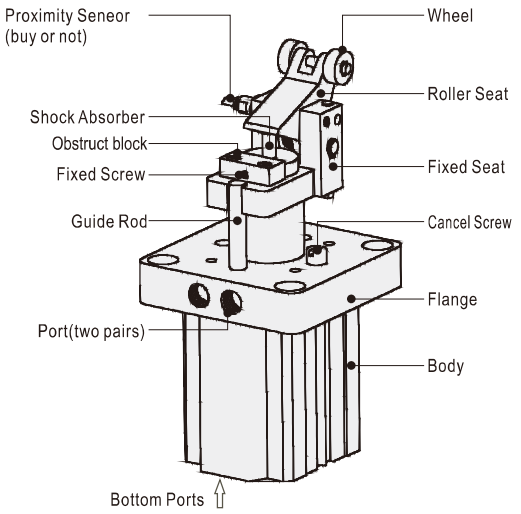


Note:The type with magnet and the type without magnet have the same dimension.

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.

Installation and application

1. Function & Operating Manual



2. Adjustment of Shock Absorber

2.1) The Shock Absorber had been adjusted before the cylinder finished.

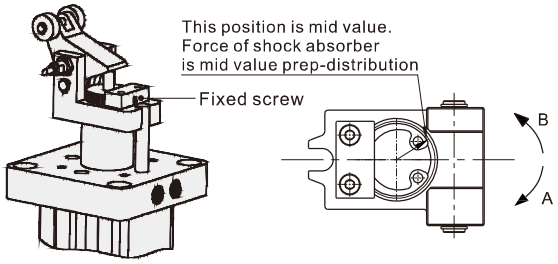
2.2) The client can adjust it if necessary.

2.3) The steps are as following.

a. Loose the fixed screw.

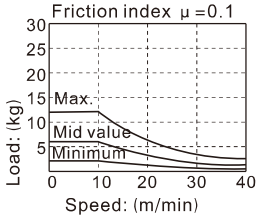
b. Turn the Shock Absorber to adjust the cushion ability.

c. Fasten the fixed screw.

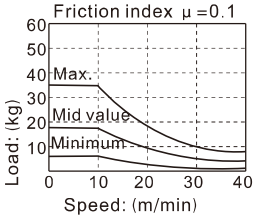


Please adjust shock absorber to direction "A" when cushion is badness and load exceed mid value.
Please adjust shock absorber to direction "B" when cushion is badness and load less than mid value.
For example: Bore size: Φ32; Speed:18m/min;
Max. load: 20kg; Mid value is 10kg.
If load exceed 10kg, when the cushion is badness, please adjust shock absorber to direction "A";
If load less then 10kg, when the cushion is badness, please adjust shock absorber to direction "B";

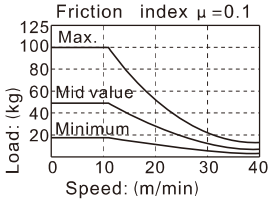
Bore size Φ20, Φ25
Friction index μ =0.1



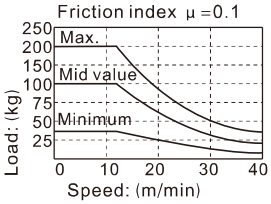
Bore size Φ32
Friction index μ =0.1



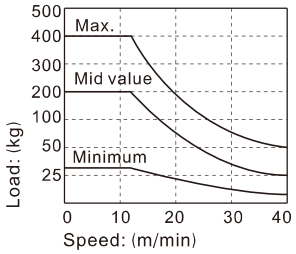
Bore size Φ40
Friction index μ =0.1



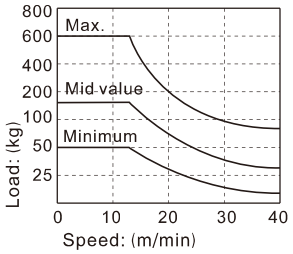
Bore size Φ50
Friction index μ =0.1



Bore size Φ63 Friction index μ =0.1

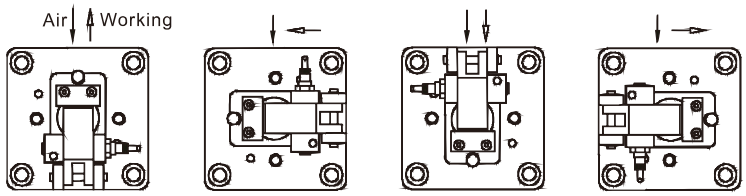


Bore size Φ80 Friction index μ =0.1



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

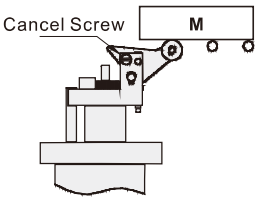
4.1) This function is used to cancel the stop action of the cylinder,and make the work piece pass easy.

4.2) The steps are as following.

a. Screw off the cancel screw from the flange.

b. Put the roller seat down.

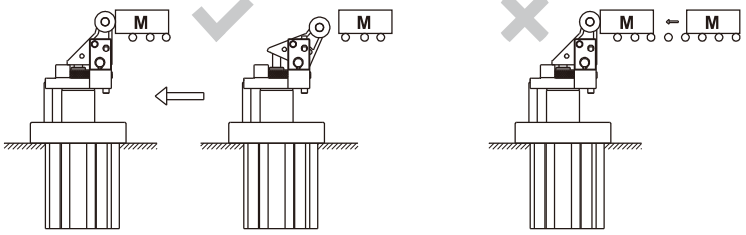
c. Fasten the cancel screw in the screw hole on the fixed seat and the tail of the cancel screw should be inserted in the hole made on the roller seat.



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.

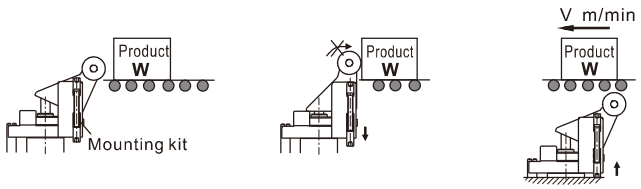
5.2) The maximum impact kinetic energy acting on the piston rod cann't exceed the allowable maximum values, otherwise mechanical failure may be caused.



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



Original position of roller　　Lock the roller　　Unlock the roller

7. Shock absorbers are consumable parts.

When a decrease in energy absorption capacity is noticed, it must be replaced.

Bore size	20 / 25	32 / 40	50	63	80
Shock absorber type	ASA1008	ASJ1408	ASJ2210	ASJ2912	ASJ3315