


Specification

Type	DGYB
Bore	Φ 10、15、20、25、32、40
Power fluid	air
The range of pressure	0.12 ~ 7.1 kgf/cm ²
Proof pressure	10.7 kgf/cm ²
Speed range	50 ~ 500 mm/s
The range of temperature	-10°C ~ +60°C

How to order

DGYB	15	-	50
Type	Bore		Stroke
 DGYB	10 : Φ 10 15 : Φ 15 20 : Φ 20 25 : Φ 25 32 : Φ 32 40 : Φ 40		Please see stroke table

Stroke table

Bore	Standard stroke (mm)
Φ 10	50,100,150,200,250,300
Φ 15	50,100,150,200,250,300,350,400,450,500
Φ 20	
Φ 25	100,150,200,250,300,350,400,450,500,600,700,800
Φ 32	
Φ 40	100,150,200,250,300,350,400,450,500,600,700,800,900,1000

Magnet effect table

Unit : N (1N=0.101972kgf)

Bore	Φ 10	Φ 15	Φ 20	Φ 25	Φ 32	Φ 40
Magnet effect	53.9	137	231	363	588	922

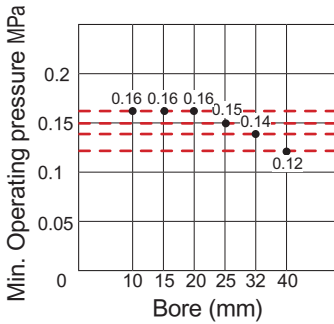
Weight table

Unit : kg

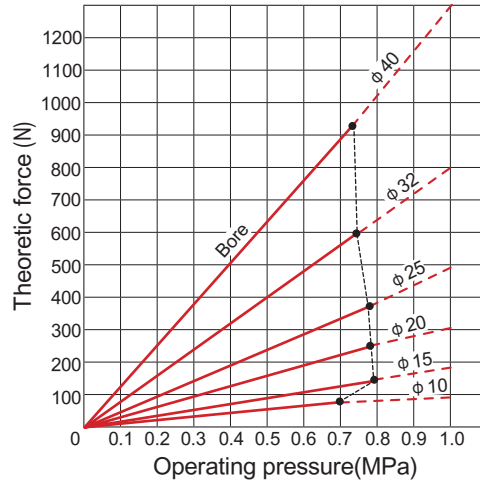
Bore	Φ 10	Φ 15	Φ 20	Φ 25	Φ 32	Φ 40
Basic weight	0.08	0.275	0.351	0.672	1.287	2.07
Stroke 50 weight	0.004	0.015	0.02	0.023	0.033	0.04

Calculation — Ex : DGYB32X500 1.287+0.033X500 ÷ 50=1.617kg
 Basic weight — 1.287kg
 Increased weight — 0.033/50st
 Stroke — 500st

Min. operating pressure



Theoretic force



Specific product precatons

1. Cylinder must use two side fixed end cap

Please avoid to use fixed slide movement components.

2. Cylinder bore size exterior do not trace of hit.

Cause oil seal and wear ring damage or action is incorrect.

3. Please do not use when remove the piston magnet components.

When remove the piston magnet components, please hand to the end of the slide movement components (or piston movement components is no pressure) press and hold to return to the right place.

4. Attention rotation of slide movement components

With other axis (linear guide rail, etc.) connect, please control rotation.

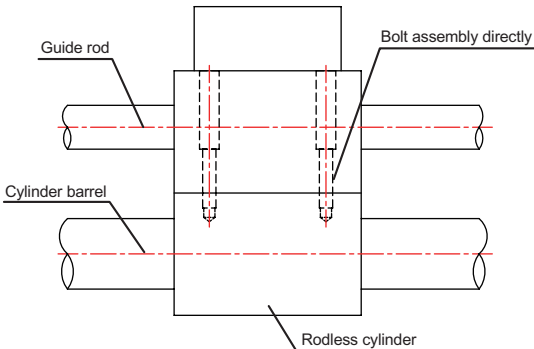
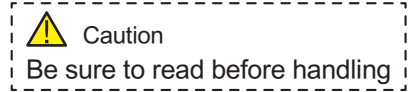
5. When Vertical direction, attention the allow load weight.

Use allow load weight in the vertical direction according to machine model selection, more than the value of the load will set off piston magnet components. Make sure the pressure and load when using.

6. Do not add horizontal load on slide movement components.

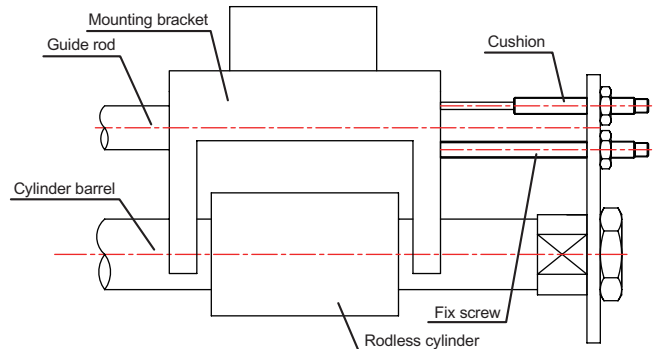
Install load directly above the cylinder, cause each axis can not absorb the axis deviation and horizontal load burden, it will become adverse action.(See drawing 1)

Please consider able to absorb the axis deviation value and the weight of cylinder body, the deformation of the connection method. Drawing 2 shows the proposed assembly method.



Can not absorb load and cylinder axis deviation value , it is the reason to make adverse action.

Drawing 1 The wrong way assembly(X)



Mounting bracket and cylinder with gap, we can absorb cylinder axis deviation value. Another mounting bracket extended to the cylinder axis of the cylinder can make cylinder not to bear torque.

Drawing 2 Proposed assembly method(O)

Service and maintenance precautions

- Warning**
- Please attention that the adsorption capacity of magnet is very strong.

Because service need to remove the slide movement components and piston movement components from cylinder bore, when installed each movement components with very strong magnet, must attention to use fully.

- Caution**
- Please do not disassemble parts arbitrary, internal have strong magnet (piston movement components, slide movement components)

The wrong disassembling will make maintain force down and malfunction.

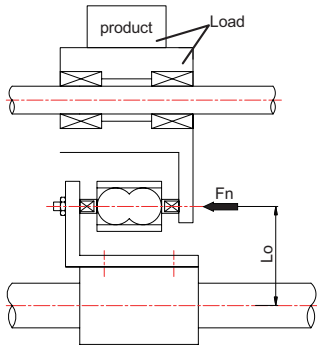
- After decomposition please strengthen the locking when re-installation.

Use vise to grip 2 side installation position when decomposition, then the other side of the two surface use wrench or adjustable wrench board to remove the cover. Re-lock position when you install more than $3^{\circ} \sim 5^{\circ}$.

- Please attention the piston movement components adsorption directly when taken out slide movement components.

When taken out slide movement components or piston movement components from piston tube, please enforce to remove the location of magnet piston components that keeping the state of not attract mutually. By the way, it will not be attracted to the magnet and unable detach.

Model selection method



(Data A : distance from cylinder axis — allow driving force)

Selection step

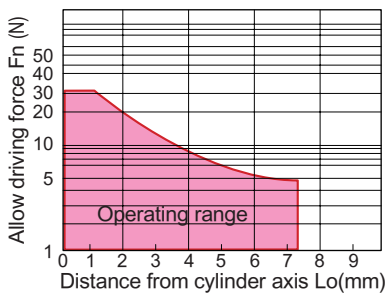
- Find the load of horizontal movement driving resistance $F_n(N)$
- Find the distance from load driving force point to cylinder axis ($L_o(cm)$)
- Select the cylinder bore from L_o of data A to F_n .

Example

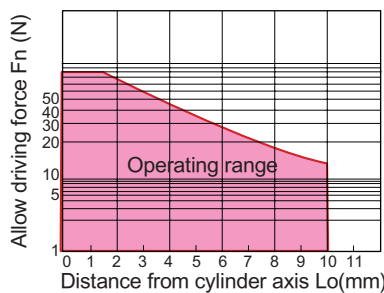
Load of driving resistance $F_n=100$, the distance of cylinder axis force to action point $L_o=8cm$, find draconic from data A 8cm of horizontal axis to vertical axis. Next you can find vertical axis of allow driving force.

Achieve 100(N) requirements for models to DGYB32 or DGYB40.

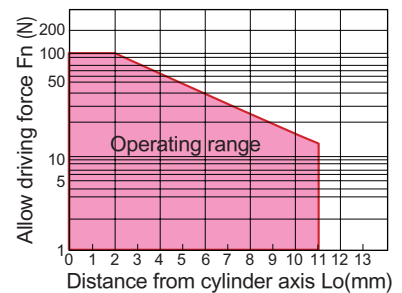
DGYB10



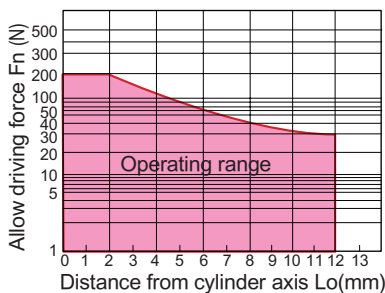
DGYB15



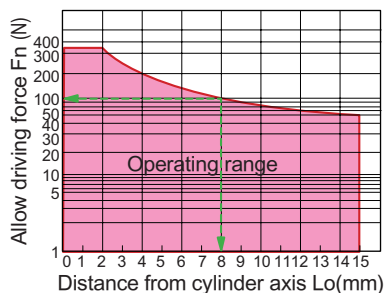
DGYB20



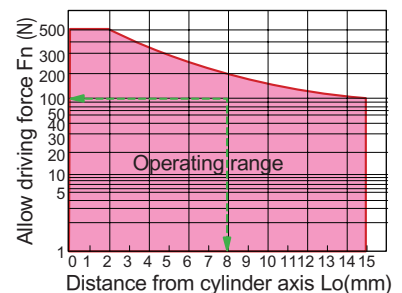
DGYB25



DGYB32



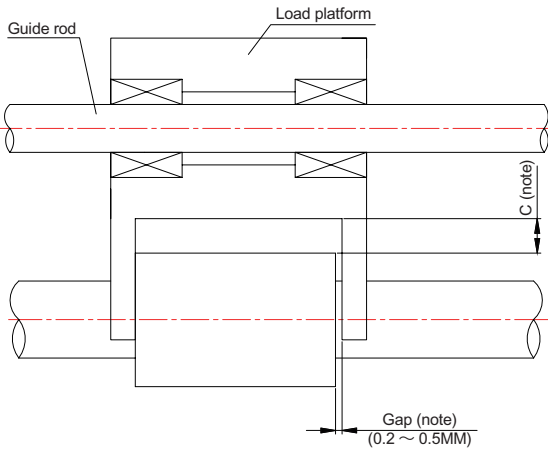
DGYB40



Model selection method

Cylinder weight deflection

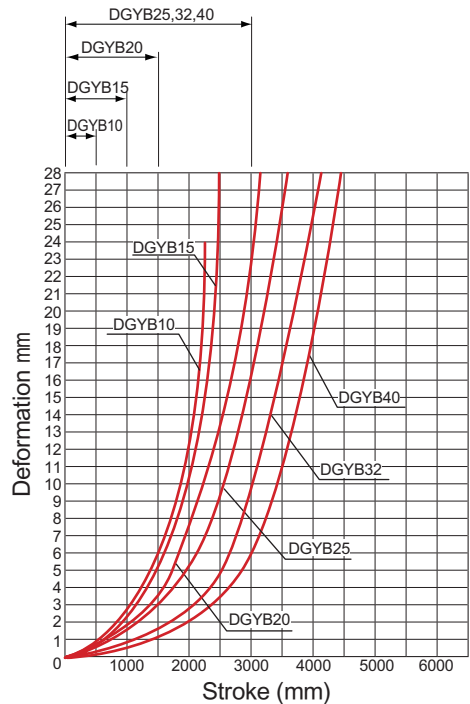
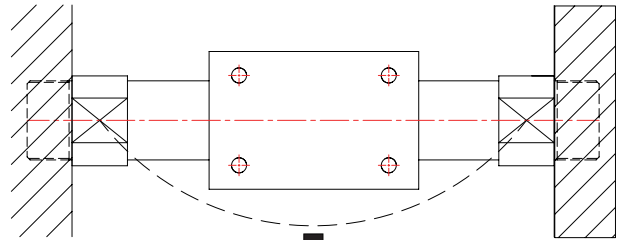
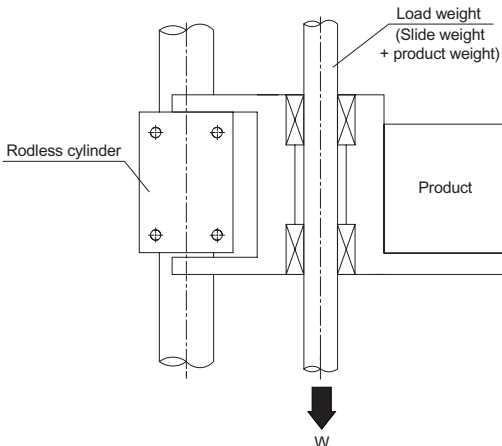
Because the cylinder body weight such as data appear deformation when horizontal install. The stroke more longer and the deflection of axis center is more bigger. Please consider the content method for show in drawing for absorbing deviation to install.



The above gap volume is reference value
Note : Please refer right drawing of weight deflection, the situation of cylinder non-contact mounting surface and load to set gap can work properly in the minimum operating pressure range.

Vertical

Load guide by ball bearing (linear bearing, etc.), increase resistance when using slide bearing by load weight and load torque to make actuation abnormal.



* The above deflection data for slide movement components in middle of the stroke when moving.

Bore (mm)	Allow load Wv(kg)	Max. operating pressure Pv(MPa)
10	2.7	0.55
15	7.0	
20	11.0	0.65
25	18.5	
32	30.0	
40	47.0	

Note : Using more than maximum operating pressure, Please attention piston magnet components.

Model selection method

About intermediate stop

1. Load by external brake when intermediate stop

Load by external brake when intermediate stop, please use belowing shows table of following operating pressure range. If using more than operating pressure range, please attention the piston magnet components would detach.

Bore (mm)	Operating pressure range when intermediate stop Ps(MPa)
10	0.55
15	
20	
25	0.65
32	
40	

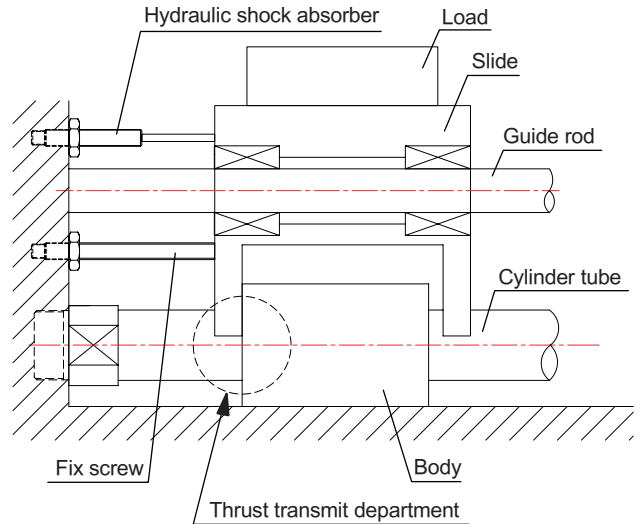
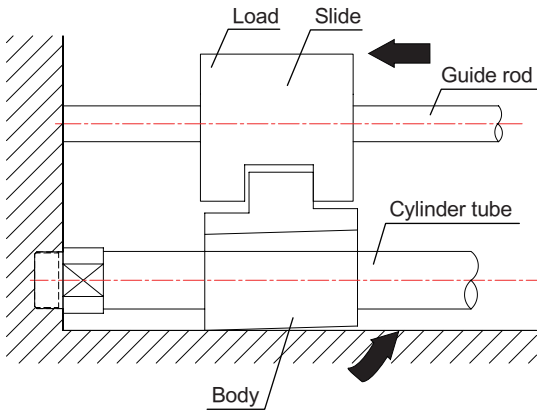
2. Load by pressure loop when intermediate stop

Load by pressure loop when intermediate stop, please use belowing shows table of following sport energy range. If using more than allow value, please attention the piston magnet components would detach.

Bore (mm)	Possible sport energy when intermediate stop Es(J)
10	0.03
15	0.13
20	0.24
25	0.45
32	0.88
40	1.53

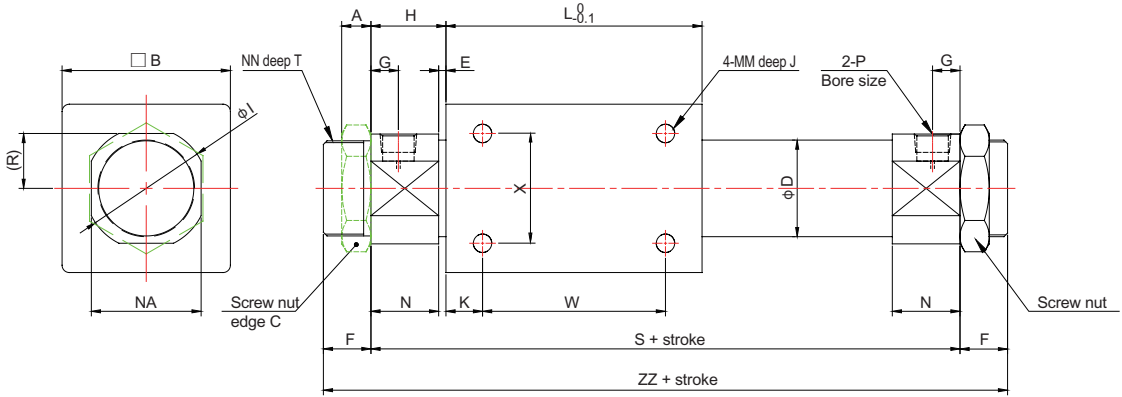
About stop method when the end of stroke

If load of big inertial force stoped in the end of cylinder stroke, the body would tilt. It would cause bearing and cylinder tube damaged. (see below left drawing) Please refer to below right drawing and use hydraulic shock absorber and brakes. Let thrust transmit to body center and body do not tilt.

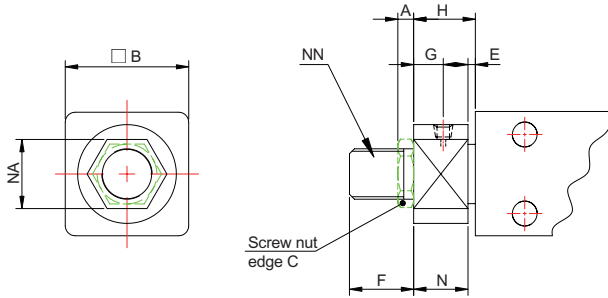


DGYB Dimensional features

● Bore $\phi 20 \sim 40$



● Bore $\phi 10 \sim 15$



Dimensional table

Mark Bore	A	B	C	D	E	F	G	H	I	J	K	L
$\Phi 10$	4	25	14	12	1.5	9	5	12.5	—	4.5	4	38
$\Phi 15$	4	35	14	17.4	2	10	5.5	13	—	6	11	57
$\Phi 20$	8	36	27	21.4	2	13	7.5	20	28	6	8	66
$\Phi 25$	8	46	32	26.4	2	13	7.5	20.5	33.5	8	10	70
$\Phi 32$	8	60	32	33.6	2	16	8	22	40	8	15	80
$\Phi 40$	10	70	41	41.6	3	16	11	29	50	10	16	92

Mark Bore	MM	N	NA	NN	R	S	T	W	X	ZZ	P
$\Phi 10$	M3x0.5	11	14	M10X1.0	—	63	8	30	16	81	M5x0.8
$\Phi 15$	M4x0.7	11	17	M10x1.0	—	83	9	35	19	103	M5x0.8
$\Phi 20$	M4x0.7	18	24	M20x1.5	12	106	11	50	25	132	Rc(PT)1/8"
$\Phi 25$	M5x0.8	18.5	30	M26x1.5	15	111	11	50	30	137	Rc(PT)1/8"
$\Phi 32$	M6x1.0	20	37	M26x1.5	18.5	124	14	50	40	156	Rc(PT)1/8"
$\Phi 40$	M6x1.0	26	46	M32x2.0	23	150	14	60	40	182	Rc(PT)1/4"