

MCGA series Stop / Lift

TWIN-GUIDE CYLINDER



Features:

- Strong cylinder suitable for heavy load, for stopping work carriers of various sizes at a fixed position, and for stacking many work carriers, etc.
- The strong and thick guide rods sustain the unbalanced load.
- Designed for right-angled turn, positioning, and lifting on the conveyor line.

Specification:

Model	MCGA			
Model (Stop type view)				
Acting type	Double acting			
Tube I.D. (mm)	20	32, 40	50, 63	80
Port size Rc(PT)	1/8		1/4	3/8
Medium	Air			
Operating pressure range	1~9.9 kgf/cm ²			
Proof pressure	15 kgf/cm ²			
Ambient temperature	-5~+60°C (No freezing)			
Cushion	With rubber cushion pad			
Lubrication	Not required			
Sensor switch	RCB			

Order example:

MCGA - 03 - 20 - 50 - BSP

MODEL

TUBE I.D.

STROKE

PURPOSE / TYPE OF BEARING

Code	Purpose / Type of bearing
03	Stop / Slide bearing
13	Lift / Linear bush bearing※
53	Lift / Slide bearing

※ Linear bush bearing type is not available as a stopper.

PORT THREAD
Blank: PT thread
BSP: BSP thread
NPT: NPT thread

Table for standard stroke

Series variety	Bearing type	Tube I.D.	Stroke (mm)											
			30	50	75	100	200	300	400	500	600	700		
MCGA -03	Slide bearing	φ 20	█	█	█	█								
		φ 32	█	█	█	█								
		φ 40	█	█	█	█								
		φ 50	█	█	█	█								
		φ 63	█	█	█	█								
		φ 80	█	█	█	█								
MCGA -13	Linear bush bearing	φ 20	█	█	█	█								
		φ 32	█	█	█	█								
		φ 40	█	█	█	█								
		φ 50	█	█	█	█								
		φ 63	█	█	█	█								
		φ 80	█	█	█	█								
MCGA -53	Slide bearing	φ 20	█	█	█	█								
		φ 32	█	█	█	█								
		φ 40	█	█	█	█								
		φ 50	█	█	█	█								
		φ 63	█	█	█	█								
		φ 80	█	█	█	█								

- The other stroke lengths that fall in the range between our standard strokes will be manufacture by the next large standard stroke with additional spacer.
ex: The 40mm stroke length will be made by 50mm stroke with additional spacer.
- Stroke out of specification is also available.
- Please consult us if stroke exceed 100mm.

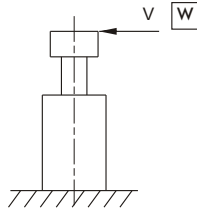
MCGA-03 Stop type

TWIN-GUIDE CYLINDER



Capacity graph

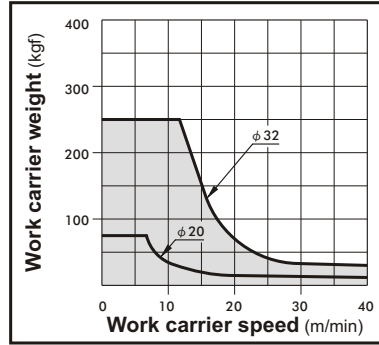
Capacity for the use as a stopper~



Linear bush bearing type is not available as a stopper.

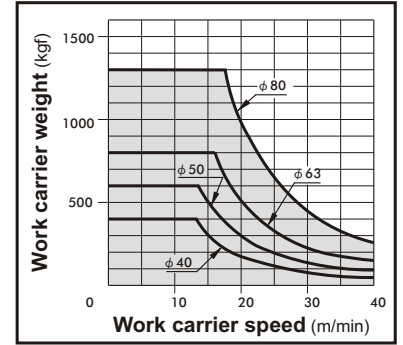
Stop capacity

MCGA-03 $\phi 20, \phi 32-30st$



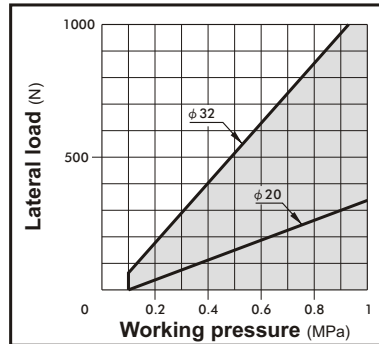
Stop capacity

MCGA-03 $\phi 40, \phi 50, \phi 63, \phi 80-50st$



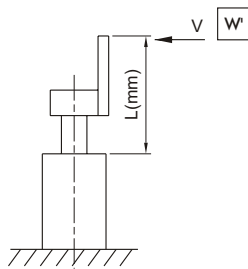
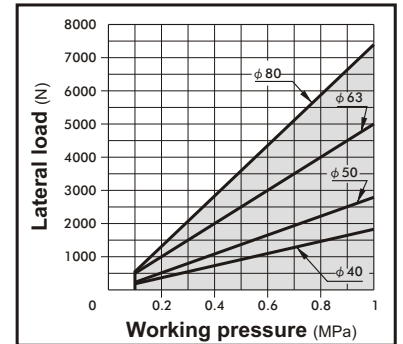
Normal lateral load

MCGA-03 $\phi 20, \phi 32-30st$



Normal lateral load

MCGA-03 $\phi 40, \phi 50, \phi 63, \phi 80-50st$



$$W = W' \times \frac{L}{\ell}$$

Coefficients for conversion

MCGA series	$\phi 20$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$
ℓ	48	55	80	85	90	98

W: The maximum weight of the work carrier in the above graph for the stopper's

For the use of attaching a plate to the link bar, choose a bore size referring to the formula below.

MCGA-13/53 Lift type

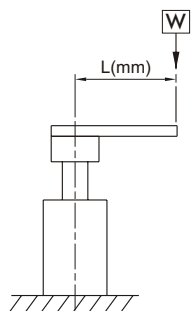
TWIN-GUIDE CYLINDER



Capacity graph

Capacity for the use as a lifter~

Allowable eccentric load for the use as a lifter (at supply pressure 0.5MPa)

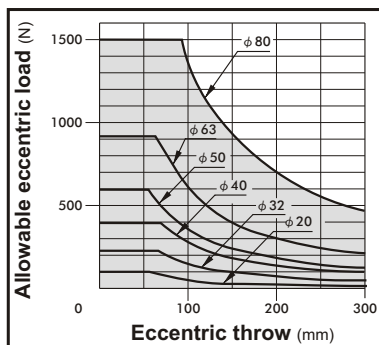


Show the dynamic allowable value at L(mm) eccentricity from the center of the guide rod.

Linear bush bearing

MCGA-13... $\phi 20, \phi 32-30 \sim 100\text{st}$

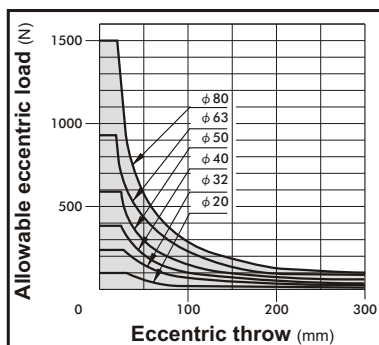
MCGA-13... $\phi 40, \phi 50, \phi 63, \phi 80-50 \sim 100\text{st}$



Slide bearing

MCGA-53... $\phi 20, \phi 32-30 \sim 100\text{st}$

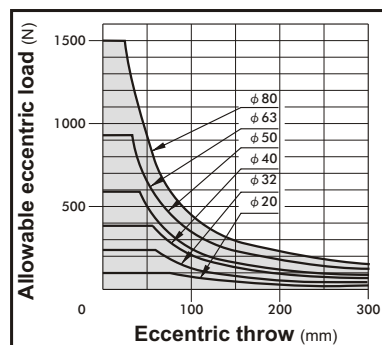
MCGA-53... $\phi 40, \phi 50, \phi 63, \phi 80-50 \sim 100\text{st}$



Slide bearing

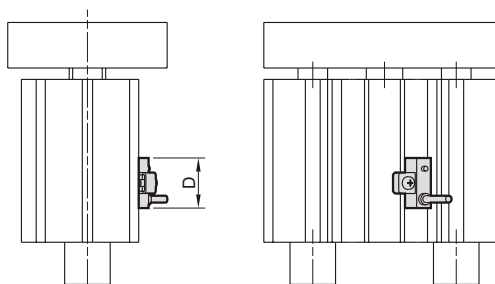
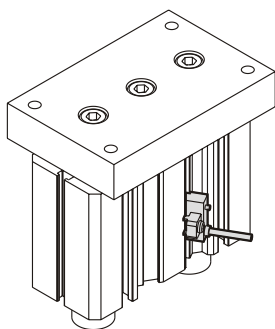
MCGA-53... $\phi 20, \phi 32-50 \sim 100\text{st}$

MCGA-53... $\phi 40, \phi 50, \phi 63, \phi 80-75 \sim 100\text{st}$

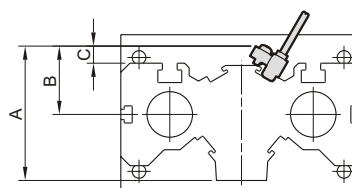


■ Installation of sensor switch (For Stop / Lift / Push type)

Sensor switch: RCB

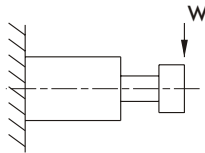


Code Tube I.D.	A	B	C	D
20	39.5	24.5	7.5	22
32	59.5	30.5	8	22
40	64	31	5	22
50	71.5	33.5	2.5	22
63	88.5	40.5	1.5	22
80	103	43	0	22



Capacity table

Allowable lateral load :

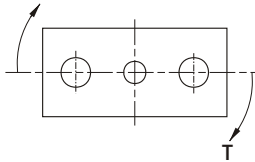


Shows the dynamic allowable value, when actuating the cylinder with lateral load W at the guide rods' top (vertical load against the guide rods).

(N)

Tube I.D.	Bearing type	Stroke (mm)			
		30	50	75	100
φ 20	Slide bearing	58.84	88.26	73.55	58.84
	Linear bush bearing	78.45	63.74	49.03	39.23
φ 32	Slide bearing	117.7	147.1	117.7	98.07
	Linear bush bearing	156.9	127.5	98.07	78.45
φ 40	Slide bearing	/	147.1	166.7	137.3
	Linear bush bearing	/	225.6	186.3	156.9
φ 50	Slide bearing	/	147.1	176.5	147.1
	Linear bush bearing	/	245.2	196.1	166.7
φ 63	Slide bearing	/	215.7	274.6	215.7
	Linear bush bearing	/	/	323.6	284.4
φ 80	Slide bearing	/	245.2	294.2	245.2
	Linear bush bearing	/	/	588.4	539.4

Allowable rotating torque :

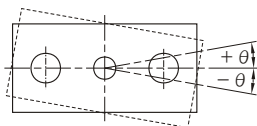


Shows the dynamic allowable value, when actuating the cylinder with a rotating torque T at the guide rods' top.

(N.m)

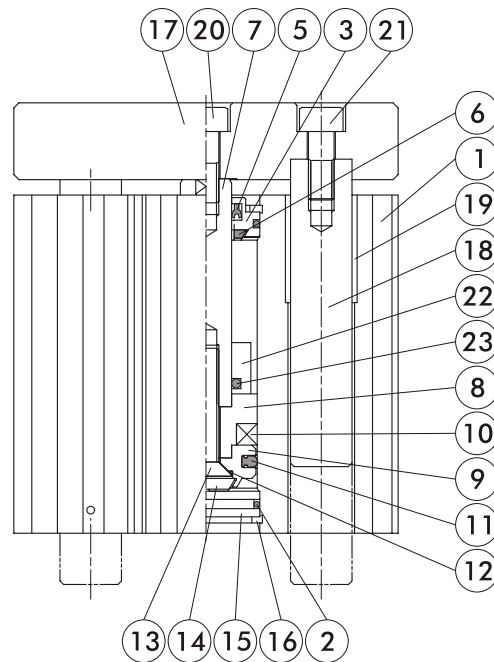
Tube I.D.	Bearing type	Stroke (mm)			
		30	50	75	100
φ 20	Slide bearing	0.686	0.981	0.785	0.686
	Linear bush bearing	0.883	0.686	0.539	0.441
φ 32	Slide bearing	2.059	2.55	2.059	1.765
	Linear bush bearing	4.609	2.157	1.765	1.471
φ 40	Slide bearing	/	3.628	3.727	3.236
	Linear bush bearing	/	4.609	3.825	3.236
φ 50	Slide bearing	/	4.315	5.099	4.511
	Linear bush bearing	/	6.865	5.786	4.903
φ 63	Slide bearing	/	6.276	8.041	6.276
	Linear bush bearing	/	/	9.512	8.336
φ 80	Slide bearing	/	10.79	13.73	12.75
	Linear bush bearing	/	/	27.46	24.52

Anti-roll accuracy :



- The values are the deflection angle against the piston rod.
- Exclusive factor of the guide rods' deflection.

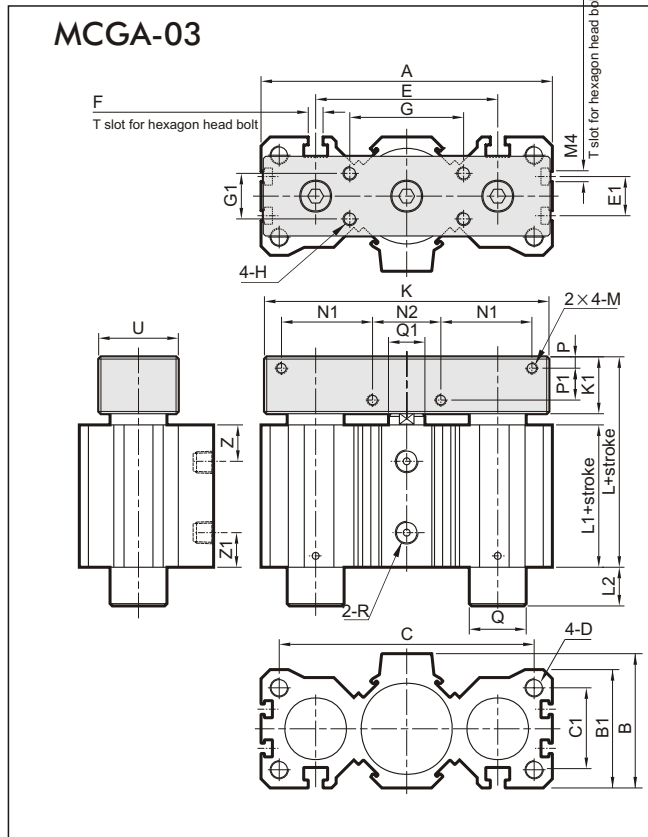
Tube I.D.	Bearing type	Anti-roll accuracy
		θ
φ 20	Slide bearing	±0.08°
	Linear bush bearing	±0.03°
φ 32	Slide bearing	±0.07°
	Linear bush bearing	±0.03°
φ 40	Slide bearing	±0.06°
	Linear bush bearing	±0.03°
φ 50	Slide bearing	±0.05°
	Linear bush bearing	±0.02°
φ 63	Slide bearing	±0.05°
	Linear bush bearing	±0.02°
φ 80	Slide bearing	±0.04°
	Linear bush bearing	±0.02°



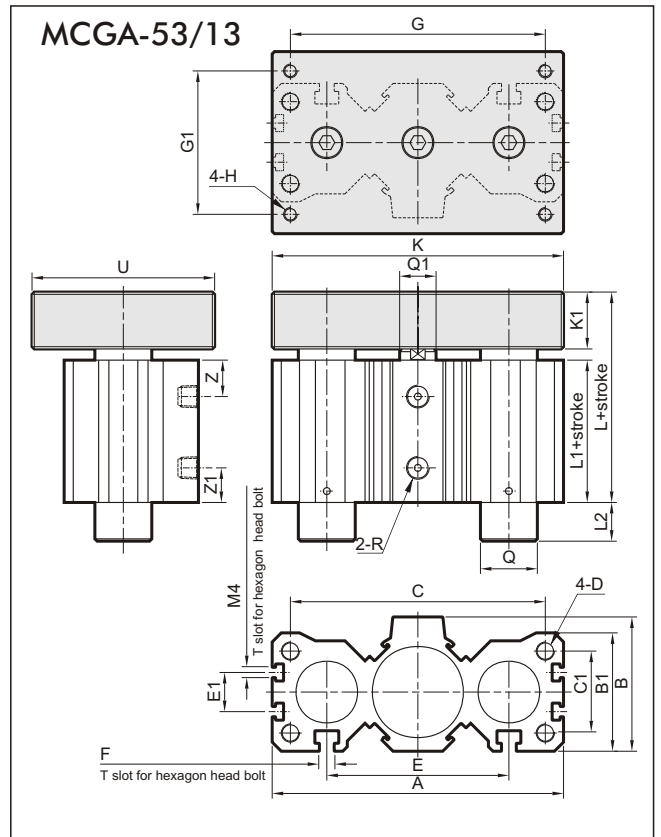
Material

No.	Part name	Material
1	Body	Aluminum alloy
2	Cover ring	NBR
3	Rod cover	Aluminum alloy
4	Rod bush	Copper
5	Rod packing	NBR
6	Rod cushion	NBR
7	Piston rod	Carbon steel
8	Piston	Aluminum alloy
9	Piston for magnet ring	Aluminum alloy
10	Magnet ring	Magnet material
11	Piston packing	NBR
12	Piston gasket	NBR
13	Screw	Carbon steel
14	Head cushion	NBR
15	End cover	Aluminum alloy
16	Snap ring	Carbon tool steel
17	Plate	Aluminum alloy
18	Guide rod	Carbon steel
19	Guide rod bush	Copper
20	Screw for piston rod	Carbon steel
21	Screw for guide rod	Carbon steel
22	Spacer	Aluminum alloy
23	O-ring	NBR

Stop type



Life type



MCGA-03

Code Tube I.D.	A	B	B1	C	C1	D	E	E1	F	G	G1	H	K	K1	L	L1	M	N1	N2	P	P1	Q	Q1	R	U	Z	Z1
20	75	34	32	63	20	M5×0.8×15dp	45	-	M4	32	16	M5×0.8×10dp	75	15	54	36	M4×0.7×8dp	22.5	20	4	6	$\phi 12$	$\phi 10$	PT 1/8	25	11	10
32	106	51.5	45	90	30	M8×1.25×20dp	63	-	M6	40	18	M6×1.0×12dp	100	20	66.5	41.5	M5×0.8×10dp	32	25	5	9	$\phi 20$	$\phi 16$	PT 1/8	30	12	12
40	128	59	52	112	36	M8×1.25×20dp	80	-	M6	50	20	M6×1.0×12dp	125	25	81	51	M5×0.8×10dp	40	30	5	14	$\phi 25$	$\phi 16$	PT 1/8	35	16	16.5
50	150	69	62	132	45	M10×1.5×25dp	100	20	M8	63	25	M8×1.25×16dp	140	30	87	52	M6×1.0×12dp	37.5	50	6	16	$\phi 30$	$\phi 20$	PT 1/4	40	16	17.5
63	180	87	78	156	53	M12×1.75×30dp	118	25	M10	80	40	M10×1.5×20dp	175	35	100	60	M8×1.25×16dp	47.5	60	9	16	$\phi 35$	$\phi 20$	PT 1/4	60	17.5	21
80	243	110	100	212	71	M16×2.0×40dp	160	30	M12	106	56	M10×1.5×20dp	224	40	110.5	62.5	M10×1.5×20dp	60	80	10	18	$\phi 45$	$\phi 25$	PT 3/8	75	22	19.5

L2 dimensions list

MCGA-53/13

Code Tube I.D.	G	G1	K	Q	U
20	63	32	75	$\phi 12(\phi 8)$	45
32	90	50	106	$\phi 20(\phi 13)$	70
40	112	63	128	$\phi 25(\phi 16)$	80
50	132	71	150	$\phi 30(\phi 20)$	100
63	150	85	175	$\phi 35(\phi 25)$	110
80	212	125	236	$\phi 45(\phi 35)$	150

() :For MCGA-13 type

MCGA-03/53

Tube I.D.	Stroke (mm)			
	30	50	75	100
20	0	17	17	17
32	0	18.5	18.5	18.5
40	0	0	22	22
50	0	0	18	18
63	20	20	20	20
80	0	0	38.5	38.5

MCGA-13

Tube I.D.	Stroke (mm)			
	30	50	75	100
20	18	18	18	18
32	29.5	29.5	29.5	29.5
40	30	30	30	30
50	/	39	39	39
63	/	6	6	6
80	/	16	16	16