



### Features

- Strong cylinder capable of high loads, used extensively for stopping work carriers in both the vertical and horizontal position.
- Large diameter guide rods enable cylinder to take high off-set loads.
- Can be used as 90 degree pusher on large conveyor systems.
- Magnetic as standard.

### Specification

Model	MCGA			
Model (Stop type view)				
Acting type	Double acting			
Tube I.D. (mm)	20	32, 40	50, 63	80
Port size	Rc1/8		Rc1/4	Rc3/8
Medium	Air			
Operating pressure range	0.1~1 MPa			
Proof pressure	1.5 MPa			
Ambient temperature	- 5~+ 60℃ (No freezing)			
Available speed range	50~500mm/sec			
Cushion	With rubber cushion pad			
Lubrication	Not required			
Sensor switch (※)	RCB			

※ RCB specification, please refer to page V-07.

### Order example

MCGA - 03 - 20 - 50 - G

MODEL

TUBE I.D. STROKE

PURPOSE / TYPE OF BEARING

PORT THREAD  
Blank: Rc thread  
G: G thread  
NPT: NPT thread

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.

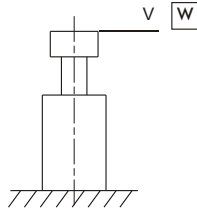
### Table for standard stroke

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.

### Capacity graph

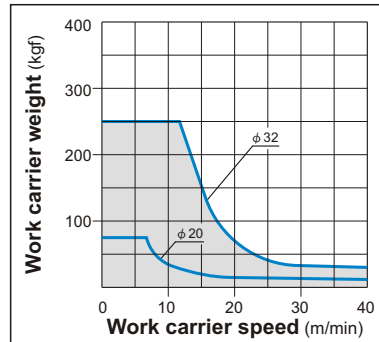
Capacity for the use as a stopper~



Linear bush bearing type is not available as a stopper.

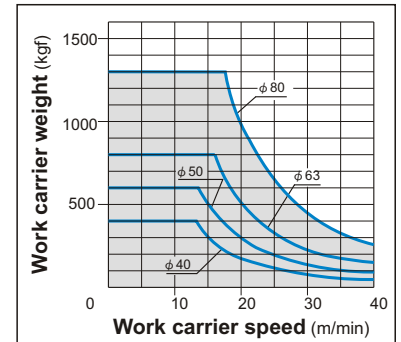
### Stop capacity

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



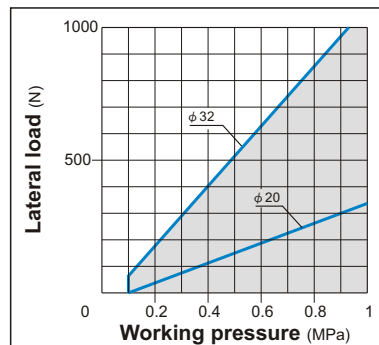
### Stop capacity

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



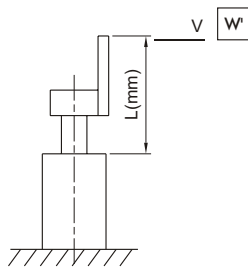
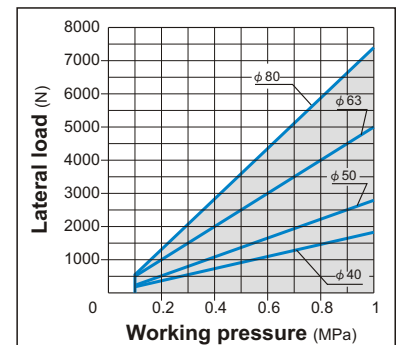
### Normal lateral load

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	$\phi 20$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$
$\ell$	48	55	80	85	90	98

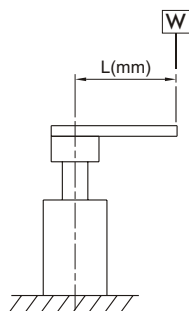
W: The maximum weight of the work carrier in the above graph for the stopper's

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

### Capacity graph

#### Capacity for the use as a lifter~

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

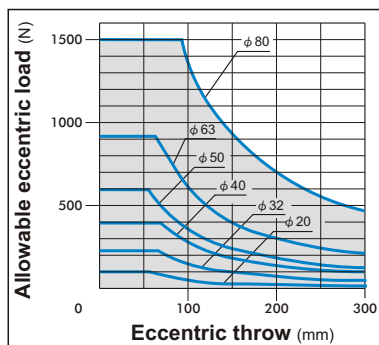


Show the dynamic allowable value at L(mm) eccentricity from the center of the guide rod.

### Linear bush bearing

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

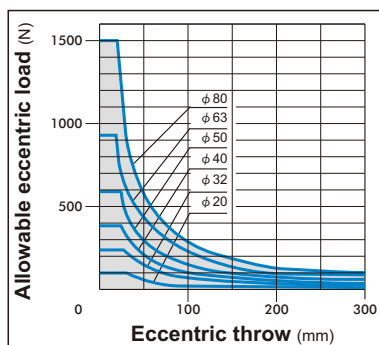
MCGA-13...  $\phi 40, \phi 50, \phi 63, \phi 80-50\sim 100st$



### Slide bearing

MCGA-53...  $\phi 20, \phi 32-30st$

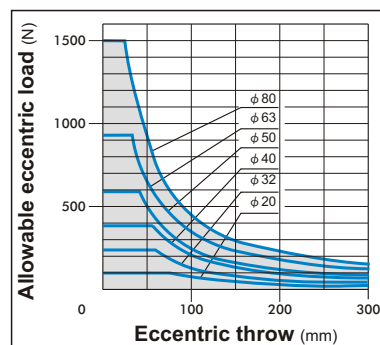
MCGA-53...  $\phi 40, \phi 50, \phi 63, \phi 80-50st$



### Slide bearing

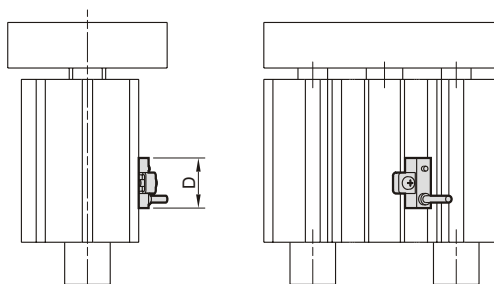
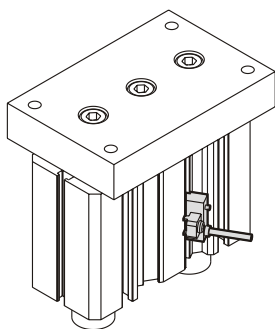
MCGA-53...  $\phi 20, \phi 32-50\sim 100st$

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

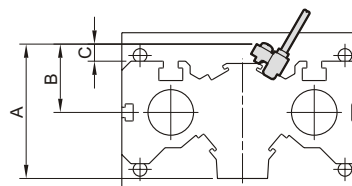


## Installation of sensor switch (For Stop / Lift / Push type)

Sensor switch: RCB

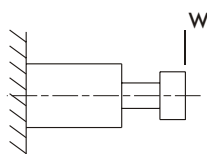


Code Tube I.D.	A	B	C	D
20	39.5	24.5	7.5	22
32	59.5	30.5	8	22
40	64	31	5	22
50	71.5	33.5	2.5	22
63	88.5	40.5	1.5	22
80	103	43	0	22



### Capacity table

#### Allowable lateral load

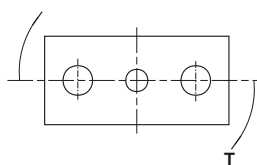


Shows the dynamic allowable value, when actuating the cylinder with lateral load W at the guide rods' top (vertical load against the guide rods).

(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

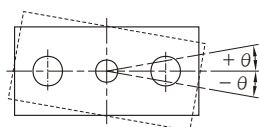


Shows the dynamic allowable value, when actuating the cylinder with a rotating torque T at the guide rods' top.

(N.m)

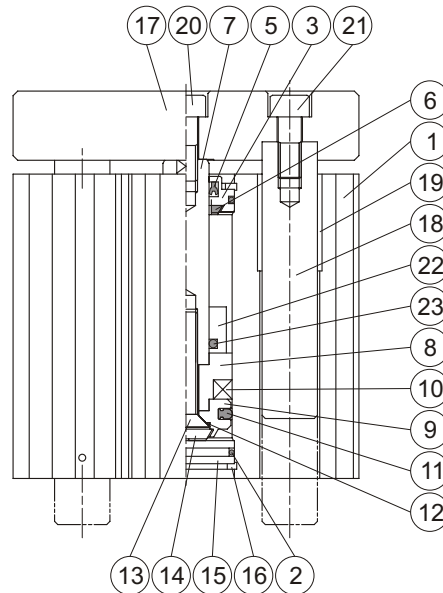
Tube I.D.	Bearing type	Stroke (mm)			
		30	50	75	100
φ 20	Slide bearing	0.686	0.981	0.785	0.686
	Linear bush bearing	0.883	0.686	0.539	0.441
φ 32	Slide bearing	2.059	2.55	2.059	1.765
	Linear bush bearing	4.609	2.157	1.765	1.471
φ 40	Slide bearing	/	3.628	3.727	3.236
	Linear bush bearing	/	4.609	3.825	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	Q'y	Repair kits (inclusion)
1	Body	Aluminum alloy	1	
2	Cover ring	NBR	2	●
3	Rod cover	Aluminum alloy	1	
4	Rod bush	Bearing alloy	1	
5	Rod packing	NBR	1	●
6	Rod cushion	NBR	1	●
7	Piston rod	Carbon steel	1	
8	Piston	Aluminum alloy	1	
9	Piston for magnet ring	Aluminum alloy	1	
10	Magnet ring	Magnet material	1	
11	Piston packing	NBR	1	●
12	Piston gasket	NBR	1	●
13	Bolt for piston	Carbon steel	1	
14	Head cushion	NBR	1	●
15	End cover	Aluminum alloy	1	
16	Snap ring	Spring steel	2	
17	Plate	Aluminum alloy	1	
18	Guide rod	Carbon steel	2	
19	Guide rod bush	Bearing alloy	4	
20	Bolt for piston rod	Carbon steel	1	
21	Bolt for guide rod	Carbon steel	2	
22	Spacer	Aluminum alloy	1	
23	O-ring	NBR	1	

### Order example of repair kits

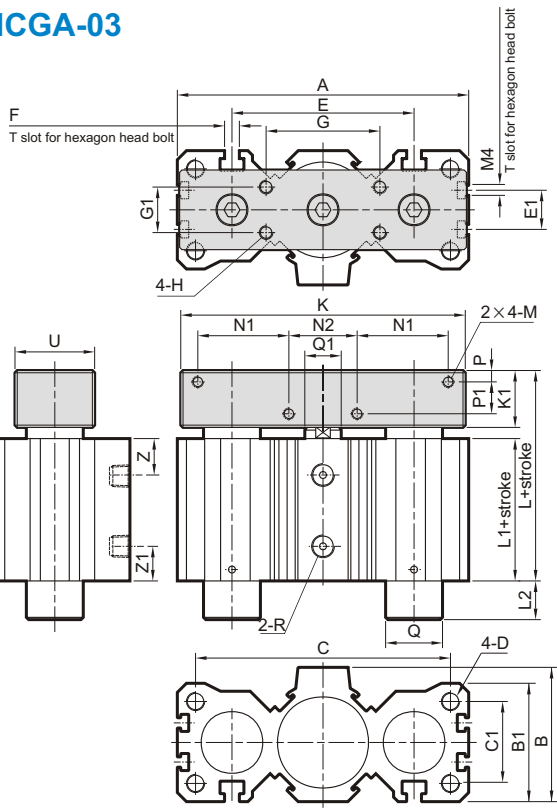
Tube I.D.	Repair kits
φ 20	<b>PS-MCGA-20</b>
φ 32	<b>PS-MCGA-32</b>
φ 40	<b>PS-MCGA-40</b>
φ 50	<b>PS-MCGA-50</b>
φ 63	<b>PS-MCGA-63</b>
φ 80	<b>PS-MCGA-80</b>

TWIN-GUIDE CYLINDER

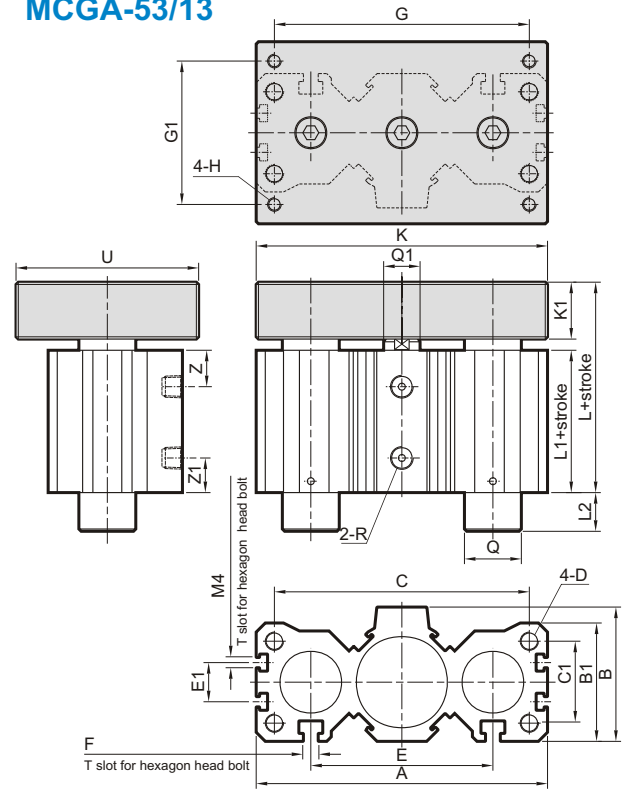
Stop type

Life type

MCGA-03



MCGA-53/13



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	$\phi 12$	$\phi 10$	Rc1/8	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	$\phi 20$	$\phi 16$	Rc1/8	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	$\phi 25$	$\phi 16$	Rc1/8	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	$\phi 30$	$\phi 20$	Rc1/4	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	$\phi 35$	$\phi 20$	Rc1/4	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	$\phi 45$	$\phi 25$	Rc3/8	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	