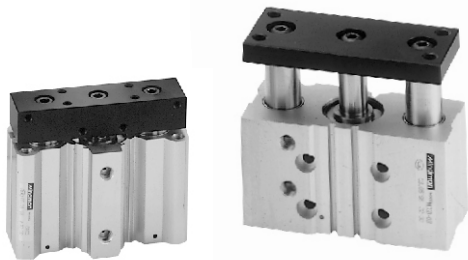


# MCG\* series Stop / Lift / Push

## TWIN-GUIDE CYLINDER

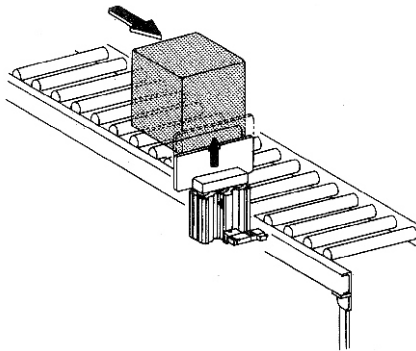


### Several uses

- Stopper cylinder
- Lift cylinder
- Pusher cylinder

### S-function

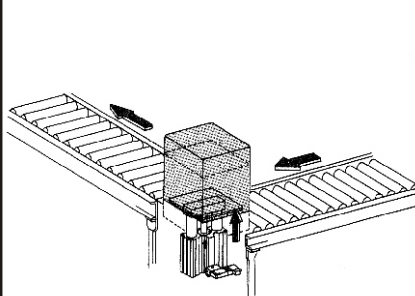
#### Stopper cylinder



Tough type of stopping a large-load work carrier at a fixed point, and for the straggle of a number of work carriers, etc.

### L-function

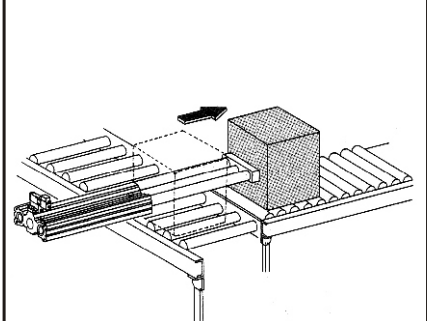
#### Lift cylinder



Special design which stands the large one-sided load. Lifts the work carrier at a fixed point not changing the posture.

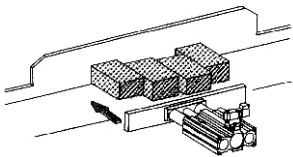
### P-function

#### Pusher cylinder



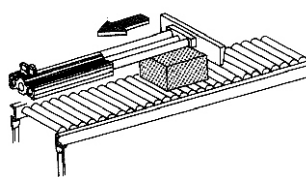
Long strokes available, the highly precise pushing work transfers and places a work carrier and changes the direction.

### Multi purpose



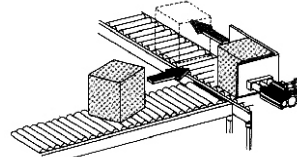
#### Arranges in line

Arranges the work carriers in line which have the same side face and which have been carried on the free flow line.



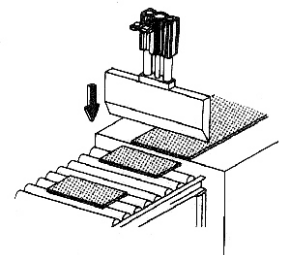
#### Draws in

Draws in the work carrier for the length of the stroke and slide it on the conveyor line.



#### Arranges the posture

Arranges the posture of a work carrier and push it out.



#### Cuts sheets

Can be used as a power source of sheets shearing machine.

# MCGB series

## TWIN-GUIDE CYLINDER



### Order example:

**MCGB - 03 - 12 - 50 - BSP**

MODEL

TUBE I.D.

STROKE

PURPOSE / TYPE OF BEARING

Code	Purpose / Type of bearing
03	Stop / Slide bearing
23*	Push / Linear bush bearing

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

\*Could attach a table for the use as a lifter

### Features:

- The long experience provided the following feature in pursuit of accuracy, durability and handiness.
- Connection from 2 direction and 3-type fixing (pierced hole bolt, back tapped hole, bottom tapped hole), and the miniature sensor switch recessed in the cylinder body.
- A special packing absorbs the shock sound at the end of the stroke.

### Specification:

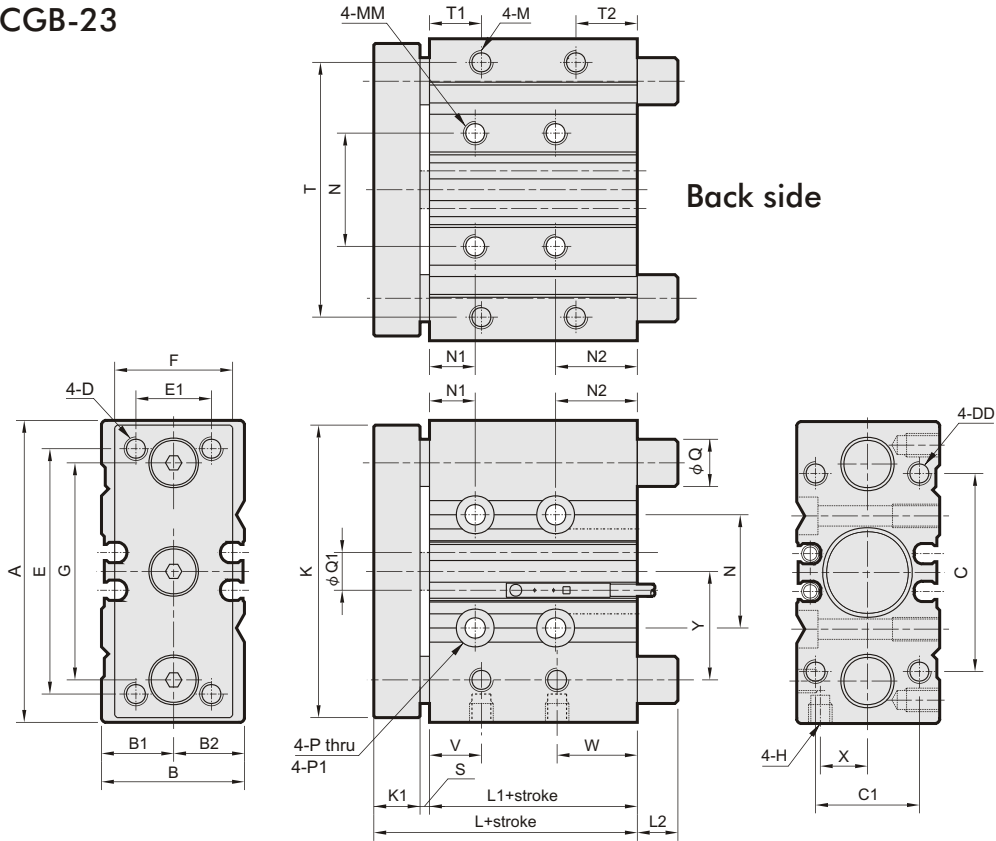
Model	MCGB		
Model			
Acting type	Double acting		
Tube I.D.(mm)	12, 16	20, 25, 32, 40	50, 63
Port size Rc(PT)	M5×0.8	PT 1/8	PT 1/4
Medium	Air		
Operating pressure range	1~9.9 kgf/cm <sup>2</sup>		
Proof pressure	15 kgf/cm <sup>2</sup>		
Ambient temperature	-5~+60°C (No freezing)		
Cushion	With rubber cushion pad		
Lubrication	Not required		
Sensor switch	RCE, RCE1		

### Table for standard stroke

Series variety	Bearing type	Tube I.D.	Stroke (mm)																
			10	20	25	30	40	50	75	100	125	150	175	200					
MCGB-03	Slide bearing	φ 12																	
		φ 16																	
		φ 20																	
		φ 25																	
		φ 32*																	
		φ 40																	
		φ 50																	
MCGB-23	Linear bush bearing	φ 12																	
		φ 16																	
		φ 20																	
		φ 25																	
		φ 32																	
		φ 40																	
		φ 50																	
φ 63																			

\*1. MCGB-03 ~Tube I.D. φ 32: 25mm for the shortest standard stroke.  
2. Please consult us if stroke out of specification.

### MCGB-03/MCGB-23



### MCGB-03/MCGB-23

Code Tube I.D.	A	B	B1	B2	C	C1	D	DD	E	E1	F	G	H	K	K1	L	L1	L2	M	MM	N	N1	N2	P
12	58	26	13	13	40	18	M4×0.7	M4×0.7×9dp	48	14	22	41.5	M5×0.8	56	8	39	29		M4×0.7×7dp	M5×0.8×10dp	23	5	20	φ 4.3
16	64	30	15	15	42	22	M5×0.8	M5×0.8×11dp	52	16	25	46	M5×0.8	62	10	43	31		M5×0.8×8dp	M5×0.8×10dp	24	5	22	φ 4.3
20	85	36	17	19	52	26	M5×0.8	M5×0.8×13dp	60	18	30	55	PT 1/8	72	10	47	35	※	M5×0.8×7dp	M6×1.0×12dp	28	19	16	φ 5.3
25	96	42	21	21	62	32	M6×1.0	M6×1.0×15dp	70	26	38	65	PT 1/8	86	10	47.5	35.5		M6×1.0×9dp	M6×1.0×12dp	34	22	12.5	φ 5.3
32	116	51	26	25	80	38	M8×1.25	M8×1.25×18dp	96	30	48	80	PT 1/8	112	12	47.5	33.5		M8×1.25×11dp	M8×1.25×16dp	42	22	14.5	φ 6.6

Code Tube I.D.	P1	Q		Q1	S	T	T1	T2	V	W	X	Y
		MCGB-03	MCGB-23									
12	φ 8×4.5dp	8	6	6	2	50	12	12	11	15	8.5	19.5
16	φ 8×4.5dp	10	8	8	2	54	11	13	11	17	10	23
20	φ 9.5×5.5dp	12	10	10	2	64	11	14	12	23	11.5	24.5
25	φ 9.5×5.5dp	16	13	12	2	76	12	13.5	11	23.5	13.5	24
32	φ 11×6.5dp	20	16	16	2	100	12	16.5	11.5	25	16	31

### L2 dimensions list

#### MCGB-03

Tube I.D.	Stroke (mm)											
	10	20	25	30	40	50	75	100	125	150	175	200
12	0	0	0	0	0	0	18	18	0	0	0	0
16	0	0	0	0	0	0	21	21	0	0	0	0
20	0	0	0	0	0	0	14	14	31	31	31	31
25	0	0	0	0	0	0	14	14	31	31	31	31
32	0	0	20	20	20	20	20	20	42	42	42	42

#### MCGB-23

Tube I.D.	Stroke (mm)											
	10	20	25	30	40	50	75	100	125	150	175	200
12	0	0	0	0	14	14	14	14	0	0	0	0
16	0	0	0	0	21	21	21	21	0	0	0	0
20	0	0	0	0	27	27	27	27	50	50	50	50
25	0	2	0	0	32	32	32	32	50	50	50	50
32	0	0	8	8	8	8	42	42	55	55	55	55

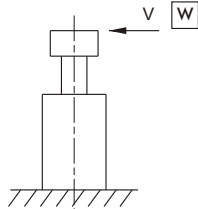
# MCGB-03/23 Stop / Lift $\phi 12 \sim \phi 32$

## TWIN-GUIDE CYLINDER



### Capacity graph

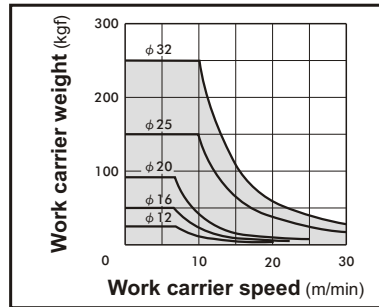
Capacity for the use as a stopper~



Linear bush bearing type is not available as a stopper.

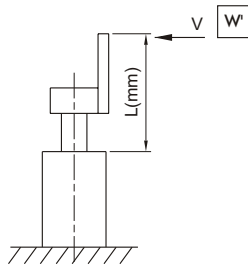
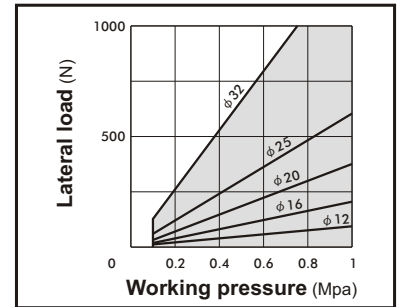
### stop capacity

MCGB-03...30st



### Normal lateral load

MCGB-03...30st



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

### Coefficients for conversion

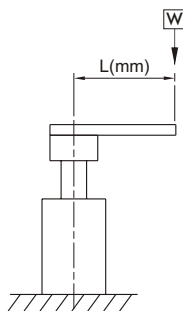
$$W = W' \times \frac{L}{\ell}$$

MCGB series	$\phi 12$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$
$\ell$	40	42	42	42	44

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

### Capacity for the use as a lifter~

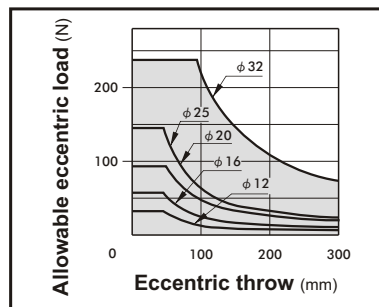
Allowable eccentricity load for the use as a lifter (at supply pressure 0.5MPa)



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

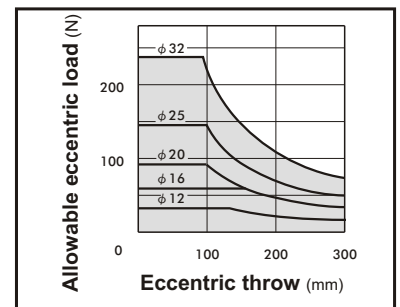
### Slide bearing

MCGB-03...10-50st



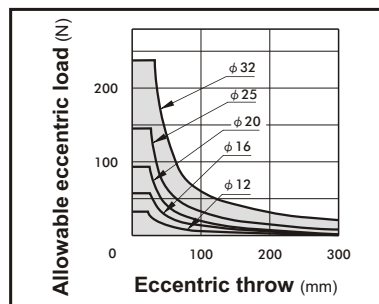
### Slide bearing

MCGB-03...75-200st



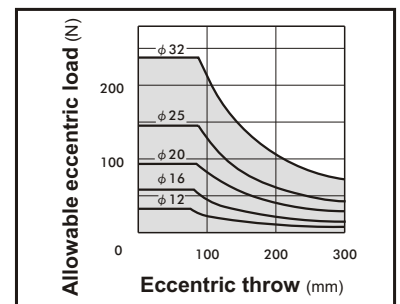
### Linear bush bearing

MCGB-23...10-50st



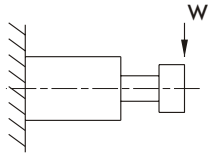
### Linear bush bearing

MCGB-23...75-200st



### Capacity table

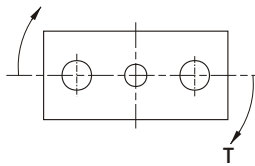
#### Allowable lateral load :



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

Tube I.D.	Bearing type	Stroke (mm)												
		10	20	25	30	40	50	75	100	125	150	175	200	
$\phi 12$	Slide bearing	31	24	/	19	16	13	37	31	/	/	/	/	
	Linear bush bearing	23	17	/	14	34	30	23	19	/	/	/	/	
$\phi 16$	Slide bearing	50	39	/	32	27	24	54	45	/	/	/	/	
	Linear bush bearing	36	29	/	24	59	52	40	33	/	/	/	/	
$\phi 20$	Slide bearing	/	51	/	44	39	35	54	46	74	66	59	54	
	Linear bush bearing	/	43	/	36	98	87	69	57	46	40	36	32	
$\phi 25$	Slide bearing	/	68	/	59	52	46	72	61	98	88	79	72	
	Linear bush bearing	/	67	/	56	148	132	105	87	70	62	55	50	
$\phi 32$	Slide bearing	/	/	165	/	/	/	129	106	90	138	123	111	101
	Linear bush bearing	/	/	104	/	/	/	74	165	138	114	100	90	81

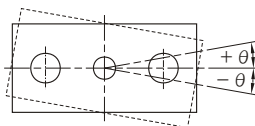
#### Allowable rotating torque :



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

Tube I.D.	Bearing type	Stroke (mm)												
		10	20	25	30	40	50	75	100	125	150	175	200	
$\phi 12$	Slide bearing	0.64	0.48	/	0.39	0.32	0.28	0.75	0.63	/	/	/	/	
	Linear bush bearing	0.47	0.35	/	0.29	0.71	0.62	0.4	0.38	/	/	/	/	
$\phi 16$	Slide bearing	1.14	0.9	/	0.74	0.63	0.55	1.23	1.04	/	/	/	/	
	Linear bush bearing	0.84	0.66	/	0.54	1.35	1.19	0.93	1.76	/	/	/	/	
$\phi 20$	Slide bearing	/	1.14	/	1.21	1.07	0.95	1.49	1.25	2.03	1.81	1.63	1.48	
	Linear bush bearing	/	1.19	/	0.99	2.69	2.4	1.89	1.56	1.26	1.1	0.98	0.88	
$\phi 25$	Slide bearing	/	2.19	/	1.88	1.65	1.47	2.31	1.94	3.15	2.8	2.52	2.3	
	Linear bush bearing	/	2.14	/	1.79	4.74	4.22	3.36	2.78	2.25	1.98	1.76	1.59	
$\phi 32$	Slide bearing	/	/	6.61	/	/	/	5.16	4.23	3.59	5.52	4.93	4.45	4.06
	Linear bush bearing	/	/	4.17	/	/	/	2.95	6.6	5.52	4.56	4.02	3.59	3.24

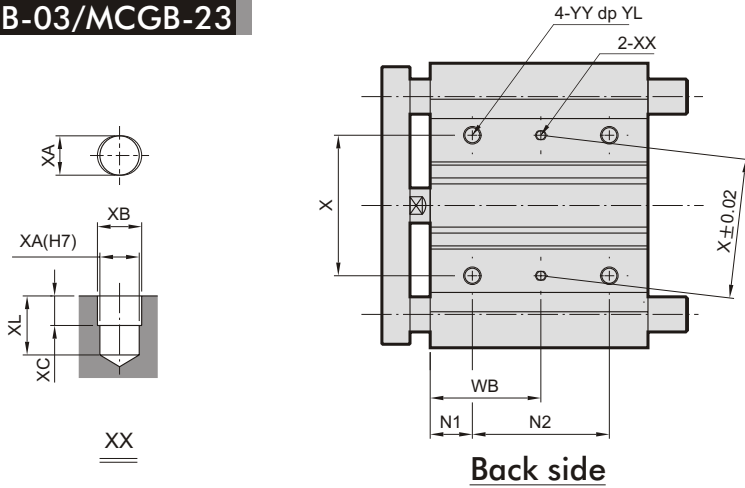
#### Anti-roll accuracy :



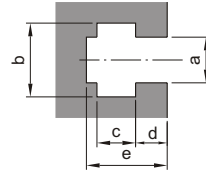
- The values are the deflection angle against the piston rod.
- Exclusive factor of the guide rods' deflection.

Tube I.D.	Bearing type	Anti-roll accuracy
		$\theta$
$\phi 12$	Slide bearing	$\pm 0.09^\circ$
	Linear bush bearing	$\pm 0.06^\circ$
$\phi 16$	Slide bearing	$\pm 0.08^\circ$
	Linear bush bearing	$\pm 0.06^\circ$
$\phi 20$	Slide bearing	$\pm 0.08^\circ$
	Linear bush bearing	$\pm 0.03^\circ$
$\phi 25$	Slide bearing	$\pm 0.07^\circ$
	Linear bush bearing	$\pm 0.05^\circ$
$\phi 32$	Slide bearing	$\pm 0.07^\circ$
	Linear bush bearing	$\pm 0.03^\circ$

### MCGB-03/MCGB-23

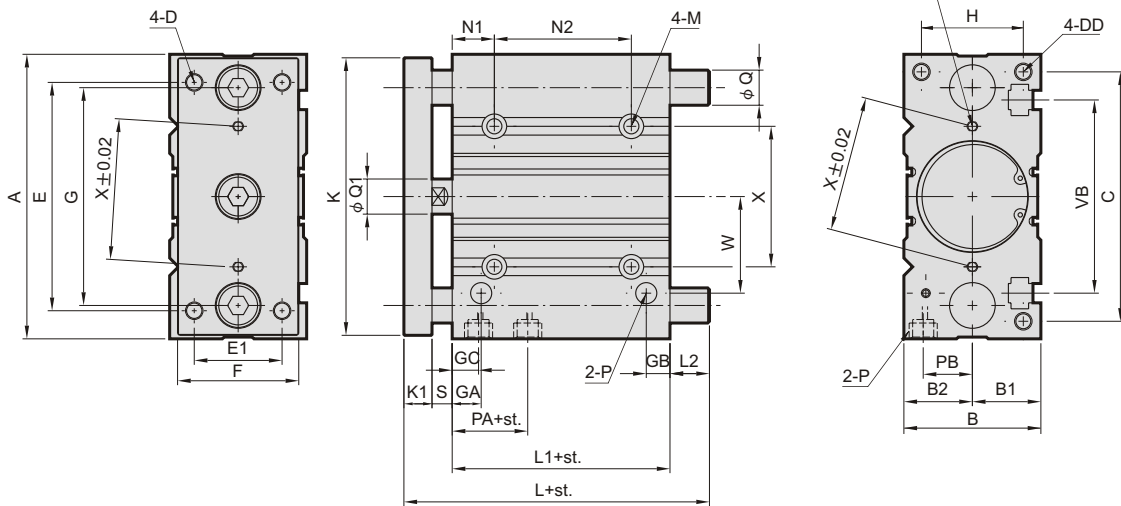


T slot for hexagon head bolt



T slot for hexagon head bolt

Tube I.D.	a	b	c	d	e
40	6.5	10.5	5.5	4	11
50	8.5	13.5	7.5	4.5	13.5
63	11	17.8	10	7	18.5



### MCGB-03/MCGB-23

Code Tube I.D.	A	B	B1	B2	C	D	DD	E	E1	F	G	GA	GB	GC	H	K	K1	L1	M	N1
40	120	54	27	27	106	M8×1.25	M8×1.25×20 dp	104	30	44	86	14	10	14	40	118	12	44	$\phi 6.6$ thru, $\phi 11 \times 7.5$ dp	22
50	148	64	32	32	130	M10×1.5	M10×1.5×22 dp	130	40	60	110	14	11	12	46	146	16	44	$\phi 8.6$ thru, $\phi 14 \times 9$ dp	24
63	162	78	39	39	142	M10×1.5	M10×1.5×22 dp	130	50	70	124	16.5	13.5	16.5	58	158	16	49	$\phi 8.6$ thru, $\phi 14 \times 9$ dp	24

Code Tube I.D.	P	PA	PB	Q1	S	VB	W	X	XA <sup>H7</sup>	XB	XC	XL	YY	YL	N2			WB		
															25st	50,75,100st	100st-	25st	50,75,100st	100st-
40	PT 1/8	13	18	16	10	72	38	50	4	4.5	3	6	M8×1.25	16	24	48	124	34	46	84
50	PT 1/4	9	21.5	20	12	92	47	66	5	6	4	8	M10×1.5	20	24	48	124	36	48	86
63	PT 1/4	14	28	20	12	110	55	80	5	6	4	8	M10×1.5	20	28	52	128	38	50	88

### MCGB-03

Code Tube I.D.	L		L2		Q
	25,50ST	50ST-	25,50ST	50ST-	
40	97	102	31	36	$\phi 20$
50	106.5	118	34.5	46	$\phi 25$
63	106.5	118	29.5	41	$\phi 25$

### MCGB-23

Code Tube I.D.	L			L2			Q
	25,50ST	75,100ST	100ST-	25,50ST	75,100ST	100ST-	
40	81	98	118	15	32	52	$\phi 16$
50	93	114	134	21	42	62	$\phi 20$
63	93	114	134	16	37	57	$\phi 20$

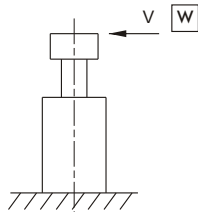
# MCGB-03/23 Stop / Lift $\phi 40 \sim \phi 63$

## TWIN-GUIDE CYLINDER



### Capacity graph

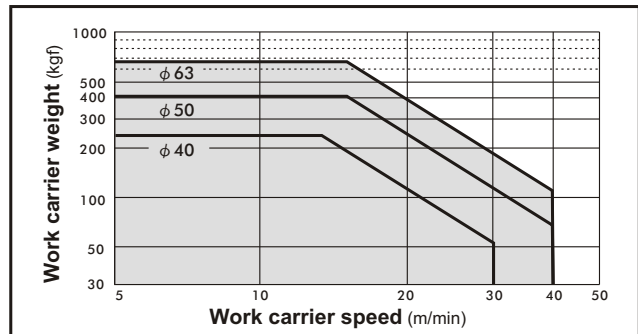
Capacity for the use as a stopper~



Linear bush bearing type is not available as a stopper.

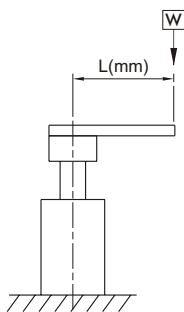
### stop capacity

MCGB-03...25st



### Capacity for the use as a lifter~

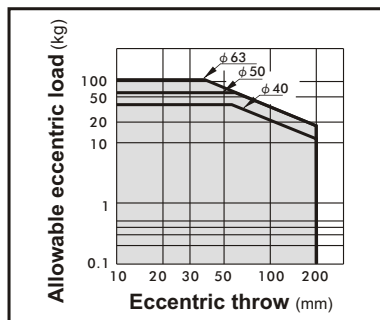
Allowable eccentricity load for the use as a lifter (at supply pressure 0.5MPa)



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

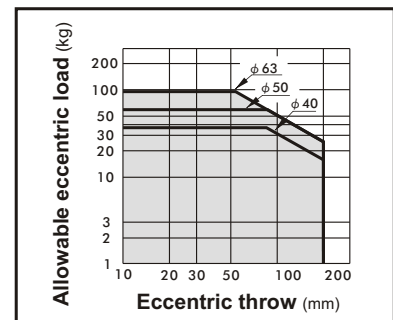
### Slide bearing

MCGB-03...25-50st



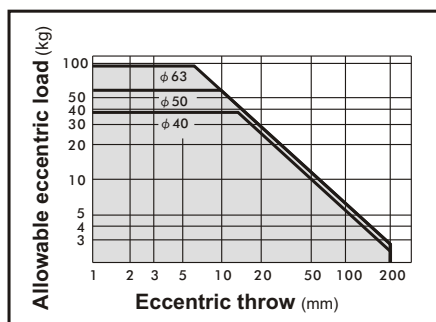
### Slide bearing

MCGB-03...75-100st



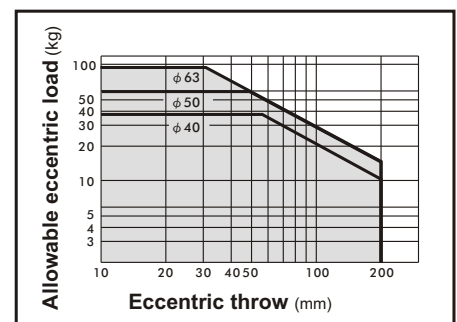
### Linear bush bearing

MCGB-23...25-50st



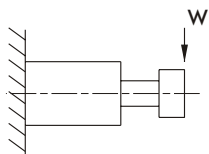
### Linear bush bearing

MCGB-23...75-100st



### Capacity table

#### Allowable lateral load :

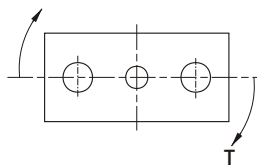


Shows the dynamic allowable value, when actuating the cylinder with lateral load  $W$  at the guide rods' top (vertical load against the guide rods).

Tube I.D.	Bearing type	Stroke (mm)											
		10	20	25	30	40	50	75	100	125	150	175	200
$\phi 40$	Slide bearing	/	/	203	/	/	164	182	159	/	/	/	/
	Linear bush bearing	/	/	113	/	/	78	129	106	/	/	/	/
$\phi 50$	Slide bearing	/	/	296	/	/	245	273	241	/	/	/	/
	Linear bush bearing	/	/	120	/	/	83	178	148	/	/	/	/
$\phi 63$	Slide bearing	/	/	296	/	/	245	273	241	/	/	/	/
	Linear bush bearing	/	/	117	/	/	81	176	145	/	/	/	/

(N)

#### Allowable rotating torque :

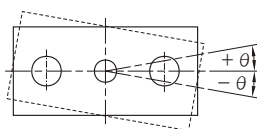


Shows the dynamic allowable value, when actuating the cylinder with a rotating torque  $T$  at the guide rods' top.

Tube I.D.	Bearing type	Stroke (mm)											
		10	20	25	30	40	50	75	100	125	150	175	200
$\phi 40$	Slide bearing	/	/	7.00	/	/	5.66	6.27	5.48	/	/	/	/
	Linear bush bearing	/	/	5.24	/	/	4.25	7.19	6.33	/	/	/	/
$\phi 50$	Slide bearing	/	/	13.0	/	/	10.8	12.0	10.6	/	/	/	/
	Linear bush bearing	/	/	7.02	/	/	5.76	12.3	10.9	/	/	/	/
$\phi 63$	Slide bearing	/	/	14.7	/	/	12.1	13.5	12.0	/	/	/	/
	Linear bush bearing	/	/	7.77	/	/	6.35	13.7	12.2	/	/	/	/

(N.m)

#### Anti-roll accuracy :



TUBE I.D.	Bearing type	Anti-roll accuracy
		$\theta$
$\phi 40$	Slide bearing	$\pm 0.06^\circ$
	Linear bush bearing	$\pm 0.08^\circ$
$\phi 50$	Slide bearing	$\pm 0.05^\circ$
	Linear bush bearing	$\pm 0.06^\circ$
$\phi 63$	Slide bearing	$\pm 0.05^\circ$
	Linear bush bearing	$\pm 0.06^\circ$

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