

Guide Cylinder

# Series MGG

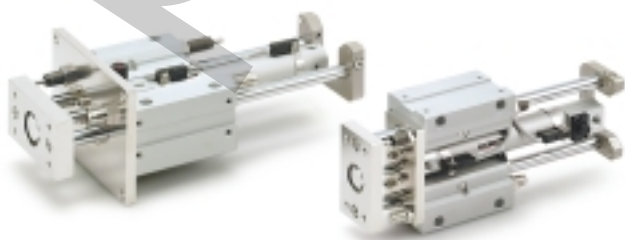
ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

## Integration of a basic cylinder and guide rods Linear Transfer Unit



● End lock type now standard

● Made to order specifications are now available



- Stainless steel components: -XC6□
- With coil scraper: -XC35
- Water resistant type/Built-in hard plastic magnets: -XC58
- Fluoro rubber seals/Built-in hard plastic magnets: -XC59
- Helical insert thread specification: -XC71
- Without built-in auto switch magnets: -XC72
- Built-in cylinder with lock: -XC73



# Basic cylinder with integrated guide rods in a compact configuration

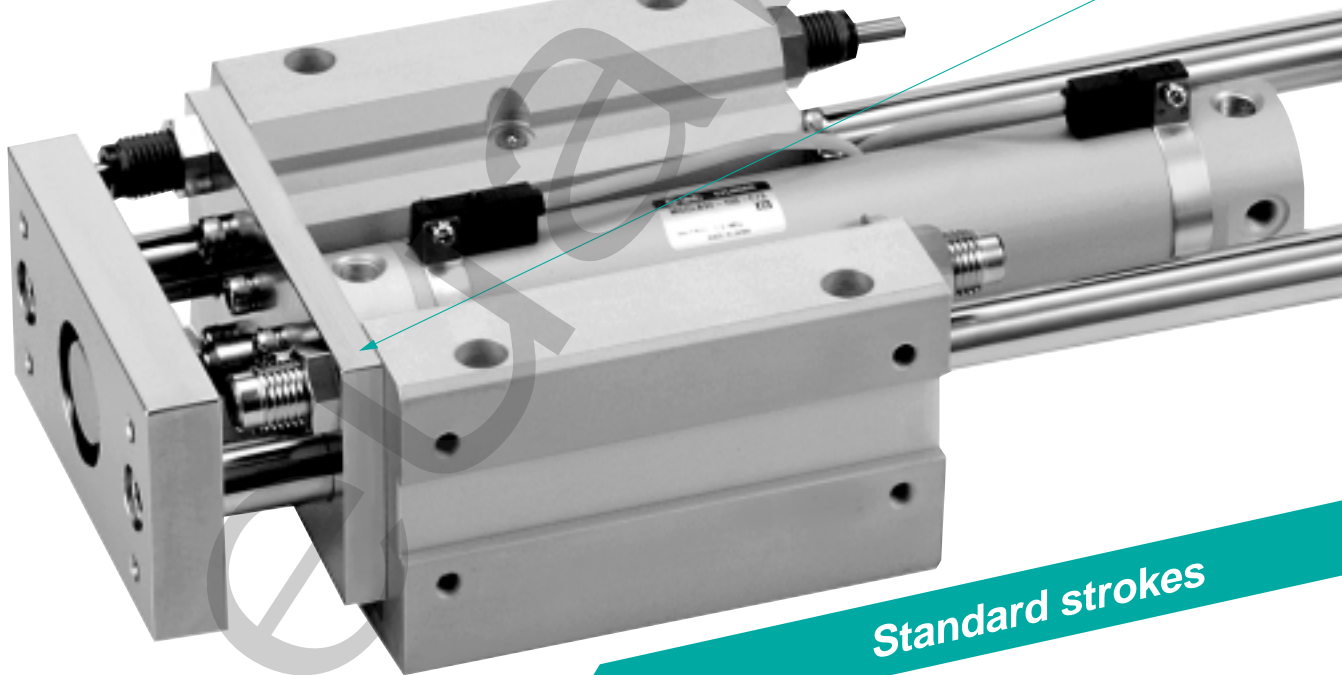
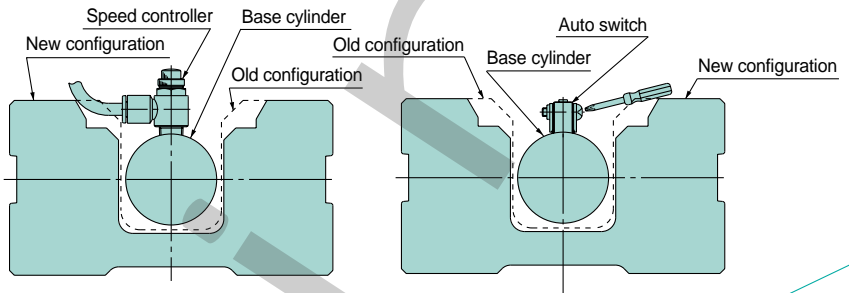
## Series MGG Cylinder with Guide – Updated Design

Modified body design allows easier installation of fittings, speed controllers and auto switches as well as improved auto switch adjustment.

Bore size (mm)	Open sectional area (mm <sup>2</sup> )		Enlargement (%)
	Old type	New type	
20	1208.5	<b>1486.9</b>	18.7%
25	1749.5	<b>2255.4</b>	22.4%
32	2321.6	<b>2797.2</b>	17.0%
40	3739.4	<b>4520.0</b>	17.3%
50	4999.1	<b>6037.8</b>	17.2%

## Series MGG Guide Cylinder

Ø20, Ø25, Ø32, Ø40, Ø50, Ø63, Ø80, Ø100

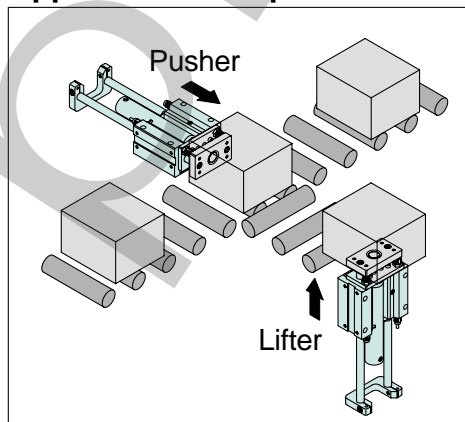


Standard strokes

## Cylinder position can be detected

All models have built-in magnets for auto switches. Auto switch capable throughout entire stroke range.

### Application examples



## Non-rotating accuracy improved by using two guide rods

Bore size (mm)	20	25	32	40	50	63	80	100
Slide bearing	±0.07°	±0.06°	±0.06°	±0.05°	±0.04°	±0.04°	±0.04°	±0.03°
Ball bushing	±0.06°	±0.05°	±0.04°	±0.04°	±0.04°	±0.03°	±0.03°	±0.02°

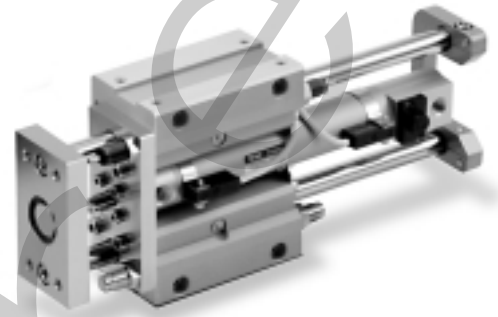
(Excluding deflection of the guide rods)

## A grease port is provided as standard

This allows lubrication of the bearings.

# A linear transfer unit that achieves high lateral load resistance and non-rotating precision

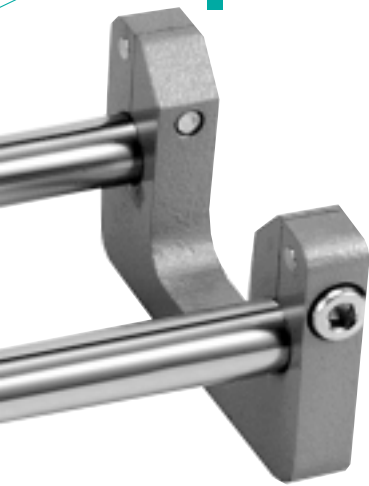
End lock option introduced to allow holding of cylinder position even when air supply is cut off



## Two types of guide rod bearings

Slide bearing ..... Excellent wear resistance and heavy load capacity

Ball bushing ..... High precision and smooth operation



Long strokes available

Ø20 up to 400mm max.

Ø25 up to 500mm max.

Ø32 up to 600mm max.

Ø40 up to 800mm max.

Ø50 up to 1000mm max.

Ø63 up to 1100mm max.

Ø80 up to 1200mm max.

Ø100 up to 1300mm max.

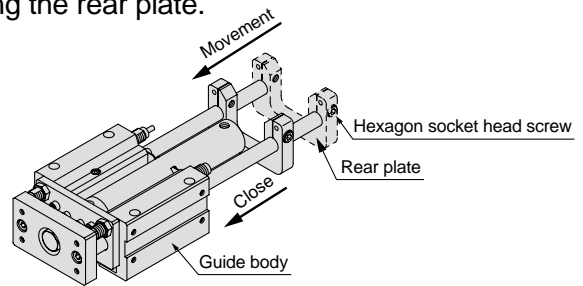
Ø20: 75 to 200mm  
Ø25 to Ø100: 75 to 300mm

## Shock absorbers and adjustment bolts are standard

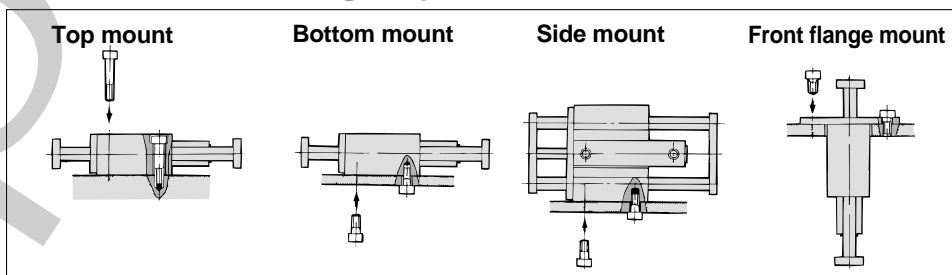
Stroke end shock absorption for high speed operation and fine stroke adjustment are possible.

## Simple adjustment of extension stroke

The extension stroke can be adjusted by moving the rear plate.



## Four mounting styles



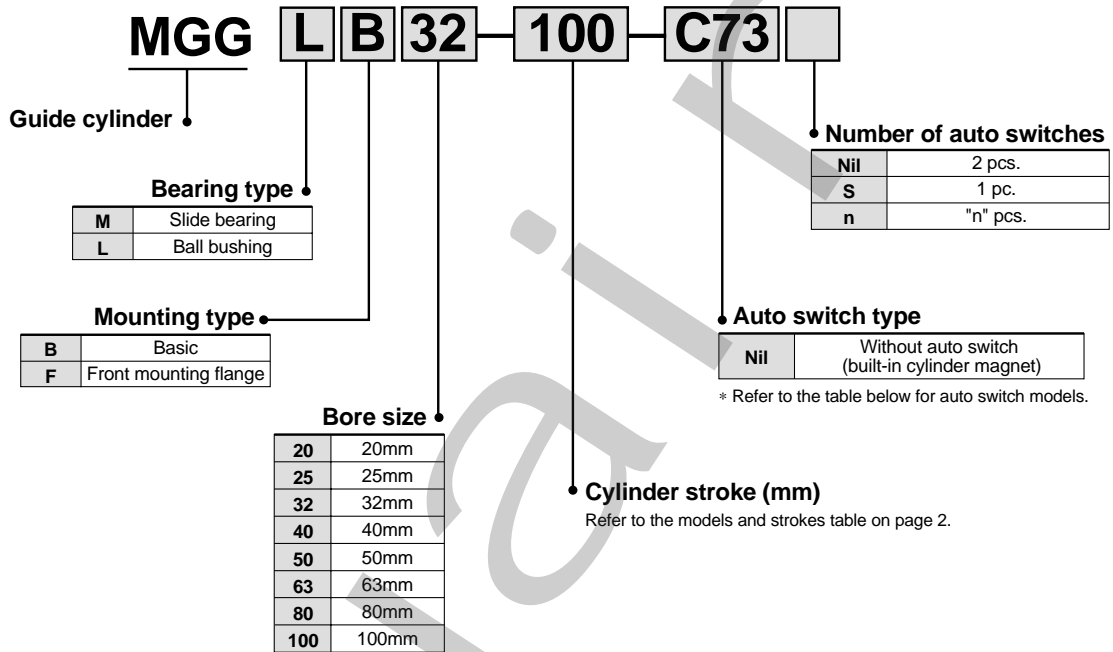
Wide range of made to order specifications (See pages 37 through 47.)

## Guide Cylinder

# Series MGG

∅20, ∅25, ∅32, ∅40, ∅50, ∅63, ∅80, ∅100

### How to Order



### Applicable auto switches / Refer to pages 29 through 36 for detailed auto switch specifications.

Type	Special function	Electrical entry	Indicator/light	Wiring (output)	Load voltage		Switch mounting screw in-line direction				Perpendicular	Lead wire length (m)*				Applicable load		
					DC	AC	∅20 ∅25	∅32	∅40 to ∅63	∅80 ∅100		∅20 to ∅63	0.5 (Nil)	3 (L)	5 (Z)		None (N)	
Reed switch	—	Grommet	Yes	3 wire (NPN equiv.)	5V	—	C76		—	B76	●	●	—	—	IC circuit	—		
				2 wire	24V	100V	C73		—	B73	●	●	●	—	—	—	Relay, PLC	
							(B53)		B53	—	●	●	●	—	—	—	PLC	
							100V, 200V		(B54)	B54	—	●	●	●	—	—	—	—
							200V or less		(B64)	B64	—	●	●	—	—	—	—	—
				Connector	Yes	No	5V, 12V	100V or less	C80		—	B80	●	●	—	—	IC circuit	Relay, PLC
12V	—	C73C					—	B73C	●	●	●	●	—	—				
Diagnostic indication (2 color indicator)	Grommet	Yes	Yes	5V, 12V	24V or less	C80C		—	B80C	●	●	●	●	IC circuit	—			
				—	—	(B59W)	B59W	—	●	●	—	—	—	—	—			
Solid state switch	—	Grommet	Yes	3 wire (NPN)	5V, 12V	—	H7A1	G59	G79	●	●	○	—	IC circuit	Relay, PLC			
				3 wire (PNP)			H7A2	G5P	—	●	●	○	—	—				
		Connector		2 wire	12V	H7B	K59	K79	●	●	○	—	—					
						H7C	—	K79C	●	●	●	●	—	—				
		Grommet		3 wire (NPN)	5V, 12V	H7NW	G59W	—	●	●	○	—	IC circuit					
						3 wire (PNP)	H7PW	G5PW	—	●	●	○	—	—				
						2 wire	12V	H7BW	K59W	—	●	●	○	—		—		
								H7BA	G5BA	—	—	●	○	—		—		
						Water resistant (2 color indicator)	3 wire (NPN)	5V, 12V	(G5NT)	G5NT	—	—	●	○		—	—	
									With timer	—	—	—	—	●		○	—	—
With diagnostic output (2 color indicator)	Grommet	Yes	4 wire (NPN)	5V, 12V	—	H7NF	G59F	—	●	●	○	—	IC circuit					
						Latch type with diagnostic output (2 color indicator)	H7LF	—	—	●	●	○	—	—				

\* Lead wire length symbols 0.5m ..... Nil Example: B80C 5m ..... Z Example: B80CZ

3m ..... L Example: B80CL None ..... N Example: B80CN

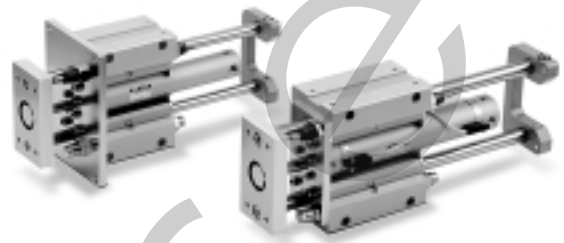
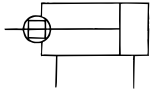
\* Solid state switches marked with "○" are produced upon receipt of order.

\* Refer to page 29 when using solid state switches (G59, G5P, K59, G59W, G5PW, K59W, G5BA, G59F) on bore sizes ∅20 to ∅63.

**⚠ Caution** When using auto switches shown inside ( ), stroke end detection may not be possible depending on the One-touch fitting or speed controller model. Contact P/A in this case.

## Models and Specifications

### JIS symbol



### Models and strokes

Model	Bearing type	Bore size (mm)	Standard stroke (mm)	Long stroke (mm)
MGGM	Slide bearing	20	75, 100, 125, 150, 200	250, 300, 350, 400
		25	75, 100, 125, 150, 200, 250, 300	350, 400, 450, 500
		32		350, 400, 450, 500, 600
		40		350, 400, 450, 500, 600, 700, 800
MGGL	Ball bushing	50		350, 400, 450, 500, 600, 700, 800, 900, 1000
		63	350, 400, 450, 500, 600, 700, 800, 900, 1000, 1100	
		80	350, 400, 450, 500, 600, 700, 800, 900, 1000, 1100, 1200	
		100	350, 400, 450, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300	

\* Intermediate strokes and short strokes other than the above are produced upon receipt of order.

### Specifications

Model	MGG□□20	MGG□□25	MGG□□32	MGG□□40	MGG□□50	MGG□□63	MGG□□80	MGG□□100
Base cylinder	CDG1BN20	CDG1BN25	CDG1BN32	CDG1BN40	CDG1BN50	CDG1BN63	CDG1BN80	CDG1BN100
Bore size (mm)	20	25	32	40	50	63	80	100
Action	Double acting							
Fluid	Air							
Proof pressure	1.5MPa							
Maximum operating pressure	1.0MPa							
Minimum operating pressure	0.15MPa (horizontal with no load)							
Ambient and fluid temperature	-10° to 60°C							
Piston speed	50 to 1000mm/s						50 to 700mm/s	
Cushion	Base cylinder	Rubber bumper						
	Guides	Built-in shock absorber (2 pcs.)						
Stroke adjustment range (one side) [built-in adjustment bolts (2 pcs.)]	0 to -10mm	0 to -15mm						
Base cylinder lubrication	Non-lube							
Thread tolerance	JIS class 2							
Stroke length tolerance	+1.9, +0.2 mm (1000mm or less), +2.3, +0.2 mm (1001mm or more)							
Non-rotating accuracy (except deflection of guide rods)	Slide bearing	±0.07°	±0.06°	±0.06°	±0.05°	±0.04°	±0.04°	±0.03°
	Ball bushing	±0.06°	±0.05°	±0.04°	±0.04°	±0.04°	±0.03°	±0.02°
Port size	Rc 1/8				Rc 1/4		Rc 3/8	Rc 1/2

### Shock absorber specifications

Shock absorber model	RB1007	RB1412	RB2015	RB2725	
Applicable guide cylinder	MGG□□20	MGG□□25, 32	MGG□□40, 50, 63	MGG□□80, 100	
Maximum energy absorption J	5.88	19.6	58.8	147	
Stroke absorption mm	7	12	15	25	
Maximum collision speed m/s	5				
Maximum operating frequency cycle/min*	70	45	25	10	
Ambient temperature range °C	-10° to 80°C				
Spring force N	Extended	4.22	6.86	8.34	8.83
	Compressed	6.86	15.98	20.5	20.01

\* With the maximum energy absorption per cycle. Consequently, the operating frequency can be increased depending on the energy absorption.

# Series MGG

## Theoretical Output



Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm <sup>2</sup> )	Operating pressure (MPa)								
				0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
20	8	OUT	314	62.8	94.2	126	157	188	220	251	283	314
		IN	264	52.8	79.2	106	132	158	185	211	238	264
25	10	OUT	491	98.2	147	196	246	295	344	393	442	491
		IN	412	82.4	124	165	206	247	288	330	371	412
32	12	OUT	804	161	241	322	402	482	563	643	724	804
		IN	691	138	207	276	346	415	484	553	622	691
40	16	OUT	1260	252	378	504	630	756	882	1010	1130	1260
		IN	1060	212	318	424	530	636	742	848	954	1060
50	20	OUT	1960	392	588	784	980	1180	1370	1570	1760	1960
		IN	1650	330	495	660	825	990	1160	1320	1490	1650
63	20	OUT	3120	624	936	1250	1560	1870	2180	2500	2810	3120
		IN	2800	560	840	1120	1400	1680	1960	2240	2520	2800
80	25	OUT	5030	1010	1510	2010	2520	3020	3520	4020	4530	5030
		IN	4540	908	1360	1820	2270	2720	3180	3630	4090	4540
100	30	OUT	7850	1570	2360	3140	3930	4710	5500	6280	7070	7850
		IN	7150	1430	2150	2860	3580	4290	5010	5720	6440	7150

(Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm<sup>2</sup>)

## Weights

Bore size (mm)		20	25	32	40	50	63	80	100
Standard weight	Basic type	1.2	1.98	2.66	5.21	8.23	10.26	16.79	23.61
	Front mounting flange type	1.75	2.71	3.41	6.81	9.99	14.17	23.25	31.95
Weight by bearing type	Slide bearing	0.73	1.13	1.53	2.8	4.33	5.98	8.96	12.93
	Ball bushing	0.74	1.14	1.52	2.78	4.51	6.6	9.76	14.24
Additional weight per 50mm of stroke		0.14	0.17	0.25	0.4	0.61	0.82	1.11	1.48
Additional weight for long stroke		0.01	0.01	0.02	0.03	0.06	0.1	0.19	0.26
Additional weight with bracket		0.012	0.017	0.018	0.031	0.062	0.27	0.39	0.57

Calculation method Example: **MGGLB32-500** (basic type, ball bushing, ø32, 500mm stroke, with bracket)

- Standard weight .... 2.66 (basic type)
- Bearing weight ..... 1.52 (ball bushing)
- Additional weight for stroke ..... 0.25/50mm
- Additional weight for long stroke ... 0.02
- Additional weight with bracket ..... 0.018

$$2.66 + 1.52 + 0.25 \times 500/50 + 0.02 + 0.018 = 6.718\text{kg}$$

## Weights of Moving Parts

Bore size (mm)	20	25	32	40	50	63	80	100
Moving parts basic weight	0.73	1.23	1.74	3.32	5.61	8.45	13.21	18.79
Additional weight per 50mm of stroke	0.11	0.135	0.203	0.327	0.51	0.68	0.949	1.266

Calculating weight of moving parts Example: **MGGLB32-500**

- Moving parts basic weight ..... 1.74
- Additional weight for stroke ..... 0.203/50mm
- Stroke ..... 500mm

$$1.74 + 0.203 \times 500/50 = 3.77\text{kg}$$

### Air-hydro Type

Low pressure hydraulic cylinder of 1.0MPa or less

When used together with a series CC air-hydro unit, constant and low speed actuation, and intermediate stopping similar to hydraulic units are possible with the use of valves and other pneumatic equipment.

**MGGH** Bearing type Mounting Bore size Stroke

Air-hydro type

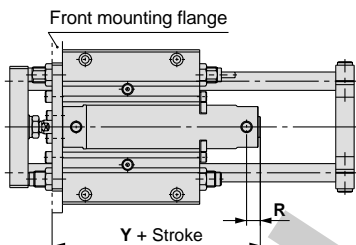
#### Specifications

Bore size (mm)	20, 25, 32, 40, 50, 63	
Action	Double acting	
Fluid	Turbine oil	
Proof pressure	1.5MPa	
Maximum operating pressure	1.0MPa	
Minimum operating pressure	0.18MPa (horizontal with no load)	
Piston speed	15 to 300mm/s	
Cushion	Base cylinder	None
	Guides	Built-in shock absorber (2 pcs.)
Ambient and fluid temperature	+5° to 60°C	
Thread tolerance	JIS class 2	
Mounting	Basic type Front mounting flange type	

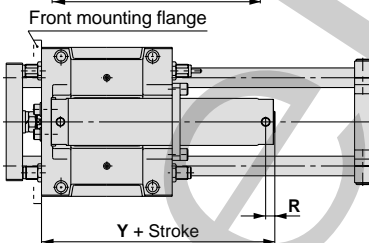
\* Refer to page 2 for specifications other than the above.  
\* Auto switch capable

#### Dimensions

ø20 to ø50



ø63



Bore size (mm)	20	25	32	40	50	63
R	14	14	14	15	16	16
Y	88	88	90	101	116	119

\* Dimensions other than the above are the same as those on pages 17, 18, 19 and 20.

### Copper-Free Type (for CRT production processes)

In order to eliminate the adverse effects of copper ions and halogen ions on CRT production processes, this type does not use copper or fluorine materials.

**20-MGG** Bearing type Mounting Bore size Stroke

Copper-free

#### Specifications

Bore size (mm)	20, 25, 32, 40, 50, 63, 80, 100	
Action	Double acting	
Fluid	Air	
Maximum operating pressure	1.0MPa	
Minimum operating pressure	0.15MPa (horizontal with no load)	
Cushion	Base cylinder	Rubber bumper
	Guides	Built-in shock absorber (2 pcs.)
Mounting	Basic type Front mounting flange type	

\* Refer to page 2 for specifications and pages 17 through 20 for dimensions other than the above.  
\* Auto switch capable

### Water Resistant Type

The installation of a special scraper in front of the rod seal on the base cylinder protects against the entry of liquids from the environment into the cylinder. This type can be used in environments with machine tool coolants, and with water spray such as food processing and car washing equipment.

**MGGM** Mounting Bore size R Stroke G5BAL

Slide bearing

Water resistant  
2 color indication  
solid state switch

Water resistant cylinder

R	Seals NBR (nitrile rubber)
V	Seals FKM (fluoro rubber)

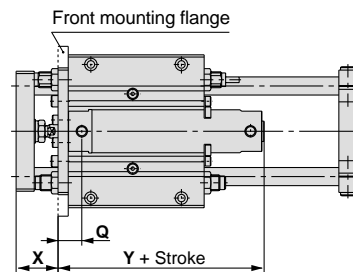
#### Specifications

Bore size (mm)	32, 40, 50, 63, 80, 100	
Action	Double acting	
Fluid	Air	
Maximum operating pressure	1.0MPa	
Minimum operating pressure	0.15MPa (horizontal with no load)	
Bearing type	Slide bearing	
Cushion	Base cylinder	Rubber bumper
	Guides	Built-in shock absorber (2 pcs.)
Mounting	Basic type Front mounting flange type	

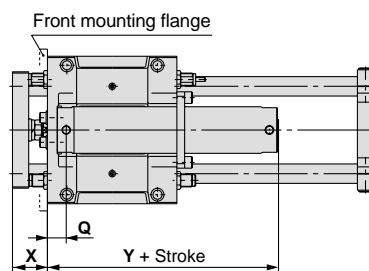
\* Refer to page 2 for specifications other than the above.  
\* Auto switch capable (water resistant type)  
Note) RBL (coolant resistant) type shock absorbers are used.

#### Dimensions

ø32 to ø50



ø63 to ø100



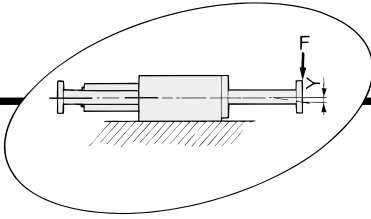
Bore size (mm)	Q	X	Y
32	25	39	86 (94)
40	29	46	96 (105)
50	31	57	109 (121)
63	34	56	112 (124)
80	46	68	137 (151)
100	47	68	138 (152)

\* Dimensions inside ( ) are for long strokes.  
\* Dimensions other than the above are the same as those on pages 17 through 20.

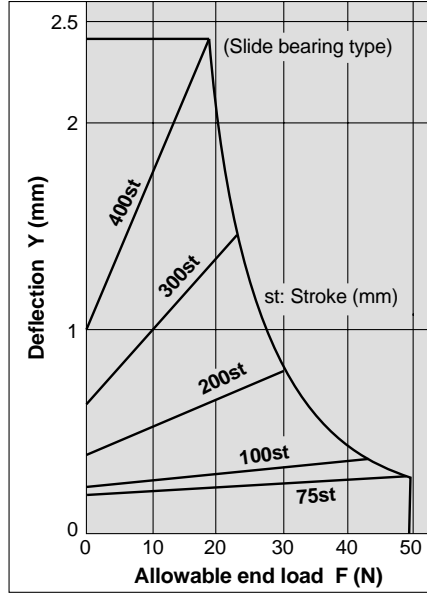
Refer to the separate catalog (CAT.E244-**B**) for detailed specifications (except ø63 to ø100).

# Series MGG

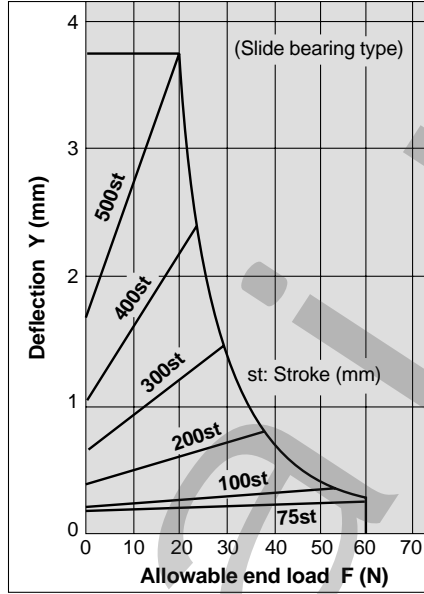
## Slide Bearing Allowable End Load and Deflection



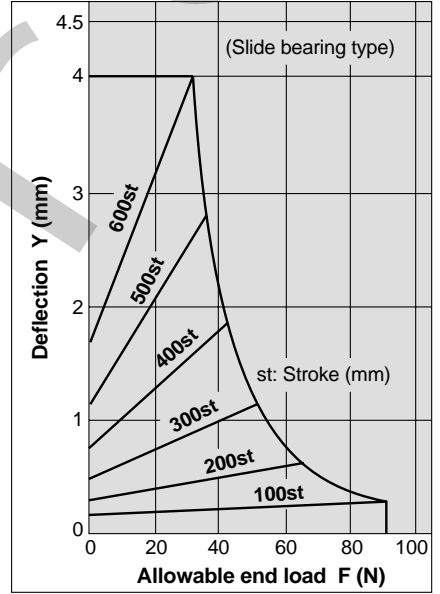
MGGM 20- Stroke



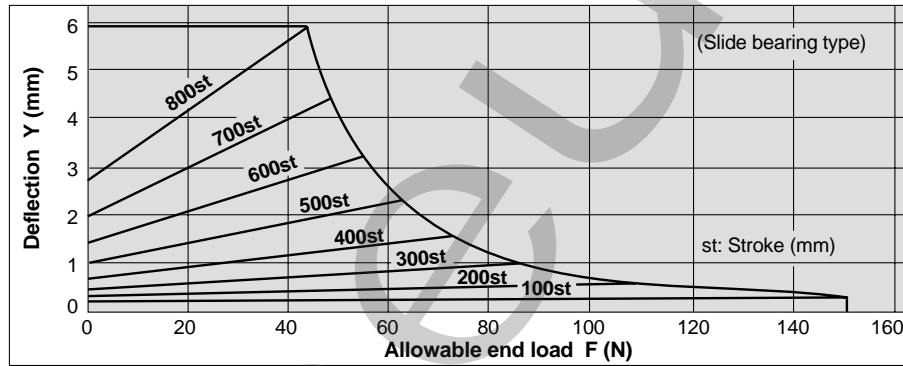
MGGM 25- Stroke



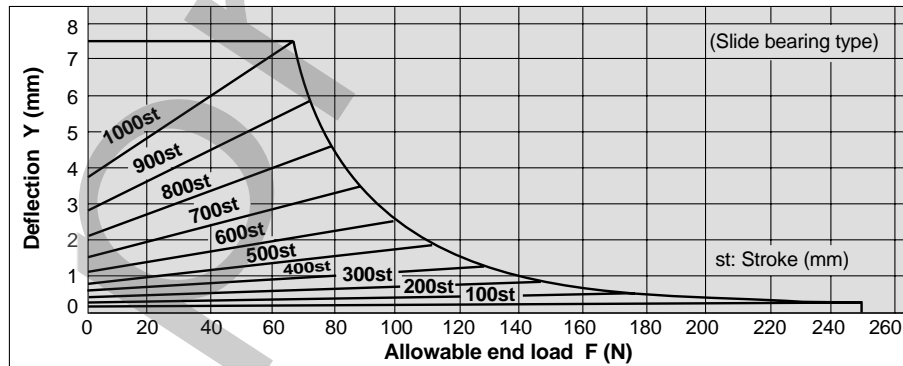
MGGM 32- Stroke



MGGM 40- Stroke

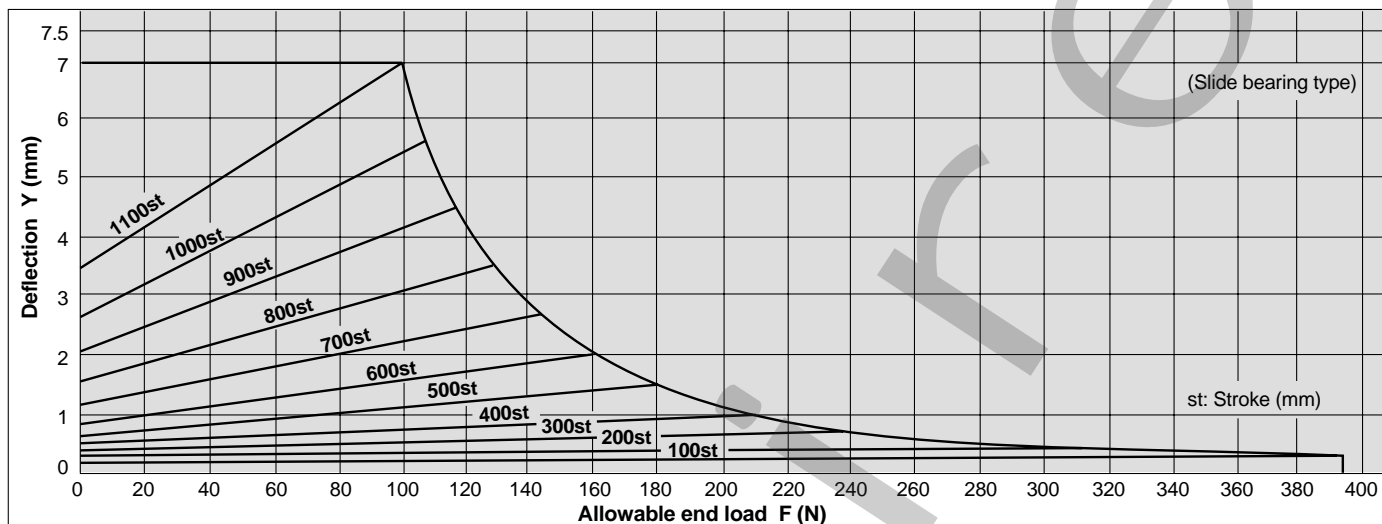


MGGM 50- Stroke

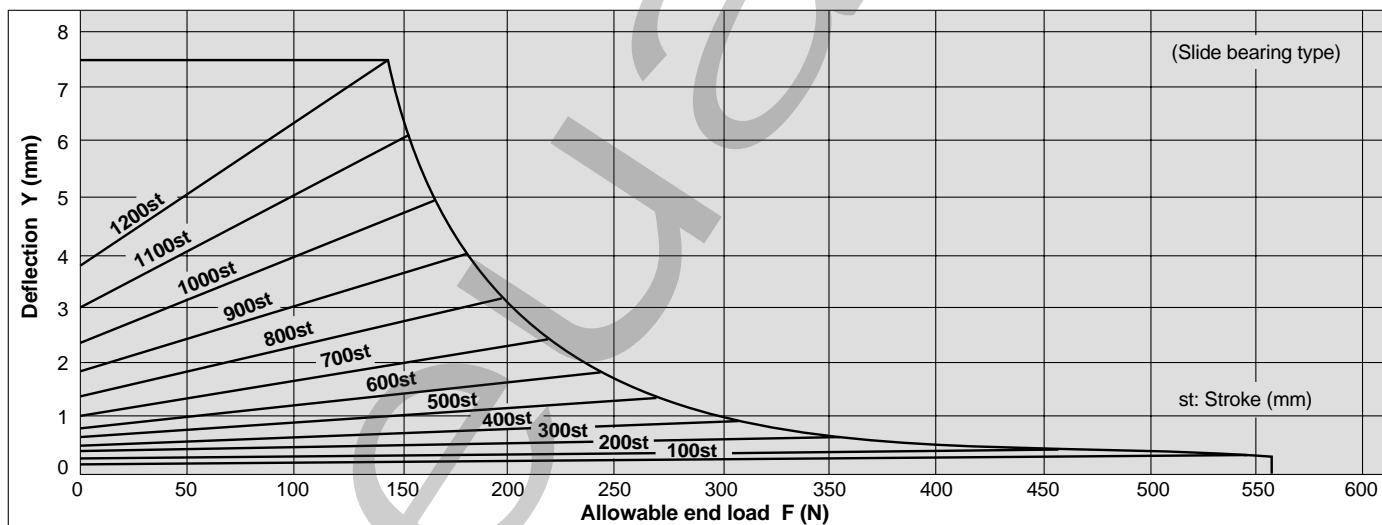




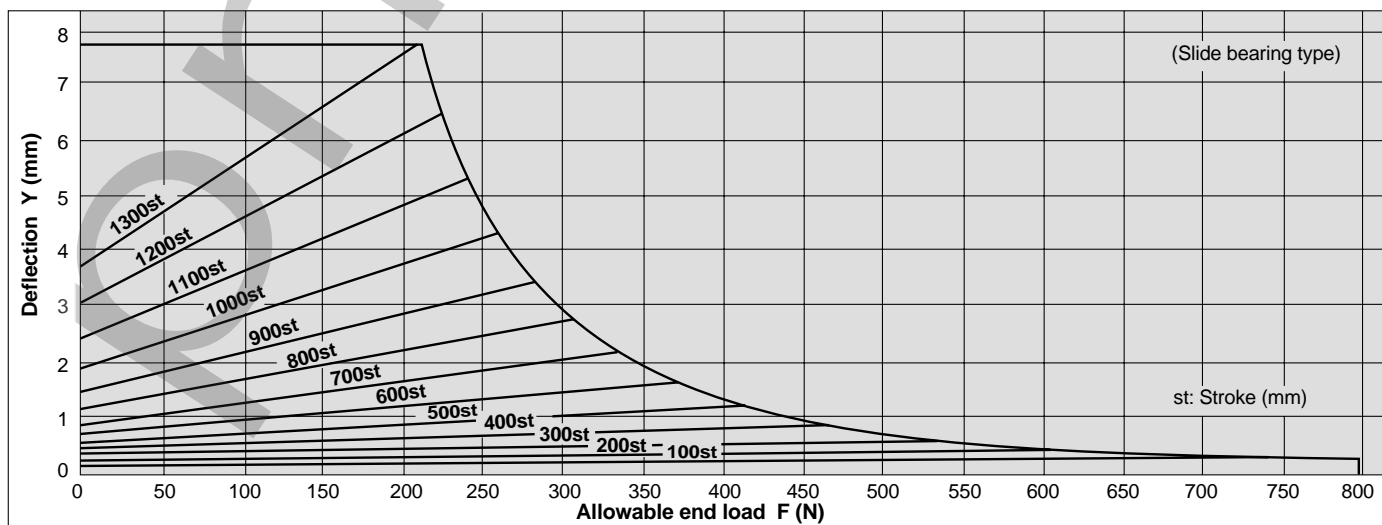
**MGGM**  63- Stroke



**MGGM**  80- Stroke

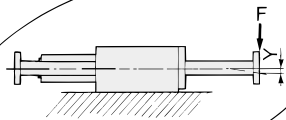


**MGGM**  100- Stroke

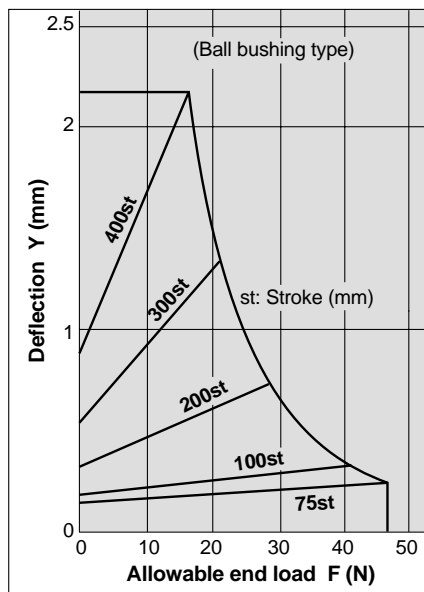


# Series MGG

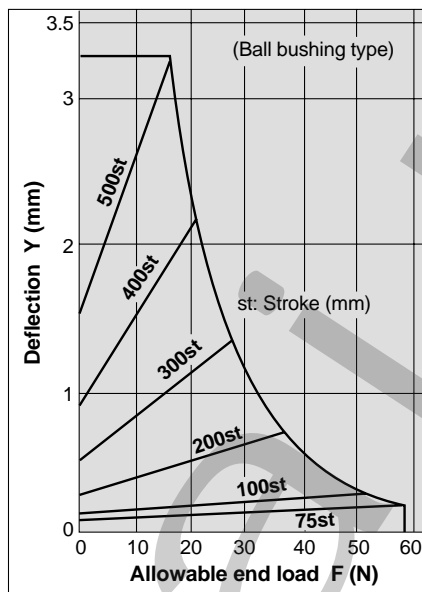
## Ball Bushing Allowable End Load and Deflection



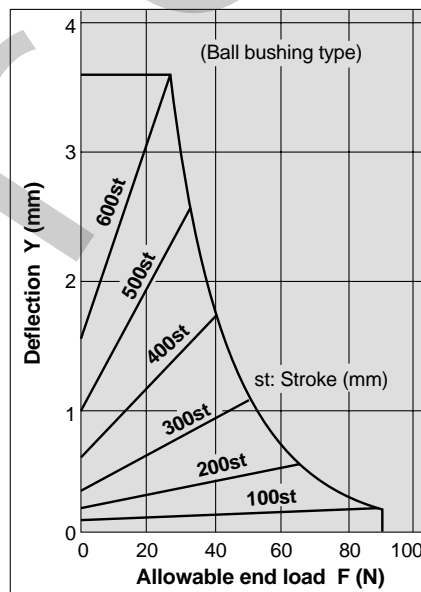
MGGL 20- Stroke



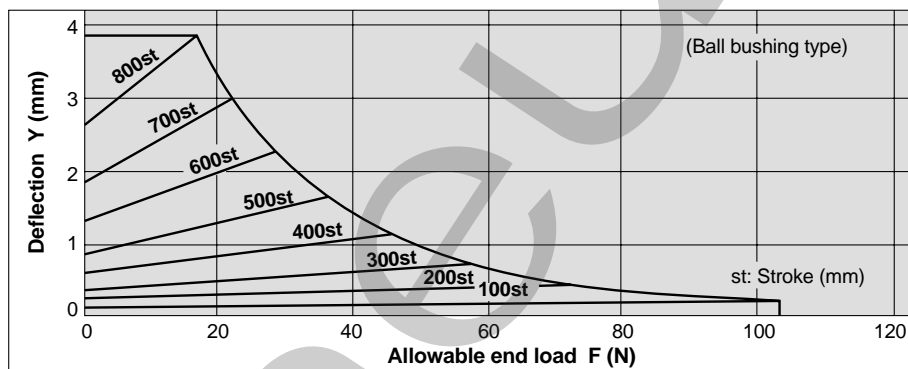
MGGL 25- Stroke



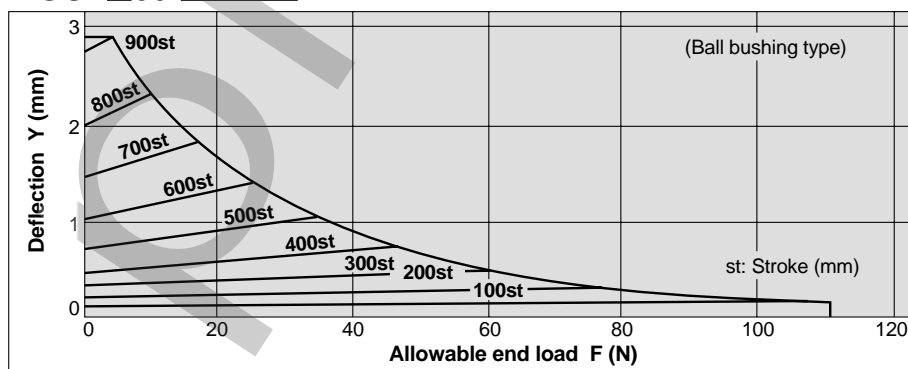
MGGL 32- Stroke



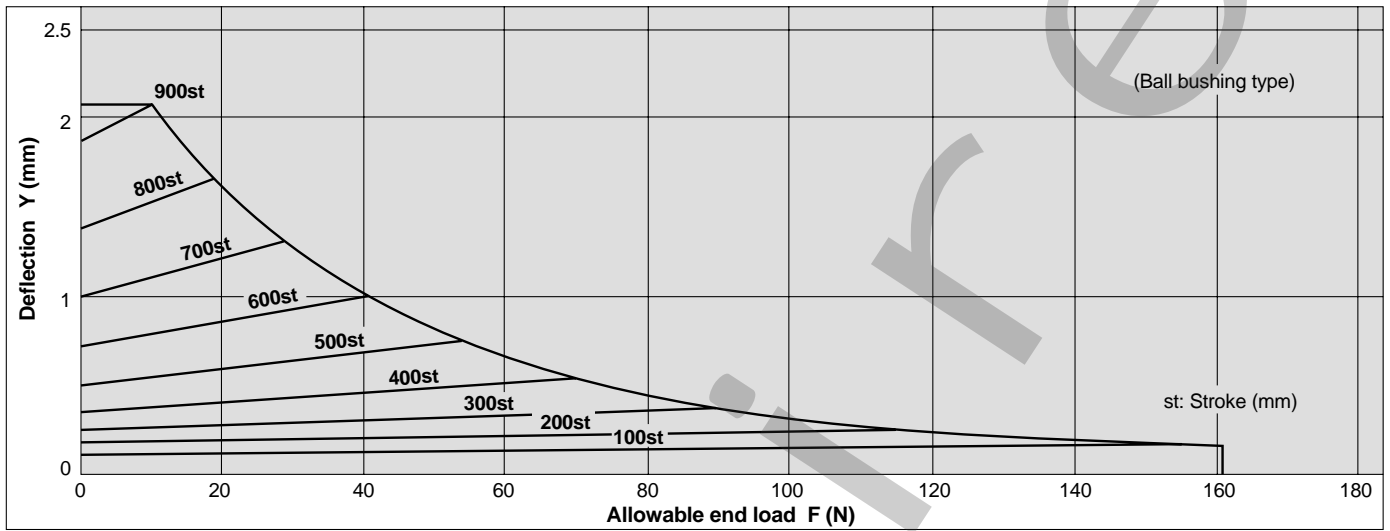
MGGL 40- Stroke



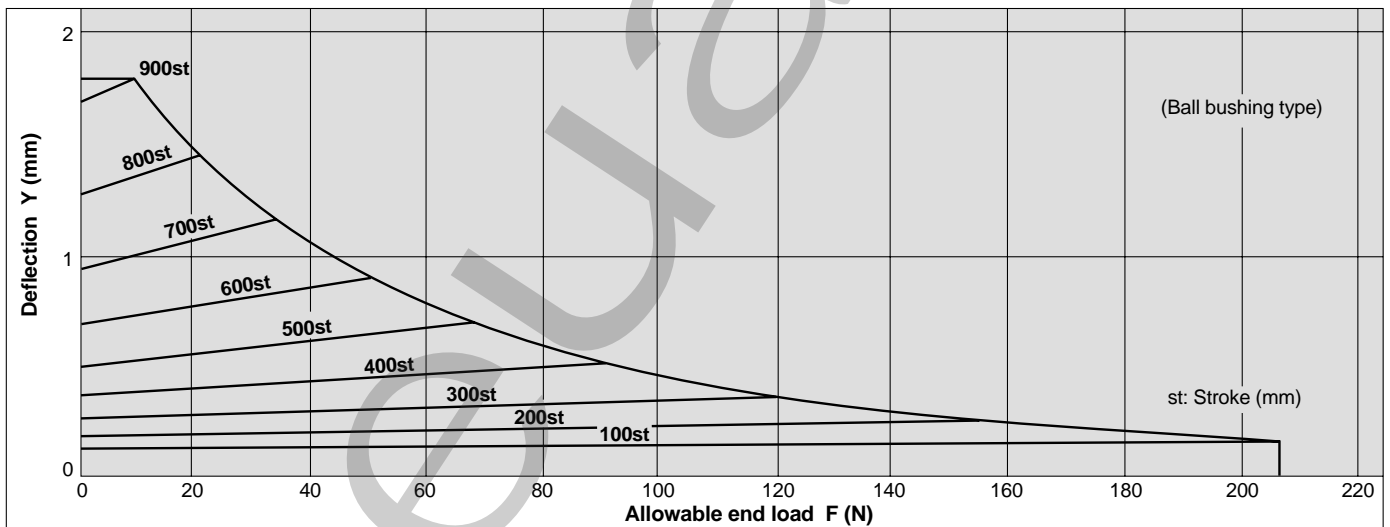
MGGL 50- Stroke



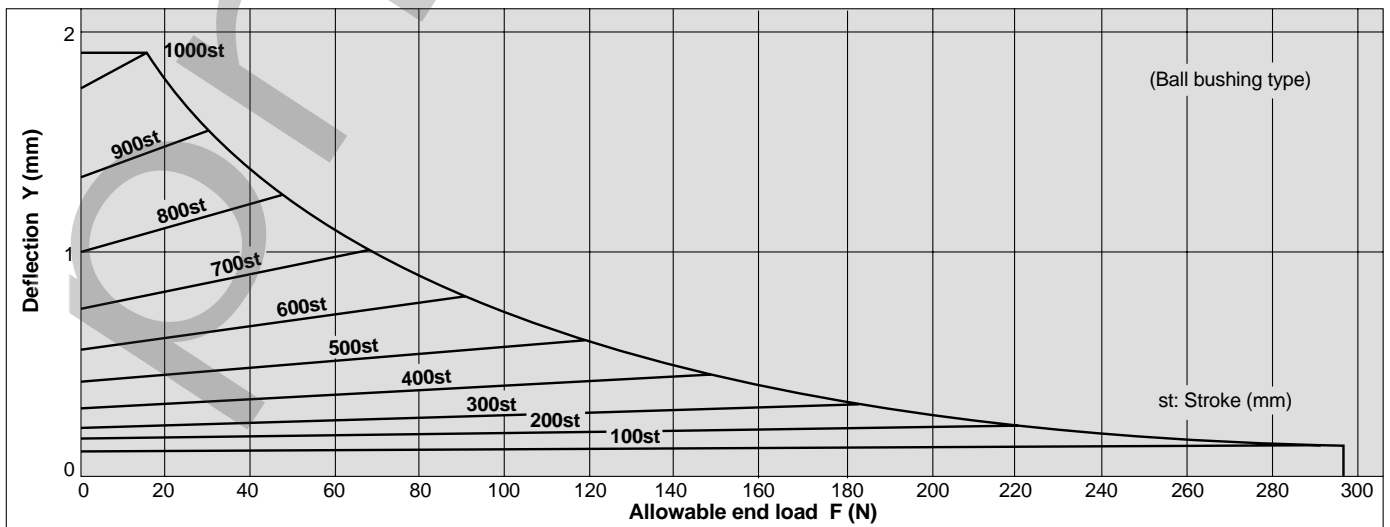
**MGGL 63- Stroke**



**MGGL 80- Stroke**

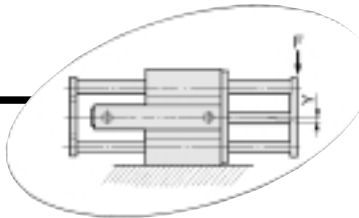


**MGGL 100- Stroke**

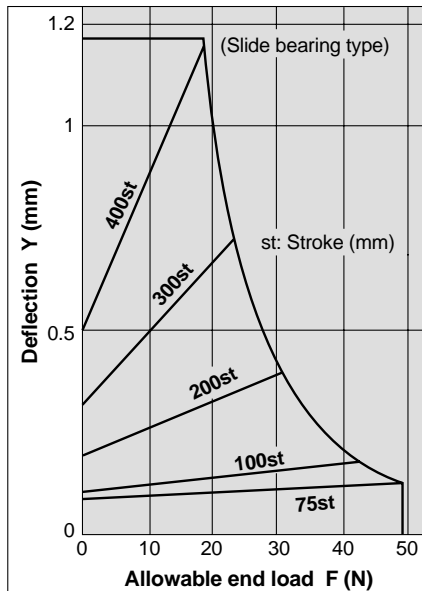


# Series MGG

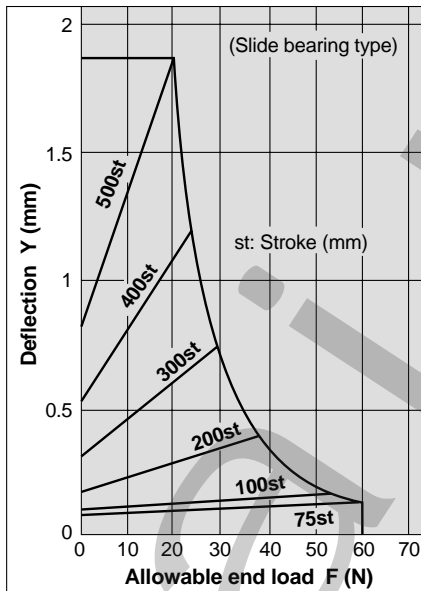
## Slide Bearing Allowable End Load and Deflection



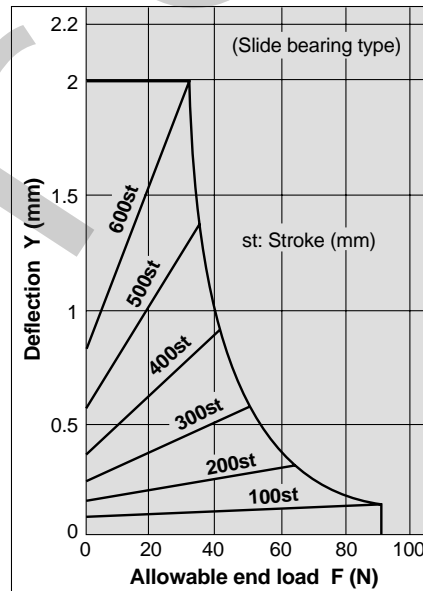
MGGM 20- Stroke



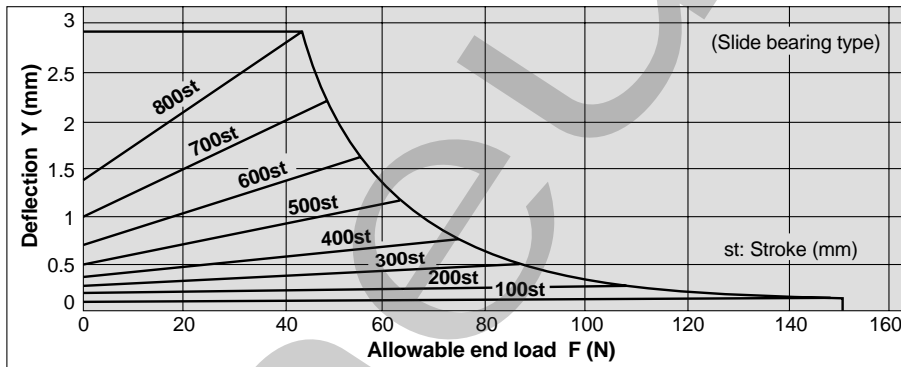
MGGM 25- Stroke



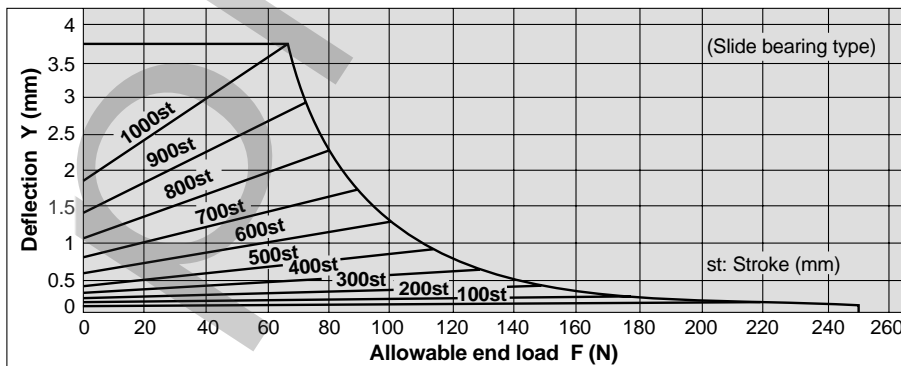
MGGM 32- Stroke



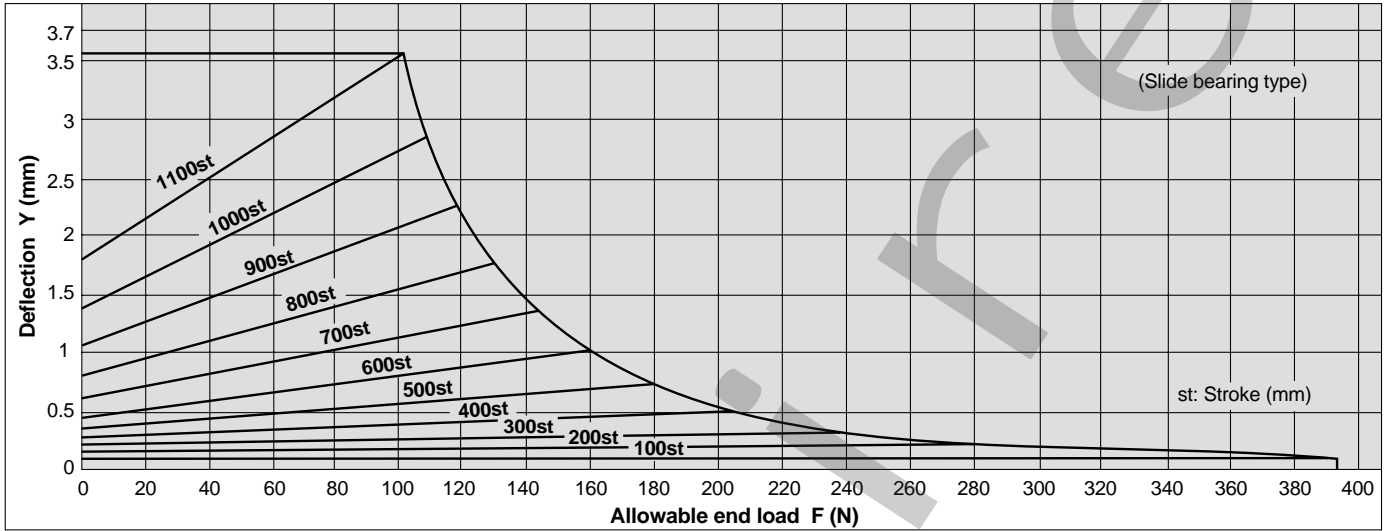
MGGM 40- Stroke



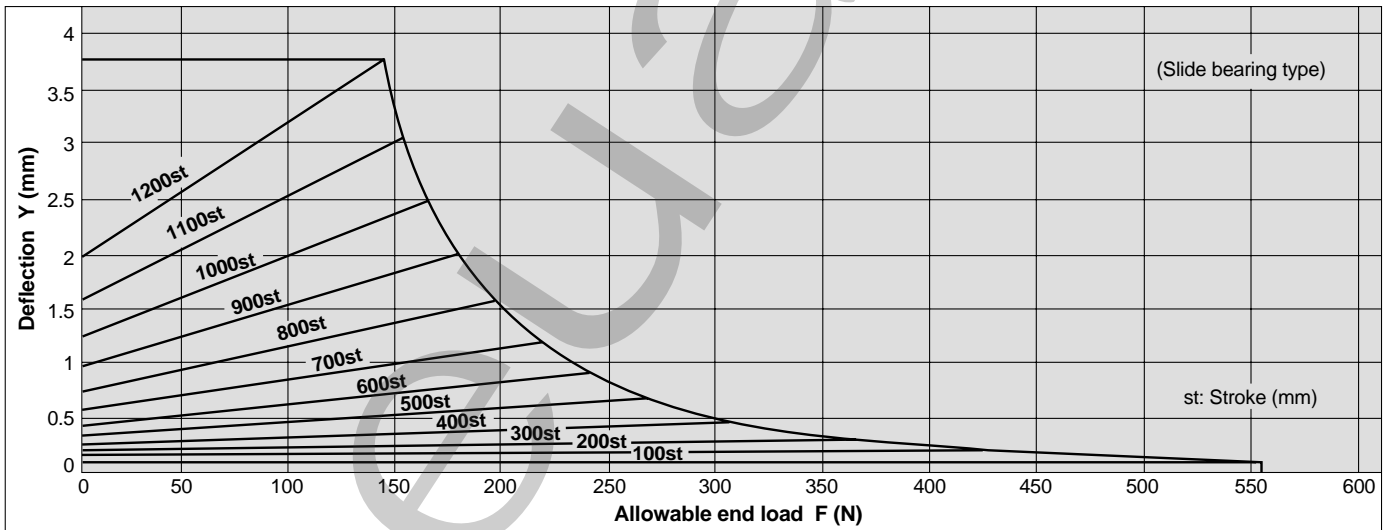
MGGM 50- Stroke



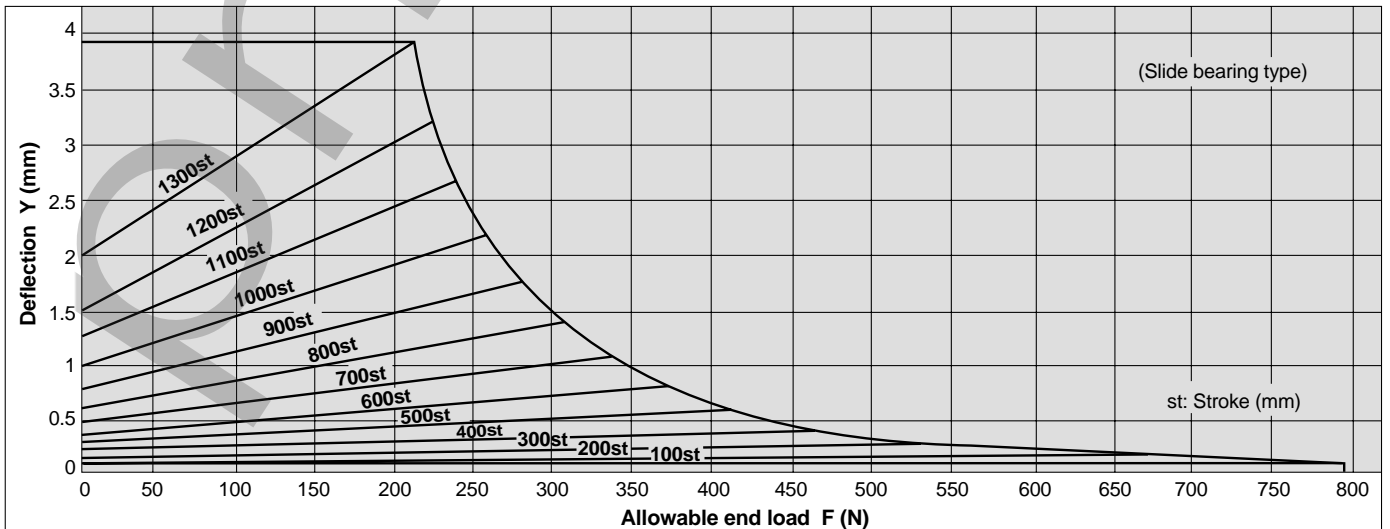
**MGGM**  **63-**  Stroke



**MGGM**  **80-**  Stroke

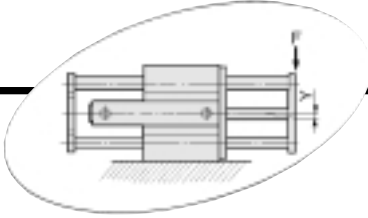


**MGGM**  **100-**  Stroke

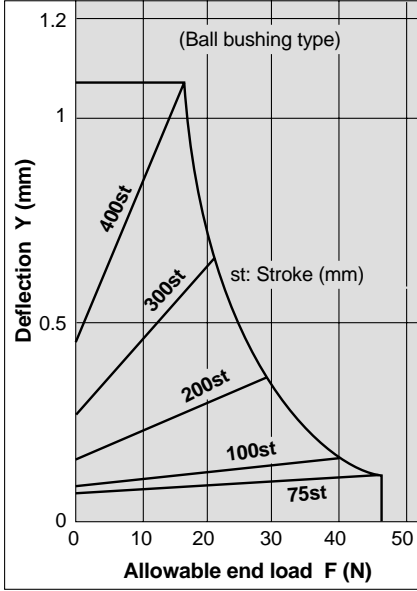


# Series MGG

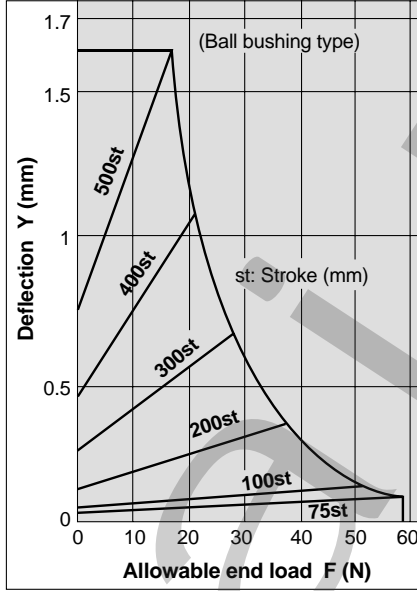
## Ball Bushing Allowable End Load and Deflection



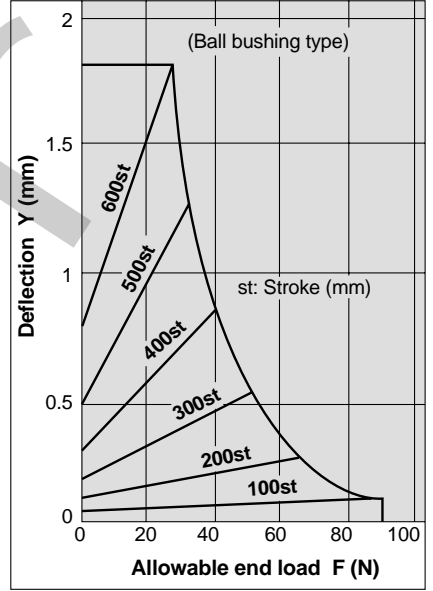
MGGL 20- Stroke



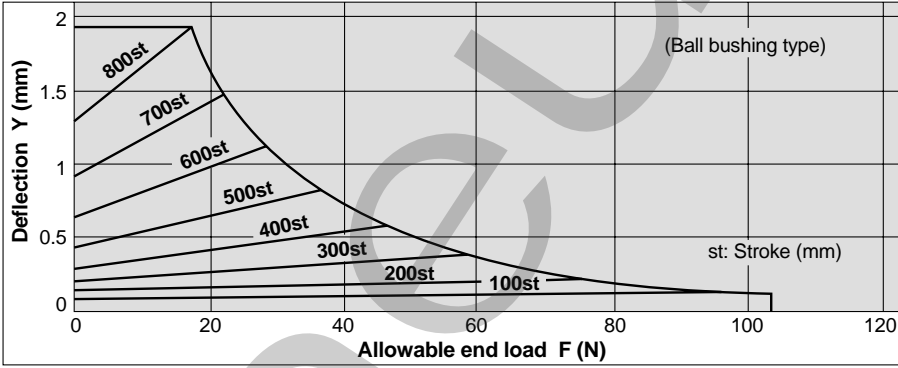
MGGL 25- Stroke



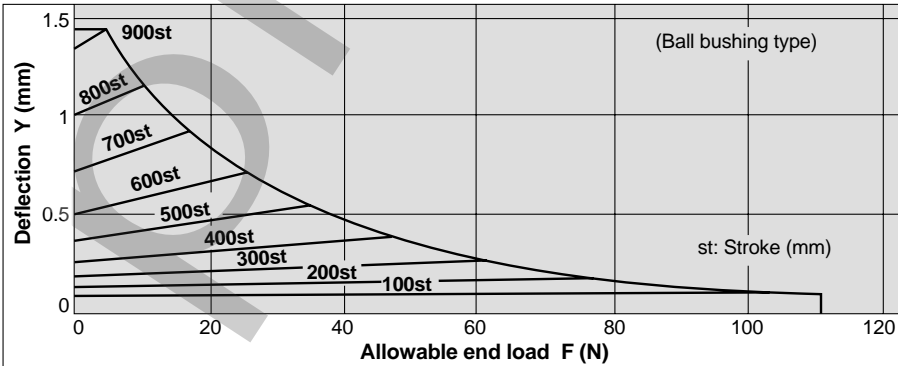
MGGL 32- Stroke



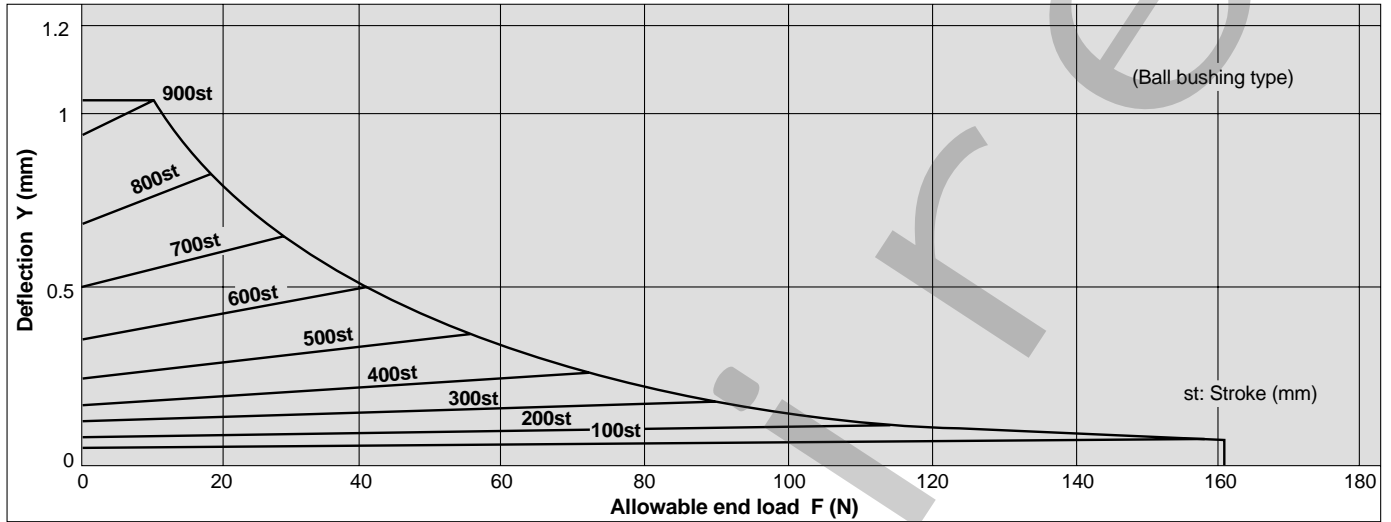
MGGL 40- Stroke



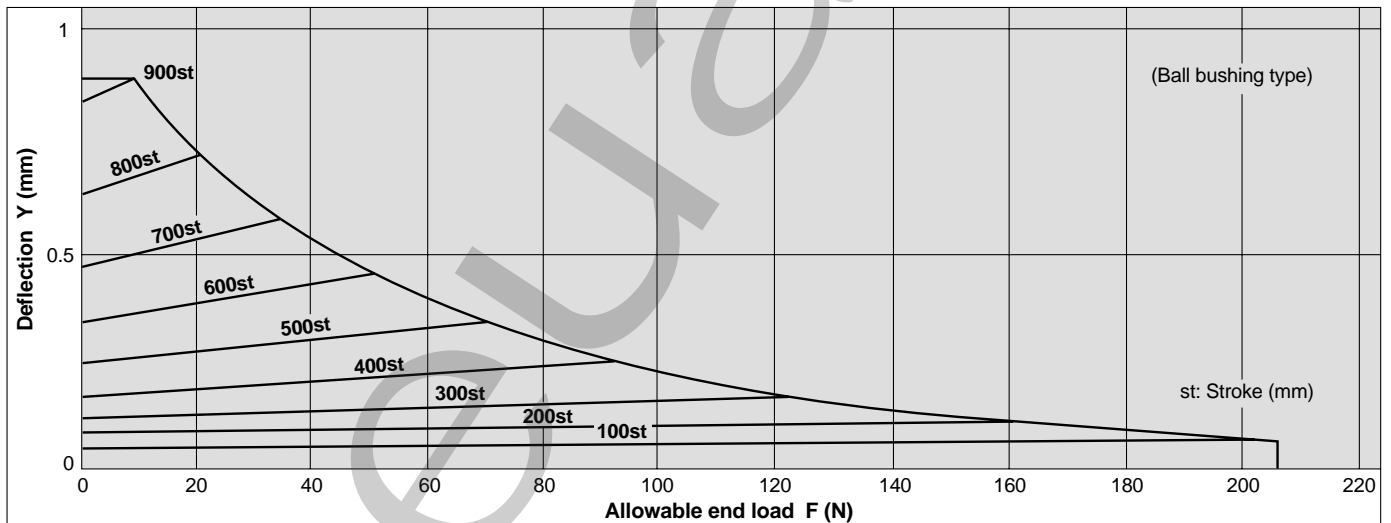
MGGL 50- Stroke



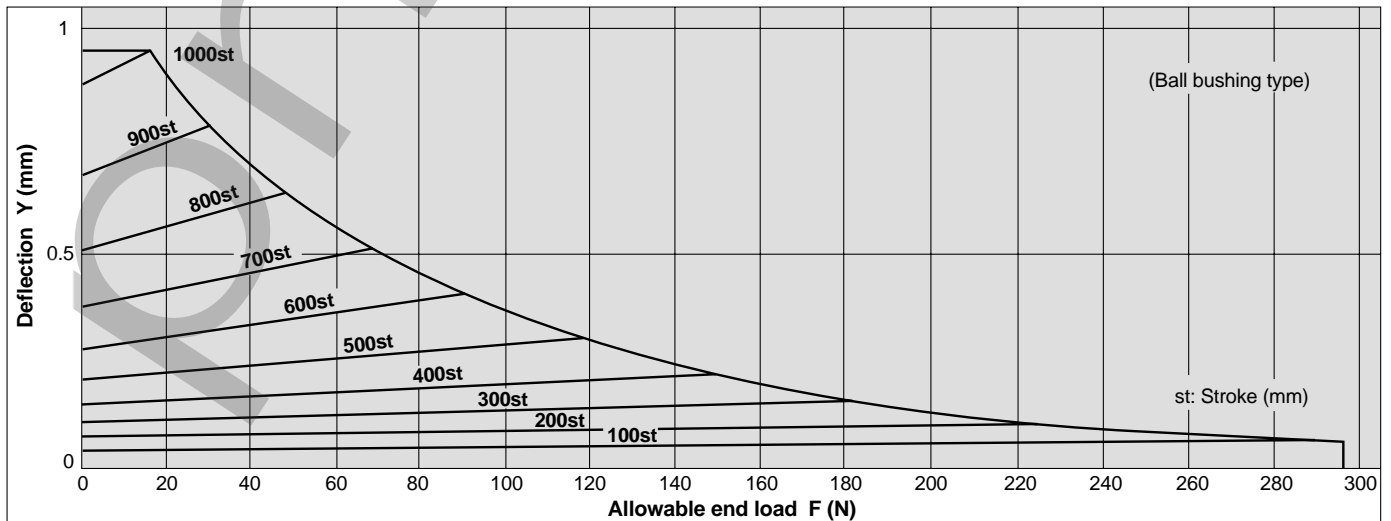
**MGGL 63- Stroke**



**MGGL 80- Stroke**

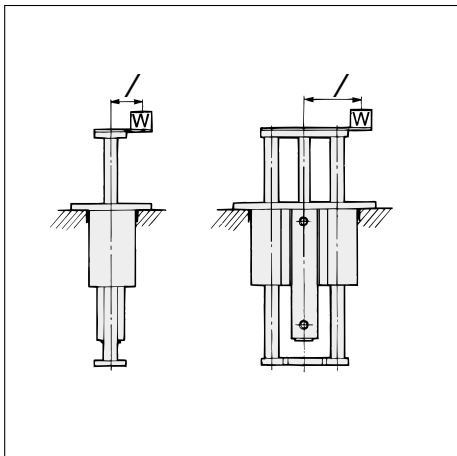


**MGGL 100- Stroke**

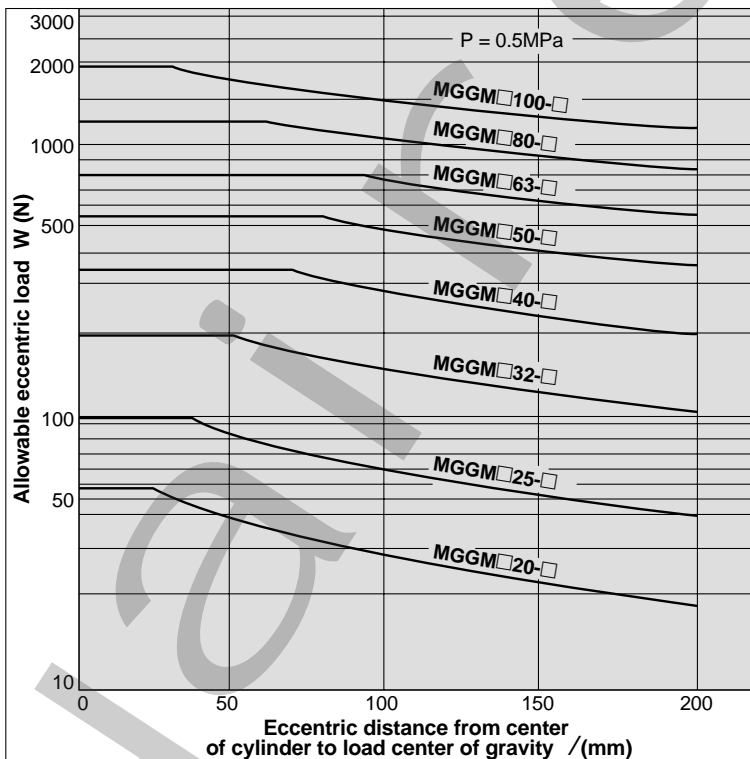


# Series MGG

## Allowable Eccentric Load

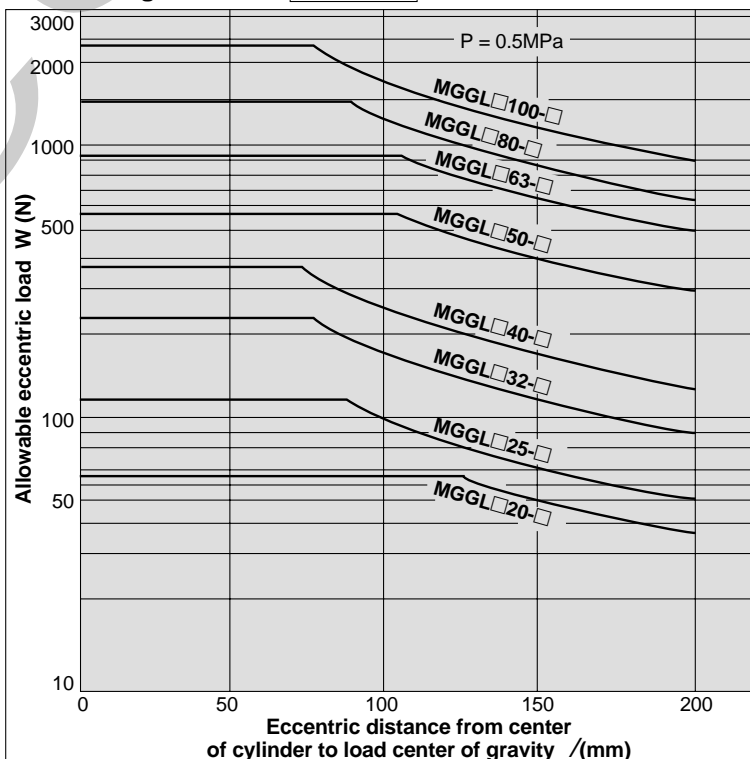


Slide bearing/MGGM□□-Stroke



(Set the maximum allowable load so that it does not exceed the following percentages of the theoretical output: 35% for ø20, 40% for ø25, 50% for ø32, 55% for ø40 and ø50, and 50% for ø63, ø80 and ø100.)

Ball bushing/MGGL□□-Stroke

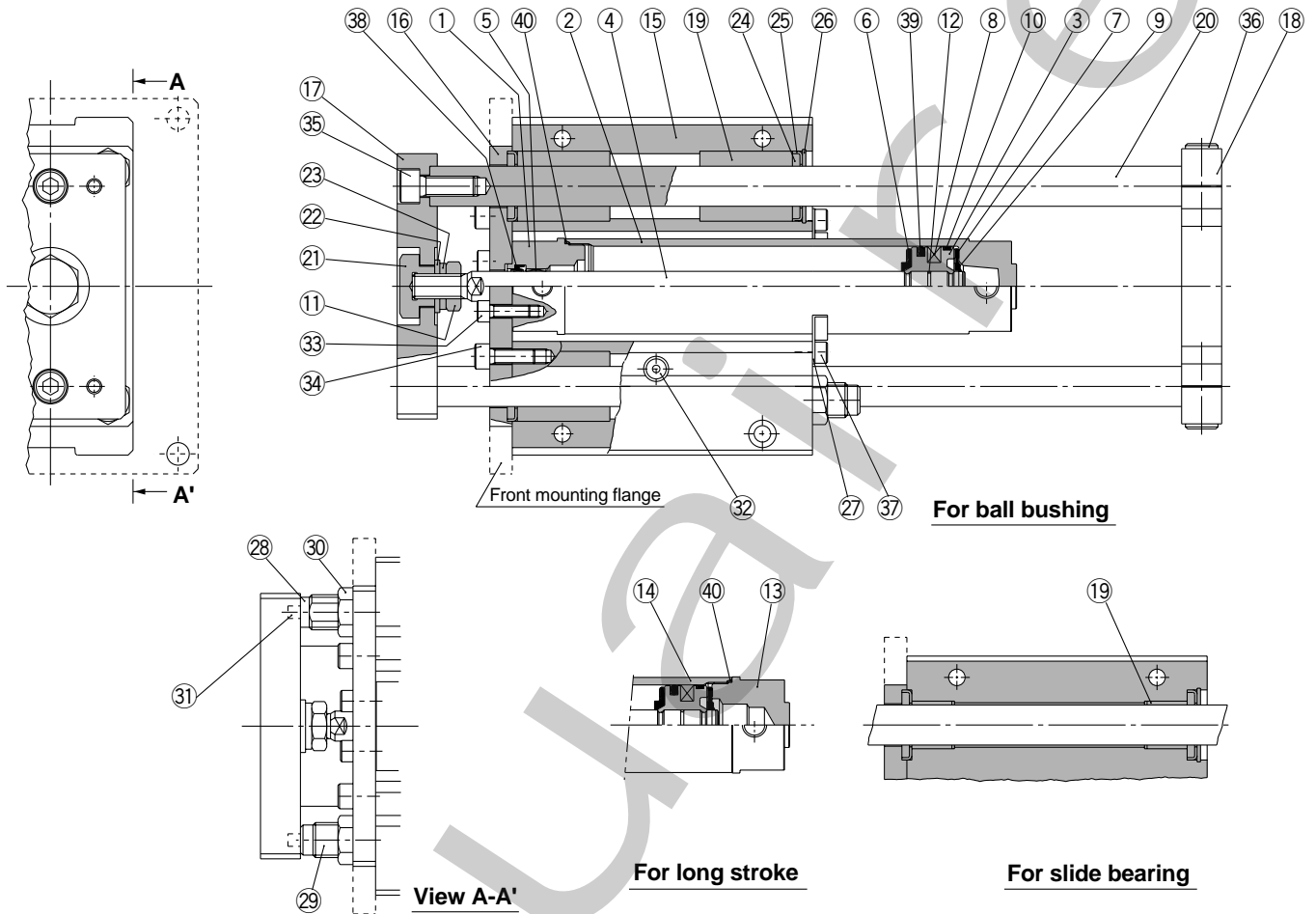


(Set the maximum allowable load so that it does not exceed the following percentages of the theoretical output: 40% for ø20, 50% for ø25, and 60% for ø32, ø40, ø50, ø63, ø80 and ø100.)



**Construction**

∅20 to ∅50/MGG□□



**Parts list**

No.	Description	Material	Note
1	Rod cover	Aluminum alloy	Clear hard anodized
2	Tube cover	Aluminum alloy	Clear hard anodized
3	Piston	Aluminum alloy	Chromated
4	Piston rod	Carbon steel	Hard chrome plated ∅20, ∅25 are stainless steel
5	Bushing	Oil-impregnated sintered alloy	∅40 and larger are lead-bronze casting
6	Bumper A	Urethane	
7	Bumper B	Urethane	∅40 and larger are the same as bumper A
8	Rubber magnet	Synthetic rubber	
9	Snap ring	Stainless steel	
10	Wear ring	Resin	
11	Rod end nut	Roller steel	Nickel plated
12	Piston gasket	NBR	
13	Head cover	Aluminum alloy	Clear hard anodized
14	Cylinder tube	Aluminum alloy	Hard anodized
15	Guide body	Aluminum alloy	Clear anodized
16	Small flange	Roller steel	Flat nickel plated
16	Large flange	Roller steel	Flat nickel plated
17	Front plate	Roller steel	Flat nickel plated
18	Rear plate	Cast iron	Metallic gold
19	Slide bearing	Special friction material	For slide bearing
19	Ball bush bearing	—	For ball bushing
20	Guide rod	Carbon steel	Hard chrome plated
20	Guide rod	High carbon chromium bearing steel	Tempered, hard chrome plated
21	End bracket	Carbon steel	Flat nickel plated
22	Flat washer	Roller steel	Nickel plated
23	Spring washer	Steel wire	Nickel plated
24	Felt	Felt	
25	Holder	Stainless steel	

**Parts list**

No.	Description	Material	Note
26	C type snap ring for hole	Carbon tool steel	Nickel plated
27	Bracket	Stainless steel	
28	Shock absorber	—	
29	Adjustment bolt	Roller steel	Nickel plated
30	Nut	Roller steel	Nickel plated
31	Parallel pin	High carbon chromium bearing steel	Nickel plated
32	Grease nipple	—	Nickel plated
33	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
34	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
35	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
36	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
37	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
38	Rod seal	NBR	
39	Piston seal	NBR	
40	Tube gasket	NBR	

**Replacement parts: Seal kits**

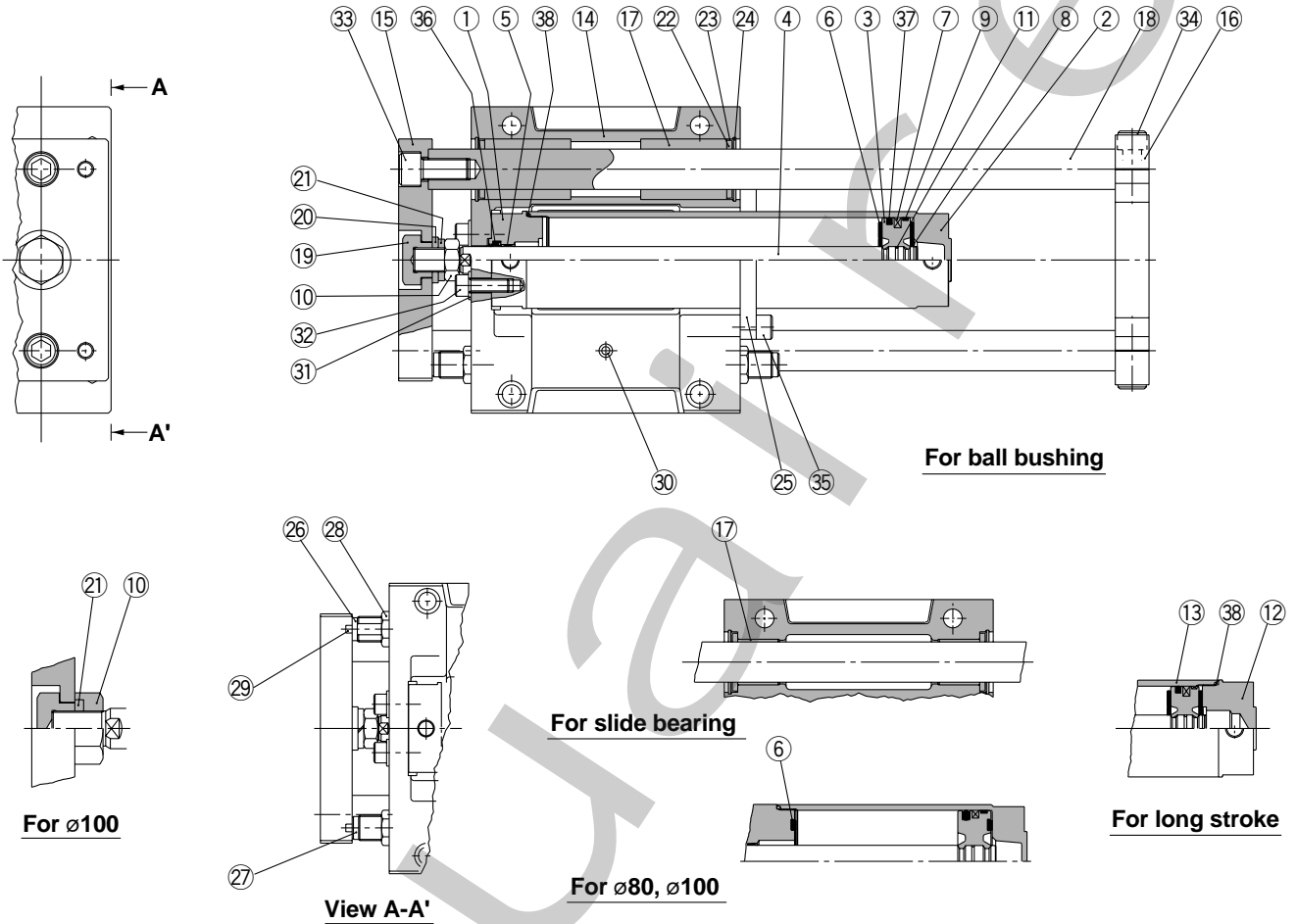
Bore size (mm)	Seal kit no.	Content
20	CG1N20-PS	A set of the above nos. 38, 39, 40
25	CG1N25-PS	
32	CG1N32-PS	
40	CG1N40-PS	
50	CG1N50-PS	

Seal kits are sets of items 38 through 40, which can be ordered using the seal kit number for each bore size.

# Series MGG

## Construction

∅63 to ∅100/MGG□B



### Parts list

No.	Description	Material	Note
1	Rod cover	Aluminum alloy	Clear hard anodized
2	Tube cover	Aluminum alloy	Clear hard anodized
3	Piston	Aluminum alloy	Chromated
4	Piston rod	Carbon steel	Hard chrome plated
5	Bushing	Lead-bronze casting	
6	Bumper	Urethane	
7	Rubber magnet	Synthetic rubber	
8	Snap ring	Stainless steel	Not required for ∅80 and ∅100
9	Wear ring	Resin	
10	Rod end nut	Rolled steel	Nickel plated ∅100 is carbon steel
11	Piston gasket	NBR	
12	Head cover	Aluminum alloy	Clear hard anodized Hard anodized For long stroke
13	Cylinder tube	Aluminum alloy	
14	Guide body	Aluminum alloy	Metallic silver
15	Front plate	Rolled steel	Flat nickel plated
16	Rear plate	Cast iron	Metallic gold
17	Slide bearing	Special friction material	For slide bearing
	Ball bush bearing	—	For ball bushing
18	Guide rod	Carbon steel	Hard chrome plated For slide bearing
		High carbon chromium bearing steel	Tempered, hard chrome plated For ball bushing
19	End bracket	Carbon steel	Flat nickel plated
20	Flat washer	Rolled steel	Nickel plated Not required for ∅100
21	Spring washer	Steel wire	Nickel plated
22	Felt	Felt	
23	Holder	Rolled steel	Nickel plated
24	C type snap ring for hole	Carbon tool steel	Nickel plated

### Parts list

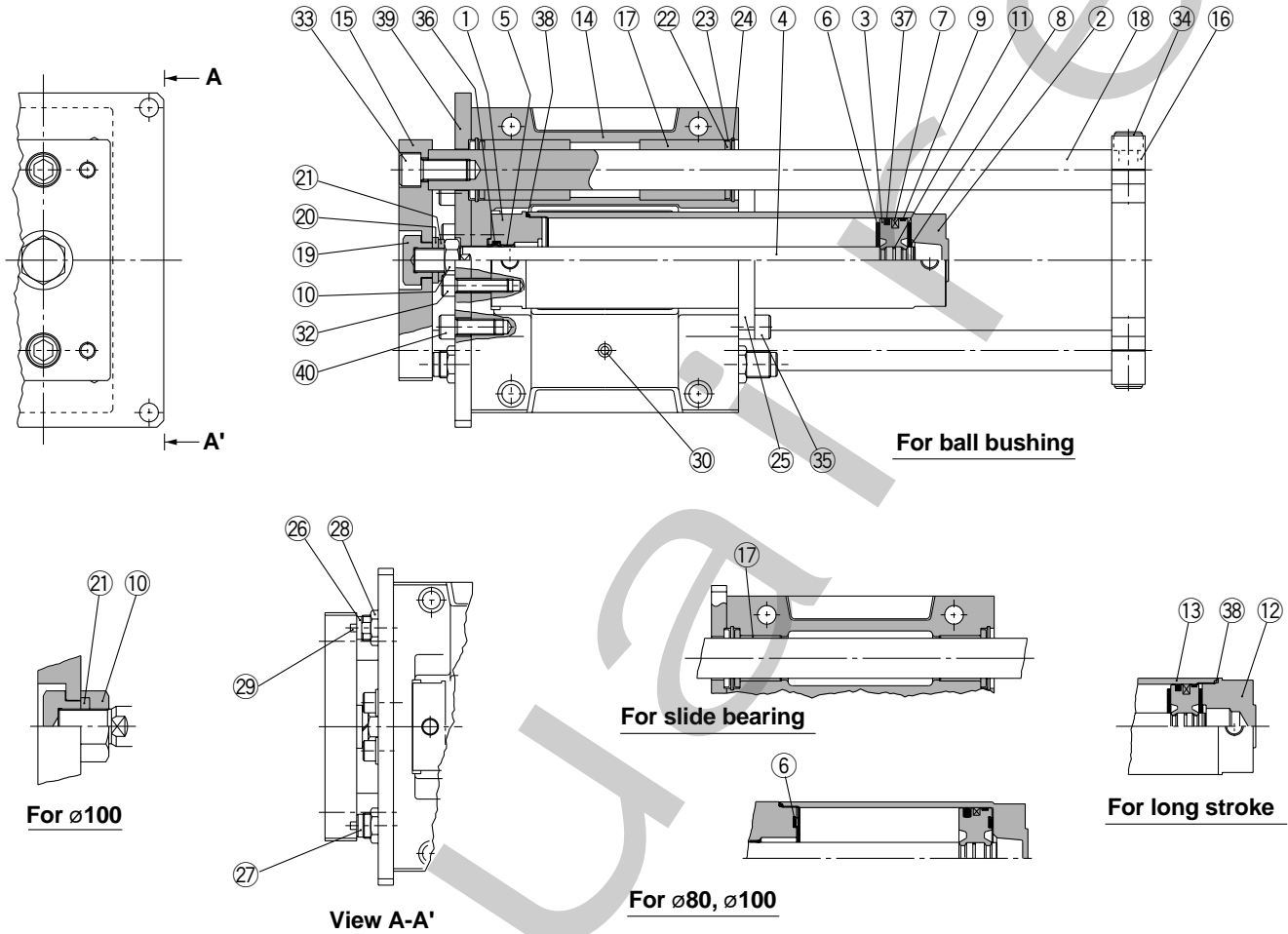
No.	Description	Material	Note
25	Bracket	Aluminum alloy	Clear anodized
26	Shock absorber	—	
27	Adjustment bolt	Rolled steel	Nickel plated
28	Nut	Rolled steel	Nickel plated
29	Parallel pin	High carbon chromium bearing steel	Nickel plated
30	Grease nipple	—	Nickel plated
31	Flat washer	Carbon steel	Nickel plated
32	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated For cylinder mounting
33	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated For front plate mounting
34	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated For rear plate mounting
35	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated For bracket mounting
36	Rod seal	NBR	
37	Piston seal	NBR	
38	Tube gasket	NBR	

### Replacement parts: Seal kits

Bore size (mm)	Seal kit no.	Content
63	CG1N63-PS	A set of the above nos. 36, 37, 38
80	CG1N80-PS	
100	CG1N100-PS	

Seal kits are sets of items 36 through 38, which can be ordered using the seal kit number for each bore size.

ø63 to ø100/MGG□F



Parts list

No.	Description	Material	Note
1	Rod cover	Aluminum alloy	Clear hard anodized
2	Tube cover	Aluminum alloy	Clear hard anodized
3	Piston	Aluminum alloy	Chromated
4	Piston rod	Carbon steel	Hard chrome plated
5	Bushing	Lead-bronze casting	
6	Bumper	Urethane	
7	Rubber magnet	Synthetic rubber	
8	Snap ring	Stainless steel	Not required for ø80 and ø100
9	Wear ring	Resin	
10	Rod end nut	Rolled steel	Nickel plated   ø100 is carbon steel
11	Piston gasket	NBR	
12	Head cover	Aluminum alloy	Clear hard anodized   For long stroke
13	Cylinder tube	Aluminum alloy	Hard anodized
14	Guide body	Aluminum alloy	Metallic silver
15	Front plate	Rolled steel	Flat nickel plated
16	Rear plate	Cast iron	Metallic gold
17	Slide bearing	Special friction material	For slide bearing
	Ball bush bearing	—	For ball bushing
18	Guide rod	Carbon steel	Hard chrome plated   For slide bearing
		High carbon chromium bearing steel	Tempered, hard chrome plated   For ball bushing
19	End bracket	Carbon steel	Flat nickel plated
20	Flat washer	Rolled steel	Nickel plated   Not required for ø100
21	Spring washer	Steel wire	Nickel plated
22	Felt	Felt	
23	Holder	Rolled steel	Nickel plated
24	C type snap ring for hole	Carbon tool steel	Nickel plated
25	Bracket	Aluminum alloy	Clear anodized

Parts list

No.	Description	Material	Note
26	Shock absorber	—	
27	Adjustment bolt	Rolled steel	Nickel plated
28	Nut	Rolled steel	Nickel plated
29	Parallel pin	High carbon chromium bearing steel	Nickel plated
30	Grease nipple	—	Nickel plated
31	—	—	
32	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated   For cylinder mounting
33	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated   For front plate mounting
34	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated   For rear plate mounting
35	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated   For bracket mounting
36	Rod seal	NBR	
37	Piston seal	NBR	
38	Tube gasket	NBR	
39	Large flange	Rolled steel	Nickel plated
40	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated   For large flange mounting

Replacement parts: Seal kits

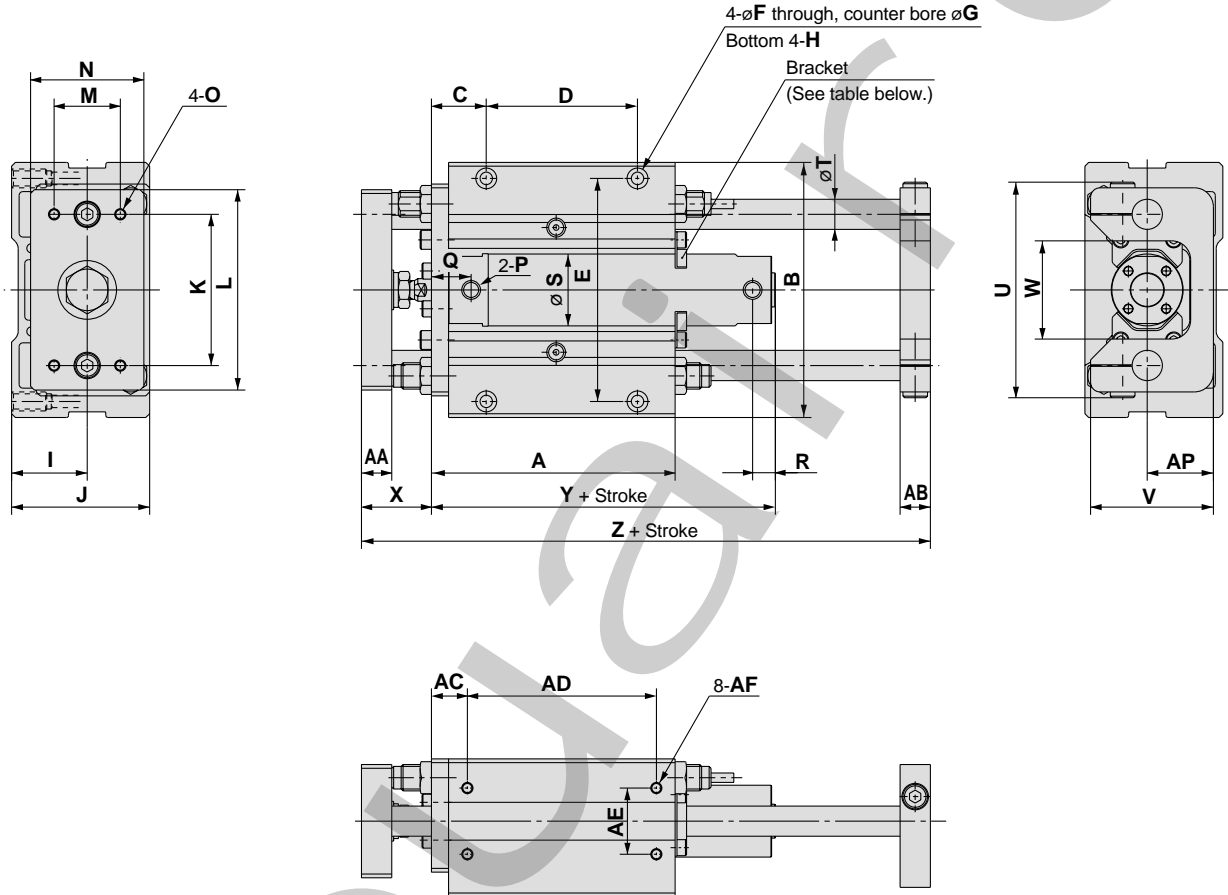
Bore size (mm)	Seal kit no.	Content
63	CG1N63-PS	A set of the above nos. 36, 37, 38
80	CG1N80-PS	
100	CG1N100-PS	

Seal kits are sets of items 36 through 38, which can be ordered using the seal kit number for each bore size.

# Series MGG

## Dimensions

Basic type/MGG□B  
ø20 to ø50



### For standard stroke

(mm)

Bore size (mm)	Stroke range (mm)	A	AA	AB	AC	AD	AE	AF	AP	B	C	D	E	F	G	H	I	J	K	L	M	N
20	75, 100, 125, 150, 200	99	12	11	16.5	75	30	M5 x 0.8 depth 10	25	108	24	60	92	5.5	9.5 depth 6	M8 x 1.25 depth 14	30	55	60	80	25	45
25	75, 100, 125, 150	109	16	13	16.5	85	30	M6 x 1 depth 12	30	130	26.5	65	113	6.6	11 depth 8	M10 x 1.5 depth 18	35	65	70	100	35	54
32		129	16	16	19	100	35	M6 x 1 depth 12	35	135	29	80	118	6.6	11 depth 8	M10 x 1.5 depth 18	40	73	80	106	35	60
40	200, 250, 300	152	19	19	22	120	40	M8 x 1.25 depth 16	45	170	32	100	150	9	14 depth 10	M12 x 1.75 depth 21	50	93	95	134	50	75
50		182	25	21	22	150	45	M10 x 1.5 depth 20	50	194	37	120	170	11	17 depth 12	M14 x 2 depth 25	55	103	115	152	56	90

Bore size (mm)	O	P	Q	R	S	T	U	V	W	X	Y	Z
20	M6 x 1 depth 9	Rc 1/8	21	12	26	12	82	48	40	30	80	157
25	M6 x 1 depth 13	Rc 1/8	21	12	31	13	100	57	46	37	80	175
32	M6 x 1 depth 13	Rc 1/8	21	12	38	16	114	65	52	37	82	201
40	M8 x 1.25 depth 16	Rc 1/8	25	12	47	20	138	84	62	44	92	238
50	M10 x 1.5 depth 21	Rc 1/4	26	14	58	25	164	94	75	55	104	285

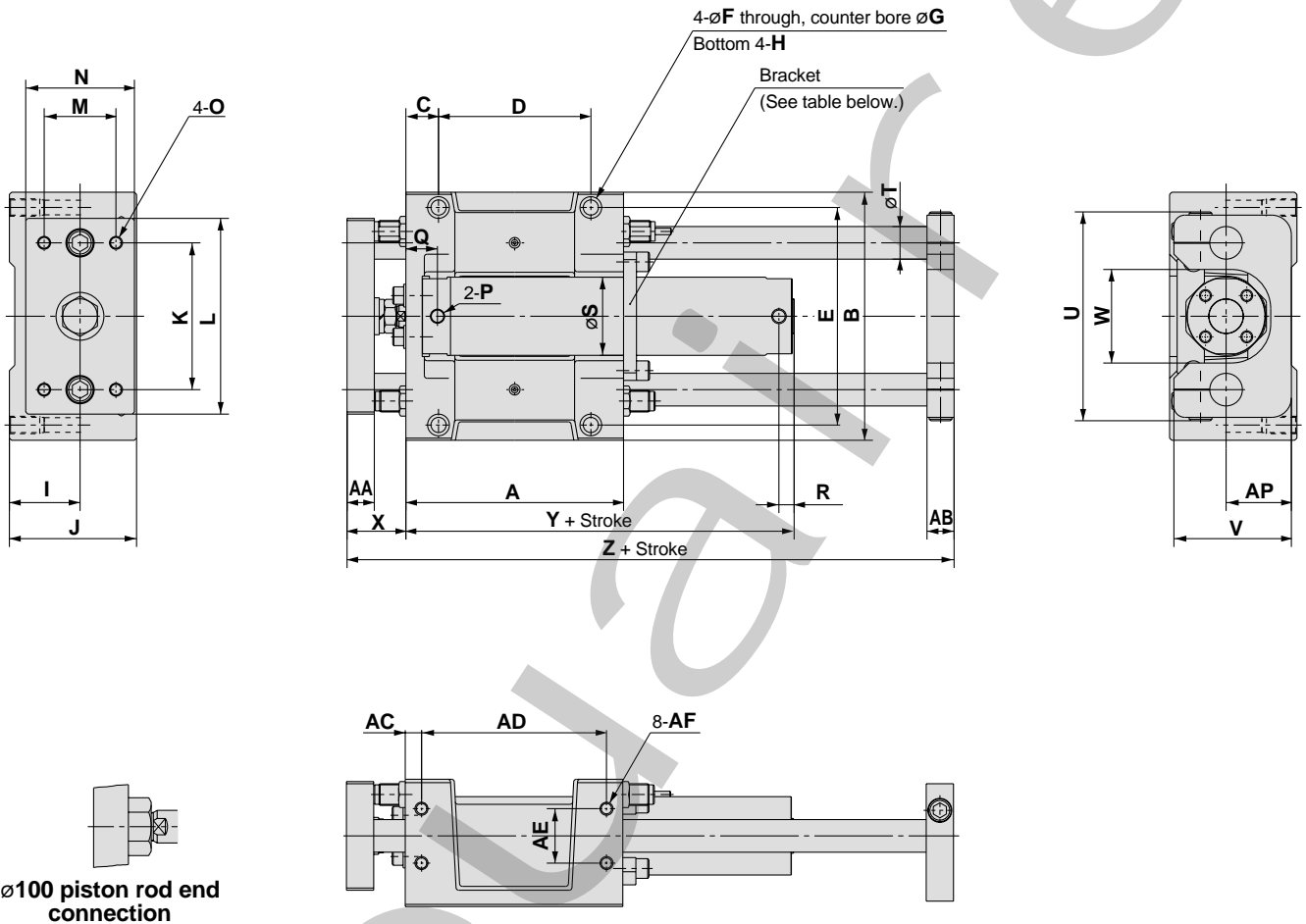
### For long strokes

Bore size (mm)	Stroke range (mm)	R	Y
20	250 to 400	14	88
25	350 to 500	14	88
32	350 to 600	14	90
40	350 to 800	15	101
50	350 to 1000	16	116

### Bracket mounting strokes

Bore size (mm)	Bracket mounting stroke
20	100mm or more
25	125mm or more
32	150mm or more
40	200mm or more
50	250mm or more

**Basic type/MGG□B**  
 $\varnothing 63$  to  $\varnothing 100$



**For standard strokes**

(mm)

Bore size (mm)	Stroke range (mm)	A	AA	AB	AC	AD	AE	AF	AP	B	C	D	E	F	G	H	I	J	K	L	M	N
63	75, 100	200	25	25	15	170	50	M12 x 1.75 depth 24	60	228	30	140	200	13.5	20 depth 14.5	M16 x 2 depth 28	65	117	135	180	66	100
	125, 150	230	30	27	15	200	55	M12 x 1.75 depth 24	70	262	30	170	234	13.5	20 depth 14.5	M16 x 2 depth 28	75	138	160	214	76	115
100	200, 250 300	280	32	30	17.5	245	70	M14 x 2 depth 28	80	304	35	210	274	15	23 depth 17	M18 x 2.5 depth 32	85	153	190	245	80	125

Bore size (mm)	O	P	Q	R	S	T	U	V	W	X	Y	Z
63	M12 x 1.75 depth 23	Rc 1/4	29	14	72	30	192	108	86	54	107	308
80	M12 x 1.75 depth 28	Rc 3/8	40	19	89	35	224	128	104	66	131	355
100	M14 x 2 depth 30	Rc 1/2	40	19	110	40	262	143	128	66	131	410

**For long strokes**

Bore size (mm)	Stroke range (mm)	R	Y
63	350 to 1100	16	119
80	350 to 1200	23	145
100	350 to 1300	23	145

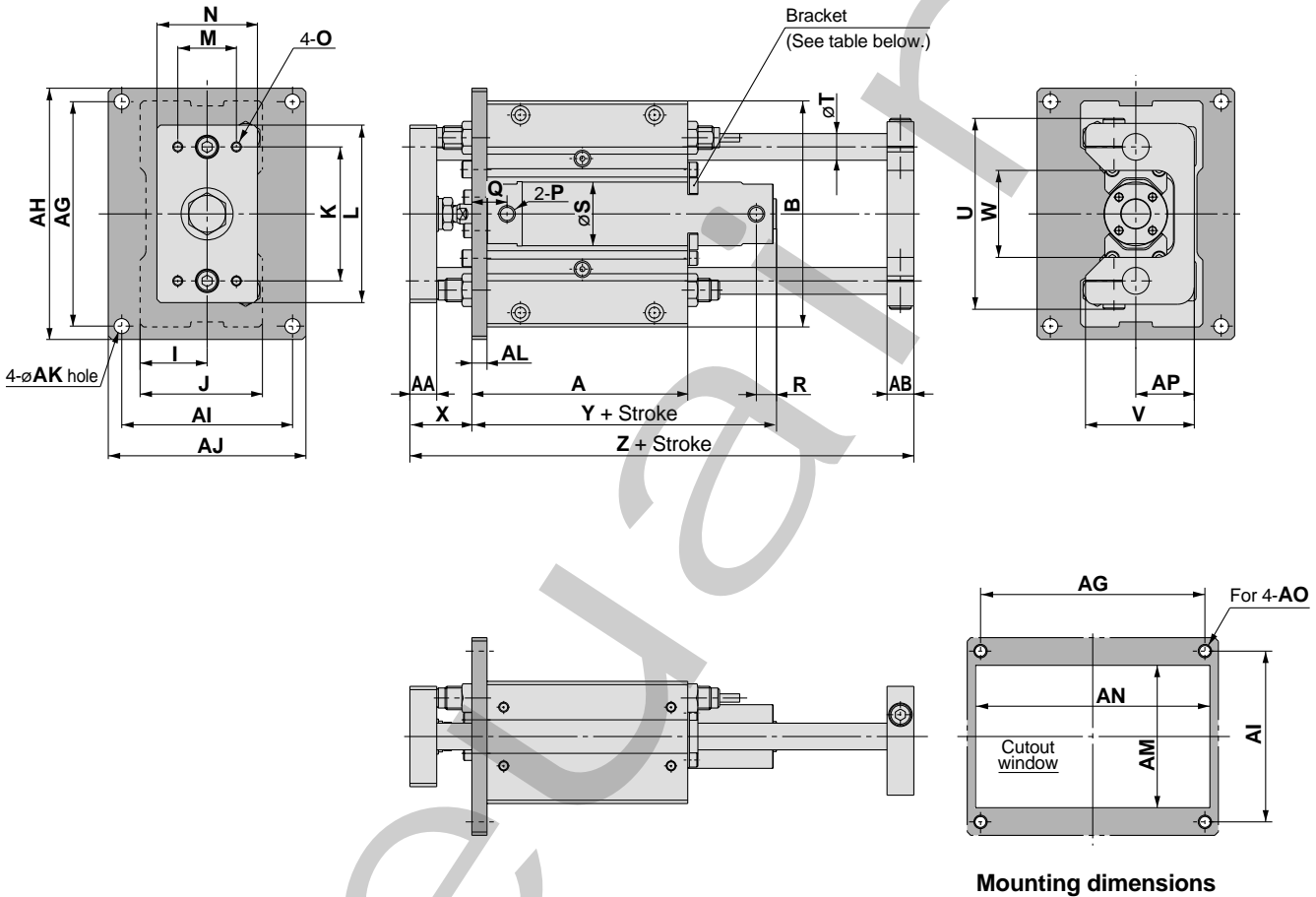
**Bracket mounting strokes**

Bore size (mm)	Bracket mounting stroke
63	300mm or more
80	400mm or more
100	500mm or more

# Series MGG

## Dimensions

Front mounting flange type/MGG□F  
 ø20 to ø50



**Mounting dimensions**

**For standard strokes**

Bore size (mm)	Stroke range (mm)	A	AA	AB	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	B	I	J	K	L	M	N	O
20	75, 100, 125, 150, 200	99	12	11	112	125	82	95	6.6	9	65	115	M6	25	108	30	55	60	80	25	45	M6 x 1 depth 9
25	75, 100 125, 150	109	16	13	134	150	92	108	9	9	75	135	M8	30	130	35	65	70	100	35	54	M6 x 1 depth 13
32		129	16	16	134	150	102	118	9	9	85	140	M8	35	135	40	73	80	106	35	60	M6 x 1 depth 13
40	200, 250	152	19	19	170	186	134	150	9	12	105	175	M8	45	170	50	93	95	134	50	75	M8 x 1.25 depth 16
50	300	182	25	21	190	210	140	160	11	12	115	200	M10	50	194	55	103	115	152	56	90	M10 x 1.5 depth 21

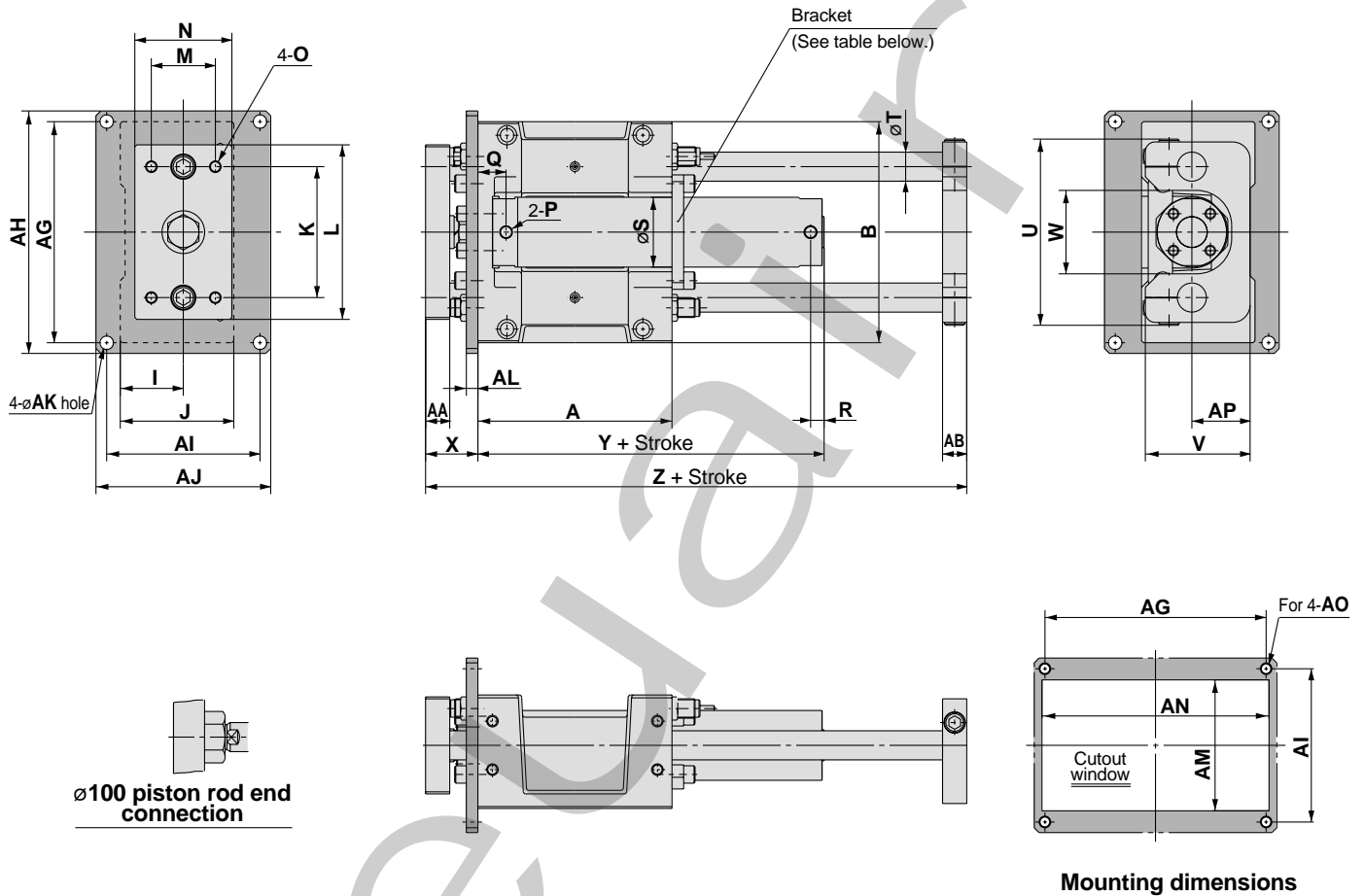
**For long strokes**

Bore size (mm)	P	Q	R	S	T	U	V	W	X	Y	Z
20	Rc 1/8	21	12	26	12	82	48	40	30	80	157
25	Rc 1/8	21	12	31	13	100	57	46	37	80	175
32	Rc 1/8	21	12	38	16	114	65	52	37	82	201
40	Rc 1/8	25	12	47	20	138	84	62	44	92	238
50	Rc 1/4	26	14	58	25	164	94	75	55	104	285

**Bracket mounting strokes**

Bore size (mm)	Stroke range (mm)	R	Y	Bore size (mm)	Bracket mounting stroke
20	250 to 400	14	88	20	100mm or more
25	350 to 500	14	88	25	125mm or more
32	350 to 600	14	90	32	150mm or more
40	350 to 800	15	101	40	200mm or more
50	350 to 1000	16	116	50	250mm or more

Front mounting flange type/MGG□F  
 ø63 to ø100



For standard strokes

Bore size (mm)	Stroke range (mm)	A	AA	AB	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	B	I	J	K	L	M	N	O	P
63	75, 100	200	25	25	228	250	158	180	14	12	135	234	M12	60	228	65	117	135	180	66	100	M12 x 1.75 depth 23	Rc 1/4
80	125, 150 200, 250	230	30	27	262	284	178	200	14	16	155	268	M12	70	262	75	138	160	214	76	115	M12 x 1.75 depth 28	Rc 3/8
100	300	280	32	30	300	326	200	226	16	16	175	310	M14	80	304	85	153	190	245	80	125	M14 x 2 depth 30	Rc 1/2

For long strokes

Bore size (mm)	Q	R	S	T	U	V	W	X	Y	Z
63	29	14	72	30	192	108	86	54	107	308
80	40	19	89	35	224	128	104	66	131	355
100	40	19	110	40	262	143	128	66	131	410

Bracket mounting strokes

Bore size (mm)	Stroke range (mm)	R	Y	Bore size (mm)	Bracket mounting stroke
63	350 to 1100	16	119	63	300mm or more
80	350 to 1200	23	145	80	400mm or more
100	350 to 1300	23	145	100	500mm or more