

Made to Order Common Specifications: -XC4: With Heavy Duty Scraper



16 With Heavy Duty Scraper

Cylinders with a heavy duty scraper on the wiper ring are suitable for use in extremely dusty environments and those where they will be exposed to earth or sand, such as in die-casted equipment, construction machinery, and industrial vehicles.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CM2	Air cylinder	CM2-Z	Double acting, Single rod	Head side locking type only (Except w/ air cushion)	②-1 From P. 172
		CM2W-Z	Double acting, Double rod		
	Centralized piping type	CM2□□P	Double acting, Single rod		
	End lock cylinder	CBM2	Double acting, Single rod		
CG1	Air cylinder	CG1-Z	Double acting, Single rod	Applicable to ø32 to ø63	②-1 From P. 292
MB	Air cylinder	MB-Z	Double acting, Single rod	Except ø125	②-1 From P. 392
		MBW-Z	Double acting, Double rod	Except ø125	
MB1	Air cylinder	MB1-Z	Double acting, Single rod	Except ø125	②-1 From P. 440
		MB1W-Z	Double acting, Double rod	Except ø125	
CA2 *	Air cylinder	CA2-Z	Double acting, Single rod	Head side locking type only	②-1 From P. 470
		CA2W-Z	Double acting, Double rod		
	End lock cylinder	CBA2	Double acting, Single rod		
CS1	Air cylinder	CS1	Double acting, Single rod		②-1 From P. 530
		CS1W	Double acting, Double rod		
CS2	Air cylinder	CS2	Double acting, Single rod		②-1 From P. 568
		CS2W	Double acting, Double rod		
CQ2	Air cylinder	CQ2-Z	Double acting, Single rod	Applicable to ø20 to ø100	②-1 From P. 773
		CQ2W-Z	Double acting, Double rod	Applicable to ø40 to ø100	
	Axial piping type (Centralized piping type)	CQP2	Double acting, Single rod	Applicable to ø32 to ø100	
	Long stroke	CQ2-Z	Double acting, Single rod		
RQ	Compact cylinder with air cushion	RQ	Double acting, Single rod		②-1 From P. 985
CV	Valve mounted air cylinder	CVM5	Double acting, Single rod		②-3 From P. 771
		CV3	Double acting, Single rod		②-3 From P. 812
		CVS1	Double acting, Single rod		
MGP	Compact guide cylinder	MGPM-Z	Double acting	Applicable to ø20 to ø100	②-2 From P. 432
		MGPL-Z	Double acting	Applicable to ø20 to ø100	
		MGPA-Z	Double acting	Applicable to ø20 to ø100	
MGG	Guide cylinder	MGG	Double acting	Applicable to ø32 to ø100	②-2 From P. 538
MGC	Guide cylinder	MGC	Double acting	Applicable to ø32 to ø50	②-2 From P. 578
CNA2	Cylinder with lock	CNA2	Double acting, Single rod		②-2 From P. 922
CNG	Cylinder with lock	CNG	Double acting, Single rod	Applicable to ø32, ø40	②-2 From P. 866
MK	Rotary clamp cylinder	MK-Z	Double acting	Except ø12	②-3 From P. 389

* CA2□□H (Air-hydro type) comes with a heavy duty scraper as standard.

How to Order

Standard model no. **-XC4**

* For the MGP series, refer to page 1764.

With heavy duty scraper

⚠ Caution

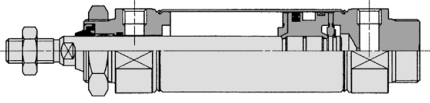
Do not replace heavy duty scrapers.

- Since heavy duty scrapers are press-fit, do not replace the cover only, but rather the entire rod cover assembly.
- The CM2 series cannot replace either heavy duty scraper or rod seal. (It goes for replacing retainer assembly for the CS1 series.)
- Replace the CNA2 series with the lock unit.

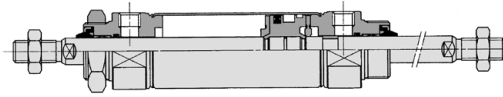
Specifications: Same as standard type

Construction (Dimensions are the same as standard.)

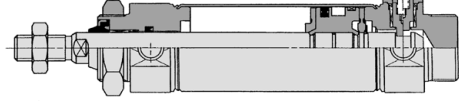
CM2 series Refer to page 1762 for the female rod end.



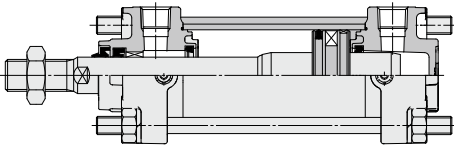
CM2W series Refer to page 1762 for the female rod end.



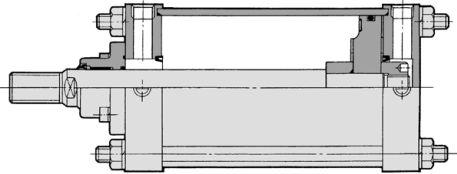
CBM series (Only with head side locking)



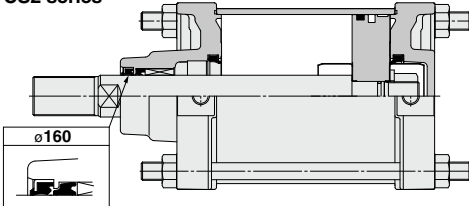
CA2 series



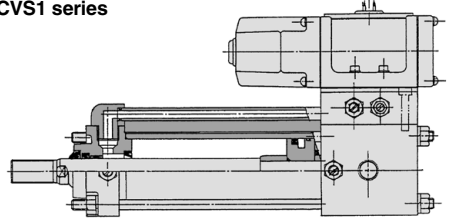
CS1 series



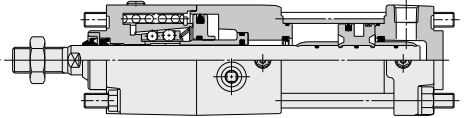
CS2 series



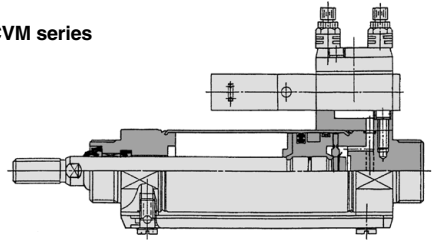
CVS1 series



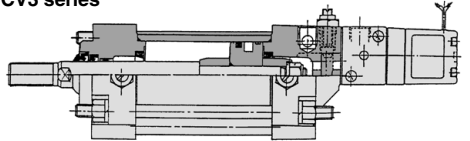
CNA2 series



CVM series



CV3 series



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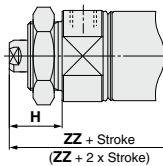
16 With Heavy Duty Scraper

Dimensions (Dimensions other than below are the same as standard type.)

CM2 series CM2W series

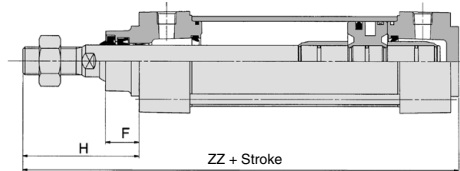
* () : Denotes the dimensions for the CM2W series.

Female rod end



Bore size	CM2 series		CM2W series (mm)	
	H	ZZ	H	ZZ
20	24	99	24	110
25	24	99	24	110
32	24	101	24	112
40	26	130	26	140

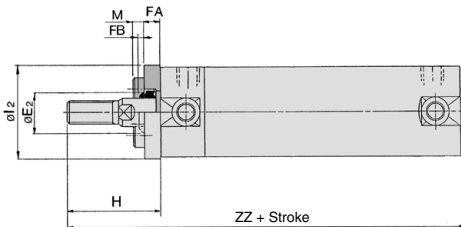
MB series MB1 series



MB, MB1 Series (mm)

Bore size (mm)	F	H	ZZ
32	15	47	135
40	17	58	146
50	19	67	165
63	19	67	165
80	25	81	199
100	25	81	199

CG1 series



CG1 Series

Bore size	E ₂	FA	FB	M	l ₂	(mm)			
						H		ZZ	
						Male thread	Female thread	Male thread	Female thread
32	17	8	3	5	38	48	28	121	101
40	21	8	3	3.5	47	58	29	138	109
50	26	9	3	4.5	58	66	30	158	122
63	26	9	3	5.5	72	66	30	158	122

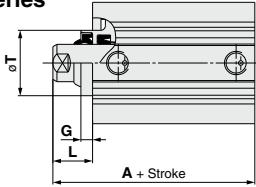
Long Stroke

ZZ	
Male thread	Female thread
129	109
147	118
170	134
170	134

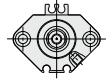
* On the axial foot type and the rod side flange type, the mounting bracket is wedged and bolted between the cylinder and the scraper at the time of shipment. On other types, it is placed in the same package (not assembled).

Dimensions (Dimensions other than below are the same as standard type.)

CQ2 series



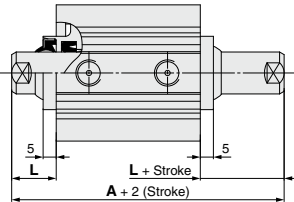
- * () : Denotes the dimensions with auto switch magnet.
- * Relation between bore size 20 to 32 piping port and mounting holes is as the following diagram.
- * Please contact SMC for bore size 20 to 32 with both ends tapped and mounting brackets.



Without auto switch magnet
Bore size 20 to 32
With auto switch magnet
Bore size 32

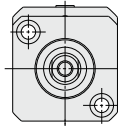
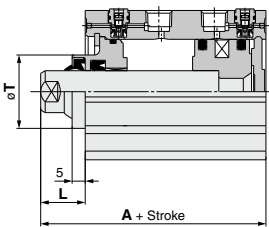
Bore size (mm)	A			G		L		T
	50 stroke or less	75, 100 stroke	125 to 300 stroke	100 stroke or less	125 stroke or more	100 stroke or less	125 to 300 stroke	
20	34 (46)	—	—	—	—	4.5	—	—
25	37.5 (47.5)	—	—	—	—	5	—	—
32	40 (50)	50	67.5	—	—	7	12	—
40	46.5 (56.5)	56.5	77	5	10	17	22	28
50	48.5 (58.5)	58.5	78.5	5	10	18	23	35
63	54 (64)	64	80	5	10	18	23	35
80	63.5 (73.5)	73.5	91	5	10	20	25	43
100	75 (85)	85	102.5	5	10	22	27	59

CQ2W series

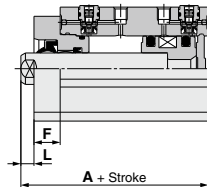


Bore size (mm)	A		L
	50 stroke or less	75, 100 stroke	
40	74 (84)	84	17
50	76.5 (86.5)	86.5	18
63	78 (88)	88	18
80	91 (101)	101	20
100	104.5 (114.5)	114.5	22

RQ series



Bore size 20, 25



Bore size (mm)	(mm)			
	A	F	L	T
20	46.5	10	4.5	—
25	51.5	10	5	—
32	54	10	7	—
40	61	—	17	28
50	67.5	—	18	35
63	73	—	18	35
80	83.5	—	20	43
100	98	—	22	59

- * Please contact SMC for bore size 20 to 32 with both ends tapped and mounting brackets.
- * Only standard strokes are applicable.

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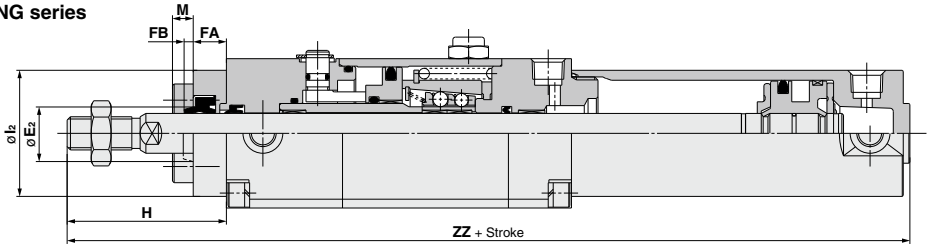


16 With Heavy Duty Scraper

Symbol
-XC4

Dimensions (Dimensions other than below are the same as standard type.)

CNG series

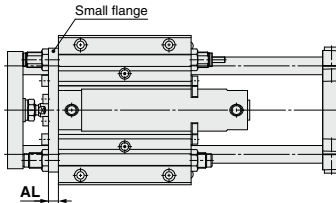


Bore size	E ₂	FA	FB	M	l ₂	H	ZZ
32	17	8	3	5	38	48	204
40	21	8	3	6	48	58	229

Long strokes	ZZ
	212
	238

- * The above figure shows the rubber bumper type.
- * On the axial foot type and the rod side flange type, the mounting bracket is wedged and bolted between the cylinder and the scraper at the time of shipment.

MGG□B series ø32 to ø50

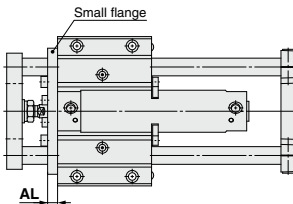


Bore size (mm)	AL (mm)
32	9
40	12
50	12

Specifications: Same as standard type

- Note 1) Except ø20 and ø25
- Note 2) Heavy duty scrapers are attached to the piston rod and guide rods (front and back).
- Note 3) Rod side heavy duty scrapers for ø32 to ø50 are press-fit to large and small flanges.

MGC□B series ø32 to ø50



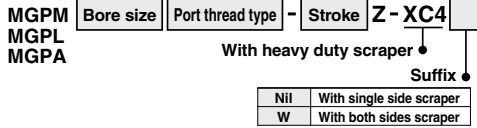
Bore size (mm)	AL (mm)
32	9
40	12
50	12

Made to Order Common Specifications: -XC4: With Heavy Duty Scraper



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How to Order/MGP

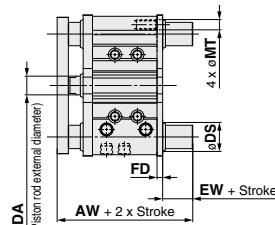
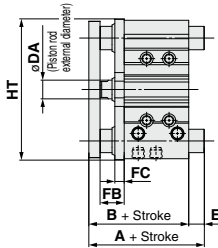


Specifications

Applicable series	MGPM	MGPL/MGPA
Bearing type	Slide bearing	Ball bushing bearing
Bore size (mm)	20, 25, 32, 40, 50, 63, 80, 100	
Minimum operating pressure	With single side	0.12 MPa
	With both sides	0.14 MPa

Specifications other than above are the same as standard type.

Dimensions (Dimensions other than below are the same as standard type.)



For cylinder with both sides scraper

Common Dimensions:

MGPM, MGPL, MGPA (mm)

Bore size (mm)	B	DA	FB	FC	
				MGPM	MGPL/MGPA
20	63	10	18	9	5
25	63.5	10	17	9	5
32	69.5	14	22	9	5
40	76	14	22	9	5
50	82	20	26	10	8
63	87	20	26	10	5
80	106.5	25	34	15	6
100	126	30	41	15	6

With Both Sides Scraper

Dimensions: AW, EW, FD, MT, DS (mm)

Bore size (mm)	AW	EW	FD	MT	DS ^{*)}	
					MGPM	MGPL/MGPA
20	74	6	5	6	17	15
25	74.5	6	5	7	21	19
32	82.5	7	6	8.5	26	21
40	89	7	6	8.5	26	21
50	95	7	6	11	31	26
63	100	7	6	11	31	26
80	120.5	8	6	14	36	31
100	143	8	9	16	44	36

^{*)} Bypass port size for guide rod with bottom mounting

MGPM (Slide bearing) A, E, HT Dimensions (mm)

Bore size (mm)	A			E			HT
	50 st or less	Over 50 st to 200 st	Over 200 st	50 st or less	Over 50 st to 200 st	Over 200 st	
20	63	87.5	120	0	24.5	57	80
25	63.5	87.5	119.5	0	24	56	93
32	85	103.5	139.5	15.5	34	70	111.5
40	85	103.5	139.5	9	27.5	63.5	119
50	98.5	119.5	160.5	16.5	37.5	78.5	151
63	98.5	119.5	160.5	11.5	32.5	73.5	165
80	114.5	141.5	190.5	8	35	84	202
100	136.5	161.5	200.5	10.5	35.5	74.5	240

MGPL, MGPA (Ball bushing bearing) A, E, HT Dimensions (mm)

Bore size (mm)	A			E			HT	
	50 st or less	Over 50 st to 100 st	Over 100 st to 200 st	50 st or less	Over 50 st to 100 st	Over 100 st to 200 st		
20	89	86	110	127.5	6	23	47	80
25	75.5	91.5	110.5	127.5	12	28	47	93

Bore size (mm)	A			E			HT		
	50 st or less	Over 50 st to 50 st	Over 200 st	50 st or less	Over 50 st to 50 st	Over 200 st			
32	89.5	106.5	126.5	148.5	20	37	57	79	110
40	89.5	106.5	126.5	148.5	13.5	30.5	50.5	72.5	118
50	101.5	122.5	142.5	169.5	19.5	40.5	60.5	87.5	146
63	101.5	122.5	142.5	169.5	14.5	35.5	55.5	82.5	160

Bore size (mm)	A			E			HT		
	25 st or less	Over 25 st to 50 st	Over 200 st	25 st or less	Over 25 st to 50 st	Over 200 st			
80	114.5	138.5	168.5	201.5	8	32	62	95	199
100	129.5	155.5	188.5	211.5	3.5	29.5	62.5	85.5	236

How to Order/MK

MKB Bore size Port thread type - Clamp stroke Rotary direction Body option Z - Auto switch - **XC4**
MKF
MKG With heavy duty scraper

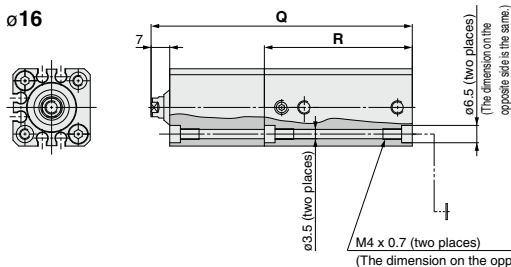
Specifications

Bore size	16	20	25	32	40	50	63
Minimum operating pressure	0.15 MPa			(0.1 MPa)			

- * Specifications other than above are the same as standard type.
- * The dimensions in () are the same as standard type.

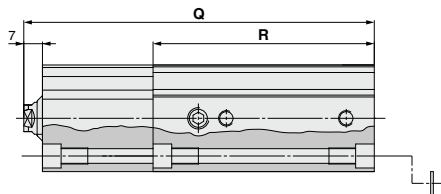
Dimensions (Dimensions other than below are the same as standard type.)

ø16



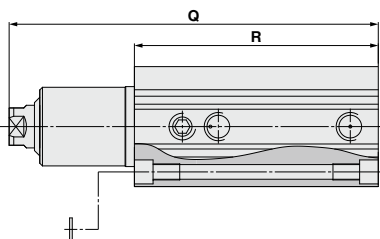
Bore size (mm)	Rod state	Clamp stroke					
		10 mm		20 mm		30 mm	
		Q	R	Q	R	Q	R
16	Retracted	78	45.5	98	55.5	118	65.5
	Extended	95.5		125.5		155.5	

ø20, ø25



Bore size (mm)	Rod state	Clamp stroke					
		10 mm		20 mm		30 mm	
		Q	R	Q	R	Q	R
20	Retracted	99	72	119	82	139	92
	Extended	118.5		148.5		178.5	
25	Retracted	111.5	73	131.5	83	151.5	93
	Extended	131		161		191	

ø32 to ø63



Bore size (mm)	Rod state	Clamp stroke							
		10 mm		20 mm		30 mm		50 mm	
		Q	R	Q	R	Q	R	Q	R
32	Retracted	118.5	81.5	138.5	91.5	158.5	101.5	198.5	121.5
	Extended	143.5		173.5		203.5		263.5	
40	Retracted	119	75	139	85	159	95	199	115
	Extended	144		174		204		264	
50	Retracted	137	86.5	157	96.5	177	106.5	217	126.5
	Extended	166		196		226		286	
63	Retracted	140	90	160	100	180	110	220	130
	Extended	169		199		229		289	