

Made to Order Common Specifications



1	-XB5	Oversized rod cylinder	P.1700
2	-XB6	Heat resistant cylinder (-10 to 150°C)	P.1701
3	-XB7	Cold resistant cylinder (-40 to 70°C)	P.1703
4	-XB9	Low speed cylinder (10 to 50 mm/s)	P.1704
5	-XB10	Intermediate stroke (Using exclusive body)	P.1705
6	-XB10A	Intermediate stroke (Spacer-installed type)	P.1710
7	-XB11	Long stroke type	P.1711
8	-XB12	External stainless steel cylinder	P.1714
9	-XB13	Low speed cylinder (5 to 50 mm/s)	P.1715
10	-XB14	Cylinder with heat resistant auto switch	P.1716
11	-XB19	High speed type	P.1717
12	-XB20	Stroke adjustment unit with adjustment bolt	P.1718
13	-XB22	Shock absorber soft type series RJ type	P.1722
14	-XC2(A)	Rod End Length Extended 10 mm	P.1725
15	-XC3	Special port location	P.1726
16	-XC4	With heavy duty scraper	P.1730
17	-XC5	Heat resistant cylinder (-10 to 110°C)	P.1735
18	-XC6	Made of stainless steel	P.1736
19	-XC7	Tie-rod, cushion valve, tie-rod nut, etc. made of stainless steel	P.1739
20	-XC8	Adjustable stroke cylinder/Adjustable extension type	P.1740
21	-XC9	Adjustable stroke cylinder/Adjustable retraction type	P.1746
22	-XC10	Dual stroke cylinder/Double rod type	P.1751
23	-XC11	Dual stroke cylinder/Single rod type	P.1756
24	-XC12	Tandem cylinder	P.1762
25	-XC13	Auto switch rail mounting style	P.1764
26	-XC17	Pin cylinder with rod quenched	P.1769
27	-XC19	Intermediate stroke (Spacer type)	P.1770
28	-XC20	Head cover axial port	P.1771
29	-XC22	Fluororubber seals	P.1772
30	-XC24	With magnet shielding plate	P.1774
31	-XC25	No fixed throttle of connection port	P.1774
32	-XC26	With split pins for double clevis pin/double knuckle joint pin and flat washers	P.1775
33	-XC27	Double clevis and double knuckle joint pins made of stainless steel	P.1777
34	-XC28	Compact flange made of SS400	P.1778
35	-XC29	Double knuckle joint with spring pin	P.1779
36	-XC30	Rod side trunnion	P.1780
37	-XC34	Non-rotating plate with workpiece mounting screw (No extended part on the rod end)	P.1782
38	-XC35	With coil scraper	P.1783
39	-XC36	With boss in rod side	P.1789
40	-XC37	Larger throttle diameter of connection port	P.1789
41	-XC38	Vacuum (Rod through-hole)	P.1790
42	-XC42	Built-in shock absorber in head cover side	P.1791
43	-XC51	With hose nipple	P.1792
44	-XC52	Mounting nut with set screw	P.1792
45	-XC56	With knock pin holes	P.1793
46	-XC57	Rodless cylinder with floating joint	P.1796
47	-XC67	Dust seal band NBR lining specifications	P.1798
48	-XC68	Made of stainless steel (with hard chrome plated piston rod)	P.1798
49	-XC69	Series MGP with shock absorber	P.1799
50	-XC71	Helical insert thread specifications	P.1802
51	-XC72	Without built-in auto switch magnet	P.1802
52	-XC73	Built-in cylinder with lock (CDNG)	P.1803
53	-XC74	With front plate for MGG cylinder	P.1806
54	-XC78	Auto switch mounting special dimensions at stroke end	P.1807
55	-XC82	Bottom mounting style	P.1808
56	-XC83	Built-in cylinder with lock (MDNB)	P.1809
57	-XC85	Grease for food processing equipment	P.1812
58	-XC86	With rod end bracket	P.1813
59	-XC87	Cylinder with one-way lock/heavy duty specifications	P.1814
60	-XC92	Dust resistant actuator	P.1815
61	-XC93	With greater water resistance + stable lubrication function	P.1818
62	-XC98	Guide unit with Lube-retainer	P.1818-1

Made to Order Common Specifications: -XB5: Oversized Rod Cylinder



Series **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

Symbol

-XB5

1 Oversized Rod Cylinder

A cylinder that has been made stronger through the use of a piston rod with a larger diameter. It is used for long stroke applications that pose the risk of bending or buckling of the piston rod.
(Please contact SMC if a lateral load must be applied to it.)

How to Order

Standard model no.

-XB5

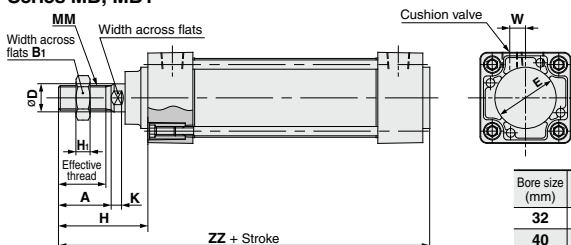
Oversized rod cylinder ●

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
MB	Air cylinder	MB	Double acting, Single rod	● From P. 408
MB1	Air cylinder	MB1	Double acting, Single rod	● From P. 456
CA2	Air cylinder	CA2	Double acting, Single rod	● From P. 508
CS1	Air cylinder	CS1	Double acting, Single rod	● From P. 564

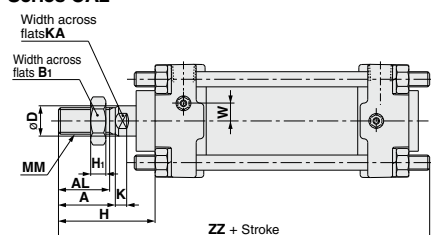
Dimensions (Dimensions other than below are the same as standard type.)

Series MB, MB1



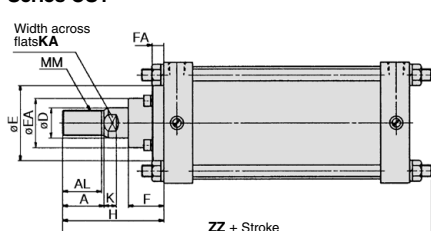
Bore size (mm)	A	Effective thread length	B1	øD	H	H1	K	Width across flats	MM	W	ZZ
32	30	27	22	16	51	8	6	14	M14 x 1.5	7.2	139
40	35	32	27	20	58	11	7	18	M18 x 1.5	9.7	146
50	40	37	32	25	68	13	10	22	M22 x 1.5	10.5	166
63	40	37	32	25	68	13	10	22	M22 x 1.5	12	166
80	40	37	41	30	74	16	10	26	M26 x 1.5	14	192
100	50	47	46	36	90	18	16	31	M30 x 1.5	15	208

Series CA2



Bore size (mm)	A	AL	B1	øD	H	H1	K	KA	MM	W	ZZ
40	35	32	27	20	58	11	7	18	M18 x 1.5	9	153
50	40	37	32	25	71	13	11	22	M22 x 1.5	9	172
63	40	37	32	25	71	13	11	22	M22 x 1.5	9	183
80	40	37	41	30	72	16	11	26	M26 x 1.5	0	205
100	50	47	46	36	85	18	15	31	M30 x 1.5	0	228

Series CS1



Bore size (mm)	A	AL	D	E	EA	F	FA	H	K	KA	MM	ZZ
125	63	60	50	115	74	48	17	135	20	46	M45 x 1.5	260
140	71	67	60	140	86	60	20	160	25	56	M56 x 2.0	285
160	71	67	60	140	86	60	20	160	25	56	M56 x 2.0	296.5
180	80	76	70	140	96	60	20	175	30	65	M64 x 2.0	321
200	80	76	70	140	96	60	20	175	30	65	M64 x 2.0	321

Made to Order Common Specifications: -XB6: Heat Resistant Cylinder (-10 to 150°C)



Series **CJ2**, **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

2 Heat Resistant Cylinder (-10 to 150°C)

Symbol

-XB6

Air cylinder which changed the seal material and grease, so that it could be used even at higher temperature up to 150 from -10°C.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CJP2	Pin cylinder	CJP2	Double acting, Single rod	Except clevis, trunnion style, with auto switch, ø4. Packing set ⁽⁸⁾	● From P. 23
CJ2	Air cylinder	CJ2	Double acting, Single rod	Except with air cushion and auto switch	● From P. 44
		CJ2W	Double acting, Double rod	Except with air cushion and auto switch	
CM2	Air cylinder	CM2	Double acting, Single rod	Except with auto switch	● From P. 172
		CM2W	Double acting, Double rod	Except with auto switch	
	Non-rotating rod type	CM2K	Double acting, Single rod	Except with auto switch	
		CM2KW	Double acting, Double rod	Except with auto switch	
	Direct mount type	CM2R	Double acting, Single rod	Except with auto switch	
	Non-rotating rod, Direct mount type	CM2RK	Double acting, Single rod	Except with auto switch	
CG1	Air cylinder	CG1	Double acting, Single rod	Except with auto switch. Without a bumper for cylinders with auto switch and rubber bumper	● From P. 306
		CG1W	Double acting, Double rod	Except with auto switch. Without a bumper for cylinders with auto switch and rubber bumper	
	Direct mount type	CG1R	Double acting, Single rod	Except with auto switch. Without a bumper for cylinders with auto switch and rubber bumper	
		CG1RW	Double acting, Double rod	Except with auto switch. Without a bumper for cylinders with auto switch and rubber bumper	
MB	Air cylinder	MB	Double acting, Single rod	Except without air cushion and with auto switch	● From P. 408
		MBW	Double acting, Double rod	Except without air cushion and with auto switch	
MB1	Air cylinder	MB1	Double acting, Single rod	Except without air cushion and with auto switch	● From P. 456
		MB1W	Double acting, Double rod	Except without air cushion and with auto switch	
CA2	Air cylinder	CA2	Double acting, Single rod	Except with auto switch	● From P. 508
		CA2W	Double acting, Double rod	Except with auto switch	
	End lock cylinder	CBA2	Double acting, Single rod	Except with auto switch	
CS1	Air cylinder	CS1□□ CS1W□□	Double acting, Single rod Double acting, Double rod	Except with auto switch. Applicable bore size (ø125 to ø200)	● From P. 564
CS2	Air cylinder	CS2	Double acting, Single rod	Except with auto switch	CAT.ES20-196
		CS2W	Double acting, Double rod	Except with auto switch	
CUJ	Mini free mount cylinder	CUJ	Double acting, Single rod	Except with auto switch, ø4, ø12, ø16, and ø20	● From P. 630
CU	Free mount cylinder	CU	Double acting, Single rod	Except with auto switch	● From P. 657
	Non-rotating rod type	CUK	Double acting, Single rod	Except with auto switch	
	Long stroke	CU	Double acting, Single rod	Except with auto switch	
	Long stroke, Non-rotating rod	CUK	Double acting, Single rod	Except with auto switch	
CQS	Compact cylinder	CQS	Double acting, Single rod	Except with rubber bumper and auto switch	● From P. 725
		CQSW	Double acting, Double rod	Except with rubber bumper and auto switch	
CQ2	Compact cylinder	CQ2	Double acting, Single rod	Except with rubber bumper and auto switch	● From P. 785
		CQ2W	Double acting, Double rod	Except with rubber bumper and auto switch	
	Axial piping type (Centralized piping type)	CQP2	Double acting, Single rod	Except with rubber bumper and auto switch	
		CQK2	Double acting, Single rod	Except with rubber bumper and auto switch	
	Non-rotating rod type	CQ2KW	Double acting, Double rod	Except with rubber bumper and auto switch	
		CQ2KW	Double acting, Double rod	Except with rubber bumper and auto switch	
CG5	Stainless cylinder	CG5	Double acting, Single rod	Except with auto switch. Without a bumper for cylinders with a rubber bumper (Grease for non-food is used.)	● From P. 1062
CY3	Magnetically coupled rodless cylinder	CY3B	Basic type	Except with auto switch. Without a bumper	● From P. 1452
MK	Rotary clamp	MK	Double acting	Except with auto switch	● From P. 1375
MGP-Z	Compact guide cylinder	MGPM	Double acting	Except with auto switch. No rubber bumper is equipped.	● From P. 434
MGQ		MGQ	Double acting	Except with auto switch, ø12 to ø25 of MGQL (Ball bushing type)	
MGG	Guide cylinder	MGG	Double acting	Except with auto switch. No shock absorber and rubber bumper are equipped.	● From P. 454
MGC		MGC	Double acting	Except with auto switch	● From P. 494
CXSJ	Dual rod cylinder	CXSJ	Compact type	Except with auto switch	● From P. 653
CXS		CXS	Basic type	Except with auto switch	● From P. 665

Note 1) Operate without lubrication from a pneumatic system lubricator.

Note 2) Please contact SMC for details on the maintenance intervals for this cylinder, which differ from those of the standard cylinder.

Note 3) In principle, it is impossible to make built-in magnet type and the one with auto switch. But, as for the one with auto switch, and the heat resistant cylinder with heat resistant auto switch, since it will be differed depending on the series, please contact SMC.

Note 4) Piston speed is ranged from 50 to 500 mm/s. But, for MGQ□80, 100 and MGP□80, 100, it will be 50 to 400 mm/s. 50 to 200 mm/s for Series MK. The piston speed for the CY3B series is 50 to 400 mm/s.

Note 5) Please contact SMC for Series CQ2, CQS and MGQ with rubber bumper.

Note 6) As for the ambient temperature range of Series CY3B, since the magnetic holding force will be varied depending on the operating conditions, make sure that by referring to the next page.

Note 7) The ambient temperature range of Series CY3B is 50 to 150°C.

Note 8) Refer to the construction of the standard type for the details of the packing set for CJP2□6,10 and 16.

How to Order

Standard model no.

-XB6

Heat resistant cylinder

Specifications

Ambient temperature range	-10 to 150°C (0 to 150°C for Series CS1, CS2)
Seals materials	Fluororubber
Grease	Heat resistant grease
Specifications other than above and external dimensions	Same as standard type

Warning Precautions

Be aware that smoking cigarettes, etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.



Made to Order Common Specifications: -XB6: Heat Resistant Cylinder (-10 to 150°C)



2 Heat Resistant Cylinder (-10 to 150°C)

Symbol
-XB6

Series CY3B How to Order

CY3B Bore size Port thread type - Stroke -XB6

Heat resistant cylinder ●

Specifications

Applicable size	CY3B
Bore size (mm)	ø6 to ø63
Ambient and fluid temperature	50 to 150°C*
Maximum operating pressure	0.5 MPa
Piston speed	50 to 400 mm/s*

* When using in less than 100°C range, since it could make a difference in the maintenance cycle, depending on the operating speed, use it at 200 mm/s or less.

Operating Pressure Limit for Intermediate Stop and Vertical Operation

Maximum operating pressure at the intermediate stop	0.4 MPa*
---	----------

* Use caution that the magnet coupling will be removed, if it is used to stop in an intermediate stroke by an external stopper with the operating pressure over 0.4 MPa.

Magnetic Holding Force

(N)

Bore size (mm)	6	10	15	20	25	32	40	50	63
Holding force (at 150°C)	14.4	40.0	90.1	160	250	410	641	1000	1590
Holding force (at 100°C)	17.2	47.9	107	192	299	490	766	1190	1900

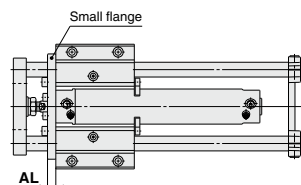
Series MGC How to Order

MGC Standard model no. -XB6

Heat resistant cylinder ●

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

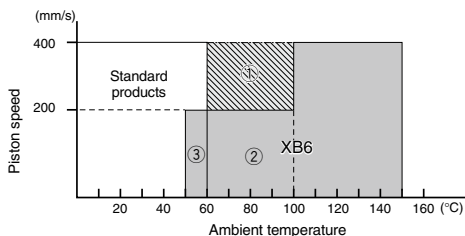
Series MGCLB



Bore size (mm)	AL
20	9
25	9
32	9
40	12
50	12

Temperature Range for Operating Cylinder and Piston Speed

- When using with the operating temperature from 60 up to 100°C, and the piston speed of more than 200 mm/s, please consult with SMC separately.
- When using with the operating temperature from 50 up to 100°C, and the piston speed of less than 200 mm/s, XB6 specifications can be used.
- As for XB6, regarding the temperature range (over 50 to 60°C) which overlaps the one of standard products, consider the tendency of operating temperature (upper, lower limits), then choose a model.



When using with the operating temperature fluctuated between 50°C or less and 100°C or more, the operating speed, etc. will be largely restricted by the durability. Prior to use, please contact SMC.

<Reference>

Maintenance cycle for XB6 could vary substantially, depending on the operating condition and the ambient temperature.

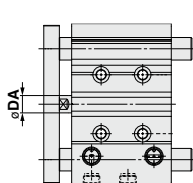
Even if using in our recommended range, as a guide, conduct it in around 1/2 intervals, compared to the standard products.

Series MGP-Z How to Order

MGPM Standard model no. -XB6

Heat resistant cylinder ●

Dimensions



Bore size (mm)	DA (mm)
12	(6)
16	(8)
20	(10)
25	(10)
32	(14)
40	(14)
50	20
63	20
80	25
100	30

The dimensions in () are the same as standard type.

Made to Order Common Specifications: -XB7: Cold Resistant Cylinder (−40 to 70°C)



Series **CJ2**, **CM2** and **CG1** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

Symbol

3 Cold Resistant Cylinder (−40 to 70°C)

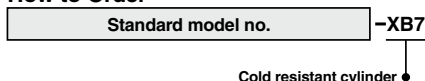
-XB7

Air cylinder which changed the seal material and grease, so that it could be used even at lower temperature down to −40°C.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CJP2	Pin cylinder	CJP2	Double acting, Single rod	Except clevis, trunnion style, with auto switch, ø4. Packing set ⁽⁷⁾	● From P. 23
CJ2	Air cylinder	CJ2	Double acting, Single rod	Except with air cushion, auto switch	● From P. 44
		CJ2W	Double acting, Double rod	Except with air cushion, auto switch	
CM2	Air cylinder	CM2	Double acting, Single rod	Except with air cushion, auto switch	● From P. 172
		CM2W	Double acting, Double rod	Except with air cushion, auto switch	
	Direct mount type	CM2R	Double acting, Single rod	Except with air cushion, auto switch	
CG1	Air cylinder	CG1	Double acting, Single rod	Except with air cushion, auto switch. Cylinders with a rubber bumper have no bumper.	● From P. 306 ⁽⁶⁾
		CG1W	Double acting, Double rod	Except with air cushion, auto switch. Cylinders with a rubber bumper have no bumper.	
	Direct mount type	CG1R	Double acting, Single rod	Except with air cushion, auto switch. Cylinders with a rubber bumper have no bumper.	
CU	Free mount cylinder	CU	Double acting, Single rod	Except with auto switch	● From P. 657
	Non-rotating rod type	CUK	Double acting, Single rod	Except with auto switch	
	Long stroke	CU	Double acting, Single rod	Except with auto switch	
	Long stroke, Non-rotating rod	CUK	Double acting, Single rod	Except with auto switch	
CQS	Compact cylinder	CQS	Double acting, Single rod	Except with auto switch, with rubber bumper, with bracket	● From P. 725
		CQSW	Double acting, Double rod	Except with auto switch, with rubber bumper, with bracket	
CQ2	Compact cylinder	CQ2	Double acting, Single rod	ø12 to ø40. Except with auto switch, with rubber bumper, with bracket	● From P. 785
		CQ2W	Double acting, Double rod	ø12 to ø40. Except with auto switch, with rubber bumper, with bracket	
	Axial piping type (Centralized piping type)	CQP2	Double acting, Single rod	ø12 to ø40. Except with auto switch, with rubber bumper, with bracket	

How to Order



Specifications

Ambient temperature range	−40 to 70°C
Seals material	Low nitrile rubber
Grease	Cold resistant grease
Auto switch	Not mountable
Dimensions	Same as standard type
Additional specifications	Same as standard type

⚠ Warning Precautions

Be aware that smoking cigarettes, etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

- Note 1) Operate without lubrication from a pneumatic system lubricator.
- Note 2) Use dry air which is suitable for heatless air dryer, etc. not to cause the moisture to be frozen.
- Note 3) Please contact SMC for details on the maintenance intervals for this cylinder, which differ from those of the standard cylinder.
- Note 4) Mounting auto switch is impossible.
- Note 5) Please contact SMC for the one with rubber bumper for CQ2, CQS.
- Note 6) No cushion type is adopted.
Piston speed is ranged from 50 to 500 mm/s.
- Note 7) Refer to the construction of the standard type for the details of the packing set for CJP2□6,10 and 16.

Made to Order Common Specifications: -XB9: Low Speed Cylinder (10 to 50 mm/s)



Series **CJ2**, **CM2** and **CG1** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

4 Low Speed Cylinder (10 to 50 mm/s)

Symbol

-XB9

Even if driving at lower speeds 10 to 50 mm/s, there would be no stick-slip phenomenon and it can run smoothly.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CJ2	Air cylinder	CJ2	Double acting, Single rod	Except with air cushion	● From P. 44
	Air cylinder	CM2	Double acting, Single rod	Except air-hydro, with air cushion, with rod boot	
CM2	Direct mount type	CM2R	Double acting, Single rod	Except with air cushion	● From P. 172
	End lock cylinder	CBM2	Double acting, Single rod	Except with air cushion	
CG1	Air cylinder	CG1	Double acting, Single rod	Except with air cushion	● From P. 306
	Direct mount type	CG1R	Double acting, Single rod	Except with air cushion	
CU	Free mount cylinder	CU	Double acting, Single rod		
	Non-rotating rod type	CUK	Double acting, Single rod		● From P. 657
	Long stroke standard type	CU	Double acting, Single rod		
	Long stroke, Non-rotating rod type	CUK	Double acting, Single rod		
CQS	Compact cylinder	CQS	Double acting, Single rod		● From P. 725
		CQSW	Double acting, Double rod		
CQ2	Compact cylinder	CQ2	Double acting, Single rod		
		CQ2W	Double acting, Double rod		● From P. 785
	Axial piping type (Centralized piping type)	CQP2	Double acting, Single rod		
CY	Magnetically coupled rodless cylinder	CY3B	Double acting		
		CY1S-Z	Double acting		● From P. 1452
		CY1L	Double acting		
MGQ	Compact guide cylinder	MGQ	Double acting		● From P. 434

How to Order

Standard model no.

-XB9

Low speed cylinder ●

Note) Operate without lubrication from a pneumatic system lubricator.

Specifications

Piston speed	10 to 50 mm/s (CY is ranged between 15 to 50 mm/s.)
Dimensions	Same as standard type
Additional specifications	Same as standard type

⚠ Warning Precautions

Be aware that smoking cigarettes, etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

Made to Order Common Specifications: -XB10: Intermediate Stroke (Using exclusive body)



5 Intermediate Stroke (Using exclusive body)

Symbol

-XB10

Cylinder which can reduce the mounting space by using an exclusive body which does not use a spacer to achieve that the full length dimension could be shortened when an intermediate stroke other than the standard stroke is required.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CQS	Compact cylinder	CQS	Double acting, Single rod	Long stroke is available, too.	● From P. 725
		CQSW	Single acting (Spring return) Double acting, Double rod		
CQ2	Compact cylinder	CQ2	Double acting, Single rod	Except ø12 to 32	● From P. 785
		CQ2W	Single acting (Spring return) Double acting, Double rod		
	Non-rotating rod type	CQ2K	Double acting, Single rod		
		CQ2	Double acting, Single rod		
	Large bore size	CQ2W	Double acting, Double rod		
		CQ2	Double acting, Single rod		
MGP-Z	Compact guide cylinder	MGP	Double acting		● From P. 434
		MGQ	Double acting		
MY1H-Z		MY1H	Linear guide type		● From P. 1194
MY1	Mechanically jointed rodless cylinder	MY1H	Linear guide type		● From P. 1288
		MY1HT	High rigidity Linear guide type		● From P. 1312
MY2		MY2H/HT	Linear guide type		● From P. 1375
CY1	Magnetically coupled rodless cylinder	CY1H	Linear guide type		● From P. 1512
		CY1F			
REA	Sine rodless cylinder	REAH	Linear guide type		● From P. 1053
REB		REBH			

How to Order

Specifications: Same as standard type.

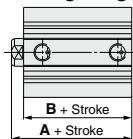
Standard model no.

-XB10

● Intermediate stroke

Dimensions: Series CQ2

Double acting, Single rod



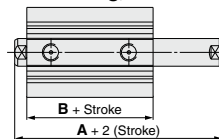
(mm)

Bore size (mm)	Single rod type				Applicable stroke range (mm)
	A		B		
	49 stroke or less	51 to 99 stroke	49 stroke or less	51 to 99 stroke	
12	20.5 (31.5)	—	17 (28)	—	6 to 29
16	22 (34)	—	18.5 (30.5)	—	
20	24 (36)	—	19.5 (31.5)	—	
25	27.5 (37.5)	—	22.5 (32.5)	—	6 to 49
32	30 (40)	40 (40)	23 (33)	33 (33)	
40	36.5 (46.5)	46.5 (46.5)	29.5 (39.5)	39.5 (39.5)	6 to 99
50	38.5 (48.5)	48.5 (48.5)	30.5 (40.5)	40.5 (40.5)	
63	44 (54)	54 (54)	36 (46)	46 (46)	11 to 99
80	53.5 (63.5)	63.5 (63.5)	43.5 (53.5)	53.5 (53.5)	
100	65 (75)	75 (75)	53 (63)	63 (63)	

(mm)

Bore size (mm)	Single rod type (Single acting/Return)		Applicable stroke range (mm)
	A	B	
12	20.5 (31.5)	17 (28)	6 to 9
16	22 (34)	18.5 (30.5)	
20	24 (36)	19.5 (31.5)	
25	27.5 (37.5)	22.5 (32.5)	6 to 9
32	30 (40)	23 (33)	
40	36.5 (46.5)	29.5 (39.5)	6 to 9
50	38.5 (48.5)	30.5 (40.5)	

Double acting, Double rod



(mm)

Bore size (mm)	Double rod type				Applicable stroke range (mm)
	A		B		
	49 stroke or less	51 to 99 stroke	49 stroke or less	51 to 99 stroke	
12	32.2 (39.4)	—	25.2 (32.4)	—	6 to 29
16	33 (43)	—	26 (36)	—	
20	35 (47)	—	26 (38)	—	
25	39 (49)	—	29 (39)	—	6 to 49
32	44.5 (54.5)	54.5 (54.5)	30.5 (40.5)	40.5 (40.5)	
40	54 (64)	64 (64)	40 (50)	50 (50)	
50	56.5 (66.5)	66.5 (66.5)	40.5 (50.5)	50.5 (50.5)	6 to 99
63	58 (68)	68 (68)	42 (52)	52 (52)	
80	71 (81)	81 (81)	51 (61)	61 (61)	
100	84.5 (94.5)	94.5 (94.5)	60.5 (70.5)	70.5 (70.5)	11 to 99

* (): Denotes the dimensions of auto switch type.
* Other dimensions are the same as standard type.
Note) Applicable stroke available by the 1 mm interval.

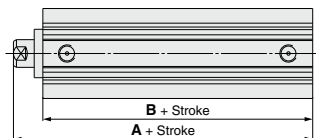
Made to Order Common Specifications: -XB10: Intermediate Stroke (Using exclusive body)



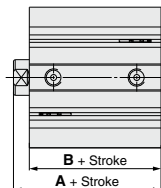
5 Intermediate Stroke (Using exclusive body)

Dimensions: Series CQ2

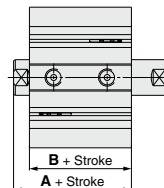
Double acting, Single rod/Long stroke



Double acting, Single rod/Large bore



Double acting, Double rod/Large bore



Bore size (mm)	Single rod type (Long stroke)		Applicable stroke range(mm)
	A	B	
32	62.5	45.5	101 to 299
40	72	55	
50	73.5	55.5	
63	75	57	
80	86	66	
100	97.5	75.5	

* Dimensions of "with auto switch" and those of "without auto switch" are the same.

Bore size (mm)	Single rod type		Applicable stroke range(mm)
	A	B	
125	99	83	11 to 299
140	99	83	
160	108	91	
180	119	102	
200	126	109	

* Dimensions other than listed above are the same as standard type.

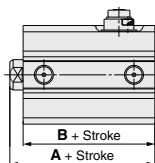
Note) Applicable stroke available by the 1 mm interval.

Bore size (mm)	Double rod type		Applicable stroke range(mm)
	A	B	
125	115	83	11 to 299
140	115	83	
160	125	91	
180	136	102	
200	143	109	

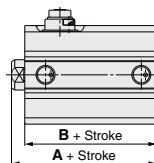
* Dimensions other than listed above are the same as standard type.

Note) Applicable stroke available by the 1 mm interval.

Double acting, Single rod/End lock With head side locking



Double acting, Single rod/End lock With rod side locking



Head Side Locking

Head Side Locking					(mm)
Bore size (mm)	A		B		Applicable stroke range(mm)
	24 stroke or less	26 to 99 stroke	24 stroke or less	26 to 99 stroke	
20	65.5	80.5	61	66	6 to 99
25	69	84	64	69	
32	72.5		65.5		
40	82		75		
50	83.5		75.5		
63	85		77		

Bore size (mm)	A		B		Applicable stroke range(mm)
	49 stroke or less	51 to 99 stroke	49 stroke or less	51 to 99 stroke	
80	121	136	111	116	6 to 99
100	132.5	147.5	120.5	125.5	

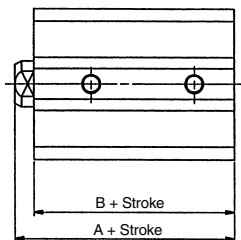
Rod Side Locking

Rod Side Locking					(mm)
Bore size (mm)	A		B		Applicable stroke range(mm)
	24 stroke or less	26 to 99 stroke	24 stroke or less	26 to 99 stroke	
20	59	80.5	54.5	66	6 to 99
25	62.5	84	57.5	69	
32	65		58		
40	71.5		64.5		
50	73.5		65.5		
63	79		71		

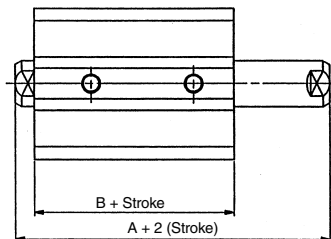
Bore size (mm)	A		B		Applicable stroke range(mm)
	49 stroke or less	51 to 99 stroke	49 stroke or less	51 to 99 stroke	
80	113.5	136	103.5	116	6 to 99
100	125	147.5	113	125.5	

Dimensions: Series CQS

Double acting,
Single rod/Long stroke



Double acting, Double rod



(mm)

Bore size (mm)	Single rod type		Applicable stroke
	A	B	
12	20.5 (25.5)	17 (22)	6 to 29
16	20.5 (25.5)	17 (22)	
20	24 (34)	19.5 (29.5)	6 to 49
25	27.5 (37.5)	22.5 (32.5)	

(mm)

Bore size (mm)	Double rod type		Applicable stroke
	A	B	
12	29 (34)	22 (27)	6 to 29
16	29 (34)	22 (27)	
20	35 (45)	26 (36)	6 to 49
25	39 (49)	29 (39)	

(mm)

Bore size (mm)	Single rod type (Long stroke)		Applicable stroke
	A	B	
12	45.5	32	31 to 99
16	45.5	32	
20	55.5	41	51 to 199
25	59	44	

(mm)

Bore size (mm)	Single rod type (Single acting/Return)		Applicable stroke
	A	B	
12	20.5 (25.5)	17 (22)	6 to 9
16	20.5 (25.5)	17 (22)	
20	24 (34)	19.5 (29.5)	6 to 9
25	27.5 (37.5)	22.5 (32.5)	

* (): Denotes the dimensions with auto switch.

* (): Denotes the dimensions with auto switch.

* In the case of long stroke, dimensions of "with auto switch" and those of "without auto switch" are the same.

* Dimensions other than listed at left are the same as standard type.

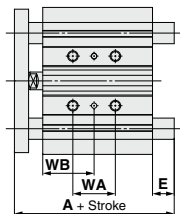
Note) Applicable stroke available by the 1 mm interval.

Made to Order Common Specifications: -XB10: Intermediate Stroke (Using exclusive body)



5 Intermediate Stroke (Using exclusive body)

Dimensions: Series MGP-Z



Stroke Range

Bore size (mm)	Stroke range (mm)
12, 16	11 to 249
20, 25	21 to 399
32, 40, 50, 63, 80, 100	26 to 399

* Specifications except the stroke range are the same as standard.
Note) Applicable stroke available by the 1 mm interval.

MGPM, MGPL, MGPA/WA, WB Dimensions

Bore size (mm)	Stroke range (mm)	WA				WB			
		11 to 39 st	41 to 99 st	101 to 199 st	201 to 249 st	11 to 39 st	41 to 99 st	101 to 199 st	201 to 249 st
12	11 to 249	20	40	110	200	15	25	60	105
16		24	44	110	200	17	27	60	105

Bore size (mm)	Stroke range (mm)	WA				WB			
		21 to 39 st	41 to 124 st	126 to 199 st	201 to 399 st	21 to 39 st	41 to 124 st	126 to 199 st	201 to 399 st
20	21 to 399	24	44	120	200	29	39	77	117
25		24	44	120	200	29	39	77	117

Bore size (mm)	Stroke range (mm)	WA				WB			
		26 to 49 st	51 to 124 st	126 to 199 st	201 to 399 st	26 to 49 st	51 to 124 st	126 to 199 st	201 to 399 st
32	26 to 399	24	48	124	200	33	45	83	121
40		24	48	124	200	34	46	84	122
50		24	48	124	200	36	48	86	124
63		28	52	128	200	38	50	88	124
80		28	52	128	200	42	54	92	128
100		48	72	148	220	35	47	85	121

MGPM/A, E Dimensions

Bore size (mm)	A			E		
	11 to 74 st	76 to 99 st	101 to 249 st	11 to 74 st	76 to 99 st	101 to 249 st
12	42	60.5	82.5	0	18.5	40.5
16	46	64.5	92.5	0	18.5	46.5

Bore size (mm)	A			E		
	21 to 74 st	76 to 199 st	201 to 399 st	21 to 74 st	76 to 199 st	201 to 399 st
20	53	77.5	110	0	24.5	57
25	53.5	77.5	109.5	0	24	56

Bore size (mm)	A			E		
	26 to 74 st	76 to 199 st	201 to 399 st	26 to 74 st	76 to 199 st	201 to 399 st
32	75	93.5	129.5	15.5	34	70
40	75	93.5	129.5	9	27.5	63.5
50	88.5	109.5	150.5	16.5	37.5	78.5
63	88.5	109.5	150.5	11.5	32.5	73.5
80	104.5	131.5	180.5	8	35	84
100	126.5	151.5	190.5	10.5	35.5	74.5

* Dimensions except mentioned above are the same as standard type.

MGPL, MGPA/A, E Dimensions

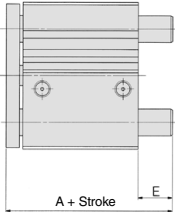
Bore size (mm)	A			E		
	11 to 39 st	41 to 99 st	101 to 249 st	10 to 39 st	41 to 99 st	101 to 249 st
12	43	55	84.5	1	13	42.5
16	49	65	94.5	3	19	48.5

Bore size (mm)	A			E		
	21 to 39 st	41 to 124 st	126 to 199 st	21 to 39 st	41 to 124 st	126 to 199 st
20	59	76	100	117.5	6	23
25	65.5	81.5	100.5	117.5	12	28

Bore size (mm)	A			E		
	26 to 74 st	76 to 124 st	126 to 199 st	26 to 74 st	76 to 124 st	126 to 199 st
32	79.5	96.5	116.5	138.5	20	37
40	79.5	96.5	116.5	138.5	13.5	30.5
50	91.5	112.5	132.5	159.5	19.5	40.5
63	91.5	112.5	132.5	159.5	14.5	35.5

Bore size (mm)	A			E		
	26 to 49 st	51 to 74 st	76 to 199 st	26 to 49 st	51 to 74 st	76 to 199 st
80	104.5	128.5	158.5	191.5	8	32
100	119.5	145.5	178.5	201.5	3.5	29.5

Dimensions: Series MGQ



Stroke Range

Bore size (mm)	Stroke range (mm)
12, 16	11 to 99
20, 25	21 to 199
32, 40, 50, 63, 80, 100	26 to 199

* Specifications except the stroke range are the same as standard.
Note) Applicable stroke available by the 1 mm interval.

MGQM (Slide bearing) A, E Dimensions

Bore size (mm)	A		E	
	11 to 99 st	11 to 99 st	11 to 99 st	11 to 99 st
12	39		0	
16	43		0	
Bore size (mm)	A		E	
	21 to 74 st	76 to 199 st	21 to 74 st	76 to 199 st
20	47	61.5	0	14.5
25	47.5	62	0	14.5
Bore size (mm)	A		E	
	26 to 199 st	26 to 199 st	26 to 199 st	26 to 199 st
32	71.5		24	
40	71.5		17.5	
50	81		25	
63	81		20	
80	93		18.5	
100	105		21	

* Dimensions except mentioned above are the same as standard type.

MGQL (Ball bushing bearing) A, E Dimensions

Bore size (mm)	A		E	
	11 to 39 st	41 to 99 st	11 to 39 st	41 to 99 st
12	43	55	4	16
16	49	65	6	22
Bore size (mm)	A		E	
	21 to 39 st	41 to 199 st	21 to 39 st	41 to 199 st
20	57	74	10	27
25	63.5	79.5	16	32
Bore size (mm)	A		E	
	26 to 74 st	76 to 199 st	26 to 74 st	76 to 199 st
32	53	90	5.5	42.5
40	54	90	0	36
50	60	102	4	46
63	61	102	0	41
80	84	143	9.5	68.5
100	89	153	5	69

* Dimensions except mentioned above are the same as standard type.

Series RE^A_B

REAH
REBH

Bore size — Stroke — XB10

(Refer to the table below.)

● Intermediate stroke

Strokes

Bore size	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	650	700	750	800	850	900	950	1000
REAH10	●	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
RE _B H15	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
REAH20	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
RE _B H25	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
RE _B HT25	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
RE _B HT32	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

●: Standard stroke

○: Strokes set for -XB10

—: No setting

Made to Order Common Specifications: -XB10A: Intermediate Stroke (Spacer-installed type)



6 Intermediate Stroke (Spacer-installed type)

Symbol

-XB10A

Intermediate stroke: Available in 1 mm intervals. A spacer is installed on tubes with a stroke longer than the specified stroke (● in the below table).

Applicable Series

Series	Model	Action	Note
CQ2	Standard type	CQ2	Double acting, Single rod
			ø32 to ø100

Applicable Stroke

Intermediate stroke with ○: Available in 1 mm intervals.

A spacer is installed on tubes with a stroke longer than the specified stroke (●).

◆: Standard stroke ●: Stroke in stock

Bore size (mm)	Stroke range	Type	Stroke													
			55	60	65	70	75	80	85	90	95	100				
32, 40	51 to 94	Spacer-installed type 2	○	●	○	●	○	●	○	●	○	●	○	●	○	●
50 to 100	51 to 94		○	●	○	●	○	●	○	●	○	●	○	●	○	●

Note) Specify a spacer-installed type 1 with standard model number for ordering an intermediate stroke with a * mark. Refer to Series CQ2, page 787 for details.

Specifications: Same as standard type.

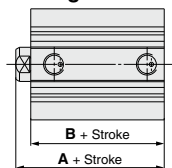
How to Order **C□Q2** **Standard model no.** **— XB10 A**

Intermediate stroke ●
Spacer-installed type ●

Order no.	CQ2B32-57DZ-XB10A (uses 60 mm stroke tube)
	● CQ2B32-60DZ-XB10 with 3 mm width spacer inside
	● The B dimension is 93 mm.

Dimensions: Series CQ2

Double acting,
Single rod



Symbol Stroke	A																B							
	51 to 54	56 to 59	61 to 64	66 to 69	76 to 79	81 to 84	86 to 89	91 to 94	51 to 54	56 to 59	61 to 64	66 to 69	76 to 79	81 to 84	86 to 89	91 to 94	51 to 54	56 to 59	61 to 64	66 to 69	76 to 79	81 to 84	86 to 89	91 to 94
Bore size																								
32	95	100	105	110	120	125	130	135	88	93	98	103	113	118	123	128								
40	101.5	106.5	111.5	116.5	126.5	131.5	136.5	141.5	94.5	99.5	104.5	109.5	119.5	124.5	129.5	134.5								
50	103.5	108.5	113.5	118.5	128.5	133.5	138.5	143.5	95.5	100.5	105.5	110.5	120.5	125.5	130.5	135.5								
63	109	114	119	124	134	139	144	149	101	106	111	116	126	131	136	141								
80	118.5	123.5	128.5	133.5	143.5	148.5	153.5	158.5	108.5	113.5	118.5	123.5	133.5	138.5	143.5	148.5								
100	130	135	140	145	155	160	165	170	118	123	128	133	143	148	153	158								

Made to Order Common Specifications: -XB11: Long Stroke Type



7 Long Stroke Type

Symbol
-XB11

Stroke which exceeds the standard stroke length

Applicable Series

Series	Description	Model	Type	Note	Vol. no. (for std model)
CX2	Slide unit	CX2	Slide bearing type		● From P. 566
CXW	Slide unit	CXWM	Slide bearing type		● From P. 575
		CXWL	Ball bushing bearing type		
CXS	Dual rod cylinder	CXS ^{Note)}	Standard type		● From P. 665
		CXSW	Double rod type		
CY3	Magnetically coupled rodless cylinder	CY3B	Basic type		● From P. 1452
MY1B-Z	Mechanically jointed rodless cylinder	MY1B	Basic type		● From P. 1176
MY1H-Z		MY1H	Linear guide type		● From P. 1194
MY1	Mechanically jointed rodless cylinder	MY1B	Basic type		● From P. 1224
		MY1M (W)	Slide bearing type	With cover (W) is also available.	
		MY1C (W)	Cam follower guide type	With cover (W) is also available.	
		MY1H	Linear guide type	Except ø10	
MY2	Mechanically jointed rodless cylinder	MY2C	Cam follower guide type		● From P. 1368
		MY2H/HT	Linear guide type		
MY3	Mechanically jointed rodless cylinder	MY3A	Basic short type		● From P. 1411
		MY3B	Basic standard type		
		MY3M	Slide bearing type		
CQ2	Compact cylinder	CQ2AH	Air-hydro type	Except with rubber bumper	● From P. 785
ML1	Hy-rodless cylinder	ML1C	Cam follower guide type		● From P. 1028
REA	Sine rodless cylinder	REA	Basic type		● From P. 1053

Note) The product with air cushion or with end lock for retraction side is available as a special order.

How to Order

Standard model no.

-XB11

Specifications: Same as standard type.

● Long stroke type

* Enter a symbol for stroke required.

Stroke Range

Series	Bore size (mm)	Standard stroke (mm)	Long stroke (mm)
MY1B-Z	25, 32, 40	100 to 2000	2001 to 5000
MY1H-Z	25, 32, 40	50 to 600	601 to 1500
MY1B	10, 16, 20, 25, 32, 40, 50, 63, 80, 100	100 to 2000	2001 to 5000 (Up to 3000 for ø10, ø16)
MY1M (W)	16, 20, 25, 32, 40, 50, 63	100 to 2000	2001 to 5000 (3000 for ø16 only, 3000 for MY1MW)
MY1C (W)	16, 20, 25, 32, 40, 50, 63	100 to 2000	2001 to 5000 (3000 for ø16 only, 3000 for MY1CW)
MY1H	16, 20, 25, 32, 40	50 to 600	601 to 1500 (Up to 1000 for ø16, ø20)
MY2C	16, 25, 40	100 to 2000	2001 to 5000 (Up to 3000 for ø16)
MY2H/HT	16, 25, 40	50 to 600	601 to 1500 (Up to 1000 for ø16)
MY3A	16, 20, 25, 32, 40, 50, 63	100 to 2000	2001 to 3000
MY3B	16, 25, 40, 63	100 to 2000	2001 to 3000
MY3M	16, 25, 40, 63	100 to 2000	2001 to 3000
CXS	10	10 to 75	80, 90, 100, 110, 120, 125, 150
	15	10 to 100	110, 120, 125, 150
	20, 25, 32	10 to 100	110, 120, 125, 150, 175, 200

Series	Bore size (mm)	Standard stroke (mm)	Long stroke (mm)
CXSW	10, 15	10, 20, 30, 40, 50	75, 100, 125, 150
	20, 25, 32	10, 20, 30, 40, 50, 75, 100	125, 150, 175, 200
CX2	15, 25	25 to 200	225, 250, 275, 300
CXWM	16, 20, 25, 32	25 to 200	225, 250, 275, 300 (CXWM16 to 25) 225, 250 (CXWM32)
CXWL			225, 250, 275 (CXWL16 to 25) 225 (CXWL32)
ML1	25, 32, 40	100 to 1000	1001 to 2000
CY3B	25, 32, 40, 50, 63	100 to 1000	2001 to 3000 (ø25 to ø40) 2001 to 5000 (ø50, ø63)
REA	25, 32, 40, 50, 63	200 to 1000	2001 to 4000 (ø25, ø32) 2001 to 5000 (ø40) 2001 to 6000 (ø50, ø63)
CQ2AH	32, 40, 50, 63, 80, 100	(5), 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100	125, 150, 175, 200, 250, 300



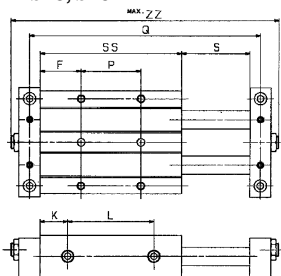
Made to Order Common Specifications: -XB11: Long Stroke Type



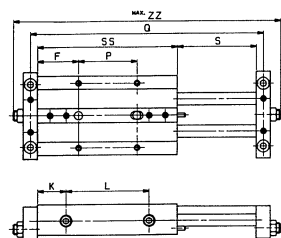
7 Long Stroke Type

Dimensions

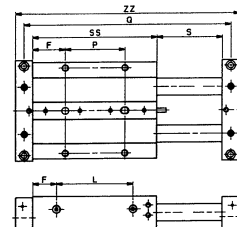
Series CX2: $\phi 15$, $\phi 25$



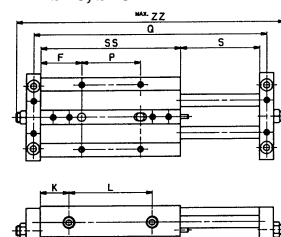
Series CXWM: $\phi 16$, $\phi 25$



$\phi 20$, $\phi 32$



Series CXWL: $\phi 16$, $\phi 25$



(mm)

Model	F	L	K	P	Q	S	SS	Z	ZZ
CX2N15-225	89.5	238	15.5	90	506	227	269	496	528
CX2N15-250	102	263	15.5	90	556	252	294	546	578
CX2N15-275	114.5	288	15.5	90	606	277	319	596	628
CX2N15-300	127	313	15.5	90	656	302	344	646	678

Model	F	L	K	P	Q	S	SS	Z	ZZ
CX2N25-225	96	241	20.5	90	525	227	282	509	553
CX2N25-250	108.5	266	20.5	90	575	252	307	559	603
CX2N25-275	121	291	20.5	90	625	277	332	609	653
CX2N25-300	133.5	316	20.5	90	675	302	357	659	703

(mm)

Model	F	L	K	P	Q	S	SS	Z	ZZ
CXWM16-225	92.5	238	18.5	90	514	227	275	502	538
CXWM16-250	105	263	18.5	90	564	252	300	552	588
CXWM16-275	117.5	288	18.5	90	614	277	325	602	638
CXWM16-300	130	313	18.5	90	664	302	350	652	688

Model	F	L	K	P	Q	S	SS	Z	ZZ
CXWM25-225	96	241	20.5	90	525	227	282	509	553
CXWM25-250	108.5	266	20.5	90	575	252	307	559	603
CXWM25-275	121	291	20.5	90	625	277	332	609	653
CXWM25-300	133.5	316	20.5	90	675	302	357	659	703

(mm)

Model	F	L	K	P	Q	S	SS	Z	ZZ
CXWM20-225	94.5	239	20	90	520	227	279	506	534
CXWM20-250	107	264	20	90	570	252	304	556	584
CXWM20-275	119.5	289	20	90	620	277	329	606	634
CXWM20-300	132	314	20	90	670	302	354	656	684

Model	F	L	K	P	Q	S	SS	Z	ZZ
CXWM32-225	38	240	28	220	543	227	296	523	563
CXWM32-250	38	265	28	245	593	252	321	573	613

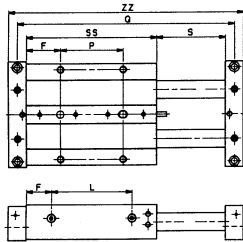
(mm)

Model	F	L	K	P	Q	S	SS	Z	ZZ
CXWL16-225	115.5	239	41	90	560	227	321	548	584
CXWL16-250	128	264	41	90	610	252	346	598	634
CXWL16-275	140.5	289	41	90	660	277	371	648	684

Model	F	L	K	P	Q	S	SS	Z	ZZ
CXWL25-225	119	241	43.5	90	571	227	328	555	599
CXWL25-250	131.5	266	43.5	90	621	252	353	605	649
CXWL25-275	144	291	43.5	90	671	277	378	655	699

Dimensions

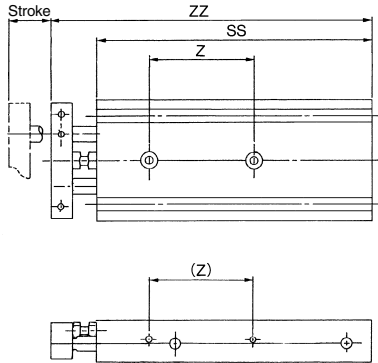
Series CXWL: $\varnothing 20$, $\varnothing 32$



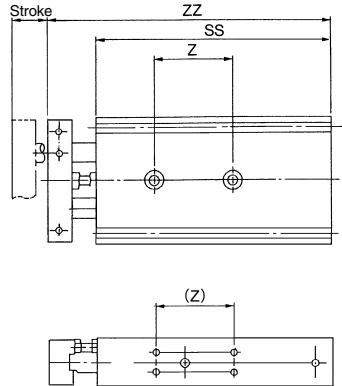
Model	F	L	K	P	Q	S	SS	Z	ZZ
CXWL20-225	116.5	239	42	90	564	227	323	550	578
CXWL20-250	129	264	42	90	614	252	348	600	628
CXWL20-275	141.5	289	42	90	664	277	373	650	678

Model	F	L	K	P	Q	S	SS	Z	ZZ
CXWL32-225	41	277	30	255	584	227	337	564	604

Series CXS^M_L: $\varnothing 10$, $\varnothing 15$



Series CXS^M: $\varnothing 20$, $\varnothing 25$, $\varnothing 32$



Model	CXS ^M #10								CXS ^M #15								CXS ^M #20								CXS ^M #25								CXS ^M #32							
Stroke	80	90	100	110	120	125	150	110	120	125	150	110	120	125	150	175	200	110	120	125	150	175	200	110	120	125	150	175	200	110	120	125	150	175	200					
SS	135	145	155	165	175	180	205	170	180	185	210	180	190	195	220	245	270	182	192	197	222	247	272	192	202	207	232	257	282											
ZZ	152	162	172	182	192	197	222	189	199	204	229	204	214	219	244	269	294	206	216	221	246	271	296	222	232	237	262	287	312											
Z	50	60			70		80			65	75				80		100						80						100			90								

Note 1) Dimensions of each model except SS, ZZ and Z on the above table are the same as standard type.
Note 2) For the external dimensions of Series CXSW double rod, refer to the standard type of CXSW.

Series CQ2AH: $\varnothing 32$, $\varnothing 40$, $\varnothing 50$, $\varnothing 63$, $\varnothing 80$, $\varnothing 100$

Model	CQ2AH32/40/50		CQ2AH63/80/100	
Dimensions	External dimensions are the same as CQ2 long stroke type.		External dimensions are the same as CQ2 long stroke type.	

Made to Order Common Specifications: -XB12: External Stainless Steel Cylinder



Series **CM2** has been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

8 External Stainless Steel Cylinder

Symbol

-XB12

A cylinder that uses stainless steel that excels in rust resistance for all external parts that are exposed to the surrounding environment. Its external dimensions and installation dimensions are identical to those of the standard Series CM2.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std. model)
CM2	Air cylinder	CM2	Double acting, Single rod Single acting (Spring return/extend)	From P. 172
		CM2W	Double acting, Double rod	
	Non-rotating rod type	CM2K	Double acting, Single rod	
			Single acting (Spring return/extend)	

How to Order

CM2 Standard model no. -XB12
 External stainless steel cylinder

Specifications

Material	External stainless steel 304	
Series	CM2, CM2K	CM2W
Cushion	Rubber bumper (Standard equipment)	
Mounting style	Basic style, Axial foot style, Rod side flange style, Head side flange style, Integral clevis style, Boss-cut basic style, Boss-cut rod side flange style	Basic style, Axial foot style, Flange style
Specifications other than above and external dimensions	Same as standard type	

Note) With air cushion, One-touch fitting integral type are not available.

Mounting Bracket Part No.

Description	Bore size (mm)			
	20	25	32	40
Foot ⁽¹⁾	CM-L020B-XB12	CM-L032B-XB12	CM-L040B-XB12	
Flange	CM-F020B-XB12	CM-F032B-XB12	CM-F040B-XB12	
Mounting nut	SN-020BSUS	SN-032BSUS	SN-040BSUS	
Rod end nut	NT-02SUS	NT-03SUS	NT-04SUS	
Single knuckle joint	I-020B-XB12	I-032B-XB12	I-040B-XB12	
Double knuckle ⁽²⁾ joint	Y-020B-XB12	Y-032B-XB12	Y-040B-XB12	
Pin for double ⁽³⁾ knuckle joint	CDP-1-XC27		CDP-3-XC27	

Note 1) The minimum order quantity includes 2 foot brackets and 1 mounting nut. Order 2 pcs. per cylinder.

Note 2) With pin, retaining ring

Note 3) With retaining ring (Cotter pins for bore size ø40)

Made to Order Common Specifications: -XB13: Low Speed Cylinder (5 to 50 mm/s)



Series **CJ2**, **CM2**, **CG1** and **MB** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

9 Low Speed Cylinder (5 to 50 mm/s)

Symbol

-XB13

Even if driving at lower speeds 5 to 50 mm/s (CY: 7 to 50 mm/s), there would be no stick-slip phenomenon and it can run smoothly.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CJ2	Air cylinder	CJ2	Double acting, Single rod	Except with air cushion	● From P. 44
CM2	Air cylinder	CM2	Double acting, Single rod	Except with air cushion	● From P. 172
	Direct mount type	CM2R	Double acting, Single rod	Except with air cushion	
CG1	Air cylinder	CG1	Double acting, Single rod	Except with rod boot and with air cushion	● From P. 306
	Direct mount type	CG1R	Double acting, Single rod	Except with air cushion	
MB	Air cylinder	MB	Double acting, Single rod		● From P. 408
CU	Free mount cylinder	CU	Double acting, Single rod		● From P. 657
	Non-rotating rod type	CUK	Double acting, Single rod		
	Long stroke, standard type	CU	Double acting, Single rod		
	Long stroke, non-rotating rod type	CUK	Double acting, Single rod		
CQS	Compact cylinder	CQS	Double acting, Single rod	Except long stroke, non-rotating and anti-lateral load types	● From P. 725
		CQSW	Double acting, Double rod	Except non-rotating type	
CQ2	Compact cylinder	CQ2	Double acting, Single rod	Except long stroke, non-rotating, large bore and anti-lateral load types	● From P. 785
		CQ2W	Double acting, Double rod	Except non-rotating and large bore types	
		CQP2	Double acting, Single rod		
CX2	Slide unit	CX2	Slide bearing type		● From P. 566
CXW	Slide unit	CXWM	Slide bearing type		● From P. 575
		CXWL	Ball bushing bearing type		
MXH	Compact slide	MXH-Z	Double acting, Single rod		● From P. 19
CXSJ	Dual rod cylinder	CXSJ	Standard type		● From P. 653
CXS		CXS	Standard type		● From P. 665
MGP	Compact guide cylinder	MGP ^M -Z	Double acting		● From P. 315
		MGP ^L	Double acting	Except those with air cushion or end lock	● From P. 346
MGG	Guide cylinder	MGGM	Double acting	Shock absorber cannot be mounted.	● From P. 454
MGC		MGCM	Double acting	With rubber bumper. Port size Rc1/8 is applicable to ø20, 25.	● From P. 494
CY	Magnetically coupled rodless cylinder	CY3B	Basic type		● From P. 1452
		CY1S-Z	Slide bearing type		
		CY1L	Ball bushing bearing type		
CXT	Platform cylinder	CXT	Double acting	Except long stroke. Shock absorber cannot be mounted.	● From P. 628

How to Order

Standard model no.

-XB13

Low speed cylinder ●

Note 1) Operate without lubrication from a pneumatic system lubricator.

Note 2) For the speed adjustment, use speed controllers for controlling at lower speeds. (Series AS-FM/AS-M)

Specifications

Piston speed	5 to 50 mm/s (CY: 7 to 50 mm/s)
Dimensions	Same as standard type
Additional specifications	Same as standard type

⚠ Warning

Operating Precautions

Be aware that smoking cigarettes, etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

Made to Order Common Specifications: -XB14: Cylinder with Heat Resistant Auto Switch



10 Cylinder with Heat Resistant Auto Switch

Symbol

-XB14

Heat resistant compact cylinder Series CDQ2 (ø16 to ø63) which can mount heat resistant solid state switch. (D-F7NJ¹/₂, Max. 150°C)

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CQ2	Compact cylinder	CQ2	Double acting, Single rod	Applicable to ø16 to ø63 Except with rubber bumper	● From P. 785

How to Order

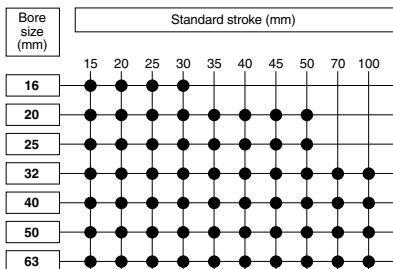
CDQ2 Standard model no. - F7NJL - XB14

Cylinder with heat resistant auto switch ●

Specifications

Applicable cylinder	Compact cylinder/Standard type
Series	CQ2
Bore size (mm)	16, 20, 25, 32, 40, 50, 63
Type	Non-tube
Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Minimum operating pressure	0.05 MPa (For ø16 only, 0.07 MPa)
Ambient and fluid temperature	0 to 150°C
Rubber bumper	None
Rod end thread	Male or female thread
Stroke length tolerance	+1.0 0 mm
Piston speed	50 to 500 mm/s

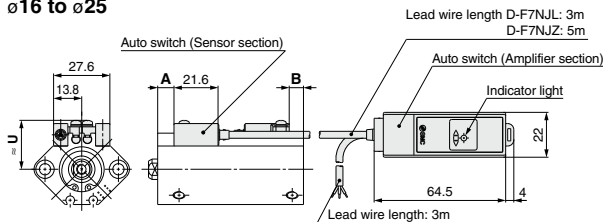
Note) For detailed specifications about auto switch, refer to page 1618.



● Manufacturing of intermediate strokes
Intermediate strokes by the 1 mm interval are available by using spacers with standard stroke cylinders.

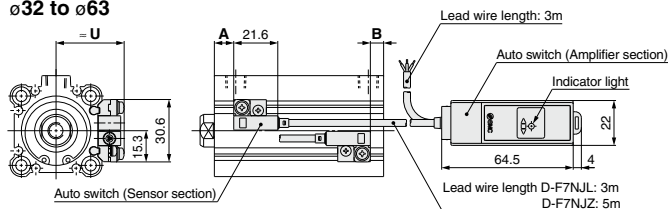
Proper Mounting Auto Switch Position (Detection at stroke end)

ø16 to ø25



Bore size (mm)	A	B	U
16	8	5.5	22.5
20	8	7	25.5
25	8	7.5	28
32	9.5	6.5	36
40	13.5	9	38
50	11.5	12	43.5
63	14	15	48.5

ø32 to ø63



Auto Switch Mounting Bracket: Part No.

Auto switch model	Bore size (mm)					
	16	20	25	32	40	50 63
D-F7NJL(Z)	BQ4-012			BQJ2-032		

Auto Switch Mounting Bracket Mass

Mounting bracket part no.	Weight (g)
BQ4-012	1.5
BQJ2-032	3.6

* Dimensions on the cylinder body is equivalent to the standard type, double acting, single rod of Series CDQ2.

Note 1) Auto switches are shipped in the same package, but not assembled in order to protect it at the time of shipment. Assemble it by referring to A, B dimensions for mounting position shown in the table above.

Note 2) Tightening torque for auto switch mounting M3 screw should be set as 0.5 to 0.7 N·m.

Heat Resistant 2-Color Indicator Solid State Auto Switch Direct Mounting Type



- Heat resistant (Max. 150°C) type added to the D-M9□ compact auto switch.
- Choice of output types: PNP, NPN

How to Order

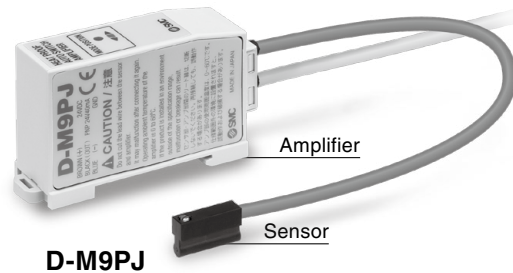
D-M9 **N** **J** **L**

Output specifications

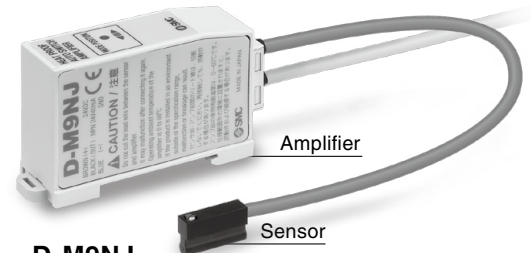
Symbol	Specification
N	NPN output
P	PNP output

Lead wire length

Symbol	Specification
L	Between the sensor and amplifier: 3 m, Amplifier section: 3 m
Z	Between the sensor and amplifier: 5 m, Amplifier section: 3 m



D-M9PJ



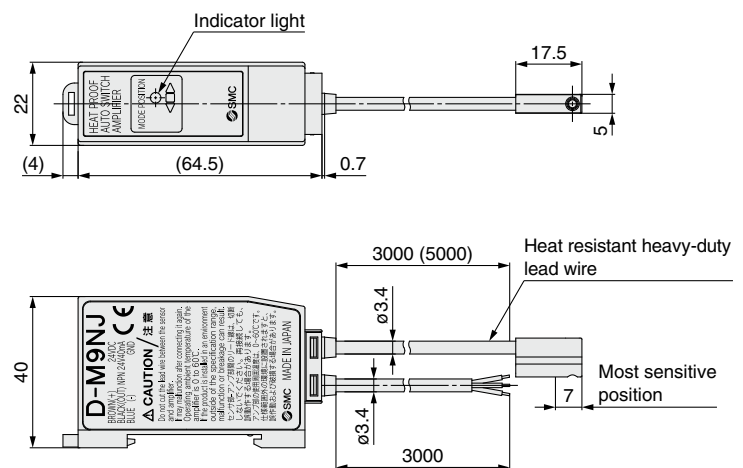
D-M9NJ

Auto Switch Specifications

D-M9NJ, D-M9PJ (With indicator light)		
Auto switch model	D-M9NJ	D-M9PJ
Output type	NPN	PNP
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)	
Current consumption	25 mA or less	
Load voltage	28 VDC or less	—
Load current	40 mA or less	
Internal voltage drop	0.8 V or less	
Leakage current	100 μA or less at 24 VDC	
Indicator light	Operating range Red LED lights up. Optimum operating range Green LED lights up.	
Ambient temperature	Sensor section: 0 to 150°C Amplifier section: 0 to 60°C	
Impact resistance	Sensor section: 1000 m/s ² Amplifier section: 300 m/s ²	
Standards	CE marking, RoHS	

Dimensions

[mm]



Cylinder with Heat Resistant Auto Switch: -XB14 (Made to Order)

Applicable Cylinder

Series	Description	Model	Action	Applicable bore size [mm]							Note
				16	20	25	32	40	50	63	
CDQ2	Compact cylinder	CDQ2-XB14	Double acting, Single rod	●	●	●	●	●	●	●	Except with rubber bumper

Series **D-M9**□ **J**

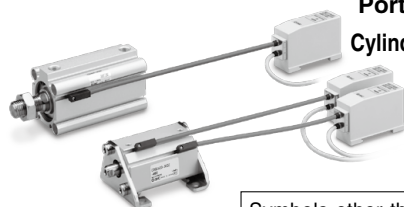


15-E644

How to Order

With auto switch

CDQ2 - **D** **Z** - - **M9NJL** - **XB14**



Mounting

Type

Bore size (See Table 1.)

Port thread type

Cylinder stroke (See Table 1.)

Body option

Mounting bolt

Rod end bracket

Number of auto switches

Cylinder with heat resistant auto switch

Auto switch

Symbol	Output
M9NJ	NPN
M9PJ	PNP

* Lead wire length symbols
3 m L (Example) M9NJL
5 m Z (Example) M9NJZ

Symbols other than those for the auto switch are the same as the standard type. For details, refer to the **WEB catalog** or Best Pneumatics No. 2.

Specifications

Ambient and fluid temperature range	0 to 150°C
Seal material	Fluororubber
Grease	Heat resistant grease
Standard stroke	See Table 1.
Dimensions	See below.
Specifications other than above	Same as standard type

Table 1 Cylinder Strokes

[mm]

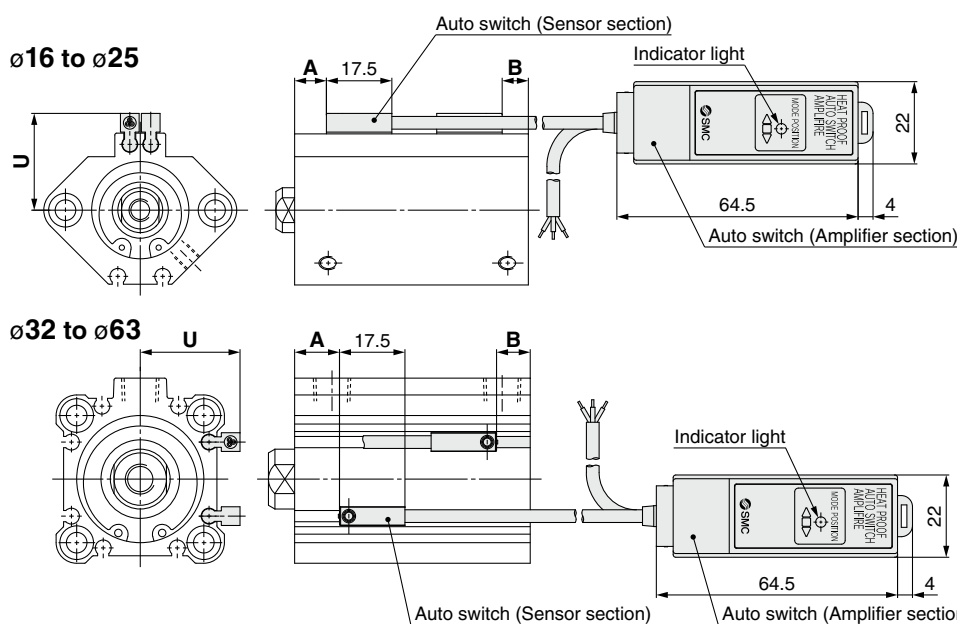
Bore size	Stroke
16	15, 20, 25, 30
20, 25	15, 20, 25, 30, 35, 40, 45, 50
32 to 63	15, 20, 25, 30, 35, 40, 45, 50, 75, 100

● Manufacturing of intermediate strokes

Intermediate strokes in 1 mm increments are available by using spacers with standard stroke cylinders.

Dimensions

(Dimensions other than those shown below are the same as the standard type. Refer to the **WEB catalog** or Best Pneumatics No. 2.)



Auto Switch Proper Mounting Position (Detection at stroke end) and Its Mounting Height [mm]

Auto switch model	D-M9□ J		
	A	B	U
16	9.5	7	21
20	9.5	8.5	23.5
25	9.5	9	27
32	11	8	29
40	15	10.5	31
50	13	13.5	36
63	15.5	16.5	41.5

Note) Adjust the auto switch after confirming the operating condition in the actual setting.

Operating Range

[mm]

Auto switch model	Bore size						
	16	20	25	32	40	50	63
D-M9NJ□	4.5	4.5	4.5	5	4.5	5	5
D-M9PJ□	4.5	4.5	4.5	5	4.5	5	5

* Since the operating range is provided as a guideline at room temperature, it cannot be guaranteed. It may change substantially depending on the ambient environment.

⚠ Safety Instructions Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.

Made to Order Common Specifications: -XB19: High Speed Type



11 High Speed Type

Symbol

-XB19

This is a high speed type of the dual rod cylinder series CXS.

The cylinder speed can reach a maximum of 1500 mm/s (1000 mm/s for $\phi 25$ and $\phi 32$) by enlarging the orifice diameter of the cylinder port. The allowable kinetic energy is approximately four times that of the standard type.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CXS	Dual rod cylinder	CXS	Double acting, Single rod	● From P. 665

How to Order

CXS Standard model no. -XB19
High speed type

Specifications

Bore size (mm)	6	10	15	20	25	32
Minimum operating pressure	0.15 MPa	0.1 MPa		0.05 MPa		
Maximum operating pressure	0.7 MPa					
Proof pressure	1.05 MPa					
Fluid	Air (Non-lube)					
Ambient and fluid temperature	-10 to 60°C (No freezing)					
Piston speed	30 to 1500 mm/s			30 to 1000 mm/s		
Port size	M5 x 0.8			Rc 1/8		
Stroke adjustable range	0 to -5 mm compared to the standard stroke					
Bearing type	Slide bearing, Ball bushing bearing					
Cushion	Rubber bumper					

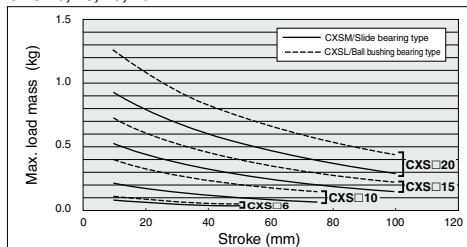
Operating Conditions

Maximum Load Mass

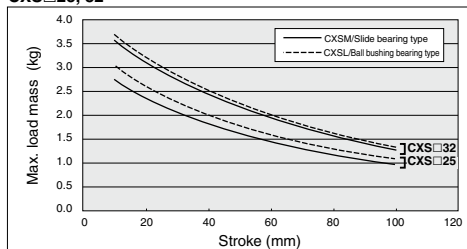
When the cylinder is mounted as shown in the diagrams on the right, the maximum load mass (m) should not exceed the values indicated in the graph below.



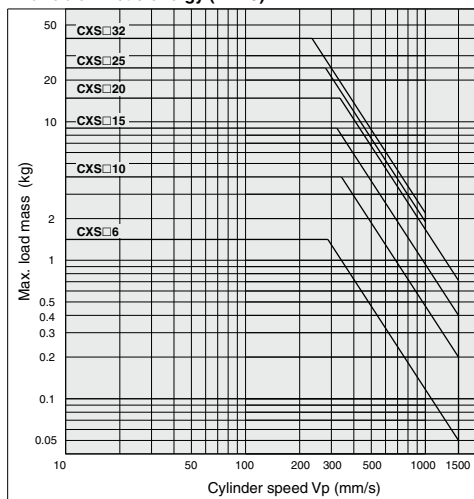
CXS \square 6, 10, 15, 20



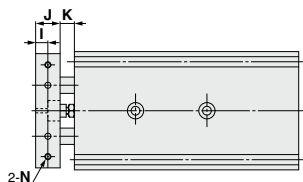
CXS \square 25, 32



Allowable kinetic energy (XB19)



Dimensions



Bore size (mm)	I	J	K	N
6	3.25	6.5	7	M3 x 0.5 through-hole
10	5	10	7	M3 x 0.5 through-hole
15	6	12	7	M3 x 0.5 through-hole
20	7	14	10	M4 x 0.7 thread depth 6
25	7	14	10	M5 x 0.8 thread depth 7.5
32	9	18	12	M5 x 0.8 thread depth 8

-XC

Made to Order Common Specifications: -XB20: Stroke Adjustment Unit with Adjustment Bolt



12 Stroke Adjustment Unit with Adjustment Bolt

Stroke adjustment unit with an adjustment bolt.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
MY2	Mechanically jointed rodless cylinder	MY2H	Linear guide (Single axis)	● From P. 1375
		MY2HT	Linear guide (Double axis)	

How to Order

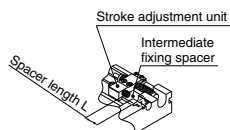
MY2H
MY2HT Standard model no. -XB20

Stroke Adjustment Unit Specifications

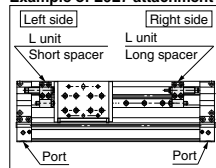
Bore size (mm)		16		25		40	
Unit symbol		L	H	L	H	L	H
Shock absorber model	MY2H	RB0806	RB1007	RB1007	RB1412	RB1412	RB2015
	MY2HT	RB1007	RB1412	RB1412	RB2015	RB2015	RB2725
Stroke adjustment range by intermediate fixing spacer (mm)	Without spacer	0 to -5.6		0 to -11.5		0 to -16	
	With short spacer	-5.6 to -11.2		-11.5 to -23		-16 to -32	
	With long spacer	-11.2 to -16.8		-23 to -34.5		-32 to -48	

* Spacers are used to fix the stroke adjustment unit at an intermediate stroke position.
* Stroke adjustment range is applicable for one side when mounted on a cylinder.

Stroke adjustment unit mounting diagram



Example of L6L7 attachment



Stroke Adjustment Unit Model

Note) Stroke adjustment unit with adjusting bolt (-XB20) cannot be mounted on the standard cylinder.

MY2 H - A 25 L2 - 6N - XB20

Guide symbol

H	MY2H16
H	MY2H25
H	MY2H40
HT	MY2HT16
HT	MY2HT25
HT	MY2HT40

Stroke adjustment unit

Cylinder bore size

16	16 mm
25	25 mm
40	40 mm

Unit part no.

Symbol	Stroke adjustment unit	Mounting position
L1	L unit	For left
L2	L unit	For right
H1	H unit	For left
H2	H unit	For right

* L unit only for ø16

With adjustment bolt

Intermediate fixing spacer

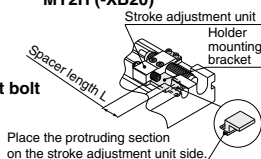
Nil	Without spacer
6	Short spacer
7	Long spacer

Spacer shipping method

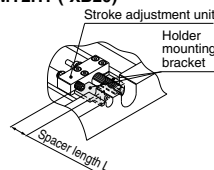
Nil	Assembled as a unit
N	Spacer only

* Spacers for MY2HT are shipped in 2 piece sets.
* Intermediate fixing spacers are shipped together.

MY2H (-XB20)

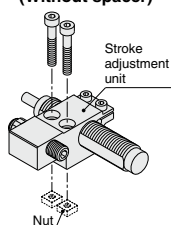


MY2HT (-XB20)

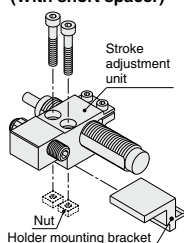


Components Parts

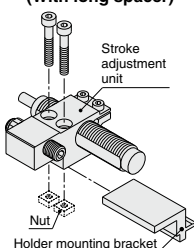
MY2H-A25L2-XB20
(Without spacer)



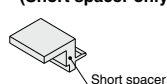
MY2H-A25L2-6-XB20
(With short spacer)



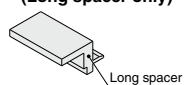
MY2H-A25L2-7-XB20
(With long spacer)



MY2H-A25L2-6N-XB20
(Short spacer only)



MY2H-A25L2-7N-XB20
(Long spacer only)



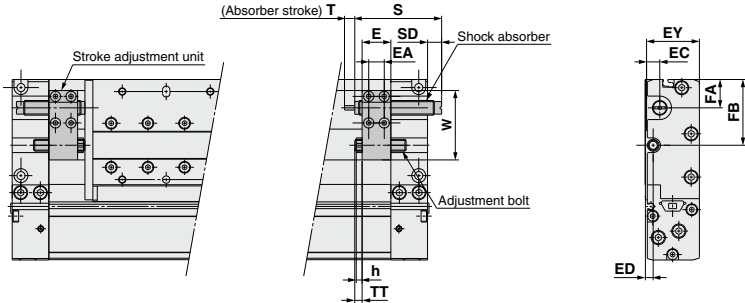
* Nuts are installed onto the cylinder body.

Made to Order Common Specifications: Stroke Adjustment Unit with Adjustment Bolt

Symbol
-XB20

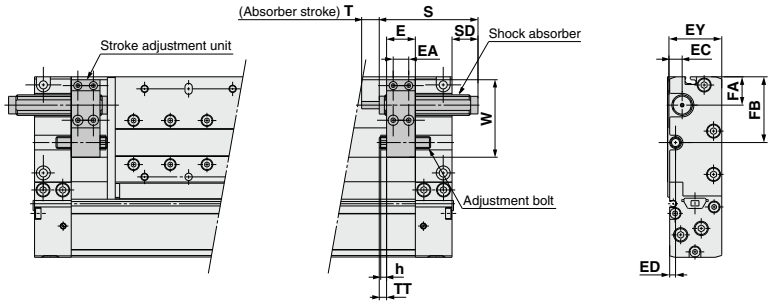
Dimensions (Dimensions other than below are the same as standard type.)

MY2H L unit

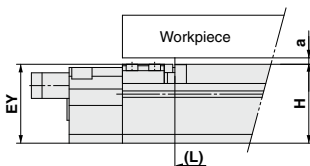


Applicable cylinder	E	EA	EC	ED	EY	FA	FB	h	S	T	SD	TT	W	Shock absorber model	Adjusting bolt	Adjustment range
MY2H16	15.8	8.4	6.2	5	28	12.4	30	3.2	40.8	6	1.3	4.2 (Max. 9.8)	34.5	RB0806	M5 x 0.8 x 25L	5.6
MY2H25	19.6	10.6	10	5.5	37	19.3	44.8	4	46.7	7	—	5 (Max. 16.5)	47.3	RB1007	M8 x 1.0 x 35L	11.5
MY2H40	29	16	13	8	57	17	49	5	67.3	12	—	6 (Max. 22)	59	RB1412	M10 x 1.0 x 50L	16

MY2H H unit



Applicable cylinder	E	EA	EC	ED	EY	FA	FB	h	S	SD	T	TT	W	Shock absorber model	Adjustment bolt	Adjustment range
MY2H16	15.8	8.4	6.2	5	28	12.4	30	3.2	46.7	7.2	7	4.2 (Max. 9.8)	35.5	RB1007	M5 x 0.8 x 25L	5.6
MY2H25	19.6	10.6	10	5.5	37	19.3	44.8	4	67.3	18.2	12	5 (Max. 16.5)	52.8	RB1412	M8 x 1.0 x 35L	11.5
MY2H40	29	16	13	8	57	17	49	5	73.2	—	15	6 (Max. 22)	59	RB2015	M10 x 1.0 x 50L	16



⚠ Caution

Since the dimension **EY** of the unit is greater than the table top height (dimension **H**), when a workpiece is loaded that is larger than the full length (dimension **L**) of the slide table, allow a clearance of size "a" or larger at the workpiece side.

Applicable cylinder	a	EY	H
MY2H16 L/H Unit	1	28	28
MY2H25 L/H Unit	1	37	37
MY2H40 L/H Unit	0	57	58

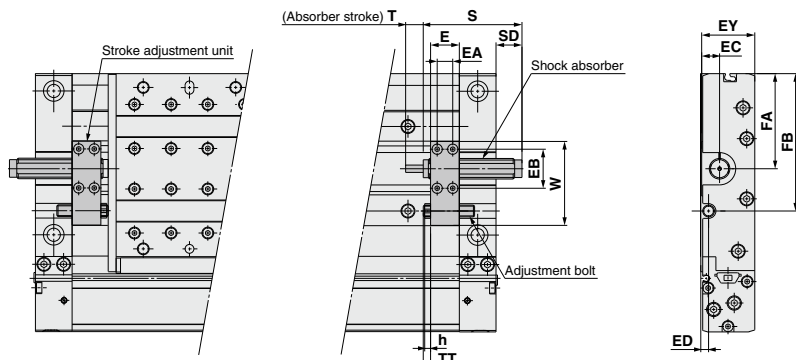
Made to Order Common Specifications: -XB20: Stroke Adjustment Unit with Adjustment Bolt



12 Stroke Adjustment Unit with Adjustment Bolt

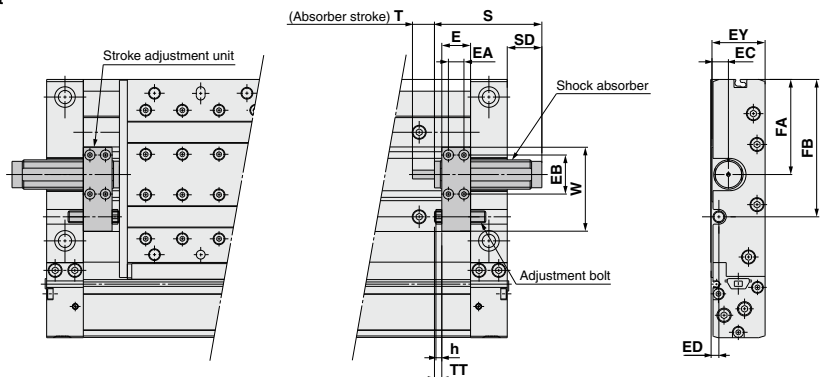
Dimensions (Dimensions other than below are the same as standard type.)

MY2HT L unit

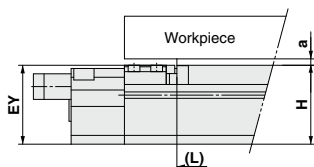


Applicable cylinder	E	EA	EB	EC	ED	EY	FA	FB	h	S	SD	T	TT	W	Shock absorber model	Adjustment bolt	Adjustment range
MY2HT16	15.8	8.4	21	9	5	28	46.5	67	3.2	46.7	7.2	7	4.2 (Max. 9.8)	40.6	RB1007	M5 x 0.8 x 25L	5.6
MY2HT25	19.6	10.6	26.6	12.2	5.5	37	64.8	93.6	4	67.3	18.2	12	5 (Max. 16.5)	57.2	RB1412	M8 x 1.0 x 35L	11.5
MY2HT40	29	16	37	18.2	8	58	74.5	110.5	5	73.2	—	15	6 (Max. 22)	71.6	RB2015	M10 x 1.0 x 50L	16

MY2HT H unit



Applicable cylinder	E	EA	EB	EC	ED	EY	FA	FB	h	S	SD	T	TT	W	Shock absorber model	Adjustment bolt	Adjustment range
MY2HT16	15.8	8.4	21	9	5	28	46.5	67	3.2	67.3	27.8	12	4.2 (Max. 9.8)	40.6	RB1412	M5 x 0.8 x 25L	5.6
MY2HT25	19.6	10.6	26.6	12.2	5.5	37	64.8	93.6	4	73.2	24.1	15	5 (Max. 16.5)	57.2	RB2015	M8 x 1.0 x 35L	11.5
MY2HT40	29	16	37	18.2	8	58	74.5	110.5	5	99	24.5	25	6 (Max. 22)	71.6	RB2725	M10 x 1.0 x 50L	16



Caution

Since the dimension EY of the unit is greater than the table top height (dimension H), when a workpiece is loaded that is larger than the full length (dimension L) of the slide table, allow a clearance of size "a" or larger at the workpiece side.

Applicable cylinder	a	EY	H
MY2HT16 L/H Unit	1	28	28
MY2HT25 L/H Unit	1	37	37
MY2HT40 L/H Unit	1	58	58

Made to Order Common Specifications: Stroke Adjustment Unit with Adjustment Bolt

Symbol
-XB20

XB20 (Stroke Adjustment Unit with Adjustment Bolt)

⚠ Caution

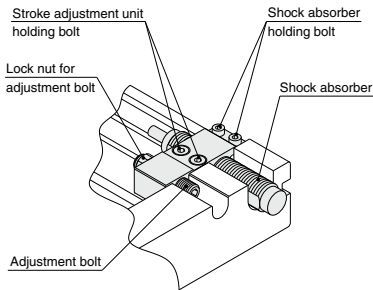
<Stroke adjustment with adjusting bolt>

1. Loosen the lock nut for the adjustment bolt and adjust a stroke by rotating the adjustment bolt.

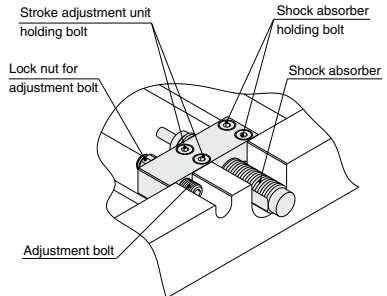
After adjusting the stroke, secure the adjustment bolt by tightening the lock nut.

If the effective stroke of the shock absorber is shortened by the stroke adjustment, its absorption capacity will be drastically reduced. Therefore, the adjustment bolt should be secured at a position where it projects about 0.5 mm farther than the shock absorber.

Tighten shock absorber holding bolts equally with the specified tightening torque.



MY2H(-XB20)



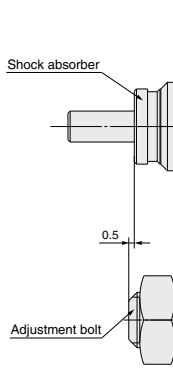
MY2HT(-XB20)

Tightening Torque for Stroke Adjustment Unit Holding Bolt

Bore size (mm)	MY2H		MY2HT		(N·m)
	L unit	H unit	L unit	H unit	
16					0.6
25					1.5
40					5.0

Tightening Torque for Shock Absorber Holding Bolt

Bore size (mm)	MY2H		MY2HT		(N·m)
	L unit	H unit	L unit	H unit	
16					0.6
25	1.5	0.6		1.5	
40	5.0	1.5		5.0	



2. Do not use the shock absorber and air cushion together.

-X□

Made to Order Common Specifications: -XB22: Shock Absorber Soft Type Series RJ Type



13 Shock Absorber Soft Type Series RJ Type

- The standard cylinder has been equipped with shock absorber soft type Series RJ type to enable soft stopping at the stroke end.
- Two different shock absorbers are available in accordance with the operating conditions.

Applicable Series

Series	Description	Model	Bearing type	Applicable bore size	Vol. no. (for std model)
MY	Mechanically jointed rodless cylinder	MY1B-Z	Basic type	ø25, ø32, ø40	● From P.1176
		MY1H-Z	Single-axis linear guide type	ø25, ø32, ø40	● From P.1194
		MY1B	Basic type	ø10 to ø40 (except ø16)	● From P.1224
		MY1M	Slide bearing type	ø16 to ø40	● From P.1248
		MY1C	Cam follower type	ø16 to ø40	● From P.1268
		MY1H	Single-axis linear guide type	ø10 to ø40	● From P.1288
		MY1□W	With protective cover	ø16 to ø40	● From P.1338
		MY2C	Cam follower type	ø16, ø25, ø40	● From P.1368
		MY2H	Single-axis linear guide type	ø16, ø25, ø40	● From P.1375
		MY2HT	Double-axis linear guide type	ø16, ø25	● From P.1375
		MY3B	Basic type	ø16 to ø50	● From P.1411
		MY3M	Slide bearing type	ø16, ø25, ø40	● From P.1429
CY	Magnetically coupled rodless cylinder	CY1S	Slide bearing type	ø6 to ø25	● From P.1484
		CY1L	Ball bushing bearing type	ø6 to ø25	● From P.1500
		CY1H	Single-axis linear guide type	ø10 to ø25	● From P.1512
		CY1HT	Double-axis linear guide type	ø25	● From P.1512
MGP	Compact guide cylinder	MGP	Slide bearing type, Ball bushing bearing type	ø12 to ø40	● From P.346
MGG	Guide cylinder	MGG	Slide bearing type, Ball bushing bearing type	ø20 to ø32	● From P.454
CX2	Slide unit	CX2N	Slide bearing type	ø10, ø15, ø25	● From P.566
CXT	Platform cylinder	CXT	Slide bearing type, Ball bushing bearing type	ø12 to ø25	● From P.628

How to Order

Standard model no.	-XB22
	● Shock absorber soft type Series RJ type

How to Order a Stroke Adjustment Unit for MY Itself

Stroke adjustment unit model	-XB22
------------------------------	-------

Specifications

Performance, absorbed energy	Refer to the table below and the maximum impact weight graph.			
Dimensions	Shock absorber overall length: 0 to -1.4 mm shorter than the standard type			
Specifications other than above	Same as standard type			
Model	Short stroke type		RJ/H type	
	RJ0805	RJ0806H	RJ1007H	RJ1412H
Max. energy absorption (J) ^{Note)}	0.5	1	3	10
O.D. thread size (mm)	8	8	10	14
Stroke (mm)	5	6	7	12
Collision speed (m/s)	0.05 to 1		0.05 to 2	
Max. operating frequency (cycle/min) ^{Note)}	80	80	70	45
Spring force (N)	Extended	2.8	5.4	6.4
	Retracted	4.9	8.4	17.4
Max. allowable thrust (N)	245	245	422	814
Ambient temperature (°C)	-10 to 60°C (No freezing)			
Weight (g)	Basic	15	23	65

Note) At ordinary temperature (20 to 25°C)

- * For details on shock absorber soft type Series RJ, refer to Best Pneumatics No.3.
- * The shock absorber service life is different from that of each cylinder. Refer to the "Specific Product Precautions" of Series RJ for the replacement period.

Cylinders

Note) Refer to Best Pneumatics No. 3 for the details of the shock absorber RB series.

Mechanically Jointed Rodless Cylinder

Model	Type	Stroke adjusting unit	Bore size							
			ø10	ø16	ø20	ø25	ø32	ø40	ø50	
MY1B-Z MY1H-Z	-XB22	L				RJ1007H	RJ1412H			
		H				RJ1412H	—	—		
	Standard	L				RB1007	RB1412			
		H				RB1412	RB2015			
MY1B	-XB22	L	RJ0805		RJ0806H	RJ1007H	RJ1412H			
		H			RJ1007H	RJ1412H	—	—		
	Standard	L			RB0806	RB1007	RB1412			
		H			RB1007	RB1412	RB2015			
MY1M MY1C	-XB22	L			RJ0806H	RJ1007H	RJ1412H			
		H			RJ1007H	RJ1412H	—	—		
	Standard	L			RB0806	RB1007	RB1412			
		H			RB1007	RB1412	RB2015			
MY1H	-XB22	L	RJ0805		RJ0806H	RJ1007H	RJ1412H			
		H			RJ1007H	RJ1412H	—	—		
	Standard	L			RB0806	RB1007	RB1412			
		H			RB1007	RB1412	RB2015			
MY1□W	-XB22	L			RJ0806H	RJ1007H	RJ1412H			
		H			RB0806	RB1007	RB1412			
	Standard	L			RJ0806H	RJ1007H	RJ1412H			
		H			RB0806	RB1007	RB1412			
MY2C MY2H	-XB22	L			RJ0806H	RJ1007H	RJ1412H			
		H			RJ1007H <small>Note)</small>	RJ1412H	—	—		
	Standard	L			RB0806	RB1007	RB1412			
		H			RB1007 <small>Note)</small>	RB1412	RB2015			
MY2HT	-XB22	L			RJ1007H	RJ1412H	—			
		H			RJ1412H	—	—			
	Standard	L			RB1007	RB1412	RB2015			
		H			RB1412	RB2015	RB2725			
MY3B	-XB22	L			RJ0806H	RJ1007H	RJ1412H			
		H			RJ1007H	RJ1412H	—	—		
	Standard	L			RB0806	RB1007	RB1412			
		H			RB1007	RB1412	RB2015			
MY3M	-XB22	L			RJ0806H	RJ1007H	RJ1412H			
		H			RJ1007H	RJ1412H	—	—		
	Standard	L			RB0806	RB1007	RB1412			
		H			RB1007	RB1412	RB2015			

Note) MY2C16 is not available with H unit.

Magnetically Coupled Rodless Cylinder

Model	Type	Bore size				
		ø6	ø10	ø15	ø20	ø25
CY1S CY1L	-XB22	RJ0805	RJ0806H		RJ1007H	RJ1412H
	Standard	RB0805			RB1006	RB1411
CY1H	-XB22		RJ0806H		RJ1007H	RJ1412H
	Standard		RB0805	RB0806	RB1006	RB1411
CY1HT	-XB22					RJ1412H
	Standard					RB1411

Guide Cylinder

Model	Type	Bore size					
		ø12	ø16	ø20	ø25	ø32	ø40
MGP	-XB22	RJ0806H		RJ1007H		RJ1412H	
	-XC69	RB0806		RB1007		RB1412	
MGG	-XB22			RJ1007H	RJ1412H		—
	Standard			RB1007	RB1412		RB2015

Platform Cylinder

Model	Type	Bore size			
		ø12	ø16	ø20	ø25
CXT	-XB22	RJ0806H		RJ1007H	RJ1412H
	Standard	RB0806		RB1007	RB1411

Slide Unit/Double Rod Type

Model	Type	Bore size		
		ø10	ø15	ø25
CX2N	-XB22	RJ0806H		RJ1007H
	Standard	RB0805		RB1006

Made to Order Common Specifications: -XB22: Shock Absorber Soft Type Series RJ Type



13 Shock Absorber Soft Type Series RJ Type

Symbol
-XB22

Maximum Impact Weight Graph (Shock Absorber Performance Line Graph) * Values in the maximum impact mass graph are at room temperature (20 to 25°C).

Ensure that the impact mass and the impact speed are within the absorbed energy graphs below.

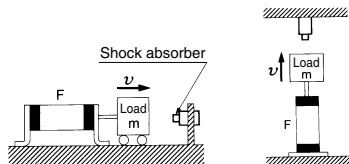
Refer to each cylinder selection calculation for load factors and guide load factors.

Consult with SMC for the MY3 series because of restrictions regarding the cylinder.

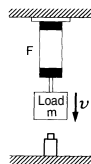
■ Type of collision

Horizontally-applied impact

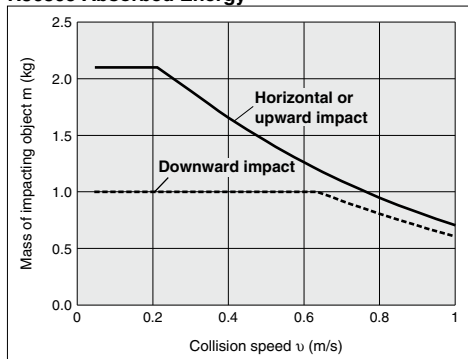
Air cylinder impact (horizontal/upward)



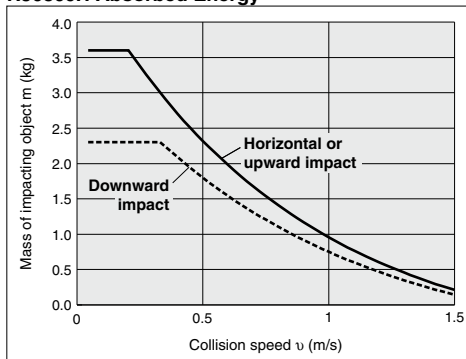
Air cylinder impact (downward)



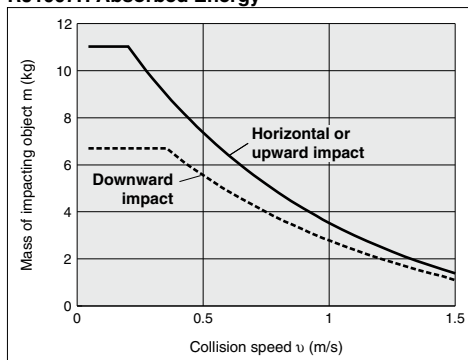
RJ0805 Absorbed Energy



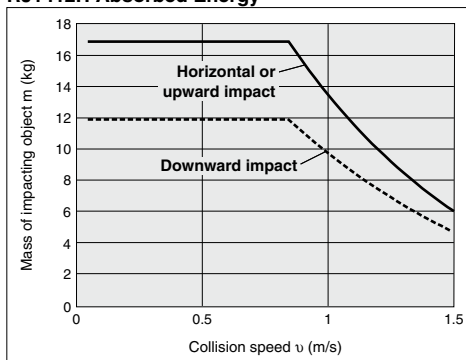
RJ0806H Absorbed Energy



RJ1007H Absorbed Energy



RJ1412H Absorbed Energy



* Be sure to read "Handling Precautions for SMC Products" (M-E03-3) and "Shock Absorber Soft Type Series RJ" (Best Pneumatics No.3) before using.

Made to Order Common Specifications: -XC2(A): Rod End Length Extended 10 mm



14 Rod End Length Extended 10 mm

Symbol

-XC2(A)

Rod end length (L dimension) specifications of the cylinder for mounting the flange on the foot or rod side are "standard product + 10 mm" (-XC2).

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CQ2	Standard type	CQ2	Double acting, Single rod	Foot style, Rod side flange only	● From P.785
		CQ2W	Double acting, Double rod	Foot style only	● From P.807
	Non-rotating rod type	CQ2K	Double acting, Single rod	Foot style, Rod side flange only	● From P.863
		CQ2KW	Double acting, Double rod	Foot style only	● From P.877

Rod end length (L dimension) specifications of the cylinder for mounting the double rod flange are "standard product + 10 mm" (-XC2A).

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CQ2	Standard type	CQ2W	Double acting, Double rod	Flange only	● From P.807
	Non-rotating rod type	CQ2KW	Double acting, Double rod	Flange only	● From P.877

How to Order

Standard model no.

- XC2 (A)

● Rod end length extended 10 mm

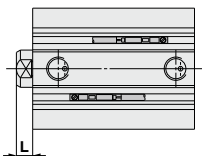
-XC2 Foot style, Rod side flange only

-XC2A For mounting double rod flange

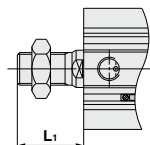
Specifications: Same as standard type.

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

Double acting, Single rod

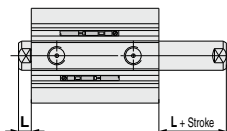


Rod end female thread

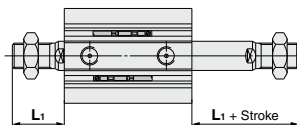


Rod end male thread

Double acting, Double rod (-XC2)

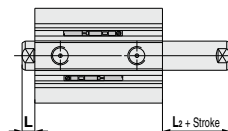


Rod end female thread

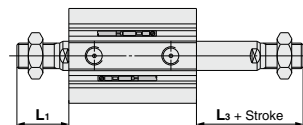


Rod end male thread

Double acting, Double rod (-XC2A)



Rod end female thread



Rod end male thread

Dimensions

(mm)

Bore size (mm)	Applicable Series		Dimensions		
	Standard type	Non-rotating rod type	Female thread		Male thread
			L	L ₁	
12	○	—	13.5	24	
16	○	—	13.5	25.5	
20	○	—	14.5	28.5	
25	○	—	15	32.5	
32	○	—	17	38.5	
40	○	○	17	38.5	
50	○	○	18	43.5	
63	○	○	18	43.5	
80	○	—	20	53.5	
100	○	—	22	53.5	

Dimensions

(mm)

Bore size (mm)	Applicable Series		Dimensions			
	Standard type	Non-rotating rod type	Female thread		Male thread	
			L	L ₂	L ₁	L ₃
12	○	—	13.5	3.5	24	14
16	○	—	13.5	3.5	25.5	15.5
20	○	—	14.5	4.5	28.5	18.5
25	○	—	15	5	32.5	22.5
32	○	—	17	7	38.5	28.5
40	○	○	17	7	38.5	28.5
50	○	○	18	8	43.5	33.5
63	○	○	18	8	43.5	33.5
80	○	—	20	10	53.5	43.5
100	○	—	22	12	53.5	43.5

Made to Order Common Specifications: -XC3: Special Port Location



Series **CJ2**, **CM2**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

15 Special Port Location

Compared with the standard type, a cylinder which changes the connection port location of rod/head cover and the location of cushion valve.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CJ2	Standard type	CJ2	Double acting, Single rod	Except w/ rail mounting style auto switches, w/ air cushion	② From P.44
	Non-rotating rod type	CJ2K	Double acting, Single rod	Except w/ rail mounting style auto switches	
CM2-Z	Air cylinder	CM2	Double acting, Single rod		② From P.150
CM2	Standard type	CM2	Double acting, Single rod Single acting (Spring return/extend)		
		CM2W	Double acting, Double rod		
	Air-hydro type	CM2H	Double acting, Single rod		
		CM2K	Double acting, Single rod Single acting (Spring return/extend)		
	Non-rotating rod type	CM2KW	Double acting, Double rod		② From P.172
		CM2R	Double acting, Single rod	Except with air cushion	
	Direct mount type	CM2RH	Double acting, Single rod		
	Non-rotating rod, Direct mount type	CM2RK	Double acting, Single rod		
	Low friction type	CM2Y	Double acting, Single rod		
	End lock cylinder	CBM2	Double acting, Single rod	Except air cushion	
MB	Standard type	MB	Double acting, Single rod		
		MBW	Double acting, Double rod		
	Non-rotating rod type	MBK	Double acting, Single rod		② From P.408
		MBKW	Double acting, Double rod		
MB1	Standard type	MB□Q	Double acting, Single rod		
		MB1	Double acting, Single rod		
	Non-rotating rod type	MB1W	Double acting, Double rod		② From P.456
		MB1K	Double acting, Single rod		
CA2	Standard type	CA2	Double acting, Single rod		
		CA2W	Double acting, Double rod		② From P.508
	End lock cylinder	CBA2	Double acting, Single rod		
CS1	Standard type	CS1	Double acting, Single rod		② From P.564
	Low friction type	CS1□Q	Double acting, Single rod		
CS2	Standard type	CS2	Double acting, Single rod		② From P.602
	Smooth cylinder	CS2Y	Double acting, Single rod	Applicable to ø20 to ø40	
RHC	High power cylinder	RHC	Double acting, Single rod		② From P.1337
RSQ RSG	Stopper cylinder	RSQ	Double acting		
			Double acting with spring installed		
			Single acting		② From P.1511
		RSG	Double acting		
			Double acting with spring installed		
			Single acting		
CL1	Locked up cylinder	CL1	Double acting, Single rod		② From P.746
CLS	Cylinder with lock	CLS	Double acting, Single rod		② From P.898
CNA2	Cylinder with lock	CNA2	Double acting, Single rod	Unlocking cams are on the same side as cushion valves.	② From P.838
MXH	Compact slide	MXH-Z	Double acting		② From P.19

How to Order

CJ2 **CM2** Standard model no. -XC3 A B

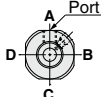
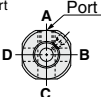
Special port location

- Head port location seen from the rod side
- Rod port location seen from the rod side

Specifications: Same as standard type.

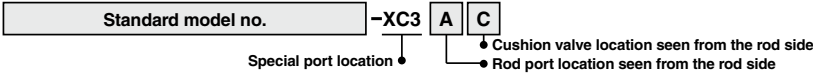
* For port location, refer to the following diagrams and show the symbols of A, B, C and D.

Port Location

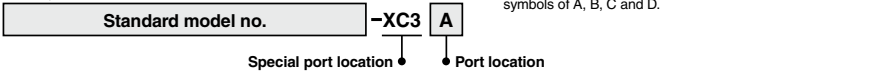
Series	Corresponding symbol of mounting bracket (Positional relationships)	
CJ2 CM2	 <p>* Viewed from the rod side, the ports are rendered A, B, C, and D, in the clockwise direction.</p>	 <p>* Viewed from the rod side, with the clevis positioned as shown in the diagram, the ports are rendered A, B, C, and D, in the clockwise direction.</p>
	1. Positional relationships between port and cushion valve cannot be changed.	2. Cylinder with cushion of CJ2 (CJ2-A) is not available for -XC3.

How to Order

MB, MB1, CA2, CS1, CS2, CNA2, CL1

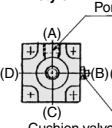
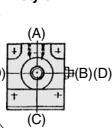
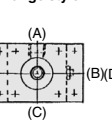
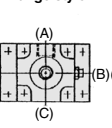
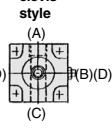
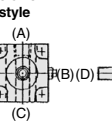
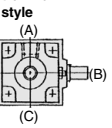
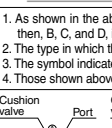
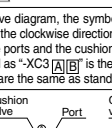
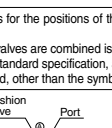
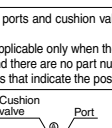
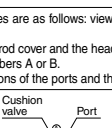
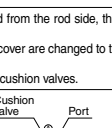
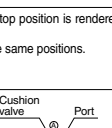



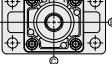

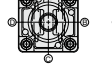

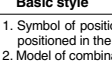
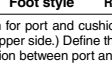
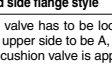
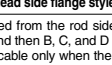
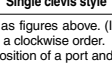
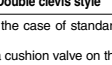
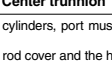
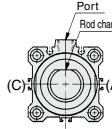
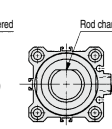
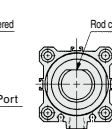
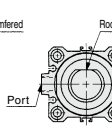


RSQ, RSG



Specifications: Same as standard type.

Relation between Port Location and Cushion Valve Location

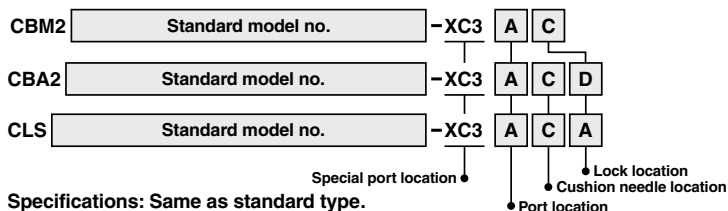
Series	Corresponding symbol of mounting bracket (Positional relationships)						
CA2	Basic style	Foot style	Rod side flange style	Head side flange style	Single clevis style	Double clevis style	Center trunnion style
CS1							
CNA2							
CL1	<p>1. As shown in the above diagram, the symbols for the positions of the ports and cushion valves are as follows: viewed from the rod side, the top position is rendered A; then, B, C, and D, in the clockwise direction.</p> <p>2. The type in which the ports and the cushion valves are combined is applicable only when the rod cover and the head cover are changed to the same positions.</p> <p>3. The symbol indicated as "-XC3 [A][B]" is the standard specification, and there are no part numbers A or B.</p> <p>4. Those shown above are the same as standard, other than the symbols that indicate the positions of the ports and the cushion valves.</p>						
CS2							
	Basic style	Foot style	Rod side flange style	Head side flange style	Single clevis style	Double clevis style	Center trunnion
	<p>1. Symbol of position for port and cushion valve has to be looked from the rod side, as figures above. (In the case of standard cylinders, port must be positioned in the upper side.) Define the upper side to be A, and then B, C, and D in a clockwise order.</p> <p>2. Model of combination between port and cushion valve is applicable only when the position of a port and a cushion valve on the rod cover and the head cover will be changed to the same position against the support bracket, as a rule.</p> <p>3. -XC3AA is not available in terms of the position between port and cushion valve, since it is available in the standard products.</p>						
MB							
MB1	Basic style	Foot style	Rod side flange style	Head side flange style	Single clevis style	Double clevis style	Center trunnion (Except MB1)
	<p>1. Symbol of position for port and cushion valve has to be looked from the rod side, as figures above. (In the case of standard cylinders, port must be positioned in the upper side.) Define the upper side to be A, and then B, C, and D in a clockwise order.</p> <p>2. Model of combination between port and cushion valve is applicable only when the position of a port and a cushion valve on the rod cover and the head cover will be changed to the same position against the support bracket, as a rule.</p> <p>3. XC3AA is not available in terms of the position between port and cushion valve, since it is available in the standard products.</p>						
RSQ							
RSG	Standard type	-XC3A	-XC3B	-XC3C			

Made to Order Common Specifications: -XC3: Special Port Location



15 Special Port Location

How to Order



Specifications: Same as standard type.

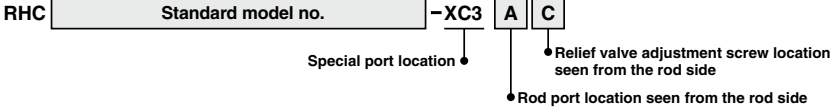
Relation between Port Location and Cushion Valve Location

Series	Corresponding symbol of mounting bracket (Positional relationships)	
CBM2	<p>Port location Rod side port and head side port are at the same location. Symbols of lock position and port location are as the following diagrams.</p>	<p>Clevis style and trunnion style are based on the direction of clevis bracket.</p> <p>Diagrams seen from the rod side</p>
	<p>Except with air cushion</p>	
CBA2	<p>Port and cushion needle are at the same rod/head position. Symbols of port location, cushion needle position and lock position are as the following diagrams.</p>	<p>When the mounting bracket is attached, the conditions placed like below are on a basis.</p> <p>Single clevis style Double clevis style Center trunnion style</p> <p>Diagrams seen from the rod side</p>
CLS	<p>Basic style Foot style Rod side flange style Head side flange style Single clevis style Double clevis style Center trunnion style</p> <p>1. Symbols of port and cushion valve, and lock positions, have to be looked at from the rod side as shown in the figures above. Define the upper side to be A, and then B, C, and D in a clockwise order. 2. The combination model of a port and a cushion valve is applicable when the rod and head covers are moved to the same position. 3. Part number of -XC3[A][B][A] is not available since it indicates a standard type. 4. For the rod side flange style, lock positions [B] and [D] cannot be manufactured since the brake cylinder and the mounting hole of the flange bracket interfere with each other. 5. Symbols excluding those that indicate the locations of ports and cushion valves are the same as the standard type.</p>	

Symbol

-XC3□

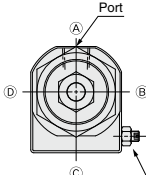
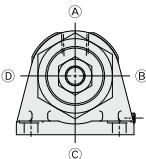
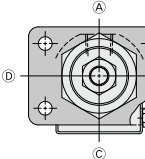
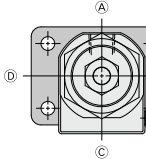
How to Order



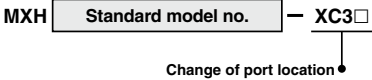
* For port location, refer to the following diagrams and show the symbols of A, B, C and D.

Specifications: Same as standard type

Relation between Port Location and Relief Valve Adjustment Screw Location

Series	Corresponding symbol of mounting bracket (Positional relationships)			
RHC	Basic style	Foot style	Rod side flange style	Head side flange style
				
<p>① As shown in the above diagram, the symbols for the positions of the ports and the relief valve adjustment screws are as follows: viewed from the rod side, the top position is rendered A, then B, C and D in the clockwise direction.</p> <p>② The type in which the ports and the relief valve adjustment screws is applicable only when the rod cover and the head cover are changed to the same positions.</p> <p>③ The symbol indicated as "-XC3 AB" is the standard specification, and there are no part numbers A or B.</p> <p>④ Those shown above are the same as standard, other than the symbols that indicate the positions of the ports and the relief valve adjustment screws.</p> <p>⑤ Brackets are shipped together.</p>				

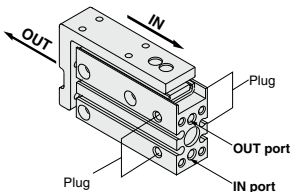
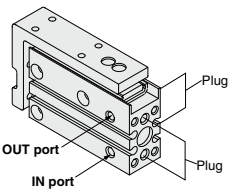
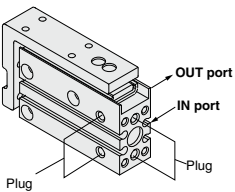
How to Order



Specifications: Same as standard type

The port location of a standard product is in the axial direction, and it is shipped as plugged on both sides. However, side ported types can be ordered. A shifting of the plugs is not required by the customer.

Relation between Port Location and Plug Location

Standard	-XC3A	-XC3B
		

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



Series **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

16 With Heavy Duty Scraper

It is suitable for using cylinders under the environment, where there are much dusts in a surrounding area by using a heavy duty scraper on the wiper ring, or using cylinders under earth and sand exposed to the die-casted equipment, construction machinery, or industrial vehicles.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CM2	Air cylinder	CM2	Double acting, Single rod		● From P. 172
		CM2W	Double acting, Double rod		
	Centralized piping type	CM2□□P	Double acting, Single rod		
	End lock cylinder	CBM2	Double acting, Single rod	Head side locking type only (Except w/ air cushion)	
CG1	Air cylinder	CG1	Double acting, Single rod	ø32 to ø63 only	● From P. 306
MB	Air cylinder	MB	Double acting, Single rod		● From P. 408
		MBW	Double acting, Double rod		
MB1	Air cylinder	MB1	Double acting, Single rod		● From P. 456
		MB1W	Double acting, Double rod		
CA2 *	Air cylinder	CA2	Double acting, Single rod		● From P. 508
		CA2W	Double acting, Double rod		
	End lock cylinder	CBA2	Double acting, Single rod	Head side locking type only	
CS1	Air cylinder	CS1	Double acting, Single rod		● From P. 564
		CS1W	Double acting, Double rod		
CS2	Air cylinder	CS2	Double acting, Single rod		● P. 599
		CS2W	Double acting, Double rod		
CQ2	Air cylinder	CQ2	Double acting, Single rod	ø20 to ø100	● From P. 785
		CQ2W	Double acting, Double rod	ø40 to ø100 only	
	Axial piping type (Centralized piping type)	CQP2	Double acting, Single rod	ø32 to ø100	
	Long stroke	CQ2	Double acting, Single rod		
RQ	Compact cylinder with air cushion	RQ	Double acting, Single rod		● From P. 978
CVM5	Valve mounted air cylinder	CVM5	Double acting, Single rod		● From P. 1723
CV	Valve mounted cylinder	CV3	Double acting, Single rod		● From P. 1764
		CVS1	Double acting, Single rod		
MGP-Z	Compact guide cylinder	MGPM	Double acting	ø20 to ø100	● From P. 309
		MGPL	Double acting	ø20 to ø100	
		MGPA	Double acting	ø20 to ø100	
MGG	Guide cylinder	MGG	Double acting	Except ø20, ø25	● From P. 454
MGC		MGC	Double acting	Except ø20, ø25	● From P. 494
CNA2	Cylinder with lock	CNA2	Double acting, Single rod		● From P. 838
CNG	Cylinder with lock	CNG	Double acting, Single rod	ø32, ø40 only	● From P. 782

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

How to Order

Standard model no.

-XC4

With heavy duty scraper ●

* For Series MGP, refer to page 1734.

⚠ 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. (Holder plate assembly in the case of Series MGP)

Series CM2 cannot replace either heavy duty scraper or rod seal.

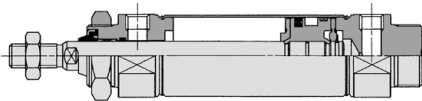
(It goes for replacing retainer assembly for Series CS1.)

Replace the CNA2 series with the lock unit.

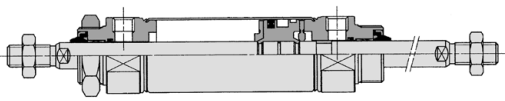
Specifications: Same as standard type.

Construction (Dimensions are the same as standard.)

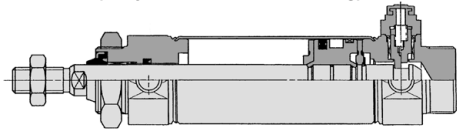
Series CM2



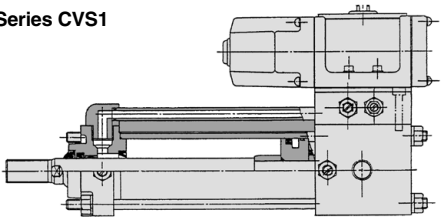
Series CM2W



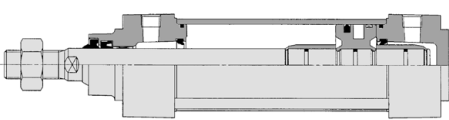
Series CBM (Only with head side locking)



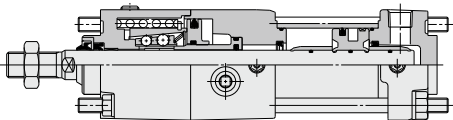
Series CVS1



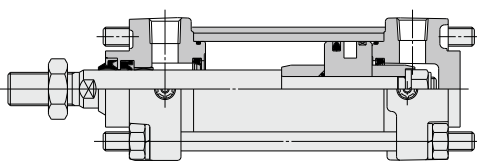
Series MB



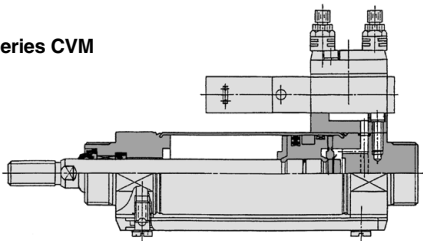
Series CNA2



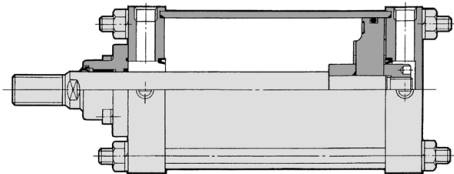
Series CA2



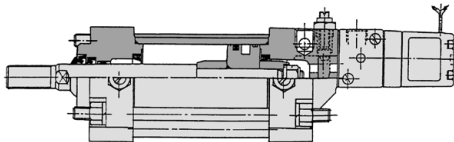
Series CVM



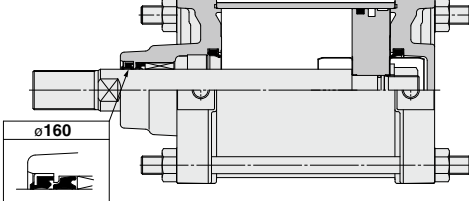
Series CS1



Series CV3



Series CS2



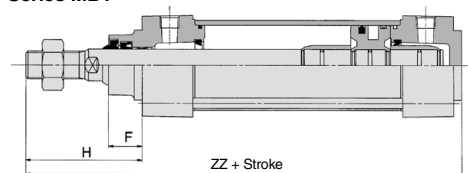
Made to Order Common Specifications: -XC4: With Heavy Duty Scraper



16 With Heavy Duty Scraper

Dimensions

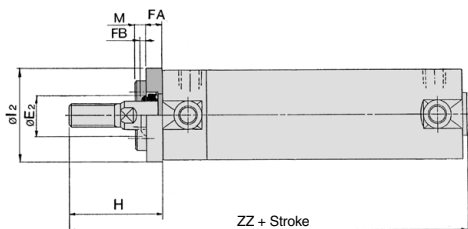
Series MB Series MB1



Series MB, MB1 (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

Series CG1



Series CG1 (mm)

Bore size (mm)	E2	FA	FB	M	l2	H	ZZ
32	17	8	3	5	38	48	121
40	21	8	3	6	48	58	138
50	26	9	3	8	59	66	158
63	26	9	3	10	72	66	158

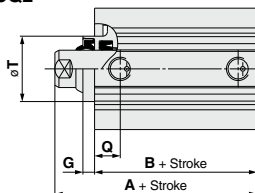
(mm)

Long stroke	ZZ
	129
	147
	170
	170

* Other dimensions are the same as double acting, single rod, standard type.

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

Series CQ2



- () : Denotes the dimensions with auto switch.
- Other dimensions are the same as for CQ2/standard type.
- Bore size 32, without switch, 5 strokes: Q-dimensions is 21.5.
- Relation between bore size 20 to 32 piping port and mounting holes is as the following diagram. Please contact SMC for both ends tapped style and bracket style. Applicable stroke available by the 5 mm interval.



Without switch: Bore size 20 to 32
With switch: Bore size 20, 25
With switch: Bore size 32

Series CQ2

Bore size (mm)	A			B			T	G		Q	
	50 stroke or less	75, 100 stroke	125 to 300 stroke	50 stroke or less	75, 100 stroke	125 to 300 stroke		100 stroke or less	125 stroke or more	50 stroke or less	125 stroke or more
20	34 (46)	—	—	29.5 (41.5)	—	—	—	—	—	18 (18)	—
25	37.5 (47.5)	—	—	32.5 (42.5)	—	—	—	—	—	19 (19)	—
32	40 (50)	50 (50)	67.5 (67.5)	33 (43)	43 (43)	55.5 (55.5)	—	—	—	20 (20)	—
40	46.5 (56.5)	56.5 (56.5)	77 (77)	29.5 (39.5)	39.5 (39.5)	55 (55)	28	5	10	12.5 (12.5)	12.5 (12.5)
50	48.5 (58.5)	58.5 (58.5)	78.5 (78.5)	30.5 (40.5)	40.5 (40.5)	55.5 (55.5)	35	5	10	10.5 (10.5)	14 (14)
63	54 (64)	64 (64)	80 (80)	36 (46)	46 (46)	57 (57)	35	5	10	15 (15)	16.5 (16.5)
80	63.5 (73.5)	73.5 (73.5)	91 (91)	43.5 (53.5)	53.5 (53.5)	66 (66)	43	5	10	16 (16)	19 (19)
100	75 (85)	85 (85)	102.5 (102.5)	53 (63)	63 (63)	75.5 (75.5)	59	5	10	23 (23)	23 (23)

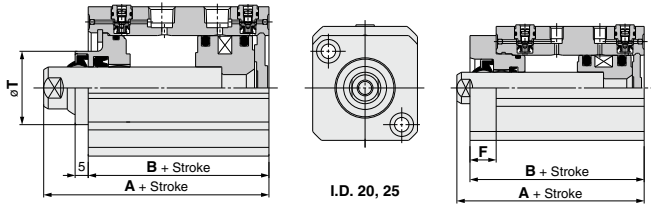
**Made to Order Common Specifications:
With Heavy Duty Scraper**

Symbol

-XC4

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

Series RQ



Bore size (mm)	A	B	T	F
20	46.5	42	—	10
25	51.5	46.5	—	10
32	54	47	—	10
40	61	44	28	—
50	67.5	49.5	35	—
63	73	55	35	—
80	83.5	63.5	43	—
100	98	76	59	—

⚠ Caution

Do not replace heavy duty scrapers.

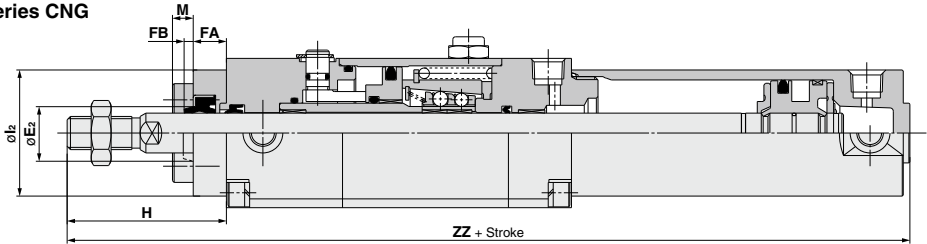
- Since heavy duty scrapers are press-fit, do not replace the cover only, but rather the entire rod cover assembly.

* Contact SMC for the rod cover assembly part number.

* Contact SMC for cylinders with I.D. 20 to 32 both ends tapped and brackets.

* Only standard strokes are applicable.

Series CNG



Bore size (mm)	E ₂	FA	FB	M	1/2	H	ZZ
32	17	8	3	5	38	48	204
40	21	8	3	6	48	58	229

* Other dimensions are the same as the standard type. (The above figure shows the rubber bumper type.)

* On the axial foot style and the rod side flange style, the installation bracket is wedged and bolted between the cylinder and the scraper at the time of shipment.

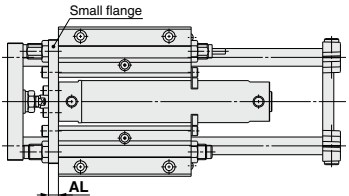
Long strokes	ZZ
	212
	238

⚠ Caution

Do not replace heavy duty scrapers.

- Since heavy duty scrapers are press-fit, they must be replaced together with the seal holder assembly.

Series MGG□B
ø32 to ø50



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

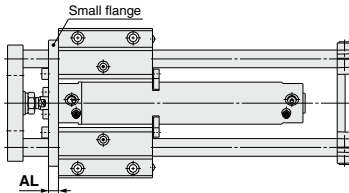
Specifications: Same as standard type.

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. When replacing them, replace the large and small flange assemblies.

Series MGC□B
ø32 to ø50



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

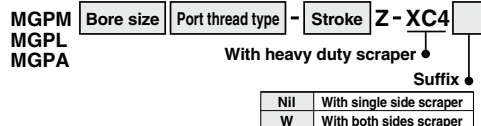
Made to Order Common Specifications: -XC4: With Heavy Duty Scraper



16 With Heavy Duty Scraper

Symbol
-XC4

How to Order/MGP

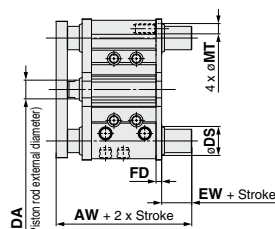
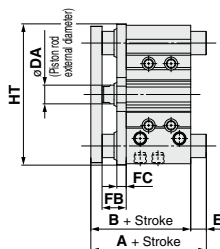


Specifications

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	Over 50 st to 100 st	Over 100 st to 200 st	Over 200 st	
20	69	86	110.5	6	23	47	80
25	75.5	91.5	127.5	12	28	64	93

Bore size (mm)	A				E				HT
	50 st or less	Over 50 st to 100 st	Over 100 st to 200 st	Over 200 st	50 st or less	Over 50 st to 100 st	Over 100 st to 200 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 50 st to 200 st	Over 200 st	25 st or less	Over 25 st to 50 st	Over 50 st to 200 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

Made to Order Common Specifications: -XC5: Heat Resistant Cylinder (−10 to 110°C)



Series **CM2**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

Symbol

-XC5

17 Heat Resistant Cylinder (−10 to 110°C)

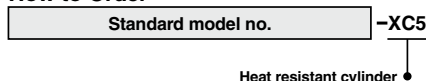
Cylinder which changed the seal material for heat resistance (up to 110°C) in order to use under the severe ambient temperature condition which exceeds the standard specifications of −10 to 70°C (0 to 70°C for Series CS1, CS2).

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CM2	Air cylinder	CM2	Double acting, Single rod	② From P. 172
		CM2W	Double acting, Double rod	
	Direct mount type	CM2R	Double acting, Single rod	
MB	Air cylinder	MB	Double acting, Single rod	② From P. 408
		MBW	Double acting, Double rod	
MB1	Air cylinder	MB1	Double acting, Single rod	② From P. 456
		MB1W	Double acting, Double rod	
CA2	Air cylinder	CA2	Double acting, Single rod	② From P. 508
		CA2W	Double acting, Double rod	
CS1 *	Air cylinder	CS1	Double acting, Single rod	② From P. 564
		CS1W	Double acting, Double rod	
CS2	Air cylinder	CS2	Double acting, Single rod	② P. 599
		CS2W	Double acting, Double rod	

* Applicable bore size of Series CS1
Lube type: ø125 to ø300
Non-lube type: ø125 to ø200

How to Order



Note 1) Please contact SMC for details on the maintenance intervals for this cylinder, which differ from those of the standard cylinder.

Note 2) Manufacturing built-in magnet type and the one with auto switch is impossible.

Note 3) Material of rod boot is heat resistant tarpaulin.

Specifications

Ambient temperature range	−10 to 110°C (0 to 110°C for Series CS1, CS2)
Seal material	Fluororubber (In the case of CS1 cylinder, cushion seal is made of NBR.)
With auto switch	Unavailable ⁽²⁾
Specifications other than above and external dimensions	Same as standard type

Made to Order Common Specifications: -XC6: Made of Stainless Steel



Series **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

18 Made of Stainless Steel

Suitable for the cases it is likely to generate rust by being immersed in the water and corrosion.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CM2	Air cylinder	CM2	Double acting, Single rod Single acting (Spring return/extended)	● From P. 172
		CM2W	Double acting, Double rod	
	Non-rotating rod type	CM2K	Double acting, Single rod Single acting (Spring return/extended)	
		CM2KW	Double acting, Double rod	
	Direct mount type	CM2R	Double acting, Single rod	
	Non-rotating rod, Direct mount type	CM2RK	Double acting, Single rod	
	Centralized piping type	CM2□□P	Double acting, Single rod	
	Smooth cylinder	CM2Y	Double acting, Single rod	
	Air-hydro type	CM2H	Double acting, Single rod	
	Direct mount type, air-hydro type	CM2RH	Double acting, Single rod	
	End lock cylinder	CBM2	Double acting, Single rod	
CG1	Air cylinder	CG1	Double acting, Single rod Single acting (Spring return)	● From P. 306
	Double rod type	CG1W	Double acting, Double rod	
	Direct mount type	CG1R	Double acting, Single rod	
	Smooth cylinder	CG1Y	Double acting, Single rod	
MB ⁽²⁾	Air cylinder	MB	Double acting, Single rod	● From P. 408
	Non-rotating rod type	MBW	Double acting, Double rod	
		MBK	Double acting, Single rod	
	Low friction type	MB□Q	Double acting, Single rod	
MB1 ⁽²⁾	Air cylinder	MB1	Double acting, Single rod	● From P. 456
	Non-rotating rod type	MB1W	Double acting, Double rod	
		MB1K	Double acting, Single rod	
		MB1KW	Double acting, Double rod	
CA2 ⁽²⁾	Air cylinder	CA2	Double acting, Single rod	● From P. 508
	End lock cylinder	CBA2 ⁽¹⁾	Double acting, Single rod	
	Air-hydro type	CA2H	Double acting, Single rod	
	Smooth cylinder	CA2□Y	Double acting, Single rod	
CS1 ⁽²⁾	Air cylinder	CS1	Double acting, Single rod	● From P. 564
	Air-hydro type	CS1W	Double acting, Double rod	

Series	Description	Model	Action	Vol. no. (for std model)
CQS	Compact cylinder	CQS	Double acting, Single rod Single acting (Spring return/extended)	● From P. 725
		CQSW	Double acting, Double rod	
	Non-rotating rod type	CQSK	Double acting, Single rod	
	Lateral load resisting type	CQS□S	Double acting, Single rod	
CQ2	Compact cylinder	CQ2	Double acting, Single rod Single acting (Spring return/extended)	● From P. 785
		CQ2W	Double acting, Double rod	
	Axial piping type (Centralized piping type)	CQP2	Double acting, Single rod	
	Long stroke	CQ2	Double acting, Single rod	
	Lateral load resisting type	CQ2□S	Double acting, Single rod	
	Water-resistant compact cylinder	CQ2□ ^{1/2}	Double acting, Single rod	
	Water resistant, axial piping	CQP2□ ^{1/2}	Double acting, Single rod	
CV	Valve mounted cylinder	CVM5	Double acting, Single rod	● From P. 1723
		CVM5K	Double acting, Single rod	
		CV3	Double acting, Single rod	
		CVS1	Double acting, Single rod	
MGP-Z	Compact guide cylinder	MGP	Double acting	● From P. 315
MGP	Compact guide cylinder	MGP	Double acting	● From P. 346
MGG	Guide cylinder	MGG	Double acting	● From P. 454
MGC	Guide cylinder	MGC	Double acting	● From P. 494
CXS	Dual rod cylinder	CXSM	Double acting	● From P. 665
CXSJ	Dual rod cylinder compact type	CXSJM	Double acting	● From P. 653
RHC	High power cylinder	RHC	Double acting	● From P. 1337

Note 1) Head side locking type only

Note 2) There is a maximum stroke limit for CA2, MB, MB1 (ø100) and CS1 cylinders.

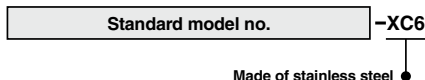
Note 3) The CS2 series, made of stainless steel, is applicable as "-XC68".

Maximum Stroke

Series	Double acting, Single rod	Double acting single rod with rod boot (mm)
CA2, MB, MB1 (Bore size 100) Others same as the standard type	1500 (Same as standard)	1000
CS1	1200	1200

How to Order

CM2, CG1, MB, MB1, CA2, CS1, CQS, CQ2, CV



Specifications

Parts changed to stainless steel	Piston rod, Rod end nut
Specifications other than above and external dimensions	Same as standard

Note 1) In the case of CS1 cylinder, the piston rod is only made of stainless steel. Rod end nut is not attached.

Note 2) In the case of CQ cylinder, its snap ring and piston rod are made of stainless steel.
Rod end nut is also made of stainless steel for rod end male thread type.

Series CQ (P) 2^{1/2}

Piston rod and rod end nut (male thread only) have been changed to stainless steel specification "-XC6". Also, the materials for hexagon socket head cap screws to fix ø20 to ø32 rod covers have been changed to stainless steel.

Applicable Series

Series	Model	Action	Note	Vol. no. (for std model)
CQ2	Water-resistant compact cylinder	CQ2□ ^R _V	Double acting, Single rod	Applicable to ø20, ø25, ø32.
	Water resistant, axial piping	CQP2□ ^R _V	Double acting, Single rod	Applicable to ø32.

Specifications

Parts changed to stainless steel	Piston rod, Rod end nut (male thread only), Rod cover holding hexagon socket head cap screw
----------------------------------	---

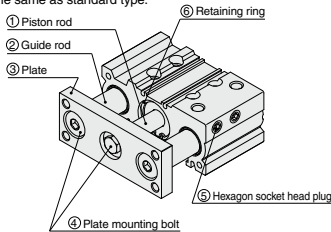
Specifications other than above and external dimensions	Same as standard
---	------------------

Series MGP-Z

Stainless Steel Modified Parts

XC6A	① ② ③ ④ ⑤ ⑥
XC6B	① ② ⑤ ⑥

Specifications and external dimensions other than above are the same as standard type.



Series CXSJM

How to Order

CXSJM Standard model no. **-XC6**
 Made of stainless steel

Specifications

Parts changed to stainless steel	Piston rod, retaining ring, hexagon socket head bolt, hexagon socket head set screw, dumper bolt, hexagon nut
Specifications other than above and external dimensions	Same as standard

Series CXSM

How to Order

CXSM Standard model no. **-XC6**
 Made of stainless steel

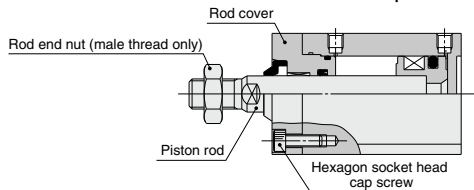
Specifications

Parts changed to stainless steel	Piston rod, retaining ring, hexagon socket head bolt, hexagon socket head set screw, dumper bolt, hexagon nut, hexagon socket head plug
Specifications other than above and external dimensions	Same as standard

How to Order

C□Q2□^R_V Standard model no. **-XC6A**
C□QP2□^R_V

Stainless steel used on all standard iron parts



How to Order

MGP^M_L Standard model no. **-XC6 A**

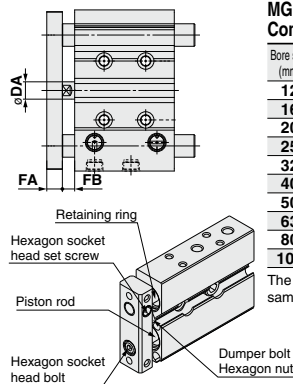
Made of stainless steel Suffix

A	Stainless steel used on all standard iron parts
B	Stainless steel rod parts

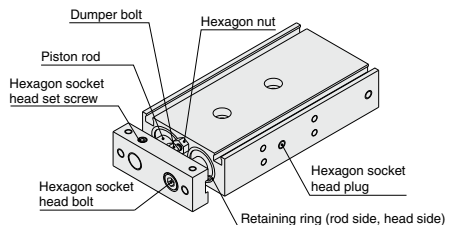
Dimensions

MGPM, MGPL, -Z-XC6□ Common Dimensions (mm)					
Bore size (mm)	XC6A			XC6B	
	DA	FA	FB	DA	
12	(6)	8	5	(6)	
16	(8)	8	5	(8)	
20	(10)	9	7	(10)	
25	(10)	10	6	(10)	
32	(14)	12	10	(14)	
40	(14)	12	10	(14)	
50	20	16	12	20	
63	20	16	12	20	
80	25	19	21	25	
100	30	22	28	30	

The dimensions in () are the same as standard type.



Note) The head cover retaining ring for ø6 is made of special steel.



Made to Order Common Specifications: -XC6: Made of Stainless Steel



18 Made of Stainless Steel

Symbol
-XC6

Suitable for the cases it is likely to generate rust by being immersed in the water and corrosion.

Series MGG How to Order

MGG Standard model no. -XC6

Made of stainless steel

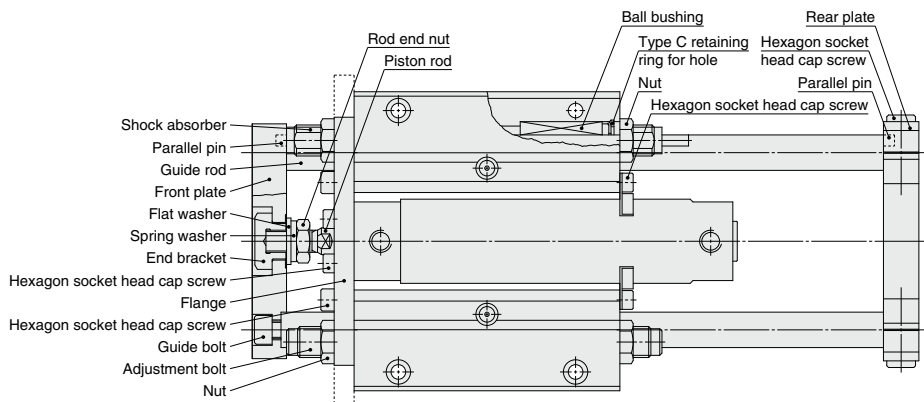
Suffix

Nil	Piston rod, rod end nut made of stainless steel
A	Stainless steel used on all standard iron parts
B	Stainless steel rod end moving parts
C	Stainless steel rod parts

Stainless Steel Modified Parts

Symbol	Basic cylinder	Guide unit
-XC6		—
-XC6A	CDG1Z \square N20 to 63- \square Z-XC6 CDG1B \square N80 to 100- \square Z-XC6 (Piston rod, Rod end nut)	Flange, Front plate, Rear plate, Ball bushing, Guide rod, End bracket, Flat washer, Spring washer, Type C retaining ring for hole, Adjustment bolt, Nut, Parallel pin, Hexagon socket head cap screw, Guide bolt
-XC6B		Front plate, Guide rod, End bracket, Flat washer, Spring washer, Parallel pin (for front plate), Guide bolt
-XC6C		Guide rod

* Specifications other than the above are the same as the standard type.
Note) RBL (coolant resistant) type shock absorbers are used for -XC6A.

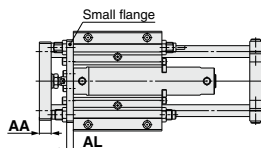


Dimensions (Dimensions other than below are the same as standard type.)

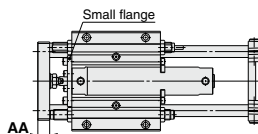
MGG \square B20 to 50- \square -XC6A

MGG \square B20 to 50- \square -XC6B
MGG \square B20 to 50- \square -XC6C

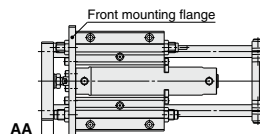
MGG \square F20 to 50- \square -XC6A
MGG \square F20 to 50- \square -XC6B
MGG \square F20 to 50- \square -XC6C



(mm)		
Bore size (mm)	AA	AL
20	12	9
25	16	9
32	16	9
40	19	12
50	25	12



(mm)	
Bore size (mm)	AA
20	12
25	16
32	16
40	19
50	25



(mm)	
Bore size (mm)	AA
20	12
25	16
32	16
40	19
50	25

Made to Order Common Specifications: -XC6: Made of Stainless Steel



18 Made of Stainless Steel

Symbol
-XC6

Suitable for the cases it is likely to generate rust by being immersed in the water and corrosion.

Series MGC How to Order

MGC Standard model no. - XC6

Made of stainless steel

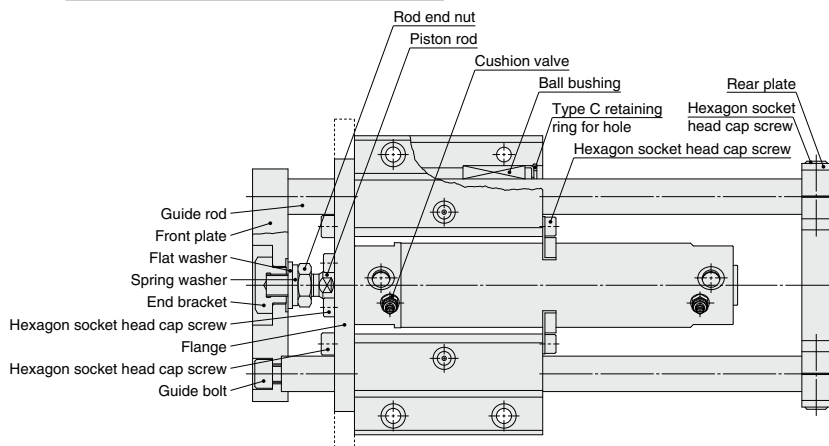
Suffix

Nil	Piston rod, rod end nut made of stainless steel
A	Stainless steel used on all standard iron parts
B	Stainless steel rod end moving parts
C	Stainless steel rod parts

Stainless Steel Modified Parts

Symbol	Basic cylinder	Guide unit
-XC6	CDG1ZA20 to 50-□-XC6 (Piston rod, Rod end nut)	—
-XC6A	CDG1BA20 to 50-□-X1057 (Piston rod, Rod end nut, Cushion valve)	Flange, Front plate, Rear plate, Ball bushing, Guide rod, End bracket, Flat washer, Spring washer, Type C retaining ring for hole, Hexagon socket head cap screw, Guide bolt
-XC6B		Front plate, Guide rod, End bracket, Flat washer, Spring washer, Guide bolt
-XC6C		Guide rod

* Specifications other than the above are the same as the standard type.

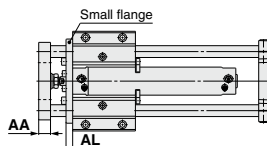


Dimensions (Dimensions other than below are the same as standard type.)

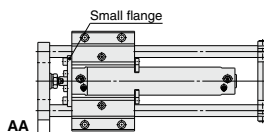
MGC□B20 to 50-□-XC6A

MGC□B20 to 50-□-XC6B
MGC□B20 to 50-□-XC6C

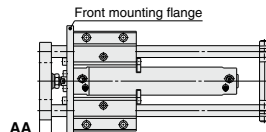
MGC□F20 to 50-□-XC6A
MGC□F20 to 50-□-XC6B
MGC□F20 to 50-□-XC6C



Bore size (mm)	AA	AL
20	12	9
25	16	9
32	16	9
40	19	12
50	25	12



Bore size (mm)	AA
20	12
25	16
32	16
40	19
50	25



Bore size (mm)	AA
20	12
25	16
32	16
40	19
50	25

Made to Order Common Specifications: -XC7: Tie-rod, Cushion Valve, Tie-rod Nut, etc. Made of Stainless Steel



Series **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

Symbol

19 Tie-rod, Cushion Valve, Tie-rod Nut, etc. Made of Stainless Steel

-XC7

When using in locations where the rust generation or corrosion likelihood exists, the standard parts material have been partly changed to the stainless steel.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
MB	Standard type	MB	Double acting, Single rod	④ From P. 408
		MBW	Double acting, Double rod	
	Non-rotating rod type	MBK	Double acting, Single rod	
		MBKW	Double acting, Double rod	
	Low friction type	MB□Q	Double acting, Single rod	
	Cylinder with end lock	MBB	Double acting, Single rod	
MB1	Standard type	MB1	Double acting, Single rod	④ From P. 456
		MB1W	Double acting, Double rod	
	Non-rotating rod type	MB1K	Double acting, Single rod	
		MB1KW	Double acting, Double rod	
CA2-Z	Standard type	CA2	Double acting, Single rod	④ From P. 481
		CA2W	Double acting, Double rod	
CA2	Standard type	CA2	Double acting, Single rod	④ From P. 508
		CA2W	Double acting, Double rod	
	Non-rotating rod type	CA2K	Double acting, Single rod	
		CA2KW	Double acting, Double rod	
	End lock cylinder	CBA2	Double acting, Single rod	
CV	Valve mounted cylinder	CV3	Double acting, Single rod	④ From P. 1764
		CVS1	Double acting, Single rod	
		CV3K	Double acting, Single rod	
		CVS1K	Double acting, Single rod	

How to Order

Standard model no.

-XC7

Tie-rod, Cushion valve, Tie-rod nut, etc. made of stainless steel

Specifications

Component parts changed to stainless steel	Tie-rod, Tie-rod nut, Mounting bracket nut, Spring washer, Cushion valve, Lock nut
Additional specifications	Same as standard type
Dimensions	Same as standard type

Made to Order Common Specifications: -XC8: Adjustable Stroke Cylinder/Adjustable Extension Type



Series **CJ2**, **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

20 Adjustable Stroke Cylinder/Adjustable Extension Type

It adjusts the extending stroke by the stroke adjustable mechanism equipped in the head side. (After the stroke is adjusted, with cushion on both sides is altered to single-sided, with cushion.)

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CJ2	Air cylinder	CJ2	Double acting	Except double clevis style and with air cushion	② From P. 44
CM2	Air cylinder	CM2	Double acting	Except clevis style	② From P. 172
	Non-rotating rod type	CM2K	Double acting	Except clevis style	
	Direct mount type	CM2R	Double acting		
	End lock cylinder	CBM2	Double acting	Except clevis style Head side locking type only, Except with air cushion	
	Air-hydro type	CM2H	Double acting	Except clevis style	
CG1	Direct mount type, air-hydro type	CM2HR	Double acting		② From P. 306
	Air cylinder	CG1	Double acting	Except head side flange and clevis styles	
	Non-rotating rod type	CG1K	Double acting	Except head side flange, clevis styles and with air cushion	
	Direct mount type	CG1R	Double acting	Except with air cushion	
MB	Non-rotating, Direct mount type	CG1KR	Double acting	Except with air cushion	② From P. 408
	Air cylinder	MB	Double acting	Except head side flange and clevis styles	
MB1	Non-rotating rod type	MBK	Double acting	Except head side flange and clevis styles	② From P. 456
	Air cylinder	MB1	Double acting	Except head side flange and clevis styles	
CA2-Z	Non-rotating rod type	MB1K	Double acting	Except head side flange and clevis styles	② From P. 481
	Air cylinder	CA2	Double acting	Except head side flange and clevis styles	
CA2	Air cylinder	CA2	Double acting	Except head side flange and clevis styles	② From P. 508
	Non-rotating rod type	CA2K	Double acting	Except head side flange and clevis styles	
	End lock cylinder	CBA2	Double acting	Except head side flange and clevis styles, Locking in head side only	
CS1	Air cylinder	CS1	Double acting	Except head side flange and clevis styles	② From P. 564
	Air-hydro type	CS1H	Double acting	Except head side flange and clevis styles	
CQS	Compact cylinder	CQS	Double acting	Except with rubber bumper and with mounting bracket	② From P. 725
	Non-rotating rod	CQSK	Double acting	Except with rubber bumper and with mounting bracket	
CQ2	Compact cylinder	CQ2	Double acting	Except with rubber bumper and with mounting bracket	② From P. 785
	Non-rotating rod type	CQ2K	Double acting	Except with rubber bumper and with mounting bracket	
	Air-hydro type	CQ2H	Double acting	Except with mounting bracket	
MTS	Precision cylinder	MTS	Double acting		② From P. 284
MGP-Z	Compact guide cylinder	MGPM	Double acting		② From P. 309
		MGPL	Double acting		
		MGPA	Double acting		
MGG	Guide cylinder	MGG	Double acting		② From P. 454
MGC		MGC	Double acting		② From P. 494

How to Order

CJ2	Mounting style		Bore size		-	Stroke		XC8	
CM2	Mounting style	Bore size	-	Stroke	Cushion	Stroke adjustment symbol		XC8	
CG1	Mounting style	Type	Bore size	-	Stroke	Stroke adjustment symbol		XC8	
CBM2	Mounting style	Bore size	-	Stroke	Stroke adjustment symbol	-H	Manual release type	XC8	
CBA2	Mounting style	Bore size	-	Stroke	Suffix	Stroke adjustment symbol		XC8	
MB	Mounting style	Bore size	-	Stroke	Suffix	Stroke adjustment symbol		XC8	
MB1	* Except head side flange and clevis styles								
CA2	Mounting style	Bore size	-	Stroke	Suffix	Stroke adjustment symbol	Z	XC8	
	* Except head side flange and clevis styles								
CA2	Mounting style	Bore size	-	Stroke	Suffix	Stroke adjustment symbol	XC8		
	* Except head side flange and clevis styles								
CS1	Mounting style	Tubing material	Type	Bore size	-	Stroke	Suffix	Stroke adjustment symbol	XC8
	* Except head side flange and clevis styles								
CQSB	Bore size	-	Stroke	D(M)				XC8	
CQ2B(H)	Bore size	-	Stroke	D(M) (Z)				XC8	
MTS	Bore size	-	Stroke	(R)				XC8	
MGP	Bearing type	Bore size	-	Stroke	Stroke adjustment symbol		Z	XC8	
MGG	Bearing type	Mounting style	Bore size	Port thread type	-	Stroke	Stroke adjustment symbol	XC8	
MGC	Bearing type	Mounting style	Bore size	Port thread type	-	Stroke	Stroke adjustment symbol	Equipped/Not equipped back plate	XC8

Adjustable stroke cylinder/Adjustable extend type •

Made to Order Common Specifications: Adjustable Stroke Cylinder/Adjustable Extension Type

Symbol
-XC8

Specifications

Series	Stroke adjustment symbol	Stroke adjustment range (mm)
CJ2	—	0 to 15
CM2 CG1 MB MB1 CA2-Z CA2 CS1	A	0 to 25
	B	0 to 50

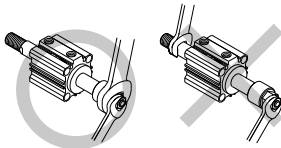
Note) Specifications other than above are the same as standard type.

Series	Stroke adjustment symbol	Stroke adjustment range (mm)
CQ2 CQS	—	0 to 10
MGG MGC	A	0 to 25
	B	0 to 50
MGP-Z	A	0 to 10
	B	0 to 25
MTS	—	0 to 10 (ø8) 0 to 25 (ø12 to ø40)

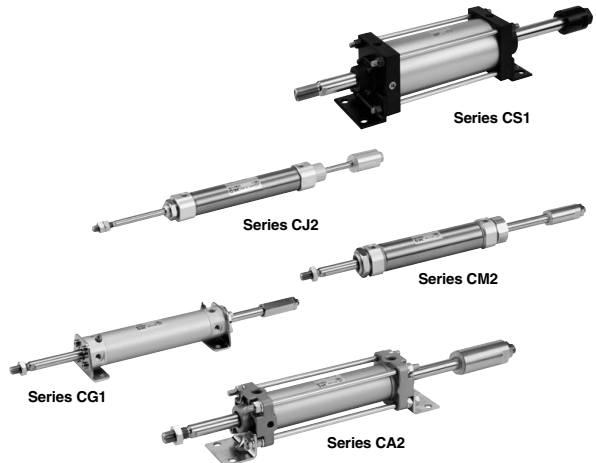
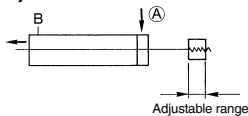
Precautions

⚠ Warning

- When the cylinder is operating, if something gets caught between the stopper bracket for adjusting the stroke and the cylinder body, it could cause bodily injury or damage the peripheral equipment. Therefore, take preventive measures as necessary, such as installing a protective cover.
- To adjust the stroke, make sure to secure the wrench flats of the stopper bracket by a wrench, etc. before loosening the lock nut. If the lock nut is loosened without securing the stopper bracket, be aware that the area that joins the load to the piston rod or the area in which the piston rod is joined with the load side and the stopper bracket side could loosen first. It may cause an accident or malfunction.



Symbol



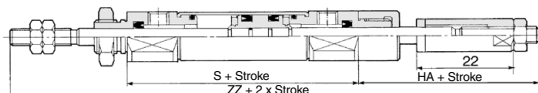
Made to Order Common Specifications: -XC8: Adjustable Stroke Cylinder/Adjustable Extension Type



20 Adjustable Stroke Cylinder/Adjustable Extension Type

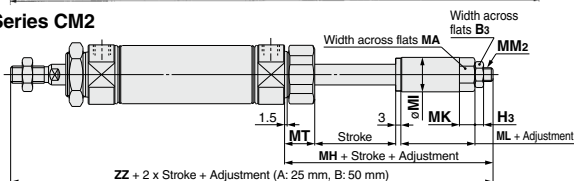
Dimensions (Dimensions other than below are the same as standard type.)

Series CJ2



(mm)			
Bore size (mm)	HA	S	ZZ
10	37	49	114
16	37	50	115

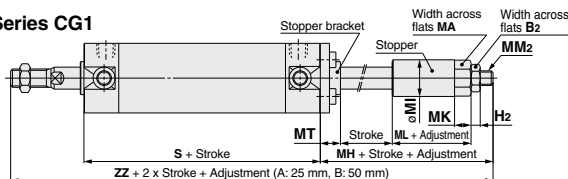
Series CM2



Series CM2

(mm)										
Bore size (mm)	B ₃	H ₃	MA	MI	MK	MM ₂	MT	MH	ML	ZZ
20	10	3.6	12	14	7	M6 x 1	16.5	47	18	150
25	13	5	17	20	9	M8 x 1.25	17.5	49	18	156
32	13	5	17	20	9	M8 x 1.25	17.5	49	18	158
40	17	6	19	25	10	M10 x 1.25	21.5	60	24	198

Series CG1

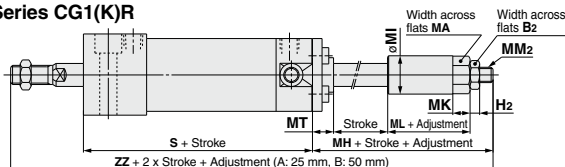


Series CG1

(mm)											
Bore size (mm)	B ₂	H ₂	MA	MH	MI	MK	ML	MM ₂	MT	S	ZZ
20	10	3.6	12	38	14	7	18	M6 x 1	9	77	150
25	13	5	17	41	20	9	18	M8 x 1.25	11	77	158
32	13	5	17	41	20	9	18	M8 x 1.25	11	79	160
40	17	6	19	47	25	10	24	M10 x 1.25	11	87	184
50	19	8	24	60	32	13	32	M14 x 1.5	11	102	220
63	19	8	24	60	32	13	32	M14 x 1.5	13	102	220

* On the axial foot style, the foot bracket is wedged and bolted between the cylinder and the stopper bracket at the time of shipment. On other styles, it is placed in the same package (not assembled).

Series CG1(K)R



Series CG1(K)R

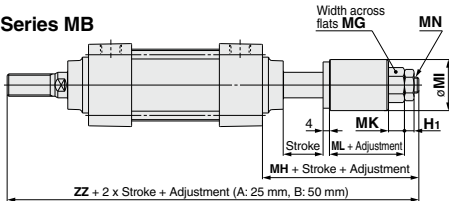
(mm)											
Bore size (mm)	B ₂	H ₂	MA	MH	MI	MK	ML	MM ₂	MT	S	ZZ
20	10	3.6	12	38	14	7	18	M6 x 1	9	83	148
25	13	5	17	41	20	9	18	M8 x 1.25	11	85	158
32	13	5	17	41	20	9	18	M8 x 1.25	11	91	164
40	17	6	19	47	25	10	24	M10 x 1.25	11	103	189
50	19	8	24	60	32	13	32	M14 x 1.5	11	120	225
63	19	8	24	60	32	13	32	M14 x 1.5	13	126	231

Made to Order Common Specifications: Adjustable Stroke Cylinder/Adjustable Extension Type

Symbol
-XC8

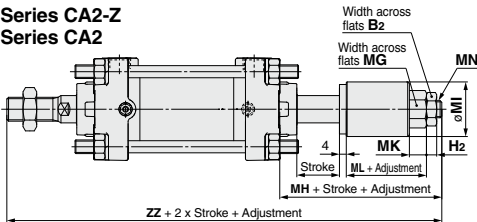
Dimensions (Dimensions other than below are the same as standard type.)

Series MB



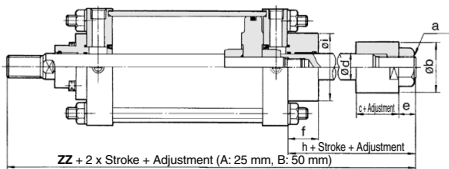
Bore size (mm)	MG	MH	MI	MK	ML	MN	ZZ
32	17	44	23	9	20	M8 x 1.25	175
40	19	48	32	10	22	M10 x 1.25	183
50	24	53	38	13	24	M14 x 1.5	205
63	24	53	38	13	24	M14 x 1.5	205
80	27	72	45	14	32	M16 x 1.5	258
100	32	75	55	17	35	M20 x 1.5	261

Series CA2-Z Series CA2



Bore size (mm)	H2	MG	MH	MI	MK	ML	MN	ZZ
40	6	19	45	32	10	22	M10 x 1.25	180
50	8	24	49	38	13	24	M14 x 1.5	197
63	8	24	49	38	13	24	M14 x 1.5	205
80	10	27	66	45	14	32	M16 x 1.5	253
100	12	32	69	55	17	35	M20 x 1.5	267

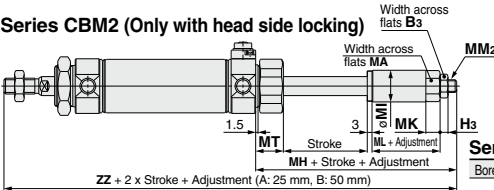
Series CS1



Bore size (mm)	a	ob	c	od	e	f	h	oi	ZZ
125	M30 x 1.5	70	43	36	27	40	110	90	318
140	M30 x 1.5	70	43	36	27	40	110	90	318
160	M30 x 1.5	70	43	36	27	40	110	90	336
180	M42 x 1.5	80	50	45	37.5	45	132.5	115	378.5*
200	M42 x 1.5	80	50	50	37.5	45	132.5	115	378.5*
250	M56 x 2	110	70	60	50	55	175	140	476
300	M56 x 2	110	70	70	50	55	175	140	496

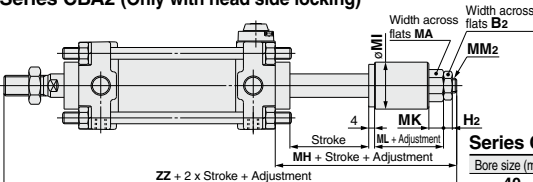
* With auto switch ø180: 382.5, ø200: 387.5

Series CBM2 (Only with head side locking)



Bore size (mm)	B3	H3	MA	MI	MK	MM2	MT	MH	ML	ZZ
20	10	3.6	12	14	7	M6 x 1	16.5	47	18	150
25	13	5	17	20	9	M8 x 1.25	17.5	49	18	156
32	13	5	17	20	9	M8 x 1.25	17.5	49	18	158
40	17	6	19	25	10	M10 x 1.25	21.5	60	24	198

Series CBA2 (Only with head side locking)



Bore size (mm)	B2	H2	MA	MI	MK	MM2	MH	ML	ZZ
40	17	6	19	32	10	M10 x 1.25	45	22	180
50	22	8	24	38	13	M14 x 1.5	51	24	199
63	22	8	24	38	13	M14 x 1.5	49	24	205
80	24	10	27	45	14	M16 x 1.5	66	32	253
100	30	12	32	55	17	M20 x 1.5	69	35	267

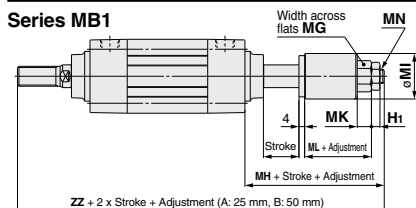
Made to Order Common Specifications: -XC8: Adjustable Stroke Cylinder/Adjustable Extension Type



20 Adjustable Stroke Cylinder/Adjustable Extension Type

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

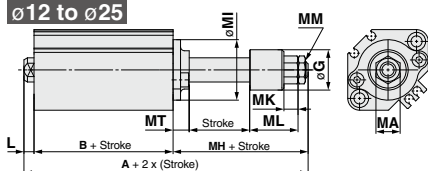
Series MB1



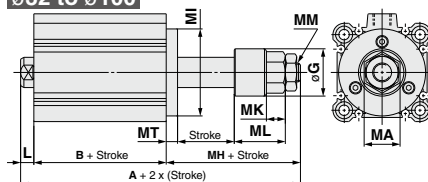
Bore size	MG	MH	MI	MK	ML	MN	ZZ
32	17	44	23	9	20	M8 x 1.25	175
40	19	48	32	10	22	M10 x 1.25	183
50	24	53	38	13	24	M14 x 1.5	205
63	24	53	38	13	24	M14 x 1.5	205
80	27	72	45	14	32	M16 x 1.5	258
100	32	75	55	17	35	M20 x 1.5	261

Series CQ2, CQ2H

ø12 to ø25



ø32 to ø100

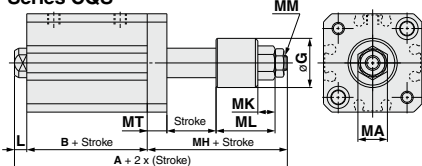


Bore size	A	B	L	MH	MT	MA	MI	MM	MK	ML	øG	Stroke adjustment range
12	57.7 (64.9)	25.2 (32.4)	3.5	29	5	8	□25 (ø15)	M4 x 0.7	5.5	20	14	5 to 30
16	58.5 (68.5)	26 (36)	3.5	29	5	10	□28 (ø20)	M5 x 0.8	5.5	20	14	5 to 30
20	67.5 (79.5)	26 (38)	4.5	37	8	12	□36 (ø25)	M6 x 1	7	24	20	5 to 50
25	71 (81)	29 (39)	5	37	8	12	□40 (ø30)	M6 x 1	7	24	20	5 to 50
32	78.5 (88.5)	30.5 (40.5)	7	41	6	17	ø38	M8 x 1.25	9	28.5	25	5 to 50 75,100
40	88 (98)	40 (50)	7	41	6	19	ø46	M10 x 1.25	10	27	25	5 to 50 75,100
50	100.5 (110.5)	40.5 (50.5)	8	52	8	24	ø57	M14 x 1.5	13	31	35	10 to 50 75,100
63	102 (112)	42 (52)	8	52	10	24	ø68	M14 x 1.5	13	31	35	10 to 50 75,100
80	125 (135)	51 (61)	10	64	12	32	ø90	M20 x 1.5	16	40	45	10 to 50 75,100
100	138.5 (148.5)	60.5 (70.5)	12	66	14	32	ø110	M20 x 1.5	16	40	45	10 to 50 75,100

Note 1) () : Denotes the dimensions with auto switch.

Note 2) Applicable stroke available by the 5 mm interval.

Series CQS



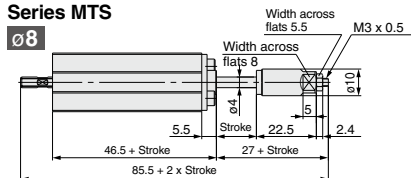
Bore size	A	B	L	MH	MT	MA	MM	MK	ML	øG	Stroke adjustment range
12	56.1 (61.1)	22 (27)	3.5	30.6	5	8	M4 x 0.7	5.5	20	14	5 to 30
16	56.5 (61.5)	22 (27)	3.5	31	5	10	M5 x 0.8	5.5	20	14	5 to 30
20	67.5 (77.5)	26 (36)	4.5	37	8	12	M6 x 1	7	24	20	5 to 50
25	71 (81)	29 (39)	5	37	8	12	M6 x 1	7	24	20	5 to 50

Note 1) () : Denotes the dimensions with auto switch.

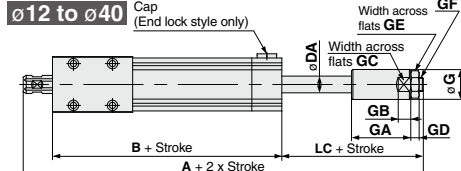
Note 2) Applicable stroke available by the 5 mm interval.

Series MTS

ø8



ø12 to ø40



Basic Style

Bore size (mm)	A	B	LC	DA	G	GA	GB	GC	GD	GE	GF
12	145	80.5	49.5	6	13.5	42.5	6	11	4	8	M5 x 0.8
16	149.5	83	50.5	8	15.5	42.5	7	13	5	10	M6 x 1.0
20	175	106.5	50.5	10	19.5	42.5	8.5	17	5	13	M8 x 1.25
25	187	114.5	51.5	12	21.5	42.5	9	19	6	17	M10 x 1.25
32	222.5	142.5	56	16	27.5	45	10.5	24	8	22	M14 x 1.5
40	240	155	59	20	32.5	45	11.5	27	11	27	M18 x 1.5

With End Lock

Bore size (mm)	A	B
12	163	98.5
16	165.5	99
20	191.5	123
25	201.5	129
32	238.5	158.5
40	258.5	173.5

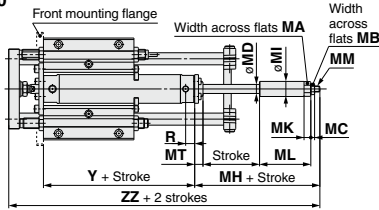
Made to Order Common Specifications: Adjustable Stroke Cylinder/Adjustable Extension Type

Symbol
-XC8

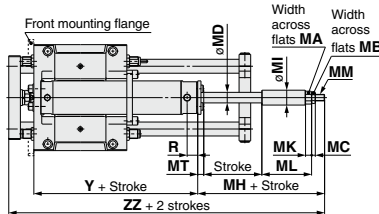
Dimensions (Dimensions other than below are the same as standard type.)

Series MGG

ø20 to ø50

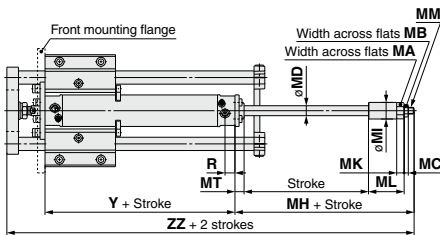


ø63

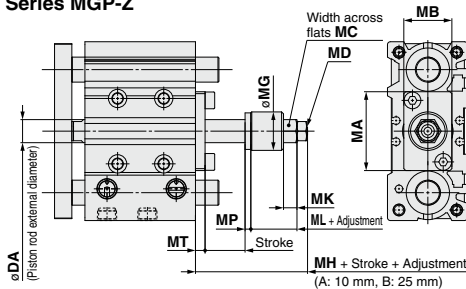


Series MGC

ø20 to ø50



Series MGP-Z



Series MGG

(mm)

Bore size (mm)	R	Y	MA	MB	MC	MD	MI	MK	MM	MT
20	12	77	12	10	3.6	8	14	7	M6 x 1	9
25	12	77	17	13	5	10	20	9	M8 x 1.25	11
32	12	79	17	13	5	12	20	9	M8 x 1.25	11
40	13	87	19	17	6	16	25	10	M10 x 1.25	11
50	14	102	24	19	8	20	32	13	M14 x 1.5	11
63	14	117	24	19	8	20	32	13	M14 x 1.5	13

Bore size (mm)	Adjustment 0 to 25 mm			Adjustment 0 to 50 mm		
	MH	ML	ZZ	MH	ML	ZZ
20	63	43	179	88	68	204
25	66	43	189	91	68	214
32	66	43	191	91	68	216
40	72	49	215	97	74	240
50	85	57	254	110	82	279
63	85	57	256	110	82	281

* The piston speed for the extension side is 50 to 500 mm/s.

Series MGC

(mm)

Bore size (mm)	R	Y	MA	MB	MC	MD	MI	MK	MM	MT
20	12	77	12	10	3.6	8	14	7	M6 x 1	9
25	12	77	17	13	5	10	20	9	M8 x 1.25	11
32	12	79	17	13	5	12	20	9	M8 x 1.25	11
40	13	87	19	17	6	16	25	10	M10 x 1.25	11
50	14	102	24	19	8	20	32	13	M14 x 1.5	11

Bore size (mm)	Adjustment 0 to 25 mm			Adjustment 0 to 50 mm		
	MH	ML	ZZ	MH	ML	ZZ
20	63	43	179	88	68	204
25	66	43	189	91	68	214
32	66	43	191	91	68	216
40	72	49	215	97	74	240
50	85	57	254	110	82	279

* The piston speed for the extension side is 50 to 500 mm/s.

Common Dimensions: MGPM, MGPL, MGPA

(mm)

Bore size (mm)	DA	MA	MB	MC	MD	øMG	MH	MK	ML	MP	MT
12	6	27	13	8	M4 x 0.7	14	20	5.5	10	3	3
16	8	28	16	10	M5 x 0.8	14	20	5.5	10	3	3
20	10	33	22	12	M6 x 1	20	26	7	14	3	4
25	12	41	25	12	M6 x 1	20	27	7	14	3	5
32	16	51	32	17	M8 x 1.25	25	35	9	18.5	4	6
40	16	60	32	19	M10 x 1.25	25	35	10	17	4	6
50	20	71	38	24	M14 x 1.5	35	46	13	21	4	8
63	20	84	50	24	M14 x 1.5	35	46	13	21	4	8
80	25	114	50	32	M20 x 1.5	45	55	16	30	4	9
100	30	140	65	32	M20 x 1.5	45	58	16	30	4	12

Made to Order Common Specifications: -XC9: Adjustable Stroke Cylinder/Adjustable Retraction Type



Series **CJ2**, **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

21 Adjustable Stroke Cylinder/Adjustable Retraction Type

The retract stroke of the cylinder can be adjusted by the adjustment bolt.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CJ2	Air cylinder	CJ2	Double acting, Single rod	Except double clevis style and with air cushion	② From P. 44
	Non-rotating rod	CJ2K	Double acting, Single rod	Except double clevis style	
	Direct mount type	CJ2R	Double acting, Single rod		
	Non-rotating rod/Direct mount type	CJ2RK	Double acting, Single rod		
CM2	Air cylinder	CM2	Double acting, Single rod	Except clevis style	② From P. 172
	Non-rotating rod	CM2K	Double acting, Single rod	Except clevis style	
	Direct mount type	CM2R	Double acting, Single rod		
	Non-rotating rod/Direct mount type	CM2RK	Double acting, Single rod		
	Low friction	CM2Y	Double acting, Single rod	Except clevis style	
CG1	Air cylinder	CG1	Double acting, Single rod	Except head side flange and clevis styles	② From P. 306
	Non-rotating rod	CG1K	Double acting, Single rod	Except head side flange, clevis styles and with air cushion	
	Direct mount type	CG1R	Double acting, Single rod	Except with air cushion	
	Non-rotating rod/Direct mount type	CG1KR	Double acting	Except with air cushion	
MB	Air cylinder	MB	Double acting, Single rod	Except head side flange and clevis styles	② From P. 408
	Non-rotating rod	MBK	Double acting, Single rod	Except head side flange and clevis styles	
MB1	Air cylinder	MB1	Double acting, Single rod	Except head side flange and clevis styles	② From P. 456
	Non-rotating rod	MB1K	Double acting, Single rod	Except head side flange and clevis styles	
CA2	Air cylinder	CA2	Double acting, Single rod	Except head side flange and clevis styles	② From P. 508
	Non-rotating rod	CA2K	Double acting, Single rod	Except head side flange and clevis styles	
	End lock cylinder	CBA2	Double acting, Single rod	Except head side flange and clevis styles	
CS1	Air cylinder	CS1	Double acting, Single rod	Except head side flange and clevis styles $\phi 125$ to $\phi 160$	② From P. 564
CS2	Air cylinder	CS2	Double acting, Single rod	Except head side flange and clevis styles	② P. 599
CQS	Compact cylinder	CQS	Double acting, Single rod	Except with rubber bumper and with mounting bracket	② From P. 725
CQ2	Compact cylinder	CQ2	Double acting, Single rod	Except with rubber bumper and with mounting bracket	② From P. 785
	Non-rotating rod	CQ2K	Double acting, Single rod	Except with rubber bumper and with mounting bracket	
MGP-Z	Compact guide cylinder	MGPM	Double acting		② From P. 309
		MGPL	Double acting		
		MGPA	Double acting		
MGG	Guide cylinder	MGG	Double acting		② From P. 454
MGC		MGC	Double acting		② From P. 494

How to Order

CJ2	Mounting style	Bore size	-	Stroke	-	XC9					
	* Except clevis style										
CM2	Mounting style	Bore size	-	Stroke	Cushion	Stroke adjustment symbol	-	XC9			
	* Except boss-cut and clevis styles										
CM2R	Mounting style	Bore size	-	Stroke	Stroke adjustment symbol	-	XC9				
CG1	Mounting style	Type	Bore size	-	Stroke	Stroke adjustment symbol	-	XC9			
	* Except clevis style										
MB	Mounting style	Bore size	-	Stroke	Suffix	Stroke adjustment symbol	-	XC9			
MB1	* Except head side flange and clevis styles										
CA2	Mounting style	Type	Bore size	-	Stroke	Suffix	Stroke adjustment symbol	-	XC9		
	* Except head side flange and clevis styles										
CS1	Mounting style	Tubing material	Type	Bore size	-	Stroke	Suffix	Stroke adjustment symbol	-	XC9	
	* Except head side flange and clevis styles										
CS2	Mounting style	Bore size	Port suffix	-	Stroke	Suffix	Stroke adjustment symbol	-	XC9		
	* Except head side flange and clevis styles										
CS2Y	Mounting style	Bore size	Port suffix	-	Stroke	Suffix	Stroke adjustment symbol	-	XC9		
	* Except head side flange and clevis styles										
CQ2B	Bore size	-	Stroke	D (M) (Z)	-	XC9					
CQSB	Bore size	-	Stroke	D (M)	-	XC9					
MGP	Bearing type	Bore size	-	Stroke	Stroke adjustment symbol	Z	-	XC9			
MGG	Bearing type	Mounting style	Bore size	Port thread type	-	Stroke	Stroke adjustment symbol	-	XC9		
MGC	Bearing type	Mounting style	Bore size	Port thread type	-	Stroke	Stroke adjustment symbol	-	Equipped/Not equipped back plate	-	XC9

Adjustable stroke cylinder/Adjustable retract type ●

(After adjusting stroke, both-side cushion style is changed into single side cushion style. CQ2 is without cushion.)

Made to Order Common Specifications: Adjustable Stroke Cylinder/Adjustable Retraction Type

Symbol
-XC9

Specifications

Series	Stroke adjustment symbol	Stroke adjustment range (mm)
CJ2	—	0 to 15
CM2 CG1 MB MB1 CA2 CS1 CS2	A	0 to 25
	B	0 to 50

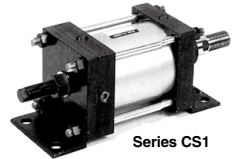
Series	Stroke adjustment symbol	Stroke adjustment range (mm)
CQ2 CQS	—	0 to 10
MGP-Z	A	0 to 10
	B	0 to 25
MGG MGC	A	0 to 25
	B	0 to 50

Note) Specifications other than above are the same as standard type.

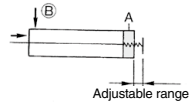
Precautions

⚠ Caution

- When air is supplied to the cylinder, if the stroke adjustment bolt is loosened in excess of the allowable stroke adjustment amount, be aware that the stroke adjustment bolt could fly out or air could be discharged, which could injure personnel or damage the peripheral equipment.
- Adjust the stroke when the cylinder is not pressurized.
If it is adjusted in the pressurized state, the seal of the adjustment section could become deformed, leading to air leakage.

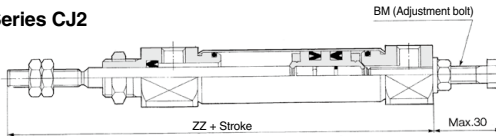


Symbol



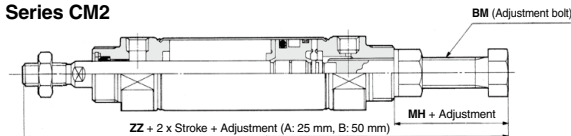
Dimensions (Dimensions other than below are the same as standard type.)

Series CJ2



Bore size (mm)	BM	ZZ (mm)
10	M5 x 0.8	74
16	M5 x 0.8	75

Series CM2



Bore size (mm)	BM	MH	ZZ (mm)
20	M10 x 1.25	26.5	142.5
25	M14 x 1.5	29	149
32	M14 x 1.5	29	151
40	M16 x 1.5	32	186

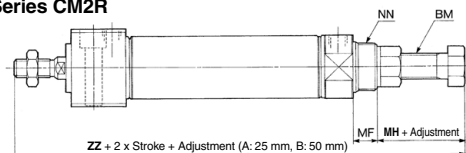
Made to Order Common Specifications: -XC9: Adjustable Stroke Cylinder/Adjustable Retraction Type



21 Adjustable Stroke Cylinder/Adjustable Retraction Type

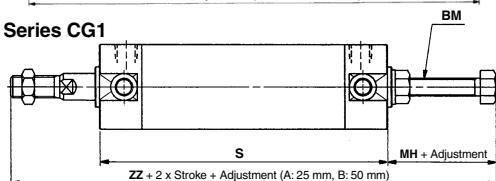
Dimensions (Dimensions other than below are the same as standard type.)

Series CM2R



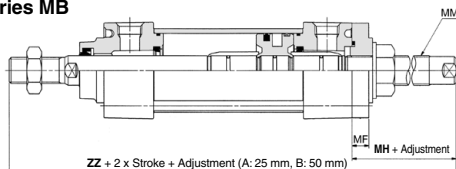
Bore size (mm)	BM	MF	MH	NN	ZZ
20	M10 x 12.5	13	26.5	M20 x 1.5	142.5
25	M14 x 1.5	13	29	M26 x 1.5	149
32	M14 x 1.5	13	29	M26 x 1.5	151
40	M16 x 1.5	16	32	M32 x 2	186

Series CG1



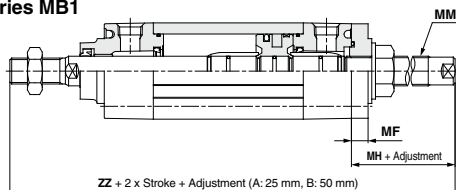
Bore size (mm)	BM	S	Rubber bumper	Air cushion
			MH ZZ	MH ZZ
20	M6 x 1	77	23 135	21 133
25	M6 x 1	77	23 140	21 138
32	M8 x 1.25	79	25 144	25 144
40	M12 x 1.75	87	40 177	39 176
50	M12 x 1.75	102	33 193	37 197
63	M16 x 2	102	40 200	44 204

Series MB



* In the case of axial foot style, the cushion is shipped after mounting. On other styles, it is placed in the same package (not assembled).
* Dimensions other than above are the same as Series CG1, long stroke type.

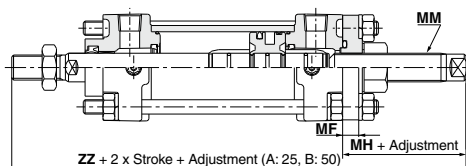
Series MB1



MB, MB1 Common

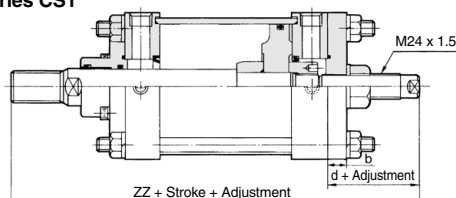
Bore size (mm)	MH	MF	MM	ZZ
32	41.5	9.5	M12 x 1.25	172
40	41.5	9.5	M12 x 1.25	176
50	52.5	11.5	M20 x 1.5	204
63	52.5	11.5	M20 x 1.5	204
80	62.5	15.5	M24 x 1.5	248
100	62.5	15.5	M24 x 1.5	248

Series CA2



Bore size (mm)	MH	MF	MM	ZZ
40	44	9	M16 x 1.5	179
50	42	11	M16 x 1.5	190
63	48	11	M20 x 1.5	204
80	55	15	M24 x 1.5	242
100	57	15	M24 x 1.5	255

Series CS1



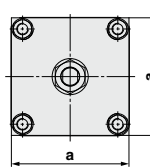
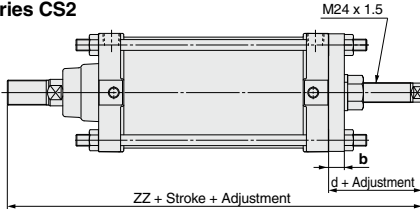
Bore size (mm)	b	d	ZZ
125	19	66	274
140	19	66	274
160	22	62	288

Made to Order Common Specifications: Adjustable Stroke Cylinder/Adjustable Retraction Type

Symbol
-XC9

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

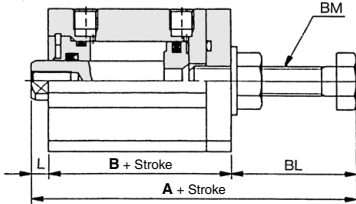
Series CS2



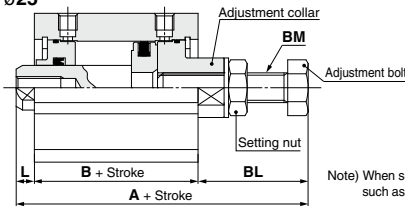
Bore size (mm)	a	b	d	ZZ
125	142	19	63	271
140	155	19	63	271
160	174	19	59	285

Series CQS

ø12, ø16



ø20, ø25



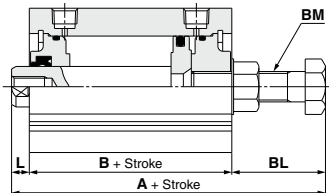
Bore size (mm)	A	B	L	BL	BM	Manufacturable stroke
12	50.5 (54.5)	22 (27)	3.5	25 (29)	M5 x 0.8	5 to 30
16	51 (56)	22 (27)	3.5	25.5	M6 x 1	
20	61 (71)	26 (36)	4.5	30.5	M8 x 1.25	
25	63.5 (73.5)	29 (39)	5	29.5	M8 x 1.25	5 to 50

Note 1) (): Denotes the dimensions with auto switch.

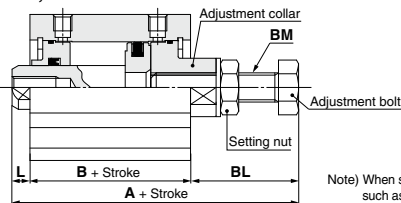
Note 2) Applicable stroke available by the 5 mm interval.

Note) When securing the adjustment bolt, clamp the width across flats of the adjustment collar with a tool, such as a spanner and tighten the setting nut with a tool, such as other spanner to secure the bolt firmly.

Series CQ2



ø20, ø25, ø32



Bore size (mm)	A	B	L	BL	BM	Manufacturable stroke
12	52 (59.2)	25.2 (32.4)	3.5	23.3	M5 x 0.8	5 to 30
16	53 (63)	26 (36)	3.5	23.5	M6 x 1	
20	61 (73)	26 (38)	4.5	30.5	M8 x 1.25	
25	63.5 (73.5)	29 (39)	5	29.5	M8 x 1.25	5 to 50
32	65.5 (75.5)	30.5 (40.5)	7	28	M8 x 1.25	5 to 50
40	84 (94)	40 (50)	7	37	M12 x 1.5	75, 100
50	84.5 (94.5)	40.5 (50.5)	8	36	M12 x 1.5	
63	88.5 (98.5)	42 (52)	8	38.5	M16 x 1.5	10 to 50
80	109.5 (119.5)	51 (61)	10	48.5	M20 x 1.5	75, 100
100	125 (135)	60.5 (70.5)	12	52.5	M24 x 1.5	

Note 1) (): Denotes the dimensions with auto switch.

Note 2) Applicable stroke available by the 5 mm interval.

Note) When securing the adjustment bolt, clamp the width across flats of the adjustment collar with a tool, such as a spanner and tighten the setting nut with a tool, such as other spanner to secure the bolt firmly.

Made to Order Common Specifications: -XC9: Adjustable Stroke Cylinder/Adjustable Retraction Type



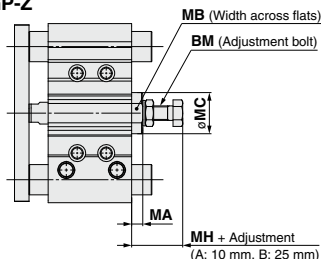
21 Adjustable Stroke Cylinder/Adjustable Retraction Type

Symbol

-XC9

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

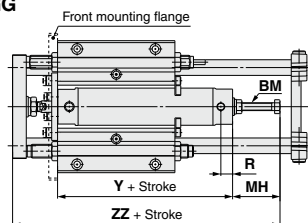
Series MGP-Z



Common Dimensions: MGPM, MGPL, MGPA (mm)

Bore size (mm)	BM	MA	MB	MC	MH
12	M5 x 0.8	5	8	12.5	17
16	M6 x 1	5	10	14	19
20	M8 x 1.25	6.5	13	16	25
25	M8 x 1.25	6.5	13	16	24
32	M8 x 1.25	6.5	19	21	25
40	M12 x 1.5	9	27	30	32.5
50	M12 x 1.5	9	30	34	32.5
63	M16 x 1.5	10	36	40	37
80	M20 x 1.5	15	41	46	48.5
100	M24 x 1.5	18	46	52	55.5

Series MGG ø20 to ø50

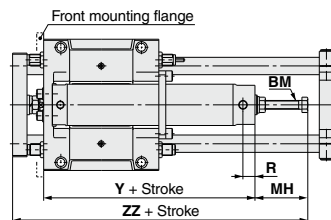


Series MGG (mm)

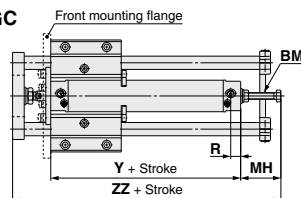
Bore size (mm)	R	Y	BM	Adjustment 0 to 25 mm		Adjustment 0 to 50 mm	
				MH	ZZ	MH	ZZ
20	12	77	M6 x 1	48	164	73	189
25	12	77	M6 x 1	48	171	73	196
32	12	79	M8 x 1.25	50	175	75	200
40	13	87	M12 x 1.75	65	208	90	233
50	14	102	M12 x 1.75	58	227	83	252
63	14	117	M16 x 2	65	236	90	261

* The piston speed for the retraction side is 50 to 500 mm/s.

ø63



Series MGC ø20 to ø50



Series MGC (mm)

Bore size (mm)	R	Y	BM	Adjustment 0 to 25 mm		Adjustment 0 to 50 mm	
				MH	ZZ	MH	ZZ
20	12	77	M6 x 1	46	162	71	187
25	12	77	M6 x 1	46	169	71	194
32	12	79	M8 x 1.25	50	175	75	200
40	13	87	M12 x 1.75	64	207	89	232
50	14	102	M12 x 1.75	62	231	87	256

* The piston speed for the retraction side is 50 to 500 mm/s.

Made to Order Common Specifications: -XC10: Dual Stroke Cylinder/Double Rod Type



Series **CJ2**, **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

Symbol

22 Dual Stroke Cylinder/Double Rod Type

-XC10

Two cylinders are constructed as one cylinder in a back-to-back configuration allowing the cylinder stroke to be controlled in three steps.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CJ2	Air cylinder	CJ2	Double acting, Single rod	Except with air cushion	● From P. 44
	Non-rotating rod type	CJ2K	Double acting, Single rod		
CM2	Air cylinder	CM2	Double acting, Single rod	Except with air cushion	● From P. 172
	Non-rotating rod type	CM2K	Double acting, Single rod	Except with air cushion	
CG1	Air cylinder	CG1	Double acting, Single rod	Except with air cushion	● From P. 306
	Non-rotating rod type	CG1K	Double acting, Single rod		
MB	Air cylinder	MB	Double acting, Single rod	* Except clevis and trunnion styles	● From P. 408
	Non-rotating rod type	MBK	Double acting, Single rod	* Except clevis and trunnion styles	
	With end lock type	MBB	Double acting, Single rod	* Except clevis and trunnion styles	
MB1	Air cylinder	MB1	Double acting, Single rod	* Except clevis and trunnion styles	● From P. 456
	Non-rotating rod type	MB1K	Double acting, Single rod	* Except clevis and trunnion styles	
CA2	Air cylinder	CA2	Double acting, Single rod	* Except clevis and trunnion styles	● From P. 508
	Non-rotating rod type	CA2K	Double acting, Single rod	* Except clevis and trunnion styles	
	End lock cylinder	CBA2	Double acting, Single rod	* Except clevis and trunnion styles	
CS1	Air cylinder	CS1	Double acting, Single rod	* Except clevis and trunnion styles	● From P. 564
	Air-hydro cylinder	CS1H	Double acting, Single rod	* Except clevis and trunnion styles	
CS2	Air cylinder	CS2	Double acting, Single rod	* Except clevis and trunnion styles	● P. 599
CQS	Compact cylinder	CQS	Double acting, Single rod	Except with bracket	● From P. 725
	Compact cylinder	CQ2	Double acting, Single rod	Except with bracket	
CQ2	Air-hydro cylinder	CQ2H	Double acting, Single rod	Except with bracket	● From P. 785

How to Order

CJ2	Mounting style	Bore size	—	Stroke A	+	Stroke B	—	XC10				
CM2	Mounting style	Bore size	—	Stroke A	Suffix	+	Stroke B	Suffix	—	XC10		
CG1	Mounting style	Type	Bore size	—	Stroke A	Suffix	+	Stroke B	Suffix	—	XC10	
MB MB1	Mounting style	Bore size	—	Stroke A	Suffix	+	Stroke B	Suffix	—	XC10		
* Except clevis and trunnion styles												
CA2	Mounting style	Type	Bore size	—	Stroke A	Suffix	+	Stroke B	Suffix	—	XC10	
* Except clevis and trunnion styles												
CS1	Mounting style	Tubing material	Type	Bore size	—	Stroke A	Suffix	+	Stroke B	Suffix	—	XC10
* Except clevis and trunnion styles												
CS2	Mounting style	Bore size	Port suffix	—	Stroke A	Suffix	+	Stroke B	Suffix	—	XC10	
* Except clevis and trunnion styles												
CBA2	Mounting style	Type	Bore size	—	Stroke A	Suffix	—	Symbol of lock	Manual release type	+		
<div>Stroke B</div> <div>Suffix</div> <div>—</div> <div>Lock position</div> <div>Symbol of manual release</div> <div>—</div> <div>XC10</div>												
* Except clevis and trunnion styles												
CQ2B	Bore size	—	Stroke S ₁	+	Stroke S ₂	D (C) (M)	—	XC10				
CQSB	Bore size	—	Stroke S ₁	+	Stroke S ₂	D (C) (M)	—	XC10				

Dual stroke cylinder

Made to Order Common Specifications: -XC10: Dual Stroke Cylinder/Double Rod Type



22 Dual Stroke Cylinder/Double Rod Type

Specifications

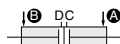
Series	Bore size (mm)	Maximum manufacturable stroke (mm)
CJ2	10, 16	300 (Maximum 150 on one side)
CM2	20 to 40	1000
CG1	20	350
	25	400
	32	450
	40	800
	50, 63	1200
MB MB1	32	600
	40	700
	50 to 100	900

* Specifications other than above are the same as standard type.

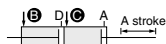
Series	Bore size (mm)	Maximum manufacturable stroke (mm)
CA2,CBA2	40 to 100	1000
CS1	125, 140	1000
	160 to 300	1200
CS2	125, 140	1000
	160	1200
CQS CQ2	12, 16	60 (Maximum 30 on one side)
	20, 25	100 (Maximum 50 on one side)
CQ2	32, 40	200 (Maximum 100 on one side)
	50 to 100	200 (Maximum 100 on one side)

Symbol

Function



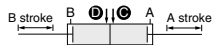
When air pressure is supplied to ports **A** and **B**, both A and B strokes retract.



When air pressure is supplied to ports **B** and **C**, A out strokes.



When air pressure is supplied to ports **A** and **B**, B out strokes.



When air pressure is supplied to ports **C** and **D**, both strokes A and B out strokes.



Series CJ2



Series CS1



Series CG1



Series CA2

Made to Order Common Specifications: Dual Stroke Cylinder/Double Rod Type

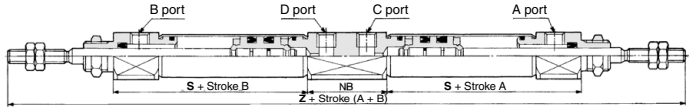
Symbol

-XC10

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

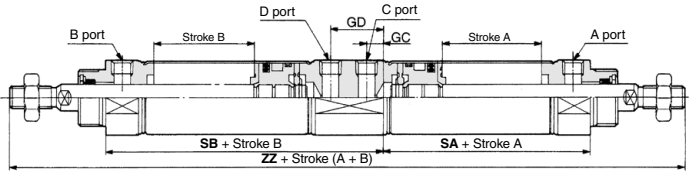
Series CJ2

Bore size (mm)	NB	S	Z
10	21	36.5	150
16	21	37.5	152

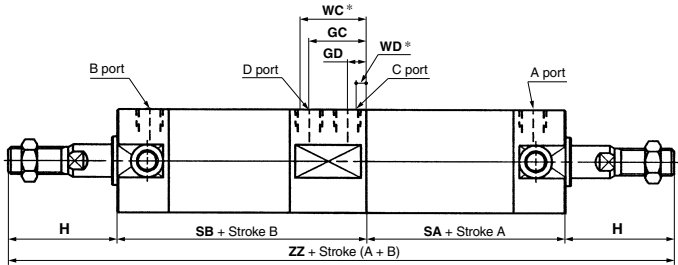
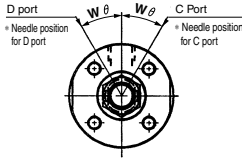


Series CM2

Bore size (mm)	GC	GD	SA	SB	ZZ
20	7	24	47	78	207
25	7	24	47	78	215
32	7	24	49	80	219
40	10.5	33.5	66.5	110.5	277



Series CG1

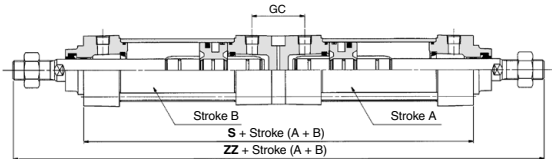


Bore size (mm)	GC	GD	H	SA	SB	Wθ	Air cushion		ZZ
							WC	WD	
20	21	9	35	56	86	30°	25	5	212
25	21	9	40	56	86	30°	25	5	222
32	23	9	40	58	90	30°	27	5	228
40	24	8	50	66	98	20°	27	5	264
50	28	12	58	76	116	20°	32	8	308
63	28	12	58	76	116	20°	32	8	308

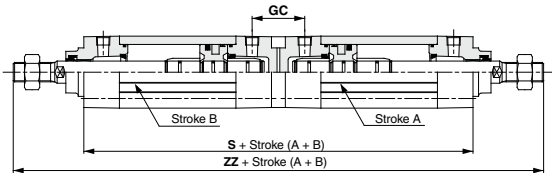
Series MB

MB, MB1 Common

Bore size (mm)	GC	S	ZZ
32	36	178	272
40	38	178	280
50	41	198	314
63	43	198	314
80	52	242	386
100	52	242	386



Series MB1



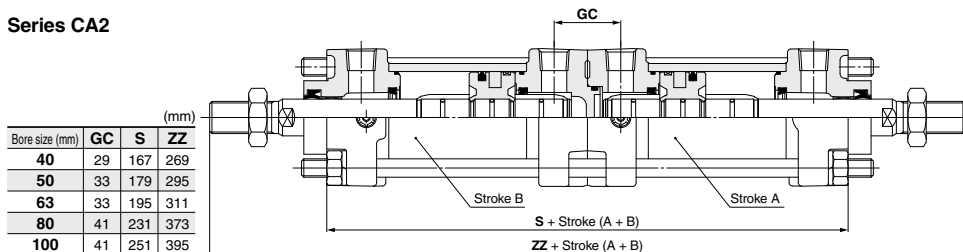
Made to Order Common Specifications: -XC10: Dual Stroke Cylinder/Double Rod Type



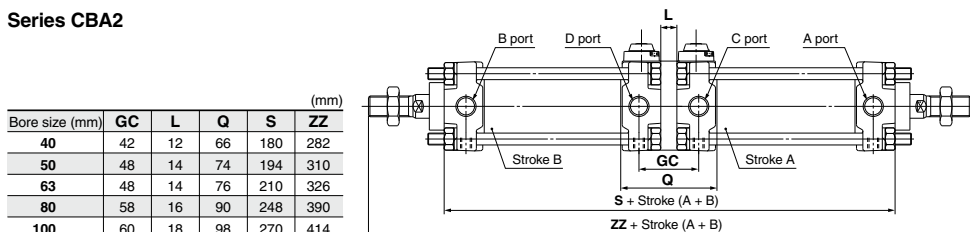
22 Dual Stroke Cylinder/Double Rod Type

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

Series CA2

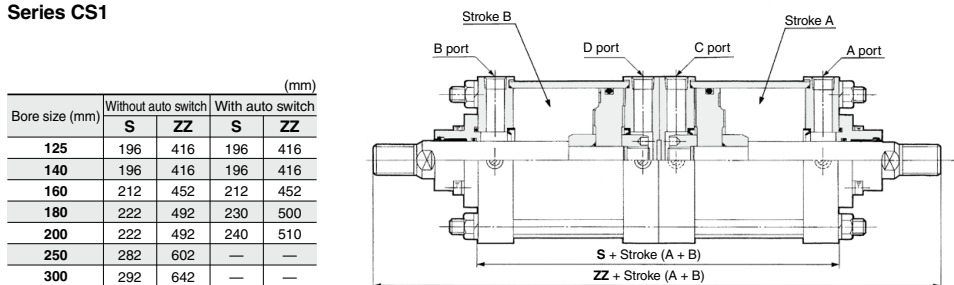


Series CBA2

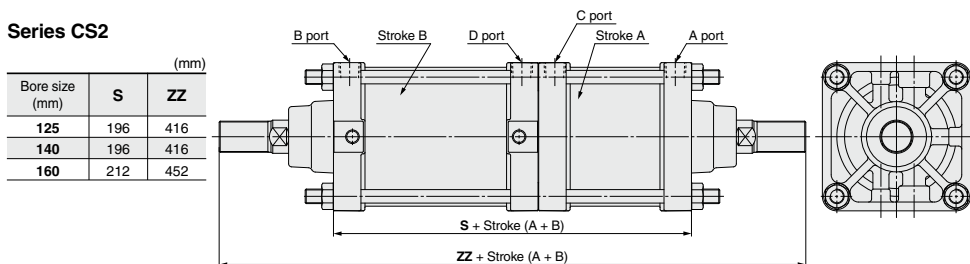


* The above diagram shows head side lock type and manual releasing non-locking type. Dimensions of rod side locking type, both-side lock style and manual releasing lock type are the same as dimensions in the above table.

Series CS1



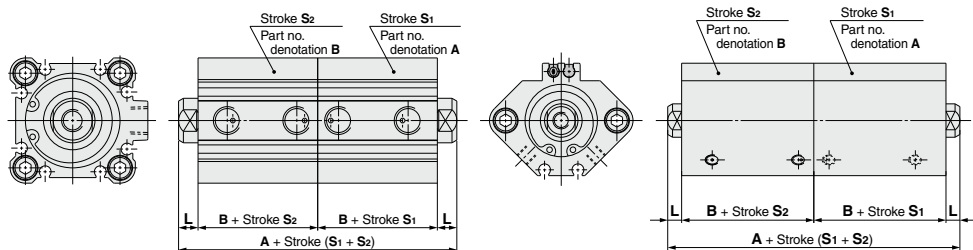
Series CS2



* For rod side flange style "F", the flange bracket will be attached to the stroke A side.

Construction/Dimensions (Other dimensions are the same as standard.)

Series CQ2



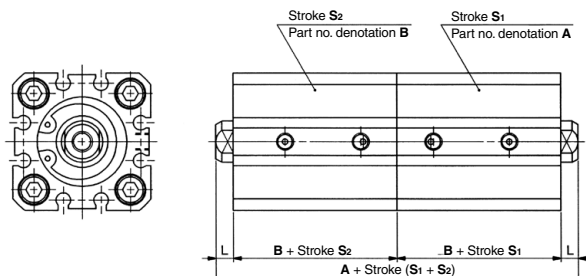
Note) In the case of bore sizes $\phi 12$ to $\phi 25$ with auto switch, port directions are different.

Bore size (mm)	A		B		L	Stroke Both of S ₁ , S ₂
	50 st or less	75, 100 st	50 st or less	75, 100 st		
12	41 (63)	—	17 (28)	—	3.5	5 to 30
16	44 (68)	—	18.5 (30.5)	—	3.5	
20	48 (72)	—	19.5 (31.5)	—	4.5	
25	55 (75)	—	22.5 (32.5)	—	5	5 to 50
32	60 (80)	80 (80)	23 (33)	33 (33)	7	
40	73 (93)	93 (93)	29.5 (39.5)	39.5 (39.5)	7	
50	77 (97)	97 (97)	30.5 (40.5)	40.5 (40.5)	8	10 to 100
63	88 (108)	108 (108)	36 (46)	46 (46)	8	
80	107 (127)	127 (127)	43.5 (53.5)	53.5 (53.5)	10	
100	130 (150)	150 (150)	53 (63)	63 (63)	12	

Note 1) () : Denotes the dimensions with auto switch.

Note 2) Applicable stroke available by the 5 mm interval.

Series CQS



Bore size (mm)	A		L	Stroke Both of S ₁ , S ₂
	B	B		
12	41 (51)	17 (22)	3.5	5 to 30
16	41 (51)	17 (22)	3.5	
20	48 (68)	19.5 (29.5)	4.5	5 to 50
25	55 (75)	22.5 (32.5)	5	

Note 1) () : Denotes the dimensions with auto switch.

Note 2) Applicable stroke available by the 5 mm interval.

Made to Order Common Specifications: -XC11: Dual Stroke Cylinder/Single Rod Type



Series **CJ2**, **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

23 Dual Stroke Cylinder/Single Rod Type

Two cylinders can be integrated by connecting them in line, and the cylinder stroke can be controlled in two stages in both directions. Do not operate Series CS1 at twice the output.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CJ2	Air cylinder	CJ2	Double acting, Single rod	Except with air cushion	② From P. 44
CM2	Air cylinder	CM2	Double acting, Single rod		② From P. 172
	Non-rotating rod	CM2K	Double acting, Single rod		
	Direct mount	CM2R	Double acting, Single rod		
	Non-rotating rod, Direct mount type	CM2RK	Double acting, Single rod	Except with air cushion	
CG1	Air cylinder	CG1	Double acting, Single rod		② From P. 306
	Non-rotating rod	CG1K	Double acting, Single rod	Except with air cushion	
MB	Air cylinder	MB	Double acting, Single rod	* Except trunnion style	② From P. 408
MB1	Air cylinder	MB1	Double acting, Single rod	* Except trunnion style	② From P. 456
CA2	Air cylinder	CA2	Double acting, Single rod	* Except trunnion style	② From P. 508
	Non-rotating rod	CA2K	Double acting, Single rod	* Except trunnion style	
CS1	Air cylinder	CS1	Double acting, Single rod	* Except trunnion style	② From P. 564
CS2	Air cylinder	CS2	Double acting, Single rod	* Except trunnion style	② P. 599
CQS	Compact cylinder	CQS	Double acting, Single rod	Except with bracket	② From P. 725
CQ2	Compact cylinder	CQ2	Double acting, Single rod	Except with bracket	② From P. 785
	Air-hydro cylinder	CQ2H	Double acting, Single rod	Except with bracket	
CNA2	Cylinder with lock	CNA2	Double acting, Single rod	* Except trunnion style	② From P. 838
MGG	Guide cylinder	MGG	Double acting		② From P. 454
MGC		MGC	Double acting		② From P. 494

How to Order

CJ2 [Mounting style] [Bore size] - [Stroke A] + [Stroke B-A] - XC11

CM2 [Mounting style] [Bore size] - [Stroke A] + [Stroke B-A] [Suffix] - XC11

CG1 [Mounting style] [Type] [Bore size] - [Stroke A] + [Stroke B-A] [Suffix] - XC11

MB
MB1 [Mounting style] [Bore size] - [Stroke A] [Suffix] + [Stroke B-A] [Suffix] - XC11
* Except trunnion style

CA2 [Mounting style] [Type] [Bore size] - [Stroke A] [Suffix] + [Stroke B-A] [Suffix] - XC11
* Except trunnion style

CS1 [Mounting style] [Tubing material] [Bore size] - [Stroke A] [Suffix] + [Stroke B-A] [Suffix] - XC11
* Except trunnion style

CS2 [Mounting style] [Bore size] [Port suffix] - [Stroke A] [Suffix] + [Stroke B-A] [Suffix] - XC11
* Except trunnion style

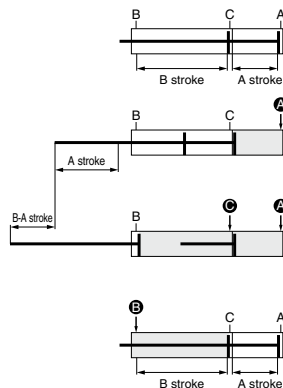
CQSB [Bore size] - [Stroke S₁] + [Stroke S₂-S₁] D(C)(M) - XC11

CQ2B [Bore size] - [Stroke S₁] + [Stroke S₂-S₁] D(C)(M)(Z) - XC11

CNA2 [Mounting style] [Type] [Bore size] - [Stroke A] [Suffix] + [Stroke B-A] [Suffix] - D - XC11

Specifications: Same as standard type. (Please contact SMC for each manufacturable stroke length.)

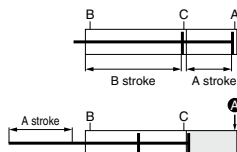
Functional description of dual stroke cylinder



- 1) Initial state
(0 stroke position)
- 2) 1st stage A stroke operation
When the air pressure is supplied from the A port, the rod operates the A stroke.
- 3) 2nd stage B-A stroke operation
Following the 1st stage, when the air pressure is supplied from the C port, the rod operates the B-A stroke.
- 4) Cylinder retraction
When the air pressure is supplied from the B port, the rod retracts completely.

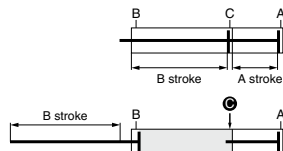


A stroke or B stroke operation can be made individually.



A stroke operation

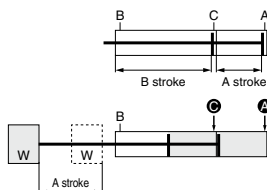
- 1) Initial state
(0 stroke position)
- 2) Operation
When the air pressure is supplied from the A port, the rod operates the A stroke.



B stroke operation

- 1) Initial state
(0 stroke position)
- 2) Operation
When the air pressure is supplied from the C port, the rod operates the B stroke.

Double output is possible.



- 1) Initial state
(0 stroke position)
- 2) Double output
When the air pressure is supplied to the A and C ports at the same time, the double output can be obtained in the A stroke range.

Precautions

⚠ Caution

1. Do not supply air until the cylinder is fixed with the attached bolt.
2. If air is supplied without securing the cylinder, the cylinder could lurch, posing the risk of bodily injury or damage to the peripheral equipment.

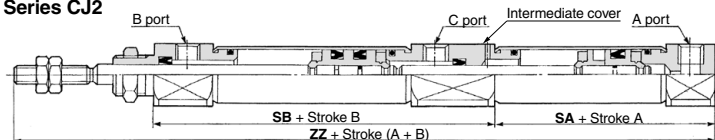
Made to Order Common Specifications: -XC11: Dual Stroke Cylinder/Single Rod Type



23 Dual Stroke Cylinder/Single Rod Type

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

Series CJ2



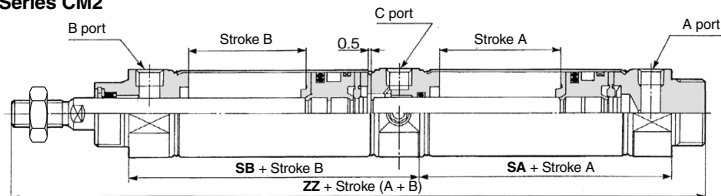
(mm)			
Bore size (mm)	SA	SB	Z
10	31	53.5	112.5
16	31.5	54.5	114

Note) When mounting an auto switch at the extended piston rod A side, the following auto switches interfere with the intermediate cover. In this case, please mount on the stroke B side. Please be aware that the auto switch defects and temporarily turns ON/OFF when passing the intermediate position of the B stroke.

Solid state auto switch : D-H7□, D-H7C, D-H7□W, D-H7NF, D-H7BA

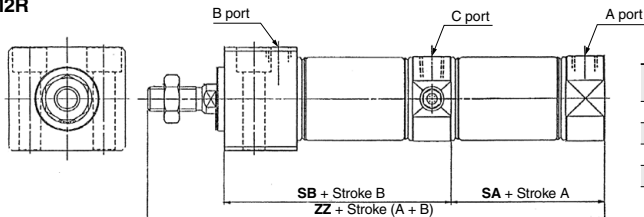
Reed auto switch : D-C7□, D-C80, D-C73C, D-C80C, D-A80, D-A9□, D-A9□V, D-A79W, D-A73

Series CM2



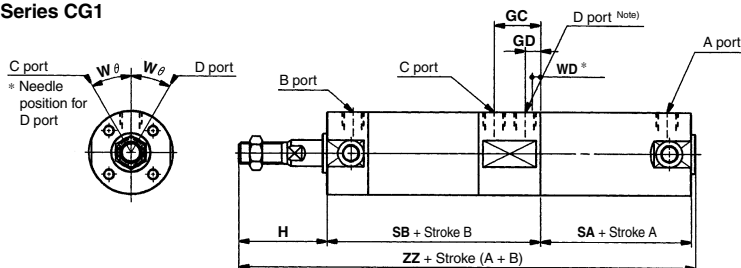
(mm)			
Bore size (mm)	SA	SB	ZZ
20	48	62	164
25	48	62	168
32	50	64	172
40	67.5	88.5	222

Series CM2R



(mm)			
Bore size (mm)	SA	SB	ZZ
20	48	76	151
25	48	76	155
32	50	78	159
40	67.5	104.5	206

Series CG1



Note) D port style Type N: Rubber bumper, element installation; Type A: Air cushion, element non-installation (Release to atmospheric pressure)

A Stroke Range

Bore size	Stroke range
ø20	Up to 200 mm
ø25, ø32	Up to 300 mm

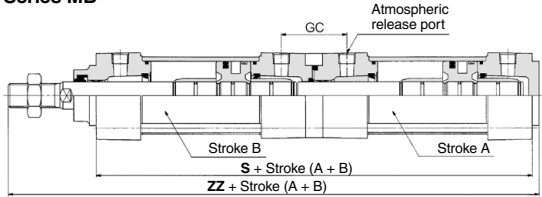
Bore size (mm)	GC	GD	H	SA	SB	Wθ	ZZ	Air cushion	
								WD	Long stroke
20	21	9	35	48	87	30°	172	5	—
25	21	9	40	48	87	30°	177	5	—
32	23	9	40	50	91	30°	183	5	—
40	24	8	50	57	99	20°	208	5	66
50	28	12	58	64	117	20°	241	8	76
63	28	12	58	64	117	20°	241	8	76

Symbol

-XC11

Construction/Dimensions

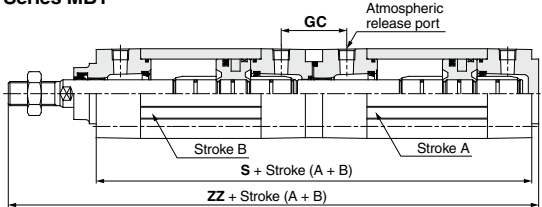
Series MB



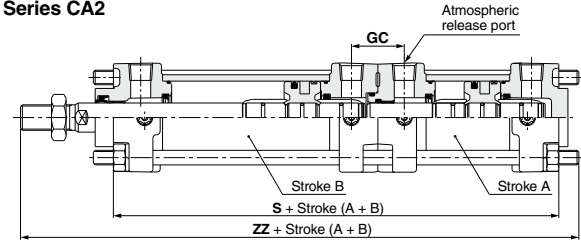
MB, MB1 Common (mm)

Bore size (mm)	GC	S	ZZ
32	36	179	230
40	38	179	234
50	41	199	261
63	43	199	261
80	52	243	319
100	52	243	319

Series MB1



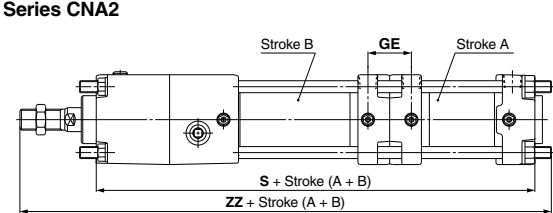
Series CA2



(mm)

Bore size (mm)	GC	S	ZZ
40	29	168	230
50	33	180	249
63	33	196	268
80	41	232	320
100	41	252	341

Series CNA2



(mm)

Bore size (mm)	GE	S	ZZ
40	29	237	299
50	33	258	327
63	33	280	352
80	41	334	422
100	41	372	461

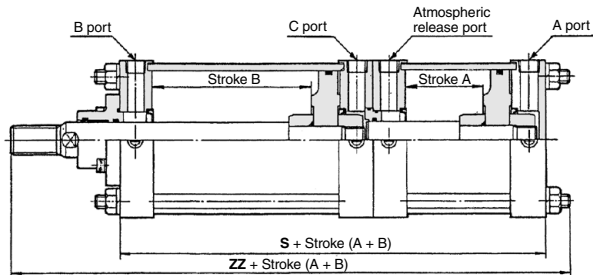
Made to Order Common Specifications: -XC11: Dual Stroke Cylinder/Single Rod Type



23 Dual Stroke Cylinder/Single Rod Type

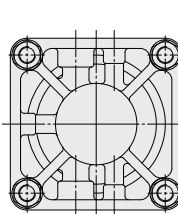
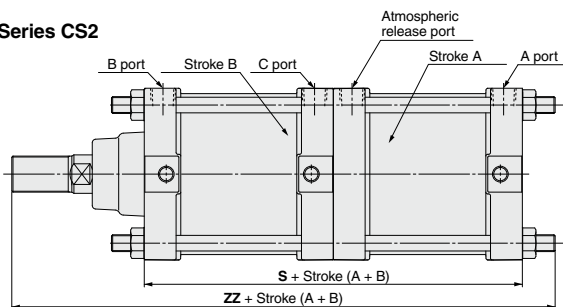
Construction/Dimensions

Series CS1



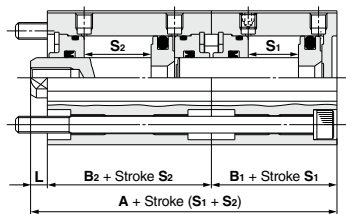
Bore size (mm)	Without auto switch		With auto switch	
	S	ZZ	S	ZZ
125	197	334	197	334
140	197	334	197	334
160	213	363.5	213	363.5
180	223	393	231	401
200	223	393	241	411
250	283	484.5	—	—
300	293	519.5	—	—

Series CS2



Bore size (mm)	S	ZZ
125	197	334
140	197	334
160	213	363.5

Series CQS



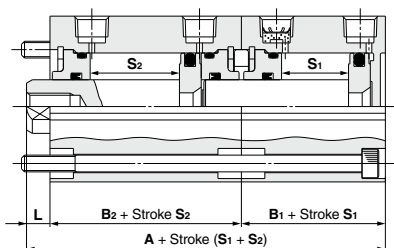
Bore size (mm)	A	B ₁	B ₂	L	Stroke Both of S ₁ , S ₂
12	42.5 (52.5)	17 (22)	22 (27)	3.5	5 to 30
16	42.5 (52.5)	17 (22)	22 (27)	3.5	5 to 30
20	50 (70)	19.5 (29.5)	26 (36)	4.5	5 to 50
25	56.5 (76.5)	22.5 (32.5)	29 (39)	5	5 to 50

Note 1) () : Denotes the dimensions with auto switch.

Note 2) Applicable stroke available by the 5 mm interval.

Note 3) Please contact SMC for long stroke type.

Series CQ2



Bore size (mm)	A	B ₁	B ₂	L	Stroke Both of S ₁ , S ₂
12	45.7 (63.9)	17 (28)	25.2 (32.4)	3.5	5 to 30
16	48 (70)	18.5 (30.5)	26 (36)	3.5	5 to 30
20	50 (74)	19.5 (31.5)	26 (38)	4.5	5 to 50
25	56.5 (76.5)	22.5 (32.5)	29 (39)	5	5 to 50
32	60.5 (80.5)	23 (33)	30.5 (40.5)	7	5 to 50
40	76.5 (96.5)	29.5 (39.5)	40 (50)	7	5 to 50
50	79 (99)	30.5 (40.5)	40.5 (50.5)	8	5 to 50
63	86 (106)	36 (46)	42 (52)	8	5 to 50
80	104.5 (124.5)	43.5 (53.5)	51 (61)	10	10 to 50
100	125.5 (145.5)	53 (63)	60.5 (70.5)	12	10 to 50

Note 1) () : Denotes the dimensions with auto switch.

Note 2) Applicable stroke available by the 5 mm interval.

Note 3) Please contact SMC for long stroke type.

Made to Order Common Specifications:
Dual Stroke Cylinder/Single Rod Type

Symbol

-XC11

Series MGG

How to Order

MGG Bearing type Mounting style Bore size — Stroke A + Stroke B-A — Auto switch — Auto switch mounting bracket —XC11
Dual stroke cylinder/Single rod type

Specifications

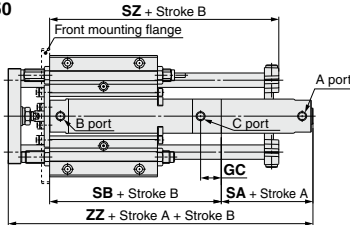
Bore size	20	25	32	40	50	63
Basic cylinder *	CDG1BN	Bore size	Port thread type	— Stroke —	Auto switch —	Auto switch mounting bracket —X428
Stroke A	ø20: Maximum 200 mm ø25 to ø63: Maximum 300 mm					
Stroke B	ø20: Maximum 200 mm ø25 to ø63: Maximum 300 mm					
Dimensions	Refer to the table below The piston speed for the stroke B retraction side is 50 to 500 mm/s.					
Specifications other than above	Same as standard type.					

* The cylinder has the shape before model change.

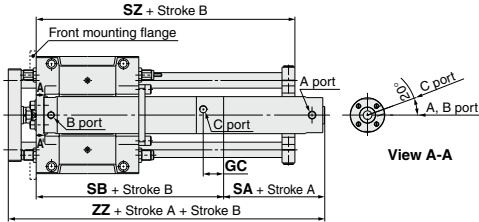
Dimensions (Dimensions other than below are the same as standard type.)

Series MGG

ø20 to ø50



ø63



Series MGG

(mm)

Bore size (mm)	GC	SA	SB	SZ	ZZ	Bracket mounting stroke (Stroke A + Stroke B)	Stroke A availability
20	21	50	87	118	176	35 st or more	Up to 200
25	21	50	87	129	183	60 st or more	Up to 300
32	23	52	91	155	189	80 st or more	
40	24	59	99	182	214	125 st or more	
50	28	66	117	218	250	160 st or more	
63	28	66	132	254	252	210 st or more	

-XC

23 Dual Stroke Cylinder/Single Rod Type

Symbol

-XC11

Series MGC

How to Order

MGC Bearing type Mounting style Bore size — Stroke A + Stroke B-A — Equipped/Not equipped back plate — Auto switch — **XC11**

Dual stroke cylinder/Single rod type ●

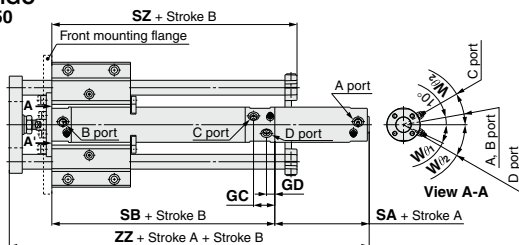
Specifications

Bore size	20	25	32	40	50
Basic cylinder	CG1ZA Bore size Port thread type — Stroke — Equipped/Not equipped back plate — Auto switch — XC11				
Stroke A	ø20: Maximum 200 mm ø25 to ø50: Maximum 300 mm				
Stroke B	ø20: Maximum 200 mm ø25 to ø50: Maximum 300 mm				
Dimensions	Refer to the table below The piston speed for the stroke B retraction side is 50 to 500 mm/s.				
Specifications other than above	Same as standard type.				

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

Series MGC

ø20 to ø50



Series MGC

(mm)

Bore size (mm)	GC	GD	SA	SB	W _{1/1}	W _{2/2}
20	21	9	50	87	30°	30°
25	21	9	50	87	30°	30°
32	23	9	52	91	25°	30°
40	24	8	59	99	20°	20°
50	28	12	66	117	20°	20°

Bore size (mm)	SZ		ZZ	Bracket mounting stroke (Stroke A + Stroke B)	Stroke A availability
	With R	Without R			
20	101	80	176	35 st or more	Up to 200
25	107	85	183	60 st or more	
32	115	90	189	80 st or more	Up to 300
40	132	100	214	125 st or more	
50	174	135	250	160 st or more	

Made to Order Common Specifications: -XC12: Tandem Cylinder



Series **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

24 Tandem Cylinder

This is a cylinder produced with two air cylinders in line allowing double the output force.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std. model)
CM2	Air cylinder	CM2	Double acting, Single rod	Except with air cushion	② From P. 172
	Direct mount type	CM2R	Double acting, Single rod	Except with air cushion	
CG1	Air cylinder	CG1	Double acting, Single rod	Except with air cushion	② From P. 306
	Non-rotating rod type	CG1K	Double acting, Single rod	Except with air cushion	
MB	Air cylinder	MB	Double acting, Single rod		② From P. 408
MB1	Air cylinder	MB1	Double acting, Single rod		② From P. 456
CA2	Air cylinder	CA2	Double acting, Single rod		② From P. 508

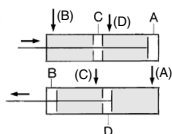
How to Order

Standard model no.

-XC12

Tandem cylinder ●

Symbol



When air pressure is supplied to ports (B) and (D), the output force is doubled in the retract stroke.

When air pressure is supplied to ports (A) and (C), the output force is doubled in the out stroke.

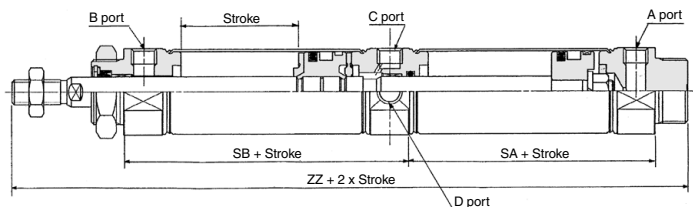


Series CG1

Specifications: Same as standard type.

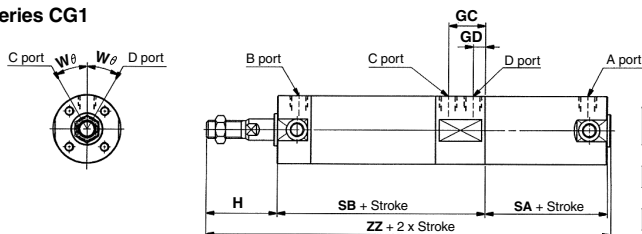
Dimensions (Dimensions other than below are the same as standard type.)

Series CM2



Bore size (mm)	SA	SB	ZZ
20	48	62	164
25	48	62	168
32	50	64	172
40	67.5	88.5	222

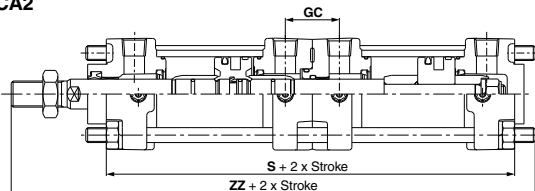
Series CG1



Bore size (mm)	GC	GD	H	SA	SB	Wθ	ZZ
20	21	9	35	48	87	30°	172
25	21	9	40	48	87	30°	177
32	23	9	40	50	91	30°	183
40	24	8	50	57	99	20°	208
50	28	12	58	64	117	20°	241
63	28	12	58	64	117	20°	241

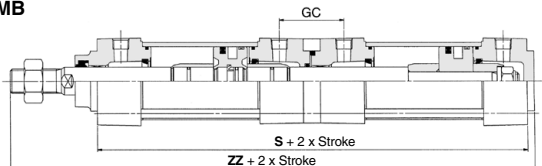
* Please contact SMC for long stroke (301 mm or more) since SA-dimensions and ZZ-dimensions are different from those in the above table.

Series CA2



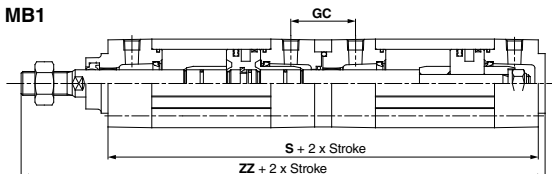
Bore size (mm)	GC	S	ZZ
40	29	169	231
50	33	181	250
63	33	197	269
80	41	233	321
100	41	253	342

Series MB



MB, MB1 Common				(mm)
Bore size (mm)	GC	S	ZZ	
32	36	180	231	
40	38	180	235	
50	41	200	262	
63	43	200	262	
80	52	244	320	
100	52	244	320	

Series MB1



* Stroke range is shown as the addition of stroke length on both sides.

** External dimensions other than above are the same as standard type of each product series.

Made to Order Common Specifications: -XC13: Auto Switch Rail Mounting Style



Series **CM2** and **CG1** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

25 Auto Switch Rail Mounting Style

A cylinder on which a rail is mounted to enable auto switches, in addition to the standard method for mounting auto switches (Band mounting style).

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CM2	Air cylinder	CM2	Double acting, Single rod		⑨ From P. 172
		CM2W	Single acting (Spring return/extend)		
	Non-rotating rod type	CM2K	Double acting, Double rod		
		CM2K	Double acting, Single rod		
		CM2KW	Single acting (Spring return/extend)		
	Direct mount type	CM2R	Double acting, Double rod		
	Non-rotating rod, Direct mount type	CM2RK	Double acting, Single rod		
	Low friction	CM2Y	Double acting, Single rod		
	End lock cylinder	CBM2	Double acting, Single rod	For XC13A and XC13C only	
CG1	Air cylinder	CG1	Double acting, Single rod	Except the trunnion style	⑨ From P. 306
	Double rod type	CG1W	Double acting, Double rod	Except the trunnion style	
	Non-rotating rod type	CG1K	Double acting, Single rod	Except the trunnion style	
	Direct mount type	CG1R	Double acting, Single rod	Except with air cushion	
CBG1	End lock cylinder	CBG1	Double acting, Single rod	For XC13A only	⑨ From P. 352
MGG	Guide cylinder	MGG	Double acting		⑨ From P. 454
MGC		MGC	Double acting		⑨ From P. 494

How to Order

CDM2 Standard model no. – XC13A

CDG1 Standard model no. – XC13A

* Trunnion style of the Series CDG1 cannot be mounted.

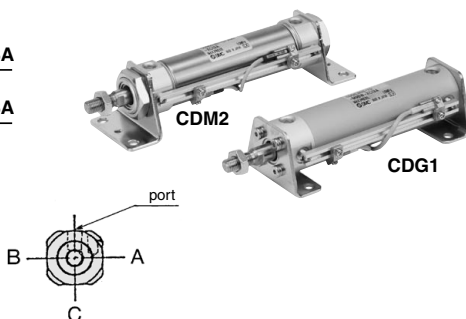
Rail mounting direction *

XC13A	Mounted on the right side when viewed from the rod with the ports facing upwards.
XC13B ^{*2, *3}	Mounted on the left side when viewed from the rod.
XC13C ^{*1, *2}	Mounted on the underside when viewed from the rod.

* 1 Not available for CDG1.

* 2 Not available for CBG1.

* 3 Not available for CBM2.



CDM2 Applicable Auto Switches

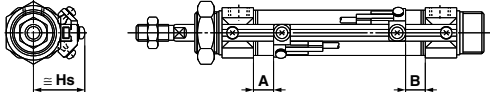
Rail mounting style	Solid state	D-F7□, D-F7□V, D-F7BA, D-F79F, D-F79W, D-F7□WV, D-J79, D-J79C, D-J79W
	Reed	D-A9□/A9□V, D-A7/A8, D-A7□H/A80H, D-A73C/A80C, D-A79W
Auto switch specifications		For detailed specifications about an auto switch for itself, refer to pages 1559 to 1673.

CDG1 Applicable Auto Switches

Rail mounting style	Solid state	D-M9□/M9□V, D-M9□W/M9□WV, D-M9□A/M9□AV, D-F7□, D-F7□V, D-F7BA, D-F79F, D-F79W, D-F7□WV, D-J79, D-J79C, D-J79W
	Reed	D-A7/A8, D-A7□H/A80H, D-A73C/A80C, D-A79W
Auto switch specifications		For detailed specifications about an auto switch for itself, refer to pages 1559 to 1673.

Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height

Series CDM2



Proper Auto Switch Mounting Position

Auto switch model	D-F7□/F79F/F7□V D-J79/J79C D-F7□W/J79W/F7□WV D-F7BA/F7BAV D-A72/A7□H/A80H D-A73C/A80C		D-F7NT		D-A9□ D-A9□V D-A79W		D-A7□ D-A80	
	A	B	A	B	A	B	A	B
20	8 (5.5)	7 (4.5)	13 (10.5)	12 (9.5)	5 (2.5)	4 (1.5)	7.5 (5)	6.5 (4)
25	8 (5.5)	7 (4.5)	13 (10.5)	12 (9.5)	5 (2.5)	4 (1.5)	7.5 (5)	6.5 (4)
32	9 (6.5)	8 (5.5)	14 (11.5)	13 (10.5)	6 (3.5)	5 (2.5)	8.5 (6)	7.5 (5)
40	15	13	19	18	12	10	14.5	12.5

Note 1) (): With air cushion

Note 2) Adjust the auto switch after confirming the operating conditions in the actual setting.

Note 3) For the dimensions other than the proper auto switch mounting position and its mounting height, refer to standard type for series CM2.

Auto Switch Mounting Height

D-F7□/F79F D-J79/F7NT D-F7□W/J79W D-F7BA D-A9□/A9□V A7□H/A80H	D-F7□V D-F7□WV D-F7BAV	D-J79C	D-A7□ D-A80	D-A73C D-A80C	D-A79W
Hs	Hs	Hs	Hs	Hs	Hs
23.5	26	29	22.5	29.5	25
26.5	29	32	25.5	32.5	28
30	32.5	35.5	29	35	31.5
34	36.5	39.5	33	40	35.5

Minimum Auto Switch Mounting Stroke

Auto switch model	No. of auto switch mounted		
	1	2 Same surface	n (n: No. of auto switches) Same surface
D-F7□V D-J79C	5	5	10 + 10 (n-2) ^{Note} (n=4, 6···)
D-F7□ D-J79	5	5	15 + 15 (n-2) ^{Note} (n=4, 6···)
D-F7□WV D-F7BAV D-A79W	10	15	10 + 15 (n-2) ^{Note} (n=4, 6···)
D-F7□W/J79W D-F7BA D-F79F/F7NT	10	15	15 + 20 (n-2) ^{Note} (n=4, 6···)
D-A9□ D-A9□V	5	10	10 + 15 (n-2) ^{Note} (n=4, 6···)
D-A7□/A80 D-A7□H/A80H D-A73C/A80C	5	10	15 + 10 (n-2) ^{Note} (n=4, 6···)
D-A7□H D-A80H	5	10	15 + 15 (n-2) ^{Note} (n=4, 6···)

Note) When "n" is an odd number, an even number that is one larger than this odd number is used for the calculation. However, the minimum even number is 4. So, 4 is used for the calculation when "n" is 1 to 3.

Auto Switch Mounting Bracket: Part No.

Auto switch model	Bore size (mm)
	ø20 to ø40
D-A9□/A9□V	BQ2-012

Note 1) When adding D-A9□(V), order a set of auto switch mounting brackets BQ-1 and BQ2-012 for the CDQ2 series (ø12 to ø25) separately.

When adding the auto switches other than D-A9□(V) mentioned on the left and D-F7BA(V), order auto switch mounting brackets BQ-1 separately.

Note 2) When adding the auto switch D-F7BA(V), order a stainless steel screw set BBA2 separately.



Made to Order Common Specifications: -XC13: Auto Switch Rail Mounting Style



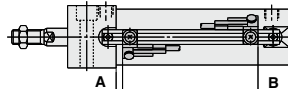
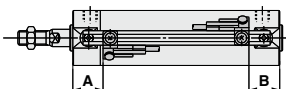
25 Auto Switch Rail Mounting Style

Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height

Series CDG1

Series CDG1R

(ø20 to ø63)



Proper Auto Switch Mounting Position/Applicable Cylinder Series: CDG1-XC13

(mm)

Auto switch model Bore size (mm)	D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV		D-F7□/F79F/F7□V D-J79/J79C D-F7□W/J79W/F7□WV		D-F7BA/F7BAV D-A72/AT□/A80H D-A73C/A80C		D-F7NT		D-A7□ D-A80		D-A79W	
	A	B	A	B	A	B	A	B	A	B	A	B
20	31.5	22.5 (30.5)	30.5	21.5 (29.5)	35.5	26.5 (34.5)	29.5	20.5 (28.5)	27.5	18.5 (26.5)		
25	31.5	22.5 (30.5)	30.5	21.5 (29.5)	35.5	26.5 (34.5)	29.5	20.5 (28.5)	27.5	18.5 (26.5)		
32	32.5	23.5 (31.5)	31.5	22.5 (30.5)	36.5	27.5 (35.5)	30.5	21.5 (29.5)	28.5	19.5 (27.5)		
40	37.5	25.5 (34.5)	36.5	24.5 (33.5)	41.5	29.5 (38.5)	35.5	23.5 (32.5)	33.5	21.5 (30.5)		
50	44.5	30.5 (42.5)	43.5	29.5 (41.5)	48.5	34.5 (46.5)	42.5	28.5 (40.5)	40.5	26.5 (38.5)		
63	44.5	30.5 (42.5)	43.5	29.5 (41.5)	48.5	34.5 (46.5)	42.5	28.5 (40.5)	40.5	26.5 (38.5)		
80	54.5	38.5 (52.5)	53.5	37.5 (51.5)	58.5	42.5 (56.5)	52.5	36.5 (50.5)	50.5	34.5 (48.5)		
100	54.5	38.5 (52.5)	53.5	37.5 (51.5)	58.5	42.5 (56.5)	52.5	36.5 (50.5)	50.5	34.5 (48.5)		

Note 1) () : For long stroke and double rod type

Note 2) Adjust the auto switch after confirming the operating conditions in the actual setting.

Note 3) For the dimensions other than the proper auto switch mounting position and its mounting height, refer to standard type for series CG1.

Proper Auto Switch Mounting Position/Applicable Cylinder Series: CDG1R-XC13

(mm)

Auto switch model Bore size (mm)	D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV		D-F7□/F79F/F7□V D-J79/J79C D-F7□W/J79W/F7□WV		D-F7BA/F7BAV D-A72/AT□/A80H D-A73C/A80C		D-F7NT		D-A7□ D-A80		D-A79W	
	A	B	A	B	A	B	A	B	A	B	A	B
20	10.5	22.5	9.5	21.5	14.5	26.5	8.5	20.5	6.5	18.5		
25	10.5	22.5	9.5	21.5	14.5	26.5	8.5	20.5	6.5	18.5		
32	11.5	23.5	10.5	22.5	15.5	27.5	9.5	21.5	7.5	19.5		
40	16.5	25.5	15.5	24.5	20.5	29.5	14.5	23.5	12.5	21.5		
50	18.5	30.5	17.5	29.5	22.5	34.5	16.5	28.5	14.5	26.5		
63	18.5	30.5	17.5	29.5	22.5	34.5	16.5	28.5	14.5	26.5		

Note 1) Adjust the auto switch after confirming the operating conditions in the actual setting.

Note 2) For the dimensions other than the proper auto switch mounting position and its mounting height, refer to standard type for series CG1R.

Proper Auto Switch Mounting Position/Applicable Cylinder Series: CDBG1-XC13 (mm)

Bore size (mm)	H (Head side)		R (Rod side)		W (Both sides)	
	A	B (2)	A	B	A	B (2)
20	+0	+12	+11	+0	+11	+12
25	+0	+12	+11	+0	+11	+12
32	+0	+10	+10	+0	+10	+10
40	+0	+14	+9	+0	+9	+14
50	+0	+17	+12	+0	+12	+17
63	+0	+17	+12	+0	+12	+17
80	+0	+22	+16	+0	+16	+22
100	+0	+22	+16	+0	+16	+22

Note 1) For end lock cylinders, add the above values to those listed in the table for CG1-XC13.

Note 2) For the head side and both sides lock, add the above values to CG1-XC13 (long stroke) to find B.

Note 3) Adjust the auto switch after confirming the operating conditions in the actual setting.

Note 4) For the dimensions other than the proper auto switch mounting position and its mounting height, refer to standard type for series CDBG1.

Auto Switch Mounting Height

(mm)

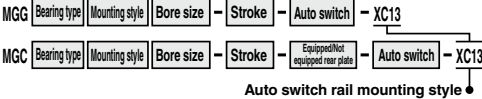
Auto switch model Bore size (mm)	D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV D-F7□/F79F D-F7□W/J79W/F7BA	D-F7□V D-F7□WV D-F7BAV	D-J79C	D-A7□ D-A80	D-A73C D-A80C	D-A79W
	Hs	Hs	Hs	Hs	Hs	Hs
20	26.5	29	32	25.5	32.5	28
25	29	31.5	34.5	28	35	30.5
32	32.5	35	38	31.5	38.5	34
40	36.5	39	42	35.5	42.5	38
50	42	44.5	47.5	41	48	43.5
63	49	51.5	54.5	48	55	50.5
80	59	61.5	64.5	58	65	60.5
100	69.5	72	75	68.5	75.5	71

Made to Order Common Specifications: Auto Switch Rail Mounting Style

Symbol

-XC13

How to Order

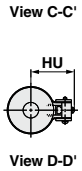
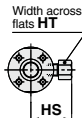
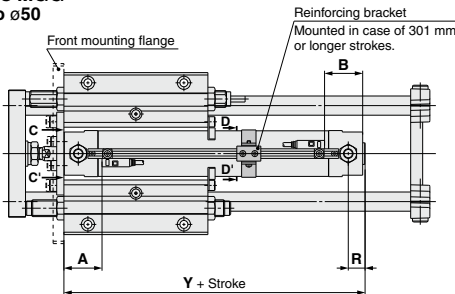


MGG/MGC Applicable Auto Switches

Rail mounting style	Solid state switch	D-M9□/M9□V, D-M9□W/M9□WV, D-M9□A/M9□AV, D-F7□, D-F7□V, D-F7BA, D-F79F, D-F79W, D-F7□WV, D-J79, D-J79C, D-J79W
	Reed switch	D-A7/A8, D-A7□H/A80H, D-A73C/A80C, D-A79W
Auto switch specifications	For detailed specifications about an auto switch for itself, refer to pages 1559 to 1673.	

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

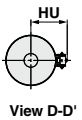
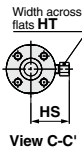
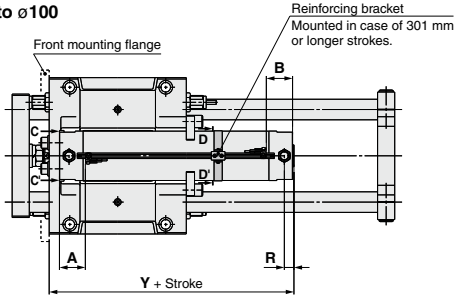
Series MGG ø20 to ø50



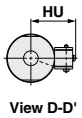
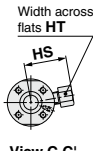
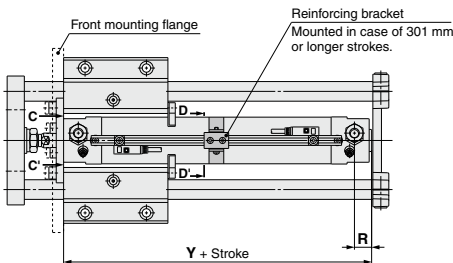
Series MGG (mm)

Bore size (mm)	R	Y	HS	HT	HU
20	14	99	28.5	14	30.7
25	14	99	31	14	33.2
32	14	101	34.5	14	36.5
40	15	109	39	14	41
50	16	124	49.5	17	46.2
63	16	139	56.5	17	53.2
80	23	165	75.5	23	62.2
100	23	165	86	26	72.7

ø63 to ø100



Series MGC ø20 to ø50



Series MGC (mm)

Bore size (mm)	R	Y	HS	HT	HU
20	14	99	26	7	30.7
25	14	99	28.5	7	33.2
32	14	101	34.5	14	36.5
40	15	109	39	14	41
50	16	124	49.5	17	46.2

Made to Order Common Specifications: -XC13: Auto Switch Rail Mounting Style



25 Auto Switch Rail Mounting Style

Symbol
-XC13

Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height

Proper Auto Switch Mounting Position/Applicable Cylinder Series MGG, MGC (mm)

Auto switch model	D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV		D-F7□/F79F/F7□V D-J79/J79C D-F7□W/J79W/F7□WV D-F7BA/F7BAV D-A72/A7□H/A80H D-A73C/A80C		D-F7NT		D-A7□ D-A80		D-A79W	
	A	B	A	B	A	B	A	B	A	B
20	45.5	39.5	43	37	48	42	42.5	36.5	40	34
25	45.5	39.5	43	37	48	42	42.5	36.5	40	34
32	46.5	40.5	44	38	49	43	43.5	37.5	41	35
40	51.5	43.5	49	41	54	46	48.5	40.5	46	38
50	58.5	51.5	56	49	61	54	55.5	48.5	53	46
63	58.5	51.5	56	49	61	54	55.5	48.5	53	46
80	68.5	61.5	66	59	71	64	65.5	58.5	63	56
100	68.5	61.5	66	59	71	64	65.5	58.5	63	56

Auto Switch Mounting Height (mm)

D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV D-F7□/F79F D-J79/J79C D-F7□W/J79W/F7BA	D-F7□V D-F7□WV D-F7BAV	D-J79C	D-A7□ D-A80	D-A73C D-A80C	D-A79W
Hs	Hs	Hs	Hs	Hs	Hs
26.5	29	31	26.5	32.5	30
29	31.5	33.5	29	35	32.5
32.5	34.5	36.5	32	38.5	35.5
37	39	41	36.5	43	40
42	44.5	46.5	42	48	45.5
49	51.5	53.5	49	55	52.5
58	60.5	62.5	58	64	61.5
69	71	73	68.5	74.5	72

Note 1) Adjust the auto switch after confirming the operating conditions in the actual setting.

Note 2) For dimensions other than the proper auto switch mounting position and height, refer the standard type for Series MGG and MGC.

Minimum Auto Switch Mounting Stroke/CDG1, MGG, MGC

Auto switch model	No. of auto switch mounted (mm)		
	1	2	n (n: No. of auto switches) Same surface
D-M9□/M9□V D-F7□V D-J79C	5	5	10 + 10 (n-2) ^(Note) (n=4, 6-)
D-M9□WV D-M9□AV D-F7□WV D-F7BAV D-A79W	10	15	10 + 15 (n-2) ^(Note) (n=4, 6-)
D-M9□W D-M9□A	10	15	15 + 15 (n-2) ^(Note) (n=4, 6-)
D-F7□ D-J79	5	5	15 + 15 (n-2) ^(Note) (n=4, 6-)
D-F7□W/J79W D-F7BA D-F79F/F7NT	10	15	15 + 20 (n-2) ^(Note) (n=4, 6-)
D-A7□/A80 D-A7□H/A80H D-A73C/A80C	5	10	15 + 10 (n-2) ^(Note) (n=4, 6-)
D-A7□H D-A80H	5	10	15 + 15 (n-2) ^(Note) (n=4, 6-)

Note) When "n" is an odd number, an even number that is one larger than this odd number is used for the calculation. However, the minimum even number is 4. So, 4 is used for the calculation when "n" is 1 to 3.

Operating Range/CDG1, MGG, MGC

Auto switch model	Bore size (mm)							
	20	25	32	40	50	63	80	100
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	4	4	5	4	5.5	6.5	7.5	7
D-F7□/F79F/F7□V D-J79/J79C D-F7□W/J79W/F7□WV D-F7BA/F7BAV D-F7NT	4.5	4	4.5	5	5	6	6	6
D-A7□/A80 D-A7□H/A80H D-A73C/A80C	9	9	10	11	11	13.5	13	13.5
D-A79W	11	11	13	14	14	16.5	16	16.5

* Since the operating range is provided as a guideline including hysteresis, it cannot be guaranteed. (Assuming approximately ±30% dispersion.) It may vary substantially depending on an ambient environment.

Auto Switch Mounting Bracket: Part No./CDG1, MGG, MGC

Auto switch model	Bore size (mm)
	ø20 to ø100
D-M9□/M9□V D-M9□W/M9□WV	BQ2-012
D-A9□A/A9□AV	BQ2-012S

Note 1) When adding D-M9□(V) and D-A9□W(V), order a set of auto switch mounting brackets BQ-1 and BQ2-012 for the CDQ2 series (ø12 to ø25) separately.

When ordering the auto switches other than D-M9□□□ mentioned on the left and D-F7BA(V), order auto switch mounting brackets BQ-1 separately.

Note 2) When adding D-M9□A(V), order a stainless steel screw set BBA2 together with BQ2-012S separately.

When adding the auto switch D-F7BA(V), order a stainless steel screw set BBA2 separately.

Made to Order Common Specifications: -XC17: Pin Cylinder with Rod Quenched



26 Pin Cylinder with Rod Quenched

Symbol

-XC17

The piston rod material is changed and the rod end is quenched.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CJP	Pin cylinder	CJPB	Single acting (Panel mount)	Except ø4	● From P. 35
		CJPS	Single acting (Embedded)	Except ø4	

How to Order

CJP Standard model no. -XC17

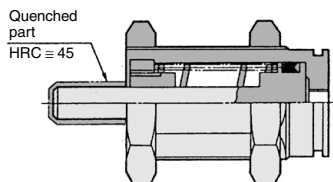
(Note) Additional symbol for "-B" (without thread) is unnecessary when indicating the model no.

Rod quenched specifications

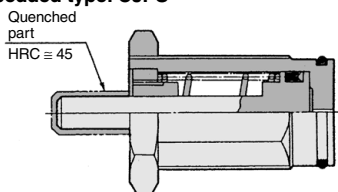
Specifications: Same as standard type.

Construction (Dimensions are the same as standard.)

Panel mount type: CJPB



Embedded type: CJPS



Made to Order Common Specifications: -XC19: Intermediate Stroke (Spacer Type)



27 Intermediate Stroke (Spacer type)

Symbol

-XC19

Dealing with the intermediate stroke by installing a spacer with the standard stroke cylinder.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CU	Free mount cylinder	CU	Double acting, Single rod	5 mm spacer only	② From P. 657
	Non-rotating rod type	CUK	Double acting, Single rod	5 mm spacer only	
	Long stroke	CU	Double acting, Single rod	5 mm spacer only	
	Long stroke, Non-rotating	CUK	Double acting, Single rod	5 mm spacer only	
CJP2	Pin cylinder	CJP2	Double acting, Single rod		② From P. 23
MGP	Compact guide cylinder	MGP ^M _A	Double acting	Air cushion type only	② From P. 346
MXH	Compact slide	MXH-Z	Double acting	5 mm spacer only	② From P. 19
CXS	Dual rod cylinder	CXS ^M	Double acting	5 mm spacer only	② From P. 665
CXSJ	Dual rod cylinder compact type	CXSJ ^M	Double acting	5 mm spacer only	② From P. 653

How to Order

Standard model no.

-XC19

Intermediate stroke (Spacer type) ◆

CU

Applicable Stroke

(mm)

ø6, ø10, ø16	35, 45, 55
ø20, ø25, ø32	35, 45, 55, 65, 75, 85, 95

- Dealing with it by installing a 5 mm width spacer with the standard stroke cylinder.
- Specifications other than above are the same as standard type.
- External dimensions are the same as standard stroke products added by 5 mm for the required stroke.
- Please consult with SMC when stroke other than applicable stroke is required.

CJP

Applicable Stroke

(mm)

ø6	1 mm intervals in 20 st or less
ø10	1 mm intervals in 30 st or less
ø15	1 mm intervals in 30 st or less

- Dealing with it by installing a 1 to 4 mm width spacer with the standard stroke cylinder.
- Specifications other than above are the same as standard type.
- External dimensions are the same as standard stroke products which is closed to the required intermediate stroke.
Example: For 11 ST, to b+e dealt with 4 mm spacer for 15 st body
- As for the one with switch, 5 st or less will not be available.

MGP(Air Cushion Type)

Applicable Stroke

Description	Dealing with the stroke by the 1 mm interval by changing a collar of the standard stroke cylinder. Minimum manufacturable stroke ø16 to ø63: 15 mm ø80, ø100: 20 mm Select a rubber bumper type, because the cushion effect is not obtainable for less than this stroke.		
Part no.	Suffix "-XC19" to the end of standard part number.		
Applicable stroke (mm)	ø16	15 to 249	
	ø20 to ø63	15 to 399	
	ø80, ø100	20 to 399	
Example	Part no. MGPM20-35A-XC19 15 mm width collar is installed in MGPM20-50A. C dimension is 112 mm.		

Note) Intermediate strokes (by the 1 mm interval) with a special body are available by made-to-order.

CXS

Applicable Stroke

(mm)

ø6	15, 25, 35, 45
ø10	55, 65
ø15	
ø20	55, 65, 85, 95
ø25	
ø32	

- Dealing with it by installing a 5 mm width spacer with the standard stroke cylinder.
- Specifications other than above are the same as standard type.
- External dimensions are the same as standard stroke products added by 5 mm for the required stroke.
- Please consult with SMC when stroke other than applicable stroke is required.

1770

MXH

Applicable Stroke

(mm)

ø6, ø10, ø16, ø20	35, 45, 55
-------------------	------------

- Dealing with it by installing a 5 mm width spacer with the standard stroke cylinder.
- Specifications other than above are the same as standard type.
- External dimensions are the same as standard stroke products added by 5 mm for the required stroke.
- Please consult with SMC when stroke other than applicable stroke is required.

CXSJ

Applicable Stroke

(mm)

ø6	15, 25, 35, 45
ø10	15, 25, 35, 45, 70
ø15	
ø20	15, 25, 35, 45, 70, 95
ø25	
ø32	

- Dealing with it by installing a 5 mm width spacer with the standard stroke cylinder.
- Specifications other than above are the same as standard type.
- External dimensions are the same as standard stroke products added by 5 mm for the required stroke.
- Please consult with SMC when stroke other than applicable stroke is required.

Made to Order Common Specifications: -XC20: Head Cover Axial Port



Series **CM2** and **CG1** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

28 Head Cover Axial Port

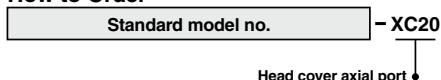
Symbol
-XC20

Head side port position is changed to the axial direction. (Standard head side port is plugged with hexagon socket head screw.)

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CM2-Z	Air cylinder	CM2	Double acting, Single rod		② From P. 150
			Double acting, Single rod	Except with air cushion	
	Air cylinder	CM2	Single acting (Spring return/extend)		② From P. 172
	Non-rotating rod type	CM2K	Double acting, Single rod	Except with air cushion	
			Single acting (Spring return/extend)		
	Direct mount type	CM2R	Double acting, Single rod	Except with air cushion	
	Non-rotating rod, Direct mount type	CM2RK	Double acting, Single rod	Except with air cushion	
	Low friction	CM2Y	Double acting, Single rod		
CG1	Air cylinder	CG1	Double acting, Single rod	Except with air cushion	② From P. 306
			Single acting (Spring return/extend)		
	Non-rotating rod type	CG1K	Double acting, Single rod	Except with air cushion	
	Direct mount type	CG1R	Double acting, Single rod	Except with air cushion	
	Non-rotating rod, Direct mount type	CG1KR	Double acting, Single rod	Except with air cushion	
	Low friction	CG1Y	Double acting, Single rod		

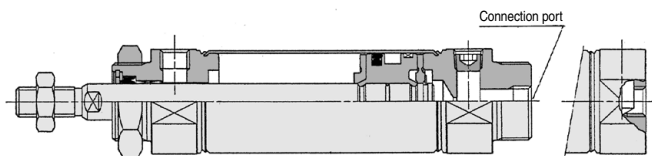
How to Order



Specifications: Same as standard type.

* Be sure to use the speed controller since head side port has no throttle.

Construction



Series CM2-Z

Series CM2

Bore size (mm)	Port size
20, 25, 32	Rc 1/8
40	Rc 1/4

Series CG1

Bore size (mm)	Port size
20, 25, 32, 40	Rc 1/8
50, 63	Rc 1/4

* Same dimensions as standard type except port size.

Made to Order Common Specifications: -XC22: Fluororubber Seals



Series **CJ2**, **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

29 Fluororubber Seals

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CJP	Pin cylinder	CJP2	Double acting, Single rod	Except ø4. Packing set (7)	From P. 23
		CJPB	Single acting (Panel mounting)	Except ø4	
		CJPS	Single acting (Embedded)	Except ø4	
CJ2	Air cylinder	CJ2	Double acting, Single rod	Except with air cushion	From P. 44
			Single acting (Spring return/extend)		
			Double acting, Double rod		
	Non-rotating rod type	CJ2K	Double acting, Single rod	Except with air cushion	
	Direct mount type	CJ2R	Double acting, Single rod		
CM2	Air cylinder	CM2	Double acting, Single rod		From P. 172
		CM2W	Double acting, Double rod		
		CM2K	Double acting, Single rod		
	Non-rotating rod type	CM2KW	Double acting, Double rod		
		CM2R	Double acting, Single rod		
	Direct mount type	CM2RK	Double acting, Single rod		
	End lock cylinder	CBM2	Double acting, Single rod		
CG1	Air cylinder	CG1	Double acting, Single rod	Without a bumper for cylinders with a rubber bumper	From P. 306 (45)
	Double rod type	CG1W	Double acting, Double rod	Without a bumper for cylinders with a rubber bumper	
	Direct mount type	CG1R	Double acting, Single rod	Without a bumper for cylinders with a rubber bumper	
MB	Air cylinder	MB	Double acting, Single rod		From P. 408
MB1	Air cylinder	MBW	Double acting, Double rod		From P. 456
		MB1	Double acting, Single rod		
CA2	Air cylinder	MB1W	Double acting, Double rod		From P. 508
		CA2	Double acting, Single rod		
		CA2W	Double acting, Double rod		
CS1	Air cylinder	CS1	Double acting, Single rod	Applicable bore: Lube type 125 to 300, Non-lube type 125 to 200	From P. 564
CS2	Air cylinder	CS2	Double acting, Single rod		P. 599
		CS2W	Double acting, Double rod		
CU	Free mount cylinder	CU	Double acting, Single rod		From P. 657
			Single acting (Spring return/extend)		
	Non-rotating rod type	CUK	Double acting, Single rod		
			Single acting (Spring return/extend)		
	Long stroke	CU	Double acting, Single rod		
MGP-Z	Compact guide cylinder	CUK	Double acting, Single rod		From P. 434 (46)
		MGPM	Double acting	Slide bearing only	
MGQ		MGQM	Double acting	Slide bearing only	From P. 454
MGG	Guide cylinder	MGG	Double acting	Without rubber bumper	From P. 494
MGC		MGC	Double acting		From P. 1764
CV	Valve mounted cylinder	CV3	Double acting, Single rod		From P. 1594
CEP1	High precision stroke reading cylinder	CVS1	Double acting, Single rod		From P. 19
MXH-Z	Compact slide	CEP1	Double acting, Single rod		From P. 665
CXS	Dual rod cylinder	MXH	Double acting		From P. 653
CXSJ	Dual rod cylinder compact type	CXS	Double acting		From P. 566
CX2	Slide unit	CXSJ	Double acting		From P. 575
CXW		CX2	Double acting		
		CXW	Double acting		

How to Order

Standard model no. **-XC22**

Fluororubber seals

Specifications

Seal material	Fluororubber	
Ambient temperature range	With auto switch : -10 to 60°C (0°C to 60°C for Series CS1, CS2) Without auto switch : -10 to 70°C (0°C to 70°C for Series CS1, CS2)	Note 1) (No freezing)
Specifications other than above and external dimensions	Same as standard type for each series	

Note 1) Please confirm with SMC, as the type of chemical and the operating temperature may not allow the use of this product.

Note 2) Cylinders with auto switches can also be produced; however, auto switch related parts (auto switch units, mounting brackets, built-in magnets) are the same as standard products. Before using these, please contact SMC regarding their suitability for the operating environment.

Note 3) It is only applicable for the cylinder main body section as to Series CV3, CVS1.

Note 4) Series MGG is using a shock absorber RBL type.

Note 5) No cushion is equipped for N type.

Note 6) The MGP and MGQ series are without a cushion.

Confirm the kinetic energy.

Note 7) Refer to the construction of the standard type for the details of the packing set for CJP2□6,10 and 16.

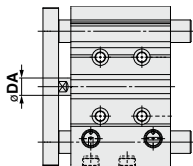
Symbol

-XC22

How to Order

MGPM Standard model no. **-XC22**
Fluororubber seals ●

Dimensions



(mm)			
Bore size (mm)	DA	Bore size (mm)	DA
12	(6)	40	(14)
16	(8)	50	20
20	(10)	63	20
25	(10)	80	25
32	(14)	100	30

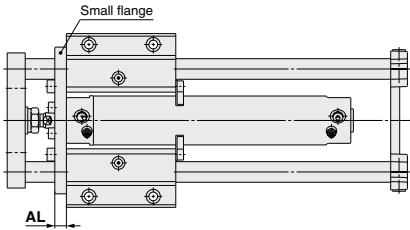
The dimensions in () are the same as standard type.

How to Order

MGC Standard model no. **-XC22**
Fluororubber seals ●

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

Series MGCLB



(mm)	
Bore size (mm)	AL
20	9
25	9
32	9
40	12
50	12

-X□

Made to Order Common Specifications:

-XC24: With Magnetic Shielding Plate

-XC25: No Fixed Throttle of Connection Port



Series **CM2** has been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

30 With Magnetic Shielding Plate -XC24

Shields against the magnetic leaked from external slider.

Applicable Series

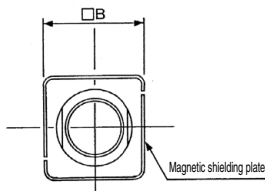
Series	Description	Model	Action	Vol. no. (for std model)
CY3	Magnetically coupled rodless cylinder	CY3B	Double acting	● From P. 1452
REA	Sine rodless cylinder	REA	Double acting	● From P. 1035

How to Order

CY3B
REA Standard model no. -XC24
With magnetic shielding plate

Specifications: Same as standard type.

Dimensions



Dimensions	Bore size (mm)									
	ø6	ø10	ø15	ø20	ø25	ø32	ø40	ø50	ø63	
□B	19	27	37	38	48	62	72	88	102	
Standard external (□B)	17	25	35	36	46	60	70	86	100	

* Dimensions except mentioned above are the same as standard type.
* REA is ø25 to ø63.

31 No Fixed Throttle of Connection Port -XC25

Type with no restrictor on the port, since it's using air-hydro type on the rod cover and the head cover of air cylinder Series CM2.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CM2	Air cylinder	CM2	Double acting, Single rod Single acting (Spring return)	● From P. 172
		CM2W	Double acting, Double rod	
	Non-rotating rod type	CM2K	Double acting, Single rod	
		CM2KW	Double acting, Double rod	
	Direct mount type	CM2R	Double acting, Single rod	
	Non-rotating rod, Direct mount type	CM2RK	Double acting, Single rod	

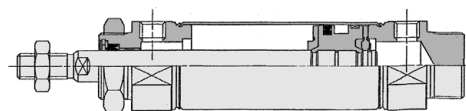
* Except with air cushion

How to Order

CM2 Standard model no. -XC25
No fixed throttle in connection port

Specifications: Same as standard type.

Construction



* External dimensions are the same as standard CM2 series.

⚠ Caution

1. Use a shock absorber, etc.

When the piston speed exceed 750 mm/s, make sure that direct impact does not apply on the cylinder cover by using an external stopper (shock absorber, etc).

Made to Order Common Specifications: -XC26: With Split Pins for Double Clevis Pin and Double Knuckle Joint Pin and Flat Washers



32 With Split Pins for Double Clevis Pin/Double Knuckle Joint Pin and Flat Washers

Symbol

-XC26

Flat washer is added for the double clevis (one of the mounting styles) or double knuckle joint (one of the accessories).

Applicable Series

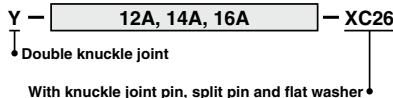
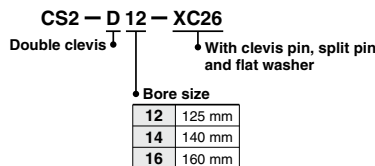
Series	Description	Model	Action
CS2	Standard type	CS2	Double acting, Single rod
	Smooth cylinder	CS2Y	Double acting, Single rod

How to Order

• Product



• Parts assembly

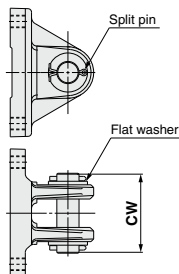


Specifications

Mounting style	Only double clevis style (D), Double knuckle joint
Changed parts	Clevis pin, knuckle joint pin, flat washer
Specifications other than above	Same as standard type

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

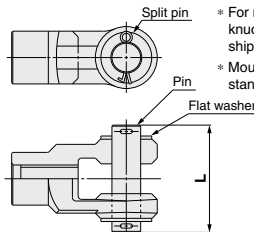
Double clevis



- * For mounting bracket, split pin, clevis pin and flat washer are shipped together, (but not assembled).
- * Mounting method is the same as standard type.

Bore size (mm)	CW
ø125	90
ø140	104
ø160	113

Double knuckle joint



- * For mounting bracket, split pin, knuckle joint pin and flat washer are shipped together, (but not assembled).
- * Mounting method is the same as standard type.

Bore size (mm)	L
ø125	90
ø140	104
ø160	113

Made to Order Common Specifications: -XC26: With Split Pins for Double Clevis Pin and Double Knuckle Joint Pin and Flat Washers



32 With Split Pins for Double Clevis Pin/Double Knuckle Joint Pin and Flat Washers

Symbol

-XC26

A pin for double clevis (one of the mounting types) or double knuckle joint (one of the accessories) has been changed for a split pin, and split pins and flat washers have been added.

Applicable Series

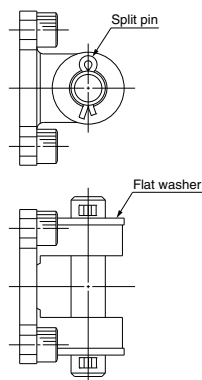
Series	Model	Action
CQS	Standard type	CQS
	Long stroke	CQS
	Non-rotating rod type	CQSK
	Anti-lateral load type	CQS□S
CQ2	Standard type	CQ2
	Long stroke	CQ2
	Non-rotating rod type	CQ2K
	Anti-lateral load type	CQ2□S
	With end lock	CBQ2
	Magnetic field resistant	CDQ2□P
	Copper-free compact	20-CQ2
	Copper-free long stroke	20-CQ2□
	Copper-free anti-lateral load	20-CQ2□S

Specifications

Mounting	Double clevis (D) only
Changed parts	Clevis pin/Knuckle pin, Split pin, Flat washer
Specifications other than above	Same as standard

Dimensions: Same as Standard

Double clevis



How to Order

• Product

CQSD
CQ2D

Standard model no.

— **XC26**

• Double clevis

With double clevis pin,
split pins and flat washers

• Parts assembly

CQ — D 032 — XC26

• Double clevis

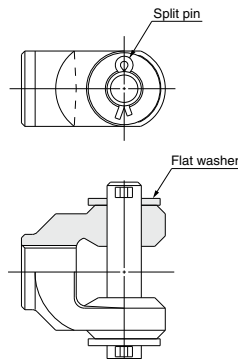
• Bore size

012	12 mm
016	16 mm
020	20 mm
025	25 mm
032	32 mm
040	40 mm
050	50 mm
063	63 mm
080	80 mm
100	100 mm

• Double clevis pin

- * For mounting bracket, split pins, clevis pin and flat washers are shipped together, (but not assembled).
- * Mounting method is the same as standard.

Double knuckle joint



Y —

G012, Z015A, G02, G03
G04, G05, G08, G10

— **XC26**

• Double knuckle joint

With double knuckle joint pin,
split pins and flat washers

IY —

G012, J015, G02, G03
G04, G05, G08, G10

— **XC26**

• Clevis pin/Knuckle pin

With clevis pin/knuckle pin,
split pins and flat washers

- * For mounting bracket, split pins, knuckle pin and flat washers are shipped together, (but not assembled).
- * Mounting method is the same as standard.

Made to Order Common Specifications: -XC27: Double Clevis and Double Knuckle Joint Pins Made of Stainless Steel



Series **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

33 Double Clevis and Double Knuckle Joint Pins Made of Stainless Steel

Symbol

-XC27

To prevent the oscillating portion of the double clevis or the double knuckle joint from rusting, the material of the pin and the retaining ring has been changed to stainless steel.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CM2	Standard type	CM2	Double acting, Single rod Single acting (Spring return extended)	● From P. 172
	Non-rotating rod type	CM2K	Double acting, Single rod Single acting (Spring return extended)	
	End lock cylinder	CBM2	Double acting, Single rod	
	Standard type	MB	Double acting, Double rod	
MB	Non-rotating rod type	MBK	Double acting, Single rod	● From P. 408
	Low friction	MBQ	Double acting, Single rod	
	With end lock	MBB	Double acting, Single rod	
	Standard type	MB1	Double acting, Single rod	
MB1	Non-rotating rod type	MB1K	Double acting, Single rod	● From P. 456
	Standard type	CA2	Double acting, Single rod	
CA2	Non-rotating rod type	CA2K	Double acting, Single rod	● From P. 508
	End lock cylinder	CBA2	Double acting, Single rod	
	Standard type	CS1	Double acting, Single rod	
CS1	Low friction	CS1Q	Double acting, Single rod	● From P. 564
	Standard type	CS2	Double acting, Single rod	● From P. 602
CS2	Smooth cylinder	CS2Y	Double acting, Single rod	
CV	Valve mounted cylinder	CVS1	Double acting, Single rod	● From P. 1784
		CVS1K	Double acting, Single rod	
CG1	Air cylinder	CG1	Double acting, Single rod Single acting (Spring return extended)	● From P. 306
	Non-rotating rod type	CG1K	Double acting, Single rod	
	End lock cylinder	CBG1	Double acting, Single rod	

Series	Description	Model	Action	Vol. no. (for std model)
CQS	Compact cylinder	CQS	Double acting, Single rod Single acting (Spring return extended)	● From P. 725
	Long stroke	CQS	Double acting, Single rod	
	Anti-lateral load type	CQS□S	Double acting, Single rod	
	Non-rotating rod type	CQSK	Double acting, Single rod	
	Copper-free compact cylinder	20-CQS	Double acting, Single rod Single acting (Spring return extended)	
	Copper-free long stroke	20-CQS	Double acting, Single rod	
	Copper-free anti-lateral load type	20-CQS□S	Double acting, Single rod	
CQ2	Compact cylinder	CQ2	Double acting, Single rod Single acting (Spring return extended)	● From P. 785
	Long stroke	CQ2	Double acting, Single rod	
	Anti-lateral load type	CQ2□S	Double acting, Single rod	
	Non-rotating rod type	CQ2K	Double acting, Single rod	
	Magnetic field resistant	CDQ2□P	Double acting, Single rod	
	Copper-free compact cylinder	20-CQ2	Double acting, Single rod Single acting (Spring return extended)	
	Copper-free long stroke	20-CQ2	Double acting, Single rod	
	Copper-free anti-lateral load type	20-CQ2□S	Double acting, Single rod	

How to Order

CQSD Standard model no. **-XC27**

CQ2D Standard model no. **-XC27**

CG1D Standard model no. **-XC27**

CM2D Standard model no. **-XC27**

CA2D Standard model no. **-XC27**

CS1D Standard model no. **-XC27**

CS2D Standard model no. **-XC27**

• Double clevis style

Double clevis pin
made of stainless steel

Y - **G012, 2015A, G02, G03, G04, G05, G08, G10** **-XC27**

Y - **020B, 032B, 040B** **-XC27**

Y - **04D, 05D, 08D, 10D** **-XC27**

Y - **12, 14, 16, 18, 20, 25, 30** **-XC27**

Y - **12A, 14A, 16A** **-XC27**

• Double knuckle joint

Double knuckle joint pin
made of stainless steel

Specifications

Mounting style	Only double clevis style (D), Double knuckle joint only
Pin and retaining ring material	Stainless steel 304
Specifications other than above	Same as standard type

IY - **12, 14, 16, 18, 20, 25, 30** **-XC27**

IY - **G012 (J015)*, G02, G03, G04, G05, G08, G10** **-XC27**

CD - **M03, M05, M08** **-XC27**

CD - **G02, G25, G03, G04, G05, G06** **-XC27**

CDP - **1, 2, 3** **-XC27**

CDP - **2A, 3A, 4A, 5A, 6A, 7A** **-XC27**

Clevis pin
Knuckle pin

made of stainless steel

• Clevis pin
Knuckle pin

* Stainless steel specification for IY-J015 is IY-J015SUS.

Made to Order Common Specifications: -XC28: Compact Flange Made of SS400



Series **CA2** has been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

34 Compact Flange Made of SS400

Symbol

-XC28

Width of a flange bracket on the rod and head side has the same dimensions as the cylinder's rod cover to save the mounting space. (Flange shape and FV-dimensions are only different from the standard type.)

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CA2	Air cylinder	CA2	Double acting, Single rod	② From P. 508
		CA2W	Double acting, Double rod	
		CA2K	Double acting, Single rod	
	Non-rotating rod type	CA2KW	Double acting, Double rod	
		CBA2	Double acting, Single rod	
CV	Valve mounted cylinder	CVS1	Double acting, Single rod	② From P. 1784
		CVS1K	Double acting, Single rod	

How to Order

CA2 **F** Standard model no. -XC28

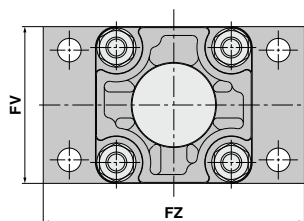
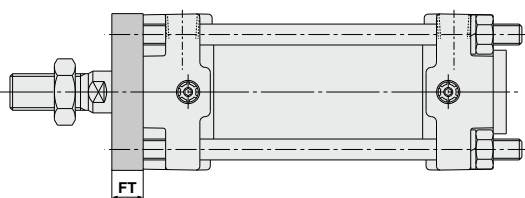
CVS1 **F** Compact flange made of SS400

↓ Mounting style

F	Rod side flange
G	Head side flange

Specifications: Same as standard type.

Dimensions



Bore size (mm)	FT	FV	FZ
40	12	60	100
50	12	70	110
63	15	85	130
80	18	102	160
100	18	116	180

* Other dimensions are the same as flange on the rod side and head side of standard type.
(Figure is the case of flange on the rod side.)

Made to Order Common Specifications: -XC29: Double Knuckle Joint with Spring Pin



Series **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

35 Double Knuckle Joint with Spring Pin

Symbol

-XC29

To prevent loosening of the double knuckle joint of standard air cylinder (Series CM2/CA2)

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CM2	Air cylinder	CM2	Double acting, Single rod Single acting (Spring returnless)	From P. 172
		CM2W	Double acting, Double rod	
	Direct mount type	CM2R	Double acting, Single rod	
	Centralized piping type	CM2□□P	Double acting, Single rod	
	End lock cylinder	CBM2	Double acting, Single rod	
CG1	Air cylinder	CG1	Double acting, Single rod	From P. 306

Series	Description	Model	Action	Vol. no. (for std model)
MB	Air cylinder	MB	Double acting, Single rod	From P. 408
	Low friction	MBQ	Double acting, Single rod	
	Cylinder with end lock	MBB	Double acting, Single rod	
MB1	Air cylinder	MB1	Double acting, Single rod	From P. 456
CA2	Air cylinder	CA2	Double acting, Single rod	From P. 508
	End lock cylinder	CBA2	Double acting, Single rod	
CV	Valve mounted cylinder	CV3	Double acting, Single rod	From P. 1764
		CVS1	Double acting, Single rod	

How to Order

Standard model no.

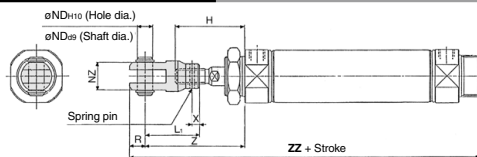
-XC29

Double knuckle joint with spring pin

Specifications: Same as standard type.

Dimensions (For mounting bracket, pin is shipped together.)

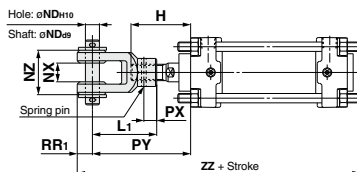
Series CM2



Bore size (mm)	H	L ₁	NDH10	NZ	R	Z	ZZ	Spring pin
20	41	36	9 ^{+0.058} ₀	18	10	61	146	ø3 x 16L
25	45	38	9 ^{+0.058} ₀	18	10	65	150	ø3 x 16L
32	45	38	9 ^{+0.058} ₀	18	10	65	152	ø3 x 16L
40	50	55	12 ^{+0.070} ₀	38	13	83	200	ø4 x 24L

* Other dimensions are the same as standard type.

Series CA2 (CBA2, CV3, CVS1)



Bore size (mm)	H	L ₁	PX	PY	ZZ	RR ₁	øND	H10	d _ø	NX	NZ	Spring pin
40	51	55	11	84	192	13	12	+0.070 0	-0.050 -0.093	16 ^{+0.3} _{-0.1}	38	ø4 x 24L
50	58	60	12	91	207	15	12	+0.070 0	-0.050 -0.093	16 ^{+0.3} _{-0.1}	38	ø4 x 25L
63	58	60	12	91	218	15	12	+0.070 0	-0.050 -0.093	16 ^{+0.3} _{-0.1}	38	ø4 x 25L
80	71	71	16	105	257	19	18	+0.070 0	-0.050 -0.093	28 ^{+0.3} _{-0.1}	55	ø4 x 36L
100	72	83	16	118	282	21	20	+0.084 0	-0.065 -0.117	30 ^{+0.3} _{-0.1}	61	ø4 x 40L

* Dimensions except mentioned above are the same as standard type.



Made to Order Common Specifications: -XC30: Rod Side Trunnion



Series **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

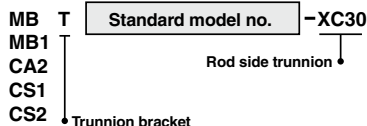
36 Rod Side Trunnion

This cylinder shortens the distance between the fulcrum and the rod end by installing a trunnion bracket in front of the rod side cover.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
MB	Standard type	MB	Double acting, Single rod	From P. 408
		MBW	Double acting, Double rod	
	Non-rotating rod type	MBK	Double acting, Single rod	
		MBKW	Double acting, Double rod	
	Low friction	MB□Q	Double acting, Single rod	
MB1	Cylinder with end lock	MBB	Double acting, Single rod	
	Standard type	MB1	Double acting, Single rod	From P. 456
		MB1W	Double acting, Double rod	
	Non-rotating rod type	MB1K	Double acting, Single rod	
		MB1KW	Double acting, Double rod	
CA2-Z	Air cylinder	CA2	Double acting, Single rod	From P. 481
CA2	Standard type	CA2	Double acting, Single rod	From P. 508
CS1	Standard type	CS1	Double acting, Single rod	From P. 564
		CS1W	Double acting, Double rod	
CS2	Standard type	CS2	Double acting, Single rod	From P. 602
		CS2W	Double acting, Double rod	
	Smooth cylinder	CS2Y	Double acting, Single rod	

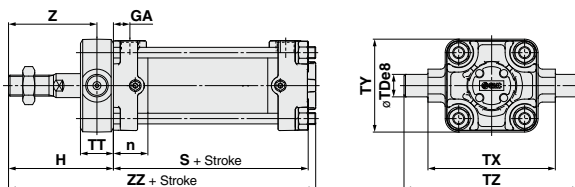
How to Order



Specifications: Same as standard type.

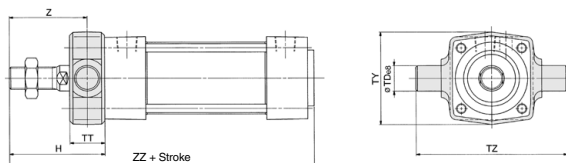
Dimensions (Dimensions other than below are the same as standard type.)

Series CA2-Z Series CA2



Symbol	Stroke range (mm)	n	GA	H	S	TD _{e8}	TT	TX	TY	TZ	Z	ZZ
Bore size (mm)												
40	Up to 1000	23	11	66	80	15 ^{+0.032} _{-0.059}	22	85	62	117	55	151
50	Up to 1000	26	13	71	86	15 ^{+0.032} _{-0.059}	22	95	74	127	60	163
63	Up to 1000	27	13	79	94	18 ^{+0.032} _{-0.059}	28	110	90	148	65	179
80	Up to 1000	32	16	94.5	111	25 ^{+0.040} _{-0.073}	34	140	110	192	77.5	212.5
100	Up to 1000	35	16	100	121	25 ^{+0.040} _{-0.073}	40	162	130	214	80	229

Series MB



Symbol	øTDe8	TT	TY	TZ	H	Z	ZZ
Bore size (mm)							
32	12 ^{+0.032} _{-0.059}	17	49	74	47	38.5	135
40	16 ^{+0.032} _{-0.059}	22	58	95	60	49	148
50	16 ^{+0.032} _{-0.059}	22	71	107	66	55	164
63	20 ^{+0.040} _{-0.073}	28	87	130	72	58	170
80	20 ^{+0.040} _{-0.073}	34	110	150	86	69	204
100	25 ^{+0.040} _{-0.073}	40	136	182	92	72	210

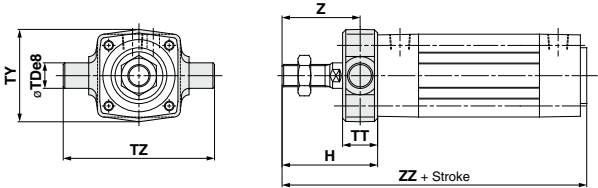
* Dimensions except mentioned above are the same as standard type.

Symbol

-XC30

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

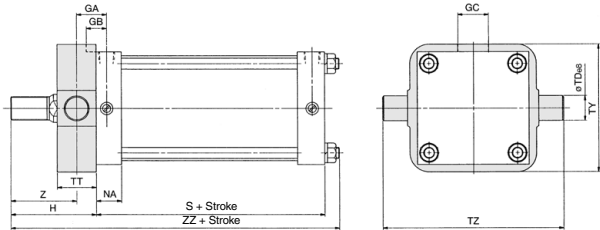
Series MB1



Bore size (mm)	$\phi TDe8$	TT	TY	TZ	H	Z	ZZ
32	12 -0.032 -0.059	17	49	74	47	38.5	135
40	16 -0.032 -0.059	22	58	95	60	49	148
50	16 -0.032 -0.059	22	71	107	66	55	164
63	20 -0.040 -0.073	28	87	130	72	58	170
80	20 -0.040 -0.073	34	110	150	86	69	204
100	25 -0.040 -0.073	40	136	182	92	72	210

* Dimensions except mentioned above are the same as standard type.

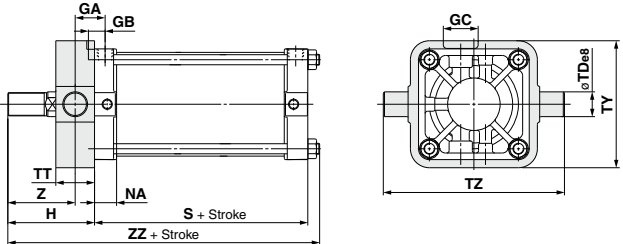
Series CS1



Bore size (mm)	Symbol	GA	GB	GC	NA	S	$\phi TDe8$	TT	TY	TZ	H	Z	ZZ
125		38	23	45	32	95	32 -0.050 -0.089	50	164	234	113	88.0	227
140		40.5	23	45	32	95	36 -0.050 -0.089	55	184	262	113	85.5	227
160		45.5	25.5	50	36	103	40 -0.050 -0.089	60	204	292	123	93.0	248
180		45	25.5	50	36	108	45 -0.050 -0.089	59	228	326	138	108.5	272
200		45	25.5	50	36	108	45 -0.050 -0.089	59	257	355	138	108.5	272
250		54.5	30	60	46	138	56 -0.060 -0.106	69	325	447	163	128.5	331
300		59.5	30	70	46	143	67 -0.060 -0.106	79	390	534	178	138.5	357

* Dimensions except mentioned above are the same as standard type.

Series CS2



Bore size (mm)	GA	GB	GC	NA	S	$\phi TDe8$	TT	TY	TZ	H	Z	ZZ
125	38	23	45	28.5	96	32 -0.050 -0.089	50	164	234	112	87	221
140	40.5	23	45	28.5	96	36 -0.050 -0.089	55	184	262	112	84.5	221
160	46	26	50	32.5	104	40 -0.050 -0.089	60	204	292	122	92	241

Made to Order Common Specifications: -XC34: Non-rotating Plate with Workpiece Mounting Screw (No extended part on the rod end)



37 Non-rotating Plate with Workpiece Mounting Screw (No extended part on the rod end)

Symbol

-XC34

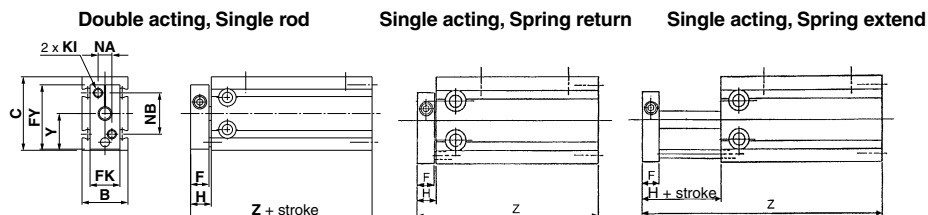
- The plate has workpiece mounting screws.
- The dimension FL, the distance between a non-rotating plate to piston rod end, has been eliminated.
The piston rod does not protrude from the plate.

Applicable model no. **- XC34**

Applicable Series

C(D)UK	Non-rotating rod/Double acting/Single rod
	Non-rotating rod/Single acting/Single rod (Spring return/extend)
	Non-rotating rod/Long stroke double acting/Single rod

Dimensions



(mm)

Bore size (mm)	B	C	FK	FY	KI	NA	NB	Y
6	13	22	11	20.5	M3 x 0.5	6	14	10.5
10	15	24	12	22	M3 x 0.5	7	15	11.5
16	20	32	13	28	M4 x 0.7	6	18	15.5
20	26	40	16	33	M4 x 0.7	8	20	19.5
25	32	50	20	43.5	M5 x 0.8	10	28	24.5
32	40	62	24	51.5	M5 x 0.8	12	32	30.5

(mm)

Action Bore size (mm)	F	H	Double acting		Single acting (Spring return)						Single acting (Spring extend)					
			Z		Z						Z					
			Without switch	With switch	Without switch			With switch			Without switch			With switch		
					5st	10st	15st	5st	10st	15st	5st	10st	15st	5st	10st	15st
6	8	9	42	42	47	52	57	47	52	57	52	62	67	52	62	67
10	8	9	45	45	50	55	65	50	55	65	55	65	80	55	65	80
16	8	9	39	49	44	49	59	54	59	69	59	69	84	69	79	94
20	8	9	45	55	50	55	65	60	65	75	55	65	80	65	75	90
25	10	11	51	61	56	61	71	66	71	81	61	71	86	71	81	96
32	12	13	55	65	60	65	75	70	75	85	65	75	90	75	85	100

* Dimensions except mentioned above are the same as standard type.

Made to Order Common Specifications: -XC35: With Coil Scraper



Series **CM2**, **CG1**, **MB**, **MB1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

38 With Coil Scraper

Symbol
-XC35

It gets rid of frost, ice, weld spatter, cutting chips adhered to the piston rod, and protects the seals, etc.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CM2	Air cylinder	CM2	Double acting, Single rod	Except with air cushion	● From P. 172
		CM2W	Double acting, Double rod	Except with air cushion	
	Cylinder with end lock	CBM2	Double acting, Single rod	Lock in head end only (Except with air cushion)	
CG1	Air cylinder	CG1	Double acting, Single rod		● From P. 306
MB	Air cylinder	MB	Double acting, Single rod		● From P. 408
		MBW	Double acting, Double rod		
MB1	Air cylinder	MB1	Double acting, Single rod		● From P. 456
		MBW	Double acting, Double rod		
CA2	Air cylinder	CA2	Double acting, Single rod		● From P. 508
		CA2W	Double acting, Double rod		
	Cylinder with end lock	CBA2	Double acting, Single rod		
CS1	Air cylinder	CS1	Double acting, Single rod		● From P. 564
		CS1W	Double acting, Double rod		
CS2	Air cylinder	CS2	Double acting, Single rod		● P. 599
		CS2W	Double acting, Double rod		
		CQ2	Double acting, Single rod	Applicable to ø32 to ø100	
CQ2	Compact cylinder	CQ2W	Double acting, Double rod	Applicable to ø32 to ø100	● From P. 785
		CQP2	Double acting, Single rod	Applicable to ø40 to ø100, Except with bracket	
		CQ2	Double acting, Single rod	Applicable to ø32 to ø100	
RQ	Compact cylinder with air cushion	RQ	Double acting, Single rod	Applicable to ø32 to ø100	● From P. 978
MNB	Cylinder with lock	MNB	Double acting, Single rod		● From P. 806
CNA2	Cylinder with lock	CNA2	Double acting, Single rod		● From P. 838
CNG	Cylinder with lock	CNG	Double acting, Single rod		● From P. 782
CLS	Cylinder with lock	CLS	Double acting, Single rod	Applicable to ø125 to ø160 (ø180 to ø250 as standard)	● From P. 898
CLQ	Compact cylinder with lock	CLQ	Double acting, Single rod	Applicable to ø40 to ø100	● From P. 928
CV	Valve mounted cylinder	CVS1	Double acting, Single rod		● From P. 1784
MGP-Z	Compact guide cylinder	MGPM	Double acting	Applicable to ø20 to ø100	● From P. 309
		MGPL	Double acting	Applicable to ø20 to ø100	
		MGPA	Double acting	Applicable to ø20 to ø100	
MGG	Guide cylinder	MGG	Double acting	Except ø20, ø25	● From P. 454
MGC	Guide cylinder	MGC	Double acting	Except ø20, ø25	● From P. 494

How to Order

Standard model no. **-XC35**
 With coil scraper

* For Series MGP, refer to page 1787.

Specifications: Same as standard type.

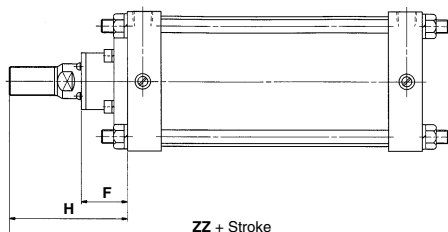
Made to Order Common Specifications: -XC35: With Coil Scraper



38 With Coil Scraper

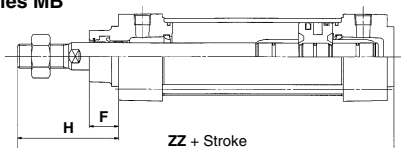
Dimensions (Dimensions other than below are the same as standard type.)

Series CS1



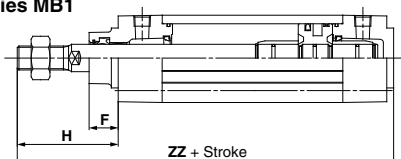
Bore size (mm)	Without auto switch			With auto switch		
	F	H	ZZ	F	H	ZZ
125	50	120	245	50	120	245
140	50	120	245	50	120	245
160	50	130	266.5	50	130	266.5
180	55	145	291	55	145	295
200	55	145	291	55	145	300
250	69	175	357.5	—	—	—
300	69	190	387.5	—	—	—

Series MB



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

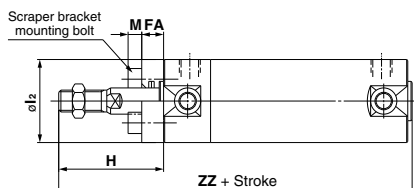
Series MB1



Bore size (mm)	F	H	ZZ
32	15	47	135
40	17	58	146
50	19	67	165

Bore size (mm)	F	H	ZZ
63	19	67	165
80	25	81	199
100	25	81	199

Series CG1



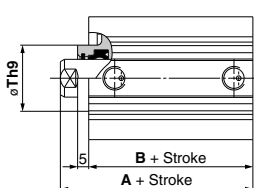
Bore size (mm)	Stroke range (mm)		FA	H	I ₂	M	ZZ
	Standard	Long stroke					
20	Up to 200	201 to 350	6	39	27	4	110 (118)
25	Up to 300	301 to 400	6	44	32	5	115 (123)
32	Up to 300	301 to 450	6	44	38	5	117 (125)
40	Up to 300	301 to 800	7	54	48	6	134 (143)
50	Up to 300	301 to 1200	7	62	59	8	154 (166)
63	Up to 300	301 to 1200	7	62	72	10	154 (166)

Note) () : Long stroke

* Other dimensions are the same as the double acting, single rod type.

* On the axial foot and rod side flange styles, the mounting bracket is welded and bolted between the cylinder and the scraper at the time of shipment. Others are shipped together (but not assembled).

Series CQ2



Bore size	Stroke range	A (mm)		L	T
		Without auto switch	With auto switch		
32	5 to 50	35	45	12	23 ⁰ _{-0.052}
	75,100	45			
	125 to 300		62.5	17	
40	5 to 50	41.5	51.5	12	28 ⁰ _{-0.052}
	75,100	51.5			
	125 to 300		72	17	
50	10 to 50	43.5	53.5	13	35 ⁰ _{-0.062}
	75,100	53.5			
	125 to 300		73.5	18	

Note) Applicable stroke available by the 5 mm interval.

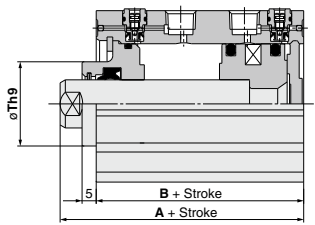
Bore size	Stroke range	A (mm)		L	T
		Without auto switch	With auto switch		
63	10 to 50	49	59	13	35 ⁰ _{-0.062}
	75,100	59			
	125 to 300		75	18	
80	10 to 50	58.5	68.5	15	43 ⁰ _{-0.062}
	75,100	68.5			
	125 to 300		86	20	
100	10 to 50	70	80	17	59 ⁰ _{-0.074}
	75,100	80			
	125 to 300		97.5	22	

Symbol

-XC35

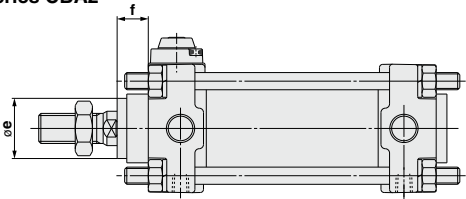
Dimensions (Dimensions other than below are the same as standard type.)

Series RQ



Bore size (mm)	A	B	Th9 (mm)
32	49	37	23 ⁰ _{-0.052}
40	56	44	28 ⁰ _{-0.052}
50	62.5	49.5	35 ⁰ _{-0.062}
63	68	55	35 ⁰ _{-0.062}
80	78.5	63.5	43 ⁰ _{-0.062}
100	93	76	59 ⁰ _{-0.074}

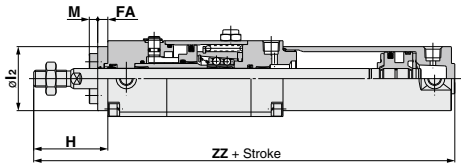
Series CBA2



Bore size (mm)	ae	f (mm)
		With rod side locking, With both-side locking
40	28	14.5
50	32	16.5
63	32	14
80	37	16
100	44	17.5

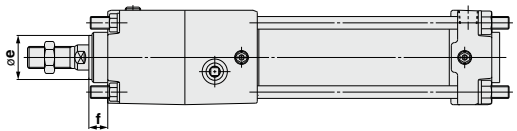
The above diagram shows the rod side locking and manual releasing non-locking types.
Series CBA2 head side locking type is the same as the standard type.
The dimensions of the manual releasing non-locking type are the same as indicated above.

Series CNG



Bore size (mm)	FA	M	I ₂	H	ZZ
20	6	4	27	39	182
25	6	5	32	44	197
32	6	5	38	44	200
40	7	6	48	54	225
					ZZ
					190
					205
					208
					234

Series CNA2



- * Other dimensions are the same as the standard type. (The figure shows a type with a rubber bumper.)
- * On the axial foot and rod side flange styles, the mounting bracket is wedged and bolted between the cylinder and the scraper at the time of shipment.

Bore size (mm)	e	f
40	28	12
50	32	12.5
63	32	12.5
80	37	16.5
100	44	17

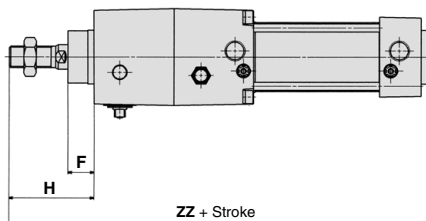
Made to Order Common Specifications: -XC35: With Coil Scraper



38 With Coil Scraper

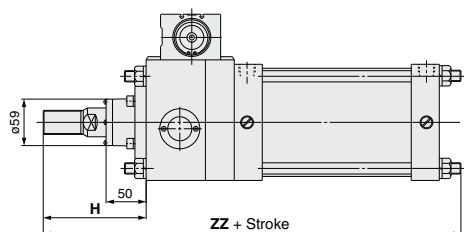
Dimensions (Dimensions other than below are the same as standard type.)

Series MNB



Bore size (mm)	F	H	ZZ
32	16	47	205
40	18	56	221
50	19	63	250
63	19	63	264
80	25	77	326
100	25	77	346

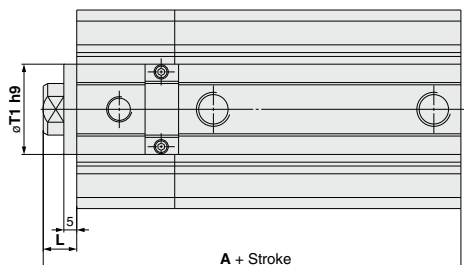
Series CLS



Bore size (mm)	H	ZZ
125	120	355
140	120	355
160	130	398.5

* ø180 to ø250: A coil scraper is attached as standard.

Series CLQ



Bore size (mm)	Stroke range (mm)	A		L	T1 h9
		Without auto switch	With auto switch		
40	10 to 50	75.5	85.5	12	28 ⁰ _{-0.052}
	75,100	85.5			
50	10 to 50	78.5	88.5	13	35 ⁰ _{-0.062}
	75,100	88.5			
63	10 to 50	87	97	13	35 ⁰ _{-0.062}
	75,100	97			
80	10 to 50	101.5	111.5	15	43 ⁰ _{-0.062}
	75,100	111.5			
100	10 to 50	120	130	17	59 ⁰ _{-0.074}
	75,100	130			

Made to Order Common Specifications: With Coil Scraper

Symbol

-XC35

How to Order

MGPM **MGPL** **MGPA**

Bore size **Port thread type** - **Stroke** **Z - XC35**

With coil scraper

Suffix

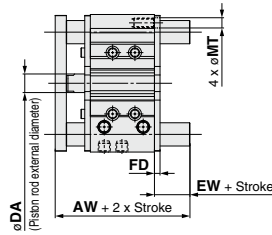
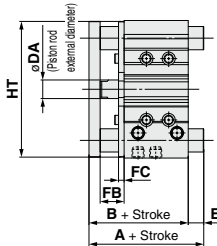
Nil	With scraper on single end
W	With scrapers on both ends

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 end	0.12 MPa	
	With both ends	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:

Bore size (mm)	B	DA	FB	FC	
				MGPM	MGPL, MGPA
20	63	10	18	5	4
25	63.5	10	17	6	4
32	69.5	14	22	6	5
40	76	14	22	6	5
50	82	20	26	6	5
63	87	20	26	6	5
80	106.5	25	34	8	6
100	126	30	41	9	6

With Both Sides Scraper

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

Bore size (mm)	AW	EW	FD	MT
20	74	6	5	6
25	74.5	6	5	7
32	82.5	7	6	9
40	89	7	6	8.5
50	95	7	6	11
63	100	7	6	11
80	120.5	8	6	14
100	143	8	9	16

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	110
40	85	103.5	139.5	9	27.5	63.5	118
50	98.5	119.5	160.5	16.5	37.5	78.5	146
63	98.5	119.5	160.5	11.5	32.5	73.5	160
80	114.5	141.5	190.5	8	35	84	199
100	136.5	161.5	200.5	10.5	35.5	74.5	236

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

Bore size (mm)	A				E				HT
	30 st or less	Over 30 st to 100 st	Over 100 st to 200 st	Over 200 st	30 st or less	Over 30 st to 100 st	Over 100 st to 200 st	Over 200 st	
20	69	86	110	127.5	6	23	47	64.5	80
25	75.5	91.5	110.5	127.5	12	28	47	64	93

Bore size (mm)	A				E				HT
	50 st or less	Over 50 st to 100 st	Over 100 st to 200 st	Over 200 st	50 st or less	Over 50 st to 100 st	Over 100 st to 200 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 50 st to 200 st	Over 200 st	25 st or less	Over 25 st to 50 st	Over 50 st to 200 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



Made to Order Common Specifications: -XC35: With Coil Scraper



38 With Coil Scraper

Symbol

-XC35

How to Order

MGG Standard model no. **-XC35**
MGC
With coil scraper ●

Specifications: Same as the standard type of each series.

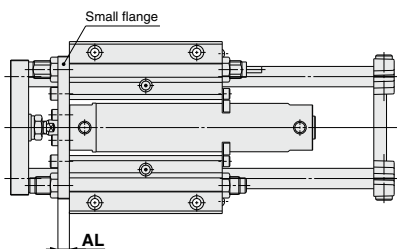
Note 1) Except ø20 and ø25

Note 2) Coil scrapers are attached to the piston rod and guide rods (front and back).

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

Series MGG□B

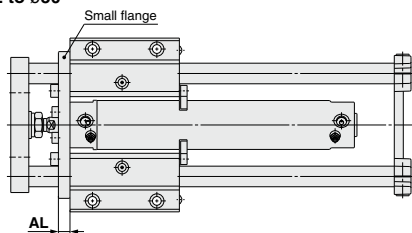
ø32 to ø50



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

Series MGC□B

ø32 to ø50



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

Made to Order Common Specifications:

-XC36: With Boss in Rod Side

-XC37: Larger Throttle Dia. of Connection Port



Series **CG1** has been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

39 With Boss in Rod Side

Symbol

-XC36

Cylinder with boss in rod side

Applicable Series

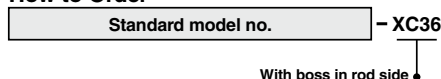
Series	Description	Model	Action	Vol. no. (for std model)
CQS	Compact cylinder	CQS	Double acting, Single rod	② From P. 725
		CQSW	Double acting, Double rod	
CQ2	Compact cylinder	CQ2	Double acting, Single rod	② From P. 785
		CQ2W	Double acting, Double rod	
	Axial piping type (Centralized piping type)	CQP2	Double acting, Single rod	
		CQP2	Single acting (Spring return/extend)	

Note 1) For the double rod type, it comes with boss for both sides.

Note 2) Except with bracket

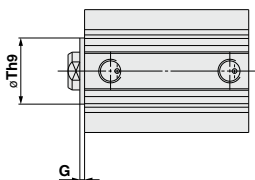
Note 3) ø125 or more is excluded in CQ2.

How to Order



Specifications: Same as standard type.

Dimensions



Series	CQ2		CQS	
	Th9	G	Th9	G
Bore size (mm)				
12	15 ⁰ _{-0.043}	1.5	15 ⁰ _{-0.043}	1.5
16	20 ⁰ _{-0.052}	1.5	20 ⁰ _{-0.052}	1.5
20	13 ⁰ _{-0.043}	2	13 ⁰ _{-0.043}	2
25	15 ⁰ _{-0.043}	2	15 ⁰ _{-0.043}	2
32	21 ⁰ _{-0.052}	2	—	—
40	28 ⁰ _{-0.052}	2	—	—
50	35 ⁰ _{-0.062}	2	—	—
63	35 ⁰ _{-0.062}	2	—	—
80	43 ⁰ _{-0.062}	2	—	—
100	59 ⁰ _{-0.074}	2	—	—

* Dimensions except mentioned above are the same as standard type.

40 Larger Throttle Diameter of Connection Port

Symbol

-XC37

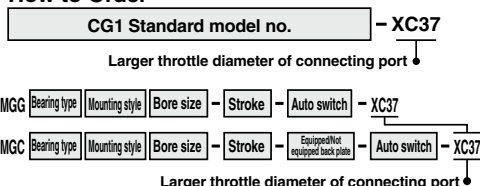
This is a cylinder with a piping port larger than the standard type.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CG1	Air cylinder	CG1	Double acting, Single rod	② From P. 306
	Double rod type	CG1W	Double acting, Double rod	
MGG	Guide Cylinder	MGG	Double acting	② From P. 454
MGC		MGC	Double acting	② From P. 494

Note 1) Except ø80, 100

How to Order



Specifications: Same as standard type.

Dimensions (Throttle diameter of connection port)

Dimensions other than below are the same as standard type.

Series CG1 (mm)			
Bore size (mm)	With rubber bumper	With air cushion	Standard type
20	5	3	(2.1)
25	5	3.5	(2.5)
32	6	6	(3.3)
40	7	7	(3.9)
50	9	9	(4.5)
63	9	9	(5.7)

* Use external stopper, etc. not to be damaged with cylinder cover directly if exceeding the range of kinetic energy absorption.

Series **MGG** (mm)

Bore size (mm)	Throttle dia. (ø)
20	5
25	5
32	6
40	7
50	9
63	9

Series **MGC** (mm)

Bore size (mm)	Throttle dia. (ø)
20	3
25	3.5
32	6
40	7
50	9



Made to Order Common Specifications: -XC38: Vacuum (Rod through-hole)



Series **CM2** has been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

41 Vacuum (Rod through-hole)

Symbol

-XC38

Through-hole of hollow rod can be used as the passage of vacuum air.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CM2	Air cylinder/Standard type	CM2W	Double acting, Double rod		● From P. 191
MTS	Precision cylinder	MTS	Double acting, Single rod	Available only for ø8 female thread	● From P. 284

How to Order

CM2 Standard model no.

-XC38

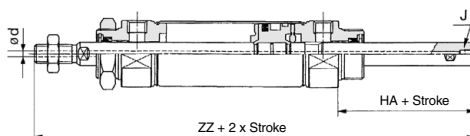
Vacuum (Rod through-hole)



Construction/Dimensions

(Other dimensions are the same as standard.)

Series CM2W



Bore size (mm)	d	J	HA	ZZ
20	3	M5 x 0.8	32	135
25	3	M5 x 0.8	32	139
32	3	M5 x 0.8	32	141
40	4	Rc1/8	36	174

Specifications: Same as standard type.

MTS8 - Stroke (P) - XC38

Axial piping type

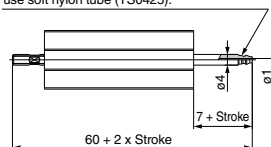
Vacuum (Rod through-hole)



Dimensions

Series MTS8

Use ø4/ø2.5 urethane tube (TU0425) or use soft nylon tube (TS0425).



⚠ Caution

1. Blow air for through-hole.

Flush the through-hole which is a passage for air pressure and vacuum to prevent dust.

Specifications

Bore size (mm)	8
Piping direction	Standard piping type, Axial piping type
Rod end configuration	Female thread

Made to Order Common Specifications: -XC42: Built-in Shock Absorber in Head Cover Side



Series **CG1** has been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

42 Built-in Shock Absorber in Head Cover Side

Symbol

-XC42

A type of Series CG1 air cylinder in which a special shock absorber is enclosed in the head portion so that its ability to absorb energy during the retraction of the cylinder is considerably greater than the conventional air cushion.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CG1	Air cylinder	CG1	Double acting, Single rod	● From P. 306

How to Order

CG1 Standard model no. **-XC42**

Built-in shock absorber in head cover side

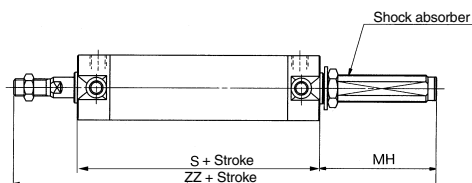


Specifications

Piston speed	Spring return side: 50 to 1000 mm/s, Spring extend side: 50 to 2000 mm/s
Additional specifications	Same as standard type

* On the axial foot and head side flange styles, the bracket is mounted at the time of shipment. Others are shipped together (but not assembled).

Construction/Dimensions (Other dimensions are the same as CG1 long stroke cylinder.)



The shock absorber service life is different from that of the CG1 cylinder. Refer to the Series RB Specific Product Precautions for the replacement period.

(mm)					
Bore (mm)	Stroke range	Shock absorber	S	MH	ZZ
20	10 to 350	RBAC0806	77	23.5	135.5
25	10 to 400	RBAC1007	77	31	148
32	15 to 450	RBAC1412	79	55	174
40	15 to 800	RBAC2015	87	62.5	199.5
50	15 to 1200	RBAC2015	102	55.5	215.5
63	25 to 1200	RBAC2725	102	92.5	252.5

* Shock absorbers are consumables.

The specifications for shock absorbers are the same as RBC□□□□, but use RBAC□□□□ when an external pressure is applied such as for a built-in cylinder.

The maximum absorption energy may decrease depending on the operating conditions.

Made to Order Common Specifications: -XC51: With Hose Nipple -XC52: Mounting Nut with Set Screw



Series **CJ2** and **CM2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

43 With Hose Nipple

Symbol

-XC51

The one with hose nipple attached in order to save time for assembly at the time of shipment.

44 Mounting Nut with Set Screw

Symbol

-XC52

In order to prevent the mounting nut from being loosen, set screw should be tighten from the two directions to fix the mounting nut.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CJ2	Air cylinder	CJ2	Double acting, Single rod	● From P. 44
		CJ2W	Single acting (Spring return)	
	Non-rotating rod type	CJ2K	Double acting, Single rod	
		CJ2K	Single acting (Spring return)	
	With speed controller	CJ2Z	Double acting, Single rod	
		CJ2ZW	Double acting, Double rod	
	Low friction type	CJ2□Q	Double acting, Single rod	
		CJ2RA	Single acting (Spring return)	
CJ2	Non-rotating rod, Direct mount type	CJ2RK	Double acting, Single rod	
		CJ2RK	Single acting (Spring return)	

Applicable Series

Series	Description	Action	Action	Vol. no. (for std model)
CM2-Z	Air cylinder	CM2	Double acting, Single rod	● From P. 150
CM2	Air cylinder	CM2	Double acting, Single rod	● From P. 172
		CM2W	Single acting (Spring return)	
	Non-rotating rod type	CM2K	Double acting, Double rod	
		CM2K	Single acting (Spring return)	
	Centralized piping type	CM2KW	Double acting, Single rod	
		CM2□P	Double acting, Double rod	
CM2	End lock cylinder	CBM2	Double acting, Single rod	
		CBM2	Double acting, Single rod	

How to Order

CJ2	Standard model no.	-XC51	H4
With hose nipple			
Hose nipple type			
H4	ø4/2.5 with restriction		
H6	ø6/4 with restriction		
MH4	ø4/2.5 without restriction		
MH6	ø6/4 without restriction		

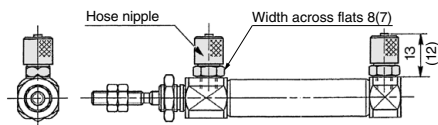
Specifications: Same as standard type.

Applicable Hose Nipple Type

Symbol	Applicable bore size (mm)	Function	Hose nipple part no.
H4	ø4/2.5	With a fixed orifice (ø0.8)	CJ-5H-4
H6	ø6/4		CJ-5H-6
MH4	ø4/2.5	Without fixed orifice	M-5H-4
MH6	ø6/4		M-5H-6

Dimensions

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



* The above figure shows the ø6/4 hose nipple mounting dimensions. The dimensions in () show those for the ø4/2.5 hose nipple.

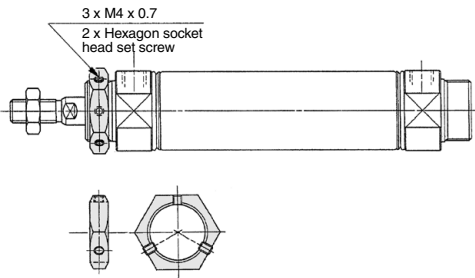
How to Order

CM2	Standard model no.	-XC52
Mounting nut with set screw		

Specifications: Same as standard type.

Dimensions

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



Made to Order Common Specifications: -XC56: With Knock Pin Holes



45 With Knock Pin Holes

Symbol

-XC56

Cylinder with knock positioning pin hole.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
MGPW	Compact guide cylinder	MGPW	Double acting	Applicable to ø20 to ø63.	● From P. 413
MGG	Guide cylinder	MGG ^M B	Double acting	For basic style only	● From P. 454
MGC	Guide cylinder	MGC ^M B	Double acting	For basic style only	● P. 494
MGQ	Compact guide cylinder	MGQ	Double acting		● From P. 434
MY1H-Z	Mechanically jointed rodless cylinder	MY1H	Linear guide		● From P. 1194
MY1	Mechanically jointed rodless cylinder	MY1C	Cam follower guide		● From P. 1268
		MY1H	Linear guide		

How to Order

Standard model no.

-XC56

With knock pin holes

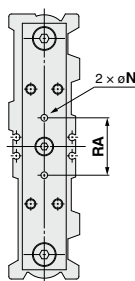
Specifications: Same as standard type.

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

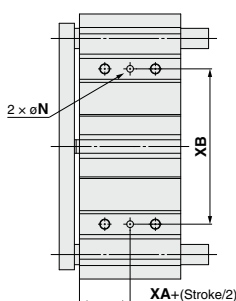
Series MGPW

ø20 to ø50

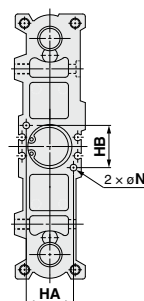
Upper view of plate



Side view (lower surface) of cylinder



Bottom view of cylinder



Series MGPW

(mm)

Bore size (mm)	HA	HB	N	RA	XA	XB
20	25±0.02	25±0.02	3 ^{H7} $^{+0.010}_0$ depth 6	28±0.02	17	76±0.03
25	28±0.02	28±0.02	4 ^{H7} $^{+0.012}_0$ depth 6	34±0.02	18	92±0.03
32	34±0.02	34±0.02	4 ^{H7} $^{+0.012}_0$ depth 6	42±0.02	19	112±0.03
40	38±0.02	38±0.02	4 ^{H7} $^{+0.012}_0$ depth 6	50±0.02	21	128±0.04
50	49±0.02	49±0.02	5 ^{H7} $^{+0.012}_0$ depth 8	66±0.03	21	168±0.04
63	58±0.03	58±0.03	5 ^{H7} $^{+0.012}_0$ depth 8	80±0.03	25	196±0.04

-XC

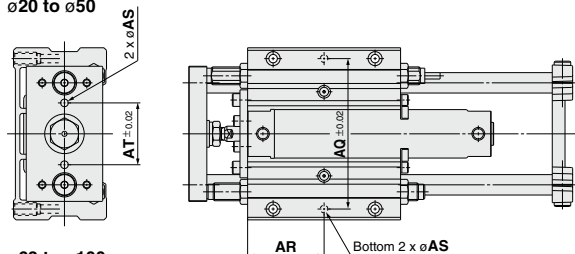
Made to Order Common Specifications: -XC56: With Knock Pin Holes



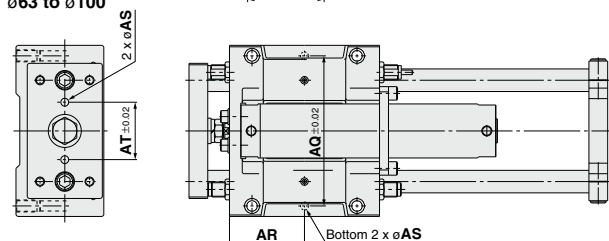
45 With Knock Pin Holes

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

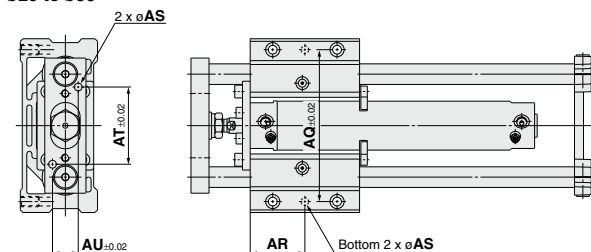
Series MGG ø20 to ø50



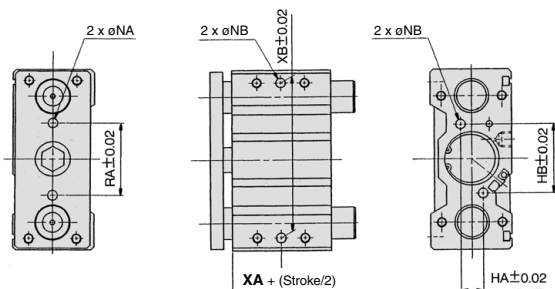
ø63 to ø100



Series MGC ø20 to ø50



Series MGQ



Series MGG

(mm)

Bore size (mm)	AQ	AR	AS	AT
20	92	45	5 ^{+0.012} ₀ depth 6	36
25	113	50	6 ^{+0.012} ₀ depth 8	45
32	118	60	6 ^{+0.012} ₀ depth 8	48
40	150	70	8 ^{+0.015} ₀ depth 11	56
50	170	85	10 ^{+0.015} ₀ depth 13	68
63	200	100	10 ^{+0.015} ₀ depth 13	74
80	234	115	12 ^{+0.018} ₀ depth 15	92
100	274	140	12 ^{+0.018} ₀ depth 15	106

Series MGC

(mm)

Bore size (mm)	AQ	AR	AS	AT	AU
20	90	37.5	5 ^{+0.012} ₀ depth 6	45	15
25	103	40	6 ^{+0.012} ₀ depth 8	55	20
32	118	42.5	6 ^{+0.012} ₀ depth 8	60	20
40	140	47.5	8 ^{+0.015} ₀ depth 11	70	22
50	170	65	8 ^{+0.015} ₀ depth 11	85	30

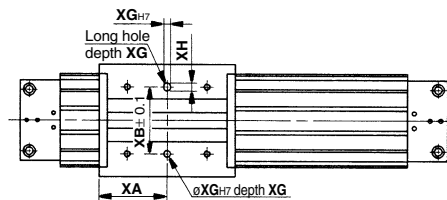
Series MGQ

(mm)

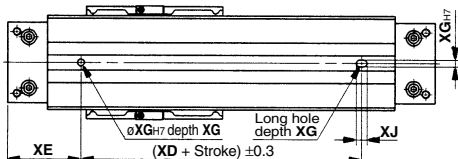
Bore size (mm)	HA	HB	NA	NB	RA	XA	XB
12	0	19	3 ^{+0.010} ₀ depth 4	3 ^{+0.010} ₀ depth 4	21	14.5	50
16	7	22	3 ^{+0.010} ₀ depth 4	3 ^{+0.010} ₀ depth 4	22	16.5	54
20	9	26	4 ^{+0.012} ₀ depth 5	4 ^{+0.012} ₀ depth 5	28	18	64
25	12	30	4 ^{+0.012} ₀ depth 5	4 ^{+0.012} ₀ depth 5	34	19	76
32	14	44	6 ^{+0.012} ₀ through	6 ^{+0.012} ₀ depth 8	46	18.5	100
40	14	54	6 ^{+0.012} ₀ through	6 ^{+0.012} ₀ depth 8	50	22	110
50	20	62	8 ^{+0.015} ₀ through	8 ^{+0.015} ₀ depth 11	56	22	124
63	30	74	8 ^{+0.015} ₀ through	8 ^{+0.015} ₀ depth 11	66	24	132
80	36	94	10 ^{+0.018} ₀ through	10 ^{+0.018} ₀ depth 13	84	28.5	166
100	40	116	10 ^{+0.018} ₀ through	10 ^{+0.018} ₀ depth 13	110	32.5	200

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

Series MY1C



Mounting surface of a workpiece for the slide table



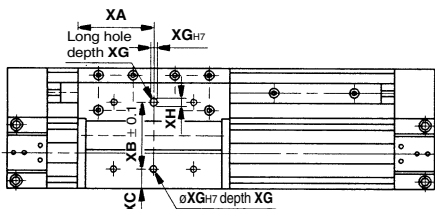
Mounting surface of cylinder tube

Bore size (mm)	XA	XB	XD	XE	XG	XH	XJ
16	40	40	80	40	4	5	9
20	50	40	100	50	4	5	9
25	51	50	110	55	5	6	10
32	66	60	140	70	6	7	11
40	81	80	180	80	6	7	11
50	100	90	230	85	8	9	13
63	115	110	280	90	10	10	15

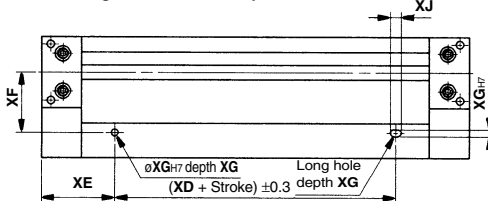
Series MY1H

$\phi 25, \phi 32, \phi 40$

Series MY1H



Mounting surface of a workpiece for the slide table



Mounting surface of cylinder tube

Bore size (mm)	XA	XB	XC	XD	XE
10	25	33	3.5	70	20
16	40	40	7.5	80	40
20	50	40	14.5	100	50
25	57	50	14.5	110	55
32	70	60	15	140	70
40	85	80	20.5	180	80

Bore size (mm)	XF	XG	XH	XJ
10	21.5	3	4	5
16	30	4	5	7
20	39	4	5	7
25	45	5	6	8
32	60	6	7	9
40	60.5	6	7	9

Made to Order Common Specifications: -XC57: Rodless Cylinder with Floating Joint



46 Rodless Cylinder with Floating Joint

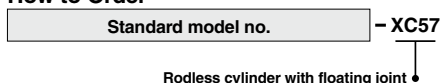
A special floating joint has been added to Series CY3B, which reduces the amount of labor that is required for connecting the cylinder to the guide of another shaft (load side).

The bolts used for joining the floating joint to the load can be secured either from above or below. (CY1B with a $\phi 6$ or $\phi 10$ bore must be secured from above.)

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CY3	Magnetically coupled rodless cylinder	CY3B	Double acting	② From P. 1452
		CY3R	Double acting	
		REA	Double acting	
REA REB	Sine rodless cylinder	REAR	Double acting	③ From P. 1053
		REBR	Double acting	

How to Order

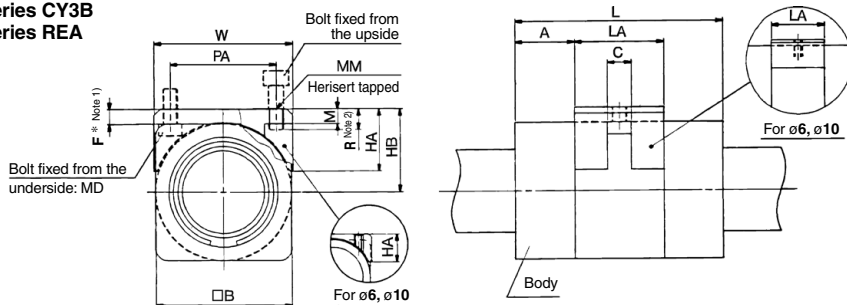


Note) The body of this cylinder is for connecting to the floating joint so that it cannot be connected to the body of the standard style. Therefore, please contact SMC for this.

Specifications: Same as standard type.

Construction/Dimensions (Other dimensions are the same as standard.)

Series CY3B Series REA



Bore size (mm)	A	□B	C	F* (1)	HA	HB	L	LA	MM	MD	M	PA	R (2)	W
6	10	17	—	2.5	6.3	11	35	15	M3 x 0.5 x 3L	—	—	12	—	18
10	10	25	—	2.5	9.5	15	38	18	M3 x 0.5 x 3L	—	—	17	—	26
15	16	35	6.5	5.5	16.5	23	57	25	M4 x 0.7	M3	4	25	6	36
20	18	36	6.5	5.5	17	23.5	66	30	M4 x 0.7	M3	4	27	6	37
25	20	46	8.0	5.5	21	28.5	70	30	M5 x 0.8	M4	5	36	7	47
32	22.5	60	9.5	6.0	27.5	36	80	35	M6 x 1.0	M5	6	47	8	61
40	26	70	9.5	6.0	28.5	41	92	40	M6 x 1.0	M5	6	55	8	71
50	35	86	11	6.0	35	49	110	40	M8 x 1.25	M6	8	65	11	87
63	36	100	18	7.0	42	57	122	50	M8 x 1.25	M6	10	80	11	101

Note 1) With dimension F*, the amount of clearance between the body and the floating joint is 1 mm. The self weight deflection of the cylinder tube is not taken into account. Before operating the cylinder, determine the proper value by taking the amount of self weight deflection and the amount of off-centering from the other shaft into consideration.

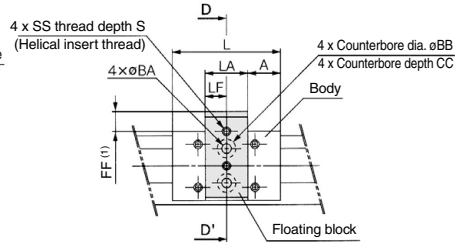
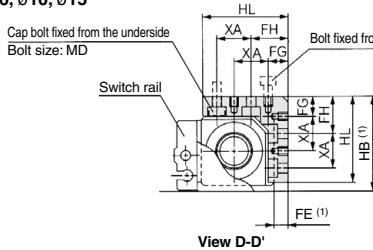
Note 2) When the bolts are secured from above, be aware that if the cylinder is operated when dimension R (on $\phi 6$ and $\phi 10$, 3 mm or over) is exceeded, the end of the bolt could come in contact with the body, without being able to achieve the floating effect.

Construction/Dimensions

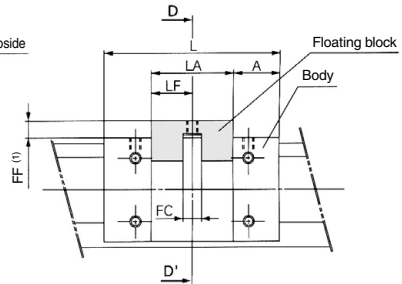
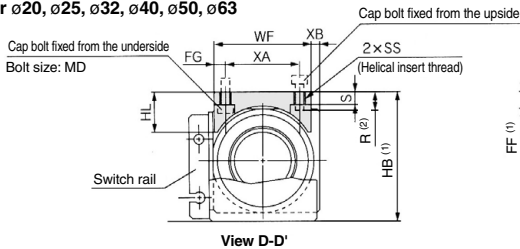
Series CY3R

Series REAR, REBR

For $\phi 6$, $\phi 10$, $\phi 15$



For $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$



Bore size (mm)	A	BA	BB	CC	FC	FE ⁽¹⁾	FF ⁽¹⁾	FG	FH	HB ⁽¹⁾	HL	L	LA	LF	MD	R ⁽²⁾	S	SS	WF	XA	XB
6	9.5	3.4	6.5	3.3	—	5	7	5.5	10.5	26	23	34	15	7.5	M3	—	3.5	M3 x 0.5	—	10	—
10	11.5	3.4	6.5	3.3	—	5	7	7	13	33	30	38	15	7.5	M3	—	3.5	M3 x 0.5	—	12	—
15	18	4.5	8	4.4	—	4.5	6.5	7.5	14.5	38.5	35.5	53	17	8.5	M4	—	4.5	M4 x 0.7	—	14	—
20	16.5	—	—	—	6.5	—	6	4	—	45	14	62	29	14.5	M3	7	4.5	M4 x 0.7	34	26	3
25	20.5	—	—	—	8	—	7	4	—	51	17	70	29	14.5	M4	8	5.5	M5 x 0.8	39	31	3
32	21	—	—	—	9.5	—	7.5	4.5	—	62.5	22	76	34	17	M5	10	6.5	M6 x 1	50	41	3
40	25.5	—	—	—	9.5	—	7.5	7.5	—	74.5	28	90	39	19.5	M5	10	6.5	M6 x 1	60	45	3
50	35.5	—	—	—	11	—	7.5	9	—	92.5	38	110	39	19.5	M6	15	10	M8 x 1.25	78	60	3
63	34.5	—	—	—	18	—	7.5	10	—	104.5	39	118	49	24.5	M6	15	10	M8 x 1.25	90	70	3

Note 1) With dimension FE, FF, and HB, the amount of clearance between the body and the floating joint is 1 mm. The self weight deflection of the cylinder tube is not taken into account. Before operating the cylinder, determine the proper value by taking the amount of self weight deflection and the amount of off-centering with the other shaft into consideration.

Note 2) When the bolts are secured from above, be aware that if the cylinder is operated when dimension R is exceeded, the end of the bolt could come in contact with the body, without being able to achieve the floating effect.

Made to Order Common Specifications:

-XC67: Dust Seal Band NBR Lining Specifications

-XC68: Made of Stainless Steel (With Hard Chrome Plated Piston Rod)



47 Dust Seal Band NBR Lining Specifications

Symbol

-XC67

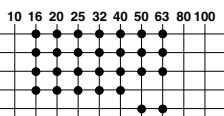
The standard vinyl chloride lining specification is changed to NBR lining
Oil resistance and peeling resistance are improved.

Note) Please consult with SMC for specific details on oil resistance.

MY1 **B** Bore size - Stroke - Auto switch Suffix -XC67

Series: Bore size

B	Basic type
M(W)	Slide bearing type (With cover)
C(W)	Cam follower guide type (With cover)
H	Linear guide type
HT	High rigidity/Linear guide type



ø10, ø80 and ø100 are available only in stainless steel plate and the NBR lining specification is not available.

Example) MY1B40G-300L-Z73-XC67

For ordering dust seal band (NBR lining) only

MY Bore size - 16 B N - Stroke

Dust seal band
NBR lining

Dust seal band
Hexagon socket head set
screw thread treatment

NII	Black zinc chromated
W	Nickel plated

Example) MY25-16B^NW-300

For details, refer to "Dust seal band" in the construction of each series.

48 Made of Stainless Steel (With Hard Chrome Plated Piston Rod)

Symbol

-XC68

Suitable for the cases it is likely to generate rust by being immersed in the water and corrosion.

Applicable Series

Series	Description	Model	Action
CS1	Standard type	CS1	Double acting, Single rod
CS2	Standard type	CS2	Double acting, Single rod
		CS2W	Double acting, Double rod
	Smooth cylinder	CS2Y	Double acting, Single rod

How to Order

Standard model no. -XC68

Made of stainless steel
(With hard chrome plated piston rod)

Specifications

Parts changed to stainless steel	Piston rod
Specifications other than above and external dimensions	Same as standard

Maximum stroke

Series	Double acting, Single rod	Double acting single rod with rod boot
CS1, CS2	1600	1400

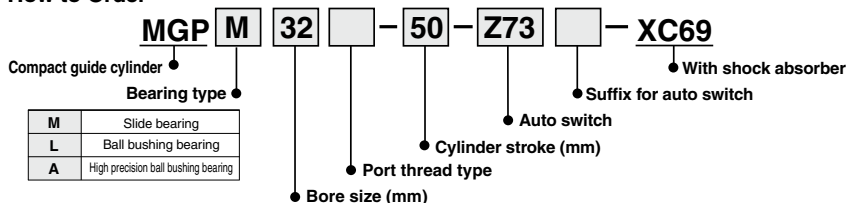
Made to Order Common Specifications: -XC69: Series MGP with Shock Absorber



49 Series MGP with Shock Absorber

Symbol
-XC69

How to Order



Specifications of Extension Adjusting Mechanism

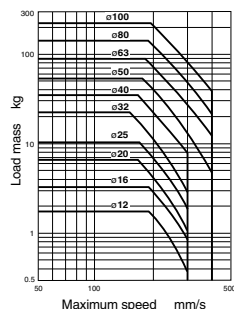
Bore size (mm)	12, 16	20, 25	32, 40	50, 63	80, 100
Shock absorber model	RB0806	RB1007	RB1412	RB2015	RB2725
Maximum energy absorption (J)	2.94	5.88	19.6	58.8	147
Stroke adjustment range (mm)	0 to -15		0 to -25		0 to -30
Piston speed	Refer to the graph below.				

Soft type Series RJ type (-XB22) is also available.
For details, refer to -XB22.

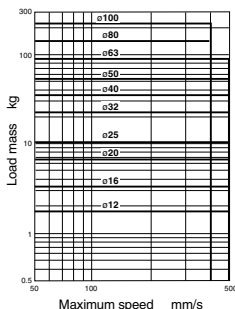
Allowable Kinetic Energy

Load mass and cylinder speed should be observed within the range given in the graph below.

Stroke retracted side (Rubber bumper)



Stroke extended side (Shock absorber)



The shock absorber service life is different from that of the MGP cylinder. Refer to the Series RB Specific Product Precautions for the replacement period.

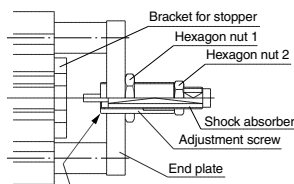
Mounting

Do not allow hands or fingers near the cylinder during its operation.

If finger, etc. were to get caught between shock absorber and body, it might damage on the human body and the peripheral equipment. Take protective measures by mounting a protective cover, etc. as necessary.

Basically, avoid bottom-mounting a cylinder.

Mounting space is limited owing to the guide rod and the end plate, etc. Mount a cylinder by the top mounting or side mounting.



* Adjust it so that the end of an adjustment screw hit directly on the stopper bracket.

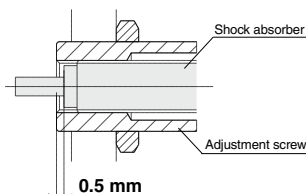
Adjustment

1. How to adjust an adjustment screw (Stroke adjustment)

Loosen only the hexagon nut 1, then turn the adjustment screw to adjust the stroke. After adjusting, lock it with the hexagon nut 1. Fix it at the position ejected from the end plate, so that the end face of an adjustment screw could hit the bracket for stopper directly. (Refer to the figure right above.)

2. How to replace shock absorbers

Loosen hexagon nut 2, and turn a shock absorber counterclockwise for removal. For installing a new shock absorber, fix it at the position that the end face of an adjustment screw sticks out by 0.5 mm from a shock absorber. (Refer to the figure on the right.) After adjusting the position of shock absorber, be sure to secure with hexagon nut 2.



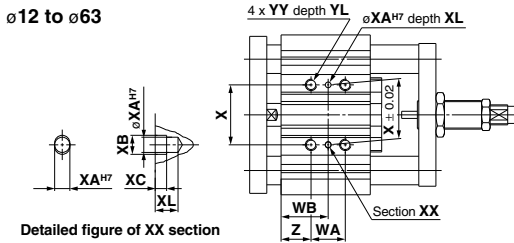
Made to Order Common Specifications: -XC69: Series MGP with Shock Absorber



49 Series MGP with Shock Absorber

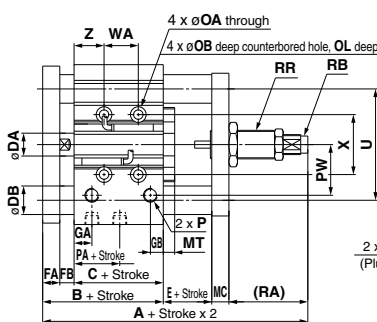
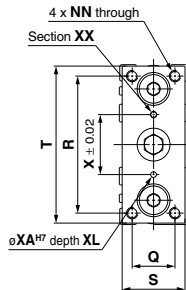
Dimensions

ø12 to ø63

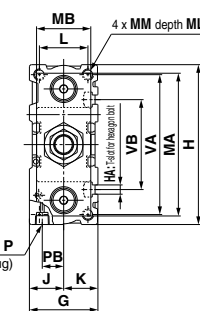


Detailed figure of XX section

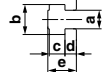
Bottom view



For ø12, ø16



T-slot dimensions



Bore size (mm)	a	b	c	d	e
12	4.4	7.4	3.7	2	6.2
16	4.4	7.4	3.7	2.5	6.7
20	5.4	8.4	4.5	2.8	7.8
25	5.4	8.4	4.5	3	8.2
32	6.5	10.5	5.5	3.5	9.5
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

Common Dimensions

Bore size (mm)	Standard stroke (mm)	A	B	C	DA	DB	E	FA	FB	G	GA	GB	H	HA	J	K	L	MA	MB	MC	MT	MM	ML	NN
						Slide	Ball bearing																	
12	10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250	90	42	29	6	8	6	7	8	5	26	11	7.5	58	M4	13	13	18	51	19	8	6	M4 x 0.7	M4 x 0.7
16	125, 150, 175, 200, 250	94	46	33	8	10	8	7	8	5	30	11	8	64	M4	15	15	22	58	19	8	6	M5 x 0.8	M5 x 0.8
20	20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400	109	53	37	10	12	10	9	10	6	36	10.5	8.5	83	M5	18	18	24	68	30	10	8	M5 x 0.8	M5 x 0.8
25		109.5	53.5	37.5	12	16	13	9	10	6	42	11.5	9	93	M5	21	21	30	82	30	10	8	M6 x 1.0	M6 x 1.0
32		135.5	59.5	37.5	16	20	16	9	12	10	48	12.5	9	112	M6	24	24	34	100	38	12	8	M8 x 1.25	M8 x 1.25
40	25, 50, 75, 100	142	66	44	16	20	16	9	12	10	54	14	10	120	M6	27	27	40	108	38	12	8	M8 x 1.25	M8 x 1.25
50	125, 150, 175, 200	155	72	44	20	25	20	10	16	12	64	14	11	148	M8	32	32	46	139	60	16	9	M10 x 1.5	M10 x 1.5
63	250, 300, 350, 400	160	77	49	20	25	20	10	16	12	78	16.5	13.5	162	M10	39	39	58	153	60	16	9	M10 x 1.5	M10 x 1.5

Bore size (mm)	OA	OB	OL	P			PA	PB	PW	Q	R	RA	RB	RR	S	T	U	VA	VB	X	XA	XB	XC	XL	YY	YL	Z
				NII	N	TF																					
12	4.3	8	4.5	M5 x 0.8	—	—	13	8	18	14	48	33	RB0806	M12 x 1.5	22	56	41	50	37	23	3	3.5	3	6	M5 x 0.8	10	5
16	4.3	8	4.5	M5 x 0.8	—	—	15	10	19	16	54	33	RB0806	M12 x 1.5	25	62	46	56	38	24	3	3.5	3	6	M5 x 0.8	10	5
20	5.4	9.5	5.5	Rc1/8	NPT1/8	G1/8	12.5	10.5	25	18	70	37	RB1007	M14 x 1.5	30	81	54	72	44	28	3	3.5	3	6	M6 x 1.0	12	17
25	5.4	9.5	5.5	Rc1/8	NPT1/8	G1/8	12.5	13.5	30	26	78	37	RB1007	M14 x 1.5	38	91	64	82	50	34	4	4.5	3	6	M6 x 1.0	12	17
32	6.6	11	7.5	Rc1/8	NPT1/8	G1/8	7	15	35.5	30	96	55	RB1412	M20 x 1.5	44	110	78	98	63	42	4	4.5	3	6	M8 x 1.25	16	21
40	6.6	11	7.5	Rc1/8	NPT1/8	G1/8	13	18	39.5	30	104	55	RB1412	M20 x 1.5	44	118	86	106	72	50	4	4.5	3	6	M8 x 1.25	16	22
50	8.6	14	9	Rc1/4	NPT1/4	G1/4	9	21.5	47	40	130	57	RB2015	M27 x 1.5	60	146	110	130	92	66	5	6	4	8	M10 x 1.5	20	24
63	8.6	14	9	Rc1/4	NPT1/4	G1/4	14	28	58	50	130	57	RB2015	M27 x 1.5	70	158	124	142	110	80	5	6	4	8	M10 x 1.5	20	24

MGP12 to 25 WA, WB Dimensions

Bore size (mm)	WA					WB				
	30 at or less	Over 30 to 100 at	Over 100 to 200 at	Over 200 to 300 at	Over 300 at	30 at or less	Over 30 to 100 at	Over 100 to 200 at	Over 200 to 300 at	Over 300 at
12	20	40	110	200	—	15	25	60	105	—
16	24	44	110	200	—	17	27	60	105	—
20	24	44	120	200	300	29	39	77	117	167
25	24	44	120	200	300	29	39	77	117	167

MGP32 to 63 WA, WB Dimensions

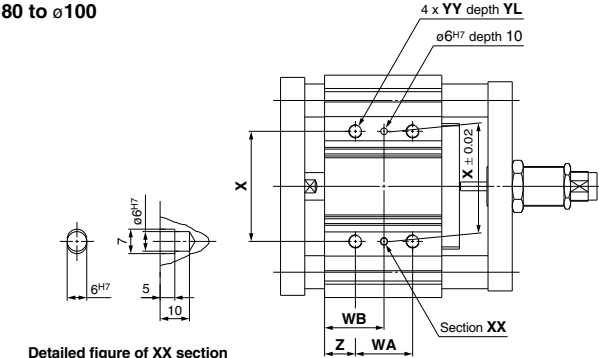
Bore size (mm)	WA					WB				
	25 at or less	Over 25 to 100 at	Over 100 to 200 at	Over 200 to 300 at	Over 300 at	25 at or less	Over 25 to 100 at	Over 100 to 200 at	Over 200 to 300 at	Over 300 at
32	24	48	124	200	300	33	45	83	121	171
40	24	48	124	200	300	34	46	84	122	172
50	24	48	124	200	300	36	48	86	124	174
63	28	52	128	200	300	38	50	88	124	174

Note) Refer to the Manufacture of Intermediate Strokes in Best Pneumatics No. 3 for intermediate strokes excluding the standard strokes.

- Bore size 12 and 16: M5 x 0.8 port only
- Bore size over 20: Rc, NPT or G ports selectable (Refer to Best Pneumatics No. 3.)

Dimensions

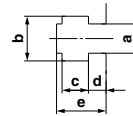
ø80 to ø100



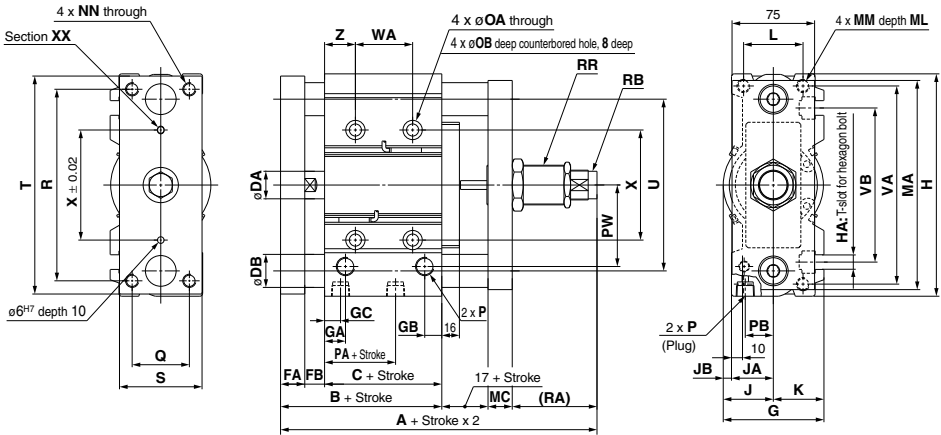
Detailed figure of XX section

Bottom view

T-slot dimensions



Bore size (mm)	T-slot dimensions (mm)				
	a	b	c	d	e
80	13.3	20.3	12	8	22.5
100	15.3	23.3	13.5	10	30



Common Dimensions

(mm)

Bore size (mm)	Standard stroke (mm)	A	B	C	DA	DB		FA	FB	G	GA	GB	GC	H	HA	J	JA	JB	K	L	MA	MC
						Slide	Ball bushing															
80	25, 50, 75, 100, 125, 150, 175	212.5	96.5	56.5	25	30	25	22	18	91.5	19	15.5	14.5	202	M12	45.5	38	7.5	46	54	190	22
100	200, 250, 300, 350, 400	232	116	66	30	36	30	25	25	111.5	23	19	18	240	M14	55.5	45	10.5	56	62	228	25

Bore size (mm)	MM	ML	NN	OA	OB	P			PA	PB	PW	Q	R	RA	RB	RR	S	T	U	VA	VB
						Nil	N	TF													
80	M12 x 1.75	25	M12 x 1.75	10.6	17.5	Rc3/8	NPT3/8	G3/8	14.5	25.5	74	52	174	77	RB2725	M36 x 1.5	75	198	156	180	140
100	M14 x 2.0	31	M14 x 2.0	12.5	20	Rc3/8	NPT3/8	G3/8	17.5	32.5	89	64	210	74	RB2725	M36 x 1.5	90	236	188	210	166

Bore size (mm)	WA					WB					X	YY	YL	Z
	25 st or less	Over 25 st to 100 st	Over 100 st to 200 st	Over 200 st to 300 st	Over 300 st	25 st or less	Over 25 st to 100 st	Over 100 st to 200 st	Over 200 st to 300 st	Over 300 st				
80	28	52	128	200	300	42	54	92	128	178	100	M12 x 1.75	24	28
100	48	72	148	220	320	35	47	85	121	171	124	M14 x 2.0	28	11

Note) Refer to the Manufacture of Intermediate Strokes in Best Pneumatics No. 3 for the intermediate strokes excluding the standard strokes.

• Rc, NPT or G ports selectable (Refer to Best Pneumatics No. 3.)

Made to Order Common Specifications:

-XC71: Helical Insert Thread Specifications

-XC72: Without Built-in Auto Switch Magnet



50 Helical Insert Thread Specifications

Symbol

-XC71

The guide body mounting threads are helical insert threads.

How to Order

MGG Bearing type B Bore size Port thread type — Stroke — Auto switch — **XC71**

↓ Basic style

↓ Helical insert thread specifications

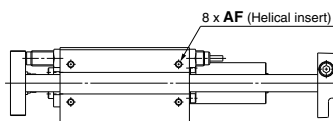
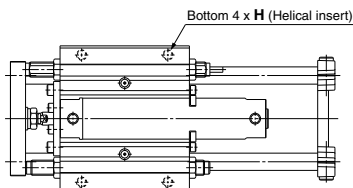
Specifications

Applicable series	MGG□B
Bore size (mm)	20, 25, 32, 40, 50
Mounting style	Basic style

* Specifications other than above are the same as standard type.

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

ø20 to ø50



Bore size (mm)	H	AF
20	M6 x 1 depth 12	M5 x 0.8 depth 7.5
25	M8 x 1.25 depth 16	M6 x 1 depth 9
32	M8 x 1.25 depth 16	M6 x 1 depth 9
40	M10 x 1.5 depth 20	M8 x 1.25 depth 12
50	M12 x 1.75 depth 24	M10 x 1.5 depth 15

51 Without Built-in Auto Switch Magnet

Symbol

-XC72

This cylinder type does not have built-in auto switch magnet.

How to Order

MGG Standard model no. — **XC72**

Without built-in auto switch magnet

Specifications

Applicable series	MGG
Bore size (mm)	20, 25, 32, 40, 50
Auto switch	Not mountable

* Specifications and external dimensions other than above are the same as standard type.

Made to Order Common Specifications: -XC73: Built-in Cylinder with Lock (CDNG)



52 Built-in Cylinder with Lock (CDNG)

Symbol
-XC73

This type has a built-in cylinder with lock, which accommodates intermediate stops, emergency stops and drop prevention, etc.

How to Order

MGG Bearing type Mounting style Bore size — Stroke — Auto switch — **XC73**

Built-in cylinder with lock

Cylinder Specifications

Applicable series		MGG			
Bore size (mm)		20	25	32	40
Basic cylinder		CDNGBN	Bore size	Stroke	D — Auto switch
Minimum operating pressure		0.2 MPa (Horizontal with no load)			
Piston speed		50 to 1000 mm/s <small>Note)</small>			
Stroke adjustment range (One side) [Built-in adjustment bolts (2 pcs.)]		0 to -15 mm			
Non-rotating accuracy ^{*2}	Slide bearing	±0.06°	±0.05°	±0.04°	
	Ball bushing bearing	±0.04°	±0.04°	±0.04°	
Shock absorber model		RB1412		RB2015	

Note) When the piston is locked, the load mass is limited by the mounting orientation and the operating pressure.

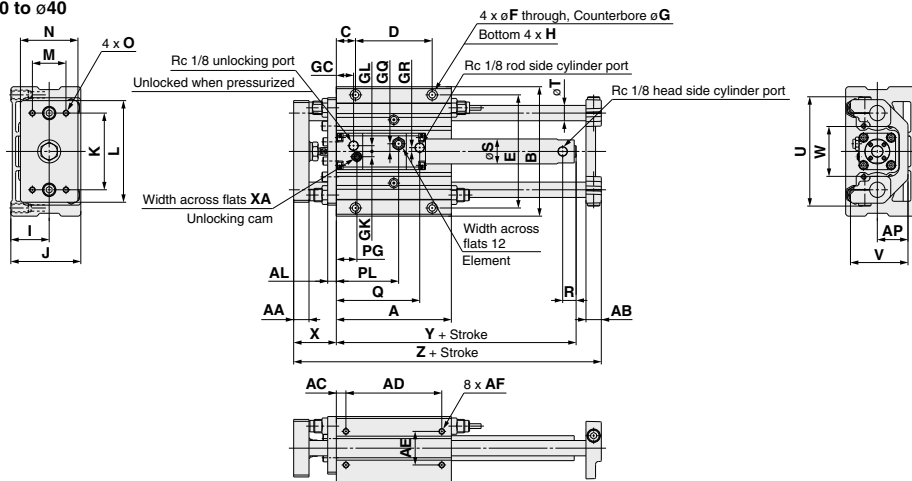
*1 Specifications other than shown on the left are the same as the standard type.

*2 Non-rotating rod accuracy must be below the values shown in the table at the retraction of the cylinder (initial value), and without loads or the conditions excluding the deflection of the guide rods.

Dimensions

Basic style/MGG□B

ø20 to ø40



Standard Stroke

Bore size (mm)	Stroke range (mm)	A	AA	AB	AC	AD	AE	AF	AL	AP	B	C	D	E	F	G	GC	GK	GL	GQ	GR	H	I	J
20	75, 100, 125, 150, 200	120	12	16	10	100	35	M6 x 1 depth 12	9	32	135	20	80	118	6.6	11 depth 8	18	5.5	6	8	4	M10 x 1.5 depth 18	40	73
25	75, 100, 125	140	16	19	10	120	40	M6 x 1.25 depth 16	9	37	170	20	100	150	9	14 depth 10	25	6.5	9	10	7	M12 x 1.75 depth 21	50	93
32	150, 200	140	16	19	10	120	40	M6 x 1.25 depth 16	9	37	170	20	100	150	9	14 depth 10	25	6.5	9	10	7	M12 x 1.75 depth 21	50	93
40	250, 300	170	19	21	10	150	45	M10 x 1.5 depth 20	12	42	194	25	120	170	11	17 depth 12	26	7	11	12	7	M14 x 2 depth 25	55	103

Long Stroke

Bore size (mm)	K	L	M	N	O	PG	PL	Q	R	S	T	U	V	W	X	XA	Y	Z
20	80	106	35	60	M6 x 1 depth 9	21.5	65	85	12	26	16	114	60	52	39	3	143	194
25	95	134	50	75	M8 x 1.25 depth 13	26.5	73	96	12	31	20	134	72	62	46	3	153	228
32	95	134	50	75	M8 x 1.25 depth 13	26.5	73	97	12	38	20	134	72	62	46	3	156	228
40	115	152	56	90	M10 x 1.5 depth 16	28	81	104	12	47	25	164	82	75	56	4	171	274

Bore size (mm)	Stroke range (mm)	R	Y
20	250 to 400	14	151
25	350 to 500	14	161
32	350 to 600	14	164
40	350 to 800	15	180

Made to Order Common Specifications: -XC73: Built-in Cylinder with Lock (CDNG)

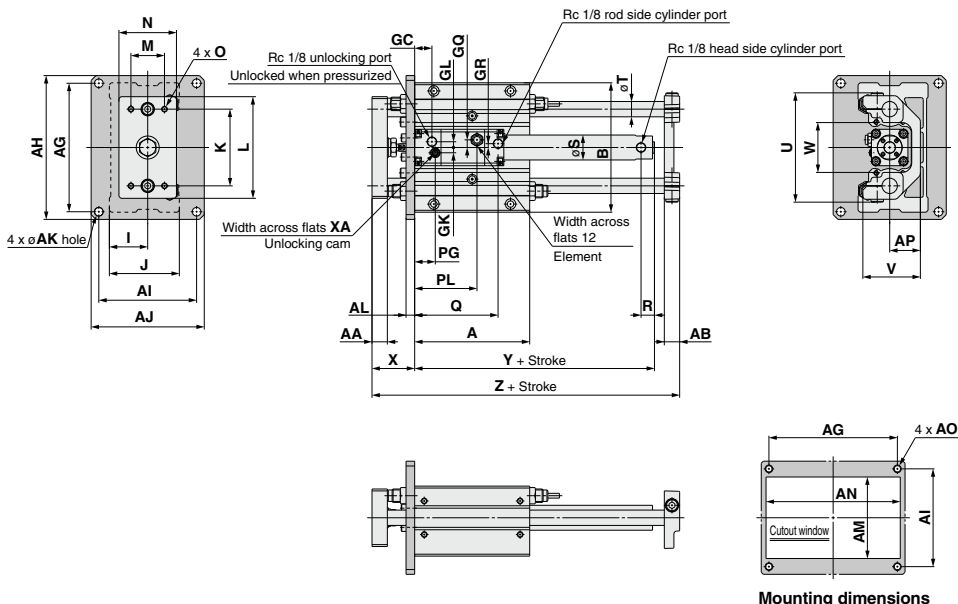


52 Built-in Cylinder with Lock (CDNG)

Dimensions

Front mounting flange style/MGG□F

ø20 to ø40



Mounting dimensions

Standard Stroke

Bore size (mm)	Stroke range (mm)	A	AA	AB	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	B	GC	GK	GL	GQ	GR	I	J	K	L	M	N
20	75, 100, 125, 150, 200	120	12	16	134	150	102	118	9	9	85	140	M8	32	135	18	5.5	6	8	4	40	73	80	106	35	60
25	75, 100, 125	140	16	19	170	186	134	150	9	9	105	175	M8	37	170	25	6.5	9	10	7	50	93	95	134	50	75
32	150, 200	140	16	19	170	186	134	150	9	9	105	175	M8	37	170	25	6.5	9	10	7	50	93	95	134	50	75
40	250, 300	170	19	21	190	210	140	160	11	12	115	200	M10	42	194	26	7	11	12	7	55	103	115	152	56	90

Long Stroke

Bore size (mm)	O	PG	PL	Q	R	S	T	U	V	W	X	XA	Y	Z	Bore size (mm)	Stroke range (mm)	R	Y
20	M6 x 1 depth 9	21.5	65	85	12	26	16	114	60	52	39	3	143	194	20	250 to 400	14	151
25	M8 x 1.25 depth 13	26.5	73	96	12	31	20	134	72	62	46	3	153	228	25	350 to 500	14	161
32	M8 x 1.25 depth 13	26.5	73	97	12	38	20	134	72	62	46	3	156	228	32	350 to 600	14	164
40	M10 x 1.5 depth 16	28	81	104	12	47	25	164	82	75	56	4	171	274	40	350 to 800	15	180

Made to Order Common Specifications: Built-in Cylinder with Lock (CDNG)

Symbol
-XC73

This type has a built-in cylinder with lock, which accommodates intermediate stops, emergency stops and drop prevention, etc.

How to Order

MGC **Bearing type** **Mounting style** **Bore size** **Stroke** **Equipped/Not equipped rear plate** **Auto switch** **-XC73**
Built-in cylinder with lock

Cylinder Specifications

Applicable series		MGC			
Bore size (mm)		20	25	32	40
Basic cylinder		CDNGBA	Bore size	Stroke	-D- Auto switch
Minimum operating pressure		0.2 MPa (Horizontal with no load)			
Piston speed		50 to 750 mm/s <small>Note</small>			
Non-rotating accuracy ^{*2}	Slide bearing	±0.06°	±0.05°		±0.04°
	Ball bushing bearing	±0.04°	±0.04°		±0.04°

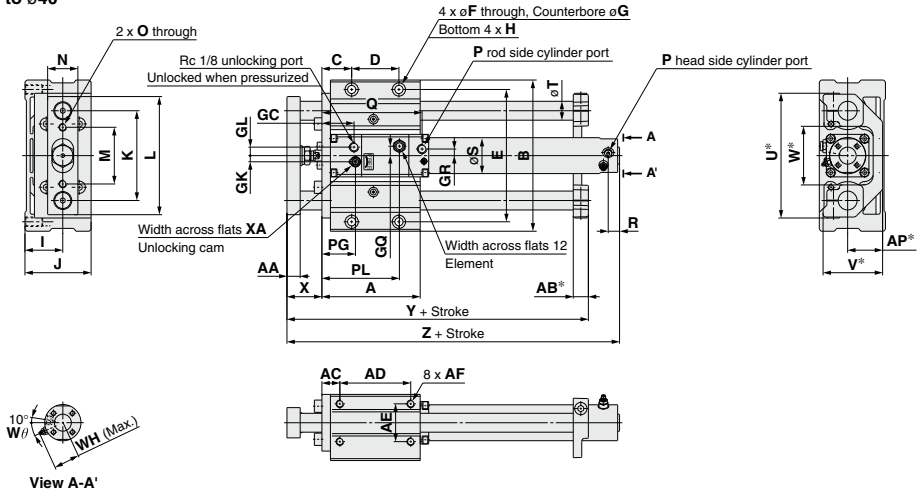
Note) When the piston is locked, the load mass is limited by the mounting orientation and the operating pressure. For details about the lock specifications, etc., refer to the cylinders with lock (Best Pneumatics No. 3).

*1 Specifications other than shown on the left are the same as the standard type.

*2 Non-rotating rod accuracy must be below the values shown in the table at the retraction of the cylinder (initial value), and without loads or the conditions excluding the deflection of the guide rods.

Dimensions

Basic style/MGC□B ø20 to ø40



Standard Stroke

Bore size (mm)	Stroke range (mm)	A	AA	AB*	AC	AD	AE	AF	AP*	B	C	D	E	F	G	GC	GK	GL	GQ	GR	H	I	J	K
20	75, 100, 125, 150, 200	94	11	13	16.5	70	35	M6 x 1 depth 12	32	135	26.5	50	118	6.8	11 depth 8	27	5.5	6	8	4	M8 x 1.25 depth 14	35	60	80
25	75, 100, 125	104	14	16	19	75	40	M8 x 1.25 depth 16	37	160	31.5	50	140	8.6	14 depth 10	34	6.5	9	10	7	M10 x 1.5 depth 18	40	70	95
32	150, 200	104	14	16	19	75	40	M8 x 1.25 depth 16	37	160	31.5	50	140	8.6	14 depth 10	34	6.5	9	10	7	M10 x 1.5 depth 18	40	70	95
40	250, 300	142	17	19	22	110	45	M10 x 1.5 depth 20	42	194	37	80	170	10.5	17 depth 12	38	7	11	12	7	M12 x 1.75 depth 21	45	82.5	115

Long Stroke

Bore size (mm)	L	M	N	O	P	PG	PL	Q	R	S	T	U*	V*	W*	WH	W/	X	XA	Y	Z
20	105	50	25	M6 x 1	M5 x 0.8	30.5	74	96	12	26	16	110	53	52	23	30°	30	3	148	182
25	125	60	32	M8 x 1.25	M5 x 0.8	35.5	82	106	12	31	20	132	63	62	25	30°	37	3	169	199
32	125	60	32	M8 x 1.25	Rc 1/8	35.5	82	106	12	38	20	132	63	62	28.5	25°	37	3	169	202
40	150	75	38	M8 x 1.25	Rc 1/8	40	93	116	12	47	25	158	73	75	33	20°	44	4	210	227

Bore size (mm)	Stroke range (mm)	R	Z
20	250 to 400	14	190
25	350 to 500	14	207
32	350 to 600	14	210
40	350 to 800	15	236

Note) Without rear plate: Dimensions with an asterisk (*) mark is not needed.

Made to Order Common Specifications:

-XC73: Built-in Cylinder with Lock (CDNG)

-XC74: With Front Plate for MGG Cylinder



52 Built-in Cylinder with Lock (CDNG)

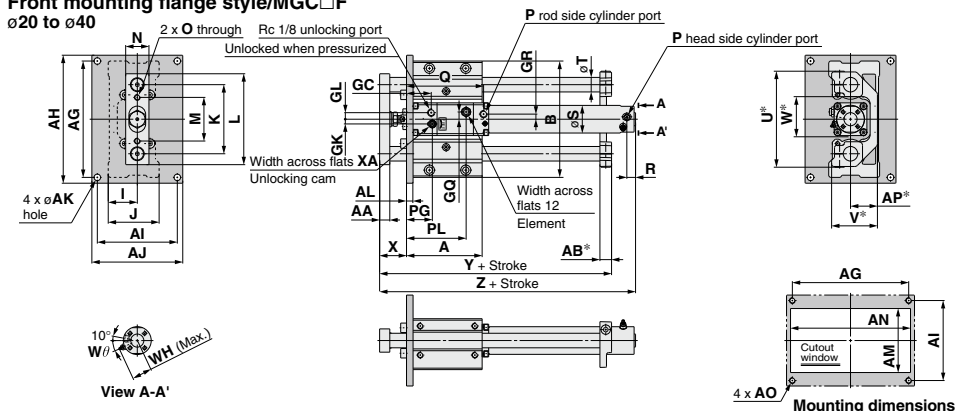
Symbol

-XC73

Dimensions

Front mounting flange style/MGC□F

ø20 to ø40



Standard Stroke

Bore size (mm)	Stroke range (mm)	A	AA	AB*	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP*	B	GC	GK	GL	GQ	GR	I	J	K	L	M	N
20	75, 100, 125, 150, 200	94	11	13	134	150	92	108	9	9	75	140	M8	32	135	27	5.5	6	8	4	35	60	80	105	50	25
25	75, 100, 125	104	14	16	160	176	110	125	9	9	88	165	M8	37	160	34	6.5	9	10	7	40	70	95	125	60	32
32	150, 200, 250, 300	104	14	16	160	176	110	125	9	9	88	165	M8	37	160	34	6.5	9	10	7	40	70	95	125	60	32
40		142	17	19	190	210	115	135	11	12	96	200	M10	42	194	38	7	11	12	7	45	82.5	115	150	75	38

Long Stroke

Bore size (mm)	O	P	PG	PL	Q	R	S	T	U*	V*	W*	WH	Wθ	X	XA	Y	Z
20	M6 x 1	M5 x 0.8	30.5	74	96	12	26	16	110	53	52	23	30°	30	3	148	182
25	M8 x 1.25	M5 x 0.8	35.5	82	106	12	31	20	132	63	62	25	30°	37	3	169	199
32	M8 x 1.25	Rc 1/8	35.5	82	106	12	38	20	132	63	62	28.5	25°	37	3	169	202
40	M8 x 1.25	Rc 1/8	40	93	116	12	47	25	158	73	75	33	20°	44	4	210	227

Bore size (mm)	Stroke range (mm)	R	Z
20	250 to 400	14	190
25	350 to 500	14	207
32	350 to 600	14	210
40	350 to 800	15	236

Note) Without rear plate: Dimensions with an asterisk (*) mark is not needed.

53 With Front Plate for MGG Cylinder

Symbol

-XC74

This type uses a front plate equivalent to the MGG series.

How to Order

MGC Standard model no. **-XC74**

With front plate for MGG

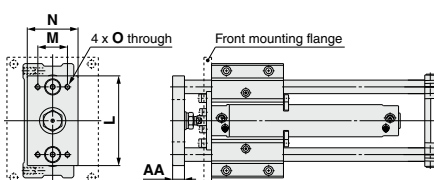
Specifications

Applicable series	MGC
Bore size (mm)	20, 25, 32, 40, 50
Fluid	Air
Minimum operating pressure	0.15 MPa (Horizontal, With no load)
Piston speed	50 to 750mm/s
Auto switch	Mountable

* Specifications other than above are the same as standard type.

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

ø20 to ø50



Bore size (mm)	L	M	N	O	AA
20	80	25	45	M6 x 1	11
25	100	35	54	M6 x 1	14
32	106	35	60	M6 x 1	14
40	134	50	75	M8 x 1.25	17
50	152	56	90	M10 x 1.5	23

Made to Order Common Specifications: -XC78: Auto Switch Mounting Special Dimensions at Stroke End



54 Auto Switch Mounting Special Dimensions at Stroke End

Symbol

-XC78

Auto switch mounting position at stroke end is assembled like below.

How to Order

MGC Standard model no. -XC78

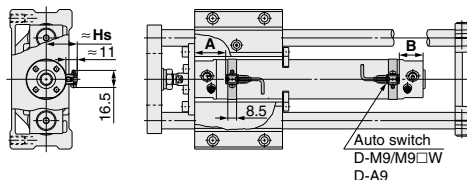
Auto switch mounting special dimensions at stroke end

Specifications

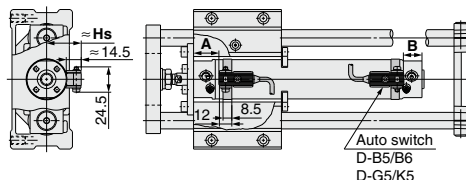
Applicable series	MGC
Bore size (mm)	20, 25, 32, 40, 50
Applicable cylinder	Guide cylinder
Specifications other than above	Same as standard type

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

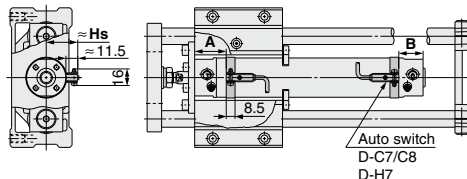
D-M9□(V)/M9□W(V)/M9□A(V)
D-A9□(V)



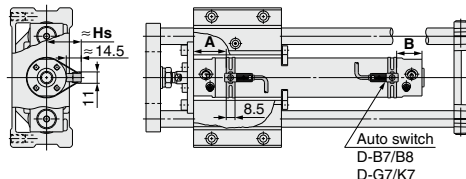
D-B5/B6
D-G5/K5



D-C7/C8
D-H7



D-B7/B8
D-G7/K7



Proper Auto Switch Mounting Position

(mm)

Auto switch model	D-M9□(V) D-M9□W(V) D-M9□A(V)		D-A9□(V)		D-B7/B8 D-B7C D-B80C D-G7/K7 D-K79C		D-C7□ D-C80 D-C73C D-C80C		D-B5□ D-B64		D-B59W		D-H7□ D-H7C D-H7NF D-H7□W D-H7BA		D-G59F/G5□ D-K59 D-G5□W D-K59W D-G5NT D-G5BA	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
20	33	24 (32)	29	20 (28)	30.5	21.5 (29.5)	29.5	20.5 (28.5)	23.5	15.5 (22.5)	26.5	17.5 (25.5)	28.5	19.5 (27.5)	25	16 (24)
25	33	24 (32)	29	20 (28)	30.5	21.5 (29.5)	29.5	20.5 (28.5)	23.5	15.5 (22.5)	26.5	17.5 (25.5)	28.5	19.5 (27.5)	25	16 (24)
32	34	25 (33)	30	21 (29)	31.5	22.5 (30.5)	30.5	21.5 (29.5)	24.5	15.5 (23.5)	27.5	18.5 (26.5)	29.5	20.5 (28.5)	26	17 (25)
40	39	27 (36)	35	23 (32)	36.5	24.5 (33.5)	35.5	23.5 (32.5)	29.5	19 (26.5)	32	20.5 (29.5)	34.5	22.5 (31.5)	31	19 (28)
50	46	32 (36)	42	28 (40)	43.5	29.5 (41.5)	42.5	28.5 (40.5)	36.5	22.5 (34.5)	39.5	25.5 (37.5)	41.5	27.5 (39.5)	38	24 (36)

Proper Auto Switch Mounting Height

Auto switch model	D-M9□(V) D-M9□W(V) D-M9□A(V) D-A9□(V)		D-C7□/C80 D-H7□ D-H7□W D-H7NF D-H7BA		D-C73C D-C80C		D-B7□/B80 D-G5□/K59 D-B73C D-G5□W D-B80C D-K59W D-G79/K79 D-B5□/B64 D-K79C D-B59W D-H7C D-G5BA D-G5NT D-G59F	
	Hs	Hs	Hs	Hs	Hs	Hs	Hs	
20	25	24.5	27				27.5	
25	27.5	27	29.5				30	
32	31	30.5	33				33.5	
40	35.5	35	37.5				38	
50	41	40.5	43				43.5	

* () : Long stroke, double rod

Note) Adjust the auto switch after confirming the operating conditions in the actual setting.

Made to Order Common Specifications: -XC82: Bottom Mounting Style



55 Bottom Mounting Style

Symbol

-XC82

Since the guide rod does not protrude from the bottom at the retraction of the rod, relief holes for guide rods are not required.

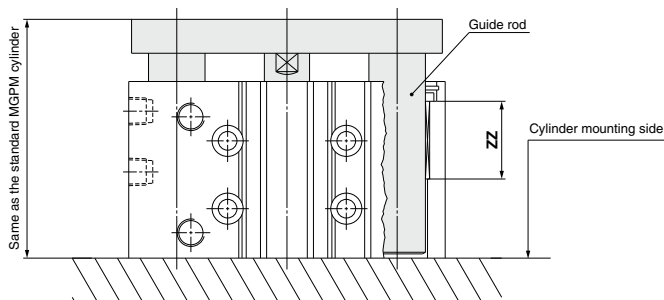
How to Order

MGP M 32 - 50 (Z) - XC82

- Compact guide cylinder
- Bearing Type (mm)
 - M Slide bearing
- Bore size (mm)

12	12 mm
16	16 mm
20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm
- Port thread type
- 50 (Z)
 - 50 Cylinder stroke (mm)
 - (Z) Auto switch
- Suffix for auto switch
- Bottom mounting style

Bore size (mm)	Applicable stroke (mm)
12 to 25	75, 100
32 to 100	25, 50, 75, 100



Note) The total length (ZZ) of the guide rod bushing is shorter than the standard type.

Made to Order Common Specifications: -XC83: Built-in Cylinder with Lock (MDNB)



56 Built-in Cylinder with Lock (MDNB)

Symbol
-XC83

This type has a built-in cylinder with lock, which accommodates intermediate stops, emergency stops and drop prevention, etc.

How to Order

MGG Bearing type Mounting style Bore size — Stroke — Auto switch — **XC83**

Specifications

Built-in cylinder with lock

Applicable series	MGG							
Bore size (mm)	50		63		80		100	
Basic cylinder	MDNBB	Bore size	—	Stroke	— D —	Auto switch	— X1189	
Minimum operating pressure	0.2 MPa (Horizontal with no load)							
Piston speed ^{Note}	50 to 1000 mm/s			50 to 700 mm/s				
Stroke adjustment range (One side) [Built-in adjusting bolts (2 pcs.)]	0 to -15 mm							
Non-rotating accuracy ^{*2}	±0.04°						±0.03°	
Slide bearing	±0.03°						±0.02°	
Shock absorber model	RR2015			RR2725				

Note) When the piston is locked, the load mass is limited by the mounting orientation and the operating pressure.

For details about the lock specifications, etc., refer to the cylinders with lock (Best Pneumatics No. 3).

*1 Specifications other than shown above are the same as the standard type.

*2 Non-rotating rod accuracy must be below the values shown in the table at the retraction of the cylinder (initial value), and without loads or the conditions excluding the deflection of the guide rods.

Applicable Auto Switches

Refer to pages 1559 to 1673 for the detailed specifications of auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (output)	Load voltage		Auto switch part no.		Lead wire length (m)					Pre-wired connector	Applicable load									
					DC	AC	Tie-rod mounting	Band mounting	0.5 (Nil)	1 (M)	3 (L)	5 (Z)												
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9N	—	●	●	●	○	○	—	IC circuit	Relay, PLC								
				3-wire (PNP)			M9P	—	●	●	●	○	○											
		Terminal conduit		2-wire			M9B	—	●	●	●	○	○											
				3-wire (NPN)			—	G39	—	—	—	—	—											
	Diagnostic indication (2-color)	Grommet		2-wire			—	K39	—	—	—	—	—				—							
				3-wire (NPN)	5 V, 12 V	—	M9NW	—	●	●	●	○	○	—	IC circuit									
				3-wire (PNP)			M9PW	—	●	●	●	○	○											
				2-wire			M9BW	—	●	●	●	○	○											
				3-wire (NPN)			M9NA	—	○	○	○	○	○											
				3-wire (PNP)			M9PA	—	○	○	○	○	○											
	Water resistant (2-color indication)			2-wire			M9BA	—	○	○	●	○	○				—							
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96	—	●	—	●	—	—	—	IC circuit	—							
				No				2-wire	24 V	12 V	—	—	—	—				—	—	—	—			
		Terminal conduit	100 V	A93	—	●	●								●	●						—	—	IC circuit
			100 V or less	A90	—	●	—								—	—						—		
		Din terminal	Yes	—	100 V, 200 V	—	A33								—	—						—	—	—
					—	A44	—	—	—	—	—	—	—											

* Lead wire length symbols: 0.5 m Nil (Example) M9NW 1 m M (Example) M9NWL 3 m L (Example) M9NWL 5 m Z (Example) M9NWL

* Solid state auto switch with ○: Manufactured upon receipt of order.

* Refer to page 1810 since there are applicable auto switches other than listed above.

* Refer to pages 1626 and 1627 for the details of auto switches with a pre-wired connector.

* D-A9□/M9□/M9□W/M9□A/M9□AV auto switches are shipped together (not assembled).

(Auto switch mounting brackets for the models above are mounted when shipped.)

Auto Switch Mounting Bracket: Part No.

Auto switch model	Bore size (mm)			
	ø50	ø63	ø80	ø100
D-A9□/A9□V D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	BA7-040	BA7-040	BA7-063	BA7-063
D-A3□/A44 D-G39/K39	BMB1-050	BMB1-063	BMB1-080	BMB1-100
D-Z7□/Z80 D-Y59□/Y69□ D-Y7P/Y7PV D-Y7□W/Y7□WV D-Y7BA	BMB4-050	BMB4-050	BA4-063	BA4-063

[Mounting screw set made of stainless steel]

The following set of mounting screws made of stainless steel (including nuts) is available. Use it in accordance with the operating environment. (Please order the auto switch mounting bracket separately, since it is not included.)

BBA1: Stainless steel screw set for D-A5/A6/F5/J5 types

Note) Refer to page 1663 for the details of BBA1.

When shipping cylinders with D-M9□A/M9□AV/Y7BA auto switches, the stainless steel screws above are used to secure auto switch mounting brackets.

-XC

Made to Order Common Specifications: -XC83: Built-in Cylinder with Lock (MDNB)



56 Built-in Cylinder with Lock (MDNB)

Besides the models listed on the previous page, the following auto switches are applicable.
Refer to pages 1559 and 1673 for details.

Auto switch type	Part no.	Electrical entry (Fetcing direction)	Features
Reed	D-A93V, A96V	Grommet (Perpendicular)	—
	D-A90V		Without indicator light
	D-Z73, Z76	Grommet (In-line)	—
	D-Z80		Without indicator light
Solid state	D-M9NV, M9PV, M9BV	Grommet (Perpendicular)	—
	D-Y69A, Y69B, Y7PV		—
	D-M9NWV, M9PWV, M9BWV		Diagnostic indication (2-color)
	D-Y7NWV, Y7PWV, Y7BWV		Water resistant (2-color indication)
	D-M9NAV, M9PAV, M9BAV	Grommet (In-line)	—
	D-Y59A, Y59B, Y7P		Diagnostic indication (2-color)
	D-Y7NW, Y7PW, Y7BW		Water resistant (2-color indication)
	D-Y7BA		Water resistant (2-color indication)

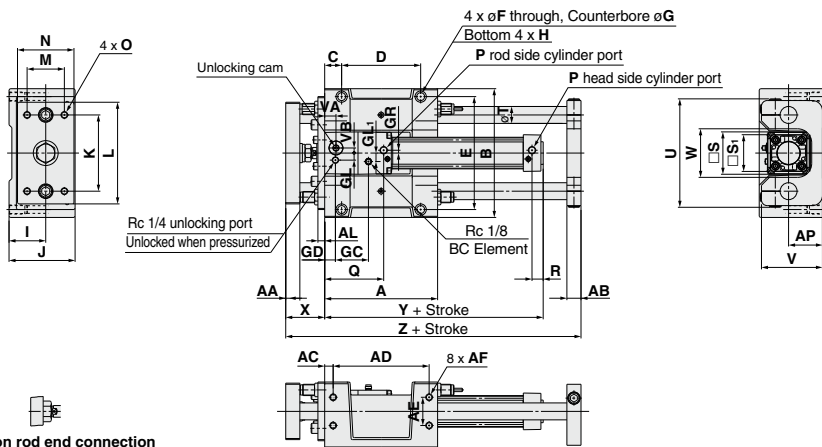
* For solid state switches, auto switches with a pre-wired connector are also available. Refer to pages 1626 and 1627 for details.

* Normally closed (NC = b contact) solid state auto switches (D-F9G/F9H/Y7G/Y7H types) are also available. Refer to pages 1577 and 1579 for details.

Refer to Series MNB in Best Pneumatics No.3 for the minimum auto switch mounting stroke, proper auto switch mounting position and operating range.

Dimensions

Basic style ø50 to ø100



ø100 piston rod end connection

Standard Stroke

Bore size (mm)	Stroke range (mm)	A	AA	AB	AC	AD	AE	AF	AL	AP	B	C	D	E	F	G	GC	GD	GL	GL ₁	GR	H	I
50	75, 100, 125	200	25	25	15	170	50	M12 x 1.75 depth 24	12	60	228	30	140	200	13.5	20 depth 14.5	58.5	19	12.5	15	5	M16 x 2 depth 28	65
63	150, 200	230	25	27	15	200	55	M12 x 1.75 depth 24	12	70	262	30	170	234	13.5	20 depth 14.5	68	23	17.5	12	9	M16 x 2 depth 28	75
80	250, 300	280	30	17.5	245	70	70	M14 x 2 depth 28	16	80	304	35	210	274	15	23 depth 17	81	33	22	18	11.5	M18 x 2.5 depth 32	85
100		280	32	30	17.5	245	70	M14 x 2 depth 28	16	80	304	35	210	274	15	23 depth 17	96	37.5	25	20	17	M18 x 2.5 depth 32	85

Long Stroke

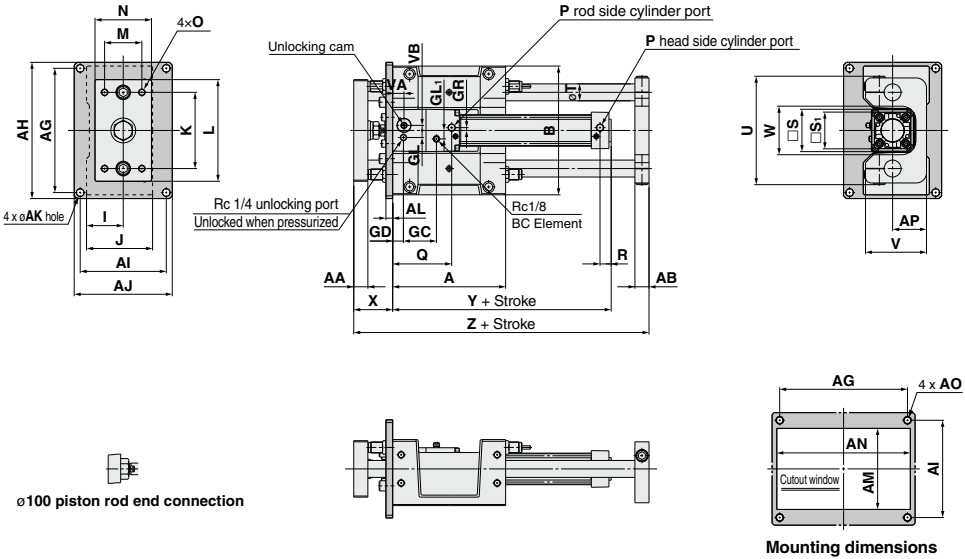
Bore size (mm)	J	K	L	M	N	O	P	Q	R	S	S ₁	T	U	V	VA	VB	W	X	Y	Z	Bore size (mm)	Stroke range (mm)
50	117	135	180	66	100	M12 x 1.75 depth 23	Rc 1/4	104.5	19.5	75	65	30	192	108	20	9	86	69	187	323	50	350 to 1000
63	138	160	214	76	115	M12 x 1.75 depth 23	Rc 3/8	119.5	20.5	90	75	35	224	128	23	8.5	104	69	201	358	63	350 to 1000
80	153	190	245	80	125	M14 x 2 depth 28	Rc 3/8	150	23	102	95	40	262	143	33	10.5	128	87	249	431	80	350 to 1000
100	153	190	245	80	125	M14 x 2 depth 30	Rc 1/2	170	23	116	114	40	262	143	37.5	10.5	128	87	269	431	100	350 to 1000

Symbol

-XC83

Dimensions

Front mounting flange style ø50 to ø100



Standard Stroke

Bore size (mm)	Stroke range (mm)	A	AA	AB	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	B	GC	GD	GL	GL ₁	GR	I	J	K	L	M	N
50	75, 100, 125 150, 200 250, 300	200	25	25	228	250	158	180	14	12	135	234	M12	60	228	58.5	19	12.5	15	5	65	117	135	180	66	100
63		230	25	27	262	284	178	200	14	12	155	268	M12	70	262	68	23	17.5	12	9	75	138	160	214	76	115
80		280	30	30	300	326	200	226	16	16	175	310	M14	80	304	81	33	22	18	11.5	85	153	190	245	80	125
100		280	32	30	300	326	200	226	16	16	175	310	M14	80	304	96	37.5	25	20	17	85	153	190	245	80	125

Bore size (mm)	O	P	Q	R	S	S ₁	T	U	V	VA	VB	W	X	Y	Z
50	M12 x 1.75 depth 23	Rc 1/4	104.5	19.5	75	65	30	192	108	20	9	86	69	187	323
63	M12 x 1.75 depth 23	Rc 3/8	119.5	20.5	90	75	35	224	128	23	8.5	104	69	201	358
80	M14 x 2 depth 28	Rc 3/8	150	23	102	95	40	262	143	33	10.5	128	87	249	431
100	M14 x 2 depth 30	Rc 1/2	170	23	116	114	40	262	143	37.5	10.5	128	87	269	431

Long Stroke

Bore size (mm)	Stroke range (mm)
50	350 to 1000
63	350 to 1000
80	350 to 1000
100	350 to 1000

Made to Order Common Specifications: -XC85: Grease for Food Processing Equipment



Series **CJ2**, **CM2**, **CG1** and **CA2** have been remodeled. For details, refer to "Simple Specials" and "Made to Order" in the individual product catalog.

57 Grease for Food Processing Equipment

Symbol
-XC85

Food grade grease (certified by NSF-H1) is used as lubricant.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CM2-Z	Air cylinder	CM2	Double acting, Single rod		② From P. 150
CM2	Air cylinder	CM2	Double acting, Single rod		② From P. 172
		CM2W	Double acting, Double rod		
	Direct mount type	CM2R	Double acting, Single rod		
	Centralized piping type	CM2□P	Double acting, Single rod	Except with rod boot	
CG1-Z	Air cylinder	CG1	Double acting, Single rod		② From P. 286
CG1	Air cylinder	CG1	Double acting, Single rod		② From P. 306
		CG1W	Double acting, Double rod		
	Direct mount type	CG1R	Double acting, Single rod		
CA2-Z	Air cylinder	CA2	Double acting, Single rod		② From P. 508
		CA2W	Double acting, Double rod		
CQ2	Compact cylinder	CQ2	Double acting, Single rod		② From P. 785
		CQ2	Single acting, Single rod		
		CQ2W	Double acting, Double rod		
	Long stroke	CQ2	Double acting, Single rod		
		CQ2B	Double acting, Single rod		
	Large bore size	CQ2WB	Double acting, Double rod		
		CQ2□S	Double acting, Single rod		
	Anti-lateral load	CQ2	Double acting, Single rod		
CQS	Compact cylinder	CQP2	Double acting, Single rod		② From P. 725
		CQP2	Single acting, Single rod		
		CBQ2	Double acting, Single rod		
	Long stroke	CQS	Double acting, Single rod		
		CQS	Single acting, Single rod		
		CQSW	Double acting, Double rod		
	Anti-lateral load	CQS	Double acting, Single rod		
		CQS□S	Double acting, Single rod		
MGP	Compact guide cylinder	MGP	Double acting, Single rod		② From P. 346
	With air cushion	MGP-□A	Double acting, Single rod		
	With end lock	MGP	Double acting, Single rod		
	With heavy duty guide	MGPS	Double acting, Single rod		
	High precision ball bushing type	MGPA	Double acting, Single rod		

How to Order

Standard model no.

—XC85

Grease for food processing equipment

Specifications

Seal material	Nitrile rubber
Grease	Grease for food processing equipment
Auto switch	Mountable
Dimensions	Same as standard model
Specifications other than above	Same as standard model

Warning

Precautions

Be aware that smoking cigarettes, etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

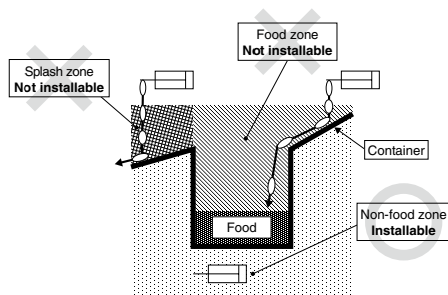
<Not installable>

Food zone.....An environment where food which will be sold as merchandise, directly touches the cylinder's components.

Splash zone.....An environment where food which will not be sold as merchandise, directly touches the cylinder's components.

<Installable>

Non-food zone.....An environment where there is no contact with food.



Note 1) Avoid using this product in the food zone. (Refer to the figure above.)

Note 2) When the product is used in an area of liquid splash, or a water resistant function is required for the product, please consult SMC.

Note 3) Operate without lubrication from a pneumatic system lubricator.

Note 4) Use the following grease pack for the maintenance work.
GR-H-010 (Grease: 10 g)

Note 5) Please contact SMC for details on the maintenance intervals for this cylinder, which differ from those of the standard cylinder.

Made to Order Common Specifications: -XC86: With Rod End Bracket



58 With Rod End Bracket

Symbol
-XC86

With rod end bracket type to simplify the order process.

Applicable Series

Series	Description	Model	Action	Vol. no. (for std model)
CS1	Standard type	CS1	Double acting, Single rod	② From P. 564
	Low friction type	CS1Q	Double acting, Single rod	
CS2	Standard type	CS2	Double acting, Single rod	② From P. 602
	Smooth cylinder	CS2Y	Double acting, Single rod	

How to Order

Standard model no.

-XC86 A

With rod end bracket

Suffix

A	With rod end nut
B	With double knuckle joint
C	With single knuckle joint
D	With double knuckle joint and rod end nut
E	With single knuckle joint and rod end nut
F	With rod end nut (For knuckle joint)

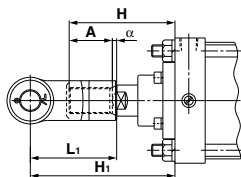
Note 1) Rod end brackets are shipped together.

Note 2) A pin and two split pins are attached for double knuckle joint.

Note 3) XC86A to C: Standard type, XC86D to F: Standard type except for rod end thread length (A and H dimensions)

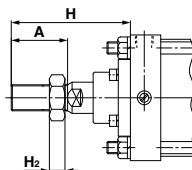
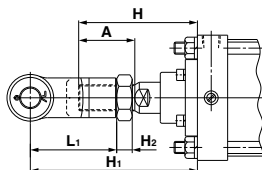
Dimensions (Dimensions other than below are the same as standard type.)

Series CS1, CS2 XC86B, XC86C



Series	Symbol Bore size (mm)	H	A	α	L ₁	H ₁	CS1		CS2	
							Applicable knuckle joint part no.			
							I type single knuckle	Y type double knuckle	I type single knuckle	Y type double knuckle
CS1 CS2	125	110	50	3.5	100	156.5	I-12	Y-12	I-12A	Y-12A
	140	110	50	3.5	105	161.5	I-14	Y-14	I-14A	Y-14A
	160	120	56	3.5	110	170.5	I-16	Y-16	I-16A	Y-16A
CS1	180, 200	135	63	3.5	125	193.5	I-18, I-20	Y-18, Y-20		
	250	160	71	3.5	160	245.5	I-25	Y-25		
	300	175	80	3.5	175	266.5	I-30	Y-30		

Series CS1, CS2 XC86D, XC86E



Series	Symbol Bore size (mm)	H	A	L ₁	H ₁	H ₂	CS1		CS2		CS1, CS2 common		
							Applicable knuckle joint part no.						Applicable rod end nut
							I type single knuckle	Y type double knuckle	I type single knuckle	Y type double knuckle			
CS1 CS2	125	125	65	100	181	18	I-12	Y-12	I-12A	Y-12A	NT-12		
	140	125	65	105	186	18	I-14	Y-14	I-14A	Y-14A	NT-12		
	160	140	76	110	198	21	I-16	Y-16	I-16A	Y-16A	NT-16		
CS1	180	155	83	125	223	23	I-18	Y-18			NT-18		
	200	160	88	125	227	27	I-20	Y-20			NT-20		
	250	195	106	160	287	34	I-25	Y-25			NT-25		
	300	210	115	175	312	38	I-30	Y-30			NT-30		

Made to Order Common Specifications:

-XC86: With Rod End Bracket

-XC87: Cylinder with One-way Lock/Heavy Duty Specifications



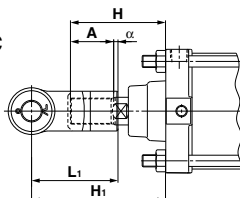
58 With Rod End Bracket

Symbol

-XC86

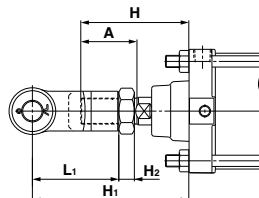
Dimensions (Dimensions other than below are the same as standard type.)

Series CS2 XC86B, XC86C



Symbol Bore size (mm)	H	A	α	L1	H1	Applicable knuckle joint part no.	
						I type single knuckle	Y type double knuckle
125	110	50	3.5	100	156.5	I-12A	Y-12A
140	110	50	3.5	105	161.5	I-14A	Y-14A
160	120	56	3.5	110	170.5	I-16A	Y-16A

Series CS2 XC86D, XC86E



Symbol Bore size (mm)	H	A	L1	H1	H2	Applicable knuckle joint part no.		Applicable rod end nut
						I type single knuckle	Y type double knuckle	
125	125	65	100	181	18	I-12A	Y-12A	NT-12
140	125	65	105	186	18	I-14A	Y-14A	NT-12
160	140	76	110	198	21	I-16A	Y-16A	NT-16

59 Cylinder with One-way Lock/Heavy Duty Specifications

Symbol

-XC87

Piston rods are heat treated. Even when an external force exceeding the specification range acts temporarily on the piston rod in the locked state, it is resistant to damage and an unlocking failure is unlikely to occur.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
CLQ	Compact cylinder with lock	CLQ	Double acting, Single rod	Applicable to ø40 to ø100.	● From P. 928
RLQ	Compact cylinder with air cushion and lock	RLQ	Double acting, Single rod	Applicable to ø40 to ø63.	● From P. 956
MLGP	Compact guide cylinder with lock	MLGP	Double acting	Applicable to ø40 to ø100.	● From P. 1014
CLK2	Clamp cylinder with lock	CLK2	Double acting, Single rod	Applicable to ø40 to ø63.	● From P. 1484
MLU	Plate cylinder with lock	MLU	Double acting, Single rod	Applicable to ø40 and ø50.	● From P. 984

How to Order

Standard model no.

-XC87

Heavy duty specifications ●

Specifications: Same as standard type.

Dimensions: Same as the standard type.

Made to Order Common Specifications: -XC92: Dust Resistant Actuator



60 Dust Resistant Actuator

Symbol
-XC92

Applicable for environments with flying micro-powder (20 to 30 µm or less) such as ceramic powder, toner powder, paper powder, and metallic powder (except weld spatter).
4 times stronger than the standard model

Applicable series

Series	Description/Type	Model	Action	Remark (s)	Vol. No. (for std model)
CM2	Air Cylinder	CM2	Double acting, Single rod	Compatible with cylinders with rubber bumper	② P.172
CQS	Compact Cylinder	CQS	Double acting, Single rod		② P.725
CQ2	Standard type	CQ2	Double acting, Single rod	Applicable to ø32 to ø100.	② P.785
MGP	Compact Guide Cylinder	MGP	Double acting, Single rod		③ P.346

How to Order

C(D)M2 **Mounting bracket** **Bore size** — **Stroke** — **Auto switch** **Suffix** — **XC92**
 * Auto switch is applicable for CDM2 only.

Bore size (mm)	Standard stroke	Minimum operating pressure
20	25, 50, 75, 100, 125, 150, 200, 250, 300	0.1 MPa
25		
32		
40		

C(D)QS **Mounting bracket** **Bore size** — **Stroke** **D** — **Auto switch** **Suffix** — **XC92**
 * Auto switch is applicable for CDQS only.

Bore size (mm)	Standard stroke	Minimum operating pressure
12, 16	5, 10, 15, 20, 25, 30	0.14 MPa
20, 25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	0.1 MPa

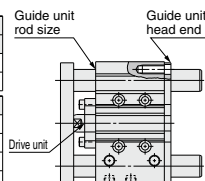
C(D)Q2 **Mounting bracket** **Bore size** — **Stroke** **D** **Body option** **Z** — **Auto switch** **Suffix** — **XC92**
 * Body option with rear slip fit is not available.

Bore size (mm)	Standard stroke	Minimum operating pressure
32, 40	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100	0.1 MPa
50 to 100	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100	0.1 MPa

MGPM **Bore size** — **Stroke** — **Auto switch** **Suffix** — **XC92**

Bore size (mm)	Standard stroke
12, 16	10, 20, 30, 40, 50, 75, 100
20, 25	20, 30, 40, 50, 75, 100, 125, 150, 175, 200
32 to 100	25, 50, 75, 100, 125, 150, 175, 200

Symbol	Type	Drive unit		Guide unit	
		Rod side	Head end	Rod side	Head end
Nil	With lub-retainers on one side	○	○	○	○
W	With lub-retainers on both sides	○	○	○	○
XC92	Bore size	Minimum operating pressure			
	ø12, ø16	0.2 MPa			
XC92W	Bore size	Minimum operating pressure			
	ø12, ø16	0.25 MPa			
	ø20 to ø100	0.2 MPa			



Specifications other than minimum operating pressure are the same as standard model.

Made to Order Common Specifications: -XC92: Dust Resistant Actuator



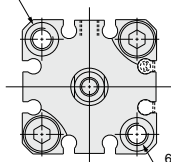
60 Dust Resistant Actuator

Dimensions (Other dimensions are the same as the standard type.)

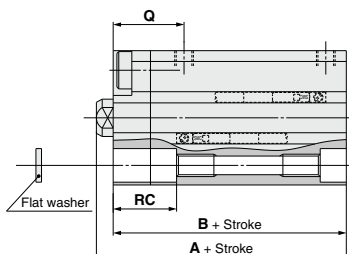
Series CM2: The same as the standard type

Series CQS

6 x ϕ OB counterbore
4 locations on the
back side



6 x OA effective
depth RA (Note 1)
4 locations on the
back side (Note 4)



Note 1) For the standard type ϕ 12 and ϕ 16 with 5 strokes, ϕ 20 with 15 strokes or less, and ϕ 25 with 5 or 10 strokes, and for models with an auto switch and built-in magnet of ϕ 20 with 5 strokes, the through-hole is threaded over the entire length.

Note 2) Be sure to use the attached flat washer for mounting cylinder with through-holes.

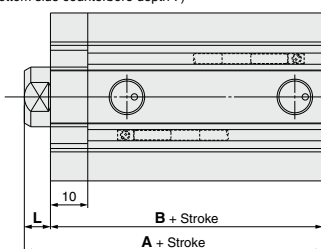
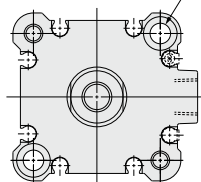
Note 3) For models with a rubber bumper, the stroke tolerance does not include bumper deflection.

Note 4) 2 locations on the back side for the standard-type ϕ 20 with 15 strokes or less and ϕ 25 with 5 strokes, and for models with an auto switch and built-in magnet.

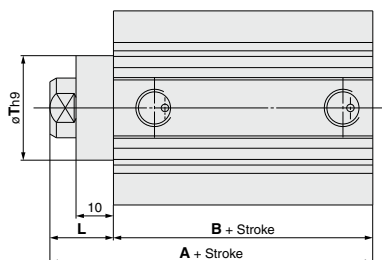
Bore size (mm)	A		B		Q	OA	OB	RA	RC
	Without auto switch	With auto switch	Without auto switch	With auto switch					
12	30.5	35.5	27	32	17.5	M4 x 0.7	6.5	7	14
16	30.5	35.5	27	32	17.5	M4 x 0.7	6.5	7	14
20	34	44	29.5	39.5	19	M6 x 1.0	9	10	17
25	37.5	47.5	32.5	42.5	21	M6 x 1.0	9	10	17

Series CQ2

2 x ϕ 5.5 through
2 x 2 x ϕ 9 counterbore depth 17
(Bottom side counterbore depth 7)



ϕ 32



ϕ 40 to ϕ 100

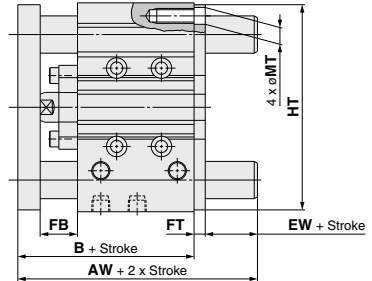
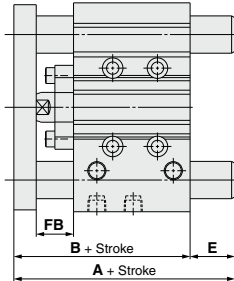
Bore size (mm)	A		B		(mm)	
	Without auto switch	With auto switch	Without auto switch	With auto switch	L	T
32	40 (50)	50	33 (43)	43	7	—
40	46.5 (56.5)	56.5	29.5 (39.5)	39.5	17	28
50	48.5 (58.5)	58.5	30.5 (40.5)	40.5	18	35
63	54 (64)	64	36 (46)	46	18	35
80	63.5 (73.5)	73.5	43.5 (53.5)	53.5	20	43
100	75 (85)	85	53 (63)	63	22	59

Note 1) For cylinders with rubber bumper, stroke tolerance does not include the amount of bumper change.

Note 2) Dimensions inside () are for 75, 100st.

Dimensions (Other dimensions are the same as the standard type.)

Series MGP



With Lub-retainers on one side

(mm)

Bore size (mm)	A		B	E		FB
	50 st or less	Over 50 st and 200 st or less*		50 st or less	Over 50 st and 200 st or less*	
12	52	70.5	52	0	18.5	15
16	56	74.5	56	0	18.5	15
20	63	94.5	63	0	31.5	16
25	63.5	95	63.5	0	31.5	16
32	97	112	69.5	27.5	42.5	20
40	97	112	76	21	36	20
50	106.5	128	82	24.5	46	22
63	106.5	128	87	19.5	41	22
80	125	152	106.5	18.5	45.5	28
100	147	172	126	21	46	35

* The standard stroke for ø12 and ø16 is 100 st.

With Lub-retainers on both sides

(mm)

Bore size (mm)	AW	B	EW	FB	FT	MT	HT
12	63	52	6	15	5	5	57
16	67	56	6	15	5	6	64
20	74	63	6	16	5	6	80
25	74.5	63.5	6	16	5	7	92
32	82.5	69.5	7	20	6	8.5	110
40	89	76	7	20	6	8.5	118
50	95	82	7	22	6	11	146
63	100	87	7	22	6	11	160
80	120.5	106.5	8	28	6	14	200
100	143	126	8	35	9	16	238

Made to Order Common Specifications: -XC93□: With Greater Water Resistance + Stable Lubrication Function



61 With Greater Water Resistance + Stable Lubrication Function

Symbol

-XC93

- 5 times stronger against water (liquids) than the standard model
- Equipped with the greater water resistant scraper (Fluororubber). The Lub-retainer creates grease coating around the piston rod, which improves lubrication.
- Stainless steel can be selected for the piston rod and rod end nut.

Applicable Series

Series	Description	Model	Action	Note	Vol. no. (for std model)
RHC	High power cylinder	RHC	Double acting, Single rod	Applicable bore size: ø32, ø40 Rc port only	● From P.1337

How to Order

Standard model no.

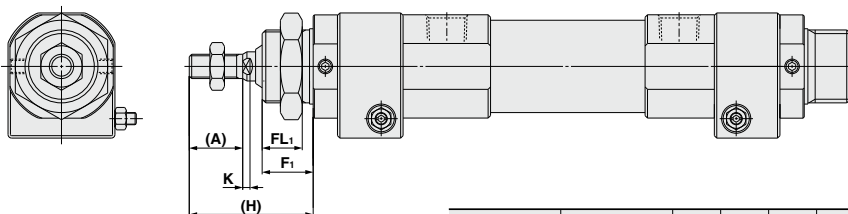
-XC93□

With greater water resistance + stable lubrication function ●

● Piston rod,
Rod end nut material

NII	Standard (Carbon steel)
S	Stainless steel

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



Bore size	Stroke range	A*	F ₁	FL ₁	H*	K
32	Up to 1000	22	21	16.5	51	3
40	Up to 1000	24	22.5	18	54.5	3

*: Same as the standard model.

Made to Order Common Specifications: -XC98: Guide Unit with Lube-retainer



62 Guide Unit with Lube-retainer

Symbol

-XC98

Lube-retainer suitable for retaining the lubrication is mounted on the guide unit.

Applicable Series

Series	Model	Action
MGP-Z	Standard type	MGPM
		Double acting

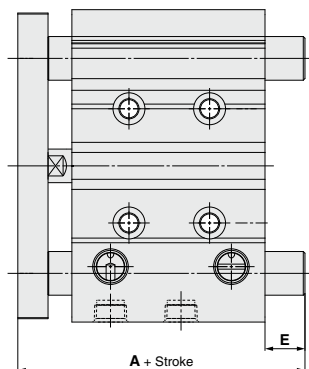
How to Order

MGPM Standard model no. -XC98

Guide unit with Lube-retainer

Specifications: Same as standard type

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



Bore size (mm)	A			E		
	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	(53)	83	115.5	(0)	30	62.5
25	(53.5)	83.5	115.5	(0)	30	62
32	82	100.5	136.5	22.5	41	77
40	82	100.5	136.5	16	34.5	70.5
50	95.5	116.5	157.5	23.5	44.5	85.5
63	95.5	116.5	157.5	18.5	39.5	80.5
80	113.5	140.5	189.5	17	44	93
100	135.5	160.5	199.5	19.5	44.5	83.5

The dimensions in () are the same as standard type.