

Rotary Clamp Cylinder Series MK

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63

Features

- 3 times the allowable moment of inertia of the old MK (excluding ø12, ø16).
- More stroke range than MK2.
- Compact auto switch can be mounted on four surfaces (excluding ø12, ø25).
- Now all size of cylinder can be disassembled so that the seal kit and the guide pin can be replaced.



How to Order

Rotary clamp cylinder

Mounting bracket

Symbol	Mounting
B	Through-hole/Both ends tapped common (Basic)

* Order mounting accessories separately

Bore size

12	12 mm	32	32 mm
16	16 mm	40	40 mm
20	20 mm	50	50 mm
25	25 mm	63	63 mm

Port thread type

—	M thread	ø12 to ø25
TF	G	ø32 to ø63

Clamp stroke

Symbol	Clamp stroke	Applicable bore size
10	10 mm	ø12 to ø63
20	20 mm	
30	30 mm	ø32 to ø63
50	50 mm	

Auto switch multiple side mounting

Body option

—	Standard (Female thread)
N	With arm

Rotary direction (Unclamp – Clamp)

R	Clockwise
L	Counterclockwise

Product Recommendation



Stocked items for fast delivery

MKB12-10LZ	MKB16-20RZ	MKB25-10LZ	MKB32TF-30RZ	MKB40TF-50LZ	MKB50TF-50RZ
MKB12-10RZ	MKB16-30LZ	MKB25-10RZ	MKB32TF-50LZ	MKB40TF-50RZ	MKB63TF-10LZ
MKB12-20LZ	MKB16-30RZ	MKB25-20LZ	MKB32TF-50RZ	MKB50TF-10LZ	MKB63TF-10RZ
MKB12-20RZ	MKB20-10LZ	MKB25-20RZ	MKB40TF-10LZ	MKB50TF-10RZ	MKB63TF-20LZ
MKB12-30LZ	MKB20-10RZ	MKB25-30LZ	MKB40TF-10RZ	MKB50TF-20LZ	MKB63TF-20RZ
MKB12-30RZ	MKB20-20LZ	MKB25-30RZ	MKB40TF-20LZ	MKB50TF-20RZ	MKB63TF-30LZ
MKB16-10LZ	MKB20-20RZ	MKB32TF-10	MKB40TF-20RZ	MKB50TF-30LZ	MKB63TF-30RZ
MKB16-10RZ	MKB20-30LZ	MKB32TF-20	MKB40TF-30LZ	MKB50TF-30RZ	MKB63TF-50LZ
MKB16-20LZ	MKB20-30RZ	MKB32TF-30LZ	MKB40TF-30RZ	MKB50TF-50LZ	MKB63TF-50RZ



Auto Switches

- D-M9PWL (PNP 2-colour indication)
- D-M9NWL (NPN 2-colour indication)

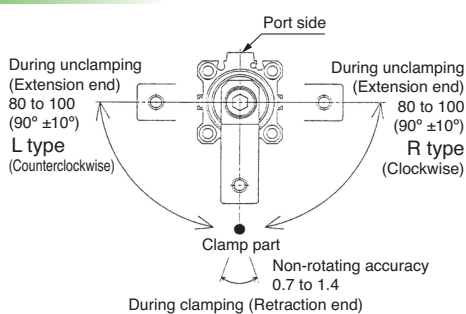
Note) For more options see the Auto Switch section, page XXX



Related Products

- Series AS** - Speed Controllers - page 1238
- Series RB** - Shock Absorber - page 809
- Series SY** - Valves - page 65, 101, 417
- Series SV** - Valves - page 20
- Series VQC** - Valves - page 193, 211
- Series AC** - Air Preparation - page 1076
- Series TU** - Tubing - page 1223
- Series KQ2** - Fittings - page 1184

Rotary Angle



For more product options and details see our specific catalogues or on-line information.

Technical Specifications

Bore size [mm]	12	16	20	25	32	40	50	63
Action	Double acting							
Rotary angle ^{Note 1)}	90° ±10°							
Rotary direction ^{Note 2)}	Clockwise, Counterclockwise							
Rotary stroke [mm]	7.5		9.5		15		19	
Clamp stroke [mm]	10, 20, 30				10, 20, 30, 50			
Theoretical clamp force [N] ^{Note 3)}	40	75	100	185	300	525	825	1400
Fluid	Air							
Proof pressure	1.5 MPa							
Operating pressure range	0.1 to 1 MPa							^{Note 4)} 0.1 to 0.6 MPa
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)							
Lubrication	Non-lube							
Piping port size	M5				G1/8		G1/4	
Mounting	Through-hole/Both ends tapped common, Head flange							
Cushion	Rubber bumper							
Stroke length tolerance	+0.6 -0.4							
Piston speed ^{Note 5)}	50 to 200 mm/s							
Non-rotating accuracy (Clamp part) ^{Note 1)}	±1.4°		±1.2°		±0.9°		±0.7°	

- Note 1) Refer to Rotary Angle figure.
- Note 2) Direction of rotation viewed from the rod end when the piston rod is retracting
- Note 3) Clamp force at 0.5 MPa
- Note 4) When using the cylinder within a pressure range from 0.61 to 1 MPa, please use -X2071.
- Note 5) Be sure to install a speed controller to the cylinder, and adjust the cylinder speed to make it within the range from 50 to 200 mm/s. To adjust the speed, start with the needle in the completely closed position, and then adjust it by opening gradually.

Replacement Parts/Seal Kit

Bore size [mm]	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Seal Kit no.	CQSB12-PS	CQSB16-PS	MK20Z-PS	MK25Z-PS	MK32Z-PS	MK2T40-PS	MK2T50-PS	MK63Z-PS
Guide Pin Kit no.	MK12Z-GS	MK16Z-GS	MK20Z-GS	MK25Z-GS	MK32Z-GS	MK40Z-GS	MK50Z-GS	MK63Z-GS

* Since the seal kit does not include a grease pack, order it separately. Grease pack part no.: GR-S-010 (10 g)

Option/Arm

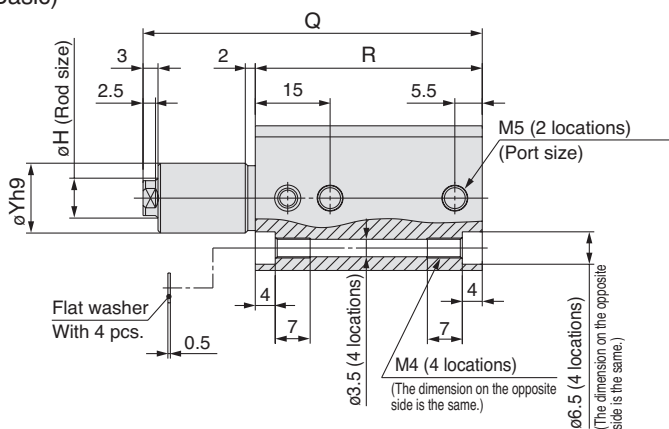
Bore size [mm]	Part no.
12	MK-A012Z
16	MK-A016Z
20	MK-A020Z
25	
32	MK-A032Z
40	
50	MK-A050Z
63	

Mounting Bracket/Flange

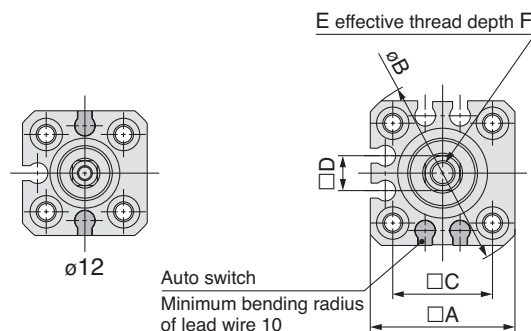
Bore size [mm]	Part no.
12	CQS-F012
16	CQS-F016
20	MKZ-F020
25	MKZ-F025
32	MK2T-F032
40	MK2T-F040
50	MK2T-F050
63	MK2T-F063

Dimensions: ø12, ø16

Through-hole/Both ends tapped common (Basic)



The outline dimensions shown are when the rod is retracted.



Basic

Model	A	B	C	D	E	F	H	øYh9
MKB12-Z	25	32	15.5	5	M3	5.5	6	11 ⁰ _{-0.043}
MKB16-Z	29	38	20	7	M5	6.5	8	14 ⁰ _{-0.043}

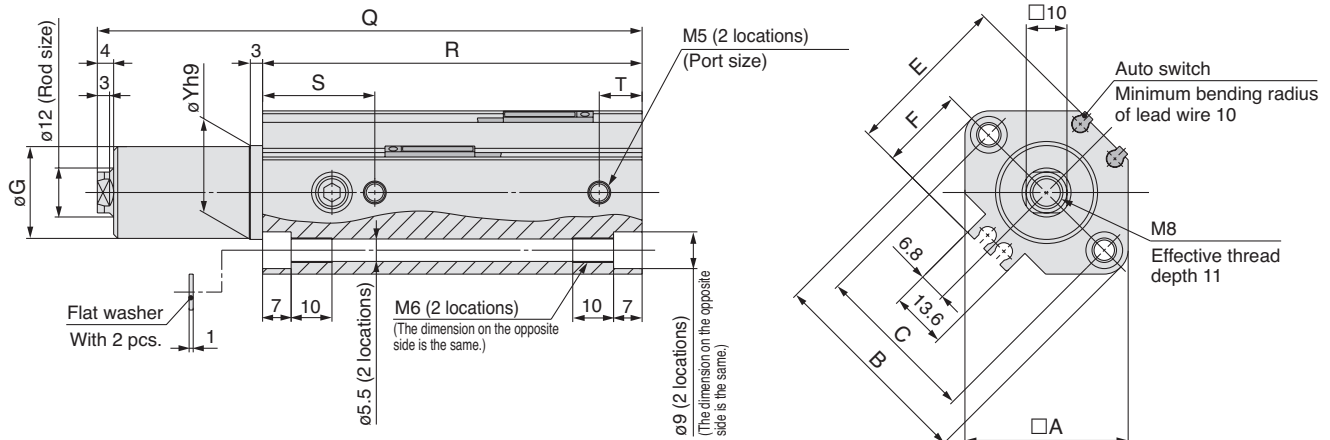
Model	Rod state	Clamp stroke					
		10 mm		20 mm		30 mm	
		Q	R	Q	R	Q	R
MKB12-Z	Retracted	68	45.5	88	55.5	108	65.5
	Extended	85.5	45.5	115.5	55.5	145.5	65.5
MKB16-Z	Retracted	68	45.5	88	55.5	108	65.5
	Extended	85.5	45.5	115.5	55.5	145.5	65.5

Note) The above figure is with the auto switch (D-M9□) mounted.

Dimensions: $\phi 20, \phi 25$

 Through-hole/Both ends tapped common
(Basic)

The outline dimensions shown are when the rod is retracted.



Basic	[mm]								
Model	A	B	C	E	F	G	$\phi Yh9$	S	T
MKB20-Z	36	47	36	35.5	18	17.9	$18_{-0.043}^0$	28	9
MKB25-Z	40	52	40	40.5	21	22.5	$23_{-0.052}^0$	27.5	10.5

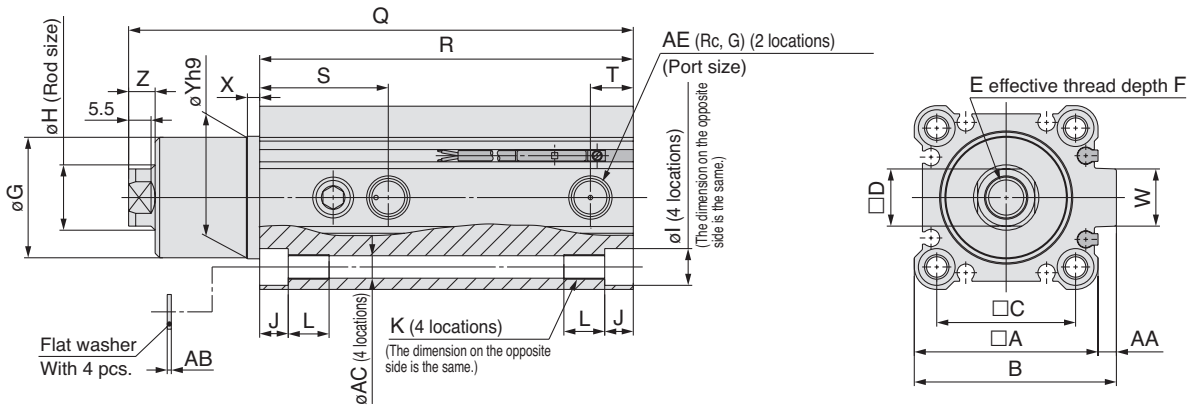
Model	Rod state	Clamp stroke [mm]					
		10 mm		20 mm		30 mm	
		Q	R	Q	R	Q	R
MKB20-Z	Retracted	92.5	72	112.5	82	132.5	92
	Extended	112	72	142	82	172	92
MKB25-Z	Retracted	93.5	73	113.5	83	133.5	93
	Extended	113	73	143	83	173	93

(Note) The above figure is with the auto switch (D-M9□) mounted.

Dimensions: $\phi 32, \phi 40, \phi 50, \phi 63$

 Through-hole/Both ends tapped common
(Basic)

The outline dimensions shown are when the rod is retracted.



Basic	[mm]																					
Model	A	B	C	D	E	F	G	H	I	J	K	L	S	T	W	X	$\phi Yh9$	Z	AA	AB	ϕAC	AE
MKB32-Z	45	49.5	34	14	M10	12	29.5	16	9	7	M6	10	31.5	10.5	14	3	$30_{-0.062}^0$	6.5	4.5	1	5.5	1/8
MKB40-Z	52	57	40	14	M10	12	29.5	16	9	7	M6	10	29	9	15	3	$30_{-0.062}^0$	6.5	5	1	5.5	1/8
MKB50-Z	64	71	50	17	M12	15	36.5	20	11	8	M8	14	34	11.5	19	3.5	$37_{-0.062}^0$	7.5	7	1	6.6	1/4
MKB63-Z	77	84	60	17	M12	15	47.5	20	14	10.5	M10	18	34.5	10.5	19	3.5	$48_{-0.062}^0$	7.5	7	1.4	9	1/4

Model	Rod state	Clamp stroke							
		10 mm		20 mm		30 mm		50 mm	
		Q	R	Q	R	Q	R	Q	R
MKB32-Z	Retracted	113.5	81.5	133.5	91.5	153.5	101.5	193.5	121.5
	Extended	138.5	81.5	168.5	91.5	198.5	101.5	258.5	121.5
MKB40-Z	Retracted	114.5	75	134.5	85	154.5	95	194.5	115
	Extended	139.5	75	169.5	85	199.5	95	259.5	115
MKB50-Z	Retracted	132	86.5	152	96.5	172	106.5	212	126.5
	Extended	161	86.5	191	96.5	221	106.5	281	126.5
MKB63-Z	Retracted	135	90	155	100	175	110	215	130
	Extended	164	90	194	100	224	110	284	130

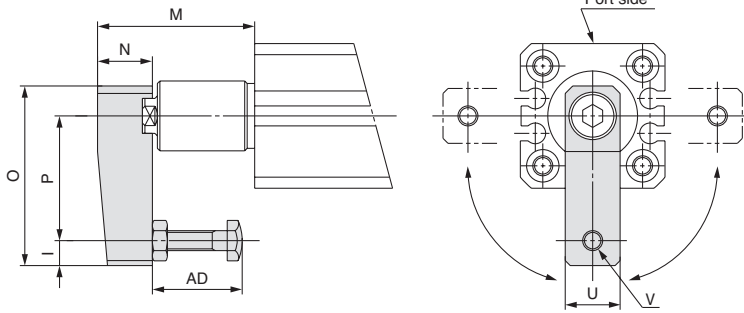
(Note) The above figure is with the auto switch (D-M9□) mounted.



For more product options and details see our specific catalogues or on-line information.

Dimensions

With arm



With Arm

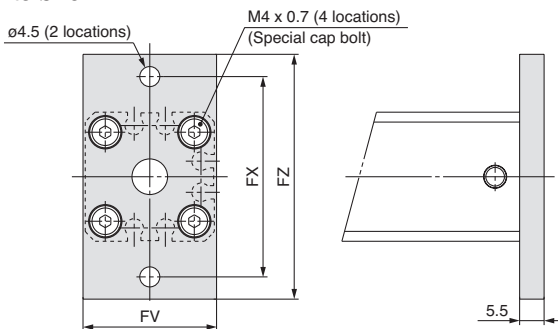
Model	Rod state	M			
		Clamp stroke			
		10 mm	20 mm	30 mm	50 mm
MKB12-Z	Retracted	28.5	38.5	48.5	–
	Extended	46	66	86	–
MKB16-Z	Retracted	31.5	41.5	51.5	–
	Extended	49	69	89	–
MKB20-Z	Retracted	32	42	52	–
	Extended	51.5	71.5	91.5	–
MKB25-Z	Retracted	32	42	52	–
	Extended	51.5	71.5	91.5	–
MKB32-Z	Retracted	45.5	55.5	65.5	85.5
	Extended	70.5	90.5	110.5	150.5
MKB40-Z	Retracted	53	63	73	93
	Extended	78	98	118	158
MKB50-Z	Retracted	63	73	83	103
	Extended	92	112	132	172
MKB63-Z	Retracted	62.5	72.5	82.5	102.5
	Extended	91.5	111.5	131.5	171.5

With arm

Model	I	N	O	P	U	V	AD
MKB12-Z	4	8	29	20	8	M3	8 to 18
MKB16-Z	5	11	36	25	11	M4	8 to 18
MKB20-Z	7	14	51	35	16	M6	12 to 22
MKB25-Z	7	14	51	35	16	M6	12 to 22
MKB32-Z	10	18	67	45	20	M8	15 to 25
MKB40-Z	10	18	67	45	20	M8	15 to 25
MKB50-Z	10	22	88	65	22	M10	30 to 40
MKB63-Z	10	22	88	65	22	M10	30 to 40

Head flange

ø12 to ø16

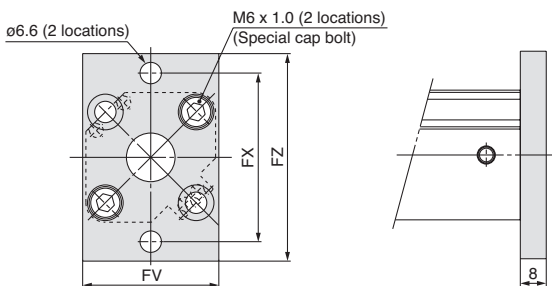


Head Flange

[mm]

Model	FV	FX	FZ
MKG12-Z	25	45	55
MKG16-Z	30	45	55
MKG20-Z	39	48	60
MKG25-Z	42	52	64

ø20 to ø25

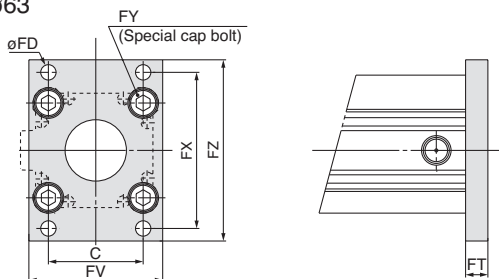


Head Flange

[mm]

Model	C	øFD	FT	FV	FX	FY	FZ
MKG32-Z	34	5.5	8	48	56	M6	65
MKG40-Z	40	5.5	8	54	62	M6	72
MKG50-Z	50	6.6	9	67	76	M8	89
MKG 63-Z	60	9	9	80	92	M10	108

ø32 to ø63

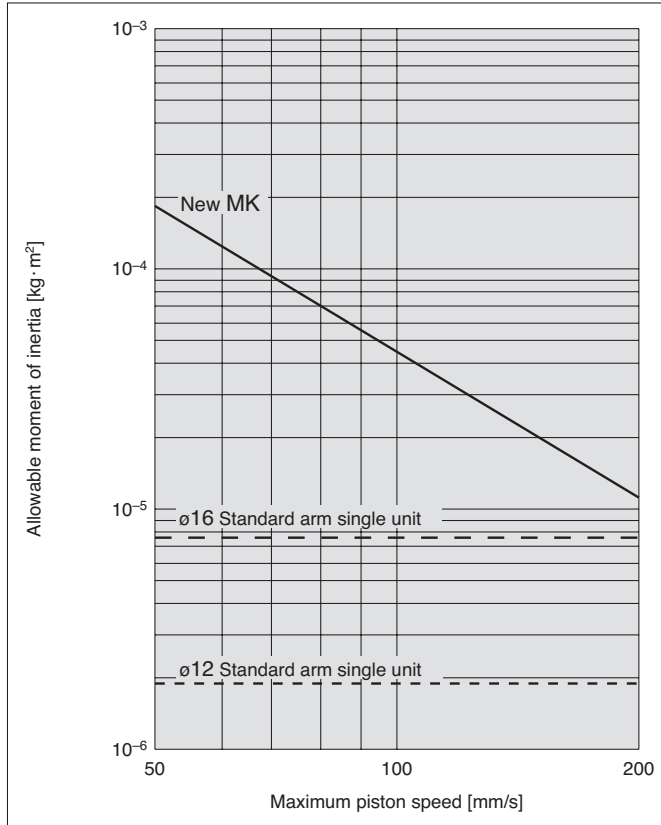


Moment of Inertia

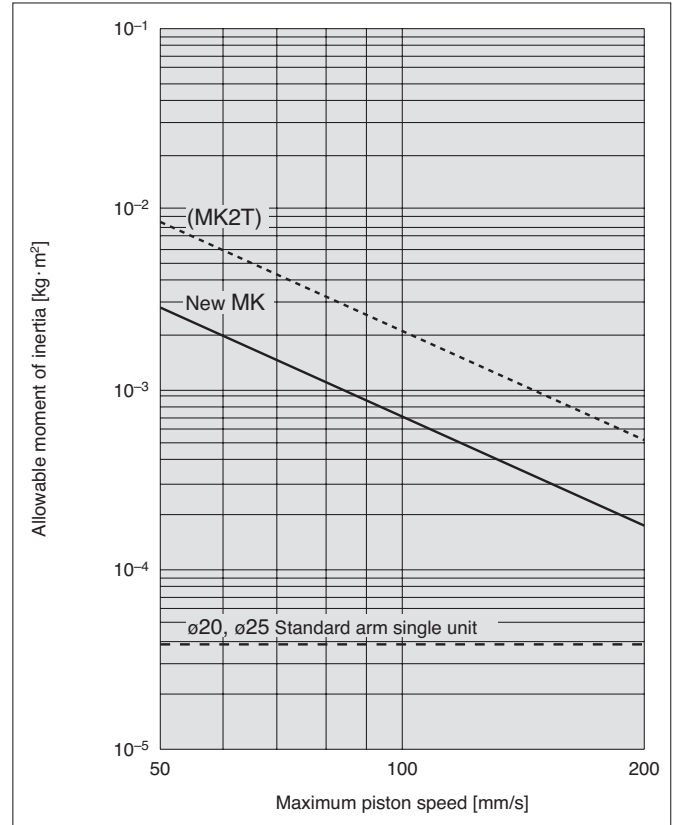
Note) Maximum piston speed is equivalent to approximately 1.6x the average piston speed. (Rough indication)

Calculate the operating conditions and operate this product within the allowable range.
If the allowable range is exceeded, increase the bore size or use the MK2T series.

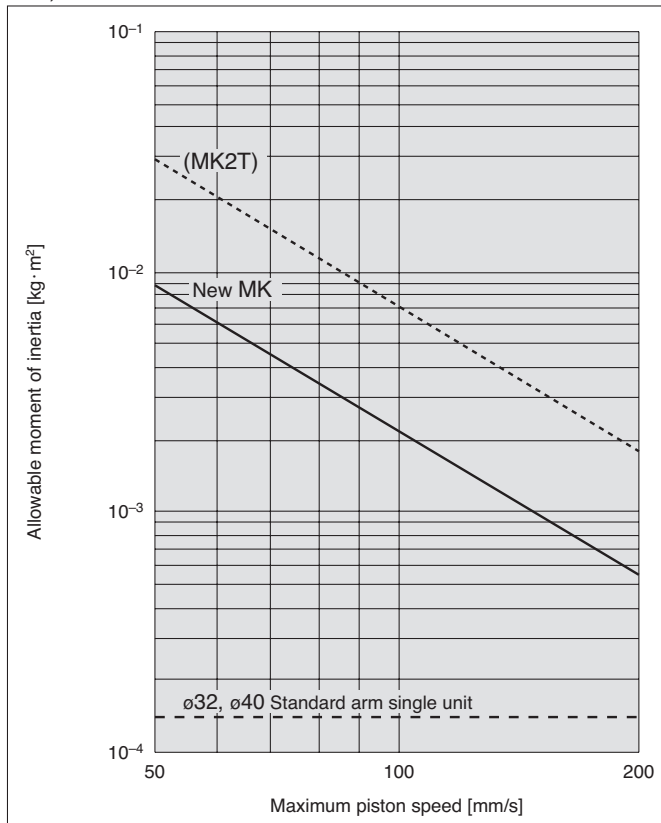
ø12, ø16



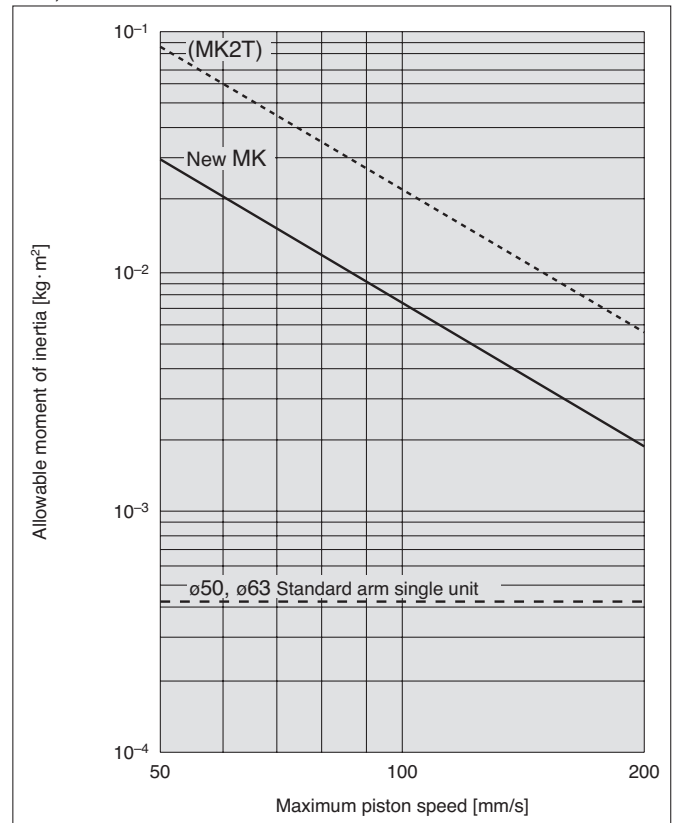
ø20, ø25



ø32, ø40



ø50, ø63

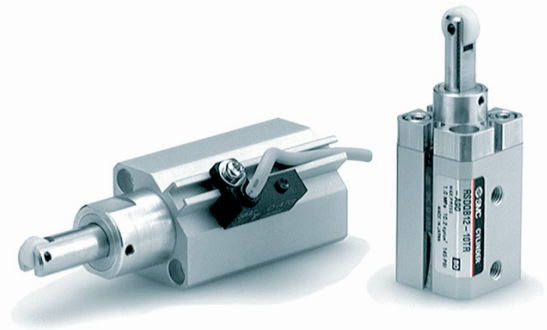


Stopper Cylinder: Fixed Mounting Height Series RSQ

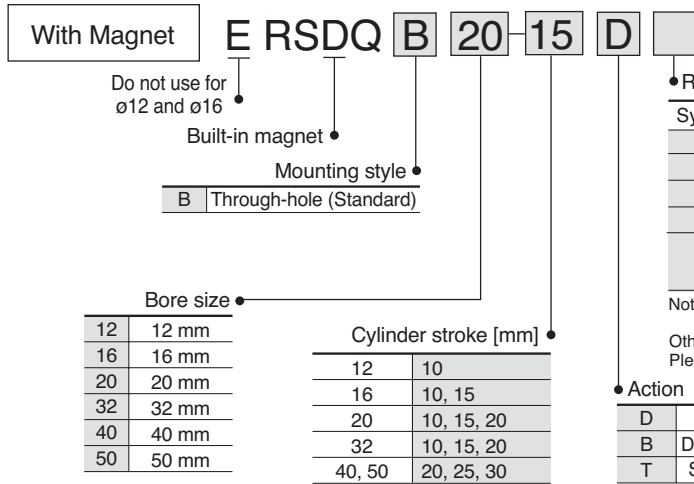
ø12, ø16, ø20, ø32, ø40, ø50

Features

- Fixed mounting height stopper cylinder.
- High side impact resistance for conveyor automation.
- Various rod end configurations.
- Magnetic piston as standard.



How to Order



• Rod end configuration

Symbol	Configuration	Application
—	Round bar type	—
R	Roller	—
L	Lever type (Non-adjustable) ^{Note 1)}	Basic style
B	Lever type ^{Note 1)}	—
D	(Energy absorbing Adjustable deformation)	With lock mechanism

Note 1) The lever styles are only applicable to bore sizes from ø32 to ø50
Other Rod and configurations available.
Please refer to the specific catalogue.

• Action

D	Double acting
B	Double acting with spring loaded
T	Single acting (Spring extend)

Product Recommendation



Stocked items for fast delivery

RSDQB12-10B	RSDQB16-15T	ERSDQB20-20T	ERSDQB32-20DR	ERSDQB40-30B	ERSDQB50-20TL
RSDQB12-10D	ERSDQB20-10B	ERSDQB20-20TR	ERSDQB32-20T	ERSDQB40-30BL	ERSDQB50-25DR
RSDQB12-10DR	ERSDQB20-10D	ERSDQB32-10D	ERSDQB32-20TR	ERSDQB40-30D	ERSDQB50-30D
RSDQB12-10T	ERSDQB20-10DR	ERSDQB32-10T	ERSDQB40-20D	ERSDQB40-30DL	ERSDQB50-30DL
RSDQB12-10TR	ERSDQB20-10T	ERSDQB32-10TR	ERSDQB40-20DR	ERSDQB40-30DR	ERSDQB50-30DR
RSDQB16-10B	ERSDQB20-15D	ERSDQB32-15D	ERSDQB40-20DR	ERSDQB40-30T	ERSDQB50-30T
RSDQB16-10D	ERSDQB20-15T	ERSDQB32-15T	ERSDQB40-20T	ERSDQB40-30TR	ERSDQB50-30TL
RSDQB16-10DR	ERSDQB20-20B	ERSDQB32-20B	ERSDQB40-25D	ERSDQB50-20D	
RSDQB16-15D	ERSDQB20-20D	ERSDQB32-20D	ERSDQB40-25DL	ERSDQB50-20DL	
RSDQB16-15DR	ERSDQB20-20DR	ERSDQB32-20DB	ERSDQB40-25DR	ERSDQB50-20T	

Auto Switches

- D-M9PWL (PNP 2-colour indication)
- D-M9NWL (NPN 2-colour indication)

Note) For more options see the Auto Switch section, page XXX

Related Products

- Series AS** - Speed Controllers - page 1238
- Series RB** - Shock Absorber - page 809
- Series SY** - Valves - page 65, 101, 417
- Series SV** - Valves - page 20
- Series VQC** - Valves - page 193, 211
- Series AC** - Air Preparation - page 1076
- Series IDK** - Moisture Control Tube - page 1149
- Series TU** - Tubing - page 1223
- Series KQ2** - Fittings - page 1184

Technical Specifications

Action	Double acting, single acting, double acting with spring
Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Ambient and fluid temperature	With auto switch: -10 to 60°C (No freezing)
Lubrication	Not required (Non-lube)
Cushion	Rubber bumper
Stroke length tolerance	+1.4 0
Mounting	Through-hole
Auto switch	Mountable

Model

Bore size [mm]		12	16	20	32	40	50
Mounting	Through-hole	●	●	●	●	●	●
Built-in magnet		●	●	●	●	●	●
Piping	Screw-in type	M5			1/8		
Action		Double acting, Single acting (Spring extend), Double acting with spring loaded					
Rod end configuration	Round bar		●			●	
	Roller		●			●	
	Lever type		—			●	

Bore Size/Standard Stroke

Bore size [mm]	Rod end configuration [mm]		
	Round bar	Roller	Lever with integrated shock absorber
12	10	10	–
16	10, 15	10, 15	–
20	–	–	–
32	10, 15, 20	10, 15, 20	10, 15, 20
40	–	–	–
50	20, 25, 30	20, 25, 30	20, 25, 30

Spring Force (Single acting)

Bore size [mm]	Extended [N]	Compressed [N]
12	3.9	9.6
16	4.9	14.9
20	3.4	14.9
32	8.8	18.6
40, 50	13.7	27.5

*Applicable only to round bar and roller end configurations.

Replacement Parts: Seal Kits

Bore size [mm]	Kit No.		
	Double acting	Double with spring	Single acting
12	RSQ12D-PS	RSQ12T-PS	
16	RSQ16D-PS	RSQ16B-PS	RSQ16T-PS
20	RSQ20D-PS	RSQ20B-PS	RSQ20T-PS
32	RSQ32D-PS	RSQ32B-PS	RSQ32T-PS
40	RSQ40D-PS	RSQ40B-PS	RSQ40T-PS
50	RSQ50D-PS	RSQ50B-PS	RSQ50T-PS

Replacement Parts: Shock Absorber

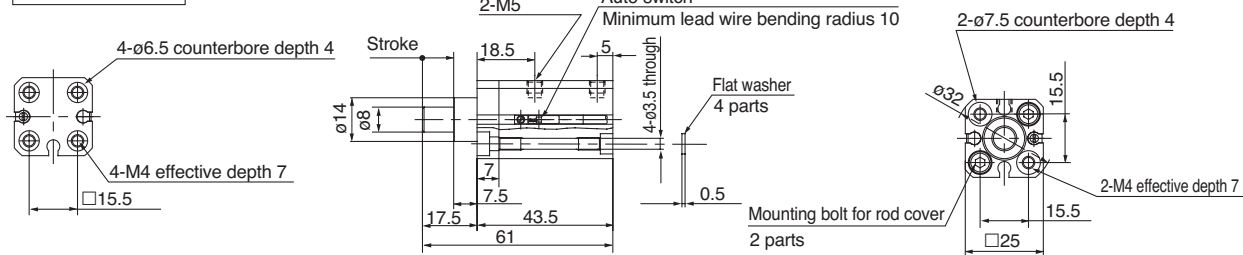
Bore size [mm]	Kit no.
32	RB1007-X225
40, 50	RB1407-X552

Dimensions Rod end Configuration: Round Bar Type

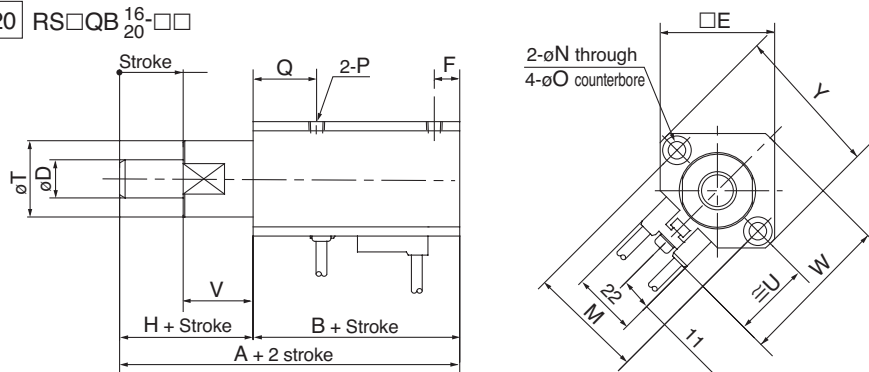
Basic style: Through-hole mounting, Screw mounting

These 3 figures show the piston rod extended.

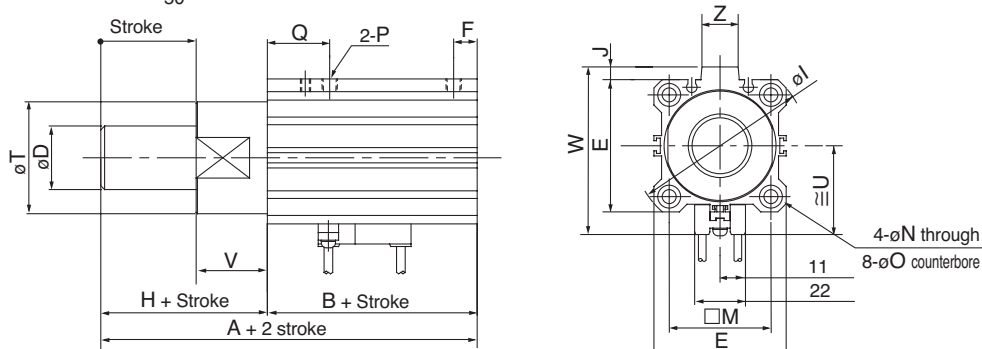
Bore size: $\phi 12$



Bore size: $\phi 16, \phi 20$ RS□QB¹⁶/₂₀□□



Bore size: $\phi 32, \phi 40, \phi 50$ RS□QB³²/₄₀/₅₀□□



Bore size [mm]	A	B	D	E	F	H	I	J	M	N	O counterbore	P	Q	T	U	V	W	Y	Z
16	59.5	41.5	10	29	6	18	–	–	28	3.5	6.5 depth 4	M5	17	20	22.5	18	41.5	38	–
20	67	45	12	36	8	22	–	–	36	5.5	9 depth 7	M5	20	24	24.5	22	48	47	–
32	68	48	20	45	7.5	20	60	4.5	34	5.5	9 depth 7	G1/8	20	36	31.5	20	58.5	–	14
40	80.5	52.5	25	52	8	28	69	5	40	5.5	9 depth 7	G1/8	24.5	44	35	28	66	–	14
50	82	54	25	64	8	28	86	7	50	6.6	11 depth 8	G1/8	24.5	56	41	28	80	–	19

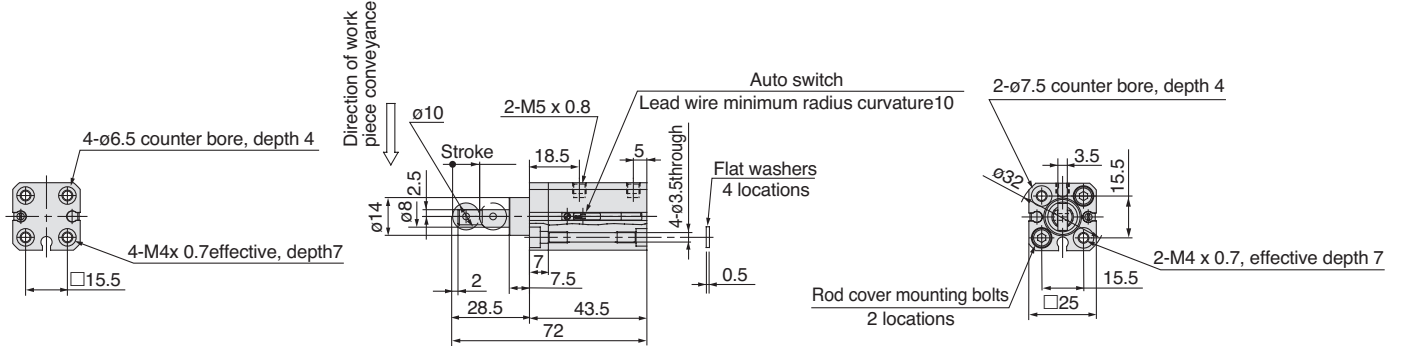


Dimensions Rod end Configuration: Roller

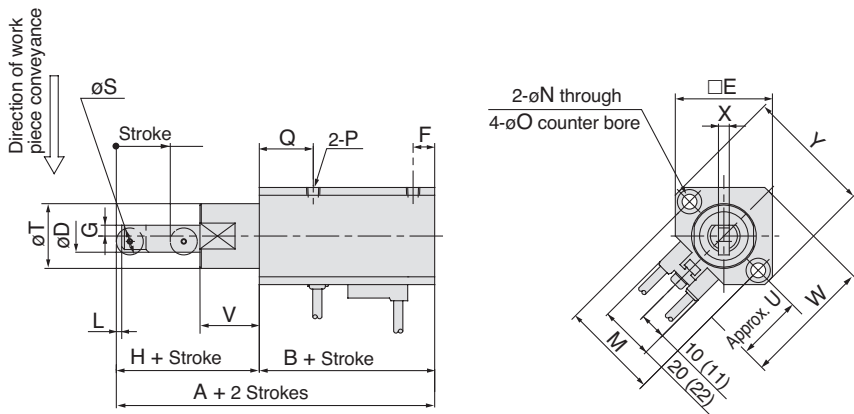
Basic style: Through-hole mounting, Screw mounting

These 3 figures show the piston rod extended.

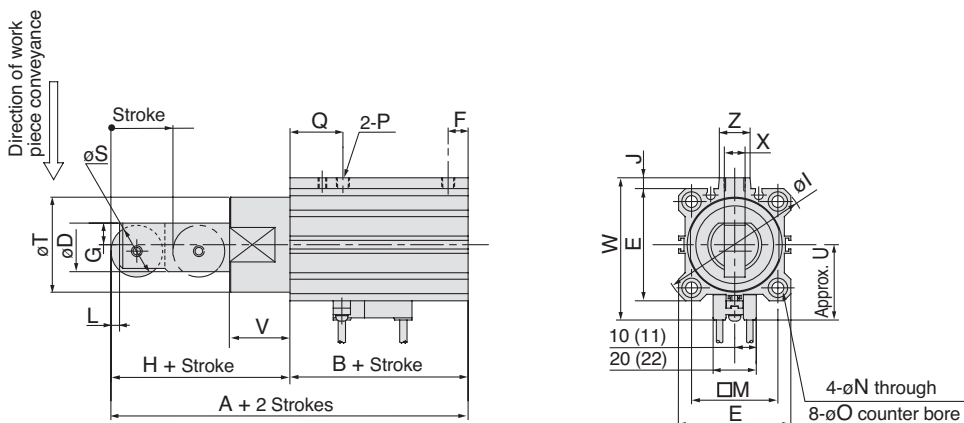
Bore size: $\phi 12$ RS□QB12-10□R



Bore size: $\phi 16, \phi 20$ RS□QB₂₀¹⁶-□□R



Bore size: $\phi 32, \phi 40, \phi 50$ RS□QB₅₀³²-□□R



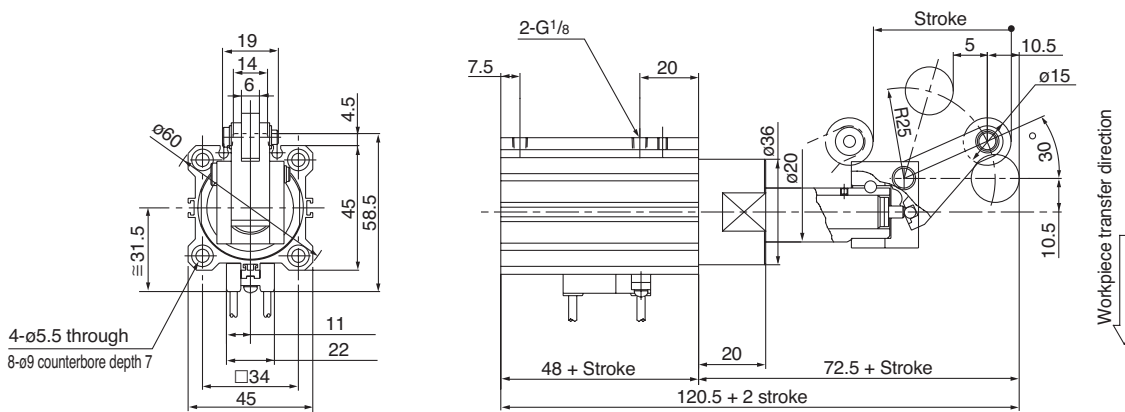
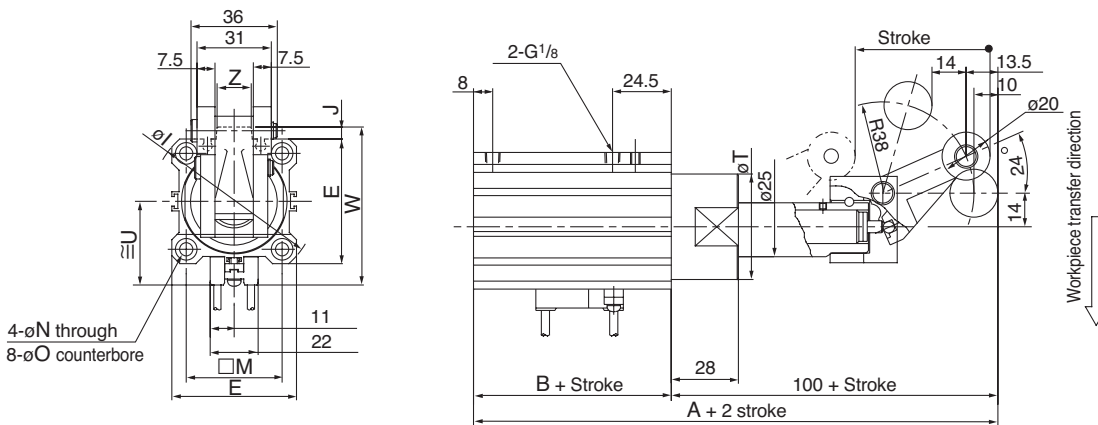
Bore [mm]	A	B	D	E	F	G	H	I	J	L	M	N	O counter bore	P	Q	S	T	U	V	W	X	Y	Z
16	68	41.5	10	29	6	3	26.5	—	—	2	28	3.5	6.5 Depth 4	M5	17	8	20	22.5	18	41.5	3.5	38	—
20	78	45	12	36	8	4	33	—	—	2	36	5.5	9 Depth 7	1/8	20	10	24	24.5	22	48	4	47	—
32	87	48	20	45	7.5	8	39	60	4.5	3	34	5.5	9 Depth 7	1/8	20	18	36	31.5	20	58.5	8	—	14
40	105.5	52.5	25	52	8	10	53	69	5	4	40	5.5	9 Depth 7	1/8	24.5	24	44	35	28	66	9	—	14
50	107	54	25	64	8	10	53	86	7	4	50	6.6	11 Depth 8	1/8	24.5	24	56	41	28	80	9	—	19

Actuators

Dimensions Rod End Configuration: Lever Type with Shock Absorber

Basic style: Through-hole mounting, Screw mounting

These 2 figures show the piston rod extended.

 Bore size: $\phi 32$ RS□QB32-□□L

 Bore size: $\phi 40, \phi 50$ RS□QB⁴⁰/₅₀-□□L


Bore size [mm]	A	B	E	I	J	M	N	O counterbore	T	U	W	Z
40	152.5	52.5	52	69	5	40	5.5	9 depth 7	44	35	66	14
50	154	54	64	86	7	50	6.6	11 depth 8	56	41	80	19

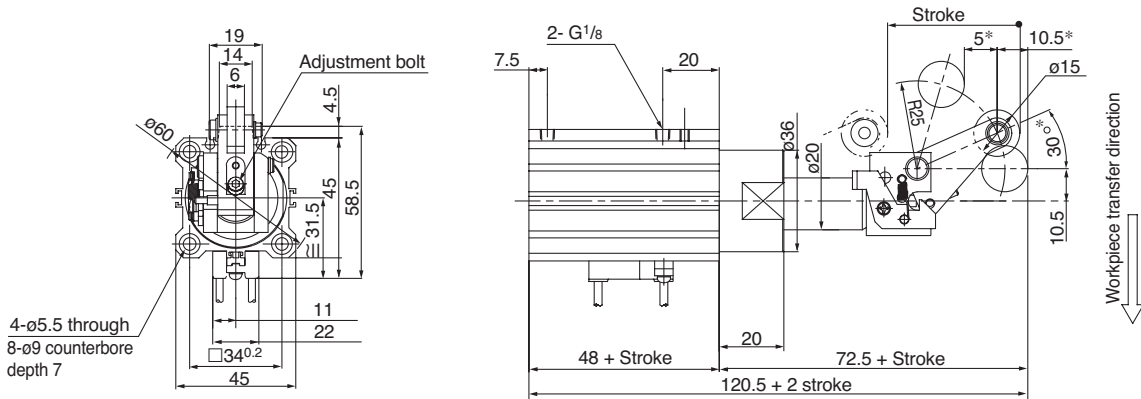


Dimensions Rod End Configuration: Lever Type with Shock Absorber

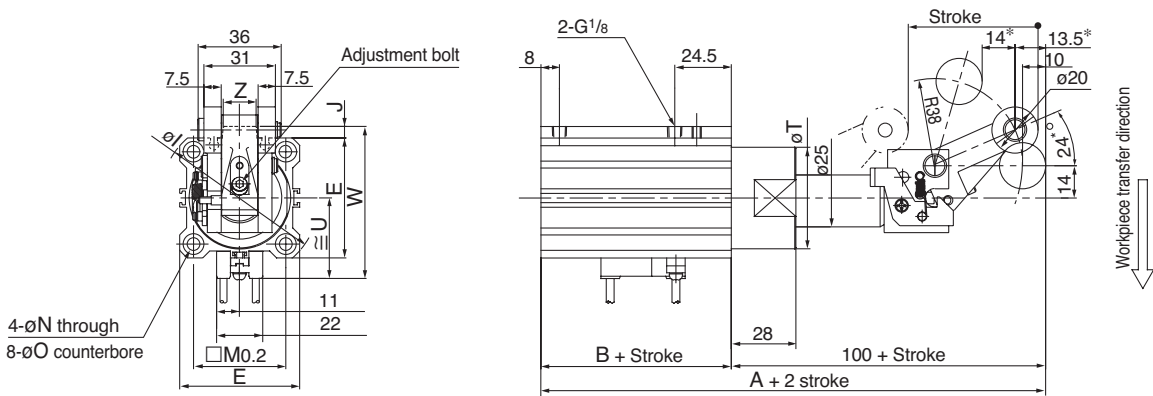
Variable energy absorbing type/Through-hole mounting,
Screw mounting style
With lock mechanism

These 2 figures show the piston rod extended.

Bore size: $\phi 32$ RS□QB32-□□D



Bore size: $\phi 40, \phi 50$ RS□QB₅₀⁴⁰-□□D



* These figures show dimensions when set for maximum energy absorbing capacity. [mm]

Bore size [mm]	A	B	E	I	J	M	N	O counterbore	T	U	W	Z
40	152.5	52.5	52	69	5	40	5.5	9 depth 7	44	35	66	14
50	154	54	64	86	7	50	6.6	11 depth 8	56	41	80	19



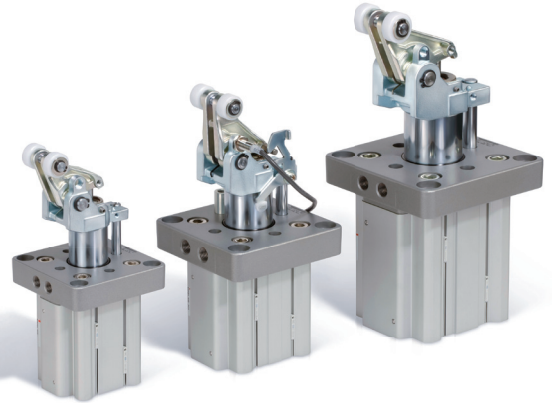
Heavy Duty Stopper Cylinder

Series RS2H

ø50, ø63, ø80

Features

- Possibility to slide D-M9 small auto switches and D-P3DW magnetic field resistant auto switches in three of the four sides.
- Light weight and space saving.
- Adjustable shock absorber.
- Roller: Resin or carbon steel.



How to Order

RS2H 50 TF — 30 D L —

Bore size		Thread type	
50	50 mm	TF	G
63	63 mm		
80	80 mm		

Piping direction

Flange side	Diagram
—	
Axial direction (tube)	Diagram
A	

Action		Roller material	
D	Double acting	L	Resin
B	Double acting with spring	M	Carbon steel
T	Single acting, Spring extend		

Cylinder stroke		Option ^{Note 1)}	
30	30 mm (ø50, 63)	—	Without option
40	40 mm (ø80)	D	With lock mechanism
		C	With cancel cap
		S	With lever detection switch

Positional relationship of lever and port

Port	Direction of transfer	Diagram
Q	↑	
P	←	
R	→	

Note 1) Options can be combined. Indicate the part no. according to the priority order of D.C.S.

Technical Specifications

Bore size [mm]	50	63	80
Action	Double acting, Double acting spring type, Single acting/spring extend		
Rod end configuration	Lever with built-in shock absorber		
Fluid	Air		
Proof pressure	1.5 MPa		
Max. operating pressure	1.0 MPa		
Ambient and fluid temperature	-10 to 60°C (No freezing)		
Lubrication	Not required (non-lube)		
Cushion	Rubber bumper		
Stroke length tolerance	+1.4 0		
Mounting	Flange		
Port size [G]	1/8	1/4	1/4

Product Recommendation



Auto Switches

- D-M9PWL (PNP 2-colour indication)
- D-M9NWL (NPN 2-colour indication)

Note) For more options see the Auto Switch section, page XXX



Related Products

- Series AS** - Speed Controllers - page 1238
- Series RB** - Shock Absorber - page 809
- Series SY** - Valves - page 65, 101, 417
- Series SV** - Valves - page 20
- Series VQC** - Valves - page 193, 211
- Series AC** - Air Preparation - page 1076
- Series TU** - Tubing - page 1223
- Series KQ2** - Fittings - page 1184

Replacement Parts/Seal Kit

Bore size [mm]	Kit no.	
	Double acting	Double acting spring type Single acting
50	RS2H50D-PS	RS2H50T-PS
63	RS2H63D-PS	RS2H63T-PS
80	RS2H80D-PS	RS2H80T-PS

*Since the seal kit does not include a grease pack, order it separately.
Grease pack part no.: GR-S-010 (10 g)

Replacement Parts/Shock Absorber

Bore size [mm]	Order no.
50	RS2H-R50
63	RS2H-R63
80	RS2H-R80

Model Selection

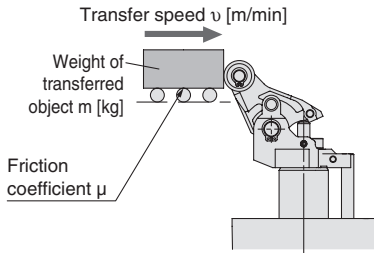
Operating Range

(Example)

Weight of transferred object:

300 kg,

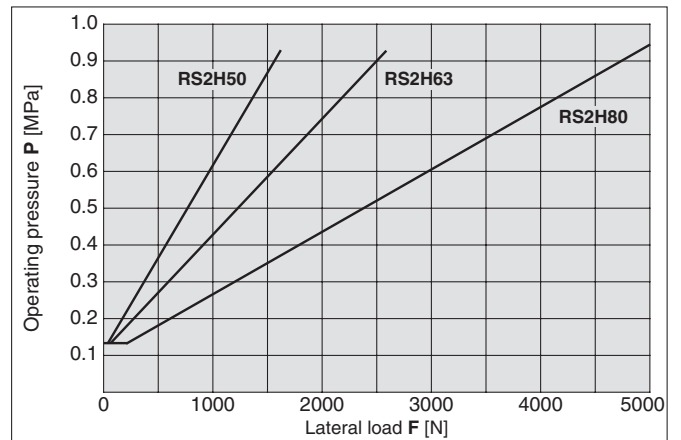
Transfer speed: 20 m/min

 Friction coefficient: $\mu = 0.1$


(How to read graph)

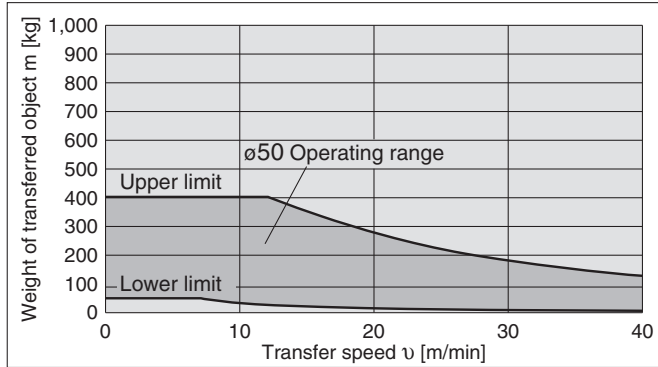
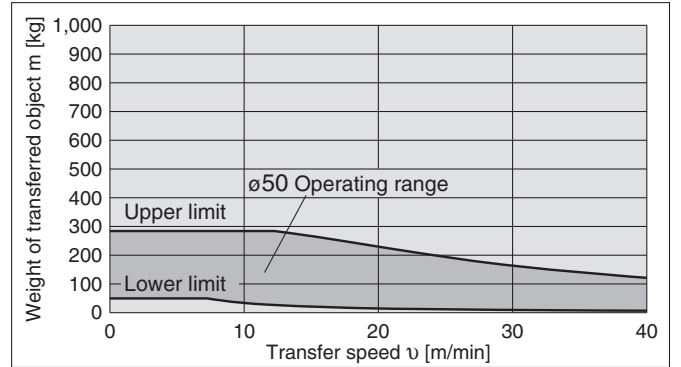
In following graph, find the intersection of the vertical axis representing a weight of 300 kg and the horizontal axis representing a transfer speed of 20 m/min. And select the bore size $\phi 63$ positioned within the operating range of the cylinder.

RS2H50, 63, 80



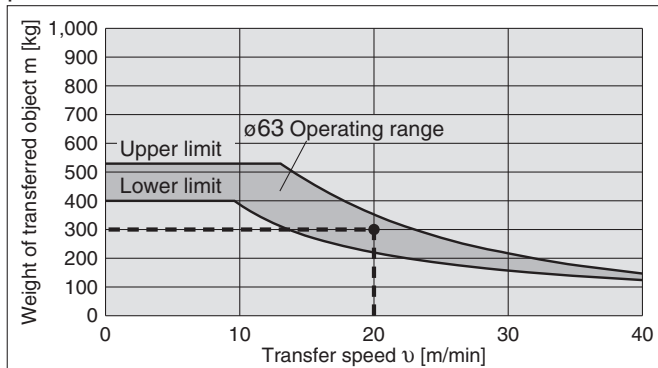
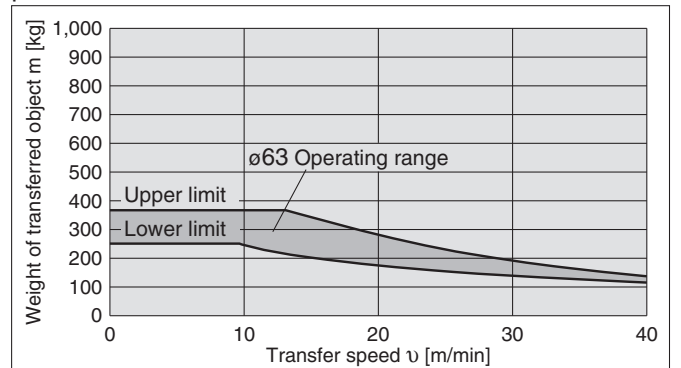
RS2H50-30□□

*The graphs indicate the values at normal temperature. (20 to 25°C)

 $\mu = 0.1$

 $\mu = 0.2$


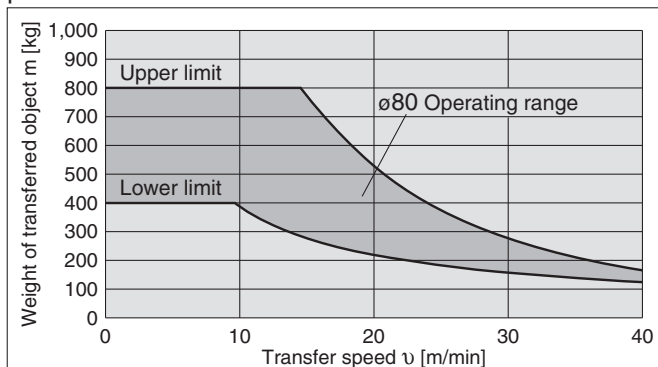
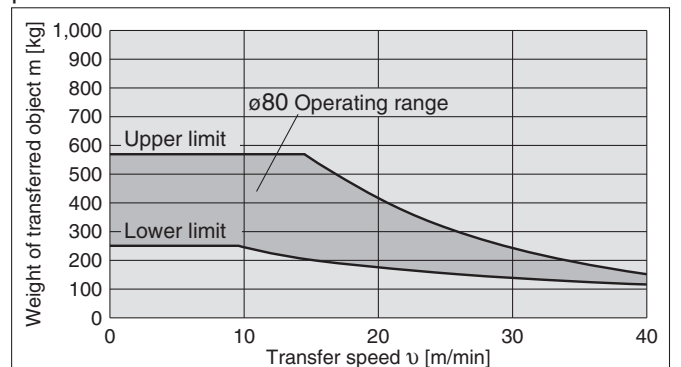
RS2H63-30□□

*The graphs indicate the values at normal temperature. (20 to 25°C)

 $\mu = 0.1$

 $\mu = 0.2$


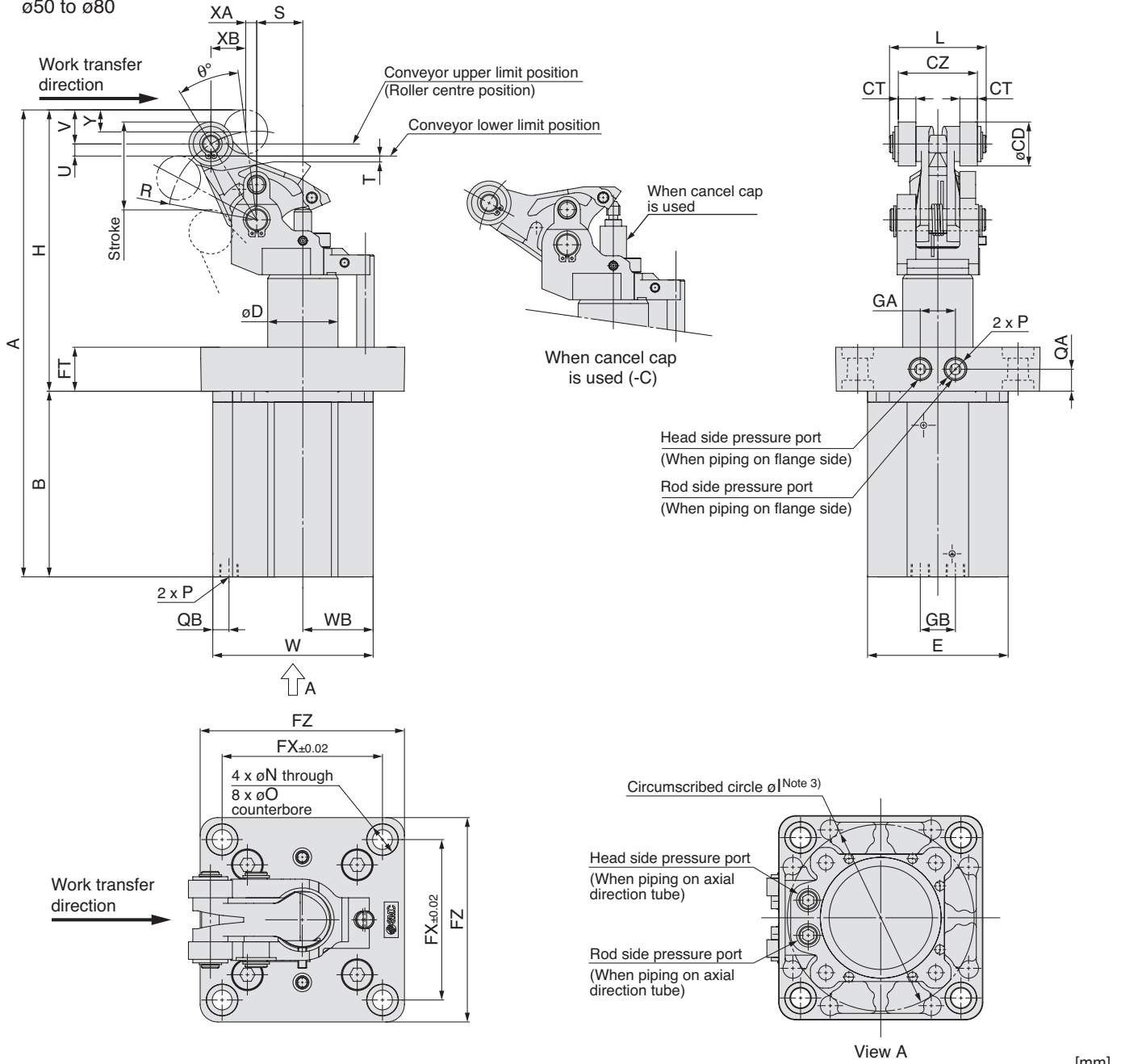
RS2H80-40□□

*The graphs indicate the values at normal temperature. (20 to 25°C)

 $\mu = 0.1$

 $\mu = 0.2$


Dimensions

Basic
ø50 to ø80



Actuators

Model	Stroke	A	B	CD	CT	CZ	D	E	FT	FX	FZ	GA	GB	H	Circumscribed circle ø Note 3	L	N	O	QA	QB
RS2H50	30	212.5	84.5	20	8	36	32	64	20	73	93	16	16	128	85	44	9	14 depth 5	10	7
RS2H63	30	234.5	90	20	10	45	40	77	25	90	114	24	24	144.5	103	53	11	18 depth 6	12.5	8.5
RS2H80	40	292.5	121	25	10	45	50	98	25	110	138	24	35	171.5	132	54.5	13	20 depth 6	12.5	10

Model	Stroke	R	S	T	U	V	W	WB	XA	XB	Y	θ°
RS2H50	30	40	21	2	5.5	15.5	73	32	5	15.8	10	24
RS2H63	30	47	24.5	3.5	6.4	16	87.5	38.5	5	18.7	10	24
RS2H80	40	54	31	3	6.7	19	109	49	6	20.6	12.5	23

Model	P (Piping port)
RS2H50	TF
RS2H63	G1/8
RS2H80	G1/4



Note 1) Dimensions when equipped with auto switch are the same as drawing above.

Note 2) The figure shows an extended piston rod.

Note 3) Circumscribed circle ø | means that diameter of the circle circumscribed to the cylinder angles.

Mounting hole must be ø (l + 1).

Be careful of the interference between the lever and the mounting base when mounted from the lever side.

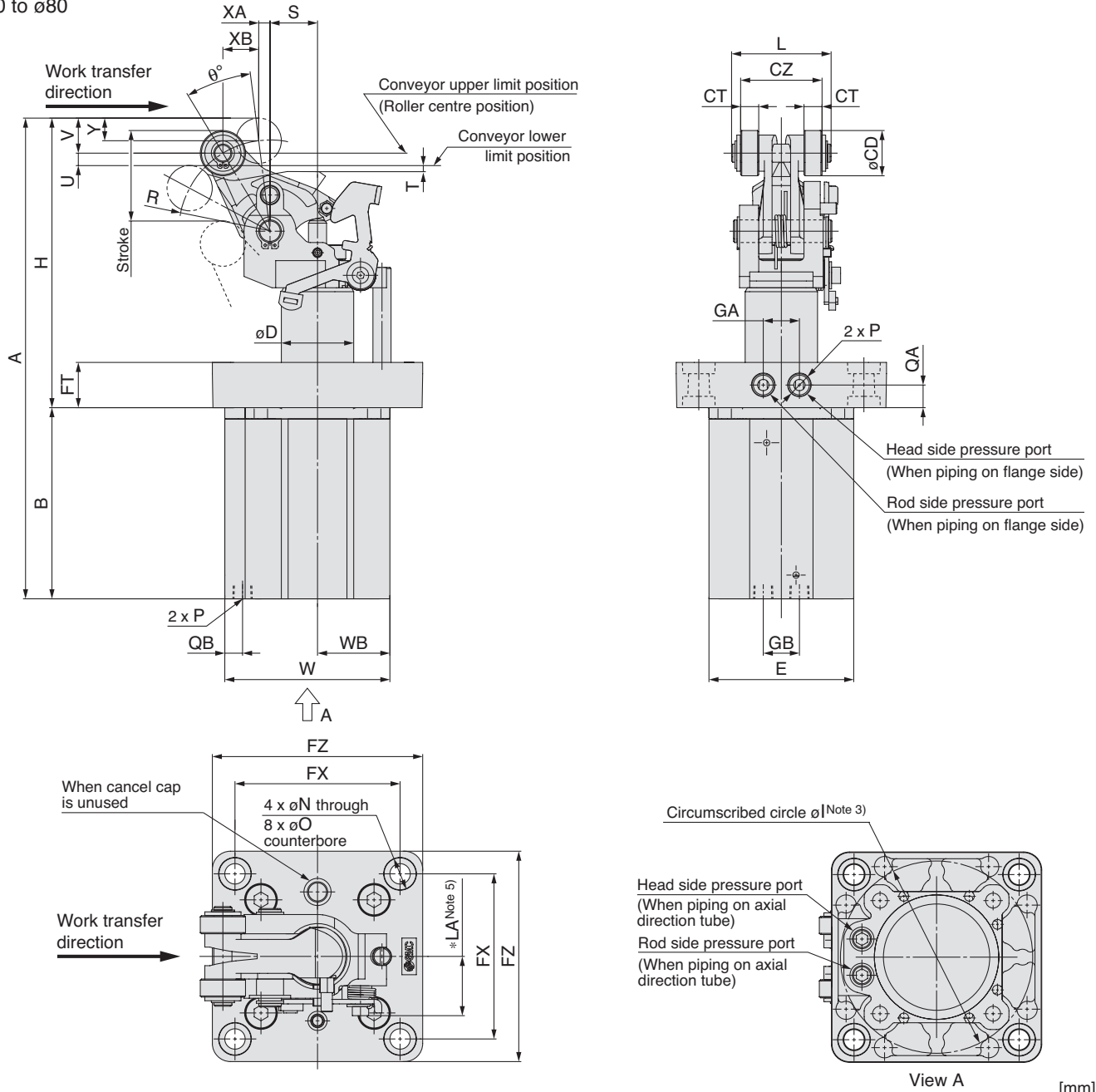
Thus, the thickness of the mounting base must be the values shown below or less.

(RS2H50: 10 mm RS2H63: 15 mm RS2H80: 18 mm)

Note 4) Set the conveyor height within the range from the lower limit position to the upper limit position (U dimension) shown in the figure.

Dimensions

With lock mechanism
 $\phi 50$ to $\phi 80$



Model	Stroke	A	B	CD	CT	CZ	D	E	FT	FX	FZ	GA	GB	H	Circumscribed circle ϕl	L	*LA ^{Note 5)}	N	O	QA
RS2H50	30	212.5	84.5	20	8	36	32	64	20	73	93	16	16	128	85	44	26	9	14 depth 5	10
RS2H63	30	234.5	90	20	10	45	40	77	25	90	114	24	24	144.5	103	53	31	11	18 depth 6	12.5
RS2H80	40	292.5	121	25	10	45	50	98	25	110	138	24	35	171.5	132	54.5	38	13	20 depth 6	12.5

Model	Stroke	QB	R	S	T	U	V	W	WB	XA	XB	Y	θ°
RS2H50	30	7	40	21	2	5.5	15.5	72	32	5	15.8	10	24
RS2H63	30	8.5	47	24.5	3.5	6.4	16	87.5	38.5	5	18.7	10	24
RS2H80	40	10	54	31	3	6.7	19	109	49	6	20.6	12.5	23

Model	P (Piping port)
RS2H50	G1/8
RS2H63	G1/4
RS2H80	G1/4



Note 1) Dimensions when equipped with auto switch are the same as drawing above.

Note 2) The figure shows an extended piston rod.

Note 3) Circumscribed circle ϕl means that diameter of the circle circumscribed to the cylinder angles.

Mounting hole must be $\phi (l + 1)$.

Be careful of the interference between the lever and the mounting base when mounted from the lever side.

Thus, the thickness of the mounting base must be the values shown below or less.

(RS2H50: 10 mm RS2H63: 15 mm RS2H80: 18 mm)

Note 4) Set the conveyor height within the range from the lower limit position to the upper limit position (U dimension) shown in the figure.

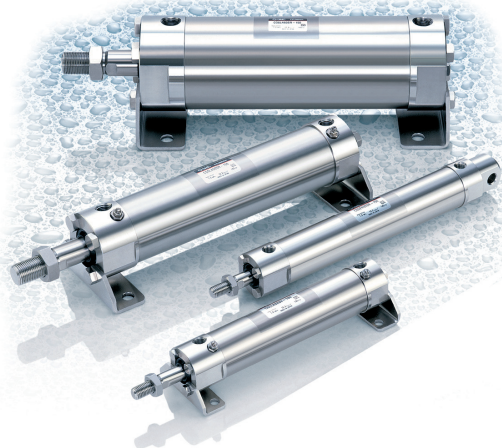
Note 5) Dimensions other than those marked * (LA) are the same as the basic type (no locking type).



For more product options and details see our specific catalogues or on-line information.

Stainless Steel Cylinder Series CG5-S

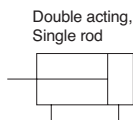
ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100



Features

- Applicable for use in an environment with water splashing such as food processing machines.
- Special scraper (standard) prevents water from entering the cylinder.
- All stainless steel specification (external parts), including mounts.

Symbol



How to Order

With Auto Switch **CDG5 B N 25 TF S R 100**

- With auto switch (built-in magnet)**: CDG5
- Mounting**: B (Basic type)
- Type**: N (Non-lube, rubber bumper), A (Non-lube, air cushion)
- Bore size**: 20 (20 mm), 25 (25 mm), 32 (32 mm), 40 (40 mm), 50 (50 mm), 63 (63 mm), 80 (80 mm), 100 (100 mm)
- Stainless steel cylinder**: S
- Port thread type**: TF (M5 x 0.8 (Rubber bumper)), G (M5 x 0.8 (Air cushion))
- Seal material**: R (NBR), V (FKM)
- Cylinder stroke [mm]**: 100 (Refer to the standard stroke on next page.)

Product Recommendation



Stocked items for fast delivery

Part Number	Stroke (□)	Part Number	Stroke (□)
CDG5BA20SV-□A	25, 50, 75, 100, 125, 150, 200	CDG5BN20TFSR-□	25, 50, 75, 100, 125, 150, 200
CDG5BA25SV-□A	25, 50, 75, 100, 125, 150, 200, 250	CDG5BN25TFSR-□	25, 50, 75, 100, 125, 150, 200, 250
CDG5BA32TFSV-□A	25, 50, 75, 100, 125, 150, 200, 250	CDG5BN32TFSR-□	25, 50, 75, 100, 125, 150, 200, 250
CDG5BA40TFSV-□A	25, 50, 75, 100, 125, 150, 200, 250	CDG5BN40TFSR-□	25, 50, 75, 100, 125, 150, 200, 250
CDG5BA50TFSV-□A	25, 50, 75, 100, 125, 150, 200, 250	CDG5BN50TFSR-□	25, 50, 75, 100, 125, 150, 200, 250
CDG5BA63TFSV-□A	25, 50, 75, 100, 125, 150, 200, 250	CDG5BN63TFSR-□	25, 50, 75, 100, 125, 150, 200, 250

Technical Specifications

Action	Double acting, Single rod	
Fluid	Air	
Proof pressure	1.5 MPa	
Maximum operating pressure	1.0 MPa	
Minimum operating pressure	0.05 MPa	
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)	
Cushion	Rubber bumper, Air cushion	
Piston speed	ø20 to ø63	50 to 1000 mm/s
	ø80, ø100	50 to 700 mm/s
Thread tolerance	JIS Class 2	
Stroke length tolerance	ø20 to ø63	Up to 1000 st +1.4 ₀ mm, Up to 1200 st +1.8 ₀ mm
	ø80, ø100	Up to 1000 st +1.4 ₀ mm, Up to 1500 st ₀ mm
Mounting	Basic, Axial foot, Rod side flange, Head side flange, Clevis integrated	



Auto Switches

- D-G5BAL (Water resistant 2-colour indication)

Note) For more options see the Auto Switch section, page XXX



Related Products

- Series AS/FG - Stainless Steel Speed Controllers - page 1247
- Series SY - Valves - page 65, 101, 417
- Series SV - Valves - page 20
- Series VQC - Valves - page 193, 211
- Series AC - Air Preparation - page 1076
- Series TU - Tubing - page 1223
- Series KQG/KFG - Stainless Steel Fittings - page 1212

Mounting Bracket Part No.

Mounting bracket	Bore size [mm]							
	20	25	32	40	50	63	80	100
Axial foot (1)	CG-L020SUS	CG-L025SUS	CG-L032SUS	CG-L040SUS	CG-L050SUS	CG-L063SUS	CG-L080SUS	CG-L100SUS
Flange	CG-F020SUS	CG-F025SUS	CG-F032SUS	CG-F040SUS	CG-F050SUS	CG-F063SUS	CG-F080SUS	CG-F100SUS
Pivot bracket (2)	CG-E020SUS		CG-E032SUS		CG-E050SUS		CG-E080SUS	

Note 1) When ordering the foot bracket, order 2 pcs. per cylinder.

Note 2) Clevis pin and circlip are attached.

Replacement parts: Seal kits Note)

Bore size [mm]	Rubber bumper		Air cushion	
	CG5□N□SR	CG5□N□SV	CG5□A□SR	CG5□A□SV
20	CG5N20SR-PS	CG5N20SV-PS	CG5A20SR-PS	CG5A20SV-PS
25	CG5N25SR-PS	CG5N25SV-PS	CG5A25SR-PS	CG5A25SV-PS
32	CG5N32SR-PS	CG5N32SV-PS	CG5A32SR-PS	CG5A32SV-PS
40	CG5N40SR-PS	CG5N40SV-PS	CG5A40SR-PS	CG5A40SV-PS

Note) A grease pack (GR-R-010, 10g) is included in seal kits.

Standard Stroke

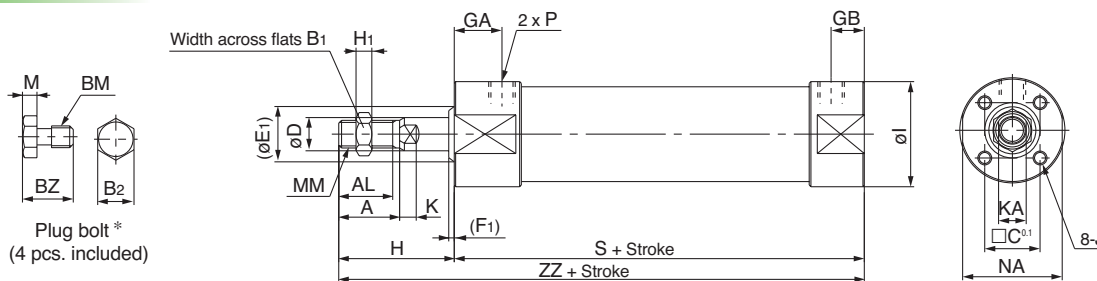
Bore size [mm]	Standard stroke <small>Note)</small>	Long stroke
20	25, 50, 75, 100, 125, 150, 200	201 to 350
25	25, 50, 75, 100, 125, 150, 200, 250, 300	301 to 400
32		301 to 450
40		301 to 800
50, 63		301 to 1200
80		301 to 1400
100		301 to 1500

Note) All non-standard strokes are produced upon receipt of order. (Spacers are not used on intermediate strokes.)

Accessories

Bore size [mm]	Single Knuckle Joint	Double Knuckle Joint	Knuckle Joint Pin	Pivot Bracket	Clevis Pin	Rod End Nut
20	I-G02SUS	Y-G02SUS	IY-G02SUS	CG-E020SUS	CD-E02SUS	NT-02SUS
25	I-G03SUS	Y-G03SUS	IY-G03SUS	CG-E020SUS	CD-E02SUS	NT-03SUS
32	I-G03SUS	Y-G03SUS	IY-G03SUS	CG-E032SUS	CD-E03SUS	NT-03SUS
40	I-G04SUS	Y-G04SUS	IY-G04SUS	CG-E032SUS	CD-E03SUS	NT-G04SUS
50	I-G05SUS	Y-G05SUS	IY-G05SUS	CG-E050SUS	CD-E05SUS	NT-05SUS
63	I-G05SUS	Y-G05SUS	IY-G05SUS	CG-E050SUS	CD-E05SUS	NT-05SUS
80	I-G08SUS	Y-G08SUS	IY-G08SUS	CG-E080SUS	CD-E08SUS	NT-08SUS
100	I-G10SUS	Y-G10SUS	IY-G10SUS	CG-E080SUS	CD-E08SUS	NT-10SUS

Dimensions Basic (B): C□G5BN□S $\frac{R}{V}$: With rubber bumper



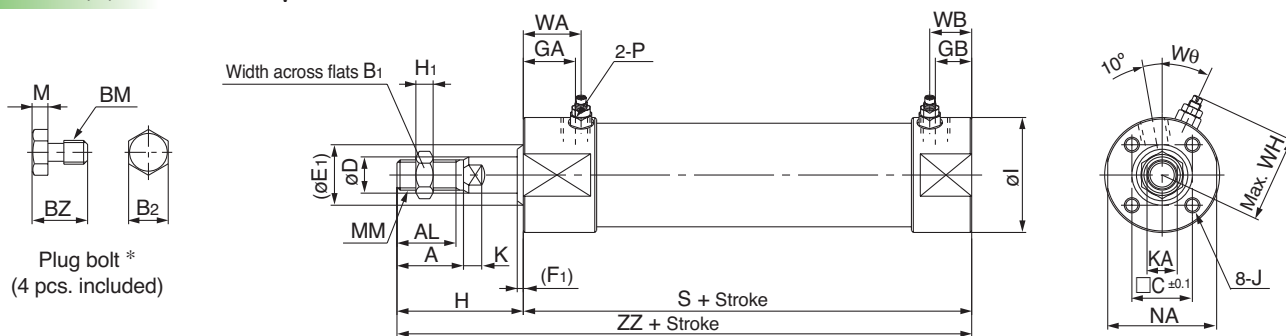
Bore size [mm]	Stroke range	A	AL	B1	B2	BM	BZ	C	D	E1	F1	GA	GB	H	H1	I	J	K	KA	M	MM	NA	P	S	ZZ
20	Up to 350	18	15.5	13	7	M4	9	16.5	8	15	3	18	12	35	5	31	M4 depth 7	5	6	3	M8 x 1.25	29	M5 x 0.8	83	118
25	Up to 400	22	19.5	17	8	M5	9.5	18.5	10	17	3	18	12	40	6	33	M5 depth 8	5.5	8	3.5	M10 x 1.25	29	M5 x 0.8	83	123
32	Up to 450	22	19.5	17	8	M5	9.5	20	12	19	3	18	12	40	6	38	M58 depth 8	5.5	10	3.5	M10 x 1.25	35.5	G1/8	85	125
40	Up to 800	30	27	19	10	M6	12	26	16	23	3	19	13	50	8	47	M6 depth 12	6	14	4	M14 x 1.5	44	G1/8	93	143
50	Up to 1200	35	32	27	13	M8	15.5	32	20	28	3	21	14	58	11	58	M8 depth 16	7	18	5.5	M18 x 1.5	55	G1/4	109	167
63	Up to 1200	35	32	27	17	M10	19	38	20	28	3	21	14	58	11	72	M10 depth 16	7	18	7	M18 x 1.5	69	G1/4	109	167
80	Up to 1400	40	37	32	17	M10	19	50	25	33	3	28	20	71	13	89	M10 depth 22	10	22	7	M22 x 1.5	80	G3/8	130	201
100	Up to 1500	40	37	41	19	M12	24	60	30	38	3	29	20	71	16	110	M12 depth 23	10	26	8	M26 x 1.5	100	G1/2	131	202

* Install plug bolts, which are included, in any unused mounting holes.



For more product options and details see our specific catalogues or on-line information.

Basic (B)/C□G5BA□S^R_V: With air cushion



Plug bolt *
(4 pcs. included)

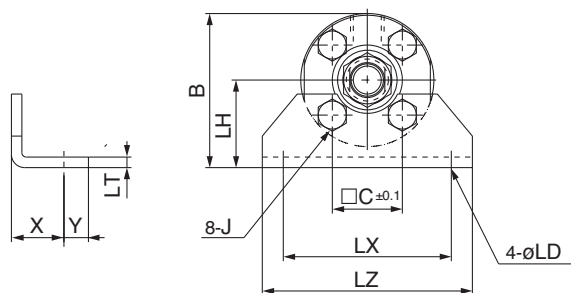
Bore size [mm]	Stroke range	A	AL	B1	B2	BM	BZ	C	D	E1	F1	GA	GB	H	H1	I	J	K	KA	M	MM	NA	P	S
20	to 350	18	15.5	13	7	M4	9	16.5	8	15	3	18	12	35	5	31	M4 depth 7	5	6	3	M8	29	M5	83
25	to 400	22	19.5	17	8	M5	9.5	18.5	10	17	3	18	12	40	6	33	M5 depth 8	5.5	8	3.5	M10 x 1.25	29	M5	83
32	to 450	22	19.5	17	8	M5	9.5	20	12	19	3	18	12	40	6	38	M5 depth 8	5.5	10	3.5	M10 x 1.25	35.5	1/8	85
40	to 800	30	27	19	10	M6	12	26	16	23	3	19	13	50	8	47	M6 depth 12	6	14	4	M14 x 1.5	44	1/8	93
50	to 1200	35	32	27	13	M8	15.5	32	20	28	3	21	14	58	11	58	M8 depth 16	7	18	5.5	M18 x 1.5	55	1/4	109
63	to 1200	35	32	27	17	M10	19	38	20	28	3	21	14	58	11	72	M10 depth 16	7	18	7	M18 x 1.5	69	1/4	109
80	to 1400	40	37	32	17	M10	19	50	25	33	3	28	20	71	13	89	M10 depth 22	10	22	7	M22 x 1.5	80	3/8	130
100	to 1500	40	37	41	19	M12	24	60	30	38	3	29	20	71	16	110	M12 depth 23	10	26	8	M26 x 1.5	100	1/2	131

* Install plug bolts, which are included, in any unused mounting holes.

Bore size [mm]	WA	WB	WH	Wθ	ZZ
20	22	16	23	30°	118
25	22	16	25	30°	123
32	22	16	28.5	25°	125
40	22	16	33	20°	143
50	25	18	40.5	20°	167
63	25	18	47.5	20°	167
80	30	22	60.5	20°	201
100	31	22	71	20°	202

Actuators

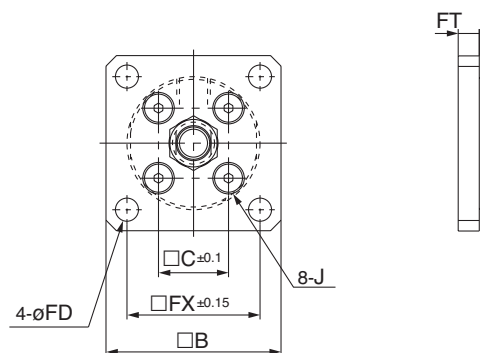
Axial foot (L): C□G5LN^R_V□S



Bore size [mm]	B	C	LD	LH	LT	LX	LZ	X	Y
20	37.5	16.5	6	22	3	40	50	15	7
25	41.5	18.5	6	25	3	44	60	15	7
32	44	20	7.2	25	3	44	60	16	6
40	53.5	26	7.2	30	3	54	75	16.5	6.5
50	69	32	10	40	4	66	90	21.5	11.5
63	81	38	12	45	4	82	110	21.5	11.5
80	99.5	50	12	55	4	100	130	28	17
100	125	60	14	70	6	120	160	30	15

* Foot brackets and plug bolts are installed when shipped from factory.

Rod side flange (F): C□G5FN^R_V□S

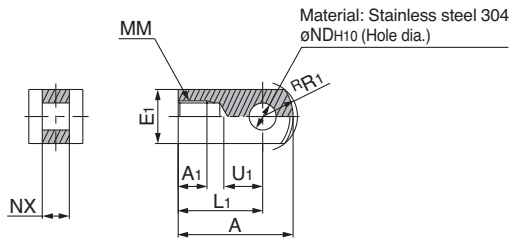


Bore size [mm]	B	C	FX	FD	FT	J
20	50	16.5	36	5.5	6	M4
25	50	18.5	36	5.5	6	M5
32	50	20	38	6.6	6	M5
40	60	26	46	6.6	6	M6
50	75	32	58	9	9	M8
63	90	38	70	11	9	M10
80	100	50	82	11	9	M10
100	125	60	100	14	10	M12

* Flange bracket and plug bolt are installed when shipped from factory.

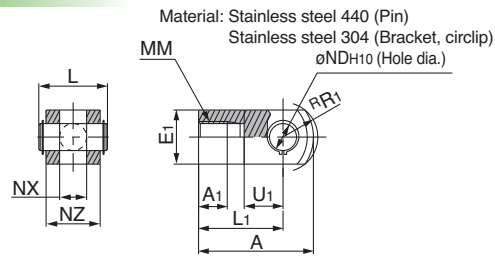
Accessory Dimensions

Single Knuckle Joint



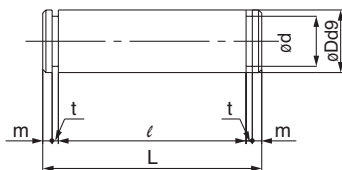
Part no.	Applicable bore size [mm]	A	A ₁	E ₁	L ₁	MM	NDH ₁₀	NX	R ₁	U ₁
I-G02SUS	20	34	8.5	□16	25	M8	8 ^{+0.058} ₀	8 ^{-0.2} _{-0.4}	10.3	11.5
I-G03SUS	25, 32	41	10.5	□20	30	M10 x 1.25	10 ^{+0.058} ₀	10 ^{-0.2} _{-0.4}	12.8	14
I-G04SUS	40	42	14	□22	30	M14 x 1.5	10 ^{+0.058} ₀	18 ^{-0.3} _{-0.5}	12	14
I-G05SUS	50, 63	56	18	□38	40	M18 x 1.5	14 ^{+0.070} ₀	22 ^{-0.3} _{-0.5}	16	20
I-G08SUS	80	71	21	□38	50	M22 x 1.5	18 ^{+0.070} ₀	28 ^{-0.3} _{-0.5}	21	27
I-G10SUS	100	79	21	□45	55	M26 x 1.5	22 ^{+0.084} ₀	32 ^{-0.3} _{-0.5}	24	31

Double Knuckle Joint



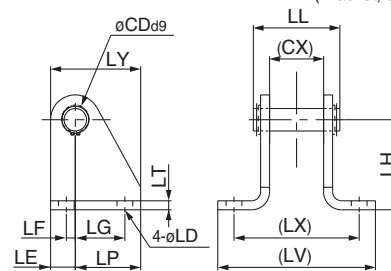
Part no.	Applicable bore size [mm]	A	A ₁	L	E ₁	L ₁	MM	NDH ₁₀	NX	NZ	R ₁	U ₁	Applicable pin no.
Y-G02SUS	20	34	8.5	21	16	25	M8	8 ^{+0.058} ₀	8 ^{+0.4} _{+0.2}	16	10.3	11.5	IY-G02SUS
Y-G03SUS	25, 32	41	10.5	25.6	20	30	M10 x 1.25	10 ^{+0.058} ₀	10 ^{+0.4} _{+0.2}	20	12.8	14	IY-G03SUS
Y-G04SUS	40	42	16	41.6	22	30	M14 x 1.5	10 ^{+0.058} ₀	18 ^{+0.5} _{+0.3}	36	12	14	IY-G04SUS
Y-G05SUS	50, 63	56	20	50.6	25	40	M18 x 1.5	14 ^{+0.070} ₀	22 ^{+0.5} _{+0.3}	44	16	20	IY-G05SUS
Y-G08SUS	80	71	23	64	35	50	M22 x 1.5	18 ^{+0.070} ₀	28 ^{+0.5} _{+0.3}	56	21	27	IY-G08SUS
Y-G10SUS	100	79	24	72	40	55	M26 x 1.5	22 ^{+0.084} ₀	32 ^{+0.5} _{+0.3}	64	24	31	IY-G10SUS

Knuckle Joint Pin

 Material: Stainless steel 440 (Pin)
 Stainless steel 304 (circlip)


Part no.	Applicable bore size [mm]	Dd9	d	L	l	m	t	Applicable circlip
IY-G02SUS	20	8 ^{-0.040} _{-0.076}	7.6	21	16.2	1.5	0.9	Type C 8 for axis
IY-G03SUS	25, 32	10 ^{-0.040} _{-0.076}	9.6	25.6	20.2	1.55	1.15	Type C 10 for axis
IY-G04SUS	40	10 ^{-0.040} _{-0.076}	9.6	41.6	36.2	1.55	1.15	Type C 10 for axis
IY-G05SUS	50, 63	14 ^{-0.050} _{-0.093}	13.4	50.6	44.2	2.05	1.15	Type C 14 for axis
IY-G08SUS	80	18 ^{-0.050} _{-0.093}	17	64	56.2	2.55	1.35	Type C 18 for axis
IY-G10SUS	100	22 ^{-0.065} _{-0.117}	21	72	64.2	2.55	1.35	Type C 22 for axis

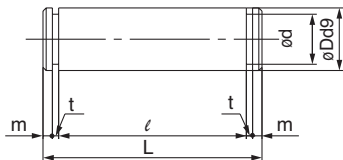
Pivot Bracket

 Material: Stainless steel 440 (Pin)
 Stainless steel 304 (Bracket, circlip)


Part no.	Applicable bore size [mm]	CD (Snap ring)	CX	LD	LE	LF	LG	LH	LL	LP	LT	LV	LX	LY
CG-E020SUS	20, 25	8 ^{-0.040} _{-0.076}	16	7	9	2	14	30	27.6	21	3	56.5	42	30
CG-E032SUS	32, 40	10 ^{-0.040} _{-0.076}	24	7	11	4	22	40	38.4	29	4	70.5	56	40
CG-E050SUS	50, 63	14 ^{-0.050} _{-0.093}	40	12	15	5	25	50	59.6	35	6	106.5	84	50
CG-E080SUS	80, 100	22 ^{-0.065} _{-0.117}	60	14	23	6	40	80	87.2	57	9	144.5	120	80

 Note) This bracket is only applicable to the CG5-S with integral clevis.
 Please contact SMC for how to order information of this cylinder variant.

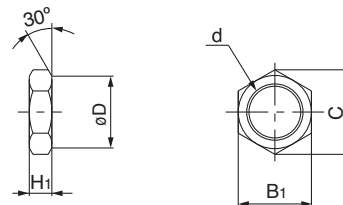
Clevis Pin

 Material: Stainless steel 440 (Pin)
 Stainless steel 304 (circlip)


Part no.	Applicable bore size [mm]	Dd9	d	L	l	m	t	Applicable circlip
CD-E02SUS	20, 25	8 ^{-0.040} _{-0.076}	7.6	27.6	22.8	1.5	0.9	Type C 8 for axis
CD-E03SUS	32, 40	10 ^{-0.040} _{-0.076}	9.6	38.4	33	1.55	1.15	Type C 10 for axis
CD-E05SUS	50, 63	14 ^{-0.050} _{-0.093}	13.4	59.6	53.2	2.05	1.15	Type C 14 for axis
CD-E08SUS	80, 100	22 ^{-0.065} _{-0.117}	21	87.2	79.4	2.55	1.35	Type C 22 for axis

Rod End Nut

Material: Stainless steel 304



Part no.	Applicable bore size [mm]	B ₁	C	D	d	H ₁
NT-02SUS	20	13	(15)	12.5	M8	5
NT-03SUS	25, 32	17	(19.6)	16.5	M10 x 1.25	6
NT-G04SUS	40	19	(21.9)	18	M14 x 1.5	8
NT-05SUS	50, 63	27	(31.2)	26	M18 x 1.5	11
NT-08SUS	80	32	(37.0)	31	M22 x 1.5	13
NT-10SUS	100	41	(47.3)	39	M26 x 1.5	16

