



Air Cylinder: Standard Type

Single Acting, Single Rod, Spring Return/Extend

Series CG1

ø20, ø25, ø32, ø40

How to Order

Without auto switch

CG1 L N 25 100 S

With auto switch

CDG1 L N 25 100 S H7BW

Built-in magnet

Mounting style

B Basic style	U Rod side trunnion style
L Axial foot style	T Head side trunnion style
F Rod side flange style	D Clevis style
G Head side flange style	

Note) Mounting brackets are shipped together, (but not assembled).

Type

N Non-lube/Rubber bumper	
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Bore size

20	20 mm
25	25 mm
32	32 mm
40	40 mm

Auto switch

Nil	Without auto switch (Built-in magnet)
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* For the applicable auto switch model, refer to the table below.

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

Action

S	Single acting, Spring return
T	Single acting, Spring extend

Cylinder stroke (mm)
Refer to "Standard Stroke" on page 6-5-23.

Applicable Auto Switch/Refer to page 6-16-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model	Lead wire length (m) *				Pre-wire connector	Applicable load		
					DC	AC	Applicable bore size (mm)	0.5 (Nil)	3 (L)	5 (Z)	None (N)		IC circuit	Relay, PLC	
							20 to 40								
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	C76	●	●	—	—	—	—	—
				Connector	24 V	12 V	100 V, 200 V	B54	●	●	●	—	—	—	—
	100 V	C73	●				●	●	—	—					
	Diagnostic indication (2-color indication)	Grommet	—	—	B59W	●	●	—	—	—	—	—	—		
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	H7A1	●	●	○	—	○	IC circuit	Relay, PLC
				3-wire (PNP)				H7A2	●	●	○	—	○		
		2-wire		H7B				●	●	○	—	○			
		H7C		●				●	●	●	—	—			
	Diagnostic indication (2-color indication)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	H7NW	●	●	○	—	○	IC circuit	Relay, PLC
				3-wire (PNP)				H7PW	●	●	○	—	○		
	Water resistant (2-color indication)	Grommet	—	—	H7BW	●	●	○	—	○	—	—	—		
	With diagnostic output (2-color indication)	Grommet	—	—	H7BA	—	●	○	—	○	—	—	—		
	Grommet	—	—	H7NF	●	●	○	—	○	—	○	IC circuit	—		

* Lead wire length symbols: 0.5 m Nil (Example) C73C
 3 m L (Example) C73CL
 5 m Z (Example) C73CZ
 None N (Example) C73CN

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

- Since there are other applicable auto switches than listed, refer to page 6-5-29 for details.
- For details about auto switches with pre-wire connector, refer to page 6-16-60.

Air Cylinder: Standard Type Single Acting, Single Rod, Spring Return/Extend **Series CG1**

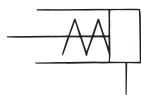


Specifications

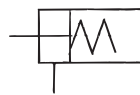
Action	Single acting, Spring return	Single acting, Spring extend
Bore size (mm)	20, 25, 32, 40	
Type	Non-lube	
Fluid	Air	
Proof pressure	1.5 MPa	
Maximum operating pressure	1.0 MPa	
Minimum operating pressure	0.18 MPa	0.23 MPa
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)	
Piston speed	50 to 1000 mm/s	
Stroke length tolerance	Up to 200 ^{st+1.4} _o mm	
Thread tolerance	JIS Class 2	
Cushion	Rubber bumper	
Mounting	Basic style, Axial foot style, Rod side flange style, Head side flange style, Rod side trunnion style, Head side trunnion style, Clevis style (Used for changing the port location by 90°.)	

JIS Symbol

Spring return



Spring extend



Made to Order Specifications (For details, refer to page 6-17-1.)

Symbol	Specifications
-XC6	Piston rod and rod end nut made of stainless steel
-XC18	NPT finish piping port
-XC20	Head cover axial port

Accessory

Mounting		Basic style	Axial foot style	Rod side flange style	Head side flange style	Rod side trunnion style	Head side trunnion style	Clevis style
Standard equipment	Rod end nut	●	●	●	●	●	●	●
	Clevis pin	—	—	—	—	—	—	●
Option	Single knuckle joint	●	●	●	●	●	●	●
	Double knuckle joint* (With pin)	●	●	●	●	●	●	●
	Pivot bracket	—	—	—	—	●	●	●

* Pin and snap ring are shipped together with double knuckle joint.

Standard Stroke

Bore size (mm)	Standard stroke (mm) ^{Note)}
20	25, 50, 75, 100, 125
25, 32, 40	25, 50, 75, 100, 125, 150, 200

Note) Intermediate strokes other than the above are produced upon receipt of order. Spacers are not used for intermediate strokes.

Mounting Bracket Part No.

Mounting bracket	Bore size (mm)			
	20	25	32	40
Axial foot *	CG-L020	CG-L025	CG-L032	CG-L040
Flange	CG-F020	CG-F025	CG-F032	CG-F040
Trunnion pin	CG-T020	CG-T025	CG-T032	CG-T040
Clevis *	CG-D020	CG-D025	CG-D032	CG-D040
Pivot bracket	CG-020-24A	CG-025-24A	CG-032-24A	CG-040-24A

* Order two foot brackets per cylinder.

** Mounting bolt is shipped together with foot style and flange style, and clevis pin, snap ring and mounting bolt with clevis style.

Auto Switch Mounting Bracket Part No.

Auto switch model	Bore size (mm)			
	20	25	32	40
D-C7/C8	BMA2-020	BMA2-025	BMA2-032	BMA2-040
D-H7				
D-B5/B6	BA-01	BA-02	BA-32	BA-04
D-G5				



* Mounting screws set made of stainless steel

The following set of mounting screws made of stainless steel is also available. Use it in accordance with the operating environment.

(A switch mounting band is not included, so please order it separately.)

BBA3: For D-B5/B6/G5

BBA4: For D-C7/C8/H7

• D-G5BAL and D-H7BAL switches are set on the cylinder with the stainless steel screws above when shipped.

When only a switch is shipped independently, BBA3 or BBA4 screws are attached.

Series CG1

Weight

(kg)

Spring return					
Bore size (mm)		20	25	32	40
Basic weight	25 stroke	0.17	0.27	0.40	0.63
	50 stroke	0.19	0.30	0.45	0.71
	75 stroke	0.26	0.40	0.58	0.91
	100 stroke	0.28	0.43	0.62	0.99
	125 stroke	0.35	0.53	0.76	1.20
	150 stroke	—	0.56	0.81	1.28
	200 stroke	—	0.69	0.98	1.56
Mounting bracket weight	Axial foot style	0.11	0.13	0.16	0.22
	Flange style	0.08	0.10	0.14	0.20
	Trunnion style	0.01	0.02	0.03	0.05
	Clevis style	0.05	0.08	0.15	0.23
Accessory bracket	Pivot bracket	0.08	0.09	0.17	0.25
	Single knuckle joint	0.05	0.09	0.09	0.10
	Double knuckle (With pin)	0.05	0.09	0.09	0.13

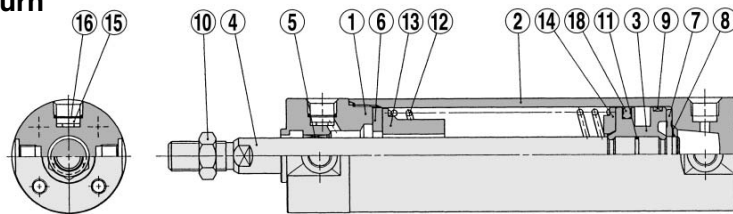
Spring extend					
Bore size (mm)		20	25	32	40
Basic weight	25 stroke	0.16	0.25	0.38	0.59
	50 stroke	0.18	0.28	0.43	0.67
	75 stroke	0.24	0.37	0.54	0.83
	100 stroke	0.26	0.40	0.58	0.91
	125 stroke	0.32	0.48	0.69	1.08
	150 stroke	—	0.50	0.72	1.12
	200 stroke	—	0.63	0.89	1.40
Mounting bracket weight	Axial foot style	0.11	0.13	0.16	0.22
	Flange style	0.08	0.10	0.14	0.20
	Trunnion style	0.01	0.02	0.03	0.05
	Clevis style	0.05	0.08	0.15	0.23
Accessory bracket	Pivot bracket	0.08	0.09	0.17	0.25
	Single knuckle joint	0.05	0.09	0.09	0.10
	Double knuckle (With pin)	0.05	0.09	0.09	0.13

Calculation: (Example) CG1LN20-100S (Foot style, ø20, 100 st)
 • Basic weight.....0.28 kg (ø20) • Mounting bracket weight.....0.11 kg (Foot)
 0.28 + 0.11 = 0.39 kg

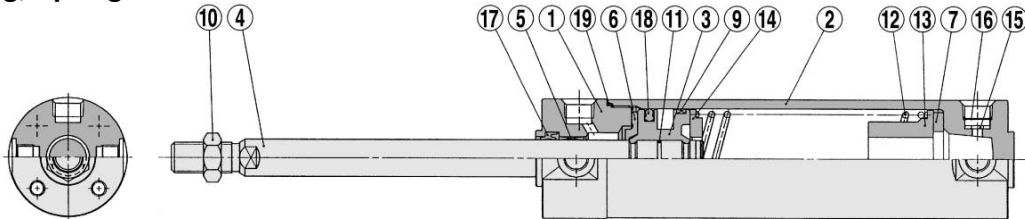
Calculation: (Example) CG1LN20-100T (Foot style, ø20, 100 st)
 • Basic weight.....0.26 kg (ø20) • Mounting bracket weight.....0.11 kg (Foot)
 0.26 + 0.11 = 0.37 kg

Construction

Single acting, Spring return



Single acting, Spring extend



Component Parts

No.	Description	Material	Note
①	Rod cover	Aluminum alloy	Clear hard anodized
②	Tube cover	Aluminum alloy	Clear hard anodized
③	Piston	Aluminum alloy	Chromated
④	Piston rod	Carbon steel *	Hard chrome plated
⑤	Bushing	Oil-impregnated sintered alloy	ø40 is lead-bronze casted
⑥	Bumper A	Urethane	
⑦	Bumper B	Urethane	
⑧	Snap ring	Stainless steel	
⑨	Wear ring	Resin	
⑩	Rod end nut	Rolled steel	Nickel plated
⑪	Piston gasket	NBR	
⑫	Return spring	Steel wire	Zinc chromated
⑬	Spring guide	Aluminum alloy	Chromated
⑭	Spring seat	Aluminum alloy	Chromated
⑮	Element	Sintered metallic BC	
⑯	Snap ring	Copper wire	
⑰	Rod seal	NBR	
⑱	Piston seal	NBR	
⑲	Tube gasket	NBR	

Note) In the case of cylinders with auto switches, rubber magnets are installed in the piston.

* The material is stainless steel on auto switch equipped styles ø20 and ø25.

Replacement Parts: For Single Acting, Spring Return

No.	Description	Material	Part no.			
			20	25	32	40
⑱	Piston seal	NBR	PPD-20	PPD-25-19	PPD-32	PPD-40

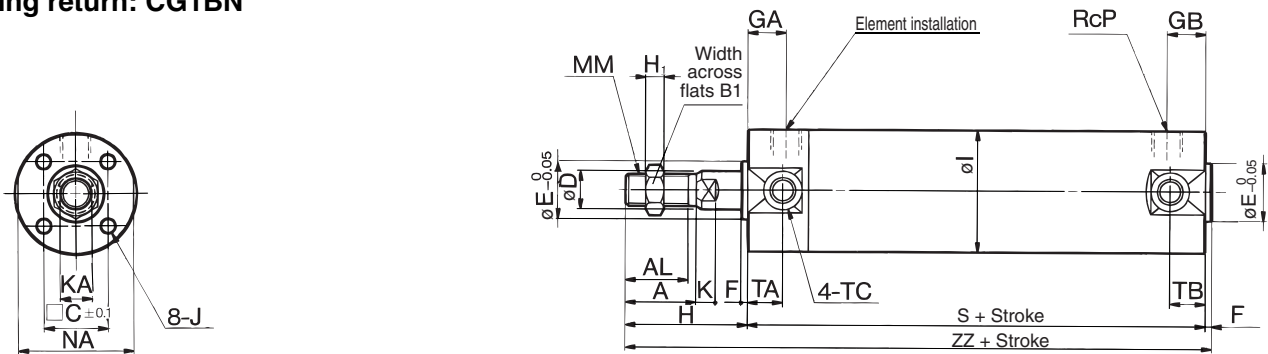
Replacement Parts: For Single Acting, Spring Extend

Replacement parts/Seal kits are the same as standard type, double acting, single rod (with rubber bumper). Refer to page 6-5-7.

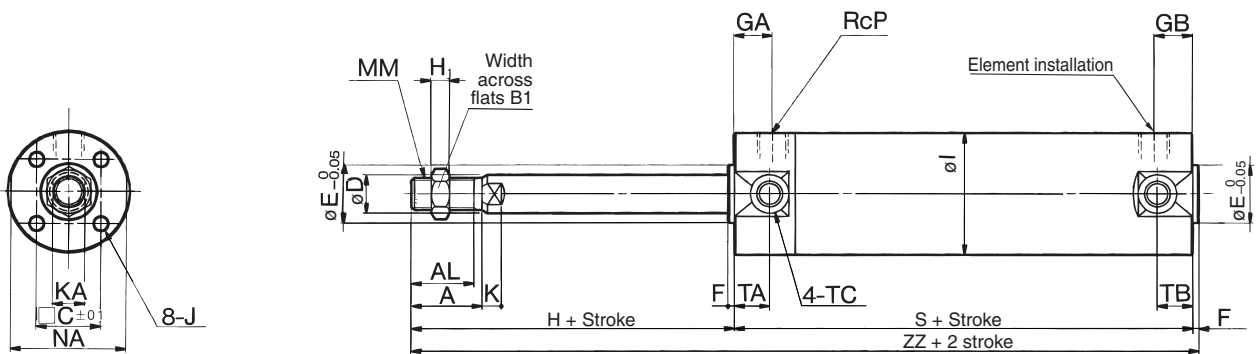
Series CG1

Basic Style

Spring return: CG1BN



Spring extend: CG1BN



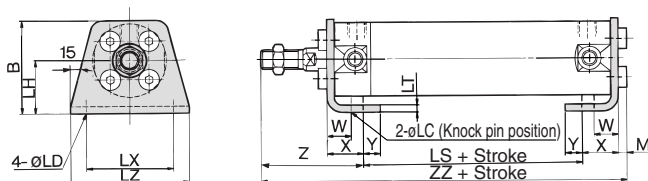
Bore size (mm)	Stroke range (mm)	A	AL	B1	C	D	E	F	GA	GB	H	H1	I	J	K	KA	MM	NA	P
20	Up to 125	18	15.5	13	14	8	12	2	12	10	35	5	26	M4 x 0.7 depth 7	5	6	M8 x 1.25	24	1/8
25	Up to 200	22	19.5	17	16.5	10	14	2	12	10	40	6	31	M5 x 0.8 depth 7.5	5.5	8	M10 x 1.25	29	1/8
32	Up to 200	22	19.5	17	20	12	18	2	12	10	40	6	38	M5 x 0.8 depth 8	5.5	10	M10 x 1.25	35.5	1/8
40	Up to 200	30	27	19	26	16	25	2	13	10	50	8	47	M6 x 1 depth 12	6	14	M14 x 1.5	44	1/8

Bore size (mm)	TA	TB	TC	1 to 50 st		51 to 100 st		101 to 125 st		126 to 200 st	
				S	ZZ	S	ZZ	S	ZZ	S	ZZ
20	11	11	M5 x 0.8	94	131	119	156	144	181	—	—
25	11	11	M6 x 0.75	94	136	119	161	144	186	169	211
32	11	10	M8 x 1.0	96	138	121	163	146	188	171	213
40	12	10	M10 x 1.25	103	155	128	180	153	205	178	230

With Mounting Bracket

Note) The drawing below shows the single acting/spring return style. The rod is in retracted state for spring extend type.

Axial foot style: CG1LN



Axial Foot Style

Bore size (mm)	Stroke range (mm)	B	M	LC	LD	LH	LT	LX	LZ	W	X	Y	Z
20	Up to 125	34	3	4	6	20	3	32	44	10	15	7	47
25	Up to 200	38.5	3.5	4	6	22	3	36	49	10	15	7	52
32	Up to 200	45	3.5	4	7	25	3	44	58	10	16	8	53
40	Up to 200	54.5	4	4	7	30	3	54	71	10	16.5	8.5	63.5

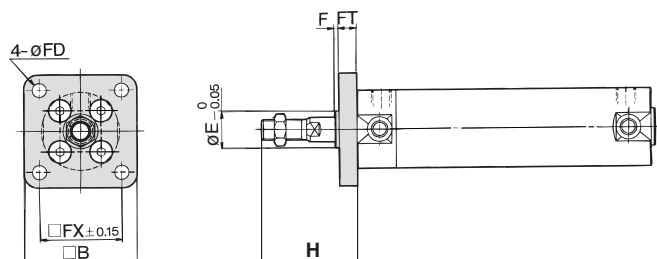
Bore size (mm)	1 to 50 st	51 to 100 st	101 to 125 st	126 to 200 st	1 to 50 st		51 to 100 st		101 to 125 st		126 to 200 st	
					LS	ZZ	LS	ZZ	LS	ZZ	LS	ZZ
20	70	135	95	160	120	185	—	—	—	—	—	—
25	70	140.5	95	165.5	120	190.5	145	215.5	—	—	—	—
32	70	142.5	95	167.5	120	192.5	145	217.5	—	—	—	—
40	76	160	101	185	126	210	151	235	—	—	—	—

* Other dimensions are the same as basic style.

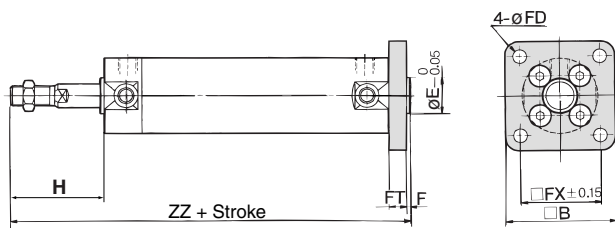
Air Cylinder: Standard Type Single Acting, Single Rod, Spring Return/Extend **Series CG1**

With Mounting Bracket

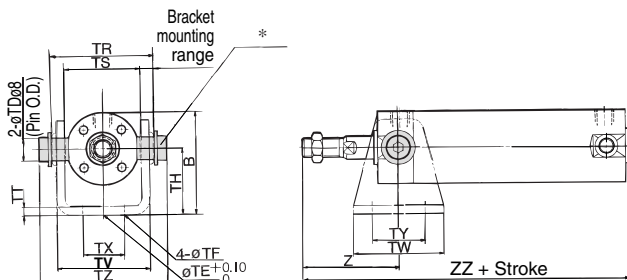
Rod side flange style: CG1FN



Head side flange style: CG1GN

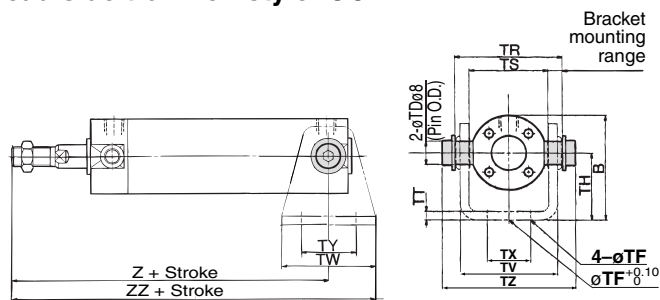


Rod side trunnion style: CG1UN

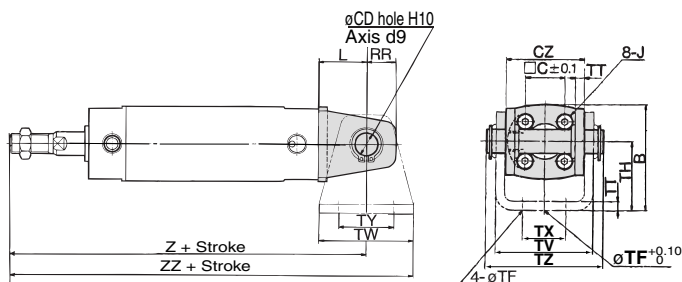


* Clevis pin and snap ring are shipped together.

Head side trunnion style: CG1TN



Clevis style: CG1DN



(The above shows the case port location is changed by 90°.)

Bore size (mm)	Stroke range (mm)	B	E	F	FX	FD	FT	H
20	Up to 125	40	12	2	28	5.5	6	35
25	Up to 200	44	14	2	32	5.5	7	40
32	Up to 200	53	18	2	38	6.6	7	40
40	Up to 200	61	25	2	46	6.6	8	50

* End boss is machined on the flange for øE.

* Other dimensions are the same as basic style.

Rod Side Flange Style

Bore size (mm)	ZZ			
	1 to 50 st	51 to 100 st	101 to 125 st	126 to 200 st
20	131	156	181	—
25	136	161	186	211
32	138	163	188	213
40	155	180	205	230

Head Side Flange Style

Bore size (mm)	ZZ			
	1 to 50 st	51 to 100 st	101 to 125 st	126 to 200 st
20	137	162	187	—
25	143	168	193	218
32	145	170	195	220
40	163	188	213	238

Bore size (mm)	Stroke range (mm)	B	TDe8	TE	TF	TH	TR	TS	TT	TV	TW	TX	TY	TZ
20	Up to 125	38	8 ^{-0.025} _{-0.047}	10	5.5	25	39	28	3.2	(35.8)	42	16	28	47.6
25	Up to 200	45.5	10 ^{-0.025} _{-0.047}	10	5.5	30	43	33	3.2	(39.8)	42	20	28	53
32	Up to 200	54	12 ^{-0.032} _{-0.059}	10	6.6	35	54.5	40	4.5	(49.4)	48	22	28	67.7
40	Up to 200	63.5	14 ^{-0.032} _{-0.059}	10	6.6	40	65.5	49	4.5	(58.4)	56	30	30	78.7

* Consists of pin, flat washer and hexagon socket head cap bolt.

* Other dimensions are the same as basic style.

Rod Side Trunnion Style

Bore size (mm)	Z	ZZ			
		1 to 50 st	51 to 100 st	101 to 125 st	126 to 200 st
20	46	131	156	181	—
25	51	136	161	186	211
32	51	138	163	188	213
40	62	155	180	205	230

Head Side Trunnion Style

Bore size (mm)	1 to 50 st		51 to 100 st		101 to 125 st		126 to 200 st	
	Z	ZZ	Z	ZZ	Z	ZZ	Z	ZZ
20	118	139	143	164	168	189	—	—
25	123	144	148	169	173	194	198	219
32	126	150	151	175	176	200	201	225
40	143	171	168	196	193	221	218	246

Clevis Style

Bore size (mm)	Stroke range (mm)	B	CD	CZ	L	RR	TE	TF	H	TT	TV
20	Up to 125	38	8	29	14	11	10	5.5	25	3.2	(35.8)
25	Up to 200	45.5	10	33	16	13	10	5.5	30	3.2	(39.8)
32	Up to 200	54	12	40	20	15	10	6.6	35	4.5	(49.4)
40	Up to 200	63.5	14	49	22	18	10	6.6	40	4.5	(58.4)

Bore size (mm)	TW	TX	TY	TZ	1 to 50 st		51 to 100 st		101 to 125 st		126 to 200 st	
					Z	ZZ	Z	ZZ	Z	ZZ	Z	ZZ
20	42	16	28	43.4	143	164	168	189	193	214	—	—
25	42	20	28	48	150	171	175	196	200	221	225	246
32	48	22	28	59.4	156	180	181	205	206	230	231	255
40	56	30	30	71.4	175	200	200	228	225	253	250	278

* For dimensions of pivot bracket, refer to page 6-5-12.

* Other dimensions are the same as basic style.

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

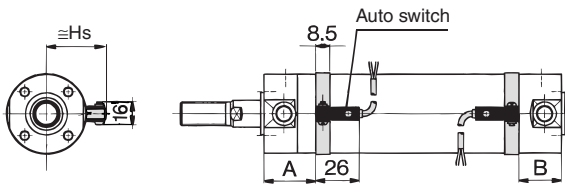
20-

Data

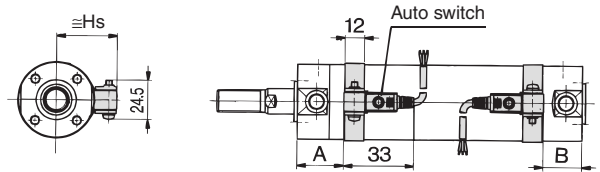
Series CG1

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

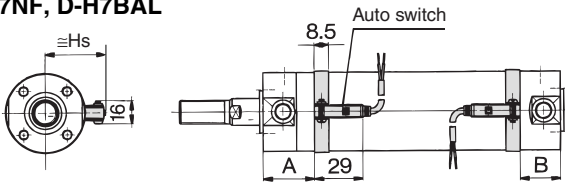
D-C7, D-C8



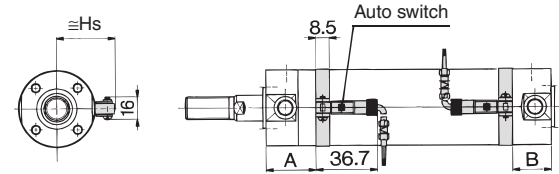
D-G5NTL



D-H7□, D-H7□W
D-H7NF, D-H7BAL

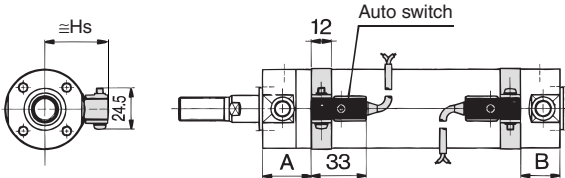


D-C73C, D-C80C

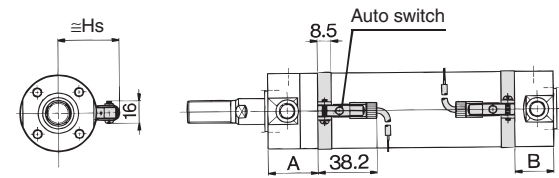


(36) : Denotes the values of D-H7LF.

D-B5, D-B6, D-B59W



D-H7C



Single Acting, Spring Return

Auto switch model	Bore size (mm)	A							B	Hs
		25	50	75	100	125	150	200		
D-C7	20	55	55	80	80	105	—	—	20.5	24.5(27)
D-C8	25	55	55	80	80	105	130	130	20.5	27(29.5)
D-C73C	32	56	56	81	81	106	131	131	21.5	30.5(33)
D-C80C	40	60.5	60.5	85.5	85.5	110.5	135.5	135.5	23.5	35(37.5)
D-H7□W	20	54	54	79	79	104	—	—	19.5	24.5(27.5)
D-H7□	25	54	54	79	79	104	129	129	19.5	27(30)
D-H7C	32	55	55	80	80	105	130	130	20.5	30.5(33.5)
D-H7BAL	40	59.5	59.5	84.5	84.5	109.5	134.5	134.5	22.5	35(38)
D-H7NF	20	49	49	74	74	99	—	—	15.5	27.5
D-B5	25	49	49	74	74	99	124	124	15.5	30
D-B6	32	50	50	75	75	100	125	125	15.5	33.5
	40	54.5	54.5	79.5	79.5	104.5	129.5	129.5	19	38
D-G5NTL	20	50.5	50.5	75.5	75.5	100.5	—	—	16	27.5
D-G59F	25	50.5	50.5	75.5	75.5	100.5	125.5	125.5	16	30
	32	51.5	51.5	76.5	76.5	101.5	126.5	126.5	17	33.5
	40	56	56	81	81	106	131	131	19	38
D-B59W	20	52	52	77	77	102	—	—	17.5	27.5
	25	52	52	77	77	102	127	127	17.5	30
	32	53	53	78	78	103	128	128	18.5	33.5
	40	57.5	57.5	82.5	82.5	107.5	132.5	132.5	20.5	38

() : Denotes the dimensions with connector.

Single Acting, Spring Extend

Auto switch model	Bore size (mm)	All stroke	B							Hs
			25	50	75	100	125	150	200	
D-C7	20	30	45.5	45.5	70.5	70.5	95.5	—	—	24.5(27)
D-C8	25	30	45.5	45.5	70.5	70.5	95.5	120.5	120.5	27(29.5)
D-C73C	32	31	46.5	46.5	71.5	71.5	96.5	121.5	121.5	30.5(33)
D-C80C	40	35.5	48.5	48.5	73.5	73.5	98.5	123.5	123.5	35(37.5)
D-H7□W	20	29	44.5	44.5	69.5	69.5	94.5	—	—	24.5(27.5)
D-H7□	25	29	44.5	44.5	69.5	69.5	94.5	119.5	119.5	27(30)
D-H7C	32	30	45.5	45.5	70.5	70.5	95.5	120.5	120.5	30.5(33.5)
D-H7BAL	40	34.5	47.5	47.5	72.5	72.5	97.5	122.5	122.5	35(38)
D-H7NF	20	24	39.5	39.5	64.5	64.5	89.5	—	—	27.5
D-B5	25	24	39.5	39.5	64.5	64.5	89.5	114.5	114.5	30
D-B6	32	25	40.5	40.5	65.5	65.5	90.5	115.5	115.5	33.5
	40	29.5	42.5	42.5	67.5	67.5	92.5	117.5	117.5	38
D-G5NTL	20	25.5	41	41	66	66	91	—	—	27.5
D-G59F	25	25.5	41	41	66	66	91	116	116	30
	32	26.5	42	42	67	67	92	117	117	33.5
	40	31	44	44	69	69	94	119	119	38
D-B59W	20	27	42.5	42.5	67.5	67.5	92.5	—	—	27.5
	25	27	42.5	42.5	67.5	67.5	92.5	117.5	117.5	30
	32	28	43.5	43.5	68.5	68.5	93.5	118.5	118.5	33.5
	40	32.5	45.5	45.5	70.5	70.5	95.5	120	120.5	38

() : Denotes the dimensions with connector.

Air Cylinder: Standard Type Single Acting, Single Rod, Spring Return/Extend **Series CG1**

Operating Range

Auto switch model	Bore size (mm)			
	20	25	32	40
D-C7□/C80 D-C73C/C80C D-B5□/B64	8	10	9	10
D-B59W	13	13	14	14
D-H7□/H7□W D-H7BAL	4	4	4.5	5
D-H7C	7	8.5	9	10
D-H7NF	5	5	5.5	6
D-G5NTL	4	4	4.5	5
D-G5NBL	35	40	40	45

* Since this is a guideline including hysteresis, not meant to be guaranteed.

(Assuming approximately ±30% dispersion)

There may be the case it will vary substantially depending on an ambient environment.

Other than the applicable auto switches listed in “How to Order”, the following auto switches can be mounted. For detailed specifications, refer to page 6-16-1.

Type	Model	Electrical entry	Features	Applicable bore size (mm)
Reed switch	D-C80	Grommet	Without indicator light	20 to 40
	D-C80C	Connector		
	D-B53	Grommet	—	
	D-B64		Without indicator light	

* Timer equipped type, solid state auto switch (D-G5NTL) is also available.

* Wide range detection type, solid state auto switch (D-G5NBL) is also available.

* With pre-wire connector is available for D-G5NTL and D-G5NBL.

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

20-

Data