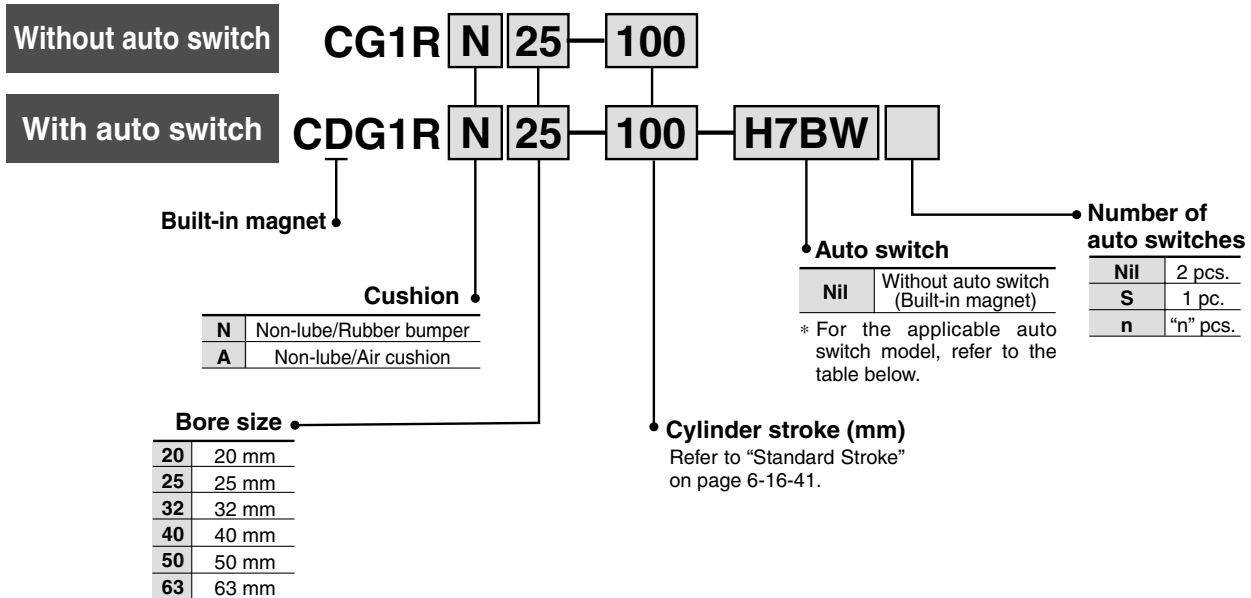


Air Cylinder: Direct Mount Type Double Acting, Single Rod

Series **CG1R**

ø20, ø25, ø32, ø40, ø50, ø63

How to Order



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		0.5 (Nil)	3 (L)	5 (Z)	None (N)		IC circuit	Relay, PLC	
							Applicable bore size (mm)								
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	C76	●	●	—	—	—	—	—
				2-wire	24 V	100 V, 200 V	B54	●	●	●	—	—	—	—	Relay, PLC
	100 V	C73	●			●	●	●	—	—					
	Diagnostic indication (2-color indication)	Grommet	Yes	—	—	B59W	●	●	—	—	—	—	—		
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	H7A1	●	●	○	—	○	—	IC circuit
				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
				3-wire (PNP)				H7PW	●	●	○	—	○	—	
				2-wire				H7BW	●	●	○	—	○	—	
				H7BA				—	●	○	—	○	—		
Water resistant (2-color indication)	Grommet	Yes	4-wire (NPN)	24 V	5 V, 12 V	—	H7NF	●	●	○	—	○	—	IC circuit	
With diagnostic output (2-color indication)			—				—	—	—	—	—	—			

* 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 6-5-45 for details.
- For details about auto switches with pre-wire connector, refer to page 6-16-60.

Air Cylinder: Direct Mount Type Double Acting, Single Rod **Series CG1R**

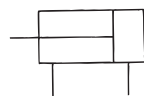
Series CG1R direct mount cylinder can be installed directly through the use of a square rod cover.

Space-saving has been realized.

Because it is a directly mounted style without using brackets, its overall length is shorter, and its installation pitch can be made smaller. Thus, the space that is required for installation has been dramatically reduced.



JIS Symbol



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

Symbol	Specifications
-XA□	Change of rod end shape
-XB6	Heat resistant cylinder (150°C)
-XB7	Cold resistant cylinder
-XB9	Low speed cylinder (10 to 50 mm/s)
-XB13	Low speed cylinder (5 to 50 mm/s)
-XC6	Piston rod and rod end nut made of stainless steel
-XC8	Adjustable stroke cylinder/Adjustable extension type
-XC9	Adjustable stroke cylinder/Adjustable retraction type
-XC13	Auto switch rail mounting
-XC20	Head cover axial port
-XC22	Fluoro rubber seals

Specifications

Bore size (mm)	20	25	32	40	50	63
Action	Double acting, Single rod					
Type	Non-lube					
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)					
Piston speed	50 to 1000 mm/s					
Thread tolerance	JIS Class 2					
Stroke length tolerance	Up to 300 ^{st+1.4} ₀ mm					
Cushion	Rubber bumper, Air cushion					

Weight

Bore size (mm)	20	25	32	40	50	63
Basic weight	0.14	0.23	0.35	0.57	1.04	1.49
Single knuckle joint	0.05	0.09	0.09	0.10	0.22	0.22
Double knuckle joint (With pin)	0.05	0.09	0.09	0.13	0.26	0.26
Additional weight per each 50 mm of stroke	0.05	0.07	0.09	0.15	0.22	0.26
Additional weight with air cushion	0.01	0.01	0.02	0.02	0.03	0.03

Calculation: (Example) CG1RN32-100 (ø32, 100 st)

- Basic weight..... 0.35
 - Additional weight..... 0.09/50 st
 - Cylinder stroke..... 100 st
- 0.35 + 0.09 x 100/50 = 0.53 kg

Accessory

Mounting		Basic style
Standard equipment	Rod end nut	●
Option	Single knuckle joint	●
	Double knuckle joint * (With pin)	●

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

Standard Stroke

Bore size (mm)	Standard stroke * (mm)
20	25, 50, 75, 100, 125, 150
25, 32	25, 50, 75, 100, 125, 150, 200
40, 50, 63	25, 50, 75, 100, 125, 150, 200, 250, 300

* Other intermediate strokes can be manufactured upon receipt of order. Long strokes are not available. Spacers are not used for intermediate strokes.

Auto Switch Mounting Bracket Part No.

Auto switch model	Bore size (mm)					
	20	25	32	40	50	63
D-C7/C8	BMA2-020	BMA2-025	BMA2-032	BMA2-040	BMA2-050	BMA2-063
D-H7						
D-B5/B6	BA-01	BA-02	BA-32	BA-04	BA-05	BA-06
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.
(Please order the mounting band separately, since it is not included.)

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

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

20-

Data

Series CG1R

Clean Series

10-CG1RN **Bore size** — **Stroke**

Clean Series (With relief port)

The rod portion of the actuator has a double seal construction, and a relief port is provided to discharge the exhaust air directly outside of the clean room.

Thus, it can be used in a Class 100 clean room.

Specifications

Bore size (mm)	20, 25, 32, 40, 50, 63
Action	Double acting
Fluid	Air
Maximum operating pressure	1.0 MPa
Minimum operating pressure	0.05 MPa
Cushion	Rubber bumper
Piston speed	50 to 400 mm/s
Relief port size	M5 x 0.8

* Auto switch can be mounted.

For details, refer to the separate catalog, "Pneumatic Clean Series".

Copper-free

20-CG1R **Type** — **Bore size** — **Stroke**

Copper-free

This cylinder eliminates any influences of copper ions or fluororesins on color CRTs.

Copper materials have been nickel plated or replaced with non-copper materials to prevent the generation of copper ions.

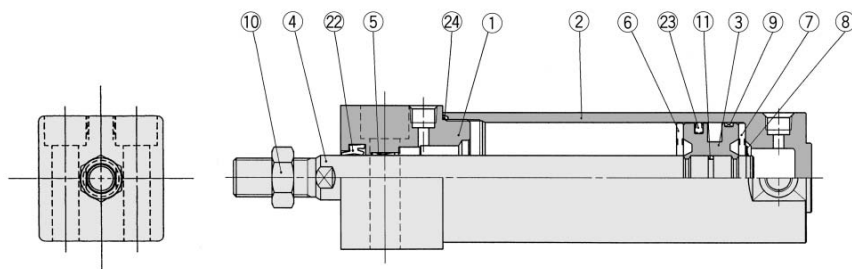
Specifications

Bore size (mm)	20, 25, 32, 40, 50, 63	
Action	Double acting	
Fluid	Air	
Maximum operating pressure	1.0 MPa	
Minimum operating pressure	0.05 MPa	
Cushion	Type N	With rubber bumper
	Type A	With air cushion
Relief port size	50 to 1000 mm/s	

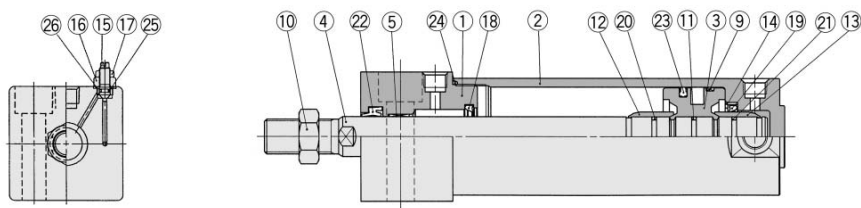
Air Cylinder: Direct Mount Type Double Acting, Single Rod Series **CG1R**

Construction

Basic style: Bottom mounting style/with rubber bumper



With air cushion



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 or larger: Lead-bronze casted
⑥	Bumper A	Urethane	
⑦	Bumper B	Urethane	ø40 or larger: The same as bumper A
⑧	Snap ring	Stainless steel	
⑨	Wear ring	Resin	
⑩	Rod end nut	Rolled steel	Nickel plated
⑪	Piston gasket	NBR	
⑫	Cushion ring A	Brass	
⑬	Cushion ring B	Brass	ø32 or larger: The same as A

No.	Description	Material	Note
⑭	Seal retainer	Rolled steel	
⑮	Cushion valve	Rolled steel	Electroless nickel plated
⑯	Valve retainer	Rolled steel	Electroless nickel plated
⑰	Lock nut	Carbon steel	Nickel plated
⑱	Cushion seal A	Urethane	
⑲	Cushion seal B	Urethane	
⑳	Cushion ring gasket A	NBR	
㉑	Cushion ring gasket B	NBR	ø32 or larger: The same as A
㉒	Rod seal	NBR	
㉓	Piston seal	NBR	
㉔	Tube gasket	NBR	
㉕	Valve seal	NBR	
㉖	Valve retaining 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/Seal kit are the same as standard type, double acting, single rod. Refer to page 6-5-7.

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

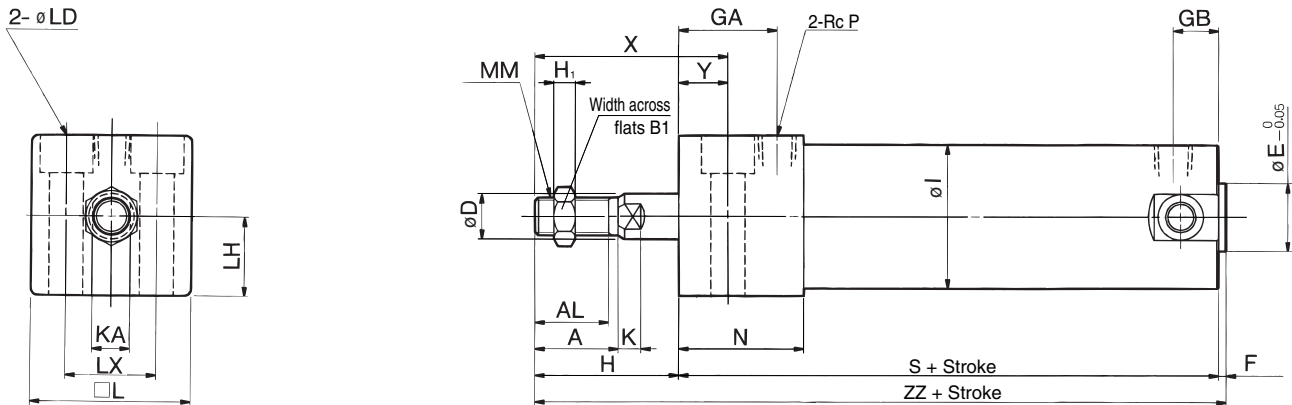
20-

Data

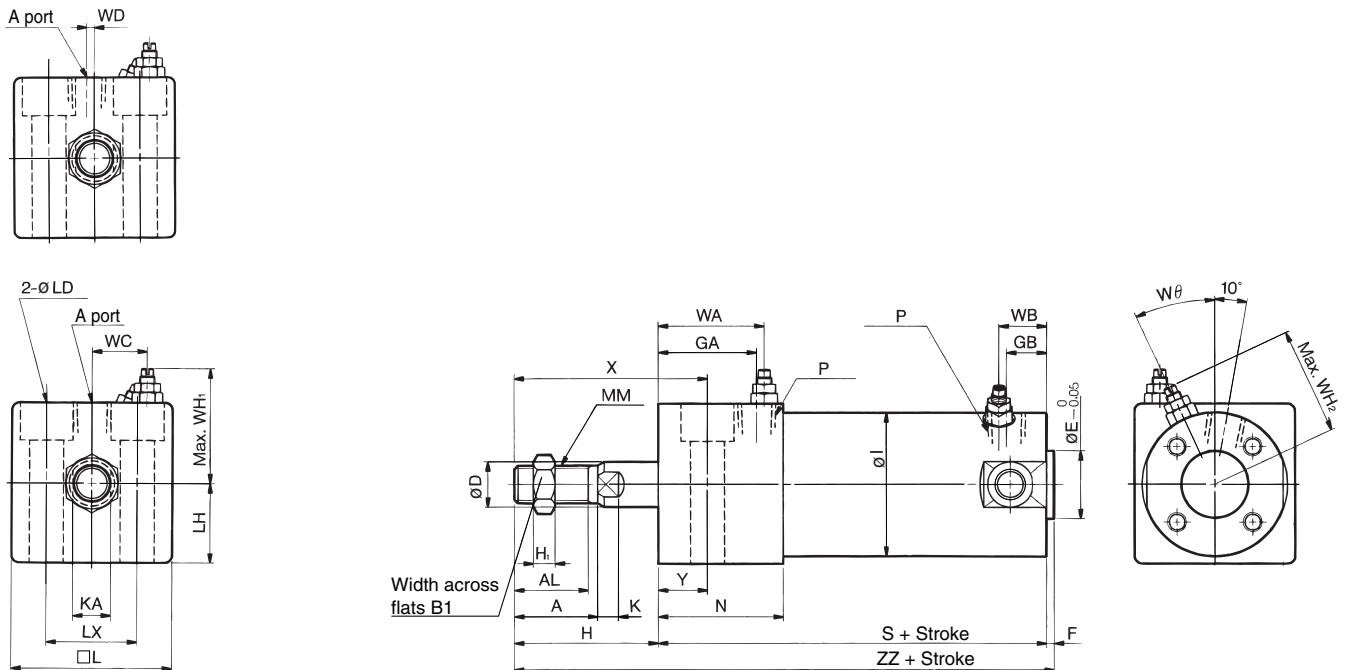
Series CG1R

Basic Style with Bottom Mounting

With rubber bumper: CG1RN



With air cushion: CG1RA



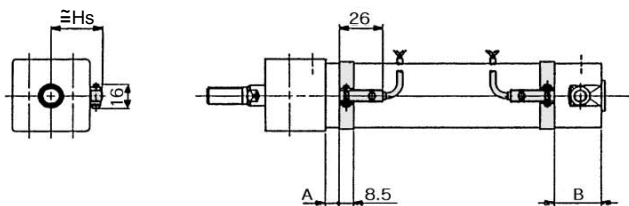
Bore size (mm)	Stroke range (mm)	A	AL	B ₁	D	E	F	GA	GB	H	H ₁	I	K	KA	L	LD	LH	LX	MM	N	P	S	X	Y	ZZ
20	Up to 150	18	15.5	13	8	12	2	20	10	27	5	26	5	6	30.4	ϕ 5.5, ϕ 9.5 counterbore depth 6	15	18	M8 x 1.25	27	1/8	75	38	11	104
25	Up to 200	22	19.5	17	10	14	2	22	10	32	6	31	5.5	8	36.4	ϕ 6.6, ϕ 11 counterbore depth 7	18	22	M10 x 1.25	29	1/8	77	44	12	111
32	Up to 200	22	19.5	17	12	18	2	26	10	32	6	38	5.5	10	42.4	ϕ 9, ϕ 14 counterbore depth 9	21	24	M10 x 1.25	33	1/8	83	45	13	117
40	Up to 300	30	27	19	16	25	2	30	10	39	8	47	6	14	52.4	ϕ 11, ϕ 17.5 counterbore depth 12	26	32	M14 x 1.5	37	1/8	94	55	16	135
50	Up to 300	35	32	27	20	30	2	33	12	45	11	58	7	18	64.5	ϕ 14, ϕ 20 counterbore depth 14	32	41	M18 x 1.5	44	1/4	108	62	17	155
63	Up to 300	35	32	27	20	32	2	39	12	45	11	72	7	18	76.6	ϕ 18, ϕ 26 counterbore depth 18	38	46	M18 x 1.5	50	1/4	114	64	19	161

With Air Cushion

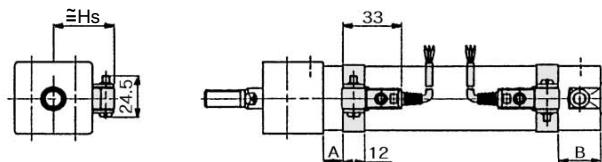
Bore size (mm)	Stroke range (mm)	P	WA	WB	WC	WD	WH	WH ₂	W θ
20	Up to 150	M5 x 0.8	22	15	8.5	2	25	23	30°
25	Up to 200	M5 x 0.8	24	15	11	2	27.5	25	30°
32	Up to 200	Rc 1/8	28	15	14.5	—	30.5	28.5	25°
40	Up to 300	Rc 1/8	32	15	18.5	—	35.5	33	20°
50	Up to 300	Rc 1/4	36	17	22	—	43.5	40.5	20°
63	Up to 300	Rc 1/4	42	17	29	—	49.5	47.5	20°

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

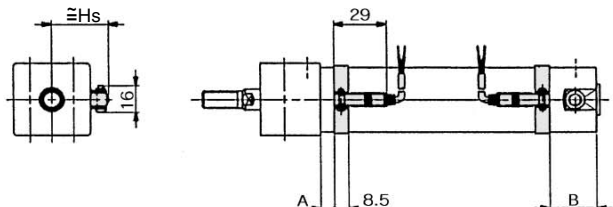
D-C7



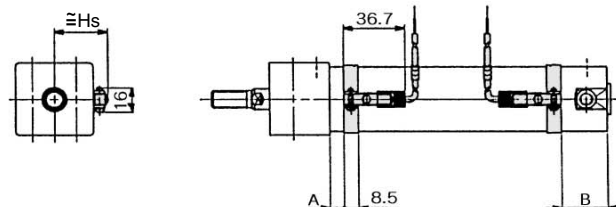
D-G5, D-K5



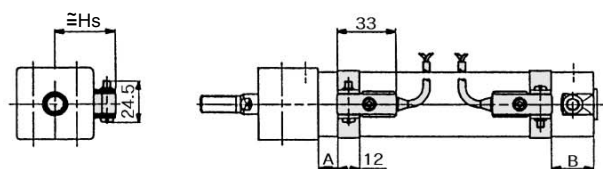
D-H7



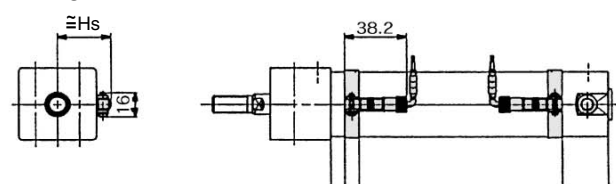
D-C73C



D-B5



D-H7C



Proper Auto Switch Mounting Position

Auto switch model	D-C7/C8 D-C73C/ C80C		D-B5/B6		D-B59W		D-H7□W D-H7NF D-H7BAL D-H7□ D-H7C		D-G5NTL	
	A	B	A	B	A	B	A	B	A	B
20	9	20.5	3	15.5	6	17.5	8	19.5	4.5	16
25	9	20.5	3	15.5	6	17.5	8	19.5	4.5	16
32	10	21.5	4	15.5	7	18.5	9	20.5	5.5	17
40	14.5	23.5	8.5	19	11.5	20.5	13.5	22.5	10	19
50	17	28.5	11	22.5	14	25.5	16	27.5	12.5	24
63	17	28.5	11	22.5	14	25.5	16	27.5	12.5	24

Auto Switch Mounting Height

D-C7/C8 D-H7□ D-H7□W D-H7□F D-H7BAL	D-C73C D-C80C	D-B5/B6 D-B59W D-G5NTL D-H7C
Hs	Hs	Hs
24.5	27	27.5
27	29.5	30
30.5	33	33.5
35	37.5	38
40.5	43	43.5
47.5	50	50.5

Operating Range

Auto switch model	Bore size (mm)					
	20	25	32	40	50	63
D-C7□/C80/C73C/C80C D-B5□/B64	8	10	9	10	10	11
D-B59W	13	13	14	14	14	17
D-H7NF/D-H7□/H7□W/H7BAL D-H7C	4	4	4.5	5	6	6.5
D-G5NTL	7	8.5	9	10	9.5	10.5
D-G5NBL	4	4	4.5	5	6	6.5
	35	40	40	45	45	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 63
	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