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Type C2 Solenoid Operated Low-pressure Relief Valve



JIS graphic symbols for hydraulic system

Refer to the next page.

Features

- These normally open type valves are capable of pressure control from the low pressure range because of a structure that supplies the external pilot flow rate to the built-in flow rate adjusting valve.
- Provides the function of an unload valve itself, eliminating the need for an unload circuit.

Nomenclature

※ - C2RLS - G ※※ - ※ ※ ※ - 30 - ※ ※ - ※

1 2 3 4 5 6 7 8 9 10 11

1 Applicable fluid code

No designation: Petroleum-based hydraulic fluid
 H: Water-glycol hydraulic fluid
 F: Phosphate ester hydraulic fluid

2 Model No.

C2RLS: Type C2 external solenoid pilot operated low-pressure relief valve

3 Connections

G: Gasket mount type

4 Nominal diameter

03: $\frac{3}{8}$
 06: $\frac{3}{4}$

5 Circuit code

A: Normally closed type (on-load state when demagnetized)
 B: Normally open type (unload state when demagnetized)

6 Pressure adjustment range

1: Up to 7 MPa {Up to 70 kgf/cm²}
 2: Up to 16 MPa {Up to 160 kgf/cm²}

7 Voltage code for the solenoid valve

A: AC 100 V (50/60 Hz), AC 110 V (60 Hz)
 B: AC 200 V (50/60 Hz), AC 220 V (60 Hz)
 P: DC 24 V

8 Design No. (The design No. is subject to change)

9 Drainage code

No designation: Internal drain type
 X: Internal drain type*¹
 E: External drain type

10 Option code

No designation: Pressure adjusting handle type
 H: Pressure adjusting small handle type
 F: Screw adjusting type with a cap

11 Solenoid pilot valve option code

Refer to the option code table for KSO-G02 on Page G-12.

Note: *¹ When the solenoid pilot option with grounding terminal (code E, EN, ENR, etc.) is selected for an internal drain type model, the drainage code is "X".

Specifications

Model code	Nominal diameter	Maximum operating pressure MPa {kgf/cm ² }	Pressure adjustment range* ² MPa {kgf/cm ² }	Maximum flow rate L/min	External pilot flow rate L/min	Mass kg
C2RLS-G03-※1※-30	$\frac{3}{8}$	21 {210} (External pilot pressure)	Up to 7 {Up to 70}	100	0.5 to 0.6	7.1
C2RLS-G03-※2※-30			Up to 16 {Up to 160}			
C2RLS-G06-※1※-30	$\frac{3}{4}$		Up to 7 {Up to 70}	250	0.8 to 1.2	10.1
C2RLS-G06-※2※-30			Up to 16 {Up to 160}			

Note: *² The minimum adjustment pressure varies depending on the flow rate. See the minimum adjustment pressure characteristics of C2RL-G** on Page E-34 for details.

For information on performance curves, see the one for C2RL-G** on Page E-34.
 For the specifications of the solenoid, see the one for KSO-G02 on Page G-12.

Model code	Pressure change MPa {kgf/cm ² } per handle revolution
C2RLS-G**-※1※	2.5 {25}/revolution
C2RLS-G**-※2※	4.6 {46}/revolution

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5: JIS graphic symbols for hydraulic system

Circuit code		A		B	
		Simplified symbols	Detailed symbols	Simplified symbols	Detailed symbols
JIS graphic symbols for hydraulic system	Internal drain type				
	External drain type				
Applicable solenoid model code		KSO-G02-3A※-30-66H (※: Voltage code)		KSO-G02-3A※-30-T66 (※: Voltage code)	
Applicable pilot relief valve model code		CR-S02P-※-10 (※: Pressure adjustment range)			
Solenoid valve excitation state		OFF	ON	OFF	ON
Operation state		Set pressure	Unload	Unload	Set pressure

E PRESSURE CONTROL VALVES

Sub-plate model code

- The sub-plate is not provided with the valve. Order it separately as required by specifying the model code given in the table below.

Model code	Nominal diameter	Connection port diameter	Mass kg
JGB-03M	3/8	Rc3/8	1.6
JGB-03M04		Rc1/2	
JGB-06M	3/4	Rc3/4	3.9
JGB-06M08		Rc1	

Refer to Page S-6 for the dimensions of the sub-plate.

Accessories

Model No.	Hexagon socket head cap bolt	Quantity	Tightening torque N·m {kgf·cm}
C2RLS-G03	M10 × 60	4	51 to 68 {510 to 680}
C2RLS-G06	M10 × 75	4	51 to 68 {510 to 680}

Handling

- Directly connect the tank piping of the valve to the tank without merging it with other tank piping and arrange it such that the back pressure of the tank port can be maintained at no greater than 0.5 MPa {5 kgf/cm²}.
- External pilot pressure is required to operate the valve. Set the external pilot pressure 1 MPa {10 kgf/cm²} higher than the maximum adjustment pressure.
- When using the valve as a safety valve, set the pressure 1 to 1.5 MPa {10 to 15 kgf/cm²} higher than the pressure set for the hydraulic circuit.
- Use a valve with the flow rate given in the table below or higher since the pressure setting may be unstable if the flow rate is too low.

Model No.	Minimum flow rate L/min
C2RLS-G03	12
C2RLS-G06	15

Drain type setting guide

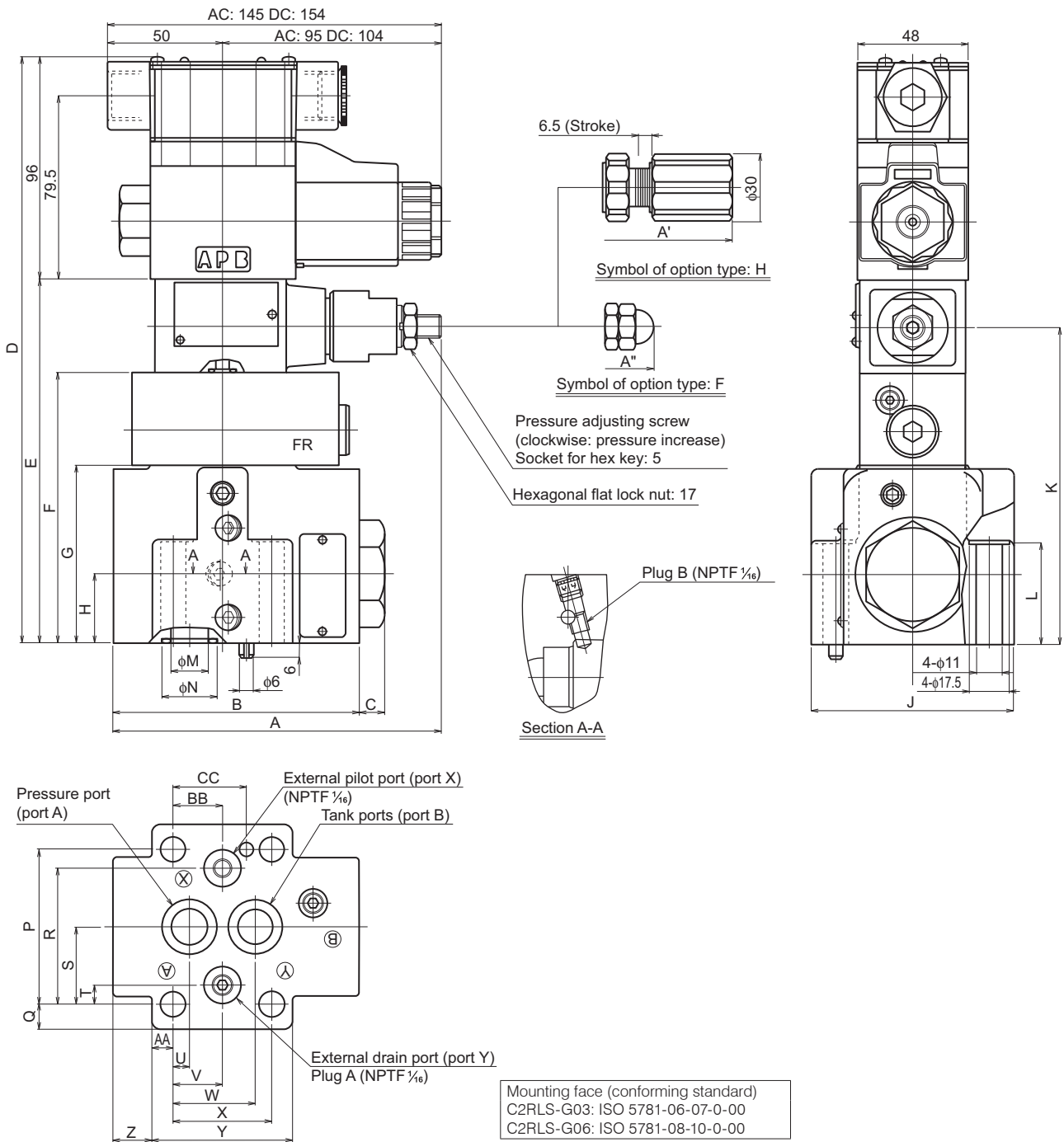
- Either the internal or external drain type can be set by fitting/removing plugs. When the valve is set as the external drain type, connect the piping directly from the external drain port (port Y) to the tank.

	Internal drain type	External drain type	Hexagon socket taper thread plug	Tightening torque N·m {kgf·cm}
Plug A	Provided	Not provided	NPTF1/16	6 to 7.5 {60 to 75}
Plug B	Not provided	Provided		

See the external dimension diagram on Page E-38 for the positions of plugs A and B.

External dimension diagram

C2RLS-G**



Model No.	Dimensions														
	A	A'	A''	B	C	D	E	F	G	H	J	K	L	M	N
C2RLS-G03	142.5	147.5	182	107	11	253	157	117	77	30	88	137	44	16	24
C2RLS-G06	152	157	191.5	127	14	271	175	135	95	40	102	155	59	24	34

Model No.	Dimensions													
	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC
C2RLS-G03	66.7	10.65	58.7	33.3	7.9	7.1	21.4	35.7	42.9	61	17	9.05	21.4	31.8
C2RLS-G06	79.4	11.3	73	39.7	6.4	11.1	39.7	49.2	60.3	82	16	10.85	20.8	44.5

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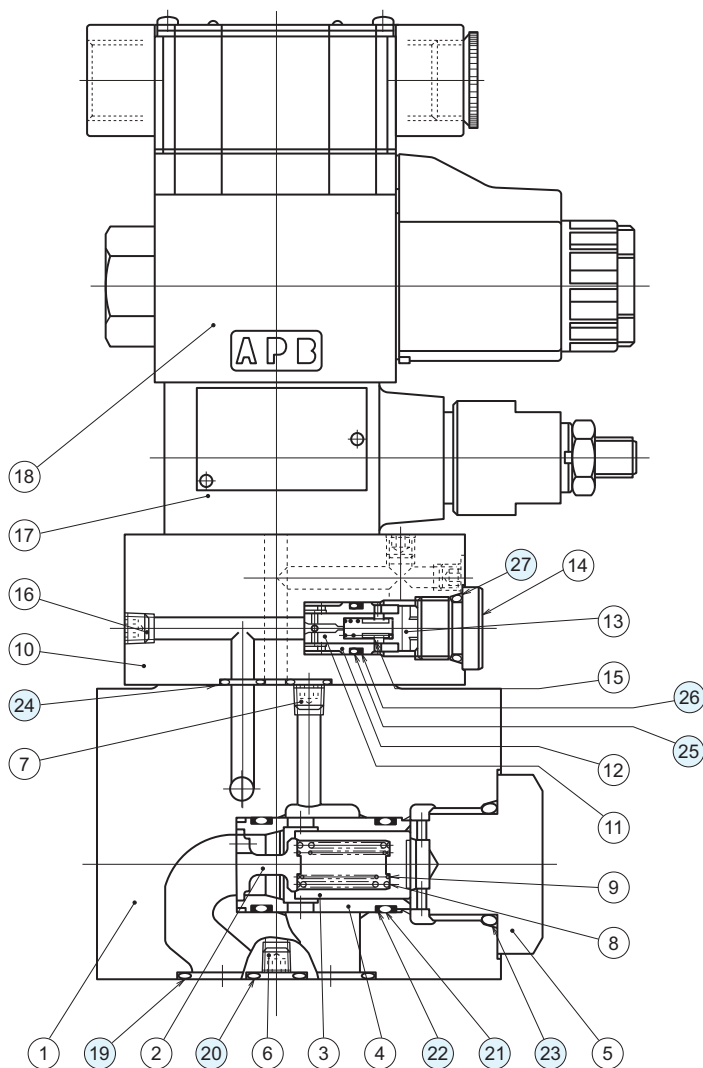
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Sectional structural diagram

C2RLS-G**



Sealing part table

Part No.	Name	Quantity	Part specifications	
			C2RLS-G03	C2RLS-G06
19	O-ring	2	JIS B 2401 1B P20	JIS B 2401 1B P28
20	O-ring	2	JIS B 2401 1B P12	JIS B 2401 1B P12
21	O-ring	2	AS568-020 (NBR, Hs90)	AS568-122 (NBR, Hs90)
22	Backup ring	4	Bias cut for AS568-020	Bias cut for AS568-122
23	O-ring	1	AS568-215 (NBR, Hs90)	AS568-222 (NBR, Hs90)
24	O-ring	4	JIS B 2401 1B P9	JIS B 2401 1B P9
25	O-ring	1	AS568-013 (NBR, Hs90)	AS568-013 (NBR, Hs90)
26	Backup ring	1	Bias cut for AS568-013	Bias cut for AS568-013
27	O-ring	1	JIS B 2401 1B P14	JIS B 2401 1B P14