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Pressure Control Valves



JIS graphic symbols for hydraulic system

Refer to the next page.

Features

- These direct operated pressure control valves can be used as sequence valves, unload valves, counter balance valves, or relief valves by changing the combination of internal and external pilot and drain settings.

Nomenclature

※ - JQ ※ - ※ ※ ※ - 2 ※ - ※ ※ - ※

1 2 3 4 5 6 7 8 9

1 Applicable fluid code

No designation: Petroleum-based hydraulic fluid, water-glycol hydraulic fluid
F: Phosphate ester hydraulic fluid

2 Model No.

JQ: JQ type pressure control valve

3 Check valve code

No designation: Without check valve
C: With check valve

4 Connections

G: Gasket mount type
T: Screw connection type
F: Flange connection type

5 Nominal diameter

03: 3/8
06: 3/4
10: 1 1/4
16: 2

6 Function code (See JIS graphic symbols for hydraulic system)*1

2: Sequence valve (internal pilot type, external drain type)
<With no option code designation>
Counter balance valve (internal/external pilot type, external drain type)
<With "W" option code designation>

7 Pressure adjustment range

A: 0.25 to 0.85 MPa {2.5 to 8.5 kgf/cm²}
C: 0.85 to 3.5 MPa {8.5 to 35 kgf/cm²}
E: 3.5 to 14 MPa {35 to 140 kgf/cm²}
D: 1.75 to 7 MPa {17.5 to 70 kgf/cm²}*2

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

12: Gasket mount type (G), screw connection type (T)
20: Flange mount type (F) <With nominal diameter of 06 (3/4), 10 (1 1/4)>
21: Flange mount type (F) <With nominal diameter of 16 (2)>

9 Option code

No designation: Single pilot type (Internal or external pilot type)
W: Double pilot type (Internal and external pilot type)

Note: *1 The products are supplied with a function code of 2 as standard. If a product with a function code of 1, 3 or 4 is required, change the setting by referring to the setting guide on Page E-46. After changing the setting, correct the model code marked on the nameplate.

*2 Pressure adjustment range: code D is only applicable to nominal diameter code 16 (2).

Specifications

Model code			Nominal diameter	Maximum operating pressure MPa {kgf/cm ² }	Pressure adjustment range MPa {kgf/cm ² }	Maximum flow rate L/min
Gasket mount type (G)	Screw connection type (T)	Flange mount type (F)				
JQ(C)-G03-※A-12	JQ(C)-T03-※A-12	-	3/8	21 {210}	0.25 to 0.85 { 2.5 to 8.5 }	50
JQ(C)-G03-※C-12-(W)	JQ(C)-T03-※C-12-(W)	-			0.85 to 3.5 { 8.5 to 35 }	
JQ(C)-G03-※E-12-(W)	JQ(C)-T03-※E-12-(W)	-			3.5 to 14 {35 to 140 }	
JQ(C)-G06-※A-12	JQ(C)-T06-※A-12	JQC-F06-※A-20	3/4	21 {210}	0.25 to 0.85 { 2.5 to 8.5 }	120
JQ(C)-G06-※C-12-(W)	JQ(C)-T06-※C-12-(W)	JQC-F06-※C-20-(W)			0.85 to 3.5 { 8.5 to 35 }	
JQ(C)-G06-※E-12-(W)	JQ(C)-T06-※E-12-(W)	JQC-F06-※E-20-(W)			3.5 to 14 {35 to 140 }	
JQ(C)-G10-※A-12	JQ(C)-T10-※A-12	JQC-F10-※A-20	1 1/4	21 {210}	0.25 to 0.85 { 2.5 to 8.5 }	280
JQ(C)-G10-※C-12-(W)	JQ(C)-T10-※C-12-(W)	JQC-F10-※C-20-(W)			0.85 to 3.5 { 8.5 to 35 }	
JQ(C)-G10-※E-12-(W)	JQ(C)-T10-※E-12-(W)	JQC-F10-※E-20-(W)			3.5 to 14 {35 to 140 }	
-	-	JQC-F16-※D-21	2	21 {210}	1.75 to 7 {17.5 to 70 }	500
-	-	JQC-F16-※E-21			3.5 to 14 {35 to 140 }	

Model code	Pressure change MPa {kgf/cm ² } per handle revolution	Model code	Pressure change MPa {kgf/cm ² } per handle revolution
JQ(C)-※03-※A	0.07 { 0.7 }/revolution	JQ(C)-※10-※A	0.07 { 0.7 }/revolution
JQ(C)-※03-※C	0.3 { 3 }/revolution	JQ(C)-※10-※C	0.27 { 2.7 }/revolution
JQ(C)-※03-※E	2.7 {27 }/revolution	JQ(C)-※10-※E	1.1 {11 }/revolution
JQ(C)-※06-※A	0.07 { 0.7 }/revolution	JQC-F16-※D	0.86 { 8.6 }/revolution
JQ(C)-※06-※C	0.3 { 3 }/revolution	JQC-F16-※E	1.08 { 10.8 }/revolution
JQ(C)-※06-※E	2.1 {21 }/revolution		

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



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



Mass (kg)



Model No.	(1)	(2)	(3)	Model No.	(1)	(2)	(3)	Model No.	(2)	(3)
JQ(C)-G03	3.5	3.8	4.3	JQ(C)-T03	2.9	3.1	3.6	JQC-F06	6.2	7.1
JQ(C)-G06	6	6.5	7.4	JQ(C)-T06	5	5.4	6.3	JQC-F10	3.5	15.2
JQ(C)-G10	11.5	12.8	14.5	JQ(C)-T10	9.8	11.1	12.8	JQC-F16	38.8	-

Note: Mass (1) Single pilot type without check valve (2) Single pilot type with check valve (3) Double pilot type with check valve

6: JIS graphic symbols for hydraulic system

Model code	JQ-***-1*	JQ-***-2*	JQ-***-3*	JQ-***-4*
Name	Relief valve	Sequence valve	Sequence valve	Unload valve
Pilot method	Internal pilot type	Internal pilot type	External pilot type	External pilot type
Drain method	Internal drain type	External drain type	External drain type	Internal drain type
JIS graphic symbols for hydraulic system				

Model code	JQC-***-1*	JQC-***-2*	JQC-***-3*	JQC-***-4*
Name	Counterbalance valve	Sequence valve with check valve	Sequence valve with check valve	Counterbalance valve
Pilot method	Internal pilot type	Internal pilot type	External pilot type	External pilot type
Drain method	Internal drain type	External drain type	External drain type	Internal drain type
JIS graphic symbols for hydraulic system				

Model code	JQC-***-1*-W	JQC-***-2*-W
Name	Counterbalance valve	Sequence valve with check valve
Pilot method	Internal/external pilot type	Internal/external pilot type
Drain method	Internal drain type	External drain type
JIS graphic symbols for hydraulic system		

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	Rc 3/8	1.6
JGB-03M04		Rc 1/2	
JGB-06M	3/4	Rc 3/4	3.9
JGB-06M08		Rc1	
JGB-10M	1 1/4	Rc1 1/4	6.7
JGB-10M12		Rc1 1/2	

Refer to Page S-7 for the dimensions of the sub-plate.

Accessories

Connections	Model No.	Hexagon socket head cap bolt	Quantity	Tightening torque N·m {kgf·cm}
Gasket mount type	JQ(C)-G03	M10 × 75	4	48 to 63 {480 to 630}
	JQ(C)-G06	M10 × 85	4	
	JQ(C)-G10	M10 × 105	6	
Flange connection type	Flange (JIS B 2291 SSA), O-ring, mounting bolts			

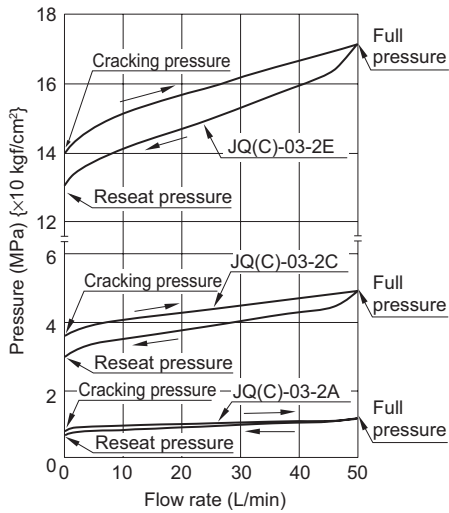
Handling

- The pressure adjustment ranges are indicated using cracking pressures.
- For products with a function code of 1 or 4 (internal drain type), connect the secondary side pressure port directly to the tank.
- For products with a function code of 2 or 3 (external drain type), connect the secondary side pressure port directly to the tank.
- For products with the pressure adjustment range code E, do not change the drain/pilot setting to function code 1 (internal pilot type, internal drain type). Otherwise, chattering may occur.
- When connecting two or more of these valves for sequential operation, set the valve pressures such that there is a minimum difference of 1 MPa {10 kgf/cm²} between two valves.

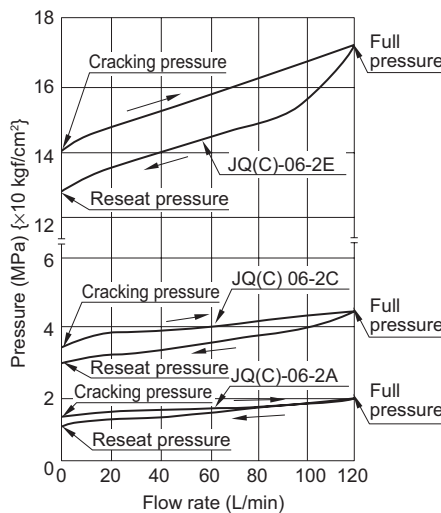
Performance curves (viscosity: 32 mm²/s {cSt})

• Flow rate - Pressure characteristics

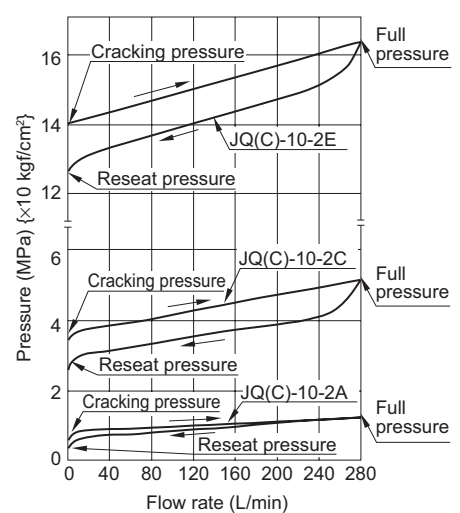
JQ(C)-×03



JQ(C)-×06



JQ(C)-×10

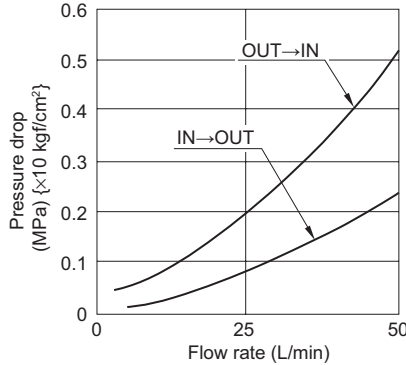


• Pressure drop characteristics

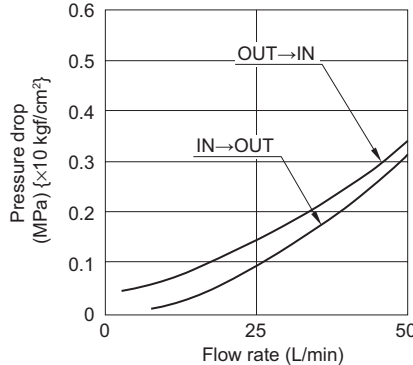
OUT → IN: Check valve passing resistance

IN → OUT: Pressure drop with the pressure adjusting screw fully open

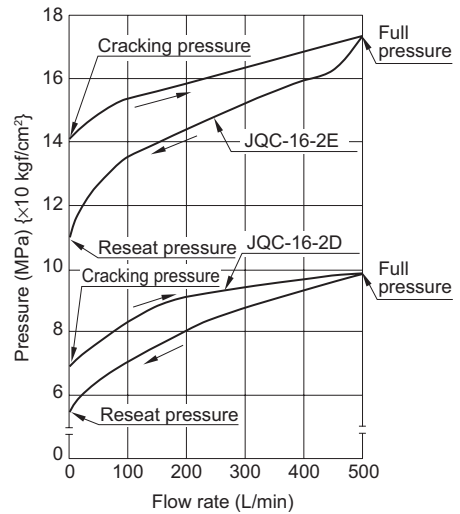
JQ(C)-G03



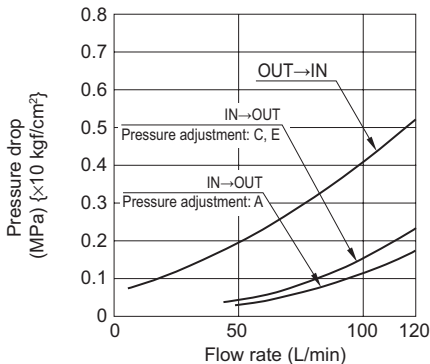
JQ(C)-T03



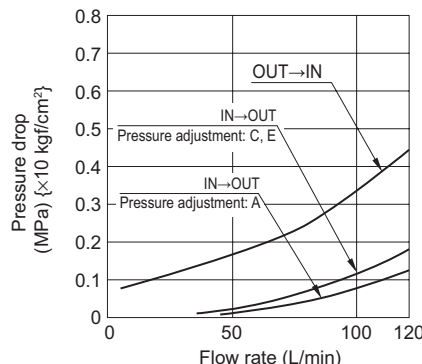
JQC-F16



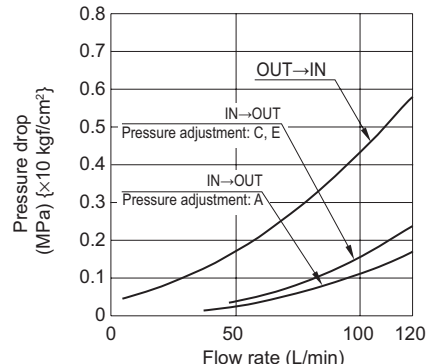
JQ(C)-G06



JQ(C)-T06



JQC-F06



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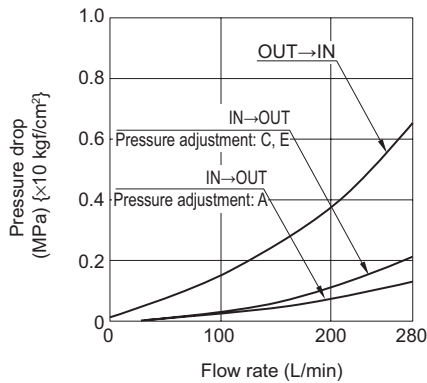
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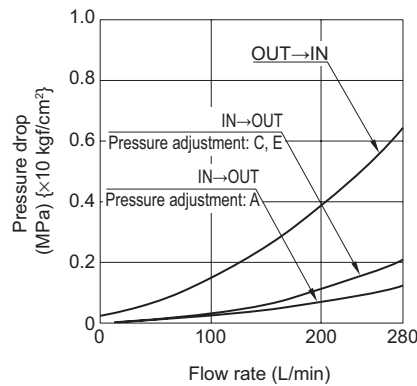
Performance curves (viscosity: 32 mm²/s {cSt})

• Pressure drop characteristics

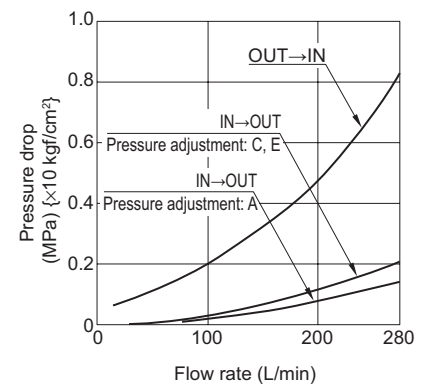
JQ(C)-G10



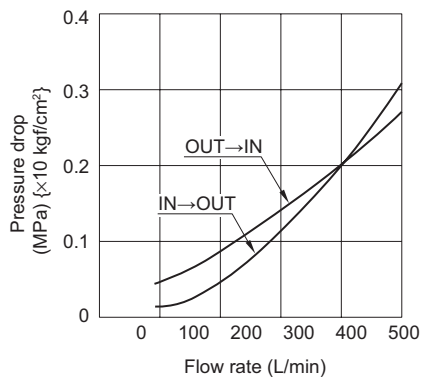
JQ(C)-T10



JQC-F10

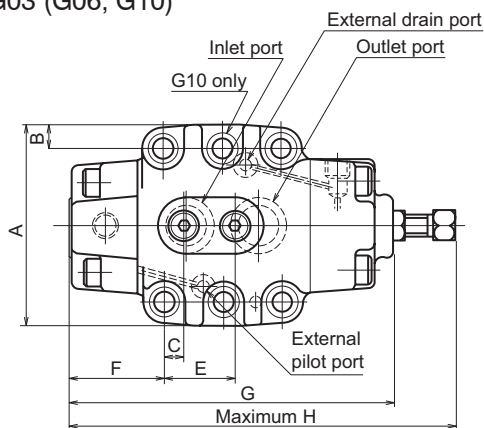


JQC-F16



External dimension diagram

JQ-G03 (G06, G10)



Model No.	A	B	C	E	F	G	H	J
JQ (C)-G03	88	10.7	16.4	35.4	45.1 (64.1)	146 (165)	180.7 (199.7)	70
JQ (C)-G06	102	11.4	23.6	47.6	51.4 (72.4)	171 (192)	205.7 (226.7)	80
JQ (C)-G10	122	12.6	35	65	54 (79)	216 (241)	251 (276)	102

Figures in parentheses are for double pilot types.

Model No.	K	L	N	P	R
JQ (C)-G03	59	14	24	35	89
JQ (C)-G06	69	22	32	40	100
JQ (C)-G10	91	28	40	51	131

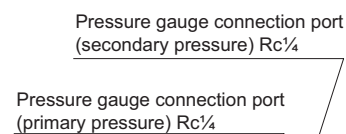
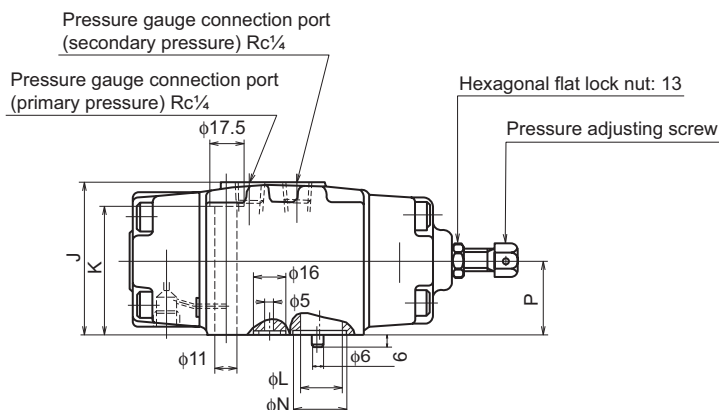
Mounting face (conforming standard)

JQ(C)-G03: ISO 5781-06-07-0-00

JQ(C)-G06: ISO 5781-08-10-0-00

JQ(C)-G10: ISO 5781-10-13-0-00

JQC-G03 (G06, G10)



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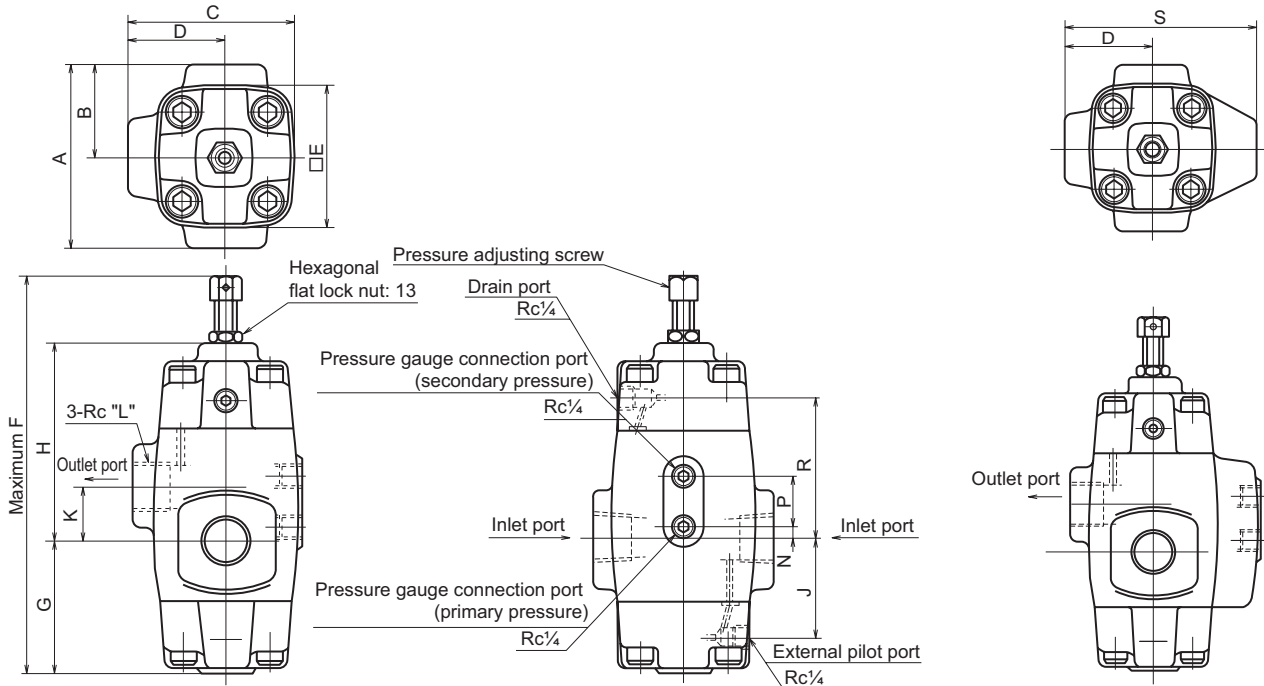
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External dimension diagram

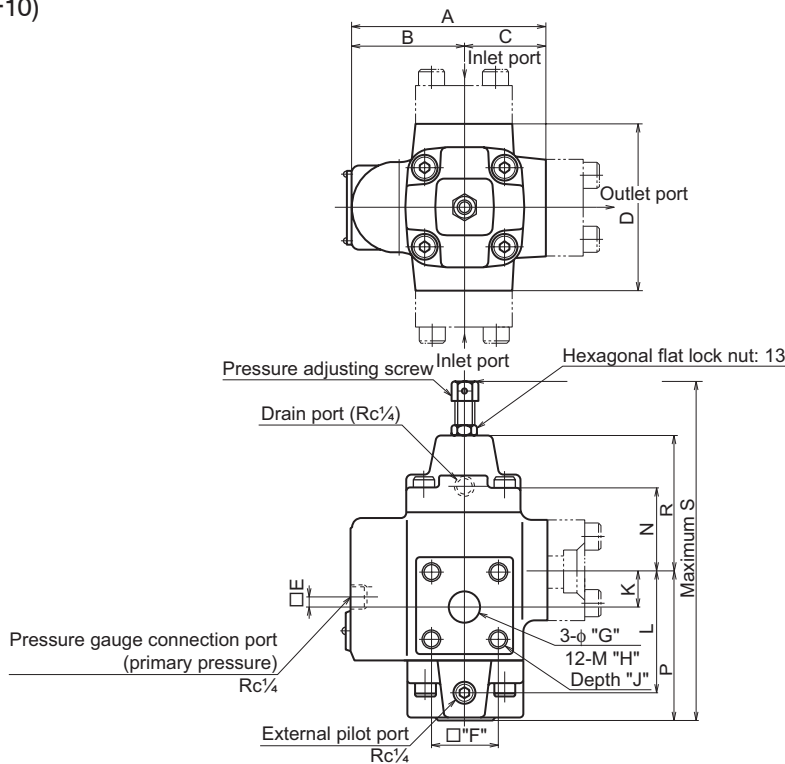
JQ-T03 (T06, T10)

JQC-T03 (T06, T10)



Model No.	A	B	C	D	E	F	G	H	J	K	L	N	P	R	S
JQ(C)-T03	70	35	72	40	63	180.7	58	88	41	23	3/8	3.5	19	58	94
JQ(C)-T06	95	47.5	87	50	73	205.7	69.5	101.5	52.5	27	1/4	5.5	24	71.5	110
JQ(C)-T10	108	54	116	68.5	95	251	83.5	132.5	62.5	28	1/4	5.5	30	87.5	148.5

JQC-F06 (F10)



Model No.	A	B	C	D	E	F	G	H	J	K	L	N	P	R	S
JQC-F06	119	69	50	100	6	40	18	10	20	21	73	51	90	81	205.7
JQC-F10	154	91	63	126	14.5	56	30	12	20	28	88.5	59.5	109.5	106.5	252

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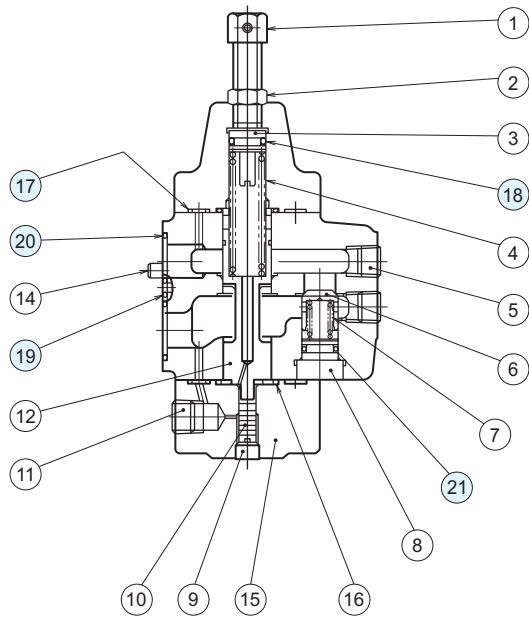
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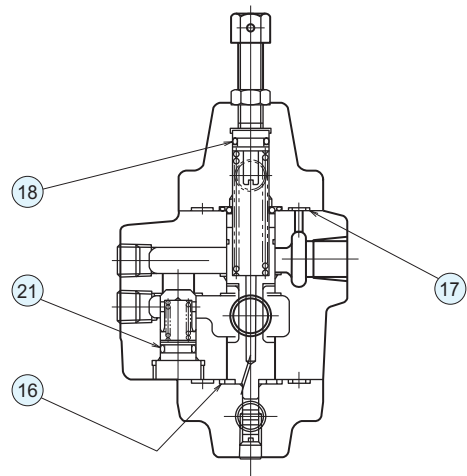
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Sectional structural diagram

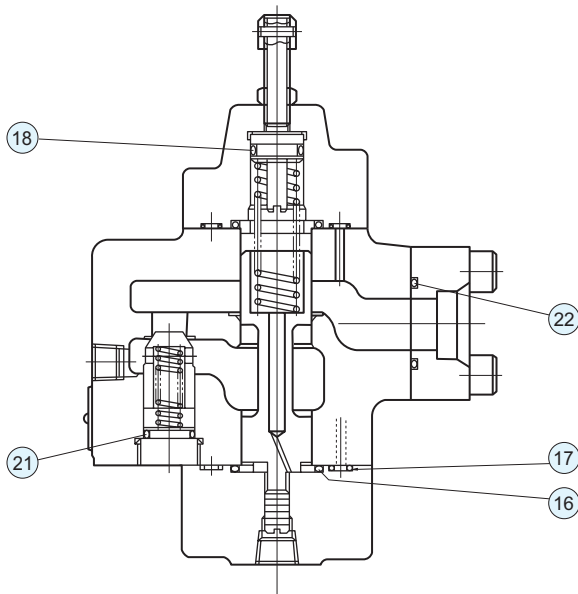
JQC-G**



JQC-T**



JQC-F**



Note: The sectional structural diagram is for the pressure adjustment range codes C, D, and E. For products with the pressure adjustment range code A, the plunger (10) is not provided.

Sealing part table

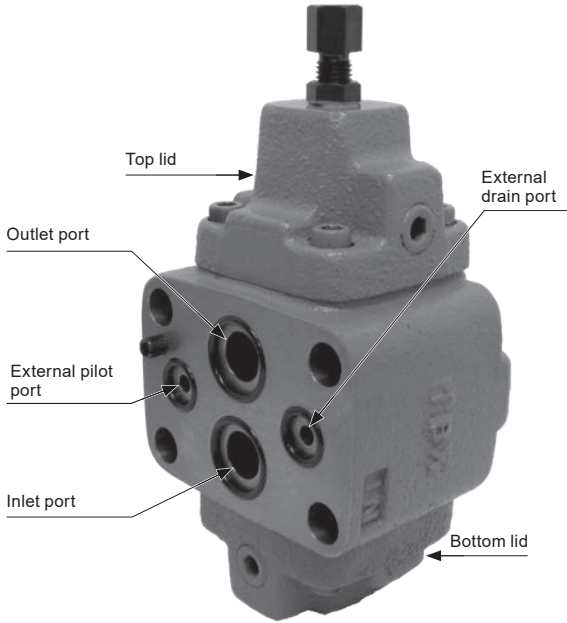
Part No.	Name	Quantity	Part specifications							
			JQC-G03	JQC-G03	JQ-T03	JQC-T03	JQ-G06	JQC-G06	JQ-T06	JQC-T06
16	O-ring	2	JIS B 2401 1BP22	JIS B 2401 1BP22	JIS B 2401 1BP22	JIS B 2401 1BP22	JIS B 2401 1BG30	JIS B 2401 1BG30	JIS B 2401 1BG30	JIS B 2401 1BG30
17	O-ring	4	JIS B 2401 1BP6	JIS B 2401 1BP6	JIS B 2401 1BP6	JIS B 2401 1BP6	JIS B 2401 1BP6	JIS B 2401 1BP6	JIS B 2401 1BP6	JIS B 2401 1BP6
18	O-ring	1	JIS B 2401 1BP11	JIS B 2401 1BP11	JIS B 2401 1BP11	JIS B 2401 1BP11	JIS B 2401 1BP16	JIS B 2401 1BP16	JIS B 2401 1BP16	JIS B 2401 1BP16
19	O-ring	2	JIS B 2401 1BP12	JIS B 2401 1BP12	-	-	JIS B 2401 1BP12	JIS B 2401 1BP12	-	-
20	O-ring	2	JIS B 2401 1BP20	JIS B 2401 1BP20	-	-	JIS B 2401 1BP26	JIS B 2401 1BP26	-	-
21	O-ring	1	-	JIS B 2401 1BP11	-	JIS B 2401 1BP11	-	JIS B 2401 1BP14	-	JIS B 2401 1BP14

Part No.	Name	Quantity	Part specifications							
			JQC-F06	JQ-G10	JQC-G10	JQ-T10	JQC-T10	JQC-F10	JQC-F16	
16	O-ring	2	JIS B 2401 1BG30	JIS B 2401 1BG40	JIS B 2401 1BG40	JIS B 2401 1BG40	JIS B 2401 1BG40	JIS B 2401 1BG40	JIS B 2401 1BG60	
17	O-ring	4	JIS B 2401 1BP6	JIS B 2401 1BP6	JIS B 2401 1BP6	JIS B 2401 1BP6	JIS B 2401 1BP6	JIS B 2401 1BP6	JIS B 2401 1BP8	
18	O-ring	1	JIS B 2401 1BP16	JIS B 2401 1BP22A	JIS B 2401 1BP22A	JIS B 2401 1BP22A	JIS B 2401 1BP22A	JIS B 2401 1BP22A	JIS B 2401 1BP36	
19	O-ring	2	-	JIS B 2401 1BP12	JIS B 2401 1BP12	-	-	-	-	
20	O-ring	2	-	JIS B 2401 1BG35	JIS B 2401 1BG35	-	-	-	-	
21	O-ring	1	JIS B 2401 1BP16	-	JIS B 2401 1BP22	-	JIS B 2401 1BP22	JIS B 2401 1BG25	JIS B 2401 1BP38	
22	O-ring	1	JIS B 2401 1BG30	-	-	-	-	JIS B 2401 1BG40	JIS B 2401 1BG60	

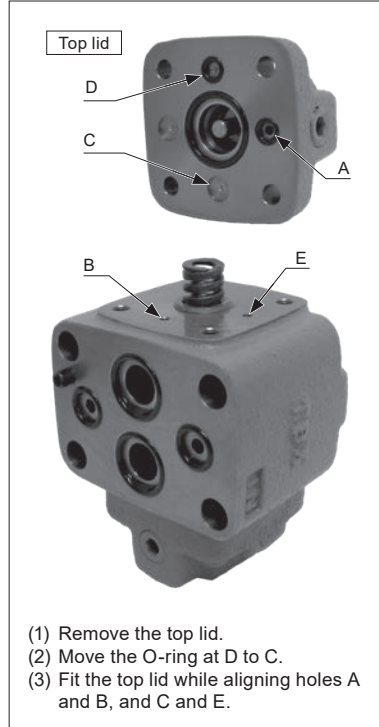
Setting guide

The products are supplied with a function code of 2 as standard. If a product with a function code of 1, 3 or 4 is required, change the setting by referring to the guide given below.

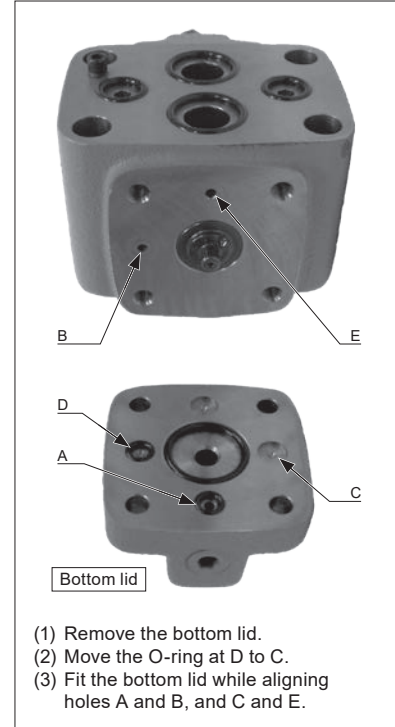
■ Gasket mount type (JQ(C)-G※※)



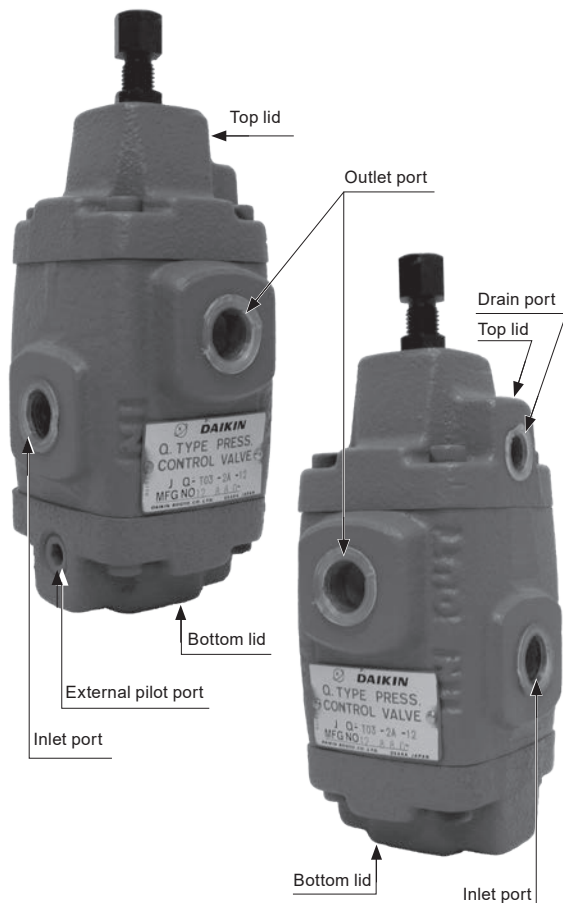
● Changing the external drain type to the internal drain type



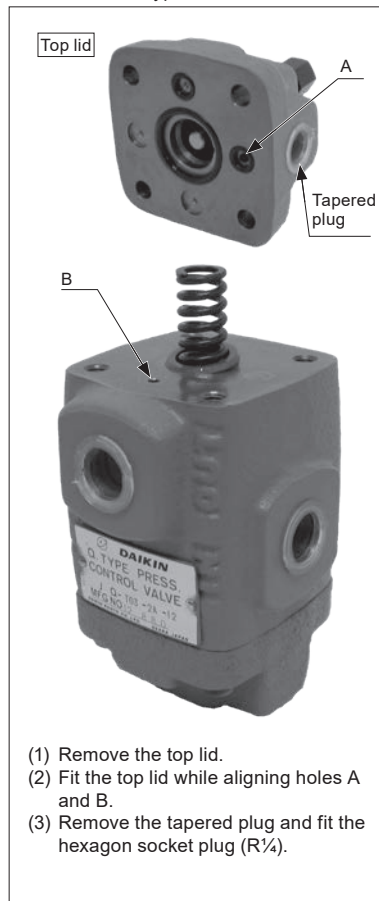
● Changing the internal pilot type to the external pilot type



■ Screw connecting type (JQ(C)-T※※), flange mount type (JQ(C)-F※※)



● Changing the external drain type to the internal drain type



● Changing the internal pilot type to the external pilot type

