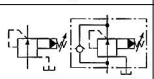
C

PRESSURE CONTROLS

Valve Type	KS Graphic Symbols	Max.operating Pressure MPa {kgf/cm²}	Max. Flow L/min (1 2 3 5 10 20 30 50 100 200 300 500 1000 2000)	Page
Remote Cont. Relief Valves		25 {255}	01	C-3
Direct Type Relief Valves		21 {214}	02	C-5
Pilot Operated Relief Valves		25 {255}	03 06 10	C-7
Low Noise Type Pilot Relief Valves		25 {255}	03 06	C-11
Sol. Cont. Relief Valves		25 {255}	03 06 10	C-14
H Type Press. Cont. Valves		21 {214}	03 06 10	C-23
HC Type Press. Cont. Valves		21 {214}	03 06 10	C-29
Press. Reducing & Check Valves		21 {214}	03 06	C-34
Press. Reducing & Relieving Valves		03:14 {143}	03	C-40
Unloading Relief Valves		21 {214}	06	C-43

Hydraulic Fluids

1. Fluid Types

Any type of hydraulic fluid, listed in the table below can be used.

Petroleum based oil	Use fluids equivalent to ISO VG32 or VG46.
Synthetic fluids	Use phosphate ester or polyol ester fluid. When phosphate ester fluid is to be used, prefix "F-" to the model number because a special seal (fluororubber) will be used.
Water containig fluids	Use water - glycol fluid.

Note: For use with hydraulic fluids other than those listed above, please consult your SEWON represestatives in acvance.

2. Recommended Fluid Viscosity and Temperature

Use under conditions where the viscosity and temperature of the hydraulic fluid remain in the ranges indicated in the following table.

Name		Viscosity	Temperature
Remote Control Relief Valves	H Type Presure Control Valves	15~400mm²/s{cSt}	-15~+70℃
Direct Type Relief Valves	HC Type Pressure Control Valves		
Pilot Operated Relief Valves	Pressure Reducing Valves		
Low Noise Type Pilot Operated Relief	Valves Pressure Reducing and Check Valves		
Solenoid Controlled Relief Valves	Pressure Reducing and Relieving Valves		

※ If the valve is provided with a vent ristrictor (ex.: A-BSG-03), the viscosity range should be 15-200cSt (80-900 SSU).

3. Control of Contamination

Due caution must be paid to maintaining control over contamination of the hydraulic fluids which may otherwise lead to breakdowns and shorten the life of the valve. Please maintain the degree of contamination within NAS 1638-Grade 11. Use 25㎛ or finer line filter.

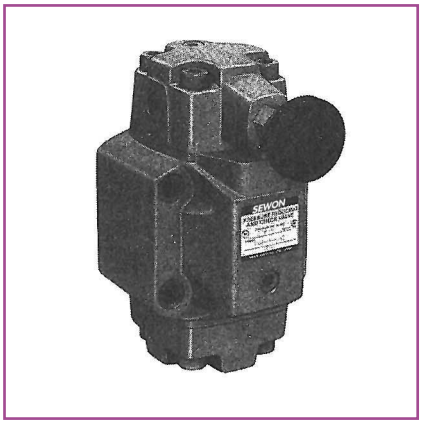
4. Drain Piping

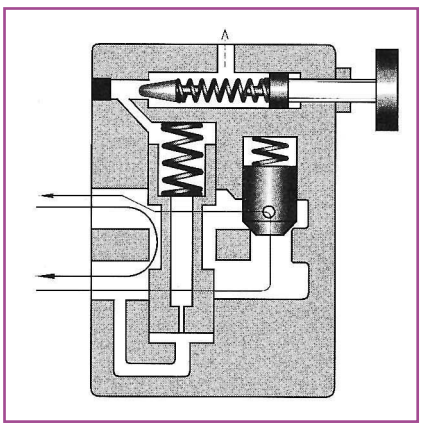
Drain port must be connected directly to the tank in condition back pressure is lower than the atmospheric pressure.
That line pressure can be increased infinitely can be caused a serious accident.

Pressure Reducing Valves
Pressure Reducing and Check Valves

Pressure reducing valves are used to set the pressure of a hydraulic circuit below that of the main circuit. In addition, operation under remote control is possible by using the remote control port.

Pressure reducing and check valves are used to set the pressure of a hydraulic circuit below that of the main circuit. They have check valves, which allow a free flow from the secondary side to the primary. Operation under remote control is also possible by using the remote control port.





Ratings

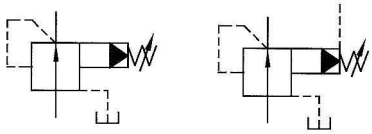
Model Numbers		Max.Operating Pres. MPa {kgf/cm²}	Max. Flow ★1		Drain Flow ★2 L/min	Mass kg	
Threaded Connection	Sub-Plates Mounting		Set. Pres. MPa {kgf/cm²}	Max Flow L/min		R& T type	R& G type
RT RCT-03-※-22	RG RCG-03-※-22	21 {214}	0.7~1.0 {7.1~10.2}	40	0.8~1.0	RT: 4.3 RCT: 4.8	RG: 4.5 RCG: 5.4
			1.0~20.5 {10.2~209}	50			
RT RCT-06-※-22	RG RCG-06-※-22	21 {214}	0.7~1.0 {7.1~10.2}	50	0.8~1.1	RT: 6.9 RCT: 7.8	RG: 6.8 RCG: 8.1
			1.0~1.5 {10.2~15.3}	100			
			1.5~20.5 {15.3~209}	125			

★1. The max. flow rates are those shown at the primary pressure at 21MPa{214kgf/cm²}

★2. The drain flow rates are equal to pilot flow rates when differential pressure between primary and secondary pressure is at 20.5MPa{209kgf/cm²}

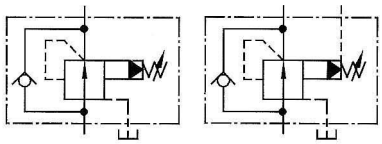
KS Graphic Symbols

RT·RG



Remote control connection

RCT·RCG



Remote control connection

Model Number Designation

RC	T	-03	-B	-22
Series Number	Type of Mounting	Valve Size	Pres. Adj. Range MPa{kgf/cm²}	Design Number
R : Pressure Reducing Valves RC : Pressure Reducing and Check Valves	T : Threaded Connection	03	B : 0.7~7 {7.1~71.4} C : 3.5~14 {35.7~143} H : 7~20.5 {71.4~209}	22
		06		22
	G : Sub-Plate Mounting	03		22
		06		22

Sub-Plates

Valve Model Numbers	Sub-Plate Model Numbers	Piping Size	Mass kg
RG RCG-03	HGM-03-20	Rc 3/8	1.6
	HGM-03X-20	Rc 1/2	
RG RCG-06	HGM-06-20	Rc 3/4	2.4
	HGM-06X-20	Rc 1	3.0

- Sub-plates are available. Specify sub-plate model from the table above. When sub-plates are not used, the mounting surface should have a good machined finish.
- The sub-plates are the same as those for H type pressure control valves. With the pressure reducing valve, the sub-plate is used in a position 180 turned(upside down) from the normal position. When mounting the sub-plate, be sure to bring the valve locating pin to the sub-plate pin hole. For dimensions, see page C-29 to 30. Pressure Reducing Valves Pressure Reducing and Check Valves

Introductions

- To adjust the pressure, loosen the lock nut and turn the pressure adjustment screw slowly clockwise for higher pressures or anti-clockwise for lower pressures. After adjustments, do not forget to tighten the lock nut.
- Connect the secondary side pressure ports of types 1 and 4(internal drain) and the drain ports of types 2 and3(external drain) directly to the tanks with a back pressure close to the atmospheric pressure.

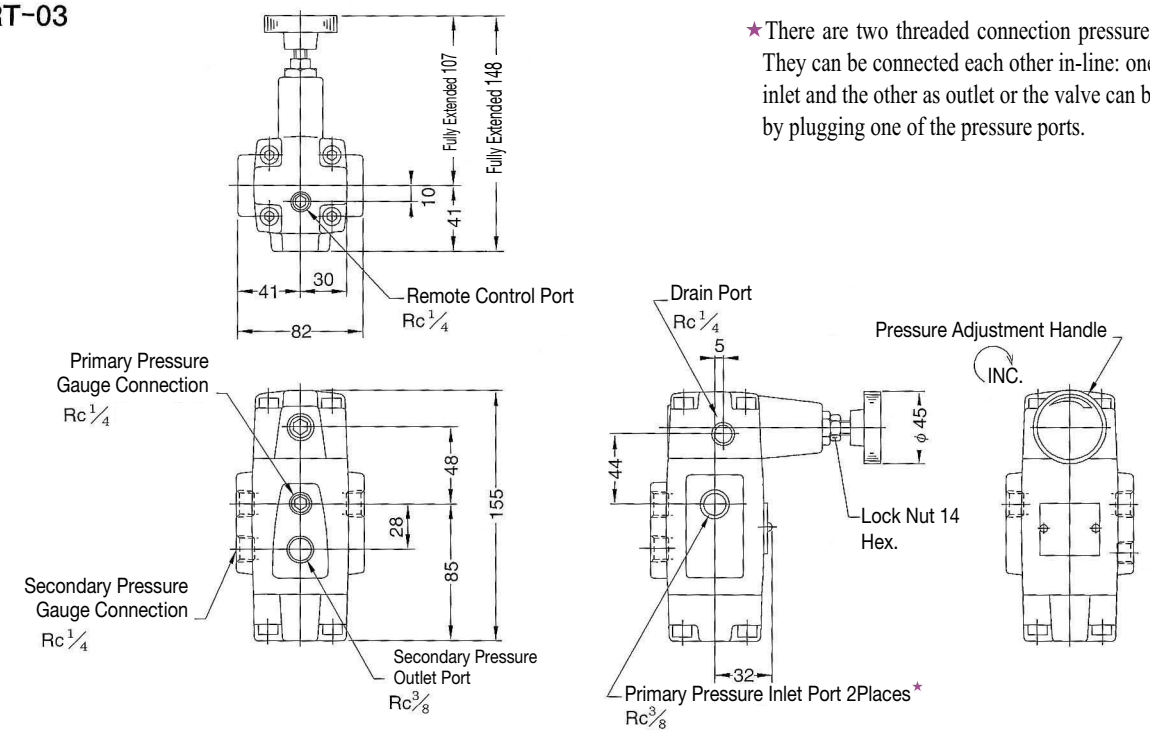
Attachment

- Mounting Bolts

Valve Model Numbers	Socket Head Cap Screw
RG-03	M10×50L····· 4pcs
RG-06	M10×50L····· 4pcs

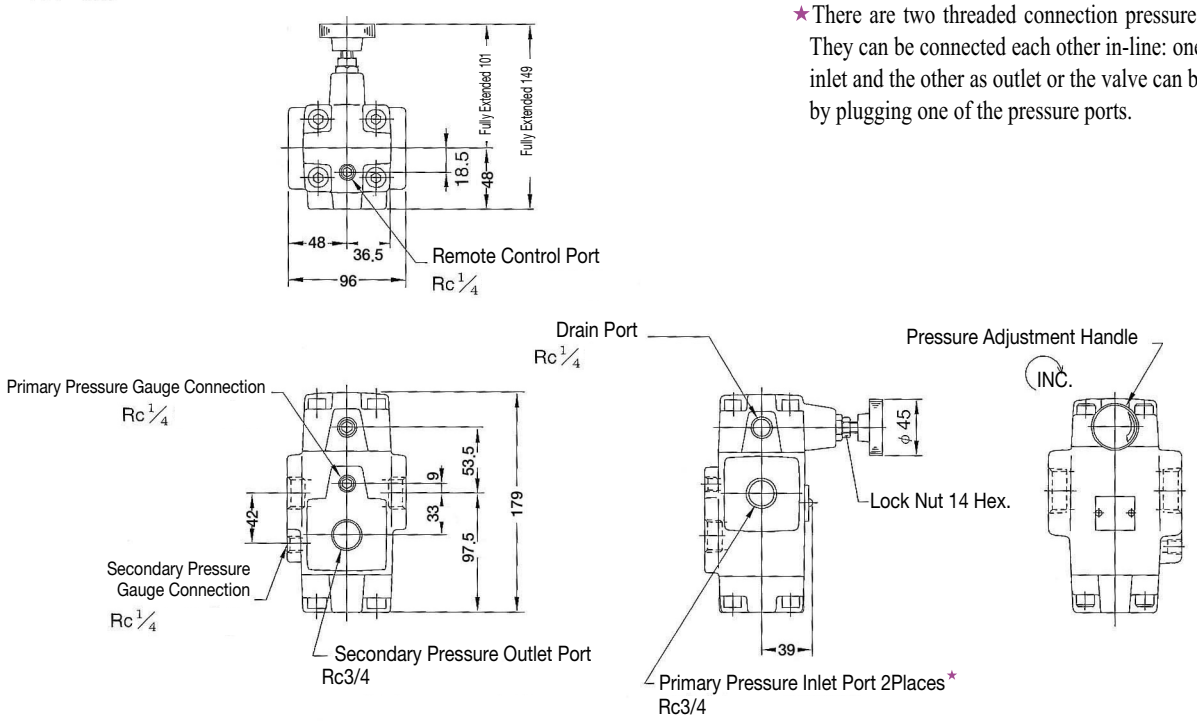
Valve Model Numbers	Socket Head Cap Screw
RCG-03	M10×70L····· 4pcs
RCG-06	M10×80L····· 4pcs

RT-03



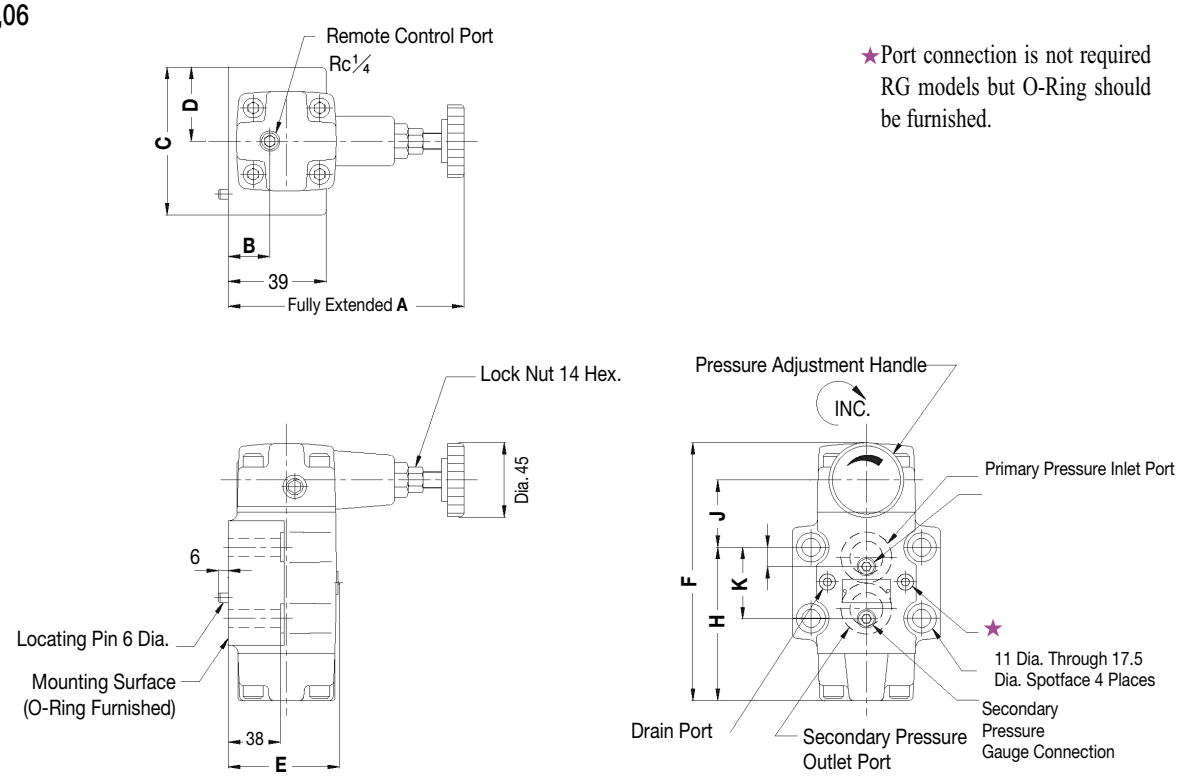
★There are two threaded connection pressure ports. They can be connected each other in-line: one as an inlet and the other as outlet or the valve can be used by plugging one of the pressure ports.

RT-06



★There are two threaded connection pressure ports. They can be connected each other in-line: one as an inlet and the other as outlet or the valve can be used by plugging one of the pressure ports.

RG-03,06

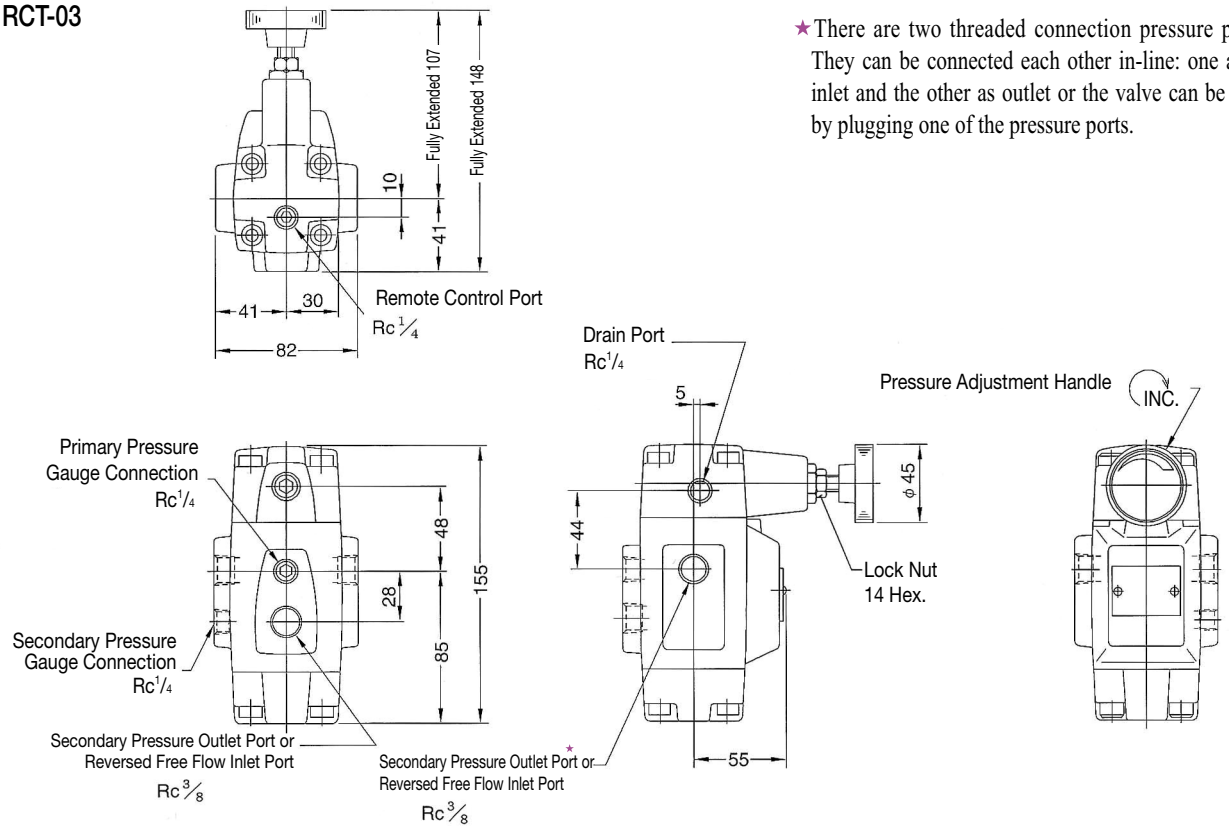


★Port connection is not required RG models but O-Ring should be furnished.

Model Numbers	A	B	C	D	E	F	H	J	K
RG-03	142	25	89	44.5	67	155.5	92.4	40.6	34.9
RG-06	141	21.5	102	51	79	179	111	40	48

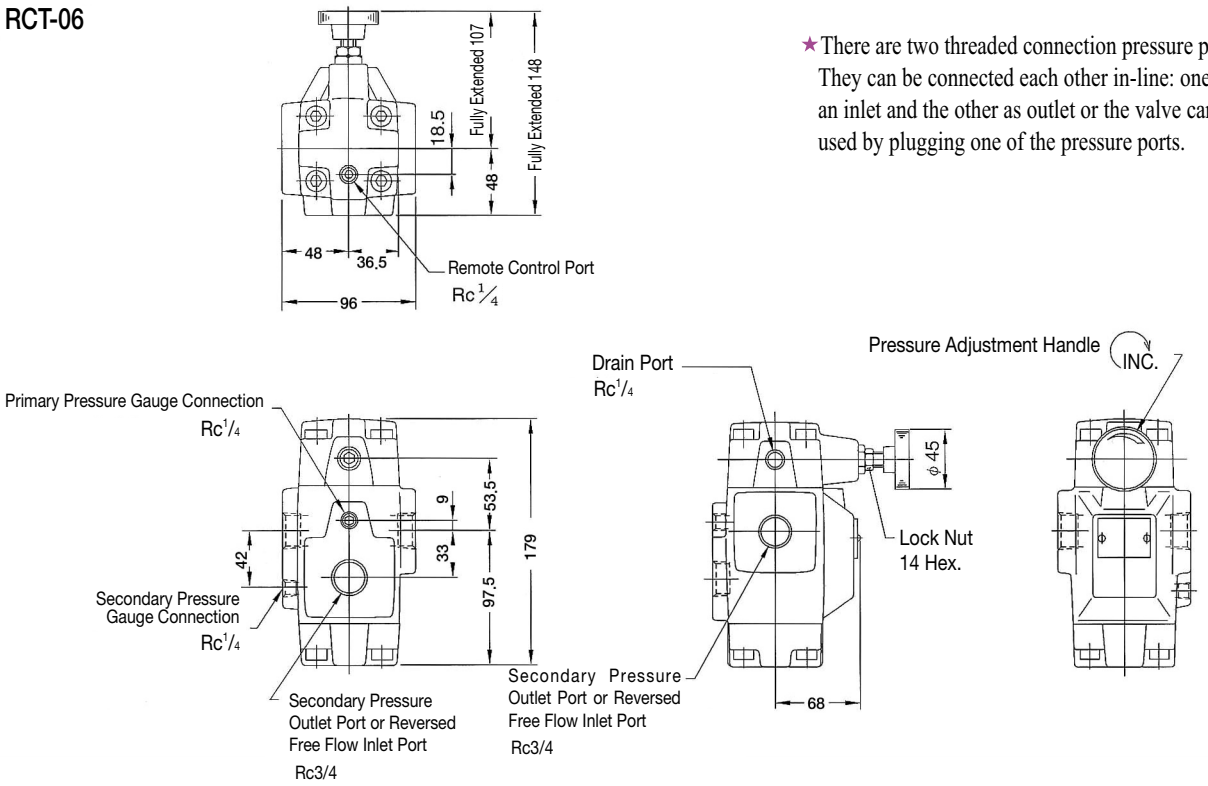
Note: For dimensions of the valve mounting surface see the dimensional drawing(C-27) of the sub-place used together.

RCT-03



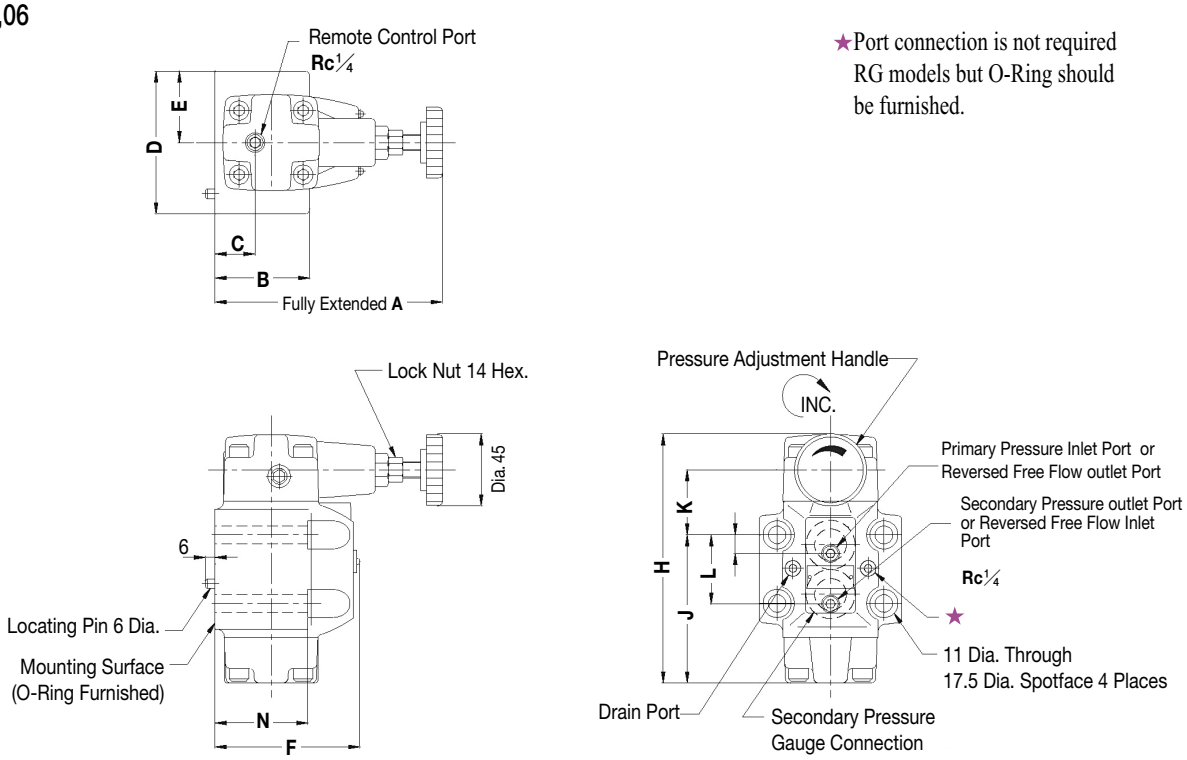
★There are two threaded connection pressure ports. They can be connected each other in-line: one as an inlet and the other as outlet or the valve can be used by plugging one of the pressure ports.

RCT-06



★There are two threaded connection pressure ports. They can be connected each other in-line: one as an inlet and the other as outlet or the valve can be used by plugging one of the pressure ports.

RCG-03,06



★Port connection is not required RG models but O-Ring should be furnished.

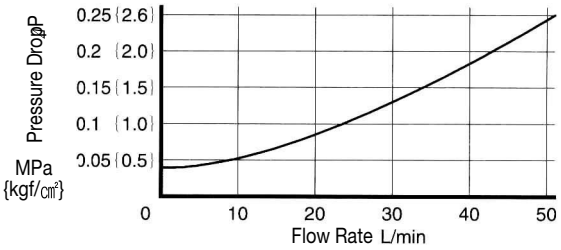
Model Numbers	A	B	C	D	E	F	H	J	K	L	N
RCG-03	142	59	25	89	44.5	90	155	92.4	40.6	34.9	58
RCG-06	141	69	21.5	102	51	108	179	111	40	48	68

Note: For dimensions of the valve mounting surface see the dimensional drawing(C-27) of the sub-place used together.

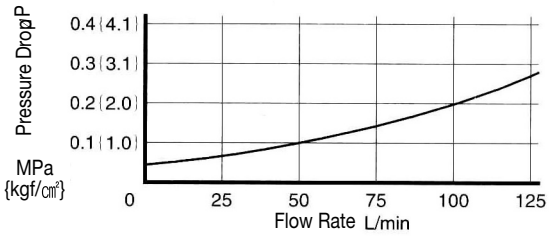
■Pressure Drop for Free Flow

Hydraulic fluid : Viscosity : 35mm²/s{cSt}
Specific Gravity : 0.850

RCT-03
RCG-03



RCT-06
RCG-06



●For any other viscosity, multiply the factors in the table below.

Viscosity	mm²/s{cSt}	15	20	30	40	50	60	70	80	90	100
	SSU	77	98	141	186	232	278	324	371	471	464
Factor 0.81		0.87	0.96	1.03	1.09	1.14	1.19	1.23	1.27	1.30	

●For any other specific gravity(G), the pressure drop ($\triangle P'$) may be obtained from the fomula below.

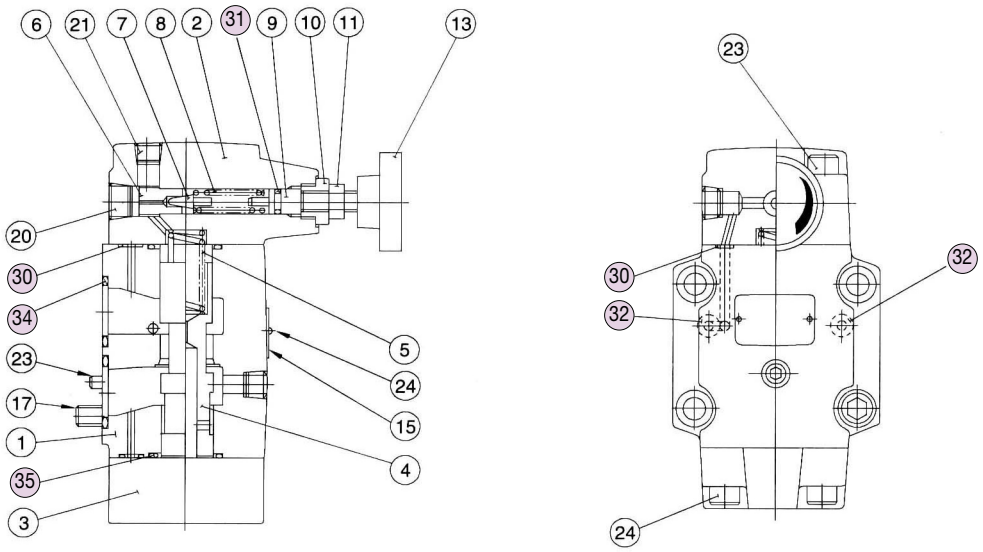
$\Delta P' = \Delta P\ (G'/0.850)$

CAUTION

When making replacement of seals, please do it carefully after reading through the relevant instructions in the Operator's Manual.

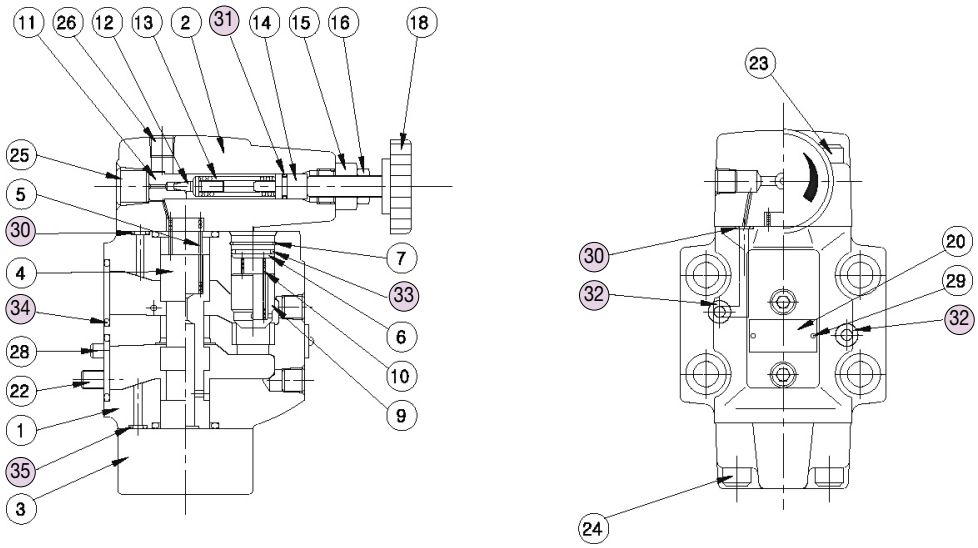
List of Seals

RT-03,06
RG-03,06



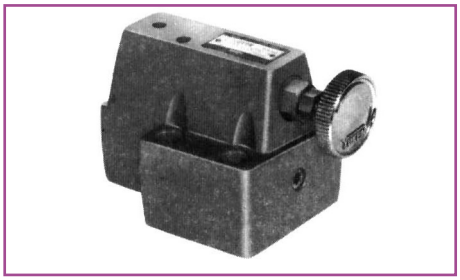
Item	Name of Parts	Part Numbers		Quantity	
		RT RG-03	RT RG-06	RT-※	RG-※
30	O-Ring	JIS B 2401-1B-P 6	JIS B 2401-1B-P 6	4	4
31	O-Ring	JIS B 2401-1A-P 9	JIS B 2401-1A-P 9	1	1
32	O-Ring	JIS B 2401-1B-P 9	JIS B 2401-1B-P 9	-	2
34	O-Ring	JIS B 2401-1B-P18	JIS B 2401-1B-P28	-	2
35	O-Ring	JIS B 2401-1B-P22	JIS B 2401-1B-P28	2	2

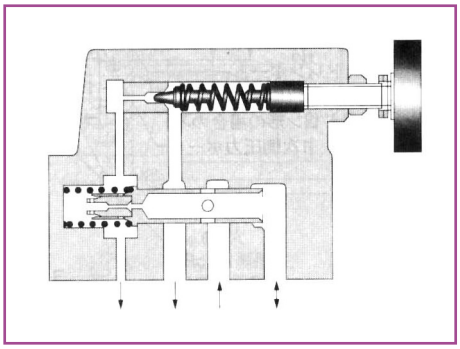
RCT-03,06
RCG-03,06



Item	Name of Parts	Part Numbers		Quantity	
		RCT RCG-03	RCT RCG-06	RCT-※	RCG-※
30	O-Ring	JIS B 2401-1B-P 6	JIS B 2401-1B-P 6	4	4
31	O-Ring	JIS B 2401-1A-P 9	JIS B 2401-1A-P 9	1	1
32	O-Ring	JIS B 2401-1B-P 9	JIS B 2401-1B-P 9	-	2
33	O-Ring	JIS B 2401-1B-P12	JIS B 2401-1B-P18	1	1
34	O-Ring	JIS B 2401-1B-P18	JIS B 2401-1B-P28	-	2
35	O-Ring	JIS B 2401-1B-P22	JIS B 2401-1B-P28	2	2

Pressure Reducing and Relieving Valves





Pressure Reducing and Relieving Valves are composite pressure control valves having pressure reducing and counterbalancing function developed for hydraulic balancing circuits.

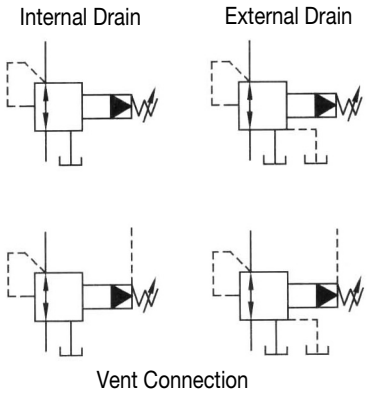
Ratings

Model Numbers	Max. Operating Pres. MPa {kgf/cm²}	Pres. Adj. Range MPa {kgf/cm²}	Max. Flow L/min	Relieving Flow L/min	Drain Flow L/min	Mass kg
RBG-03- ※-15	14 {143}	0.6~13.5 {6.1~138}	50	50	0.6~1	4.2

Model Number Designation

RB	G	-03	-R	-10
Series Number	Type of Mounting	Valve ize	Drain Type	Design Number
RB: Pressure Reducing and Relieving Valves	**G** : Sub-Plate Mounting	03	**None:** Internal Drain **R**: External Drain	15

KS Graphic Symbols



Instruction

- To use remote control relief valve in the venting circuit, see page59.If the internal volume of the vent line is too large, chattering is likely to occur. Thus, as far as possible reduce the inside Dia. and the length of the pipe.
- To adjust the pressure, loosen the lock nut and turn pressure adjustment handle slowly clockwist for higher pressure and anti-clockwise for lower pressures.
- Connect the tank pipe not to any other line but directly to the tank.

Sub-Plate

Series Number	Sub-Plate Model Numbers	Piping Size	Mass kg
RBG-03	RBGM-03-10	Rc 3/8	1.6
	RBGM-03X-10	Rc 1/2	

- Sub-plates are available. Specify sub-plate model from the table above. When sub-plates are not used, the mounting surface should have a good machined finish.

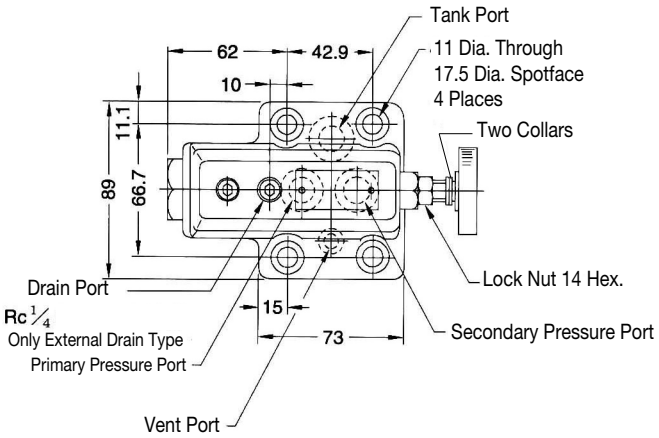
Attachment

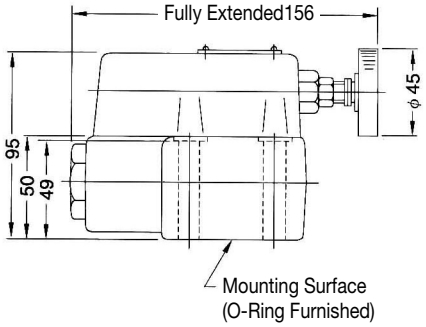
- Mounting Bolts

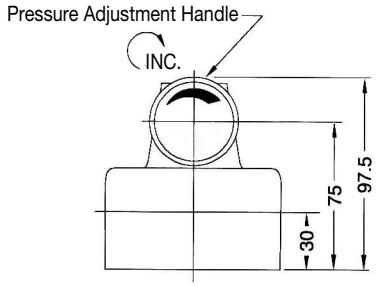
Series Number	Socket Head Cap Screw
RBG-03	M10×65L.....4pcs

RBG-03

★Pressure is limited by collars fitted.If a working pressure cannot be attained, remove some collars. One collar is equivalent to

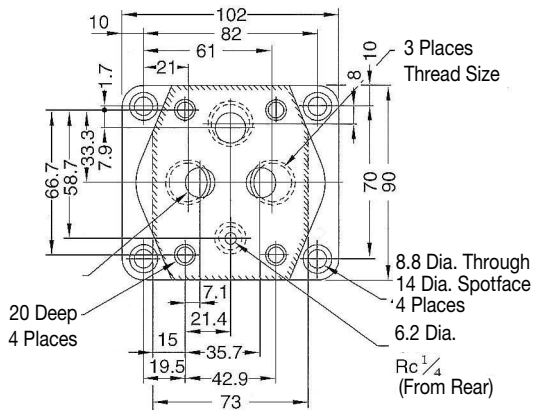


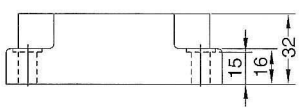




Sub-Plate

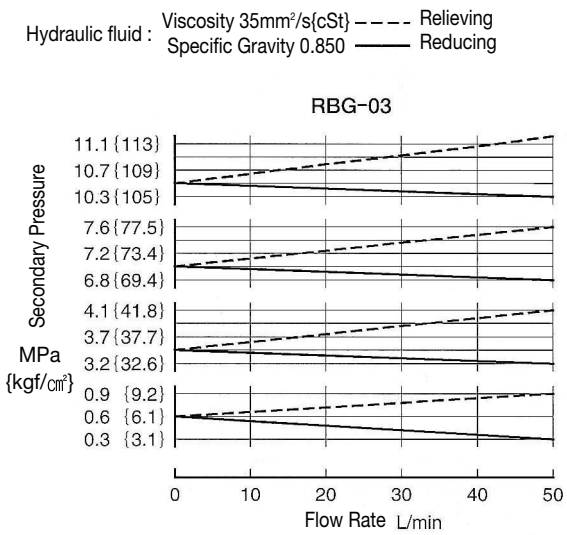
RBGM-03※





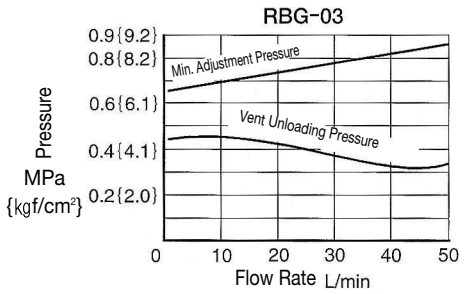
Sub-Plate Model Numbers	Thread Size
RBGM-03-10	Rc 3/8
RBGM-03X-10	Rc 1/2

■Nominal Override Characteristics



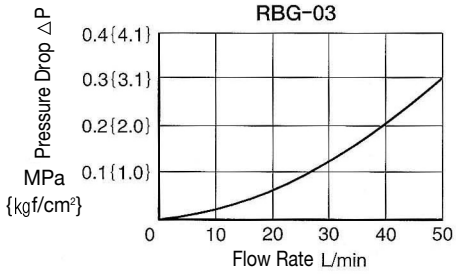
■Min. Adjustment Pressure and Vent Unloading Pressure

Hydraulic fluid : Viscosity 35mm²/s{cSt}
Specific Gravity 0.850



■ Pressure Drop

Hydraulic fluid : Viscosity 35mm²/s{cSt}
Specific Gravity 0.850



- For any other viscosity, multiply the factors in the table below.
- For any other specific gravity(G), the pressure drop (△P′) may be obtained from the fomula below.

$$\Delta P' = \Delta P\,(G'/0.850)$$

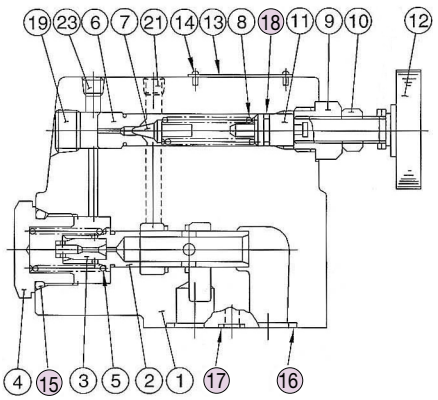
Viscosity	mm²/s{cSt}	15	20	30	40	50	60	70	80	90	100
	SSU	77	98	141	186	232	278	324	371	417	464
Factor 0.81		0.87	0.96	1.03	1.09	1.14	1.19	1.23	1.27	1.30	

⚠ CAUTION

When making replacement of seals, please do it carefully after reading through the relevant instructions in the Operator's Manual.

■List of Seals

RBG-03



Item	Name of Parts	Part Numbers	Quantity
15	O-Ring	JIS B 2401-1B-P24	1
16	O-Ring	JIS B 2401-1B-P18	3
17	O-Ring	JIS B 2401-1B-P 9	1
18	O-Ring	JIS B 2401-1A-P 9	1