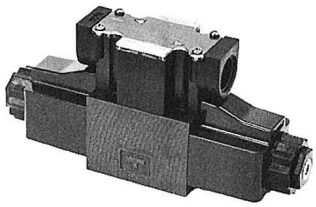
E

DIRECTIONAL CONTROLS

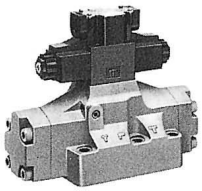
■Directional Valves

These valve are used for shifting oil flow direction of hydraulic circuit and for actuator starting/stopping as well as theoperating direction shifting of actuator.

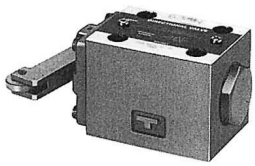
●Solenoid Operated Directional Valve



●Solenoid Controlled Pilot Operated Directional Valve



●Pilot / Mechanically Operated Directional Valves



●Check / Pilot Controlled Check Valves

Hydraulic Fluids

1. Type of Fluids

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

Type of Fluids	Petroleum Base Oils
Petroleum Base Oil	Use fluids equivalent to ISO VG32 or VG46.
Synthetic Fluids [1)]	Use phosphate ester or polyol ester type. When phosphate estertype fluid is to be used, prefix "F-" to the model numberbecause a special seal (fluororubber) will be used.
Water Containing Fluids	Use water-glycol fluids or W/O emulsion type fluids.

Note1. For use with hydraulic fluids other than those listed above, please consult your SEWON representatives is advance.

2. Recommended Viscosity and Oil Temperatures

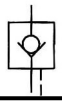
Use hydraulic fluids which satisfy the both recommended viscosity and oil temperatures given in the table below.

Name	Viscosity	Oil Temperature	Degree of contamination
Solenoid Operated Directional Valves Solenoid Controlled Pilot Operated Directional Valves Poppet Type Solenoid Operated Directional Valves Mechanically Operated Directional Valves Check Valves Pilot Controlled Check Valves	15~400mm²/s{cSt}	−15℃ ~ + 70℃	ISO 21/18 NAS 1638-Grade 12

3. Control of Contamination

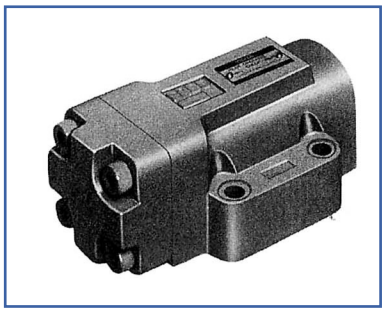
Due caution must be paid to maintaining control over contamination of the hydraulic fluids which may otherwise leadto breakdowns and shorter the life of the valve. Please maintain the degree of contamination within NAS 1638-Grade12. Use 25 μm or finer line filter.

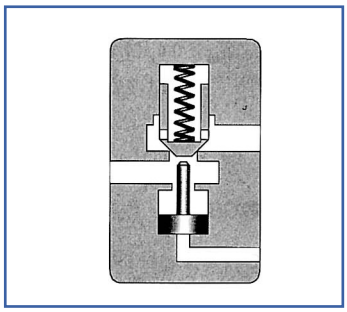
Check/
Pilot Controlled Check Valves

Valve Type	Graphic Symbols	Max. Operating MPa {kgf/cm²}	Maximum Flow L/min (1 2 5 10 20 50 100 200 500 1000 2000 5000)	Page
Check Valves		25 {255}	In-Line (CIT) 02 03 04 06 08 10	E-64
			Right Angle (CRT/CRG) 03 06 10	E-67
Pilot Operated Check Valves		25 {255}	Threaded Connection(CP※T) Sub-plate Mounting(CP※G) 03 06 10	E-71

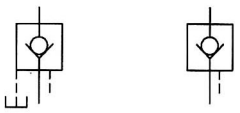
■Pilot Operated Check Valves

These check valves allow flow in one direction and prevent flow in the reverse direction,until operated by pilot pressure to allow free reverse flow. The specified cracking pressure is required to open the valve to allow free flow direction.





KS Graphic Symbol



Internal Drain Type External Drain Type

■Ratings

Model Numbers		Rated Flow★ L/min	Max. Operating Pres. MPa{kgf/cm²}	Cracking Pres. MPa{kgf/cm²}	Approx.Mass kg
Threaded Connection	CP※T-03-※-※-60	40	25{255}	0.04{0.4} 0.2 {2.0} 0.35{3.6} 0.5 {5.1}	3.0
	CP※T-06-※-※-60	125			5.5
	CP※T-10-※-※-60	250			9.6
Sub-plate Mounting	CP※G-03-※-※-60	40	25{255}	0.04{0.4} 0.2 {2.0} 0.35{3.6} 0.5 {5.1}	3.3
	CP※G-06-※-※-60	125			5.4
	CP※G-10-※-※-60	250			8.5

★Rated flow is the approximate flow rate, when there is a free flow pressure drop of maximum 0.3MPa{3.1kgf/cm²},the fluid has a specific gravity of 0.85 and a kinematic viscosity of 20㎟/s, and the cracking pressure is 0.04MPa{0.4kgf/cm²}

■Model Number Designation

CP	T	-03	-E	-04	-60
Series Number	Type of Connection	Valve Size	Drain Connection	Cracking Pressure MPa{kgf/cm²}	Design Number
CP : Pilot Operated Check Valve **CPD** : Decompression Type Pilot Operated Check Valve	**T** : Threaded Connection	**03** **06** **10**	**None**: Internal Drain **E** : External Drain	**04** : 0.04 {0.4} **20** : 0.2 {2.0} **35** : 0.35 {3.6} **50** : 0.5 {5.1}	**60(Standard) : Possible exchange of internal drain & external drain**
	G : Sub-plate Mounting	**03** **06** **10**			

NOTE : We have phosphate ester fluids type products. Phosphate ester fluid type products is to be used, prefix "F" to the model number because a special seal (fluororubber) will be used.

■Attachment

●Mounting Bolts

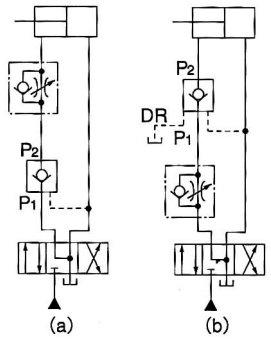
Valve Model Numbers	Socket Head Cap Screw	Qty.
CP※G-03	M10×45L	4
CP※G-06	M10×50L	4
CP※G-10	M10×55L	6

■Instructions

●Operation of internal and external drain types

When the outlet side P1 is directly connected to the tank in reversed free flow (Fig.a), the internal drain type is normally used. When the back pressure is applied to the outlet side P(Fig.b), be sure to use the external drain type.

- ●Sub-Plates are available, specify the sub-plate model number from the table above.When sub-plates are not used, the mounting surface should have a good machined finish.
- ●Sub-Plates are shared with those for H Type Pressure Control Valves.Refer to pages C-29 for dimensions.



●Minimum pilot pressure characteristics

That depends on the pressure of the inlet side P2 (Fig.b), in the reversed free flow.
This value can be determined from the characteristics chart.

⚠ WARNING

The machinery, if misused due to failure to observe the "Cautions" on the left, may perform unforeseeable movements, resulting in a disastrous accident.

■Sub-Plates

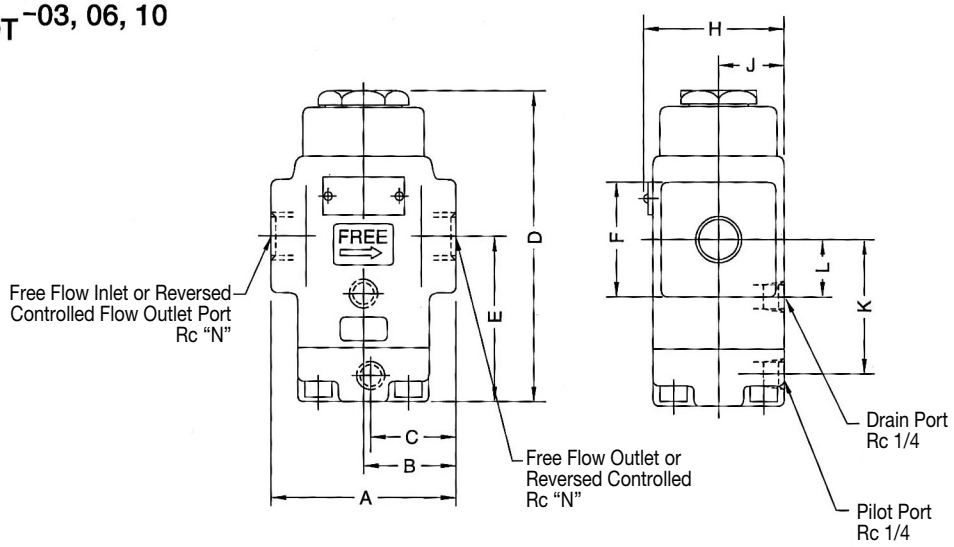
Valve Model Numbers	Sub-plate Model Numbers	Thread Size Rc	Approx.Mass kg
CP※G-03	HGM-03-20	3/8	1.6
	HGM-03X-20	1/2	
CP※G-03	HGM-06-20	3/4	2.4
	HGM-06X-20	1	3.0
CP※G-03	HGM-10-20	1 1/4	4.8
	HGM-10X-20	1 1/2	5.7

- ●Sub-Plates are available, specify the sub-plate model number from the table above.When sub-plates are not used, the mounting surface should have a good machined finish.
- ●Sub-Plates are shared with those for H Type Pressure Control Valves.Refer to pages C-29 for dimensions.

●Cautionson replacement of 20 design low cracking pressure type valves with 60 design valves.

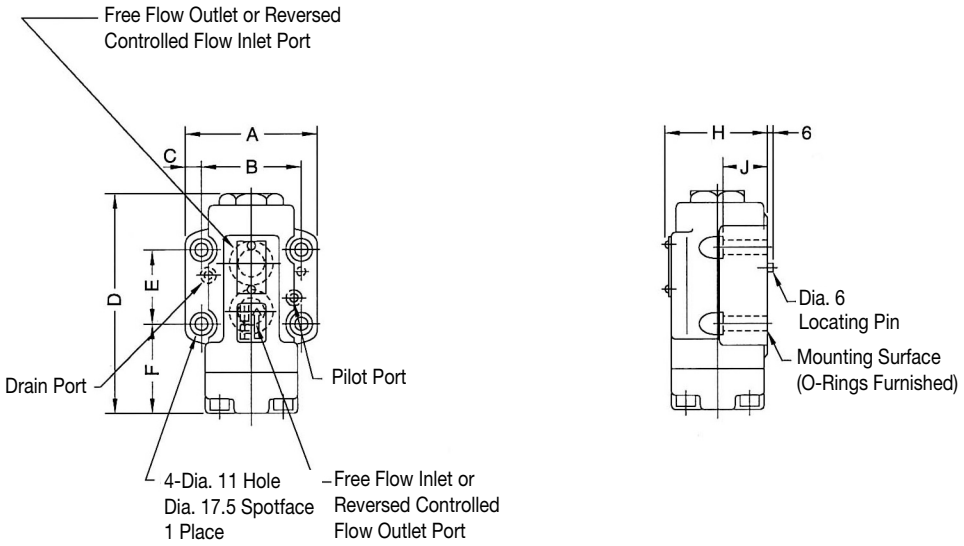
In 20 design valve with cracking pressure of 0.035MPa {0.36kgf/cm²}(Code"5"), for closing the valve completely and certainly, it was necessary to introduce the pressurized oil into the drain port to push down the piston compulsory.
While in 60 design valve with cracking pressure of 0.04MPa {0.4kgf/cm²}(Code"6"), it has such structure that the valve can be closed completely and certainly without introducing the pressurized oil into the drain port. On the contrary, what is worse is that if the pressurized oil is introduced into the drain port, the oil acts towards the direction of opening the valve, which is very dangerous and has to be absolutely avoided. Therefore, please do not supply any pressurized oil into the drain port in case of using 60 design valve.

CPT CPDT -03, 06, 10



Model Numbers	A	B	C	D	E	F	H	J	K	L	N
CP※T-03	80	40	39	150.5	84.5	Dia38	60	29	67.5	26.5	3/8
CP※T-06	96	48	47	171.5	92.5	□62	72	35	75.5	31	3/4
CP※T-10	140	70	64	203.5	113	□80	82	40	96	43	1 1/4

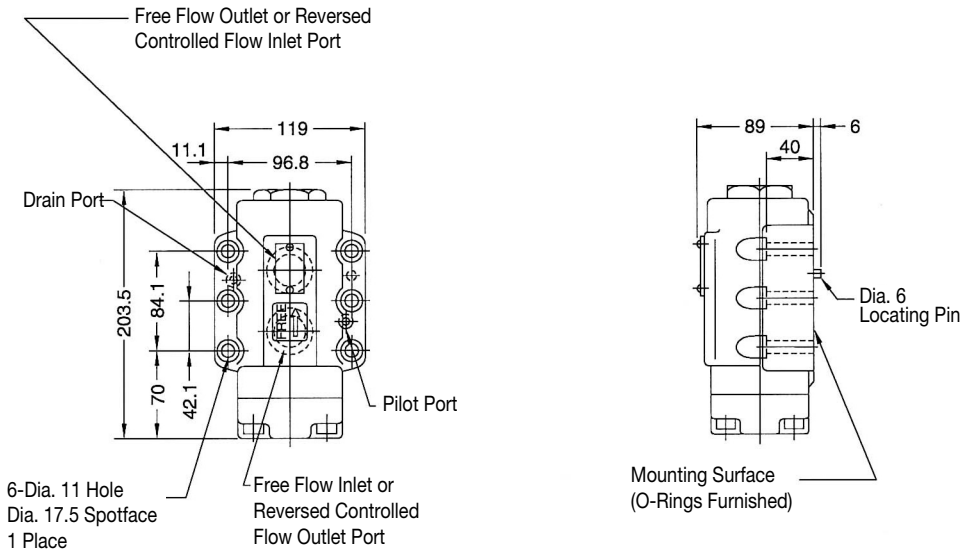
CPG CPDG -03, 06



Model Numbers	A	B	C	D	E	F	H	J	Mounting Surface
CP※G-03	90	66.7	11.7	150.5	42.9	66	62	30	ISO 5781-AG-06-2-A
CP※G-06	102	79.4	11.3	171.5	60.3	67.5	74	35	ISO 5781-AH-08-2-A

CPG CPDG -10

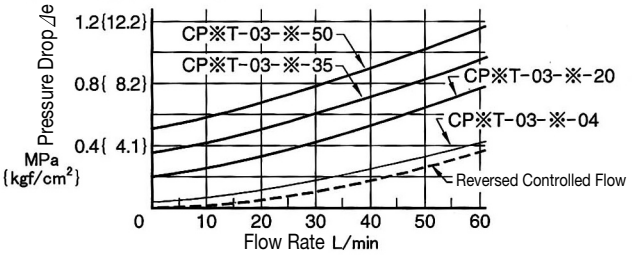
Mounting Surface : ISO 5781-AJ-10-2-A



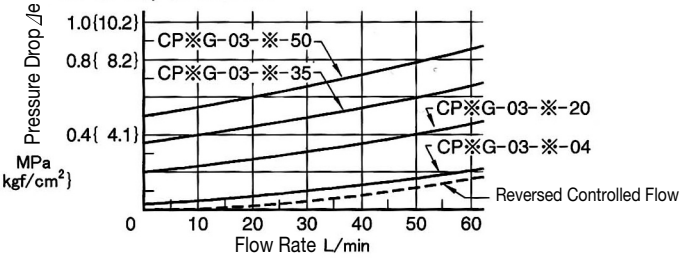
■Pressure Drop

Hydraulic Fluid: Viscosity : 30mm²/s

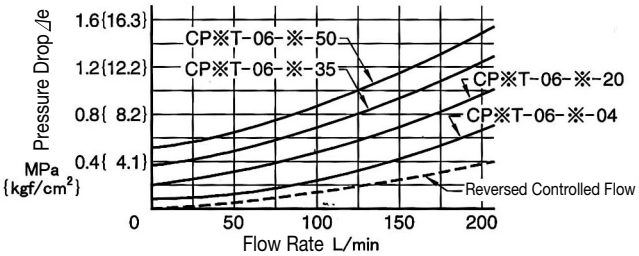
●CPT-03, CPDT-03



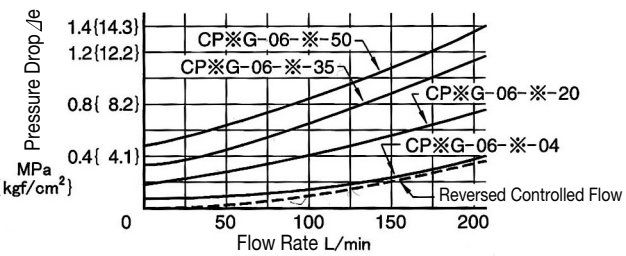
●CPG-03, CPDG-03



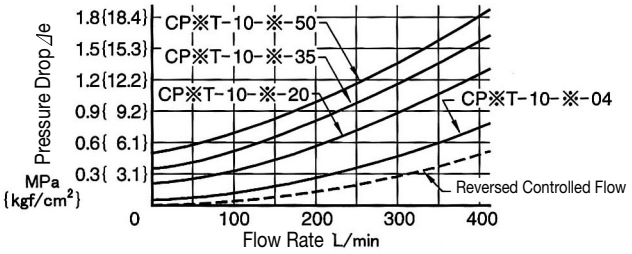
●CPT-06, CPDT-06



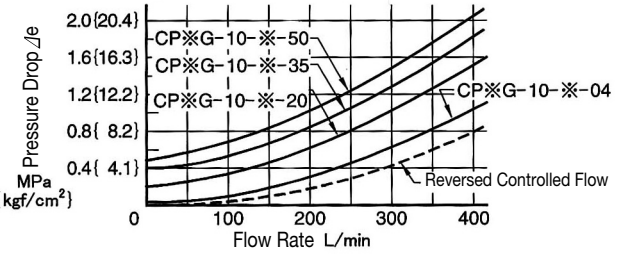
●CPG-06, CPDG-06



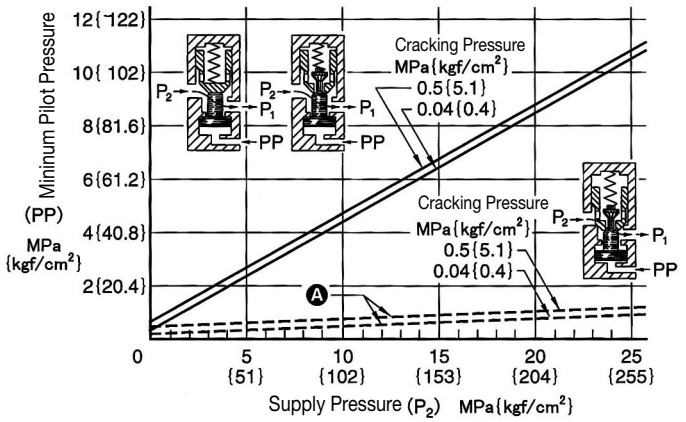
●CPT-10, CPDT-10



●CPG-10, CPDG-10



■Min. Pilot Pressure Chart

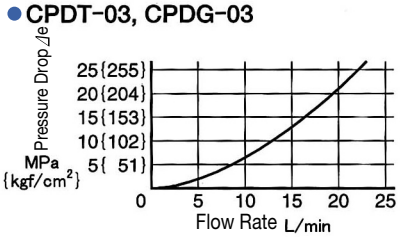


Ⓐ: Min.Pilot Pressure to open the Decompression Valve

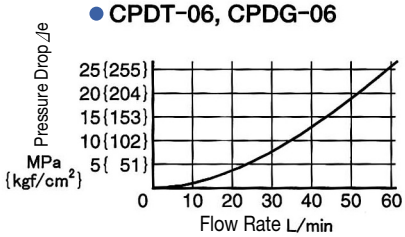
■Pressure Drop for Reversed Controlled Flow Only when Decompression Valve is Opened

Hydraulic Fluid: Viscosity : 30mm²/s

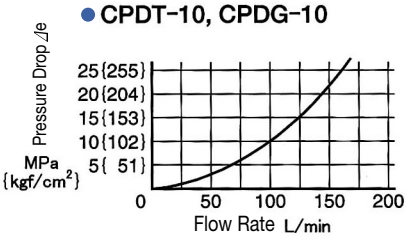
●CPDT-03, CPDG-03



●CPDT-06, CPDG-06



●CPDT-10, CPDG-10

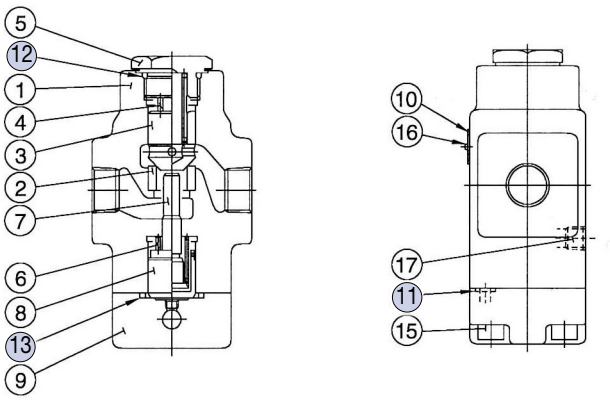


CAUTION

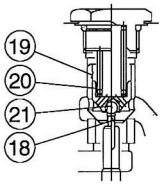
When making replacement of seals, please do it carefully after reading through the relevant instructions in the Operator's Manual.

List of Seals

CPT-03, 06, 10

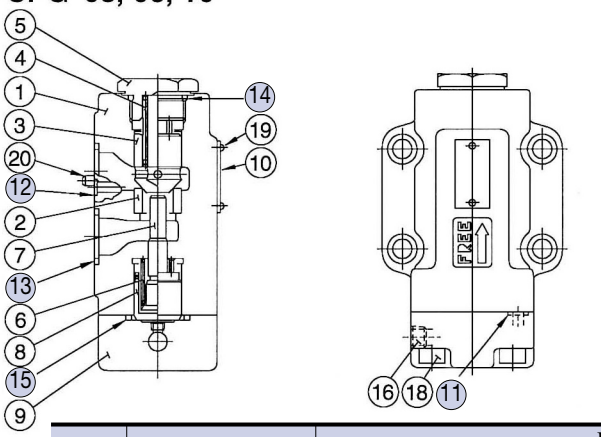


CPDT-03, 06, 10

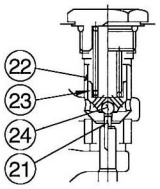


Item	Name of Parts	Part Numbers			Qty.
		CP※T-03	CP※T-06	CP※T-10	
11	O-Ring	JIS B 2401-1B-P7	JIS B 2401-1B-P9	JIS B 2401-1B-P9	1
12	O-Ring	JIS B 2401-1B-P21	JIS B 2401-1B-P29	JIS B 2401-1B-P36	1
13	O-Ring	JIS B 2401-1B-G25	JIS B 2401-1B-P32	JIS B 2401-1B-P42	1

CPG-03, 06, 10



CPDG-03, 06, 10



Item	Name of Parts	Part Numbers			Qty.
		CP※G-03	CP※G-06	CP※G-10	
11	O-Ring	JIS B 2401-1B-P7	JIS B 2401-1B-P9	JIS B 2401-1B-P9	1
12	O-Ring	JIS B 2401-1B-P9	JIS B 2401-1B-P9	JIS B 2401-1B-P9	2
13	O-Ring	JIS B 2401-1B-P18	JIS B 2401-1B-P28	JIS B 2401-1B-P32	2
14	O-Ring	JIS B 2401-1B-P21	JIS B 2401-1B-P29	JIS B 2401-1B-P36	1
15	O-Ring	JIS B 2401-1B-G25	JIS B 2401-1B-P32	JIS B 2401-1B-P42	1