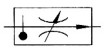
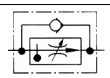
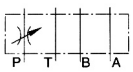
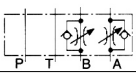
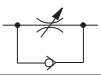
D

FLOW CONTROLS

Valve Type	KS Graphic Symbols	Maximum Operating Pressure MPa {kgf/cm²}	Maximum Flow L/min (1 2 3 5 10 20 30 50 100 200 300 500 1000 2000 3000 5000)	Page
Flow Control Valves		21{214}	01 02 03	D-3
Flow Control and Check Valves		21{214}	01 02 03	D-3
Restrictors		25{255}	03 06 (Rated flow)★	D-10
One Way Restrictors		25{255}	03 06 (Rated flow)★	D-14
Throttle Modules		25{255}	01 03	D-18
Throttle & Check Modules		25{255}	01 03	D-18
Needle Valves		35{357}	02	D-22
Flow Control and Check Valves		21{214}	400 600 800 1200 1600 2000	D-24

★Rated flow stands for approximate flow rate when the pressure drop between inlet and outlet ports of the valve in fully opened condition becomes 0.3MPa{kgf/cm²} maximum at fluid's specific gravity of 0.85 and kinematic viscosity of 20㎟/s(98SSU).

Hydraulic Fluid

1.Fluid Types

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

Types of fluids	Specifications
Petroleum base oils	Use fluids equivalent to ISO VG32 or VG46.
Synthetic fluids	Use phosphate ester or polyol ester fluid.When phosphate ester fluid is used, prefix "F-" to the model number because the special seals (fluororubber) are required to be used.
Water containing fluids	Use water-glycol fluid.

Note: For use with hydtaulic fluids other than those listed above, please consult your SEWON representatives in advande.
Water in oil emulsion type fluids can be used for restrictors and one way restrictors.

2.Recommended Viscosity and Oil Temperatures

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

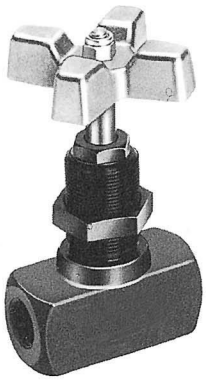
Name	Viscosity	Temperature
Flow Control Valves Flow Control and Check Valves	20~200mm²/s{cSt}	-15℃~+70℃
Restrictors One Way Restrictors Throttle Modules Throttle and Check Modules Needle Valves	15~400mm²/s{cSt}	

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 valves. Please maintain the degree of contamination within NAS 1638-Grade12. Use 25μm or finer line filter.

Needle Valves

Used as stop valves for pressure gauge lines and small-capacity line. Also can be used as restrictors for regulating flow rates in pilot lines.



Ratings

Model Numbers		Max. Flow L/min	Max. Operating Pressure MPa {kgf/cm²}	Approx. Madss kg
In-line Type	Angle Type			
GCT-02-31	GCTR-02-31	★	35{357}	0.34

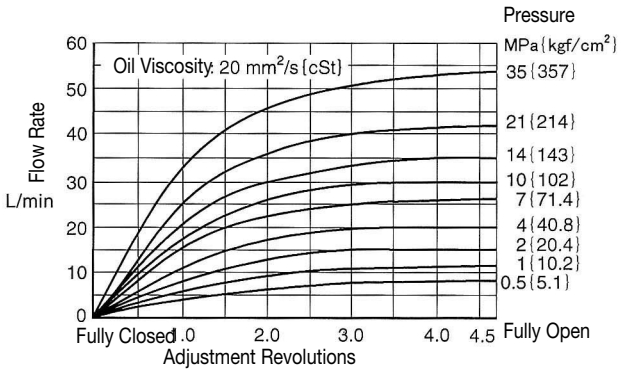
★ Depends on allowable pressure drops. See Flow vs. Adjustment Revolutions characteristics and Pressure Drop at Full Open Characteristics.

Model Number Designation

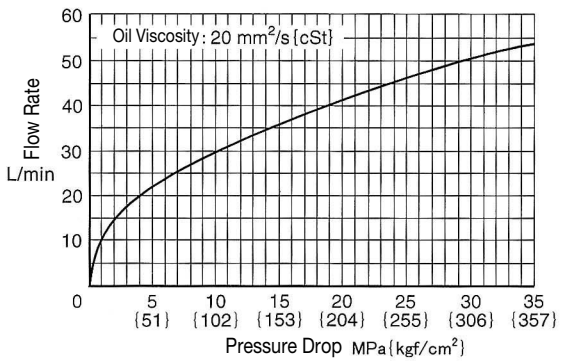
GCT	-02	-31
Series Number	Valve Size	Design Number
GCT : In-line Type Needle Valve, Threaded Connection GCTR : Angle Type Needle Valve, Threaded Connection	02	31

KS Graphic Symbols

Flow vs. Adjustment Revolutions



Pressure Drop at Full Open

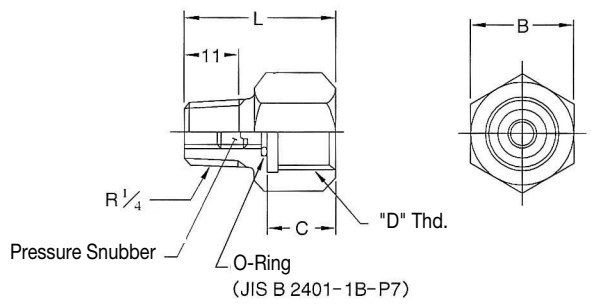


Adaptor

Used where pressure gauges are attached directly to needle valves. Equipped with pressure snubber for reducing harmful surges to protect pressure gauges.
Adaptors are not accessories to needle valves. Other them referring to the table below. For the models shown here, only Japanese standard specifications are available.

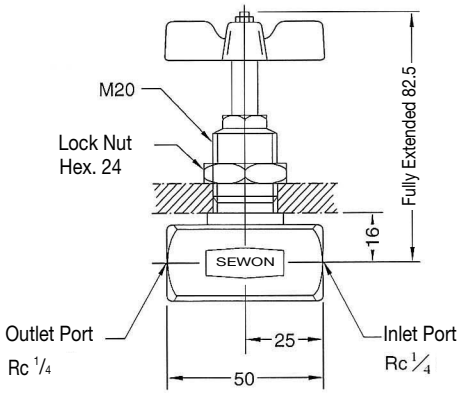
Adaptor Type	Thread Size "D" Thd.	B	C	L	Approx.Mass kg
AG-02S	G1/4	24	14	32	0.075
AG-03S	G3/8	24	16	35	0.075
AG-04S	G1/2	27	18	37	0.08

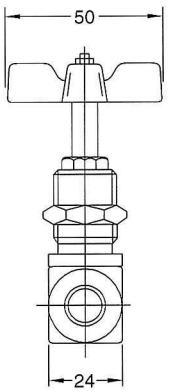
AG-02S, 03S, 04S

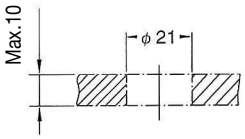


NOTE : The dimensions refer to the table above.

GCT-02

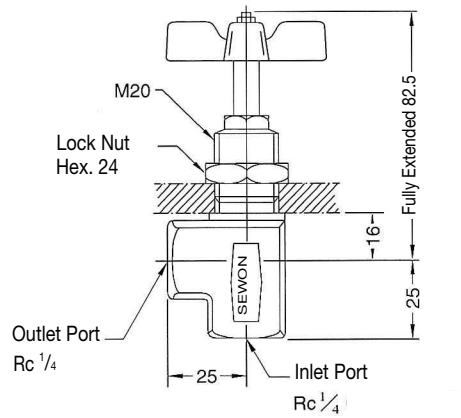


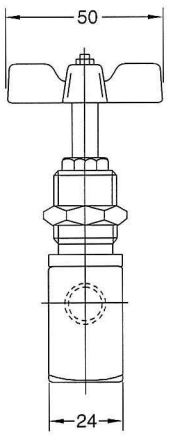


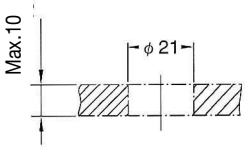


Panel Mounting Dimensions

GCTR-02







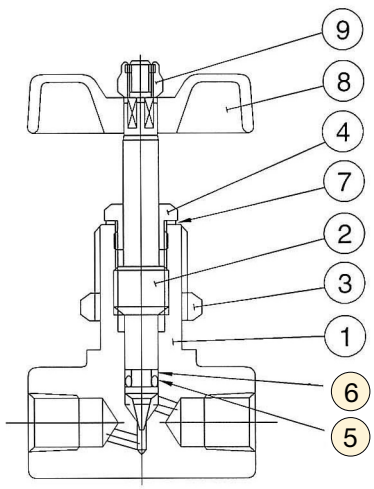
Panel Mounting Dimensions

⚠ CAUTION

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

List of Seals

GCT
GCTR-02



Item	Name of Parts	Part Numbers	Qty.
5	O-Ring	JIS B 2401-1A-P5	1
6	Back Up Ring	JIS B 2407-T2-P5	1

Installation

Refer to the following procedures to fit the valve with a panel. Figure in a circle below is shown on the above drawing.

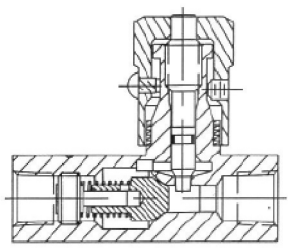
1.Remove the nut ⑨ then take off the handle ⑧.
2.Take off the nut ③.
3.Insert the needle valve to a panel hole.
4.Screw the nut ③ onto the valve and fix the valve with the panel.
5. Fit the handle ⑧ and fix it with the nut ⑨.

Flow Control and Check Valve

With a combination of throttle valve and check valve in one direction to control the flow through the bridge axis, the check valve in the opposite direction to the flow through the valve is free.

Ratings

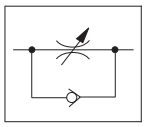
Max. Flow Rate	Max.Operating Pressure	Cracking Pressure	Available temperature
Refer to the table below	200~800: 34MPa {347kgf/cm²}	0.039MPa {0.4kgf/cm²}	-40℃ ~ 121℃



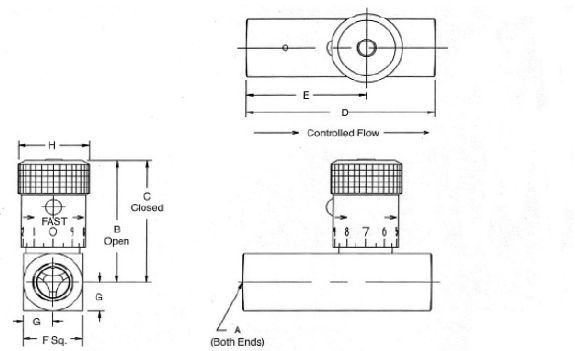
Model Number Designation

SF	600	S
Series Number	Valve Size	Material
SF : SEWON FLOW CONTROL VALVE	Refer to the table below	STEEL

KS Graphic Symbol



Dimensions



Model Numbers	Max. Flow L/mim	Dimensions(mm)							
		A	B	C	D	E	F	G	H
SF400S	19	PT 1/4	45.5	40.4	66.8	42.2	20.6	10.4	20.6
SF600S	30	PT 3/8	55.4	49.5	69.9	44.5	25.4	12.7	25.4
SF800S	57	PT 1/2	68.6	61.5	87.4	56.6	31.8	16	30.2
SF1200S	95	PT 3/4	89.5	71.4	98.6	65.5	38.1	19.1	35.1
SF1600S	151	PT1	123.7	106.9	127	81.8	44.5	22.4	47.8
SF2000S	265	PT1 1/4	126	113	144	102	55	27.5	50