



## SC10 & SC20 & SC30 Series Diaphragm-Seal Type Pressure Gauge

### OUTLINE

These pressure gauges are constructed to use a liquid filled between the diaphragm seal and element as the pressure transmission medium. Our catalog introduces pressure gauges, pressure gauges with electric contact, pressure switches, differential pressure gauges, differential pressure gauges with electric contact, and differential pressure switches. Since the diaphragm seal and bottom flange of the wetted part can be selected to match the application, these gauges are applicable to measurement of highly corrosive fluids, high viscosity fluids, and fluids which are mixed with solids or which solidify easily.

### FEATURES

- \* A highly corrosion resistance diaphragm is used at the diaphragm seal so that high viscosity fluids, as well as highly corrosive fluids, can be measured.
- \* When the diaphragm is welded, its surface can be easily cleaned by loosening the case mounting bolt.

### SPECIFICATION

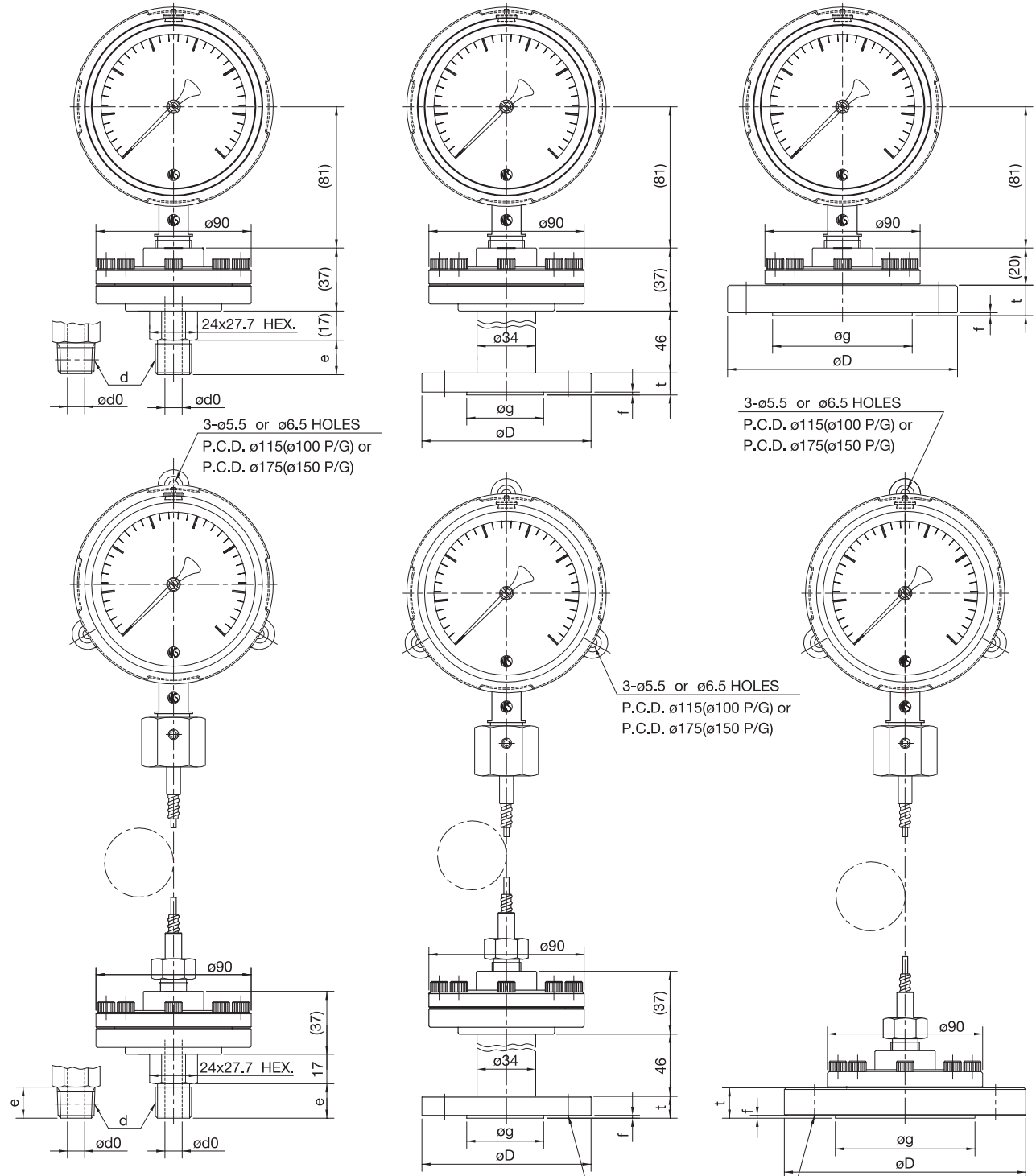
- **Model :** SC10-20-30 Series (Diaphragm Seal Pressure Gauge)
- **Fluid :**  
High corrosion and high viscosity fluid
- **Size :**  
100 Dia.  
150 Dia.
- **Filling liquid :**  
Silicon oil
- **Installation method :**  
Screw type  
Flange type
- **Type :**  
Direct type  
Remote type (Option)
- **Maximum capillary length :**  
In case of remote (Option)  
2m~15m (Depend on the range)
- **Capillary material :**  
304SS, 316SS (316SS is only request)
- **Flexible material :**  
304SS, (316SS and or request)
- **Diaphragm dia :**  
ø40, 60, 80, 110m/m
- **Diaphragm materials :** 316LSS  
For the material of the upper and lower flange, diaphragm, etc., refer to diaphragm-seal pressure and differential pressure gauge(switch) catalogue diaphragm seal part 2 column.
- **Case and Cover material :**  
304SS, 316SS (Option), Aluminium alloy
- **Pressure range :**  
0 ~ 0.1 → 0 ~ 10 MPa (0 ~ 25 MPa is welded type)  
-0.1 ~ 0 → -0.1 ~ 2 MPa
- **Accuracy :**  
±1.5%F.S. / 20°C±10°C (STD.)  
±1.0%F.S. / 20°C±10°C (Option)
- **Operating temperature :**  
Ambient : -5 ~ 40°C  
Fluid : -20 ~ 80°C
- **Window :**  
Glass, Safety glass
- **Filling liquid (Operating temp.) :**  
Silicon oil : -30 ~ 230°C  
Note : For vacuum and compound pressure gauges, only those for -30 to 100°C temperature range are available.  
\* Pressure ranges filled with Daifloil, glycerine water solution or ethylene glycol are also available. For details, please inquire at the nearest KOREA NAGANO office. (Note that working temperature range changes according to the filled liquid type and that using as a vacuum or compound pressure gauge is possible only when low-temperature silicon oil is filled.)

Outline dimension & Mounting type (SC10 & SC20 & SC30 Series)

SC10-□□□

SC20-□□□

SC30-□□□

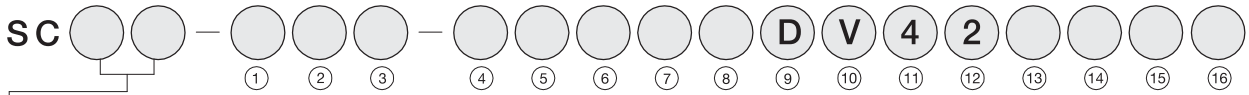


d	e	d0	Model
PF3/8	18	8	SC10 Series
PF1/2	20	10	
(N)PT1/4	14	5	
(N)PT3/8	16	8	
(N)PT1/2	18	10	

Connection flange  
The length depends on the standard length of JIS or ANSI flange.

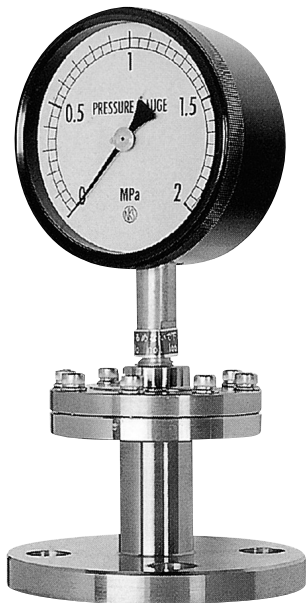
## Model number configuration (SC10 & SC20 & SC30 Series)

\* For ordering, Please specify the model number and each spec.



Model	Selective spec.										Option					
	10	Screw type					50	I-Flange type with Cleaning hole								
20	I-Flange type					60	I-Flange type with Steam jacket									
30	Direct flange type					70	I-Flange type with Non metal									
40	Screw type with Cleaning hole															
① Mounting method (Rating)	0	SCREW	C	JIS 20K	F	ANSI 150#	I	ANSI 900#	G	JPI 150#	P	JPI 900#				
	A	JIS 10K	D	JIS 30K	G	ANSI 300#	J	ANSI 1500#	H	JPI 300#	X	Other				
	B	JIS 16K	E	JIS 40K	H	ANSI 600#	K	ANSI 2500#	K	JPI 600#						
② Process connection	Screw															
	1	PF3/8"	3	NPT3/8"	5	PT1/2"	7	PF3/4"	9	NPT3/4"						
	2	PT3/8"	4	PF1/2"	6	NPT1/2"	8	PT3/4"	0	Other						
	Flange															
A	10A (3/8")	C	20A (3/4")	E	32A (1 1/4")	G	50A (2")	I	80A (3")							
B	15A (1/2")	D	25A (1")	F	40A (1 1/2")	H	65A (2 1/2")	J	100A (4")							
③ Shape	0	Screw				3	MF			6	FMF					
	1	FF				4	GF			7	RJ					
	2	RF				5	TF			9	Other					
④ Upper flange material	2	304SS				4	316LSS									
	3	316SS				5	Other									
⑤ Diaphragm material	1	316LSS+PTFE lining				4	316LSS			5	Monel					
	2	316LSS+PTFE coating				8	Hastelloy-C			7	Other					
⑥ Wetted parts material (Lower flange)	1	304SS		4	316SS+PTFE coating			7	316SS+PTFE lining							
	2	316SS		5	316LSS+PTFE coating			8	316LSS+PTFE lining							
	3	316LSS		6	304SS+PTFE coating			9	304SS+PTFE lining							
								0	Other							
⑦ Diaphragm dia. (MPa)	4	40 dia. (0~7, 10, 15)					8	80 dia. (0~0.1, 0.2, 0.3, 0.4)								
	6	60 dia. (0~1.5, 2, 2.5, 3.5, 5)					9	100 dia. (0~0.05, 0.07)								
⑧ For medium temperature	A	Nil (Low-temperature)														
	B	Middle-temperature (Higher than 100 to 230°C)														
⑨ ⑩ ⑪ ⑫ Pressure gauge	Application model (Use for application model)															
	D	V	4	2	100 dia. P/G											
	D	V	6	2	150 dia. P/G											
	B	E	1	0	100 dia. P/G											
⑬ Construction	0	Nil														
	1	Direct type														
	2	Remote type														
⑭ Indicator element material	N	Nil														
	D	General use														
	R	Corrosion-proof use														
⑮ Treatment	0	Nil				2	Use no water									
	1	Use no oil				3	Use no oil & water									
⑯ Document	0	Nil														
	1	Required														

# Diaphragm-Seal type Pressure Gauge



## OUTLINE

This is a diaphragm seal type pressure instrument in which liquid as a pressure transmitting media is filled between a diaphragm seal parts and bourdon tube as an element.

In this catalogue, general type of Indicator, pressure gauge with electric contact, pressure switch, differential pressure gauge, differential pressure gauge with contact and differential pressure switch are introduced.

Diaphragm and the lower flange as wetted parts can be selected according to applications, so these instruments are appropriate for the measurement of highly corrosive fluid, high viscosity fluid, fluid which contains solid materials or fluid to be easily solidified.

## FEATURES

- Because the high-corrosion resistant diaphragm can be used at the pressure receiving portion, this pressure gauge can be used for the measurement of highly corrosive measuring fluid.
- For a pressure gauge in which a diaphragm is attached by welding, the surface of a diaphragm can be easily cleaned. (by loosening the casing bolts.)
- A zero-adjusting pointer has been applied, so calibration required due to errors of temperature, elevation, etc. can be easily preformed.
- With the application of a welded diaphragm the application for leakage of filled liquid has been decreased. (diaphragms made of some materials are excluded.)

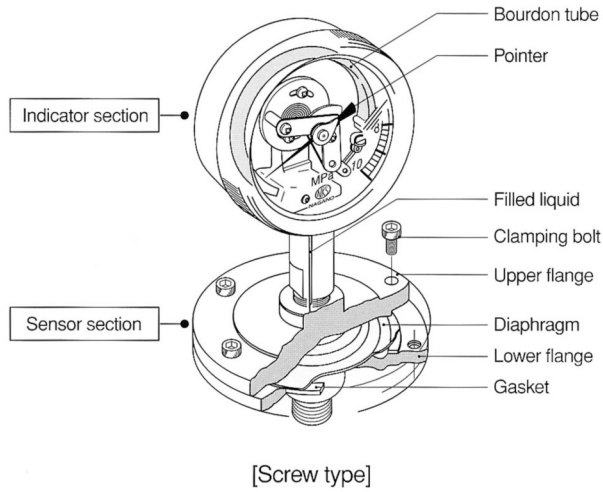
Classification	General pressure gauge		Pressure gauge with electric contact		Pressure switch			Differential pressure gauge	Differential pressure switch
	General type, weather-proof type (conforming to JIS)	Glycerin filled type	Micro switch	Electronic type	Pressure switch (Explosion-proof pressure switch)			Differential pressure gauge (Differential switch with electric contact)	Differential pressure switch (Explosion-proof differential pressure switch)
	AC, AE, AG, BC, BE, BG	GV42	JM□□	JD1□	CD30	CQ30	CB13, CB33, CD75	DG9□	CL71, CD71
Measured fluid Temperature range	-30~230°C	-5~100°C	-30~230°C	-5~100°C	-30~230°C	-30~230°C	-30~100°C	-5~100°C	-5~100°C
Appearance									
Type	Direct type Remote type (option)	Direct type Remote type (option)	Direct type Remote type (option)	Direct type Remote type (option)	Remote type	Direct type Remote type (option)	Remote type	Remote type	Remote type
Pressure range	0~0.05 MPa ↓ 0~15 MPa	0~0.1 MPa ↓ 0~15 MPa	0~0.1 MPa ↓ 0~5 MPa	0~0.2 MPa ↓ 0~15 MPa	0~0.2 MPa ↓ 0~15 MPa	0~0.2 MPa ↓ 0~15 MPa	0.04~0.4 MPa ↓ 1~10 MPa	0~0.05 MPa ↓ 0~0.5 MPa	0.01~0.05 MPa ↓ 0.2~1 MPa
	-0.1~0 MPa ↓ -0.1~2 MPa	-0.1~0 MPa ↓ -0.1~2 MPa	-0.1~0 MPa ↓ -0.1~2 MPa	-0.1~0.1 MPa ↓ -0.1~2 MPa	-0.1~0 MPa ↓ -0.1~2 MPa	-0.1~0.2 MPa ↓ -0.1~2 MPa			
Diaphragm dia.	φ 40, φ 60, φ 80, φ 110	φ 40, φ 60, φ 80, φ 110	φ 60, φ 80, φ 110	φ 40, φ 60, φ 80	φ 40, φ 60, φ 80, φ 110	φ 40, φ 60, φ 80, φ 110	φ 60, φ 110	φ 110	φ 110

※ In addition to these, pressure gauges with electric contacts or other combinations, for example, with electronic pressure transmitters or pneumatic pressure/differential pressure transmitters are available. Please contact the nearest NAGANO KEIKI office.



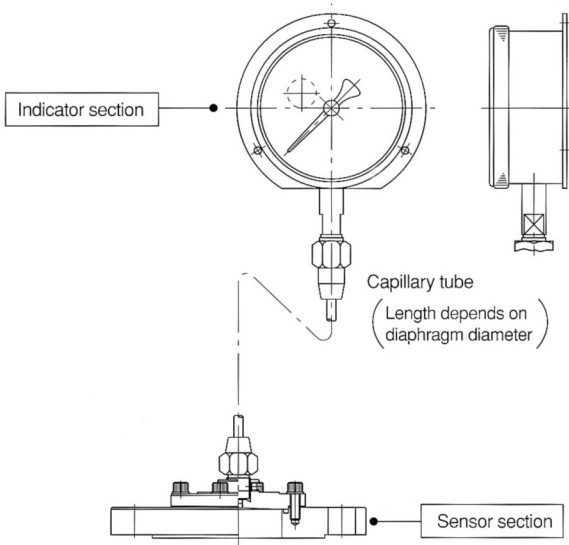
**CONSTRUCTION**

**Direct type :**



Liquid is filled between the diaphragm and the Bourdon tube. The pressure which is received by the diaphragm is transmitted to the Bourdon tube by the filled liquid as pressure transmitting medium, and the Bourdon tube is deformed under the pressure to rotate the pointer.

**Remote type :**



Indicator section and sensor section are connected by a capillary tube in which liquid is filled.

※ For diaphragm-seal type pressure gauges, a "bellows type" which is not filled liquid (unfilled type) is also available. This type is especially suited to the food processing industry or other applications where no droplets of filled liquid are allowed to mix in with the object fluid.

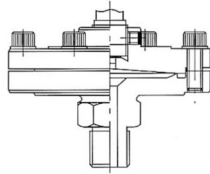
**SENSOR SECTION 1**

**Mounting**

[Screw type]

Screw type

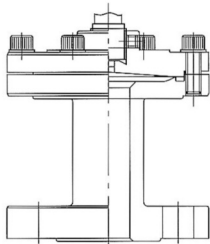
(Model : SC10)



[Flange type]

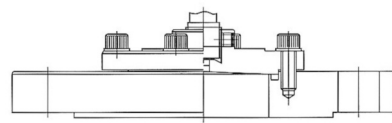
I - Flange type

(Model : SC20)



Direct - Flange type

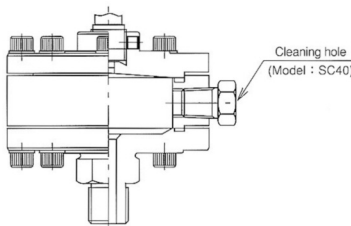
(Model : SC30)



**Special models**

Screw with Cleaning hole type

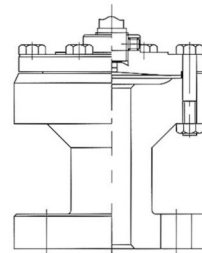
(Model : SC40)



Application: When fluid is stuck on the diaphragm, the inside of the flange can be cleaned through the cleaning hole without removing the lower flange.

I - Flange Non-metal flange type

(Model : SC70)



For non-metal flange type

Flange material: Rigid polyvinyl chloride, polypropylene

Flange face: FF (flat face)

Flange manufacturing range: JIS10K15A~40A

ANSI 150LB3/4B~1 1/2B

(Diaphragm diameter: only  $\phi$  60 and  $\phi$  80)

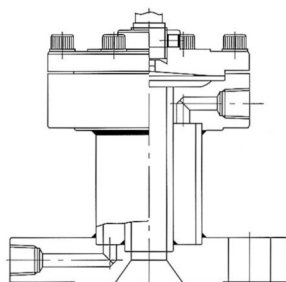
Maximum pressure:  $\phi$  60...1MPa or less

$\phi$  80...0.4MPa or less

Working temperature: 0 to 60°C

I - Flange with Steam jacket type

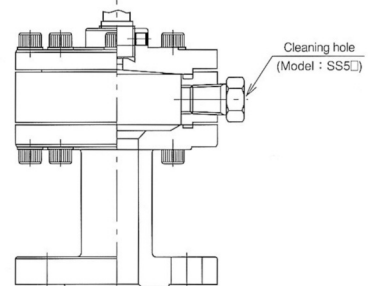
(Model : SC60)



Application: In order to prevent freezing or to increase viscosity, steam is let through the jacket to warm the fluid flowing in the inner pipe.

I - Flange with Cleaning hole type

(Model : SC50)



Application: When fluid is stuck on the diaphragm, the inside of flange can be cleaned through the cleaning hole without removing the lower flange.

**SENSOR SECTION 2**

**Connecting screw/flange :**

Screw type (SC10)	Flange type (SC2□ · 3□)	
	Nominal pressure	Nominal size
G3/8B (PF)	JIS10K, JIS16K,	10A, 15A, 20A,
G1/2B (PF)	JIS20K, JIS30K,	25A, 32A, 40A,
R3/8 (PT)	JIS40K, JIS63K,	50A, 65A, 80A,
R1/2 (PT)	ANSI150, ANSI300,	100A
3/8NPT	ANSI600, ANSI900,	3/8", 1/2", 3/4",
1/2NPT	ANSI1500	1", 1 1/4", 1 1/2",
		2", 2 1/2", 3",
		3 1/2", 4"

**Material :**

**Standard type (Model : SC□□)**

Upper flange	Diaphragm	Lower flange		Gasket	Clamping bolt
		Screw type	Flange type		
S25C (Ni plated)	SUS316, SUS316L, Monel,	S25C, SUS316, SUS316L, Monel,	S25C, SUS316, SUS316L, S25C+Lining, (Glass, PTFE, Neoprene, crude rubber)	Less than 200°C PTFE 200°C or higher Asbestos (Only when temperature is specified)	SUS305
SUS316	TP35C (Titanium), Hastelloy B, Hastelloy C-276, TaP (Tantalum), Nickel, SUS316 +Neoprene lining, <sup>※1</sup> SUS316 +FEP lining, <sup>※1</sup> SUS316 +FEP coating <sup>※1</sup>	TB35C (Titanium), Hastelloy B, Hastelloy C-276, NAS305 (Carpenter 20)	S25C+Lining, (PTFE, Neoprene, Crude rubber) S25C+FEP coating, SUS316+Lining, (PTFE, Neoprene, Crude rubber) SUS316+FEP coating, Rigid polyvinyl chloride (PVC), <sup>※2</sup> Polypropylene <sup>※2</sup>		

**High withstand pressure type (Model : HH□□ · HD□□)**

Upper flange	Diaphragm	Lower flange		Gasket	Clamping bolt
		Screw type	Flange type		
S25C (Ni plated) (HD□□ only)	SUS316, SUS316L, SUS316 +FEP lining, <sup>※1</sup> SUS316 +FEP coating <sup>※1</sup>	S25C (HD□□ only), SUS316, SUS316L (HD□□ only),	S25C (HD□□ only), SUS316, SUS316L (HD□□ only),	Less than 200°C PTFE 200°C or higher Asbestos (temperature is specified)	SUS305
SUS316 (HD□□ only)					

**High withstand pressure welding end type (Model : HE□□)**

Upper flange	Diaphragm	Lower flange	
		Screw type	Flange type
SUS316	SUS316,	SUS316,	SUS316,
SUS316L	SUS316L	SUS316L	SUS316L
Upper flange comes into contact with liquid			

\* 1 When diaphragm material is FEP or Neoprene, the maximum working temperature of sensor section is 100°C.

\* 2 When the material of the lower flange is rigid polyvinyl chloride (PVC), polypropylene or other resin, a problem may arise involving heat resistance, weather resistance, strength or durability. Please use metal flange as much as possible.  
(Rigid polyvinyl chloride (PVC) flanges are manufactured by bonding, not by machining.)

Note 1: Can be used as a vacuum gauge of specified accuracy when pressure is 2.7 kPa abs. or higher.

Note 2: When the product is used to measure high-pressure gas, NAGANO KEIKI can provide a strength calculation report conforming to the High-Pressure Gas Safety Act. Request it to us when necessary.

Note 3: When the material of diaphragm is monel, nickel or coating, the flange may not be welded.  
In case of FEP, SUS316 is welded on the upper flange and then FEP is lined on the connected side.  
However, for vacuum or compound pressure gauges, please specify "FEP coating."

## MANUFACTURING SPECIFICATION

**Relationship between pressure range, temperature range and diaphragm diameter :** (Maximum length of capillary tube: For remote type (option))

Filled liquid	Low-temperature silicone oil				Middle-temperature silicone oil	
	Temperature range of measured fluid	Less than -30 to -5°C		-5 to 100°C ※		Higher than 100 to 230°C
Pressure range MPa	Diaphragm diameter	Maximum length of capillary tube	Diaphragm diameter	Maximum length of capillary tube	Diaphragm diameter	Maximum length of capillary tube
0~ 0.05 (GV42 is not available)	φ 110	6m	φ 110	6m	φ 110	6m
~ 0.07 (GV42 is not available)	φ 110	6m	φ 110	6m	φ 110	6m
~ 0.1	φ 110	6m	φ 80	6m	φ 110	6m
~ 0.16	φ 110	6m	φ 80	6m	φ 110	6m
~ 0.2	φ 110	6m	φ 80	6m	φ 110	6m
~ 0.25	φ 80	4m	φ 80	6m	φ 80	4m
~ 0.3	φ 80	4m	φ 80	6m	φ 80	4m
~ 0.4	φ 80	6m	φ 80	8m	φ 80	6m
~ 0.6	φ 80	6m	φ 60	6m	φ 80	6m
~ 1	φ 80	6m	φ 60	10m	φ 80	6m
~ 1.5	φ 60	2m	φ 60	10m	φ 60	2m
~ 1.6	φ 60	2m	φ 60	10m	φ 60	2m
~ 2	φ 60	2m	φ 60	10m	φ 60	2m
~ 2.5	φ 60	2m	φ 60	10m	φ 60	2m
~ 3.5	φ 60	2m	φ 60	10m	φ 60	2m
~ 4	φ 60	2m	φ 60	10m	φ 60	2m
~ 5	φ 60	2m	φ 60	10m	φ 60	2m
~ 6	φ 40	2m	φ 40	2m	φ 40	2m
~ 7	φ 40	2m	φ 40	2m	φ 40	2m
~10	φ 40	2m	φ 40	2m	φ 40	2m
~15	φ 40	2m	φ 40	2m	φ 40	2m
~16	φ 40	2m	φ 40	2m	φ 40	2m
-0.1~0MPa	—	—	φ 110 <sup>○</sup> φ 80	6m 3m	—	—
~0.05 (GV42 is not available)	—	—	φ 110	6m	—	—
~0.07 (GV42 is not available)	—	—	φ 110	6m	—	—
~0.1	—	—	φ 80	6m	—	—
~0.16	—	—	φ 80	6m	—	—
~0.2	—	—	φ 80	6m	—	—
~0.25	—	—	φ 80	6m	—	—
~0.3	—	—	φ 80	6m	—	—
~0.4	—	—	φ 80	8m	—	—
~0.6	—	—	φ 60	6m	—	—
~1	—	—	φ 60	10m	—	—
~1.5	—	—	φ 60	10m	—	—
~1.6	—	—	φ 60	10m	—	—
~2	—	—	φ 60	10m	—	—
~2.5	—	—	φ 60	10m	—	—

※For glycerin filled type (GV42), only those for the temperature range of -5 to 100°C are available.

※Specify the length of capillary tube by the meter.

Shading means the pressure ranges conforming to JIS B7505-1994.

**Relationship between the size of flange/screw and the diameter of diaphragm :**

Mounting method	Flange type								Screw type
	φ 40		φ 60		φ 80		φ 110		
Diaphragm diameter	Model 200 (SC2□)	Model 300 (SC3□)	Model 200 (SC2□)	Model 300 (SC3□)	Model 200 (SC2□)	Model 300 (SC3□)	Model 200 (SC2□)	Model 300 (SC3□)	Model 100 (SC1□)
Nominal size									
10A (3/8")	○	—	○	—	○	—	○	—	G3/8B G1/2B R3/8 R1/2 1/2NPT 3/8NPT
15A (1/2")	○	—	○	—	○	—	○	—	
20A (3/4")	○	—	○	—	○	—	○	—	
25A (1")	—	○	○	—	○	—	○	—	
32A (1 1/4")	—	○	○	—	○	—	○	—	
40A (1 1/2")	—	○	—	○	○	—	○	—	
50A (2")	—	○	—	○	—	○	○	—	
65A (2 1/2")	—	—	—	○	—	○	○	—	
80A (3")	—	—	—	○	—	○	—	○	
100A (4")	—	—	—	○	—	○	—	○	

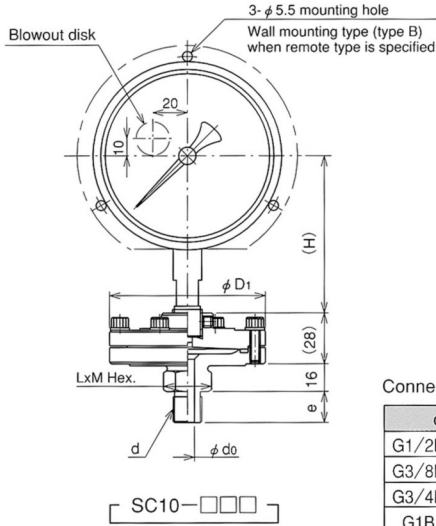


**DIMENSIONS**

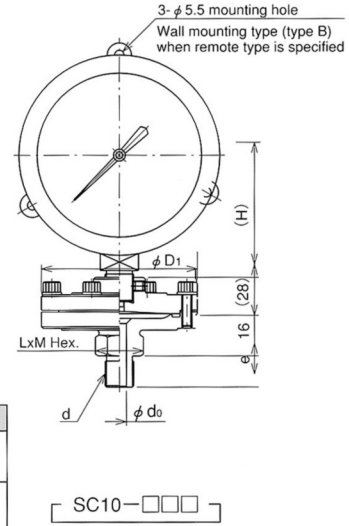
Standard type (Model : SC□□)

[Screw type] Model 100 · Screw

General type · Weather-proof type pressure gauge



Glycerin filled type

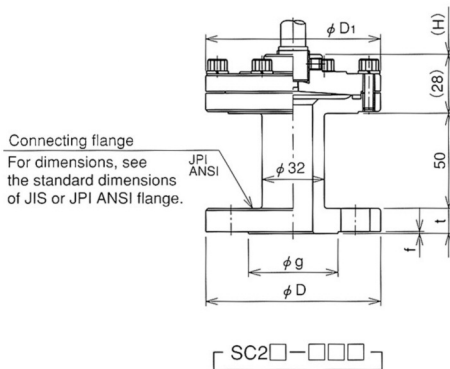


Connecting screw size

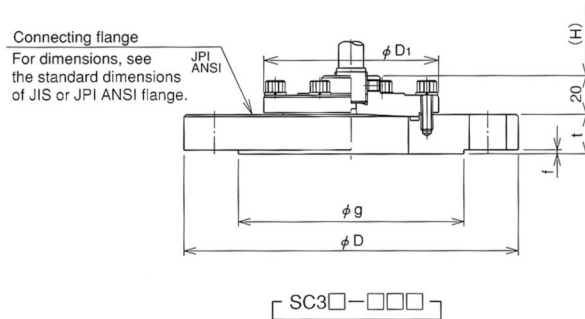
d	e	do	LXM
G1/2B (PF)	20	10	24×27.7
G3/8B (PF)	18	8	36×41.6
G3/4B (PF)	24	15	
G1B (PF)	28	20	

[Flange type]

Model 200 · Flange



Model 300 · Flange



**Dimensions of indicator section (general type, weather-proof type)**

Case material	Size	H	Type No. (indicator section)	
			Direct type	Remote type
Metal	75	56	AC10-1□□	AC10-2□□
			BC10-1□□	BC10-2□□
	100	94	AE10-1□□	AE10-2□□
			BE10-1□□	BE10-2□□
	150	109	AG10-1□□	AG10-2□□
			BG10-1□□	BG10-2□□
Plastic	75	56	BC12-1□□	BC12-2□□
	100	94	BE12-1□□	BE12-2□□
	150	109	BG12-1□□	BG12-2□□

**Glycerin filled type Dimensions of indicator section**

Case material	Size	H	Type No. (indicator section)	
			Direct type	Remote type
SUS304	100	72	GV42-1□□	GV42-2□□

**Outside diameter of sensor section ( φ D<sub>1</sub> )**

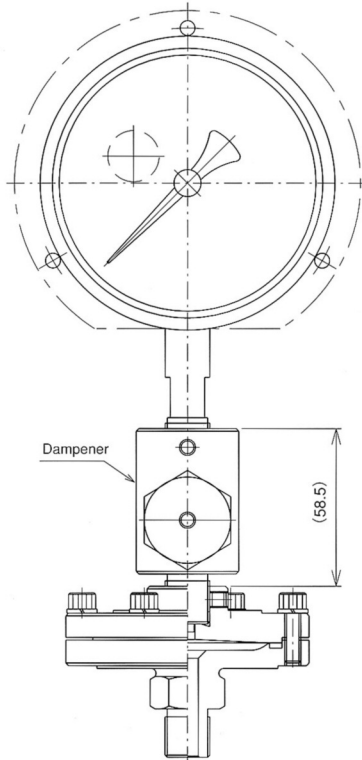
Diaphragm dia.	φ D <sub>1</sub>
φ 40	φ 70
φ 60	φ 90
φ 80	φ 110
φ 110	φ 140

※ For the dimensions of remote type (option), please inquire at the nearest NAGANO KEIKI office.

※ For detailed outside dimensions of indicator section, see the catalog.



**DAMPENER**

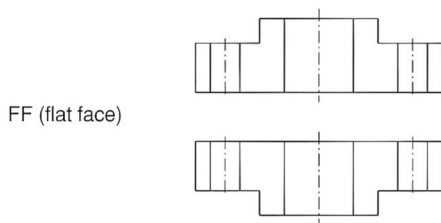


When your pressure gauge is subjected to high pulsating pressure or surge pressure, please install the dampener to protect the gauge.

The dampener has a variable throttle, which can be adjusted according to pressure variation.

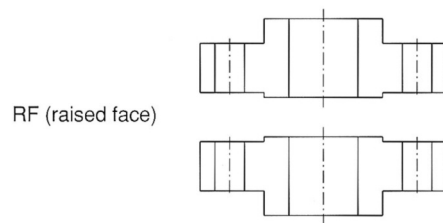
When installed in diaphragm-seal type pressure gauges, the dampener throttles only the filled liquid, eliminating the danger of clogging due to foreign matter. In addition, stable throttling effect is ensured, thanks to the excellent characteristic of filled liquid where viscosity hardly changes with temperature.

**FLANGE TYPE**



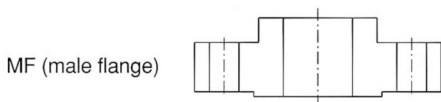
FF (flat face)

Application: Cast iron or copper alloy flanges of 16K or lower nominal pressure.



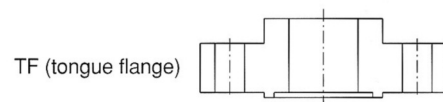
RF (raised face)

Application: Flanges of 63K or lower nominal pressure.



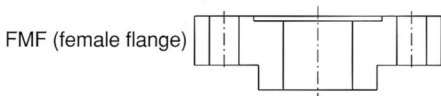
MF (male flange)

Application: 16K or higher nominal pressure requiring airtightness.

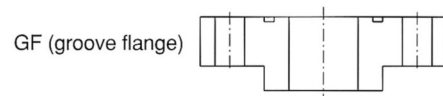


TF (tongue flange)

Application: 16K or higher nominal pressure using dangerous fluid or requiring airtightness.



FMF (female flange)

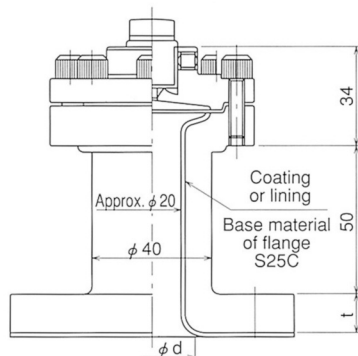


GF (groove flange)

※ Names in ( ) are JIS, [ ] are JPI.

## LINING & COATING

### Lined or coated flange



Available flange type: FF only  
Dimension "t" does not include the thickness of coating or lining.

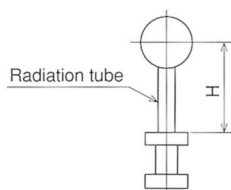
Name	Thickness (mm)	Working temperature range
Glass lining	0.4 ~ 0.8	-30 ~ 230°C
Neoprene lining	2	-20 ~ 100°C
Crude-rubber lining	2	-15 ~ 80°C
PTFE lining	2	-20 ~ 150°C
FEP coating	0.2 ~ 0.3	-30 ~ 180°C

There is a case where "φ d" is bigger than the standard dimension, so please pay attention to gasket size.

## RADIATION TUBE

For middle temperature pressure gauges (over 100°C, below 230°C) or direct mounting type, or when the temperature of sensing part becomes 180°C or higher, we recommend to use the radiation tube as shown below to minimize the influence of temperature on the indication part. Please specify the temperature of measured fluid. Remote type has similar effect.

### Model 200 with radiation tube



#### H length

Height	Weather-proof type φ 100	Weather-proof type φ 150
H	213	228

#### Material

Upper flange	S25C	SUS316
Radiation tube	SS400	SUS316



## SD10 & SD20 Series Diaphragm-Seal Type Pressure Gauge for High Temperature

### OUTLINE

These are pressure gauges that use a liquid filled between the pressure sensing section and the bourdon tube, which is the element, as the pressure transmitting medium. They are used to measure the pressure of material melted under a high temperature and the pressure of a liquid which has a high viscosity under room temperature and are extensively used in the synthetic chemical industry, textile chemical industry, and plastics industry.

### FEATURES

- The pressure gauges can measure pressure over a wide temperature range of 0°C to 330°C. They demonstrate little indication fluctuations due to temperature changes and do not require indication compensation.
- Because they are sealed, and the measured liquid does not directly enter the element (Bourdon tube), the pressure of high density liquids can be measured.
- Since the specific gravity of the filled liquid is low, the indication error (elevation error) due to the difference of height of the sensing section and the indicator does not require compensation.

### SPECIFICATION

- **Model :** SD10 & SD20 Series High Temp. Diaphragm Pressure Gauge
- **Fluid :** Gas or Liquid
- **Type :** Direct type, Remote type
- **Filled liquid :** The filled liquid is a stably quality harmless oil.
- **Size :** 100 Dia.
- **Mounting :** Type A : Direct mounting  
Type B : Surface wall remote mounting
- **Diaphragm :** 18 Dia. (m/m)  
23.6 Dia. (m/m)
- **Connection :** 3/4"PF  
1"PF
- **Wetted parts materials :** Diaphragm : 316SS, 316LSS
- **Detecting element :** With protector or Without protector
- **Allowable temperature range (Detecting element) :** 0 ~ 330°C
- **Pressure range :** 0 ~ 10 → 0 ~ 50 MPa
- **Indication accuracy :** ±1.5% F.S. (Within 20 ~ 80% F.S.)
- **Case & Cover material :** 304SS / 316SS (316SS is only request)
- **Capillary & Flexible tube material :** 304SS, 316SS (316SS is only request)
- **Max. capillary length :** 3m (Remote type)
- **Weight :** Approx. 1.3 ~ 1.9kg

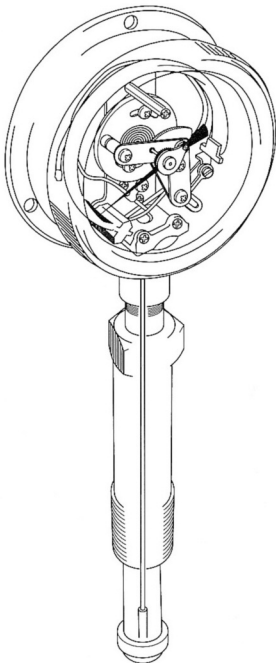
## Construction (SD10 & SD20 Series)

### SPECIFICATION 2

Minimum graduation and weight :

Diaphragm DIA.	Pressure range MPa (kgf/cm <sup>2</sup> )	Minimum graduation MPa (kgf/cm <sup>2</sup> )	Weight Approx. (kgs)
18 DIA.	0~25 (0~250)	0.5 (5)	1.3
	0~35 (0~350)	1 (10)	1.4
	0~50 (0~500)	1 (10)	1.6
23.6 DIA.	0~10 (0~100)	0.2 (2)	1.6
	0~15 (0~150)	0.5 (5)	1.6
	0~25 (0~250)	0.5 (5)	1.7
	0~35 (0~350)	1 (10)	1.9

### CONSTRUCTION

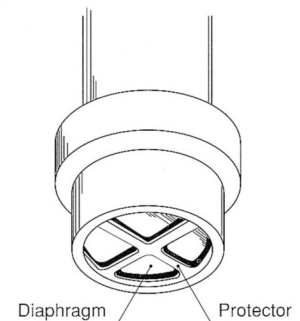


Liquid is filled between diaphragm and bourdon tube.  
 Pressure which received by diaphragm is transmitted to bourdon tube by filled liquid as pressure medium and displace the bourdon tube.  
 Pointer moves by using this displacement.

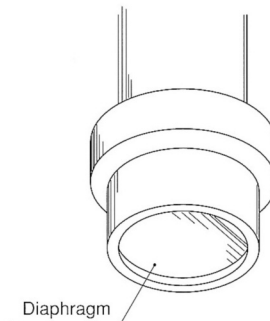
### DETECTING ELEMENT

The protector is used for the protection of diaphragm.

With protector

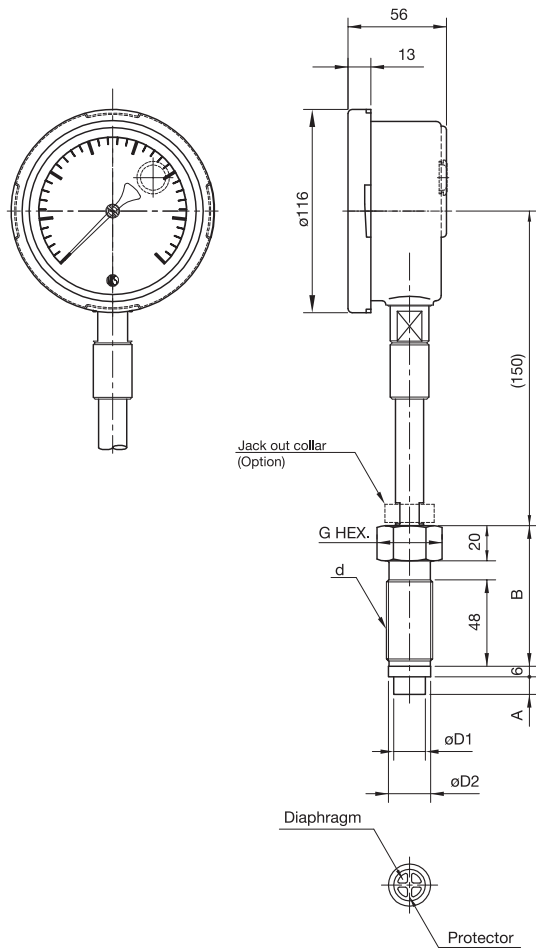


Without protector

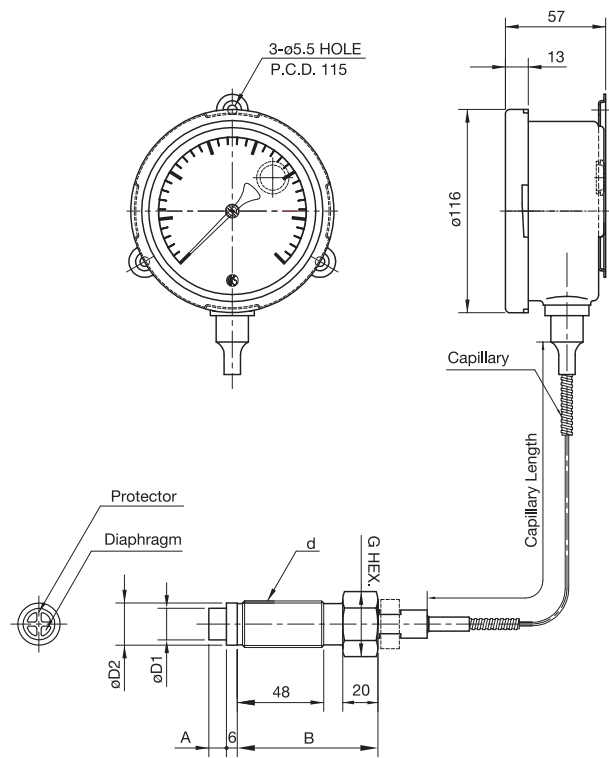


## Outline dimension & Mounting type (SD10 & SD20 Series)

SD10-X11



SD20-X21



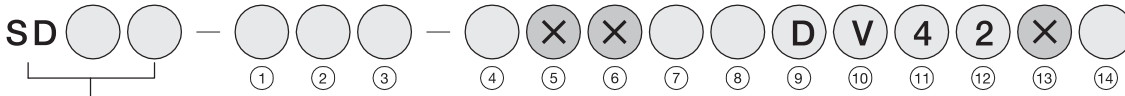
Diaphragm O.D. $\phi D1$	D2	d	G	Detecting element	Capillary length
18	24	PF3/4	32X37	Without Protector	1 m
				With Protector	2 m
23.6	30	PF1	36X41.6	Without Protector	3 m
				With Protector	3 m



## Model number configuration (SD10 & SD20 Series)

\* For ordering, Please specify the model number and each spec.

Diaphragm seal Pressure Gauge for High Temperature



Model		Selective spec.	Option
Model	1 0	Direct type (DV42 is Std.)	
	2 0	Remote type (DV42 is Std.)	
① Construction	X	High Temperature diaphragm	
② Connection/ pressure range		Connection	Diaphragm      Range      Wetted
	1	3/4"PF	18 Dia.      0 ~ 25, 35, 50 MPa      316SS
	2	1"PF	23.6 Dia.      0 ~ 10, 15, 25, 35 MPa      316SS
③ Protector	1	With protection, without Screw relief (18 Dia.)	
	2	Without protection, without Screw relief (23.6 Dia.)	
	3	With protection, with Screw relief (18 Dia.)	
	4	Without protection, with Screw relief (23.6 Dia.)	
③ Wetted parts diaphragm material	3	316SS	
	4	316LSS	
④ Diaphragm material	3	316SS	
	4	316LSS	
⑤ Length A	X	Specify a length between 10 and 30mm in 5mm intervals.	
⑥ Length B	X	Specify a length 55 or 80 to 450mm in 10mm intervals.	
⑦ Option	0	Nil	
	1	With jack out collar	
⑧ Treatment	0	Nil	
	1	Use no oil	
	2	Use no water	
	3	Use no oil & Water	
⑨ ⑩ ⑪ ⑫ Option model		BE10 or GV42	
⑬ Construction	0	Direct type	
	1	Remote type : Capillary length = 1m	
	2	Remote type : Capillary length = 2m	
	3	Remote type : Capillary length = 3m	
⑭ Documents	0	Nil	
	1	Required	

\* When ordering, specify lengths A and B for capillary length and screw mounting.

\* Specify "X" if there is no specification item.