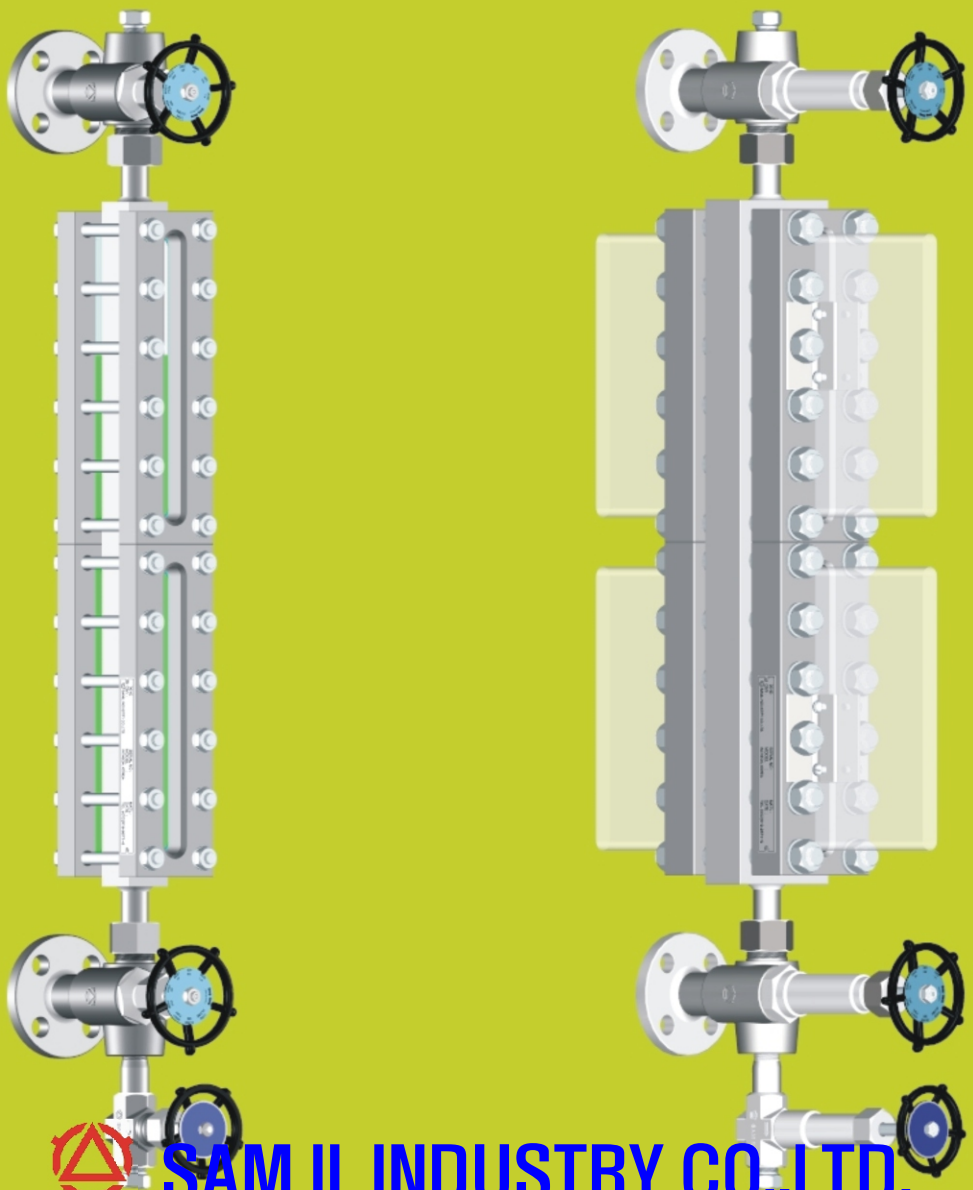
CHAPTER– 4

LIQUID LEVEL GAUGE

TRANSPARENT GAUGE SERIES

IN THIS CHAPTER-4

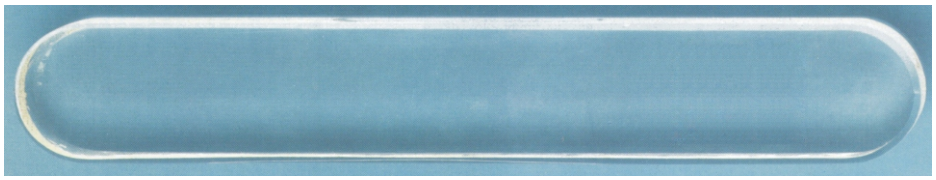
Here is explain the transparent type liquid level gauge series for **SAM IL**'s standard and There may be a little changed for quality improvements and special requirements of our valuable customers. Included the **SWPG** series in this chapter as the direct welding pad gauges.



PRESSURE - TEMPERATURE CHARTS FOR TRANSPARENT GLASS

INTRODUCTION :

Gauge Glasses in liquid level gauges on steam boilers are exposed to very high mechanical and chemical stresses. The interface between steam and water is continuously in motion like as water evaporates, condensate forms. in this an event, the glass is wear rapidly.
For the above problem, Transparent Glasses could be protected with mica shield and if the medium is dirty, viscous on aggressive, flat transparent glasses guarantee better indication since the glass surface can be protected by mica shield against serious attack from media.





Liquid Color at portion to contact with fluid

TRANSPARENT GLASS

Transparent Glass Application Conditions

- Saturated steam or hot water in direct contact with transparent sight glass is :

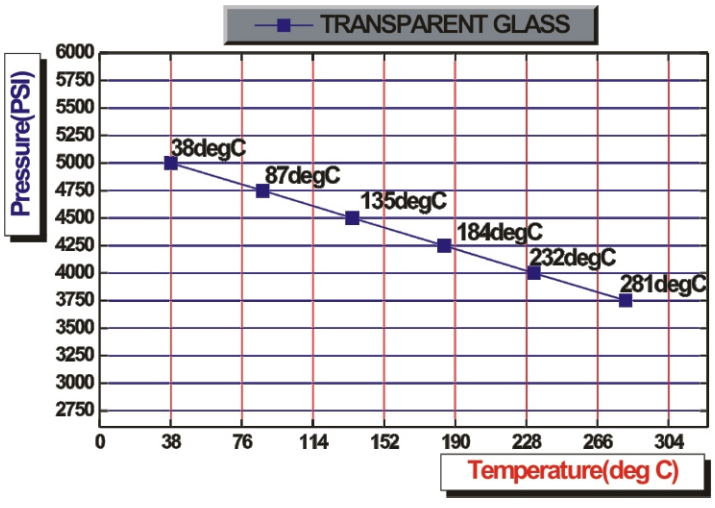
  - Maximum Permissible Pressure : 500 psi[35bar] at 243 °C [470 °F]

- Saturated steam or hot water in contact with transparent sight glass protected with Mica is :

  - Maximum Permissible Pressure : 1500 psi[103bar] at 320°C [608°F]

- The chart shown on the right is range of application with no technically significant glass attack.

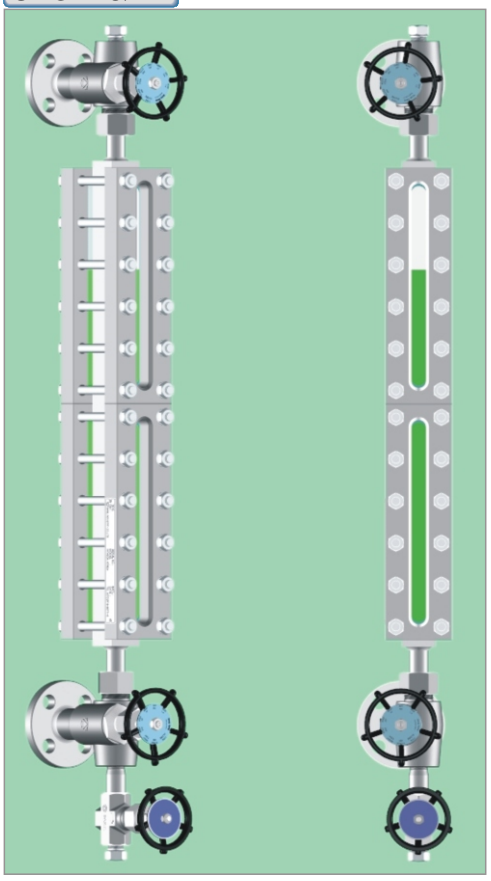
- Transparent Glasses can be used with all media except steam at service conditions up to 4930 psi or temperature up to 400°C.



GENERAL DESCRIPTION

Transparent liquid level gauge use T-Form sight glasses. designed and built for a wide range of high temperature and high pressure applications, **SAM IL**'s transparent type level gauge is used to make observation of the level of corrosion-proof and chromatic liquids. These types are utilized two pieces of tempered flat gauge glasses, in front and rear of which are enclosed with a gauge cover using stud bolts. Where high temperature and corrosion are liable to occur, it can be furnished with a mica shield to prevent it from being corroded. These types are preferably used for reservoir tanks that require a relatively long visible length by constructing the supporter.
The Transparent Gauge is assembled firmly with gasket, [Mica Shield], transparent glass, cushion gasket and gauge cover on the body by Stud-Bolts for all STG series, in order.

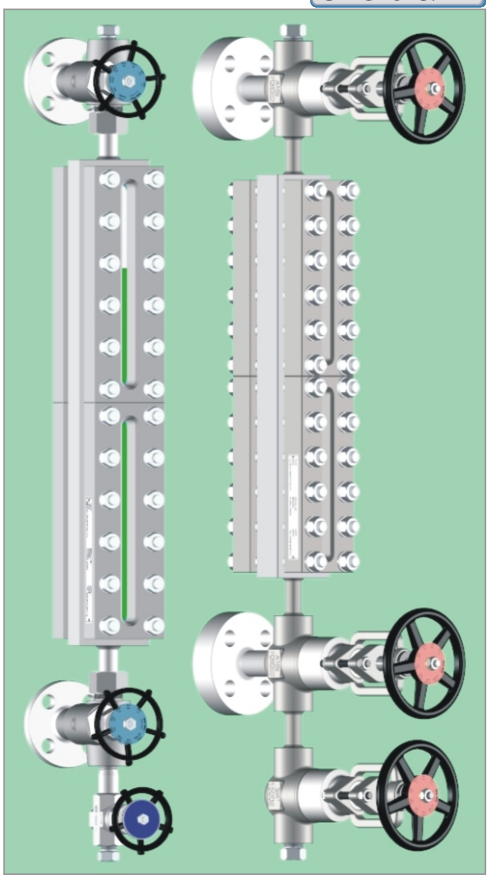
STG-1 & 2



OPTIONS

- **Scale Plate**
  - units : Cm, Liter
- **Vent**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Drain**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Bracket**
  - Longer than 2000 mm of C to C
- **Gauge Valve**
  - Hand Wheel with Chain
  - Arm Lever

STG-3 & 4



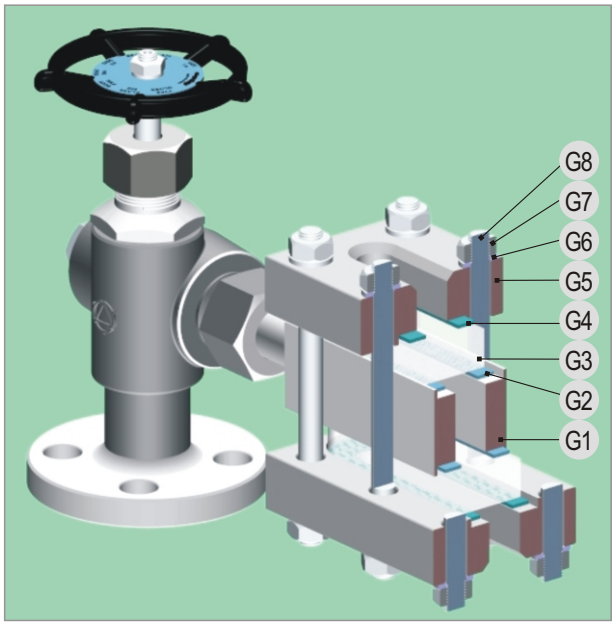
SPECIFICATIONS

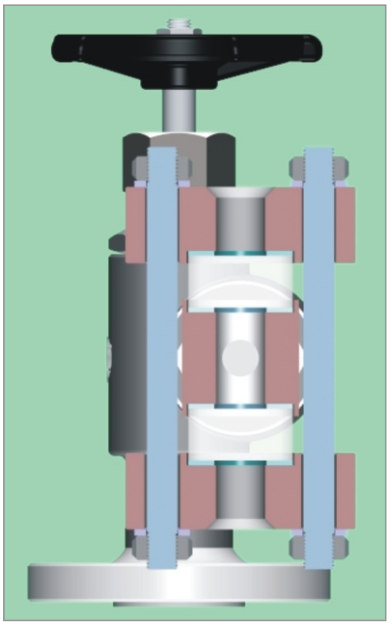
- **MATERIAL** : C.S, LTCS, Stainless Steel, A182-F11, 22, 5, 9, 91 & Monel, Titanium, Hastelloy, Alloy-20, etc.
- **VISIBLE LENGTH** : 90 to 3510 mm.
- **MAX. NO. OF SECTION** : 10 Sections.
- **VESSEL CONNECTION** : 3/4" or 1" Flanged ANSI 150# ~ 2500#.
- **GAUGE BODY & GAUGE VALVE CON'N** : Not Rotatable & 360° Rotatable [turn to page **G-9**].
- **SHELL TEST PRESSURE** : 1.5 Times at the Max. Working Pressure.

Others, except the above specification are available on request by customer.

Transparent Gauge Glasses are designed for the direct observation of liquid levels in the tank and Mica Shiels inserted for caustic liquid and high temperature services.

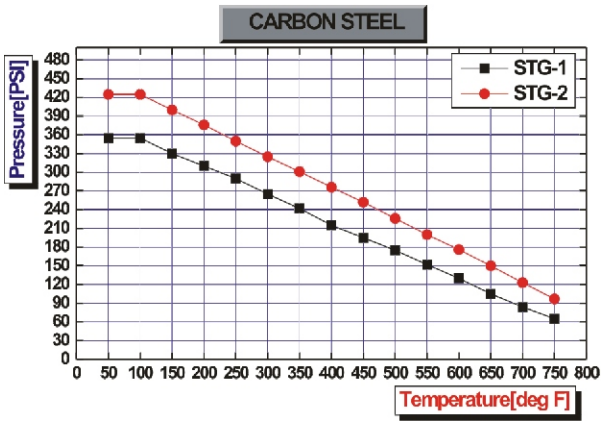
SECTION FOR MODEL : STG-1 & 2

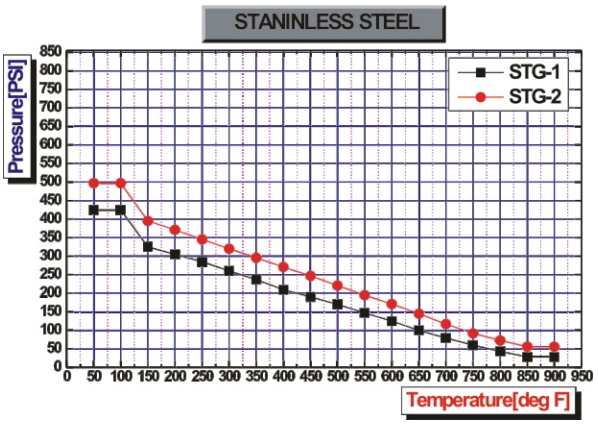




NO.	PARTS	MATERIAL	NO.	PART	MATERIAL
G1	Gauge Body	C.S, Stainless Steel	G5	Gauge Cover	C.S
G2	Sealing Gasket	Graphite, Non-Asbestos	G6	Washer	SWRH-62B
G3	Transparent Glass	Borosilicate	G7	Nuts	A194 Gr.2H
G4	Cushion Gasket	Non-Asbestos	G8	Stud - Bolts	A193 Gr.B7

- SAM IL has been carried out actual shell test and simulation using software for FEA and we found the safety ranges for Pressure - Temperature rating by the models.

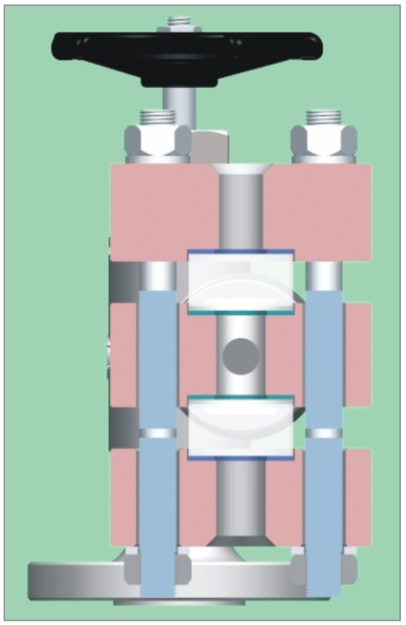


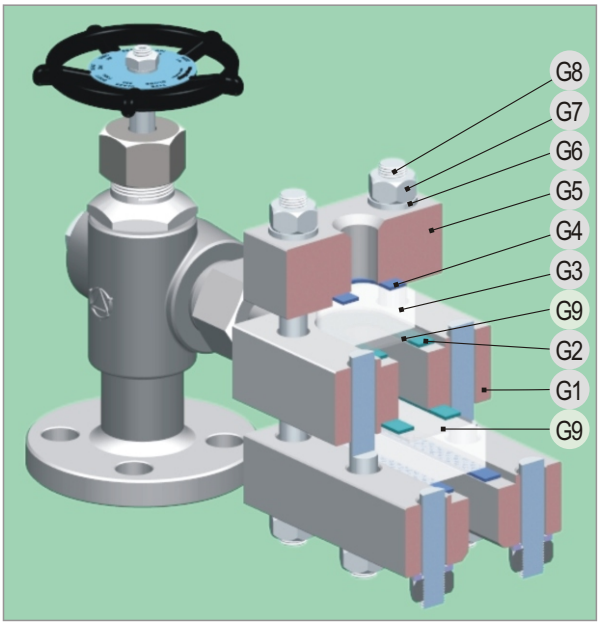


GAUGE CHAMBER PRESSURE - TEMPERATURE CHARTS FOR SAFETY OPERATING

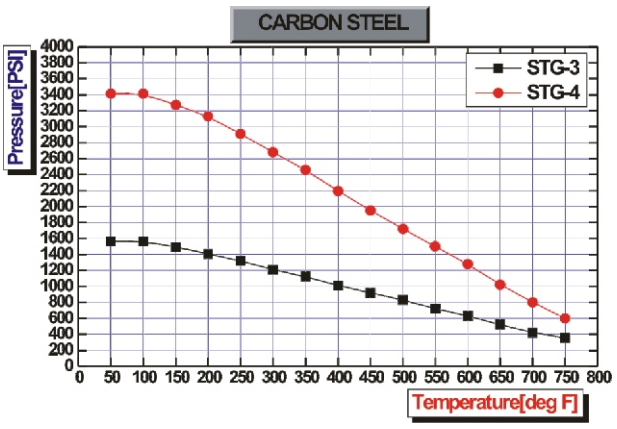
Others, except the above materials of part are available on request by customer.

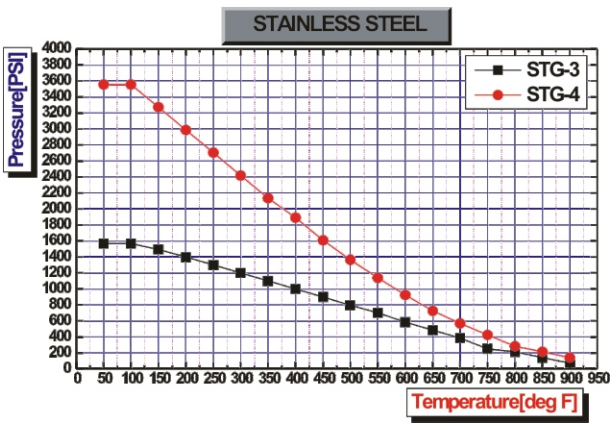
SECTION FOR MODEL : STG-3 & 4





NO.	PARTS	MATERIAL	NO.	PART	MATERIAL
G1	Gauge Body	C.S, Stainless Steel	G5	Gauge Cover	C.S
G2	Sealing Gasket	Graphite, Non-Asbestos	G6	Washer	SWRH-62B
G3	Transparent Glass	Borosilicate	G7	Nuts	A194 Gr.2H
G4	Cushion Gasket	Non-Asbestos	G8	Stud-Bolts	A193 Gr.B7
			G9	Shield	Mica





GAUGE CHAMBER PRESSURE - TEMPERATURE CHARTS FOR SAFETY OPERATING

Others, except the above materials of part are available on request by customer.

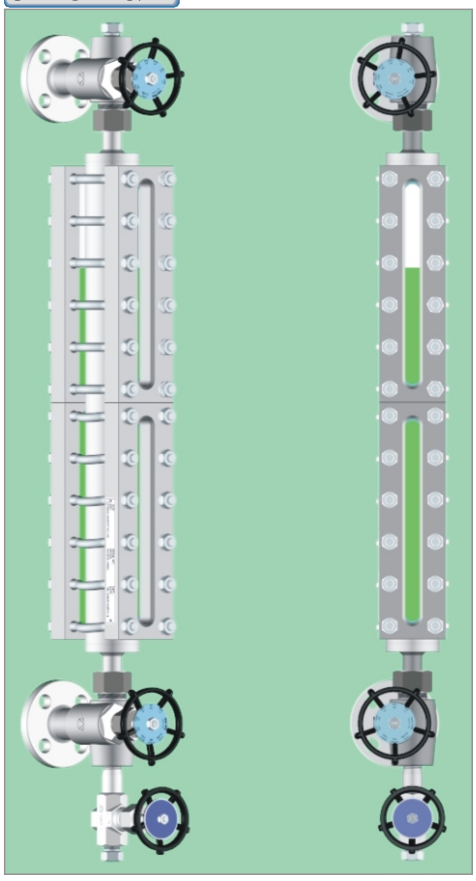
GENERAL DESCRIPTION

The most advantage of this type is for easy level reading of boiling liquids. in the event of liquids boiling, its bubbling makes indistinct the surface level. in this type of gauge with the larger volume of the liquid chamber will be reduced bubbling. Thereby this type should facilitate to read its level of bubbling liquids. it has also provides highly advantages for highly dense and viscous liquid. the body is made of seamless pipe.

SAM IL's Large Chamber Transparent Types are classified into four[4] models, those are STLG-1,2,3 & 4 according to process conditions which are max. working pressure & temperature [see page **G-4**].

This type is comprised of assembling order to fasten the nuts, set the sealing gasket, transparent glass, cushion gasket, gauge cover, bolts and nuts on the large chamber, in regular sequence.

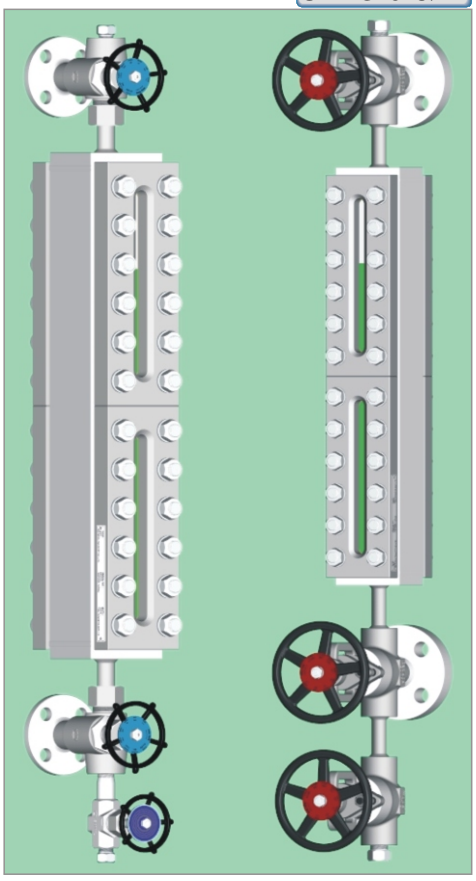
STLG-1 & 2



OPTIONS

- **Scale Plate**
  - units : Cm, Liter
- **Vent**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Drain**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Bracket**
  - Longer than 2000 mm of C to C
- **Gauge Valve**
  - Hand Wheel with Chain
  - Arm Lever

STLG-3 & 4



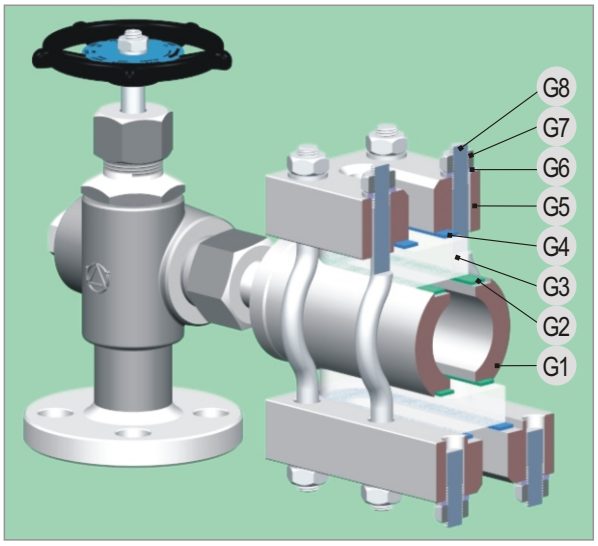
SPECIFICATIONS

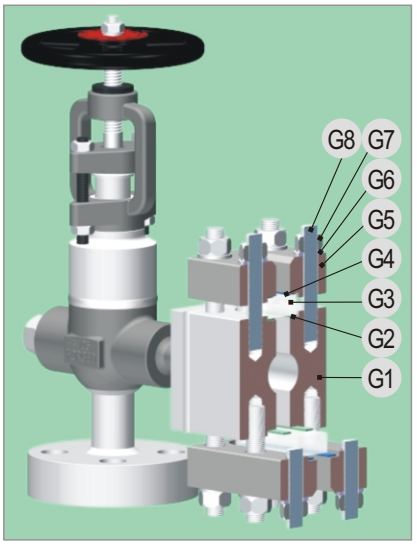
- **MATERIAL** : C.S, LTCS, Stainless Steel, A182-F11, 22, 5, 9, 91 & Monel, Titanium, Hastelloy, Alloy-20, etc.
- **VISIBLE LENGTH** : 90 to 3510 mm.
- **MAX. NO. OF SECTION** : 10 Sections.
- **VESSEL CONNECTION** : 3/4" or 1" Flanged ANSI 150# ~ 2500# [900# ~ 2500# : Special Type].
- **GAUGE BODY & GAUGE VALVE CON'N** : Not Rotatable & 360° Rotatable [turn to page **G-9**].
- **SHELL TEST PRESSURE** : 1.5 Times at the Max. Working Pressure.

Others, except the above specification are available on request by customer.

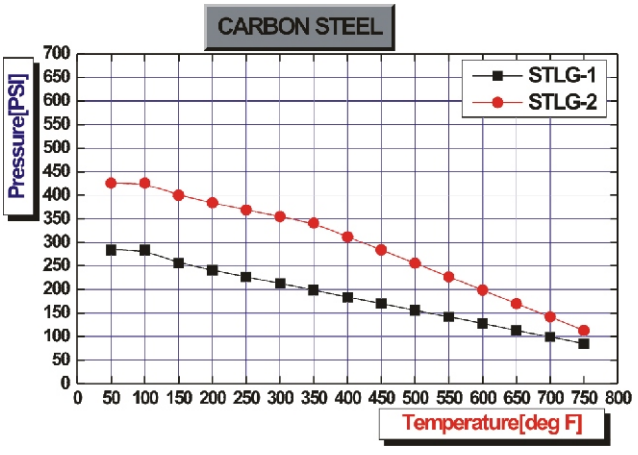
This STLG is designed and manufactured for easy and accurate reading the liquid level of highly foamy liquids. the gauge has a relatively spacious internal area where foamy liquid is held from forming foams. thereby providing rather more accurate level observations.

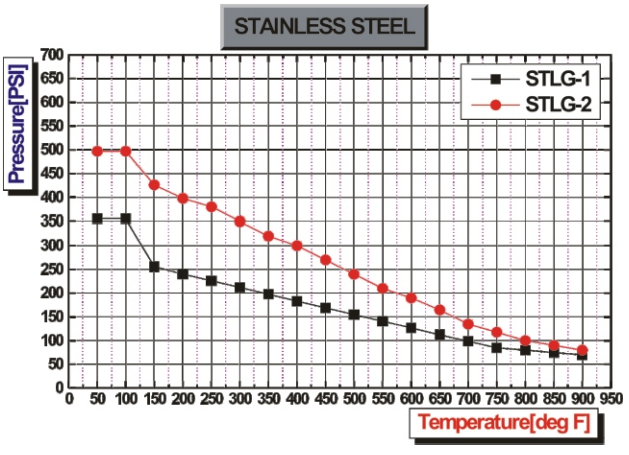
SECTION FOR MODEL : STLG-1,2 & 3,4





NO.	PARTS	MATERIAL	NO.	PART	MATERIAL
G1	Gauge Body	C.S, Stainless Steel	G5	Gauge Cover	C.S
G2	Sealing Gasket	Graphite, Non-Asbestos	G6	Washer	SWRH-62B
G3	Transparent Glass	Borosilicate	G7	Nuts	A194 Gr.2H
G4	Cushion Gasket	Non-Asbestos	G8	Bolts	A193 Gr.B7





GAUGE CHAMBER PRESSURE - TEMPERATURE CHARTS FOR SAFETY OPERATING

Others, except the above materials of part are available on request by customer.

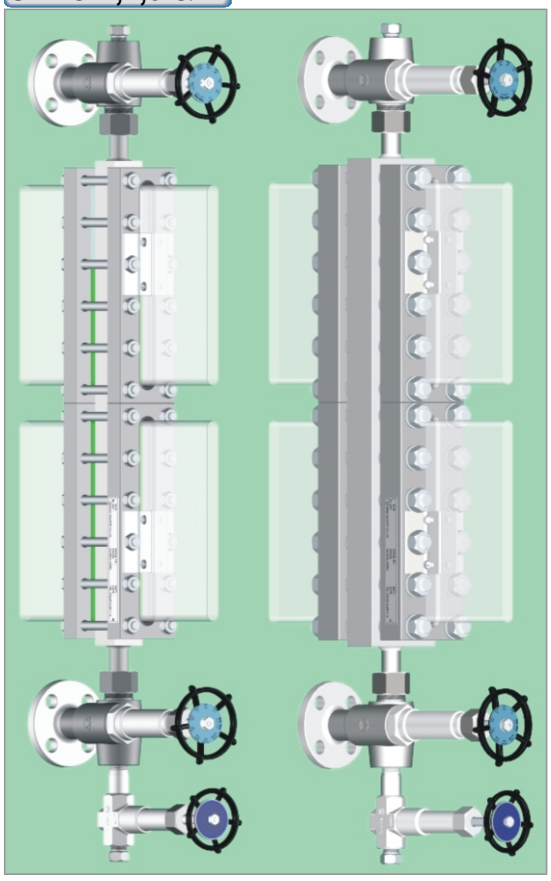
GENERAL DESCRIPTION

If a conventional level gauge is used for extremely low-temperature applications, it becomes difficult to observe the level of liquid as the gauge front tends to freeze. to get rid of this problem, the acrylic non-frosting plate window is mounted in the front of the gauge like as below and you will observe the level easily far better.

SAM IL's Non-Frosting Transparent Types are classified into two[2] types, Models are STNG-1,2,3 & 4 and STLNG-1,2,3 & 4 according to process conditions [see page **G-4**]. depending on the working temperature conditions, the height of the Non-Frosting plate window may be selected from 75 to 250 mm.

This type is comprised of assembling order to fasten the nuts, set the sealing gasket, transparent glass, cushion gasket, gauge cover, bolts and nuts on the Transparent Body, in regular sequence and then the Non-Frosting plate is mounted on it.

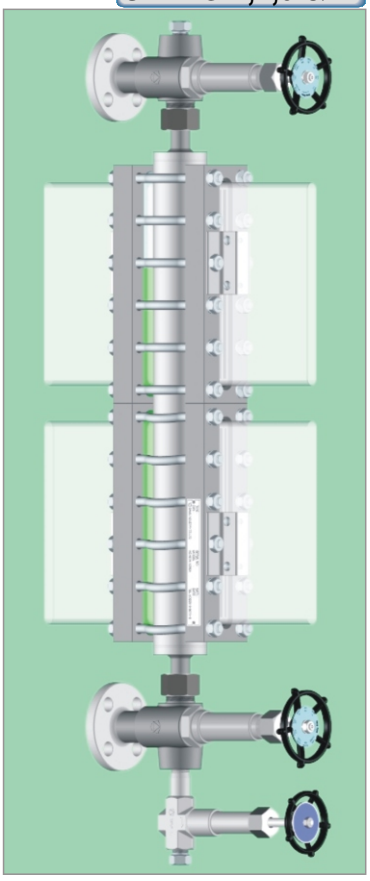
STNG-1,2,3 & 4



OPTIONS

- **Scale Plate**
  - units : Cm, Liter
- **Vent**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Drain**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Bracket**
  - Longer than 2000 mm of C to C
- **Gauge Valve**
  - Hand Wheel with Chain
  - Arm Lever

STLNG-1,2,3 & 4



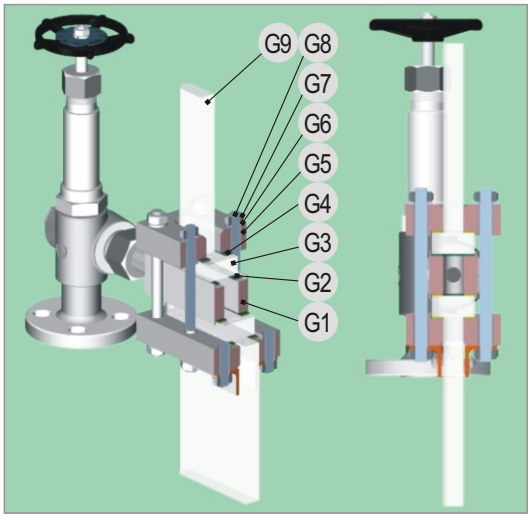
SPECIFICATIONS

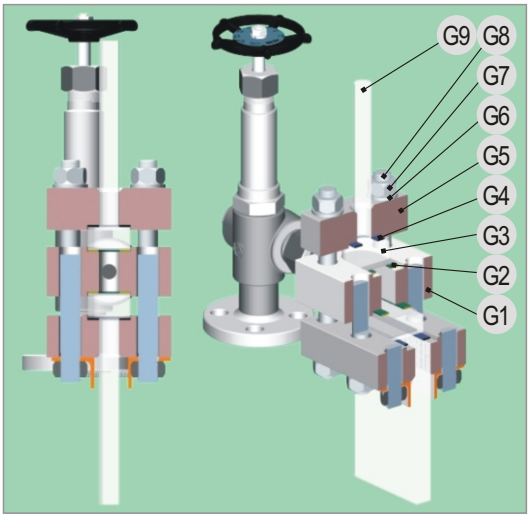
- **MATERIAL** : LTCS & Stainless Steel.
- **VISIBLE LENGTH** : 90 to 3510 mm.
- **MAX. NO. OF SECTION** : 10 Sections.
- **VESSEL CONNECTION** : 3/4" or 1" Flanged ANSI 150# ~ 2500# .
- **GAUGE BODY & GAUGE VALVE CON'N** : Not Rotatable & 360° Rotatable [turn to page **G-9**].
- **SHELL TEST PRESSURE** : 1.5 Times at the Max. Working Pressure.

Others, except the above specification are available on request by customer.

These STNG and STLNG is used for protecting the frost at low-temperature. thereby you can easily read level position through these STNG & STLNG Models.

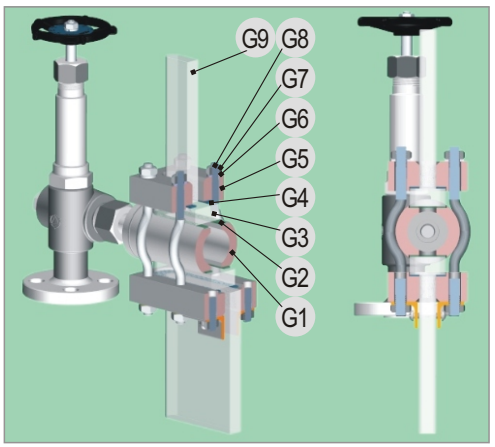
SECTION FOR MODEL : STNG-1,2 & 3,4



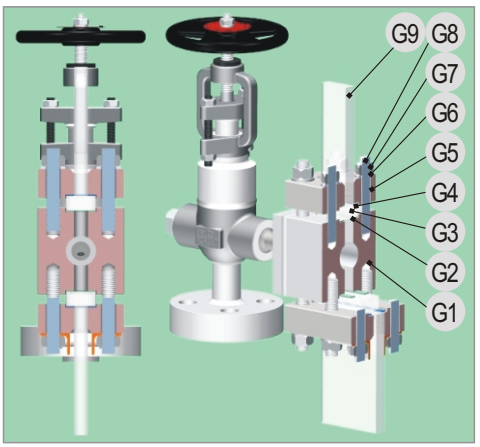


NO.	PARTS	MATERIAL	NO.	PART	MATERIAL
G1	Gauge Body	LTCS, Stainless Steel	G5	Gauge Cover	LTCS, Stainless Steel
G2	Sealing Gasket	Non-Asbestos	G6	Washer	SWRH-62B
G3	Transparent Glass	Borosilicate	G7	Nuts	A194 Gr.2H, A194 Gr.4
G4	Cushion Gasket	Non-Asbestos	G8	Bolts	A193 Gr.B7, A320 Gr.L7
			G9	Non - Frosting	Acrylic

SECTION FOR MODEL : STLNG-1,2 & 3,4



Since these types are used at a temperature below freezing point, gauge valve and drain valve is used with long bonnet type for preventing chilblains on your hands.



TEMPERATURE RATING & DIMENSIONS OF NON-FROSTING PLATES

Temperature [°C]	0 ~ -20	-21 ~ -45	-46 ~ -100	-101 ~ -160	-161 ~ -200
Materials	LTCS	LTCS	304SS	316SS	316LSS
Acrylic Height [H]	75	100	150	200	250

Others, except the above materials of part are available on request by customer.

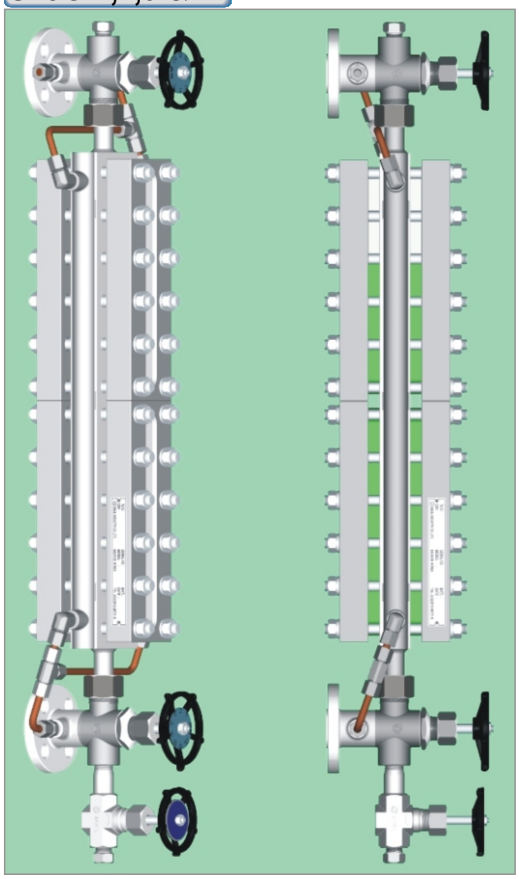
GENERAL DESCRIPTION

This type is usually called a Jacket Type. This gauge is used to read the level of highly congealable or ebullient liquids. The principle is to inflow a steam for congealable liquids and a cold water for ebullient liquids through the inside of the jacket to ensure accurate and reliable level observation.

SAM IL's Jacket Transparent Types are classified into two[2] types, Models are STJG-1,2,3 & 4 and STLJG-1,2,3 & 4 according to process conditions which are max. working pressure & temperature [see page **G-4**].

This type is comprised of assembling order to fasten the nuts, set the sealing gasket, transparent glass, cushion gasket, gauge cover, bolts and nuts in regular sequence, on the Transparent Body equipped with Jacket for heating and cooling. The gauge body shape of STJG-1 & 2 have the same with it of STJG-3 & 4 taking account of facilities of the jacket construction. Semi-Jacket may also be installed on the gauge body only, without gauge valve.

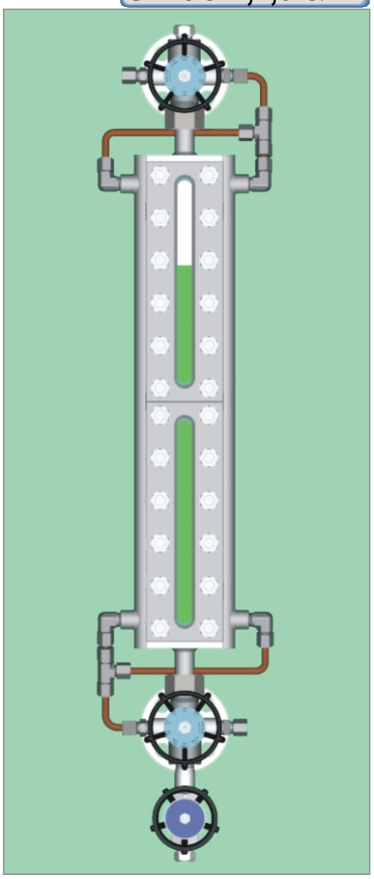
STJG-1,2,3 & 4



OPTIONS

- **Scale Plate**
  - units : Cm, Liter
- **Vent**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Drain**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Bracket**
  - Longer than 2000 mm of C to C
- **Gauge Valve**
  - Hand Wheel with Chain
  - Arm Lever

STLJG-1,2,3 & 4



SPECIFICATIONS

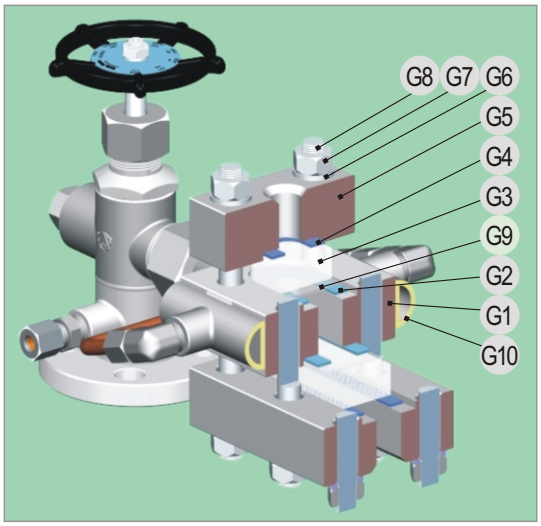
- **MATERIAL** : C.S, LTCS, Stainless Steel, A182-F11,22,5,9,91 & Monel, Titanium, Hastelloy, Alloy-20, etc.
- **VISIBLE LENGTH** : 90 to 3510 mm.
- **MAX. NO. OF SECTION** : 10 Sections.
- **VESSEL CONNECTION** : 3/4" or 1" Flanged ANSI 150# ~ 2500#.
- **GAUGE BODY & GAUGE VALVE CON'N** : Not Rotatable & 360° Rotatable [turn to page **G-9**].
- **SHELL TEST PRESSURE** : 1.5 Times at the Max. Working Pressure.

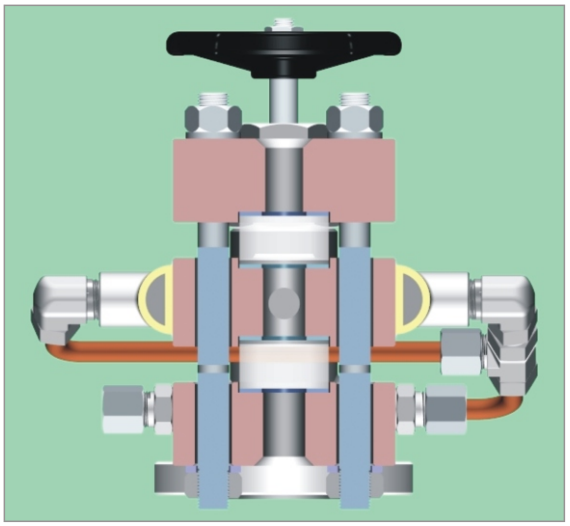
Others, except the above specification are available on request by customer.

This type is used for observing the fluid by changing it into state of liquid after heating or cooling it through jacket according to features of fluid.
of **SAM IL** standard, the entrance of Jacket for inflowing a steam or cold water is 1/2" NPT[M]. other entrance sizes for the Jacket connection are available on request by customers.

Steam or Cooling Media is circulated through the Jacket.

SECTION FOR MODEL : STJG-1,2,3 & 4





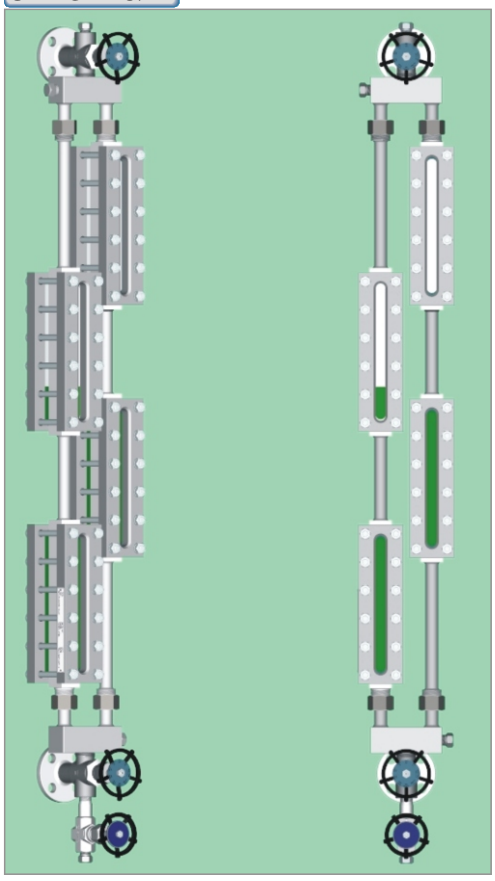
NO.	PARTS	MATERIAL	NO.	PART	MATERIAL
G1	Gauge Body	C.S, Stainless Steel	G6	Washer	SWRH-62B
G2	Sealing Gasket	Graphite, Non-Asbestos	G7	Nuts	A194 Gr.2H
G3	Transparent Glass	Borosilicate	G8	Bolts	A193 Gr.B7
G4	Cushion Gasket	Non-Asbestos	G9	Shield	Mica
G5	Gauge Cover	C.S	G10	Jacket Pipe	C.S or Stainless Steel

Others, except the above materials of part are available on request by customer.

GENERAL DESCRIPTION

The most advantage of this type have no invisible sections [Dead Band]. **SAM IL**'s standard overlapped section is ten [10] mm as minimum and the gauge is so designed that supporting brackets as illustrated on next page can be equipped to protect a long multiple connected gauge from distortion of fall down. The scale plate to mount along side the gauge may be available on request by customers to observe the liquid level more accurately.
This type is comprised of assembling order to fasten the nuts, set the sealing gasket, transparent glass, cushion gasket, gauge cover, bolts and nuts on the Transparent Body after making Zig-Zag formed the body.

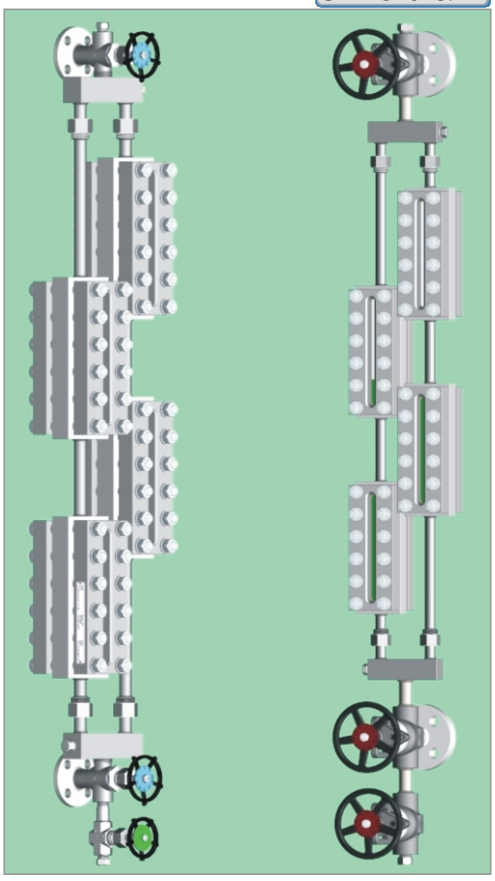
STZG-1 & 2



OPTIONS

- **Scale Plate**
  - units : Cm, Liter
- **Vent**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Drain**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Bracket**
  - Longer than 2000 mm of C to C
- **Gauge Valve**
  - Hand Wheel with Chain
  - Arm Lever

STZG-3 & 4

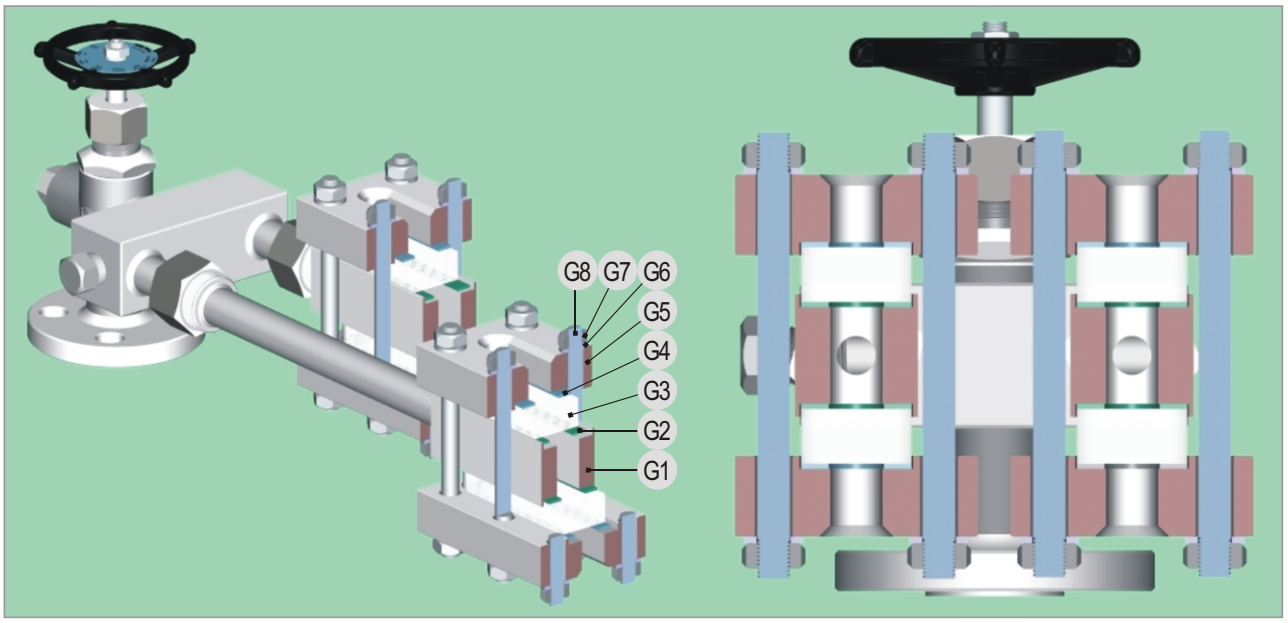


SPECIFICATIONS

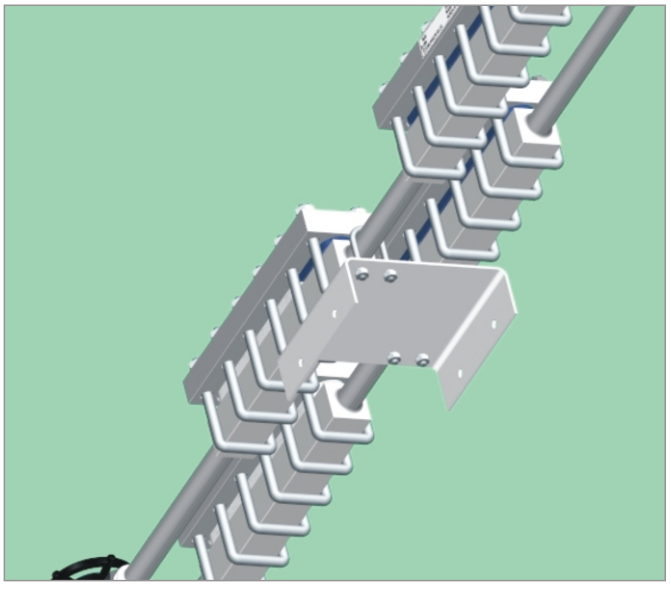
- **MATERIAL** : C.S, LTCS, Stainless Steel, A182-F11, 22, 5, 9, 91 & Monel, Titanium, Hastelloy, Alloy-20, etc.
- **VISIBLE LENGTH** : Max. 6050 mm.
- **MAX. NO. OF SECTION** : 20 Sections.
- **VESSEL CONNECTION** : 3/4" or 1" Flanged ANSI 150# to 2500#.
- **GAUGE BODY & GAUGE VALVE CON'N** : Not Rotatable & 360° Rotatable [turn to page **G-9**].
- **SHELL TEST PRESSURE** : 1.5 Times at the Max. Working Pressure.

Others, except the above specification are available on request by customer.

SECTION FOR MODEL : STZG-1 & 2



NO.	PARTS	MATERIAL	NO.	PART	MATERIAL
G1	Gauge Body	C.S, Stainless Steel	G5	Gauge Cover	C.S
G2	Sealing Gasket	Graphite, Non-Asbestos	G6	Washer	SWRH-62B
G3	Transparent Glass	Borosilicate	G7	Nuts	A194 Gr.2H
G4	Cushion Gasket	Non-Asbestos	G8	Stud - Bolts	A193 Gr.B7



. Details of the Bracket dimension will be indicated on the drawing for submittal and may be changed on request by customers.

. As shown on the left-hand side illustrated, this is **SAM IL**'s standard and you can connect the supporting from our supporting bracket to Vessel.

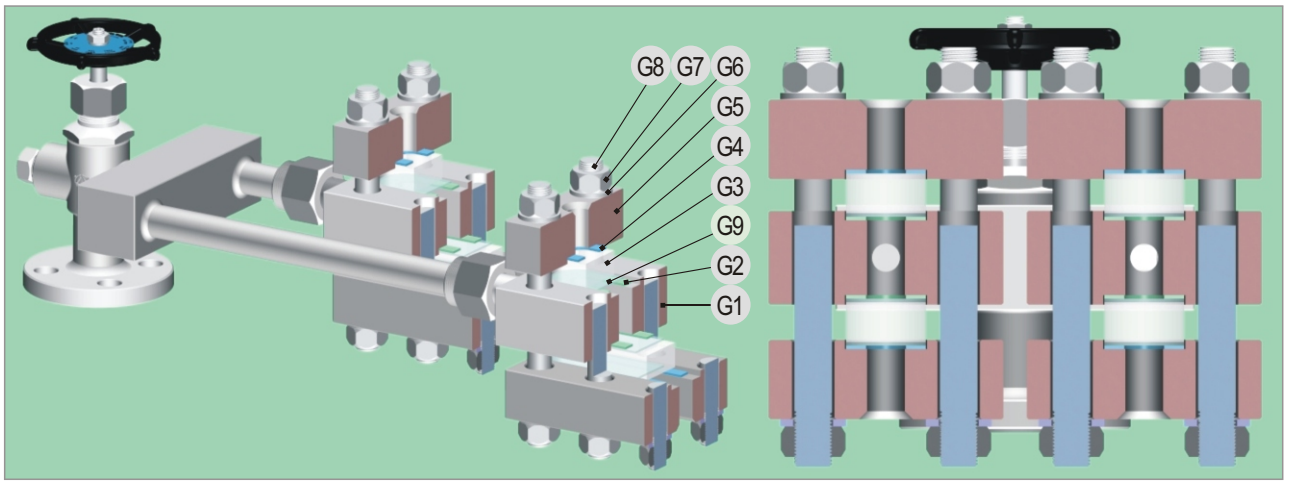
. Bracket for supporting is built on this model for **7** gauges(= **7**sections) and over as standard.

. Assembly - Dismantling on the body is easy.

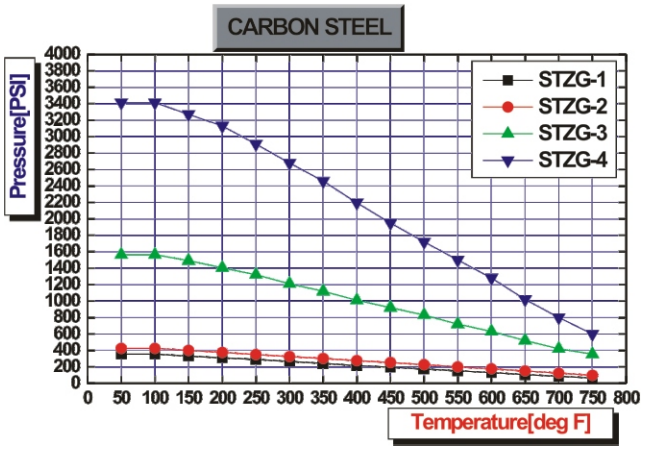
5. The feature of bracket and its installation method may change in order to facilitate the construction.

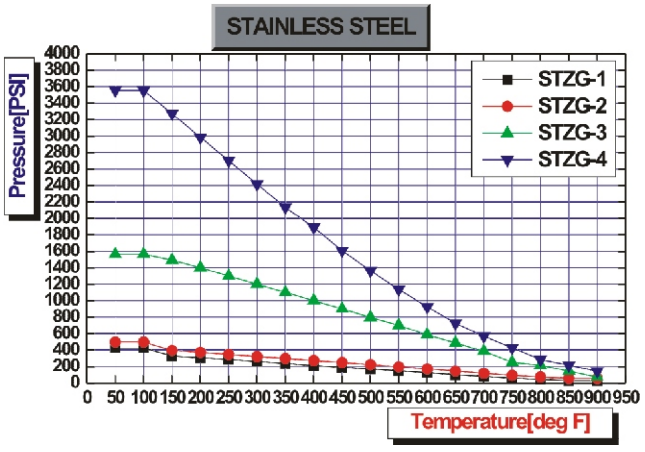
Others, except the above materials of part are available on request by customer.

SECTION FOR MODEL : STZG-3 & 4



NO.	PARTS	MATERIAL	NO.	PART	MATERIAL
G1	Gauge Body	C.S, Stainless Steel	G5	Gauge Cover	C.S
G2	Sealing Gasket	Graphite, Non-Asbestos	G6	Washer	SWRH-62B
G3	Transparent Glass	Borosilicate	G7	Nuts	A194 Gr.2H
G4	Cushion Gasket	Non-Asbestos	G8	Stud - Bolts	A193 Gr.B7
			G9	Shield	Mica

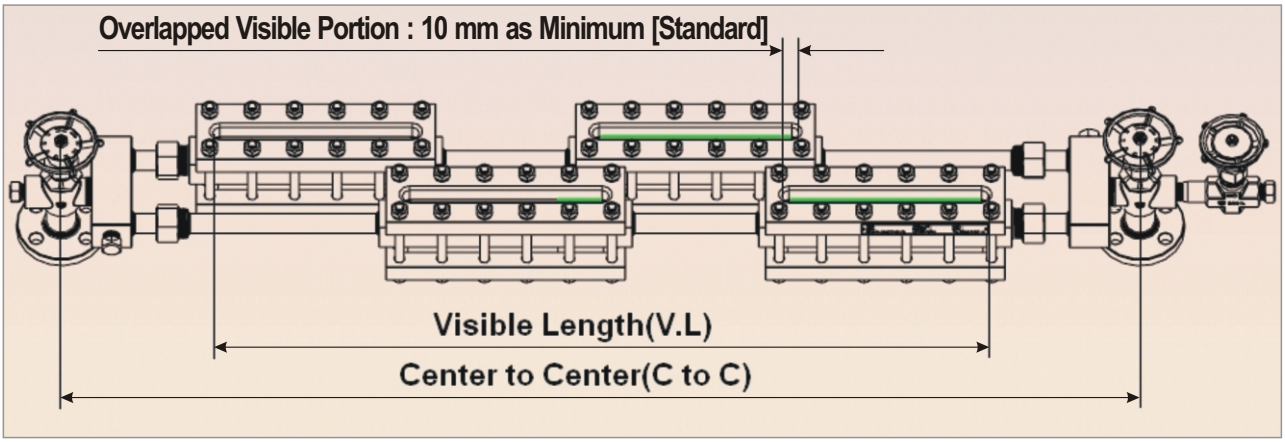




GAUGE CHAMBER PRESSURE - TEMPERATURE CHARTS FOR SAFETY OPERATING

Others, except the above materials of part are available on request by customer.

SOLID DRAWING & DIMENSIONS



No. of Gauge Sections	Glass No. - 7		Glass No. - 8		Glass No. - 9	
	C TO C [mm]	V•L [mm]	C TO C [mm]	V•L [mm]	C TO C [mm]	V•L [mm]
2 Gauges	800	500	880	580	920	620
3 Gauges	1040	740	1160	860	1220	920
4 Gauges	1290	990	1450	1150	1520	1220
5 Gauges	1530	1230	1720	1420	1820	1520
6 Gauges	1770	1470	2000	1700	2120	1820
7 Gauges	2000	1700	2300	2000	2420	2120
8 Gauges	2250	1950	2550	2250	2720	2420
9 Gauges	2500	2200	2850	2550	3020	2720
10 Gauges	2750	2450	3100	2800	3300	3000
11 Gauges	3000	2700	3400	3100	3600	3300
12 Gauges	3200	2900	3700	3400	3900	3600
13 Gauges	3450	3150	3950	3650	4200	3900
14 Gauges	3700	3400	4250	3950	4500	4200
15 Gauges	3950	3650	4550	4250	4800	4500
16 Gauges	4200	3900	4800	4500	5100	4800
17 Gauges	4400	4100	5100	4800	5400	5100
18 Gauges	4650	4350	5400	5100	5700	5400
19 Gauges	4900	4600	5650	5350	6000	5700
20Gauges	5100	4800	5900	5600	6300	6000

Visible + 300 mm = C to C [For Gauge Valve Model : SS, SO, SB at Page **G-9**].

Others, except the above dimensions are available on request by customer.

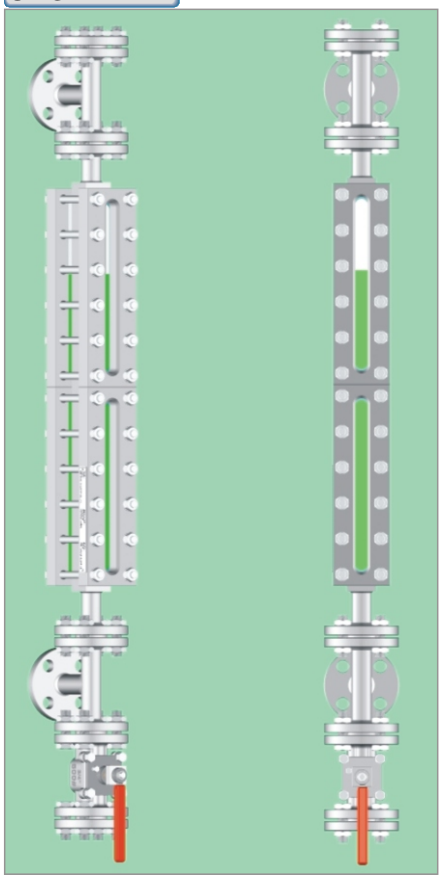
GENERAL DESCRIPTION

More severe demands may be often required on liquid level gauges in terms of resistance to corrosion, and this is accomplished by lining or coating all parts to contact with the liquid. The most important aspect of this process is the preparation of the metal substrate. For this, **SAM IL** employs only the latest machinery and highly an expert personnel.

SAM IL's Lined Transparent Types are classified into two[2] models, Models are STG-1LD and STLG-1LD due to the properties of fluids [see page **G-4**].

This type is comprised of assembling order to fasten the nuts, set the sealing gasket, transparent glass, cushion gasket, gauge cover, bolts and nuts in regular sequence, on the Transparent Body to Lined.

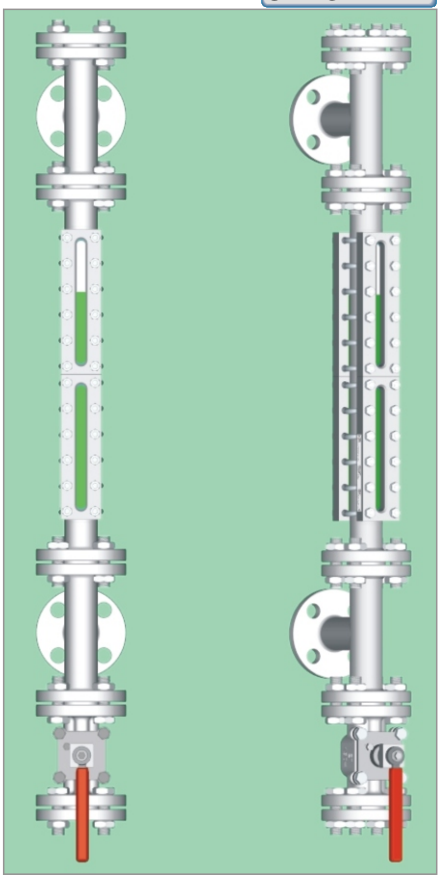
STG-1LD



OPTIONS

- **Scale Plate**
  - units : Cm, Liter
- **Vent**
  - Consult Us
  - Plug Valve
- **Drain**
  - Consult Us
  - Plug Valve
- **Bracket**
  - Longer than 2000 mm of C to C

STLG-1LD



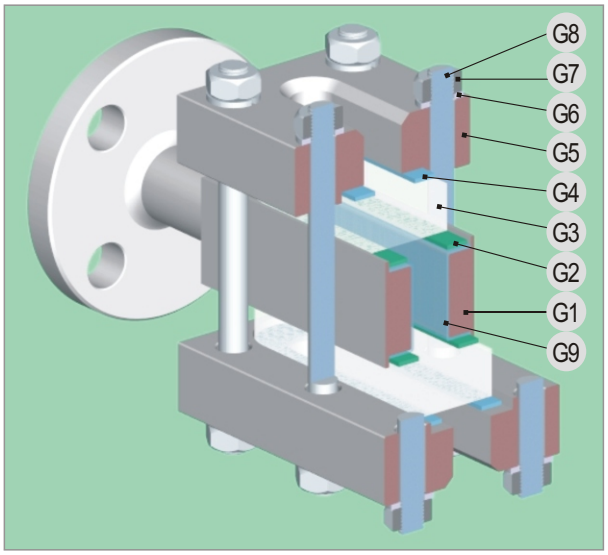
SPECIFICATIONS

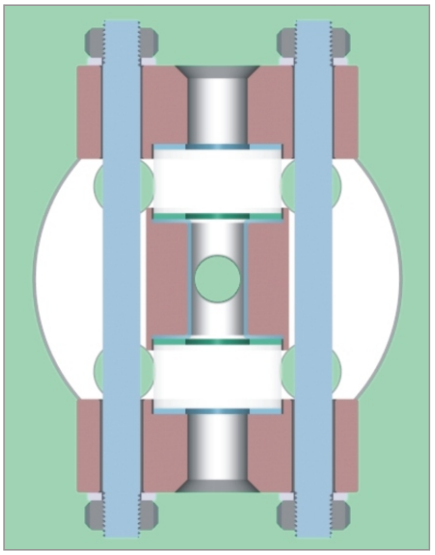
- **MATERIAL** : Carbon Steel & Stainless Steel
- **VISIBLE LENGTH** : 90 to 3510 mm.
- **MAX. NO. OF SECTION** : 10 Sections.
- **VESSEL CONNECTION** : 3/4" to 2" Flanged ANSI 150# ~ 300#.
- **SHELL TEST PRESSURE** : 1.5 Times at the Max. Working Pressure.

Others, except the above specification are available on request by customer.

Block Valve, Drain and Vent Valve of Lined Transparent Type are available on Plug Valve, etc., any request.

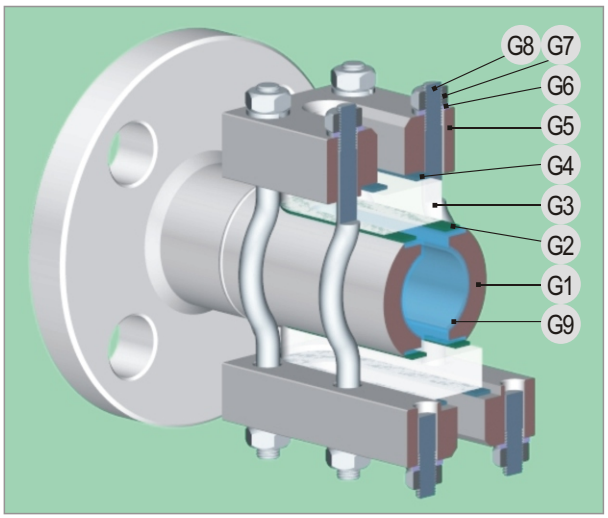
SECTION FOR MODEL : STG-LD

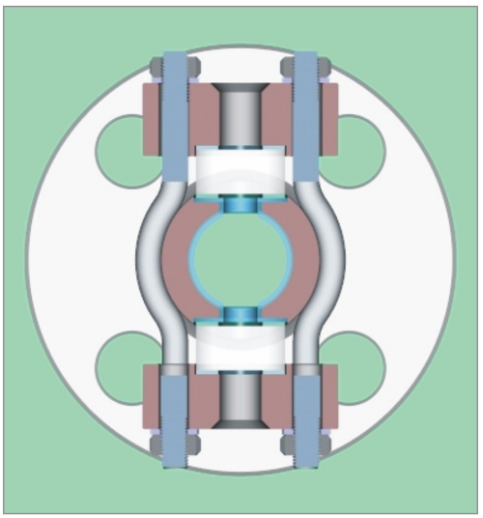




NO.	PARTS	MATERIAL	NO.	PART	MATERIAL
G1	Gauge Body	C.S, Stainless Steel	G5	Gauge Cover	C.S
G2	Sealing Gasket	Rubber, Soft Teflon	G6	Washer	SWRH-62B
G3	Transparent Glass	Borosilicate	G7	Nuts	A194 Gr.2H
G4	Cushion Gasket	Non-Asbestos	G8	Bolts	A193 Gr.B7
			G9	Lining	Hard Rubber, Teflon

SECTION FOR MODEL : STLG-LD



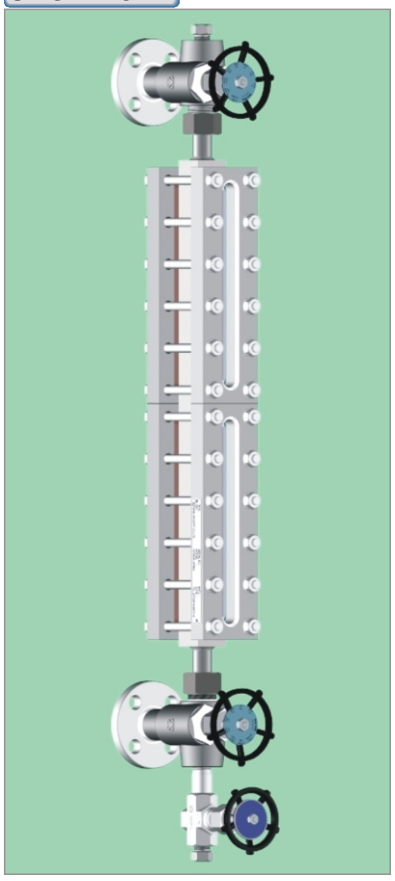


Others, except the above materials of part are available on request by customer.

GENERAL DESCRIPTION

This gauge is used with a special reflex type sight glass which has wider V - Shaped single refractive groove and red coating on the outside all of the glass. It provides a clear observation of liquid level because of made refracting red color on the V - Groove for steam or beyond portion of the level and its color of fluid itself for liquid portions.
SAM IL's Bi-Color Transparent Types are classified into two[2] models, those are STG-1 & 2BC according to process conditions which are max. working pressure & temperature [see page **G-4**].
This type is comprised of assembling order to fasten the nuts, set the sealing gasket, transparent glass in rear of, V-shaped special reflex glass in front of, cushion gasket, gauge cover, bolts and nuts on the transparent body, in order.

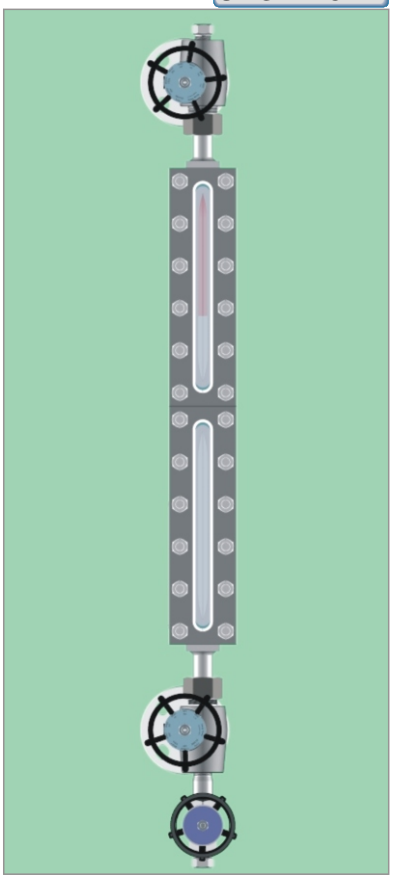
STG-1BC



OPTIONS

- **Scale Plate**
  - units : Cm, Liter
- **Vent**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Drain**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Bracket**
  - Longer than 2000 mm of C to C
- **Gauge Valve**
  - Hand Wheel with Chain
  - Arm Lever

STG-2BC

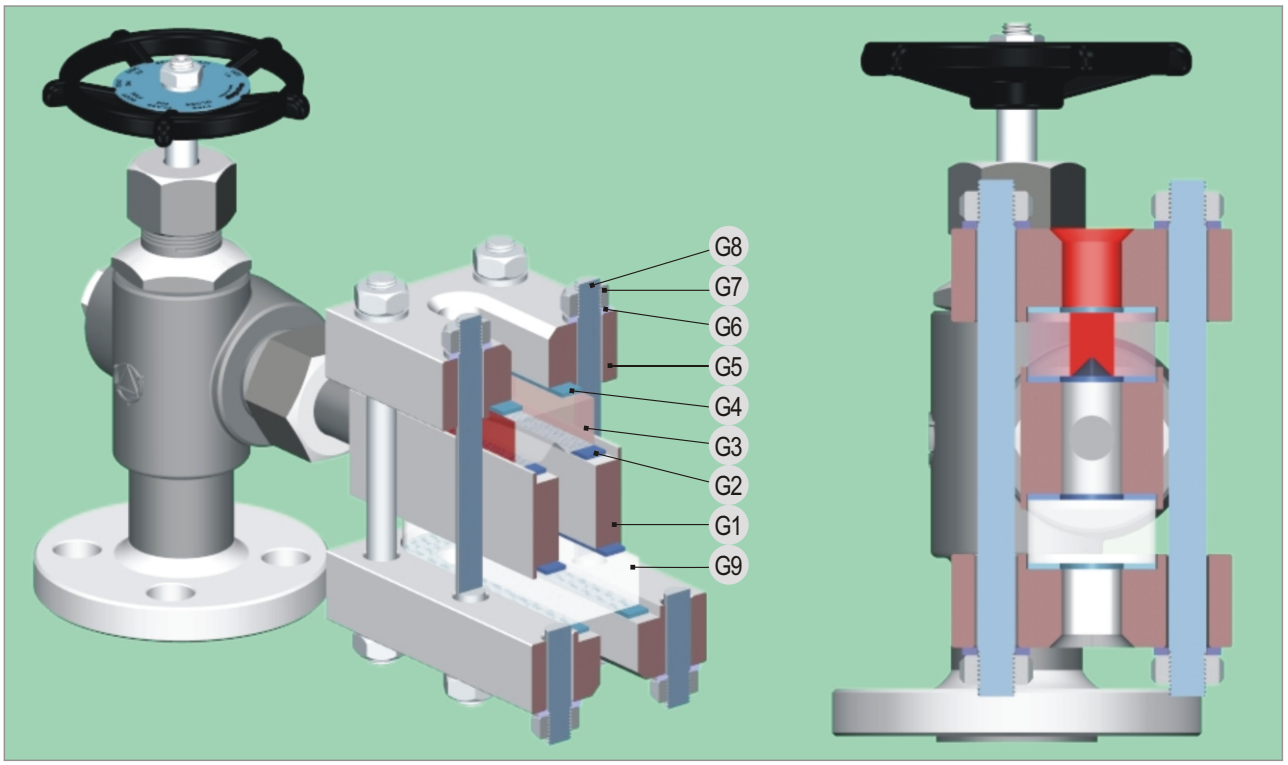


SPECIFICATIONS

- **MATERIAL** : C.S, LTCS, Stainless Steel, A182-F11, 22, 5, 9, 91 & Monel, Titanium, Hastelloy, Alloy-20, etc.
- **VISIBLE LENGTH** : 90 to 3510 mm.
- **MAX. NO. OF SECTION** : 10 Sections.
- **VESSEL CONNECTION** : 3/4" or 1" Flanged ANSI 150# ~ 600# .
- **GAUGE BODY & GAUGE VALVE CON'N** : Not Rotatable & 360° Rotatable [turn to page **G-9**].
- **SHELL TEST PRESSURE** : 1.5 Times at the Max. Working Pressure.

Others, except the above specification are available on request by customer.

SECTION FOR MODEL : STG-1 & 2BC



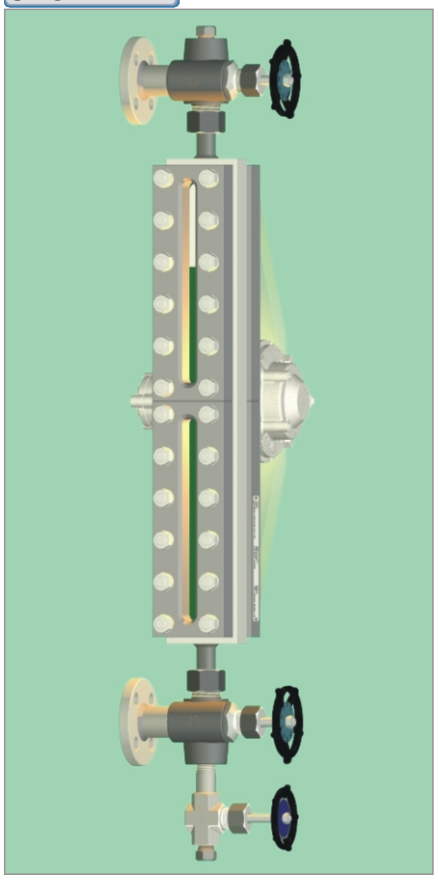
NO.	PARTS	MATERIAL	NO.	PART	MATERIAL
G1	Gauge Body	C.S, Stainless Steel	G5	Gauge Cover	C.S
G2	Sealing Gasket	Graphite, Non-Asbestos	G6	Washer	SWRH-62B
G3	Bi-Color Reflex Glass	Borosilicate	G7	Nuts	A194 Gr.2H
G4	Cushion Gasket	Non-Asbestos	G8	Stud - Bolts	A193 Gr.B7
			G9	Transparent Glass	Borosilicate

Others, except the above materials of part are available on request by customer.

GENERAL DESCRIPTION

Features and Principles of this type is the same with basic Transparent Gauges except for the fact that the illuminator is mounted on the Transparent Gauge. Transparent Type with illuminator of **SAM IL** is useful for observing the fluid in a dim place or at night by using an explosion-proof and weather-proof.
The illuminator is possible to construct on all Transparent Models and STG-IL Model is shown as below.

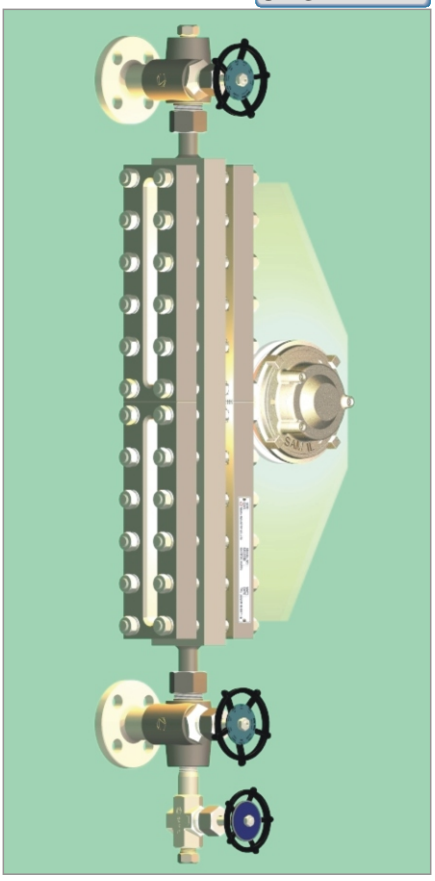
STG-IL



OPTIONS

- **Scale Plate**
  - units : Cm, Liter
- **Vent**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Drain**
  - Needle Valve
  - Gate Valve
  - Globe Valve
  - Nipple & Cap
- **Bracket**
  - Longer than 2000 mm of C to C
- **Gauge Valve**
  - Hand Wheel with Chain
  - Arm Lever

STG-IL

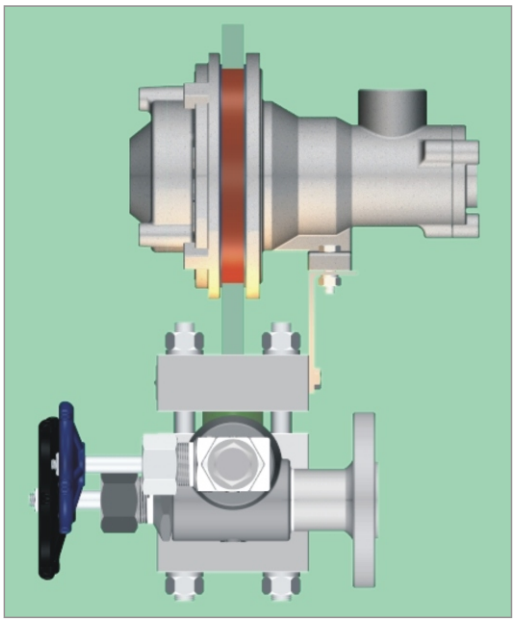


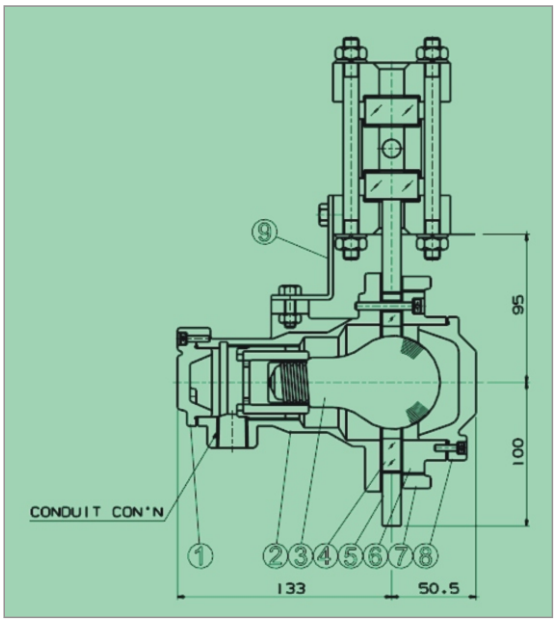
SPECIFICATIONS

- **MATERIAL** : C.S, LTCS, Stainless Steel, A182-F11, 22, 5, 9, 91 & Monel, Titanium, Hastelloy, Alloy-20, etc.
- **VISIBLE LENGTH** : 90 to 3510 mm.
- **MAX. NO. OF SECTION** : 10 Sections.
- **VESSEL CONNECTION** : 3/4" or 1" Flanged ANSI 150# ~ 2500# .
- **GAUGE BODY & GAUGE VALVE CON'N** : Not Rotatable & 360° Rotatable [turn to page **G-9**].
- **SHELL TEST PRESSURE** : 1.5 Times at the Max. Working Pressure.

Others, except the above specification are available on request by customer.

SECTION FOR MODEL : STG-IL





NO.	PARTS
1	Cover
2	Bulb Hosing
3	Bulb
4	Glass Plate
5	Reflector
6	Glass Cover
7	Front Cover
8	Bulb Cover
9	Bracket

CONDUIT CON'N DIMENSION		
Size [PT,NPT]	Outside Diameter [mm]	Thread per Inch
1/2"	21.34	14
3/4"	26.67	14
1"	33.40	11½
Size	**Major Diameter [mm]**	**Pitch [mm]**
M16	15.97	1.5
M20	19.97	1.5
M25	24.97	1.5

ELECTRICITY

STANDARD :

- **Voltage** : AC 110~220V, 50Hz, 60Hz.
- **Bulb Light** : 11W~60W.
- **Explosion-Proof** : for Domestic ; KOSHA
  11 W =>Ex d ⅡC T6 IP65
  60W =>Ex d ⅡC T4 IP65
  : for Overseas ; ATEX
  11W =>Ex d ⅡC T6 IP66

- **Others** : The Certificate of Explosion-Proof : Division 1 and 2 ; Class Ⅰ : Group B, C, D ;
  Class Ⅱ : Group E, F, G ;
  Class Ⅲ : Type 4 at FM Approved.
  Division 1 and 2 ; Class Ⅰ : Group B, C, D ;
  Class Ⅱ : Group E, F, G ;
  Class Ⅲ : Type 4 at CSA Certified Ex d.

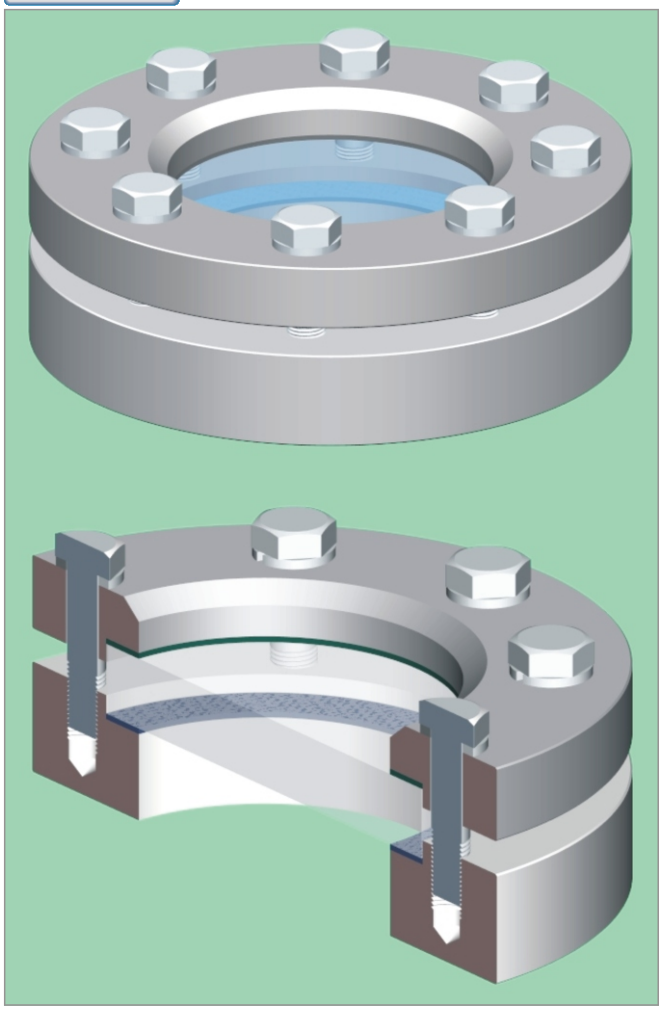
: The Certificate of CENELEC is available on EExd ⅡB + H_2 T4, IP66.
: The Certificate of U.L is available on Class Ⅰ : Groups C and D Temp. Code T4A ; Division 1.
Class Ⅰ : Group B Temp. Code T2A : Division 2.

Others, except the above SAM IL's standard electricity are available on request by customer.

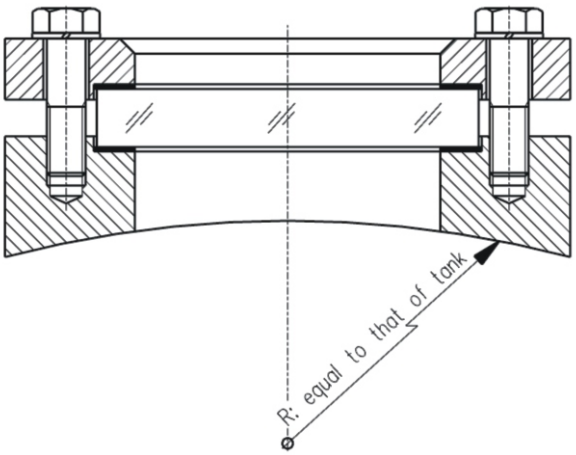
GENERAL DESCRIPTION

These gauge bodies are made suitable for welding directly to the vessel. Therefore, No cocks can be fitted between vessel and gauge.
The tables below show visible length and depending upon the application, extra-long types are also available. in case of glass breakage, as the fluid flowing from the vessel can not be stopped, it must keep within the maximum operating pressure absolutely for preventing the glass breakage.

SWPG-1



TYPE	VISIBLE DIAMETER	BODY DIAMETER
W-20	20	75
W-25	25	80
W-40	40	100
W-50	50	110
W-70	70	135
W-80	80	145
W-90	90	155
W-100	100	185
W-130	130	210
W-160	160	240
W-200	200	280



When the tank diameter or radius informed us and is request, **SAM IL** will make this machining like as shown the right-side hand illustrated.

SPECIFICATIONS

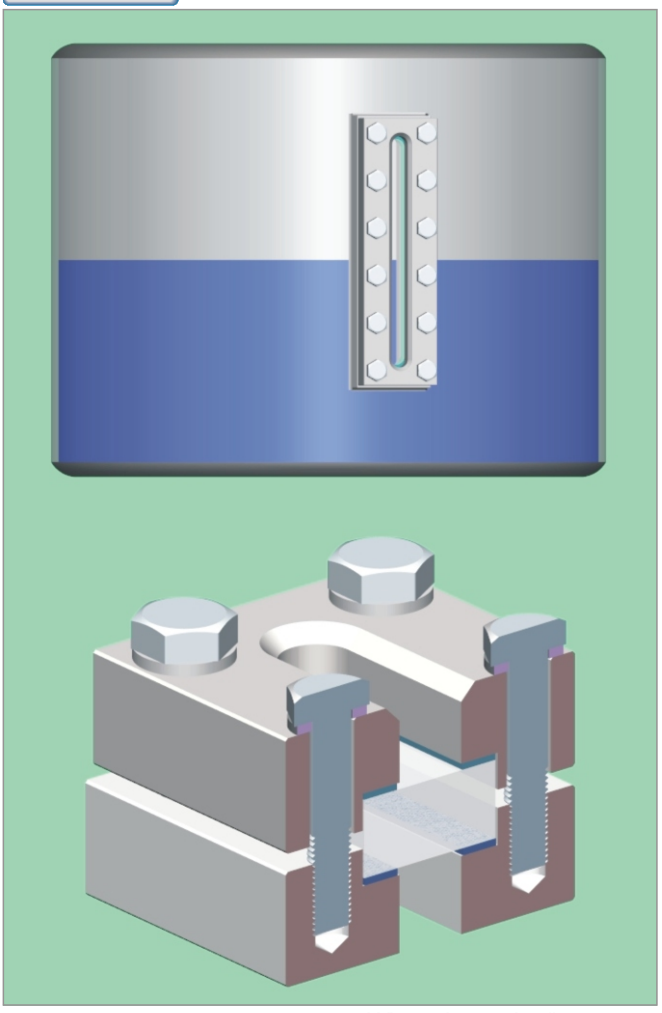
- **MATERIAL** : C.S, LTCS & Stainless Steel, etc.
- **VISIBLE DIAMETER** : 20 to 200 mm.
- **MAX. NO. OF SECTION** : 1 Sections.
- **VESSEL CONNECTION** : Direct Welding on the Vessel
- **MAX. WORKING PRESSURE** : 142 psi [as standard based on dimensions at the above table].
- **OTHERS** : Special Types are available up to 426 psi [30 kg/cm^2] on request.

Others, except the above specification are available on request by customer.

During the welding operation, take care not to expose the gauge body for long time to high temperature, as this might damage the flatness of the glass sealing surface.

This type also can be designed and manufactured as a regular square and an oval form. Others, except below our standard dimensions, of **V.L, V.W, B.L, B.W** [Body Width] are also available on request.

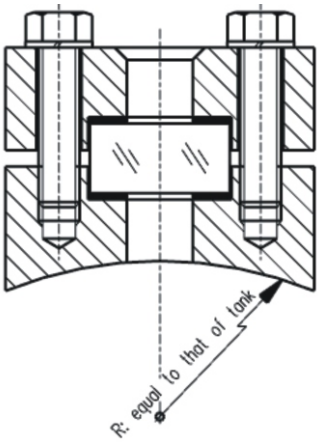
SWPG-2



TYPE	V.L	V.W	B.L
R-3 / T-3	140	16	185
R-4 / T-4	165	16	210
R-5 / T-5	195	16	240
R-6 / T-6	225	16	270
R-7 / T-7	255	16	300
R-8 / T-8	295	16	340
R-9 / T-9	315	16	360
R-10 / T-10	375	16	420

R : Reflex Glass
T : Transparent Glass

V.L : Visible Length
V.W : Visible Width
B.L : Gauge Body Length



When the tank diameter or radius informed us and is request, **SAM IL** will make this machining like as shown the right-side hand illustrated.

SPECIFICATIONS

- **MATERIAL** : C.S, LTCS & Stainless Steel, etc.
- **VISIBLE LENGTH** : 90 to 375 mm.
- **MAX. NO. OF SECTION** : 5 Sections.
- **VESSEL CONNECTION** : Direct Welding on the Vessel.
- **MAX. WORKING PRESSURE** : 426 psi [as standard based on dimensions at the above table].
- **OTHERS** : Special Types are available up to 853 psi [60 kg/cm^2] on request.

Others, except the above specification are available on request by customer.

ENQUIRY- / ORDER FORM FOR PRODUCTS

TO : SAM IL INDUSTRY CO.,LTD.	FROM :
WEB PAGE : www.samilind.co.kr	WEB PAGE :
E - MAIL : samilind79@samilind.co.kr	E - MAIL :
TEL NO. : 82-2-2618-2000 ~4, 82-32-819-9671 ~ 7	TEL NO. :
FAX NO. : 82-32-819-9693 ~4	FAX NO. :

We are pleased to receive this enquiry- / order form for products from your company.

SPECIAL REQUIREMENTS :

OUTLINE DRAWING [IF NECESSARY] :

www.samilind.co.kr
samilind79@samilind.co.kr

DATA SHEET

SINCE 1979
SAM IL INDUSTRY CO.,LTD.

LEVEL GAUGE
[REFLEX & TRANSPARENT TYPE]

NO.	BY	DATE	REVISION

SHEET : OF
SPEC. NO. REV.
CONTRACT DATA
REQ. P.O.
BY CHK'D APPR.

		1	Item No.	1	2	3	4
GENERAL	✶	2	Tag No.				
	✶	3	Q'TY				
		4	Model No.				
FLUID DATA	✶	5	Fluid Name				
	✶	6	Press.@ Oper. [kg/cm^2 G]				
	✶	7	Temp.@ Oper. [°C]				
	✶	8	Press.@ Design[kg/cm^{2}G]				
	✶	9	Temp.@ Design[°C]				
		10	Operating Viscosity[cp]				
GAUGE	✶	11	C to C Length [mm]				
		12	Visible Length [mm]				
	✶	13	Connection Size				
	✶	14	Connection Arrangement				
	✶	15	Body Material				
		16	Cover Material				
		17	Gasket Material				
		18	Bolts / Nuts Material				
VALVE	✶	19	Type				
	✶	20	Body Material				
		21	Trim Material				
		22	Packing Material				
		23	Check Ball	Yes	Yes	Yes	Yes
		24	Re-Newable Seat				
	✶	25	Flange & Valve Con'n				
			Gauge Con'n: Size / Rating				
			Gauge Con'n: Union / Other				
	✶	26	Drain Con'n: Size / Rating				
			Drain Con'n: With /				
	✶	27	Vent Con'n: Size / Rating				
			Vent Con'n: With /				
OPTIONS	✶	28	Calibration Scale Plate				
	✶	29	Support Bracket				
	✶	30	Illuminator				
	✶	31	- Elect. Class				
	✶	32	- Elect. Supply				
	✶	33	Non-Frosting Plate				
	✶	34	Heating / Cooling Jacket				
		35	Shield [Mica]				
		36	Other				

REMARK : "✶" MARKED COLUMNS SHOULD BE FILLED UP BY CUSTOMER NECESSARILY [OR IF POSSIBLE].
NOTE :

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