

SHICO. TANK LEVEL GAUGE

MODEL : SLT-1100 Series

CONSTRUCTION AND PRINCIPLE OF SLT-1100 SERIES FLOAT TYPE LEVEL GAUGE

The SLT-1100 series level gauge consists of a level detecting float, transmitting parts (type, guide elbow, etc.) and the instrument body. The indicator body comprises the sprocket pulley, tape winding pulley, constant torque spring, gear mechanism, pointer and scale plate. When a transmitter is provided for level gauge, the transmitter is connected to the sprocket pulley shaft of the indicator body through the coupling mechanism.

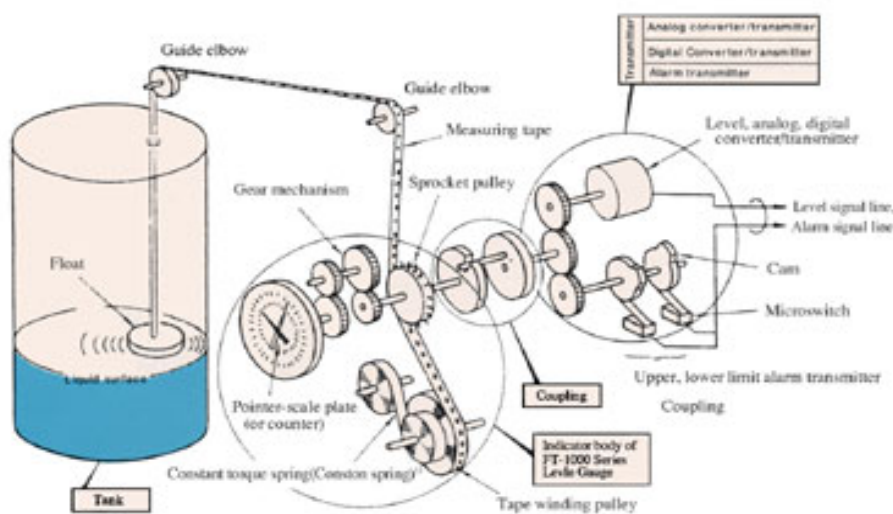
The float is kept afloat on the surface of the liquid with a constant draft line, and follows any changes in the liquid level. The float is connected to a type winding pulley through the stainless steel type which is punched at regular intervals. The constant torque spring is incorporated in the tape winding pulley in order to apply a constant torque in the tape winding direction. This constant torque is balanced with the weight of the float on the surface of the liquid

When the float rises and lowers, according to the change in the liquid level, the tape which is interlock with the float rotates the sprocket pulley, which in turn is engaged with the punched tape. The rotation corresponds to the upward or downward movement of the float. Thus, any change in the level of the liquid is converted to the change in the rotation angle of the sprocket pulley shaft.



The rotation angle of the sprocket pulley shaft is transmitted to the pointer through the gear mechanism, and the liquid level is indicated by the pointer and the scale plate, or by the counter.

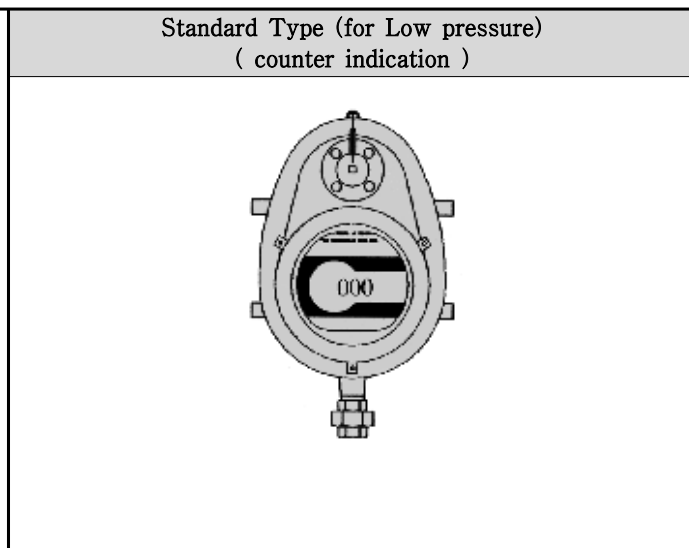
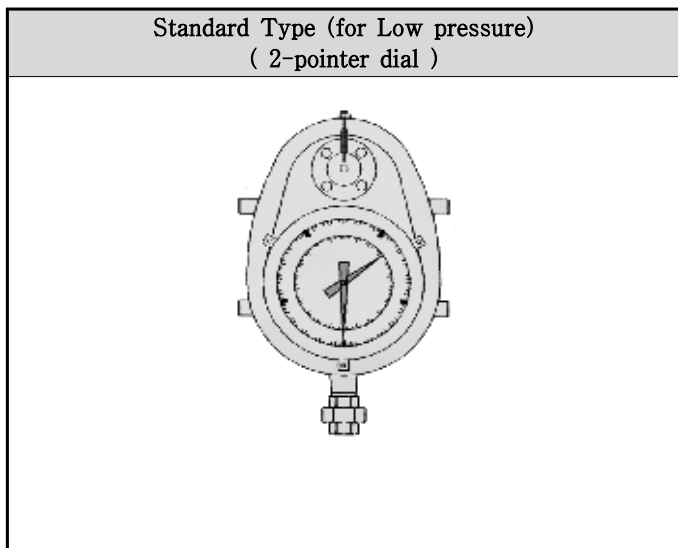
A signal to alarm of the liquid level can be transmitted to a remote receiver in order to indicate the upper and lower limits. This can be done by connecting the sprocket pulley shaft with the analog transmitter, digital converter, or alarm transmitter. (a combination of the cam and micro switch).



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■ SLT-1100 SERIES LEVEL GAUGE



■ STANDARD SPECIFICATIONS

Measuring range : 0-3, 5, 10, 15, 20, 25, 30 m

Indication system : 2-pointer dial or counter
(graduation increment 1 mm)

Accuracy : Possible up to 2mm
(for a liquid specific gravity of 1,
measuring range 10m)

Withstanding press. Standard type 0.2 kgf/cm² G

Connection : Standard type 1-1/2", screw
High pressure type 1-1/2", flange

Material : indicator body :

Standard type ADC12

Float : SUS304

Standard : SUS316, PVC

Special : Teflon lining

Type : SUS316

Guide wire : SUS304

Bottom piece : SS41

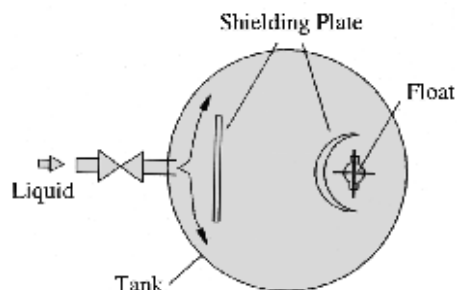
Construction : Water-proof, Air-tight.

Paint color : Silver (standard)

Preventing the float from abnormally vibration due to tank feed stream

It is bad for reasons of durability for the float and type to be subjected to sudden, abnormal vibration due to a violent stream of feed liquid.

To avoid it, the float should be located as far away from the liquid feed pipe as possible, and a shielding plate should be installed, as shown at right figure.

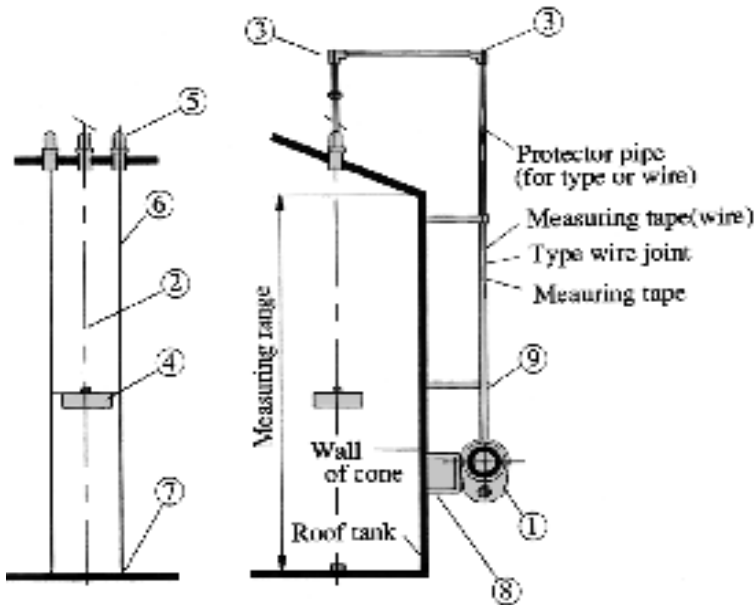


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■ INSTALLATION OF THE SLT-1100 SERIES LEVEL GAUGE ON A TANK

Installing on the side of a cone roof tank

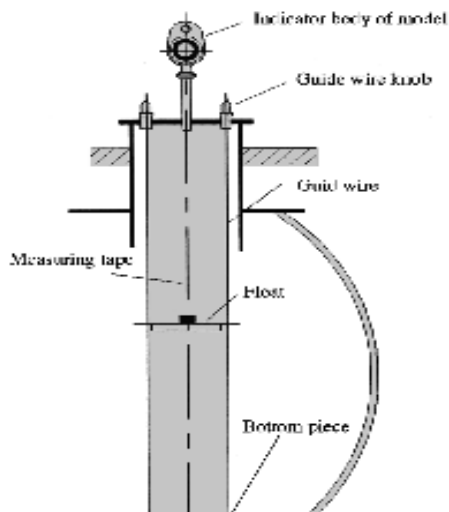


Construction parts for complete set

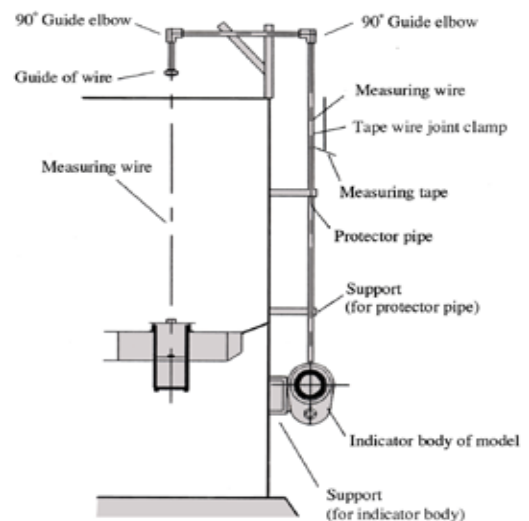
① Indicator body of model SLT1100 series	1
② Measuring type	1
③ 90° guide elbow	2
④ Float (equipped with tape wire joint clamp)	1
⑤ Guide wire knob	
⑥ Guide wire	2
⑦ Bottom piece	
⑧ Support for indicator body	2
⑨ Support (for protector pipe)	1

• Marked is use for tape-wire joint type
Protector pipe is supplied by customer

Installing on the top of a tank or underground tank



Installing on a floating roof tank (with float)



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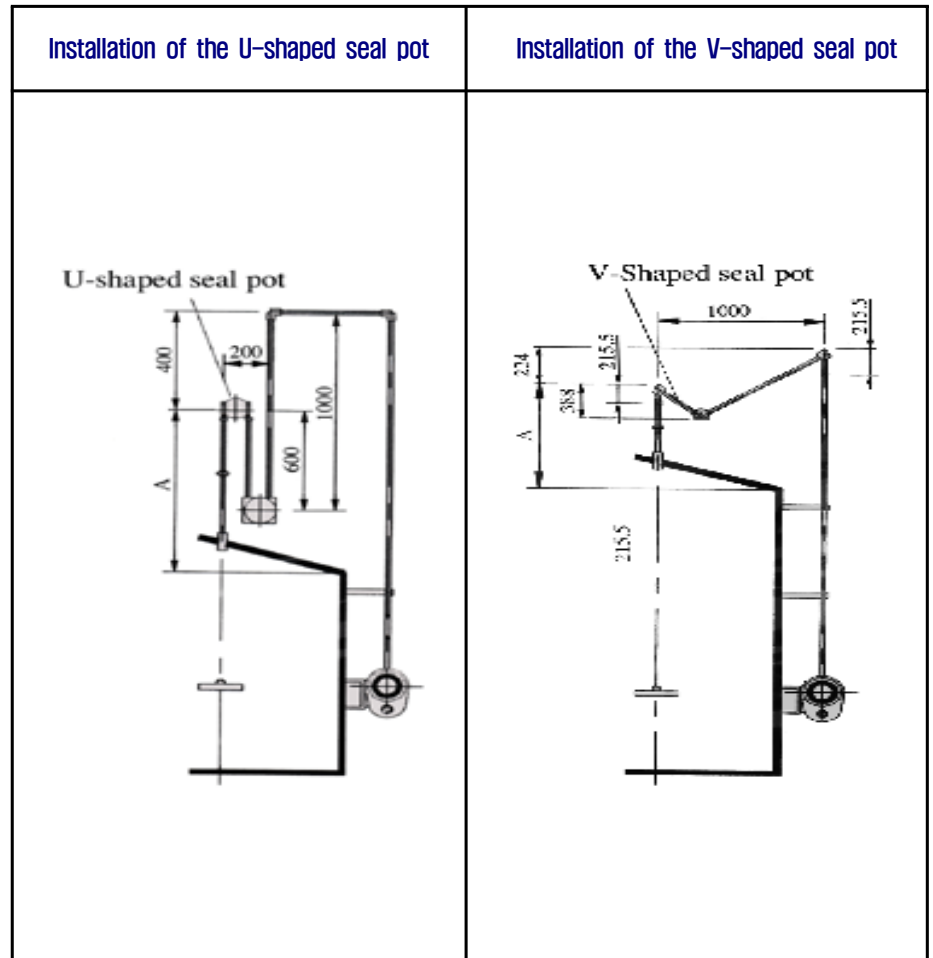
■ GAS SEAL MECHANISM

The U-shaped or V-shaped seal pot, as shown is installed to seal the gas generating parts from the side of the level gauge when the level gauge is to be mounted on a normal pressure tank, which, for example, contains a liquid that generates dangerous and harmful vapors or inflammable.

The seal pot contains a non-volatile seal liquid which does not affect the liquid in the tank, such as silicone oil, spindle oil and liquid paraffin).

The seal liquid cuts off the harmful gas from flowing into the level gauge.

Connection	PT 1-1/2" screw 1-1/2" flange
Cut-off Pressure	400-1000(mmAq)
Material	SGP, SUS304, SUS316, AC2A, FC25, SCS13, SCS14
Seal liquid (example)	Silicone oil, etc.
Volume of seal liquid	Approx. 1.5l





■ DIMENSIONS OF SLT-1100 SERIES LEVEL GAUGE



Dimensions of SLT-1100 for low pressure	Dimensions of extra parts for low pressure		
<p>1 Indicator body 2 Gasket 3 Back cover 4 Indicator 5 Hand hoisting mechanism 6 Union 7 Plug 8 Connection of transmitter</p>	Float <p>(Guide wire pith)</p>	Guide wire knob 	
	90° guide elbow 	Bottom piece 	

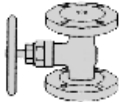
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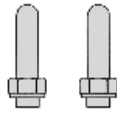
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■ PARTS OF SLT-1100 SERIES LEVEL GAUGE

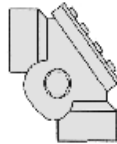
Float		
Standard	Diameter	Material
	φ 135	SUS 304 SUS 316
	φ 300	SUS 304 SUS 316
	φ 400	SUS 304 SUS 316
This is the standard. Other material such as special metal, synthetic resin, or lining are possible.		

Tape and constant torque spring (constant spring)			
	Part	Diameter	Material
	Tape	13Wx0.15t x L1 hole pitch 30	SUS 304 SUS 316
	Constant torque spring	25W x 0.3t x L2	SUS 304 SUS 316
L1 and L2 are decided according to the tank height.			

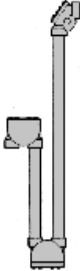
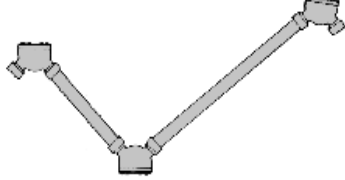
Shut off valve			
	Type	Connection	Material of main body
	For low pressure	1 1/2" flange	SCS 13, 14
	For high pressure		

Guide wire knob			
	Type	Connection	Case Mat'l (standard)
	For low pressure	1 1/2" screw type welding type	FC23 SCS13, 14
	For high pressure	1 1/2" flange	STPG38 SUS304 SUS316

Guide wire			
	Type	Dimensions	Material
	Stand	φ 3 x L	SUS316 (standard)
	Single wire	φ 4 x L	SUS304
L is decided according to the tank height.			

Guide elbow				
	Type	Connection	Application	Case material (standard)
	For low pressure	PT 1/2" screw	135° 90°	FC25 ADC12
		1 1/2" flange	135° 90°	SCS13 SCS14
	For high pressure	1 1/2" flange	90° 135°	SC49 SCS13, 14

FT Series hoisting handle	
	Material
	AC2A

U-Shaped seal pot	V-Shaped seal pot		
		Connection	PT 1-1/2" screw 1-1/2" flange
		Cut-off pressure	400-1000(mmAq)
		Material	SGP, SUS304, SUS316, AC2A, FC25, SCS13, SCS14
		Seal liquid (example)	Silicone oil, etc.
		Volume of seal liquid	Approx. 1.51

