

LIQUID LEVEL GAUGE

Rev. No.	M. D. Year	Rev. Description	Prepared by	Reviewed by	Approved by

KUKDONG LEVEL CO.

#843-1, JANGLIM-DONG, SAHA-GU, BUSAN, KOREA

TEL : + 82-51-261-7569

FAX : + 82-51-261-7570

E-MAIL : kdlevel@hanmail.net

## TABLE OF CONTENTS

1. Installation	-----	3
2. Handling	-----	3
3. Warming up level gauge for boiler service	-----	4
4. Repairment of level gauge	-----	5
5. Leakage test after repairment	-----	6
6. Assembling procedure	-----	6

## 1. Intallation

### 1) adjustment of branch nozzle.

If center to center dimension of branch nozzle of level gauge for vessel is incorrect, it will cause the damage of level gauge's glass in particurar.

### 2) Intallation of drain piping.

Install the drain piping to avoid danger to operator when liquid in level gauge is drained out,

## 2. Handling

### 1) A. Fully close upper (A), lower valves (B), and drain valve (C).

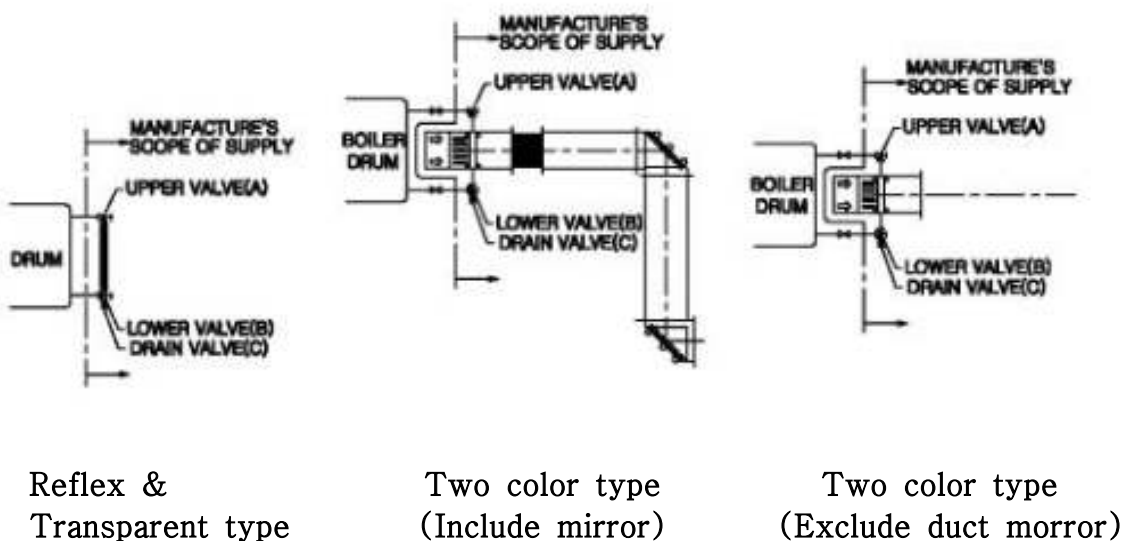
B. Open drain valve (C).

C. Gradually open upper valve (A) and pour air into level gauge.

D. Fully close drain valve (C), and level gauge will be pressurized.

E. Gradually open lower valve (B) to indicate level in level gauge.

F. Fully open upper (A) and lower valves (B).



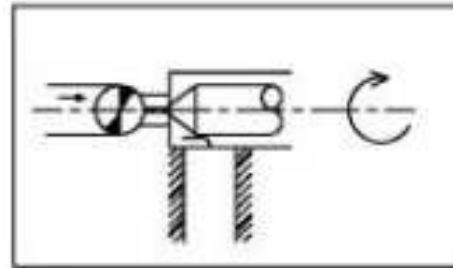
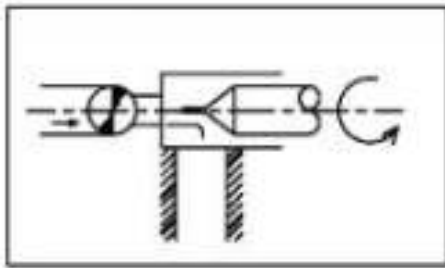
2) When some leakage occurs on the level gauge close upper (A) and lower (B) valves and open drain valve to depressurize the interior of the level gauge. Carry out bolting in accordance with Figure 1.

3) When liquid level is not indicated in the level gauge.

A. In case of trouble of function of ball check.

Fully close upper (A) and lower (B) valves, then gradually open them slightly.

B. In case upper (A) and lower (B) valves are choked with something wrong dismantal the level gauge and clean it up.



### 3. Warming up level gauge for boiler service

1) Open drain valve (C), then close lower valve (B), and upper valve (A) a half revolution.

Must continue warming up for about 15 minutes until temperature of level gauge body becomes to 150-200 degrees centigrade.

2) After warming up, close upper valve (A) and carry out bolting in the sequence shown in the figure 1.

3) Open again upper valve (A) a half revolution, continue warming up for 5 minutes.

4) After warming up, close drain valve (C), fully open upper (A) and lower (B) valves.

#### 4. Repairment of level gauge

##### 1) Disassembling

- A. Prior to any disassembly of the gauge, first close bose upper and lower valves, than open drain valve to be relieved of all internal pressure.
- B. Remove gauge glass carefully from body.

##### 2) Clean up

- A. The glass, gasket and cushion should not be re-used, even when they may look perfect.  
Chipped or scratched glass should not be used, because such defects become points of high stress concentration.
- B. Clean up the metal surace for packing carefully, take off trace of packing and packing paste.
- C. Keep the metal surface for packing in perfect condition.

##### 3) Reassembling

Refer to the sketch (item 8) for assembling procedure.

##### A. Bolting time

- First : A 80 percent of tightening.
- Second : A 100 percent of tightening.

- B. Bolts & nuts **벼무삿** depends on type and size of the level gauge.  
So, actual bolts & nuts quantity may be different from the right figure.

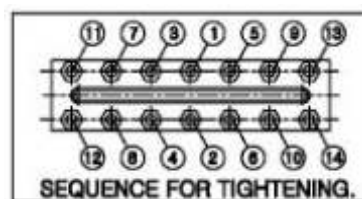


Figure 1.

## 5. Leakage test after repairment

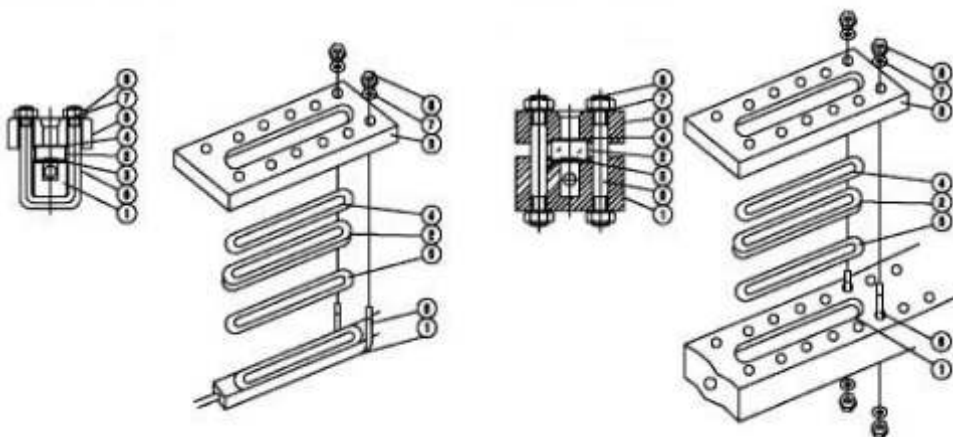
Carry out leakage test at the specified pressure.

## 6. Assembling procedure

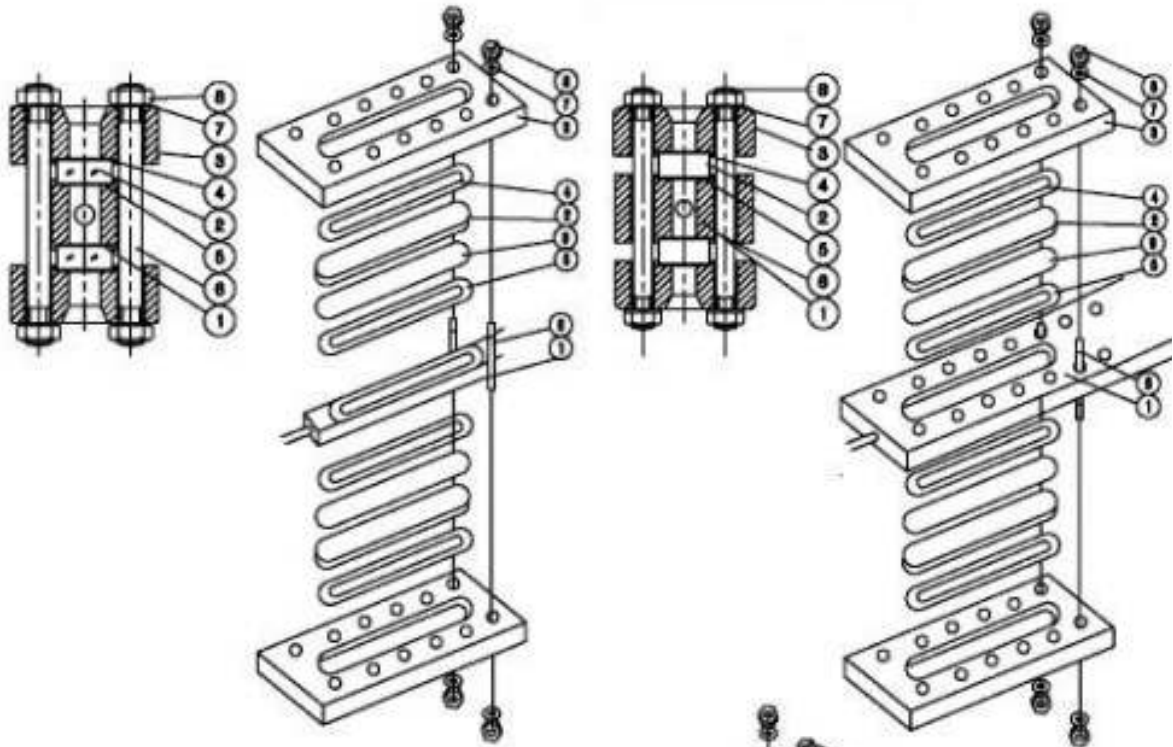
- 1) Install gasket(5) gauge glass(2) cushion(4) and gauge cover(3) to gauge body(1).
- 2) Insert bolt(6) to center positioned hole of gauge cover(3) and screw up nuts(7,8) softly.
- 3) Insert two bolt(6) to adjacent hole and screw up nuts(7,8) in softly after adjusting correct position of gasket(5) and gauge glass(2).
- 4) Insert the reset of bolts(6) and nuts(7,8).
5. Screw up all nuts(7,8) in accordance with the sequence for tightening cover bolts(fig. 1)

	Name of part		Name of part
1	Gauge body	5	Sealing gasket
2	Gauge glass	6	Bolt
3	Gauge cover	7	Washer
4	Cushion gasket	8	Nut

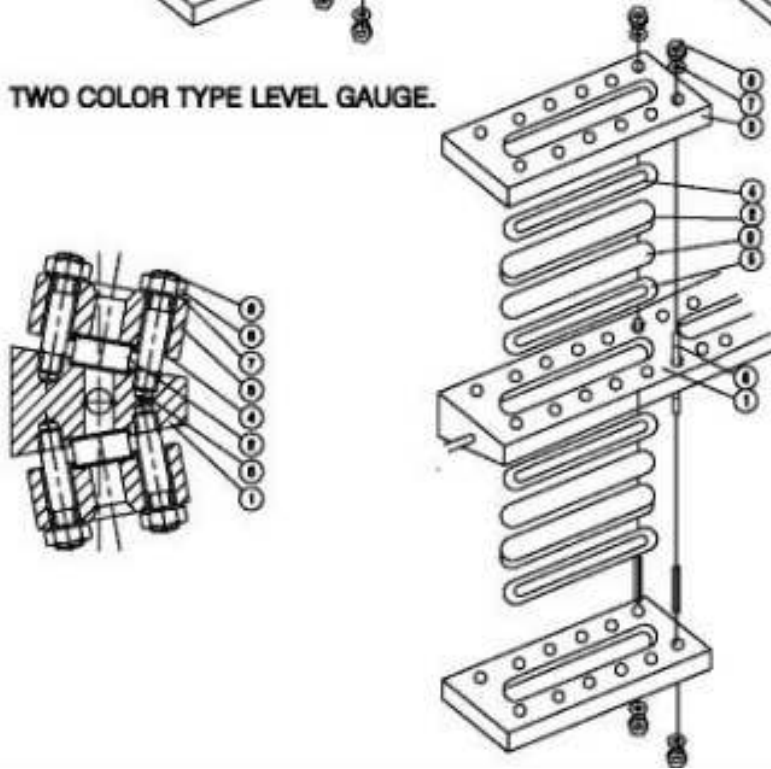
REFLEX TYPE LEVEL GAUGE



**TRANSPARENT TYPE LEVEL GAUGE.**



**TWO COLOR TYPE LEVEL GAUGE.**



Tubular type level gauge

1) In case of the tube glass

- A : Put it into valve body after winding packing(5) round the tube glass(6).
- B : Push packing(5) lightly into valve body with gland(4).
- C : Tighten the union nut(3) to avoid causing leakage.
- D : Bind tight once more protector(2) wound by gland(4) with a hose band(1).

2) In case of PFA hose

- A : Insert PFA hose(6) into hose nipple after heating it slightly.
- B : Tighten the union nut(6) to avoid causing leakage after pushing gland(4) lightly into hose nipple(5).
- C : Bind tight once more protector(2) would by gland(4) with hose band(1).

	Name of part		Name of part (Glass/PFT hose)
1	Hose band	4	Gland
2	Protector	5	Packing/Hose nipple
3	Union nut	6	Glass/PFT hose

