

ULB

GLASS PLATE LEVEL GAUGE

Operation Manual



Preface

Thank you for choosing the products of Dandong Top Electronics Instrument (Group)Co.,Ltd.

This operation manual provides you with important information on installation, connection and commissioning as well as on maintenance, troubleshooting and storage. Please read it carefully before installation and commissioning and keep it as part of the product near the meter for easy reading.

This manual can be downloaded by entering the version number at www.ddtop.com.

If the instructions are not followed, the protection provided by the meter may be destroyed.

Trademark, Copyright and Restriction Instructions

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The performance specifications of the meter are effective as of the date of publication and are subject to change without notice. Dandong Top Electronics Instrument (Group)Co.,Ltd. reserves the right to modify the products described in this manual at any time without prior notice.

Quality Assurance

Dandong Top Electronics Instrument (Group) Co.,Ltd. guarantees that all glass plate level gauge have no defects in materials and manufacturing processes within one year from the date of delivery.

During the warranty period, if the product returns with quality problems and the claim is determined by the manufacturer to be within the scope of warranty, Dandong Top Electronics Instrument (Group) Co.,Ltd. is responsible for repair or replacement of the buyer (or owner) free of charge.

Dandong Top Electronics Instrument (Group) Co.,Ltd. is not responsible for the costs caused by improper use of equipment, labor claims, direct or subsequent damage and installation and use of equipment. In addition to the special written warranty certificate for certain products of Dandong Top Electronics Instrument (Group) Co.,Ltd., Dandong Top Electronics Instrument (Group) Co.,Ltd. does not provide any express or implied warranty.

Quality

Dandong Top Electronics Instrument (Group) Co.,Ltd. has passed the ISO9001 quality system certification. The whole process of product production is strictly in accordance with the scope of the quality system, providing the strongest guarantee for product and service quality.

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1 Safety Tips

It is expressly prohibited to modify or change products for safety reasons, repair or replacement only allows the use of accessories specified by the manufacturer.

1.1 Explosion may result in death or serious injury.

When installing equipment in an explosive atmosphere, be sure to follow applicable local, national, international standards, codes, and procedures. Be sure to install the equipment in Intrinsically safe or non-flammable site operating procedures.

1.2 Process leaks can cause serious injury or death.

Care should be taken to lift the transmitter. If the process seal is damaged, the medium may leak at the joint.

1.3 Failure to follow safe installation guidelines may result in death or serious injury.

The operations described in this manual are performed by professionally trained and qualified professionals or end-user specialized professionals to complete.

2 Product Manual

2.1 Main Structure

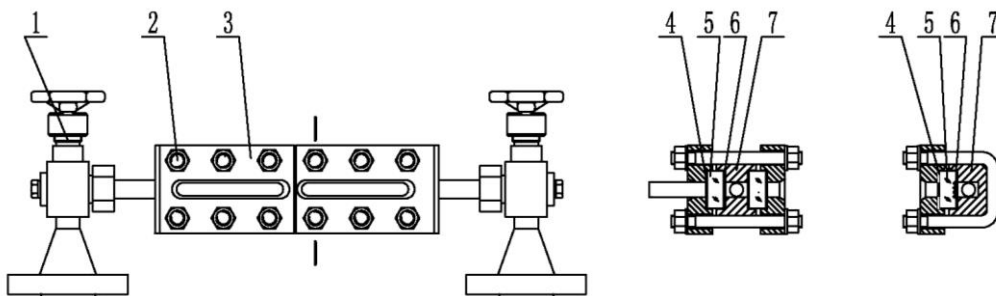


Figure 1 Main Structure of the Product

1. Safety Valve
2. Fasteners,including Bolt and Nut Washers
3. Pressure Plate (Gland)
4. Cushion
5. Glass Plate
6. Seal
7. Body

2.2 Operating Principle

In accordance with the principle of communicating vessels.Through the built-in sight glasses,the

filing level of the liquid is directly visible.

2.3 Packaging

Please send the packaging waste to a special recycling agency.

2.4 Hoisting and Transporting

Please use quality hoisting equipment and lifting straps, and pay attention to safety.

2.5 Warehousing

Storage temperature $-20\text{ }^{\circ}\text{C} \sim 40\text{ }^{\circ}\text{C}$; storage humidity $\leq 20\%$.

3 Technical Characteristics

3.1 Main Performance

3.1.1 Product performance standards: JB/T9244 Glass Plate Level Gauge

3.2 Main Parameters

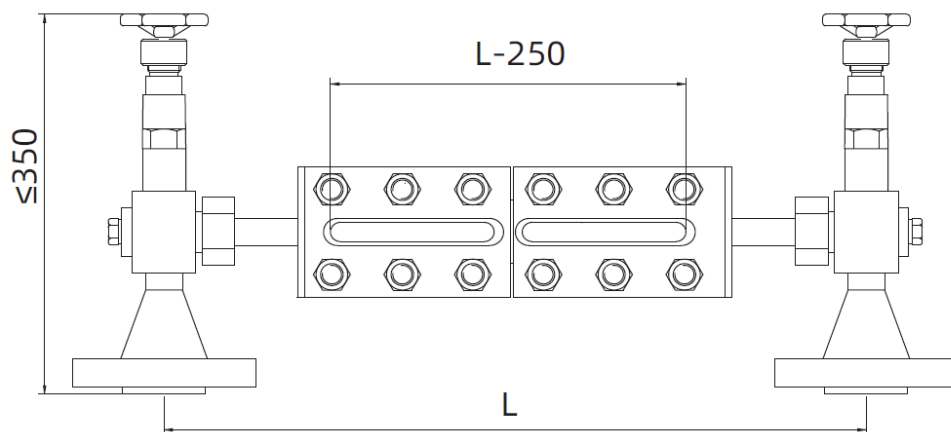
3.2.1: Needle valve automatically close pressure $\geq 0.3\text{MPa}$

3.2.2 Heating steam jacket joints: R3/8 or on request

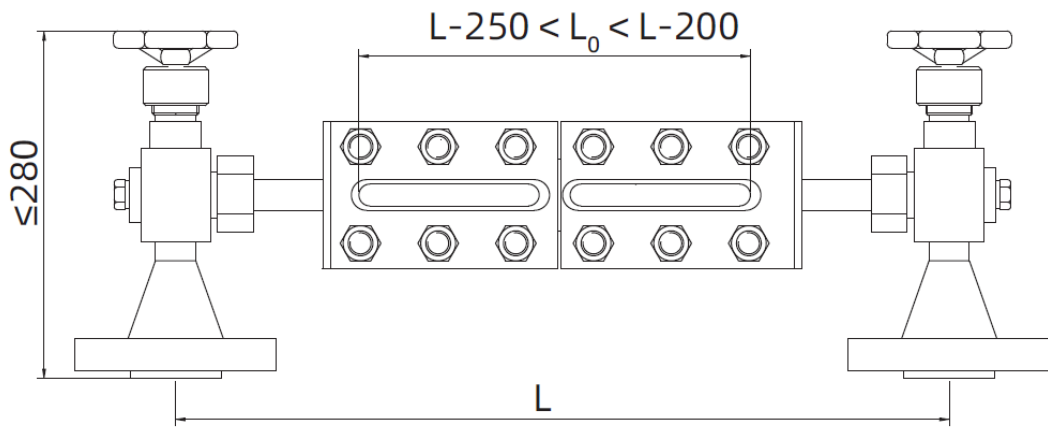
3.2.3 Flange: HG/T20592-2009,HG/T20615-2009 or on request

4 Dimensional Schematic-Figure 2

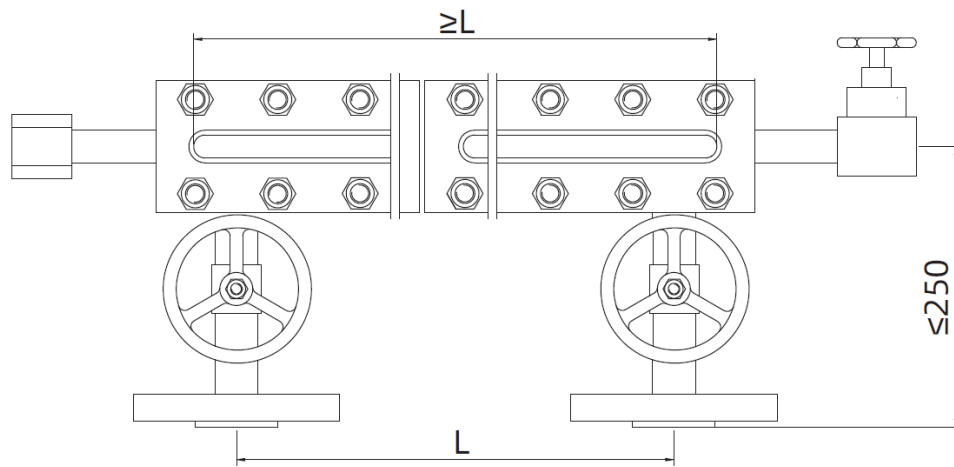
If the order is required to be a special size, the actual size will prevail.



Frost-proof Non-blind Glass Plate Level Gauge



Non-blind Zone Glass Plate Level Gauge



No Blind Zone Glass Plate Level Gauge

Figure 2 Dimensional Schematic

5 Unpacking and Inspection

5.1 Unpacking Inspection Notice

5.1.1 Check whether the product nameplate (Figure 3) is consistent with the supply list information.

DDTOP ELECTRONICS INSTRUMENT		Glass Plate Level Gauge			PA 10F211-21	
Model		Nominal Pressure	MPa	Tag No.		
Medium temperature	°C	Range	mm	Date / Number of manufacture		
Dandong Top Electronics Instrument (Group) Co., Ltd.						

Figure 3 Product Nameplate

5.1.2 Check the packing list, check the quantity of each part, and the material is correct.

5.2 Check Content

5.2.1 Check the appearance of the instrument for defects, damage and other abnormal conditions, Whether the glass plate has cracks, whether the fastener is loose, and whether the joint between the valve and the main body is loose.

6 Installation

6.1 Installation Tool

6.1.1 Wrenches, flange gaskets and flange bolts for process connections

6.1.2 Level

6.2 Installation Technical Requirements

6.2.1 Before installing the level gauge, it is necessary to measure whether the center distance of the flange on the container is consistent with the center distance of the liquid level gauge. If it is inconsistent, the center distance of the flange of the container or the level gauge needs to be adjusted, and the liquid level gauge is easily damaged by forced installation.

6.2.2 Install the liquid level timing, the level of the level gauge flange must be perpendicular to the horizontal plane

7 Debugging - Figure 4

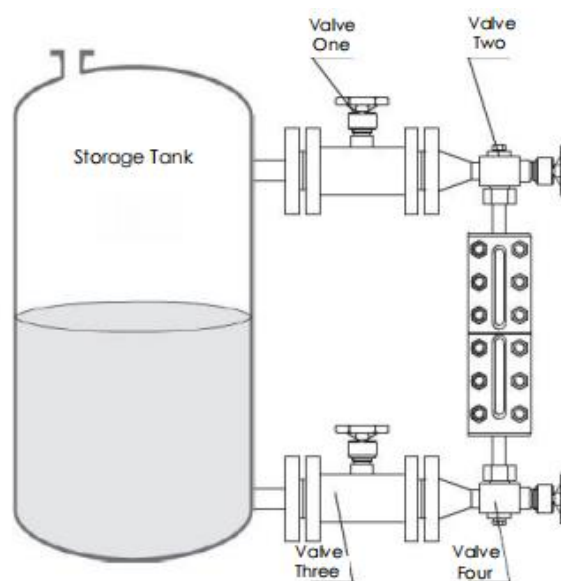


Figure 4 Debugging

7.1 Completely close all valves on the level gauge (Valve 1 - 4);

7.2 Slowly open the flange valve between the tank and the level gauge (Valve 1, Valve 3);

7.3 Slowly open the upper valve of the level gauge (Valve 2);

7.4 Slowly open the lower valve of the level gauge to allow the medium to flow into the level gauge (Valve 4);

7.5 Completely open the upper and lower valves of the level gauge (Valve 2, Valve 4)

8 Fault Analysis and Elimination

Fault Phenomenon	Reason	Method of Exclusion
No liquid level in the level gauge	Steel ball seals the valve port	Slowly open the valve after closing the valve, and fully open the valve after the pressure is stable

9 Maintenance

9.1 Warning

Attention should be paid to hazardous process conditions, such as pressure inside the vessel, high temperatures, corrosive or toxic media, etc.

9.2 Disassembly

9.2.1 Close all valves (Valve 1, Valve 2, Valve 3, Valve 4), remove the drain plug, and drain the residual medium (See Figure 4);

9.2.2 Loosen the bolts in order from the ends to the center;

9.2.3 After removing the bolts, remove the pressure plate, glass plate and gasket in turn.

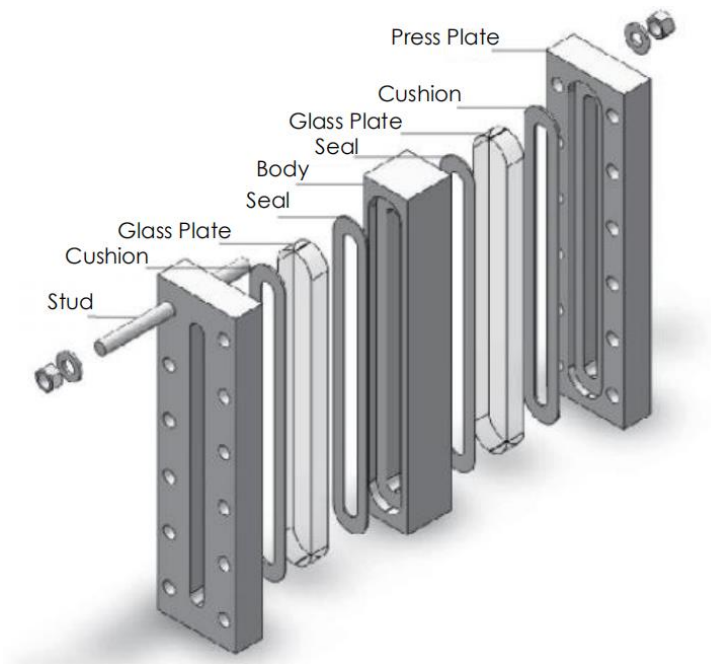
9.3 Cleaning

9.3.1 Do not use damaged glass plates, used gaskets, mica pads.

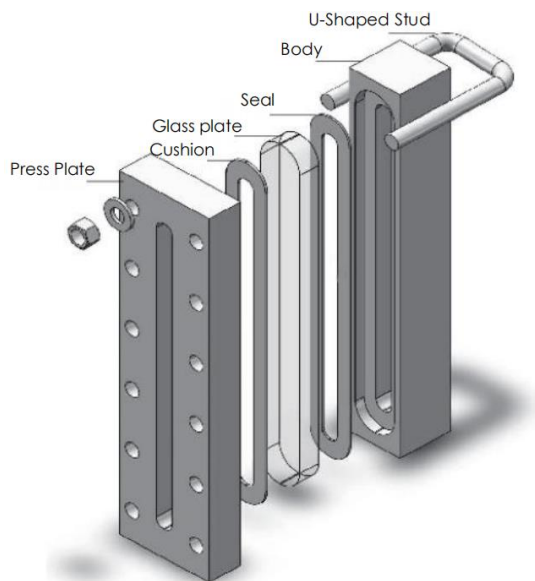
9.3.2 Carefully clean the sealing surface so that the surface is clean and free of debris and scratches;

9.4 Assembly

9.4.1 Assembly order of glass plate level gauge

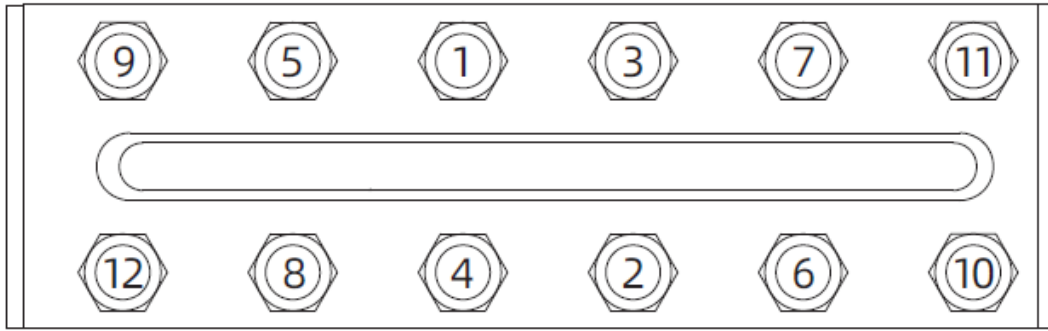


9.4.1.1 Assembly order of transparent glass plates



9.4.1.2 Assembly order of reflective glass plates

9.4.2 Preloading order of studs



9.4.3 Stud torque value

Nominal Pressure	Pound-Foot	Newton-Meter
PN < 40	35	45
40 ≤ PN < 100	40	55
100 ≤ PN < 160	70	90
PN ≥ 160	89	120

10 Product Certification

Product Certification		
Certification	Certification Number	Scope of Certification/Description
Formal approval certification for measuring instruments 	10F211-21	