

ULG

ULG-S BI-COLOR GLASS TUBE LEVEL GAUGE

ULG 型玻璃管液位计

使用说明书

Operation Manual



前言

Preface

感谢您选择丹东通博电器（集团）有限公司的产品。

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

本使用说明书给您提供有关安装、连接和调试以及针对维护、故障排除和贮存方面的重要信息。请在安装调试前仔细阅读并将它作为产品的组成部分保存在仪表的近旁，供随时翻阅。

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.

并可通过 www.ddtop.com 输入版本号下载本说明书。

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

如未遵照本说明书进行操作，则本仪表所提供的防护可能会被破坏。

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

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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.

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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.

在质保期内，如产品出现质量问题而返回，提出的索赔要求经制造厂检验后确定属于质保范围内，则丹东通博电器（集团）有限公司负责免费为买方（或业主）维修或更换。

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.

丹东通博电器（集团）有限公司对因设备使用不当，劳动力索赔、直接或后续损伤以及安装和使用设备所引起的费用概不负责。除了关于丹东通博电器（集团）有限公司某些产品的特殊书面保修证明，丹东通博电器（集团）有限公司不提供任何明示或暗示的质量保证。

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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 安全提示

1 Safety Tips

出于安全的原因, 明确禁止擅自改装或改变产品, 维修或替换只允许使用由制造商指定的配件。

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 爆炸可能会导致死亡或严重伤害。

1.1 Explosion may result in death or serious injury.

在有爆炸危险的环境中安装设备时, 请务必遵守适用当地、国家和国际标准、规范和规程。应确保按照本安或非易燃现场作业规程安装设备。

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 Intrinsicly safe or non-flammable site operating procedures.

1.2 过程泄漏可能导致严重伤害或死亡。

1.2 Process leaks can cause serious injury or death.

如果过程密封件损坏, 介质可能在连接处发生泄漏。

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

1.3 不遵守安全安装准则可能导致死亡或严重受伤。

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

此说明书中所描述的各项操作需由受过专业培训并取得相应资质或终端用户特约的专业人员来完成。

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

2 产品说明

2 Product Manual

2.1 产品主要结构-图 1

2.1 Main Structure of Product-Figure 1

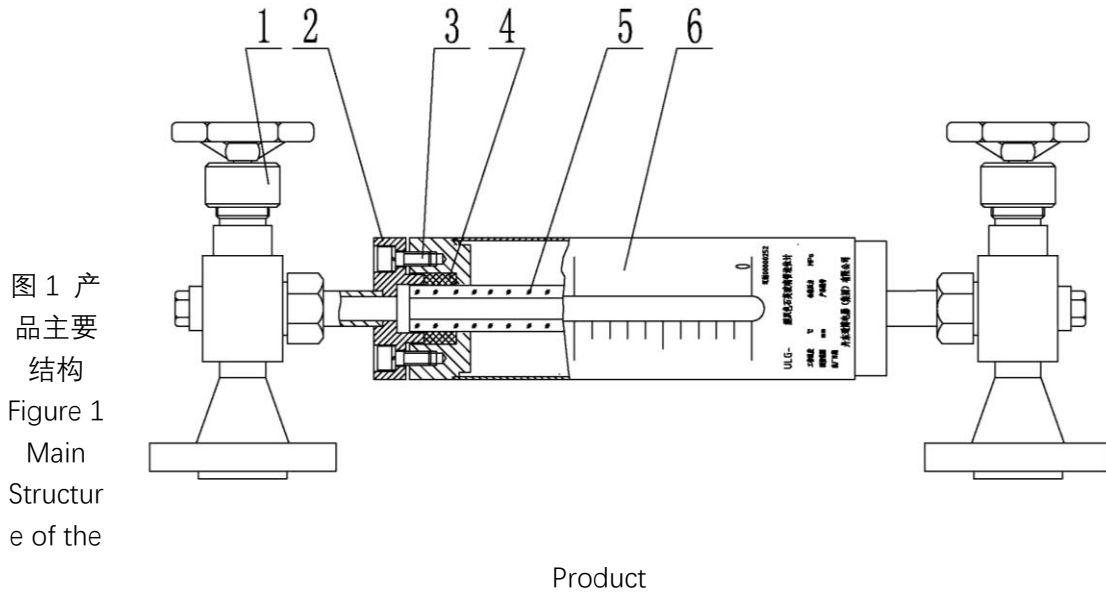


图 1 产
品主要
结构
Figure 1
Main
Structur
e of the

1. 安全阀
1. Safety Valve
2. 压紧体
2. Compression Body
3. 内六角螺钉
3. Socket Head Cap Screws
4. 石墨填料
4. Graphite Filler
5. 石英玻璃管
5. Quartz Glass Tube
6. 标尺
6. Ruler

2.2 工作原理

2.2 Operating Principle

根据连通器原理，将容器内介质液位引至外部玻璃管液位计内，并从透明玻璃表面读得液位实际高度。

According to the principle of the connector, the level in the container is led to the external glass tube level gauge, and the actual height of the level is read from the surface of the transparent glass.

2.3 包装

2.3 Packing

请将包装废物送到专门的回收机构。

Please send the packaging waste to a special recycling agency.

2.4 吊装运输时

2.4 Hoisting and Transporting

请选用质量合格的吊装设备及吊绑带，并注意安全。

Please select qualified hoisting equipment and lifting straps, and pay attention to safety.

2.5 仓储

2.5 Warehousing

贮存温度-20°C~40°C；贮存湿度 \leq 20%。

Storage temperature -20°C~40°C; storage humidity \leq 20%.

3 技术特性

3 Technical Characteristics

3.1 主要性能

3.1 Main Performance

3.1.1 产品执行标准：JB/T9243 玻璃管液位计。

3.1.1 Product Performance Standards: JB/T9243 glass tube level gauge.

3.2 主要参数

3.2 Main Parameters

3.2.1 针阀自动关闭压力： \geq 0.3MPa；

3.2.1 Needle valve automatically closes pressure: \geq 0.3MPa；

3.2.2 伴热蒸汽夹套接头：R1/2 或按用户要求；

3.2.2 Heat-storing steam jacket joint: R1/2 or according to user requirements；

3.2.3 连接法兰：HG/T20592-2009, HG/T20615-2009 或按用户要求；

3.2.3 Connection flange: HG/T20592-2009, HG/T20615-2009 or according to user requirements；

4 外形尺寸示意图-图 2

4 Dimensional Schematic -Figure 2

若订货时要求为特殊尺寸，以实际尺寸为准。

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

图 2-1-外形尺寸-S1 型玻璃管液位计

Figure 2-1-Dimensional Schematic-S1 Glass Tube Level Gauge

图 2-2-外形尺寸-S2 型玻璃管液位计

Figure 2-2-Dimensional Schematic-S2 Glass Tube Level Gauge

图 2-3-外形尺寸-S4 型玻璃管液位计

Figure 2-3-Dimensional Schematic-S4 Glass Tube Level Gauge

图 2-4-外形尺寸-S5 型玻璃管液位计

Figure 2-4-Dimensional Schematic-S5 Glass Tube Level Gauge

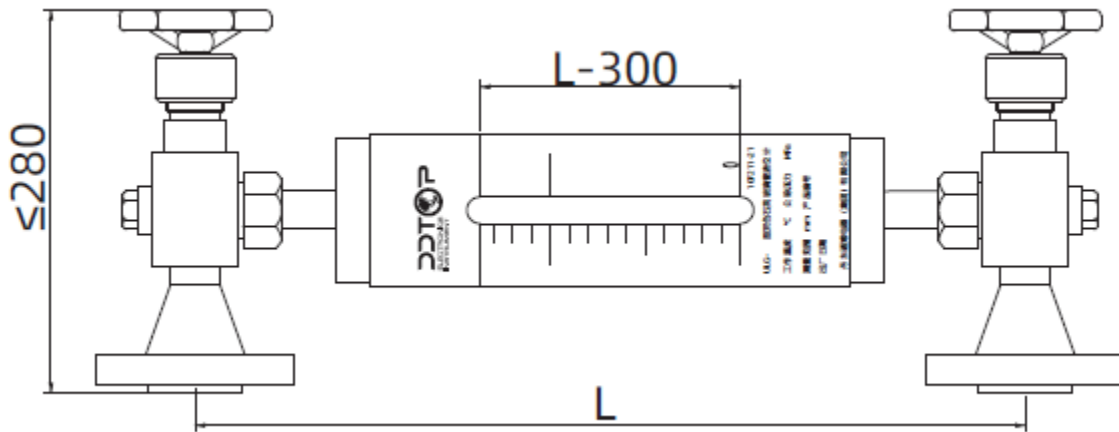


图 2-1 S1 型玻璃管液位计

Figure 2-1 S1 Glass Tube Level Gauge

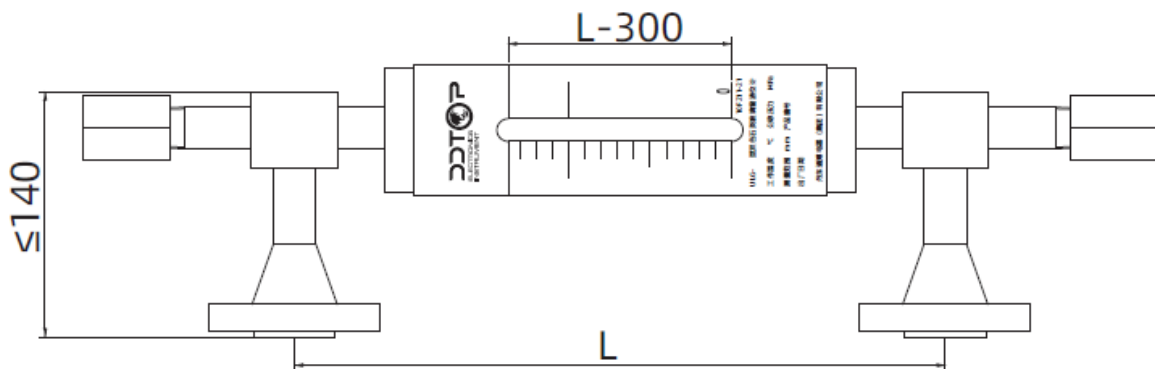


图 2-2 S2 型玻璃管液位计

Figure 2-2 S2 Glass Tube Level Gauge

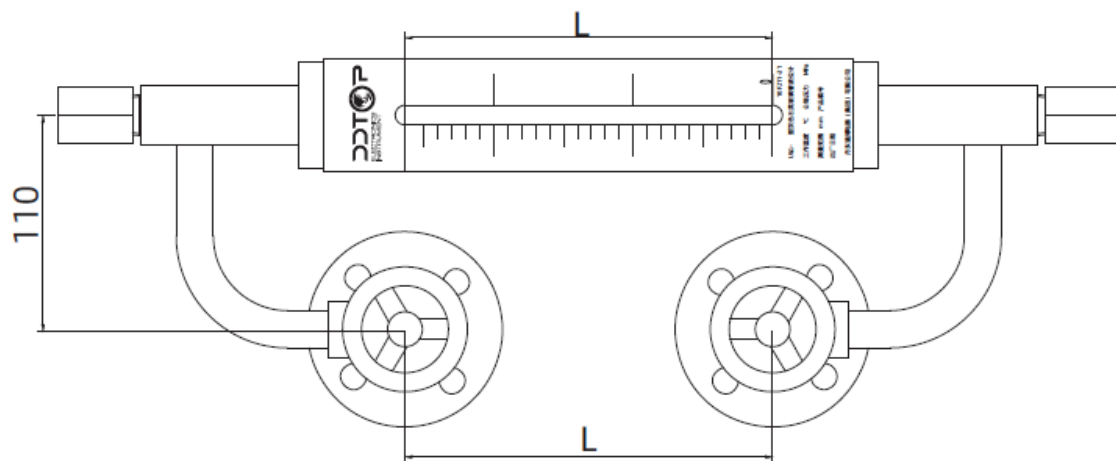


图 2-3 S4 型玻璃管液位计
Figure 2-3 S4 Glass Tube Level Gauge

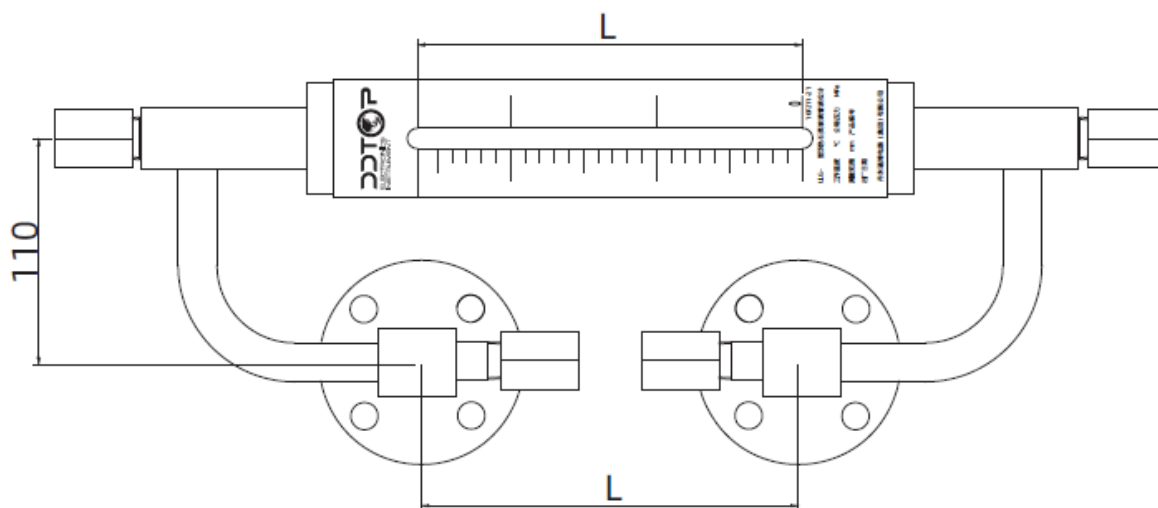


图 2-4 S5 型玻璃管液位计
Figure 2-4 S5 Glass Tube Level Gauge

5 开箱及检查

5 Unpacking and Inspection

5.1 开箱验货注意事项

5.1 Unpacking Inspection Notice

5.1.1 对照产品铭牌(图 3)与供货清单信息是否一致。

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

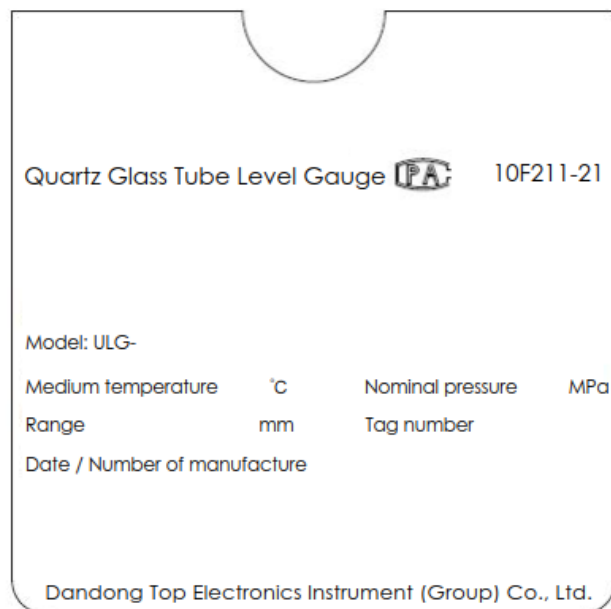


图 3 产品铭牌
Figure Product Nameplate

5.1.2 对照装箱清单，检查各零件数量，材质是否正确。

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

5.2 检查内容

5.2 Check Content

5.2.1 检查仪表外观是否有缺陷，损坏等异常情况，石英玻璃管和玻璃条是否有裂纹，阀门与主体之间的活接头是否松动。

5.2.1 Check the appearance of the instrument for defects, damage and other abnormal conditions, whether the quartz glass tube and the glass strip are cracked, and whether the joint between the valve and the main body is loose.

6 安装

6 Installation

6.1 安装工具

6.1 Installation Tool

6.1.1 适用于过程连接件的扳手、法兰垫片和法兰螺栓

6.1.1 Wrenches, flange gaskets and flange bolts for process connections

6.1.2 水平仪

6.1.2 Level

6.2 安装技术要求

6.2 Installation Technical Requirements

6.2.1 在安装液位计之前需要测量容器上的法兰中心距是否与液位计的中心距一致，如不一致，需要调整容器或液位计的法兰中心距，强行安装容易损坏液位计。

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 level gauge. If it is inconsistent, the flange center distance of the container or the level gauge needs to be adjusted, and the level gauge is easily damaged by forced installation.

6.2.2 安装液位计时，液位计法兰轴线必须垂直于水平面-图 4。

6.2.2 When installing the level gauge, the level of the level gauge flange must be perpendicular to the horizontal plane - Figure 4.

7 调试

7 Debugging

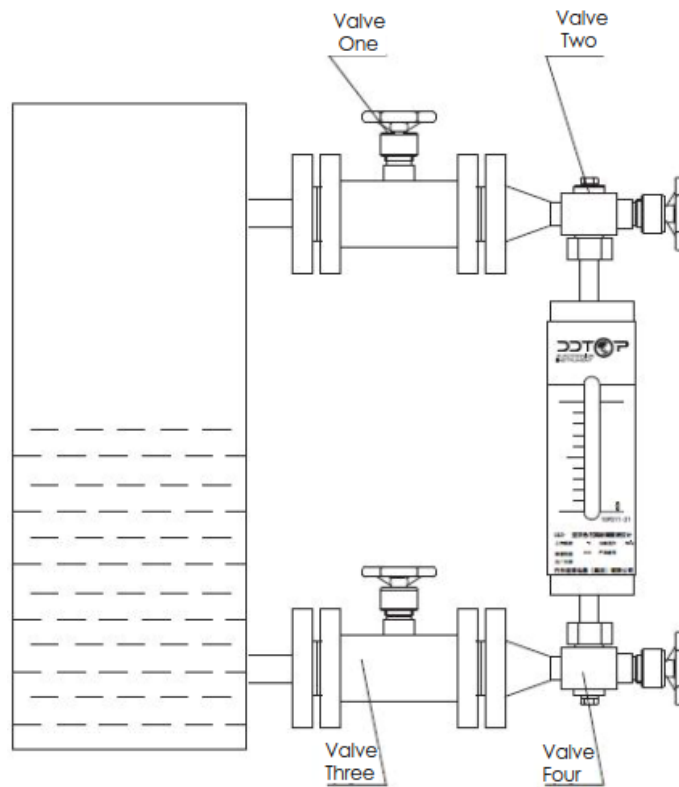
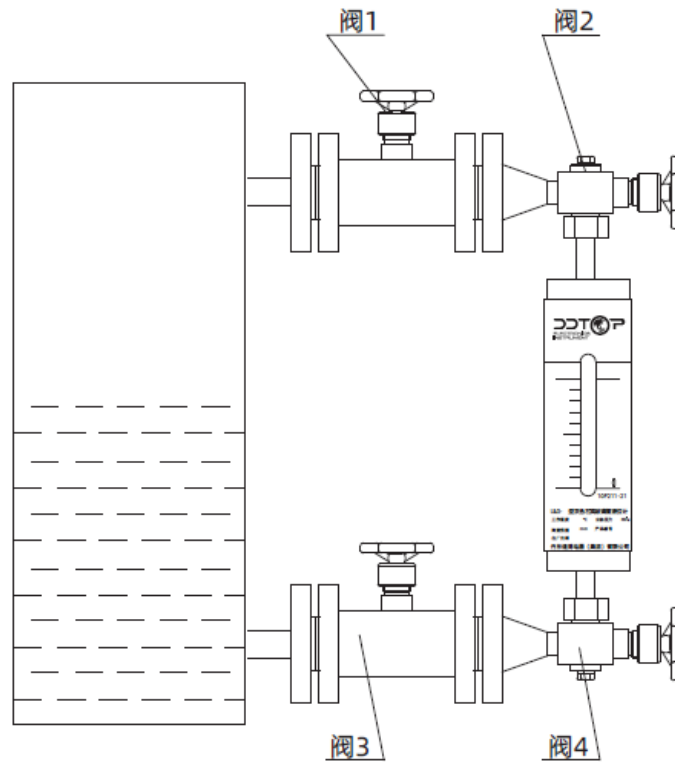


图 4 调试
Figure 4 Debugging

7.1 完全关闭液位计上的全部阀门(阀 1-阀 4);

- 7.1 Completely close all valves on the level gauge (Valve 1 - 4);
- 7.2 缓缓开启储罐与液位计之间的法兰阀（阀 1、阀 3）；
- 7.2 Slowly open the flange valve between the tank and the level gauge (Valve 1, Valve 3);
- 7.3 缓缓开启液位计上部阀门（阀 2）；
- 7.3 Slowly open the upper valve of the level gauge (Valve 2);
- 7.4 缓缓开启液面计下部阀门使介质流入液位计内（阀 4）；
- 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 完全开启液面计的上部阀门和下部阀门(阀 2、阀 4)
- 7.5 Fully open the upper and lower valves of the gauge (Valve 2, Valve 4)

8 故障分析与排除

8 Failure Analysis and Elimination

故障现象	原因分析	排除方法
液位计内无液位	钢珠将阀口封住	关闭阀门后缓慢的开启阀门，待压力平稳后将阀门完全开启。

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 维修

9 Maintenance

9.1 警告

9.1 Warning

在拆卸前应注意危险的过程条件,如:容器内的压力、高温、腐蚀性的或有毒的介质等。

Attention should be paid to hazardous process conditions, such as pressure inside the vessel, high

temperatures, corrosive or toxic media, etc.

9.2 拆卸

9.2 Disassembly

9.2.1 关闭全部阀门（阀 1、阀 2、阀 3、阀 4），卸下排污丝堵，排污残余介质（见图 5）；

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 5);

9.2.2 对角线方向拆卸内六角螺钉（见图 6）；

9.2.2 Remove the hexagon socket head cap screws diagonally (See Figure 6);

9.2.3 卸下螺钉后，依次取下压紧体、石墨填料、石英玻璃管；

9.2.3 After removing the screws, remove the pressing body, graphite packing, and quartz glass tube in turn;

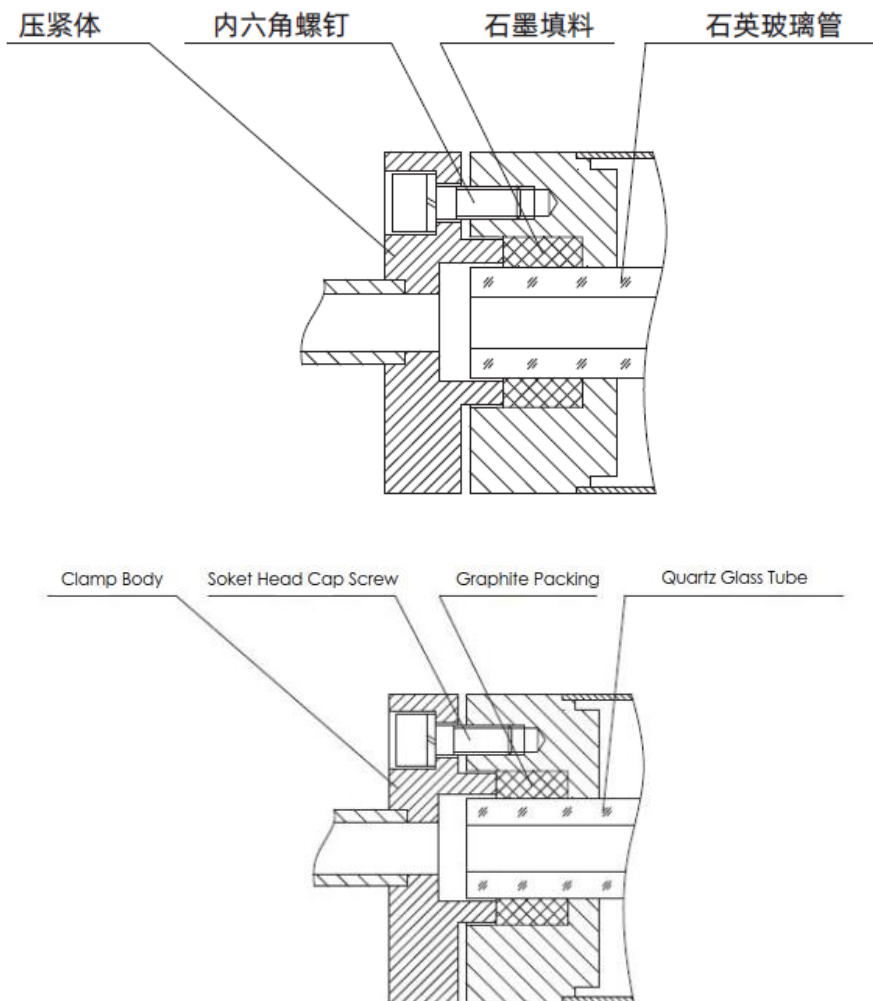


图 5 拆卸螺钉

Figure 5 Remove the Screws

9.3 清洗

9.3 Cleaning

9.3.1 仔细清洗密封面，使其表面干净无杂物，划伤；

9.3.1 Carefully clean the sealing surface to make it clean and free from sundries and scratches;

9.4 组装

9.4 Assembly

9.4.1 将石英玻璃管装入壳体内，玻璃管的端面与壳体的端面基本一致；

9.4.1 Load the quartz glass tube into the shell, and the end face of the glass tube is basically the same as that of the shell;

9.4.2 将石墨填料环套入石英玻璃管的两端；

9.4.2 Insert graphite packing ring into both ends of quartz glass tube;

9.4.3 安装压紧体，对角线方向旋紧内六角螺栓；

9.4.3 Install the compression body and tighten the hexagon bolts diagonally;

9.4.4 按最高工作压力的 1.5 倍水压测试，保压 3 分钟不泄漏。

9.4.4 According to 1.5 times of the maximum working pressure of water pressure test, keep pressure for 3 minutes without leakage.

10 产品认证

10 Product Certification

产品认证		
认证	证书编号	认证范围/描述
计量器具型式 批准证书		10F211-21

Product Certification

Certification	Certification Number	Scope of Certification/Description
---------------	----------------------	------------------------------------

Formal approval certification
for measuring instruments



10F211-21