

INSTRUCTION & MAINTENANCE MANUAL

TECHTROL TRANSPARENT TUBULAR LEVEL GAUGE "TTG"



Innovating Level Controls since 1984

Before you move on.....

Please review the manual to ensure proper installation and functioning of supplied instrument. To get the best intrinsic value from every techtrol instrument, it should be used within the limits of operating conditions, spelt out in the Instrument Test Report. Besides, carry out periodic preventive maintenance to extend the working life of instruments.

Precautions for Unpacking

1. Unpack carefully without damaging the instruments.
2. Visually check the instruments and ensure that, there has been no damage in transit.
3. If damaged, contact your Insurance Company for claim of damages.
4. Ensure that fasteners have not loosened in transit. Tighten them adequately, if found loose.
5. Ensure that products are in line with confirmed specifications / drawing. If not, please inform us.

Installation : (Fig. 1)

1. Select a suitable location on tank, where vibrations if any, are minimum.
2. Ensure that the process connections & CC distance of the level gauge match with those on tank.

Flange connection : Flange on the level gauge should match the counter flanges on the tank & their PCD orientation should be identical.

Screwed / SMS Union : Threads and Type should match.

3. Ensure counter connections provided on tank are vertical and in plumb line.
4. Provide suitable gaskets between the flanges and appropriate thread sealant between threads before bolting, to ensure zero leakage through the joint.
5. Please do not connect any pump suction or outlet for process at drain point of the gauge.
6. Provide separate isolating valve on the tank for safety & removal of level gauge for repair / maintenance.

Maintenance :

Normally, "Tubular Level Gauge" requires no maintenance. In case of liquids with dirt or suspended particles periodic cleaning of gauge glass is essential.

Cleaning of gauge glass (Fig. 2) :

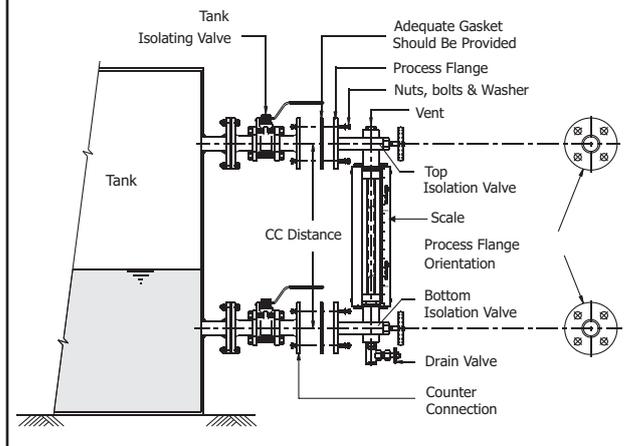
The gauge glass can be cleaned without its removal as following :

- i) Close both isolation valves and drain liquid from the gauge glass.
- ii) Clean the gauge glass with a 'soft wire brush' from top (vent) or by passing compressed air. If dirt still persists, then employ trichloroethylene for cleaning.



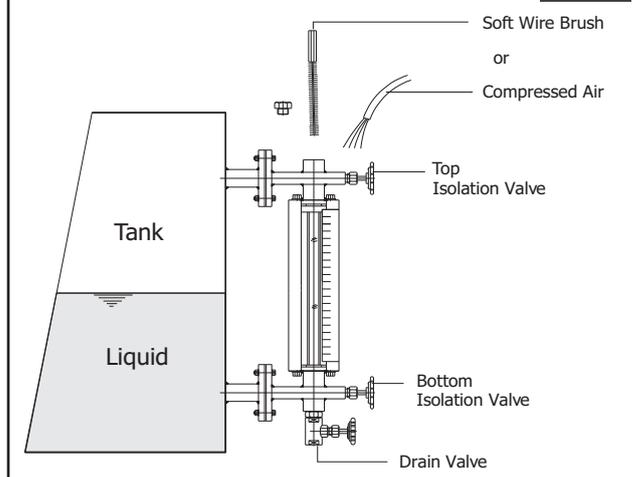
Installation

Fig. 1



Cleaning of Glass Tube

Fig. 2



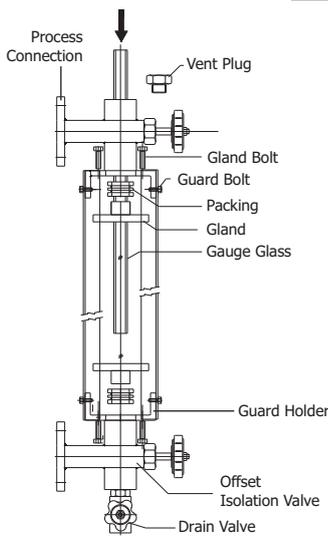
CAUTION : Usage of instruments beyond the limits of specified Pressure, Temperature, Voltage & Current, may cause permanent damage beyond repair.

TECHTROL TRANSPARENT TUBULAR LEVEL GAUGE - TTG



Glass Tube Refitting

Fig. 3



Gauge glass removal / replacement. (Fig. 3)

A) Replace old gland packings, in case they have become hard.

- 1) Close both isolation valves.
- 2) Open vent plug and unscrew gland bolts.
- 3) Remove the gauge glass carefully pushing it upwards.

B) In case gauge glass has to replace.

- 1) Follow steps 1 & 2 of A
- 2) Insert gauge glass from top (vent side).
- 3) Insert packing & gland over the gauge glass from both sides.
- 4) Push gauge glass into bottom isolation valve.
- 5) Insert packing & gland into isolation valve and tighten gland bolts evenly till the gap between gland & guard holder is 3-4 mm.

Trouble Shooting :

Problem	Cause	Solution
1. Leakage through glands.	a) Gland not tightened properly. b) Packings have become hard.	a) Tighten gland bolts uniformly. b) Replace packing.
2. Shows correct reading initially, but faulty readings after some period.	a) Gases entrapped within the liquid. b) Scaling / deposition of dirt / foreign particles inside the gauge glass and packing bore.	a) Effect venting. b) Clean gauge glass and packing bore.
3. Breakage of gauge glass.	a) High operating pressure & temp. b) Gauge is not in plumb line.	a) Maintain rated pressure & temp. b) Align the mounting.
4. Auto ball check not working.	a) Scaling / deposition of foreign particles on its seat. b) Auto ball check stopper is damaged.	a) Remove and clean auto ball check seat. b) Replace auto ball check.
5. Leakage through inbuilt isolation valve.	a) Wear out of packing bush in isolation valve assembly, due to frequent operation.	a) Replace packing bush. (Teflon)
6. Illuminator does not work.	a) No power supply to illuminator. b) Bulb blown off. c) Wiring connection is loose. d) Wire connection not proper.	a) Check supply, if not switch on the same. b) Replace the bulb. c) Tighten connection. d) Wire connection as specified.
7. Poor visibility in case of frost free extension.	a) Dust over the frost free extension. b) Perspex sheet not in proper contact with the glass.	a) Clean the perspex sheet. b) Fix / tighten the clamp, so that perspex sheet is in contact with the glass.
8. Leakage through ferrule & lock nut (Jacketing construction)	a) Excess pressure. b) Joint loose. c) Packing damage / worn out.	a) Maintain required pressure. b) Tighten the joints. c) Change the packing.

Non-valid Guarantee Claims : Abnormal usage, mishandling, breakage, disaster, incorrect installation and usage beyond limits of condition / electrical parameters.

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