

## Techtrol Weld Pad Flat Glass Level Gauge - WFG

### Pre Installation Check :

1. Ensure that supplied gauge is as per required specifications.
2. Visually examine the gauge for scratches, chips or cracks and ensure that glass is not damaged in transit.
3. If 'not damaged' proceed with installation.
4. If 'damaged', please do not install and ensure Personnel safety.

### Installation :

A single or staggered multiple gauges (fig. 3) can be installed to achieve full visibility. Gauges are available with **Flat** or **Radius** profile (fig. 2) for welding onto the vessels with corresponding surface.

### Prewelding Operation :

1. Weld pad gauges are shipped loosely assembled and should be disassembled by loosening bolts.
2. Carefully remove the cover plate, gauge glass & gaskets from weld pad.
3. Identify mounting position of gauge on tank. Use weld pad as template for welding and marking of holes on tank.
4. Drill marked holes to match the size of holes on template.

### Welding Operation :

1. Locate weld pad on marked area on the tank ensuring that drilled holes and weld pad holes are aligned.
2. Tack weld the weld pad on the tank (fig. 4) and ensure that weld pad is mounted in upright position & in plumb to tank.
3. Assemble the gauge using **steel spacer** in recessed area of weld pad as substitute of gauge glass & gaskets to prevent distortion / warping of glass seating surface during welding. Place cover plate and tighten it.
4. Weld the gauge to vessel completely by making short passes, alternating from side to side and end to end until the entire circumference of the gauge is welded in place.

### Post Welding Operation :

**Proceed the following steps only after the gauge has cooled to ambient temperature.**

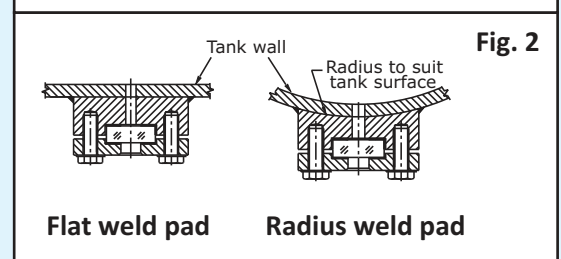
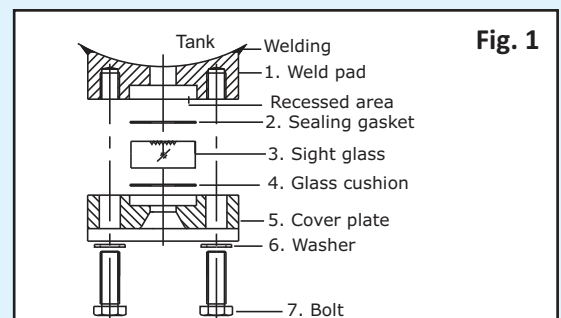
1. Remove the cover plate & steel spacer from weld pad.
2. Check the recessed face of cover plate and weld pad for distortion or warpage.
3. If any distortion/warpage is found at glass seating surface, it must be restored through smooth filing.

#### **Caution**

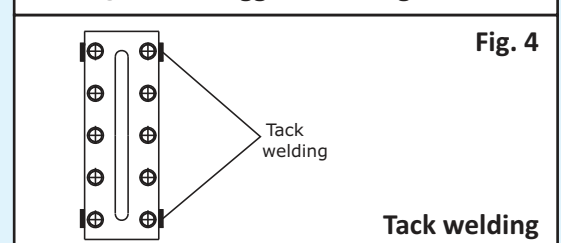
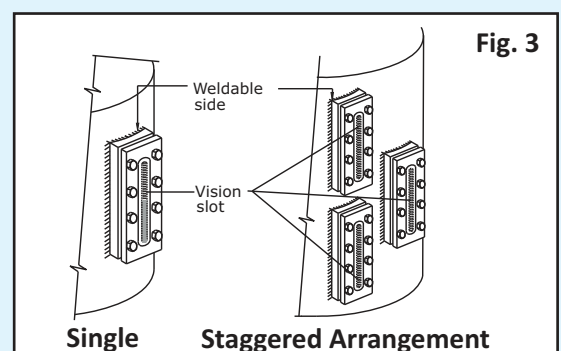
- Instruction manual should be read & understood before installation of gauge.
- Installation should be carried out by qualified & experienced personnel.
- Tank or vessel must be relieved of all pressure or vacuum and allowed to reach amb. temp & must be drained of all fluids prior to welding.



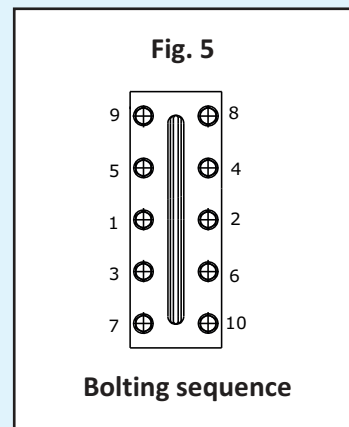
### Construction :



### Installation :



- If seating surface cannot be restored, gauge must be removed, & replaced.
- If glass seating surface is found clean & without distortion, proceed gauge assembly as per sequence. (fig. 1)
- Apply suitable sealant onto recessed area to hold the gasket in place.
- Then place the gauge glass, followed by cushion and cover plate. Before bolting the cover plate ensure that the gauge glass and cushion are properly seated in the cover plate recess.
- Tighten bolts with fingers in sequence. (fig. 5) Use torque wrench to complete the tightening procedure with same sequence. By adopting this procedure, the glass is uniformly loaded under equal strain.
- Check the gauge glass for any damage during installation.
- Bring the gauge to service slowly. Rapid pressurization or sudden changes in temperature will subject the gauge glass to shock that could significantly shorten its service life or result in failure.



## Precautions :

- Do not exceed temperature & pressure beyond specified limits.
- Never reuse the glass, gaskets, cushions & bolts even when they appear in perfect condition as stress gets developed under assembled position and gasket gets deformed by compression. It is wised to adopt the best practice of using new glass and gasket.
- When gasket is to be changed, smooth file the recessed area to clean foreign particles and then place new gasket..

## Preventive Maintenance :

- Regular attention should be given to glass to ensure that there are no cracks, scratches or physical damage. This may break the glass under pressure causing liquid loss and personnel injury.
- Keep the gauge glass clean using a commercial glass cleaner and a soft cloth. Never use an abrasive material, wire brush or scraper.
- If damage to the gauge glass is detected, gauge should be taken out of service immediately.
- Regularly check gauge for leakage at the gasket surface. If detected, it must be repaired by allowing the gauge to reach amb. temp & pressure and verify adequate tightness of bolts. If the bolts are loose, then tighten them in sequence and if they are adequately tightened, replace the gasket.
- Bolts should be tightened in sequence frequently after certain intervals.
- If bolting, gasketing or glass of any section of multisection gauge is disturbed, all sections must be checked for integrity and retorqued or repaired as necessary.



### Caution

Maintenance should be carried out only when the gauge has reached to ambient temperature, relieved of all pressure or vacuum and drained of all fluids.

## Trouble Shooting :

Defect	Causes	Solution
1. Leakage through gasket	a) Bolts are not tightened uniformly b) Gasket damaged or hardened	a) Tighten the bolts b) Replace gasket
2. Glass damaged Glass cracked or chipped off.	a) Excessive/uneven tightening of bolts b) Uneven surface of recessed area c) Operating temp & pressure is beyond the specifications	a) Tighten bolts properly in sequence b) Smooth file the recessed area before bolting. c) Check & ensure that operating conditions are with specified limits.

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