

# IBR APPROVED BICOLOR TRANSPARENT GLASS GAUGE- 'BTFG'

*It is used for direct indication of water level in low and medium pressure boilers/ steam drums.  
The water level is visually indicated in green color and steam in red color.*



With Viewing Hood

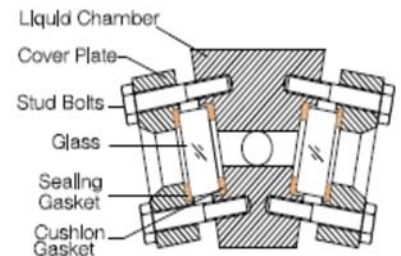
## Salient Features

- High quality mica to protect the inner surface of glass from steam erosion.
- Single or double expansion loop to eliminate thermal expansion due to temp & pressure
- Illuminator with low powered, high intensity LED bulbs, long life.
- Viewing hood for clear visibility
- Available with IBR/ ASME certification

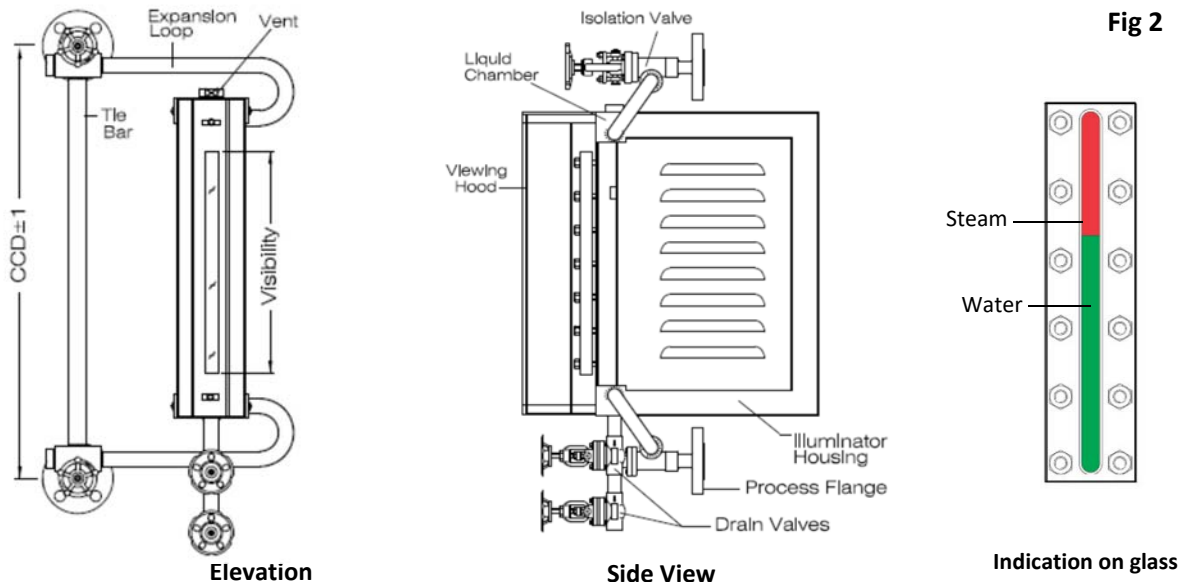
## Construction & Operation

It consists of trapezoid shaped metallic liquid chamber with single or multiple windows on its front and rear side of non-parallel vertical plane. A transparent crystal clear glass with smooth surfaces having 250, 280 or 340 mm sizes are fitted on single or multiple windows alongwith mica sheets, sealing/cushion gaskets and cover plate (fig 1). The liquid chamber is fitted between two end blocks with isolation valves through double expansion loops (fig 2). Stand pipe is provided with expansion loop for better circulation of condensate and robustness of gauge assembly. An illuminator consisting bicolour filter (red & green) and LED bulbs are housed in a steel enclosure with louvres on rear side of the gauge. A viewing hood is fitted on front for clear visibility. The gauge mounting is oriented on right or left side of the process connections (fig. 4). It is provided with two drain valves for extra safety.

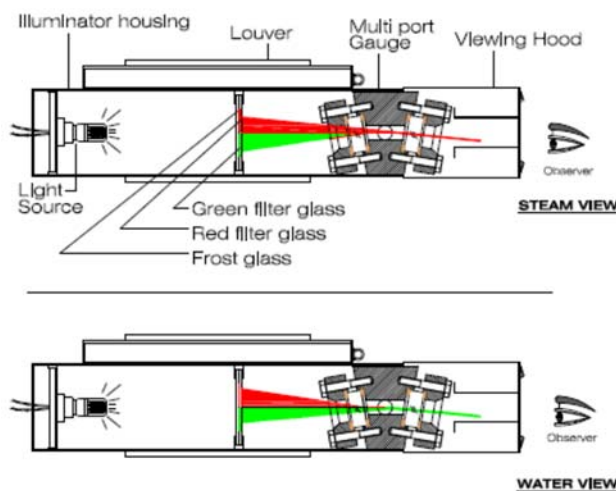
**Fig 1**



**Fig 2**



**Fig 3**



The rays (fig. 3) from light source pass through bi-coloured filter fall on inclined gauge glass, fitted on trapezoid shaped chamber and are refracted in steam or water according to their refractive index.

It appears to the viewer as red color, when light passes through steam and green color, when light passes through water.

## Specifications

Gauge Glass	Tempered Borosilicate
Sealing/ Cushion Gasket	SS Graphite
Mica	High quality grade with clear transparency
Liquid Chamber (Gauge Body)	1) CS SA516 Gr. 70, CS ASTM A105 ( <b>IBR</b> ), 2) ASTM 182F SS316 ( <b>Non-IBR</b> )
Port Cover/ Cover Plate	CS ASTM A105 or ASTM 182F SS316
Bolts	ASTM A193 Gr. B7
Process Connection	3/4" or 1" Socket weld /ASME Flange
Process Connection MOC	CS ASTM A105 ( <b>IBR</b> ), ASTM A182 F SS316 ( <b>Non-IBR</b> )
Isolation Valves	Integral Offset Needle Valve Bolted Bonnet x Auto Ball Check MOC- CS ASTM A105 ( <b>IBR</b> ) or ASTM A182 F SS316 ( <b>Non-IBR</b> )
Stand Pipe	CS ASTM A106 Gr B or ASTM A312 TP SS316
Expansion Loop	Double, CS ASTM A106 Gr B or ASTM A312 TP SS316;
Vent	1/2" NPT Plug
Drain Valves	1/2" Socket weld Globe Valve (800#) x CS ASTM A106 or ASTM A182 F SS316
CC Distance	500 to 1800 mm
Viewing Hood	SS MOC (for clear visibility)
Illuminator	SS Enclosure ventilating louvers housed with high intensity LED Bulbs
Conduit Connection	1/2" NPT Cable Gland, Brass
Power Supply	85-260 VAC
Gauge Mtg. Orientation	Left or right
Max. Temperature	300°C
Max. Operating Pressure	50 kg/cm <sup>2</sup>
Max. Test Pressure	75 kg/cm <sup>2</sup>

## Applications

Feed Water Heater, Utility Boiler, Recovery Boilers, Small Industrial Boilers, Process Heaters

## Gauge Orientation

Fig 4

