

# Techtrol Bi Color Multiport Level Gauge - TBLG

It is a high pressure level gauge with multi ports for continuous indication of water level in high pressure boilers, where presence of water is indicated by green color and steam /air by red color.

## Salient Features :

- High quality mica for protecting the inner surface of glass from steam erosion.
- Option of IBR certification.
- Single or Double expansion loop to accommodate high temp & pressure conditions.

## Construction & Operation :

It consists of trapezoid shape liquid chamber with equi-spaced port along its non parallel sides. Circular gauge glass with mica is fitted on each port with gasket, cushion and cover plate (fig. 1).

An illuminator with bicolor glass filter (red & green) and a light source housed in a steel enclosure with ventilating louvers are fitted on the rear side of the gauge. Liquid chamber is fitted between two end blocks with isolation valves through single or double expansion loops (fig. 4). Stand pipe is provided with double expansion loop for better circulation and robustness. The gauge mounting is oriented on right or left side of the rear process connections (fig. 5). It is provided with two drain valves, as anyone of them worn out, other will remain in use.

The rays (fig. 2) from light source pass through bi-colored filter fall on inclined glass fitted on trapezoid shaped chamber and get refracted in steam or water according to its refractive index. It appears to the viewer as red color, when light passes through steam and green color when light passes through water, due to difference in their refractive index. Refer Table-1 for CC distance , Visibility and No. of Ports

## Gauge Mounting Orientation :

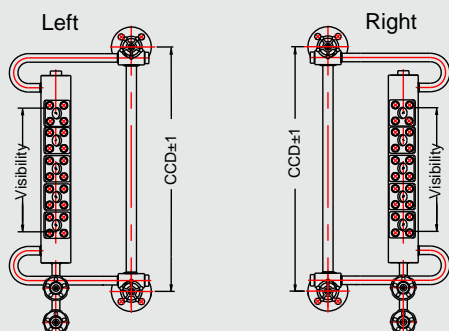
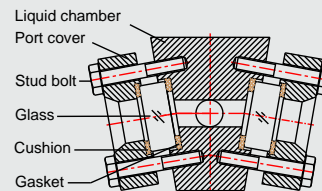


Fig. 5

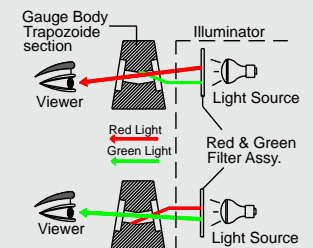


## Port Assy :



Sectional view

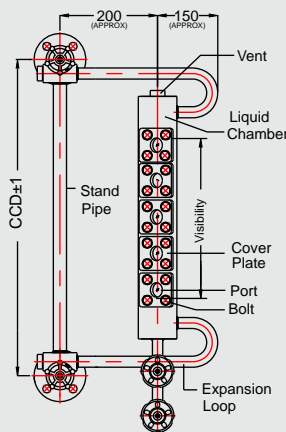
Fig. 1



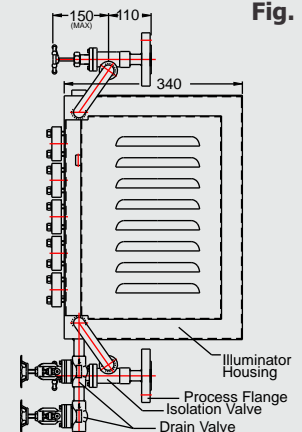
Water Zone

Fig. 2

## Steam Zone

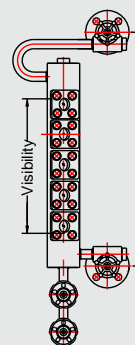


Elevation

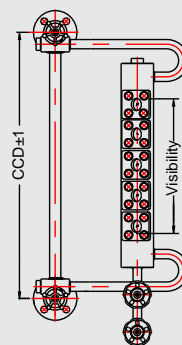


Side view

Fig. 3



a) Single Expansion Loop



b) Double Expansion Loop

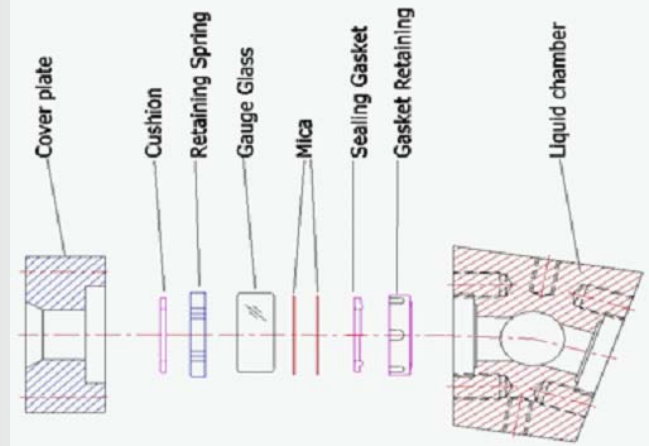
Fig. 4

## Specifications :

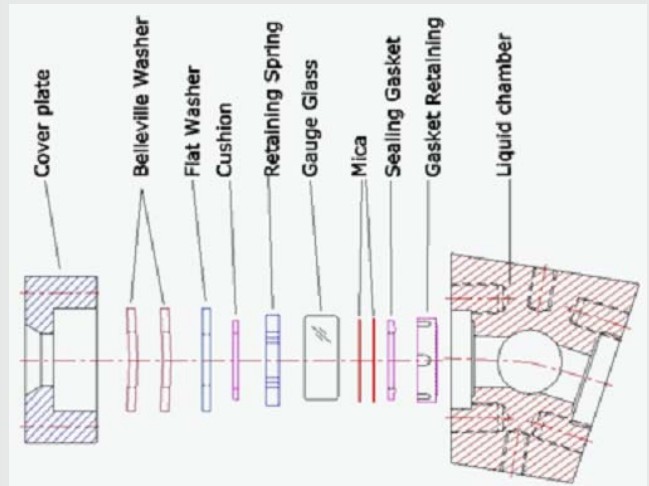
Gauge Glass	: Tempered Borosilicate or Aluminosilicate
Gasket/ Cushion	: Graphite
Mica	: High quality grade with clear transparency
Gauge Body	: a) CS SA516 Gr. 70, CS A105 (IBR) , b) CS SA516 Gr. 70 or ASTM 182F SS304/ SS316 (Non-IBR)
	<b>CC distance beyond 1140 is available in dual section with flanged coupler joint.</b>
Port Cover	: CS SA516 Gr 70 or CS A105 or ASTM 182F SS304 /SS316
Bolt	: ASTM A193 Gr. B7
Process Connection	: 3/4" or 1" Socket weld /ASME Flange
Process Conn. MOC	: CS A105 (IBR) , SA516, ASTM A182 F SS304/316 (Non-IBR)
Isolation Valves	: CS A105 (IBR) or ASTM A182 F SS304 /316 (Non-IBR) x Integral Offset Needle Valve x Auto Ball Check x Bolted Bonnet
Stand Pipe MOC	: CS A106 Gr B or ASTM A132 TP SS304/ 316
Expansion Loop	: CS A106 Gr B or ASTM A132 TP SS304 SS304/ 316
Vent	: 1/2"NPT Plug
Drain Valves (2 nos)	: 1/2" Socket Globe Valve x CS A106 or ASTM A182 F SS304
CC Distance	: 535 to 1815 mm
No. of Ports	: 05 to 21
CC Dist bet Ports	: 70 mm
Visible Port Dia	: 15 mm
Gauge Mtg Orientn	: Left or right
Illuminator	: LED Bulb x 80-250 VAC supply
Max Temperature	: 300°C
Max Optg. Pressure	: Std - upto 60 kg/cm <sup>2</sup> , High Pressure - upto 80 kg/cm <sup>2</sup>
Max Test Pressure	: Std - upto 120 kg/cm <sup>2</sup> , High Pressure - upto 160 kg/cm <sup>2</sup>

## Construction

### Standard



### High Pressure



## CC Dist Vs No.of Ports

SL	CC Dist (Single Loop)	CC Dist (Double Loop)	Visibility	No of Ports
1	535	615	315	05
2	610	690	390	06
3	685	765	465	07
4	760	840	540	08
5	835	915	615	09
6	910	990	690	10
7	985	1065	765	11
8	1060	1140	840	12
9	1135	1215	915	13
10	1210	1290	990	14
11	1285	1365	1065	15
12	1360	1440	1140	16
13	1435	1515	1215	17
14	1510	1590	1290	18
15	1585	1665	1365	19
16	1660	1740	1440	20
17	1735	1815	1515	21

All dimensions in mm except specified

## Applications :

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

## Ordering Information :

Model No, CC Distance, Optg. Temp & Pressure.

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Custom built specs./options available on demand.

We reserve the right to modify design and specifications without prior notice.

# IBR

## Model Identification

TBLG -										
<b>1. No. of Ports</b> (Refer CC Distance Table)	05 to 21									
<b>2. Transparent Glass</b>										
Aluminosilicate (Aluminum Silicate)	A									
Borosilicate	B									
<b>3. Liquid Chamber x Port Cover</b>										
CS SA516 x CS SA516	1									
CS A105 x CS A105	2									
SS304 x CS SA516	3									
SS304 x SS304	4									
SS316 x CS SA516	5									
SS316 x SS316	6									
Others	O									
<b>4. Process Connection MOC</b>										
CS SA 516		C								
CS A105		A								
SS304		N								
SS316		S								
Others		O								
<b>5. Process Connection Size &amp; Type</b>										
¾" Socket Weld						1				
1" Socket Weld						2				
¾" NB Flange ASME 300#						3				
¾" NB Flange ASME 600 #						4				
1" NB Flange ASME 300 #						5				
1" NB Flange ASME 600#						6				
Others						O				
<b>6. Gauge Mounting Orientation</b>										
Right							R			
Left							L			
<b>7. No. of Expansion Loop</b>										
Single (Optg. Pressure ≤ 50 kg/cm <sup>2</sup> )								S		
Double								D		
<b>8. Vent &amp; Drain</b>										
½" NPT Plug x ½" NPT Plug									1	
½" NPT Plug x ½" NPT Globe Valve (2 nos)									2	
½" NPT Plug x ½" Socket Weld Globe Valve (2 nos)									3	
Others									O	
<b>9. IBR Approval</b>										
Not Provided										W
Provided										B
<b>10. Construction</b>										
Standard										S
High Pressure										H