



## PRESSURE SOLUTIONS

# Safety Pattern Bourdon Tube Process Pressure Gauges

These process quality pressure gauges all feature a fully serviceable design with replaceable parts, backed by factory service to provide minimum lifetime cost.

Safety Pattern gauges incorporate a solid baffle between tube and window, and a full blow-out rear, designed to prevent the window blowing out in cases of tube failure.

Calibration is done against primary standards maintained traceable to South African National Standards.

Tubes are recessed into the block for extra strength, and end-caps are standard to minimize stress concentrations.

### Specification:

**Accuracy:** 1,6% FSD on 63mm ,  
1% on larger sizes.

**Bezel:** Bayonet.

**Dial:** Black figures on white background, fine graduations.

**Window:** laminated safety glass,.

**Pointer:** Black aluminium

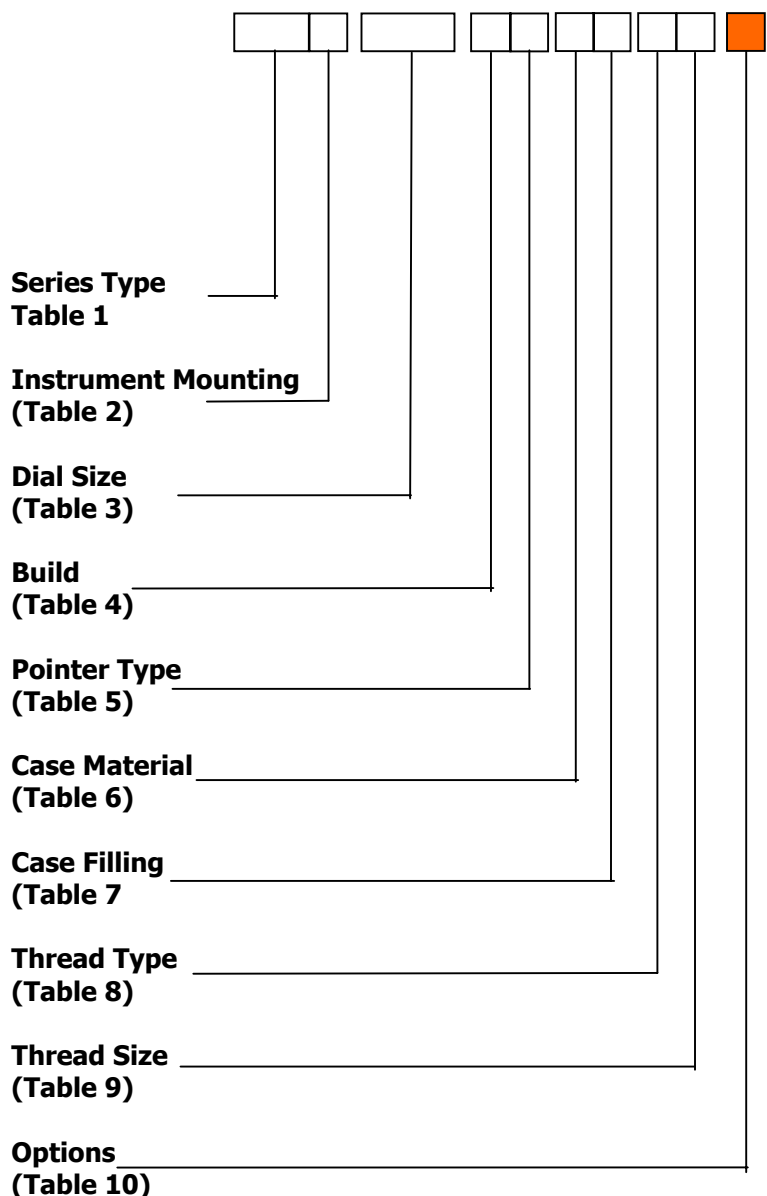
**Movement:** 304 stainless steel,  
(brass on series 59), fully adjustable.

**Seals:** Nitrile, except Viton used on PC case window seal.

**Temperature Limit:** 60°C



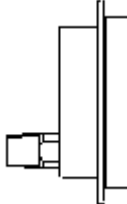
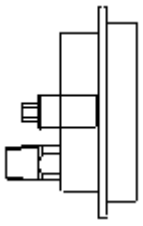
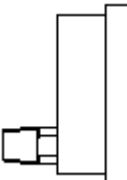
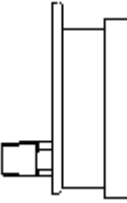
Our **Vibragauge®** build variant is designed to handle high vibration applications, using inlet restrictors, damped movements, and other features.

## Generating a Model Number



The option box shown in red may be omitted if not required.

<b>Table 1</b>  <b>Series Type</b>	<b>69</b>	-			-			-			-							
	<b>Description</b>															<b>Code</b>		
	Pressure gauge with bronze tube, brass block and brass movement															59		
	<b>Pressure gauge with 316 stainless steel tube and block, and 304 stainless steel movement</b>															<b>69</b>		
Pressure gauge with Monel 400 tube and block, and 304 stainless steel movement															79			

<b>Table 2</b>  <b>Instrument Mounting</b>	<b>69</b>	<b>2</b>	-			-			-			-						
	<b>Description</b>															<b>Code</b>		
	<b>Direct mounting, bottom entry</b>															<b>2</b>		
	Direct mounting, rear entry															5		
	Surface mounting, back flange, bottom entry															1		
	Surface mounting, back flange, rear entry															7		
	Panel mounting, front flange, screw fix, rear entry															3		
Panel mounting, front Flange, U-clamp fix, rear entry															4			
<b>Type 1</b>			<b>Type 2</b>						<b>Type 3</b>									
																		
<b>Type 4</b>			<b>Type 5</b>						<b>Type 7</b>									
																		

<b>Table 3</b>  <b>Dial Size</b>	<b>69</b>	<b>2</b>	-	<b>1</b>	<b>0</b>	<b>0</b>	-			-			-					
	<b>Description</b>															<b>Code</b>		
	63mm (2½")															063		
	<b>100mm (4")</b>															<b>100</b>		
	150mm (6")															150		
250mm (10")															250			

<b>Table 4</b>  <b>Build</b>	69	2	-	1	0	0	-	V	-	-	-	-	-	-
	<b>Description</b>											<b>Code</b>		
	Standard											S		
<b>Vibragauge®</b>											<b>V</b>			

<b>Table 5</b>  <b>Pointer</b>	69	2	-	1	0	0	-	V	F	-	-	-	-	-
	<b>Description</b>											<b>Code</b>		
	<b>Fixed</b>											<b>F</b>		
Micro-Adjustable											A			

<b>Table 6</b>  <b>Case Material</b> (Not all combinations are valid)	69	2	-	1	0	0	-	V	F	-	4	-	-	-
	<b>Description</b>											<b>Code</b>		
	<b>Cast Aluminium (not 250mm)</b>											<b>1</b>		
	<b>304 stainless steel (default)</b>											<b>4</b>		
316 stainless steel (expensive extra)											6			

<b>Table 7</b> <b>Case Fill</b> (Note fills are not permissible when used on oxidant service, e.g. oxygen)	69	2	-	1	0	0	-	V	F	-	4	0	-	-
	<b>Description</b>											<b>Code</b>		
	Not fillable											X		
	<b>Fillable but unfilled</b>											<b>0</b>		
	Glycerine filled											1		
Silicone oil filled (DC200)											2			

<b>Table 8</b>  <b>Thread Type</b>	69	2	-	1	0	0	-	V	F	-	4	0	-	N	-
	<b>Description</b>											<b>Code</b>			
	BSP Parallel (ISO228/1 – G)											B			
	<b>NPT</b>											<b>N</b>			
<b>BSP Taper (ISO 7/1– R)</b>											<b>R</b>				

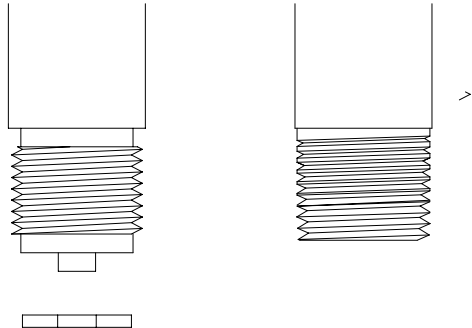
<b>Table 9</b>  <b>Thread Size</b> NB Maximum in 63mm dial is ¼", and ½" in larger sizes.	69	2	-	1	0	0	-	V	F	-	4	0	-	N	4	-
	<b>Description</b>											<b>Code</b>				
	1/8" (6mm)											1				
	1/4" (8mm)											2				
	3/8" (10mm)											3				
<b>1/2" (15mm)</b>											<b>4</b>					

<b>Table 10</b>  <b>Options</b>	69	2	-	1	0	0	-	V	F	-	4	0	-	N	4	-
	<b>Description</b>											<b>Code</b>				
	Where a gauge is required other than as selected above, specify your requirements, and use the X code											X				

## Threads for Instrument Connections

One of the least understood parts of instrument specifications is the connection thread. Misguided metrication also plays its part.

The two commonest thread types provided by instrument manufacturers, are the BSP parallel thread, and the NPT taper thread. Pipe fittings provided in the field are most commonly BSPT in South Africa.



Parallel  
Thread  
Uses  
Sealing  
Washer

Taper  
Thread  
Uses  
Thread  
Tape

Most, but not all, European instrument threads are BSP parallel. These threads are designed for sealing on a flat washer under the thread. The modern specification for these threads is ISO228/1, previously BS2779, and they are referred to as G $\frac{1}{4}$ , G $\frac{1}{2}$  etc. External threads are available with two tolerance classes, A and B. If not stated, B is assumed.

Parallel threads are meant to be sealed using a flat washer, as shown left. If thread tape is to be used, order a taper thread. Most industrial pipe fittings used in South Africa are BSPT, SABS 1109. These threads were originally made to BS21, superseded by ISO 7/1, and now used with the Prefix R. These threads are designed for sealing on the threads using thread tape or other

sealant.

**BSPT and NPT threads.** These thread types are mostly not compatible. Most instrument taper threads are NPT. As a rough guide to thread identification, the basic attributes are listed below:

Nominal Bore	O.D. mm	Threads per inch (TPI)		
		BSP Parallel (G)	BSP Taper (R)	NPT Taper
1/8" – 6mm	~10	28	28	27
1/4" – 8mm	~14	19	19	18
3/8" – 10mm	~17	19	19	18
1/2" – 15mm	~21	14	14	14
3/4" – 20 mm	~27	14	14	14
1" – 25mm	~33	11	11	11½

### Dials:

Dials follow SABS 1062 recommendations, and feature fine graduations for optimum resolution.

Range	Divisions	Typical Weights (kg)		
		Size	Dry	Filled
1; 10; 100; 1 000	100	63 mm	0,2	0,25
1,6; 16; 160; 1 600	80	100 mm	0,6	0,9
2,5; 25; 250; 2 500	125	150 mm	1,1	2,0
4; 40; 400; 4 000	80	(With glycerine)		
6; 60; 600; 6 000	120			

### Supplied by

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