

Techtrol Thermowells– ‘TW’



Thermowells are used in conjunction with thermocouples & RTDs to protect the sensors from damage due to process pressure, velocity or viscous, abrasive and corrosive materials present individually or in combination.

It extends the life of temperature sensor and enables removal of temperature sensor for replacement and repair or testing without disturbing the process.



SALIENT FEATURES

- Available in solid barstock or fabricated type
- Wide choice of materials, style and process connections to suit applications
- Customized design as per requirement
- Using standardized thermowells permits easy interchange of sensors throughout a plant

CONSTRUCTION

Thermowell tubes are machined from solid barstocks or fabricated from pipes. One end of the tube is sealed and other end is provided with process connection alongwith fitting for a temperature sensor. It is available in various materials and styles to suit application requirements.

Fabricated Thermowell - It is manufactured from pipe. Its one end is sealed by welding a solid tip and other end is welded to process connection. This design provides a cost-effective solution for low to medium pressure applications.



Weld-In



Threaded



Flanged



Sanitary (Triclover Flange)

Bar Stock Thermowell – Its thermowell stem is drilled and machined from single piece of solid bar stock (round or hexagon) ensuring uniformity and structural integrity. There is no welding at the tip of the stem. The flange process connection is welded on open side of the stem. Solid bar stock is ideal for higher pressure ratings.



Weld-In



Threaded



Flanged



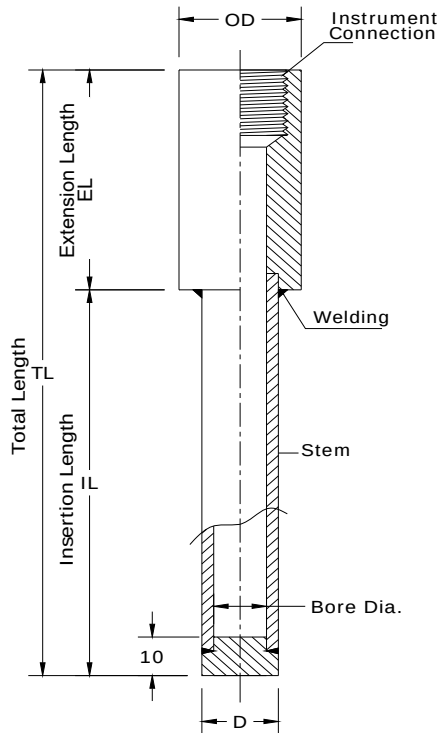
Sanitary (Triclover Flange)

IBR approved thermowells are available in CS SA516 Gr.70 or SS316 material

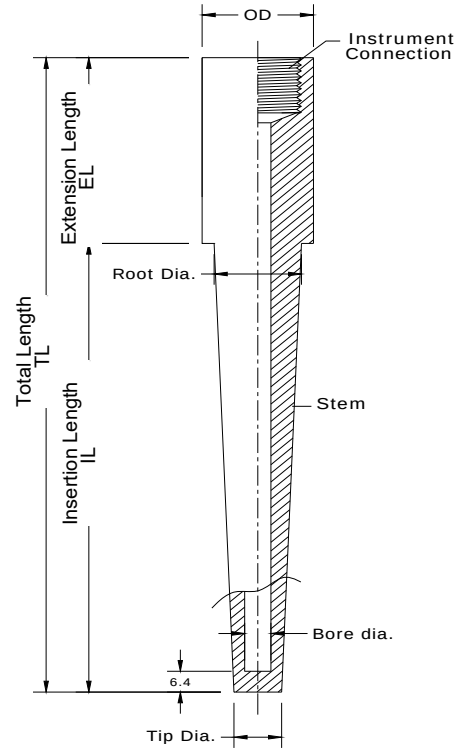
Thermowells are available in various process connection types and sizes to suit applications.

- 1. Weld-In Connection** - It is directly welded to process pipes/ tanks. This type of thermowell is preferred where leak proof seal (zero leakage) is essential. They are usually employed for services with high velocity, flow, temperature & pressure and for non-corrosive process medium and where routine removal is not required.

Fabricated Weld -In (TW-F)



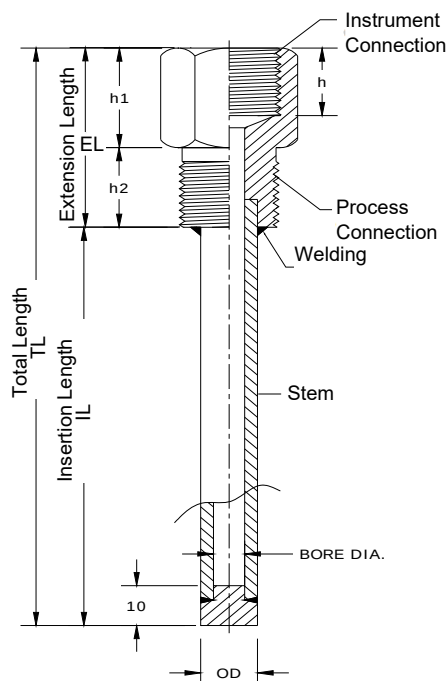
Bar stock Weld -In (TW-B)



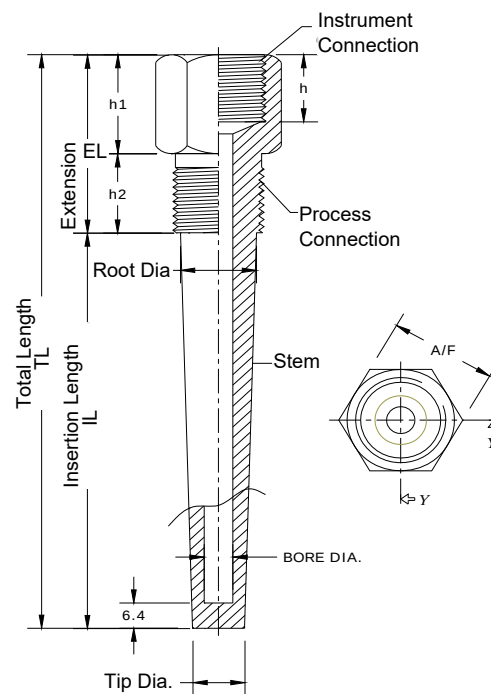
2. Threaded Connection

It is screwed into pipe or tank. This type of connection is adopted for small diameter thermowells

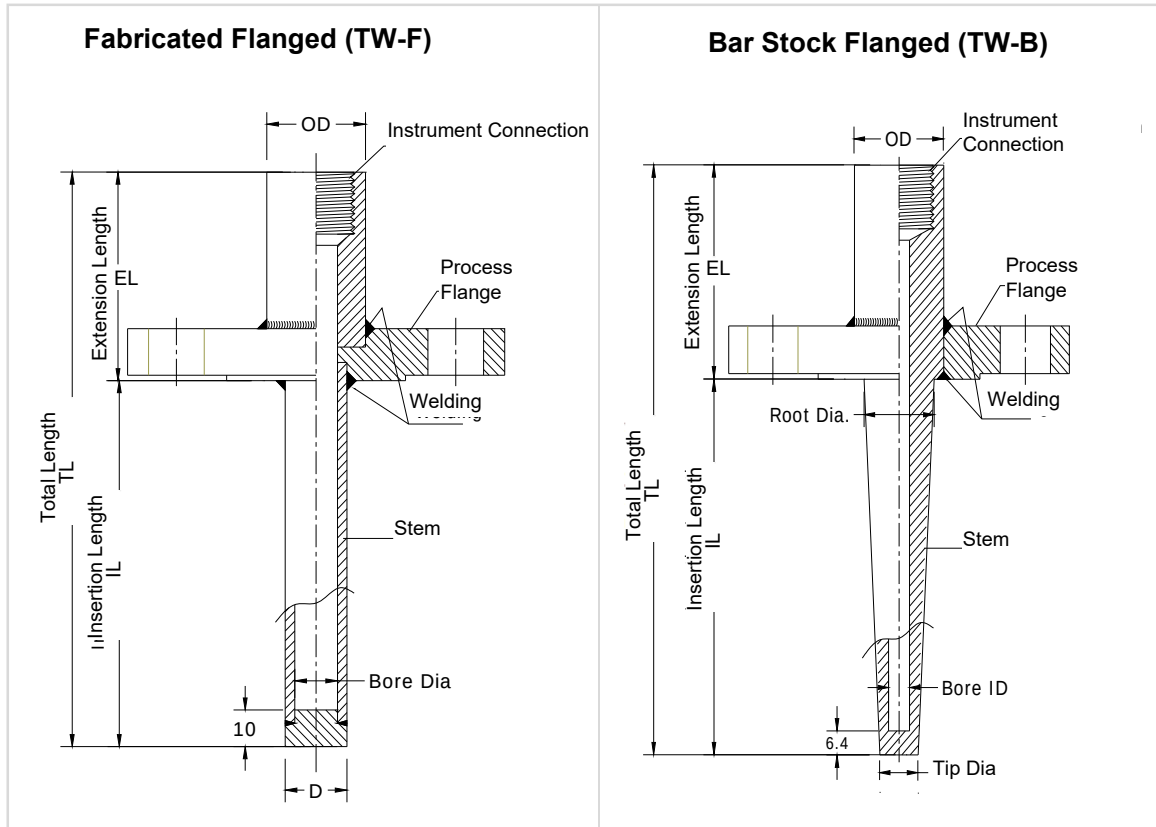
Fabricated Threaded (TW-F)



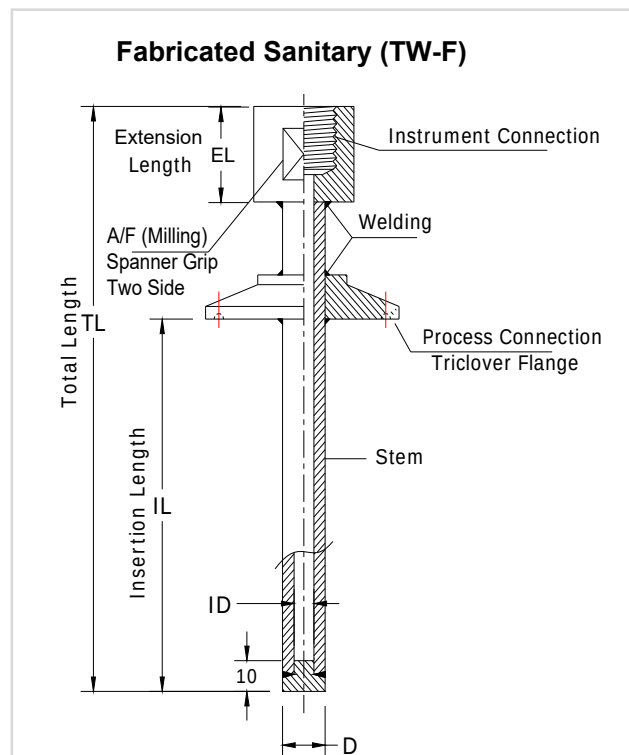
Bar Stock Threaded (TW-B)



3. Flanged Connection: Thermowell is welded with flange and it is bolted to a mating flange on process pipe or tank. It is easy to install and is adopted where thermowell is replaced frequently.



4. Triclover Connection: This type of thermowell comes with triclover ferrule connection, for sanitary applications such as dairy, food & pharmaceutical. They are available in fabricated and bar stock type.



						TW												
1. Type																		
Fabricated							F											
2. Process Connection Size & Type																		
Size				Type				X	X									
Not Applicable (<i>Weld-in</i>) <i>(socket OD suitable for instrument conn.)</i>				W	Weld -In			I										
¼" (<i>Threaded</i>)				A	Flanged (ANSI)			F										
3/8" (<i>Threaded</i>)				B	NPT (M) Threaded			A										
½" (<i>Threaded</i>)				C	NPT (F) Threaded			B										
¾" (<i>Threaded</i>)				D	BSP (M) Threaded			C										
1" (<i>Threaded</i>)				E	BSP(F) Threaded			D										
1¼" (<i>Threaded</i>)				F	BSPT (M) Threaded			E										
1½" (<i>Threaded</i>)				G	BSPT(F) Threaded			G										
2" (<i>Flanged</i>)				H	Metric Threaded			M										
3" (<i>Flanged</i>)				I	Others			O										
3½" (<i>Flanged</i>)				J														
4" (<i>Flanged</i>)				K														
5" (<i>Flanged</i>)				L														
6" (<i>Flanged</i>)				M														
M14 x 1.5 (<i>Threaded</i>)				N														
M18 x 1.5 (<i>Threaded</i>)				P														
M20 x 1.5 (<i>Threaded</i>)				Q														
M27 x 2 (<i>Threaded</i>)				R														
M33 x 2 (<i>Threaded</i>)				S														
Others				O														
3. Process Flange Type																		
Rating				Flange Facing					X	X								
Not Applicable (<i>Weld-in, Threaded</i>)				W	Not Applicable <i>Weld-in, Threaded</i>)			W										
150#				1	FF			F										
300#				2	RF			R										
600#				3	RTJ			J										
900#				4	Others			O										
1500#				5														
2500#				6														
Other				0														
4. Process Connection Material																		
Not Applicable (<i>Weld-in , Threaded</i>)																	W	
CS A105																	A	
Brass																	B	
SS304																	D	
SS304L																	E	
SS310																	F	
SS316																	G	
SS316L																	H	
SS321																	I	
SS446																	J	
Inconel 600																	K	
Inconel 601																	L	
Inconel 800																	M	

Monel 400	R			
Hastalloy C	N			
Hastalloy B	Q			
Others	O			
5. Instrument Connection Size				
1/4"		A		
3/8"		B		
1/2"		C		
3/4"		D		
1"		E		
1 1/4"		F		
1 1/2"		G		
M 18 X 1.5		H		
M 20 X 1.5		I		
M 24 X 1.5		J		
M 27 X 2		K		
M 33 X 2		L		
Other		O		
6. Instrument Connection Type				
NPT (M)			1	
NPT (F)			2	
BSP(M)			3	
BSP(F)			4	
BSPT(M)			5	
BSPT(F)			6	
Other			0	
7. Stem Material				
CS A105				A
Brass				B
SS304				D
SS304L				E
SS310				F
SS316				G
SS316L				H
SS321				I
SS446				J
Inconel 600				K
Inconel 601				L
Inconel 800				M
Monel 400				R
Hastalloy C				N
Hastalloy B				Q
Titanium (Threaded)				U
Others				O
8. Stem Pipe Size				
1/2" sch 40				A
1/2" sch 80				B
1/2" sch 160				C
3/4" sch 40				D
3/4" sch 80				E
10 OD x 8 ID				F
12 OD x 8 ID				G
12.7 OD x 10 ID				H
16 OD x 8 ID				I
16 OD x 10 ID				J
16 OD x 12 ID				K
19 OD x 15 ID				L
Others				O

Barstock Thermowell

Hastalloy B	Q					
Others	O					
6. Instrument Connection Size						
1/4"		A				
3/8"		B				
1/2"		C				
3/4"		D				
1"		E				
1 ¼"		F				
1 ½"		G				
M 18 X 1.5		H				
M 20 X 1.5		I				
M 24 X 1.5		J				
M 27 X 2		K				
M 33 X 2		L				
Other	O					
7. Instrument Connection Type						
NPT (M)			1			
NPT (F)			2			
BSP(M)			3			
BSP(F)			4			
BSPT(M)			5			
BSPT(F)			6			
Other	O		0			
8. Stem Material						
CS A105			A			
Brass			B			
SS304			D			
SS304L			E			
SS310			F			
SS316			G			
SS316L			H			
SS321			I			
SS446			J			
Inconel 600			K			
Inconel 601			L			
Inconel 800			M			
Monel 400			R			
Hastalloy C			N			
Hastalloy B			Q			
Titanium (Threaded)			U			
Others	O		0			
9. Bar Size (OD in mm)						
20			A			
22			B			
25			C			
28			D			
30			E			
32			F			
36			G			
42			H			
50			I			
Others			J			
10. IBR Approval						
Not Provided						W
Provided						P

TW -									
1. Type									
Vanstone		V							
2. 'P' Ø in mm									
33.4					A				
48.26					B				
3. RF Ø 'R' Size in mm									
50.8							A		
73							B		
4. Instrument Connection Size									
3/8"									B
1/2"									C
3/4"									D
Others									O
5. Instrument Connection Type									
NPT(F)									B
BSP(F)									D
Others									O
6. Stem Material									
CS A105									A

CS SA516	Z	
Brass	B	
SS304	D	
SS304L	E	
SS310	F	
SS316	G	
SS316L	H	
SS321	I	
SS446	J	
Inconel 600	K	
Inconel 601	L	
Inconel 800	M	
Monel 400	R	
Hastalloy C	N	
Hastalloy B	Q	
Titanium (Threaded)	U	
Others	O	
7. IBR Approval		
Not Provided		W
Provided		P

ORDERING INFORMATION

- 1) Fabricate and Sanitary Thermowell –
Model No. x Insertion Length (IL) x Lag Length (H), Optg. Temperature & Pressure
- 2) Bar stock and Vanstone Thermowell -
Model No. x Insertion Length (IL) x Lag Length (H), Optg. Temperature & Pressure x
Root Dia, Bore Dia & Tip Dia.