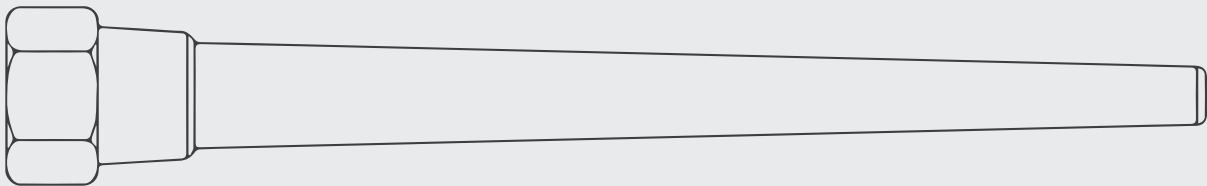


Drilled bar stock Thermowell

BORED – THREADED – STRAIGHT

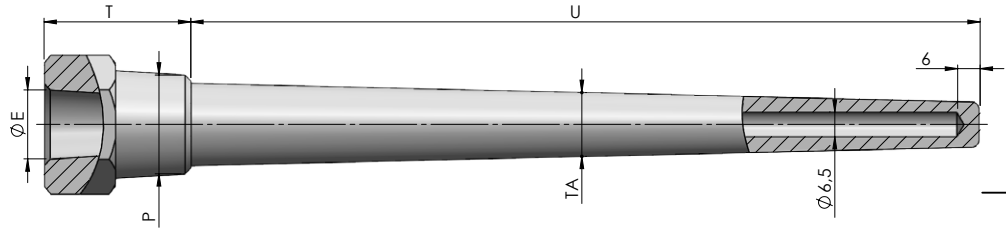
BTT – BTTL – BTTR – BTTRL
CONFIGURATIONS



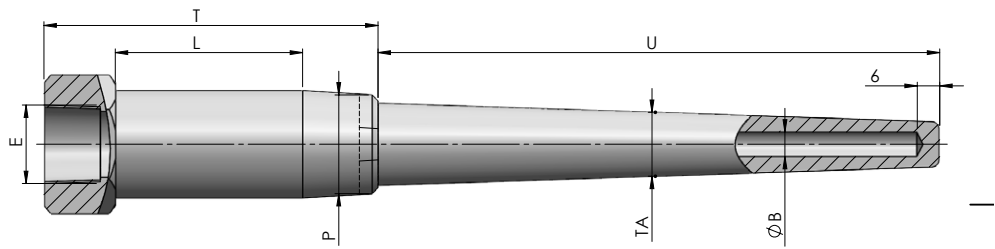
RODAX^o
new temperature solutions

Product series BTT

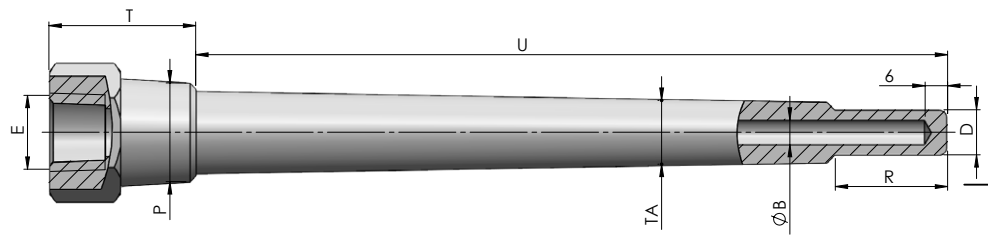
BTT



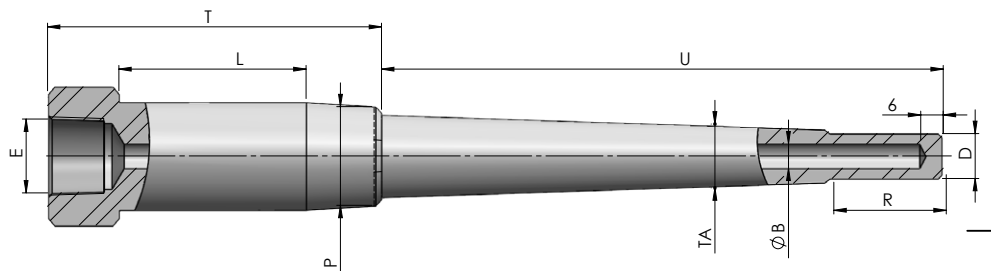
B TTL



B TTR



B TTL



Features

Our thermowells are machined and drilled with a stem from solid bar stock (no welds present). High accuracy machines are used to ensure concentricity of the bore with respect to the outside diameter and a consistent wall thickness over the full length of the thermowell.

Our bar stock thermowells have been designed for various fluids and pressure applications. Metric and fractional thread connections are available.

Technical specification

- Tolerances: all dimensions +/- 1 mm except B: +/- 0.15 mm
- Standard finish thermowell stem: $1.6 < Ra < 3.2 \mu m$
- Material: wide range of materials available as per EN, ASTM and other international standards.
- Reduced tip: OD 1/2" (12,7mm) or 7/8" (22,2mm) for ASME PTC 19.3 compliant thermowells. Other reduced tips on request.
- Threads according to following standards: Parallel or straight: ISO 228/1 and tapered NPT: ASME B1.20.1. All other international thread standards (e.g. ISO 261 (metric) and ISO 7/1) on request.
- Material: We ensure that all used materials comply to the latest requirements of the international material specifications (ASTM, AISI, ASME, EN and others on request) and try to use as complete material as possible. E.g.: SS316/316L 1,4401/1,4404 + NACE
- PED: As thermowells are a component of pressure equipment they do not comply with the definition for pressure equipment in article 2 (1) and therefore does not have to be marked CE. Rodax Thermowells are designed and manufactured in compliance with Article 4 paragraph 3. This means that Rodax thermowells meet all the relevant essential safety requirements mentioned in Annex I (2014/68/EU) related to the manufacturing process used.

Options

Thermowell calculation to ASME PTC19.3 latest edition is recommended in critical applications, but these calculations put restrictions on the maximum and minimum dimensions of thermowells.

Material grade of thermowell

M2101	M2103	M2108	M2118	M0601	M0703	M0803
SS304L	SS321	SS316/316L	SS310S	Inconel 600	Incoloy 800HT	Hastelloy C22
1.4307	1.4541	1.4401/1.4404	1.4845	2.4816	1.4959	2.4605

Process connection thread

Parallel/Straight (ISO 228/1)			Tapered (NPT, ASME B1.20.1)						Other
P205	P206	P207	P405	P406	P407	P408	P409	P410	
½" G	¾" G	1" G	½" NPT	¾" NPT	1" NPT	1 ¼" NPT	1 ½" NPT	2" NPT	
Minimum wrench size (mm)									
27	32	36	27	32	36	46	50	65	other

All thermowells are made from hexagon bar if size is available. Certain thermowell size & material combinations force us to start from round bar. In this latter case, two slots will be made to allow wrench tightening.

Instrument connection thread & thermowell top height

E205	E405	E206	E406
½" G	½" NPT	¾" G	¾" NPT

Thermowell top height T (mm)	BTT & BTTR	Process connection size > instrument connection size	45
		Process connection size =< instrument connection size	50
	BTTL & BTTLR	All other heights available for BTTL & BTTLR	T

Insertion length	U	Length in mm
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Stem

Tapering stem	TA1	TA2	TA3	TAC
	22 to 19	28 to 22	16 to 12	On request
Reduced stem (for BTTR & BTTRL)	D			DAC
	12,7/22,2			On request
Bore B	6,5/7,0			6,5/7,0
	Others on request to suit temperature sensor			
Tip thickness t	6			6
	Others on request			
Tip shape	Standard	FL	Broken corners (1 mm 45°)	
	Domed tip	DT	Radius = half of OD stem tip	
Surface finish stem	Standard	Standard finish thermowell: 1.6 < Ra < 3.2 µm		
	Others on request	Specify roughness		
Radius thermowell	Fillet radius reduced diameter stem	Standard r=0, other radius on request		

Certificates

Code	Certificates
Q04100	Inspection (material) certificate EN10204-3.1
Q04350	External hydraulic pressure test
Q04340	Internal hydraulic pressure test
Q05340	Positive material identification (XRF)
Q02040	EN10204-2.2 test report
M01200	Thermowell stress calculations

HOW TO ORDER (example)

Code	Description	Example	Your code
Type	Thermowell type	BTT	
Material grade thermowell	Material grade of thermowell SS316L	M2108	
Process connection thread	Instrument connection thread ½" NPT	P405	
Instrument connection thread	Instrument connection thread ½" NPT	E405	
Thermowell top height T (mm)	Thermowell top height T minimum 50 (due to combination of process and instrument connection thread)	T50	
Insertion length U	Insertion length 300mm	U300	
Tapering stem	TA3 = tapering 16-12 mm	TA3	
Reduced stem diameter D			
Bore B	Bore diameter 6,5 mm	B065	
Tip thickness	Standard tip thickness t = 6 mm		
Tip shape	Standard tip shape		

Ordering code example:

BTT M2108 P405 E405 T50 U300 TA3 B065

For all options: please contact Rodax

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BTT GB 202009