UNIJIN® THERMOWELL

Thermowells are used for protecting temperature sensing elements from excessive pressure, solid particles in suspension and aggressive fluids. Another advantage of thermowell is possibility to remove the temperature sensing instruments without any risk of affecting the tightness of enclosure and without stopping the process system.

Selection of thermowell

1. Material
   - In general, thermowell material chosen for the installation is covered mainly by the corrosion conditions it will face.
   - Recommened materials for various services are given in the Corrosion Table.
   - Occasionally, the material consideration is one of strength rather than corrosion. For example, Stainless Steel Thermowell may request for high pressure water service where otherwise a Brass Thermowell would be satisfactory from corrosion standpoint.
2. Insertion
   - The distance from the end of the well point should be inderside of the thread, or other connection means, (designed as " U " Length) is the insertion length.
3. Bore size
   - The selection of a standard bore diameter can produce extreme flexibility within the plant.
4. Tapper or straight type
   - Tapper type thermowell provide greater stiffness for the same sensitivity. The higher strength to weight ratio gives these thermowells higher frequency than for equivalent straight type thermowell, thus permitting operation at higher fluid velocity.

Thermowell Ordering Information

Model
Refer to table

Material
Refer to table

Bore Size Diameter (ID / OD)

Insertion Length ("U")

Extension Length ("T")

Connection Type
1/2" BSPT

Example of Order

Model
A5000

Material
SS316

ID / OD
11 / 14

"U" Length
6"

"T" Length
2"

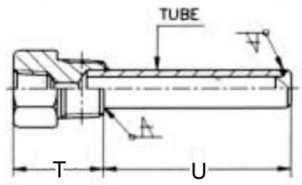
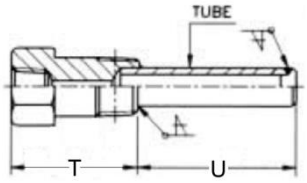
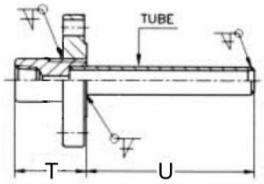
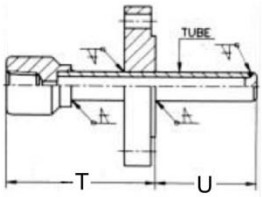
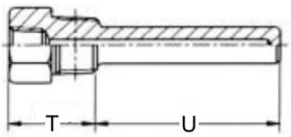
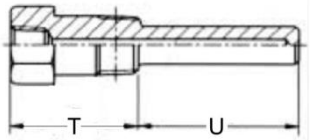
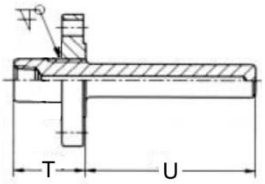
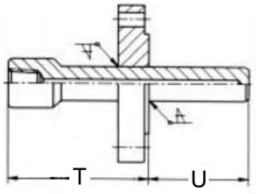
Connection Type
1/2" BSPT

Thermowell Material

MATERIAL	TO BE USED WITH	DO NOT USE WITH
316L Stainless Steel	- Strong and weak acids (except mineral ones) - Strong and weak bases - Acid, neutral or basic salt - Sea water - Oxidizing media - Hydrogen	- T fluid > 100oC - Strong oxidizing agents at high concentrations - Hydrochloric and sulphuric acid in concentrations > 2% and temperature > 20°C - Ferric Chloride - Fluorine, fluoride - Wet chlorine - Concentrated nitric acid at high temperature - Oxalic and chromic acids
Monel 400	- Hydrogen sulphide (often found in petroleum products) - Sea water - Neutral and alkaline salts - Hydrofluoric acid	- Highly oxidizing agents (E.g. nitric acid)
Hastelloy B	- Specifically designed for hydrochloric acid at high concentration and temperature	
Hastelloy B2	- For pitted corrosion in the areas near the solders hydrochloric, sulphuric, acetic acids at high concentrations and temperature.	
Hastelloy C 276	- Sulphuric acid at high concentration and temperature - Wet chlorine - Ferric chloride - Copper salts - Strong oxidizing agents - Waste incineration gas	
Uranus B 6	- Warm sulphuric acid (<40%) - Heated, concentrated nitric acid - Ammounium sulphate - Viscose - Cellulose acetate	

MATERIAL	TO BE USED WITH	DO NOT USE WITH
Titanium	- Organic media - Chlorine in aqueous solution - Sea water - Acetic or citric acid (heated, concentrated nitric acid)	
Tantalium	- Sulphuric acid up to 300°C	
Nickel	- Natural or distilled water - Sodium hydroxide - Alkaline compounds (except ammoniac) - F Fluorine (ambient temperature)	- Acetic and formic acids - Nitric and concentrated sulphuric acids
Silver	- Chlorinated products - Wet chlorine	
PTFE Coating	- Chemical compounds - Hydrochloric acid at high concentrated and temperature	

Thermowell & Flange Type

	THREAD TYPE		FLANGE TYPE	
	PLANE TYPE	LAG TYPE	PLANE TYPE	LAG TYPE
CLOSED END TUBE STRAIGHT TYPE				
	A5000	A5001	A5100	A5101
DRILL BAR STOCK STRAIGHT YPE				
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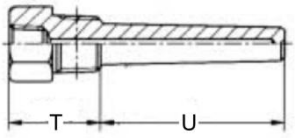
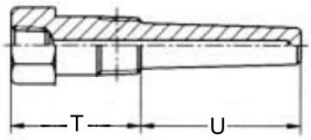
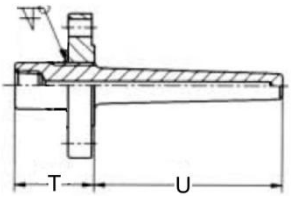
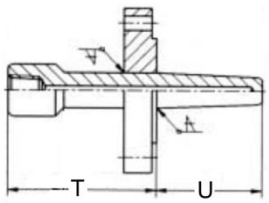
DRILL BAR STOCK TAPER TYPE				
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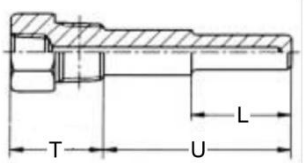
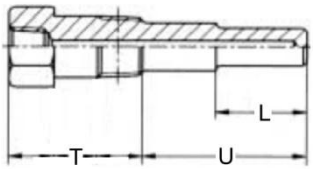
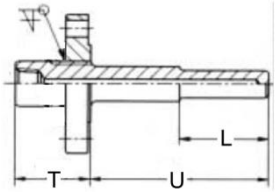
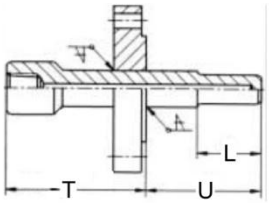
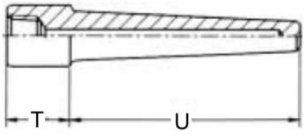
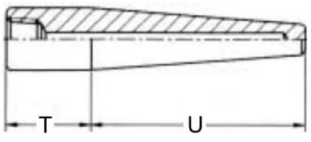
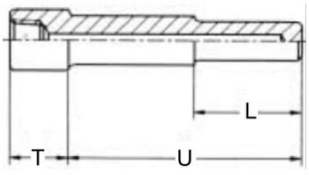
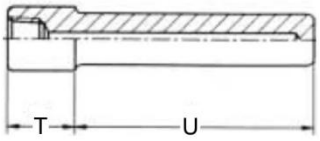
DRILL BAR STOCK STEP TYPE				
	A6020	A6021	A6120	A6121
DRILL BAR STOCK WELD TYPE	WELD-IN TYPE		SOCKET WELD TYPE	
				
	A6310	A6311	A6320	A6300