

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.
 - Recommended 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 inside 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

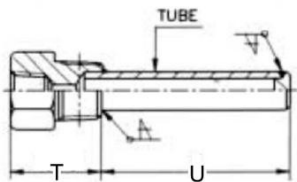
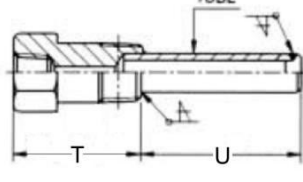
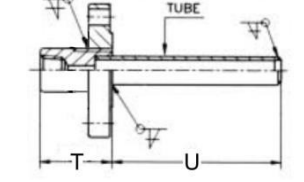
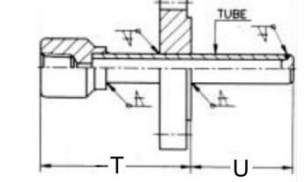
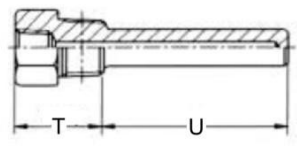
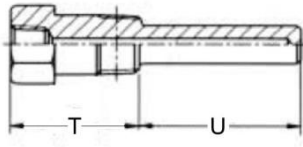
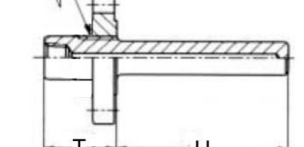
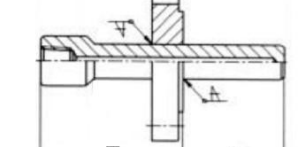
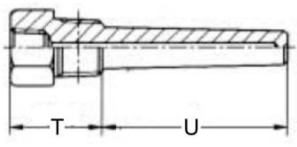
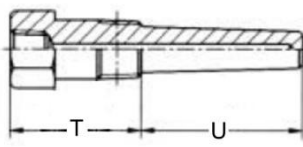
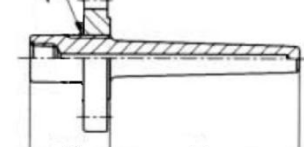
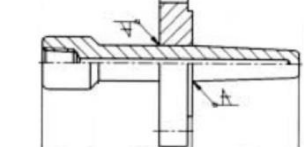
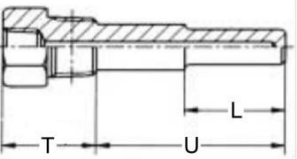
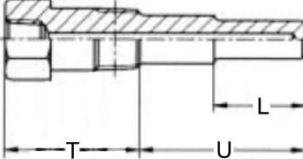
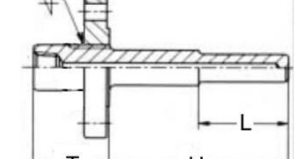
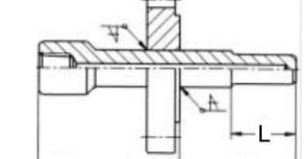
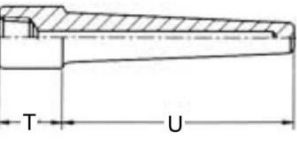
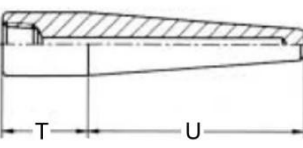
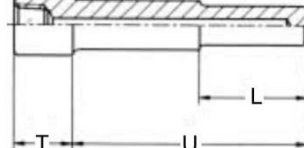
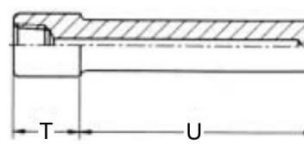
Thermowell Material

| MATERIAL | TO BE USED WITH | DO NOT USE WITH |
|-----------------------------|--|--|
| 316L Stainless Steel | <ul style="list-style-type: none"> - Strong and weak acids (except mineral ones) - Strong and weak bases - Acid, neutral or basic salt - Sea water - Oxidizing media - Hydrogen | <ul style="list-style-type: none"> - 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 | <ul style="list-style-type: none"> - Hydrogen sulphide (often found in petroleum products) - Sea water - Neutral and alkaline salts - Hydrofluoric acid | <ul style="list-style-type: none"> - Highly oxidizing agents (E.g. nitric acid) |
| Hastelloy B | <ul style="list-style-type: none"> - Specifically designed for hydrochloric acid at high concentration and temperature | |
| Hastelloy B2 | <ul style="list-style-type: none"> - For pitted corrosion in the areas near the solders hydrochloric, sulphuric, acetic acids at high concentrations and temperature. | |
| Hastelloy C 276 | <ul style="list-style-type: none"> - Sulphuric acid at high concentration and temperature - Wet chlorine - Ferric chloride - Copper salts - Strong oxidizing agents - Waste incineration gas | |
| Uranus B 6 | <ul style="list-style-type: none"> - Warm sulphuric acid (<40%) - Heated, concentrated nitric acid - Ammounium sulphate - Viscose - Cellulose acetate | |

| MATERIAL | TO BE USED WITH | DO NOT USE WITH |
|----------------------------|--|--|
| Titanium | <ul style="list-style-type: none"> - Organic media - Chlorine in aqueous solution - Sea water - Acetic or citric acid (heated, concentrated nitric acid) | |
| Tantalium | <ul style="list-style-type: none"> - Sulphuric acid up to 300°C | |
| Nickel | <ul style="list-style-type: none"> - Natural or distilled water - Sodium hydroxide - Alkaline compounds (except ammoniac) - F Fluorine (ambient temperature) | <ul style="list-style-type: none"> - Acetic and formic acids - Nitric and concentrated sulphuric acids |
| Silver | <ul style="list-style-type: none"> - Chlorinated products - Wet chlorine | |
| PTFE Coating | <ul style="list-style-type: none"> - Chemical compounds - Hydrochloric acid at high concentrated and temperature | |
| 304 Stainless Steel | <ul style="list-style-type: none"> - General use in low corrosive media - weak acids - Water, Air or Oil - Low Oxidation enviroments | <ul style="list-style-type: none"> - High acids (eg Chloride) - Stress Corrosion over 60 deg C - Sea water |

Remark : The above information should be considered as a general guide rather than an unqualified guarantee. Ultimately, the customer must determine the suitability of the material used in various solutions.

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 TYPE |  |  |  |  |
| | A6000 | A6001 | A6100 | A6101 |
| DRILL BAR STOCK TAPER TYPE |  |  |  |  |
| | A6010 | A6011 | A6110 | A6111 |
| DRILL BAR STOCK STEP TYPE |  |  |  |  |
| | A6020 | A6021 | A6120 | A6121 |
| DRILL BAR STOCK WELD TYPE | WELD-IN TYPE | | SOCKET WELD TYPE | |
| |  |  |  |  |
| | A6310 | A6311 | A6320 | A6300 |