

PALMER THERMOWELLS

Protecting your process from adverse environmental conditions is crucial!

Thermowells made from top quality materials maximize strength and corrosion resistance, assuring the best protection of your equipment and process.

Skillfully made on our CNC and gun drilling machines, our wells help you achieve a minimized response time for the most accurate temperature measurement possible.

Palmer has manufactured thermowells for over 70 years, and has gained an expertise unsurpassed in the industry. Our machined wells are built in our factory for complete control of the production process. Our attention to detail allows us to produce precision wells, allowing us to build to meet your needs and specifications.

Don't take your thermowells for granted!

An incorrectly built well distorts the accuracy and response time of your sensor, puts your vessel at risk of damage, and increases your

labor cost. We can provide complete testing services to ensure that your thermowell can meet any challenge you may encounter.

Our Customer Service Department is ready to answer your questions and help you select the right well for your application. Palmer offers wells in a large variety of connections, bore sizes, stem lengths and materials, including exotic materials for all applications. We provide emergency services and releases from blanket

orders so the thermowells are in your hands *just in time.*



We take great pride in producing the finest thermowells

right here in our Asheville, NC plant. We are an ISO certified

company, assuring our processes result in a top quality product.

Combined with our RTD and Thermocouple Assemblies, or any of our precision products, we can assist you in determining the thermowell solution to your process for years of reliable performance.

Complete specifications available on our website.



Palmer Thermowells are distributed by:

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1-800-421-2853



Continued Innovation Since 1836
ISO9001:2008 CERTIFIED

How to Select the Right Thermowell - Choose Palmer!

The right Thermowell must be properly designed and constructed to withstand abrasive and corrosive materials, vibration, fluid pressure or cavitation, high fluid velocity, and any other harsh conditions. Many processes require that the probe or sensor cannot be placed directly in the medium to be measured. A thermowell is then used to protect the sensor from the process environment, and enable the sensor to be removed when necessary without affecting the process.

Selecting the right thermowell to accommodate the type of temperature sensor or probe being used is critical not only to provide proper protection of your sensor, but to obtain a correct temperature reading of your process. Our knowledge and experience can help.

Important factors to consider when selecting the right well.

Bore Size - correct bore size is crucial for proper fit in the space between the temperature sensor and the inside wall of the well, and to facilitate proper response time and instrument accuracy. Straight bore thermowells have a small air gap to allow for temperature variations, and for expansion and contraction differences in the various materials that are used. In this case, a thin film of heat transfer grease will increase speed of response. Tapered bore wells enable the tapered parts to seat against each other, giving close metal to metal contact, allowing for good heat transfer.

Standard internal bore diameters include 0.260", 0.365", and 0.501" straight bores, and 0.437" tapered bore (0.180" taper per foot of length). Since we manufacture wells right in our plant, Palmer can manufacture to your specific application.

Connection - Internal threads allow for thermometers and sensors to be screwed into the thermowell for a tight fit. Standard external mounting threads are 1/2", 3/4" or 1" NPT. Other types of wells have accommodations for welding in, or come in various styles of flanged mountings. Palmer can also build to suit your special requirements.

Insertion Length - Referred to as the "U" length, it is the distance the well is inserted into the process line. This is the length below the mounting thread to the tip of the thermowell. It is critical because it determines that the sensing portion of the well is adequately immersed to obtain a correct reading. The overall length required to pass through wall, pipe fittings, etc. must be taken into account when choosing the necessary well insertion length for your process. The medium to be measured, such as liquid, air or gas, also determines the proper well length.

Lagging Extension - If insulation is used in the process a well with a "lagging" extension is required. This is an extension neck to clear the depth of the insulation installed. This is the length from above the mounting thread to the hex of the well.

Potential For Vibration - As the media of a process flows by the thermowell, it forms a turbulent wake that causes vibration in proportion to the diameter of the well and the flow of the fluid. In order to minimize and avoid vibration, the thermowell must have sufficient stiffness so that the wake frequency will never equal the natural frequency of the well itself. For problematic applications, it is preferable to use a tapered thermowell design as this design provides greater stiffness without sacrificing the temperature sensitivity of a straight thermowell.

Materials - The proper material must be used depending on the medium it will be exposed to (corrosive or erosive), and the conditions (primarily temperature) under which it is being used. Palmer uses the best materials possible, and certification of our materials can be supplied upon request. We offer standard materials such as stainless steel, carbon steel, and brass, as well as a variety of other materials, including teflon and exotic alloys.

Sensors & Thermometers - See the complete line of Palmer Wahl Sensors and Thermometers for the **right** solution!



Threaded Regular

Threaded Regular Thermowells: standard threaded wells are used in most applications. Palmer offers wells in lengths from 2-1/2" to 72".



Lagging Extension

Lagging Extension: If insulation is used, a well with a "lagging" extension is required. This is the length from above the mounting thread to the hex of the head (in most cases).



Welded Thermowell

Weld In Thermowells: Threaded wells are available in weld-in or brazed materials. This is important for installations that require seal weld in or brazing. The weld provides mechanical strength and sealing.



Flanged Thermowell

Flanged Thermowells: Flanges are metal rims for strength, used for attachment of a well to a vessel. Flange wells (other than Vanstone type) consist of a bar stock well which is solidly welded to a top quality flange. Standard construction uses a bevel groove weld. Palmer offers a variety of flange styles.

Protection Tubes: Light-duty wells generally used in applications where pressure and velocity are low.

Sanitary Wells: Our highly polished sanitary wells provide maximum corrosion protection and are 3A approved!

Sanitary Projectile Well: Designed to be welded into sanitary processes or storage vessels. They accept a variety of mechanical and electronic sensors specially designed to provide metal-to-metal contact for fast response.

Test Thermowells: Used for testing, this type of well does not usually have a thermowell permanently installed, and is supplied with a cap and chain.

Vanstone Thermowells: A type of head that acts as a fitting with a lap joint flange (not welded to flange).

Union Connections: In cases when a well is not used, a thermometer with a swivel nut requires the use of a union hub for a pressure tight installation.



Sanitary Thermowell



Sanitary Projectile Thermowell



Test Thermowell



Union Connection