



## Temperature Products

**New!**

# Model TW-STEP General Use Thermowells

### DESCRIPTION

U.S. Gauge recommends the use of a thermowell in conjunction with a bimetallic thermometer when the application involves a corrosive medium, high pressure, or high flow velocity. Some specific uses include protection for unarmored liquid-in-glass test thermometers or other temperature sensing elements with a maximum diameter of .25".

These #20 gauge bimetallic thermowells meet or exceed SAMA specifications and are also available in heavy duty, flange, socket weld, and Van Stone models. Standard thermowells are stepped to 1/2" OD, except for 2-1/2" insertion. Straight shank models are also available.

The standard process connection sizes are 1/2-14 NPT and 3/4-14 NPT, with other sizes available. Materials of construction include 316L stainless steel (standard), 304 stainless steel, and brass (ASTM B-16). A cap and chain for keeping the thermowell bore clean when not in use are available upon request.



### STANDARD TOLERANCES

LENGTHS:  $\pm 1/16$ " on lengths 12" or less;  $\pm 1/8$ " on lengths 12" or over

WELLS 30" OVERALL LENGTH AND OVER: Solid bored type will be drilled thru end, plugged, and heli-arc welded; Built-up design must be specified beyond 42-1/4" overall length

OD TOLERANCES: Fractional:  $\pm .015$ ; Decimal:  $\pm .005$  on .000 place;  $\pm .01$  on .00 place

BORE ID:  $+.005$ ;  $-.003$ ; We try to stay within  $\pm .002$

END THICKNESS: Gun drill bottom; 1/4" to bottom  $\pm 1/16$ "; 3/16" minimum end thickness

CONCENTRICITY OF BORE TO OD:  $\pm 10\%$  of minimum wall thickness

WETTED SURFACES FINISH: Standard finish 60-100 Ra; 16-32 Ra available; 4-10 Ra mirror polish available

RADIUS UNDER THREADS AND FLANGES: 1/8" is standard,  $\pm 1/16$  in.; 1/16" on Van Stone type

MALE THREADS (NPT):  $\pm 1$  turn on thread gage

FEMALE THREADS: 1/2" NPSM standard; 1/2-14 NPT available upon request; go gauge to 5/8" depth of thread; no go gauge 2 turns maximum

END OF WELLS: Break corners; no burrs

LAGGING EXT.: On screwed wells; left as hex stock (not turned); exception—when hex is not available in special materials

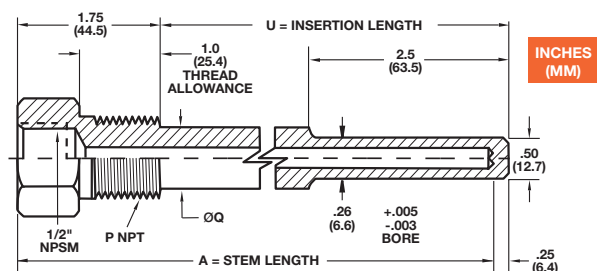
STAMPING: Stamped onto hex or round facing open end of well; material code identification; tag numbers

FLANGED WELLS: Made in accordance with ANSI B16.5; raised face is serrated 125 Ra; smooth face must be specified on order if needed

FRONT J: Groove welds are 1/4" wide by 1/4" deep; welds are machined, leaving 1/8" radius; rear welds are 1/8" wide by 1/8" deep "V"; welds are machined, leaving 1/4" radius; full penetration welds are available upon request and must be specified

MODEL	STEM LENGTH A	PROCESS CONNECTION P	INSERTION LENGTH U	SHANK DIAMETER Q
TW-STEP	4"	1/2"	2-1/2"	5/8"
	6"		4-1/2"	
	9"		7-1/2"	
	12"		10-1/2"	
	*15"		13-1/2"	
	*18"		16-1/2"	
TW-STEP	*24"	3/4"	22-1/2"	3/4"
	4"		2-1/2"	
	6"		4-1/2"	
	9"		7-1/2"	
	12"		10-1/2"	
	*15"		13-1/2"	
	*18"		16-1/2"	
	*24"		22-1/2"	

\* Optional



Note: On wells with 1/2" NPT process connection, the 1" thread allowance and 3/4" wrench allowance dimensions are reversed to accommodate the 1/2" NPSM female thread

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### SPEC NUMBER SELECTION CHART

#### Model TW – General Use

	4" Stem Length	6" Stem Length	9" Stem Length	12" Stem Length
Connection	Spec No.	Spec No.	Spec No.	Spec No.
1/2–14 NPT	416000	416001	416002	416003
3/4–14 NPT	416013	416014	416015	416016
1–11-1/2 NPT	416026	416027	416028	416029

#### Model TW – Lagging Extension

	4" Stem Length	6" Stem Length	9" Stem Length	12" Stem Length
Connection	Spec No.	Spec No.	Spec No.	Spec No.
1/2–14 NPT	–	416007	416008	416009
3/4–14 NPT	–	416020	416021	416022
1–11-1/2 NPT	–	416033	416034	416035

#### Model TW – General Use, Heavy Duty

	4" Stem Length	6" Stem Length	9" Stem Length	12" Stem Length
Connection	Spec No.	Spec No.	Spec No.	Spec No.
1/2–14 NPT	416039	416040	416041	416042
3/4–14 NPT	416052	416053	416054	416055
1–11-1/2 NPT	416065	416066	416067	416068

#### Model TW – Lagging Extension, Heavy Duty

	4" Stem Length	6" Stem Length	9" Stem Length	12" Stem Length
Connection	Spec No.	Spec No.	Spec No.	Spec No.
1/2–14 NPT	–	416046	416047	416048
3/4–14 NPT	–	416059	416060	415061
1–11-1/2 NPT	–	416072	416073	416074

#### Model TW – Limited Space

	2-1/2" Stem Length
Connection	Spec No.
1/2–14 NPT	416078
3/4–14 NPT	416079
1–11-1/2 NPT	416080

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