



DURO-SENSE CORPORATION

869 Sandhill Avenue
Carson, CA 90746
Ph: 310-533-6877 Fx: 310-533-0330
www.duro-sense.com

THERMOWELLS

Duro-Sense thermowells are drilled and machined from selected bar stock. The exterior of the thermowell is provided with a polished finish below the threads for minimum resistance to flow lines.

The bore size of thermowells shown in this catalog cover the most commonly used temperature sensing elements. Thermowells with a bore size of 0.260" are recommended for (but not limited to) ¼" stem bi-metal thermometers, ¼" diameter mineral insulated thermocouples and RTD's, and 20 gauge insulated thermocouples. Thermowells with a bore size of 0.385" are recommended for (but not limited to) 3/8" diameter mineral insulated thermocouples and RTD's and 14 gauge insulated thermocouples.

When ordering flanged thermowells, please include the type of flange, pressure rating, size and material.

Any thermowell that is not listed can be quoted upon receipt of full specifications.

Thermowell material selected for installation is governed primarily by temperature, corrosion resistance to gas or liquid and mechanical strength.

MATERIAL SELECTION GUIDE

SUBSTANCE	CONDITIONS	RECOMMENDED MATERIAL	SUBSTANCE	CONDITIONS	RECOMMENDED MATERIAL
Acetic Acid	10%-50%, 70°F	304SS, Hastelloy C, Monel	Cyanogen Gas		304SS
Acetic Acid	50%, 212°F	316SS, Hastelloy C, Monel	Dow therm		Low Carbon Steel
Acetic Acid	99%, 212°F	430SS, Hastelloy C, Monel	Epsom Salt	Hot and cold	304SS
Acetic Anhydride		Monel	Ether	70°F	304SS
Acetone	212°F	304SS	Ethyl Acetate		Monel, 304SS
Acetylene		304SS, Monel	Ethyl Chloride	70°F	304SS
Alcohol, ethyl, methyl	70°F-212°F	304SS	Ethyl Sulfate	70°F	Monel
Aluminum	Molten	Cast Iron	Ethylene Glycol		Low Carbon Steel
Ammonia	All concentrations, 70°F	304SS, 316SS	Ferric Chloride	5%, 70°F to boiling	Tantalum, Hastelloy C
Ammonium Chloride	All concentrations, 212°F	316SS, Monel	Ferric Sulfate	5%, 70°F	304SS
Ammonium Nitrate	All concentrations, 212°F	316SS	Ferrous Sulphate	Dilute, 70°F	304SS
Ammonium Sulphate	10% to saturated, 212°F	316SS	Formaldehyde		304SS, 316SS
Barium Carbonate	70°F (21°C)	304SS	Formic Acid	5%, 70°F-150°F	316SS
Barium Chloride	All concentrations, 70°F	Monel, Hastelloy C	Freon		Monel
Barium Hydroxide	All concentrations, 70°F	Low Carbon Steel	Gallic Acid	5%, 70°F-150°F	Monel
Barium Sulphite		Nichrome, Hastelloy C	Gasoline	70°F	304SS
Bromine	70°F (21°C)	Tantalum, Monel	Glucose	70°F	304SS
Butadiene		304SS	Glycerine	70°F	304SS
Butane	70°F (21°C)	304SS	Glycerol		304SS
Butylacetate		Monel	Hydrobromic Acid	98%, 212°F	Hastelloy B
Butyl Alcohol		304SS	Hydrochloric Acid	1%, 5%, 70°F	Hastelloy C
Calcium Bisulfite	70°F (21°C)	316SS	Hydrochloric Acid	1%, 5%, 212°F	Hastelloy B
Calcium Chlorate	Dilute, 70°F-150°F	304SS	Hydrochloric Acid	25%, 70°F-212°F	Hastelloy B
Calcium Hydroxide	10%-20%, 212°F	304SS, Hastelloy C	Hydrocyanic Acid		316SS
Calcium Hydroxide	50%, 212°F	316SS, Hastelloy C	Hydrofluoric Acid	60%, 212°F	Hastelloy C, Monel
Carbonic Acid	All, 212°F	316SS	Hydrogen Peroxide	70°F-212°F	316SS, 304SS
Carbon Dioxide	Wet or dry	2017-T4 Aluminum, Monel, Nickel	Hydrogen Sulfide	Wet or dry	316SS
Chlorine Gas	Dry, 70°F, (21°C)	316SS, Monel	Iodine	70°F	Tantalum
Chlorine Gas	Moist, 20°F-212°F	Hastelloy C	Kerosene	70°F	304SS
Chromic Acid	10%-50%, 212°F	316SS, Hastelloy C	Lactic Acid	5%, 70°F	304SS, 316SS
Citric Acid	15%, 70°F (21°C)	304SS, Hastelloy C	Lactic Acid	5%, 150°F	316SS
Citric Acid	15%, 212°F (100°C)	316SS, Hastelloy C	Lactic Acid	10%, 212°F	Tantalum
Citric Acid	Concentrated, 212°F	316SS, Hastelloy C	Lacquer	70°F	316SS
Copper Nitrate		304SS, 316SS	Latex		Low Carbon Steel
Copper Sulfate		304SS, 316SS	Lime Sulphur		Low Carbon Steel
Cresols		304SS	Linseed oil	70°F	304SS
SUBSTANCE	CONDITIONS	RECOMMENDED MATERIAL	SUBSTANCE	CONDITIONS	RECOMMENDED MATERIAL
Magnesium Chloride	5%, 70°F	Monel, Nickel	Resin		304SS
Magnesium Chloride	5%, 212°F	Nickel	Rosin	Molten	304SS
Magnesium Sulphate	Cold and hot	Monel	Sea Water		Monel, Hastelloy C
Malic Acid	Cold and hot	316SS	Salammoniac		Monel
Mercury		304SS, Monel	Salicylic Acid		Nickel
Methane	70°F	Low Carbon Steel	Saline		Aluminum, Brass, Monel
Milk		304SS, 316SS, Nickel	Shellac		304SS
Molasses		Monel, Nickel	Soap	70°F	304SS
Muriatic Acid	70°F	Tantalum	Sodium Bicarbonate	All concentrations, 70°F	304SS
Naptha	70°F	304SS	Sodium Bicarbonate	5%, 150°F	304SS, 316SS
Natural Gas	70°F	304SS, 316SS, 317SS	Sodium Bisulphate		Monel
Neon	70°F	304SS	Sodium Carbonate	5%, 70°F	304SS, 316SS
Nickel Chloride	70°F	304SS	Sodium Carbonate	5%, 150°F	304SS, 316SS
Nickel Sulphate	Cold and hot	304SS	Sodium Chloride	5%, 70°F	316SS
Nitric Acid	5%, 70°F	304SS, 316SS	Sodium Chloride	5%, 150°F	316SS
Nitric Acid	20%, 70°F	304SS, 316SS	Sodium Chloride	Saturated, 70°F	316SS, Monel
Nitric Acid	50%, 70°F	304SS, 316SS	Sodium Chloride	Saturated, 212°F	316SS, Monel
Nitric Acid	50%, 212°F	304SS, 316SS	Sodium Fluoride	5%, 70°F	Monel
Nitric Acid	65%, 212°F	316SS	Sodium Hydroxide		304SS, 316SS, Hastelloy C
Nitric Acid	Concentrated, 70°F	304SS, 316SS	Sodium Hypochlorite	5%, still	316SS, Hastelloy C
Nitric Acid	Concentrated, 212°F	Tantalum	Sodium Nitrate	Fused	316SS
Nitrobenzene	70°F	304SS	Sodium Peroxide		304SS
Nitrous Acid		304SS	Sodium Phosphate		Steel
Oleic Acid	70°F	316SS	Sodium Silicate		Steel
Oleum	70°F	316SS	Sodium Sulphate	70°F	304SS, 316SS
Oxalic Acid	5%, cold and hot	304SS	Sodium Sulphide	70°F	316SS
Oxalic Acid	10%, 212°F	Monel	Sodium Sulphite	30%, 150°F	304SS
Oxygen	70°F	Steel	Steam		304SS
Oxygen	Liquid	304SS, 316SS	Stearic Acid		304SS
Palmitic Acid		316SS	Sulphur	Dry, molten	304SS
Pentane		304SS	Sulphur	Wet	316SS
Petroleum Ether		304SS	Sulphur Dioxide	Moist gas, 70°F	316SS
Phenol		304SS	Sulphur Dioxide	Gas, 575°F	304SS, 316SS
Phosphoric Acid	1%, 5%, 70°F	304SS	Sulphuric Acid	5%, 70°F-212°F	Hastelloy B, 316SS
Phosphoric Acid	10%, 70°F	316SS	Sulphuric Acid	10%, 70°F-212°F	Hastelloy B
Phosphoric Acid	10%, 212°F	Hastelloy C	Sulphuric Acid	50%, 70°F-212°F	Hastelloy B
Phosphoric Acid	30%, 70°F-212°F	Hastelloy B	Sulphuric Acid	90%, 70°F	Hastelloy B
Phosphoric Acid	85%, 70°F-212°F	Hastelloy B	Sulphuric Acid	90%, 212°F	Hastelloy D
Picric Acid	70°F	304SS	Tannic Acid	70°F	304SS, Hastelloy B
Potassium Bromide	70°F	316SS	Tar		304SS, Monel, Nickel
Potassium Carbonate	1%, 70°F	304SS, 316SS	Tartaric Acid	70°F	304SS
Potassium Chlorate	70°F	304SS	Tartaric Acid	150°F	316SS
Potassium Chloride	5%, 70°F	304SS	Tin	Molten	Cast Iron
Potassium Chloride	5%, 212°F	304SS	Toluene		2017-T4 Aluminum, Monel
Potassium Hydroxide	5%, 70°F	304SS	Trichlord Ethylene		Steel
Potassium Hydroxide	25%, 212°F	304SS	Turpentine		304SS
Potassium Hydroxide	50%, 212°F	316SS	Varnish		304SS
Potassium Nitrate	5%, 70°F	304SS	Vegetable Oils		304SS, Monel
Potassium Nitrate	5%, 212°F	304SS	Vinegar		304SS
Potassium Permanganate	5%, 70°F	304SS	Whiskey		304SS, Nickel
Potassium Sulphate	5%, 70°F	304SS, 316SS	Wine		304SS, Nickel
Potassium Sulphate	5%, 212°F	304SS, 316SS	Xylene		Copper
Potassium Sulfide	70°F	304SS, 316SS	Zinc	Molten	Cast Iron
Propane		304SS	Zinc Chloride		Monel
Pyrogallic Acid		304SS	Zinc Sulphate	5%, 70°F	304SS, 316SS
Quinine Bisulphate	Dry	316SS	Zinc Sulphate	Saturated, 70°F	304SS, 316SS
Quinine Sulphate	Dry	304SS	Zinc Sulphate	25%, 212°F	304SS, 316SS

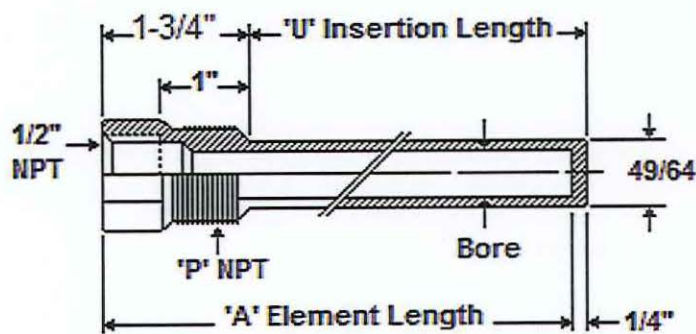


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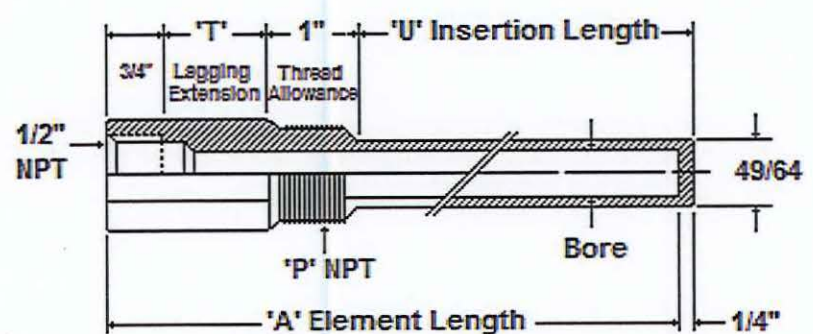
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THERMOWELLS

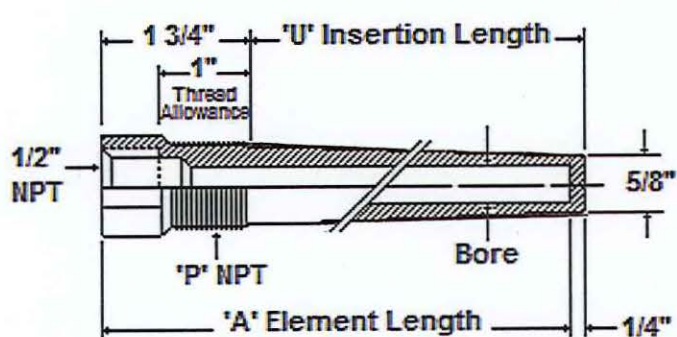
STRAIGHT



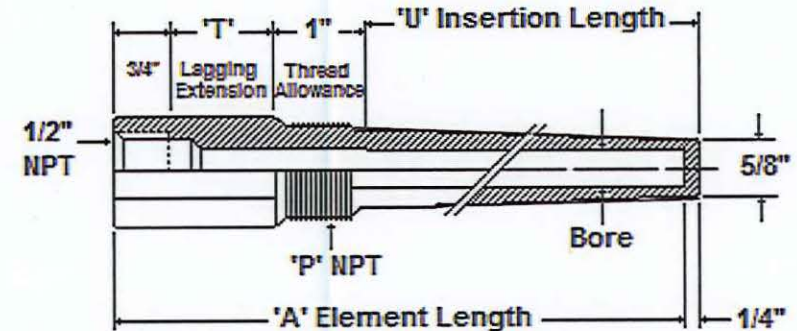
STRAIGHT W/ LAGGING EXTENSION



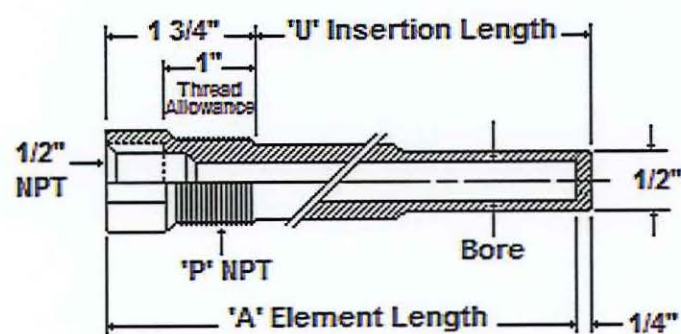
TAPERED



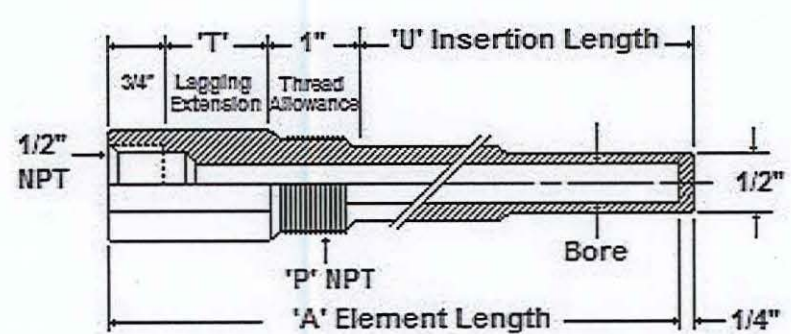
TAPERED WITH LAGGING EXTENSION



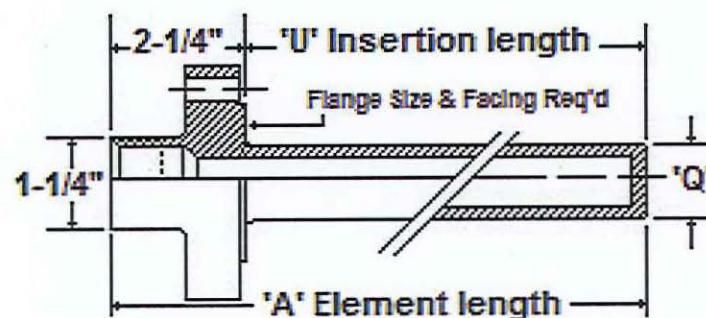
STEPPED(BI-MET)



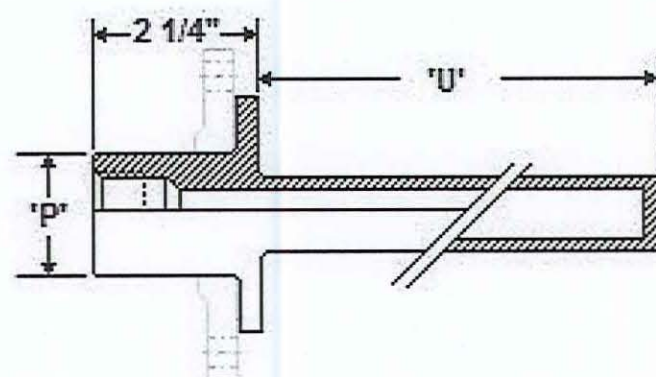
STEPPED(BI-MET) WITH LAGGING EXTENSION



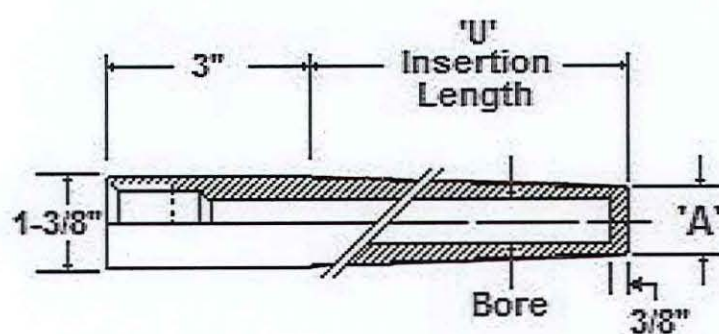
FLANGED



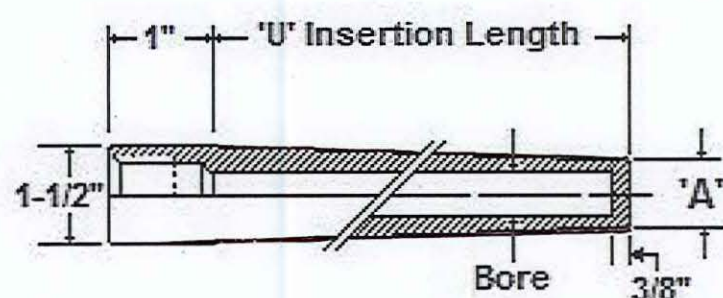
VAN STONE



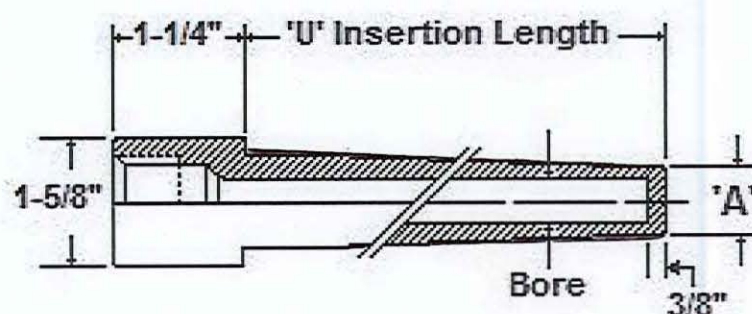
SOCKET-WELD(STRAIGHT HOLE)



SOCKET-WELD(TAPERED HOLE)



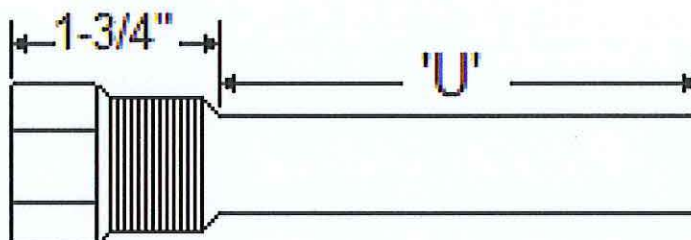
SOCKET-WELD(1-1/4" SOCKET-WELD FITTING)



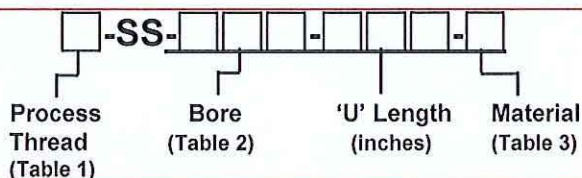
THERMOWELLS

Ordering Information

Straight Well



Part #:



NOTE: For any additional modifications to this assembly, add "-MOD" to the end of the part number and provide a physical description of the modification.

Table 1
Process Thread

P/N	Description
1/2	1/2"
3/4	1/4"
1	1"
1-1/2	1-1/2"
X	Special

Table 2
Bore

P/N	Description
260	.260"
385	.385"
X	Special

Table 3
Material

P/N	Description
A	Inconel
B	304 S.S.
C	316 S.S.
D	310 S.S.
E	321 S.S.
F	446 S.S.
G	Brass
X	Special

Example:

1/2-SS-260-6-B

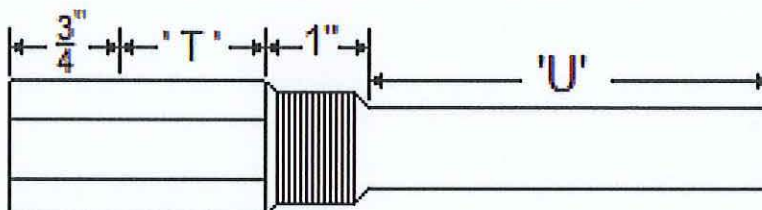
Straight Thermowell. 1/2" NPT Process Thread. .260" Bore. U=6". 304 S.S.



THERMOWELLS

Ordering Information

Straight Well with Lagging Extension



Part #: -SL-

Process Thread (Table 1) 'T' Length (Lag) (inches) Bore (Table 2) 'U' Length (inches) Material (Table 3)

NOTE: For any additional modifications to this assembly, add "-MOD" to the end of the part number and provide a physical description of the modification.

Table 1
Process Thread

P/N	Description
1/2	1/2"
3/4	1/4"
1	1"
1-1/2	1-1/2"
X	Special

Table 2
Bore

P/N	Description
260	.260"
385	.385"
X	Special

Table 3
Material

P/N	Description
A	Inconel
B	304 S.S.
C	316 S.S.
D	310 S.S.
E	321 S.S.
F	446 S.S.
G	Brass
X	Special

Example:

1/2-SL-2-260-6-B

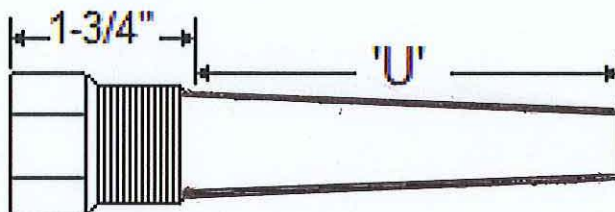
Straight Thermowell. 1/2" NPT Process Thread. 2" Lagging Extension .260" Bore. U=6". 304 S.S.



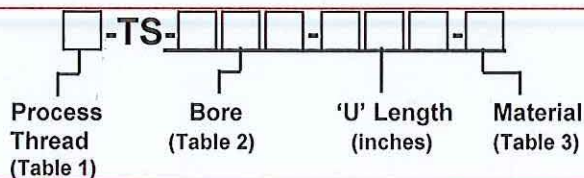
THERMOWELLS

Ordering Information

Tapered Well



Part #:



NOTE: For any additional modifications to this assembly, add "-MOD" to the end of the part number and provide a physical description of the modification.

Table 1
Process Thread

P/N	Description
1/2	1/2"
3/4	1/4"
1	1"
1-1/2	1-1/2"
X	Special

Table 2
Bore

P/N	Description
260	.260"
385	.385"
X	Special

Table 3
Material

P/N	Description
A	Inconel
B	304 S.S.
C	316 S.S.
D	310 S.S.
E	321 S.S.
F	446 S.S.
G	Brass
X	Special

Example:

1/2-TS-260-6-B

Tapered Thermowell. 1/2" NPT Process Thread. .260" Bore. U=6". 304 S.S.



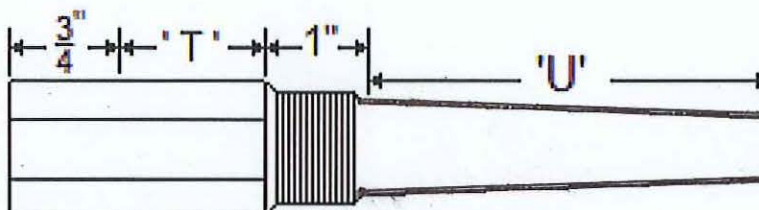
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THERMOWELLS

Ordering Information

Tapered Well with Lagging Extension



Part #:

□	-TL-	□	□	□	□	□	□	□	□	□	□
└─┘ Process Thread (Table 1)		└─┘ 'T' Length (Lag) (inches)		└─┘ Bore (Table 2)		└─┘ 'U' Length (inches)		└─┘ Material (Table 3)			

NOTE: For any additional modifications to this assembly, add "-MOD" to the end of the part number and provide a physical description of the modification.

Table 1
Process Thread

P/N	Description
1/2	1/2"
3/4	1/4"
1	1"
1-1/2	1-1/2"
X	Special

Table 2
Bore

P/N	Description
260	.260"
385	.385"
X	Special

Table 3
Material

P/N	Description
A	Inconel
B	304 S.S.
C	316 S.S.
D	310 S.S.
E	321 S.S.
F	446 S.S.
G	Brass
X	Special

Example:

1/2-TL-2-260-6-B

Tapered Thermowell. 1/2" NPT Process Thread. 2" Lagging Extension .260" Bore. U=6". 304 S.S.



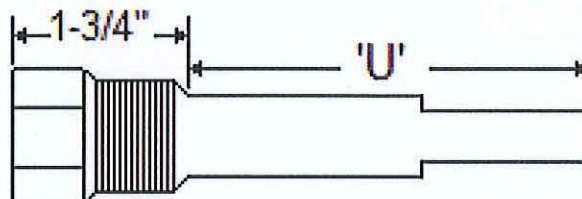
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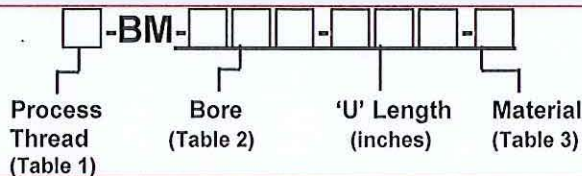
THERMOWELLS

Ordering Information

Stepped (Bi-Met) Well



Part #:



NOTE 1: Standard step length is 2.5" (for wells longer than 2.5"). For thermowells shorter than 2.5", stepped option is not available. Well would be provided straight.

NOTE 2: For any additional modifications to this assembly, add "-MOD" to the end of the part number and provide a physical description of the modification.

Table 1
Process Thread

P/N	Description
1/2	1/2"
3/4	1/4"
1	1"
1-1/2	1-1/2"
X	Special

Table 2
Bore

P/N	Description
260	.260"
385	.385"
X	Special

Table 3
Material

P/N	Description
A	Inconel
B	304 S.S.
C	316 S.S.
D	310 S.S.
E	321 S.S.
F	446 S.S.
G	Brass
X	Special

Example:

1/2-BM-260-6-B

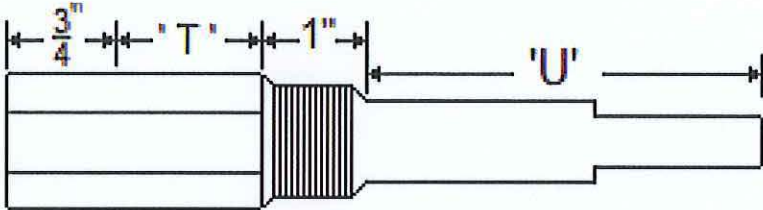
Stepped (Bi-Met) Thermowell. 1/2" NPT Process Thread. .260" Bore. U=6". 304 S.S.



THERMOWELLS

Ordering Information

Stepped (Bi-Met) Well with Lagging Extension



Part #: -BL- - - -

Process Thread (Table 1) 'T' Length (Lag) (inches) Bore (Table 2) 'U' Length (inches) Material (Table 3)

NOTE 1: Standard step length is 2.5" (for wells longer than 2.5"). For thermowells shorter than 2.5", stepped option is not available. Well would be provided straight.

NOTE 2: For any additional modifications to this assembly, add “-MOD” to the end of the part number and provide a physical description of the modification.

Table 1
Process Thread

P/N	Description
1/2	1/2"
3/4	1/4"
1	1"
1-1/2	1-1/2"
X	Special

Table 2
Bore

P/N	Description
260	.260"
385	.385"
X	Special

Table 3
Material

P/N	Description
A	Inconel
B	304 S.S.
C	316 S.S.
D	310 S.S.
E	321 S.S.
F	446 S.S.
G	Brass
X	Special

Example:

1/2-BL-2-260-6-B

Stepped (Bi-Met) Thermowell. 1/2" NPT Process Thread. 2" Lagging Extension .260" Bore. U=6". 304 S.S.



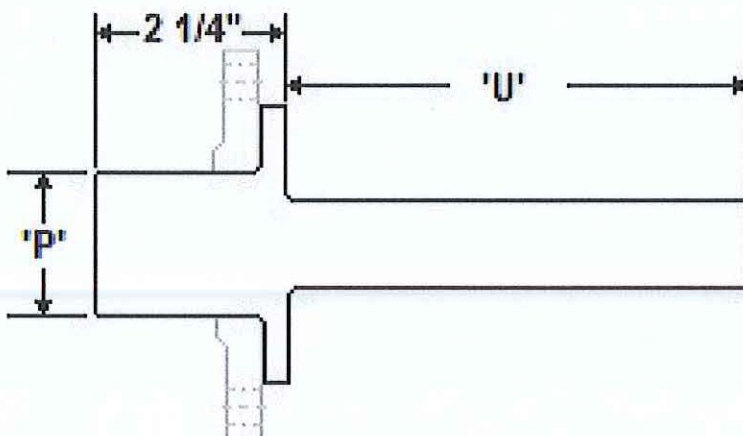
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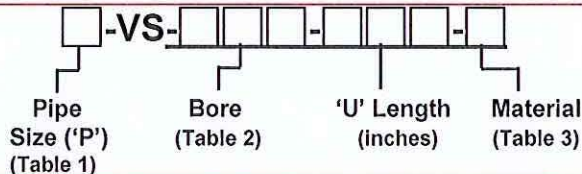
THERMOWELLS

Ordering Information

Van Stone Well



Part #:



NOTE: For any additional modifications to this assembly, add "-MOD" to the end of the part number and provide a physical description of the modification.

Table 1
Pipe Size (Nominal)

P/N	Description
1	1"
1-1/2	1-1/2"
X	Special

Table 2
Bore

P/N	Description
260	.260"
385	.385"
X	Special

Table 3
Material

P/N	Description
A	Inconel
B	304 S.S.
C	316 S.S.
D	310 S.S.
E	321 S.S.
F	446 S.S.
G	Brass
X	Special

Example:

1-VS-260-6-B

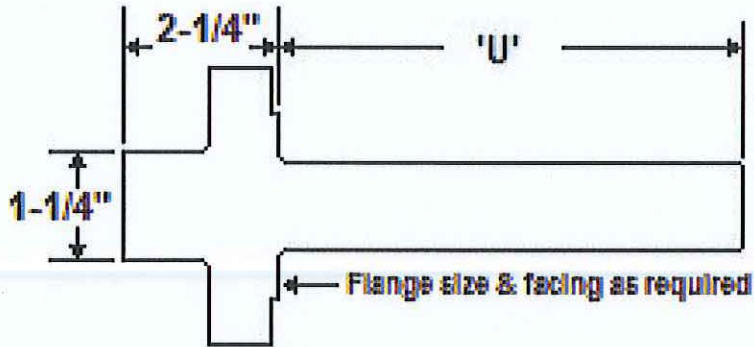
Van Stone Thermowell. 1" Pipe Size. .260" Bore. U=6". 304 S.S.



THERMOWELLS

Ordering Information

Flanged Well



Part #: FS-------

Bore
(Table 1)
'U' Length
(Inches)
Material
(Table 2)
Flange
Size & Facing

NOTE: For any additional modifications to this assembly, add "-MOD" to the end of the part number and provide a physical description of the modification.

Table 2
Bore

P/N	Description
260	.260"
385	.385"
X	Special

Table 3
Material

P/N	Description
A	Inconel
B	304 S.S.
C	316 S.S.
D	310 S.S.
E	321 S.S.
F	446 S.S.
G	Brass
X	Special

Example:

FS-260-6-B-150# RF

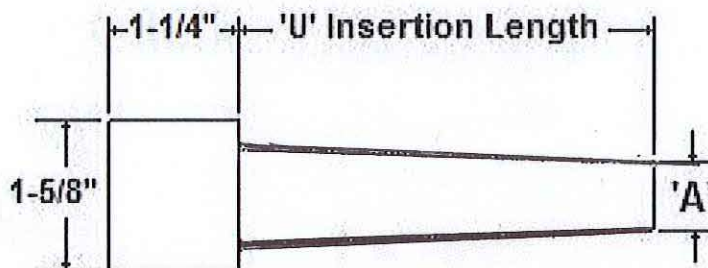
Flanged Thermowell. .260" Bore. U=6". 304 S.S. with 150# Raised Face Flange



THERMOWELLS

Ordering Information

Socket-Weld Well (For Welding in 1-1/4" Socket-Weld Fitting)



Part #: **SW-158-**

Bore
(Table 1)
'U' Length
(inches)
Material
(Table 2)

NOTE: For any additional modifications to this assembly, add "-MOD" to the end of the part number and provide a physical description of the modification.

Table 1
Bore

P/N	Description
260	.260"
385	.385"
500	.500"
X	Special

Table 2
Material

P/N	Description
A	Inconel
B	304 S.S.
C	316 S.S.
D	310 S.S.
E	321 S.S.
F	446 S.S.
G	Brass
X	Special

Example:

SW-158-260-6-B

Socket-Weld Thermowell. .260" Bore. U=6". 304 S.S.

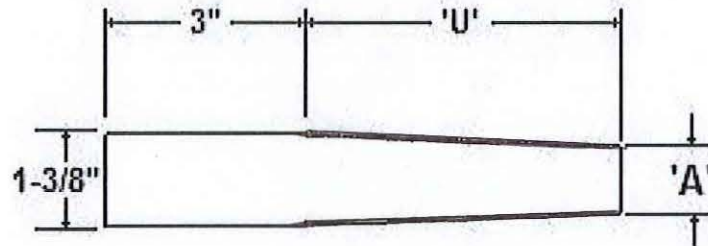
Catalog #	Bore	Stock Size	'A'	'T'
SW-158-260-'U'-(*)	.260"	1-5/8"	7/8"	1-1/4"
SW-158-375-'U'-(*)	.375"	1-5/8"	3/4"	1-1/4"
SW-158-500-'U'-(*)	.500"	1-5/8"	9/16"	1-1/4"



THERMOWELLS

Ordering Information

Socket-Weld Well (For Welding in Straight Hole)



Part #:	SW-138-							
		Bore (Table 1)		'U' Length (inches)			Material (Table 2)	

NOTE: For any additional modifications to this assembly, add "-MOD" to the end of the part number and provide a physical description of the modification.

Table 1
Bore

P/N	Description
260	.260"
385	.385"
500	.500"
X	Special

Table 2
Material

P/N	Description
A	Inconel
B	304 S.S.
C	316 S.S.
D	310 S.S.
E	321 S.S.
F	446 S.S.
G	Brass
X	Special

Example:

SW-138-260-6-B

Socket-Weld Thermowell. .260" Bore. U=6". 304 S.S.

Catalog #	Bore	Stock Size	'A'	'T'
SW-138-260-'U'-(*)	.260"	1-3/8"	7/8"	3"
SW-138-375-'U'-(*)	.375"	1-3/8"	3/4"	3"
SW-138-500-'U'-(*)	.500"	1-3/8"	9/16"	3"

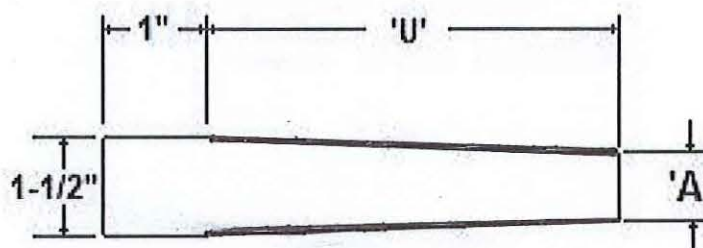


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THERMOWELLS

Ordering Information

Socket-Weld Well (For Welding in Tapered Hole)



Part #:	SW-150-			-			-	
		Bore			'U' Length			Material
		(Table 1)			(inches)			(Table 2)

NOTE: For any additional modifications to this assembly, add "-MOD" to the end of the part number and provide a physical description of the modification.

Table 1
Bore

P/N	Description
260	.260"
385	.385"
500	.500"
X	Special

Table 2
Material

P/N	Description
A	Inconel
B	304 S.S.
C	316 S.S.
D	310 S.S.
E	321 S.S.
F	446 S.S.
G	Brass
X	Special

Example:

SW-150-260-6-B

Socket-Weld Thermowell. .260" Bore. U=6". 304 S.S.

Catalog #	Bore	Stock Size	'A'	'T'
SW-150-260-'U'-(*)	.260"	1-1/2"	7/8"	1"
SW-150-375-'U'-(*)	.375"	1-1/2"	3/4"	1"
SW-150-500-'U'-(*)	.500"	1-1/2"	9/16"	1"



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