

DEDICATED TO CUSTOMER SATISFACTION

Conax Buffalo Technologies is the industry leader in the design and fabrication of temperature sensor assemblies and pressure/vacuum seals for a variety of applications and uses.

Conax works in partnership with our customers to evaluate their needs and develop cost-effective solutions. As a privately owned company, Conax is dedicated to improving customer satisfaction through continual improvement.

Turn to Conax first to share in these outstanding benefits:

- On-Time Shipping – reduces inventory & overhead, facilitates project scheduling

- Quality Assurance – eliminates need for receiving inspection & reduces assembly time
- Competitive Pricing – expedites order placement & reduces vendor search time
- Engineering Support – application knowledge & design capability
- A Working Partnership – we work with you to reduce your stress and product cost
- In-house Capabilities – full manufacturing, design and testing capabilities in our state-of-the-art production facility



2300 Walden Avenue
Buffalo, New York 14225

FAX: 716-684-7433 • Phone: 716-684-4500
1-800-223-2389

e-mail: conaxbuf@conaxbuffalo.com

www.conaxbuffalo.com

European Office
PO Box 91

BOGNOR REGIS PO22 7JB, England
FAX: +44 1243 773050 • Phone: +44 1243 784060

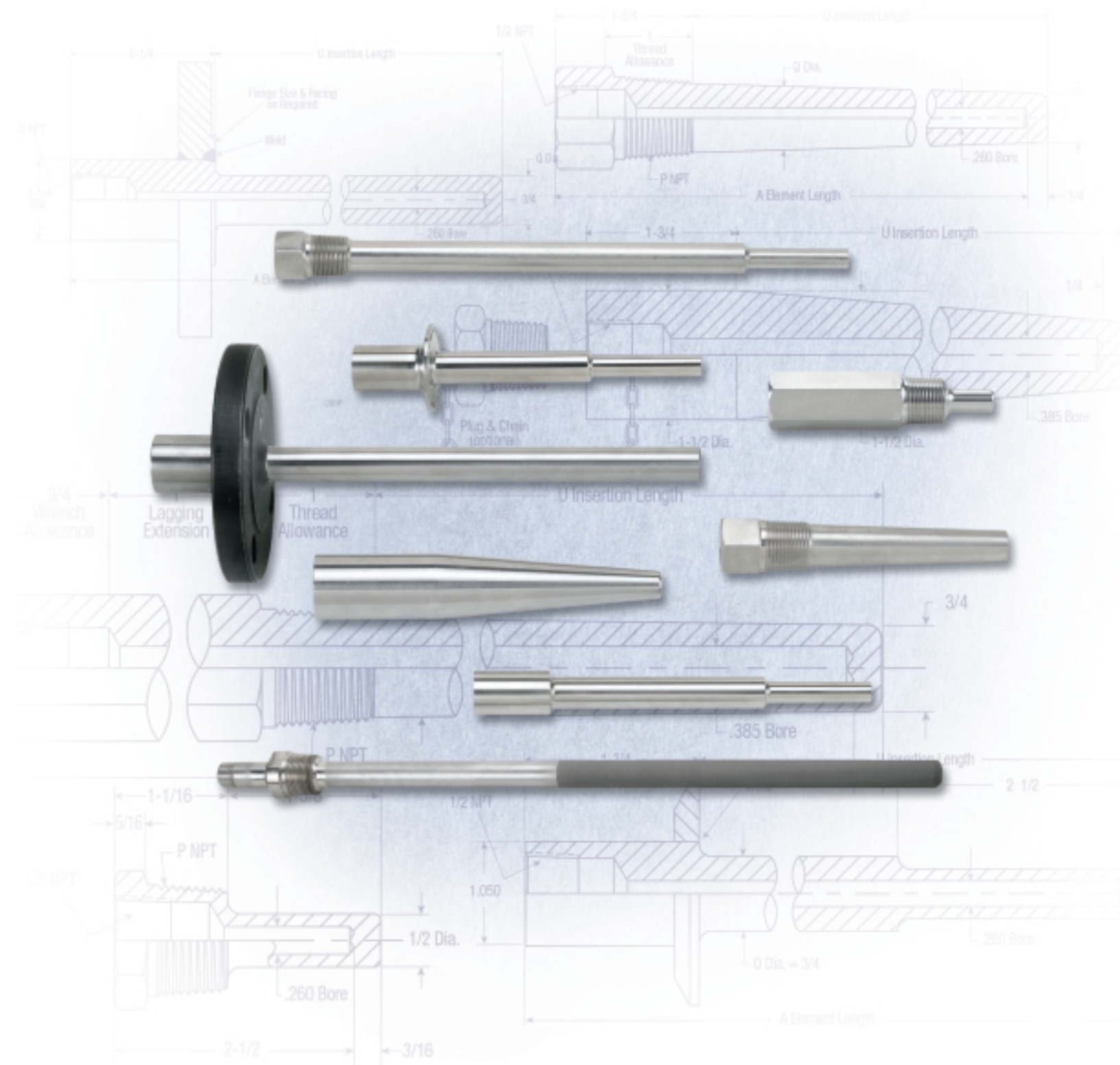
e-mail: cbteurope@conaxbuffalo.com

www.partsdrawer.com

Conax Buffalo Technologies is a registered trademark of Conax Buffalo Technologies. • ISO certification refers to Buffalo location.



Thermowells & Protection Tubes



Proven Performers

Conax Buffalo is the industry leader in the design and fabrication of temperature sensor assemblies. In the past 50 years, Conax Buffalo has developed a reputation as the company to turn to for quality solutions to application needs in a variety of industries worldwide. Many of our custom designs become industry standards. Today, we manufacture more than 100,000 standard assemblies in our state-of-the-art production facilities, while our knowledgeable engineering staff continues to break new ground with its custom designs and problem-solving abilities.

Our thermowell line represents the latest technology in protection tubes to enhance the life of your sensor assemblies. We offer a range of types and sizes to meet the needs of most applications. But if you don't see what you need, contact us – we welcome the opportunity to discuss your application and recommend solutions.

From the simplest assembly to the most complicated design challenge, turn to Conax Buffalo Technologies for quality, innovation, on-time delivery and commitment to customer satisfaction. We look forward to serving you.



Table of Contents

	Page
Introduction	4-5
Threaded Thermowells	6-8
Weld-In Thermowells	9
Socket-Weld Thermowells	10-11
ANSI Flanged Thermowells	12-13
Sanitary Flange Thermowells	14
Limited Space Thermowells	15
Van Stone Thermowells	15
Pipewells	16-17
Corrosive Materials Chart	18-19

Specifications are subject to change without notice. Dimensions, ranges, tolerances and standards outside the specifications noted in this catalog may be available. Consult the factory. All designs and trademarks not otherwise noted are the property of Conax Buffalo Technologies LLC. All rights reserved.



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com

Thermowells are pressure-tight receptacles that extend the life of a temperature sensor in environments where the sensor is not chemically compatible with the process media or the sensor does not have the mechanical strength to withstand the process flow or pressure. Thermowells also facilitate removing, changing, checking or replacing sensors without draining the process system. The use of standardized thermowells throughout a plant permits easy relocation of sensors.

In designing a system using thermowells, a number of factors must be considered:

Material of Construction

Thermowell material must be chemically compatible with the process system and the temperature sensor. In most cases, thermowell selection is based on the corrosive conditions in the well environment. Sometimes the selection may be based solely on the mechanical strength needed to withstand operating pressure and process flow. Often a combination of factors must be considered. In addition to selecting the proper base material, coatings may be used to improve a thermowell's resistance to abrasion or the chemical process.

The thermowell wall must be thin enough to minimize sensor error caused by thermal conduction and slow sensor response, but thick enough to withstand collapse from process pressure, erosion from abrasive media and bending from the process flow.

Spring-load mounting styles are recommended to ensure positive contact to maximize thermal transfer and minimize sensor vibration within a thermowell.

Insertion Length

The insertion length or "U" length is the distance from the end of the well to the underside of the thermowell thread or other connection device. For maximum accuracy, this length must be long enough to permit the temperature sensor to be fully immersed in the media to be measured and minimize sensor error caused by thermal conduction, but short enough to

withstand damage caused by process flow vibration. As a general rule of thumb, the thermowell should extend into the process a minimum of 10 times the sensor diameter or, in the case of RTDs, 10 times the sensor diameter plus one inch. This should extend the sensor into the process between 1/3 and 1/2 the diameter of the process pipe. The insertion length must also take into consideration any dead length required to pass through walls, pipe fittings and insulation.



Velocity

The most common cause of well failure is the vibrational effect caused by fluid forming a turbulent wake as it flows past the well. This turbulence has a definite vibration frequency based on the diameter of the well and the velocity of the fluid. The well must have sufficient stiffness to ensure that the wake frequency will never equal the natural frequency of the well. If the natural frequency of the well coincides with the wake frequency, the well will potentially vibrate to destruction. To be in compliance with the ASME Performance Test Code, the thermowell should have a natural frequency a minimum of 125% of the wake frequency.

Tapered shank wells (heavy duty – Type H) have a higher strength-to-weight ratio with a resultant higher natural resonant frequency than the equivalent length straight shank well. Tapered shank wells are preferred for operation at higher fluid velocities.

Process Connection

Conax Buffalo Technologies provides standardized wells in most of the common connection types, including threaded, flanged and socket weld types with standard bore sizes. Threaded wells are available in materials that can be readily welded. Flanged wells are manufactured by welding a bar stock well to the specified flange style. Double-welded construction reduces crevice corrosion and stress problems by ensuring that no open joints are exposed inside or outside the installation.

Standard Manufacturing Practices

Conax Buffalo thermowells are constructed to the following tolerances/descriptions:

Item	Tolerance/Description
Lengths	±1/16" on lengths 12" or less ±1/8" on lengths over 12"
O.D. Tolerances	±0.015
Bore I.D.	+0.005 -0.003
End Thickness	1/4" ±1/16"
Concentricity of Bore to O.D.	±10% of minimum wall thickness
Wetted Surfaces Finish	16-32 Ra is standard. Special finishes are available on request.
Process Connection Thread	In compliance with ANSI B1.20.1-92. Thread specifications vary with the process connection size.
Instrument Connection	1/2-14 NPT standard, 1/2-14 NPSM optional*
End of Wells	Break corners, no burrs
Lagging Extension	Hex on threaded wells (or wrench flats where applicable)
Stamping	Type of material standard; customer name and heat or tag number if required.
Flanges	Made in accordance with ANSI B16.5. Raised face is serrated 125/250 RMS STD
Welding	Full penetration welds are standard on 300 lb. and up

* Pending availability, NPSM instrument connection may be substituted for NPT.

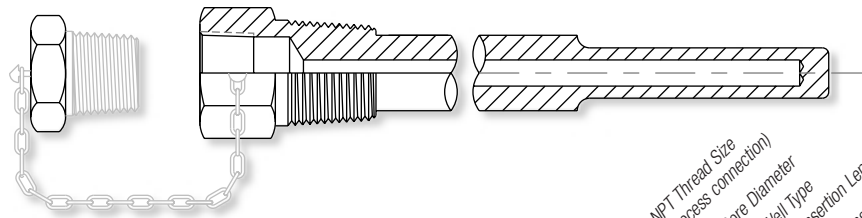
Thermowell Catalog Descriptions

The following format is used when ordering thermowells. When ordering a thermowell by itself, the initials "TW" precede the description. When ordering a thermowell as part of an assembly, the thermowell description immediately follows the mounting style designation, replacing the sensor active length.

Thermowell:
TW, .50-260S-U5.00-S316

Assembly:
E-SS25-U-T5AL(CSLW)-.50-260S-U5.00-S316





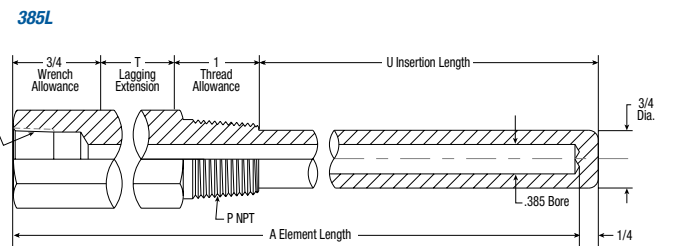
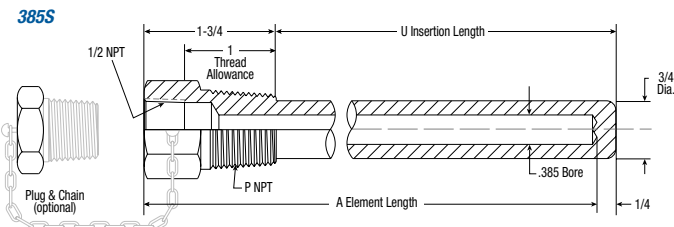
Example: **.50-260S-U 7.50-S316,T=3.50", BRASS PLUG & CHAIN**

NPT Thread Size (process connection)
 Bore Diameter
 Well Type
 Insertion Length Designator
 Insertion Length
 Material of Construction
 Additional Information (e.g., cap and chain, T = Lagging Extension Length if not standard)

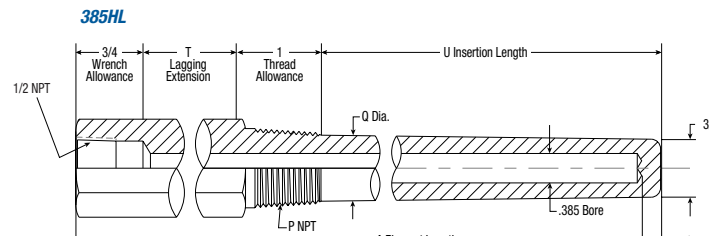
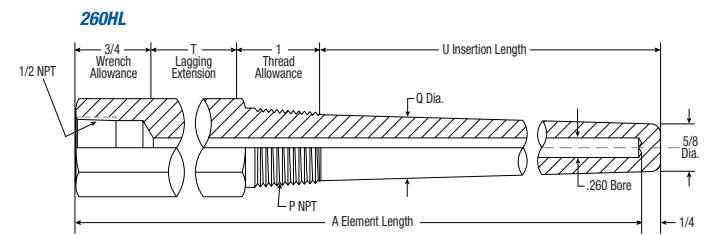
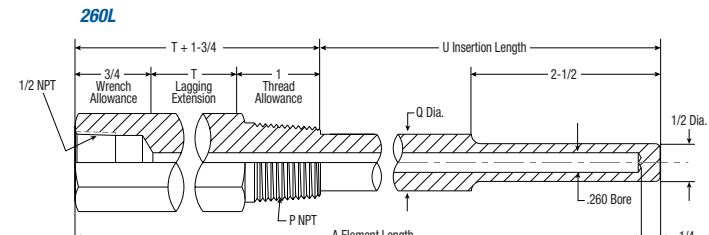
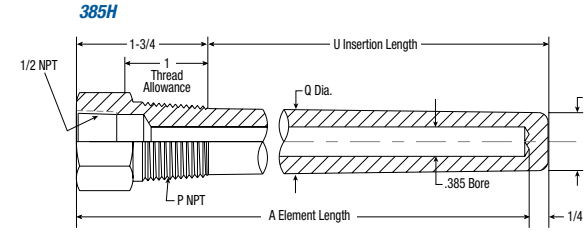
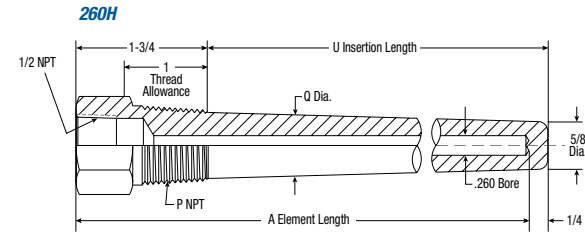
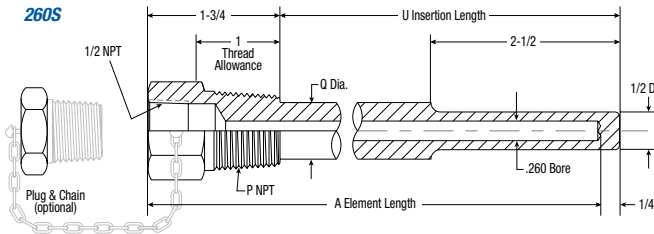
NPT Thread Size	Bore Diameter	Well Type	Insertion Length Designator	Insertion Length in Inches (2.50" min.)	Material of Construction	Additional Information
.50 = 1/2 NPT .75 = 3/4 NPT 1.00 = 1 NPT	260 - for 0.250" diameter probes 385 - for 0.375" diameter probes	S - Standard (straight shank) H - Heavy Duty (tapered shank) L - Lagging Extension (straight shank) HL - Heavy Duty with Lagging Extension (tapered shank)	U	.50	S304 - Stainless Steel S316 - 316 Stainless Steel CS - Carbon Steel BRASS - Brass	

Note: Specific material grade specifications may be added to callout, e.g. S316(A182). Other materials (titanium, Hastelloy, Monel, S316L, etc.) are available. Consult factory for details.

Ordering Information



External Thread P	Type Number	Lag. Ext. T	Elem. Length A	Insert Length U
3/4 NPT	385S	U 2-1/2	4	2-1/2
		U 4-1/2	6	4-1/2
		U 7-1/2	9	7-1/2
		U 10-1/2	12	10-1/2
		U 13-1/2	15	13-1/2
		U 16-1/2	18	16-1/2
1 NPT	385S	U 2-1/2	4	2-1/2
		U 4-1/2	6	4-1/2
		U 7-1/2	9	7-1/2
		U 10-1/2	12	10-1/2
		U 13-1/2	15	13-1/2
		U 16-1/2	18	16-1/2
3/4 NPT	385L	U 2-1/2	2	2-1/2
		U 4-1/2	3	4-1/2
		U 7-1/2	3	7-1/2
		U 10-1/2	3	10-1/2
		U 13-1/2	3	13-1/2
		U 19-1/2	3	19-1/2
1 NPT	385L	U 2-1/2	2	2-1/2
		U 4-1/2	3	4-1/2
		U 7-1/2	3	7-1/2
		U 10-1/2	3	10-1/2
		U 13-1/2	3	13-1/2
		U 19-1/2	3	19-1/2



External Thread P	Type Number	Lag. Ext. T	Elem. Length A	Insert Length U	Shank Diameter Q
1/2 NPT	260S	U 2-1/2	4	2-1/2	-
		U 4-1/2	6	4-1/2	5/8
		U 7-1/2	9	7-1/2	5/8
		U 10-1/2	12	10-1/2	5/8
		U 13-1/2	15	13-1/2	5/8
		U 16-1/2	18	16-1/2	5/8
3/4 NPT	260S	U 2-1/2	4	2-1/2	-
		U 4-1/2	6	4-1/2	3/4
		U 7-1/2	9	7-1/2	3/4
		U 10-1/2	12	10-1/2	3/4
		U 13-1/2	15	13-1/2	3/4
		U 16-1/2	18	16-1/2	3/4
	260H 385H	U 2-1/2	4	2-1/2	7/8
		U 4-1/2	6	4-1/2	7/8
		U 7-1/2	9	7-1/2	7/8
		U 10-1/2	12	10-1/2	7/8
		U 13-1/2	15	13-1/2	7/8
		U 16-1/2	18	16-1/2	7/8
1 NPT	260S	U 2-1/2	4	2-1/2	7/8
		U 4-1/2	6	4-1/2	7/8
		U 7-1/2	9	7-1/2	7/8
		U 10-1/2	12	10-1/2	7/8
		U 13-1/2	15	13-1/2	7/8
		U 16-1/2	18	16-1/2	7/8
	260H 385H	U 2-1/2	4	2-1/2	1-1/16
		U 4-1/2	6	4-1/2	1-1/16
		U 7-1/2	9	7-1/2	1-1/16
		U 10-1/2	12	10-1/2	1-1/16
		U 13-1/2	15	13-1/2	1-1/16
		U 16-1/2	18	16-1/2	1-1/16
1/2 NPT	260L	U 2-1/2	2	2-1/2	-
		U 4-1/2	3	4-1/2	5/8
		U 7-1/2	3	7-1/2	5/8
		U 10-1/2	3	10-1/2	5/8
		U 13-1/2	3	13-1/2	5/8
		U 19-1/2	3	19-1/2	5/8
3/4 NPT	260L	U 2-1/2	2	2-1/2	-
		U 4-1/2	3	4-1/2	3/4
		U 7-1/2	3	7-1/2	3/4
		U 10-1/2	3	10-1/2	3/4
		U 13-1/2	3	13-1/2	3/4
		U 19-1/2	3	19-1/2	3/4
	260HL 385HL	U 2-1/2	2	2-1/2	7/8
		U 4-1/2	3	4-1/2	7/8
		U 7-1/2	3	7-1/2	7/8
		U 10-1/2	3	10-1/2	7/8
		U 13-1/2	3	13-1/2	7/8
		U 19-1/2	3	19-1/2	7/8
1 NPT	260L	U 2-1/2	2	2-1/2	-
		U 4-1/2	3	4-1/2	7/8
		U 7-1/2	3	7-1/2	7/8
		U 10-1/2	3	10-1/2	7/8
		U 13-1/2	3	13-1/2	7/8
		U 19-1/2	3	19-1/2	7/8
	260HL 385HL	U 2-1/2	2	2-1/2	1-1/16
		U 4-1/2	3	4-1/2	1-1/16
		U 7-1/2	3	7-1/2	1-1/16
		U 10-1/2	3	10-1/2	1-1/16
		U 13-1/2	3	13-1/2	1-1/16
		U 19-1/2	3	19-1/2	1-1/16

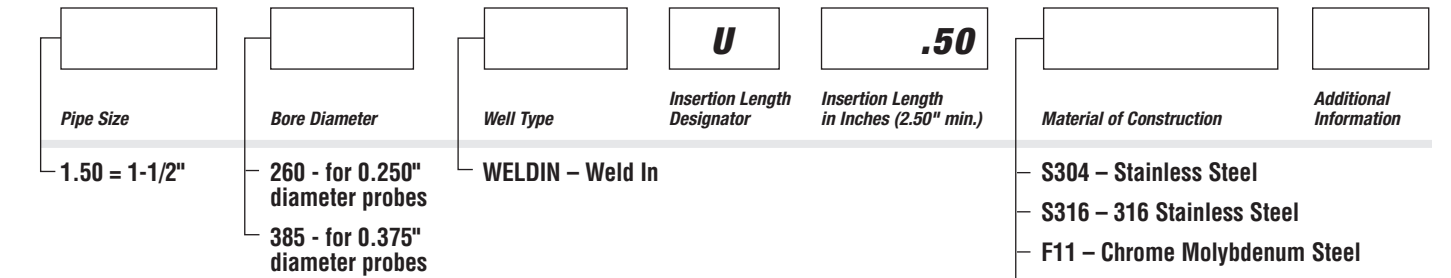
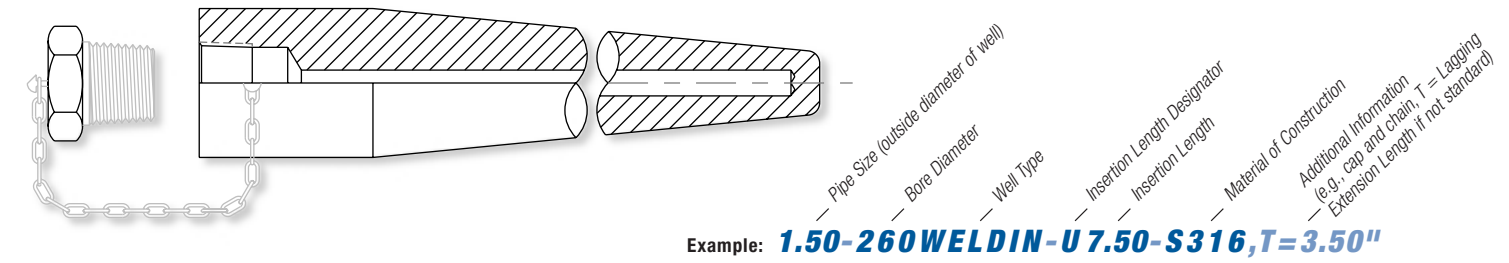
Threaded Thermowells

Weld-In Thermowells

Ordering Information

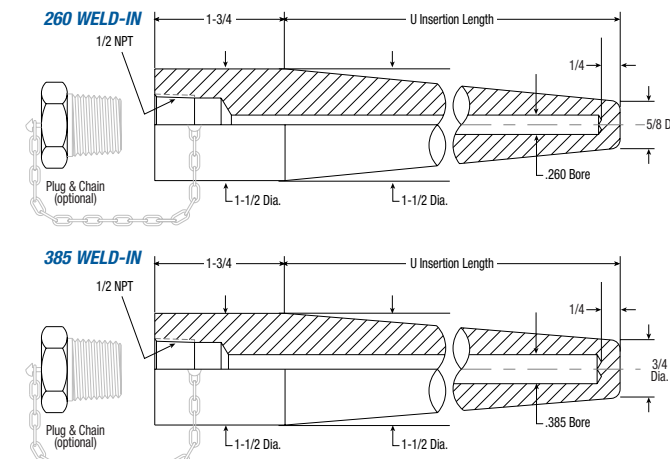
Well Type	Material	MAXIMUM FLUID VELOCITY – feet per second*									PRESSURE - TEMPERATURE RATING						
		Insertion Length - U									Temperature - °F						
		2-1/2	4-1/2	7-1/2	10-1/2	13-1/2	16-1/2	19-1/2	22-1/2	70°	200°	400°	600°	800°	1000°	1200°	
3/4-260H 3/4-260HL	Brass	305 (97.5)	93.8 (54.1)	33.9	17.1	10.5	7.0	5.0	3.7	5300	4750	1100	–	–	–	–	
	Carbon Steel	386 (175)	180 (97.2)	65.3 (59.3)	33.0	20.1	13.4	9.6	7.1	5950	5750	5450	5250	4000	1750	–	
	A.I.S.I. 304	440 (243)	197 (135)	71.2	36.0	22.0	14.7	10.5	7.8	7800	7050	6400	6150	6000	5190	1875	
	A.I.S.I. 316	440 (243)	197 (135)	71.2	36.0	22.0	14.7	10.5	7.8	7800	7800	7250	7100	6950	5800	2720	
1-260H 1-260HL	Brass	354 (161)	108 (89.5)	39.4	19.8	12.2	8.1	5.8	4.3	5300	4750	1100	–	–	–	–	
	Carbon Steel	448 (289)	209 (161)	75.7	38.4	23.3	15.5	11.1	8.2	5950	5750	5450	5250	4000	1750	–	
	A.I.S.I. 304	490 (403)	228 (225)	82.5	41.8	25.5	17.1	12.2	9.1	7800	7050	6400	6150	6000	5190	1875	
	A.I.S.I. 316	490 (403)	228 (225)	82.5	41.8	25.5	17.1	12.2	9.1	7800	7800	7250	7100	6950	5800	2720	
3/4-385H 3/4-385HL	Brass	276 (127)	124 (79)	44.0	22.0	13.0	8.0	6.0	4.0	5000	4200	1000	–	–	–	–	
	Carbon Steel	352 (228)	191 (114)	68.9	35.0	21.0	14.0	10.0	7.5	5200	5000	4800	4600	3500	1500	–	
	A.I.S.I. 304	415 (299)	203 (154)	73.2	37.3	22.5	15.0	11.0	8.0	7000	6200	5600	5400	5200	4500	1650	
	A.I.S.I. 316	415 (299)	203 (154)	73.2	37.3	22.5	15.0	11.0	8.0	7000	7000	6400	6200	6100	5100	2500	
1-385H 1-385HL	Brass	321 (150)	129 (83.5)	46.8	23.6	14.5	9.6	6.9	5.1	5000	4200	1000	–	–	–	–	
	Carbon Steel	410 (270)	249 (150)	90.3	45.6	27.8	18.5	13.2	9.8	5200	5000	4800	4600	3500	1500	–	
	A.I.S.I. 304	483 (350)	272 (208)	97.3	49.7	30.4	20.3	14.5	10.7	7000	6200	5600	5400	5200	4500	1650	
	A.I.S.I. 316	483 (350)	272 (208)	97.3	49.7	30.4	20.3	14.5	10.7	7000	7000	6400	6200	6100	5100	2500	
3/4-385S 3/4-385SL 1-385S 1-385SL	Brass	290 (145)	150 (80)	54.1 (49)	27.6	16.7	11.1	8.0	6.0	5000	4200	1000	–	–	–	–	
	Carbon Steel	326 (260)	192 (144)	69.5	35.4	20.5	14.3	10.3	7.7	5200	5000	4800	4600	3500	1500	–	
	A.I.S.I. 304	349 (360)	199	71.9	36.6	21.2	14.8	10.7	8.0	7000	6200	5600	5400	5200	4500	1650	
	A.I.S.I. 316	349 (360)	199	71.9	36.6	21.2	14.8	10.7	8.0	7000	7000	6400	6200	6100	5100	2500	
1/2-260L 1/2-260S	Brass	207 (59.3)	75.5 (32.2)	27.3 (19.7)	13.9	8.4	5.6	4.1	3.0	5000	4200	1000	–	–	–	–	
	Carbon Steel	290 (106)	105 (59)	38.2 (36.3)	19.4	11.8	7.8	5.7	4.2	5200	5000	4800	4600	3500	1500	–	
	A.I.S.I. 304	300 (148)	109 (82.2)	39.5	20.1	12.2	8.1	5.9	4.4	7000	6200	5600	5400	5200	4500	1650	
	A.I.S.I. 316	300 (148)	109 (82.2)	39.5	20.1	12.2	8.1	5.9	4.4	7000	7000	6400	6200	6100	5100	2500	
3/4-260S 3/4-260L	Brass	207 (59.3)	89.1 (39.8)	32.2 (23.9)	16.4	9.9	6.6	4.8	3.6	5000	4200	1000	–	–	–	–	
	Carbon Steel	290 (106)	123 (71.2)	44.9 (42.7)	22.8	13.8	9.3	6.7	4.9	5200	5000	4800	4600	3500	1500	–	
	A.I.S.I. 304	300 (148)	128 (99.3)	46.4	23.6	14.3	9.6	6.9	5.1	7000	6200	5600	5400	5200	4500	1650	
	A.I.S.I. 316	300 (148)	128 (99.3)	46.4	23.6	14.3	9.6	6.9	5.1	7000	7000	6400	6200	6100	5100	2500	
1-260S 1-260L	Brass	207 (59.3)	102 (47.6)	37.0 (28)	18.8	11.4	7.6	5.5	4.1	5000	4200	1000	–	–	–	–	
	Carbon Steel	290 (106)	143 (84.3)	51.6 (50.6)	26.2	15.9	10.6	7.6	5.7	5200	5000	4800	4600	3500	1500	–	
	A.I.S.I. 304	300 (148)	148 (117)	53.5	27.2	16.5	11.0	7.9	5.9	7000	6200	5600	5400	5200	4500	1650	
	A.I.S.I. 316	300 (148)	148 (117)	53.5	27.2	16.5	11.0	7.9	5.9	7000	7000	6400	6200	6100	5100	2500	

* Maximum velocity rating is based on operating temperatures of 1000° F for wells made of carbon steel, 304SST and 316SST; 350° F for wells made of brass; and 900° F for wells made of Monel. Slightly higher velocity is possible at lower temperatures. In these tables, single numbers represent the safe values for water, steam, air or gas. In the shorter insertion lengths, consideration is given to the velocity pressure effect of water flowing at higher velocities. In these cases, the values in parentheses represent safe values for water flow, and the unbracketed values may be used for steam, air, gas and similar density fluids.



Note: Specific material grade specifications may be added to callout, e.g. S316(A182). Other materials (titanium, Hastelloy, Monel, S316L, etc.) are available. Consult factory for details.

Ordering Information



Thread Size	Type Number	Elem. Length A	Insert Length U	Bore Diameter B	
1-1/2	260 WELDIN	U 2-1/2	4	2-1/2	0.260
		U 4-1/2	6	4-1/2	
		U 7-1/2	9	7-1/2	
		U 10-1/2	12	10-1/2	
		U 13-1/2	15	13-1/2	
		U 16-1/2	18	16-1/2	
1-1/2	385 WELDIN	U 2-1/2	4	2-1/2	0.385
		U 4-1/2	6	4-1/2	
		U 7-1/2	9	7-1/2	
		U 10-1/2	12	10-1/2	
		U 13-1/2	15	13-1/2	
		U 16-1/2	18	16-1/2	

Well Type	Material	MAXIMUM FLUID VELOCITY – feet per second*									PRESSURE - TEMPERATURE RATING						
		Insertion Length - U									Temperature - °F						
		2-1/2	4-1/2	7-1/2	10-1/2	13-1/2	16-1/2	19-1/2	22-1/2	70°	200°	400°	600°	800°	1000°	1200°	
1-1/2-260 WELDIN	Carbon Steel	493 (306)	220 (170)	79.4	40.5	24.5	16.4	11.7	8.8	5950	5750	5450	5250	4000	1750	–	
	A.I.S.I. 304	539 (443)	233.5 (231)	84.0	42.8	25.9	17.3	12.4	9.3	7800	7050	6400	6150	6000	5190	1875	
	A.I.S.I. 316	539 (443)	233.5 (231)	84.0	42.8	25.9	17.3	12.4	9.3	7800	7800	7250	7100	6950	5800	2720	
	F-11	549 (451)	237 (235)	85.5	43.0	26.4	17.6	12.6	9.5	7350	7350	7350	7350	7350	2898	504	
1-1/2-385 WELDIN	Carbon Steel	451 (286)	269 (159)	96.9	49.0	29.9	20.0	14.0	10.7	5200	5000	4800	4600	3500	1500	–	
	A.I.S.I. 304	531 (385)	285 (220)	102	52.0	31.6	21.2	15.0	11.4	7000	6200	5600	5400	5200	4500	1650	
	A.I.S.I. 316	531 (385)	285 (220)	102	52.0	31.6	21.2	15.0	11.4	7000	7000	6400	6200	6100	5100	2500	
	F-11	542 (392)	290 (224)	104	53.2	32.0	21.5	15.4	11.6	6562	6562	6562	6562	6562	2587	450	
F-22	542 (392)	290 (224)	104	53.2	32.0	21.5	15.4	11.6	6450	6450	6450	6450	6337	2850	487		

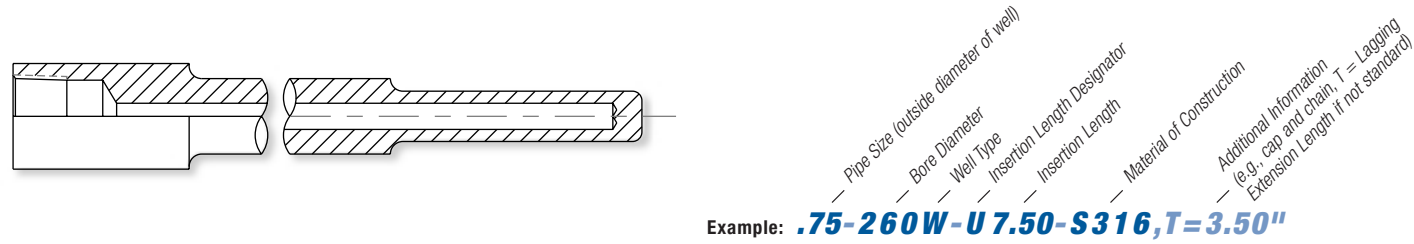
* Maximum velocity rating is based on operating temperatures of 1000° F for wells made of carbon steel, 304SST and 316SST; 350° F for wells made of brass; and 900° F for wells made of Monel. Slightly higher velocity is possible at lower temperatures. In these tables, single numbers represent the safe values for water, steam, air or gas. In the shorter insertion lengths, consideration is given to the velocity pressure effect of water flowing at higher velocities. In these cases, the values in parentheses represent safe values for water flow, and the unbracketed values may be used for steam, air, gas and similar density fluids.



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com



Example: **.75-260W-U 7.50-S316,T=3.50"**

Pipe Size	Bore Diameter	Well Type	Insertion Length Designator	Insertion Length in Inches (2.50" min.)	Material of Construction	Additional Information
.75 (1.050" OD) 1.00 (1.315" OD)	260 - for 0.250" diameter probes 385 - for 0.375" diameter probes	W – Socket Weld (straight shank) WH – Heavy Duty Socket Weld (tapered shank) WL – Socket Weld with Lagging Extension (straight shank) WHL – Heavy Duty Socket Weld with Lagging Extension	U	.50	S304 – Stainless Steel S316 – 316 Stainless Steel F11 – Chrome Molybdenum Steel F22 – Chrome Molybdenum Steel F91 – Chrome Molybdenum Steel CS – Carbon Steel	

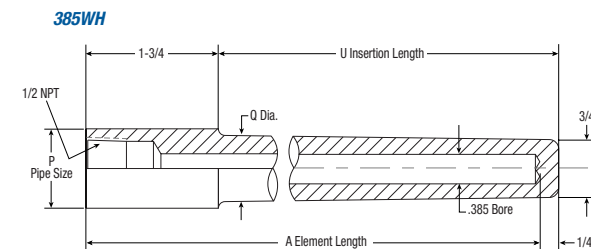
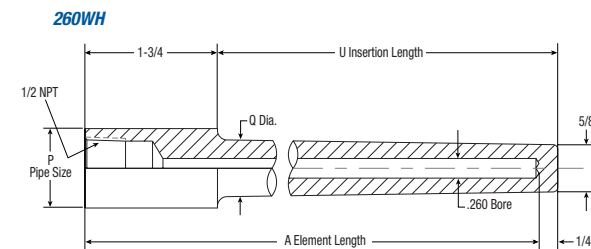
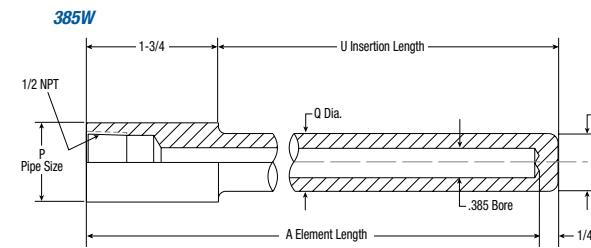
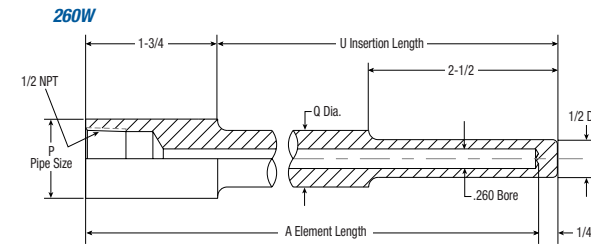
Note: Specific material grade specifications may be added to callout, e.g. S316(A182). Other materials (titanium, Hastelloy, Monel, S316L, etc.) are available. Consult factory for details.

Ordering Information

Well Type	Material	MAXIMUM FLUID VELOCITY – feet per second*								PRESSURE - TEMPERATURE RATING						
		Insertion Length - U								Temperature - °F						
		2-1/2	4-1/2	7-1/2	10-1/2	13-1/2	16-1/2	19-1/2	22-1/2	70°	200°	400°	600°	800°	1000°	1200°
3/4-260WH	Carbon Steel	386 (175)	180 (97.2)	65.3 (59.3)	33.0	20.1	13.4	9.6	7.1	5950	5750	5450	5250	4000	1750	–
	A.I.S.I. 304	440 (243)	197 (135)	71.2	36.0	22.0	14.7	10.5	7.8	7800	7050	6400	6150	6000	5190	1875
	A.I.S.I. 316	440 (243)	197 (135)	71.2	36.0	22.0	14.7	10.5	7.8	7800	7800	7250	7100	6950	5800	2720
1-260WH	Carbon Steel	448 (289)	209 (161)	75.7	38.4	23.3	15.5	11.1	8.2	5950	5750	5450	5250	4000	1750	–
	A.I.S.I. 304	490 (403)	228 (225)	82.5	41.8	25.5	17.1	12.2	9.1	7800	7050	6400	6150	6000	5190	1875
	A.I.S.I. 316	490 (403)	228 (225)	82.5	41.8	25.5	17.1	12.2	9.1	7800	7800	7250	7100	6950	5800	2720
3/4-385WH	Carbon Steel	352 (228)	191 (114)	69.0	35.0	21.0	14.0	10.0	7.5	5200	5000	4800	4600	3500	1500	–
	A.I.S.I. 304	415 (299)	203 (154)	73.2	37.3	22.5	15.0	11.0	8.0	7000	6200	5600	5400	5200	4500	1650
	A.I.S.I. 316	415 (299)	203 (154)	73.2	37.3	22.5	15.0	11.0	8.0	7000	7000	6400	6200	6100	5100	2500
1-385WH	Carbon Steel	410 (270)	249 (150)	90.3	45.6	27.8	18.5	13.2	9.8	5200	5000	4800	4600	3500	1500	–
	A.I.S.I. 304	483 (350)	272 (208)	97.3	49.7	30.4	20.3	14.5	10.7	7000	6200	5600	5400	5200	4500	1650
	A.I.S.I. 316	483 (350)	272 (208)	97.3	49.7	30.4	20.3	14.5	10.7	7000	7000	6400	6200	6100	5100	2500
3/4-260W	Carbon Steel	290 (106)	123 (71.2)	44.9 (42.7)	22.8	13.8	9.3	–	4.9	5200	5000	4800	4600	3500	1500	–
	A.I.S.I. 304	300 (148)	128 (99.3)	46.4	23.6	14.3	9.6	–	5.1	7000	6200	5600	5400	5200	4500	1650
	A.I.S.I. 316	300 (148)	128 (99.3)	46.4	23.6	14.3	9.6	–	5.1	7000	7000	6400	6200	6100	5100	2500
1-260W	Carbon Steel	290 (106)	143 (84.3)	51.6 (50.6)	26.2	15.9	10.6	–	5.7	5200	5000	4800	4600	3500	1500	–
	A.I.S.I. 304	300 (148)	148 (117)	53.5	27.2	16.5	11.0	–	5.9	7000	6200	5600	5400	5200	4500	1650
	A.I.S.I. 316	300 (148)	148 (117)	53.5	27.2	16.5	11.0	–	5.9	7000	7000	6400	6200	6100	5100	2500
3/4-385W	Carbon Steel	426 (260)	192 (144)	69.5	35.4	20.5	14.6	–	7.7	5200	5000	4800	4600	3500	1500	–
	A.I.S.I. 304	449 (360)	199	71.9	36.6	21.2	14.8	–	8.0	7000	6200	5600	5400	5200	4500	1650
1-385W	Carbon Steel	449 (360)	199	71.9	36.6	21.2	14.8	–	8.0	7000	7000	6400	6200	6100	5100	2500
	A.I.S.I. 316	449 (360)	199	71.9	36.6	21.2	14.8	–	8.0	7000	7000	6400	6200	6100	5100	2500

* Maximum velocity rating is based on operating temperatures of 1000° F for wells made of carbon steel, 304SS and 316SS; 350° F for wells made of brass; and 900° F for wells made of Monel. Slightly higher velocity is possible at lower temperatures. In these tables, single numbers represent the safe values for water, steam, air or gas. In the shorter insertion lengths, consideration is given to the velocity pressure effect of water flowing at higher velocities. In these cases, the values in parentheses represent safe values for water flow, and the unbracketed values may be used for steam, air, gas and similar density fluids.

Ordering Information



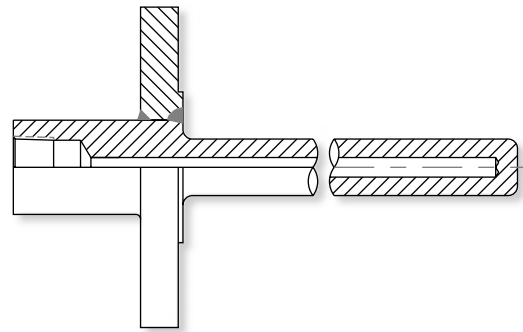
Pipe Size P	Type Number	Elem. Length A	Insert Length U	Shank Diameter Q	
3/4 NPT (1.050 diameter)	260W 385W	U 2-1/2	4	2-1/2	–
		U 4-1/2	6	4-1/2	3/4
		U 7-1/2	9	7-1/2	3/4
		U 10-1/2	12	10-1/2	3/4
		U 13-1/2	15	13-1/2	3/4
		U 16-1/2	18	16-1/2	3/4
1 NPT (1.315 diameter)	260W 385W	U 2-1/2	4	2-1/2	–
		U 4-1/2	6	4-1/2	7/8
		U 7-1/2	9	7-1/2	7/8
		U 10-1/2	12	10-1/2	7/8
		U 13-1/2	15	13-1/2	7/8
		U 16-1/2	18	16-1/2	7/8
3/4 NPT (1.050 diameter)	260WH 385WH	U 2-1/2	4	2-1/2	7/8
		U 4-1/2	6	4-1/2	7/8
		U 7-1/2	9	7-1/2	7/8
		U 10-1/2	12	10-1/2	7/8
		U 13-1/2	15	13-1/2	7/8
		U 16-1/2	18	16-1/2	7/8
1 NPT (1.315 diameter)	260WH 385WH	U 2-1/2	4	2-1/2	1
		U 4-1/2	6	4-1/2	1
		U 7-1/2	9	7-1/2	1
		U 10-1/2	12	10-1/2	1
		U 13-1/2	15	13-1/2	1
		U 16-1/2	18	16-1/2	1



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com



Example: **260F-U 22.50-RF39(S304)-S316,T=3.50"**

Bore Diameter
 Flange Well Type
 Insertion Length Designator
 Insertion Length
 Flange Designator
 Flange Class
 Flange Pipe Size
 Flange Material of Construction
 Well Material of Construction
 Additional Information

Bore Diameter	Flange Well Type	U Ins. Length Designator	.50 Insertion Length (2.50" min.)	RF Flange Designator	Flange Class	Flange Pipe Size	() Flange Material of Construction	Well Material of Construction	Additional Information
260 - for 0.250" diameter probes	F - ANSI Flange (straight shank)				1 = 150 lb.	4 = .50"	S304 - Stainless Steel		
385 - for 0.375" diameter probes	FH - Heavy Duty Flange (tapered shank)				2 = 300 lb.	5 = .75"	S316 - 316 Stainless Steel		
	FL - Flange with Lagging Extension (straight shank)				3 = 600 lb.	6 = 1.00"	CS - Carbon Steel		
	FHL - Heavy Duty Flange with Lagging Extension (tapered shank)				4 = 900 lb.	8 = 1.50"			
					5 = 1500 lb.	9 = 2.00"			
					6 = 2500 lb.	16 = 8.00"			

Note: Specific material grade specifications may be added to callout, e.g. S316(A182). Other materials (titanium, Hastelloy, Monel, S316L, etc.) are available. Consult factory for details.

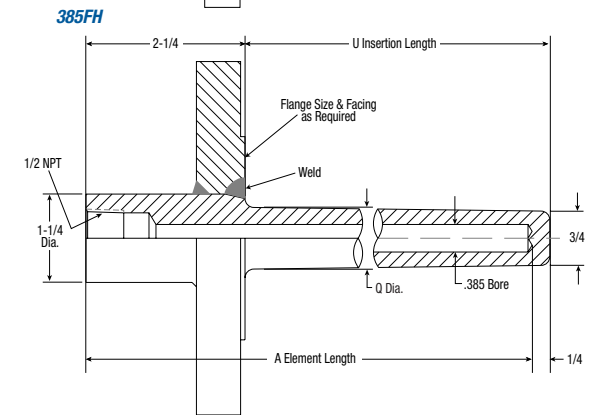
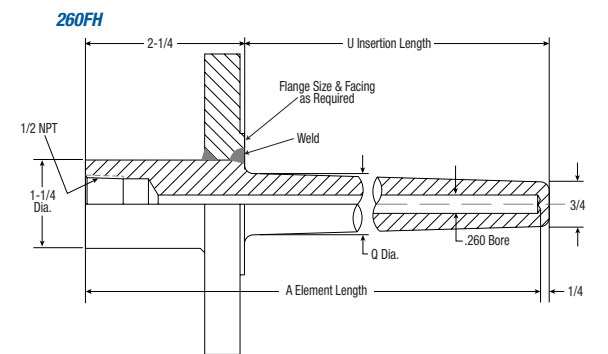
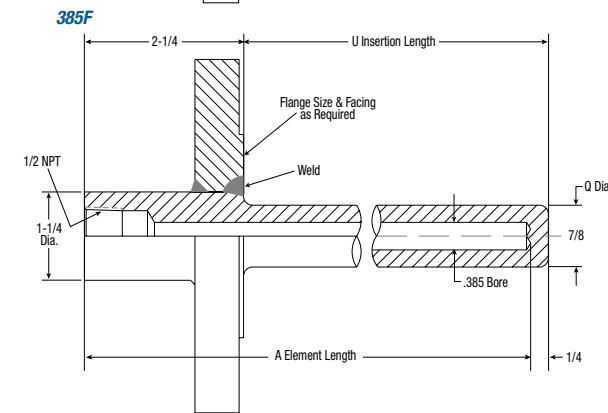
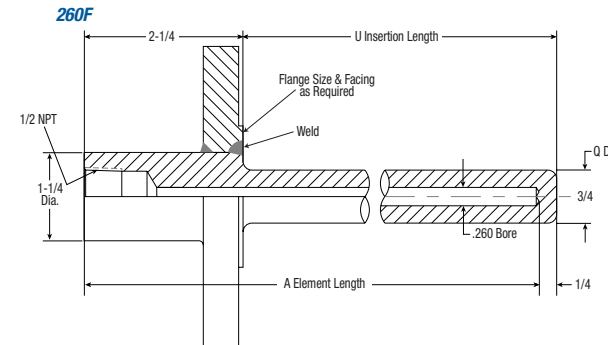
Ordering Information

Well Type	Material	MAXIMUM FLUID VELOCITY - feet per second*							MAXIMUM PRESSURE - TEMPERATURE RATING						
		Insertion Length - U							Temperature - °F						
		2	4	7	10	13	16	22	70°	200°	400°	600°	800°	1000°	1125°
260F	Carbon Steel	404 (129)	184 (71.2)	67.0 (42.7)	34.0	20.6	13.7	7.4	Up to 2500#						
	A.I.S.I. 304	430 (179)	192 (99.3)	69.7 (59.6)	35.4	21.5	14.3	7.7	Up to 2500#						
	A.I.S.I. 316	430 (179)	192 (99.3)	69.7 (59.6)	35.4	21.5	14.3	7.7	Up to 2500#						
	Monel	350 (143)	168 (79.8)	61.0 (47.7)	31.0	18.8	12.5	3.7	Up to 2500#						
385F	Carbon Steel	410 (152)	248 (84.3)	91.3 (50.6)	45.7	27.6	18.5	10.0	Up to 2500#						
	A.I.S.I. 304	444 (211)	258 (117)	95.2 (70.3)	47.6	28.8	19.3	10.4	Up to 2500#						
	A.I.S.I. 316	444 (211)	258 (117)	95.2 (70.3)	47.6	28.8	19.3	10.4	Up to 2500#						
	Monel	338 (168)	226 (93.3)	83.3 (56.0)	41.6	25.2	16.9	9.1	Up to 2500#						
260FH	Carbon Steel	603 (273)	227 (125)	74.0 (67.0)	36.0	21.0	14.0	7.5	Up to 2500#						
	A.I.S.I. 304	687 (379)	249 (170)	81.0	39.8	23.6	15.5	8.2	Up to 2500#						
	A.I.S.I. 316	687 (379)	249 (170)	81.0	39.8	23.6	15.5	8.2	Up to 2500#						
	Monel	553 (304)	196 (136)	64.0	31.0	18.0	12.0	6.0	Up to 2500#						
385FH	Carbon Steel	550 (356)	241 (144)	78.9	38.0	22.8	15.0	7.9	Up to 2500#						
	A.I.S.I. 304	648 (467)	257 (194)	83.8	41.0	24.0	16.0	8.4	Up to 2500#						
	A.I.S.I. 316	648 (467)	257 (194)	83.8	41.0	24.0	16.0	8.4	Up to 2500#						
	Monel	531 (398)	217 (169)	71.0	34.8	20.6	13.0	7.0	Up to 2500#						

* Maximum velocity rating is based on operating temperatures of 1000° F for wells made of carbon steel, 304SST and 316SST; 350° F for wells made of brass; and 900° F for wells made of Monel. Slightly higher velocity is possible at lower temperatures. In these tables, single numbers represent the safe values for water, steam, air or gas. In the shorter insertion lengths, consideration is given to the velocity pressure effect of water flowing at higher velocities. In these cases, the values in parentheses represent safe values for water flow, and the unbracketed values may be used for steam, air, gas and similar density fluids.

Flange dimensions meet ANSI B16.5 standard.

Ordering Information



Type Number	Elem. Length A	Insert Length U	Shank Diameter Q	Bore Diameter B	
260F	U 2	4	2	3/4	0.260
	U 4	6	4	3/4	
	U 7	9	7	3/4	
	U 10	12	10	3/4	
	U 13	15	13	3/4	
	U 16	18	16	3/4	
385F	U 2	4	2	7/8	0.385
	U 4	6	4	7/8	
	U 7	9	7	7/8	
	U 10	12	10	7/8	
	U 13	15	13	7/8	
	U 16	18	16	7/8	
260FH	U 2	4	2	7/8	0.260
	U 4	6	4	7/8	
	U 7	9	7	7/8	
	U 10	12	10	7/8	
	U 13	15	13	7/8	
	U 16	18	16	7/8	
385FH	U 2	4	2	7/8	0.385
	U 4	6	4	7/8	
	U 7	9	7	7/8	
	U 10	12	10	7/8	
	U 13	15	13	7/8	
	U 16	18	16	7/8	

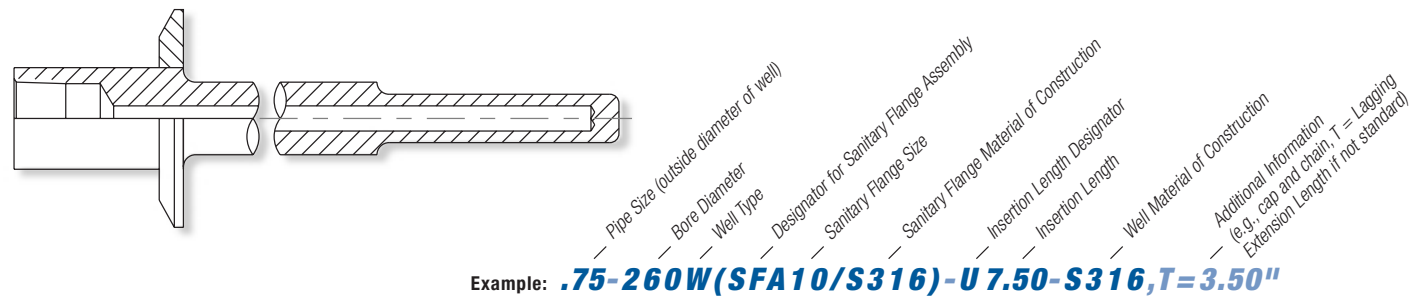


For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com

Sanitary Flange Thermowells



Example: **.75-260W(SFA10/S316)-U7.50-S316,T=3.50"**

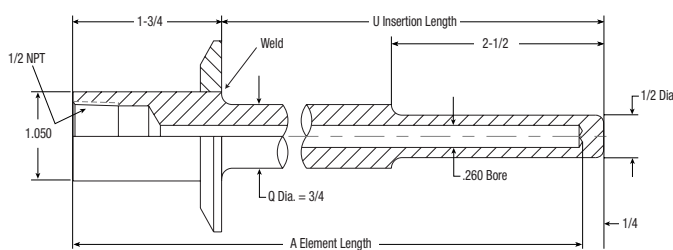
Pipe Size	Bore Diameter	Well Type	(SFA))	U	.50	Well Material of Construction	Additional Information
	260 - for 0.250" diameter probes 385 - for 0.375" diameter probes		W – Socket Weld (straight shank) WH – Heavy Duty Socket Weld (tapered shank) WL – Socket Weld with Lagging Extension (straight shank) WHL – Heavy Duty Socket Weld with Lagging Extension				S316L – 316L stainless steel standard S304 – Stainless Steel S316L – 316L Stainless Steel	
.75 (1.050 OD)								

Note: Other materials are available. Consult factory for details.

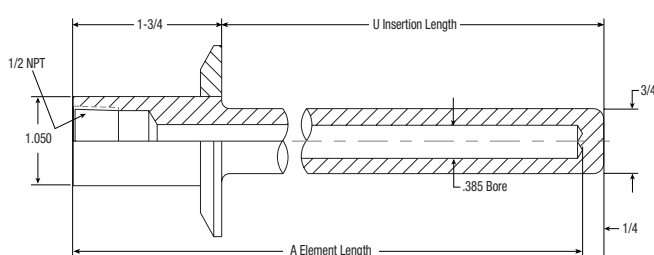
Note: SFA10 available for .75 pipe size only.

Ordering Information

260 – Well Type W Shown



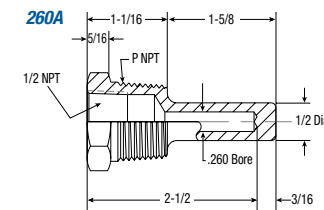
385 – Well Type W Shown



Type Number	Elem. Length A	Insert Length U	Shank Diameter Q
260 Sanitary	U 2-1/2	4	2-1/2
	U 4-1/2	6	4-1/2
	U 7-1/2	9	7-1/2
	U 10-1/2	12	10-1/2
	U 13-1/2	15	13-1/2
	U 16-1/2	18	16-1/2
385 Sanitary	U 2-1/2	4	2-1/2
	U 4-1/2	6	4-1/2
	U 7-1/2	9	7-1/2
	U 10-1/2	12	10-1/2
	U 13-1/2	15	13-1/2
	U 16-1/2	18	16-1/2

Limited Space Thermowells

Ordering Information

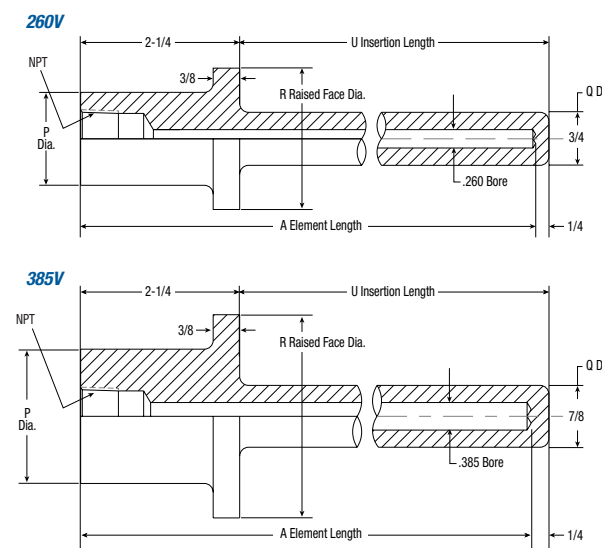


External Thread P	Type Number	Well Type	Material	MAXIMUM FLUID VELOCITY feet per second* Insertion Length - U 1-5/8	PRESSURE - TEMPERATURE RATING Temperature - °F						
					70°	200°	400°	600°	800°	1000°	1200°
3/4 NPT	3/4-260A-U1-5/8	3/4-260A	Brass	207 (59.3)	5000	4200	1000	–	–	–	–
			Carbon Steel	290 (106)	5200	5000	4800	4600	3500	1500	–
			A.I.S.I. 304	300 (148)	7000	6200	5600	5400	5200	4500	1650
			A.I.S.I. 316	300 (148)	7000	7000	6400	6200	6100	5100	2500
1 NPT	1-260A-U1-5/8	1-260A	Monel	261 (118)	6500	6000	5400	5300	5200	1500	–
			Brass	207 (59.3)	5000	4200	1000	–	–	–	–
			Carbon Steel	290 (106)	5200	5000	4800	4600	3500	1500	–
			A.I.S.I. 304	300 (148)	7000	6200	5600	5400	5200	4500	1650
			A.I.S.I. 316	300 (148)	7000	7000	6400	6200	6100	5100	2500
			Monel	261 (118)	6500	6000	5400	5300	5200	1500	–

* Maximum velocity rating is based on operating temperatures of 1000° F for wells made of carbon steel, 304SST and 316SST; 350° F for wells made of brass; and 900° F for wells made of Monel. Slightly higher velocity is possible at lower temperatures. In these tables, single numbers represent the safe values for water, steam, air or gas. In the shorter insertion lengths, consideration is given to the velocity pressure effect of water flowing at higher velocities. In these cases, the values in parentheses represent safe values for water flow, and the unbracketed values may be used for steam, air, gas and similar density fluids.

Van Stone Thermowells

Ordering Information



Type Number	Elem. Length A	Insert Length U	Shank Dia. Q	Bore Dia. B
260V	U 2	4	3/4	0.260
	U 4	6	3/4	
	U 7	9	3/4	
	U 10	12	3/4	
	U 13	15	3/4	
	U 16	18	3/4	
385V	U 2	4	7/8	0.385
	U 4	6	7/8	
	U 7	9	7/8	
	U 10	12	7/8	
	U 13	15	7/8	
	U 16	18	7/8	

Well Type	Material	MAXIMUM FLUID VELOCITY – feet per second*							MAXIMUM PRESSURE - TEMPERATURE RATING						
		Insertion Length - U							Temperature - °F						
		2	4	7	10	13	16	22	70°	200°	400°	600°	800°	1000°	1125°
260V	Carbon Steel	404 (129)	184 (71.2)	67.0 (42.7)	34.0	20.6	13.7	7.4	5200	5000	4800	4600	3500	1500	–
	A.I.S.I. 304	430 (179)	192 (99.3)	69.7 (59.6)	35.4	21.5	14.3	7.7	7000	6200	5600	5400	5200	4500	1650
	A.I.S.I. 316	430 (179)	192 (99.3)	69.7 (59.6)	35.4	21.5	14.3	7.7	7000	7000	6400	6200	6100	5100	2500
	Monel	350 (143)	168 (79.8)	61.0 (47.7)	31.0	18.8	12.5	3.7	6500	6000	5400	5300	5200	1500	–
385V	Carbon Steel	410 (152)	248 (84.3)	91.3 (50.6)	45.7	27.6	18.5	10.0	5200	5000	4800	4600	3500	1500	–
	A.I.S.I. 304	444 (211)	258 (117)	95.2 (70.3)	47.6	28.8	19.3	10.4	7000	6200	5600	5400	5200	4500	1650
	A.I.S.I. 316	444 (211)	258 (117)	95.2 (70.3)	47.6	28.8	19.3	10.4	7000	7000	6400	6200	6100	5100	2500
	Monel	338 (168)	226 (93.3)	83.3 (56.0)	41.6	25.2	16.9	9.1	6500	6000	5400	5300	5200	1500	–

* Maximum velocity rating is based on operating temperatures of 1000° F for wells made of carbon steel, 304SST and 316SST; 350° F for wells made of brass; and 900° F for wells made of Monel. Slightly higher velocity is possible at lower temperatures. In these tables, single numbers represent the safe values for water, steam, air or gas. In the shorter insertion lengths, consideration is given to the velocity pressure effect of water flowing at higher velocities. In these cases, the values in parentheses represent safe values for water flow, and the unbracketed values may be used for steam, air, gas and similar density fluids.



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com

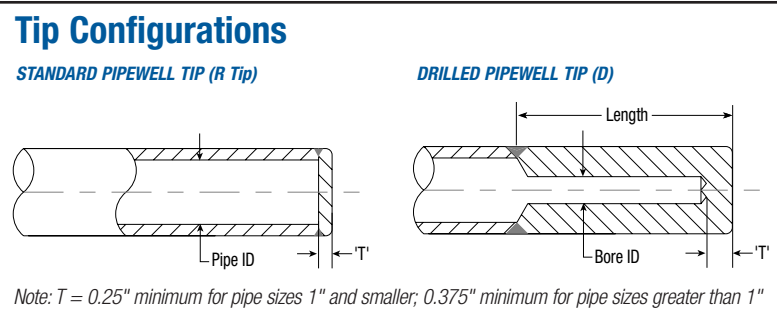
Conax Buffalo offers protection tubes in a variety of types and materials. Protection tubes are intended for use in applications where the tube will not be exposed to high pressure or fluid velocities. Pipewells, made from Schedule 40, 80 or 160 pipe, are the most commonly used form of protection tube. Mounting is generally achieved through a flange or threaded bushing welded to the pipe.

Pipewell Catalog Description

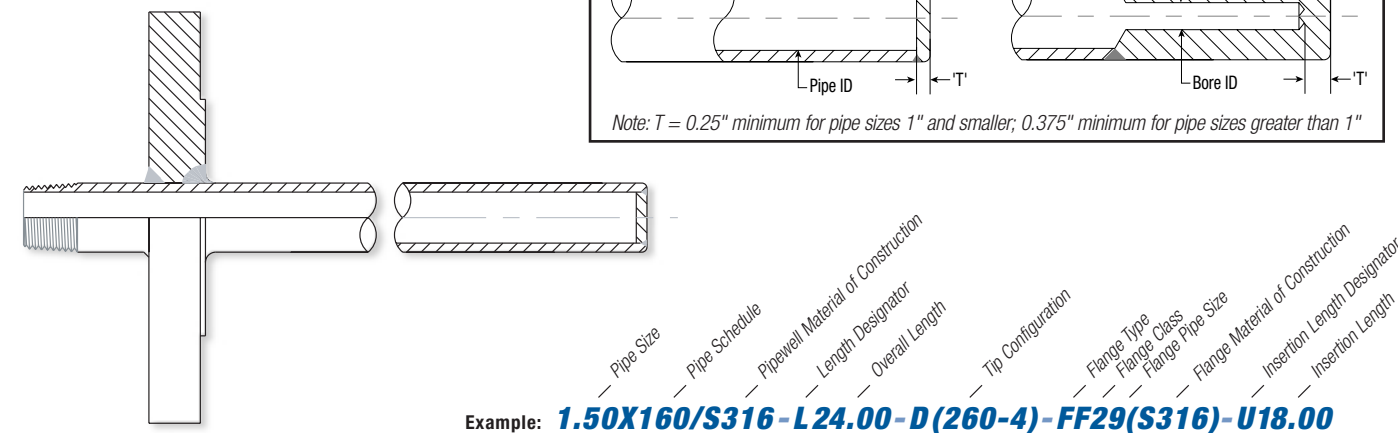
The following format is used when ordering pipewells. When ordering a pipewell by itself, the initials "PW" precede the description. When ordering a pipewell as part of an assembly, the pipewell description immediately follows the mounting style designation, replacing the sensor active length.

Pipewell: PW, .50X40/S316-L24.00-R

Assembly: E-SS25-U-T5AL(CSLWC)-.50X40/S316-L24.00-R



Pipewell with Mounting Flange

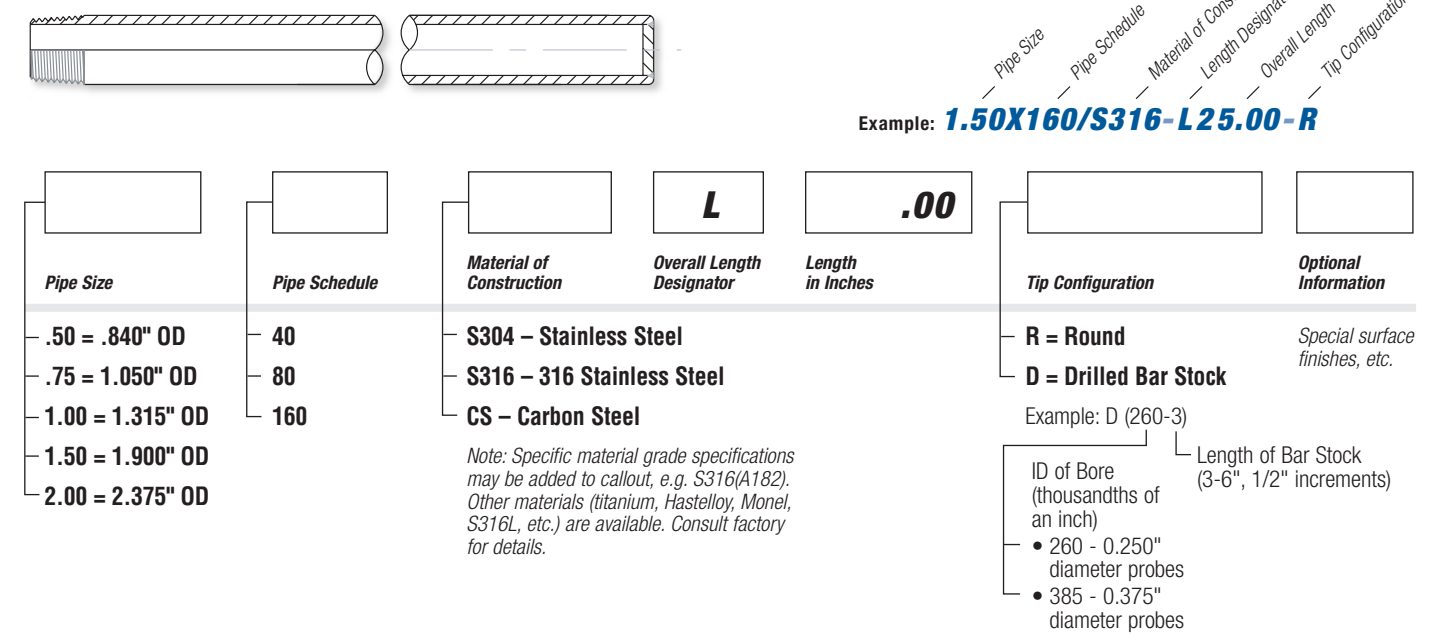


Pipe Size	Pipe Schedule	Pipewell Material of Construction	Length Design.	Overall Length in Inches	Tip Config.	Flange Type	Flange Class	Flange Pipe Size	Flange Material of Construction	Ins. Length Designator	Insertion Length in Inches
.50 = .840" OD	40	S304 – Stainless Steel	L	.00	R = Round	1 = 150 lb.	4 = .50"		S304 – Stainless Steel	U	.00
.75 = 1.050" OD	80	S316 – 316 Stainless Steel			D = Drilled Bar Stock	2 = 300 lb.	5 = .75"		S316 – 316 Stainless Steel		
1.00 = 1.315" OD	160	CS – Carbon Steel				6 = 1.00"	8 = 1.50"		CS – Carbon Steel		
1.50 = 1.900" OD						9 = 2.00"	16 = 8.00"				
2.00 = 2.375" OD						FF = Flat Faced					
						RF = Raised Faced					

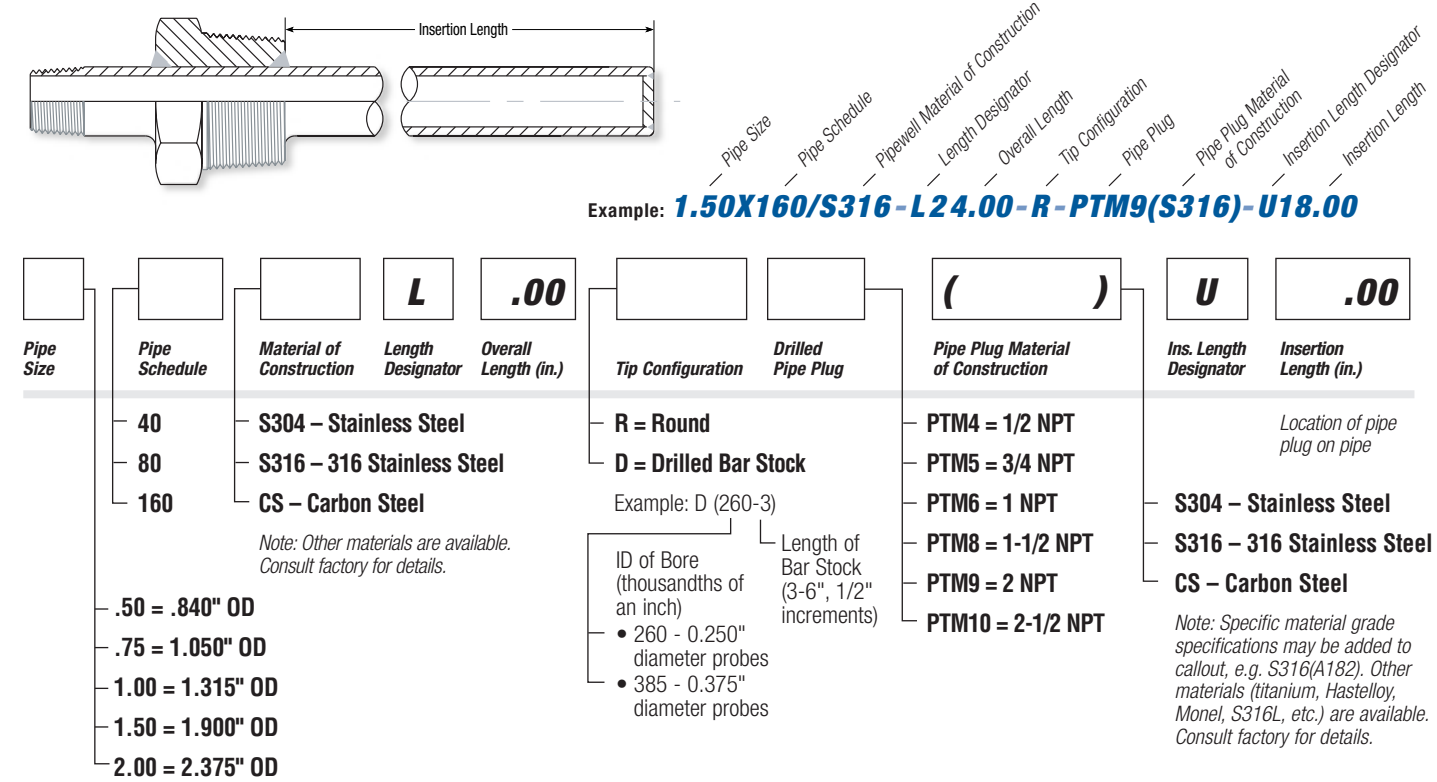
Note: Other materials are available. Consult factory for details.

Note: Specific material grade specifications may be added to callout, e.g. S316(A182). Other materials (titanium, Hastelloy, Monel, S316L, etc.) are available. Consult factory for details.

Pipewell Only



Pipewell with Mounting Plug



Corrosive Service Guide to Materials

Chemical	Condition	Material
Acetic Acid	to 50% to 212° F to 75% to 300° F to 99% to 250° F	316 Stainless Steel Titanium Hastelloy C
Acetic Anhydride	All conc. to B.P.	Monel 400
Acetone	All conc. to B.P.	304 SS, Aluminum
Acetylene		304 SS, Aluminum
Alcohol, Ethyl	70° F – 212° F	304 Stainless Steel
Aluminum Sulphate	to 25% and 212° F to 50% and 212° F	304 Stainless Steel 316 Stainless Steel
Ammonia gas or liquid	All concentrations	304 Stainless Steel
Ammonium Hydroxide		1100-1114 Aluminum
Ammonium Phosphate	to 25% and 212° F	304 Stainless Steel
Ammonium Nitrate	All conc. to 212° F	316 Stainless Steel
Ammonium Sulphate	All conc. to B.P. to 45% and 212° F	316 Stainless Steel Monel 400
Amylacetate		304 Stainless Steel
Aniline	All concentrations	
Barium Chloride	25% to B.P.	Hastelloy C
Barium Hydroxide	to 50% 212° F	C1018 Steel
Black Liquor		Alloy 556
Boracic Acid	All conc. to B.P.	Hastelloy C
Brines		Monel 400, Hastelloy C
Bromine Dry	to 212° F	Monel 400
Butane	to 250° F	316 Stainless Steel
Butylacetate	to 212° F	Monel 400
Butyl Alcohol		Copper, Aluminum
Calcium Chlorate	to 30% and 212° F	304 Stainless Steel
Calcium Hydroxide	to 50% and 212° F	Hastelloy C or Titanium
Carbonic Acid	All conc. to 300° F	316 Stainless Steel
Carbon Dioxide	to 1300° F	304 Stainless Steel
Chlorine Gas	Moist to 212° F	Hastelloy C or Titanium
Chromic Acid	10% at 150° F	Hastelloy C
Citric Acid	to 50% 212° F All conc. to B.P.	316 Stainless Steel Hastelloy C
Copper Nitrate	All conc. to 212° F	304 Stainless Steel
Copper Sulphate	All conc. to B.P.	316 Stainless Steel
Cyanogen Gas	to 212° F	304 Stainless Steel
Dowtherm		C1018 Steel
Ether		304 Stainless Steel
Ethyl Acetate	to 150° F	Monel 400
Ferric Chloride	to 50% & B.P.	Tantalum
Ferric Sulphate	to 30% & B.P.	Hastelloy C
Ferrous Sulphate	All conc. to B.C.	Hastelloy C
Formaldehyde	All conc. to 150° F	304 Stainless Steel

Chemical	Condition	Material
Formic Acid	All conc. to 212° F	304 Stainless Steel
Freon		316 Stainless Steel
Gallic Acid	to 212° F	Monel 400
Gasoline or Petroleum		304 Stainless Steel
Glucose	70° F	304 Stainless Steel
Glycerine		304 Stainless Steel
Glycerol		304 Stainless Steel
Hydrobromic Acid	40% to 65° F 48% to 212° F	Titanium Hastelloy B
Hydrochloric Acid	to 37% and 150° F	Hastelloy B
Hydrofluoric Acid	All conc. to B.P.	Hastelloy C
Hydrogen Peroxide	to 212° F	316 Stainless Steel
Hydrogen Sulphide	Dry to 1000° F	316 Stainless Steel
Iodine	to 70° F	Tantalum
Ketones	to B.P.	Aluminum, 316 SS
Kerosene		304 Stainless Steel
Lactic Acid	to 212° F	Tantalum
Magnesium Chloride	to 40% of 212° F	Monel 400
Magnesium Sulphate	to 50% 212° F	Monel 400
Muriatic Acid	to 37% and 150° F	Hastelloy B
Naphtha	70° F	304 Stainless Steel
Natural Gas	to 800° F	304 Stainless Steel
Nickel Chloride	to 80% and 200° F	Hastelloy C
Nickel Sulphate	25% and 125° F	304 Stainless Steel
Nitric Acid	to 40% and 180° F All conc. to 370° F	304 Stainless Steel Tantalum
Nitrobenzene	to 212° F	Carpenter 20CB3
Oleic Acid	to 212° F	316 Stainless Steel
Oleum	to 70° F	316 Stainless Steel
Oxalic Acid	All conc. to 212° F	Monel 400
Oxygen	70° F Liquid Oxygen Elevated Temps.	C1018 Steel 304 Stainless Steel 304 Stainless Steel
Palmitic Acid	100% at 439° F	316 Stainless Steel
Pentane		304 Stainless Steel
Phenol	to 700° F	316 Stainless Steel
Phosphoric Acid	10% & 70° F to 90% and 215° F	316 Stainless Steel Hastelloy B
Picric Acid	to 212° F	316 Stainless Steel
Potassium Bromide	75% to 180° F	Hastelloy C
Potassium Carbonate	to 50% and 212° F All conc. to B.P.	304 Stainless Steel Hastelloy C
Potassium Chlorate	to 25% and 212° F	316 Stainless Steel
Potassium Hydroxide	to 50% and B.P.	316 Stainless Steel

Corrosive Service Guide to Materials

Chemical	Condition	Material
Potassium Nitrate	to 80% and 212° F	304 Stainless Steel
Potassium Permanganate	to 50% and 75° F	Hastelloy C or Titanium
Potassium Sulphate	to 20% and 212° F	304 Stainless Steel
Pyrogallic Acid	All conc. to B.P.	304 Stainless Steel
Quinine Bisulphate	Dry	316 Stainless Steel
Quinine Sulphate	Dry	316 Stainless Steel
Sea Water		Monel 400
Salicylic Acid	to 250° F	Nickel
Sodium Bicarbonate	to 20% and 212° F	304 Stainless Steel
Sodium Carbonate	to 25% and 212° F	304 Stainless Steel
Sodium Chloride	Saturated to 212° F	316 Stainless Steel Alloy 556
Sodium Fluoride	10% - 70° F	Monel 400
Sodium Hydroxide		304 Stainless Steel
Sodium Nitrate	Fused	316 Stainless Steel
Sodium Peroxide		304 Stainless Steel
Sodium Sulphate	to 25% and 212° F	304 Stainless Steel

Chemical	Condition	Material
Sodium Sulphide	to 25% and 212° F	304 Stainless Steel
Sodium Sulphite	5% to 212° F	304 Stainless Steel
Sulphur Dioxide	to 800° F	316 Stainless Steel
Sulphur	to 850° F to 1600° F	316 Stainless Steel Alloy 556
Sulphuric Acid	1-60%, 75-100%, 176° F to 60% & B.P. All conc. to 370° F	Carpenter 20CB3 Hastelloy B Tantalum
Tannic Acid	to 212° F	304 Stainless Steel
Tartaric Acid	All conc. to 212° F	304 Stainless Steel
Toluene	to 250° F	304 Stainless Steel
Turpentine		304 Stainless Steel
Whiskey and Wine		316 Stainless Steel
Xylene		Copper
Zinc Chloride	to 25% and 130° F All conc. to B.P.	Carpenter 20CB3 Monel 400
Zinc Sulphate	to 25% to 212° F to 40% to B.P.	316 Stainless Steel Hastelloy C

WARNING: The corrosive service material selection information provided in this table is to be used only as a guide. Thermowell application environment variations may affect actual performance. Environment variations include process temperature, pressure, flow rate, concentration, purity and solids content. If you have questions relating to thermowell performance in a specific application, we recommend that you contact the factory.

