

# METAL PROTECTING TUBES

## Style P: Plain Pipe Type Protecting Tube



## Style B: Pipe Type Protecting Tube with Mounting Bushing

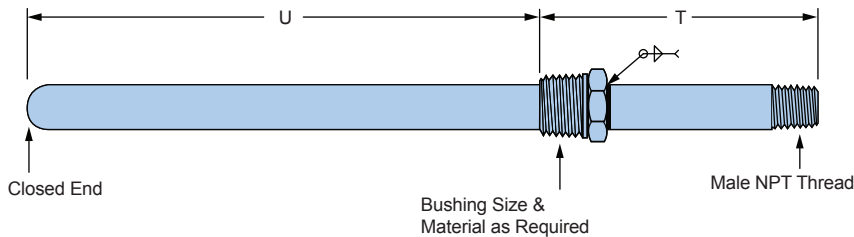


Table 1

PART NUMBER	A.S.A PIPE SCHEDULE
905	5
910	10
940	40
980	80
916	160
955	XXH

## Style F: Pipe Type Protecting Tube with Flange

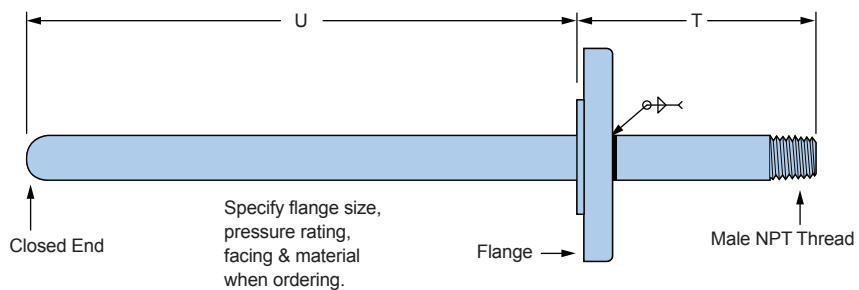


Table 2

PIPE SIZE	OUTSIDE DIAMETER	WALL THICKNESS OF A.S.A. PIPE SCHEDULES					
		5	10	40	80	160	XXH
1/8	0.405	0.035	0.049	0.068	0.095	—	—
1/4	0.540	0.049	0.065	0.088	0.119	—	—
3/8	0.675	0.049	0.065	0.091	0.126	—	—
1/2	0.840	0.065	0.083	0.109	0.147	0.187	0.294
3/4	1.050	0.065	0.083	0.113	0.154	0.218	0.308
1	1.315	0.065	0.109	0.133	0.179	0.250	0.358
1 1/4	1.660	0.065	0.109	0.140	0.191	0.250	0.382
1 1/2	1.900	0.065	0.109	0.145	0.200	0.281	0.400
2	2.375	0.065	0.109	0.154	0.218	0.343	0.436

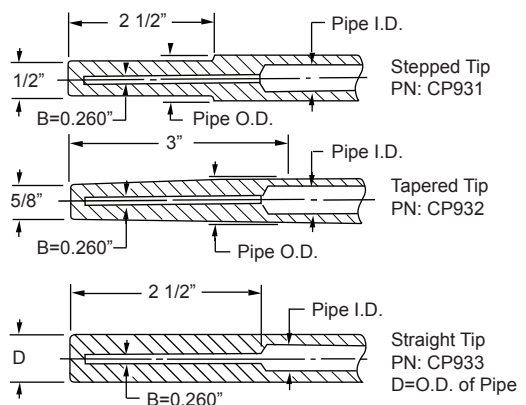
Table 3

BUSHING SIZE	ORDER CODE
1/2	B4
3/4	B6
1	B8
1 1/4	B10
1 1/2	B12
1 3/4	B14
2	B16

\* Unless otherwise specified, carbon steel bushings are furnished.

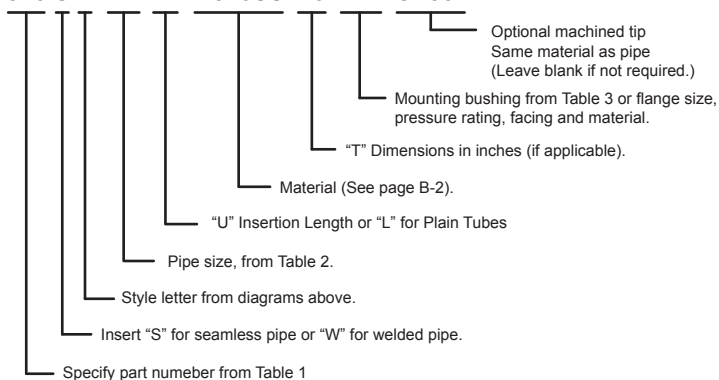
### OPTIONAL MACHINE TIPS

The use of properly designed machined tips on pipe type protecting tubes can improve the response time and accuracy of an installation. The following are tips designed for use with 0.25" O.D. temperature probes. Similar tips are available in any size or design desired.



### TO ORDER ANY 900 SERIES PIPE TYPE PROTECTING TUBE SPECIFY:

940 S B-1/2-24-M316SS-T6-B12-CP931



# SANDELIUS THERMOWELLS

## MATERIAL DESIGNATIONS FOR SANDELIUS THERMOWELLS

ORDER CODE	MATERIAL	ORDER CODE	MATERIAL	ORDER CODE	MATERIAL
M304	304 Stainless Steel	MF5	Alloy Steel A182-F5	M601	Inconel 601
M304L	304L Stainless Steel	MF9	Alloy Steel A182-F9	M602	Inconel 602
M304H	304H Stainless Steel	MF11	Alloy Steel A182-F11	M617	Inconel 617
M309	309 Stainless Steel	MF22	Alloy Steel A182-F22	M625	Inconel 625
M310	310 Stainless Steel	M6061	Aluminum 6061-T6	M686	Inconel 686
M316	316 Stainless Steel	M360	Brass 360	M718	Inconel 718
M316L	316L Stainless Steel	M1018	Carbon Steel C-1018	M750	Inconel X-750
M316H	316H Stainless Steel	MA105	Carbon Steel A105	MPVDF	Kynar
M317	317 Stainless Steel	M276	Hastelloy C-276	M400	Monel 400
M317L	317L Stainless Steel	M277	Hastelloy X	M405	Monel 405
M317H	317H Stainless Steel	M278	Hastelloy B-3	M500	Monel K-500
M321	321 Stainless Steel	M279	Hastelloy B-2	M200	Nickel 200
M347	347 Stainless Steel	M160	Haynes HR 160	MTFEM	Teflon, PTFE Mechanical Grade
M347H	347H Stainless Steel	M800	Incoloy 800	MTFEV	Teflon, PTFE Virgin Grade
M410	410 Stainless Steel	M800H	Incoloy 800H	M152	Titanium Grade 2
M446	446 Stainless Steel	M800HT	Incoloy 800HT	M155	Titanium Grade 5
M2205	2205 Duplex Stainless Steel	M825	Incoloy 825	MZ702	Zirconium R60702
MA20	Alloy 20 Stainless Steel	M600	Inconel 600	MY99	Other Material, Specify

## OPTIONAL FEATURES

The following are some of the optional features available on Sandelius thermowells. To order a thermowell with any of the listed options simply add the suffix (or suffixes by dashes) at the end of the thermowell part number. If an optional requirement must be in compliance with a precise specification or procedure, please reference this on your order. Consult factory for special requirements not listed below.

SUFFIX	OPTIONAL FEATURE
BC	Brass plug with stainless steel chain
SC	Stainless steel plug and chain
TAOS	Tantalum over sheath (Available on 420 series flanged type and 520 series Van Stone type)
<b>Pressure Testing Options</b>	
PT(xxxx) PT(xxxx) X(x)	Internal Hydrostatic Pressure Test at stated pressure (psi). Example PT1000 = Internal Pressure Test at 1,000 psi. If there is a specific time requirement, add an "X" then add the time required in minutes. Example: PT2000 X 15 = Internal Pressure Test at 2000 psi for 15 minutes
EP(xxxx) EP(xxxx) X(x)	External Hydrostatic Pressure Test at stated pressure (psi). Example EP1000 = External Pressure Test at 1,500 psi. If there is a specific time requirement, add an "X" then add the time required in minutes. Example: EP2500 X 15 = External Pressure Test at 2500 psi for 15 minutes
<b>Weld Checking &amp; Performance Options</b>	
DB	Dye Penetrant Check – both root and final pass of flange weld
DC	Dye Penetrant Check – final cover pass of flange weld
DR	Dye Penetrant Check – root pass of flange weld
RX	Radiographic examination (X-Ray) of flange weld
PW	Post weld heat treatment
QW	Qualified welder
WP	Weld procedure specification
UT	Ultrasonic Shear Wave Test
<b>Material Testing Options</b>	
MT	Material Test Reports
NA	NACE MR-01-75. <i>Thermowell must be made of a NACE recognized material.</i>
YNA	NACE MR-01-03. <i>Thermowell must be made of a NACE recognized material.</i>
PM	Positive material identification
<b>Cleaning Options</b>	
CO	Clean for Oxygen service
CC	Clean for Chlorine service
<b>Special Certifications</b>	
CR	Canadian Registration Number (Canadian province must be specified on order).
<b>Special Coatings, Stellite or Alloy Welded Tips</b>	
Consult Factory	Many types of coatings can be applied to thermowells to add corrosion and/or wear resistance (See page B-12 of this catalog). Thermowells can also be fitted with special welded-on alloy tips made of Stellite or other materials. The number of possible variations is virtually limitless. If you have a special design you need manufactured or would like to investigate possible new, special designs that may improve service life in your application, please call us. We will be glad to work with you.