

FABRICATED (FLANGED)

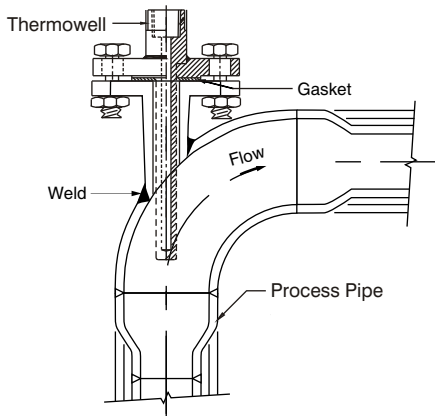
Special Features

- Design as per PTC 19.3.
- These Thermowells are manufactured from solid bar stock and installed into the process by using a flanged connection.
- This design is suitable for all type of RTD's, Thermocouples, mechanical as well as digital thermometers.
- Full Penetration Welded.
- Available in various shapes like Straight, Straight with reduced tip, Partial taper & full taper.

IPS-TW-03



Thermowell Installation

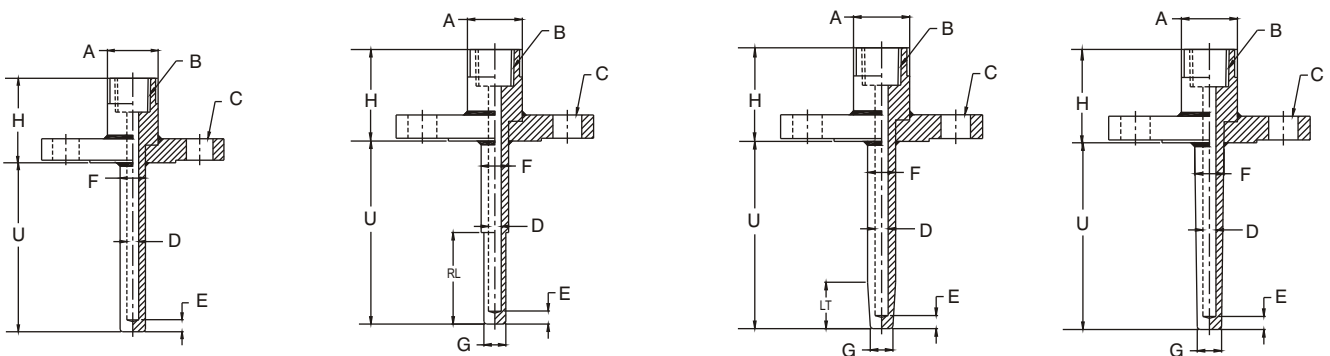


- All type of flanges and flange facings are available as per ANSI / DIN / JIS & BS.

Applications

Chemical plants, Petrochemical Plants, Engineering Plants, On shore, Offshore & other similar process industries.

Thermowell Drawings



S - STRAIGHT

R - STRAIGHT REDUCED TIP

P - PARTIAL TAPER

F - FULL TAPER

A - Finished Head Size

E - Tip Thickness

U - Insertion Length

B - Instrument Connection

F - Major Diameter

RL - Reduced Tip Length

C - Flange

G - Minor Diameter

LT - Taper Length

D - Bore Diameter

H - Extension Length



HOW TO ORDER

BASIC MODEL

IPS-TW-03

TYPE

S - STRAIGHT **R** - STRAIGHT REDUCED TIP **P** - PARTIAL TAPER **F** - FULL TAPER

X

WELL MATERIAL

(It is recommended that the well material and flange material (wetted area) should be same.)

LM AISI 316 SS	EP AISI 410 SS	LT Monel	LV Titanium
LN AISI 316L SS	LO AISI 316Ti SS	LU Inconel 600	LX Nickel
LP AISI 304 SS	EO AISI 310 SS	ES Inconel 625	LY HRS 446
ER AISI 304L SS	LQ Carbon Steel	ET Incolloy 800	LZ Alloy 20
EN AISI 321 SS		EU Incolloy 825	LS Hastelloy C

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Note : Other Materials are available on request.

FLANGE MATERIAL

LM AISI 316 SS	EN AISI 321 SS	LT Monel	LV Titanium
LN AISI 316L SS	LO AISI 316Ti SS	LU Inconel 600	LX Nickel
LP AISI 304 SS	EO AISI 310 SS	ES Inconel 625	LZ Alloy 20
ER AISI 304L SS	LQ Carbon Steel	LS Hastelloy C	

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Note : Other Materials are available on request.

INSTRUMENT CONNECTION

4BF ½" BSP (F)	5TF ¾" BSPT (F)	6NF 1" NPT (F)	3MF M18 x 1.5 (F)	6MF M24 x 1.5 (F)
4NF ½" NPT (F)	5NF ¾" NPT (F)	6BF 1" BSP (F)	4MF M20 x 1.5 (F)	7MF M27 x 2 (F)
4TF ½" BSPT (F)	5BF ¾" BSP (F)	6TF 1" BSPT (F)	5MF M22 x 1.5 (F)	9MF M33 x 2 (F)
4FF ½" PF (F)	5PF ¾" G (F)	6PF 1" G (F)		
4PF ½" G (F)				

XXX

Note : Other Connections are available on request.

FLANGE TYPE

1 Slip on **3** Threaded (Hub type) **5** Socket Weld
2 Welding Neck **4** Lap Joint

X

FLANGE "C" (SIZE & RATING)

Refer Flange table for code selection.

XXX

FLANGE FACING TYPE

R Raised Face **F** Flat Face **J** Ring type joint

X

FLANGE FINISH

1 - 125 AARH (Standard) **2** - 63 AARH

Note : Other Flange finish are available on request.

X

EXTENSION / LAGGING LENGTH "H" (In case of welding neck flange & threaded flange, consult factory.)

Please specify in mm For e.g. : for length 50 mm, mention **H50**

XXX

FINISHED HEAD SIZE "A" (Refer Table 1.1 for selection of Head Size for Thermowell.)

Please Specify in mm e.g. : For 28 mm Finished head Size, Specify **A28**

XXX

TYPE OF HEAD

K HEX HEADED* **L** ROUND HEADED **M** ROUND HEADED WITH SPANNER SLOTS.

X

* Maximum "U" Length below Flange will be 250 mm.

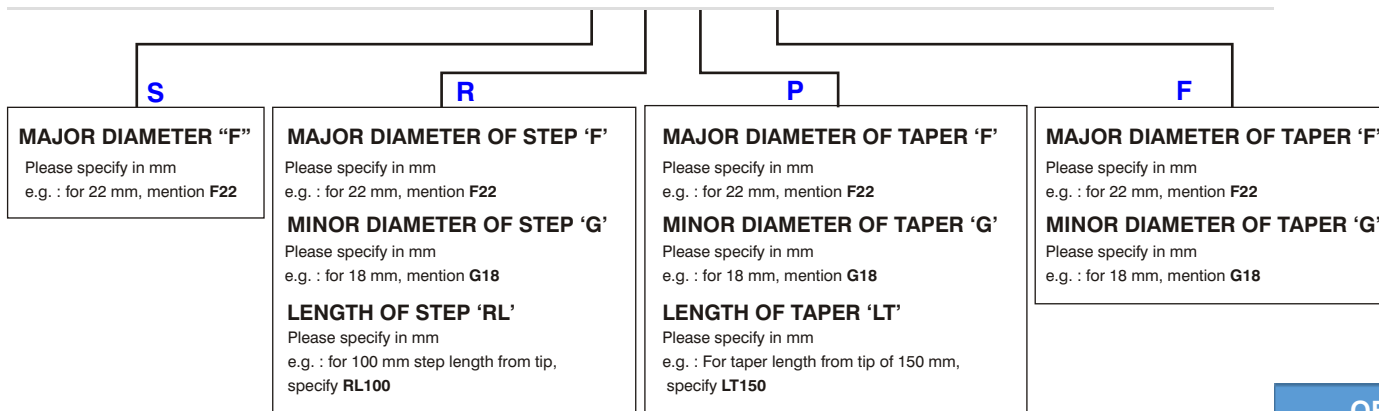
BORE DIAMETER "D"

A 6.6 mm	B 7 mm	C 8.5 mm	D 9 mm
E 10.5 mm	F 11 mm	G 13 mm	H 13.5 mm

X

Note : Refer Table 1.3 of Thermowell Design Procedure for dimensions as per PTC 19.3

MAJOR DIAMETER “F”



Note : Refer Table 1.3 of Thermowell Design Procedure for dimensions as per PTC 19.3

TIP THICKNESS “E”

Standard Tip Thickness is 5 mm. e.g. : Specify **E5** for 5 mm Tip Thickness. For others, please specify in mm.

INSERTION LENGTH “U”

Please specify in mm e.g. : for 250 mm, mention **U250**

Note : Refer Table 1.4 of Thermowell Design Procedure for dimensions as per PTC 19.3

OPTIONS

GG Plug and chain in SS	TC Counter flange with studs, nuts & gasket
FW Electro polishing	CW Marking by Laser
CX Marking by Engraving	SX SS Tag Plate

LINING & COATINGS (User to specify thickness during enquiry)

FI PTFE Lining*	EW Zirconium Oxide Coating
FM Silicon Carbide Coating	EX Stellite Coating
GK Rubber Lining*	EY PTFE Coating
GJ Tungsten Carbide Coating	

* Lining will be on wetted area of straight type wells only.

OVERLAY ON FLANGE RF (User to specify thickness during enquiry)

LS Hastelloy ‘C’	LT Monel	LV Titanium	LX Nickel
LR Hastelloy ‘B’	LU Inconel 600	LW Tantalum	LZ Alloy 20

SLEEVE MATERIAL (Wall Thickness : 1 mm)

GM Hastelloy ‘C’	FQ Monel	FT Tantalum (0.4 mm)
FO Hastelloy ‘B’	FR Inconel 600	FV Alloy 20
FP Nickel	FJ Titanium	

TESTS & CERTIFICATION

C1 Radiography for Bore Concentricity	C8 Certification for Hydrogen Service
C2 IBR Certification	C9 Certification for Oxygen Service
C3 Mechanical Test	T1 Chemical Composition Test
C4 Ultrasonic Test	T2 3.1B Material Conformity Certificate
C5 PMI Test	T3 Radiography for Welding
C6 IGC Test	T4 Dye Penetration Test
C7 Wake Frequency Calculations as per PTC 19.3#	TF Tested to NACE Standard

#Please Specify Fluid, Max. Pressure, Temperature & Flow velocity for wake frequency calculations as per PTC 19.3

Note : Specifications and dimensions given in this product catalogue represents the state of engineering at the time of printing.
 Modifications may take place and materials specified may be replaced by others without prior notice.

OR
XX
OR
XXXX
XX

XXXX

XX

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XX



FLANGE TABLE WITH CONNECTION CODES

AS PER DIN 2527

DN	PN	CODE
10	6	A01
	10	A02
	16	A03
	25	A04
	40	A05
	64	A06
	100	A07
	160	A08
	250	A09
	400	A10

15	6	A11
	10	A12
	16	A13
	25	A14
	40	A15
	64	A16
	100	A17
	160	A18
	250	A19
	400	A20

20	6	A21
	10	A22
	16	A23
	25	A24
	40	A25

25	6	A26
	10	A27
	16	A28
	25	A29
	40	A30
	64	A31
	100	A32
	160	A33
	250	A34
400	A35	

32	6	A36
	10	A37
	16	A38
	25	A39
	40	A40

40	6	A41
	10	A42
	16	A43
	25	A44
	40	A45
	64	A46
	100	A47
	160	A48
	250	A49
400	A50	

50	6	A51
	10	A52
	16	A53
	25	A54
	40	A55
	64	A56
	100	A57
	160	A58
	250	A59
	400	A60

DN	PN	CODE
65	6	A61
	10	A62
	16	A63
	25	A64
	40	A65
	64	A66
	100	A67
	160	A68
	250	A69
	400	A70

80	6	A71
	10	A72
	16	A73
	25	A74
	40	A75
	64	A76
	100	A77
	160	A78
	250	A79
	400	A80

AS PER JIS - B 2210

NOMINAL SIZE	RATING /CLASS	CODE
10A	5K	B57
	10K	B58
	40K	B59
15A	5K	B60
	10K	B61
	40K	B62
20A	5K	B63
	10K	B64
	40K	B65

25A	5K	B66
	10K	B67
	40K	B68
32A	5K	B69
	10K	B70
	40K	B71
40A	5K	B72
	10K	B73
	40K	B74

50A	5K	B75
	10K	B76
	40K	B77
	5K	B78
65A	10K	B79
	40K	B80
	5K	B81
80A	10K	B82
	40K	B83

AS PER DIN 2642

DN	PN	CODE
10	10	A90
		A91
		A92
		A93
		A94
		A95
		A96
		A97
		A98

AS PER DIN 2633

DN	PN	CODE
10	16	A81
		A82
		A83
		A84
		A85
		A86
		A87
		A88
		A89

AS PER DIN 2635

DN	PN	CODE
10	40	A99
		B01
		B02
		B03
		B04
		B05
		B06
		B07
		B08

AS PER ANSI B 16.5

NOMINAL SIZE	RATING /CLASS	CODE
1/2"	150	B09
	300	B10
	600	B11
	900	B12
	1500	B13
	2500	B14
3/4"	150	B15
	300	B16
	600	B17
	900	B18
	1500	B19
	2500	B20

1"	150	B21
	300	B22
	600	B23
	900	B24
	1500	B25
	2500	B26
1 1/4"	150	B27
	300	B28
	600	B29
	900	B30
	1500	B31
	2500	B32

1 1/2"	150	B33
	300	B34
	600	B35
	900	B36
	1500	B37
	2500	B38
2"	150	B39
	300	B40
	600	B41
	900	B42
	1500	B43
	2500	B44

2 1/2"	150	B45
	300	B46
	600	B47
	900	B48
	1500	B49
3"	2500	B50
	150	B51
	300	B52
	600	B53
	900	B54
3"	1500	B55
	2500	B56

AS PER BS - 10

NOMINAL SIZE	TABLE	CODE
1/2"	D	B84
	E	B85
	F	B86
	H	B87
	J	B88
3/4"	K	B89
	D	B90
	E	B91
	F	B92
	H	B93
3/4"	J	B94
	K	B95

1"	D	B96
	E	B97
	F	B98
	H	B99
	J	C01
1"	K	C02
	D	C03
	E	C04
	F	C05
	H	C06
1 1/4"	J	C07
	K	C08

1 1/2"	D	C09
	E	C10
	F	C11
	H	C12
	J	C13
1 1/2"	K	C14
	D	C15
	E	C16
	F	C17
	H	C18
2"	J	C19
	K	C20

2 1/2"	D	C21
	E	C22
	F	C23
	H	C24
	J	C25
2 1/2"	K	C26
	D	C27
	E	C28
	F	C29
	H	C30
3"	J	C31
	K	C32

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