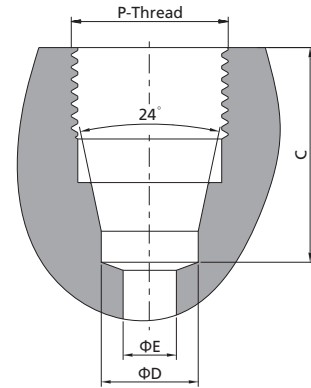


Connection Information

20D Series Tube Fitting Connections

Dimensions of Female 20D Series Connections (DFF)

Tube O.D. in.(mm)	Connection	Dimensions, in. (mm)			
		P	C	D	E
1/8 (3.18)	DFF2	3/8-24	0.63 (15.9)	0.13 (3.2)	0.09 (2.4)
1/4 (6.35)	DFF4	1/2-20	0.85 (21.7)	0.25 (6.4)	0.19 (4.8)
3/8 (9.53)	DFF6	5/8-18	0.89 (22.5)	0.38 (9.5)	0.25 (6.4)
1/2 (12.7)	DFF8	13/16-16	0.96 (24.4)	0.50 (12.7)	0.37 (9.5)
9/16 (14.3)	DFF9	15/16-14	1.20 (30.6)	0.56 (14.3)	0.41 (10.4)
3/4 (19.1)	DFF12	1 1/4-12	1.54 (39.2)	0.75 (19.1)	0.56 (14.2)
1 (25.4)	DFF16	1 1/2-16	2.03 (51.6)	1.00 (25.4)	0.69 (17.5)

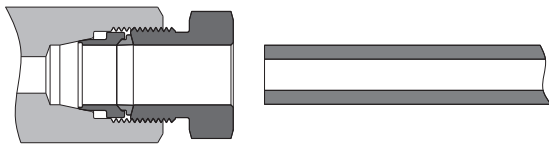


Notes: 1. All dimensions are shown for reference only and should not be considered as actual machining dimensions.
 2. All threads are manufactured to class 2A or 2B fit.

Types of 20D Series Connections

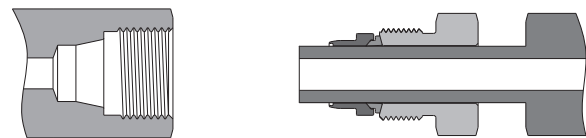
a. Female 20D Series (DFF)

T15A or T20D Series Tubing



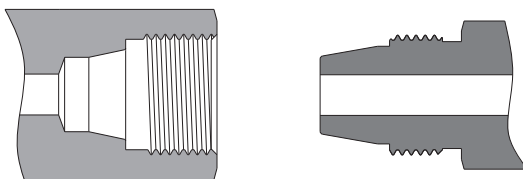
b. Female 20D Series (Without Double Ferrules and Nut)

20D Series Tube Stub with Double Ferrules and Nut (DFT)



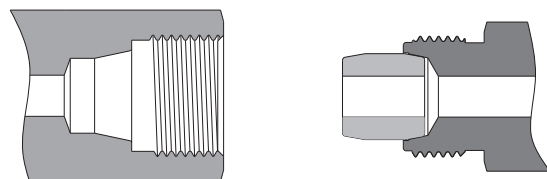
c. Female 20D Series (Without Double Ferrules and Nut) (DFF)

Male 20D Series (One-Piece) (DFM)



d. Female 20D Series (Without Double Ferrules and Nut) (DFF)

Male 20D Series (Two-Piece) (DCP)



Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

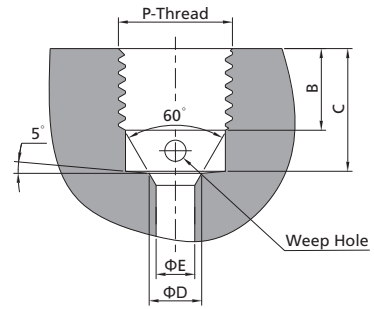
Subsea Valves

Part Number Crossover Charts

20M Series Medium Pressure Coned and Threaded Connections

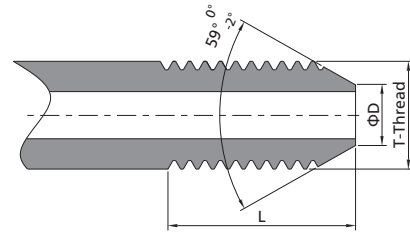
Dimensions of Female Medium Pressure Connections (MF)

Tube O.D. in. (mm)	Connection	Dimensions, in. (mm)				
		P	B	C	D	E
1/4 (6.35)	MF4	7/16-20	0.29 (7.3)	0.50 (12.7)	0.19 (4.8)	0.11 (2.8)
3/8 (9.53)	MF6	9/16-18	0.39 (10.0)	0.63 (16.0)	0.31 (7.9)	0.20 (5.2)
9/16 (14.3)	MF9	13/16-16	0.44 (11.2)	0.75 (19.1)	0.50 (12.7)	0.31 (7.9)
3/4 (19.1)	MF12	3/4-14 NPSM	0.51 (13.0)	0.94 (23.9)	0.63 (15.9)	0.44 (11.1)
1 (25.4)	MF16	1 3/8-12	0.83 (21.0)	1.31 (33.3)	0.88 (22.4)	0.56 (14.3)
1 1/2 (38.1)	MF24	1 7/8-12	1.00 (25.4)	1.59 (40.5)	1.38 (35.0)	0.94 (23.8)



Dimensions of Medium Pressure Coned and Threaded Tubing Connections

Tube O.D. x I.D. in.	Connection	Dimensions, in. (mm)		
		T (Left Hand)	D	L
1/4 x 0.109	MF4	1/4-28	0.14 (3.6)	0.34 (8.7)
3/8 x 0.203	MF6	3/8-24	0.25 (6.4)	0.44 (11.1)
9/16 x 0.312	MF9	9/16-18	0.41 (10.3)	0.50 (12.7)
3/4 x 0.438	MF12	3/4-16	0.56 (14.3)	0.63 (15.9)
1 x 0.562	MF16	1-14	0.72 (18.3)	0.78 (19.8)
1 1/2 x 0.937	MF24	1 1/2-12	1.06 (27.0)	1.00 (25.4)



Notes: 1. All dimensions are shown for reference only and should not be considered as actual machining dimensions.
 2. All threads are manufactured to class 2A or 2B fit.

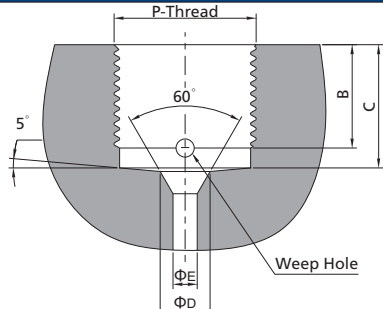
Types of Medium Pressure Connections

a. Female Medium Pressure (MF)	T20M Series Coned and Threaded Tubing	b. Female Medium Pressure (MF)	Medium Pressure Coned and Threaded Nipples (MCT)
c. Female Medium Pressure (Without Collar and Gland) (MF)	Male Medium Pressure (One-Piece) (MM)	d. Female Medium Pressure (Without Collar and Gland) (MF)	Male Medium Pressure (Two-Piece) (MCP)

60H Series High Pressure Coned and Threaded Connections

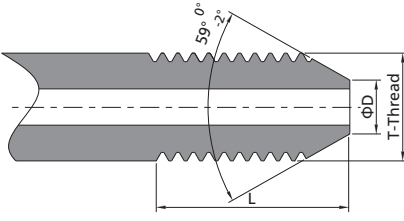
Dimensions of Female High Pressure Connections (HF)

Tube O.D. in.(mm)	Connection	Dimensions, in. (mm)				
		P	B	C	D	E
1/4 (6.35)	HF4	9/16-18	0.39 (9.8)	0.45 (11.4)	0.17 (4.3)	0.09 (2.4)
3/8 (9.53)	HF6	3/4-16	0.54 (13.6)	0.64 (16.3)	0.26 (6.6)	0.13 (3.2)
9/16 (14.3)	HF9	1 1/8-12	0.63 (16.0)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)



Dimensions of High Pressure Coned and Threaded Tubing Connections

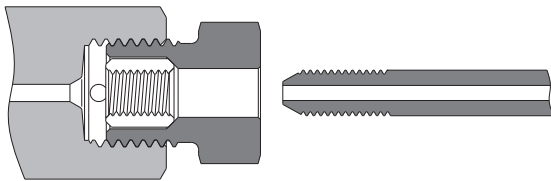
Tube O.D. x I.D. in.	Connection	Dimensions, in. (mm)		
		T (Left Hand)	D	L
1/4 x 0.083	HF4	1/4-28	0.13 (3.2)	0.56 (14.3)
3/8 x 0.125	HF6	3/8-24	0.22 (5.6)	0.75 (19.1)
9/16 x 0.188	HF9	9/16-18	0.28 (7.1)	0.94 (23.8)



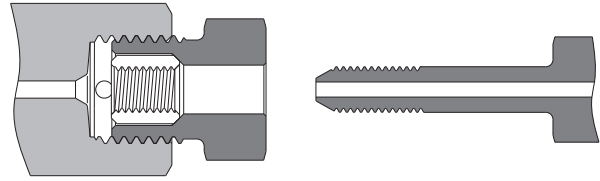
Notes: 1. All dimensions are shown for reference only and should not be considered as actual machining dimensions.
 2. All threads are manufactured to class 2A or 2B fit.
 3. API 6A, Specification for Wellhead and Christmas Tree Equipment, references high pressure coned and threaded fittings, and specifically outlines the dimensions for 9/16 inch fittings. FITOK 9/16 inch high pressure coned and threaded connections comply with the mechanical sealing dimensions called out in this specification. No other sizes or styles of cone and thread fittings or tubing are referenced in API 6A.

Types of High Pressure Connections

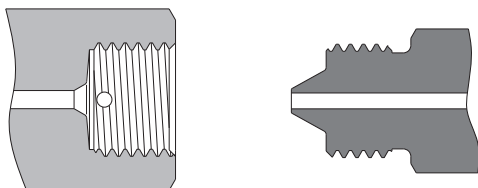
a. Female High Pressure (HF) T60H Series Coned and Threaded Tubing



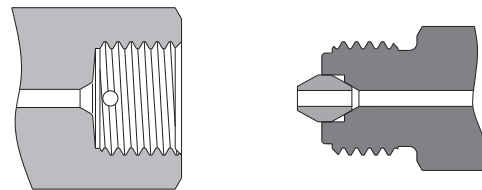
b. Female High Pressure (HF) High Pressure Coned and Threaded Nipples (HCT)



c. Female High Pressure (Without Collar and Gland) (HF) Male High Pressure (One-Piece) (HM)



d. Female High Pressure (Without Collar and Gland) (HF) Male High Pressure (Two-Piece) (HCP)



Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

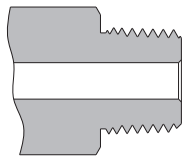
Thread Ends

Thread Specifications

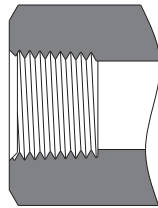
Connection Type	Designator	Thread Type	Thread Specification
Male NPT	NS	NPT	ASME B1.20.1, SAE AS71051
Female NPT	FNS		
Male ISO Tapered Thread	RT	ISO Tapered	ISO 7-1, BS EN 10226-1, DIN EN 10226-1, JIS B0203
Female ISO Tapered Thread	FRT		
Male JIC	JM	SAE/MS	ASME B1.1
Female JIC	JF		
Male SAE O-Ring	SH		
Female SAE O-Ring	US		
Male ISO Parallel Thread	HBP	ISO Parallel	ISO 228-1, DIN ISO 228-1, JIS B0202, BS2779
Female ISO Parallel Thread	SBP, HSBP		

Types of Thread Ends

Male NPT (NS)

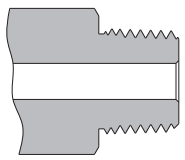


Female NPT (FNS)

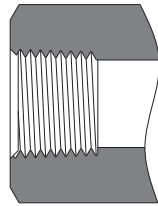


- 60° thread angle
- Pitch measured in inch
- Truncation of roots and crests is flat
- Taper 1:16
- Type of sealing: thread sealant

Male ISO Tapered Thread (RT)

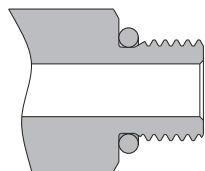


Female ISO Tapered Thread (FRT)

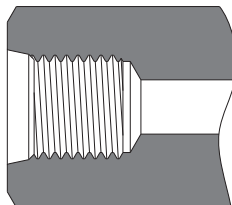


- 55° thread angle
- Pitch measured in inch
- Truncation of roots and crests is rounded
- Taper 1:16
- Type of sealing: thread sealant

Male SAE O-Ring (SH)

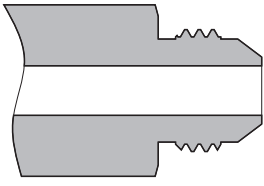


Female SAE O-Ring (US)

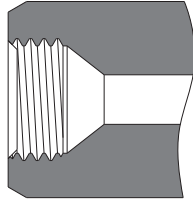


- 60° thread angle
- Pitch measured in inch
- Truncation of roots and crests is flat
- SH complies with SAE J1926-2, ISO 11926-2
- US complies with SAE J1926-1/ISO 11926-1

Male JIC (JM)

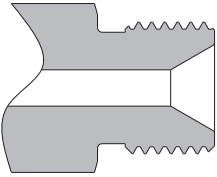


Female JIC (JF)

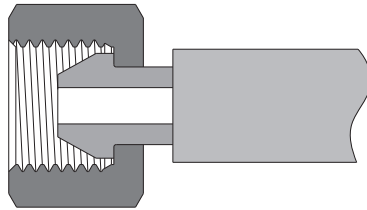


- 60° thread angle
- Pitch measured in inch
- Truncation of roots and crests is flat
- 74° coned connections

Male Type "M" (TM)

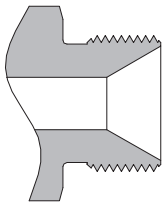


Type "M" Swivel Hose Fitting

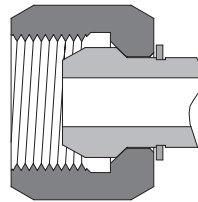
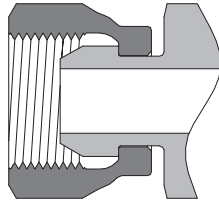


- 60° thread angle
- Pitch measured in inch
- Truncation of root and crest is flat
- 60° coned connections

Male ISO Parallel Thread (HBP)



Female ISO Parallel Thread (SBP, HSBP)



- 55° thread angle
- Pitch measured in inch
- Truncation of roots and crests is round
- 60° coned connections

SBP

HSBP

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

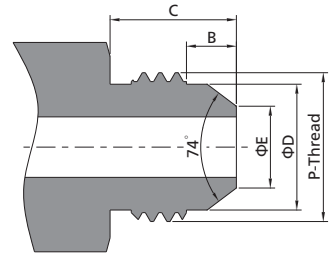
Subsea Valves

Part Number Crossover Charts

Dimensions of Thread Ends

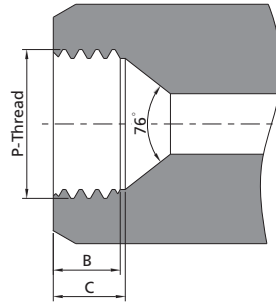
Male JIC (JM)

Description	Connection	Dimensions, in. (mm)				
		P	B	C	D	E
1/4" JIC	JM4	7/16-20	0.20 (5.1)	0.55 (14.0)	0.36 (9.2)	0.19 (4.9)
3/8" JIC	JM6	9/16-18	0.20 (5.2)	0.56 (14.1)	0.48 (12.1)	0.32 (8.1)
1/2" JIC	JM8	3/4-16	0.26 (6.6)	0.66 (16.7)	0.65 (16.6)	0.43 (10.8)
5/8" JIC	JM10	7/8-14	0.28 (7.0)	0.76 (19.3)	0.77 (19.5)	0.54 (13.7)
3/4" JIC	JM12	1 1/16-12	0.32 (8.2)	0.86 (21.9)	0.94 (23.9)	0.67 (16.9)
1" JIC	JM16	1 5/16-12	0.32 (8.2)	0.91 (23.1)	0.19 (30.2)	0.91 (23.2)



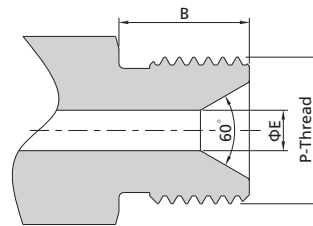
Female JIC (JF)

Description	Connection	Dimensions, in. (mm)		
		P	B	C
1/4" JIC	JF4	7/16-20	0.28 (7.1)	0.33 (8.3)
3/8" JIC	JF6	9/16-18	0.29 (7.4)	0.34 (8.7)
1/2" JIC	JF8	3/4-16	0.31 (7.9)	0.37 (9.5)
5/8" JIC	JF10	7/8-14	0.40 (10.2)	0.47 (11.9)
3/4" JIC	JF12	1 1/16-12	0.42 (10.7)	0.50 (12.7)
1" JIC	JF16	1 5/16-12	0.48 (12.3)	0.56 (14.3)



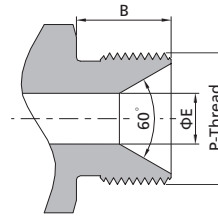
Male Type "M" (TM)

Connection	Dimensions, in. (mm)		
	P	B	E
TM9	9/16-18	0.50 (12.7)	0.09 (2.4)
TM12	3/4-16	0.63 (16.0)	0.29 (7.4)
TM14	7/8-14	0.76 (19.2)	0.15 (3.8)
TM16	1-12	0.64 (16.3)	0.39 (10.0)
TM21	1 5/16-12	0.62 (15.7)	0.69 (17.5)



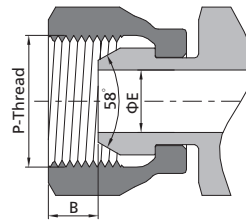
Male ISO Parallel Thread (HBP)

Connection	Dimensions, in. (mm)		
	P	B	E
HBP4	G1/4A	0.43 (11.0)	0.15 (3.8)
HBP6	G3/8A	0.47 (12.0)	0.25 (6.4)
HBP8	G1/2A	0.55 (14.0)	0.37 (9.5)
HBP12	G3/4A	0.63 (16.0)	0.50 (12.7)
HBP16	G1A	0.75 (19.0)	0.63 (15.9)



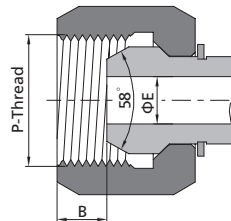
Female ISO Parallel Thread (SBP)

Connection	Dimensions, in. (mm)		
	P	B	E
SBP4	G1/4	0.18 (4.5)	0.19 (4.7)
SBP6	G3/8	0.25 (6.3)	0.31 (7.9)
SBP8	G1/2	0.28 (7.0)	0.44 (11.1)
SBP12	G3/4	0.35 (9.0)	0.66 (16.7)
SBP16	G1	0.43 (10.8)	0.87 (22.2)



Female ISO Parallel Thread (HSBP)

Connection	Dimensions, in. (mm)		
	P	B	E
HSBP4	G1/4	0.18 (4.5)	0.15 (3.8)
HSBP6	G3/8	0.25 (6.3)	0.24 (6.0)
HSBP8	G1/2	0.28 (7.0)	0.31 (8.0)
HSBP12	G3/4	0.35 (9.0)	0.43 (11.0)
HSBP16	G1	0.43 (10.8)	0.55 (14.0)



Notes: 1. All dimensions are shown for reference only and should not be considered as actual machining dimensions.
 2. All threads, except ISO parallel threads, are manufactured to a class 2A or 2B fit.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

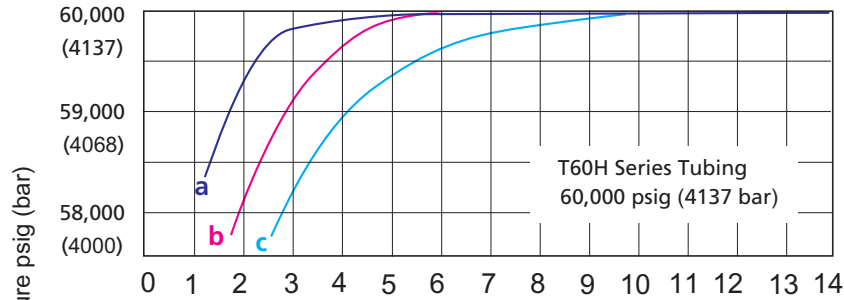
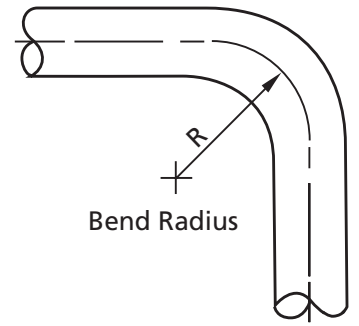
Sour Service Products

Subsea Valves

Part Number Crossover Charts

Working Pressure vs. Bend Radius Curve

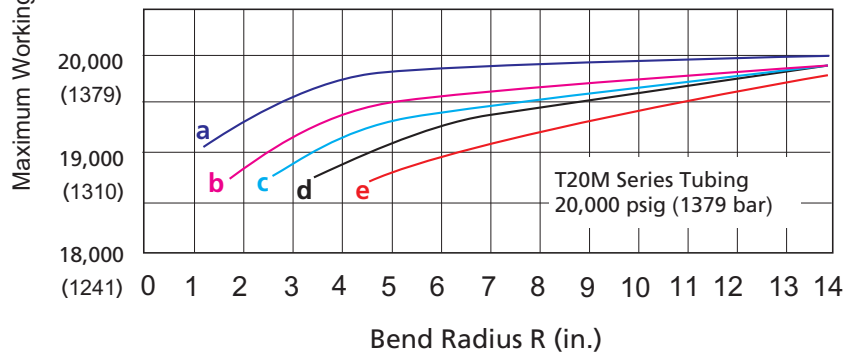
T20D、T20M and T60H Series Tubing (316/316L SS)



T60H Series Tubing

60,000 psig (4137 bar)

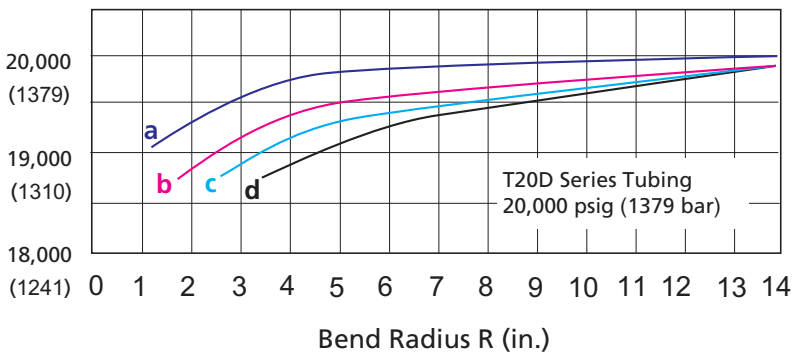
	Tube O.D. x I.D. in.	R (min.) in. (mm)
a	1/4 x 0.083	1.25 (31.8)
b	3/8 x 0.125	1.75 (44.5)
c	9/16 x 0.188	2.63 (66.7)



T20M Series Tubing

20,000 psig (1379 bar)

	Tube O.D. x I.D. in.	R (min.) in. (mm)
a	1/4 x 0.109	1.25 (31.8)
b	3/8 x 0.203	1.75 (44.5)
c	9/16 x 0.312	2.63 (66.7)
d	3/4 x 0.438	3.50 (88.9)
e	1 x 0.562	4.63 (117.5)



T20D Series Tubing

20,000 psig (1379 bar)

	Tube O.D. x W.T. in.	R (min.) in. (mm)
a	1/4 x 0.065	1.25 (31.8)
b	3/8 x 0.083	1.75 (44.5)
c	1/2 x 0.109	2.63 (66.7)
d	3/4 x 0.165	3.50 (88.9)