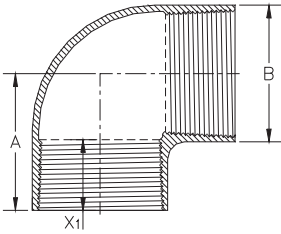


**90° Elbow  
Female x Female**

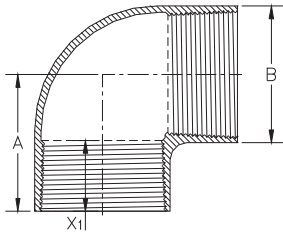


Product Code	Thread Size Inches	Pressure Rating		A In (mm)	B In (mm)	X <sup>(4)</sup> In (mm)	Wt				
		PSI	(MPa)				Lbs	(kg)			
FEL2019-90	1.90	2000	(13,8)	4.25	(108,0)	3.0	(76,2)	2.06	(52,4)	4	(1,81)
FEL2519-90		2500	(17,2)			3.2	(81,3)			4.5	(2,04)
FEL3019-90		3000	(20,7)			3.4	(86,4)			5	(2,27)
FEL4019-90		4000	(27,6)			3.8	(96,5)			6	(2,72)
FEL122Q-90	2 SSSHP	1250	(8,6)	6.25	(158,8)	3.2	(81,3)	3.625	(92,1)	5	(2,27)
FEL202Q-90		2000	(13,8)			3.6	(91,4)			6	(2,72)
FEL252Q-90		2500	(17,2)			3.9	(99,1)			7.5	(3,40)
FEL1223-90	2-3/8	1250	(8,6)	5.00	(127,0)	3.2	(81,3)	2.56	(65,1)	5	(2,27)
FEL2023-90		2000	(13,8)			3.6	(91,4)			6	(2,72)
FEL2523-90		2500	(17,2)			3.9	(99,1)			7.5	(3,40)
FEL3023-90		3000	(20,7)			4.2	(106,7)			9.5	(4,31)
FEL4023-90		4000	(27,6)			4.7	(119,4)			13	(5,90)
FEL1227-90	2-7/8	1250	(8,6)	5.75	(146,1)	3.9	(99,1)	2.88	(73,0)	6.5	(2,95)
FEL2027-90		2000	(13,8)			4.3	(109,2)			8	(3,63)
FEL2527-90		2500	(17,2)			4.6	(116,8)			10	(4,54)
FEL3027-90		3000	(20,7)			5.0	(127,0)			12	(5,44)
FEL4027-90		4000	(27,6)			5.8	(147,3)			15	(6,80)
FEL123Q-90	3 SSSHP	1250	(8,6)	7.75	(196,9)	4.7	(118,1)	4.25	(108,0)	8	(3,63)
FEL203Q-90		2000	(13,8)			5.2	(132,1)			12.5	(5,67)
FEL253Q-90		2500	(17,2)			5.6	(142,2)			17	(7,71)
FEL1235-90	3½	1250	(8,6)	6.50	(165,1)	4.7	(119,4)	3.13	(79,4)	8	(3,63)
FEL2035-90		2000	(13,8)			5.2	(132,1)			12.5	(5,67)
FEL2535-90		2500	(17,2)			5.6	(142,2)			17	(7,71)
FEL3035-90		3000	(20,7)			6.0	(152,4)			28	(12,7)
FEL4035-90		4000	(27,6)			7.0	(177,8)			40	(18,14)
FEL124Q-90	4 SSSHP	1250	(8,6)	8.75	(222,3)	5.9	(149,9)	4.25	(108,0)	20	(9,07)
FEL204Q-90		2000	(13,8)			6.7	(168,9)			29	(13,15)
FEL1245-90	4½	1250	(8,6)	8.00	(203,2)	5.9	(149,9)	3.50	(88,9)	20	(9,07)
FEL2045-90		2000	(13,8)			6.7	(170,2)			29	(13,15)
FEL2545-90		2500	(17,2)			7.2	(182,9)			37	(16,78)
FEL3045-90		3000	(20,7)			7.7	(195,6)			35	(15,88)
FEL4045-90		4000	(27,6)			8.6	(218,4)			45	(20,41)
FEL0855-90	5½	800	(5,5)	10.00	(254,0)	6.3	(160,0)	4.38	(111,1)	28	(12,70)
FEL1255-90		1250	(8,6)			6.8	(172,7)			36	(16,33)
FEL2055-90		2000	(13,8)			7.7	(195,6)			40	(18,14)
FEL3055-90		3000	(20,7)			8.8	(223,5)			52	(23,59)
FEL4055-90		4000	(27,6)			9.9	(251,5)			70	(31,75)
FEL086Q-90	6 SSSHP	800	(5,5)	9.75	(247,7)	7.6	(193,0)	4.75	(120,7)	30	(13,61)
FEL106Q-90		1000	(6,9)			7.9	(200,7)			33	(14,97)
FEL126Q-90		1250	(8,6)			8.2	(208,3)			40	(18,14)
FEL156Q-90		1500	(10,3)			8.6	(217,2)			45	(20,41)
FEL0865-90	6-5/8	800	(5,5)	8.75	(222,3)	7.6	(193,0)	3.88	(98,4)	30	(13,61)
FEL1065-90		1000	(6,9)			7.9	(200,7)			33	(14,97)
FEL1265-90		1250	(8,6)			8.2	(208,3)			40	(18,14)
FEL1565-90		1500	(10,3)			8.6	(218,4)			45	(20,41)
FEL2065-90		2000	(13,8)			9.2	(233,7)			67	(30,39)
FEL0870-90	7	800	(5,5)	9.75	(247,7)	8.1	(205,7)	4.50	(114,3)	38	(17,24)
FEL1270-90		1250	(8,6)			8.7	(221,0)			48	(21,77)
FEL2070-90		2000	(13,8)			9.8	(248,9)			57	(25,85)
FEL2570-90		2500	(17,2)			10.5	(266,7)			67	(30,39)

**IMPORTANT NOTICE:**  
All fittings are designated by thread size. It is required to know the thread size and pressure class of the pipe prior to the selection of fittings.

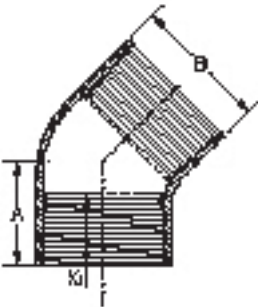
**API 15HR DESIGNS** require a review of **Page 26 Note 8** prior to selecting fittings.

**90° Elbow**  
Female x Female  
(continued)



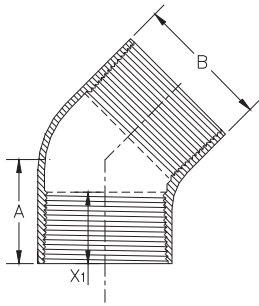
Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sup>(4)</sup> In (mm)	Wt Lbs (kg)
FEL0885-90	8-5/8	800 (5,5)	10.00 (254,0)	9.9 (251,5)	4.5 (114,3)	35 (15,88)
FEL1085-90		1000 (6,9)		10.2 (259,1)		40 (18,14)
FEL1285-90		1250 (8,6)		10.7 (271,8)		47 (21,32)
FEL1585-90		1500 (10,3)		11.1 (281,9)		57 (25,85)
FEL2085-90		2000 (13,8)		12.0 (304,8)		73 (33,11)
FEL1595-90	9-5/8	1500 (10,3)	11.75 (298,5)	12.3 (311,2)	4.75 (120,7)	75 (34,02)
FEL2095-90		2000 (13,8)		13.3 (337,8)		85 (38,56)
FEL088R-90	8SS	800 (5,5)	10.50 (266,7)	10.0 (254,0)	4.75 (120,7)	37 (16,78)
FEL108R-90		1000 (6,9)		10.3 (261,6)		45 (20,41)
FEL128R-90		1250 (8,6)		10.8 (274,3)		45 (20,41)
FEL05AR-90	10SS	500 (3,4)	10.00 (254,0)	12.6 (320,0)	5.40 (137,2)	62 (28,12)
FEL08AR-90		800 (5,5)		13.3 (337,8)		75 (34,02)
FEL10AR-90		1000 (6,9)		13.8 (350,5)		87 (39,46)
FEL12AR-90		1250 (8,6)		14.4 (365,8)		105 (47,63)
FEL05CR-90	12SS	500 (3,4)	13.25 (336,6)	14.6 (370,8)	6.10 (154,9)	74 (33,57)
FEL08CR-90		800 (5,5)		15.4 (391,2)		95 (43,09)
FEL10CR-90		1000 (6,9)		16.0 (406,4)		104 (47,17)
FEL12CR-90		1250 (8,6)		16.6 (421,6)		125 (56,7)

**45° Elbow**  
Female x Female



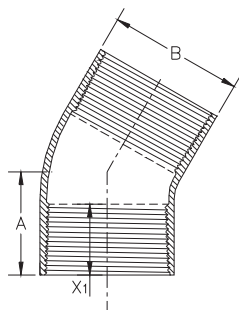
Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sup>(4)</sup> In (mm)	Wt Lbs (kg)
FEL2019-45	1.90	2000 (13,8)	3.125 (79,4)	2.9 (73,7)	2.06 (52,4)	3.5 (1,59)
FEL2519-45		2500 (17,2)		3.1 (78,7)		4 (1,81)
FEL3019-45		3000 (20,7)		3.3 (83,8)		5 (2,27)
FEL4019-45		4000 (27,6)		3.7 (94,0)		6 (2,72)
FEL122Q-45	2 SSSHP	1250 (8,6)	5.50 (139,7)	3.4 (86,4)	3.625 (92,1)	3.5 (1,59)
FEL202Q-45		2000 (13,8)		3.8 (96,5)		5 (2,27)
FEL252Q-45		2500 (17,2)		4.0 (101,6)		6.2 (2,81)
FEL1223-45	2-3/8	1250 (8,6)	4.250 (108,0)	3.2 (81,3)	2.56 (65,1)	3.5 (1,59)
FEL2023-45		2000 (13,8)		3.6 (91,4)		5 (2,27)
FEL2523-45		2500 (17,2)		3.8 (96,5)		6.2 (2,81)
FEL3023-45		3000 (20,7)		4.0 (101,6)		7.5 (3,40)
FEL4023-45		4000 (27,6)		4.5 (114,3)		11 (4,99)
FEL1227-45	2-7/8	1250 (8,6)	4.625 (117,5)	3.8 (96,5)	2.88 (73,0)	6 (2,72)
FEL2027-45		2000 (13,8)		4.2 (106,7)		7 (3,18)
FEL2527-45		2500 (17,2)		4.5 (114,3)		9 (4,08)
FEL3027-45		3000 (20,7)		4.8 (121,9)		11 (4,99)
FEL4027-45		4000 (27,6)		5.4 (137,2)		12 (5,44)
FEL123Q-45	3 SSSHP	1250 (8,6)	6.75 (171,5)	4.9 (123,2)	4.25 (108,0)	8 (3,63)
FEL203Q-45		2000 (13,8)		5.4 (135,9)		13 (5,90)
FEL253Q-45		2500 (17,2)		5.70 (144,8)		15 (6,80)
FEL1235-45	3½	1250 (8,6)	5.00 (127,0)	4.6 (116,8)	3.13 (79,4)	8 (3,63)
FEL2035-45		2000 (13,8)		5.1 (129,5)		13 (5,90)
FEL2535-45		2500 (17,2)		5.5 (139,7)		15 (6,80)
FEL3035-45		3000 (20,7)		5.8 (147,3)		25 (11,34)
FEL4035-45		4000 (27,6)		6.6 (167,6)		38 (17,24)
FEL124Q-45	4 SSSHP	1250 (8,6)	6.375 (161,9)	6.1 (153,7)	4.25 (108,0)	16 (7,26)
FEL204Q-45		2000 (13,8)		6.8 (171,5)		21 (9,53)
FEL1245-45	4½	1250 (8,6)	6.00 (152,4)	5.8 (147,3)	3.50 (88,9)	16 (7,26)
FEL2045-45		2000 (13,8)		6.5 (165,1)		21 (9,53)
FEL2545-45		2500 (17,2)		7.0 (177,8)		25 (11,34)
FEL3045-45		3000 (20,7)		7.5 (190,5)		30 (13,61)
FEL4045-45		4000 (27,6)		8.3 (210,8)		40 (18,14)

**45° Elbow**  
Female x Female  
(continued)



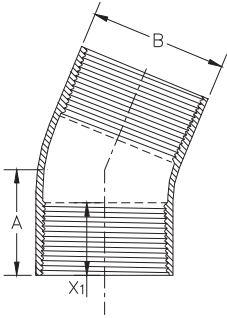
Product Code	Thread Size Inches	Pressure Rating		A In (mm)	B In (mm)	X <sup>(4)</sup> In (mm)	Wt				
		PSI	(MPa)				Lbs	(kg)			
FEL0855-45	5½	800	(5,5)	8.25	(209,6)	6.2	(157,6)	4.38	(111,1)	22	(9,98)
FEL1255-45		1250	(8,6)			6.7	(170,2)			30	(13,61)
FEL2055-45		2000	(13,8)			7.5	(190,5)			34	(15,42)
FEL2555-45		2500	(17,2)			8.0	(203,2)			40	(18,14)
FEL3055-45		3000	(20,7)			8.5	(215,9)			50	(22,68)
FEL4055-45		4000	(27,6)			9.6	(243,8)			65	(29,48)
FEL086Q-45	6 SSSHP	800	(5,5)	7.75	(196,9)	7.8	(197,1)	4.75	(120,7)	25	(11,34)
FEL106Q-45		1000	(6,9)			8.1	(204,5)			28	(12,70)
FEL126Q-45		1250	(8,6)			8.4	(212,1)			34	(15,42)
FEL156Q-45		1500	(10,3)			8.7	(221,0)			38	(17,24)
FEL0865-45	6-5/8	800	(5,5)	6.625	(168,3)	7.6	(193,0)	3.88	(98,4)	25	(11,34)
FEL1065-45		1000	(6,9)			7.8	(197,1)			28	(12,70)
FEL1265-45		1250	(8,6)			8.1	(205,7)			34	(15,42)
FEL1565-45		1500	(10,3)			8.5	(215,9)			38	(17,24)
FEL2065-45		2000	(13,8)			9.1	(231,1)			43	(19,50)
FEL0870-45	7	800	(5,5)	7.625	(193,7)	8.0	(203,2)	4.50	(114,3)	32	(14,51)
FEL1270-45		1250	(8,6)			8.6	(218,4)			30	(13,61)
FEL2070-45		2000	(13,8)			9.6	(243,8)			42	(19,05)
FEL2570-45		2500	(17,2)			10.2	(259,1)			55	(24,95)
FEL0885-45	8-5/8	800	(5,5)	7.250	(184,2)	9.9	(251,5)	4.50	(114,3)	33	(14,97)
FEL1085-45		1000	(6,9)			10.2	(259,1)			37	(16,78)
FEL1285-45		1250	(8,6)			10.6	(269,2)			45	(20,41)
FEL1585-45		1500	(10,3)			11.0	(279,4)			50	(22,68)
FEL 2085-45		2000	(13,8)			12.0	(304,8)			67	(30,39)
FEL1595-45	9-5/8	1500	(10,3)	7.375	(187,3)	12.3	(312,4)	4.75	(120,7)	62	(28,12)
FEL2095-45		2000	(13,8)			13.2	(335,3)			80	(36,29)
FEL088R-45	8SS	800	(5,5)	8.75	(222,25)	10.0	(254,0)	4.75	(120,7)	34	(15,42)
FEL108R-45		1000	(6,9)			10.3	(261,6)			42	(19,05)
FEL128R-45		1250	(8,6)			10.8	(274,3)			48	(21,77)
FEL05AR-45	10SS	500	(3,4)	10.0	(254,0)	12.4	(315,0)	5.40	(137,2)	38	(17,24)
FEL08AR-45		800	(5,5)			13.0	(330,2)			51	(23,13)
FEL10AR-45		1000	(6,9)			13.5	(342,9)			75	(34,02)
FEL12AR-45		1250	(8,6)			14.1	(358,1)			100	(45,36)
FEL05CR-45	12SS	500	(3,4)	11.5	(292,1)	14.6	(370,8)	6.10	(154,9)	55	(24,95)
FEL08CR-45		800	(5,5)			15.3	(388,6)			66	(29,94)
FEL10CR-45		1000	(6,9)			16.0	(406,4)			114	(51,71)
FEL12CR-45		1250	(8,6)			16.6	(421,6)			129	(58,51)

**30° Elbow**  
Female x Female



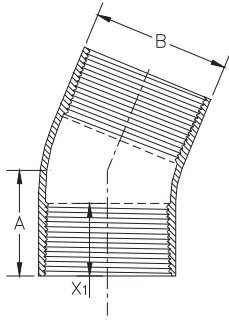
Product Code	Thread Size Inches	Pressure Rating		A In (mm)	B In (mm)	X <sup>(4)</sup> In (mm)	Wt				
		PSI	(MPa)				Lbs	(kg)			
FEL1223-30	2-3/8	1250	(8,6)	4.25	(108,0)	3.2	(81,3)	2.56	(65,1)	3.5	(1,59)
FEL2023-30		2000	(13,8)			3.6	(91,4)			4.5	(2,04)
FEL2523-30		2500	(17,2)			3.8	(96,5)			6	(2,72)
FEL3023-30		3000	(20,7)			4.0	(101,6)			8	(3,63)
FEL4023-30		4000	(27,6)			4.5	(114,3)			9	(4,08)
FEL0885-30	8-5/8	800	(5,5)	7.250	(184,2)	9.9	(251,5)	4.50	(114,3)	22	(9,98)
FEL1085-30		1000	(6,9)			10.2	(259,8)			28	(12,70)
FEL1285-30		1250	(8,6)			10.6	(269,2)			34	(15,42)
FEL1585-30		1500	(10,3)			11.0	(279,4)			44	(19,96)
FEL1595-30	9-5/8	1500	(10,3)	7.375	(187,3)	12.1	(307,3)	4.75	(120,7)	53	(24,04)
FEL2095-30		2000	(13,8)			13.0	(330,2)			61	(27,66)

**22.5° Elbow  
Female x Female**



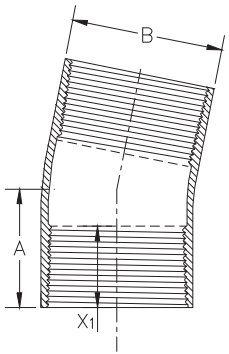
Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)
FEL122Q-23	2 SSSHP	1250 (8,6)	5.250 (133,4)	3.2 (81,3)	3.63 (92,1)	3 (1,36)
FEL202Q-23		2000 (13,8)		3.5 (88,9)		4 (1,81)
FEL252Q-23		2500 (17,2)		3.8 (96,5)		5 (2,27)
FEL1223-23	2-3/8	1250 (8,6)	4.000 (101,6)	3.2 (81,3)	2.56 (68,3)	3 (1,36)
FEL2023-23		2000 (13,8)		3.5 (88,9)		4 (1,81)
FEL2523-23		2500 (17,2)		3.8 (96,5)		5 (2,27)
FEL3023-23		3000 (20,7)		4.0 (101,6)		7 (3,18)
FEL4023-23		4000 (27,6)		4.5 (114,3)		8.5 (3,86)
FEL123Q-23	3 SSSHP	1250 (8,6)	5.750 (146,1)	4.6 (116,8)	4.25 (108,0)	5.5 (2,49)
FEL203Q-23		2000 (13,8)		5.1 (129,5)		9 (4,08)
FEL253Q-23		2500 (17,2)		5.4 (137,2)		11(4,99)
FEL1235-23	3½	1250 (8,6)	4.500 (114,3)	4.6 (116,8)	3.13 (79,4)	5.5 (2,49)
FEL2035-23		2000 (13,8)		5.1 (129,5)		9 (4,08)
FEL2535-23		2500 (17,2)		5.4 (137,2)		11(4,99)
FEL3035-23		3000 (20,7)		5.7 (144,8)		13.5 (6,12)
FEL4035-23		4000 (27,6)		6.4 (162,5)		19 (8,62)
FEL124Q-23	4 SSSHP	1250 (8,6)	5.875 (149,2)	5.8 (147,3)	4.25 (108,0)	10 (4,54)
FEL204Q-23		2000 (13,8)		6.4 (162,6)		16.5 (7,48)
FEL1245-23	4½	1250 (8,6)	5.000 (127,0)	5.8 (147,3)	3.50 (88,9)	10 (4,54)
FEL2045-23		2000 (13,8)		6.4 (162,6)		16.5 (7,48)
FEL2545-23		2500 (17,2)		6.8 (172,7)		21 (9,53)
FEL3045-23		3000 (20,7)		7.3 (185,4)		25.5 (11,57)
FEL4045-23		4000 (27,6)		8.1 (205,7)		36.5 (16,56)
FEL0855-23	5½	800 (5,5)	8.250 (209,6)	6.2 (157,5)	4.38 (111,1)	9 (4,08)
FEL1255-23		1250 (8,6)		6.6 (167,6)		13.5 (6,12)
FEL2055-23		2000 (13,8)		7.4 (188,0)		23.4 (10,61)
FEL3055-23		3000 (20,7)		8.4 (213,4)		36.5 (16,56)
FEL4055-23		4000 (27,6)		9.3 (236,2)		52 (23,59)
FEL086Q-23	6 SSSHP	800 (5,5)	6.750 (171,5)	7.5 (190,5)	4.75 (120,7)	11 (4,99)
FEL106Q-23		1000 (6,9)		7.8 (198,1)		15 (6,80)
FEL156Q-23		1500 (10,3)		8.4 (213,4)		18 (8,16)
FEL0865-23	6-5/8	800 (5,5)	5.75 (146,1)	7.5 (190,5)	3.88 (98,4)	11 (4,99)
FEL1065-22		1000 (6,9)		7.8 (198,1)		15 (6,80)
FEL1265-23		1250 (8,6)		8.0 (203,2)		18 (8,16)
FEL2065-23		2000 (13,8)		8.9 (226,1)		30 (13,61)
FEL1270-23	7	1250 (8,6)	6.50 (165,1)	8.5 (215,9)	4.50 (114,3)	21 (9,53)
FEL2070-23		2000 (13,8)		9.5 (241,3)		36.5 (16,56)
FEL2570-23		2500 (17,2)		10.1 (256,5)		47.5 (21,55)
FEL0885-23	8-5/8	800 (5,5)	5.875 (149,2)	9.8 (248,9)	4.50 (114,3)	20 (9,07)
FEL1085-23		1000 (6,9)		10.1 (256,9)		26 (11,79)
FEL1285-23		1250 (8,6)		10.5 (266,7)		32 (14,51)
FEL1585-23		1500 (10,3)		10.9 (276,9)		40 (18,14)
FEL1595-23	9-5/8	1500 (10,3)	7.375 (187,3)	12.1 (307,3)	4.75 (120,7)	50 (22,68)
FEL2095-23		2000 (13,8)		13.0 (330,2)		60.5 (27,44)

**22.5° Elbow**  
Female x Female  
(continued)



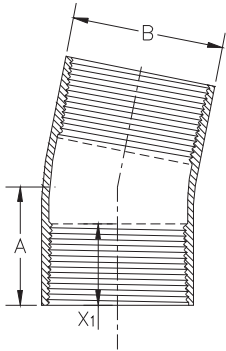
Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)
FEL088R-23	8SS	800 (5,5)	8.75 (222,25)	9.8 (249,0)	4.75 (120,7)	30 (13,60)
FEL108R-23		1000 (6,9)		10.2 (259,1)		38 (17,24)
FEL128R-23		1250 (8,5)		10.5 (266,7)		42 (19,05)
FEL05AR-23	10SS	500 (3,4)	8.187 (208,0)	12.5 (317,5)	5.40 (137,2)	25.5 (11,57)
FEL08AR-23		800 (5,5)		13.0 (330,2)		43 (19,5)
FEL10AR-23		1000 (6,9)		13.5 (342,9)		50 (22,68)
FEL12AR-23		1250 (8,6)		14.1 (358,1)		60 (27,22)
FEL05CR-23	12SS	500 (3,4)	11.375 (288,9)	14.5 (368,3)	6.10 (154,9)	30.5 (13,83)
FEL08CR-23		800 (5,5)		15.1 (383,5)		45.8 (20,77)
FEL10CR-23		1000 (6,9)		15.7 (398,8)		63.2 (28,66)
FEL12CR-23		1250 (8,6)		16.3 (414,0)		70 (31,75)

**11.25° Elbow**  
Female x Female



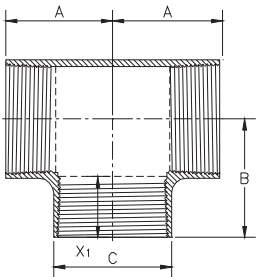
Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)
FEL122Q-11	2 SSSHP	1250 (8,6)		3.2 (81,3)	3.63 (92,1)	3 (1,36)
FEL202Q-11		2000 (13,8)		3.5 (88,9)		4 (1,81)
FEL252Q-11		2500 (17,2)		3.8 (96,5)		5 (2,27)
FEL1223-11	2-3/8	1250 (8,6)		3.2 (81,3)	2.56 (65,1)	3 (1,36)
FEL2023-11		2000 (13,8)		3.5 (88,9)		4 (1,81)
FEL2523-11		2500 (17,2)		3.8 (96,5)		5 (2,27)
FEL3023-11		3000 (20,7)		4.0 (101,6)		7 (10,4)
FEL4023-11		4000 (27,6)		4.5 (114,3)		8.5 (12,7)
FEL123Q-11	3 SSSHP	1250 (8,6)	6.750 (171,5)	4.5 (114,3)	4.25 (108,0)	5 (2,27)
FEL203Q-11		2000 (13,8)		5.0 (127,0)		8 (3,63)
FEL253Q-11		2500 (17,2)		5.3 (134,6)		10 (4,54)
FEL1235-11	3½	1250 (8,6)	5.500 (139,7)	4.5 (114,3)	3.13 (79,4)	5 (2,27)
FEL2035-11		2000 (13,8)		5.0 (127,0)		8 (3,63)
FEL2535-11		2500 (17,2)		5.3 (134,6)		10 (4,54)
FEL3035-11		3000 (20,7)		5.7 (144,8)		12 (5,44)
FEL4035-11		4000 (27,6)		6.3 (160,0)		17 (7,71)
FEL124Q-11	4 SSSHP	1250 (8,6)	6.875 (174,6)	5.7 (144,8)	4.25 (108,0)	9 (4,08)
FEL204Q-11		2000 (13,8)		6.4 (162,6)		15 (6,80)
FEL1245-11	4½	1250 (8,6)	6.000 (152,4)	5.7 (144,8)	3.50 (88,9)	9 (4,08)
FEL2045-11		2000 (13,8)		6.4 (162,6)		15 (6,80)
FEL2545-11		2500 (17,2)		6.8 (172,7)		19 (8,62)
FEL3045-11		3000 (20,7)		7.2 (182,9)		23 (10,43)
FEL4045-11		4000 (27,6)		8.1 (205,7)		33 (14,97)
FEL0855-11	5½	800 (5,5)	8.250 (209,6)	6.2 (157,5)	4.38 (111,1)	8 (3,63)
FEL1255-11		1250 (8,6)		6.6 (167,6)		12 (5,44)
FEL2055-11		2000 (13,8)		7.3 (185,4)		21 (9,53)
FEL3055-11		3000 (20,7)		8.3 (210,8)		33 (14,97)
FEL4055-11		4000 (27,6)		9.3 (236,2)		47 (21,32)
FEL086Q-11	6 SSSHP	800 (5,5)	7.625 (193,7)	7.5 (190,5)	4.75 (120,7)	10 (4,54)
FEL106Q-11		1000 (6,9)		7.7 (195,6)		13 (5,90)
FEL156Q-11		1500 (10,3)		8.4 (213,4)		18 (8,16)

**11.25° Elbow**  
**Female x Female**  
**(continued)**



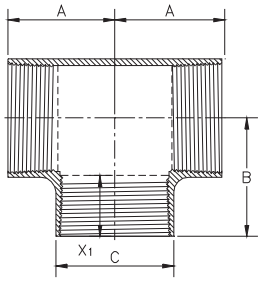
Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A		B		X <sup>(4)</sup> In (mm)	Wt	
			In	(mm)	In	(mm)		Lbs	(kg)
FEL0865-11	6-5/8	800 (5,5)	6.625	(168,3)	7.5	(190,5)	3.88	(98,4)	10 (4,54)
FEL1065-11		1000 (6,9)			7.7	(195,6)			13 (19,3)
FEL1265-11		1250 (8,6)			8.0	(203,2)			16 (7,26)
FEL2065-11		2000 (13,8)			8.9	(226,1)			27 (12,25)
FEL1270-11	7	1250 (8,6)	7.625	(193,7)	8.5	(215,9)	4.50	(114,3)	19 (8,62)
FEL2070-11		2000 (13,8)			9.4	(238,8)			33 (14,97)
FEL2570-11		2500 (17,2)			10.0	(254,0)			43 (19,50)
FEL0885-11	8-5/8	800 (5,5)	7.250	(184,2)	9.8	(248,9)	4.50	(114,3)	18 (8,16)
FEL1085-11		1000 (6,9)			10.1	(256,5)			24 (10,89)
FEL1285-11		1250 (8,6)			10.5	(266,7)			29 (13,15)
FEL1585-11		1500 (10,3)			10.8	(274,3)			36 (16,33)
FEL1595-11	9-5/8	1500 (10,3)	7.375	(187,3)	12.1	(307,3)	4.75	(120,7)	39 (17,69)
FEL2095-11		2000 (13,8)			13.0	(330,2)			55 (24,95)
FEL088R-11	8SS	800 (5,5)	8.75	(222,25)	9.8	(248,9)	4.75	(120,7)	27 (12,24)
FEL108R-11		1000 (6,9)			10.1	(256,5)			35 (15,87)
FEL128R-11		1250 (8,6)			10.5	(248,9)			35 (15,88)
FEL05AR-11	10SS	500 (3,4)	8.186	(208,0)	12.5	(317,5)	5.40	(137,2)	22 (9,98)
FEL08AR-11		800 (5,5)			13.2	(335,3)			39 (17,69)
FEL10AR-11		1000 (6,9)			13.5	(342,9)			46 (20,87)
FEL12AR-11		1250 (8,6)			14.0	(355,6)			58 (26,31)
FEL05CR-11	12SS	500 (3,4)	11.25	(285,8)	14.4	(365,8)	6.10	(154,9)	38 (17,24)
FEL08CR-11		800 (5,5)			15.2	(386,1)			66 (29,94)
FEL10CR-11		1000 (6,9)			15.6	(396,2)			83 (37,65)
FEL12CR-11		1250 (8,6)			16.2	(411,48)			106 (48,08)

**Tee**  
**Female x Female**



Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A		B		C		X <sup>(4)</sup> In (mm)	Wt	
			In	(mm)	In	(mm)	In	(mm)		Lbs	(kg)
FTE2019	1.90	2000 (13,8)	4.375	(111,1)	4.875	(123,8)	3.0	(76,2)	2.06	(52,4)	5.5 (2,49)
FTE2519		2500 (17,2)					3.2	(81,3)			6.5 (2,95)
FTE3019		3000 (20,7)					3.4	(86,4)			7.5 (3,40)
FTE4019		4000 (27,6)					3.9	(99,1)			10 (4,54)
FTE122Q	2 SSSHP	1250 (8,6)	6.50	(165,1)	7.00	(177,8)	3.3	(82,6)	3.625	(92,1)	6.4 (2,90)
FTE202Q		2000 (13,8)					3.7	(92,7)			10.6 (4,81)
FTE252Q		2500 (17,2)					4.0	(100,3)			14.1 (6,40)
FTE1223	2-3/8	1250 (8,6)	5.250	(133,4)	5.75	(146,1)	3.3	(83,8)	2.56	(65,1)	8 (3,63)
FTE2023		2000 (13,8)					3.7	(94,0)			10 (4,54)
FTE2523		2500 (17,2)					4.0	(101,6)			11 (4,99)
FTE3023		3000 (20,7)					4.2	(106,7)			12 (5,44)
FTE4023		4000 (27,6)					4.8	(121,9)			17 (7,71)
FTE1227	2-7/8	1250 (8,6)	5.75	(146,4)	6.50	(165,1)	3.9	(99,1)	2.88	(73,0)	10 (4,54)
FTE2027		2000 (13,8)					4.4	(111,8)			12 (5,44)
FTE2527		2500 (17,2)					4.8	(121,9)			14 (6,35)
FTE3027		3000 (20,7)					5.2	(132,1)			18 (8,16)
FTE4027		4000 (27,6)					5.9	(149,9)			28 (12,7)
FTE123Q	3 SSSHP	1250 (8,6)	7.75	(196,9)	8.50	(215,9)	4.8	(120,7)	4.25	(108,0)	13 (5,90)
FTE203Q		2000 (13,8)					5.4	(137,2)			22 (9,98)
FTE253Q		2500 (17,2)					5.9	(148,6)			29 (13,15)

**Tee**  
Female x Female  
(continued)

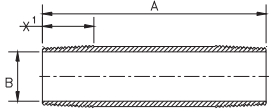


Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	C In (mm)	X <sup>(4)</sup> In (mm)	Wt Lbs (kg)
FTE1235	3½	1250 (8,6)	6.50 (165,1)	7.25 (184,2)	4.8 (121,9)	3.13 (79,4)	14 (6,35)
FTE2035		2000 (13,8)			5.4 (137,2)		21 (9,53)
FTE2535		2500 (17,2)			5.9 (149,9)		26 (11,79)
FTE3035		3000 (20,7)			6.3 (160,0)		50 (22,68)
FTE4035		4000 (27,6)			7.2 (182,9)		65 (29,48)
FTE124Q	4 SSSHP	1250(8,6)	7.875 (200,0)	8.625 (219,1)	6.0 (152,4)	4.25 (108,0)	21 (9,53)
FTE204Q		2000 (13,8)			6.8 (172,7)		36 (16,33)
FTE1245	4½	1250 (8,6)	7.50 (190,5)	8.25 (209,6)	6.0 (152,4)	3.50 (88,9)	25 (11,34)
FTE2045		2000 (13,8)			6.8 (172,7)		39 (17,69)
FTE2545		2500 (17,2)			7.3 (185,4)		48(21,77)
FTE3045		3000 (20,7)			7.9 (200,7)		75 (34,02)
FTE4045		4000 (27,6)			8.9 (226,1)		85 (38,56)
FTE0855	5½	800 (5,5)	9.00 (228,6)	9.75 (247,7)	6.4 (162,7)	4.38 (111,1)	32 (14,51)
FTE1255		1250 (8,6)			6.9 (175,3)		43 (19,5)
FTE2055		2000 (13,8)			7.8 (198,1)		70 (31,75)
FTE3055		3000 (20,7)			9.1 (231,1)		100 (45,36)
FTE4055		4000 (27,6)			10.2 (259,1)		115 (52,16)
FTE086Q	6 SSSHP	800 (5,5)	9.5 (241,3)	10.25 (260,4)	7.7 (195,6)	4.75 (120,7)	34 (15,42)
FTE106Q		1000 (6,9)			8.0 (203,2)		44 (19,96)
FTE126Q		1250 (8,6)			8.4 (212,1)		55 (24,95)
FTE156Q		1500 (8,6)			8.7 (221,0)		67 (30,39)
FTE0865	6-5/8	800 (5,5)	8.50 (215,9)	9.25 (235,0)	7.7 (195,6)	3.88 (98,4)	36 (16,33)
FTE1065		1000 (6,9)			8.0 (203,2)		42 (19,05)
FTE1265		1250 (8,6)			8.4 (213,4)		60 (27,22)
FTE1565		1500 (10,3)			8.7 (221,0)		70 (31,75)
FTE2065		2000 (13,8)			9.5 (241,3)		80 (36,29)
FTE0870	7	800 (5,5)	9.75 (247,7)	10.5 (266,7)	8.2 (208,3)	4.50 (114,3)	45 (20,41)
FTE1270		1250 (8,6)			8.9 (226,1)		65 (29,48)
FTE2070		2000 (13,8)			10.1 (255,3)		75 (34,02)
FTE2570		2500 (17,2)			10.9 (275,6)		100 (45,36)
FTE0885	8-5/8	800 (5,5)	10.00 (254,0)	10.75 (273,1)	10.1 (261,6)	4.50 (114,3)	50 (22,68)
FTE1085		1000 (6,9)			10.5 (266,7)		60 (27,22)
FTE1285		1250 (8,6)			10.9 (276,9)		70 (31,75)
FTE1585		1500 (10,3)			11.4 (289,6)		95 (43,09)
FTE2085		2000 (13,8)			12.0 (304,8)		100 (45,36)
FTE1595	9-5/8	1500 (10,3)	10.50 (266,7)	11.25 (285,8)	12.7 (322,6)	4.75 (120,7)	95 (43,1)
FTE2095		2000 (13,8)			13.7 (348,0)		110 (49,9)
FTE088R	8SS	800 (5,5)	11.5 (292,1)	12.5 (317,5)	10.1 (256,5)	4.75 (120,7)	50 (22,7)
FTE108R		1000 (6,9)			10.5 (266,7)		65 (19,5)
FTE128R		1250 (8,6)			10.9 (276,9)		65 (19,5)
FTE05AR	10SS	500 (3,4)	12.0 (304,8)	12.75 (323,9)	12.7 (322,6)	5.40 (137,2)	76 (34,5)
FTE08AR		800 (5,5)			13.5 (342,9)		90 (40,8)
FTE10AR		1000 (6,9)			14.0 (355,6)		122 (55,3)
FTE12AR		1250 (8,6)			14.6 (370,8)		160 (72,6)
FTE05CR	12SS	500 (3,4)	14.75 (374,7)	14.75 (374,7)	14.8 (375,9)	6.10 (154,9)	102 (46,3)
FTE08CR		800 (5,5)			15.6 (396,2)		145 (65,8)
FTE10CR		1000 (6,9)			16.2 (411,5)		210 (95,3)
FTE12CR		1250 (8,6)			16.9 (429,3)		240 (108,9)

# Threaded Nipples\*

Male x Male

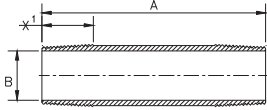
\* ALIPHATIC AMINE  
CURED EPOXY  
PRODUCTS  
ONLY



Product Code	Thread Size Inches	B Nominal Size In (mm)	Pressure PSI (MPa)	X <sub>1</sub> <sup>(4)</sup> In (mm)	A - Standard Lengths Ft. (m)		
					1 (.305)	1.5 (.457)	2 (.610)
					Weight Lbs (KGS) Product Code		
N12X2	12SS	11.81 (300,0)	1250 (8,6)	6.10 (154,9)	---	---	51.5 (53,4) N12X2-024
N12X0	10SS	9.84 (249,9)	1250 (8,6)	5.40 (137,2)	---	30.5 (9,27) N12X0-018	40.6 (12,37) N12X0-024
N1280	8SS	7.74 (196,6)	1250 (8,6)	4.75 (120,7)	---	20.2 (6,17) N1280-018	27.0 (8,23) N1280-024
N2080	9-5/8	7.74 (196,6)	2000 (13,8)	4.75 (120,7)	---	---	42.5 (19,28) N2080-024
N1280	8-5/8	7.74 (196,6)	1250 (8,6)	4.50 (114,3)	---	---	19.4 (8,80) N1280-024
N2060	7	5.93 (150,6)	2000 (13,8)	4.50 (114,3)	---	14.4 (6,53) N2060-018	19.2 (8,71) N2060-024
N2555	7	5.50 (139,7)	2500 (17,2)	4.50 (114,3)	---	20.7 (9,39) N2555-018	27.6 (12,52) N2555-024
N1060	6-5/8	5.93 (150,6)	1000 (6,9)	3.88 (98,4)	---	11.2 (5,08) N1060-018	14.9 (6,76) N1060-024
N2255	6-5/8	5.50 (139,7)	2250 (15,5)	3.88 (98,4)	---	13.8 (6,26) N2255-018	18.4 (8,35) N2255-024
N2050	5½	4.74 (120,4)	2000 (13,8)	4.38 (111,1)	---	8.3 (3,76) N2050-018	11.1 (5,03) N2050-024
N4040	5½	3.85 (97,8)	4000 (27,6)	4.38 (111,1)	---	15.6 (7,08) N4040-018	20.8 (9,43) N4040-024
N2540	4½	3.85 (97,8)	2500 (17,2)	3.50 (88,9)	---	7.7 (3,49) N2540-018	10.3 (4,67) N2540-024
N4033	4½	3.33 (84,6)	4000 (27,6)	3.50 (88,9)	---	12.1 (5,49) N4033-018	16.1 (7,30) N4033-024
N4030	4½	2.94 (74,7)	4000 (27,6)	3.50 (88,9)	---	14.7 (6,67) N4030-018	19.6 (8,89) N4030-024
N3033	4	3.33 (85,6)	3000 (20,7)	3.88 (98,4)	---	---	9.4 (4,26) N3033-024
N3030	3½	2.94 (74,7)	3000 (20,7)	3.13 (79,4)	3.6 (1,63) N3030-012	5.4 (2,45) N3030-018	7.2 (3,27) N3030-024
N4025	3½	2.37 (60,2)	4000 (27,6)	3.13 (79,4)	5.8 (2,63) N4025-012	8.6 (3,90) N4025-018	11.5 (5,22) N4025-024
N3525	2-7/8	2.37 (60,2)	3500 (24,1)	2.88 (73,0)	2.8 (1,27) N3525-012	4.1 (1,86) N3525-018	5.5 (2,49) N3525-024
N4020	2-3/8	1.94 (49,3)	4000 (27,6)	2.56 (65,1)	2.0 (0,91) N4020-012	3.1 (1,41) N4020-018	4.1 (1,86) N4020-024
N4015	1.90	1.44 (36,6)	4000 (27,6)	2.06 (52,4)	1.7 (0,77) N4015-012	2.5 (1,13) N4015-018	3.4 (1,54) N4015-024

**Threaded Nipples\***  
Male x Male

\* ALIPHATIC AMINE  
CURED EPOXY  
PRODUCTS  
ONLY

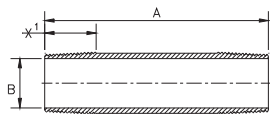


Product Code	Thread Size Inches	A - Standard Lengths Ft. (m)					Repair Nipples Product Code
		3 (.914)	4 (1.219)	6 (1.829)	8 (2.438)	10 (3.048)	
		Weight Lbs (KGS) Product Code					
N12X2	12SS	74.9 (34,0) N12X2-036	99.8 (45,3) N12X2-048	149.7 (67,9) N12X2-072	199.6 (90,5) N12X2-096	249.5 (113,2) N12X2-120	745.9 (338,3)
N12X0	10SS	61.0 (27,7) N12X0-036	81.3 (36,9) N12X0-048	121.9 (55,3) N12X0-072	163.0 (73,9) N12X0-096	203.2 (92,2) N12X0-120	609.6 (276,5) RJ12X0
N1280	8SS	40.4 (18,3) N1280-036	53.9 (24,4) N1280-048	80.9 (36,7) N1280-072	107.8 (48,9) N1280-096	134.8 (61,1) N1280-120	395.1 (179,2)
N2080	9-5/8	63.7 (28,89) N2080-036	85.0 (38,56) N2080-048	127.4 (57,79) N2080-072	169.9 (77,07) N2080-096	212.4 (96,34) N2080-120	630.9 (286,2) RJ2080
N1280	8-5/8	29.1 (13,20) N1280-036	38.8 (17,60) N1280-048	58.3 (26,44) N1280-072	77.7 (35,24) N1280-096	97.1 (44,04) N1280-120	297.1 (134,8) RJ1280
N2060	7	28.8 (13,06) N2060-036	38.4 (17,42) N2060-048	57.6 (26,13) N2060-072	76.8 (34,84) N2060-096	96.0 (43,54) N2060-120	283.2 (128,5) RJ2060
N2555	7	41.5 (18,82) N2555-036	55.3 (25,08) N2555-048	82.9 (37,60) N2555-072	96.7 (43,86) N2555-096	138.2 (62,69) N2555-120	383.9 (174,1) RJ2555
N1060	6-5/8	22.4 (10,16) N1060-036	29.8 (13,52) N1060-048	44.7 (20,28) N1060-072	59.6 (27,03) N1060-096	74.5 (33,79) N1060-120	185.1 (84,0) RJ1060
N2255	6-5/8	27.6 (12,52) N2055-036	36.8 (16,69) N2055-048	55.2 (25,04) N2055-072	73.6 (33,38) N2055-096	92.0 (41,73) N2055-120	273.2 (123,9) RJ2255
N2050	5½	16.6 (7,53) N2050-036	22.2 (10,07) N2050-048	33.2 (15,06) N2050-072	44.3 (20,09) N2050-096	55.4 (25,13) N2050-120	162.9 (73,9) RJ2050
N4040	5½	31.2 (14,15) N4040-036	41.6 (18,87) N4040-048	62.4 (28,30) N4040-072	83.2 (37,74) N4040-096	104.0 (47,17) N4040-120	317.1 (143,8) RJ4040
N2540	4½	15.5 (7,03) N2540-036	20.6 (9,34) N2540-048	31.0 (14,06) N2540-072	41.3 (18,73) N2540-096	51.6 (23,41) N2540-120	158.5 (71,9) RJ2540
N4033	4½	24.2 (10,98) N4033-036	32.2 (14,61) N4033-048	48.4 (21,95) N4033-072	64.5 (29,26) N4033-096	80.6 (36,56) N4033-120	238.2 (108,0) RJ4033
N4030	4½	29.4 (13,34) N4030-036	39.2 (17,78) N4030-048	58.7 (26,63) N4030-072	78.3 (35,52) N4030-096	97.9 (44,41) N4030-120	287.2 (130,3)
N3033	4	14.1 (6,40) N3033-036	18.8 (8,53) N3033-048	28.3 (12,84) N3033-072	37.7 (17,10) N3033-096	47.1 (21,36) N3033-120	140.8 (63,9)
N3030	3½	10.8 (4,90) N3030-036	14.4 (6,53) N3030-048	21.5 (9,75) N3030-072	28.7 (13,02) N3030-096	35.9 (16,28) N3030-120	106.3 (48,2) RJ3030
N4025	3½	17.3 (7,85) N4025-036	23.0 (10,43) N4025-048	34.5 (15,65) N4025-072	46.0 (20,87) N4025-096	57.5 (26,08) N4025-120	168.9 (76,6)
N3525	2-7/8	8.3 (3,76) N3525-036	11.0 (4,99) N3525-048	16.5 (7,48) N3525-072	22.0 (9,98) N3525-096	27.5 (12,47) N3525-120	81.8 (37,1) RJ3525
N4020	2-3/8	6.1 (2,77) N4020-036	8.2 (3,72) N4020-048	12.2 (5,53) N4020-072	16.3 (7,39) N4020-096	20.4 (9,25) N4020-120	60.5 (27,4) RJ4020
N4015	1.90	5.1 (2,31) N4015-036	6.8 (3,08) N4015-048	10.1 (4,58) N4015-072	13.5 (6,12) N4015-096	16.9 (7,67) N4015-120	49.5 (22,5)

## Threaded Nipples\*

Male x Male

\* ANHYDRIDE EPOXY PRODUCTS ONLY

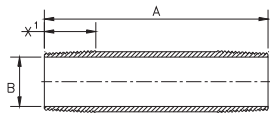


Product Code	Thread Size Inches	B Nominal Size In (mm)	Pressure PSI (MPa)	X <sub>1</sub> <sup>(4)</sup> In (mm)	A - Standard Lengths Ft. (m)		
					1 (.305)	1.5 (.457)	2 (.610)
					Weight Lbs (KGS) Product Code		
N1575GS	8-5/8	7.50 (196,6)	1500 (10,3)	4.50 (114,3)	---	---	23.4 (10,6) N1575GS-024L
N1079GS	8-5/8	7.98 (202,7)	1000 (6,9)	4.50 (114,3)	---	---	13.2 (5,98) N1079GS-024L
N1558GS	6-5/8	5.85 (148,6)	1500 (10,3)	3.88 (98,4)	---	8.7 (3,95) N1558GS-018L	11.6 (5,26) N1558GS-024L
N2055GS	6-5/8	5.50 (139,7)	2000 (13,8)	3.88 (98,4)	---	8.8 (4,01) N2055GS-018L	11.8 (5,35) N2055GS-024L
N156GQ	6 SSSHP	5.85 (148,6)	1500 (10,3)	5.10 (129,5)	---	11.0 (4,99) N156GQ-018L	14.7 (6,67) N156GQ-024L
N2837GS	4-1/2	3.75 (95,3)	2800 (19,3)	3.50 (88,9)	5.1 (2,31) N2837GS-012L	7.6 (3,47) N2837GS-018L	10.2 (4,62) N2837GS-024L
N2539GS	4-1/2	3.91 (99,3)	2500 (17,2)	3.50 (88,9)	3.9 (1,77) N2539GS-012L	5.8 (2,66) N2539GS-018L	7.8 (3,54) N2539GS-024L
N204GQ	4 SSSHP	3.91 (99,3)	2000 (13,8)	4.60 (116,8)	5.3 (2,40) N204GQ-012L	7.9 (3,58) N204GQ-018L	10.6 (4,81) N204GQ-024L
N3030GS	3-1/2	3.00 (76,2)	3000 (20,7)	3.13 (79,4)	2.9 (1,32) N3030GS-012L	4.4 (1,98) N3030GS-018L	5.8 (2,64) N3030GS-024L
N253GQ	3 SSSHP	3.00 (76,2)	2500 (17,2)	4.60 (116,8)	3.9 (1,77) N253GQ-012L	5.9 (2,68) N253GQ-018L	7.8 (3,54) N253GQ-024L
N3024GS	2-7/8	2.43 (61,7)	3000 (20,7)	2.88 (73,0)	2.2 (0,99) N3024GS-012L	3.3 (1,48) N3024GS-018L	4.4 (1,98) N3024GS-024L
N3020GS	2-3/8	2.00 (50,8)	3000 (20,7)	2.56 (65,1)	1.6 (0,73) N3020GS-012L	2.4 (1,10) N3020GS-018L	3.2 (1,46) N3020GS-024L
N252GQ	2 SSSHP	2.00 (50,8)	2500 (17,2)	4.00 (101,6)	2.3 (1,04) N252GQ-012L	3.5 (1,59) N252GQ-018L	4.6 (2,09) N252GQ-024L
N3015GS	1-1/2	1.50 (38,1)	3000 (20,7)	2.06 (52,4)	1.3 (0,59) N3015GS-012L	1.9 (0,89) N3015GS-018L	2.6 (1,18) N3015GS-024L

## Threaded Nipples\*

Male x Male

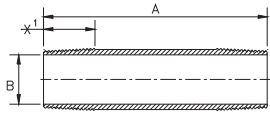
\* AROMATIC AMINE PRODUCTS ONLY



Product Code	Thread Size Inches	B Nominal Size In (mm)	Pressure PSI (MPa)	X <sub>1</sub> <sup>(4)</sup> In (mm)	A - Standard Lengths Ft. (m)		
					1 (.305)	1.5 (.457)	2 (.610)
					Weight Lbs (KGS) Product Code		
N1575DS	8-5/8	7.50 (196,6)	1500 (10,3)	4.50 (114,3)	---	---	23.4 (10,6) (N1575DS-024L)
N0879DS	8-5/8	7.98 (202,7)	800 (5,5)	4.50 (114,3)	---	---	13.2 (6,0) (N0879DS-024L)
N1558DS	6-5/8	5.85 (139,7)	1500 (10,3)	3.88 (98,4)	---	8.7 (4,0) (N1558DS-018L)	11.6 (5,3) (N1558DS-024L)
N0861DS	6-5/8	6.19 (157,2)	800 (15,5)	3.88 (98,4)	---	6.2 (2,8) (N0861DS-018L)	8.2 (3,7) (N0861DS-024L)
N2239DS	4-1/2	3.91 (76,2)	2250 (15,5)	3.50 (88,9)	3.9 (1,8) (N2239DS-012L)	5.8 (2,7) (N2239DS-018L)	7.8 (3,5) (N2239DS-024L)
N2530DS	3-1/2	3.00 (76,2)	2500 (17,2)	3.13 (79,4)	2.9 (1,3) (N2530DS-012L)	4.4 (2,0) (N2530DS-018L)	5.8 (2,6) (N2530DS-024L)
N2524DS	2-7/8	2.43 (61,7)	2500 (17,2)	2.88 (73,0)	2.2 (1,0) (N2524DS-012L)	3.3 (1,5) (N2524DS-018L)	4.4 (2,0) (N2524DS-024L)
N2720DS	2-3/8	2.00 (50,8)	2750 (19,0)	2.56 (65,1)	1.6 (0,7) (N2720DS-012L)	2.4 (1,1) (N2720DS-018L)	3.2 (1,5) (N2720DS-024L)
N2715DS	1-1/2	1.50 (38,1)	2750 (19,0)	2.06 (52,4)	1.3 (0,6) (N2715DS-012L)	1.9 (0,6) (N2715DS-018L)	2.6 (1,2) (N2715DS-024L)

**Threaded Nipples\***  
Male x Male

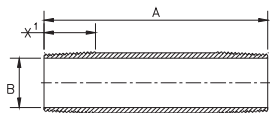
\* ANHYDRIDE EPOXY  
PRODUCTS ONLY



Product Code	Thread Size Inches	A - Standard Lengths Ft. (m)					Repair Nipples Product Code
		3 (.914)	4 (1.219)	6 (1.829)	8 (2.438)	10 (3.048)	
		Weight Lbs (KGS) Product Code					
N1575GS	8-5/8	35.2 (15,9) N1575GS-036L	46.8 (21,2) N1575GS-048L	70.4 (31,9) N1575GS-072L	93.6 (42,5) N1575GS-096L	117.0 (79,7) N1575GS-120L	450.6 (204,4)
N1079GS	8-5/8	19.8 (8,87) N1079GS-036L	26.4 (12,0) N1079GS-048L	39.6 (17,9) N1079GS-072L	52.8 (23,9) N1079GS-096L	66.0 (29,9) N1079GS-120L	297.6 (135,0)
N1558GS	6-5/8	17.4 (7,9) N1558GS-036L	23.2 (10,5) N1558GS-048L	34.8 (15,8) N1558GS-072L	46.4 (21,0) N1558GS-096L	58.0 (26,3) N1558GS-120L	252.8 (114,7)
N2055GS	6-5/8	17.7 (8,03) N2055GS-036L	23.6 (10,7) N2055GS-048L	35.3 (16,0) N2055GS-072L	47.1 (21,4) N2055GS-096L	58.9 (26,7) N2055GS-120L	201.8 (91,5)
N156GQ	6SSSHP	22.0 (9,98) N156GQ-036L	29.3 (13,29) N156GQ-048L	44.0 (19,96) N156GQ-072L	58.6 (26,58) N156GQ-096L	73.3 (33,25) N156GQ-120L	
N2837GS	4-1/2	15.3 (6,94) N2837GS-036L	20.4 (9,24) N2837GS-048L	30.6 (13,8) N2837GS-072L	40.8 (18,5) N2837GS-096L	51.0 (23,1) N2837GS-120L	209 (94,8)
N2539GS	4-1/2	11.7 (5,31) N2539GS-036L	15.6 (7,08) N2539GS-048L	23.4 (10,6) N2539GS-072L	31.2 (14,2) N2539GS-096L	39.0 (17,7) N2539GS-120L	173 (78,5)
N204GQ	4SSSHP	15.9 (7,21) N204GQ-036L	21.2 (9,62) N204GQ-048L	31.9 (14,47) N204GQ-072L	42.5 (19,28) N204GQ-096L	53.1 (24,09) N204GQ-120L	
N3030GS	3-1/2	8.7 (3,96) N3030GS-036L	11.6 (5,28) N3030GS-048L	17.4 (7,92) N3030GS-072L	23.2 (10,6) N3030GS-096L	29.0 (13,2) N3030GS-120L	120.6 (54,7)
N253GQ	3SSSHP	11.7 (5,31) N253GQ-036L	15.6 (7,08) N253GQ-048L	23.5 (10,66) N253GQ-072L	31.3 (14,20) N253GQ-096L	39.1 (17,74) N253GQ-120L	
N3024GS	2-7/8	6.6 (2,96) N3024GS-036L	8.8 (3,96) N3024GS-048L	13.2 (5,92) N3024GS-072L	17.6 (7,92) N3024GS-096L	22.0 (9,9) N3024GS-120L	93.2 (42,3)
N3020GS	2-3/8	4.8 (2,19) N3020GS-036L	6.4 (2,92) N3020GS-048L	9.6 (4,38) N3020GS-072L	12.8 (5,84) N3020GS-096L	16.0 (7,3) N3020GS-120L	67.4 (30,6)
N252GQ	2SSSHP	6.9 (3,13) N252GQ-036L	9.2 (4,17) N252GQ-048L	13.9 (6,31) N252GQ-072L	18.5 (8,39) N252GQ-096L	23.1 (10,48) N252GQ-120L	
N3015GS	1-1/2	3.9 (1,78) N3015GS-036L	5.2 (2,36) N3015GS-048L	7.8 (3,56) N3015GS-072L	10.4 (4,72) N3015GS-096L	13.0 (5,9) N3015GS-120L	50.2 (22,8)

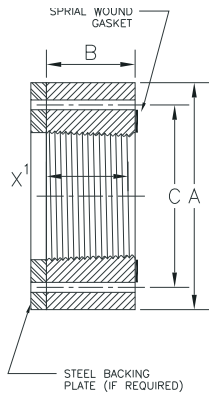
**Threaded Nipples\***  
Male x Male

\* AROMATIC AMINE  
PRODUCTS ONLY



Product Code	Thread Size Inches	A - Standard Lengths Ft. (m)					Repair Nipples Product Code
		3 (.914)	4 (1.219)	6 (1.829)	8 (2.438)	10 (3.048)	
		Weight Lbs (KGS) Product Code					
N1575DS	8-5/8	35.2 (15,9) (N1575DS-036L)	46.8 (21,2) (N1575DS-048L)	70.4 (31,9) (N1575DS-072L)	93.6 (42,5) (N1575DS-096L)	117.0 (79,76) (N1575DS-120L)	450.6 (204,4)
N0879DS	8-5/8	19.8 (8,9) (N0879DS-036L)	26.4 (12,0) (N0879DS-048L)	39,6 (17,9) (N0879DS-072L)	52.8 (23,9) (N0879DS-096L)	66.0 (29,9) (N0879DS-120L)	297.6 (135,0)
N1558DS	6-5/8	17.4 (7,9) (N1558DS-036L)	23.2 (10,5) (N1558DS-048L)	34.8 (15,8) (N1558DS-072L)	46.4 (21,0) (N1558DS-096L)	58.0 (26,3) (N1558DS-120L)	252.8 (114,7)
N0861DS	6-5/8	12.3 (5,6) (N0861DS-036L)	16.4 (7,4) (N0861DS-048L)	24.6 (11,2) (N0861DS-072L)	32.8 (14,9) (N0861DS-096L)	41.0 (18,6) (N0861DS-120L)	201.8 (91,5)
N2239DS	4-1/2	11.7 (5,3) (N2239DS-036L)	15.6 (7,1) (N2239DS-048L)	23.4 (10,6) (N2239DS-072L)	31.2 (14,2) (N2239DS-096L)	39.0 (17,7) (N2239DS-120L)	173.0 (78,5)
N2530DS	3-1/2	8.7 (4,0) (N2530DS-036L)	11.6 (5,3) (N2530DS-048L)	17.4 (7,9) (N2530DS-072L)	23.2 (10,6) (N2530DS-096L)	29.0 (13,2) (N2530DS-120L)	120.6 (54,7)
N2524DS	2-7/8	6.6 (3,0) (N2524DS-036L)	8.8 (4,0) (N2524DS-048L)	13.2 (5,9) (N2524DS-072L)	17.6 (7,9) (N2524DS-096L)	22.0 (9,9) (N2524DS-120L)	93.2 (42,3)
N2720DS	2-3/8	4.8 (2,2) (N2720DS-036L)	6.4 (2,9) (N2720DS-048L)	9.6 (4,4) (N2720DS-072L)	12.8 (5,8) (N2720DS-096L)	16.0 (7,3) (N2720DS-120L)	67.4 (30,6)
N2715DS	1-1/2	3.9 (1,8) (N2715DS-036L)	5.2 (2,4) (N2715DS-048L)	7.8 (3,6) (N2715DS-072L)	10.4 (4,7) (N2715DS-096L)	13.0 (5,9) (N2715DS-120L)	50.2 (22,8)

# Flanges Female



### IMPORTANT NOTICE:

When ordering valves, check the size ANSI bolt pattern in the first column (Product Code) versus the thread size ANSI Rating. Some sizes of high pressure (>3000 PSI) line pipe jump thread sizes and bolt pattern.

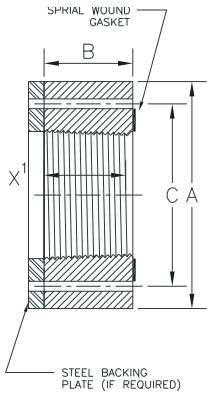
ALWAYS make sure to select the proper fittings by thread size, check the bolt pattern before purchasing valves.

### \*FIBERGLASS TO STEEL BOLT LENGTH:

Refer to the Fiber Glass Systems Line Pipe Installation and Application Practices Manual Table 2.7.1.2a for Fiberglass to Steel Bolt Lengths.

Product Code (Bolt Pattern)	Thread Size In	STAR Rating PSI (2) (MPa)	A Flange O.D. In (mm)	B Flange Width In (mm)	C Bolt Circle In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	No. of Bolts	Bolt (3) Size/Lg FG to FG* In (mm)	Bolt Hole Size In (mm)	Wt Lbs (kg)
<b>ANSI 150</b>										
FFF012Q (2" - 150)	2 SSSHP	300 (2,1)	6.0 (152,4)	3.13 (79,5)	4.75 (120,7)	3.625 (92,1)	4	.625 x 10 (15,9 x 254,0)	.750 (19,1)	4.7 (2,13)
FFF0123 (2" - 150)	2-3/8	300 (2,1)	6.0 (152,4)	3.06 (77,7)	4.75 (120,7)	2.53 (64,3)	4	.625 x 10 (15,9 x 254,0)	.750 (19,1)	4.6 (2,09)
FFF0127 (2½"-150)	2-7/8	300 (2,1)	7.0 (177,8)	3.38 (85,9)	5.50 (139,7)	2.88 (73,0)	4	.625 x 12 (15,9 x 304,8)	.750 (19,1)	7 (3,18)
FFF013Q (3" - 150)	3 SSSHP	300 (2,1)	7.5 (190,5)	4.25 (108,0)	6.00 (152,4)	4.25 (108,0)	4	.625 x 10 (15,9 x 254,0)	.750 (19,1)	9.5 (4,31)
FFF0135 (3"-150)	3½	300 (2,1)	7.5 (190,5)	3.63 (92,2)	6.00 (152,4)	3.13 (79,4)	4	.625 x 10 (15,9 x 254,0)	.750 (19,1)	8.1 (3,67)
FFF014Q (4"-150)	4 SSSHP	300 (2,1)	9.0 (228,6)	4.25 (108,0)	7.50 (190,5)	4.25 (108,0)	8	.625 x 14 (15,9 x 355,6)	.750 (19,1)	12.8 (5,81)
FFF0145 (4"-150)	4½	300 (2,1)	9.0 (228,6)	4.00 (101,6)	7.50 (190,5)	3.50 (88,9)	8	.625 x 14 (15,9 x 355,6)	.750 (19,1)	12.0 (5,44)
FFF016Q (6"-150)	6 SSSHP	300 (2,1)	11.0 (279,4)	4.25 (108,0)	9.50 (241,3)	4.75 (120,7)	8	.75 x 14 (19,1 x 355,6)	.875 (22,2)	19 (8,62)
FFF0165 (6"-150)	6-5/8	300 (2,1)	11.0 (279,4)	4.375 (111,1)	9.50 (241,3)	3.88 (98,4)	8	.75 x 14 (19,1 x 355,6)	.875 (22,2)	17.5 (7,94)
FFF0170 (6"-150)	7	300 (2,1)	11.0 (279,4)	5.00 (127,0)	9.50 (241,3)	4.50 (114,3)	8	.75 x 14 (19,1 x 355,6)	.875 (22,2)	18.4 (8,35)
FFF0185 (8"-150)	8-5/8	300 (2,1)	13.5 (342,9)	5.00 (127,0)	11.75 (298,5)	4.50 (114,3)	8	.75 x 14 (19,1 x 355,6)	.875 (22,2)	28.5 (12,93)
FFF0195 (8"-150)	9-5/8	300 (2,1)	13.5 (342,9)	5.25 (133,4)	11.75 (298,5)	4.75 (120,7)	8	.75 x 14 (19,1 x 355,6)	.875 (22,2)	24.8 (11,25)
FFF018R (8"-150)	8SS	300 (2,1)	13.5 (342,9)	5.00 (127,0)	11.75 (298,5)	4.75 (120,7)	8	.75 x 14 (19,1 x 355,6)	.875 (22,2)	28.2 (12,79)
FFF01AR (10"-150)	10SS	300 (2,1)	16.0 (406,4)	5.75 (146,1)	14.25 (362,0)	5.40 (137,2)	12	.875 x 15 (22,2 x 381,0)	1.00 (25,4)	37.2 (16,87)
FFF01CR (12"-150)	12SS	300 (2,1)	19.0 (482,6)	6.43 (163,3)	17.0 (431,8)	6.10 (154,9)	12	.875 x 16 (22,2 x 381,0)	1.00 (25,4)	61.1 (27,71)
<b>ANSI 300</b>										
FFF034Q (4"-300)	4 SSSHP	740 (5,1)	10.0 (254,0)	4.25 (108,0)	7.875 (200,0)	4.25 (108,0)	8	.75 x 14 (19,1 x 355,6)	.875 (22,2)	16.8 (7,62)
FFF0345 (4"-300)	4½	740 (5,1)	10.0 (254,0)	4.00 (101,6)	7.875 (200,0)	3.50 (88,9)	8	.75 x 14 (19,1 x 355,6)	.875 (22,2)	15.8 (7,17)
FFF0355 (4"-300)	5½	740 (5,1)	11.0 (279,4)	4.88 (124,0)	9.25 (235,0)	4.38 (111,1)	8	.875 x 14 (22,2 x 355,6)	1.00 (25,4)	22.6 (10,25)
FFF036Q (6"-300)	6 SSSHP	740 (5,1)	12.5 (317,5)	4.75 (120,7)	10.625 (269,9)	4.75 (120,7)	12	.75 x 14 (19,1 x 355,6)	.875 (22,2)	27.4 (12,43)
FFF0365 (6"-300)	6-5/8	740 (5,1)	12.5 (317,5)	4.375 (111,1)	10.625 (269,9)	3.88 (98,4)	12	.75 x 14 (19,1 x 355,6)	.875 (22,2)	25.2 (11,43)
FFF0370 (6"-300)	7	740 (5,1)	12.5 (317,5)	5.00 (127,0)	10.625 (269,9)	4.50 (114,3)	12	.75 x 14 (19,1 x 355,6)	.875 (22,2)	27.2 (12,34)
FFF0385 (8"-300)	8-5/8	740 (5,1)	15.0 (381,0)	5.00 (127,0)	13.00 (330,2)	4.50 (114,3)	12	.875 x 14 (22,2 x 355,6)	1.00 (25,4)	38.7 (17,55)
FFF0395 (8"-300)	9-5/8	740 (5,1)	15.0 (381,0)	5.25 (133,4)	13.00 (330,2)	4.75 (120,7)	12	.875 x 14 (22,2 x 355,6)	1.00 (25,4)	35.4 (16,06)
FFF038R (8"-300)	8SS	740 (5,1)	15.0 (381,0)	5.00 (127,0)	13.00 (330,2)	4.75 (120,7)	12	.875 x 14 (22,2 x 355,6)	1.00 (25,4)	38.3 (17,375)
FFF03AR (10"-300)	10SS	740 (5,1)	17.5 (444,5)	5.75 (146,1)	15.25 (387,4)	5.40 (137,2)	16	1 x 15 (25,4 x 381,0)	1.125 (28,6)	50.4 (22,86)
FFF03CR (12"-300)	12SS	740 (5,1)	20.5 (520,7)	6.43 (163,3)	17.75 (450,9)	6.10 (154,9)	16	1.125 x 16 (28,6 x 406,4)	1.25 (31,8)	77.4 (35,10)

# Flanges Female (continued)

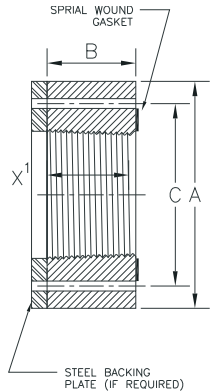


**RAISED FACE SPACER RINGS** are required for make-up of flanges ANSI 600 and higher to steel raised face flanges.

Product Code (Bolt Pattern)	Thread Size In	STAR Rating PSI (2) (MPa)	A Flange O.D. In (mm)	B Flange Width In (mm)	C Bolt Circle In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	No. of Bolts	Bolt (3) Size/Lg FG to FG* In (mm)	Bolt Hole Size In (mm)	Wt Lbs (kg)
<b>ANSI 300/600 (4)</b>										
FFF0619	1.90	1480 (10,2)	6.125 (155,6)	2.56 (66,0)	4.50 (114,3)	2.06 (52,4)	4	.75 x 10 (19,1 x 254,0)	.875 (22,2)	4.3 (1,95)
FFF062Q	2 SSSHP	1480 (10,2)	6.5 (165,1)	3.125 (80,7)	5.00 (127,0)	3.625 (92,1)	8	.625 x 10 (15,9 x 254,0)	.750 (19,1)	5.4 (2,43)
FFF0623	2-3/8	1480 (10,2)	6.5 (165,1)	3.06 (77,7)	5.00 (127,0)	2.56 (65,1)	8	.625 x 10 (15,9 x 254,0)	.750 (19,1)	5.3 (2,40)
FFF0627	2-7/8	1480 (10,2)	7.5 (190,5)	3.38 (85,9)	5.875 (149,2)	2.88 (73,0)	8	.75 x 12 (19,1 x 304,8)	.875 (22,2)	7.6 (3,45)
FFF063Q	3 SSSHP	1480 (10,2)	8.25 (209,6)	4.25 (108,0)	6.625 (168,3)	4.25 (108,0)	8	.75 x 10 (19,1 x 254,0)	.875 (22,2)	11.3 (5,13)
FFF0635	3½	1480 (10,2)	8.25 (209,6)	3.63 (92,2)	6.625 (168,3)	3.13 (79,4)	8	.75 x 10 (19,1 x 254,0)	.875 (22,2)	9.7 (4,40)
<b>ANSI 600 (4)</b>										
FFF064Q (4" - 600)	4 SSSHP	1480 (10,2)	10.75 (273,1)	4.25 (108,0)	8.50 (215,9)	4.25 (108,0)	8	.875 x 14 (22,2 x 355,6)	1.00 (25,4)	20.0 (9,07)
FFF0645 (4" - 600)	4½	1480 (10,2)	10.75 (273,1)	4.00 (101,6)	8.50 (215,9)	3.50 (88,9)	8	.875 x 14 (22,2 x 355,6)	1.00 (25,4)	18.8 (8,53)
FFF0655 (4" - 600)	5½	1480 (10,2)	13.0 (330,2)	4.88 (124,0)	10.50 (266,7)	4.38 (111,1)	8	1 x 14 (25,4 x 355,6)	1.125 (28,6)	34.9 (15,83)
FFF066Q (6" - 600)	6 SSSHP	1480 (10,2)	14.0 (355,6)	4.75 (120,7)	11.50 (292,1)	4.75 (120,7)	12	1 x 14 (25,4 x 355,6)	1.125 (28,6)	36.2 (16,42)
FFF0665 (6" - 600)	6-5/8	1480 (10,2)	14.0 (355,6)	4.375 (111,1)	11.50 (292,1)	3.88 (98,4)	12	1 x 14 (25,4 x 355,6)	1.125 (28,6)	33.3 (15,10)
FFF0670 (6" - 600)	7	1480 (10,2)	14.0 (355,6)	5.00 (127,0)	11.50 (292,1)	4.50 (114,3)	12	1 x 14 (25,4 x 355,6)	1.125 (28,6)	36.5 (16,56)
FFF0685 (8" - 600)	8-5/8	1480 (10,2)	16.5 (419,1)	5.00 (127,0)	13.75 (349,3)	4.50 (114,3)	12	1.125 x 14 (28,6 x 355,6)	1.25 (31,8)	49.8 (22,59)
FFF0695 (8" - 600)	9-5/8	1480 (10,2)	16.5 (419,1)	5.25 (133,4)	13.75 (349,3)	4.75 (120,7)	12	1.375 x 14 (34,9 x 355,6)	1.25 (31,8)	47.1 (21,36)
FFF068R (8" - 600)	8SS	1480 (10,2)	16.5 (419,1)	5.00 (127,0)	13.75 (349,3)	4.75 (120,7)	12	1.125 x 14 (28,6 x 355,6)	1.25 (31,8)	49.4 (22,41)
FFF06AR (10" - 600)	10SS	1480 (10,2)	20.0 (508,0)	5.75 (146,1)	17.00 (431,8)	5.40 (137,2)	16	1.25 x 15 (31,8 x 381,0)	1.375 (34,9)	76.9 (34,88)
FFF06CR (12" - 600)	12SS	1480 (10,2)	22.0 (558,8)	6.43 (163,3)	19.25 (489,0)	6.10 (154,9)	20	1.25 x 16 (28,6 x 406,4)	1.375 (34,9)	95.4 (43,27)
<b>ANSI 900 (4)</b>										
FFF093Q (3" - 900)	3 SSSHP	2220 (15,3)	9.5 (241,3)	4.25 (108,0)	7.50 (190,5)	4.25 (108,0)	8	.875 x 10 (22,2 x 254,0)	1.00 (25,4)	16.1 (7,30)
FFF0935 (3" - 900)	3½	2220 (15,3)	9.5 (241,3)	3.63 (92,2)	7.50 (190,5)	3.13 (79,4)	8	.875 x 10 (22,2 x 254,0)	1.00 (25,4)	13.7 (6,21)
FFF094Q (4" - 900)	4 SSSHP	2220 (15,3)	11.5 (292,1)	4.25 (108,0)	9.25 (235,0)	4.25 (108,0)	8	1.125 x 14 (28,6 x 355,6)	1.25 (31,8)	22.9 (10,39)
FFF0945 (4" - 900)	4½	2220 (15,3)	11.5 (292,1)	4.00 (101,6)	9.25 (235,0)	3.50 (88,9)	8	1.125 x 14 (28,6 x 355,6)	1.25 (31,8)	21.5 (7,75)
FFF0955 (4" - 900)	5½ (1)	2220 (15,3)	13.75 (349,3)	4.88 (124,0)	11.00 (279,4)	4.38 (111,1)	8	1.25 x 14 (31,8 x 355,6)	1.375 (34,9)	38.9 (17,64)
FFF096Q (6" - 900)	6 SSSHP (1)	2220 (15,3)	15.0 (381,0)	4.75 (120,7)	12.50 (317,5)	4.75 (120,7)	12	1.125 x 14 (28,6 x 355,6)	1.25 (31,8)	42.8 (19,41)
FFF0965 (6" - 900)	6-5/8 (1)	2220 (15,3)	15.0 (381,0)	4.375 (111,1)	12.50 (317,5)	4.88 (98,4)	12	1.125 x 14 (28,6 x 355,6)	1.25 (31,8)	39.4 (17,87)
FFF0970 (6" - 900)	7 (1)	2220 (15,3)	15.0 (381,0)	5.00 (127,0)	12.50 (317,5)	4.50 (114,3)	12	1.125 x 14 (28,6 x 355,6)	1.25 (31,8)	43.5 (19,73)
FFF0995 (8" - 900)	9-5/8 (1)	2220 (15,3)	18.5 (469,9)	5.25 (133,4)	15.50 (393,7)	4.75 (120,7)	12	1.375 x 14 (34,9 x 355,6)	1.50 (38,1)	64.9 (29,44)

- IMPORTANT NOTICE:**
1. Steel backing plates are required on these flanges. All flanges are to be installed with spiral wound (flexitalic) gaskets.
  2. Rated pressures are at 200°F.
  3. Bolt length equals fiberglass to fiberglass makeup.
  4. Raised face spacers rings required for make-up of flanges ANSI 600 and higher to steel raised face flanges.

# Flanges Female (continued)



### IMPORTANT NOTICE:

When ordering valves, check the size ANSI bolt pattern in the first column (Product Code) versus the thread size ANSI Rating. Some sizes of high pressure (>3000 PSI) line pipe jump thread sizes and bolt pattern.

ALWAYS make sure to select the proper fittings by thread size, check the bolt pattern before purchasing valves.

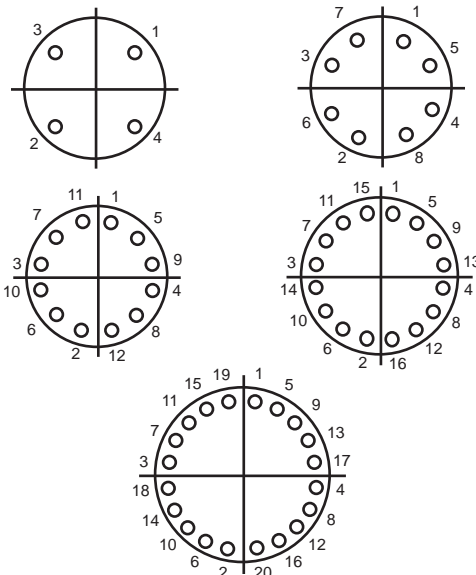
### FIBERGLASS TO STEEL BOLT LENGTH

\* Refer to the Fiber Glass Systems Line Pipe Installation and Application Practices Manual Table 2.7.1.2a for Fiberglass to Steel Bolt Lengths.

**RAISED FACE SPACER RINGS** are required for make-up of flanges ANSI 600 and higher to steel raised face flanges.

Product Code (Bolt Pattern)	Thread Size In	STAR Rating PSI (2) (MPa)	A Flange O.D. In (mm)	B Flange Width In (mm)	C Bolt Circle In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	No. of Bolts	Bolt (3) Size/Lg FG to FG* In (mm)	Bolt Hole Size In (mm)	Wt Lbs (kg)
<b>ANSI 900/1500<sup>(4)</sup></b>										
FFF1519 (1½"-900/1500)	1.90	3705 (25,6)	7.00 (177,8)	2.56 (65,0)	4.875 (123,8)	2.05 (52,1)	4	1 x 10 (25,4 x 254,0)	1.125 (28,6)	5.6 (2,54)
FFF152Q (2"-900/1500)	2 SSSHP	3705 (25,6)	8.50 (215,9)	3.125 (79,4)	6.50 (165,1)	3.625 (92,1)	8	.875 x 10 (22,2 x 254,0)	1.00 (25,4)	9.9 (4,49)
FFF1523 (2"-900/1500)	2-3/8	3705 (25,6)	8.50 (215,9)	3.06 (77,7)	6.50 (165,1)	2.56 (65,1)	8	.875 x 10 (22,2 x 254,0)	1.00 (25,4)	9.7 (4,40)
FFF1527 (2½"-900/1500)	2-7/8	3705 (25,6)	9.625 (244,5)	3.38 (85,9)	7.50 (190,5)	2.88 (73,0)	8	1 x 12 (25,4 x 304,8)	1.125 (28,6)	13.6 (6,17)
<b>ANSI 1500<sup>(4)</sup></b>										
FFF153Q (3"-1500)	3 SSSHP	3705 (25,6)	10.5 (266,7)	4.25 (108,0)	8.00 (203,2)	4.25 (108,0)	8	1.125 x 12 (25,4 x 304,8)	1.25 (31,8)	19.7 (8,94)
FFF1535 (3" - 1500)	3½	3705 (25,6)	10.5 (266,7)	3.63 (92,2)	8.00 (203,2)	3.13 (79,4)	8	1.125 x 12 (25,4 x 304,8)	1.25 (31,8)	16.8 (7,62)
FFF154535 (3"-1500)	4¼	3705 (25,6)	10.5 (266,7)	4.00 (101,6)	8.00 (203,2)	3.50 (88,9)	8	1.125 x 12 (25,4 x 304,8)	1.125 (28,6)	18.8 (8,53)
FFF154Q (4"-1500)	4 SSSHP	3705 (25,6)	12.25 (311,2)	4.25 (108,0)	9.50 (241,3)	4.25 (108,0)	8	1.25 x 14 (31,8 x 355,6)	1.375 (34,9)	26.4 (11,98)
FFF1545 (4" - 1500)	4½ (1)	3705 (25,6)	12.25 (311,2)	4.00 (101,6)	9.50 (241,3)	3.50 (88,9)	8	1.25 x 14 (31,8 x 355,6)	1.375 (34,9)	24.9 (11,29)
FFF155545 (4" - 1500)	5½ (1)	3705 (25,6)	12.25 (311,2)	4.88 (124,0)	9.50 (241,3)	4.38 (111,1)	8	1.25 x 14 (31,8 x 355,6)	1.375 (34,9)	28.5 (12,93)
FFF1555 (5" - 1500)	5½ (1)	3705 (25,6)	14.75 (374,7)	4.88 (124,0)	11.50 (292,1)	4.38 (111,1)	8	1.5 x 14 (38,1 x 355,6)	1.625 (41,3)	44.9 (20,37)
FFF156Q (6"-1500)	6 SSSHP (1)	3705 (25,6)	15.5 (393,7)	4.75 (120,7)	12.5 (317,5)	4.75 (120,7)	12	1.375x14 (34,9 x 355,6)	1.50 (38,1)	44.6 (20,23)
FFF1565 (6" - 1500)	6-5/8 (1)	3705 (25,6)	15.5 (393,7)	4.375 (111,1)	12.5 (317,5)	3.88 (98,4)	12	1.375x14 (34,9 x 355,6)	1.50 (38,1)	41.1 (18,64)
FFF1570 (6" - 1500)	7 (1)	3705 (25,6)	15.5 (393,7)	5.00 (127,0)	12.5 (317,5)	4.50 (114,3)	12	1.375 x 14 (34,9 x 355,6)	1.50 (38,1)	45.4 (20,59)
FFF1595 (8" - 1500)	9-5/8 (1)	3705 (25,6)	19.0 (482,6)	5.25 (133,4)	15.5 (393,7)	4.75 (120,7)	12	1.625 x 14 (41,3 x 355,6)	1.75 (44,5)	72.0 (32,66)

### Bolt Torquing Sequence



### Bolt Torque vs. Bolt Length

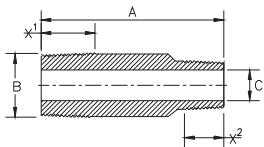
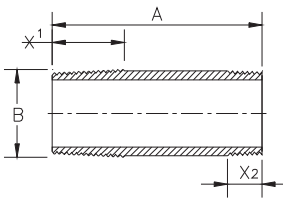
Bolt Size (inch)	Torque			
	Grade 2		Grade 5	
	ft/lb	N/m	ft/lb	N/m
5/8"	54	73	89	120
3/4"	96	130	160	216
7/8"	155	210	258	349
1"	230	311	386	523
1 1/8"	324	439	544	737
1 1/4"	460	623	776	1052
1 3/8"	595	806	1006	1363
1 1/2"	795	1077	1347	1826

Multiply by 0.9 for plating

NOTE: Regardless of bolting material, do not exceed Grade 5 torque.

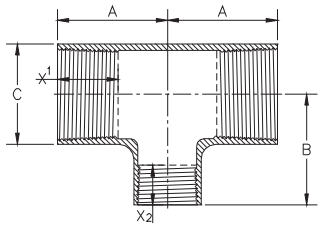
# Changeover Nipples and Swages

Male x NPT Male



Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> In (mm)	X <sub>2</sub> In (mm)	Wt Lbs (kg)
FCN201915	1.90 x 1.50 NPT	2000 (13,8)	9.0 (228,6)	2.15 (54,6)	2.06 (52,4)	1.02 (25,9)	1.1 (0,50)
FCN202321	2-3/8 x 2 NPT	2000 (13,8)	10.0 (254,0)	2.60 (66,0)	2.56 (65,1)	1.05 (26,7)	1.7 (0,77)
FSW202721	2-7/8 x 2 NPT	2000 (13,8)	11.0 (279,4)	3.10 (78,7)	2.88 (73,0)	1.06 (26,9)	3.5 (5,21)
FCN152726	2-7/8 x 2½ NPT	1500 (10,3)	11.0 (279,4)	3.10 (78,7)	2.88 (73,0)	1.57 (39,9)	2.5 (1,13)
FSW153123	3 NPT x 2-3/8	1500 (10,3)	11.0 (279,4)	3.75 (95,3)	1.63 (41,4)	2.56 (65,1)	5.5 (8,18)
FSW153127	3 NPT x 2-7/8	1500 (10,3)	11.0 (279,4)	3.75 (95,3)	1.63 (41,4)	2.88 (73,0)	7.0 (10,4)
FSW203521	3½ x 2 NPT	2000 (13,8)	11.0 (279,4)	3.75 (95,3)	3.13 (79,4)	1.06 (26,9)	5.5 (8,18)
FSW153526	3½ x 2½ NPT	1500 (10,3)	11.0 (279,4)	3.75 (95,3)	3.13 (79,4)	1.57 (39,9)	7.0 (10,4)
FCN153531	3½ x 3 NPT	1500 (10,3)	11.0 (279,4)	3.75 (95,3)	3.13 (79,4)	1.63 (41,4)	3.2 (1,45)
FSW154123	4 NPT x 2-3/8	1500 (10,3)	13.0 (330,2)	4.80 (121,9)	1.73 (43,9)	2.56 (65,1)	12.0 (17,9)
FSW154135	4 NPT x 3½	1500 (10,3)	13.0 (330,2)	4.71 (119,6)	1.73 (43,9)	3.13 (79,4)	10.6 (15,8)
FCN154541	4½ x 4 NPT	1500 (10,3)	12.0 (304,8)	4.80 (121,9)	3.50 (88,9)	1.94 (49,3)	5.2 (2,36)
FSW204521	4½ x 2 NPT	2000 (13,8)	13.0 (330,2)	4.80 (121,9)	3.50 (88,9)	1.06 (26,9)	14.0 (20,8)
FSW154526	4½ x 2½ NPT	1500 (10,3)	13.0 (330,2)	4.80 (121,9)	3.50 (88,9)	1.57 (39,9)	12.0 (17,9)
FSW154531	4½ x 3 NPT	1500 (10,3)	13.0 (330,2)	4.71 (119,6)	3.50 (88,9)	1.63 (41,4)	10.6 (15,8)
FCN155551	5½ x 5 NPT	1500 (10,3)	13.0 (330,2)	5.55 (141,0)	4.38 (111,1)	1.73 (43,9)	6.0 (2,72)
FCN106561	6-5/8 x 6 NPT	1000 (6,9)	13.0 (330,2)	6.65 (168,9)	3.88 (98,4)	1.95 (49,5)	8.1 (3,67)
FCN107061	7 x 6 NPT	1000 (6,9)	13.0 (330,2)	7.05 (179,1)	4.50 (114,3)	1.95 (49,5)	9.8 (4,45)
FCN108581	8-5/8 x 8 NPT	1000 (6,9)	13.0 (330,2)	8.85 (224,8)	4.50 (114,3)	2.15 (54,6)	11.1 (5,03)
FCN109581	9-5/8 x 8 NPT	1000 (6,9)	13.0 (330,2)	9.65 (245,1)	4.75 (120,7)	2.15 (54,6)	20.2 (9,16)

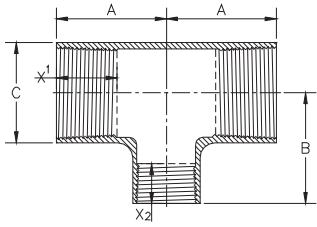
# Reducing Tee Female



Product Code	Thread Size Inches	Pressure Rating		A In (mm)	B In (mm)	C In (mm)	X <sub>1</sub> In (mm)	X <sub>2</sub> In (mm)	Wt Lbs (kg)
		PSI (MPa)							
FRT152319	2-3/8 x 1.90	1500 (10,3)		5.25 (133,4)	5.75 (146,1)	3.4 (86,4)	2.56 (65,1)	2.06 (52,4)	11 (4,99)
FRT252319		2500 (17,2)				4.0 (101,6)			12 (5,44)
FRT123523	3½ x 2-3/8	1250 (8,6)		6.50 (165,1)	7.00 (177,8)	4.8 (121,9)	3.13 (79,4)	2.56 (65,1)	14 (6,35)
FRT203523		2000 (13,8)				5.5 (139,7)			21 (9,53)
FRT253523		2500 (17,2)				5.95 (151,1)			26 (11,79)
FRT303523		3000 (20,7)				6.4 (162,6)			50 (22,68)
FRT403523		4000 (27,6)				7.3 (185,4)			65 (29,48)
FRT124523	4½ x 2-3/8	1250 (8,6)		7.50 (190,5)	7.50 (190,5)	6.2 (157,5)	3.50 (88,9)	2.56 (65,1)	25 (11,34)
FRT204523		2000 (13,8)				7.0 (177,8)			39 (17,69)
FRT254523		2500 (17,2)				7.6 (193,0)			48 (21,77)
FRT304523		3000 (20,7)				8.1 (205,7)			75 (34,02)
FRT404523		4000 (27,6)				9.0 (228,6)			85 (38,56)
FRT124535	4½ x 3½	1250 (8,6)		7.50 (190,5)	8.50 (215,9)	6.2 (157,5)	3.50 (88,9)	3.13 (79,4)	25 (11,34)
FRT204535		2000 (13,8)				7.0 (177,8)			39 (17,69)
FRT254535		2500 (17,2)				7.6 (193,0)			48 (21,77)
FRT304535		3000 (20,7)				8.1 (205,7)			75 (34,02)
FRT404535		4000 (27,6)				9.0 (228,6)			85 (38,56)
FRT126535	6-5/8 x 3½	1250 (8,6)		8.50 (215,9)	9.75 (247,7)	8.5 (215,9)	3.88 (98,4)	3.13 (79,4)	60 (27,22)
FRT206535		2000 (13,8)				9.5 (241,3)			80 (36,29)
FRT126545	6-5/8 x 4½	1250 (8,6)		8.50 (215,9)	9.75 (247,7)	8.5 (215,9)	3.88 (98,4)	3.50 (88,9)	60 (27,22)
FRT206545		2000 (13,2)				9.5 (241,3)			80 (36,29)
FRT226545		2250 (15,5)				10 (254,0)			100 (148,8)
FRT207035	7 x 3½	2000 (13,2)		9.625 (244,5)	9.50 (241,3)	10.1 (256,5)	4.50 (114,3)	3.13 (79,4)	75 (34,02)
FRT207045	7 x 4½	2000 (13,2)			10.00 (254,0)	10.1 (256,5)		3.50 (88,9)	75 (34,02)
FRT128535	8-5/8 x 3½	1250 (8,6)		10.00 (254,0)	11.75 (298,5)	11.0 (279,4)	4.50 (114,3)	3.13 (79,4)	70 (31,75)
FRT128545	8-5/8 x 4½	1250 (8,6)				11.0 (279,4)		3.50 (88,9)	70 (31,75)
FRT128565	8-5/8 x 6-5/8	1250 (8,6)				11.0 (279,4)		3.88 (98,4)	55 (24,95)
FRT08AR65	10SS x 6-5/8	800 (5,5)		12.00 (304,8)	12.00 (304,8)	13.5 (342,9)	5.40 (137,2)	3.88 (98,4)	85 (38,56)
FRT10AR65		1000 (6,9)				14.0 (355,6)			103 (46,723)
FRT12AR65		1250 (8,6)				14.6 (370,8)			120 (54,4)

## Reducing Tee

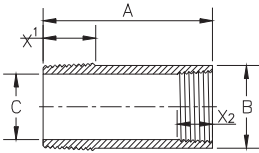
Female  
(continued)



Product Code	Thread Size Inches	Pressure Rating		A In (mm)	B In (mm)	C In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	X <sub>2</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)
		PSI (MPa)	MPa						
FRT08AR85	10SS x 8-5/8	800 (5,5)		12.00 (304,8)	12.00 (304,8)	13.5 (342,9)	5.4 (137,2)	4.50 (114,3)	90 (40,82)
FRT10AR85		1000 (6,9)				14.0 (355,6)			125 (56,70)
FRT12AR85		1250 (8,6)				14.6 (370,8)			160 (72,58)
FRT08AR8R	10SS x 8SS	800 (5,5)		12.00 (304,8)	13.50 (342,9)	13.5 (342,9)	5.40 (137,2)	4.75 (120,7)	98 (44,45)
FRT10AR85		1000 (6,9)				14.0 (355,6)			125 (56,70)
FRT12AR8R		1250 (8,6)				14.6 (370,8)			160 (72,58)
FRT12CR85	12SS x 8-5/8	1250 (8,6)		14.75 (374,7)	14.75 (374,7)	17.1 (434,3)	6.10 (154,9)	4.50 (114,3)	230 (104,33)
FRT10CR8R	12SS x 8SS	1250 (8,6)						4.75 (120,7)	225 (102,06)
FRT10CRAR	12SS x 10SS	1250 (8,6)						5.40 (137,2)	245 (111,13)

## Reducing Bushing

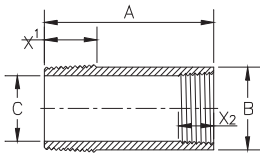
Male x Female



Product Code	Thread Size Inches	Pressure Rating		A In (mm)	B In (mm)	C In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	X <sub>2</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)
		PSI (MPa)	MPa						
FBU252719	2-7/8 x 1.90	2500 (17,2)		10.0 (254,0)	3.1 (78,7)	1.44 (36,6)	2.88 (73,0)	2.06 (52,4)	2.5 (1.13)
FBU353519	3½ x 1.90	3500 (24,1)		10.0 (254,0)	3.75 (95,3)	1.44 (36,6)	3.13 (79,4)	2.06 (52,4)	6 (2.72)
FBU253523	3½ x 2-3/8	2500 (17,2)		10.88 (276,4)		1.94 (49,3)		2.56 (65,1)	4 (1.81)
FBU354519	4½ x 1.90	3500 (24,1)		10.0 (254,0)	4.80 (121,9)	1.44 (36,6)	3.50 (88,9)	2.06 (52,4)	11 (4.99)
FBU404523	4½ x 2-3/8	4000 (27,6)		10.88 (276,4)		1.94 (49,3)		2.56 (65,1)	10 (4.54)
FBU304527	4½ x 2-7/8	3000 (20,7)				2.36 (59,9)		2.88 (73,0)	8.5 (3.86)
FBU104535	4½ x 3½	1000 (13,8)		10.88 (276,4)	4.80 (121,9)	2.95 (74,9)	3.50 (88,9)	3.13 (79,4)	6.0 (2.72)
FBU405523	5½ x 2-3/8	4000 (27,6)		10.88 (276,4)	5.55 (141,0)	1.94 (49,3)	4.38 (111,1)	2.56 (65,1)	16 (7.26)
FBU405527	5½ x 2-7/8	4000 (27,6)				2.36 (59,9)		2.88 (73,0)	14 (6.35)
FBU405535	5½ x 3½	4000 (27,6)		11.13 (282,7)		2.95 (74,9)		3.13 (79,4)	11.5 (5.22)
FBU206523	6-5/8 x 2-3/8	2000 (13,8)		10.88 (276,4)	6.65 (168,9)	1.95 (49,5)	3.88 (98,4)	2.56 (65,1)	27 (12,25)
FBU206527	6-5/8 x 2-7/8	2000 (13,8)				2.36 (59,9)		2.88 (73,0)	25 (11,34)
FBU206535	6-5/8 x 3½	2000 (13,8)		11.13 (282,7)		2.94 (74,7)		3.13 (79,4)	22 (9.98)
FBU206545	6-5/8 x 4½	2000 (13,8)				3.95 (100,3)		3.50 (88,9)	16 (7.26)
FBU257035	7 x 3½	2500 (17,2)		11.13 (282,7)	7.10 (180,3)	2.95 (74,9)	4.50 (114,3)	3.13 (79,4)	24 (10.89)
FBU257045	7 x 4½	2500 (17,2)				3.95 (100,3)		3.50 (88,9)	21 (9.53)
FBU158545	8-5/8 x 4½	1500 (10,3)				3.95 (100,3)		3.50 (88,9)	44 (19,96)

## Reducing Bushing

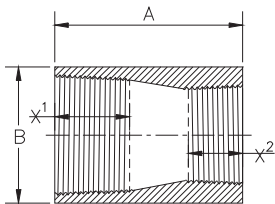
Male x Female  
(continued)



Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	C In (mm)	X <sub>1</sub> In (mm) <sup>(4)</sup>	X <sub>2</sub> In (mm) <sup>(4)</sup>	Wt Lbs (kg)
FBU158565	8-5/8 x 6-5/8	1500 (10,3)	12.0 (304,8)		5.95 (151,1)		3.88 (98,4)	30 (13,61)
FBU209565	9-5/8 x 6-5/8	2000 (13,8)	11.98 (304,3)	9.65 (245,1)				38 (17,24)
FBU10AR65	10SS x 6-5/8	1000 (13,8)	12.0 (304,8)	11.25 (285,8)	5.95 (151,1)	5.40 (137,2)	3.88 (98,4)	65 (29,48)
FBU10AR85	10SS x 8-5/8	1000 (13,8)			7.74 (196,6)		4.50 (114,3)	50 (22,68)
FBU10AR8R	10SS x 8SS	1000 (13,8)			7.74 (196,6)		4.75 (120,7)	50 (22,68)
FBU10CR85	12SS x 8-5/8	1000 (13,8)	12.0 (304,8)	14.4 (365,8)	7.74 (196,6)	6.10 (154,9)	4.50 (114,3)	80 (36,28)
FBU10CR8R	12SS x 8SS	1000 (13,8)			7.74 (196,6)		4.75 (120,7)	80 (36,28)
FBU10CRAR	12SS x 10SS	1000 (13,8)			11.81 (300,0)		5.40 (137,2)	70 (31,77)

## Reducing Coupling

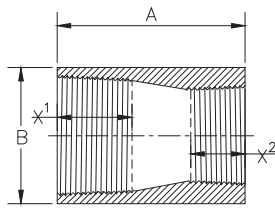
Female x Female



Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> In (mm) <sup>(4)</sup>	X <sub>2</sub> In (mm) <sup>(4)</sup>	Wt Lbs (kg)
FRC402319	2-3/8 x 1.90	4000 (27,6)	6.625 (168,3)	4.25 (108,0)	2.56 (65,1)	2.06 (52,4)	4 (1,81)
FRC402719	2-7/8 x 1.90	4000 (27,6)	6.8 (172,7)	5.25 (133,4)	2.88 (73,0)	2.06 (52,4)	7 (3,18)
FRC202723	2-7/8 x 2-3/8	2000 (13,8)	4.2 (106,7)				6.0 (8,93)
FRC402723	2-7/8 x 2-3/8	4000 (27,6)	7.2 (182,9)			2.56 (65,1)	8.5 (3,86)
FRC403519	3½ x 1.90	4000 (27,6)	8.0 (203,2)	6.0 (152,4)	3.13 (79,4)	2.06 (52,4)	18 (8,16)
FRC403523	3½ x 2-3/8	4000 (27,6)				2.56 (65,1)	13 (5,90)
FRC403527	3½ x 2-7/8	4000 (27,6)				2.88 (73,0)	12 (5,44)
FRC404519	4½ x 1.90	4000 (27,6)	10.125 (257,2)	7.45 (189,2)	3.50 (88,9)	2.06 (52,4)	28 (12,70)
FRC404523	4½ x 2-3/8	4000 (27,6)				2.56 (65,1)	24 (10,89)
FRC404527	4½ x 2-7/8	4000 (27,6)	10.375 (263,5)			2.88 (73,0)	26 (11,79)
FRC404535	4½ x 3½	4000 (27,6)	10.125 (257,2)			3.13 (79,4)	20 (9,07)
FRC405523	5½ x 2-3/8	4000 (27,6)	10.375 (263,5)	8.7 (221,0)	4.38 (111,1)	2.56 (65,1)	38 (17,24)
FRC405527	5½ x 2-7/8	4000 (27,6)		8.5 (215,9)		2.88 (73,0)	30 (13,61)
FRC405535	5½ x 3½	4000 (27,6)				3.13 (79,4)	34 (15,42)
FRC405545	5½ x 4½	4000 (27,6)				3.50 (88,9)	30 (13,61)
FRC206535	6-5/8 x 3½	2000 (13,8)	15.0 (381,0)	8.5 (215,9)	3.88 (98,4)	3.13 (79,4)	37 (16,78)
FRC206545	6-5/8 x 4½	2000 (13,8)				3.50 (88,9)	34 (15,42)

## Reducing Coupling

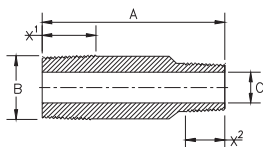
Female x Female  
(continued)



Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> In (mm) <sup>(4)</sup>	X <sub>2</sub> In (mm) <sup>(4)</sup>	Wt Lbs (kg)
FRC257045	7 x 4½	2500 (17,2)	15.0 (381,0)	9.5 (241,3)	4.50 (114,3)	3.50 (88,9)	44 (19,96)
FRC257055	7 x 5½	2500 (17,2)				4.38 (111,1)	40 (18,14)
FRC158545	8-5/8 x 4½	1500 (10,3)	15.0 (381,0)	10.3 (261,6)	4.50 (114,3)	3.50 (88,9)	55 (24,95)
FRC158565	8-5/8 x 6-5/8	1500 (10,3)	13.0 (330,2)			3.88 (98,4)	45 (20,41)
FRC158570	8-5/8 x 7	1500 (10,3)	15.0 (381,0)			4.50 (114,3)	39 (17,69)
FRC209545	9-5/8 x 4½	2000 (13,8)	15.0 (381,0)	12.2 (309,9)	4.75 (120,7)	3.50 (88,9)	88 (39,92)
FRC209570	9-5/8 x 7	2000 (13,8)				4.50 (114,3)	76 (34,47)
FRC159585	9-5/8 x 8-5/8	1500 (10,3)				4.50 (114,3)	58 (26,31)
FRC128R45	8SS x 4½	1250 (8,6)	16.5 (419,1)	10.0 (254,0)	6.10 (154,9)	3.50 (88,9)	57 (84,8)
FRC128R65	8SS x 6-5/8	1250 (8,6)	14.5 (368,3)			3.88 (98,4)	47 (69,8)
FRC12AR65	10SS x 6-5/8	1250 (8,6)	19.5 (495,3)	13.8 (350,5)	5.40 (137,2)	3.88 (98,4)	68 (30,84)
FRC12AR85	10SS x 8-5/8	1250 (8,6)				4.50 (114,3)	63 (28,58)
FRC12AR8R	10SS x 8SS	1250 (8,6)	15.0 (381,0)			4.75 (120,7)	50 (22,68)
FRC12CR85	12SS x 8-5/8	1250 (8,6)	18.3 (464,8)	16.0 (406,4)	6.10 (154,9)	4.50 (114,3)	90 (40,82)
FRC12CR95	12SS x 9-5/8	1250 (8,6)	20.5 (520,7)				90 (40,82)
FRC12CR8R	12SS x 8SS	1250 (8,6)	19.5 (495,3)			4.75 (120,7)	90 (40,82)
FRC12CRAR	12SS x 10SS	1250 (8,6)	16.0 (406,4)			5.40 (137,2)	75 (34,02)

## Swage Nipples

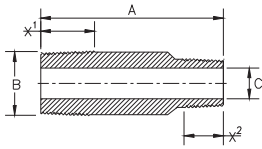
Male x Male



Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	C In (mm)	X <sub>1</sub> In (mm) <sup>(4)</sup>	X <sub>2</sub> In (mm) <sup>(4)</sup>	Wt Lbs (kg)
FSW252319	2-3/8 x 1.90	2500 (17,2)	12.0 (304,8)	2.60 (66,0)	1.50 (38,1)	2.56 (65,1)	2.06 (52,4)	3.0 (1,36)
FSW352719	2-7/8 x 1.90	3500 (24,1)	12.0 (304,8)	3.10 (78,7)	1.50 (38,1)	2.88 (73,0)	2.06 (52,4)	4.5 (2,04)
FSW252723	2-7/8 x 2-3/8	2500 (17,2)			2.00 (50,8)		2.56 (65,1)	3.5 (1,59)
FSW352723	2-7/8 x 2-3/8	3500 (24,1)						3.5 (1,59)
FSW353Q2Q	3" X 2" (SSSHP)	3500 (24,1)	12.0 (304,8)	3.75 (95,3)	2.00 (50,8)	4.35 (110,5)	3.75 (95,3)	5.5 (2,49)
FSW353519	3½ x 1.90	3500 (24,1)	12.0 (304,8)	3.75 (95,3)	1.50 (38,1)	3.13 (79,4)	2.06 (52,4)	8.0 (3,63)
FSW353523	3½ x 2-3/8	3500 (24,1)			2.00 (50,8)		2.56 (65,1)	5.5 (2,49)
FSW303527	3½ x 2-7/8	3000 (20,7)			2.43 (61,7)		2.88 (73,0)	4.5 (2,04)

# Swage Nipples

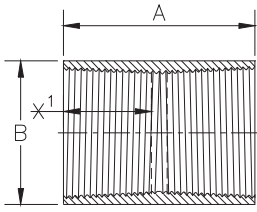
Male x Male  
(continued)



Product Code	Thread Size Inches	Pressure		A In (mm)	B In (mm)	C In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	X <sub>2</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)
		Rating PSI (MPa)							
FSW354Q2Q	4 X 2 (SSSHP)	3500 (24,1)		14.0 (355,6)	4.8 (121,9)	2.00 (50,8)	4.35 (110,5)	3.75 (95,3)	14.0 (6,35)
FSW304Q3Q	4 X 3 (SSSHP)	3000 (20,7)				3.00 (76,2)		4.35 (110,5)	14.0 (6,35)
FSW354523	4½ x 2-3/8	3500 (24,1)		14.0 (355,6)	4.8 (121,9)	2.00 (50,8)	3.50 (88,9)	2.56 (65,1)	14.0 (6,35)
FSW354527	4½ x 2-7/8	3500 (24,1)				2.43 (61,7)		2.88 (73,0)	12.0 (5,44)
FSW304535	4½ x 3½	3000 (20,7)			4.71 (119,6)	3.00 (76,2)		3.13 (79,4)	10.0 (4,54)
FSW305535	5½ x 3½	3000 (20,7)		16 (406,4)	5.55 (140,8)	3.00 (76,2)	4.38 (111,1)	3.13 (79,4)	18.0 (8,16)
FSW205545	5½ x 4½	2000 (13,8)				3.90 (99,1)		3.50 (88,9)	12.0 (5,44)
FSW206Q4Q	6 x 4 (SSSHP)	2000 (13,8)		16 (406,4)	6.65 (168,9)	3.91 (99,3)	4.85 (123,2)	4.35 (110,58)	26 (11,79)
FSW206535	6-5/8 x 3½	2000 (13,8)		16 (406,4)	6.65 (168,9)	3.00 (76,2)	3.88 (98,4)	3.13 (79,4)	28 (12,70)
FSW206545	6-5/8 x 4½	2000 (13,8)				3.90 (99,1)		3.50 (88,9)	26 (11,79)
FSW206555	6-5/8 x 5½	2000 (13,8)				4.74 (120,4)		4.38 (111,1)	20 (9,07)
FSW207045	7 x 4½	2000 (13,8)		16.0 (406,4)	7.05 (179,1)	3.90 (99,1)	4.50 (114,3)	3.50 (88,9)	28 (12,70)
FSW207055	7 x 5½	2000 (13,8)				4.74 (120,4)		4.38 (111,1)	21 (9,53)
FSW107065	7 x 6-5/8	1000 (6,9)				5.85 (148,6)		3.88 (98,4)	15 (6,80)
FSW207065	7 x 6-5/8	2000 (13,8)				5.85 (148,6)		3.88 (98,4)	18.5 (8,39)
FSW158555	8-5/8 x 5½	1500 (10,3)		17.0 (431,8)	8.65 (219,7)	4.74 (120,4)	4.50 (114,3)	4.38 (111,1)	45 (20,41)
FSW108565	8-5/8 x 6-5/8	1000 (6,9)				5.85 (148,6)		3.88 (98,4)	40 (18,14)
FSW208565	8-5/8 x 6-5/8	2000 (13,8)				5.50 (139,7)		3.88 (98,4)	44 (19,96)
FSW158570	8-5/8 x 7	1500 (10,3)				5.85 (148,6)		4.50 (114,3)	40 (18,14)
FSW109565	9-5/8 x 6-5/8	1000 (6,9)		16.0 (406,4)	9.65 (245,1)	5.85 (148,6)	4.75 (120,7)	3.88 (98,4)	35 (15,88)
FSW209565	9-5/8 x 6-5/8	2000 (13,8)				5.50 (139,7)		3.88 (98,4)	41 (18,60)
FSW209570	9-5/8 x 7	2000 (13,8)		17.0 (431,8)		5.85 (148,6)		4.50 (114,3)	50 (22,68)
FSW129585	9-5/8 x 8-5/8	1250 (8,6)		18.0 (457,2)	9.44 (239,8)	7.50 (190,5)		4.50 (114,3)	31 (14,06)
FSW12AR65	10SS x 6-5/8	1200 (8,2)		17.0 (431,8)	11.25 (285,8)	5.93 (150,6)	5.40 (137,2)	3.88 (98,4)	80 (36,29)
FSW12AR85	10SS x 8-5/8	1200 (8,2)				7.74 (196,6)		4.50 (114,3)	55 (24,95)
FSW12AR8R	10SS x 8SS	1200 (8,2)						4.75 (120,7)	55 (24,95)
FSW12CR85	12SS x 8-5/8	1200 (8,2)		18.0 (457,2)	13.25 (336,6)	7.74 (196,6)	6.10 (154,9)	4.50 (114,3)	100 (45,36)
FSW12CR8R	12SS x 8SS	1200 (8,2)				7.74 (196,6)		4.75 (120,7)	100 (45,36)
FSW12CRAR	12SS x 10SS	1200 (8,2)				9.84 (249,9)		5.40 (137,2)	65 (29,48)

## Threaded Couplings

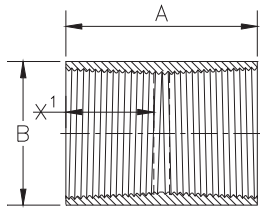
Female x Female



Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)
FCT2019	1.90	2000 (13,8)	5.125 (130,2)	2.80 (71,1)	2.06 (52,4)	1.1 (0,50)
FCT2519		2500 (17,2)		2.90 (73,7)		1.2 (0,54)
FCT3019		3000 (20,7)		3.00 (76,2)		1.4 (0,64)
FCT3519		3500 (24,1)		3.15 (80,0)		1.6 (0,74)
FCT4019		4000 (27,6)		3.30 (83,8)		1.9 (0,87)
FCT152Q	2 SSSHP	1500 (10,3)	8.626 (219,1)	3.25 (82,6)	3.63 (92,1)	2.0 (0,91)
FCT202Q		2000 (13,8)		3.40 (86,4)		2.5 (1,13)
FCT252Q		2500 (17,2)		3.60 (91,4)		3.2 (1,45)
FCT1523	2-3/8	1500 (10,3)	6.126 (155,6)	3.25 (82,6)	2.56 (65,1)	1.4 (0,64)
FCT2023		2000 (13,8)		3.40 (86,4)		1.8 (0,80)
FCT2523		2500 (17,2)		3.60 (91,4)		2.2 (1,02)
FCT3023		3000 (20,7)		3.70 (94,0)		2.5 (1,13)
FCT3523		3500 (24,1)		3.90 (99,1)		3.0 (1,37)
FCT4023		4000 (27,6)		4.10 (104,1)		3.6 (1,61)
FCT1527	2-7/8	1500 (10,3)	6.750 (171,5)	3.80 (96,5)	2.88 (73,0)	2.0 (0,91)
FCT2027		2000 (13,8)		4.00 (101,6)		2.6 (1,17)
FCT2527		2500 (17,2)		4.20 (106,7)		3.2 (1,45)
FCT3027		3000 (20,7)		4.40 (111,8)		3.9 (1,75)
FCT3527		3500 (24,1)		4.60 (116,8)		4.5 (2,05)
FCT4027		4000 (27,6)		4.80 (121,9)		5.2 (2,37)
FCT153Q	3 SSSHP	1500 (10,3)	9.750 (247,7)	4.60 (116,8)	4.25 (108,0)	4.2 (1,91)
FCT203Q		2000 (13,8)		4.80 (121,9)		5.2 (2,37)
FCT253Q		2500 (17,2)		5.10 (129,5)		6.8 (3,08)
FCT1535	3½	1500 (10,3)	7.250 (184,2)	4.60 (116,8)	3.13 (79,4)	3.1 (1,41)
FCT2035		2000 (13,8)		4.80 (121,9)		3.9 (1,76)
FCT2535		2500 (17,2)		5.10 (129,5)		5.1 (2,30)
FCT3035		3000 (20,7)		5.25 (133,4)		5.7 (2,58)
FCT3535		3500 (24,1)		5.50 (139,7)		6.8 (3,08)
FCT4035		4000 (27,6)		5.75 (146,1)		7.9 (3,59)
FCT154Q	4 SSSHP	1500 (10,3)	9.750 (247,7)	5.80 (147,3)	4.25 (108,0)	6.4 (2,90)
FCT204Q		2000 (13,8)		6.10 (154,9)		8.4 (3,81)
FCT1540	4	1500 (10,3)	8.750 (222,3)	5.00 (127,0)	3.88 (98,4)	3.5 (1,59)
FCT2040		2000 (13,8)		5.25 (133,4)		4.8 (2,16)
FCT2540		2500 (17,2)		5.55 (141,0)		6.3 (2,88)
FCT3040		3000 (20,7)		5.80 (147,3)		7.7 (3,50)
FCT1545	4½	1500 (10,3)	8.000 (203,2)	5.80 (147,3)	3.50 (88,9)	5.3 (2,39)
FCT2045		2000 (13,8)		6.10 (154,9)		6.9 (3,11)
FCT2545		2500 (17,2)		6.40 (162,6)		8.5 (3,86)
FCT3045		3000 (20,7)		6.70 (170,2)		10.3 (4,66)
FCT3545		3500 (24,1)		7.00 (177,8)		12.1 (5,49)
FCT4045		4000 (27,6)		7.20 (182,9)		13.4 (6,07)

## Threaded Couplings

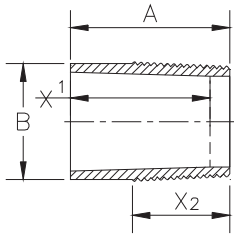
Female x Female  
(continued)



Product Code	Thread Size Inches	Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)
FCT1055	5½	1000 (6,9)	9.750 (247,7)	6.25 (158,8)	4.38 (111,1)	5.5 (2,51)
FCT1255		1250 (8,6)		6.45 (163,8)		6.9 (3,14)
FCT1555		1500 (10,3)		6.60 (167,6)		8.0 (3,62)
FCT1755		1750 (12,1)		6.75 (171,5)		9.1 (4,13)
FCT2055		2000 (13,8)		7.00 (177,8)		10.9 (4,96)
FCT2555		2500 (17,2)		7.30 (185,4)		13.3 (6,02)
FCT3055		3000 (20,7)		7.60 (193,0)		15.7 (7,13)
FCT3555		3500 (24,1)		7.90 (200,7)		18.2 (8,27)
FCT4055		4000 (27,6)		8.20 (208,3)		20.9 (9,46)
FCT086Q	6 SSSHP	800 (5,5)	10.938 (277,8)	7.35 (186,7)	4.75 (120,7)	7.0 (3,18)
FCT106Q		1000 (6,9)		7.55 (191,8)		8.8 (3,99)
FCT126Q		1250 (8,6)		7.70 (195,6)		10.2 (4,63)
FCT156Q		1500 (10,3)		7.90 (200,7)		12.1 (5,49)
FCT0865	6-5/8	800 (5,5)	8.75 (222,3)	7.35 (186,7)	3.88 (98,4)	5.6 (2,55)
FCT1065		1000 (6,9)		7.55 (191,8)		7.1 (3,21)
FCT1265		1250 (8,6)		7.70 (195,6)		8.2 (3,71)
FCT1565		1500 (10,3)		7.90 (200,7)		9.7 (4,40)
FCT2065		2000 (13,8)		8.25 (209,6)		12.5 (5,66)
FCT2565		2500 (17,2)		8.70 (221,0)		16.2 (7,34)
FCT0870	7	800 (5,5)	10.00 (254,0)	7.85 (199,4)	4.50 (114,3)	7.7 (3,48)
FCT1070		1000 (6,9)		8.00 (203,2)		9.0 (4,09)
FCT1270		1250 (8,6)		8.20 (208,3)		10.8 (4,91)
FCT1570		1500 (10,3)		8.40 (213,4)		12.7 (5,75)
FCT2070		2000 (13,8)		8.75 (222,3)		16.0 (7,26)
FCT2570		2500 (17,2)		9.20 (233,7)		20.5 (9,31)
FCT0885	8-5/8	800 (5,5)	10.00 (254,0)	9.50 (241,3)	4.50 (114,3)	9.9 (4,47)
FCT1085		1000 (6,9)		9.70 (246,4)		12.0 (5,44)
FCT1285		1250 (8,6)		10.00 (254,0)		15.3 (6,93)
FCT1585		1500 (10,3)		10.20 (259,1)		17.5 (7,96)
FCT0895	9-5/8	800 (5,5)	10.50 (266,7)	10.70 (271,8)	4.75 (120,7)	13.5 (6,12)
FCT1095		1000 (6,9)		10.90 (276,9)		16.7 (7,57)
FCT1295		1250 (8,6)		11.10 (281,9)		19.3 (8,74)
FCT1595		1500 (10,3)		11.50 (292,1)		24.6 (11,14)
FCT2095		2000 (13,8)		11.90 (302,3)		30.0 (13,63)
FCT088R	8SS	800 (5,5)	10 (254,0)	9.60 (243,8)	4.75 (120,7)	9.0 (4,08)
FCT128R		1250 (8,6)		10.20 (259,1)		15.0 (6,80)
FCT08AR	10SS	800 (5,5)	11.375 (288,9)	12.8 (325,1)	5.40 (137,2)	18.0 (8,16)
FCT12AR		1250 (8,6)		13.6 (345,4)		30.0 (13,61)
FCT08CR	12SS	800 (5,5)	12.2 (309,9)	14.8 (375,9)	6.10 (154,9)	26.0 (11,79)
FCT12CR		1250 (8,6)		15.7 (398,8)		42.0 (19,05)

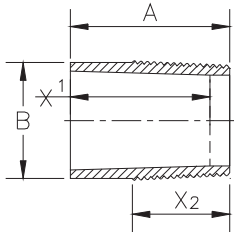
# Threaded Adapter

## Bonded Bell x Male



Thread Size Inches	Pipe Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	X <sub>2</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)	Anhydride	Anhydride	Aliphatic	Aliphatic	Aromatic
							STD Product Code (FBM)	15HR Product Code (FBM)	STD. Product Code (FBM)	15HR Product Code (FBM)	15HR Product Code (FBM)
1.90	1250	4.25 (108,0)	2.15 (54,6)	4.00 (101,6)	2.36 (59,9)	0.6 (0,27)	N/A	N/A	N/A	N/A	N/A
	1500						19NR	19NR	19NR	19NR	19NR
	1750						19NR	19NR	19NR	19NR	19NR
	2000						19NR	19NR	19NR	19NR	19NQ
	2250						19NR	19NR	19NR	19NQ	19NS
	2500						19NQ	19NR	19NR	19NP	19NT
2 SSSHP	2500	7.50 (190,5)	2.68 (68,1)	5.50 (139,7)	4.00 (101,6)	1.54 (0,70)	2HPSS	N/A	N/A	N/A	N/A
2 3/8	750	5.00 (127,0)	2.71 (68,8)	4.75 (120,7)	2.56 (65,1)	0.9 (0,41)	N/A	N/A	N/A	23NR	N/A
	800						N/A	N/A	23NR	N/A	N/A
	1000						N/A	23NS	23NR	23NR	23NS
	1250						23NS	23NS	23NR	23NR	23NS
	1500						23NS	23NS	23NR	23NR	23NS
	1750						23NS	23NS	23NR	23NS	23NQ
	2000						23NS	23NS	23NR	23NQ	23NP
	2250						23NQ	23NS	23NR	23NP	N/A
	2500						23NQ	23NP	23NS	N/A	23NQ
	2 7/8	750	5.25 (133,4)	3.21 (81,5)	5.00 (127,0)	2.88 (73,0)	1.2 (0,54)	N/A	23NT	N/A	27NU
800							N/A	27NT	27NU	N/A	N/A
1000							27NT	27NT	27NU	27NU	27NT
1250							27NT	27NT	27NU	27NU	27NT
1500							27NT	27NT	27NU	27NT	27NS
1750							27NT	27NT	27NU	27NS	27NQ
2000							27NS	27NR	27NU	27NQ	N/A
2250							27NR	27NQ	27NT	27NQ	27NS
2500							27NQ	27NQ	27NR	27NQ	27NQ
3 SSSHP		2500	10.25 (260,4)	3.89 (98,8)	8.25 (209,6)	4.60 (116,8)	3.1 (1,38)	3HPSS	N/A	N/A	N/A
3 1/2	500	5.50 (139,7)	3.89 (98,8)	5.25 (133,4)	3.13 (79,4)	1.6 (0,73)	N/A	35NT	35NU	35NU	N/A
	750						N/A	35NT	N/A	35NU	35NS
	800						35NT	N/A	35NU	N/A	N/A
	1000						35NT	35NT	35NU	35NU	35NT
	1250						35NT	35NT	35NU	35NU	35NS
	1500						35NT	35NT	35NU	35NS	35NS
	1750						35NS	35NS	35NU	35NS	35NR
	2000						35NS	35NS	35NS	35NR	35NP
	2250						35NS	35NR	35NS	35NR	35NS
	2500						35NR	35NQ	35NR	35NQ	35NS
4 SSSHP	2000	10.50 (266,7)	4.81 (122,2)	8.50 (215,9)	4.60 (116,8)	4.2 (1,90)	4HPSS	N/A	N/A	N/A	N/A
4 1/2	500	5.75 (146,1)	4.89 (124,2)	5.50 (139,7)	3.50 (88,9)	2.4 (1,09)	45NT	45NT	45NU	45NU	N/A
	750						N/A	45NT	N/A	45NU	45NT
	800						45NT	N/A	45NU	N/A	N/A
	1000						45NT	45NT	45NU	45NU	45NS
	1250						45NT	45NT	45NU	45NT	45NR
	1500						45NS	45NS	45NT	45NR	45NQ
	1750						45NS	45NR	45NS	45NQ	45NP
	2000						45NR	45NQ	45NR	45NP	45NQ

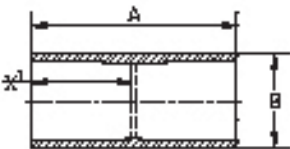
**Threaded Adapter**  
Bonded Bell x Male  
(continued)



Thread Size Inches	Pipe Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	X <sub>2</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)	Anhydride STD	Anhydride 15HR	Aliphatic STD.	Aliphatic 15HR	Aromatic 15HR
							Product Code (FBM)	Product Code (FBM)	Product Code (FBM)	Product Code (FBM)	Product Code (FBM)
TC5 1/2	500	6.75 (171,5)	5.55 (141,0)	6.50 (165,1)	4.38 (111,1)	3.2 (1,45)	N/A	N/A	55NR	N/A	N/A
	800						N/A	N/A	55NR	N/A	N/A
	1000						N/A	N/A	55NR	N/A	N/A
	1250						N/A	N/A	55NR	N/A	N/A
	1500						N/A	N/A	55NT	N/A	N/A
6 SSSHP	1000	10.00 (254,0)	6.83 (173,5)	8.00 (203,2)	5.10 (129,5)	4.6 (2,07)	6HPSS	N/A	N/A	N/A	N/A
6 5/8	500	6.25 (158,8)	6.77 (172,0)	6.00 (152,4)	3.88 (98,4)	3.5 (2,40)	65NV	65NV	65NS	65NS	65NV
	750*						N/A	65NV	N/A	65NU (5.50 ID)	65NS
									N/A	65NS (5.93 ID)	N/A
	800*						65NV	N/A	65NU (5.50 ID)	N/A	N/A
									65NS (5.93 ID)		
	1000*						65NV	65NT	65NU (5.50 ID)	65NT (5.50 ID)	65NR
									65NR (5.93 ID)	65NR (5.93 ID)	
	1250						65NS	65NR	65NT	N/A	65NR
8 5/8	500	6.88 (174,8)	8.77 (222,8)	6.63 (168,4)	4.50 (114,3)	5.3 (2,40)	85NU	85NU	85NS	85NS	85NU
	750						N/A	85NU	N/A	85NR	85NT
	800						85NU	N/A	85NS	N/A	N/A
	1000						85NT	85NT	85NR	N/A	85NR
8SS	500	8.00 (203,2)	8.79 (223,3)	8.00 (203,2)	4.75 (120,7)	7.5 (3,42)	N/A	N/A	088R	N/A	N/A
	800						N/A	N/A	088R	N/A	N/A
10SS	500	10.0 (254,0)	11.27 (286,3)	7.00 (177,8)	5.40 (137,2)	8.7 (3,93)	N/A	N/A	05AR	N/A	N/A
12SS	500	10.0 (254,0)	13.25 (337,1)	7.00 (177,8)	6.10 (154,9)	21.5 (9,74)	N/A	N/A	05CR	N/A	N/A

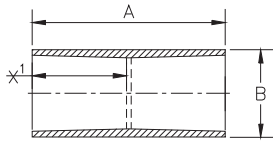
**\*IMPORTANT NOTICE**  
It is important to know the ID before ordering 6 5/8" Threaded Adapters.

**Sleeve Coupling**  
Bonded Bell x Bonded Bell



Thread Size Inches	Pipe Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)	Anhydride STD	Anhydride 15HR	Aliphatic STD.	Aliphatic 15HR	Aromatic 15HR
						Product Code (FBM)	Product Code (FBM)	Product Code (FBM)	Product Code (FBM)	Product Code (FBM)
1.90	1250	18.0 (457,2)	2.20 (55,9)	3.00 (76,2)	2.6 (1,2)	19NR	19NR	N/A	N/A	N/A
	1500					19NR	19NR	19NR	19NR	19NR
	1750					19NR	19NR	19NR	19NR	19NR
	2000					19NR	19NR	19NR	19NR	19NR
2 3/8	750	18.0 (457,2)	3.00 (76,2)	3.75 (95,3)	5.0 (2,3)	N/A	N/A	N/A	23NR	N/A
	800					N/A	N/A	23NR	N/A	N/A
	1000					N/A	23NS	23NR	23NR	23NS
	1250					23NS	23NS	23NR	23NR	23NS
	1500					23NS	23NS	23NR	23NR	23NS
	1750					23NS	23NS	23NR	23NS	23NQ
	2000					23NS	23NS	23NR	23NQ	23NP

**Sleeve Coupling**  
Bonded Bell x Bonded Bell  
(continued)



Thread Size Inches	Pipe Pressure Rating PSI (MPa)	A In (mm)	B In (mm)	X <sub>1</sub> <sup>(4)</sup> In (mm)	Wt Lbs (kg)	Anhydride STD Product Code (FBM)	Anhydride 15HR Product Code (FBM)	Aliphatic STD. Product Code (FBM)	Aliphatic 15HR Product Code (FBM)	Aromatic 15HR Product Code (FBM)
2 7/8	750	18.0 (457,2)	3.65 (92,7)	4.00 (101,6)	7.4 (3,4)	N/A	27NT	N/A	27NU	27NT
	800					N/A	N/A	27NU	N/A	N/A
	1000					27NT		27NU	27NU	27NT
	1250					27NT		27NU	27NU	27NT
	1500					27NT		27NU	27NT	27NS
	1750					27NT	27NT	27NU	27NS	27NQ
	2000					27NS	27NR	27NU	27NQ	27NP
3 1/2	500	18.0 (457,2)	4.50 (114,3)	4.25 (114,3)	11.3 (5,1)	N/A	35NT	35NU	35NU	N/A
	750					N/A	35NT	N/A	35NU	35NT
	800					35NT	N/A	35NU	N/A	N/A
	1000					35NT	35NT	35NU	35NU	35NT
	1250					35NT	35NT	35NU	35NU	35NS
	1500					35NT	35NT	35NU	35NS	35NS
4 1/2	500	18.0 (457,2)	5.75 (146,1)	4.50 (114,3)	17.8 (8,1)	45NT	45NT	45NU	45NU	N/A
	750					N/A	45NT	N/A	45NU	45NT
	800					45NT	N/A	45NU	N/A	N/A
	1000					45NT	45NT	45NU	45NT	45NS
	1250					45NT	45NT	45NU	45NS	45NR
	1500					N/A	N/A	N/A	N/A	N/A
TC5 1/2	500	18.0 (457,1)	7.50 (190,5)	5.50 (139,7)	33.8 (15,3)	N/A	N/A	55NR	N/A	N/A
	800					N/A	N/A	55NR	N/A	N/A
	1000					N/A	N/A	55NR	N/A	N/A
	1250					N/A	N/A	55NR	N/A	N/A
6 5/8	500	18.0 (457,2)	7.65 (194,3)	5.00 (127,0)	24.3 (11,0)	65NV	65NV	65NS	65NS	65NV
	750*					N/A	65NV	N/A	65NU (5.50 ID)	65NS (5.50 ID)
	750*							N/A	65NS (5.93 ID)	65NS (5.93 ID)
	800*					65NV	N/A	65NU (5.50 ID)	N/A	N/A
	800*							65NS (5.93 ID)	N/A	65NS (5.93 ID)
	1000*					65NV	65NS	65NU (5.50 ID)	65NU (5.50 ID)	65NR
	1000*							65NS (5.93 ID)	65NR (5.93 ID)	
8 5/8	500	18.0 (457,2)	10.0 (254,0)	5.38 (136,7)	43.7 (19,8)	85NU	85NU	85NS	85NS	85NU
	750					N/A	85NU	N/A	85NS	85NT
	800					85NU	N/A	85NS	N/A	N/A
8SS	500	8.00 (203,2)	8.79 (223,3)	8.00 (203,2)	7.5 (3,42)	N/A	N/A	088R	N/A	N/A
	800					N/A	N/A	088R	N/A	N/A
10SS	500	10.0 (254,0)	11.27 (286,3)	7.00 (177,8)	8.7 (3,93)	N/A	N/A	05AR	N/A	N/A
12SS	500	10.0 (254,0)	13.25 (337,1)	7.00 (177,8)	21.5 (9,74)	N/A	N/A	05CR	N/A	N/A

**\*IMPORTANT NOTICE**  
It is important to know the ID before ordering 6 5/8" Sleeve Couplings.

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**General Notes:**

1. All fittings centerline-to-face dimensions nominal  $\pm \frac{1}{4}$  inch.
2. All fittings filament wound fiberglass reinforced epoxy.
3. Thread sizes correspond to thread types listed in product specifications. All 1½" EUE 10rd and 2-3/8" - 4½" EUE 8rd API threads conform to API 5B Table 2.6a (L4 is minimum) and all 5½" - 9-5/8" OD 8rd casing threads conform to API 5B Table 2.3 (L4 is minimum) and the 2"-12" Star Super Seal is a proprietary connection.
4. The insertion depth or make-up length loss is listed by size under (X) as inches per connection.
5. Typical dimensions are listed one time per section.
6. Weights are approximate.
7. Dimensions are American Standards converted to metric.
8. All pressure ratings are standard design. API design systems require higher rated fittings according to the following chart:

<b>API Pressure Rating PSI</b>	<b>Required Standard Design Rating PSI</b>	<b>Recommended Standard Design Fitting Rating PSI</b>
500 x 1.20 =	600	800
750 x 1.20 =	900	1000
1000 x 1.20 =	1200	1250
1250 x 1.20 =	1500	1500
1500 x 1.20 =	1800	2000
1750 x 1.20 =	2100	2000
2000 x 1.20 =	2400	2500
2250 x 1.20 =	2700	3000
2500 x 1.20 =	3000	3000
2750 x 1.20 =	3300	3500
3000 x 1.20 =	3600	4000
3250 x 1.20 =	3900	4000

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**NOTES:**

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### LIMITED WARRANTY

Seller warrants that PRODUCTS manufactured by Seller when properly installed, used, and maintained shall be free from defects in material and workmanship. Seller's responsibility under this warranty shall be limited to replacing or repairing PRODUCTS, at Seller's option, the PRODUCTS that prove defective in material or workmanship within one (1) year from the date of installation, provided that Buyer gives Seller prompt notice of any defect or failure and satisfactory proof thereof. Any defective product must be returned to Seller's factory, or any other repair facility designated by Seller. Seller will deliver replacement of defective PRODUCTS to Buyer freight prepaid to the destination provided for in the original order. PRODUCTS returned to Seller for which Seller provides replacement under this warranty shall become the property of the Seller.

This limited warranty does not apply to failure of PRODUCTS caused by abrasive materials, exposure to aggressive fluids, improper application, mishandling, or abuse.

In the event PRODUCTS are altered or repaired by the Buyer and/or end user without prior written approval of the Seller, all warranties are void. Equipment and accessories not manufactured by the seller are warranted only to the extent of and by the original manufacturer's warranty. A new warranty period shall not be established for repaired or replaced materials, PRODUCTS, or supplies. Such items shall remain under warranty only for the remainder of the warranty period on original materials, PRODUCTS, or supplies.

The foregoing warranties are in lieu of all other warranties, whether oral, written, expressed, implied or statutory. Implied warranties of fitness and merchantability shall not apply. Seller's warranty obligations and Buyer's remedies thereunder (except as to title) are solely and exclusively as stated herein. In no case will Seller be liable for consequential damages, labor performed in connection with removal and replacement of the PRODUCTS, loss of production or any other loss incurred because of interruption of service.

### IMPORTANT NOTICE

**This literature is intended as a guide only. All values listed in this product specification are nominal.** Unsatisfactory product results may occur due to environmental fluctuations, variations in operating procedures, or interpolation of data. We suggest that personnel using this data have specialized training and experience in the application of these products and their normal installation and operating conditions. Your intended application of these products should be verified for propriety by your engineers. We expressly disclaim responsibility for any consequential or incidental damages resulting from the installation or use of these products since we do not determine the degree of care utilized during the product installation or service. We reserve the right to revise this data, as necessary, without notice. We welcome comments regarding this product literature.



#### HEADQUARTERS

P.O. Box 37389  
2425 S.W. 36th Street  
San Antonio, Texas 78237  
Phone: 1 (210) 434-5043  
Fax: 1 (210) 434-7543  
[www.fiberglasssystems.com](http://www.fiberglasssystems.com)  
E-Mail: [info@starfiberglass.com](mailto:info@starfiberglass.com)