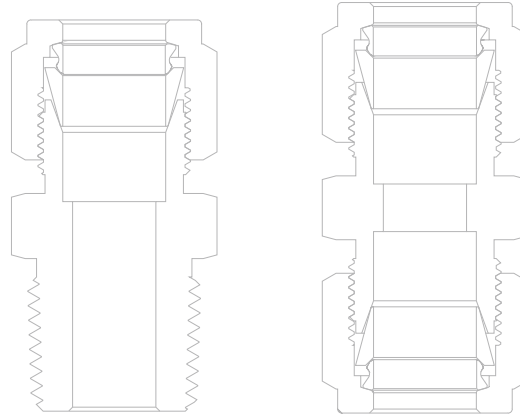


Pipe Fittings



Climate Control
Electromechanical
Filtration
Fluid & Gas Handling
Hydraulics
Process Control
Sealing & Shielding



CONTENTS

Pipe Plugs



04

Hollow Hex Plugs



05

Close Nipples



06

Special Pipe Nipples



06

Hex Nipples



07

Hex Long Nipples



10

Reducing Bushings



11

Pipe Caps



13

Hex Couplings



14

Union Ball Joints



15

Adapters



15

Male Elbows



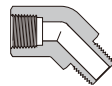
17

Street Elbows



18

45° Street Elbows



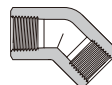
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Female Elbows



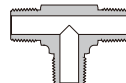
22

45° Female Elbows



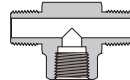
23

Male Tees



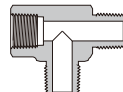
24

Female Branch Tees



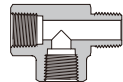
25

Female Run Tees



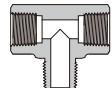
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Male Street Tees



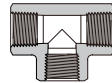
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Male Branch Tees



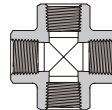
27

Female Tees



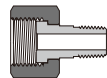
28

Female Crosses



29

Pipe to Pipe Unions



29

Features

- ⦿ The hardened threads with smooth surface finishing avoid galling and help to extend the fitting service life.
- ⦿ Radius junction design with elbows provides smooth flow path.
- ⦿ Every fitting is stamped with size, material, and heat code.

Technical Data

- ⦿ Sizes range from 1/16 to 2
- ⦿ Thread Specifications:

Thread Type	Specification
NPT	ASME B1.20.1, SAE AS71051
ISO Tapered	ISO 7-1, BS 21, JIS B0203
ISO parallel	ISO 228, JIS B0202
SAE/MS	ASME B1.1, SAE J475
Metric	ISO 261

- ⦿ Working temperatures:

For the working temperatures of VFK pipe fittings, refer to the VFK tube fitting catalog.

- ⦿ Working Pressure:

1. Catalog working pressures shown are based on ANSI/ASME B31.3 at ambient temperature, to determine working pressures in accordance with ANSI/ASME B31.1 multiply catalog working pressures shown by the factor from the below table.

Material	Factor
Stainless steel	0.94
Carbon steel	0.85
Brass	1.0

2. Use the allowable working pressure at ambient temperature to multiply the elevated temperature factors to get the working pressure at elevated temperature. To know the elevated temperature factor, please refer to the related information of VFK Tube Fittings.
3. To get the installation torque for NPT thread and ISO tapered thread, Refer to VFK Tube Fittings.

Material

Material	Bar Stock	Forging	Designator
316 stainless steel	ASTM A276, ASME SA479, EN 1.4401	ASTM A182, ASME SA182, EN 1.4401	SS
304 stainless steel	ASTM A276, ASME SA479, EN 1.4301	ASTM A182, ASME SA182, EN 1.4301	S4
Alloy 400/R-405	ASTM B164, ASME SB164	ASTM B564 ASME SB564	M
Alloy 600	ASTM B166, ASME SB166	ASTM B564, ASME SB564	INC
Alloy C-276	ASTM B574	ASTM B564,	HC
Brass	ASME B16/ASTM B453	ASTM B283	B
Carbon steel	ASTM A108	A105	CS

Ordering Information

⦿ Add the material designator as a prefix to the basic ordering number to get the complete ordering number.

Example:

1. Hex nipple with 1/4 male NPT thread for both ends and 316 stainless steel material, the complete ordering number is SS21-N4.

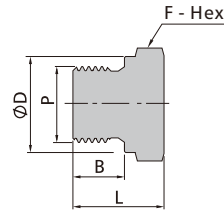
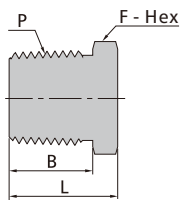
2. Adapter with 1/2 female NPT to 1/4 male RS thread for both ends and brass material, the complete ordering number is B21-FN8BS4.

⦿ To order fittings with special cleaning and packaging (VK-02), following ASTM G93 C standard, add -V2 as a suffix to the ordering number. Example: SS21-N4-V2.

Cautions :

- ⦿ Do not loose or tight fittings when system is pressurized.
- ⦿ Always use proper thread sealants on tapered pipe threads.
- ⦿ Confirm the sealing type when choosing the straight threads, make sure the construction of the matching threads comply with the sealing type.

Pipe Plugs



Male NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm		
		L	F	B
1/16	26-N1	14.2	7.9	9.7
1/8	26-N2	14.2	11.1	9.7
1/4	26-N4	19.1	14.3	14.2
3/8	26-N6	19.8	17.5	14.2
1/2	26-N8	24.6	22.2	19.1
3/4	26-N12	30.7	27.0	19.1
1	26-N16	38.1	34.9	23.9
1 1/4	26-N20	38.4	44.5	23.9
1 1/2	26-N24	43.7	50.8	26.2
2	26-N32	50.8	69.9	26.2

Male ISO parallel Threads

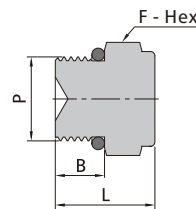
P-RS Size	Basic Ordering Number	Dimension, mm			
		L	F	B	D
1/8	26-BS2	14.0	14.3	7.1	13.7
1/4	26-BS4	19.8	19.1	11.2	18.0
3/8	26-BS6	19.8	22.2	11.2	21.8
1/2	26-BS8	25.1	27.0	14.0	25.9
3/4	26-BS12	28.7	33.3	15.7	32.0
1	26-BS16	30.7	41.3	18.0	39.1

Male ISO Tapered Threads

P-RT Size	Basic Ordering Number	Dimension, mm		
		L	F	B
1/16	26-R1	14.2	7.9	9.7
1/8	26-R2	14.2	11.1	9.7
1/4	26-R4	19.1	14.3	14.2
3/8	26-R6	19.8	17.5	14.2
1/2	26-R8	24.6	22.2	19.1
3/4	26-R12	30.7	27.0	19.1
1	26-R16	38.1	34.9	23.9
1 1/4	26-R20	38.4	44.5	23.9
1 1/2	26-R24	43.7	50.8	26.2
2	26-R32	50.8	69.9	26.2

Male Metric Threads

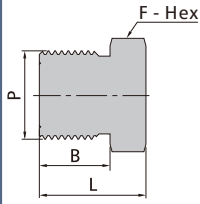
P-Metric Size	Basic Ordering Number	Dimension, mm			
		L	F	B	D
M14 x 1.5	26-MR14	21	20.6	12	18.8
M16 x 1.5	26-MR16	23	22.2	12	20.8
M18 x 1.5	26-MR18	25	23.8	12	22.8
M20 x 1.5	26-MR20	26.5	25.4	14	24.8
M22 x 1.5	26-MR22	28.5	28.6	14	26.8
M24 x 1.5	26-MR24	29	35.0	14	28.8
M27 x 2	26-MR27	30	36.5	16	31.8



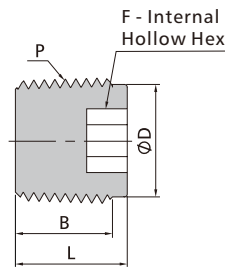
Male SAE/MS Straight Threads

P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm		
		L	F	B
7/16-20	26-ST7	19.3	14.3	9.1
9/16-18	26-ST9	20.8	17.5	9.9
3/4-16	26-ST12	22.6	22.2	11.2
1 1/16-12	26-ST17	28.4	31.8	15.0
1 5/16-12	26-ST21	30.0	38.1	15.0

Pipe Plugs



Hollow Hex Plugs



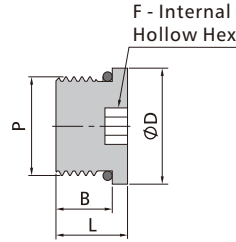
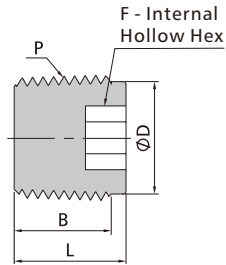
Male Metric Threads

P-Metric Size	Basic Ordering Number	Dimension, mm			
		L	F	B	
M14 x 1.5	26-MS14	18	16	13	
M16 x 1.5	26-MS16	20	18	14	
M18 x 1.5	26-MS18	22	19	15	
M20 x 1.5	26-MS20	24	22	16	
M22 x 1.5	26-MS22	26	24	17	
M24 x 1.5	26-MS24	26	27	17	
M27 x 2	26-MS27	27	30	18	
M30 x 2	26-MS30	32	32	20	

Male ISO Tapered Threads

PRT Size	Basic Ordering Number	Dimension, mm			
		L	F	B	D
1/16	261-R1	7.6	4.0	7.4	7.4
1/8	261-R2	10.4	4.8	7.4	9.4
1/4	261-R4	15.5	6.4	12.4	12.1
3/8	261-R6	15.5	7.9	12.4	15.7
1/2	261-R8	19.3	9.5	16.2	19.3
3/4	261-R12	19.8	14.3	16.7	25.7
1	261-R16	20.8	15.9	17.7	31.8

Hollow Hex Plugs



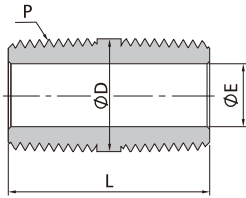
Male NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm			
		L	F	B	D
1/16	261-N1	7.6	4.0	7.4	7.4
1/8	261-N2	10.4	4.8	7.4	9.4
1/4	261-N4	15.5	6.4	12.4	12.1
3/8	261-N6	15.0	7.9	11.9	15.7
1/2	261-N8	19.3	9.5	16.2	19.3
3/4	261-N12	19.8	14.3	16.7	25.7
1	261-N16	20.8	15.9	17.7	31.8

Male SAE/MS Straight Threads

P-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm			
		L	F	B	D
7/16-20	261-ST7	11.4	4.8	9.1	14.2
9/16-18	261-ST9	12.2	6.4	9.9	17.5
3/4-16	261-ST12	14.2	7.9	11.2	22.4
1 1/16-12	261-ST17	19.1	14.3	15.0	31.8
1 5/16-12	261-ST21	19.1	15.9	15.0	38.1

Close Nipples



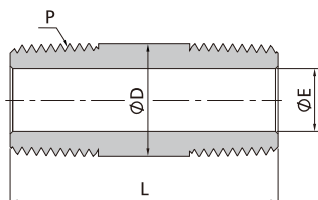
Male NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm			Working Pressure psig (bar)	
		L	D	E	316 SS, Steel	Brass
1/16	211-N1	19.1	7.9	3.0	11000 (757)	5500 (378)
1/8	211-N2	19.1	10.3	4.8	10000 (689)	5000 (344)
1/4	211-N4	28.4	13.7	7.1	8000 (551)	4000 (275)
3/8	211-N6	28.4	17.1	9.6	7800 (537)	3900 (268)
1/2	211-N8	38.1	21.3	11.9	7700 (530)	3800 (261)
3/4	211-N12	38.1	26.7	15.7	7300 (502)	3600 (248)
1	211-N16	47.8	33.4	22.4	5300 (365)	2600 (179)

Male ISO Tapered Threads

PRT Size	Basic Ordering Number	Dimension, mm			Working Pressure psig (bar)	
		L	D	E	316 SS, Steel	Brass
1/16	211-R1	19.1	7.9	3.0	11000 (757)	5500 (378)
1/8	211-R2	19.1	10.3	4.8	10000 (689)	5000 (344)
1/4	211-R4	28.4	13.7	7.1	8000 (551)	4000 (275)
3/8	211-R6	28.4	17.1	9.7	7800 (537)	3900 (268)
1/2	211-R8	38.1	21.3	11.9	7700 (530)	3800 (261)
3/4	211-R12	38.1	26.7	15.7	7300 (502)	3600 (248)
1	211-R16	47.8	33.4	22.4	5300 (365)	2600 (179)

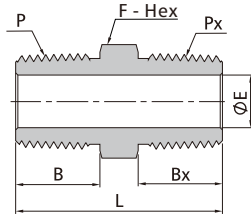
Special Pipe Nipples



Male NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm			Working Pressure psig (bar)	
		L	D	E	316 SS, Steel	Brass
1/8	211-N2-38.1	38.1	10.3	4.8	10000 (689)	5000 (344)
1/8	211-N2-50.8	50.8	10.3	4.8	10000 (689)	5000 (344)
1/8	211-N2-63.5	63.5	10.3	4.8	10000 (689)	5000 (344)
1/8	211-N2-76.2	76.2	10.3	4.8	10000 (689)	5000 (344)
1/4	211-N4-38.1	38.1	13.7	7.1	8000 (551)	4000 (275)
1/4	211-N4-50.8	50.8	13.7	7.1	8000 (551)	4000 (275)
1/4	211-N4-63.5	63.5	13.7	7.1	8000 (551)	4000 (275)
1/4	211-N4-76.2	76.2	13.7	7.1	8000 (551)	4000 (275)
1/4	211-N4-101.6	101.6	13.7	7.1	8000 (551)	4000 (275)
3/8	211-N6-38.1	38.1	17.1	9.7	7800 (537)	3900 (268)
3/8	211-N6-50.8	50.8	17.1	9.7	7800 (537)	3900 (268)
3/8	211-N6-63.5	63.5	17.1	9.7	7800 (537)	3900 (268)
3/8	211-N6-76.2	76.2	17.1	9.7	7800 (537)	3900 (268)
3/8	211-N6-101.6	101.6	17.1	9.7	7800 (537)	3900 (268)
1/2	211-N8-50.8	50.8	21.3	11.9	7700 (530)	3800 (261)
1/2	211-N8-76.2	76.2	21.3	11.9	7700 (530)	3800 (261)
1/2	211-N8-101.6	101.6	21.3	11.9	7700 (530)	3800 (261)
1/2	211-N8-152.4	152.4	21.3	11.9	7700 (530)	3800 (261)
3/4	211-N12-50.8	50.8	26.7	15.7	7300 (502)	3600 (248)
3/4	211-N12-76.2	76.2	26.7	15.7	7300 (502)	3600 (248)
3/4	211-N12-101.6	101.6	26.7	15.7	7300 (502)	3600 (248)
1	211-N16-76.2	76.2	33.4	22.4	5300 (365)	2600 (179)
1	211-N16-101.6	101.6	33.4	22.4	5300 (365)	2600 (179)

Hex Nipples



Male NPT Threads

P-NPT Size	Px-NPT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	316 SS, Steel	Brass
1/16	1/16	21-N1	25.6	7.9	9.7	9.7	3.0	11000 (757)	5500 (378)
1/8	1/16	21-N2N1	25.6	11.1	9.7	9.7	3.0	11000 (757)	5500 (378)
1/8	1/8	21-N2	25.6	11.1	9.7	9.7	4.8	10000 (689)	5000 (344)
1/4	1/16	21-N4N1	31.0	14.3	14.2	9.7	3.0	11000 (757)	5500 (378)
1/4	1/8	21-N4N2	31.0	14.3	14.2	9.7	4.8	10000 (689)	5000 (344)
1/4	1/4	21-N4	35.6	14.3	14.2	14.2	7.1	8000 (551)	4000 (275)
3/8	1/16	21-N6N1	31.8	17.5	14.2	9.7	3.0	11000 (757)	5500 (378)
3/8	1/8	21-N6N2	31.8	17.5	14.2	9.7	4.8	10000 (689)	5000 (344)
3/8	1/4	21-N6N4	36.3	17.5	14.2	14.2	7.1	8000 (551)	4000 (275)
3/8	3/8	21-N6	36.3	17.5	14.2	14.2	9.7	7800 (537)	3900 (268)
1/2	1/8	21-N8N2	37.3	22.2	19.1	9.7	4.8	7700 (530)	3800 (261)
1/2	1/4	21-N8N4	41.9	22.2	19.1	14.2	7.1	8000 (551)	4000 (275)
1/2	3/8	21-N8N6	41.9	22.2	19.1	14.2	9.7	7800 (537)	3900 (268)
1/2	1/2	21-N8	46.7	22.2	19.1	19.1	11.9	7700 (530)	3800 (261)
3/4	1/8	21-N12N2	40.4	27.0	19.1	9.7	4.8	10000 (689)	5000 (344)
3/4	1/4	21-N12N4	41.9	27.0	19.1	14.2	7.1	8000 (551)	4000 (275)
3/4	3/8	21-N12N6	45.2	27.0	19.1	14.2	9.7	7800 (537)	3900 (268)
3/4	1/2	21-N12N8	46.7	27.0	19.1	19.1	11.9	7700 (530)	3800 (261)
3/4	3/4	21-N12	46.7	27.0	19.1	19.1	15.7	7300 (502)	3600 (248)
1	1/8	21-N16N2	45.2	34.9	23.9	9.7	4.8	10000 (689)	5000 (344)
1	1/4	21-N16N4	49.3	34.9	23.9	14.2	7.1	5300 (365)	2600 (179)
1	3/8	21-N16N6	50.0	34.9	23.9	14.2	9.7	7800 (537)	3900 (268)
1	1/2	21-N16N8	54.1	34.9	23.9	19.1	11.9	7700 (530)	3800 (261)
1	3/4	21-N16N12	54.1	34.9	23.9	19.1	15.7	7300 (502)	3600 (248)
1	1	21-N16	58.9	34.9	23.9	23.9	22.4	5300 (365)	2600 (179)
1 1/4	1	21-N20N16	62.2	44.5	23.9	23.9	22.4	5300 (365)	2600 (179)
1 1/4	1 1/4	21-N20	62.9	44.5	23.9	23.9	28.6	6000 (410)	3000 (200)
1 1/2	1 1/2	21-N24	66.3	50.8	26.2	26.2	34.0	5000 (344)	2500 (172)
2	2	21-N32	77.7	69.9	26.2	26.2	45.0	3900 (268)	1900 (130)

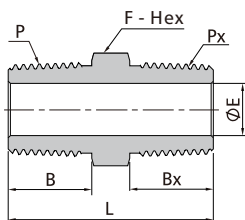
Heavy-Wall Male NPT Threads

1/4	1/4	21-N4-10K	35.6	14.3	14.2	14.2	5.8	10000 (689)	/
1/2	1/4	21-N8N4-10K	41.9	22.2	19.1	14.2	5.8	10000 (689)	/
1/2	1/2	21-N8-10K	46.7	22.2	19.1	19.1	9.9	10000 (689)	/

Male ISO Tapered Threads

P-RT Size	Px-RT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	316 SS, Steel	Brass
1/8	1/8	21-R2	25.6	11.1	9.7	9.7	4.8	10000 (689)	5000 (344)
1/4	1/4	21-R4	35.6	14.3	14.2	14.2	7.1	8000 (551)	4000 (275)
3/8	3/8	21-R6	36.3	17.5	14.2	14.2	9.7	7800 (537)	3900 (268)
1/2	1/2	21-R8	46.7	22.2	19.1	19.1	11.9	7700 (530)	3800 (261)
3/4	3/4	21-R12	46.7	27.0	19.1	19.1	15.7	7300 (502)	3600 (248)
1	1	21-R16	58.9	34.9	23.9	23.9	22.4	5300 (365)	2600 (179)

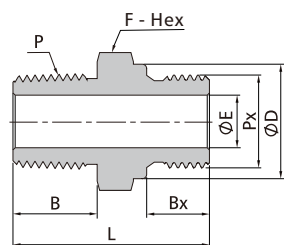
Hex Nipples



Male NPT Threads

P-NPT Size	Px-RT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	316 SS, Steel	Brass
1/8	1/8	21-N2R2	25.6	11.1	9.7	9.7	4.8	10000 (689)	5000 (344)
1/4	1/4	21-N4R4	35.6	14.3	14.2	14.2	7.1	8000 (551)	4000 (275)
3/8	3/8	21-N6R6	36.3	17.5	14.2	14.2	9.7	7800 (537)	3900 (268)
1/2	1/2	21-N8R8	46.7	22.2	19.1	19.1	11.9	7700 (530)	3800 (261)
3/4	3/4	21-N12R12	46.7	27.0	19.1	19.1	15.7	7300 (502)	3600 (248)
1	1	21-N16R16	58.9	34.9	23.9	23.9	22.4	5300 (365)	2600 (179)

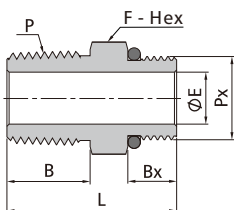
Male ISO Tapered Threads



Male NPT Threads

P-NPT Size	Px-RS Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
			L	F	B	Bx	E	D	316 SS, Steel	Brass
1/8	1/8	21-N2BS2	27.7	14.3	9.7	7.1	4.1	13.7	11400 (785)	5700 (392)
1/4	1/4	21-N4BS4	36.8	19.1	14.2	11.2	5.8	18.0	10300 (709)	5100 (351)
3/8	3/8	21-N6BS6	37.6	22.2	14.2	11.2	7.9	21.6	10300 (709)	5100 (351)
1/2	1/2	21-N8BS8	44.4	27.0	19.1	14.2	11.9	25.9	7600 (523)	3800 (261)
3/4	3/4	21-N12BS12	49.0	33.3	19.1	15.7	15.7	32.0	7300 (502)	3600 (248)
1	1	21-N16BS16	56.6	41.3	23.9	18.3	19.8	38.9	7400 (509)	3700 (254)

Male ISO parallel Threads

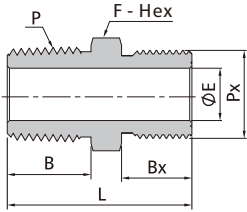


Male NPT Threads

P-NPT Size	Px-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)
			L	F	B	Bx	E	316 SS, Steel
1/4	7/16-20	21-N4ST7	30.5	14.3	14.2	9.1	5.1	4500 (310)
3/8	9/16-18	21-N6ST9	32.0	17.5	14.2	9.1	7.1	4500 (310)
1/2	3/4-16	21-N8ST12	38.9	22.2	19.1	11.2	10.7	4500 (310)
3/4	1 1/16-12	21-N12ST17	44.4	31.8	19.1	15.0	15.7	3600 (248)
1	1 5/16-12	21-N16ST21	50.8	38.1	23.9	15.0	22.4	2900 (199)

Male SAE/MS Straight Threads

Hex Nipples



Male NPT Threads

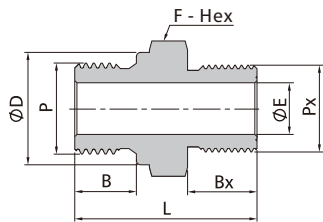
P-NPT Size	Px-Metric Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)
			L	F	B	Bx	E	316 SS, Steel
1/8	M20 x 1.5	21-N2MS20	32.7	22.2	9.7	16	5.0	7700 (530)
1/4	M8 x 1	21-N4MS8	29.0	14.3	14.2	9	3.2	8000 (551)
1/4	M14 x 1.5	21-N4MS14	34.2	15.9	14.2	13	7.0	8000 (551)
1/4	M16 x 1.5	21-N4MS16	35.2	17.5	14.2	14	7.1	7800 (537)
1/4	M20 x 1.5	21-N4MS20	37.2	22.2	14.2	16	7.0	7700 (530)
3/8	M14 x 1.5	21-N6MS14	34.2	17.5	14.2	13	7.0	7800 (537)
3/8	M20 x 1.5	21-N6MS20	37.2	22.2	14.2	16	9.5	7700 (530)
3/8	M24 x 1.5	21-N6MS24	38.2	27	14.2	17	9.5	7400 (509)
1/2	M14 x 1.5	21-N8MS14	39.1	22.2	19.1	13	7.0	7700 (530)
1/2	M20 x 1.5	21-N8MS20	42.0	22.2	19.1	16	10.0	7700 (530)
1/2	M24 x 1.5	21-N8MS24	43.5	27	19.1	17	11.9	7400 (509)
3/4	M20 x 1.5	21-N12MS20	42.1	27	19.1	16	10.0	7300 (502)
3/4	M27 x 2	21-N12MS27	46.7	31.8	19.1	18	15.8	6100 (420)
1	M30 x 2	21-N16MS30	55.0	34.9	23.9	20	11.9	6100 (420)

Male Metric Threads

Male ISO Tapered Threads

PRT Size	Px-Metric Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)
			L	F	B	Bx	E	316 SS, Steel
1/8	M20 x 1.5	21-R2MS20	32.7	22.2	9.7	16	5.0	7700 (530)
1/4	M12 x 1.5	21-R4MS12	33.4	14.3	14.2	15	5.0	8000 (551)
1/4	M20 x 1.5	21-R4MS20	37.2	22.2	14.2	16	7.0	7700 (530)
3/8	M20 x 1.5	21-R6MS20	37.2	22.2	14.2	16	9.5	7700 (530)
1/2	M20 x 1.5	21-R8MS20	42.0	22.2	19.1	16	10.0	7700 (530)

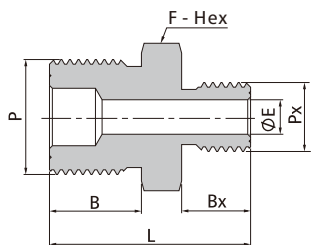
Male Metric Threads



Male ISO Parallel Threads

P-RS Size	Px-Metric Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	D	316 SS, Steel
1/8	M20 x 1.5	21-BS2MS20	30.1	22.2	7.1	16	4.0	13.7	7700 (530)
1/4	M18 x 1.5	21-BS4MS18	34.2	20.6	11.2	15	5.9	18.0	7800 (537)
1/4	M20 x 1.5	21-BS4MS20	36.2	22.2	11.2	16	5.9	18.0	7700 (530)
3/8	M20 x 1.5	21-BS6MS20	36.2	22.2	11.2	16	7.9	21.6	7700 (530)
1/2	M20 x 1.5	21-BS8MS20	40.2	22.2	14.0	16	11.9	25.9	7700 (530)

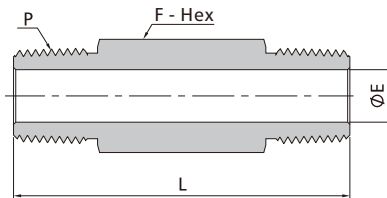
Male Metric Threads



Male Metric Threads

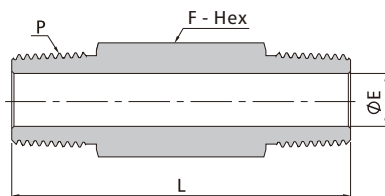
P-Metric Size	Px-Metric Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)
			L	F	B	Bx	E	316 SS, Steel
M20 x 1.5	M10 x 1	S-MS20MS10	34	22.2	16	11	4.0	
M20 x 1.5	M12 x 1.5	S-MS20MS12	35	22.2	16	12	6.0	
M20 x 1.5	M14 x 1.5	S-MS20MS14	36	22.2	16	13	8.0	
M20 x 1.5	M16 x 1.5	S-MS20MS16	37	22.2	16	14	9.0	
M20 x 1.5	M20 x 1.5	S-MS20	39	22.2	16	16	10.0	
M27 x 2	M27 x 2	S-MS27	44.5	30.1	18	18	14.0	

Hex Long Nipples



Male NPT Threads

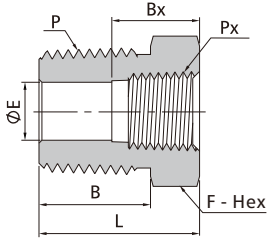
P-NPT Size	Basic Ordering Number	Dimension, mm			Working Pressure psig (bar)	
		L	F	E	316 SS, Steel	Brass
1/8	21-N2-38.1	38.1	11.1	4.8	10000 (689)	5000 (344)
1/8	21-N2-50.8	50.8	11.1	4.8	10000 (689)	5000 (344)
1/8	21-N2-63.5	63.5	11.1	4.8	10000 (689)	5000 (344)
1/8	21-N2-76.2	76.2	11.1	4.8	10000 (689)	5000 (344)
1/4	21-N4-38.1	38.1	14.3	7.1	8000 (551)	4000 (275)
1/4	21-N4-50.8	50.8	14.3	7.1	8000 (551)	4000 (275)
1/4	21-N4-63.5	63.5	14.3	7.1	8000 (551)	4000 (275)
1/4	21-N4-76.2	76.2	14.3	7.1	8000 (551)	4000 (275)
1/4	21-N4-101.6	101.6	14.3	7.1	8000 (551)	4000 (275)
3/8	21-N6-38.1	38.1	17.5	9.7	7800 (537)	3900 (268)
3/8	21-N6-50.8	50.8	17.5	9.7	7800 (537)	3900 (268)
3/8	21-N6-63.5	63.5	17.5	9.7	7800 (537)	3900 (268)
3/8	21-N6-76.2	76.2	17.5	9.7	7800 (537)	3900 (268)
3/8	21-N6-101.6	101.6	17.5	9.7	7800 (537)	3900 (268)
1/2	21-N8-50.8	50.8	22.2	11.9	7700 (530)	3800 (261)
1/2	21-N8-76.2	76.2	22.2	11.9	7700 (530)	3800 (261)
1/2	21-N8-101.6	101.6	22.2	11.9	7700 (530)	3800 (261)
1/2	21-N8-152.4	152.4	22.2	11.9	7700 (530)	3800 (261)
3/4	21-N12-50.8	50.8	27.0	15.7	7300 (502)	3600 (248)
3/4	21-N12-76.2	76.2	27.0	15.7	7300 (502)	3600 (248)
3/4	21-N12-101.6	101.6	27.0	15.7	7300 (502)	3600 (248)
1	21-N16-76.2	76.2	34.9	22.4	5300 (365)	2600 (179)
1	21-N16-101.6	101.6	34.9	22.4	5300 (365)	2600 (179)



Male ISO Tapered Threads

P-RT Size	Basic Ordering Number	Dimension, mm			Working Pressure psig (bar)	
		L	F	E	316 SS, Steel	Brass
1/8	21-R2-38.1	38.1	11.1	4.8	10000 (689)	5000 (344)
1/8	21-R2-50.8	50.8	11.1	4.8	10000 (689)	5000 (344)
1/8	21-R2-63.5	63.5	11.1	4.8	10000 (689)	5000 (344)
1/8	21-R2-76.2	76.2	11.1	4.8	10000 (689)	5000 (344)
1/4	21-R4-38.1	38.1	14.3	7.1	8000 (551)	4000 (275)
1/4	21-R4-50.8	50.8	14.3	7.1	8000 (551)	4000 (275)
1/4	21-R4-63.5	63.5	14.3	7.1	8000 (551)	4000 (275)
1/4	21-R4-76.2	76.2	14.3	7.1	8000 (551)	4000 (275)
1/4	21-R4-101.6	101.6	14.3	7.1	8000 (551)	4000 (275)
3/8	21-R6-38.1	38.1	17.5	9.7	7800 (537)	3900 (268)
3/8	21-R6-50.8	50.8	17.5	9.7	7800 (537)	3900 (268)
3/8	21-R6-63.5	63.5	17.5	9.7	7800 (537)	3900 (268)
3/8	21-R6-76.2	76.2	17.5	9.7	7800 (537)	3900 (268)
3/8	21-R6-101.6	101.6	17.5	9.7	7800 (537)	3900 (268)
1/2	21-R8-50.8	50.8	22.2	11.9	7700 (530)	3800 (261)
1/2	21-R8-76.2	76.2	22.2	11.9	7700 (530)	3800 (261)
1/2	21-R8-101.6	101.6	22.2	11.9	7700 (530)	3800 (261)
1/2	21-R8-152.4	152.4	22.2	11.9	7700 (530)	3800 (261)
3/4	21-R12-50.8	50.8	27.0	15.7	7300 (502)	3600 (248)
3/4	21-R12-76.2	76.2	27.0	15.7	7300 (502)	3600 (248)
3/4	21-R12-101.6	101.6	27.0	15.7	7300 (502)	3600 (248)
1	21-R16-76.2	76.2	34.9	22.4	5300 (365)	2600 (179)
1	21-R16-101.6	101.6	34.9	22.4	5300 (365)	2600 (179)

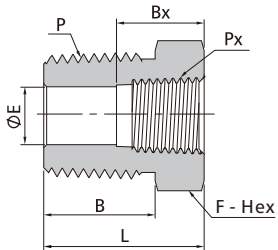
Reducing Bushings



Male NPT Threads

Female NPT Threads

P-NPT Size	Px-NPT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	316 SS, Steel	Brass
1/8	1/16	21-N2FN1	26.2	11.1	9.7	9.9	4.8	6500 (447)	3200 (220)
1/4	1/16	21-N4FN1	21.8	14.3	14.2	9.9	4.8	8000 (551)	4000 (275)
1/4	1/8	21-N4FN2	26.9	14.3	14.2	10.4	7.1	6500 (447)	3300 (227)
3/8	1/16	21-N6FN1	21.8	17.5	14.2	9.9	4.8	13300 (971)	6600 (454)
3/8	1/8	21-N6FN2	21.8	17.5	14.2	10.4	8.6	9200 (633)	4700 (323)
3/8	1/4	21-N6FN4	30.2	19.1	14.2	15.0	9.6	6600 (454)	3300 (227)
1/2	1/8	21-N8FN2	27.4	22.2	19.1	10.4	8.6	12200 (840)	6200 (427)
1/2	1/4	21-N8FN4	27.4	22.2	19.1	15.0	11.4	8300 (571)	4400 (303)
1/2	3/8	21-N8FN6	35.8	22.2	19.1	15.0	11.9	5300 (365)	2600 (179)
3/4	1/8	21-N12FN2	27.4	27.0	19.1	10.4	7.1	20000(1378)	10000(689)
3/4	1/4	21-N12FN4	27.4	27.0	19.1	15.0	11.4	12000 (826)	6000 (410)
3/4	3/8	21-N12FN6	27.4	27.0	19.1	15.0	15.0	8200 (564)	4300 (296)
3/4	1/2	21-N12FN8	41.4	27.0	19.1	19.8	15.7	4900 (337)	2400 (165)
1	1/8	21-N16FN2	34.5	34.9	23.9	10.4	7.1	20000(1378)	10000(689)
1	1/4	21-N16FN4	34.8	34.9	23.9	15.0	11.4	14500 (999)	7400 (509)
1	3/8	21-N16FN6	34.8	34.9	23.9	15.0	15.0	11600 (799)	5900 (406)
1	1/2	21-N16FN8	34.8	34.9	23.9	19.8	18.5	8600 (592)	4300 (296)
1	3/4	21-N16FN12	47.0	34.9	23.9	20.6	22.4	5300 (365)	2600 (179)
1 1/4	3/4	21-N20FN12	37.3	44.5	23.9	20.6	22.4	7800 (537)	3900 (268)
1 1/4	1	21-N20FN16	37.3	44.5	23.9	25.4	22.4	3500 (241)	1750 (120)
1 1/2	1	21-N24FN16	40.1	50.8	26.2	25.4	22.4	6600 (454)	3300 (227)
1 1/2	1 1/4	21-N24FN20	56.0	54.0	26.2	25.4	34.0	5000 (344)	2500 (172)

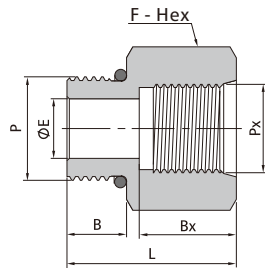
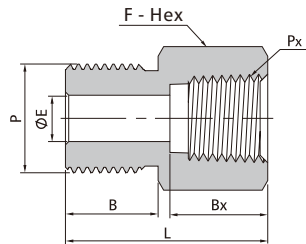
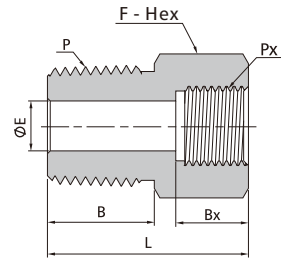
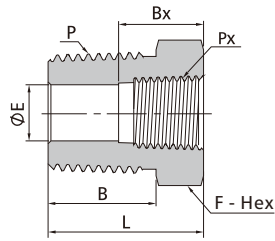


Male NPT Threads

Female ISO Tapered Pipe Threads

P-NPT Size	Px-RT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	316 SS, Steel	Brass
1/8	1/16	21-N2FR1	26.2	11.1	9.7	9.9	4.8	6500 (447)	3200 (220)
1/4	1/16	21-N4FR1	21.8	14.3	14.2	9.9	4.8	8000 (551)	4000 (275)
1/4	1/8	21-N4FR2	26.9	14.3	14.2	10.4	7.1	6500 (447)	3300 (227)
3/8	1/16	21-N6FR1	21.8	17.5	14.2	9.9	4.8	13300 (917)	6600 (454)
3/8	1/8	21-N6FR2	21.8	17.5	14.2	10.4	7.1	9200 (633)	4700 (323)
3/8	1/4	21-N6FR4	30.2	19.1	14.2	15.0	9.7	6600 (454)	3300 (227)
1/2	1/8	21-N8FR2	27.4	22.2	19.1	10.4	7.1	12200 (840)	6200 (427)
1/2	1/4	21-N8FR4	27.4	22.2	19.1	15.0	10.4	8300 (571)	4400 (303)
1/2	3/8	21-N8FR6	35.8	22.2	19.1	15.0	11.9	5300 (365)	2600 (179)
3/4	1/8	21-N12FR2	27.4	27.0	19.1	10.4	7.1	20000 (1378)	10000 (689)
3/4	1/4	21-N12FR4	27.4	27.0	19.1	15.0	10.4	12000 (826)	6000 (410)
3/4	3/8	21-N12FR6	27.4	27.0	19.1	15.0	12.7	8200 (564)	4300 (296)
3/4	1/2	21-N12FR8	41.4	27.0	19.1	19.8	15.7	4900 (337)	2400 (165)
1	1/8	21-N16FR2	34.5	34.9	23.9	10.4	7.1	20000 (1378)	10000 (689)
1	1/4	21-N16FR4	34.8	34.9	23.9	15.0	10.4	14500 (999)	7400 (509)
1	3/8	21-N16FR6	34.8	34.9	23.9	15.0	12.7	11600 (799)	5900 (406)
1	1/2	21-N16FR8	34.8	34.9	23.9	19.8	15.7	8600 (592)	4300 (296)
1	3/4	21-N16FR12	47.0	34.9	23.9	20.6	22.4	5300 (365)	2600 (179)
1 1/4	3/4	21-N20FR12	37.3	44.5	23.9	20.6	22.4	7800 (537)	3900 (268)
1 1/4	1	21-N20FR16	37.3	44.5	23.9	25.4	22.4	3500 (241)	1750 (120)
1 1/2	1	21-N24FR16	40.1	50.8	26.2	25.4	22.4	6600 (454)	3300 (227)
1 1/2	1 1/4	21-N24FR20	56.0	54.0	26.2	25.4	34.0	5000 (344)	2500 (172)

Reducing Bushings



Male ISO Tapered Threads

P-RT Size	Px-RT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	316 SS, Steel	Brass
1/4	1/8	21-R4FR2	26.9	14.3	14.2	10.4	7.1	6500 (447)	3200 (220)
3/8	1/4	21-R6FR4	30.2	19.1	14.2	15.0	9.6	6600 (454)	3300 (227)
1/2	1/4	21-R8FR4	27.4	22.2	19.1	15.0	11.2	8300 (571)	4400 (303)
1/2	3/8	21-R8FR6	35.8	22.2	19.1	15.0	11.9	5300 (365)	2600 (179)

Female ISO Tapered Threads

Male NPT Threads

P-NPT Size	Px-RG Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar) 316 SS, Steel
			L	F	B	Bx	E	
3/8	1/4	21-N6FG4	30.2	19.1	14.2	12.9	5.6	5700 (392)
1/2	3/8	21-N8FG6	35.8	22.2	19.1	14.2	6.6	5700 (392)
3/4	1/2	21-N12FG8	41.4	27.0	19.1	18.8	7.1	3900 (268)

Female ISO Parallel Threads

Male ISO Parallel Threads

P-BP Size	Px-NPT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	316 SS, Steel	Brass
1/4	1/8	21-BP4FN2	26.9	14.3	12.9	10.4	4.5	6500 (447)	3200 (220)
3/8	1/4	21-BP6FN4	31.0	19.1	14.2	15	7.1	6600 (454)	3300 (227)
1/2	3/8	21-BP8FN6	35.8	22.2	18.8	15	6.6	5300 (365)	2600 (179)

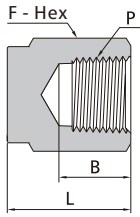
Female NPT Threads

Male SAE Straight Threads

P-SAE/MS Thread Size	Px-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar) 316 SS, Steel
			L	F	B	Bx	E	
9/16-18	7/16-20	21-ST9FST7	28.4	20.6	9.9	14.0	7.1	4500 (310)
3/4-16	7/16-20	21-ST12FST7	24.9	22.2	11.2	14.0	9.9	4500 (310)
3/4-16	9/16-18	21-ST12FST9	30.2	25.4	11.2	16.0	10.7	4500 (310)
7/8-14	9/16-18	21-ST14FST9	27.9	25.4	12.7	16.0	12.7	3600 (248)
7/8-14	3/4-16	21-ST14FST12	36.1	30.2	12.7	18.0	12.7	3600 (248)
1 1/16-12	3/4-16	21-ST17FST12	32.3	31.8	15.0	18.0	16.5	3600 (248)
1 5/16-12	1 1/16-12	21-ST21FST17	40.9	41.3	15.0	24.0	22.1	2900 (199)
1 5/8-12	1 5/16-12	21-ST26FST21	50.3	54.0	15.0	24.0	27.7	2300 (158)
1 7/8-12	1 5/16-12	21-ST30FST21	50.3	54.0	15.0	24.0	31.2	2300 (158)

Female MS Straight Threads

Pipe Caps



Female NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm			Working Pressure psig (bar)	
		L	F	B	316 SS, Steel	Brass
1/16	26-FN1	12.7	11.1	9.9	6700 (460)	3300 (227)
1/8	26-FN2	19.1	14.3	10.4	6500 (447)	3200 (220)
1/4	26-FN4	23.1	19.1	15.0	6600 (454)	3300 (277)
3/8	26-FN6	26.2	22.2	15.0	5300 (365)	2600 (179)
1/2	26-FN8	34.0	27.0	19.8	4900 (337)	2400 (165)
3/4	26-FN12	36.6	33.3	20.6	4600 (316)	2300 (158)
1	26-FN16	41.1	41.3	25.4	4400 (303)	2200 (151)

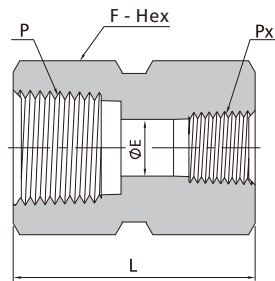
Heavy-Wall Female NPT Threads

1/4	26-FN4-10K	28.2	25.4	15.0	10000 (689)	/
1/2	26-FN8-10K	40.1	38.1	19.8	10000 (689)	/

Female ISO Tapered Threads

P-FR Size	Basic Ordering Number	Dimension, mm			Working Pressure psig (bar)	
		L	F	B	316 SS, Steel	Brass
1/16	26-FR1	12.7	11.1	9.9	6700 (460)	3300 (227)
1/8	26-FR2	19.1	14.3	10.4	6500 (447)	3200 (220)
1/4	26-FR4	23.1	19.1	15.0	6600 (454)	3300 (277)
3/8	26-FR6	26.2	22.2	15.0	5300 (365)	2600 (179)
1/2	26-FR8	34.0	27.0	19.8	4900 (337)	2400 (165)
3/4	26-FR12	36.6	33.3	20.6	4600 (316)	2300 (158)
1	26-FR16	41.1	41.3	25.4	4400 (303)	2200 (151)

Hex Couplings



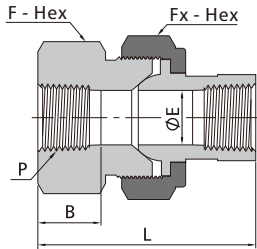
Female NPT Threads

P-NPT Size	Px-NPT Size	Basic Ordering Number	Dimension, mm			Working Pressure psig (bar)	
			L	F	E	316 SS, Steel	Brass
1/16	1/16	21-FN1	19.8	11.1	4.8	6700 (460)	3300 (227)
1/8	1/8	21-FN2	20.6	14.3	8.6	6500 (447)	3200 (220)
1/4	1/8	21-FN4FN2	31.0	19.1	8.6	6600 (454)	3300 (227)
1/4	1/4	21-FN4	30.2	19.1	11.4	6600 (454)	3300 (227)
3/8	1/4	21-FN6FN4	35.1	22.2	11.4	5300 (365)	2600 (179)
3/8	3/8	21-FN6	33.3	22.2	15.0	5300 (365)	2600 (179)
1/2	1/8	21-FN8FN2	39.6	27.0	8.6	4900 (337)	2400 (165)
1/2	1/4	21-FN8FN4	44.4	27.0	11.4	4900 (337)	2400 (165)
1/2	3/8	21-FN8FN6	45.2	27.0	15.0	4900 (337)	2400 (165)
1/2	1/2	21-FN8	39.6	27.0	18.5	4900 (337)	2400 (165)
3/4	1/4	21-FN12FN4	46.0	33.3	11.4	4600 (316)	2300 (158)
3/4	1/2	21-FN12FN8	52.3	33.3	18.5	4600 (316)	2300 (158)
3/4	3/4	21-FN12	41.1	33.3	23.9	4600 (316)	2300 (158)
1	1/2	21-FN16FN8	55.6	41.3	18.5	4400 (303)	2200 (151)
1	3/4	21-FN16FN12	57.2	41.3	23.9	4400 (303)	2200 (151)
1	1	21-FN16	50.8	41.3	29.7	4400 (303)	2200 (151)
Heavy-Wall Female NPT Threads							
1/4	1/4	21-FN4-10K	30.2	25.4	11.4	10000 (689)	/
1/2	1/2	21-FN8-10K	39.6	38.1	18.5	10000 (689)	/
1/2	1/4	21-FN8FN4-10K	44.4	38.1	11.4	10000 (689)	/

Female ISO Tapered Threads

P-RT Size	Px-RT Size	Basic Ordering Number	Dimension, mm			Working Pressure psig (bar)	
			L	F	E	316 SS, Steel	Brass
1/8	1/8	21-FR2	20.6	14.3	8.4	6500 (447)	3200 (220)
1/4	1/4	21-FR4	30.2	19.1	11.2	6600 (454)	3300 (227)
3/8	1/4	21-FR6FR4	35.1	22.2	11.2	5300 (365)	2600 (179)
3/8	3/8	21-FR6	33.3	22.2	14.7	5300 (365)	2600 (179)
1/2	1/4	21-FR8FR4	44.4	27.0	11.2	4900 (337)	2400 (165)
1/2	3/8	21-FR8FR6	45.2	27.0	14.7	4900 (337)	2400 (165)
1/2	1/2	21-FR8	39.6	27.0	18.3	4900 (337)	2400 (165)

Union Ball Joints



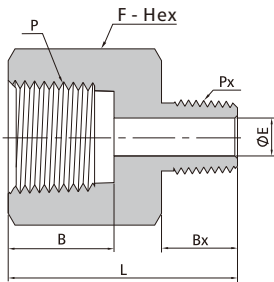
Female NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar) 316 SS, Steel
		L	F	Fx	B	E	
1/8	UBJ-FN2	46.0	23.8	28.6	10.4	6.8	8400 (578)
1/4	UBJ-FN4	59.4	30.2	34.9	15.0	9.1	6600 (454)
3/8	UBJ-FN6	63.5	33.3	38.1	15.0	13.2	5300 (365)
1/2	UBJ-FN8	68.3	41.3	44.5	19.8	15.7	6000 (410)
3/4	UBJ-FN12	79.2	47.6	54.0	20.6	22.4	4600 (316)
1	UBJ-FN16	90.4	60.3	63.5	25.4	26.2	6800 (468)

Female ISO Tapered Threads

P-RT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar) 316 SS, Steel
		L	F	Fx	B	E	
1/8	UBJ-FR2	46.0	23.8	28.6	10.4	6.8	8400 (578)
1/4	UBJ-FR4	59.4	30.2	34.9	15.0	9.1	6600 (454)
3/8	UBJ-FR6	63.5	33.3	38.1	15.0	13.2	5300 (365)
1/2	UBJ-FR8	68.3	41.3	44.5	19.8	15.7	6000 (410)
3/4	UBJ-FR12	79.2	47.6	54.0	20.6	22.4	4600 (316)
1	UBJ-FR16	90.4	60.3	63.5	25.4	26.2	6800 (468)

Adapters



Female NPT Threads

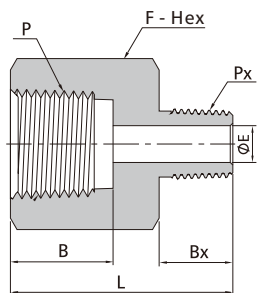
Male NPT Threads

P-NPT Size	Px-NPT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	316 SS, Steel	Brass
1/8	1/16	21-FN2N1	27.7	14.3	10.4	9.7	3.0	6500 (447)	3200 (220)
1/8	1/8	21-FN2N2	27.9	14.3	10.4	9.7	4.8	6500 (447)	3200 (220)
1/4	1/16	21-FN4N1	30.5	19.1	15.0	9.7	3.0	6600 (454)	3300 (227)
1/4	1/8	21-FN4N2	32.0	19.1	15.0	9.7	4.8	6600 (454)	3300 (227)
1/4	1/4	21-FN4N4	35.6	19.1	15.0	14.2	7.1	6600 (454)	3300 (227)
3/8	1/16	21-FN6N1	31.8	22.2	15.0	9.7	3.0	5300 (365)	2600 (179)
3/8	1/8	21-FN6N2	33.8	22.2	15.0	9.7	4.8	5300 (365)	2600 (179)
3/8	1/4	21-FN6N4	38.1	22.2	15.0	14.2	7.1	5300 (365)	2600 (179)
3/8	3/8	21-FN6N6	38.4	22.2	15.0	14.2	9.7	5300 (365)	2600 (179)
1/2	1/8	21-FN8N2	40.1	27.0	19.8	9.7	4.8	4900 (337)	2400 (165)
1/2	1/4	21-FN8N4	44.7	27.0	19.8	14.2	7.1	4900 (337)	2400 (165)
1/2	3/8	21-FN8N6	44.4	27.0	19.8	14.2	9.6	4900 (337)	2400 (165)
1/2	1/2	21-FN8N8	49.3	27.0	19.8	19.1	11.9	4900 (337)	2400 (165)
3/4	1/8	21-FN12N2	39.6	33.3	20.6	9.7	4.8	4600 (316)	2300 (158)
3/4	1/4	21-FN12N4	47.0	33.3	20.6	14.2	7.1	4600 (316)	2300 (158)
3/4	3/8	21-FN12N6	46.2	33.3	20.6	14.2	9.7	4600 (316)	2300 (158)
3/4	1/2	21-FN12N8	51.3	33.3	20.6	19.1	11.9	4600 (316)	2300 (158)
3/4	3/4	21-FN12N12	51.3	33.3	20.6	19.1	15.7	4600 (316)	2300 (158)
1	1/8	21-FN16N2	46.0	41.3	25.4	9.7	4.8	4400 (303)	2200 (151)
1	1/4	21-FN16N4	49.8	41.3	25.4	14.2	7.1	4400 (303)	2200 (151)
1	3/8	21-FN16N6	50.8	41.3	25.4	14.2	9.7	4400 (303)	2200 (151)
1	1/2	21-FN16N8	54.9	41.3	25.4	19.1	11.9	4400 (303)	2200 (151)
1	3/4	21-FN16N12	55.1	41.3	25.4	19.1	15.7	4400 (303)	2200 (151)
1	1	21-FN16N16	57.9	41.3	25.4	23.9	22.4	4400 (303)	2200 (151)
1 1/4	1	21-FN20N16	62.7	54.0	25.4	23.9	22.4	5000 (344)	2500 (172)

Heavy-Wall Female to male NPT Threads

1/4	1/4	21-FN4-10K	36.3	25.4	15.0	14.2	5.8	10000 (689)	/
1/2	1/2	21-FN8-10K	51.3	38.1	19.8	19.1	9.9	10000 (689)	/
1/2	1/4	21-FN8-FN4-10K	46.0	38.1	19.8	14.2	5.8	10000 (689)	/

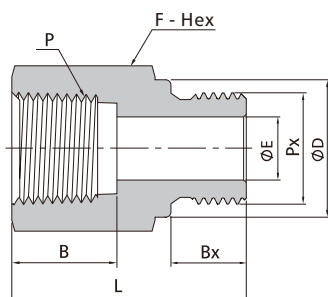
Adapters



Female NPT Threads

Male ISO Tapered Threads

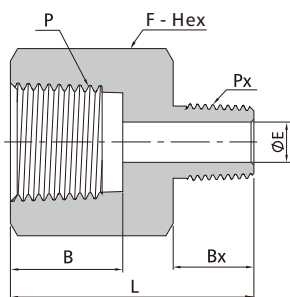
P-NPT Size	Px-RT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	316 SS, Steel	Brass
1/8	1/8	21-FN2RT2	27.7	14.3	10.4	9.7	4.8	6500 (447)	3200 (220)
1/4	1/4	21-FN4RT4	36.1	19.1	15.0	14.2	7.1	6600 (454)	3300 (227)
3/8	3/8	21-FN6RT6	38.1	22.2	15.0	14.2	9.7	5300 (365)	2600 (179)
1/2	1/2	21-FN8RT8	49.3	27.0	19.8	19.1	11.9	4900 (337)	2400 (165)
3/4	3/4	21-FN12RT12	51.3	33.3	20.6	19.1	15.7	4600 (316)	2300 (158)
1	1	21-FN16RT16	58.4	41.3	25.4	23.9	22.4	4400 (303)	2200 (151)



Female NPT Threads

Male ISO Parallel Threads

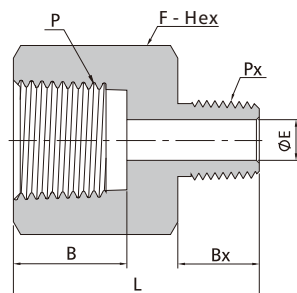
P-NPT Size	Px-RS Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
			L	F	B	Bx	D	E	316 SS, Steel	Brass
1/8	1/8	21-FN2BS2	25.1	14.3	9.9	7.1	13.7	4.1	6500 (447)	3200 (220)
1/4	1/4	21-FN4BS4	33.5	19.1	10.4	11.2	18.0	5.8	6600 (454)	3300 (227)
3/8	3/8	21-FN6BS6	35.8	22.2	15.0	11.2	21.6	7.9	5300 (365)	2600 (179)
1/2	1/2	21-FN8BS8	44.2	27.0	15.0	14.2	25.9	11.9	4900 (337)	2400 (165)
3/4	3/4	21-FN12BS12	48.0	33.3	20.6	15.7	32.0	15.7	4600 (316)	2300 (158)
1	1	21-FN16BS16	53.3	41.3	25.4	18.3	38.9	19.8	4400 (303)	2200 (151)



Female ISO Tapered Threads

Male ISO Tapered Threads

P-RT Size	Px-RT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	316 SS, Steel	Brass
1/8	1/8	21-FR2R2	27.7	14.3	10.4	9.7	4.8	6500 (447)	3200 (220)
1/4	1/8	21-FR4R2	32.0	19.1	15.0	9.7	4.8	6600 (454)	3300 (227)
1/4	1/4	21-FR4R4	36.1	19.1	15.0	14.2	7.1	6600 (454)	3300 (227)
3/8	1/4	21-FR6R4	38.1	22.2	15.0	14.2	7.1	5300 (365)	2600 (179)
3/8	3/8	21-FR6R6	38.1	22.2	15.0	14.2	9.7	5300 (365)	2600 (179)
1/2	1/4	21-FR8R4	44.7	27.0	19.8	14.2	7.1	4900 (337)	2400 (165)
1/2	3/8	21-FR8R6	44.4	27.0	19.8	14.2	9.7	4900 (337)	2400 (165)
1/2	1/2	21-FR8R8	49.5	27.0	19.8	19.1	11.9	4900 (337)	2400 (165)
3/4	3/4	21-FR12R12	51.3	33.3	20.6	19.1	15.7	4600 (316)	2300 (158)
1	1	21-FR16R16	58.4	41.3	25.4	23.9	22.4	4400 (303)	2200 (151)

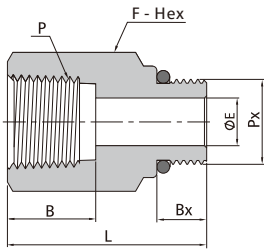


Female ISO Tapered Threads

Male NPT Threads

P-RT Size	Px-NPT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar)	
			L	F	B	Bx	E	316 SS, Steel	Brass
1/8	1/8	21-FR2N2	27.7	14.3	10.4	9.7	4.8	6500 (447)	3200 (220)
1/4	1/4	21-FR4N4	36.3	19.1	15.0	14.2	7.1	6600 (454)	3300 (227)
3/8	3/8	21-FR6N6	38.4	22.2	15.0	14.2	9.6	5300 (365)	2600 (179)
1/2	1/2	21-FR8N8	49.8	27.0	19.8	19.1	11.9	4900 (337)	2400 (165)
3/4	3/4	21-FR12N12	51.3	33.3	20.6	19.1	15.7	4600 (316)	2300 (158)
1	1	21-FR16N16	58.4	41.3	25.4	23.9	22.4	4400 (303)	2200 (151)

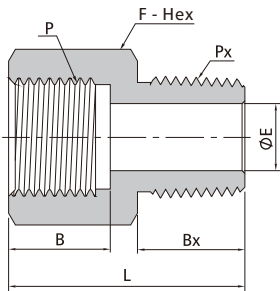
Adapters



Female NPT Threads

Male SAE/MS Straight Threads

P-NPT Size	Px-SAE/MS Thread Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar) 316 SS, Steel
			L	F	B	Bx	E	
1/4	7/16-20	21-FN4ST7	33.5	19.1	15.0	9.1	5.1	4500 (310)
3/8	9/16-18	21-FN6ST9	35.3	23.8	15.0	9.9	7.1	4500 (310)
1/2	3/4-16	21-FN8ST12	44.7	27.0	19.8	11.2	10.7	4500 (310)
3/4	1 1/16-12	21-FN12ST17	50.5	34.9	20.6	15.0	16.7	3600 (248)
1	1 5/16-12	21-FN16ST21	53.8	41.3	25.4	15.0	22.4	2900 (199)

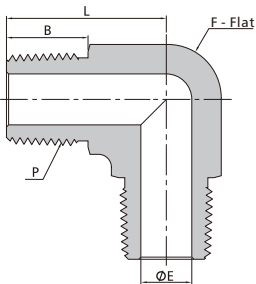


Female ISO Parallel Threads

Male NPT Threads

P-RG Size	Px-NPT Size	Basic Ordering Number	Dimension, mm					Working Pressure psig (bar) 316 SS, Steel
			L	F	B	Bx	E	
1/8	1/8	21-FG2N2	21.8	14.3	6.5	9.7	4.8	6100 (420)
1/4	1/4	21-FG4N4	30.2	19.1	12.9	14.2	5.6	5700 (392)
3/8	3/8	21-FG6N6	32.2	23.8	14.2	14.2	6.6	5700 (392)
1/2	1/2	21-FG8N8	42.7	27.0	18.8	19.1	7.1	3900 (268)

Male Elbows



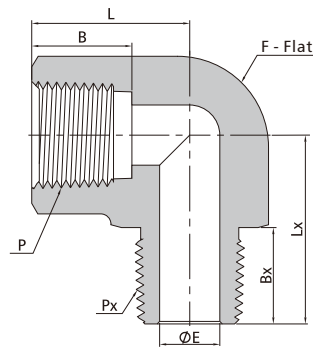
Male NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm				Working Pressure psig (bar)	
		L	F	B	E	316 SS, Steel	Brass
1/16	22-N1	18.3	9.5	9.7	3.0	11000 (757)	5500 (378)
1/8	22-N2	22.4	11.1	9.7	4.8	10000 (689)	5000 (344)
1/4	22-N4	26.7	12.7	14.2	7.1	8000 (551)	4000 (275)
3/8	22-N6	29.7	17.5	14.2	9.6	7800 (537)	3900 (268)
1/2	22-N8	36.8	20.6	19.1	11.9	7700 (530)	3800 (261)
3/4	22-N12	40.4	27.0	19.1	15.7	7300 (502)	3600 (248)
1	22-N16	50.0	34.9	23.9	22.4	5300 (365)	2600 (179)

Male ISO Tapered Pipe Threads

P-RT Size	Basic Ordering Number	Dimension, mm				Working Pressure psig (bar)	
		L	F	B	E	316 SS, Steel	Brass
1/16	22-R1	18.3	9.5	9.7	3.0	11000 (757)	5500 (378)
1/8	22-R2	22.4	11.1	9.7	4.8	10000 (689)	5000 (344)
1/4	22-R4	26.7	12.7	14.2	7.1	8000 (551)	4000 (275)
3/8	22-R6	29.7	17.5	14.2	9.7	7800 (537)	3900 (268)
1/2	22-R8	36.8	20.6	19.1	11.9	7700 (530)	3800 (261)
3/4	22-R12	40.4	27.0	19.1	15.7	7300 (502)	3600 (248)
1	22-R16	50.0	34.9	23.9	22.4	5300 (365)	2600 (179)

Street Elbows

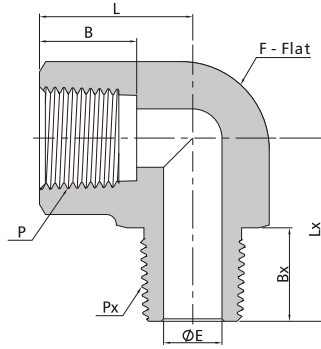


Female NPT Threads

Male NPT Threads

P-NPT Size	Px-NPT Size	Basic Ordering Number	Dimension, mm							Working Pressure psig (bar)	
			L	F	B	E	Lx	Bx	316 SS, Steel	Brass	
1/16	1/16	22-FN1N1	21.8	11.1	9.9	3.0	22.4	9.7	9200 (633)	4600 (316)	
1/16	1/8	22-FN1N2	21.8	11.1	9.9	4.8	22.4	9.7	9200 (633)	4600 (316)	
1/16	1/4	22-FN1N4	22.4	14.3	9.9	4.8	27.7	14.2	8000 (551)	4000 (275)	
1/16	3/8	22-FN1N6	22.4	17.5	9.9	4.8	29.7	14.2	7800 (537)	3900 (268)	
1/8	1/16	22-FN2N1	26.4	12.7	10.4	3.0	22.1	9.7	6200 (426)	3100 (213)	
1/8	1/8	22-FN2N2	26.4	12.7	10.4	4.8	22.1	9.7	6200 (426)	3100 (213)	
1/8	1/4	22-FN2N4	22.4	14.3	10.4	7.1	27.7	14.2	6500 (447)	3200 (220)	
1/8	3/8	22-FN2N6	22.4	17.5	10.4	7.1	29.7	14.2	7800 (537)	3900 (268)	
1/8	1/2	22-FN2N8	24.1	20.6	10.4	7.1	36.8	19.1	7700 (530)	3800 (261)	
1/8	3/4	22-FN2N12	25.4	27.0	10.4	7.1	40.4	19.1	7300 (502)	3600 (248)	
1/8	1	22-FN2N16	26.4	34.9	10.4	7.1	50.0	23.9	5300 (365)	2600 (179)	
1/4	1/8	22-FN4N2	29.7	17.5	15.0	4.8	25.4	9.7	7200 (496)	3600 (248)	
1/4	1/4	22-FN4N4	29.7	17.5	15.0	7.1	29.7	14.2	7200 (496)	3600 (248)	
1/4	3/8	22-FN4N6	29.7	17.5	15.0	8.6	29.7	14.2	7200 (496)	3600 (248)	
1/4	1/2	22-FN4N8	25.4	20.6	15.0	8.6	36.8	19.1	7200 (496)	3600 (248)	
1/4	3/4	22-FN4N12	25.4	27.0	15.0	8.6	40.4	19.1	7300 (502)	3600 (248)	
1/4	1	22-FN4N16	41.4	34.9	15.0	8.6	50.0	23.9	5300 (365)	2600 (179)	
3/8	1/4	22-FN6N4	36.1	20.6	15.0	7.1	32.0	14.2	5600 (385)	2800 (192)	
3/8	3/8	22-FN6N6	36.1	20.6	15.0	9.6	32.0	14.2	5600 (385)	2800 (192)	
3/8	1/2	22-FN6N8	36.1	20.6	15.0	11.9	36.8	19.1	5600 (385)	2800 (192)	
3/8	3/4	22-FN6N12	31.2	27.0	15.0	11.9	40.4	19.1	7300 (502)	3600 (248)	
3/8	1	22-FN6N16	41.4	34.9	15.0	11.9	50.0	23.9	5300 (365)	2600 (179)	
1/2	1/4	22-FN8N4	39.6	25.4	19.8	7.1	35.1	14.2	5600 (385)	2800 (192)	
1/2	3/8	22-FN8N6	39.6	25.4	19.8	9.6	35.1	14.2	5600 (385)	2800 (192)	
1/2	1/2	22-FN8N8	39.6	25.4	19.8	11.9	39.6	19.1	5600 (385)	2800 (192)	
1/2	3/4	22-FN8N12	31.2	27.0	19.8	15.7	40.4	19.1	5600 (385)	2800 (192)	
1/2	1	22-FN8N16	41.4	34.9	19.8	15.7	50.0	23.9	5300 (365)	2600 (179)	
3/4	3/4	22-FN12N12	48.8	31.8	20.6	15.7	42.4	19.1	5100 (351)	2500 (172)	
3/4	1	22-FN12N16	41.4	34.9	20.6	22.4	50.0	23.9	5100 (351)	2500 (172)	
1	1	22-FN16N16	48.5	42.9	25.4	22.4	49.3	23.9	5300 (365)	2600 (179)	
1 1/4	1 1/4	22-FN20N20	60.5	50.8	25.4	31.8	60.5	23.9	3100 (213)	1600 (110)	

Street Elbows

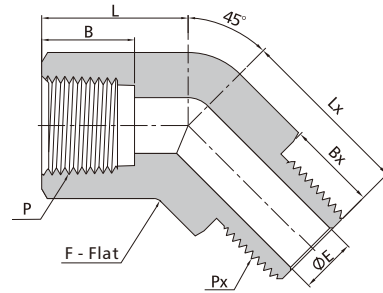


Female ISO Tapered Pipe Threads

Male ISO Tapered Threads

P-RT Size	Px-RT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
			L	F	B	E	Lx	Bx	316 SS, Steel	Brass
1/16	1/16	22-FR1R1	21.8	11.1	9.9	3.0	22.4	9.7	9200 (633)	4600 (316)
1/16	1/8	22-FR1R2	21.8	11.1	9.9	4.8	22.4	9.7	9200 (633)	4600 (316)
1/16	1/4	22-FR1R4	22.4	14.3	9.9	4.8	27.7	14.2	8000 (551)	4000 (275)
1/16	3/8	22-FR1R6	22.4	17.5	9.9	4.8	29.7	14.2	7800 (537)	3900 (268)
1/8	1/16	22-FR2R1	26.4	12.7	10.4	3.0	22.1	9.7	6200 (426)	3100 (213)
1/8	1/8	22-FR2R2	26.4	12.7	10.4	4.8	22.1	9.7	6200 (426)	3100 (213)
1/8	1/4	22-FR2R4	22.4	14.3	10.4	7.1	27.7	14.2	6500 (447)	3200 (220)
1/8	3/8	22-FR2R6	22.4	17.5	10.4	7.1	29.7	14.2	7800 (537)	3900 (268)
1/8	1/2	22-FR2R8	24.1	20.6	10.4	7.1	36.8	19.1	7700 (530)	3800 (261)
1/8	3/4	22-FR2R12	25.4	27.0	10.4	7.1	40.4	19.1	7300 (502)	3600 (248)
1/8	1	22-FR2R16	26.4	34.9	10.4	7.1	50.0	23.9	5300 (365)	2600 (179)
1/4	1/8	22-FR4R2	29.7	17.5	15.0	4.8	25.4	9.7	7200 (496)	3600 (248)
1/4	1/4	22-FR4R4	29.7	17.5	15.0	7.1	29.7	14.2	7200 (496)	3600 (248)
1/4	3/8	22-FR4R6	29.7	17.5	15.0	8.6	29.7	14.2	7200 (496)	3600 (248)
1/4	1/2	22-FR4R8	25.4	20.6	15.0	8.6	36.8	19.1	7200 (496)	3600 (248)
1/4	3/4	22-FR4R12	25.4	27.0	15.0	8.6	40.4	19.1	7300 (502)	3600 (248)
1/4	1	22-FR4R16	41.4	34.9	15.0	8.6	50.0	23.9	5300 (365)	2600 (179)
3/8	1/4	22-FR6R4	36.1	20.6	15.0	7.1	32.0	14.2	5600 (385)	2800 (192)
3/8	3/8	22-FR6R6	36.1	20.6	15.0	9.7	32.0	14.2	5600 (385)	2800 (192)
3/8	1/2	22-FR6R8	36.1	20.6	15.0	11.9	36.8	19.1	5600 (385)	2800 (192)
3/8	3/4	22-FR6R12	31.2	27.0	15.0	11.9	40.4	19.1	7300 (502)	3600 (248)
3/8	1	22-FR6R16	41.4	34.9	15.0	11.9	50.0	23.9	5300 (365)	2600 (179)
1/2	1/4	22-FR8R4	39.6	25.4	19.8	7.1	35.1	14.2	5600 (385)	2800 (192)
1/2	3/8	22-FR8R6	39.6	25.4	19.8	9.7	35.1	14.2	5600 (385)	2800 (192)
1/2	1/2	22-FR8R8	39.6	25.4	19.8	11.9	39.6	19.1	5600 (385)	2800 (192)
1/2	3/4	22-FR8R12	31.2	27.0	19.8	15.7	40.4	19.1	5600 (385)	2800 (192)
1/2	1	22-FR8R16	41.4	34.9	19.8	15.7	50.0	23.9	5300 (365)	2600 (179)
3/4	3/4	22-FR12R12	48.8	31.8	20.6	15.7	42.4	19.1	5100 (351)	2500 (172)
3/4	1	22-FR12R16	41.4	34.9	20.6	22.4	50.0	23.9	5100 (351)	2500 (172)
1	1	22-FR16R16	48.5	42.9	25.4	22.4	49.3	23.9	5300 (365)	2600 (179)
1 1/4	1 1/4	22-FR20R20	60.5	50.8	25.4	31.8	60.5	23.9	3100 (213)	1600 (110)

45° Street Elbows

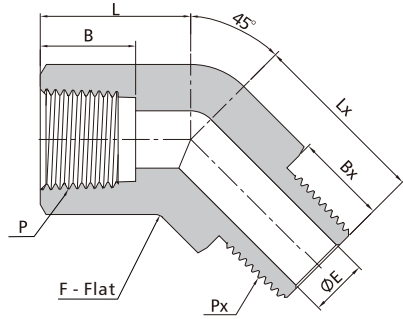


Female NPT Threads

Male NPT Threads

P-NPT Size	Px-NPT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
			L	F	B	E	Lx	Bx	316 SS, Steel	Brass
1/16	1/16	25-FN1N1	16.8	11.1	9.9	3.0	16.8	9.7	9200 (633)	4600 (316)
1/16	1/8	25-FN1N2	16.8	11.1	9.9	4.8	16.8	9.7	9200 (633)	4600 (316)
1/16	1/4	25-FN1N4	16.8	14.3	9.9	4.8	21.8	14.2	8000 (551)	4000 (275)
1/16	3/8	25-FN1N6	22.4	17.5	9.9	4.8	23.8	14.2	7800 (537)	3900 (268)
1/8	1/16	25-FN2N1	20.2	12.7	10.4	3.0	17.2	9.7	6200 (426)	3100 (213)
1/8	1/8	25-FN2N2	20.2	12.7	10.4	4.8	17.2	9.7	6200 (426)	3100 (213)
1/8	1/4	25-FN2N4	16.8	14.3	10.4	7.1	21.8	14.2	6500 (447)	3200 (220)
1/8	3/8	25-FN2N6	22.4	17.5	10.4	7.1	23.8	14.2	7800 (537)	3900 (268)
1/8	1/2	25-FN2N8	22.2	20.6	10.4	7.1	29.0	19.1	7700 (530)	3800 (261)
1/8	3/4	25-FN2N12	25.4	27.0	10.4	7.1	30.5	19.1	7300 (502)	3600 (248)
1/8	1	25-FN2N16	26.4	34.9	10.4	7.1	49.3	23.9	5300 (365)	2600 (179)
1/4	1/8	25-FN4N2	25.4	17.5	15.0	4.8	19.3	9.7	7200 (496)	3600 (248)
1/4	1/4	25-FN4N4	25.4	17.5	15.0	7.1	19.3	14.2	7200 (496)	3600 (248)
1/4	3/8	25-FN4N6	25.4	17.5	15.0	8.6	23.8	14.2	7200 (496)	3600 (248)
1/4	1/2	25-FN4N8	22.2	20.6	15.0	8.6	29.0	19.1	7200 (496)	3600 (248)
1/4	3/4	25-FN4N12	25.4	27.0	15.0	8.6	30.5	19.1	7300 (502)	3600 (248)
1/4	1	25-FN4N16	32.0	34.9	15.0	8.6	37.6	23.9	5300 (365)	2600 (179)
3/8	1/4	25-FN6N4	27.0	20.6	15.0	7.1	24.2	14.2	5600 (385)	2800 (192)
3/8	3/8	25-FN6N6	27.0	20.6	15.0	9.7	24.2	14.2	5600 (385)	2800 (192)
3/8	1/2	25-FN6N8	27.0	20.6	15.0	11.9	29.0	19.1	5600 (385)	2800 (192)
3/8	3/4	25-FN6N12	27.0	27.0	15.0	11.9	30.5	19.1	7300 (502)	3600 (248)
3/8	1	25-FN6N16	32.0	34.9	15.0	11.9	37.6	23.9	5300 (365)	2600 (179)
1/2	1/4	25-FN8N4	32.0	25.4	19.8	7.1	25.2	14.2	5600 (385)	2800 (192)
1/2	3/8	25-FN8N6	32.0	25.4	19.8	9.7	25.2	14.2	5600 (385)	2800 (192)
1/2	1/2	25-FN8N8	32.0	25.4	19.8	11.9	32.0	19.1	5600 (385)	2800 (192)
1/2	3/4	25-FN8N12	32.5	27.0	19.8	15.7	30.5	19.1	5600 (385)	2800 (192)
1/2	1	25-FN8N16	37.6	34.9	19.8	15.7	37.6	23.9	5300 (365)	2600 (179)
3/4	3/4	25-FN12N12	34.5	31.8	20.6	15.7	34.5	19.1	5100 (351)	2500 (172)
3/4	1	25-FN12N16	37.6	34.9	20.6	22.4	37.6	23.9	5100 (351)	2500 (172)
1	1	25-FN16N16	46.0	42.9	25.4	22.4	46.0	23.9	5300 (365)	2600 (179)
1 1/4	1 1/4	25-FN20N20	50.8	50.8	25.4	31.8	50.8	23.9	3100 (213)	1600 (110)

45° Street Elbows

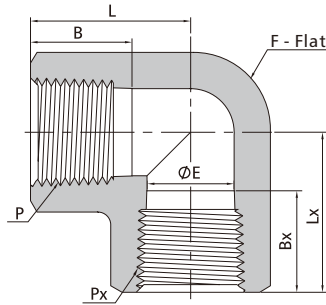


Female ISO Tapered Threads

Male ISO Tapered Threads

P-RT Size	Px-RT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
			L	F	B	E	Lx	Bx	316 SS, Steel	Brass
1/16	1/16	25-FR1R1	16.8	11.1	9.9	3.0	16.8	9.7	9200 (633)	4600 (316)
1/16	1/8	25-FR1R2	16.8	11.1	9.9	4.8	16.8	9.7	9200 (633)	4600 (316)
1/16	1/4	25-FR1R4	16.8	14.3	9.9	4.8	21.8	14.2	8000 (551)	4000 (275)
1/16	3/8	25-FR1R6	22.4	17.5	9.9	4.8	23.8	14.2	7800 (537)	3900 (268)
1/8	1/16	25-FR2R1	20.2	12.7	10.4	3.0	17.2	9.7	6200 (426)	3100 (213)
1/8	1/8	25-FR2R2	20.2	12.7	10.4	4.8	17.2	9.7	6200 (426)	3100 (213)
1/8	1/4	25-FR2R4	16.8	14.3	10.4	7.1	21.8	14.2	6500 (447)	3200 (220)
1/8	3/8	25-FR2R6	22.4	17.5	10.4	7.1	23.8	14.2	7800 (537)	3900 (268)
1/8	1/2	25-FR2R8	22.2	20.6	10.4	7.1	29.0	19.1	7700 (530)	3800 (261)
1/8	3/4	25-FR2R12	25.4	27.0	10.4	7.1	30.5	19.1	7300 (502)	3600 (248)
1/8	1	25-FR2R16	26.4	34.9	10.4	7.1	49.3	23.9	5300 (365)	2600 (179)
1/4	1/8	25-FR4R2	25.4	17.5	15.0	4.8	19.3	9.7	7200 (496)	3600 (248)
1/4	1/4	25-FR4R4	25.4	17.5	15.0	7.1	19.3	14.2	7200 (496)	3600 (248)
1/4	3/8	25-FR4R6	25.4	17.5	15.0	8.6	23.8	14.2	7200 (496)	3600 (248)
1/4	1/2	25-FR4R8	22.2	20.6	15.0	8.6	29.0	19.1	7200 (496)	3600 (248)
1/4	3/4	25-FR4R12	25.4	27.0	15.0	8.6	30.5	19.1	7300 (502)	3600 (248)
1/4	1	25-FR4R16	32.0	34.9	15.0	8.6	37.6	23.9	5300 (365)	2600 (179)
3/8	1/4	25-FR6R4	27.0	20.6	15.0	7.1	24.2	14.2	5600 (385)	2800 (192)
3/8	3/8	25-FR6R6	27.0	20.6	15.0	9.7	24.2	14.2	5600 (385)	2800 (192)
3/8	1/2	25-FR6R8	27.0	20.6	15.0	11.9	29.0	19.1	5600 (385)	2800 (192)
3/8	3/4	25-FR6R12	27.0	27.0	15.0	11.9	30.5	19.1	7300 (502)	3600 (248)
3/8	1	25-FR6R16	32.0	34.9	15.0	11.9	37.6	23.9	5300 (365)	2600 (179)
1/2	1/4	25-FR8R4	32.0	25.4	19.8	7.1	25.2	14.2	5600 (385)	2800 (192)
1/2	3/8	25-FR8R6	32.0	25.4	19.8	9.7	25.2	14.2	5600 (385)	2800 (192)
1/2	1/2	25-FR8R8	32.0	25.4	19.8	11.9	32.0	19.1	5600 (385)	2800 (192)
1/2	3/4	25-FR8R12	32.5	27.0	19.8	15.7	30.5	19.1	5600 (385)	2800 (192)
1/2	1	25-FR8R16	37.6	34.9	19.8	15.7	37.6	23.9	5300 (365)	2600 (179)
3/4	3/4	25-FR12R12	34.5	31.8	20.6	15.7	34.5	19.1	5100 (351)	2500 (172)
3/4	1	25-FR12R16	37.6	34.9	20.6	22.4	37.6	23.9	5100 (351)	2500 (172)
1	1	25-FR16R16	46.0	42.9	25.4	22.4	46.0	23.9	5300 (365)	2600 (179)
1 1/4	1 1/4	25-FR20R20	50.8	50.8	25.4	31.8	50.8	23.9	3100 (213)	1600 (110)

Female Elbows



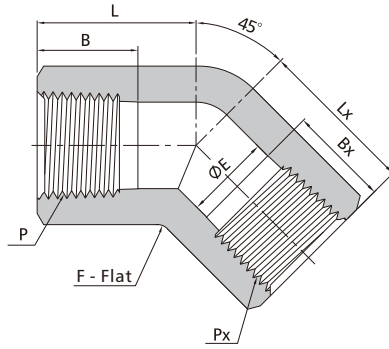
Female NPT Threads

P-NPT Size	Px-NPT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
			L	F	B	E	Lx	Bx	316 SS, Steel	Brass
1/16	1/16	22-FN1	21.8	11.1	9.9	4.8	21.8	9.9	6700 (460)	3300 (227)
1/8	1/16	22-FN2FN1	26.4	12.7	10.4	4.8	26.4	9.9	6200 (427)	3100 (213)
1/8	1/8	22-FN2	26.4	12.7	10.4	8.6	26.4	10.4	6200 (427)	3100 (213)
1/4	1/8	22-FN4FN2	29.7	17.5	15.0	7.1	29.7	10.4	7200 (496)	3600 (248)
1/4	1/4	22-FN4	29.7	17.5	15.0	11.4	29.7	15.0	7200 (496)	3600 (248)
3/8	3/8	22-FN6	36.1	20.6	15.0	15.0	36.1	15.0	5600 (385)	2800 (192)
1/2	1/2	22-FN8	39.6	25.4	19.8	18.5	39.6	19.8	5600 (385)	2800 (192)
3/4	3/4	22-FN12	48.8	31.8	20.6	23.9	48.8	20.6	5100 (351)	2500 (172)
1	1	22-FN16	48.5	42.9	25.4	29.7	48.5	25.4	6400 (440)	3200 (220)
1 1/4	1 1/4	22-FN20	59.8	50.8	25.4	27.7	50.8	25.4	3100 (213)	1600 (110)
1 1/2	1 1/2	22-FN24	65.0	63.5	27.7	34.0	52.8	27.7	5100 (351)	2500 (172)
Heavy-Wall Female NPT Threads										
1/4	1/4	22-FN4-10K	39.6	25.4	15.0	11.4	29.7	15.0	10000 (689)	/
1/2	1/2	22-FN8-10K	50.0	42.9	19.8	18.5	39.6	19.8	10000 (689)	/

Female ISO Tapered Threads

P-RT Size	Px-RT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
			L	F	B	E	Lx	Bx	316 SS, Steel	Brass
1/16	1/16	22-FR1	21.8	11.1	9.9	4.8	21.6	9.9	6700 (460)	3300 (227)
1/8	1/16	22-FR2FR1	16.8	12.7	10.4	4.8	16.8	9.9	6200 (427)	3100 (213)
1/8	1/8	22-FR2	26.4	12.7	10.4	7.1	26.4	10.4	6200 (427)	3100 (213)
1/4	1/8	22-FR4FR2	29.7	17.5	15.0	7.1	29.7	10.4	7200 (496)	3600 (248)
1/4	1/4	22-FR4	29.7	17.5	15.0	10.4	29.7	15.0	7200 (496)	3600 (248)
3/8	3/8	22-FR6	36.1	20.6	15.0	12.7	36.1	15.0	5600 (385)	2800 (192)
1/2	1/2	22-FR8	39.6	25.4	19.8	15.7	39.6	19.8	5600 (385)	2800 (192)
3/4	3/4	22-FR12	48.8	31.8	20.6	22.4	48.8	20.6	5100 (351)	2500 (172)
1	1	22-FR16	48.5	42.9	25.4	22.4	48.5	25.4	6400 (440)	3200 (220)
1 1/4	1 1/4	22-FR20	59.8	50.8	25.4	27.7	50.8	25.4	3100 (213)	1600 (110)
1 1/2	1 1/2	22-FR24	65.0	63.5	27.7	34.0	52.8	27.7	5100 (351)	2500 (172)

45° Female Elbows



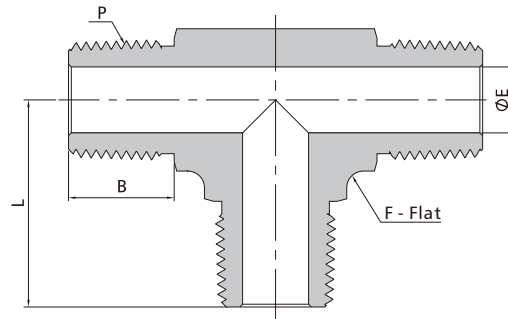
Female NPT Threads

P-NPT Size	Px-NPT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
			L	F	B	E	Lx	Bx	316 SS, Steel	Brass
1/16	1/16	25-FN1	16.8	11.1	9.9	4.8	16.8	9.9	6700 (460)	3300 (227)
1/8	1/16	25-FN2FN1	20.2	12.7	10.4	4.8	20.2	9.9	6200 (427)	3100 (213)
1/8	1/8	25-FN2	20.2	12.7	10.4	7.1	20.2	10.4	6200 (427)	3100 (213)
1/4	1/8	25-FN4FN2	25.4	17.5	15.0	7.1	25.4	10.4	7200 (496)	3600 (248)
1/4	1/4	25-FN4	25.4	17.5	15.0	10.4	25.4	15.0	7200 (496)	3600 (248)
3/8	3/8	25-FN6	27.0	20.6	15.0	12.7	27.0	15.0	5600 (385)	2800 (192)
1/2	1/2	25-FN8	32.0	25.4	19.8	15.7	32.0	19.8	5600 (385)	2800 (192)
3/4	3/4	25-FN12	34.5	31.8	20.6	22.4	34.5	20.6	5100 (351)	2500 (172)
1	1	25-FN16	46.0	42.9	25.4	22.4	46.0	25.4	6400 (440)	3200 (220)
1 1/4	1 1/4	25-FN20	43.2	50.8	25.4	27.7	43.2	25.4	3100 (213)	1600 (110)
1 1/2	1 1/2	25-FN24	46.0	63.5	27.7	34.0	46.0	27.7	5100 (351)	2500 (172)

Female ISO Tapered Pipe Threads

P-RT Size	Px-RT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
			L	F	B	E	Lx	Bx	316 SS, Steel	Brass
1/16	1/16	25-FR1	16.8	11.1	9.9	4.8	16.8	9.9	6700 (460)	3300 (227)
1/8	1/16	25-FR2FR1	20.2	12.7	10.4	4.8	20.2	9.9	6200 (427)	3100 (213)
1/8	1/8	25-FR2	20.2	12.7	10.4	7.1	20.2	10.4	6200 (427)	3100 (213)
1/4	1/8	25-FR4FR2	25.4	17.5	15.0	7.1	25.4	10.4	7200 (496)	3600 (248)
1/4	1/4	25-FR4	25.4	17.5	15.0	10.4	25.4	15.0	7200 (496)	3600 (248)
3/8	3/8	25-FR6	27.0	20.6	15.0	12.7	27.0	15.0	5600 (385)	2800 (192)
1/2	1/2	25-FR8	32.0	25.4	19.8	15.7	32.0	19.8	5600 (385)	2800 (192)
3/4	3/4	25-FR12	34.5	31.8	20.6	22.4	34.5	20.6	5100 (351)	2500 (172)
1	1	25-FR16	46.0	42.9	25.4	22.4	46.0	25.4	6400 (440)	3200 (220)
1 1/4	1 1/4	25-FR20	43.2	50.8	25.4	27.7	43.2	25.4	3100 (213)	1600 (110)
1 1/2	1 1/2	25-FR24	46.0	63.5	27.7	34.0	46.0	27.7	5100 (351)	2500 (172)

Male Tees



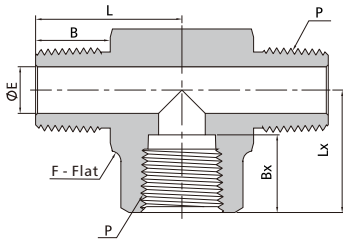
Male NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm				Working Pressure psig (bar)	
		L	F	B	E	316 SS, Steel	Brass
1/16	23-N1	18.3	9.5	9.7	3.0	11000 (757)	5500 (378)
1/8	23-N2	22.4	11.1	9.7	4.8	10000 (689)	5000 (344)
1/4	23-N4	26.7	12.7	14.2	7.1	8000 (551)	4000 (275)
3/8	23-N6	29.7	17.5	14.2	9.6	7800 (537)	3900 (268)
1/2	23-N8	36.8	20.6	19.1	11.9	7700 (530)	3800 (261)
3/4	23-N12	42.4	27.0	19.1	15.7	7300 (502)	3600 (248)
1	23-N16	49.3	34.9	23.9	22.4	5300 (365)	2600 (179)
1 1/4	23-N20	56.4	42.9	23.9	27.7	6000 (410)	3000 (200)
1 1/2	23-N24	67.1	47.6	26.2	34.0	5000 (344)	2500 (172)

Male ISO Tapered Threads

P-RT Size	Basic Ordering Number	Dimension, mm				Working Pressure psig (bar)	
		L	F	B	E	316 SS, Steel	Brass
1/16	23-R1	18.3	9.5	9.7	3.0	11000 (757)	5500 (378)
1/8	23-R2	22.4	11.1	9.7	4.8	10000 (689)	5000 (344)
1/4	23-R4	26.7	12.7	14.2	7.1	8000 (551)	4000 (275)
3/8	23-R6	29.7	17.5	14.2	9.7	7800 (537)	3900 (268)
1/2	23-R8	36.8	20.6	19.1	11.9	7700 (530)	3800 (261)
3/4	23-R12	42.4	27.0	19.1	15.7	7300 (502)	3600 (248)
1	23-R16	49.3	34.9	23.9	22.4	5300 (365)	2600 (179)
1 1/4	23-R20	56.4	42.9	23.9	27.7	6000 (410)	3000 (200)
1 1/2	23-R24	67.1	47.6	26.2	34.0	5000 (344)	2500 (172)

Female Branch Tees



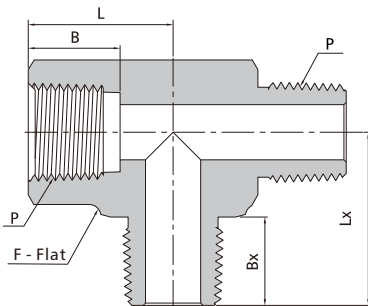
NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
		L	F	E	B	Lx	Bx	316 SS, Steel	Brass
1/16	23-N1N1FN1	18.3	11.1	3.0	9.7	21.8	9.9	9200 (633)	4600 (316)
1/8	23-N2N2FN2	22.1	12.7	4.8	9.7	26.4	10.4	6200 (427)	3100 (213)
1/4	23-N4N4FN4	29.7	17.5	7.1	14.2	29.7	15.0	7200 (496)	3600 (248)
3/8	23-N6N6FN6	32.0	20.6	9.7	14.2	36.1	15.0	5600 (385)	2800 (192)
1/2	23-N8N8FN8	39.6	25.4	11.9	19.1	39.6	19.8	5600 (385)	2800 (192)
3/4	23-N12N12FN12	42.4	31.8	15.7	19.1	48.8	20.6	5100 (351)	2500 (172)
1	23-N16N16FN16	49.3	42.9	22.4	23.9	48.5	25.4	5300 (365)	2600 (179)

ISO Tapered Pipe Threads

P-RT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
		L	F	E	B	Lx	Bx	316 SS, Steel	Brass
1/16	23-R1R1FR1	18.3	11.1	3.0	9.7	21.8	9.9	9200 (633)	4600 (316)
1/8	23-R2R2FR2	22.1	12.7	4.8	9.7	26.4	10.4	6200 (427)	3100 (213)
1/4	23-R4R4FR4	29.7	17.5	7.1	14.2	29.7	15.0	7200 (496)	3600 (248)
3/8	23-R6R6FR6	32.0	20.6	9.7	14.2	36.1	15.0	5600 (385)	2800 (192)
1/2	23-R8R8FR8	39.6	25.4	11.9	19.1	39.6	19.8	5600 (385)	2800 (192)
3/4	23-R12R12FR12	42.4	31.8	15.7	19.1	48.8	20.6	5100 (351)	2500 (172)
1	23-R16R16FR16	49.3	42.9	22.4	23.9	48.5	25.4	5300 (365)	2600 (179)

Female Run Tees



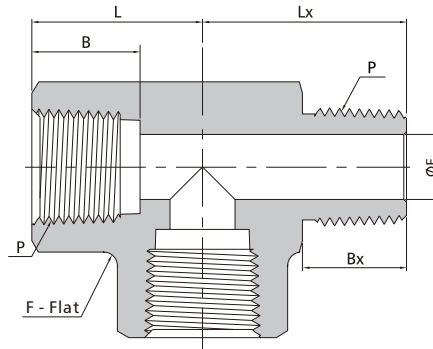
NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
		L	F	E	B	Lx	Bx	316 SS, Steel	Brass
1/16	23-FN1N1N1	21.8	11.1	3.0	9.9	18.3	9.7	9200 (633)	4600 (316)
1/8	23-FN2N2N2	26.4	12.7	4.8	10.4	22.1	9.7	6200 (427)	3100 (213)
1/4	23-FN4N4N4	29.7	17.5	7.1	15.0	29.7	14.2	7200 (496)	3600 (248)
3/8	23-FN6N6N6	36.1	20.6	9.7	15.0	32.0	14.2	5600 (385)	2800 (192)
1/2	23-FN8N8N8	39.6	25.4	11.9	19.8	39.6	19.1	5600 (385)	2800 (192)
3/4	23-FN12N12N12	48.8	31.8	15.7	20.6	42.4	19.1	5100 (351)	2500 (172)
1	23-FN16N16N16	48.5	42.9	22.4	25.4	49.3	23.9	5300 (365)	2600 (179)

ISO Tapered Threads

P-RT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
		L	F	E	B	Lx	Bx	316 SS, Steel	Brass
1/16	23-FR1R1R1	21.8	11.1	3.0	9.9	18.3	9.7	9200 (633)	4600 (316)
1/8	23-FR2R2R2	26.4	12.7	4.8	10.4	22.1	9.7	6200 (427)	3100 (213)
1/4	23-FR4R4R4	29.7	17.5	7.1	15.0	29.7	14.2	7200 (496)	3600 (248)
3/8	23-FR6R6R6	36.1	20.6	9.7	15.0	32.0	14.2	5600 (385)	2800 (192)
1/2	23-FR8R8R8	39.6	25.4	11.9	19.8	39.6	19.1	5600 (385)	2800 (192)
3/4	23-FR12R12R12	48.8	31.8	15.7	20.6	42.4	19.1	5100 (351)	2500 (172)
1	23-FR16R16R16	48.5	42.9	22.4	25.4	49.3	23.9	5300 (365)	2600 (179)

Male Street Tees



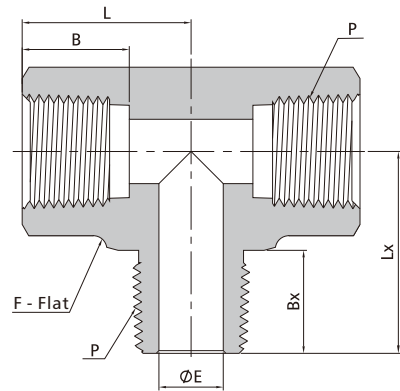
NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
		L	F	E	B	Lx	Bx	316 SS, Steel	Brass
1/16	23-FN1N1FN1	21.8	11.1	3.0	9.9	18.3	9.7	9200 (633)	4600 (316)
1/8	23-FN2N2FN2	26.4	12.7	4.8	10.4	22.1	9.7	6200 (427)	3100 (213)
1/4	23-FN4N4FN4	29.7	17.5	7.1	15.0	29.7	14.2	7200 (496)	3600 (248)
3/8	23-FN6N6FN6	36.1	20.6	9.6	15.0	32.0	14.2	5600 (385)	2800 (192)
1/2	23-FN8N8FN8	39.6	25.4	11.9	19.8	39.6	19.1	5600 (385)	2800 (192)
3/4	23-FN12N12FN12	48.8	31.8	15.7	20.6	42.4	19.1	5100 (351)	2500 (172)
1	23-FN16N16FN16	48.5	42.9	22.4	25.4	49.3	23.9	5300 (365)	2600 (179)

ISO Tapered Pipe Threads

P-RT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
		L	F	E	B	Lx	Bx	316 SS, Steel	Brass
1/16	23-FR1R1FR1	21.8	11.1	3.0	9.9	18.3	9.7	9200 (633)	4600 (316)
1/8	23-FR2R2FR2	26.4	12.7	4.8	10.4	22.1	9.7	6200 (427)	3100 (213)
1/4	23-FR4R4FR4	29.7	17.5	7.1	15.0	29.7	14.2	7200 (496)	3600 (248)
3/8	23-FR6R6FR6	36.1	20.6	9.7	15.0	32.0	14.2	5600 (385)	2800 (192)
1/2	23-FR8R8FR8	39.6	25.4	11.9	19.8	39.6	19.1	5600 (385)	2800 (192)
3/4	23-FR12R12FR12	48.8	31.8	15.7	20.6	42.4	19.1	5100 (351)	2500 (172)
1	23-FR16R16FR16	48.5	42.9	22.4	25.4	49.3	23.9	5300 (365)	2600 (179)

Male Branch Tees



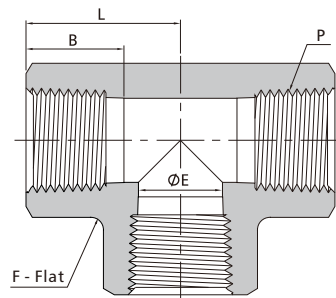
NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
		L	F	E	B	Lx	Bx	316 SS, Steel	Brass
1/16	23-FN1FN1N1	21.8	11.1	3.0	9.9	18.3	9.7	9200 (633)	4600 (316)
1/8	23-FN2FN2N2	26.4	12.7	4.8	10.4	22.1	9.7	6200 (427)	3100 (213)
1/4	23-FN4FN4N4	29.7	17.5	7.1	15.0	29.7	14.2	7200 (496)	3600 (248)
3/8	23-FN6FN6N6	36.1	20.6	9.6	15.0	32.0	14.2	5600 (385)	2800 (192)
1/2	23-FN8FN8N8	39.6	25.4	11.9	19.8	39.6	19.1	5600 (385)	2800 (192)
3/4	23-FN12FN12N12	48.8	31.8	15.7	20.6	42.4	19.1	5100 (351)	2500 (172)
1	23-FN16FN16N16	48.5	42.9	22.4	25.4	49.3	23.9	5300 (365)	2600 (179)

ISO Tapered Pipe Threads

P-RT Size	Basic Ordering Number	Dimension, mm						Working Pressure psig (bar)	
		L	F	E	B	Lx	Bx	316 SS, Steel	Brass
1/16	23-FR1FR1R1	21.8	11.1	3.0	9.9	18.3	9.7	9200 (633)	4600 (316)
1/8	23-FR2FR2R2	26.4	12.7	4.8	10.4	22.1	9.7	6200 (427)	3100 (213)
1/4	23-FR4FR4R4	29.7	17.5	7.1	15.0	29.7	14.2	7200 (496)	3600 (248)
3/8	23-FR6FR6R6	36.1	20.6	9.7	15.0	32.0	14.2	5600 (385)	2800 (192)
1/2	23-FR8FR8R8	39.6	25.4	11.9	19.8	39.6	19.1	5600 (385)	2800 (192)
3/4	23-FR12FR12R12	48.8	31.8	15.7	20.6	42.4	19.1	5100 (351)	2500 (172)
1	23-FR16FR16R16	48.5	42.9	22.4	25.4	49.3	23.9	5300 (365)	2600 (179)

Female Tees



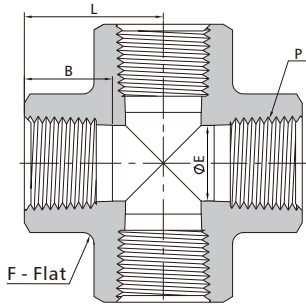
Female NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm				Working Pressure psig (bar)	
		L	F	E	B	316 SS, Steel	Brass
1/16	23-FN1	21.8	11.1	4.8	9.9	6700 (460)	3300 (227)
1/8	23-FN2	26.4	12.7	8.6	10.4	6200 (427)	3100 (213)
1/4	23-FN4	29.7	17.5	11.4	15.0	7200 (496)	3600 (248)
3/8	23-FN6	36.1	20.6	15.0	15.0	5600 (385)	2800 (192)
1/2	23-FN8	39.6	25.4	18.5	19.8	5600 (385)	2800 (192)
3/4	23-FN12	48.8	31.8	23.9	20.6	5100 (351)	2500 (172)
1	23-FN16	48.5	42.9	29.7	25.4	6400 (440)	3200 (220)
1 1/4	23-FN20	59.8	50.8	37.2	25.4	3100 (213)	1600 (110)
1 1/2	23-FN24	65.0	63.5	43.3	27.7	5100 (351)	2500 (172)
Heavy-Wall Female NPT Threads							
1/4	23-FN4-10K	39.6	25.4	11.4	15.0	10000 (689)	/
1/2	23-FN8-10K	50.0	27.0	18.5	19.8	10000 (689)	/

Female ISO Tapered Pipe Threads

P-RT Size	Basic Ordering Number	Dimension, mm				Working Pressure psig (bar)	
		L	F	E	B	316 SS, Steel	Brass
1/16	23-FR1	21.8	11.1	4.8	9.9	6700 (460)	3300 (227)
1/8	23-FR2	26.4	12.7	8.6	10.4	6200 (427)	3100 (213)
1/4	23-FR4	29.7	17.5	11.2	15.0	7200 (496)	3600 (248)
3/8	23-FR6	36.1	20.6	14.7	15.0	5600 (385)	2800 (192)
1/2	23-FR8	39.6	25.4	18.3	19.8	5600 (385)	2800 (192)
3/4	23-FR12	48.8	31.8	23.9	20.6	5100 (351)	2500 (172)
1	23-FR16	48.5	42.9	29.7	25.4	6400 (440)	3200 (220)
1 1/4	23-FR20	59.8	50.8	37.2	25.4	3100 (213)	1600 (110)
1 1/2	23-FR24	65.0	63.5	43.3	27.7	5100 (351)	2500 (172)

Female Crosses



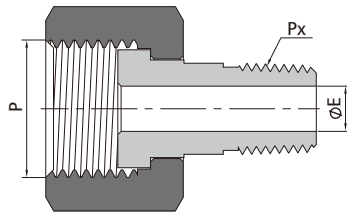
Female NPT Threads

P-NPT Size	Basic Ordering Number	Dimension, mm				Working Pressure psig (bar)	
		L	F	E	B	316 SS, Steel	Brass
1/16	24-FN1	21.8	11.1	4.8	9.9	6700 (460)	3300 (227)
1/8	24-FN2	26.4	12.7	8.6	10.4	6200 (427)	3100 (213)
1/4	24-FN4	29.7	17.5	11.4	15.0	7200 (496)	3600 (248)
3/8	24-FN6	36.1	20.6	15.0	15.0	5600 (385)	2800 (192)
1/2	24-FN8	39.6	25.4	18.5	19.8	5600 (385)	2800 (192)
3/4	24-FN12	48.8	31.8	23.9	20.6	5100 (351)	2500 (172)
1	24-FN16	48.5	42.9	29.7	25.4	6400 (440)	3200 (220)

Female ISO Tapered Threads

P-RT Size	Basic Ordering Number	Dimension, mm				Working Pressure psig (bar)	
		L	F	E	B	316 SS, Steel	Brass
1/16	24-FR1	21.8	11.1	4.8	9.9	6700 (460)	3300 (227)
1/8	24-FR2	26.4	12.7	8.6	10.4	6200 (427)	3100 (213)
1/4	24-FR4	29.7	17.5	11.4	15.0	7200 (496)	3600 (248)
3/8	24-FR6	36.1	20.6	15.0	15.0	5600 (385)	2800 (192)
1/2	24-FR8	39.6	25.4	18.5	19.8	5600 (385)	2800 (192)
3/4	24-FR12	48.8	31.8	23.9	20.6	5100 (351)	2500 (172)
1	24-FR16	48.5	42.9	29.7	25.4	6400 (440)	3200 (220)

Pipe to Pipe Unions



Metric Thread

P-Metric Thread Size	Px-NPT Size	Basic Ordering Number	Dimension, mm	Working Pressure psig (bar) 316 SS, Steel
			E	
M20 x 1.5	1/8	PUP-FM20N2	4.8	4500 (310)
M20 x 1.5	1/4	PUP-FM20N4	7.1	4500 (310)

Metric Thread

P-Metric Thread Size	Px-RT Size	Basic Ordering Number	Dimension, mm	Working Pressure psig (bar) 316 SS, Steel
			E	
M20 x 1.5	1/8	PUP-FM20RT2	4.8	4500 (310)
M20 x 1.5	1/4	PUP-FM20RT4	7.1	4500 (310)

ISO Parallel Thread

NPT Threads

P-ISO Pipe Size	Px-NPT Size	Basic Ordering Number	Dimension, mm	Working Pressure psig (bar) 316 SS, Steel
			E	
1/2	1/8	PUP-BP8N2	4.8	4900 (337)
1/2	1/4	PUP-BP8N4	7.1	4900 (337)



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