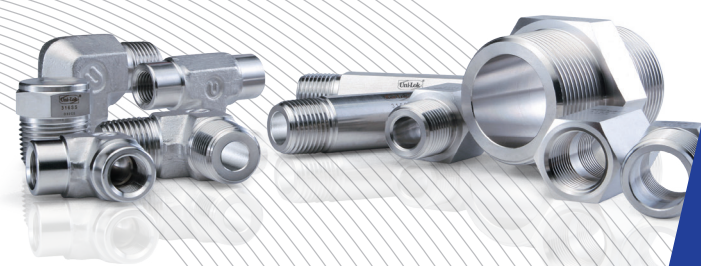




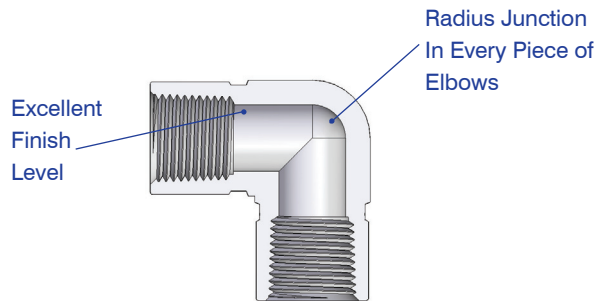
INSTRUMENTATION PIPE FITTINGS

www.unilok.com



Features

- Excellent finish level to allow smooth flow transition
- Every pieces of elbows have radius junction to eliminate entrapment areas and to allow smooth flow transition for all elbows including pipe fittings
- Fine threads meets the requirement of ASME/ANSI B1.20.1 to ensure maximum thread engagement
- Working pressures are higher than the traditional piping class, 3000 pipe fittings to ASME B16.11



Materials

UNILOK pipe fittings are available in various kinds of materials as below. Straight fittings are machined from bar stock and shaped fittings from forgings. For more details or special application, contact your local distributors.

Materials	Bar Stock	Forgings
316 SS or 316L SS	ASTM A479 ASME SA479	ASTM A182 ASME SA182
Brass	ASTM B16 ASTM B453	ASTM B283
Alloy 400 (Monel®)	ASTM B164	ASTM B564 ASME SB564

*Monel is the trade mark of Special Metals.

Sour Environment Services

UNILOK pipe fittings are comply with NACE MR-0175/ISO 15156 for sour oilfield application or NACE MR-0103 for petroleum refining operations.

To order, add-N to the end of part number.

Installation Instruction

Pipe thread sealant is recommended for a leak tight seal. PTFE tape is commonly used only for installation of the pipe fittings with male thread.

Make sure both male and female threads clean. Warp PTFE tape clockwise from the first thread.

Two time of wrapping is recommended.

Don't overhang tape on the first thread as it might be entered the system.

Cut off excess tape.

Cleaning

UNILOK pipe fittings are free from machine oils, loose particles and grease throughout the close cleaning process.

Pipe End Thread Information

The end connections with the lower pressure rating is the determining factor of pressure rating for the fittings with both UNILOK tube ends and pipe thread ends.

Pressure Rating for Pipe End Thread

Tapered Pipe Threads - NPT or ISO 7/1(BSPT)

Allowable pressure ratings for male and female threads are based on ASME B31.3 at ambient temperature.

Pipe Size inch	316SS				Brass			UNILOK Desig -nator
	Male		Female		Male	Female		
	bar	psig	bar	psig	psig	bar	psig	
1/16	760	11000	460	6700	5500	230	3300	-01N/R
1/8	690	10000	440	6500	5000	220	3200	-02N/R
1/4	550	8000	450	6600	4000	220	3300	-04N/R
3/8	540	7800	360	5300	3900	180	2600	-06N/R
1/2	530	7700	330	4900	3800	160	2400	-08N/R
3/4	500	7300	320	4600	3600	160	2300	-12N/R
1	370	5300	300	4400	2600	150	2200	-16N/R
1-1/4	410	6000	350	5000	3000	170	2500	-20N/R
1-1/2	340	5000	310	4600	2500	150	2300	-24N/R
2	270	3900	270	3900	1900	130	1900	-32N/R

Designator for NPT pipe thread is N, ISO 7/1 is R.

ISO 228/1 Parallel Thread (BSPP)

The pressure ratings are at ambient temperature.

Male Pipe Size	316SS		UNILOK Designator
	bar	psig	
1/8	316	4568	-02G
1/4	315	4568	-04G
3/8	315	4568	-06G
1/2	160	2320	-08G

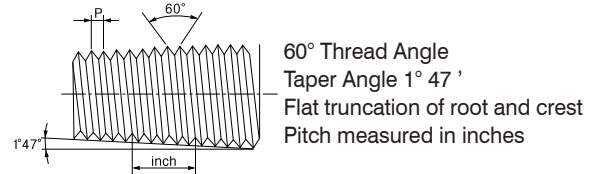
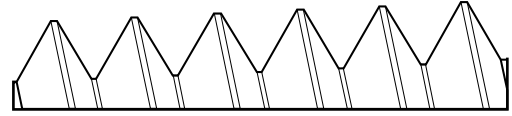
O-Seal Fittings

Rated to 206 bar (3000 psig) for 316SS fittings up to 1 inch and 25mm

Kinds of Pipe End Thread

NPT Pipe Thread

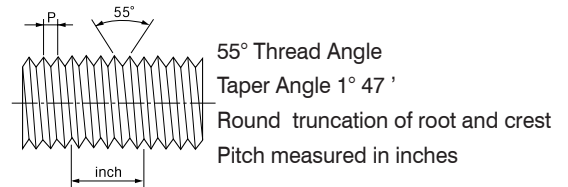
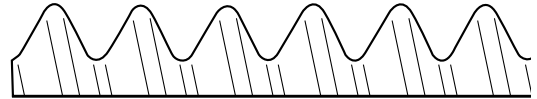
NPT (National Pipe Thread) is based on ANSI B1.20.1



ISO 7/1 Tapered Pipe Thread

International Organization for Standard (ISO 7/1) Tapered (PT)

Equivalent to BSPT (British Standard Pipe Taper Thread), DIN 2999, JIS B0203

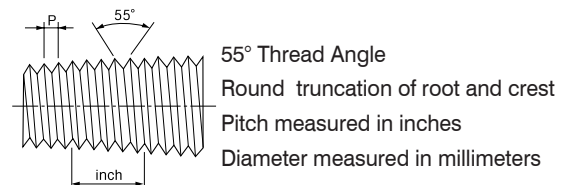
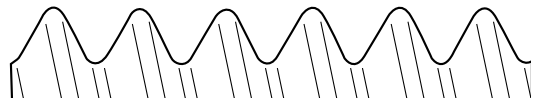


ISO 228/1 Parallel Pipe Thread

International Organization for Standard (ISO 228/1) Parallel (PF)

Equivalent to BSPP (British Standard Pipe Parallel Thread), DIN ISO228/1, JIS B0202

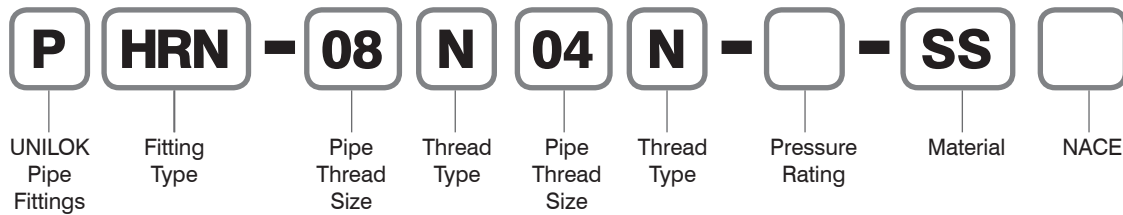
Gasket or O-ring is normally used to seal into the parallel female threaded components.



How To Order

UNILOK pipe fittings are ordered by part number as shown below.

Example : The following part number, **PHRN-08N04N-SS** is designated for Reducing Hex Nipple, 1/2 M-NPT x 1/4 M-NPT, 316SS.



Pipe Thread Size Designation						
Pipe Size	1/8	1/4	3/8	1/2	3/4	1
Designator	02	04	06	08	12	16

Thread Type Designation		
Thread Type		Designator
NPT	National Standard Pipe Thread	N
ISO 7/1	Taper Pipe Thread	R
ISO 228/1	Parallel Pipe Thread	G
	Socket Weld-Tube	WS-*T

Material Designation	
Material	Designator
316SS	SS
Brass	BS
Alloy400	MO




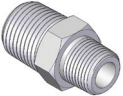


Pressure Rating Designation	
Pressure Rating	Designator
6000 psi	6K
10000 psi	10K

Pipe fittings for high pressure application are available. The standard pressure ratings for each thread sizes are based on ASME B31.3 at ambient temperature.

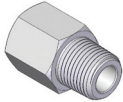
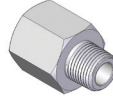
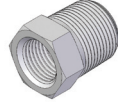




For the availability of 6000psig and 10000psig, contact your local distributors.

Visual Index

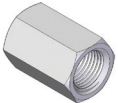
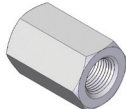


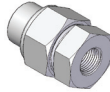
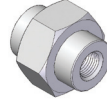
Male Pipe to Male Pipe

	Close Nipple PCN	6		Hex Nipple PHN	6		Hex Long Nipple PHLN	7
	Reducing Hex Nipple PHRN	7		Male Elbow PME	8		Male Tee PMT	8

Female Pipe to Male Pipe

	Adapter PA	8		Reducing Adapter PRA	9		Reducing Bushing PRB	9
	Street Elbow PSE	9		Reducing Street Elbow PRSE	10		Street Tee PST	10
	Branch Tee PBT	10						

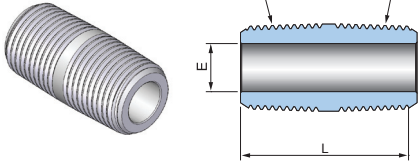
Female Pipe to Female Pipe

	Coupling PC	10		Reducing Coupling PRC	11		Female Elbow PFE	11
	Female Tee PFT	11		Ball Joint Union PBJ	11		Pipe Union PU	12

Components

	Pipe Cap PCP	12		Pipe Plug PPG	12
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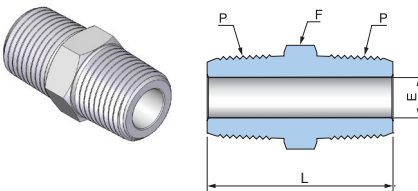
Close Nipple PCN



Male NPT to Male NPT

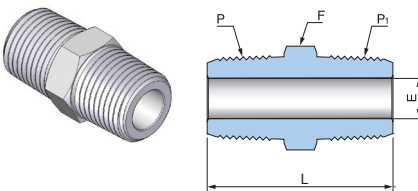
Part No.	P NPT	Dimensions (mm)	
		L	E
PCN-02N	1/8	21.8	4.8
PCN-04N	1/4	33.0	7.1
PCN-06N	3/8	34.0	9.6
PCN-08N	1/2	44.0	11.9
PCN-12N	3/4	38.1	15.7
PCN-16N	1	58.9	22.4

Hex Nipple PHN



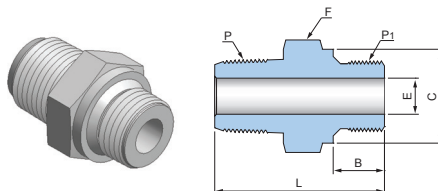
Male NPT to Male NPT

Part No.	P NPT	Dimensions (mm)			
		L	E	F	
				inch	mm
PHN-02N	1/8	25.6	4.8	7/16	11.11
PHN-04N	1/4	35.6	7.1	9/16	14.28
PHN-06N	3/8	36.3	9.6	11/16	17.46
PHN-08N	1/2	46.7	11.9	7/8	22.22
PHN-12N	3/4	46.7	15.7	1-1/16	26.98
PHN-16N	1	58.9	22.4	1-3/8	34.92



Male NPT to Male ISO Tapered Thread

Part No.	P NPT	P1 ISO7/1	Dimensions (mm)			
			L	E	F	
					inch	mm
PHN-02N02R	1/8	1/8	25.6	4.8	7/16	11.11
PHN-04N04R	1/4	1/4	35.6	7.1	9/16	14.28
PHN-06N06R	3/8	3/8	36.3	9.6	11/16	17.46
PHN-08N08R	1/2	1/2	46.7	11.9	7/8	22.22
PHN-12N12R	3/4	3/4	46.7	15.7	1-1/16	26.98
PHN-16N12R	1	1	58.9	22.4	1-3/8	34.92



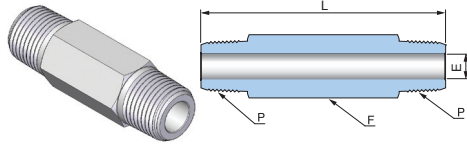
Male NPT to Male ISO Parallel Thread

Part No.	P NPT	P1 ISO 228/1	Dimensions (mm)					
			L	B	C	E	F	
							inch	mm
PHN-02N02G	1/8	1/8	27.7	7.1	13.8	4.1	9/16	14.28
PHN-04N04G	1/4	1/4	36.8	11.2	18.0	5.8	3/4	19.05
PHN-06N06G	3/8	3/8	37.6	11.2	21.8	7.9	7/8	22.22
PHN-08N08G	1/2	1/2	44.4	14.2	26.0	11.9	1-1/16	26.98
PHN-12N12G	3/4	3/4	49.0	15.7	32.0	15.7	1-5/16	33.33
PHN-16N12G	1	1	56.6	18.3	39.0	19.8	1-5/8	41.27

ISO Tapered threads are available for all fractional PCN, PHN. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

Hex Long Nipple

PHLN

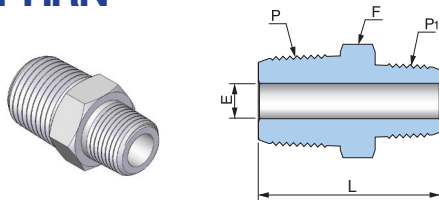


Male NPT to Male NPT

Part No.	P NPT	Dimensions (mm)			
		L	E	F	
				inch	mm
PHLN-02N-1.5	1/8	40	4.8	7/16	11.11
PHLN-02N-2.0		50			
PHLN-02N-2.5		65			
PHLN-02N-3.0		75			
PHLN-02N-4.0		100			
PHLN-04N-1.5	1/4	40	7.1	9/16	14.28
PHLN-04N-2.0		50			
PHLN-04N-2.5		65			
PHLN-04N-3.0		75			
PHLN-04N-4.0		100			
PHLN-04N-6.0		150			
PHLN-06N-2.0	3/8	50	9.6	11/16	17.46
PHLN-06N-3.0		75			
PHLN-06N-4.0		100			
PHLN-08N-2.0	1/2	50	11.9	7/8	22.22
PHLN-08N-3.0		75			
PHLN-08N-4.0		100			
PHLN-08N-6.0		150			
PHLN-12N-3.0	3/4	75	15.7	1-1/16	26.98
PHLN-12N-4.0		100			
PHLN-16N-3.0	1	75	22.4	1-3/8	34.92
PHLN-16N-4.0		100			

Reducing
Hex Nipple

PHRN



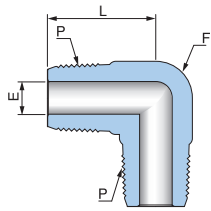
Male NPT to Reduced Male NPT

Part No.	P NPT	P1 NPT	Dimensions (mm)			
			L	E	F	
					inch	mm
PHRN-04N02N	1/4	1/8	31.0	4.8	9/16	14.28
PHRN-06N04N	3/8	1/4	36.3	7.1	11/16	17.46
PHRN-08N04N	1/2	1/4	41.9	7.1	7/8	22.22
PHRN-08N06N	1/2	3/8	41.9	9.6	7/8	22.22
PHRN-12N04N	3/4	1/4	41.9	7.1	1-1/16	26.98
PHRN-12N08N	3/4	1/2	46.7	11.9	1-1/16	26.98
PHRN-16N08N	1	1/2	54.1	11.9	1-3/8	34.92
PHRN-16N12N	1	3/4	54.1	15.7	1-3/8	34.92

ISO Tapered threads are available for all fractional PHLN, PHRN. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

Male Elbow

PME

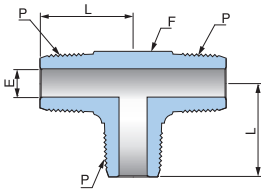
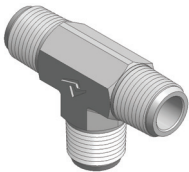


Male NPT to Male NPT

Part No.	P NPT	Dimensions (mm)			
		L	E	F	
				inch	mm
PME-02N	1/8	22.4	4.8	1/2	12.70
PME-04N	1/4	26.7	7.1	1/2	12.70
PME-06N	3/8	29.7	9.6	11/16	17.46
PME-08N	1/2	36.8	11.9	13/16	20.63

Male Tee

PMT

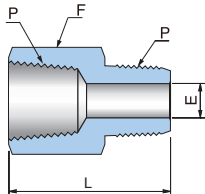
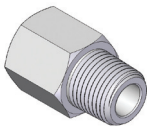


Male NPT to Male NPT

Part No.	P NPT	Dimensions (mm)			
		L	E	F	
				inch	mm
PMT-02N	1/8	22.4	4.8	1/2	12.70
PMT-04N	1/4	26.7	7.1	1/2	12.70
PMT-06N	3/8	29.7	9.6	11/16	17.46
PMT-08N	1/2	36.8	11.9	13/16	20.63

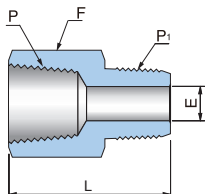
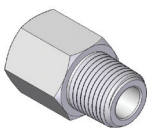
Adapter

PA



Female NPT to Male NPT

Part No.	P NPT	Dimensions (mm)			
		L	E	F	
				inch	mm
PA-02N	1/8	27.9	4.8	9/16	14.28
PA-04N	1/4	35.6	7.1	3/4	19.05
PA-06N	3/8	38.4	9.6	7/8	22.22
PA-08N	1/2	49.3	11.9	1-1/16	26.98
PA-12N	3/4	51.3	15.7	1-5/16	33.33
PA-16N	1	57.9	22.4	1-5/8	41.27



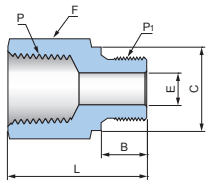
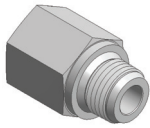
Female NPT to Male ISO Tapered Thread

Part No.	P NPT	P1 ISO7/1	Dimensions (mm)			
			L	E	F	
					inch	mm
PA-02N02R	1/8	1/8	27.7	4.8	9/16	14.28
PA-04N04R	1/4	1/4	36.1	7.1	3/4	19.05
PA-06N06R	3/8	3/8	38.1	9.6	7/8	22.22
PA-08N08R	1/2	1/2	49.3	11.9	1-1/16	26.98
PA-12N12R	3/4	3/4	51.3	15.7	1-5/16	33.33
PA-16N16R	1	1	58.4	22.4	1-5/8	41.27

ISO Tapered threads are available for all fractional PME, PMT, PA. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

Adapter

PA

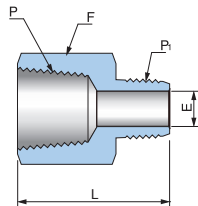
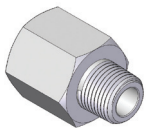


Female NPT to Male ISO Parallel Thread

Part No.	P NPT	P1 ISO 228/1	Dimensions (mm)					
			L	B	C	E	F	
							inch	mm
PA-02N02G	1/8	1/8	25.1	7.1	13.8	4.1	9/16	14.28
PA-04N04G	1/4	1/4	33.5	11.2	18.0	5.8	3/4	19.05
PA-06N06G	3/8	3/8	35.8	11.2	21.8	7.9	7/8	22.22
PA-08N08G	1/2	1/2	44.2	14.2	26.0	11.9	1-1/16	26.98
PA-12N12G	3/4	3/4	48.0	15.7	32.0	15.7	1-5/16	33.33
PA-16N16G	1	1	53.3	18.3	39.0	19.8	1-5/8	41.27

Reducing Adapter

PRA

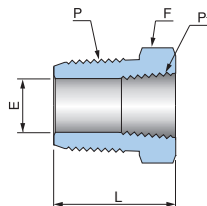
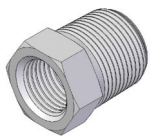


Female NPT to Reduced Male NPT

Part No.	P NPT	P1 NPT	Dimensions (mm)			
			L	E	F	
					inch	mm
PRA-04N02N	1/4	1/8	32.0	4.8	3/4	19.05
PRA-06N04N	3/8	1/4	38.1	7.1	7/8	22.22
PRA-08N04N	1/2	1/4	44.7	7.1	1-1/16	26.98
PRA-08N06N	1/2	3/8	44.4	9.6	1-1/16	26.98
PRA-12N06N	3/4	3/8	46.2	9.6	1-5/16	33.33
PRA-12N08N	3/4	1/2	51.3	11.9	1-5/16	33.33
PRA-16N08N	1	1/2	54.9	11.9	1-5/8	41.27
PRA-16N12N	1	3/4	55.1	15.7	1-5/8	41.27

Reducing Bushing

PRB

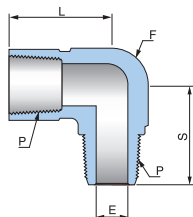
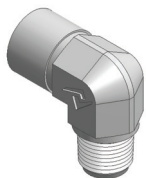


Male NPT to Reduced Female NPT

Part No.	P NPT	P1 NPT	Dimensions (mm)			
			L	E	F	
					inch	mm
PRB-04N02N	1/4	1/8	26.9	7.1	9/16	14.28
PRB-06N04N	3/8	1/4	30.2	9.6	3/4	19.05
PRB-08N04N	1/2	1/4	27.4	11.4	7/8	22.22
PRB-08N06N	1/2	3/8	35.8	11.9	7/8	22.22
PRB-12N04N	3/4	1/4	27.4	11.4	1-1/16	26.98
PRB-12N06N	3/4	3/8	27.4	15.0	1-1/16	26.98
PRB-12N08N	3/4	1/2	41.4	15.7	1-1/16	26.98
PRB-16N08N	1	1/2	34.8	18.5	1-3/8	34.92
PRB-16N12N	1	3/4	47.0	22.4	1-3/8	34.92

Street Elbow

PSE



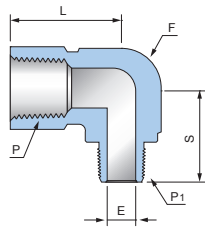
Female NPT to Male NPT

Part No.	P NPT	Dimensions (mm)				
		L	S	E	F	
					inch	mm
PSE-02N	1/8	26.4	22.1	4.8	1/2	12.70
PSE-04N	1/4	29.7	29.7	7.1	11/16	17.46
PSE-06N	3/8	36.1	32.0	9.6	13/16	20.63
PSE-08N	1/2	39.6	39.6	11.9	1	25.40

ISO Tapered threads are available for all fractional PA, PRA, PRB, PSE. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

Reducing Street Elbow

PRSE

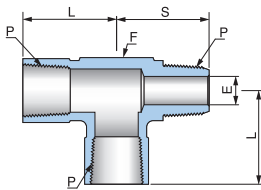


Female NPT to Reduced Male NPT

Part No.	P NPT	P1 NPT	Dimensions (mm)				
			L	S	E	F	
						inch	mm
PRSE-04N02N	1/4	1/8	29.7	25.4	4.8	11/16	17.46
PRSE-06N04N	3/8	1/4	36.1	32.0	7.1	13/16	20.63
PRSE-08N04N	1/2	1/4	39.6	35.1	7.1	1	25.40
PRSE-08N06N	1/2	3/8	39.6	35.1	9.6	1	25.40

Street Tee

PST

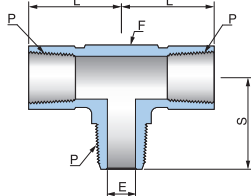
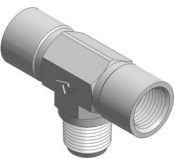


Female NPT to Male NPT

Part No.	P NPT	Dimensions (mm)				
		L	S	E	F	
					inch	mm
PST-02N	1/8	26.4	22.1	4.8	1/2	12.70
PST-04N	1/4	29.7	29.7	7.1	11/16	17.46
PST-06N	3/8	36.1	32.0	9.6	13/16	20.63
PST-08N	1/2	39.6	39.6	11.9	1	25.40

Branch Tee

PBT

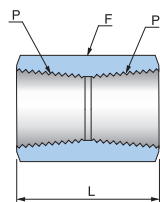
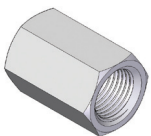


Female NPT to Male NPT

Part No.	P NPT	Dimensions (mm)				
		L	S	E	F	
					inch	mm
PBT-02N	1/8	26.4	22.1	48	1/2	12.70
PBT-04N	1/4	29.7	29.7	7.1	11/16	17.46
PBT-06N	3/8	36.1	32.0	9.6	13/16	20.63
PBT-08N	1/2	39.6	39.6	11.9	1	25.40

Coupling

PC



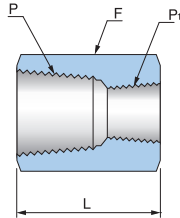
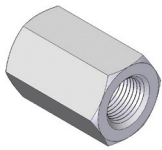
Female NPT to Female NPT

Part No.	P NPT	Dimensions (mm)		
		L	F	
			inch	mm
PC-02N	1/8	20.6	9/16	14.28
PC-04N	1/4	30.2	3/4	19.05
PC-06N	3/8	33.3	7/8	22.22
PC-08N	1/2	39.6	1-1/16	26.98
PC-12N	3/4	41.1	1-5/16	33.33
PC-16N	1	50.8	1-5/8	41.27

ISO Tapered threads are available for all fractional PRSE, PST, PBT, PC. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

Reducing Coupling

PRC

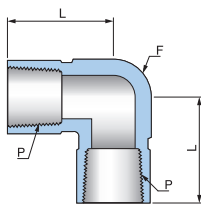
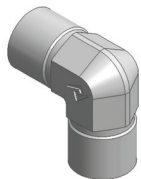


Female NPT to Reduced Female NPT

Part No.	P NPT	P1 NPT	Dimensions (mm)		
			L	F	
				inch	mm
PRC-04N02N	1/4	1/8	31.0	3/4	19.05
PRC-06N04N	3/8	1/4	35.1	7/8	22.22
PRC-08N04N	1/2	1/4	44.4	1-1/16	26.98
PRC-08N06N	1/2	3/8	45.2	1-1/16	26.98
PRC-12N04N	3/4	1/4	46.0	1-5/16	33.33
PRC-12N08N	3/4	1/2	52.3	1-5/16	33.33
PRC-16N08N	1	1/2	55.6	1-5/8	41.27
PRC-16N12N	1	3/4	57.2	1-5/8	41.27

Female Elbow

PFE

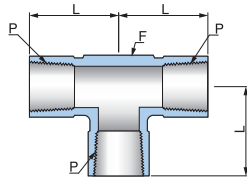


Female NPT to Female NPT

Part No.	P NPT	Dimensions (mm)		
		L	F	
			inch	mm
PST-02N	1/8	26.4	1/2	12.70
PST-04N	1/4	29.7	11/16	17.46
PST-06N	3/8	36.1	13/16	20.63
PST-08N	1/2	39.6	1	25.40

Female Tee

PFT

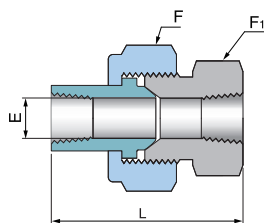
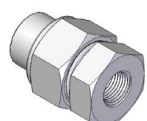


Female NPT to Female NPT

Part No.	P NPT	Dimensions (mm)		
		L	F	
			inch	mm
PFT-02N	1/8	26.4	1/2	12.70
PFT-04N	1/4	29.7	11/16	17.46
PFT-06N	3/8	36.1	13/16	20.63
PFT-08N	1/2	39.6	1	25.40

Ball Joint Union

PBJ



Female NPT to Female NPT

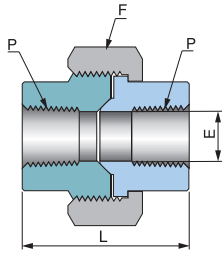
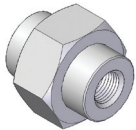
Part No.	P NPT	Dimensions (mm)					
		L	E	F		F1	
				inch	mm	inch	mm
PBJ-04N	1/4	59.4	9.1	1-3/8	34.92	1-3/16	30.16
PBJ-06N	3/8	63.5	13.2	1-1/2	38.10	1-5/16	33.33
PBJ-08N	1/2	68.3	15.7	1-3/4	44.45	1-5/8	41.27
PBJ-12N	3/4	79.2	22.4	2-1/8	53.97	1-7/8	47.62
PBJ-16N	1	90.4	26.2	2-1/2	63.50	2-3/8	60.32

ISO Tapered threads are available for all fractional PRC, PFE, PFT, PBJ. To order, add "R" as a suffix instead of "N".
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Pipe Fittings

Pipe Union

PU

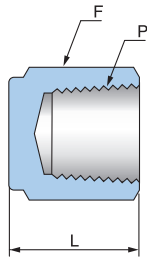
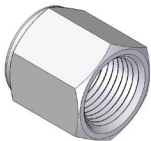


Female NPT to Female NPT

Part No.	P NPT	Dimensions (mm)		
		L	E	F
Pressure Rating, 3000psig				
PU-08N	1/2	49.2	17.2	46
PU-12N	3/4	57.2	21.5	54
PU-16N	1	62.2	27.5	63
Pressure Rating, 6000psig				
PU-08N-6K	1/2	58.3	17.2	54
PU-12N-6K	3/4	64.3	21.5	63
PU-16N-6K	1	72.4	27.5	82

Pipe Cap

PCP

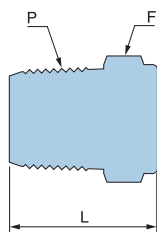
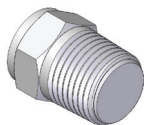


Female NPT

Part No.	P NPT	L	Dimensions (mm)	
			F	
			inch	mm
PCP-02N	1/8	19.1	9/16	14.28
PCP-04N	1/4	23.1	3/4	19.05
PCP-06N	3/8	26.2	7/8	22.22
PCP-08N	1/2	34.0	1-1/16	26.98
PCP-12N	3/4	36.6	1-5/16	33.33
PCP-16N	1	41.1	1-5/8	41.27

Pipe Plug

PPG



Male NPT

Part No.	P NPT	L	Dimensions (mm)	
			F	
			inch	mm
PPG-02N	1/8	19.1	7/16	11.11
PPG-04N	1/4	24.4	9/16	14.28
PPG-06N	3/8	25.1	11/16	17.46
PPG-08N	1/2	30.7	7/8	22.22
PPG-12N	3/4	30.7	1-1/16	26.98
PPG-16N	1	38.1	1-3/8	34.92

ISO Tapered threads are available for all fractional PCP, PPG. To order, add "R" as a suffix instead of "N".
Dimensions are for reference only and are subject to change without prior notice

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