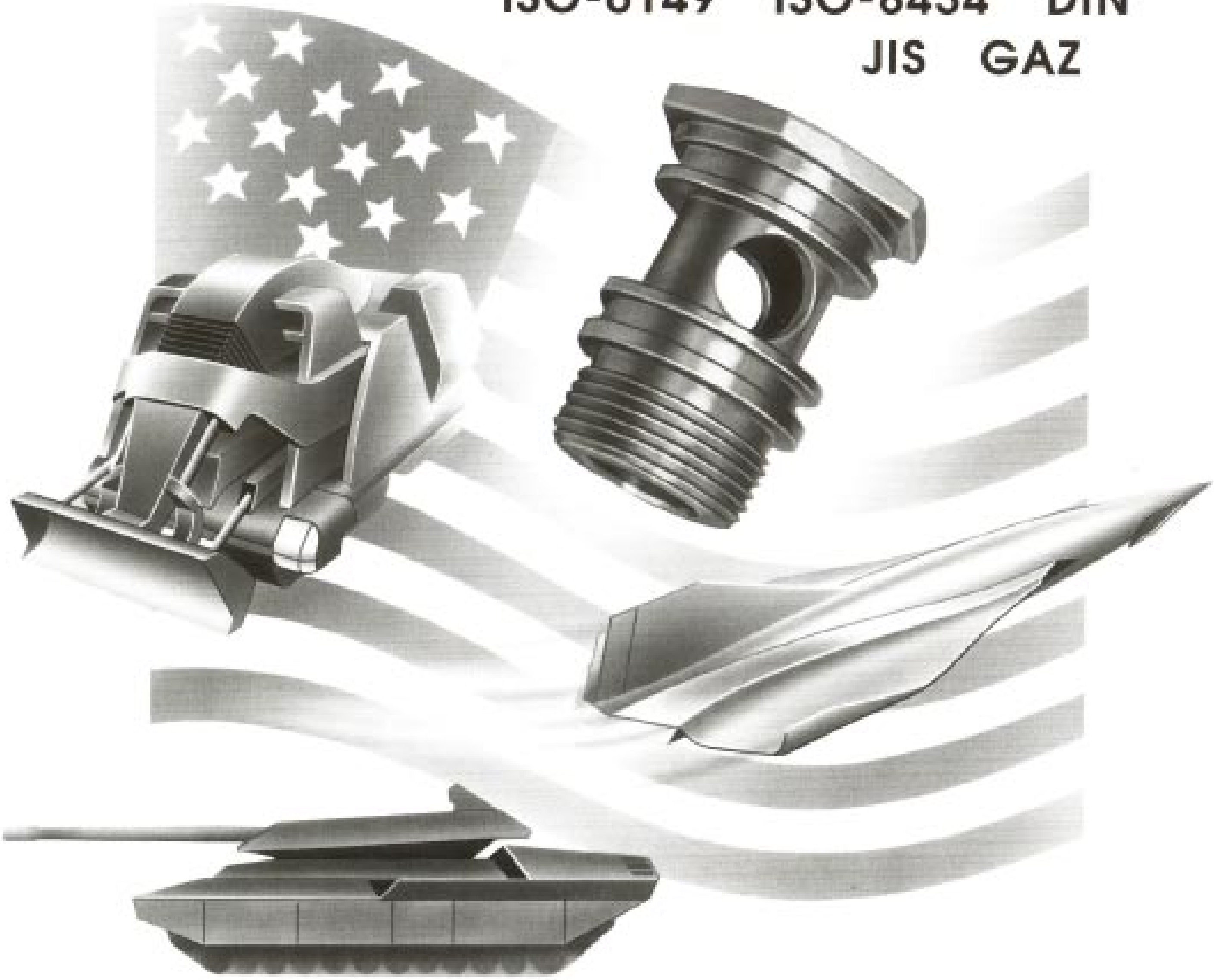
METRIC CONVERSION FITTINGS

ISO-6149 ISO-8434 DIN JIS GAZ



Metric to U.S.-U.S. to Metric Conversions for any Application

Fluid Line Products, Inc. (440) 946-9470 FAX (440) 946-9472

Fittings to Convert Metric/Metric Taper Ports to American Hose and Tube Ends

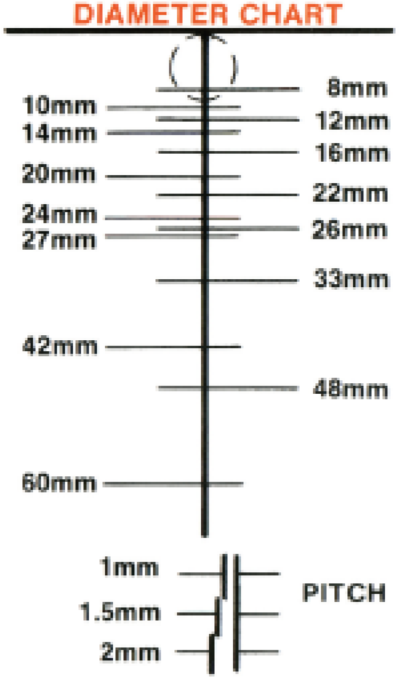
Metric Metric threads are measured by the outside diameter in millimeters and the pitch in millimeters per thread. These threads are not used to seal fluids. Sealing methods are explain on page 2. Other designations: DIN-247; DIN-516; DIN-517.

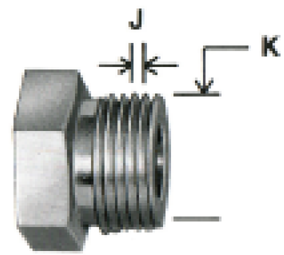
Metric Taper Metric Taper threads are used to seal fluids. When screwed together these threads create a seal. A sealing compound is recommended. Other designations: DIN-158.

TO MEASURE AND IDENTIFY THESE THREADS USE THE FOLLOWING INFORMATION

Size Millimeters	"J" Millimeters Per Thread	"K" Outside Diameter Of Thread Inches
M 8 x	1	.32
M 10 x	1	.40
M 12 x	1.5	.47
M 14 x	1.5	.55
M 16 x	1.5	.63
M 20 x	1.5	.79
M 22 x	1.5	.88
M 24 x	1.5	.94
M 26 x	1.5	1.02
M 27 x	2	1.06
M 33 x	2	1.30
M 42 x	2	1.65
M 48 x	2	1.88
M 60 x	2	2.37

DIAMETER CHART

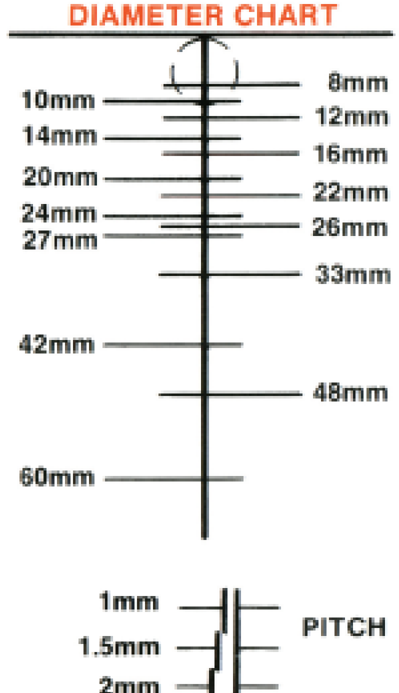


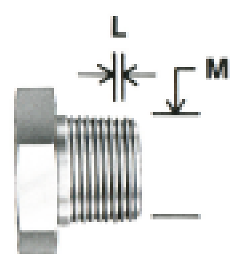


METRIC

Size Millimeters	"L" Millimeters Per Thread	"M" Outside Diameter At Small End
M 8 x	1	.28
M 10 x	1	.36
M 12 x	1	.43
M 14 x	1.5	.51
M 16 x	1.5	.59
M 20 x	1.5	.75
M 22 x	1.5	.83
M 24 x	1.5	.91
M 26 x	1.5	.99
M 27 x	1.5	1.02
M 33 x	2	1.25
M 42 x	2	1.60
M 48 x	2	1.84
M 60 x	2	2.31

DIAMETER CHART





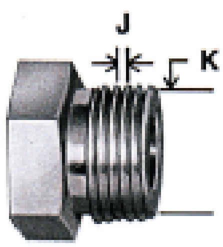
METRIC TAPER

Fittings to Convert BSPP/BSPT Ports to American Hose and Tube Ends

BSPP is the designation given to the BRITISH STANDARD PIPE PARALLEL threads. These threads are not used to seal fluids. Sealing methods are explained on page 2. Other designations: R-(Size); ISO-R228/1; DIN-259; J.I.S.-0202.

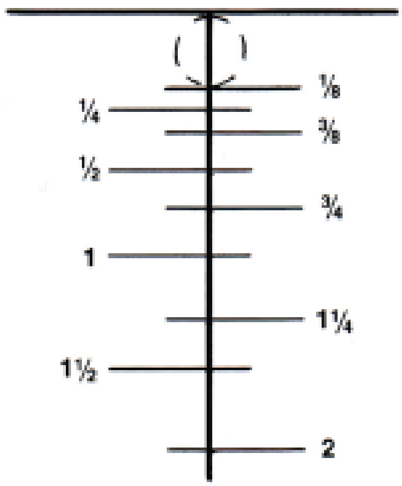
BSPT is the designation given to the BRITISH STANDARD PIPE TAPER when screwed together, these threads create a seal. A sealing compound is recommended. Other designations: R-(Size) CON; R-(Size) K; R-(Size) KEG; ISO-R 7/1; J.I.S.-0203.

TO MEASURE AND IDENTIFY THESE THREADS USE THE FOLLOWING INFORMATION

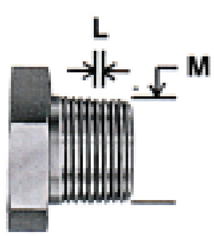


BSPP

DIAMETER CHART

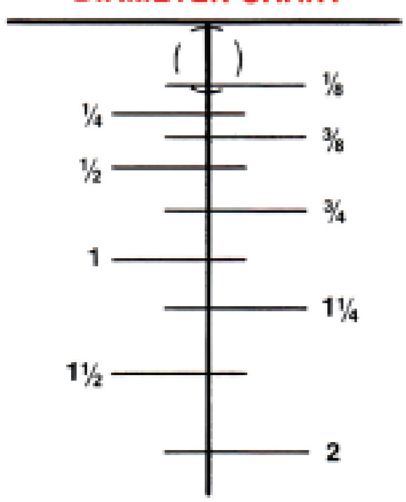


Size	"J" Threads Per Inch	"K" Outside Diameter Of Thread
⅛	28	.38
¼	19	.51
⅜	19	.65
½	14	.82
¾	14	1.03
1	11	1.30
1¼	11	1.64
1½	11	1.87
2	11	2.34



BSPT

DIAMETER CHART



Thread Size	"L" Threads Per Inch	"M" Outside Diameter At Small End
⅛	28	.35
¼	19	.47
⅜	19	.60
½	14	.76
¾	14	.97
1	11	1.23
1¼	11	1.56
1½	11	1.79
2	11	2.25

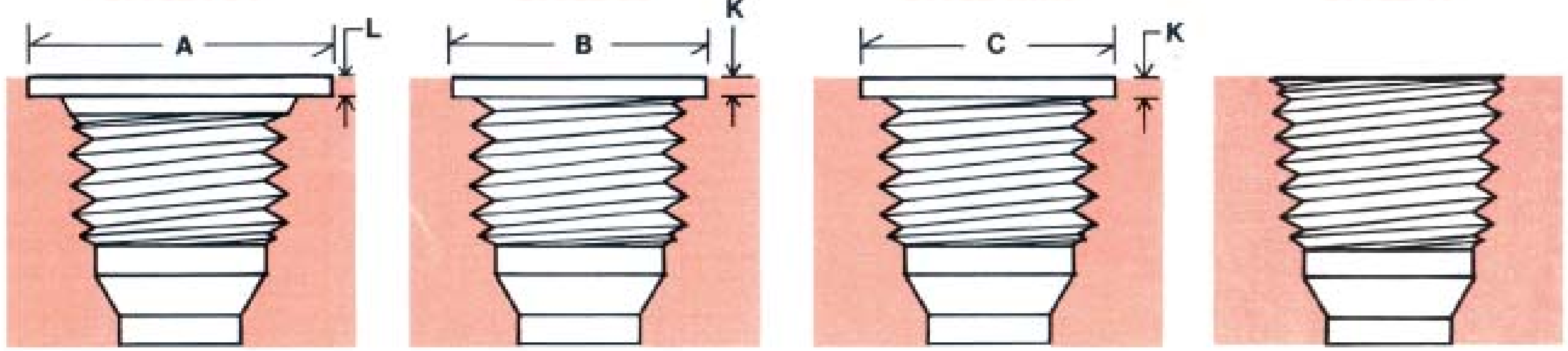
TO IDENTIFY THREADS

1. Match outside diameter "K" or "M" on the chart.
2. Determine threads per inch by measuring number of threads from crest to crest in ¼ inch length and multiply by 4.

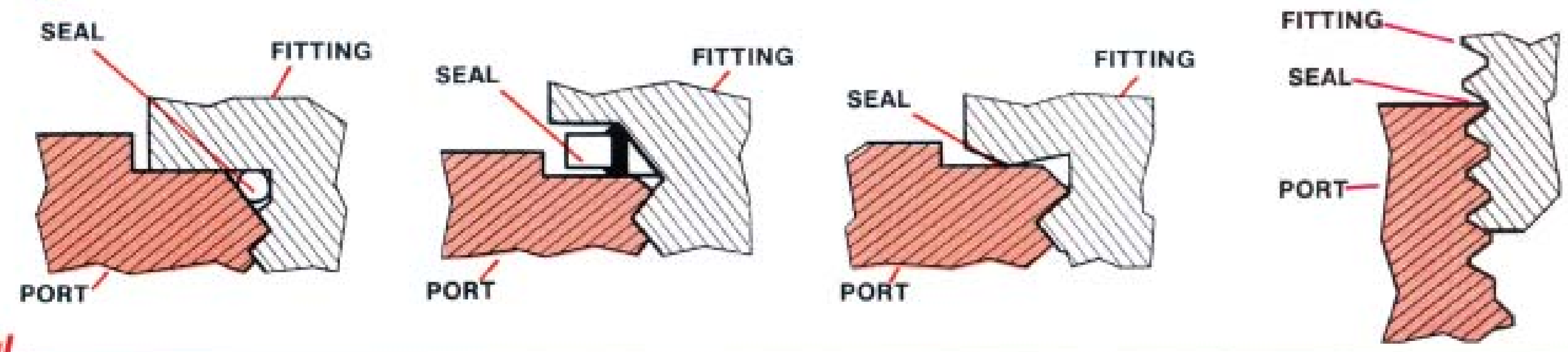
Common Metric/BSPP/BSPT Ports Found in Hydraulic Equipment

Port Specifications	ISO 6149 SAE J2244 DIN 3852 Form W J.I.S. B2351	DIN 3852 Form X	DIN 3852 Form X	DIN 3852 Form Z
Port	STYLE AA	STYLE JJ	STYLE MM	STYLE TT
Seal	O'RING SEAL	BONDED SEAL	METAL TO METAL SEAL Copper Crush Washer may be used to seal	Seal is created by interference between tapered threads
Fitting Specifications	ISO 6149 DIN 3852 Form F J.I.S. B2351	DIN 3852 Form A Form E	DIN 3852 Form B	DIN 3852 Form C
Location	Pages 4, 5, 6, 8, 9	Pages 10, 11	Pages 12, 13	Page 14

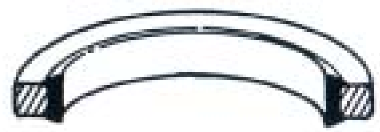
Port



Sealing Method



Seal



A, B, C, Minimum Machined Spot Face or Smooth Surface to Accept Seal (No Radial or Spiral Ridges or Grooves at Right Angle to the Axis of Thread)

METRIC THREAD

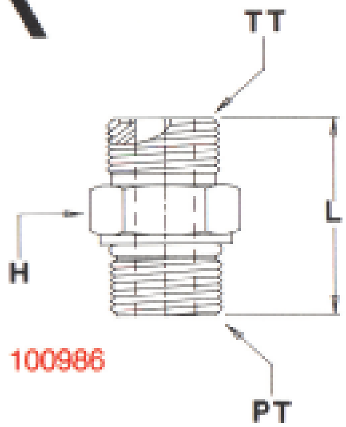
Size	Thread Size	Dia. A Min.		Dia. B Min.		Dia. C Min.		L		K	
		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
8	M8x1	14	0.55	17	0.67	13	0.51	1	0.04	1	0.04
10	M10x1	16	0.63	20	0.79	15	0.59	1	0.04	1	0.04
12	M12x1.5	19	0.75	25	0.98	18	0.71	1.5	0.06	1.5	0.06
14	M14x1.5	21	0.83	25	0.98	20	0.79	1.5	0.06	1.5	0.06
16	M16x1.5	24	0.94	28	1.10	22	0.87	1.5	0.06	1.5	0.06
18	M18x1.5	26	1.02	30	1.18	24	0.94	2	0.08	2	0.08
20	M20x1.5	27	1.06	34	1.34	26	1.02	2	0.08	2	0.08
22	M22x1.5	29	1.14	34	1.34	28	1.10	2	0.08	2.5	0.10
26	M26x1.5	—	—	42	1.65	32	1.26	—	—	2.5	0.10
27	M27x2	34	1.34	42	1.65	33	1.30	2	0.08	2.5	0.10
33	M33x2	43	1.69	47	1.85	40	1.57	2.5	0.10	2.5	0.10
42	M42x2	52	2.05	58	2.28	50	1.97	2.5	0.10	2.5	0.10
48	M48x2	57	2.24	65	2.56	56	2.20	2.5	0.10	2.5	0.10
60	M60x2	67	2.64	73	2.87	69	2.72	2.5	0.10	2.5	0.10

BSPP THREAD

Size	Thread Size	Dia. A Min.		Dia. B Min.		Dia. C Min.		L		K	
		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
2	⅛-28	18	0.71	19	0.75	15	0.59	1	0.04	1	0.04
4	¼-19	24	0.94	25	0.98	19	0.75	1.5	0.06	1.5	0.06
6	⅜-19	28	1.10	28	1.10	23	0.91	2	0.02	2	0.08
8	½-14	34	1.34	34	1.34	27	1.06	2.5	0.10	2.5	0.10
12	¾-14	36	1.42	42	1.65	33	1.30	2.5	0.10	2.5	0.10
16	1-11	51	2.01	47	1.85	40	1.57	2.5	0.10	2.5	0.10
20	1¼-11	62	2.44	58	2.28	50	1.97	2.5	0.10	2.5	0.10
24	1½-11	68	2.68	65	2.56	58	2.20	2.5	0.10	2.5	0.10
32	2-11	—	—	76	2.99	69	2.72	—	—	3	0.12

O-Ring Face Seal/Metric Port Fittings Used with Style "AA" Port

Tube Side: O-Ring Face Seal (SAE J1453)
Port Side: ISO 6149
Material: Steel
Finish: Zinc Plate



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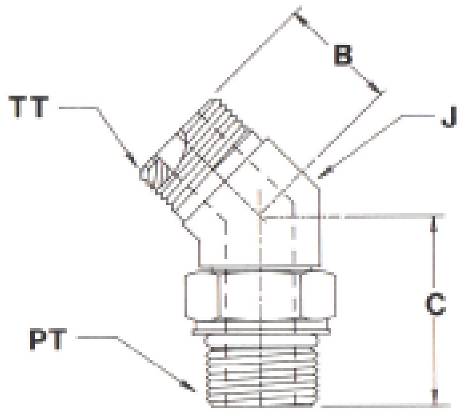

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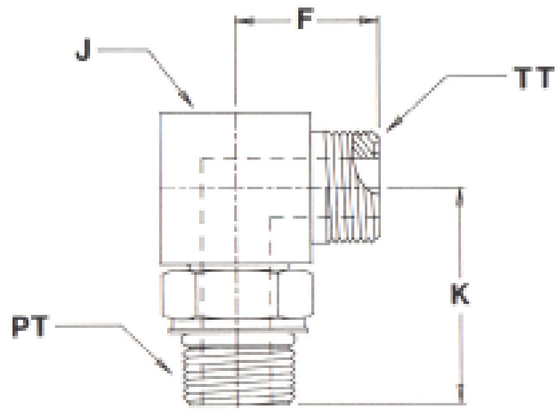

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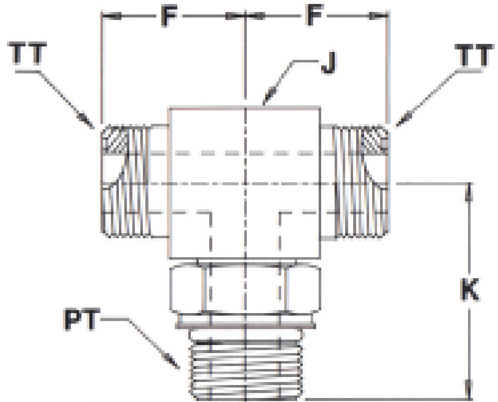
Size	Tube MM	Tube O.D.	Tube Thread 2A	Port Thread H6	L		H		F		K		B		C		J	
					mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
06012	6		9/16-18	M12 x 1.5	28.5	1.12	17	.67	21.5	.85	33	1.30	16	.63	30	1.18	15	.59
00412		1/4																
08012	8		9/16-18	M12 x 1.5	28.5	1.12	17	.67	21.5	.85	33	1.30	16	.63	30	1.18	15	.59
08014	8*		11/16-16	M14 x 1.5	32	1.26	19	.75	25	.98	37	1.46	19	.75	33	1.30	19	.75
00514		5/16																
10016	10		11/16-16	M16 x 1.5	33.5	1.32	22	.87	25	.98	37.5	1.48	19	.75	33.5	1.32	19	.75
00616		3/8																
12018	12		13/16-16	M18 x 1.5	38	1.50	24	.95	28	1.10	41	1.61	20.5	.81	36.5	1.44	22	.87
00618		1/2																
16022	16		1-14	M22 x 1.5	42	1.65	27	1.06	33.5	1.32	49	1.93	23.5	.93	43.5	1.71	28	1.12
01022		5/8																
20027	20		1 3/16-12	M27 x 2	48.5	1.91	32	1.26	37.5	1.47	55	2.17	26	1.02	50	1.97	32	1.26
01227		3/4																
25033	25		1 7/16-12	M33 x 2	52	2.05	41	1.61	41.5	1.63	60	2.36	30	1.18	52.5	2.04	38	1.50
01633		1																
30042	30		1 11/16-12	M42 x 2	54.5	2.15	50	1.97	44.5	1.75	63	2.48	32	1.26	56.5	2.22	48	1.89
02042		1 1/4																
38048	38		2-12	M48 x 2	57	2.24	55	2.17	49	1.93	72	2.84	37	1.46	56.5	2.22	52	2.04
02448		1 1/2																

*High Flow

Seal information can be found on page 7
How-to-order information can be found on page 17



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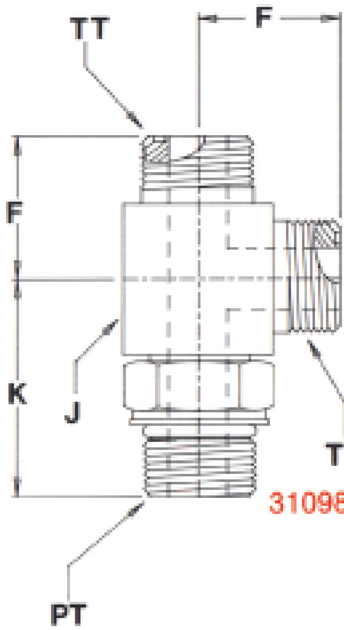
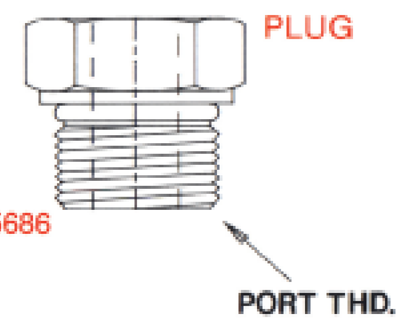


310986

PLUG



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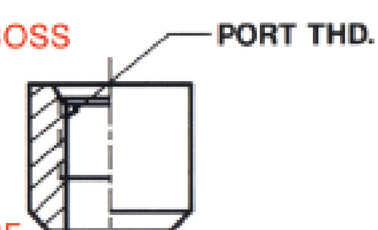
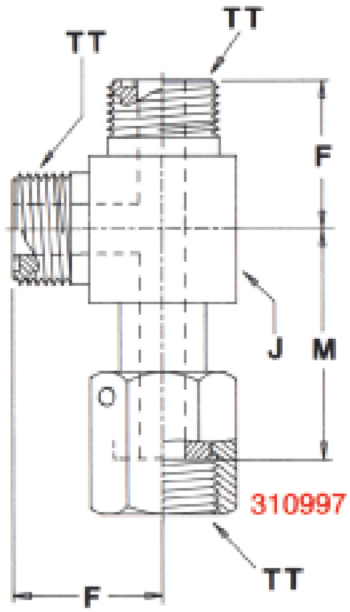
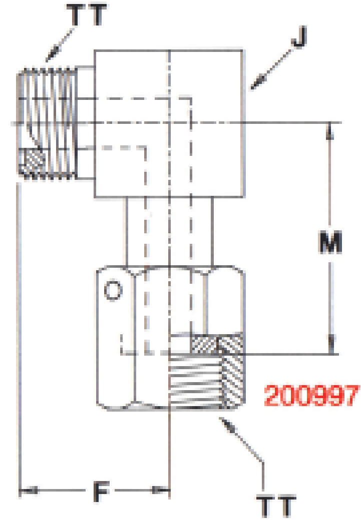
WELD BOSS



MWBF



310997



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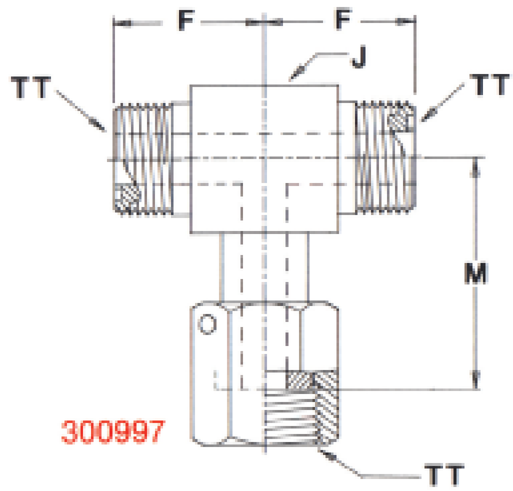


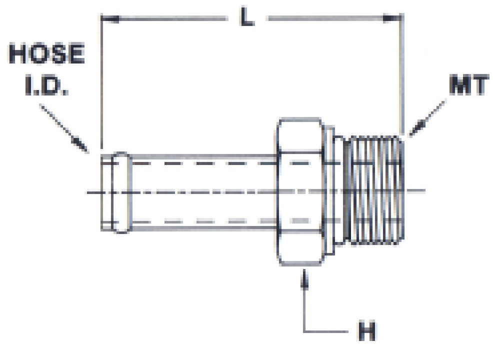
300997

Size	Tube MM	Tube O.D.	Tube Thread 2A	F mm	F in.	M mm	M in.	J mm	J in.
060	6		9/16-18	21.5	.85	26.5	1.06	15	.59
004		1/4							
080	8		9/16-18	25	.98	29	1.14	15	.59
005		5/16							
100	10		11/16-16	25	.98	29	1.14	19	.75
006		3/8							
120	12		13/16-16	28	1.10	38	1.50	22	.87
008		1/2							
160	16		1-14	33.5	1.32	41	1.63	28	1.12
010		5/8							
200	20		1 3/16-12	37.5	1.47	46.5	1.85	32	1.26
012		3/4							
250	25		1 7/16-12	41.5	1.63	53.5	2.12	38	1.50
016		1							
300	30		1 11/16-12	44.5	1.75	58	2.28	48	1.89
020		1 1/4							
380	38		2-12	49	1.93	61	2.40	52	2.04
024		1 1/2							

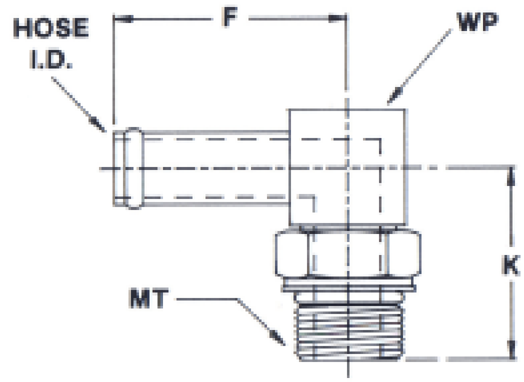
ISO-6149

Low Pressure Return Line Connectors Used with Style "AA" Port

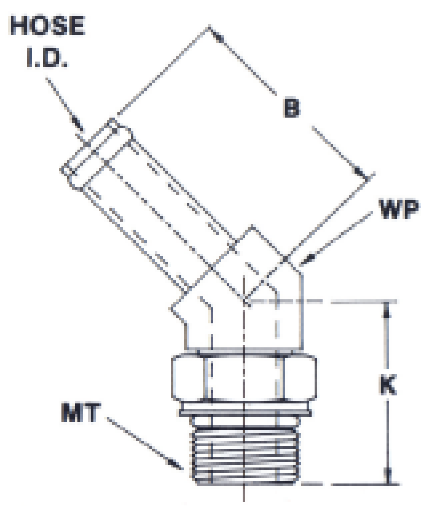
Hose end per SAE J962
Port end per ISO 6149, SAE J2244



H100



H200



H400

INCH HOSE / METRIC PORT

Size	Hose I.D.	MT Thread	H Hex mm	L mm	L in.	F mm	F in.	K mm	K in.	B mm	B in.	C mm	C in.	WP mm
4-M12	¼	M12 x 1.5	17	47.5	1.87	38.1	1.50	33.0	1.30	34.8	1.37	30.0	1.18	14
5-M14	5/16	M14 x 1.5	19	49.6	1.95	38.1	1.50	37.0	1.46	35.3	1.39	33.0	1.30	15
6-M16	⅜	M16 x 1.5	22	51.0	2.00	39.9	1.57	37.5	1.48	35.3	1.39	33.5	1.32	17
8-M18	½	M18 x 1.5	24	54.8	2.16	40.6	1.50	41.0	1.61	36.3	1.43	36.5	1.44	19
10-M22	⅝	M22 x 1.5	27	56.0	2.20	42.7	1.68	49.0	1.93	37.8	1.49	43.5	1.71	24
12-M27	¾	M27 x 2	32	61.2	2.41	45.5	1.79	55.0	2.17	37.8	1.49	50.0	1.97	28
16-M33	1	M33 x 2	41	64.2	2.52	46.2	1.82	60.0	2.36	39.4	1.55	52.5	2.07	36

Seal information can be found on page 7 How-to-order information can be found on page 17

FOR STYLE "AA" PORT

O-RING SEAL

Thread Size	Part Number
12 x 1.5	M-1215
14 x 1.5	M-1415
16 x 1.5	M-1615
18 x 1.5	M-1815
22 x 1.5	M-2215
27 x 1	M-2720
33 x 2	M-3320
42 x 2	M-4220
48 x 2	M-4820

Pages 4, 5, 6, 8, 9

FOR FACE SEAL TUBE CONNECTION

Tube Size	Part Number
4	9-100-4
6	9-100-6
8	9-100-8
10	9-100-10
12	9-100-12
16	9-100-16
20	9-100-20
24	9-100-24

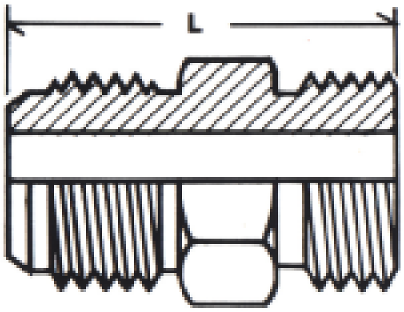
Pages 4, 5

FOR STYLE "JJ" PORT

BONDED SEAL

BSPP Seal Part Number		Metric Seal Part Number	
1-200-2	1-200-12	2-200-10	2-200-22
1-200-4	1-200-16	2-200-12	2-200-26
1-200-6	1-200-20	2-200-14	2-200-27
1-200-8	1-200-24	2-200-16	2-200-33
	1-200-32	2-200-18	2-200-42
		2-200-20	2-200-48
			2-200-60

Pages 10, 11



37° FLARE
(SAE J514)

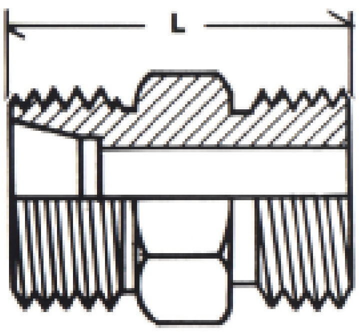
BSPP **100176**
METRIC **100186**

BSPP

Fitting Part Number	Hex	L Length
100176-4-2	½	1.23
100176-4-4	⅝	1.34
100176-6-4	⅝	1.34
100176-6-6	¾	1.37
100176-8-6	13/16	1.47
100176-8-8	1	1.73
100176-10-8	1	1.79
100176-12-12	1¼	2.00
100176-16-16	1½	2.24
100176-20-20	1⅞	2.37
100176-24-24	2	2.48

METRIC

Fitting Part Number	Hex	L Length
100186-4-10	½	1.39
100186-4-12	11/16	1.49
100186-6-14	¾	1.44
100186-8-16	⅞	1.56
100186-8-18	15/16	1.61
100186-10-20	1	1.85
100186-10-22	1 1/16	1.87
100186-12-27	1¼	2.14
100186-16-33	1½	2.28
100186-20-42	2	2.47
100186-24-48	2¼	2.68
100186-32-60	2¾	3.15



COMPRESSION
(SAE J514)

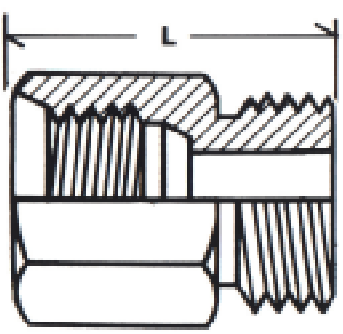
BSPP **100376**
METRIC **100386**

BSPP

Fitting Part Number	Hex	L Length
100376-4-2	½	1.12
100376-4-4	⅝	1.23
100376-6-4	⅝	1.25
100376-6-6	¾	1.28
100376-8-6	13/16	1.37
100376-8-8	1	1.59
100376-10-8	1	1.66
100376-12-12	1¼	1.83
100376-16-16	1½	2.02
100376-20-20	1⅞	2.10
100376-24-24	2	2.17

METRIC

Fitting Part Number	Hex	L Length
100386-4-10	½	1.29
100386-4-12	11/16	1.39
100386-6-14	¾	1.35
100386-8-16	⅞	1.46
100386-8-18	15/16	1.51
100386-10-20	1	1.72
100386-10-22	1 1/16	1.74
100386-12-27	1¼	1.97
100386-16-33	1½	2.07
100386-20-42	2	2.20
100386-24-48	2¼	2.33
100386-32-60	2¾	2.59



SAE O'RING
(SAE J514)

BSPP **102276**
METRIC **102286**

BSPP

Fitting Part Number	Hex	L Length
102276-4-2	11/16	1.36
102276-4-4	¾	1.45
102276-6-4	13/16	1.46
102276-6-6	⅞	1.51
102276-8-6	1	1.61
102276-8-8	1⅛	1.77
102276-10-8	1⅛	1.91
102276-12-12	1⅜	2.10
102276-16-16	1⅝	2.29
102276-20-20	2⅛	2.41
102276-24-24	2½	2.43

METRIC

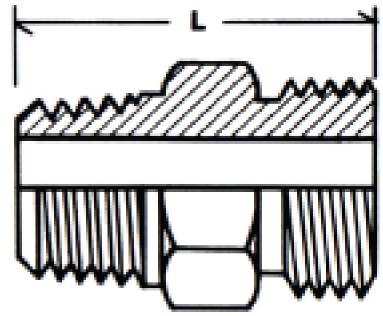
Fitting Part Number	Hex	L Length
102286-4-10	11/16	1.45
102286-4-12	11/16	1.45
102286-6-14	13/16	1.49
102286-8-16	1	1.61
102286-8-18	1	1.61
102286-10-20	1⅛	1.91
102286-10-22	1⅛	1.19
102286-12-27	1⅜	2.12
102286-16-33	1⅝	2.21
102286-20-42	2⅛	2.39
102286-24-48	2½	2.47
102286-32-60	3	2.51

BSPP

Fitting Part Number	Hex	L Length
100476-4-2	9/16	1.23
100476-4-4	5/8	1.34
100476-6-4	3/4	1.34
100476-6-6	3/4	1.37
100476-8-6	7/8	1.56
100476-8-8	1	1.78
100476-12-12	1 1/4	1.89
100476-16-16	1 1/2	2.27
100476-20-20	1 7/8	2.38
100476-24-24	2	2.48

METRIC

Fitting Part Number	Hex	L Length
100486-2-10	1/2	1.18
100486-4-12	11/16	1.46
100486-4-14	3/4	1.46
100486-6-16	7/8	1.46
100486-6-18	15/16	1.51
100486-8-20	1	1.86
100486-8-22	1 1/16	1.86
100486-12-27	1 1/4	2.03
100486-16-33	1 1/2	2.31
100486-20-42	2	2.48
100486-24-48	2 1/4	2.64
100486-32-60	2 3/4	2.85



MALE PIPE
(NPTF)

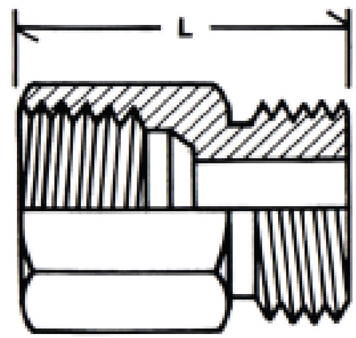
BSPP **100476**
METRIC **100486**

BSPP

Fitting Part Number	Hex	L Length
102476-4-2	3/4	1.10
102476-4-4	3/4	1.44
102476-6-4	7/8	1.45
102476-6-6	7/8	1.47
102476-8-6	1 1/8	1.79
102476-8-8	1 1/8	1.87
102476-12-12	1 3/8	1.91
102476-16-16	1 5/8	2.34
102476-20-20	2	2.50
102476-24-24	2 1/2	2.51

METRIC

Fitting Part Number	Hex	L Length
102486-2-10	9/16	1.26
102486-4-12	3/4	1.36
102486-4-14	3/4	1.40
102486-6-16	7/8	1.46
102486-6-18	15/16	1.56
102486-8-20	1 1/8	1.87
102486-8-22	1 1/8	1.87
102486-12-27	1 3/8	1.91
102486-16-33	1 5/8	2.24
102486-20-42	2	2.46
102486-24-48	2 1/4	2.54
102486-32-60	3	2.67

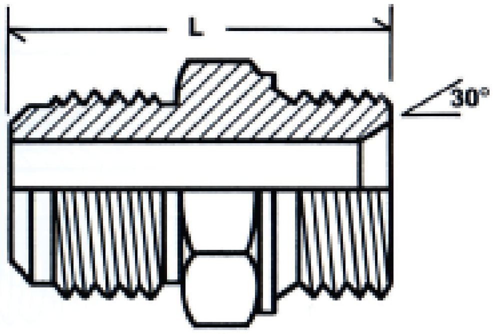


FEMALE PIPE
(NPTF)

BSPP **102476**
METRIC **102486**

Seal information can be found on page 7

How-to-order information can be found on page 17



37° FLARE

(SAE J514)

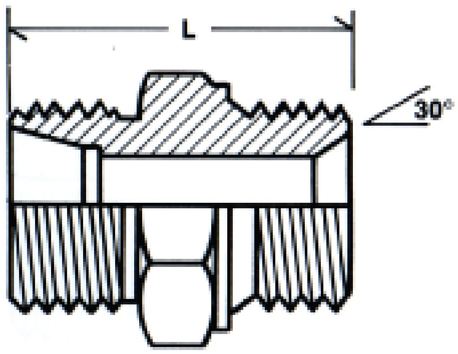
BSPP **100170**
METRIC **100180**

BSPP

Fitting Part Number	Hex	L Length
100170-4-2	9/16	1.22
100170-4-4	3/4	1.40
100170-6-4	3/4	1.40
100170-6-6	7/8	1.45
100170-8-6	7/8	1.55
100170-8-8	1 1/16	1.71
100170-10-8	1 1/16	1.81
100170-12-12	1 5/16	2.06
100170-16-16	1 5/8	2.22
100170-20-20	2	2.43
100170-24-24	2 1/4	2.61
100170-32-32	2 3/4	3.26

METRIC

Fitting Part Number	Hex	L Length
100180-4-10	9/16	1.31
100180-4-12	11/16	1.41
100180-6-14	3/4	1.42
100180-8-16	7/8	1.52
100180-8-18	15/16	1.57
100180-10-20	1	1.75
100180-10-22	1 1/8	1.77
100180-12-26	1 1/4	2.08
100180-12-27	1 1/4	2.08
100180-16-33	1 5/8	2.24
100180-20-42	2	2.45
100180-24-48	2 1/4	2.62
100180-32-60	2 3/4	3.11



COMPRESSION

(SAE J514)

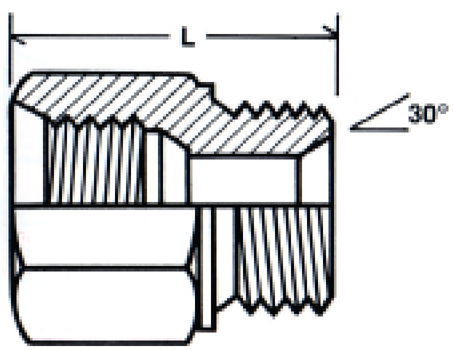
BSPP **100370**
METRIC **100380**

BSPP

Fitting Part Number	Hex	L Length
100370-4-2	9/16	1.11
100370-4-4	3/4	1.29
100370-6-4	3/4	1.31
100370-6-6	7/8	1.36
100370-8-6	7/8	1.45
100370-8-8	1 1/16	1.61
100370-10-8	1 1/16	1.68
100370-12-12	1 5/16	1.89
100370-16-16	1 5/8	2.00
100370-20-20	2	2.16
100370-24-24	2 1/4	2.30
100370-32-32	2 3/4	2.62

METRIC

Fitting Part Number	Hex	L Length
100380-4-10	9/16	1.21
100380-4-12	11/16	1.31
100380-6-14	3/4	1.33
100380-8-16	7/8	1.42
100380-8-18	15/16	1.47
100380-10-20	1	1.62
100380-10-22	1 1/8	1.64
100380-12-26	1 1/4	1.91
100380-12-27	1 1/4	1.91
100380-16-33	1 5/8	2.03
100380-20-42	2	2.18
100380-24-48	2 1/4	2.31
100380-32-60	2 3/4	2.53



SAE O'RING

(SAE J514)

BSPP **102270**
METRIC **102280**

BSPP

Fitting Part Number	Hex	L Length
102270-4-2	11/16	1.28
102270-4-4	3/4	1.43
102270-6-4	13/16	1.45
102270-6-6	7/8	1.49
102270-8-6	1	1.59
102270-8-8	1 1/8	1.67
102270-10-8	1 1/8	1.81
102270-12-12	1 3/8	2.04
102270-16-16	1 5/8	2.15
102270-20-20	2 1/8	2.35
102270-24-24	2 1/2	2.44
102270-32-32	3	2.62

METRIC

Fitting Part Number	Hex	L Length
102280-4-10	11/16	1.38
102280-4-12	11/16	1.42
102280-6-14	13/16	1.49
102280-8-16	1	1.57
102280-8-18	1	1.57
102280-10-20	1 1/8	1.81
102280-10-22	1 1/8	1.81
102280-12-26	1 3/8	2.06
102280-12-27	1 3/8	2.06
102280-16-33	1 5/8	2.17
102280-20-42	2 1/8	2.37
102280-24-48	2 1/2	2.45
102280-32-60	3	2.47

Used with Style "JJ" Port

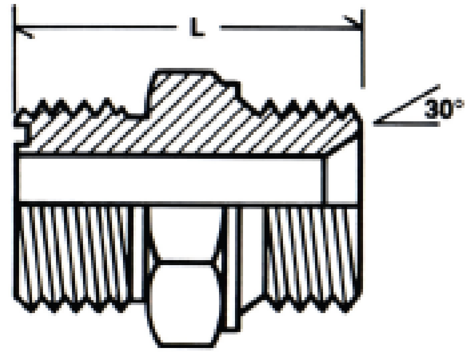
DIN-3852

BSPP

Fitting Part Number	Hex	L Length
100970-4-2	9/16	1.05
100970-4-4	3/4	1.23
100970-6-4	3/4	1.29
100970-6-6	7/8	1.39
100970-8-6	7/8	1.55
100970-8-8	1 1/16	1.55
100970-10-8	1 1/16	1.66
100970-12-12	1 5/16	1.86
100970-16-16	1 5/8	1.99
100970-20-20	2	2.16
100970-24-24	2 1/4	2.21

METRIC

Fitting Part Number	Hex	L Length
100980-4-10	9/16	1.14
100980-4-12	11/16	1.24
100980-6-14	3/4	1.26
100980-8-16	7/8	1.36
100980-8-18	15/16	1.41
100980-10-20	1	1.60
100980-10-22	1 1/8	1.62
100980-12-26	1 1/4	1.88
100980-12-27	1 1/4	1.88
100980-16-33	1 5/8	2.01
100980-20-42	2	2.18
100980-24-50	2 1/4	2.22



FACE SEAL
(SAE J1453)

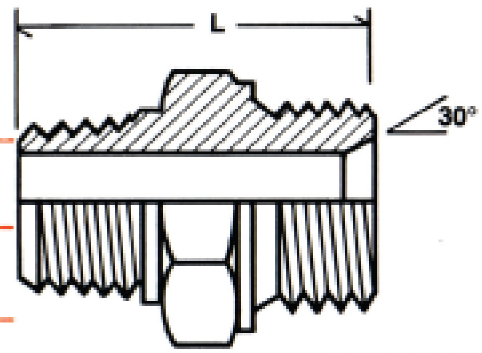
BSPP **100970**
METRIC **100980**

BSPP

Fitting Part Number	Hex	L Length
100470-4-2	9/16	1.22
100470-4-4	3/4	1.40
100470-6-4	3/4	1.40
100470-6-6	7/8	1.45
100470-8-6	7/8	1.64
100470-8-8	1 1/16	1.80
100470-12-12	1 5/16	1.95
100470-16-16	1 5/8	2.28
100470-20-20	2	2.44
100470-24-24	2 1/4	2.61
100470-32-32	2 3/4	2.96

METRIC

Fitting Part Number	Hex	L Length
100480-2-10	9/16	1.14
100480-4-12	11/16	1.38
100480-4-14	3/4	1.42
100480-6-16	7/8	1.42
100480-6-18	15/16	1.47
100480-8-20	1	1.76
100480-8-22	1 1/8	1.76
100480-12-26	1 1/4	1.97
100480-12-27	1 1/4	1.97
100480-16-33	1 5/8	2.27
100480-20-42	2	2.46
100480-24-48	2 1/4	2.62
100480-32-60	2 3/4	2.81



MALE PIPE
(NPTF)

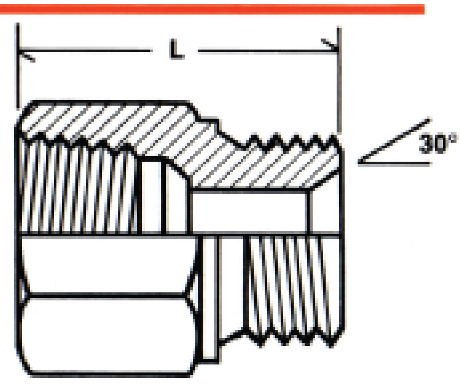
BSPP **100470**
METRIC **100480**

BSPP

Fitting Part Number	Hex	L Length
102470-4-2	3/4	1.02
102470-4-4	3/4	1.42
102470-6-6	7/8	1.46
102470-8-8	1 1/8	1.77
102470-12-12	1 3/8	1.85
102470-16-16	1 5/8	2.20
102470-20-20	2	2.44
102470-24-24	2 1/2	2.52
102470-32-32	3	2.80

METRIC

Fitting Part Number	Hex	L Length
102480-2-10	9/16	1.18
102480-4-12	3/4	1.34
102480-4-14	3/4	1.38
102480-6-16	7/8	1.46
102480-6-18	15/16	1.51
102480-8-20	1 1/8	1.77
102480-8-22	1 1/8	1.77
102480-12-26	1 3/8	1.85
102480-12-27	1 3/8	1.85
102480-16-33	1 5/8	2.20
102480-20-42	2	2.44
102480-24-48	2 1/2	2.52
102480-32-60	3	2.63

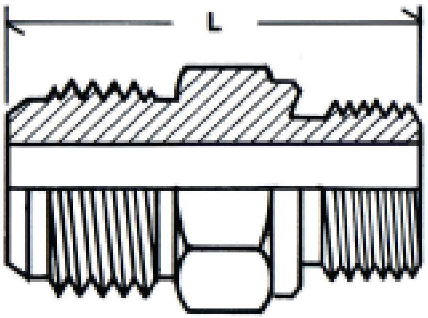


FEMALE PIPE
(NPTF)

BSPP **102470**
METRIC **102480**

Seal information can be found on page 7

How-to-order information can be found on page 17



37° FLARE

(SAE J514)

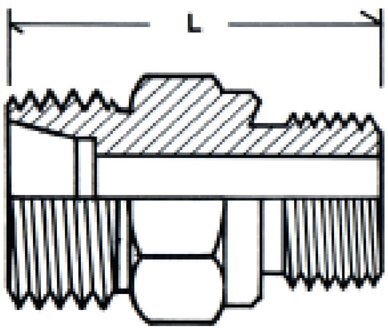
BSPP **100171**
METRIC **100181**

BSPP

Fitting Part Number	Hex	L Length
100171-4-2	9/16	1.22
100171-4-4	3/4	1.40
100171-6-4	3/4	1.40
100171-6-6	7/8	1.45
100171-8-6	7/8	1.55
100171-8-8	1 1/16	1.71
100171-10-8	1 1/16	1.81
100171-12-12	1 5/16	2.06
100171-16-16	1 5/8	2.22
100171-20-20	2	2.43
100171-24-24	2 1/4	2.61
100171-32-32	2 3/4	3.26

METRIC

Fitting Part Number	Hex	L Length
100181-4-10	9/16	1.31
100181-4-12	11/16	1.41
100181-6-14	3/4	1.42
100181-8-16	7/8	1.52
100181-8-18	15/16	1.57
100181-10-20	1	1.75
100181-10-22	1 1/8	1.77
100181-12-26	1 1/4	2.08
100181-12-27	1 1/4	2.08
100181-16-33	1 5/8	2.24
100181-20-42	2	2.45
100181-24-48	2 1/4	2.62
100181-32-60	2 3/4	3.11



COMPRESSION

(SAE J514)

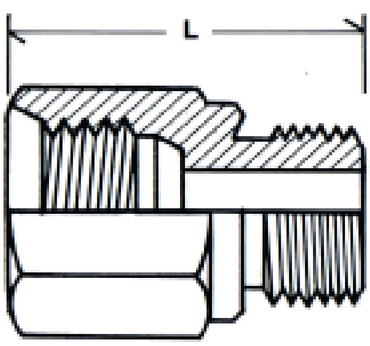
BSPP **100371**
METRIC **100381**

BSPP

Fitting Part Number	Hex	L Length
100371-4-2	9/16	1.11
100371-4-4	3/4	1.29
100371-6-4	3/4	1.31
100371-6-6	7/8	1.36
100371-8-6	7/8	1.45
100371-8-8	1 1/16	1.61
100371-10-8	1 1/16	1.68
100371-12-12	1 5/16	1.89
100371-16-16	1 5/8	2.00
100371-20-20	2	2.16
100371-24-24	2 1/4	2.30
100371-32-32	2 3/4	2.62

METRIC

Fitting Part Number	Hex	L Length
100381-4-10	9/16	1.21
100381-4-12	11/16	1.31
100381-6-14	3/4	1.33
100381-8-16	7/8	1.42
100381-8-18	15/16	1.47
100381-10-20	1	1.62
100381-10-22	1 1/8	1.64
100381-12-26	1 1/4	1.91
100381-12-27	1 1/4	1.91
100381-16-33	1 5/8	2.03
100381-20-42	2	2.18
100381-24-48	2 1/4	2.31
100381-32-60	2 3/4	2.53



SAE O'RING

(SAE J514)

BSPP **102271**
METRIC **102281**

BSPP

Fitting Part Number	Hex	L Length
102271-4-2	11/16	1.28
102271-4-4	3/4	1.43
102271-6-4	13/16	1.45
102271-6-6	7/8	1.49
102271-8-6	1	1.59
102271-8-8	1 1/8	1.67
102271-10-8	1 1/8	1.81
102271-12-12	1 3/8	2.04
102271-16-16	1 5/8	2.15
102271-20-20	2 1/8	2.35
102271-24-24	2 1/2	2.44
102271-32-32	3	2.62

METRIC

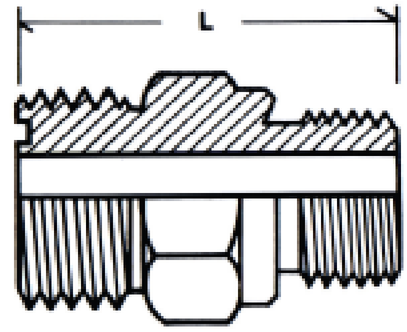
Fitting Part Number	Hex	L Length
102281-4-10	11/16	1.38
102281-4-12	11/16	1.42
102281-6-14	13/16	1.49
102281-8-16	1	1.57
102281-8-18	1	1.57
102281-10-20	1 1/8	1.81
102281-10-22	1 1/8	1.81
102281-12-26	1 3/8	2.06
102281-12-27	1 3/8	2.06
102281-16-33	1 5/8	2.17
102281-20-42	2 3/8	2.37
102281-24-48	2 1/2	2.45
102281-32-60	3	2.47

BSPP

Fitting Part Number	Hex	L Length
100971-4-2	9/16	1.05
100971-4-4	3/4	1.23
100971-6-4	3/4	1.28
100971-6-6	7/8	1.33
100971-8-6	7/8	1.39
100971-8-8	1 1/16	1.55
100971-10-8	1 1/16	1.66
100971-12-12	1 5/16	1.86
100971-16-16	1 5/8	1.96
100971-20-20	2	2.18
100971-24-24	2 1/4	2.21

METRIC

Fitting Part Number	Hex	L Length
100981-4-10	9/16	1.14
100981-4-12	11/16	1.29
100981-6-14	3/4	1.30
100981-8-16	7/8	1.36
100981-8-18	15/16	1.41
100981-10-20	1	1.60
100981-10-22	1 1/8	1.62
100981-12-26	1 1/4	1.88
100981-12-27	1 1/4	1.88
100981-16-33	1 5/8	1.98
100981-20-42	2	2.20
100981-24-50	2 1/4	2.22



FACE SEAL
(SAE J1453)

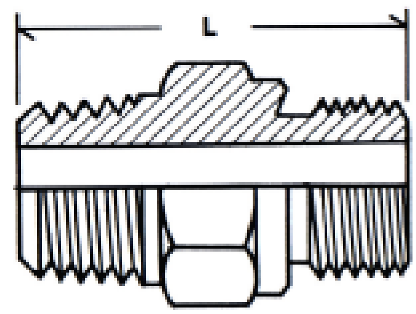
BSPP **100971**
METRIC **100981**

BSPP

Fitting Part Number	Hex	L Length
100471-4-2	9/16	1.22
100471-4-4	3/4	1.40
100471-6-4	3/4	1.40
100471-6-6	7/8	1.45
100471-8-6	7/8	1.64
100471-8-8	1 1/16	1.80
100471-12-12	1 5/16	1.95
100471-16-16	1 5/8	2.25
100471-20-20	2	2.44
100471-24-24	2 1/4	2.61
100471-32-32	2 3/4	2.96

METRIC

Fitting Part Number	Hex	L Length
100481-2-10	9/16	1.14
100481-4-12	11/16	1.38
100481-4-14	3/4	1.42
100481-6-16	7/8	1.42
100481-6-18	15/16	1.47
100481-8-20	1	1.76
100481-8-22	1 1/8	1.76
100481-12-26	1 1/4	1.97
100481-12-27	1 1/4	1.97
100481-16-33	1 5/8	2.27
100481-20-42	2	2.46
100481-24-48	2 1/4	2.62
100481-32-60	2 3/4	2.81



MALE PIPE
(NPTF)

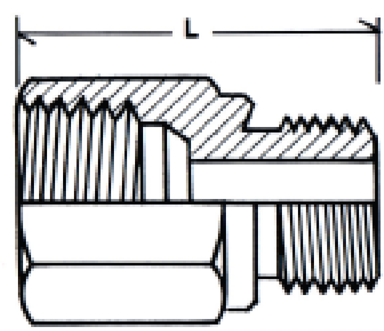
BSPP **100471**
METRIC **100481**

BSPP

Fitting Part Number	Hex	L Length
102471-4-2	3/4	1.02
102471-4-4	3/4	1.42
102471-6-6	7/8	1.46
102471-8-8	1 1/8	1.77
102471-12-12	1 3/8	1.85
102471-16-16	1 5/8	2.20
102471-20-20	2	2.44
102471-24-24	2 1/2	2.52
102471-32-32	3	2.80

METRIC

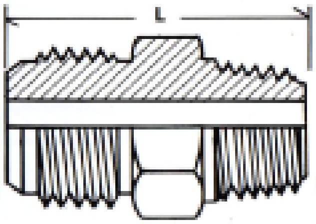
Fitting Part Number	Hex	L Length
102481-2-10	9/16	1.18
102481-4-12	3/4	1.34
102481-4-14	3/4	1.38
102481-6-16	7/8	1.46
102481-6-18	15/16	1.51
102481-8-20	1 1/8	1.77
102481-8-22	1 1/8	1.77
102481-12-26	1 3/8	1.85
102481-12-27	1 3/8	1.85
102481-16-33	1 5/8	2.20
102481-20-42	2	2.44
102481-24-48	2 1/2	2.56
102481-32-60	3	2.63



FEMALE PIPE
(NPTF)

BSPP **102471**
METRIC **102481**

How-to-order information can be found on page 17



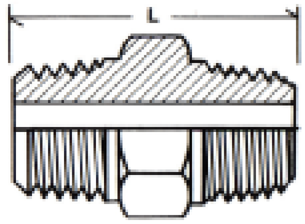
37° FLARE

(SAE J514)

BSPT

BSPT **100174**

Fitting Part Number	Hex	L Length
100174-4-2	1/2	1.16
100174-4-4	9/16	1.36
100174-6-4	5/8	1.36
100174-6-6	11/16	1.36
100174-8-6	13/16	1.46
100174-8-8	7/8	1.72
100174-10-8	15/16	1.82
100174-12-12	1 1/8	1.99
100174-16-16	1 3/8	2.39
100174-20-20	1 3/4	2.39
100174-24-24	2	2.61
100174-32-32	2 1/2	3.34



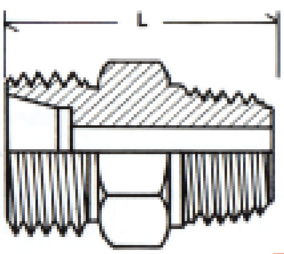
MALE PIPE

(NPTF)

BSPT

BSPT **100474**

Fitting Part Number	Hex	L Length
100474-4-2	9/16	1.22
100474-4-4	9/16	1.40
100474-6-4	3/4	1.40
100474-6-6	3/4	1.45
100474-8-6	7/8	1.64
100474-8-8	7/8	1.80
100474-12-12	1 1/8	1.95
100474-16-16	1 3/8	2.25
100474-20-20	1 3/4	2.44
100474-24-24	2	2.61
100474-32-32	2 1/2	2.96



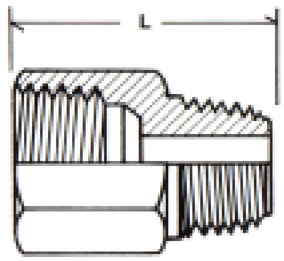
COMPRESSION

(SAE J514)

BSPT

BSPT **100374**

Fitting Part Number	Hex	L Length
100374-4-2	11/16	1.28
100374-4-4	11/16	1.45
100374-6-4	13/16	1.45
100374-6-6	13/16	1.49
100374-8-6	1	1.59
100374-8-8	1	1.77
100374-10-8	1 1/8	1.91
100374-12-12	1 3/8	2.06
100374-16-16	1 5/8	2.29
100374-20-20	2 1/8	2.43
100374-24-24	2 1/2	2.48
100374-32-32	3	2.83



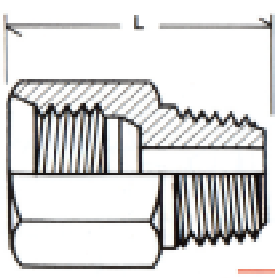
FEMALE PIPE

(NPTF)

BSPT

BSPT **102474**

Fitting Part Number	Hex	L Length
102474-4-2	3/4	1.35
102474-4-4	3/4	1.52
102474-6-4	7/8	1.56
102474-6-6	7/8	1.56
102474-8-6	1 1/8	1.79
102474-8-8	1 1/8	1.99
102474-12-12	1 3/8	1.99
102474-16-16	1 5/8	2.46
102474-20-20	2	2.64
102474-24-24	2 1/2	2.68
102474-32-32	3	2.96



SAE O'RING

(SAE J514)

BSPT

BSPT **102274**

Fitting Part Number	Hex	L Length
102274-4-2	11/16	1.28
102274-4-4	11/16	1.45
102274-6-4	13/16	1.45
102274-6-6	13/16	1.49
102274-8-6	1	1.59
102274-8-8	1	1.77
102274-10-8	1 1/8	1.91
102274-12-12	1 3/8	2.06
102274-16-16	1 5/8	2.29
102274-20-20	2 1/8	2.43
102274-24-24	2 1/2	2.48
102274-32-32	3	2.83

Metric Taper Pipe Available on Request

How-to-order information can be found on page 17

DIN-3852

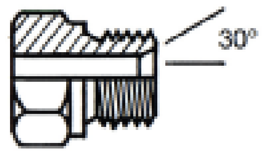
10017503

Size	Tube Size	Tube Thd	BSPP Thd	L
4-2	1/4	7/16-20	1/8	1.36
4-4	1/4	7/16-20	1/4	1.48
6-4	3/8	9/16-18	1/4	1.49
6-6	3/8	9/16-18	3/8	1.52
8-6	1/2	3/4-16	3/8	1.62
8-8	1/2	3/4-16	1/2	1.72
10-8	5/8	7/8-14	1/2	1.82
12-12	3/4	1 1/16-12	3/4	2.16
16-16	1	1 5/16-12	1	2.31
20-20	1 1/4	1 5/8-12	1 1/4	2.63
24-24	1 1/2	1 7/8-12	1 1/2	2.80
32-32	2	2 1/2-12	2	3.23

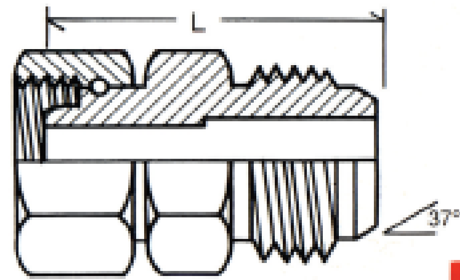
100170 — See page 10

FROM

TO



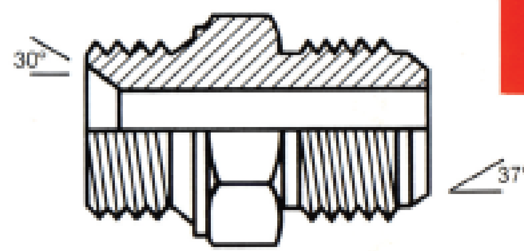
BSPP 30° Chamfer



American Hose/Tube

10017503

Hose Assembly
BSPP 30° Chamfer

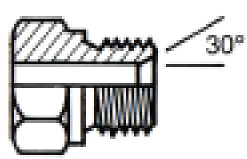


American Hose/Tube

100170

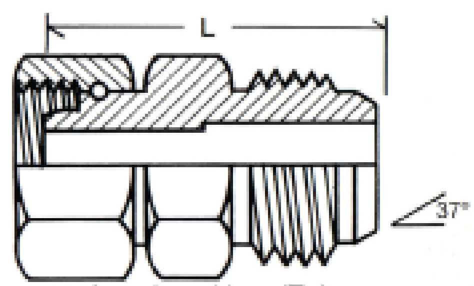
10018503 / 10018500

Size	Tube Size	Tube Thd	MM Size	MM Thd	L	K
4-6	1/4	7/16-20	6mm	12x1.5	1.47	1.27
6-8	3/8	9/16-18	8mm	14x1.5	1.52	1.27
6-10	3/8	9/16-18	10mm	16x1.5	1.68	1.27
8-12	1/2	3/4-16	12mm	18x1.5	1.68	1.32
10-15	5/8	7/8-14	15mm	22x1.5	1.83	1.52
12-18	3/4	1 1/16-12	18mm	26x1.5	2.11	1.63
16-22	1	1 5/16-12	22mm	30x1.5	2.19	1.73
20-28	1 1/4	1 5/8-12	28mm	38x1.5	2.39	1.88
24-35	1 1/2	1 7/8-12	35mm	45x1.5	2.68	1.99
32-42	2	2 1/2-12	42mm	52x1.5	3.11	2.40



DIN 7631

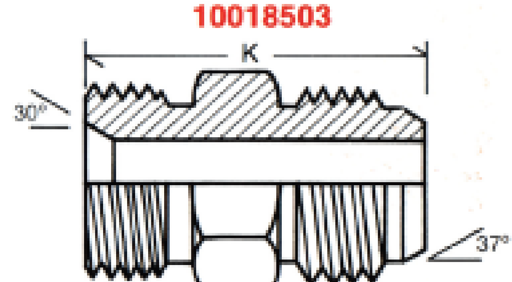
Metric 30° Chamfer



American Hose/Tube

10018503

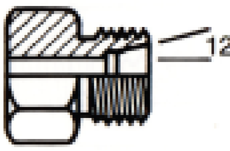
Hose Assembly
Metric 30° Chamfer

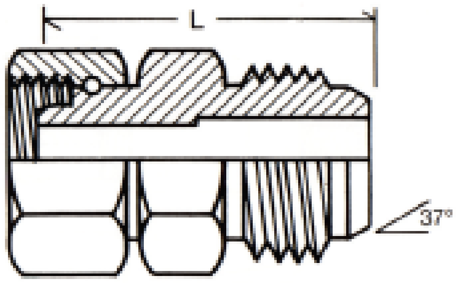


American Hose/Tube

10018500

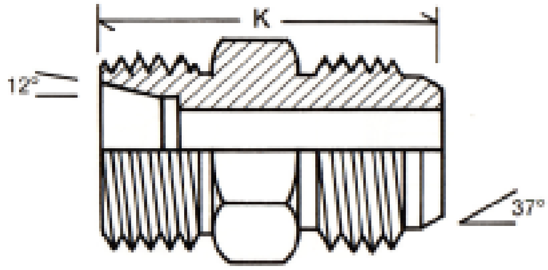
FROM | **TO**





Metric Compression
Light Duty DIN 3861-L

American Hose/Tube
10018313

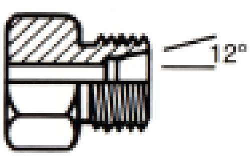


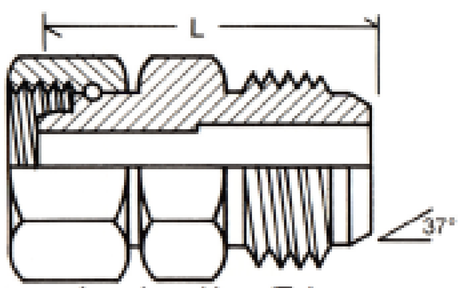
Metric Light Duty
Hose Assembly

American Hose/Tube
10018310

10018310 / 10018313

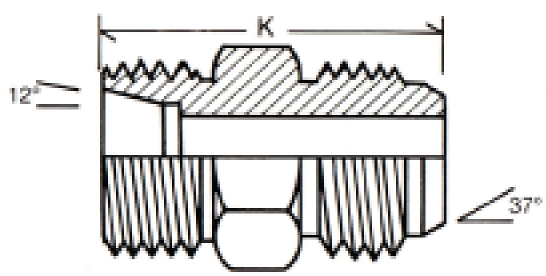
Size	Tube Size	Tube Thd	MM Tube O.D.	MM Thd	L	K
4-6	1/4	7/16-20	6	12x1.5	1.47	1.24
6-8	3/8	9/16-18	8	14x1.5	1.52	1.24
8-10	1/2	3/4-16	10	16x1.5	1.68	1.36
8-12	1/2	3/4-16	12	18x1.5	1.68	1.36
10-15	5/8	7/8-14	15	22x1.5	1.83	1.52
12-18	3/4	1 1/16-12	18	26x1.5	2.11	1.69
16-22	1	1 5/16-12	22	30x2	2.19	1.83
20-28	1 1/4	1 5/8-12	28	36x2	2.39	1.88
24-35	1 1/2	1 7/8-12	35	45x2	2.68	2.07
32-42	2	2 1/2-12	42	52x2	3.11	2.40





Metric Compression
Heavy Duty DIN 3861-S

American Hose/Tube
10018323



Metric Heavy Duty
Hose Assembly

American Hose/Tube
10018320

10018320 / 10018323

Size	Tube Size	Tube Thd	MM Tube O.D.	MM Thd	L	K
6-6	3/8	9/16-18	6	14x1.5	1.54	1.30
8-10	1/2	3/4-16	10	18x1.5	1.67	1.45
10-14	5/8	7/8-14	14	22x1.5	1.83	1.60
12-16	3/4	1 1/16-12	16	24x1.5	2.00	1.77
16-20	1	1 5/16-12	20	30x2	2.19	1.89
20-25	1 1/4	1 5/8-12	25	36x2	2.39	2.05
24-30	1 1/2	1 7/8-12	30	42x2	2.65	2.27
32-38	2	2 1/2-12	38	52x2	3.11	2.64

How to Order

1. Select fitting body configuration
2. Select seals if required
3. Select tube size
4. Select port size
5. Material designator

100176 C - 06012S

- 100176 — Configuration
- C — If seal is required
- 06 — Hose or Tube Size
- 012 — Port Size
- S — Material

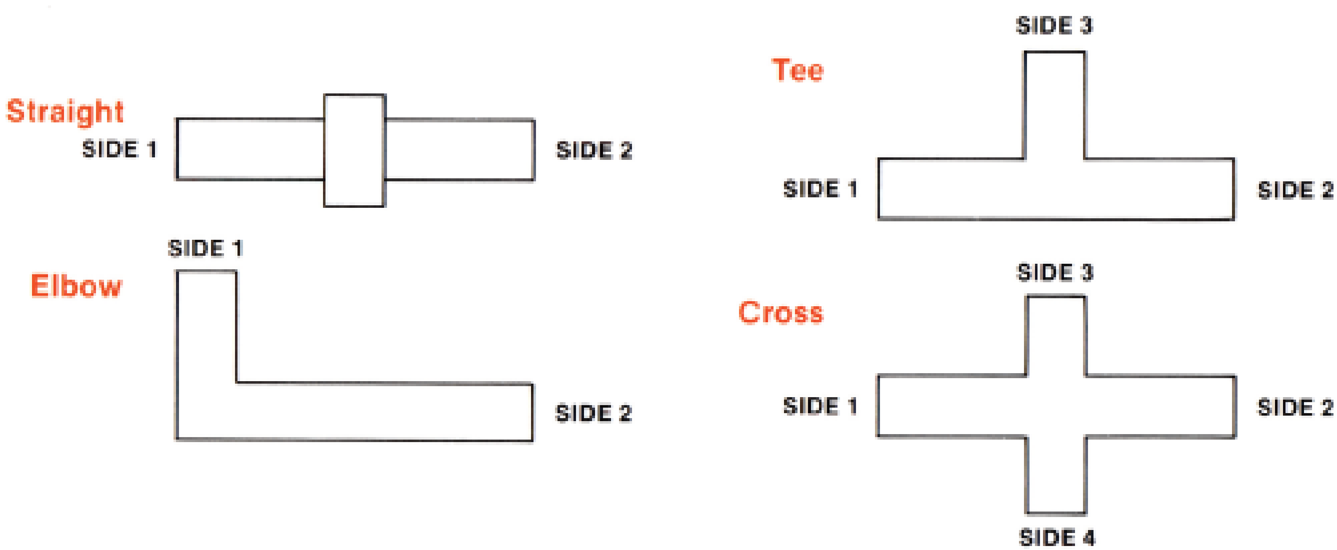
Material	
S	Steel
B	Brass
SS	Stainless Steel 316
AL	Aluminum
M	Monel R405

Add **"T"** to include Tube Side Seal
Add **"S"** to include Port Side Seal
Add **"C"** to include Both Tube and Port Seal

Non-cataloged Fittings

Non-standard fittings may be required to reduce potential leak points, weight, or assembly time.

Configuration



To request a quotation, state the following

1) Configuration
2) Side # (Tube or Port) - Connection
   Tube Size
   Thread Size
3) Material
4) Quantity

Tube Size: Dimensions correspond to the outside diameter (O.D.) of the tube

Finish: Steel fittings are furnished with zinc plating followed by a chromate treatment.

Workmanship: All products are manufactured from bar stock and one-piece construction for greater durability.

Material: Other materials available. Consult our Engineering Department.

The design and dimensional data shown in this catalog are subject to change without notice.

Test data is the result of actual testing done at our test laboratory. The data does not reflect field conditions that contain many variable parameters.

Fluid Line Products, Incorporated guarantees the products manufactured at its plant against defects in material and workmanship reported to us no later than 30 days after shipment.

Any product considered to be defective by Fluid Line Products, Inc., will be replaced, repaired free of charge, or limited to the invoice amount of the defective part.

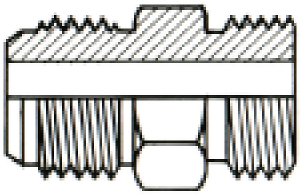
No responsibility will be assumed for expenses, abuse, age, or damages incurred through subsequent assembly of the product.

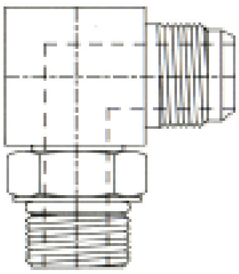
All products shall carry no other warranty either expressed or implied.

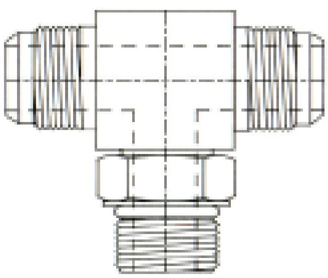
J.I.S. - Japanese Industrial Standard

Per JIS-B2351

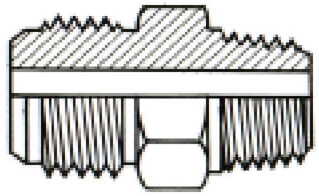
30° FLARE/O-RING

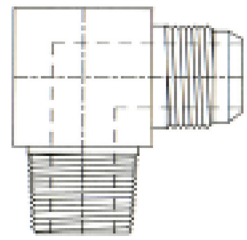


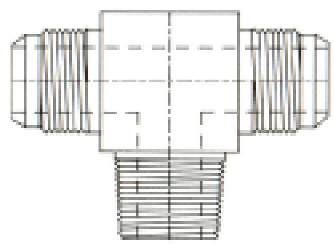




30° FLARE/BSPT







Available on Request

Fluid Line Products, Inc.

Designer and Manufacturer of Fluid Power Components

38273 Western Parkway, P.O. Box 1000, Willoughby, Ohio 44096

(440) 946-9470 FAX (440) 946-9472

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