

Haft union	เข้าท่อ OD ฮาฟยูเนียน Flared	เกลียวนอก PT		ราคาชุดละ
	6 mm	1/8"		95.00
	6 mm	1/4"		100.00
	6 mm	3/8"		110.00
	6 mm	1/2"		130.00
	8 mm	1/8"	ข้อต่อทองเหลืองตรงฮาฟ ยูเนียน 48	110.00
	8 mm	1/4"		120.00
	8 mm	3/8"		130.00
	8 mm	1/2"		140.00
	10 mm	1/8"		120.00
	10 mm	1/4"		130.00
	10 mm	3/8"		140.00
	10 mm	1/2"		150.00
	12 mm	1/4"	แฟลร์นัท 41	130.00
	12 mm	3/8"		140.00
	12 mm	1/2"		150.00
Union ยูเนียน	และ Union reducing			
	6 mm			120.00
	8 mm			140.00
	10 mm			160.00
	12 mm			200.00
Union Elbow			ยูเนียน 42	
	6 mm			170.00
	8 mm			190.00
	10 mm			210.00
	12 mm			260.00

ยูเนียนแฟลร์งอฉาก

เข้าท่อ OD	เกลียวนอก PT		ราคาชุดละ
Male Elbow 90 Flared			
6 mm	1/8"		110.00
6 mm	1/4"		115.00
6 mm	3/8"		125.00
8 mm	1/8"		120.00
8 mm	1/4"		130.00
8 mm	3/8"		135.00
8 mm	1/2"		180.00
10 mm	1/8"	ข้ออลูมิเนียม 49	140.00
10 mm	1/4"		145.00
10 mm	3/8"		160.00
10 mm	1/2"		175.00
12 mm	1/4"		190.00
12 mm	3/8"		210.00
12 mm	1/2"		230.00

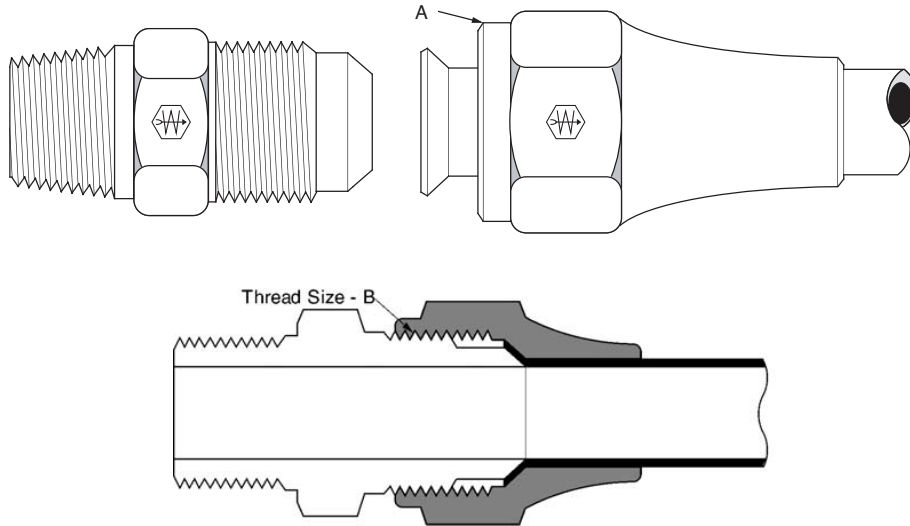
Female Elbow 90	และตรง ราคาเดียวกัน		
6 mm	1/8"		140.00
	1/4"		160.00
8 mm	1/8"		180.00
	1/4"		200.00
10 mm	1/4"		220.00
12 mm	3/8"		240.00
		ข้ออลูมิเนียม 50	
		ข้ออลูมิเนียมตัวเมีย 46	

Tree Flared			
6 mm			220.00
8 mm			260.00
10 mm			280.00
12 mm			340.00

SAE 45° Flare

**Brass
Fittings**

 Refer to safety information regarding proper selection of tubing and tube fittings on page 1.



Tube O.D.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
Thread Size-B	5/16-24	3/8-24	7/16-20	1/2-20	5/8-18	11/16-16	3/4-16	7/8-14	1-1/16-14

• Typical Application

LP and natural gas, flammable liquids (special order), instrumentation, refrigeration, power steering, hydraulic and pneumatic systems.

• Pressure

Working pressure up to 2000 psi depending on tube size. Will withstand burst pressure of standard tubing - up to 5000 psi with Bundy-weld (double flared) and 3500 psi with copper tubing, depending on size.

• Vibration

Good resistance - use long nut when greater vibration resistance is required.

• Temperature Range

-65°F to +250°F (-53°C to +121°C) range at maximum operating pressures.

• Material

CA360 Brass.

• Used With

Copper, brass, aluminum and steel hydraulic tubing that can be flared. See page 28-32 for material compatibility.

• Advantages

Low cost and reusability, long or short nut. Good resistance to vibration.

• Conformance

Listed by Underwriter's Laboratories (available on special order) for flammable liquids, refrigeration and gas. Meets specifications and standards of ASA, ASME, SAE and MS (Military Standards).

• How to Order

Order individually by catalog number.

• NOTE

Refer to current price list for availability of cataloged items. Configurations and dimensions subject to change without notice. Quotations of non-stock items available upon request. Additional information can be found in SAE J512.

• Assembly Instructions

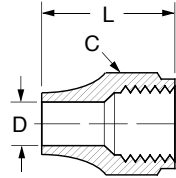
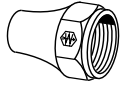
1. Cut tubing to desired length. Make sure all burrs are removed and the ends are cut square.
2. Slide nut on tube. Threaded end "A" of nut must face out.
3. Flare end of tube with a 45° flaring tool. See page 26 for flare data.
 - a. Measure flare diameter.
 - b. Examine flare for excessive thin out.
4. Lubricate threads and assemble to fitting body. Nut should be turned hand tight.
5. Tighten assembly with a wrench until a solid feeling is encountered. From that point, apply a one-sixth turn.

NOTE: Do not over-torque as it may damage the fitting or split the tubing at the flare.

Label Set: **W-8022** (adhesive)
CL-490 (non-adhesive)

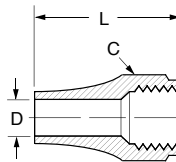
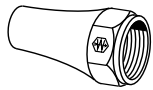
**B
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A
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S**

Nut (Ref. SAE No. 010110)



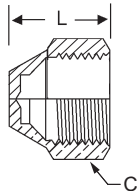
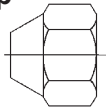
Tube O.D.	Catalog Number	Hex C	D	L
1/8	1110x2	3/8	.133	.50
3/16	1110x3	7/16	.195	.62
1/4	1110x4	9/16	.258	.75
5/16	1110x5	5/8	.320	.88
3/8	1110x6	3/4	.383	1.00
7/16	1110x7*	13/16	.445	1.06
1/2	1110x8	7/8	.508	1.12
5/8	1110x10	1-1/16	.633	1.31
3/4	1110x12*	1-1/4	.758	1.50

Long Nut (Ref. SAE No. 010111)



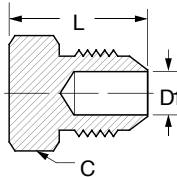
Tube O.D.	Catalog Number	Hex C	D	L
3/16	41x3	7/16	.195	.81
1/4	41x4	9/16	.258	.94
5/16	41x5	5/8	.320	1.12
3/8	41x6	3/4	.383	1.31
1/2	41x8	7/8	.508	1.62
5/8	41x10*	1-1/16	.633	1.88

Cap



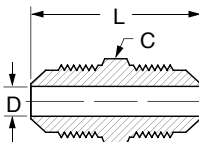
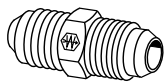
Tube O.D.	Catalog Number	Hex C	L
1/8	40x2	7/16	.40
3/16	40x3	1/2	.47
1/4	40x4	7/16	.53
5/16	40x5	5/8	.62
3/8	40x6	3/4	.69
1/2	40x8	7/8	.84
5/8	40x10	1-1/16	.97
3/4	40x12	1-5/16	1.09

Plug



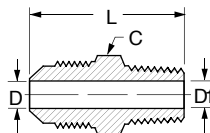
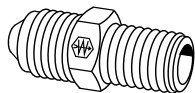
Tube O.D.	Catalog Number	Hex C	L	D1 (opt.)
1/8	39x2	5/16	.47	.079
3/16	39x3	3/8	.58	.126
1/4	39x4	7/16	.69	.189
5/16	39x5	1/2	.79	.220
3/8	39x6	5/8	.88	.282
1/2	39x8	3/4	1.06	.408
5/8	39x10	7/8	1.19	.502
3/4	39x12	1-1/16	1.31	.627

Union (Ref. SAE No. 010101)



Tube O.D.	Catalog Number	Hex C	D	L
1/8	42x2*	5/16	.078	.92
3/16	42x3	3/8	.125	1.06
1/4	42x4	7/16	.188	1.19
5/16	42x5	1/2	.219	1.34
3/8	42x6	5/8	.281	1.50
1/2	42x8	3/4	.406	1.81
5/8	42x10	7/8	.500	2.12
3/4	42x12*	1-1/16	.625	2.44

Male Connector (Ref. SAE No. 010102)



Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	D1	L
1/8	1/8	48x2	7/16	.078	.219	.90
3/16	1/8	48x3	7/16	.125	.219	1.00
1/4	1/8	48x4	7/16	.188	.188	1.06
1/4	1/4	48x4x4	9/16	.188	.312	1.26
5/16	1/8	48x5	1/2	.219	.219	1.16
5/16	1/4	48x5x4	9/16	.219	.219	1.34
3/8	1/8	48x6x2	5/8	.281	.219	1.25
3/8	1/4	48x6	5/8	.281	.281	1.44
3/8	3/8	48x6x6	11/16	.281	.281	1.44
3/8	1/2	48x6x8	7/8	.281	.562*	1.69
7/16	1/4	48x7*	11/16	.312	.312	1.53
1/2	1/4	48x8x4	3/4	.406	.312	1.62
1/2	3/8	48x8	3/4	.406	.406	1.62
1/2	1/2	48x8x8	7/8	.406	.562	1.81
5/8	3/8	48x10x6	7/8	.500	.406	1.81
5/8	1/2	48x10	7/8	.500	.500	2.00
3/4	1/2	48x12	1-1/16	.625	.562	2.18
3/4	3/4	48x12x12	1-1/16	.625	.625	2.18

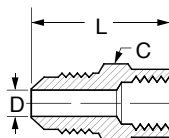
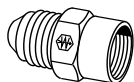
*Counterbore is optional.

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SAE 45° Flare

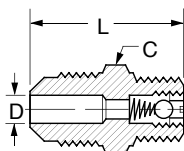
**Brass
Fittings**

Female Connector (Ref. SAE No. 010103)



Tube O.D.	Fem. Pipe Thread	Catalog Number	Hex C	D	L
3/16	1/8	46x3♦	9/16	.125	.97
1/4	1/8	46x4	9/16	.188	1.03
1/4	1/4	46x4x4	11/16	.188	1.25
5/16	1/8	46x5	9/16	.219	1.06
5/16	1/4	46x5x4♦	11/16	.219	1.28
3/8	1/8	46x6x2♦	5/8	.281	1.12
3/8	1/4	46x6	11/16	.281	1.31
3/8	3/8	46x6x6	13/16	.281	1.38
3/8	1/2	46x6x8♦	1	.281	1.62
1/2	1/4	46x8x4♦	3/4	.406	1.41
1/2	3/8	46x8	13/16	.406	1.50
1/2	1/2	46x8x8♦	1	.406	1.75
5/8	1/2	46x10♦	1	.500	1.81

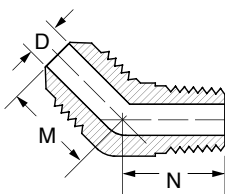
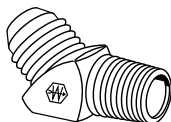
Male Ball Check Connector



Ball & Spring position may be reversed to change flow/check direction. Min pressure 3 psi.

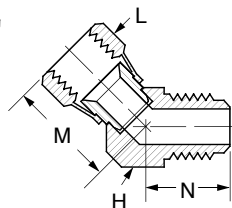
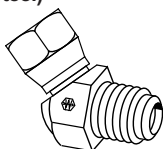
Tube O.D.	Male Pipe Thread	Catalog Number	Hex C	D	L
1/4	1/8	43x4	7/16	.125	1.06
5/16	1/8	43x5♦	1/2	.125	1.16
3/8	1/4	43x6	5/8	.219	1.31

45° Male Elbow (Ref. SAE No. 010302)



Tube O.D.	Male Pipe Thread	Catalog Number	D	M	N
1/4	1/8	54x4	.188	.67	.64
1/4	1/4	54x4x4	.188	.73	.87
5/16	1/8	54x5	.219	.78	.64
3/8	1/4	54x6	.281	.89	.86
3/8	3/8	54x6x6♦	.281	.93	.95
1/2	3/8	54x8	.406	1.06	.95
1/2	1/2	54x8x8	.406	1.12	1.17
5/8	1/2	54x10	.500	1.23	1.17
5/8	3/8	54x10x6	.500	1.23	.98

Female 45° Flare Swivel to Male SAE 45° Elbow (Steel)

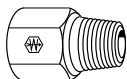


Tube O.D.	Catalog Number	M	N	Hex H	Hex L
3/8	9154x6x6	1.14	1.40	3/4	3/4
1/2	9154x8x8	1.04	1.76	1	7/8
5/8	9154x10x10	1.16	1.92	1-1/4	1

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**B
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S**

Restriction Pipe Adapter (With .0625 Orifice)



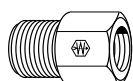
Male and
Fem. Pipe
Thread

Catalog
Number

1/8

1512

Carburetor to Fuel Line Adapter (Ford)



Male
Pipe Thread
Catalog
Number

1/4

1/8

1-2-20

1513

For use with 59x4

Fuel Line Adapter



Inv.
Tube
Size
Male
Pipe
Thread
Catalog
Number

1/2-20

1/8

1514

AC Type Adapter



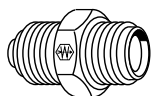
S.A.E.
Tube
Size
Catalog
Number

1/4

1/4

1521

Adapter SAE 45° Flare to Inv. Flare



SAE
Tube
Size
Inverted
Male
Catalog
Number

1/4

3/16

1518

1/4

1/4

1522

3/8

5/16

1553

3/8

3/8

1563

3/8

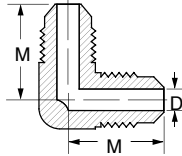
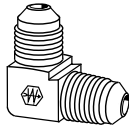
7/16

1554

SAE 45° Flare

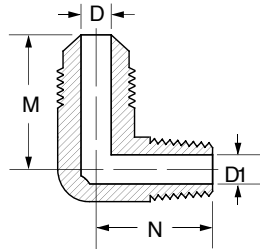
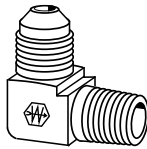
Brass Fittings

Union Elbow (Ref. SAE No. 010201)



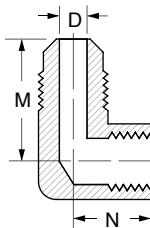
Tube O.D.	Catalog Number	D	M
1/4	55x4*	.188	.86
5/16	55x5*	.219	.91
3/8	55x6*	.281	1.04
1/2	55x8	.406	1.20
5/8	55x10*	.500	1.41

Male Elbow (Ref. SAE No. 010202)



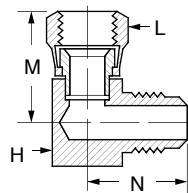
Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
1/8	1/8	49x2	.078	.219	.62	.69
3/16	1/8	49x3	.125	.219	.75	.75
1/4	1/8	49x4	.188	.219	.81	.76
1/4	1/4	49x4x4	.188	.312	.88	.94
1/4	3/8	49x4x6	.188	.375	.94	1.03
5/16	1/8	49x5	.219	.219	.91	.78
5/16	1/4	49x5x4	.219	.312	.95	.92
3/8	1/8	49x6x2	.281	.219	1.03	.91
3/8	1/4	49x6	.281	.312	.97	1.06
3/8	3/8	49x6x6	.281	.406	1.06	1.09
3/8	1/2	49x6x8	.281	.438	1.16	1.28
7/16	1/4	49x7*	.312	.312	1.12	1.06
1/2	1/4	49x8x4	.406	.281	1.22	1.19
1/2	3/8	49x8	.406	.406	1.22	1.12
1/2	1/2	49x8x8	.406	.406	1.26	1.36
5/8	3/8	49x10x6	.500	.410	1.41	1.23
5/8	1/2	49x10	.500	.562	1.41	1.38
3/4	1/2	49x12	.625	.531	1.62	1.50
3/4	3/4	49x12x12	.625	.750	1.59	1.62

Female Elbow (Ref. SAE No. 010203)



Tube O.D.	Fem. Pipe Thread	Catalog Number	D	M	N
3/16	1/8	50x3*	.125	.81	.44
1/4	1/8	50x4	.188	.88	.47
1/4	1/4	50x4x4	.188	.97	.66
5/16	1/8	50x5*	.219	.94	.47
5/16	1/4	50x5x4*	.219	1.03	.66
3/8	1/4	50x6	.281	1.09	.69
3/8	3/8	50x6x6*	.281	1.16	.69
1/2	3/8	50x8*	.406	1.28	.75
1/2	1/2	50x8x8*	.406	1.38	.94
5/8	1/2	50x10	.500	1.50	1.00

90° Elbow 45° Female Swivel to SAE 45° (Steel)



Tube O.D.	Catalog Number	M	N	Hex H	Hex L
3/8	9151x6x6	1.09	1.00	3/4	3/4
1/2	9151x8x8	1.43	1.25	1	7/8
5/8	9151x10x10	1.60	1.44	1-1/4	1

*MTO - Made To Order

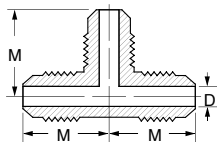
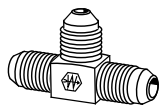
BRASS

BOSTON WEATHERHEAD™



Union Tee

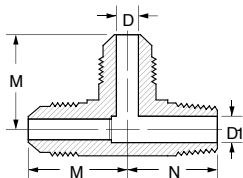
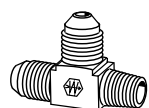
(Ref. SAE No. 010401)



Tube O.D.	Catalog Number	D	M
3/16	44x3♦	.125	.73
1/4	44x4	.188	.86
5/16	44x5♦	.219	.89
3/8	44x6♦	.281	1.04
1/2	44x8	.406	1.20
5/8	44x10♦	.500	1.42

Male Run Tee

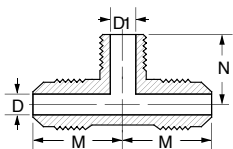
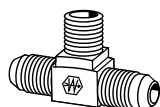
(Ref. SAE No. 010424)



Tube O.D.	Male Pipe Thread	Catalog Number	D	D1 Opt.	M	N
3/16	1/8	51x3♦	.125	.219	.73	.73
1/4	1/8	51x4	.188	.219	.86	.76
5/16	1/8	51x5♦	.219	.219	.89	.76
5/16	1/4	51x5x4x5♦	.219	.312	.97	.97
3/8	1/4	51x6♦	.281	.281	1.04	1.04
3/8	3/8	51x6x6x6♦	.281	.406	1.06	1.09
1/2	3/8	51x8♦	.406	.406	1.20	1.10
1/2	1/2	51x8x8x8♦	.406	.562	1.28	1.38
5/8	1/2	51x10♦	.500	.500	1.42	1.38

Male Branch Tee

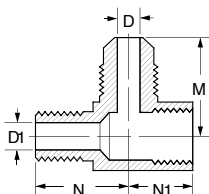
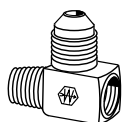
(Ref. SAE No. 010425)



Tube O.D.	Male Pipe Thread	Catalog Number	D	D1	M	N
3/16	1/8	45x3♦	.125	.219	.75	.75
1/4	1/8	45x4	.188	.219	.81	.78
1/4	1/4	45x4x4x4♦	.188	.312	.91	.94
5/16	1/8	45x5♦	.219	.219	.91	.78
5/16	1/4	45x5x5x4♦	.219	.312	.97	.94
3/8	1/4	45x6♦	.281	.344	1.00	1.06
3/8	3/8	45x6x6x6♦	.281	.406	1.06	1.09
1/2	3/8	45x8♦	.406	.406	1.22	1.12
1/2	1/2	45x8x8x8♦	.406	.562	1.28	1.38
5/8	1/2	45x10♦	.500	.562	1.41	1.38
3/4	1/2	45x12♦	.625	.562	1.62	1.50

Adapter Tee

(Female to Male Pipe on Run)



Tube O.D.	M&F Pipe Thread	Catalog Number	D	D1	M	N	N1
3/16	1/8	56x3♦	.125	.188	.78	.75	.47
1/4	1/8	56x4♦	.188	.188	.78	.76	.46



45° Flare Fittings

E

MATERIALS OF CONSTRUCTION	
BODIES:	BRASS
NUTS:	BRASS
O-RINGS:	VITON

NOMENCLATURE	
EXAMPLE: 149F-6-4	ATTRIBUTE:
1 (2)	FORGING (1) EXTRUSION (2)
49	FLARE TO EXTERNAL PIPE, 90° ELBOW
F	FLARE FITTING
6	3/8 TUBE O.D.
4	1/4 PIPE THREAD

APPLICABLE TUBE	
TUBE MATERIAL:	COPPER, BRASS, ALUMINUM, WELDED STEEL HYDRAULIC TUBING THAT CAN BE FLARED.
TUBE O.D.:	1/8, 3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4, 7/8

PRESSURE RANGE		
PSI	TUBE O.D. (IN.)	TUBE WALL (IN.)
2800	1/8	.030
1900	3/16	.030
1400	1/4	.030
1200	5/16	.032
1000	3/8	.032
750	1/2	.032
650	5/8	.035
550	3/4	.035

SPECIFICATIONS	
TEMPERATURE RANGE	FROM -65° TO +250°F
OPERATING FLUID:	WATER, AIR, INERT AND NON-COMBUSTIBLE GASSES, FLAMMABLE LIQUID, FREON,
NOTE:	FOR OTHER TYPES OF FLUID OR GASSES, PLEASE CONSULT FACTORY



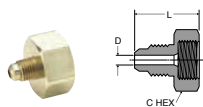
Economical fitting that resists mechanical pullout. Can be assembled and disassembled repeatedly. Listed with Underwriter's Laboratories for flammable liquid, marine, refrigeration and gas applications. Meets functional requirements of SAE J512 and J513.

Assembly Instructions

1. Cut tubing squarely and clean tube end thoroughly to remove burrs.
 2. Place nut onto tube. Place threaded end of nut toward end of tube.
 3. Flare tube end with flaring tool to provide 45° flare.
 4. Clamp tube flare between nut and nose of fitting body by screwing nut on finger-tight. Tighten with a wrench an additional 1/4 to 1/2 turn past finger tight for a metal-to-metal seal.
- Flare fittings are easy to disassemble and may be reassembled repeatedly, for a leak-proof connection.

Refrigerant Drum Adapter 1F

Ref. SAE 010165

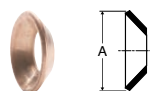


PART NO.	TUBE O.D.	PIPE THREAD	C HEX	L	FLOW DIA. D
1F-4-8	1/4	1/2	1-1/8	1.12	.189
1F-4-12*	1/4	3/4	1-1/4	1.12	.189
1F-6-12*	3/8	3/4	1-1/4	1.24	.282
1F-8-12*	1/2	3/4	1-1/4	1.37	.407

Gasket Furnished with each 1F adapter

Copper Flare Gasket 2GF

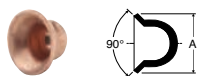
REF. SAE 010113



PART NO.	TUBE SIZE	A
2GF-3	3/16	.32
2GF-4	1/4	.36
2GF-5	5/16	.43
2GF-6	3/8	.56
2GF-8	1/2	.67
2GF-10	5/8	.78
2GF-12	3/4	.97

Seal Bonnet 3GF

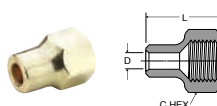
REF. SAE 010114



PART NO.	TUBE SIZE	A
3GF-3	3/16	.32
3GF-4	1/4	.37
3GF-5	5/16	.43
3GF-6	3/8	.56
3GF-8	1/2	.67
3GF-10	5/8	.78
3GF-12	3/4	.97

Long Forged Nut 14FL

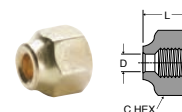
REF. SAE 010167



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
14FL-4	1/4	7/16-20	5/8	.257	.94
14FL-6	3/8	5/8-18	13/16	.382	1.06
14FL-8	1/2	3/4-16	15/16	.507	1.19
14FL-10	5/8	7/8-14	1-1/16	.632	1.44

Short Forged Nut 14FSX

REF. SAE 010166



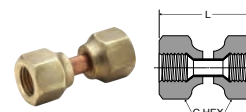
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
14FSX-4	1/4	7/16-20	5/8	.257	.63
14FSX-5	5/16	1/2-20	11/16	.320	.67
14FSX-6	3/8	5/8-18	13/16	.382	.74
14FSX-8	1/2	3/4-16	15/16	.507	.86
14FSX-10	5/8	7/8-14	1-1/16	.632	.97
14FSX-12	3/4	1-1/16-14	1-5/16	.757	1.17

Short Forged Reducing Nuts 14FS

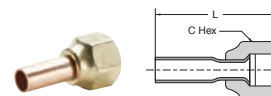
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
14FS-6-4	3/8 TO 1/4	5/8-18	13/16	.257	.74
14FS-8-6	1/2 TO 3/8	3/4-16	15/16	.382	.86
14FS-10-8	5/8 TO 1/2	7/8-14	1-1/16	.507	.99

Swivel Nut Valve Connector 14FSV

REF. SAE 010108



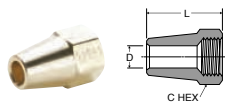
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L MIN.
14FSV-4	1/4	7/16-20	5/8	1.31
14FSV-6	3/8	5/8-18	13/16	1.50
14FSV-8	1/2	3/4-16	15/16	1.75
14FSV-10	5/8	7/8-14	1-1/16	2.00

Flare Adapter US5

PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L
US5-4	1/4	7/16-20	5/8	1.50
US5-6	3/8	5/8-18	13/16	1.58
US5-8	1/2	3/4-16	15/16	1.80
US5-10	5/8	7/8-14	1-1/16	2.18

Long Nut 41FL

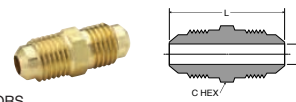
REF. SAE 010111



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L L
41FL-2	1/8	5/16-24	3/8	.133	.75
41FL-3	3/16	3/8-24	7/16	.195	.81
41FL-4	1/4	7/16-20	9/16	.257	.94
41FL-5	5/16	1/2-20	5/8	.320	1.12
41FL-6	3/8	5/8-18	3/4	.382	1.31
41FL-8	1/2	3/4-16	7/8	.507	1.62
41FL-10	5/8	7/8-14	1-1/16	.632	1.88
41FL-12	3/4	1-1/16-14	1-1/4	.757	2.19

Union 42F

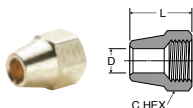
REF. SAE 010101 *THREAD PROTECTORS



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	L D
42F-2	1/8	5/16-24	5/16	.90	.079
42F-3	3/16	3/8-24	3/8	1.04	.125
42F-4	1/4	7/16-20	7/16	1.17	.189
42F-5	5/16	1/2-20	1/2	1.32	.220
42F-6	3/8	5/8-18	5/8	1.48	.282
42F-8	1/2	3/4-16	3/4	1.79	.407
42F-10	5/8	7/8-14	7/8	2.10	.501
42F-12*	3/4	1-1/16-14	1-1/16	2.42	.626
42F-14*	7/8	1-1/4-12	1-1/4	2.72	.751

E**Short Nut 41FS / Shorter Nut 41FX**

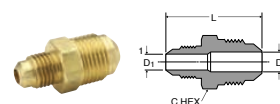
REF. SAE 010110



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L L
41FS-2	1/8	5/16-24	3/8	.132	.50
41FS-3	3/16	3/8-24	7/16	.195	.62
41FS-4	1/4	7/16-20	9/16	.257	.75
41FS-5	5/16	1/2-20	5/8	.320	.88
41FS-6	3/8	5/8-18	3/4	.382	1.00
41FX-6	3/8	5/8-18	3/4	.382	.91
41FS-8	1/2	3/4-16	7/8	.507	1.12
41FX-8	1/2	3/4-16	7/8	.507	1.00
41FS-10	5/8	7/8-14	1-1/16	.632	1.31
41FX-10	5/8	7/8-14	1-1/16	.632	1.06
41FX-12	3/4	1-1/16-14	1-1/4	.757	1.17
41FS-12	3/4	1-1/16-14	1-1/4	.757	1.50
41FS-14	7/8	1-1/4-12	1-1/2	.882	1.62

Union Reducers 42F

REF. SAE 010101



PART NO.	1 TUBE SIZE	2 TUBE SIZE	1 STRAIGHT THREAD	2 STRAIGHT THREAD	C HEX	L	FLOW DIA. D1	FLOW DIA. D2
42F-6-4	1/4	3/8	7/16-20	5/8-18	5/8	1.36	.189	.282
42F-6-5	5/16	3/8	1/2-20	5/8-18	5/8	1.42	.220	.282
42F-8-4	1/4	1/2	7/16-20	3/4-16	3/4	1.54	.189	.407
42F-8-6	3/8	1/2	5/8-18	3/4-16	3/4	1.67	.282	.407
42F-10-6	3/8	5/8	5/8-18	7/8-14	7/8	1.86	.282	.501
42F-10-8	1/2	5/8	3/4-16	7/8-14	7/8	1.98	.407	.501

Flare to Solder 43F

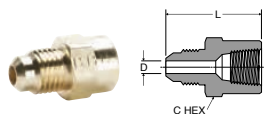
REF. SAE 010104



PART NO.	TUBE SIZE	SOLDER OD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
43F-4-4	1/4	1/4	7/16-20	7/16	.98	.189
43F-4-5	1/4	5/16	7/16-20	7/16	.98	.189
43F-4-6	1/4	3/8	7/16-20	1/2	.98	.189
43F-6-4	3/8	1/4	5/8-18	5/8	1.17	.189
43F-6-5	3/8	5/16	5/8-18	5/8	1.17	.252
43F-6-6	3/8	3/8	5/8-18	5/8	1.17	.282
43F-6-8	3/8	1/2	5/8-18	5/8	1.23	.282
43F-6-10	3/8	5/8	5/8-18	3/4	1.36	.282
43F-8-6	1/2	3/8	3/4-16	3/4	1.36	.314
43F-8-8	1/2	1/2	3/4-16	3/4	1.42	.407
43F-8-10	1/2	5/8	3/4-16	3/4	1.54	.407
43F-10-8	5/8	1/2	7/8-14	7/8	1.60	.440
43F-10-10	5/8	5/8	7/8-14	7/8	1.73	.501
43F-10-12*	5/8	3/4	7/8-14	7/8	1.86	.501
43F-10-14*	5/8	7/8	7/8-14	1	1.98	.501
43F-12-12*	3/4	3/4	1-1/16-14	1-1/16	2.04	.626
43F-12-14*	3/4	7/8	1-1/16-14	1-1/16	2.17	.626

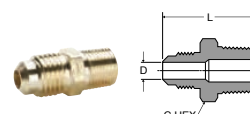
*Comes standard with thread protectors



**Female Connector 46F**

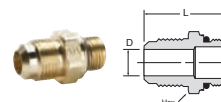
REF. SAE 010103

PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
46F-2-2	1/8	1/8	5/16-24	9/16	.91	.078
46F-3-2	3/16	1/8	3/8-24	9/16	.95	.125
46F-4-2	1/4	1/8	7/16-20	9/16	1.01	.189
46F-4-4	1/4	1/4	7/16-20	11/16	1.23	.189
46F-4-6	1/4	3/8	7/16-20	13/16	1.26	.189
46F-5-2	5/16	1/8	1/2-20	9/16	1.05	.220
46F-5-4	5/16	1/4	1/2-20	11/16	1.26	.220
46F-6-2	3/8	1/8	5/8-18	5/8	1.10	.282
46F-6-4	3/8	1/4	5/8-18	11/16	1.29	.282
46F-6-6	3/8	3/8	5/8-18	13/16	1.36	.282
46F-6-8	3/8	1/2	5/8-18	1	1.60	.282
46F-8-4	1/2	1/4	3/4-16	3/4	1.39	.407
46F-8-6	1/2	3/8	3/4-16	13/16	1.48	.407
46F-8-8	1/2	1/2	3/4-16	1	1.73	.407
46F-8-12*	1/2	3/4	3/4-16	1-1/4	1.79	.407
46F-10-6	5/8	3/8	7/8-14	7/8	1.57	.501
46F-10-8	5/8	1/2	7/8-14	1	1.80	.501
46F-10-12*	5/8	3/4	7/8-14	1-1/4	1.89	.501

**Male Connector 48F**

REF. SAE 010102

PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
48F-2-2	1/8	1/8	5/16-24	7/16	.91	.078
48F-3-2	3/16	1/8	3/8-24	7/16	.98	.125
48F-3-4	3/16	1/4	3/8-24	9/16	1.17	.125
48F-4-2	1/4	1/8	7/16-20	7/16	1.04	.189
48F-4-4	1/4	1/4	7/16-20	9/16	1.23	.189
48F-4-6	1/4	3/8	7/16-20	11/16	1.29	.189
48F-4-8	1/4	1/2	7/16-20	7/8	1.54	.189
48F-5-2	5/16	1/8	1/2-20	1/2	1.14	.220
48F-5-4	5/16	1/4	1/2-20	9/16	1.32	.220
48F-5-6	5/16	3/8	1/2-20	11/16	1.36	.220
48F-6-2	3/8	1/8	5/8-18	5/8	1.23	.220
48F-6-4	3/8	1/4	5/8-18	5/8	1.42	.282
48F-6-6	3/8	3/8	5/8-18	11/16	1.42	.282
48F-6-8	3/8	1/2	5/8-18	7/8	1.67	.282
48F-6-12*	3/8	3/4	5/8-18	1-1/16	1.79	.282
48F-8-4	1/2	1/4	3/4-16	3/4	1.60	.407
48F-8-6	1/2	3/8	3/4-16	3/4	1.60	.407
48F-8-8	1/2	1/2	3/4-16	7/8	1.79	.407
48F-8-12	1/2	3/4	3/4-16	1-1/16	1.92	.407
48F-10-4	5/8	1/4	7/8-14	7/8	1.79	.313
48F-10-6	5/8	3/8	7/8-14	7/8	1.79	.408
48F-10-8	5/8	1/2	7/8-14	7/8	1.98	.501
48F-10-12*	5/8	3/4	7/8-14	1-1/16	2.04	.501
48F-12-8*	3/4	1/2	1-1/16-14	1-1/16	2.17	.563
48F-12-12*	3/4	3/4	1-1/16-14	1-1/16	2.17	.626
48F-14-12*	7/8	3/4	1-1/4-12	1-1/4	2.35	.751

E**Flare to Metric Adaptor 48F-X-MIX**

PART NUMBER	TUBE SIZE	METRIC THREAD	STRAIGHT THREAD TUBE	HEX	L	D
48F-8-M16	1/2	M16 X 1.5	3/4-16	7/8	1.60	.35
48F-10-M127	5/8	M27 X 2.0	7/8-14	1 1/4	1.87	.50
48F-12-M127*	3/4	M27 X 2.0	1 1/16-14	1 1/4	1.99	.63

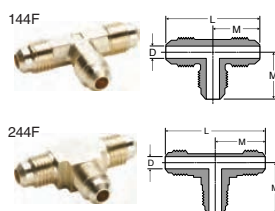
Note: Fluorocarbon o-ring is standard

Flare to SAE Straight Thread 485F

PART NO.	TUBE SIZE	STRAIGHT THREAD	STRAIGHT THREAD TUBE	HEX	L	FLOW DIA. D
485F-12-8*	3/4	3/4-16	1 1/16-14	1 1/16	1.80	.397
485F-12-12*	3/4	1 1/16-12	1 1/16-14	1 1/4	2.03	.615

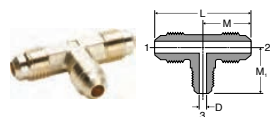
*Comes standard with thread protectors



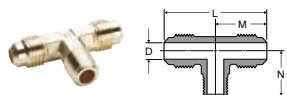
**Union Tee 144F-244F**

REF. SAE 010401

PART NO.	TUBE SIZE	STRAIGHT THREAD	L	M	FLOW DIA. D
144F-3	3/16	3/8-24	1.46	.73	.125
144F-4	1/4	7/16-20	1.72	.86	.189
244F-4	1/4	7/16-20	1.72	.86	.189
144F-5	5/16	1/2-20	1.82	.91	.220
144F-6	3/8	5/8-18	2.08	1.04	.282
144F-8	1/2	3/4-16	2.46	1.23	.407
144F-10	5/8	7/8-14	2.78	1.39	.501

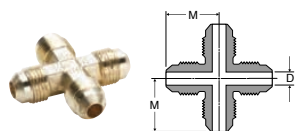
**Union Tee 144F-244F combination sizes**

PART NO.	1 TUBE SIZE	2 TUBE SIZE	3 TUBE SIZE	L	M	M1	FLOW DIA. D
144F-6-6-4	3/8	3/8	1/4	2.08	1.04	.89	.189
144F-8-8-6	1/2	1/2	3/8	2.40	1.20	1.10	.282

**Male Branch Tee 145F**

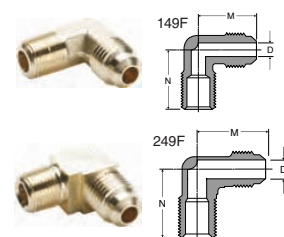
REF. SAE 010425

PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
145F-2-2	1/8	1/8	5/16-24	1.26	.63	.69	.079
145F-4-2	1/4	1/8	7/16-20	1.58	.79	.76	.189
145F-4-4	1/4	1/4	7/16-20	1.78	.89	.92	.189
145F-5-4	5/16	1/4	1/2-20	1.90	.95	.96	.220
145F-6-4	3/8	1/4	5/8-18	1.96	.98	1.05	.282
145F-6-6	3/8	3/8	5/8-18	2.00	1.00	.98	.282
145F-6-8	3/8	1/2	5/8-18	2.28	1.14	1.26	.282
145F-8-6	1/2	3/8	3/4-16	2.40	1.20	1.10	.407
145F-8-8	1/2	1/2	3/4-16	2.46	1.23	1.36	.407
145F-10-8	5/8	1/2	7/8-14	2.78	1.39	1.36	.501

**Cross 147F**

REF. SAE 010501

PART NO.	TUBE SIZE	STRAIGHT THREAD	M	FLOW DIA. D
147F-6	3/8	5/8-18	1.04	.282

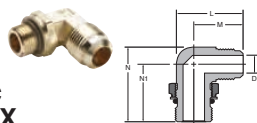
**Male Elbow 149F-249F**

REF. SAE 010202

PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	N	FLOW DIA. D
149F-2-2	1/8	1/8	5/16-24	.63	.69	.079
149F-3-2	3/16	1/8	3/8-24	.75	.75	.125
249F-3-2	3/16	1/8	3/8-24	.73	.73	.125
149F-4-2	1/4	1/8	7/16-20	.79	.76	.189
249F-4-2	1/4	1/8	7/16-20	.79	.76	.189
149F-4-4	1/4	1/4	7/16-20	.89	.92	.189
249F-4-4	1/4	1/4	7/16-20	.89	.92	.189
149F-4-6	1/4	3/8	7/16-20	.92	1.01	.189
249F-4-6	1/4	3/8	7/16-20	.92	1.01	.189
149F-4-8	1/4	1/2	7/16-20	1.02	1.26	.189
149F-5-2	5/16	1/8	1/2-20	.90	.79	.220
249F-5-2	5/16	1/8	1/2-20	.89	.77	.220
149F-5-4	5/16	1/4	1/2-20	.95	.95	.220
249F-5-4	5/16	1/4	1/2-20	.95	.92	.220
149F-5-6	5/16	3/8	1/2-20	.98	1.01	.220
149F-6-2	3/8	1/8	5/8-18	1.01	.90	.220
249F-6-2	3/8	1/8	5/8-18	1.01	.89	.220
149F-6-4	3/8	1/4	5/8-18	1.01	1.05	.282
249F-6-4	3/8	1/4	5/8-18	.98	1.04	.282
149F-6-6	3/8	3/8	5/8-18	1.04	1.07	.282
249F-6-6	3/8	3/8	5/8-18	1.04	1.07	.282
149F-6-8	3/8	1/2	5/8-18	1.15	1.26	.282
249F-6-8	3/8	1/2	5/8-18	1.14	1.26	.282
149F-6-12*	3/8	3/4	5/8-18	1.25	1.38	.282
149F-8-4	1/2	1/4	3/4-16	1.20	1.17	.314
149F-8-6	1/2	3/8	3/4-16	1.20	1.10	.407
249F-8-6	1/2	3/8	3/4-16	1.20	1.10	.407
149F-8-8	1/2	1/2	3/4-16	1.28	1.38	.407
249F-8-8	1/2	1/2	3/4-16	1.26	1.36	.407
149F-8-12*	1/2	3/4	3/4-16	1.38	1.38	.407
149F-10-4	5/8	1/4	7/8-14	1.41	1.25	.314
149F-10-6	5/8	3/8	7/8-14	1.41	1.25	.407
149F-10-8	5/8	1/2	7/8-14	1.40	1.39	.501
249F-10-8	5/8	1/2	7/8-14	1.39	1.36	.501
149F-10-12*	5/8	3/4	7/8-14	1.42	1.48	.501
149F-12-8*	3/4	1/2	1-1/16-14	1.60	1.48	.563
149F-12-12*	3/4	3/4	1-1/16-14	1.60	1.62	.626
149F-14-12*	7/8	3/4	1-1/4-12	1.73	1.67	.751

*Comes standard with thread protectors

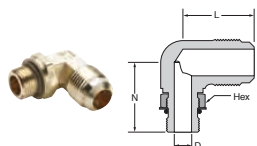
Flare Elbow to SAE Metric Straight Thread 149F-X-MIX



PART NUMBER	TUBE SIZE	METRIC THREAD	STRAIGHT THREAD TUBE	L	M	N	N1	D
149F-10-MI27	5/8	M27 X 2.0	7/8-14	1.95	1.46	2.12	1.63	.501

Note: Fluorocarbon o-ring is standard

Flare Elbow to SAE Straight Thread 1495F

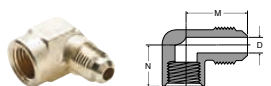


PART NO.	TUBE SIZE	STRAIGHT THREAD	STRAIGHT THREAD TUBE	HEX	L	N	FLOW DIA. D
1495F-12-8*	3/4	3/4-16	1 1/16-14	7/8	1.60	1.60	.398
1495F-12-12*	3/4	1-1/16-12	1 1/16-14	1 1/4	1.59	2.12	.616

Note: Fluorocarbon o-ring is standard

Female Elbow 150F

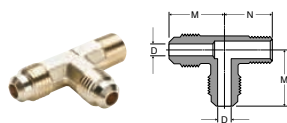
REF. SAE 010203



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	N	FLOW DIA. D
150F-4-2	1/4	1/8	7/16-20	.86	.50	.189
150F-4-4	1/4	1/4	7/16-20	.95	.67	.189
150F-5-4	5/16	1/4	1/2-20	1.01	.67	.220
150F-6-2	3/8	1/8	5/8-18	1.08	.48	.282
150F-6-4	3/8	1/4	5/8-18	1.07	.67	.282
150F-6-6	3/8	3/8	5/8-18	1.14	.67	.282
150F-6-8	3/8	1/2	5/8-18	1.23	.86	.282
150F-8-6	1/2	3/8	3/4-16	1.25	.69	.407
150F-8-8	1/2	1/2	3/4-16	1.36	.92	.407
150F-8-12	1/2	3/4	3/4-16	1.51	.92	.407
150F-10-8*	5/8	1/2	7/8-14	1.48	.98	.501
150F-10-12*	5/8	3/4	7/8-14	1.64	.98	.501

Male Run Tee 151F

REF. SAE 010424

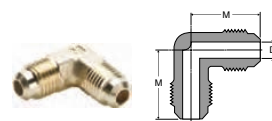


PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	N	FLOW DIA. D
151F-4-2	1/4	1/8	7/16-20	.86	.76	.189
151F-4-4	1/4	1/4	7/16-20	.89	.92	.189
151F-5-4	5/16	1/4	1/2-20	.95	.92	.220
151F-6-4	3/8	1/4	5/8-18	1.04	1.04	.282
151F-6-6	3/8	3/8	5/8-18	1.00	.98	.282
151F-6-8	3/8	1/2	5/8-18	1.16	1.26	.282
151F-8-6	1/2	3/8	3/4-16	1.20	1.10	.407
151F-8-8	1/2	1/2	3/4-16	1.23	1.36	.407
151F-10-8	5/8	1/2	7/8-14	1.39	1.36	.501

*Comes standard with thread protectors

Union Elbow 155F

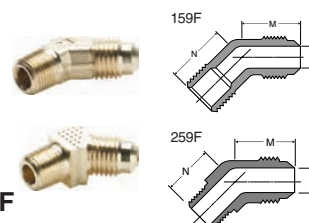
REF. SAE 010201



PART NO.	TUBE SIZE	STRAIGHT THREAD	M	FLOW DIA. D
155F-2	1/8	5/16-24	.64	.079
155F-3	3/16	3/8-24	.73	.125
155F-4	1/4	7/16-20	.86	.189
155F-5	5/16	1/2-20	.92	.220
155F-6	3/8	5/8-18	1.04	.282
155F-8	1/2	3/4-16	1.20	.407
155F-10	5/8	7/8-14	1.39	.501
155F-12*	3/4	1-1/16-14	1.64	.626

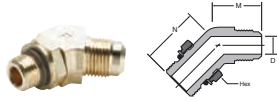
45° Elbow 159F-259F

REF. SAE 010302



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	N	FLOW DIA. D
159F-4-2	1/4	1/8	7/16-20	.78	.56	.189
259F-4-2	1/4	1/8	7/16-20	.65	.62	.189
159F-4-4	1/4	1/4	7/16-20	.75	.84	.189
259F-4-4	1/4	1/4	7/16-20	.73	.84	.189
159F-5-2	5/16	1/8	1/2-20	.76	.65	.220
159F-5-4	5/16	1/4	1/2-20	.75	.81	.220
159F-6-2	3/8	1/8	5/8-18	.89	.67	.220
159F-6-4	3/8	1/4	5/8-18	.89	.86	.282
259F-6-4	3/8	1/4	5/8-18	.91	.86	.282
159F-6-6	3/8	3/8	5/8-18	.91	.93	.282
259F-6-6	3/8	3/8	5/8-18	.91	.93	.282
159F-8-4	1/2	1/4	3/4-16	1.06	.95	.314
159F-8-6	1/2	3/8	3/4-16	1.06	.95	.407
259F-8-6	1/2	3/8	3/4-16	1.04	.93	.407
159F-8-8	1/2	1/2	3/4-16	1.12	1.16	.407
159F-10-6	5/8	3/8	7/8-14	1.13	.95	.407
259F-10-6	5/8	3/8	7/8-14	1.20	1.15	.501
159F-10-8	5/8	1/2	7/8-14	1.21	1.16	.501
259F-10-8	5/8	1/2	7/8-14	1.21	.98	.501
159F-12-8*	3/4	1/2	1-1/16-14	1.28	1.16	.560

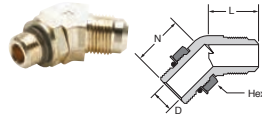
45° Flare Elbow to SAE Metric Straight Thread 159F-X-MIX



PART NUMBER	TUBE SIZE	METRIC THREAD	STRAIGHT THREAD TUBE	HEX	M	N	D
159F-8-M16	1/2	M16 X 1.5	3/4-16	22MM	1.10	1.16	.36
159F-10-M27	5/8	M27 X 2.0	7/8-14	1 1/4	1.21	1.50	.50

Note: Fluorocarbon o-ring is standard

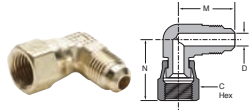
45° Flare to SAE Straight Thread 1595F



PART NO.	TUBE SIZE	STRAIGHT THREAD	STRAIGHT THREAD TUBE	HEX	L	N	FLOW DIA. D
1595F-8-8	1/2	3/4-16	3/4-16	7/8	1.00	1.16	.398
1595F-12-8*	3/4	3/4-16	1 1/16-14	7/8	1.41	1.30	.398
1595F-12-12*	3/4	1 1/16-12	1 1/16-14	1 1/4	1.41	1.45	.615

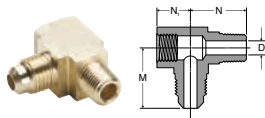
Note: Fluorocarbon o-ring is standard

90° Swivel Elbow 166FSV



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	M	N	FLOW DIA. D
166FSV-4-4	1/4	7/16-20	9/16	.86	.93	.189
166FSV-6-6	3/8	5/8-18	3/4	1.04	1.12	.282
166FSV-8-8	1/2	3/4-16	7/8	1.20	1.29	.407
166FSV-10-10	5/8	7/8-14	1	1.39	1.50	.501
166FSV-12-12*	3/4	1-1/16-14	1-1/4	1.60	1.83	.626

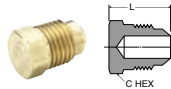
Adapter Tee 256F



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	N	N1	FLOW DIA. D
256F-4-2	1/4	1/8	7/16-20	.86	.77	.47	.220

Flared Seal Plug 639F

REF. SAE 010109

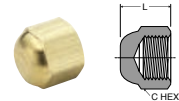


PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L
639F-4	1/4	7/16-20	7/16	.69
639F-5	5/16	1/2-20	1/2	.78
639F-6	3/8	5/8-18	5/8	.88
639F-8	1/2	3/4-16	3/4	1.06
639F-10	5/8	7/8-14	7/8	1.19

*Comes standard with thread protectors
+Should be used with 2GF flare gasket

Cap Nut 640F

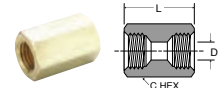
REF. SAE 010112



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L
640F-3	3/16	3/8-24	1/2	.47
640F-4	1/4	7/16-20	9/16	.53
640F-5	5/16	1/2-20	5/8	.62
640F-6	3/8	5/8-18	3/4	.69
640F-8	1/2	3/4-16	7/8	.84
640F-10	5/8	7/8-14	1-1/16	.97

Flared Union-Female Flare to Female Flare 660FHD

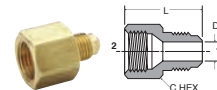
REF. SAE 010107



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
660FHD-4†	1/4	7/16-20	5/8	.98	.251
660FHD-6†	3/8	5/8-18	13/16	1.24	.376
660FHD-8†	1/2	3/4-16	15/16	1.43	.501
660FHD-10†	5/8	7/8-14	1-1/16	1.67	.626

Reducer-Male Flare to Female Flare 661FHD

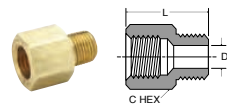
REF. SAE 010105



PART NO.	1 TUBE SIZE	2 TUBE SIZE	1 STRAIGHT THREAD	2 STRAIGHT THREAD	C HEX	L	FLOW DIA. D
661FHD-4-6†	1/4	3/8	7/16-20	5/8-18	13/16	1.20	.189
661FHD-4-8†	1/4	1/2	7/16-20	3/4-16	15/16	1.36	.189
661FHD-6-4†	3/8	1/4	5/8-18	7/16-20	5/8	1.10	.282
661FHD-6-8†	3/8	1/2	5/8-18	3/4-16	15/16	1.42	.282
661FHD-8-6†	1/2	3/8	3/4-16	5/8-18	13/16	1.39	.407
661FHD-8-10†	1/2	5/8	3/4-16	7/8-14	1-1/16	1.67	.407
661FHD-10-8†	5/8	1/2	7/8-14	3/4-16	15/16	1.60	.501
661FHD-10-12*†	5/8	3/4	7/8-14	1-1/16-14	1-5/16	1.95	.501
661FHD-12-10*†	3/4	5/8	1-1/16-14	7/8-14	1-1/16	1.86	.626

Female Flare to Male Pipe Thread 664FHD

REF. SAE 010106



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
664FHD-4-2†	1/4	1/8	7/16-20	5/8	.91	.220
664FHD-4-4†	1/4	1/4	7/16-20	5/8	1.01	.252
664FHD-6-4†	3/8	1/4	5/8-18	13/16	1.28	.345
664FHD-8-6†	1/2	3/8	3/4-16	15/16	1.31	.407