



# FLARE FITTINGS

# FLARE FITTINGS

45° FLARE FITTINGS

INVERTED FLARE FITTINGS



# 45° FLARE FITTINGS



FLARE FITTINGS IS AN ECONOMICAL CHOICE FOR A METAL-TO-METAL SEAL THAT RESISTS MECHANICAL PULLOUT. MEETS FUNCTIONAL REQUIREMENTS OF SAE J512 AND SAE J513.

## Product Features:

- All brass construction
- Resists vibration with use of long nut
- Functional requirements of SAE J512 and J513

## Applications:

- Refrigerant Lines
- Propane
- Fuels
- Adapters

## Markets:

- Refrigeration
- Heavy duty Truck
- Mobile
- Industrial
- Heating
- Air Conditioning

## Compatible Tubing:

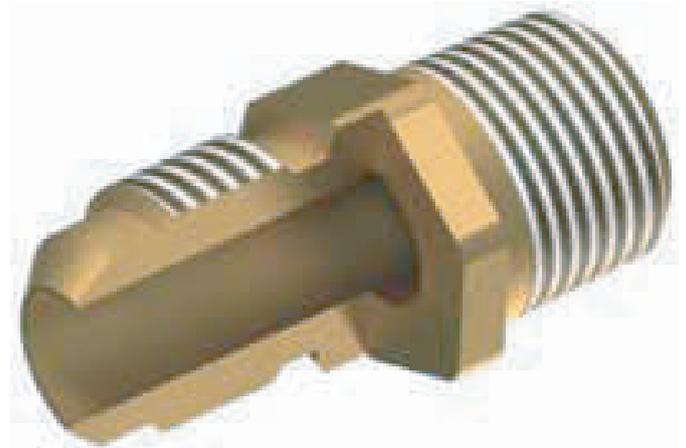
- Copper
- Brass
- Aluminium
- Welded Steel Hydraulic Tubing

## Specifications:

Temperature Range: 0.65° to +250° F (-53.8° to +121.1° C)

## Pressure Range

TUBE SIZE	PSI	bar	TUBE SIZE	PSI	bar
1/8	2800	193.0	3/8	1000	68.9
3/16	1900	131.0	1/2	750	51.7
1/4	1400	96.5	5/8	650	44.8
5/16	1200	82.7	3/4	550	37.9

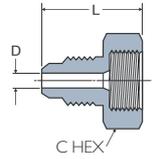


## Assembly Instructions:

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 45o flare.
4. Clamp tube flare between nut and nose of fitting body by screwing nut on finger-tight.
5. Tighten with a wrench an additional 1/4 to 1/2 turn past finger-tight for a metal-to-metal seal.



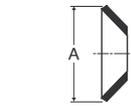
# 45° FLARE FITTINGS



**Refrigerant Drum Adapter** 1F  
REF. SAE 010165

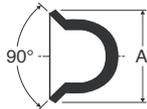
PART NO.	TUBE O.D.	PIPE THREAD	C HEX	L	FLOW DIA. D
AI 1F-4-8	1/4	1/2	1-1/8	1.12	.189
AI 1F-4-12*	1/4	3/4	1-1/4	1.12	.189
AI 1F-6-12*	3/8	3/4	1-1/4	1.24	.282
AI 1F-8-12*	1/2	3/4	1-1/4	1.37	.407

Gasket Furnished with each 1F adapter



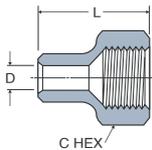
**Copper Flare Gasket** 2GF  
REF. SAE 010113

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



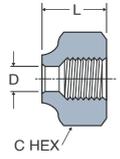
**Seal Bonnet** 3GF  
REF. SAE 010114

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



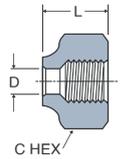
**Long Forged Nut** 14FL  
REF. SAE 010167

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



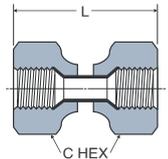
**Short Forged Nut** 14FSX  
REF. SAE 010166

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



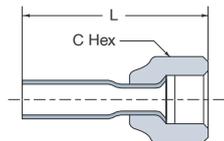
**Short Forged Reducing Nuts** 14FS

PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
AI 14FS-6-4	3/8 TO 1/4	5/8-18	13/16	.257	.74
AI 14FS-8-6	1/2 TO 3/8	3/4-16	15/16	.382	.86
AI 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.
AI 14FSV-4	1/4	7/16-20	5/8	1.31
AI 14FSV-6	3/8	5/8-18	13/16	1.50
AI 14FSV-8	1/2	3/4-16	15/16	1.75
AI 14FSV-10	5/8	7/8-14	1-1/16	2.00



**Flare Adapter** US5

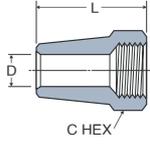
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L
AI US5-4	1/4	7/16-20	5/8	1.50
AI US5-6	3/8	5/8-18	13/16	1.58
AI US5-8	1/2	3/4-16	15/16	1.80



# 45° FLARE FITTINGS

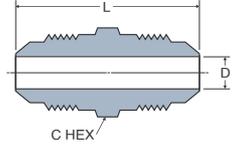


## Long Nut 41FL REF. SAE 010111

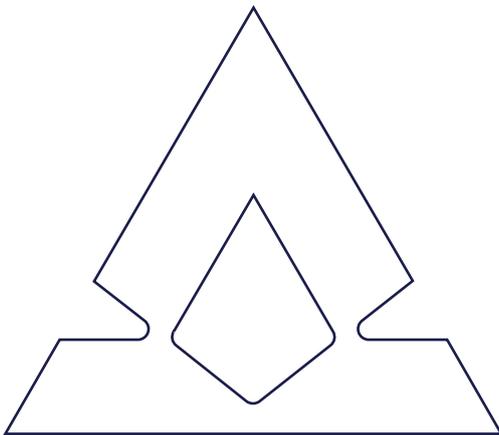


PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
Al 41FL-2	1/8	5/16-24	3/8	.133	.75
Al 41FL-3	3/16	3/8-24	7/16	.195	.81
Al 41FL-4	1/4	7/16-20	9/16	.257	.94
Al 41FL-5	5/16	1/2-20	5/8	.320	1.12
Al 41FL-6	3/8	5/8-18	3/4	.382	1.31
Al 41FL-8	1/2	3/4-16	7/8	.507	1.62
Al 41FL-10	5/8	7/8-14	1-1/16	.632	1.88
Al 41FL-12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

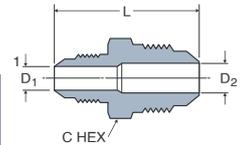
## Union 42F REF. SAE 010101 \*THREAD PROTECTORS



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

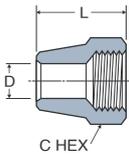


## Union Reducers 42F REF. SAE 010101



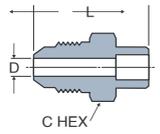
PART NO.	1 TUBE SIZE	2 TUBE SIZE	1 STRAIGHT THREAD	2 STRAIGHT THREAD	C HEX	L	FLOW DIA. D1	DIA. D2
Al 42F-6-4	1/4	3/8	7/16-20	5/8-18	5/8	1.36	.189	.282
Al 42F-6-5	5/16	3/8	1/2-20	5/8-18	5/8	1.42	.220	.282
Al 42F-8-4	1/4	1/2	7/16-20	3/4-16	3/4	1.54	.189	.407
Al 42F-8-6	3/8	1/2	5/8-18	3/4-16	3/4	1.67	.282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

## Short Nut 41FS / Shorter Nut 41FX REF. SAE 010110



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

## Flare to Solder 43F REF. SAE 010104



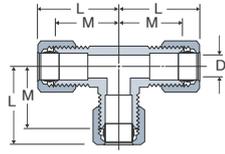
PART NO.	TUBE SIZE	SOLDER OD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
Al 43F-4-4	1/4	1/4	7/16-20	7/16	.98	.189
Al 43F-4-5	1/4	5/16	7/16-20	7/16	.98	.189
Al 43F-4-6	1/4	3/8	7/16-20	1/2	.98	.189
Al 43F-6-4	3/8	1/4	5/8-18	5/8	1.17	.189
Al 43F-6-5	3/8	5/16	5/8-18	5/8	1.17	.252
Al 43F-6-6	3/8	3/8	5/8-18	5/8	1.17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



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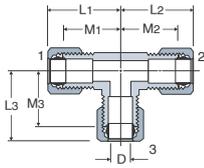


## Union Tee 164C- 264C REF. SAE 060401 BA



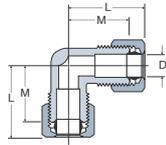
PART NO.	TUBE SIZE	STRAIGHT THREAD	L	M	FLOW DIA. D
Al 164C-2	1/8	5/16-24	.82	.61	.094
Al 264C-3	3/16	3/8-24	.84	.60	.125
Al 164C-4	1/4	7/16-24	.86	.63	.188
Al 264C-4	1/4	7/16-24	.84	.60	.188
Al 164C-5	5/16	1/2-24	.98	.71	.250
Al 164C-6	3/8	9/16-24	1.03	.74	.312
Al 164C-8	1/2	11/16-20	1.34	.93	.406
Al 164C-10	5/8	13/16-18	1.54	1.08	.500
Al 164C-12	3/4	1.00-18	1.65	1.17	.563

## Union Tee 164C- 264C Combination Sizes REF. SAE 060401 BA



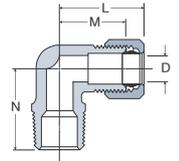
PART NO.	1 TUBE SIZE	2 TUBE SIZE	3 TUBE SIZE	L1	L2	L3	M1	M2	M3	FLOW DIAD
Al 164C-6-4-4	3/8	1/4	1/4	1.03	.96	.96	.75	.72	.72	.188
Al 164C-6-6-4	3/8	3/8	1/4	1.03	.96	.96	.75	.75	.72	.188
Al 164C-8-8-6	1/2	1/2	3/8	1.34	1.16	1.16	.94	.94	.88	.312

## Union Elbow 165C- 265C REF. SAE 060201 BA



PART NO.	TUBE SIZE	STRAIGHT THREAD	L	M	FLOW DIA. D
Al 165C-2	1/8	5/16-24	.82	.61	.094
Al 165C-3	3/16	3/8-24	.87	.61	.125
Al 165C-4	1/4	7/16-24	.88	.61	.188
Al 265C-4	1/4	7/16-24	.84	.60	.188
Al 165C-5	5/16	1/2-24	.95	.71	.250
Al 165C-6	3/8	9/16-24	1.03	.74	.312
Al 165C-7	7/16	5/3-24	1.16	.82	.312
Al 165C-8	1/2	11/16-20	1.34	.93	.406
Al 165C-10	5/8	13/16-18	1.48	1.05	.500
Al 165C-12	3/4	1-18	1.65	1.17	.563

## Male Elbow 169C- 269C REF. SAE 060202 BA

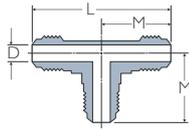


PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
Al 169C-2-1	1/8	1/16	5/16-24	.81	.60	.67	.095
Al 269C-2-2	1/8	1/8	5/16-24	.80	.60	.67	.094
Al 169C-3-1	3/16	1/16	3/8-24	.85	.61	.67	.126
Al 169C-3-2	3/16	1/8	3/8-24	.84	.61	.69	.125
Al 269C-3-2	3/16	1/8	3/8-24	.84	.60	.67	.125
Al 169C-3-4	3/16	1/4	3/8-24	.86	.64	.93	.125
Al 169C-4-2	1/4	1/8	7/16-24	.86	.61	.74	.188
Al 269C-4-2	1/4	1/8	7/16-24	.84	.60	.73	.188
Al 169C-4-4	1/4	1/4	7/16-24	.86	.62	.94	.188
Al 269C-4-4	1/4	1/4	7/16-24	.84	.60	.79	.188
Al 169C-4-6	1/4	3/8	7/16-24	.93	.68	1.00	.188
Al 169C-5-2 <sup>†</sup>	5/16	1/8	1/2-24	.88	.61	.74	.234
Al 269C-5-2 <sup>†</sup>	5/16	1/8	1/2-24	.86	.60	.73	.250
Al 169C-5-4	5/16	1/4	1/2-24	.95	.71	.93	.250
Al 269C-5-4	5/16	1/4	1/2-24	.93	.67	.82	.250
Al 169C-5-6	5/16	3/8	1/2-24	1.01	.75	1.00	.250
Al 169C-6-2 <sup>†</sup>	3/8	1/8	9/16-24	1.03	.74	.74	.234
Al 269C-6-2 <sup>†</sup>	3/8	1/8	9/16-24	.97	.69	.75	.220
Al 169C-6-4	3/8	1/4	9/16-24	1.03	.74	.93	.312
Al 269C-6-4	3/8	1/4	9/16-24	1.01	.73	.92	.312
Al 169C-6-6	3/8	3/8	9/16-24	1.03	.75	1.00	.312
Al 269C-6-6	3/8	3/8	9/16-24	1.12	.84	.97	.312
Al 169C-6-8	3/8	1/2	9/16-24	1.22	.94	1.27	.312
Al 269C-7-6	7/16	3/8	5/8-24	1.16	.82	.98	.312
Al 169C-8-4 <sup>†</sup>	1/2	1/4	11/16-20	1.34	.94	1.00	.312
Al 169C-8-6	1/2	3/8	11/16-20	1.34	.93	1.11	.406
Al 169C-8-8	1/2	1/2	11/16-20	1.48	1.00	1.37	.406
Al 169C-10-8	5/8	1/2	13/16-18	1.48	1.06	1.31	.500
Al 169C-12-8	3/4	1/2	1-18	1.64	1.18	1.49	.562
Al 169C-12-12	3/4	3/4	1-18	1.70	1.27	1.58	.562

<sup>†</sup> For these parts the pipe thread through hole is smaller than the through hole on the flare end.

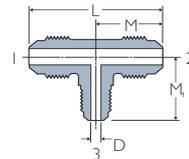


# 45° FLARE FITTINGS



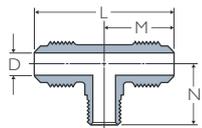
## Union Tee 144F- 244F REF. SAE 010401

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



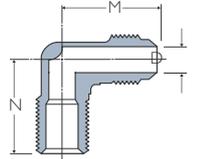
## Union Tee 144F combination sizes

PART NO.	1 TUBE SIZE	2 TUBE SIZE	3 TUBE SIZE	L	M	M1	FLOW DIA. D
Al 144F-6-6-4	3/8	3/8	1/4	2.08	1.04	.89	.189
Al 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
Al 145F-2-2	1/8	1/8	5/16-24	1.26	.63	.69	.079
Al 145F-4-2	1/4	1/8	7/16-20	1.58	.79	.76	.189
Al 145F-4-4	1/4	1/4	7/16-20	1.78	.89	.92	.189
Al 145F-5-4	5/16	1/4	1/2-20	1.90	.95	.96	.220
Al 145F-6-4	3/8	1/4	5/8-18	1.96	.98	1.05	.282
Al 145F-6-6	3/8	3/8	5/8-18	2.00	1.00	.98	.282
Al 145F-6-8	3/8	1/2	5/8-18	2.28	1.14	1.26	.282
Al 145F-8-6	1/2	3/8	3/4-16	2.40	1.20	1.10	.407
Al 145F-8-8	1/2	1/2	3/4-16	2.46	1.23	1.36	.407
Al 145F-10-8	5/8	1/2	7/8-14	2.78	1.39	1.36	.501



## Male Elbow 149F- 249F REF. SAE 010202

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

\* For these parts the pipe thread through hole is smaller than the through hole on the flare end.

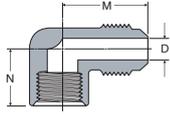


# 45° FLARE FITTINGS



## Female Elbow 150F

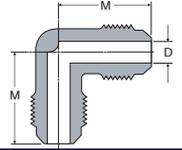
REFSAE 010203



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	N	FLOW DIA. D
AX150F-4-2	1/4	1/8	7/16-20	.86	.50	.189
AX150F-4-4	1/4	1/4	7/16-20	.95	.67	.189
AX150F-5-4	5/16	1/4	1/2-20	1.01	.67	.220
AX150F-6-2	3/8	1/8	5/8-18	1.08	.48	.282
AX150F-6-4	3/8	1/4	5/8-18	1.07	.67	.282
AX150F-6-6	3/8	3/8	5/8-18	1.14	.67	.282
AX150F-6-8	3/8	1/2	5/8-18	1.23	.86	.282
AX150F-8-6	1/2	3/8	3/4-16	1.25	.69	.407
AX150F-8-8	1/2	1/2	3/4-16	1.36	.92	.407
AX150F-8-12	1/2	3/4	3/4-16	1.51	.92	.407
AX150F-10-8*	5/8	1/2	7/8-14	1.48	.98	.501
AX150F-10-12*	5/8	3/4	7/8-14	1.64	.98	.501

## Union Elbow 155F

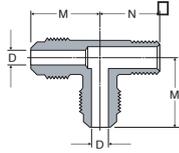
REFSAE 010201



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	FLOW DIA. D
AX155F-2	1/8	5/16-24		.64	.079
AX155F-3	3/16	3/8-24		.73	.125
AX155F-4	1/4	7/16-20		.86	.189
AX155F-5	5/16	1/2-20		.92	.220
AX155F-6	3/8	5/8-18		1.04	.282
AX155F-8	1/2	3/4-16		1.20	.407
AX155F-10	5/8	7/8-14		1.39	.501
AX155F-12*	3/4	1-1/16-14		1.64	.626

## Male Run Tee 151F

REFSAE 010424

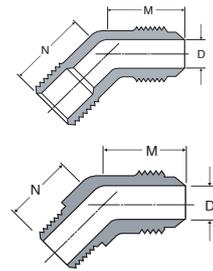


PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	N	FLOW DIA. D
AX151F-4-2	1/4	1/8	7/16-20	.86	.76	.189
AX151F-4-4	1/4	1/4	7/16-20	.89	.92	.189
AX151F-5-4	5/16	1/4	1/2-20	.95	.92	.220
AX151F-6-4	3/8	1/4	5/8-18	1.04	1.04	.282
AX151F-6-6	3/8	3/8	5/8-18	1.00	.98	.282
AX151F-6-8	3/8	1/2	5/8-18	1.16	1.26	.282
AX151F-8-6	1/2	3/8	3/4-16	1.20	1.10	.407
AX151F-8-8	1/2	1/2	3/4-16	1.23	1.36	.407
AX151F-10-8	5/8	1/2	7/8-14	1.39	1.36	.501

\*Comes standard with thread protectors

## 45° Elbow 159F-259F

REFSAE 010302



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

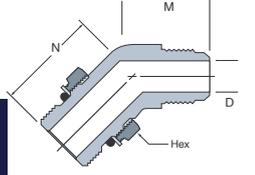
<sup>†</sup>For these parts the pipe thread through hole is smaller than the through hole on the flare end.



# 45° FLARE FITTINGS



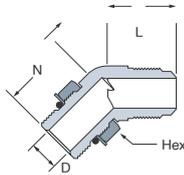
## 45° Flare Elbow to SAE Metric Straight Thread 159F-X-MIX



PART NUMBER	TUBE SIZE	METRIC THREAD	STRAIGHT THREAD TUBE	HEX	M	N	D
AI 159F-8-M16	1/2	M16 X 1.5	3/4-16	22MM	1.10	1.16	.36
AI 159F-10-M127	5/8	M27 X 2.0	7/8-14	1 1/4	1.21	1.50	.50

Note: Fluorocarbon o-ring is standard

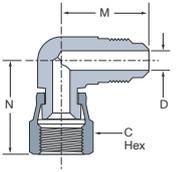
## 45° Flare to SAE Straight Thread 1595F



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

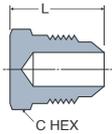
Note: Fluorocarbon o-ring is standard

## 90° Swivel Elbow 166FSV



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

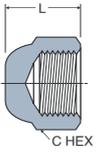
## Flared Seal Plug 639F REF. SAE 010109



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

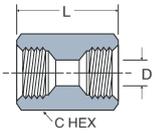
\*Comes standard with thread protectors  
Should be used with 2GF flare gasket

## Cap Nut 640F REF. SAE 010112



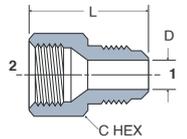
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L
AI 640F-3 <sup>†</sup>	3/16	3/8-24	1/2	.47
AI 640F-4 <sup>†</sup>	1/4	7/16-20	9/16	.53
AI 640F-5 <sup>†</sup>	5/16	1/2-20	5/8	.62
AI 640F-6 <sup>†</sup>	3/8	5/8-18	3/4	.69
AI 640F-8 <sup>†</sup>	1/2	3/4-16	7/8	.84
AI 640F-10 <sup>†</sup>	5/8	7/8-14	1-1/16	.97

## Flared Union-Female Flare to Female Flare 660FHD REF. SAE 010107



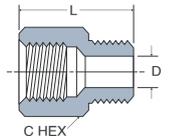
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
AI 660FHD-4 <sup>†</sup>	1/4	7/16-20	5/8	.98	.251
AI 660FHD-6 <sup>†</sup>	3/8	5/8-18	13/16	1.24	.376
AI 660FHD-8 <sup>†</sup>	1/2	3/4-16	15/16	1.43	.501
AI 660FHD-10 <sup>†</sup>	5/8	7/8-14	1-1/16	1.67	.626

## 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
AI 661FHD-4-6 <sup>†</sup>	1/4	3/8	7/16-20	5/8-18	13/16	1.20	.189
AI 661FHD-4-8 <sup>†</sup>	1/4	1/2	7/16-20	3/4-16	15/16	1.36	.189
AI 661FHD-6-4 <sup>†</sup>	3/8	1/4	5/8-18	7/16-20	5/8	1.10	.282
AI 661FHD-6-8 <sup>†</sup>	3/8	1/2	5/8-18	3/4-16	15/16	1.42	.282
AI 661FHD-8-6 <sup>†</sup>	1/2	3/8	3/4-16	5/8-18	13/16	1.39	.407
AI 661FHD-8-10 <sup>†</sup>	1/2	5/8	3/4-16	7/8-14	1-1/16	1.67	.407
AI 661FHD-10-8 <sup>†</sup>	5/8	1/2	7/8-14	3/4-16	15/16	1.60	.501
AI 661FHD-10-12* <sup>†</sup>	5/8	3/4	7/8-14	1-1/16-14	1-5/16	1.95	.501
AI 661FHD-12-10* <sup>†</sup>	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
AI 664FHD-4-2 <sup>†</sup>	1/4	1/8	7/16-20	5/8	.91	.220
AI 664FHD-4-4 <sup>†</sup>	1/4	1/4	7/16-20	5/8	1.01	.252
AI 664FHD-6-4 <sup>†</sup>	3/8	1/4	5/8-18	13/16	1.28	.345
AI 664FHD-8-6 <sup>†</sup>	1/2	3/8	3/4-16	15/16	1.31	.407



# INVERTED FLARE FITTINGS



Inverted Flare Fittings offers a metal-to-metal seal that is internal to the fitting for tighter tube bends. These fittings are listed with UL and meets the functional requirements of SAE J512.

## Product Features:

- All brass construction
- Meets functional requirements of SAE J512
- Steel nut for economy

## Applications:

- Refrigerant Lines
- Brake lines
- Fuel lines

## Markets:

- Air Conditioning
- Marine
- Mobile
- Engines

## Compatible Tubing:

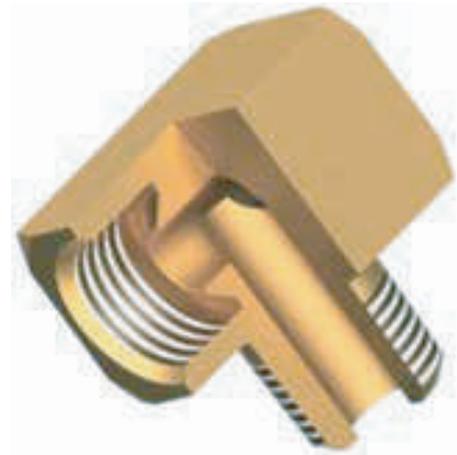
- Copper
- Brass
- Aluminium
- Welded Steel Hydraulic Tubing

## Specifications:

Temperature Range: 0.65° to +250° F (-53.8° to +121.1° C)

## Pressure Range:

TUBE SIZE	PSI	bar	TUBE SIZE	PSI	bar
1/8	2800	193.0	3/8	1000	68.9
3/16	1900	131.0	1/2	750	51.7
1/4	1400	96.5	5/8	650	44.8
5/16	1200	82.7	3/4	550	37.9



## Assembly Instructions:

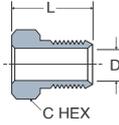
1. Cut tubing squarely and clean to remove burrs.
2. Place nut onto tube. Place threaded end of nut toward end of tube
3. Flare tube end with flaring tool to provide 45° flare.
4. On thin wall copper, welded or brazed tubing, use double flare to prevent pinch-off or cracked flares
5. Clamp tube flare between nut and nose of fitting body by screwing nut on finger tight. Tighten nut with a wrench an additional 1/4 to 1/22 turn past finger tight for a metal-to-metal seal.



# INVERTED FLARE FITTINGS

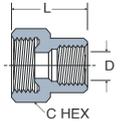


## Nut 41F REF. SAE 040110



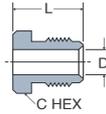
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	D
Al 41F-2	1/8	5/16-28	5/16	.52	.133
Al 41F-3	3/16	3/8-24	3/8	.56	.196
Al 41F-4	1/4	7/16-24	7/16	.56	.259
Al 41F-5	5/16	1/2-20	1/2	.62	.321
Al 41F-6	3/8	5/8-18	5/8	.66	.384
Al 41F-8	1/2	3/4-18	3/4	.74	.508

## Female Connector 46IFHD REF. SAE 040103



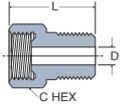
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
Al 46IFHD-3-2	3/16	1/8	3/8-24	1/2	.76	.125
Al 46IFHD-4-2	1/4	1/8	7/16-24	17/32	.78	.189
Al 46IFHD-5-2	5/16	1/8	1/2-20	19/32	.79	.220
Al 46IFHD-6-4	3/8	1/4	5/8-18	3/4	1.04	.282
Al 46IFHD-8-6	1/2	3/8	3/4-18	29/32	1.10	.407

## Piloted Nut 41IFF for Single Flared Tubing REF. SAE 040110



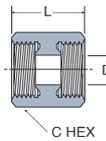
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	D
Al 41IFF-2	1/8	5/16-28	5/16	.52	.133
Al 41IFF-3	3/16	3/8-24	3/8	.56	.196
Al 41IFF-4	1/4	7/16-24	7/16	.56	.259
Al 41IFF-5	5/16	1/2-20	1/2	.62	.321
Al 41IFF-6	3/8	5/8-18	5/8	.66	.384
Al 41IFF-8	1/2	3/4-18	3/4	.74	.508

## Male Connector 48IFHD REF. SAE 040102



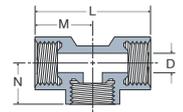
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
Al 48IFHD-2-2	1/8	1/8	5/16-28	13/32	.63	.078
Al 48IFHD-3-2	3/16	1/8	3/8-24	15/32	.70	.125
Al 48IFHD-4-2	1/4	1/8	7/16-24	17/32	.74	.189
Al 48IFHD-4-4	1/4	1/4	7/16-24	9/16	.89	.189
Al 48IFHD-5-2	5/16	1/8	1/2-20	19/32	.79	.220
Al 48IFHD-5-4	5/16	1/4	1/2-20	19/32	.98	.220
Al 48IFHD-6-2	3/8	1/8	5/8-18	3/4	.89	.220
Al 48IFHD-6-4	3/8	1/4	5/8-18	3/4	1.03	.282
Al 48IFHD-6-6	3/8	3/8	5/8-18	3/4	1.03	.282
Al 48IFHD-8-4	1/2	1/4	3/4-18	29/32	1.07	.346
Al 48IFHD-8-6	1/2	3/8	3/4-18	29/32	1.07	.407
Al 48IFHD-8-8	1/2	1/2	3/4-18	29/32	1.26	.407
Al 48IFHD-10-8	5/8	1/2	7/8-18	1-1/16	1.32	.533
Al 48IFHD-12-12	3/4	3/4	1-1/16-16	1 1/4	1.38	.626

## Union 42IFHD REF. SAE 040101



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	D
Al 42IFHD-2	1/8	5/16-28	13/32	.60	.078
Al 42IFHD-3	3/16	3/8-24	15/32	.63	.125
Al 42IFHD-4	1/4	7/16-24	17/32	.63	.189
Al 42IFHD-5	5/16	1/2-20	19/32	.71	.220
Al 42IFHD-6	3/8	5/8-18	3/4	.81	.282
Al 42IFHD-8	1/2	3/4-18	29/32	.92	.407

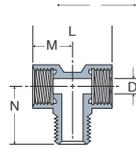
## Union Tee244IFHD REF. SAE 040401



PART NO.	TUBE SIZE	STRAIGHT THREAD	L	M	N	FLOW DIA. D
Al 244IFHD-3	3/16	3/8-24	1.10	.55	.39	.125
Al 244IFHD-4	1/4	7/16-24	1.13	.56	.42	.189
Al 244IFHD-5	5/16	1/2-20	1.26	.63	.45	.220
Al 244IFHD-6	3/8	5/8-18	1.48	.74	.56	.282
Al 244IFHD-8*	1/2	3/4-18	1.76	.88	.67	.407

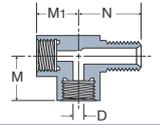


# INVERTED FLARE FITTINGS



**Male Branch Tee 245IFHD**  
REF. SAE 040425

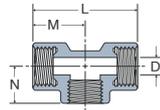
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI 245IFHD-4-2	1/4	1/8	7/16-24	.85	.43	.64	.189
AI 245IFHD-6-4	3/8	1/4	5/8-18	1.17	.58	.94	.282



**Male Run Tee 251IFHD**  
REF. SAE 040424

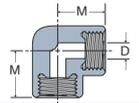
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	M1	N	FLOW DIA. D
AI 251IFHD-3-2	3/16	1/8	3/8-24	.39	.53	.72	.125
AI 251IFHD-5-2	5/16	1/8	1/2-20	.45	.62	.85	.220
AI 251IFHD-6-4	3/8	1/4	5/8-18	.56	.75	1.08	.282

**Female Branch Tee 252IFHD**  
REF. SAE 040427



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI 252IFHD-5-2	5/16	1/8	1/2-20	1.26	.63	.45	.220
AI 252IFHD-6-4	3/8	1/4	5/8-18	1.48	.74	.56	.282

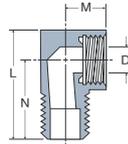
**Union Elbow 255IFHD**



PART NO.	TUBE SIZE	STRAIGHT THREAD	M	FLOW DIA. D
AI 255IFHD-4*	1/4	7/16-24	.55	.189

\*Does not meet SAE or UL.

**Male Elbow 249IFHD- 249IF**  
REF. SAE 040202

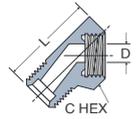


PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI 249IFHD-2-2	1/8	1/8	5/16-28	.79	.27	.58	.078
AI 249IFHD-3-2	3/16	1/8	3/8-24	.85	.27	.61	.125
AI 249IFHD-4-2 <sup>†</sup>	1/4	1/8	7/16-24	.92	.33	.65	.189
AI 249IFHD-4-4	1/4	1/4	7/16-24	1.10	.28	.82	.189
AI 249IFHD-5-4	5/16	1/4	1/2-20	1.16	.45	.86	.220
AI 249IFHD-6-2 <sup>†</sup>	3/8	1/8	5/8-18	1.13	.53	.76	.220
AI 249IF-6-4 <sup>†</sup>	3/8	1/4	5/8-18	1.26	.45	.92	.282
AI 249IFHD-6-4	3/8	1/4	5/8-18	1.32	.53	.95	.282
AI 249IFHD-6-6	3/8	3/8	5/8-18	1.32	.50	.94	.282
AI 249IFHD-8-4 <sup>†</sup>	1/2	1/4	3/4-18	1.48	.59	1.02	.407
AI 249IF-8-6 <sup>†</sup>	1/2	3/8	3/4-18	1.42	.53	.99	.407
AI 249IFHD-8-6 <sup>†</sup>	1/2	3/8	3/4-18	1.48	.59	1.02	.407
AI 249IFHD-8-8	1/2	1/2	3/4-18	1.67	.66	1.22	.407
AI 249IFHD-10-6 <sup>†</sup>	5/8	3/8	7/8-18	1.62	.67	1.09	.531
AI 249IFHD-10-8 <sup>†</sup>	5/8	1/2	7/8-18	1.82	.67	1.29	.533

<sup>†</sup>Light Duty Series

+For these parts the pipe thread through hole is smaller than the through<sup>h</sup> hole on the flare end.

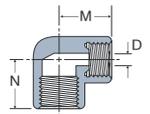
**45° Elbow 259IFHD**  
REF. SAE 040302



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
AI 259IFHD-3-2	3/16	1/8	3/8-24	17/32	.88	.125
AI 259IFHD-4-2	1/4	1/8	7/16-24	9/16	.94	.189
AI 259IFHD-5-2	5/16	1/8	1/2-20	5/8	1.00	.220
AI 259IFHD-5-4	5/16	1/4	1/2-20	5/8	1.16	.220
AI 259IFHD-6-4*	3/8	1/4	5/8-18	13/16	1.34	.282
AI 259IFHD-8-6	1/2	3/8	3/4-18	7/8	1.44	.407
AI 259IFHD-10-8	5/8	1/2	7/8-18	1-1/16	1.75	.533

\*Does not meet SAE or UL.

**Female Elbow 250IFHD**  
REF. SAE 040203



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	N	FLOW DIA. D
AI 250IFHD-3-2	3/16	1/8	3/8-24	.50	.49	.125
AI 250IFHD-4-2	1/4	1/8	7/16-24	.53	.53	.189
AI 250IFHD-5-2	5/16	1/8	1/2-20	.59	.59	.220
AI 250IFHD-6-4	3/8	1/4	5/8-18	.67	.68	.282





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