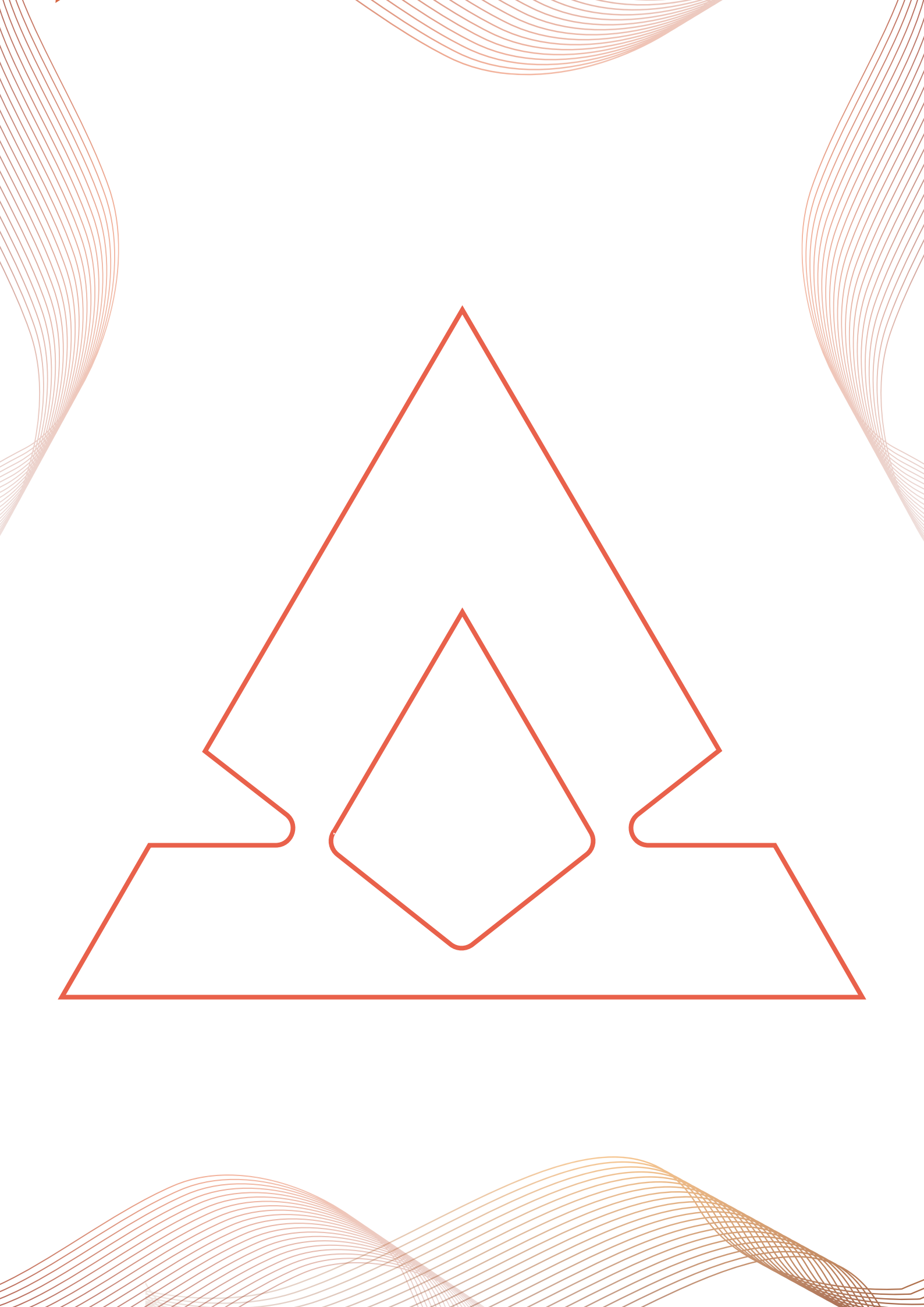




COMPANY
PROFILE
Brass Fittings





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AQURA STORY ABOUT US



Every single pursuit towards excellence has its roots firmly set in the courage to dream and having a single-minded focus on fulfilling them. Backed by long industry experience, fuelled by young enthusiasm and steered by farsighted vision, **Aqura Group's journey** from Jamnagar, Gujarat in the world of brass manufacturing industry is motivated by this philosophy where the dream is to establish a new benchmark of brilliance and innovation in the industry. The company believes in a deep-rooted dynamism and dedication towards achieving the goal. **Aqura Group** has a team of experienced, astute and technically expert directors who are holding the bastions of excellence with their shared focus energy helping the group finding its firm presence in the industry.

For more than three decades, **Aqura Group** – an ISO 9001: 2015 certified company is a leading and reputed name in the organised brass sector delivering engineering brass component solution to range of industries both nationally and internationally.





APPLICATION DATA

1.1 VISUAL INDEX


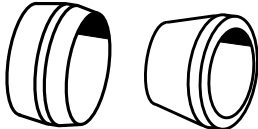
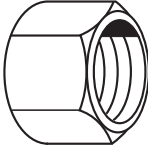
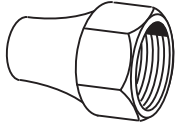

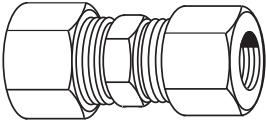
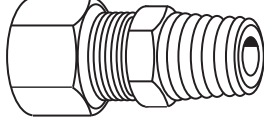
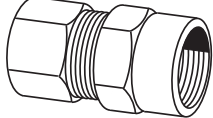
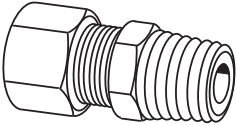
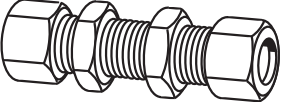
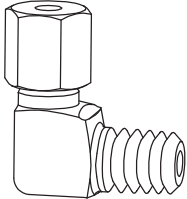
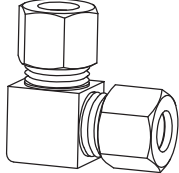
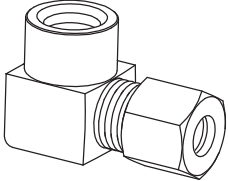
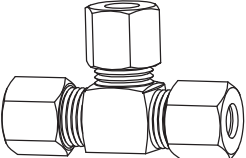
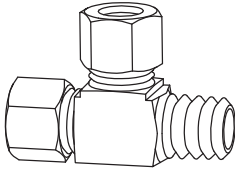
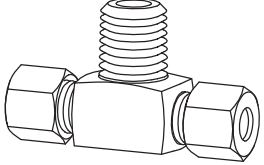
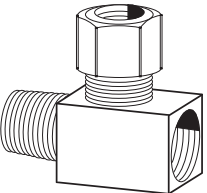
1.2 NUMBERING SYSTEM

1.3 THREAD IDENTIFICATION



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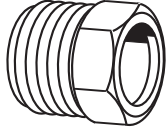
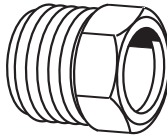
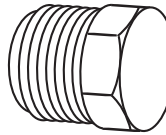
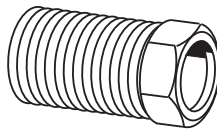
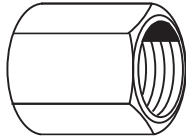
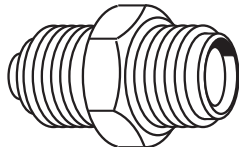
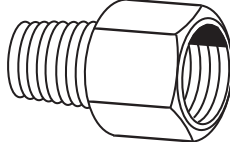
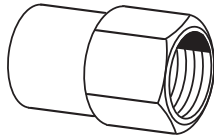
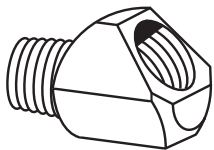
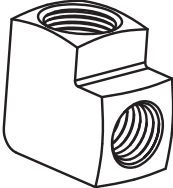
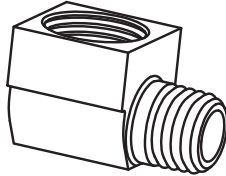
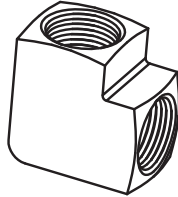
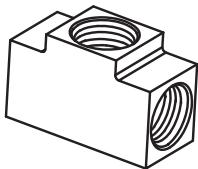
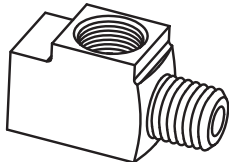
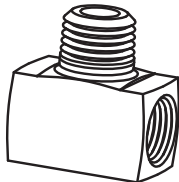
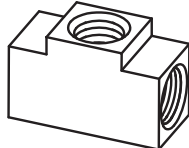
COMPRESSION AND SELFALIGN PRODUCTS

<p>Tube Support for Plastic Tubing</p> 	<p>Sleeve</p> 	<p>Nut</p> 	<p>Long Nut</p> 
<p>Bulkhead Nut</p> 	<p>Union</p> 	<p>Male Connector</p> 	<p>Female Connector</p> 
<p>Male Ball Check Connector</p> 	<p>Bulkhead Union</p> 	<p>90° Male Elbow</p> 	<p>90° Union Elbow</p> 
<p>90° Female Elbow</p> 	<p>Union Tee</p> 	<p>Male Run Tee</p> 	<p>Male Branch Tee</p> 
<p>Adapter Tee</p> 			



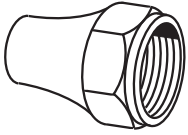
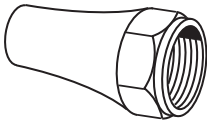
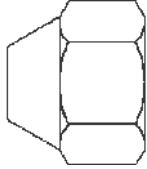
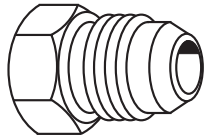
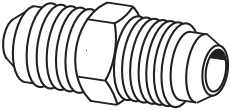
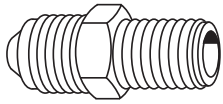
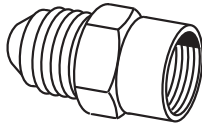
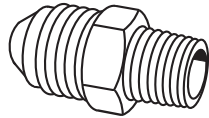
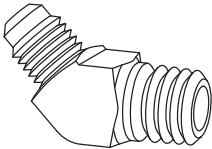
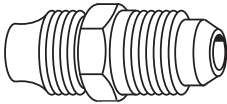
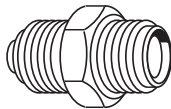
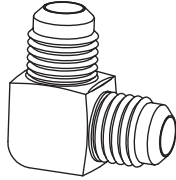
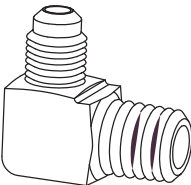
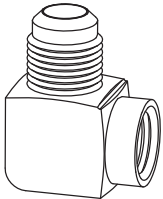
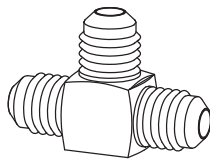
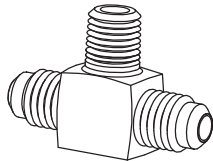
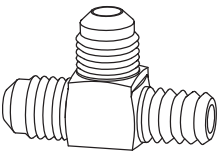
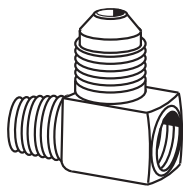
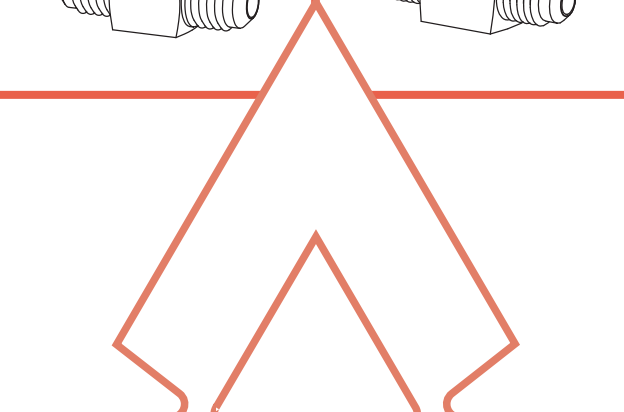
VISUAL INDEX

INVERTED FLARE

Tube Nut (Steel) 	Tube Nut (Brass) 	Plug (Steel) 	Tube Nut Long (Steel) 
Union 	Adapter SAE 45° Flare to Inv. Flare 	Male Connector 	Female Connector 
45° Male Elbow 	90° Union Elbow 	90° Male Elbow 	90° Female Elbow 
Union Tee 	Male Run Tee 	Male Branch Tee 	Female Branch Tee 

VISUAL INDEX


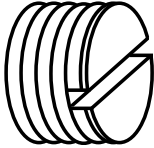
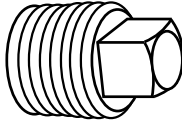
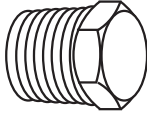
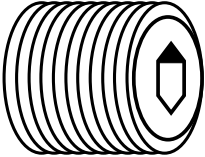
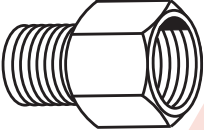
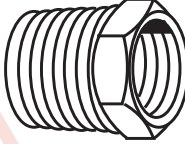
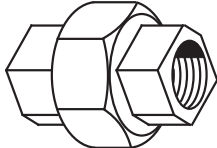
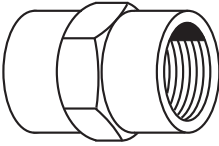
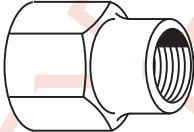
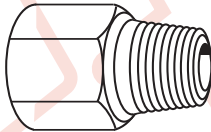
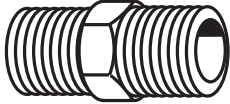
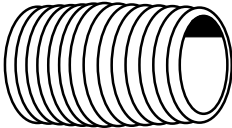
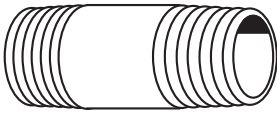
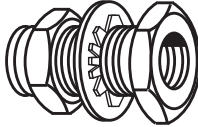
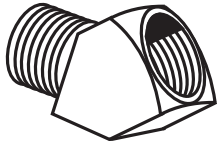
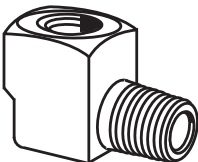
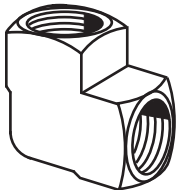
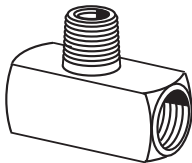
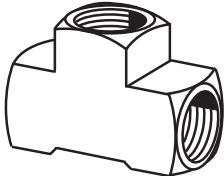
SAE 45° FLARE

<p>Nut</p> 	<p>Long Nut</p> 	<p>Cap</p> 	<p>Plug</p> 
<p>Union</p> 	<p>Male Connector</p> 	<p>Female Connector</p> 	<p>Male Ball Check Connector</p> 
<p>45° Male Elbow</p> 	<p>AC Type Adapter</p> 	<p>Adapter SAE 45°</p> 	<p>90° Union Elbow</p> 
<p>90° Male Elbow</p> 	<p>90° Female Elbow</p> 	<p>Union Tee</p> 	<p>Male Run Tee</p> 
<p>Male Branch Tee</p> 	<p>Adapter Tee</p> 		



VISUAL INDEX

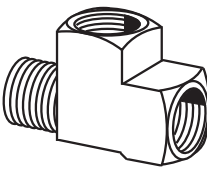
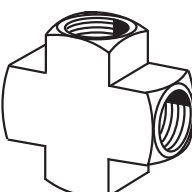
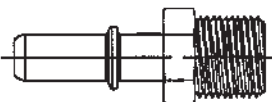
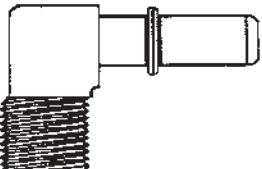
PIPE FITTINGS

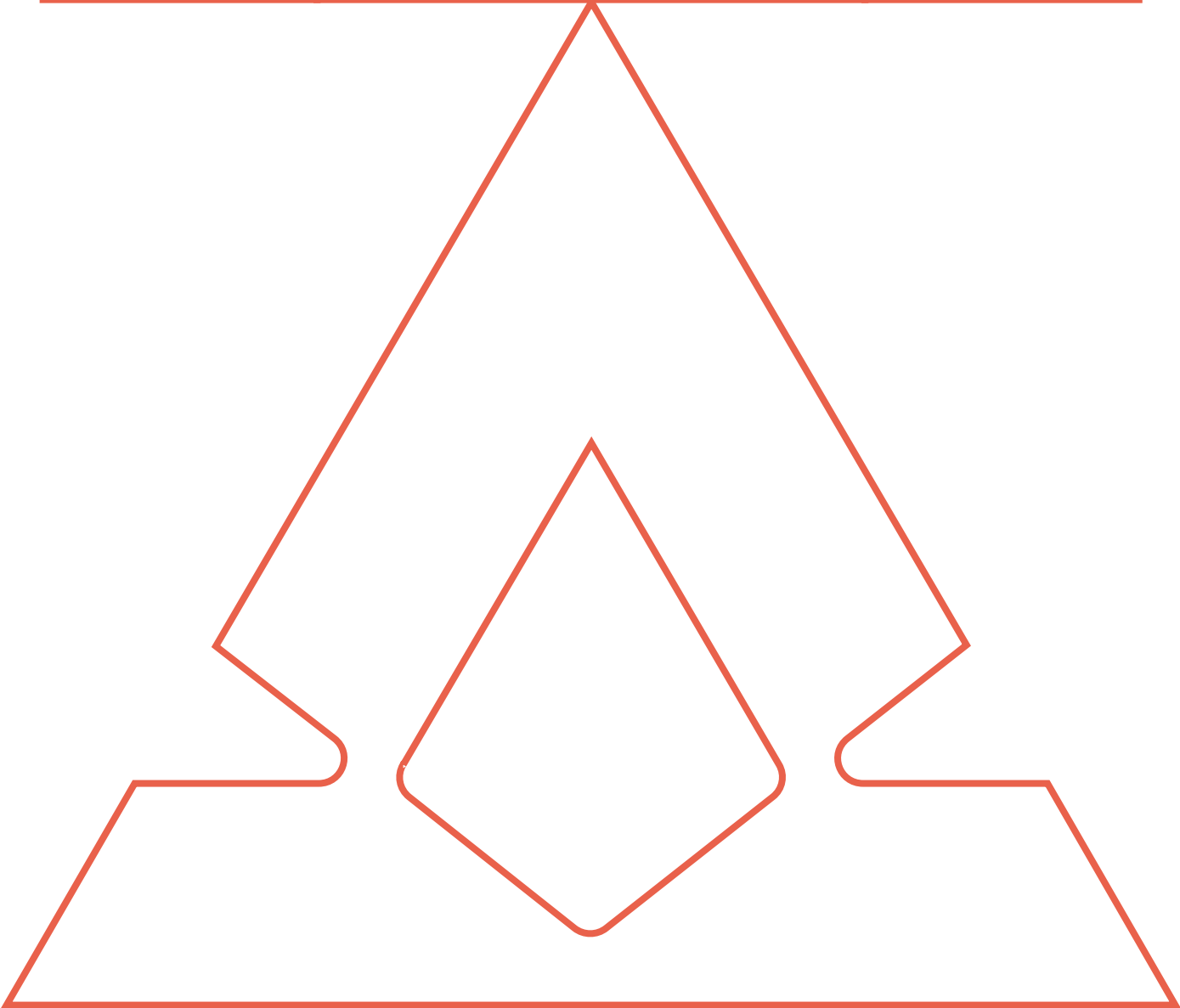
Cap 	Slotted Plug 	Square Head Plug 	Hex Head Plug 
Hex Socket Plug 	Adapter 	Bushing 	Union 
Coupling 	Reducer Coupling 	Restriction Pipe Adapter 	Hex Nipple 
Close Nipple 	Long Nipple 	Bulkhead Coupling 	45° Street Elbow 
90° Street Elbow 	90° Elbow 	Male Branch Tee 	Tee 



VISUAL INDEX

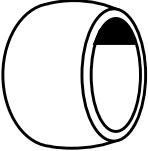
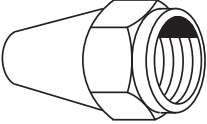
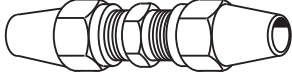
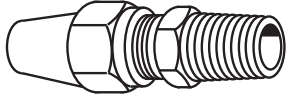
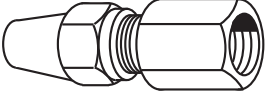
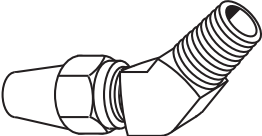
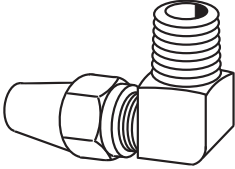
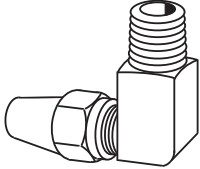
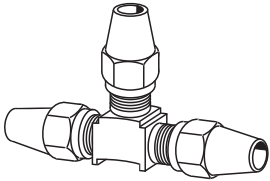
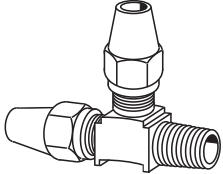
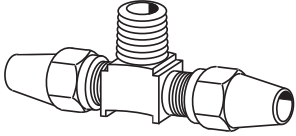
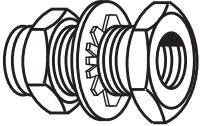
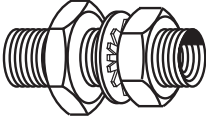
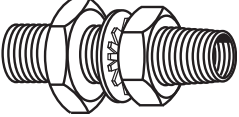
PIPE FITTINGS

<p>Male Run Tee</p> 	<p>Cross</p> 	<p>Straight</p> 	<p>90° Elbow</p> 
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VISUAL INDEX

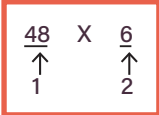
AIR BRAKE FITTINGS

Sleeve 	Nut 	Union 	Male Connector 
Female Connector 	Adapter 	Bushing 	Union 
Union Tee 	Male Run Tee 	Male Branch Tee 	Bulkhead Coupling 
Bulkhead Coupling 			

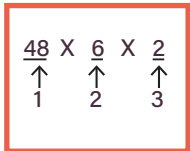


1.2 NUMBERING SYSTEM

Parts in this catalog are identified by a series of numbers separated by the letter "X."



1. The number preceding the "X" is the Catalog "Base Number" and indicates the type of connector. See Table 1 for additional base number data (sometimes referred to as dash size).



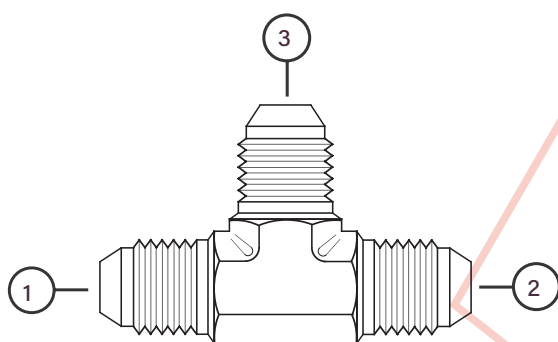
2. The second number is the tube and/or pipe size in sixteenths of an inch. When a pipe thread for a given tube size follows the SAE standard as shown in Table 2, no other number is required. Example: 48X6 = SAE 45° Flare Male Connector-3/8" tube, 1/4" Male Pipe.

3. If the pipe size is not to the SAE standard, another "X" is added followed by the pipe size indicated in sixteenths of an inch. Example: 1/8" is equal to 2/16" or X2 suffix.

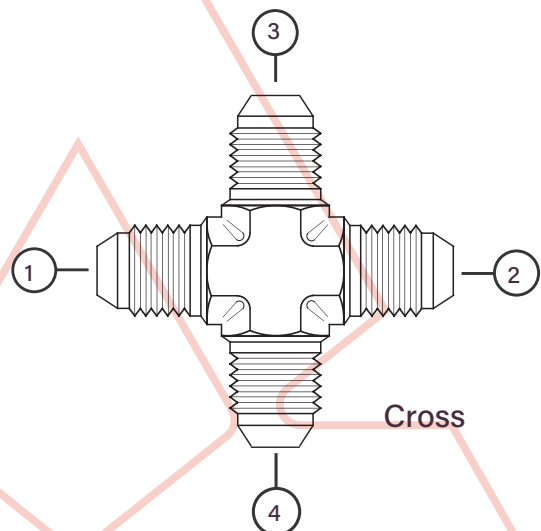
In designating tube and pipe sizes for tees and crosses that are not SAE standard, indicate the sizes in the sequence shown.

Type	Example Male Connector	Example Female Connector
45° Flare	48	46
Compression	68	66
Polyline	1268	1266
Selfalign	681	661
Air Brake (Nylon)	1468	1466
Air Brake (Copper)	1368	1366

	Tube Size	Pipe Threads
X2	1/8"	1/8"
X3	3/16"	1/8"
X4	1/4"	1/8"
X5	5/16"	1/8"
X6	3/8"	1/4"
X7	7/16"	1/4"
X8	1/2"	3/8"
X10	5/8"	1/2"
X12	3/4"	1/2"
X14	7/8"	3/4"
X16	1"	1"
X20	1-1/4"	No Standard
X24	1-1/2"	No Standard
X32	2"	No Standard



Tee



Cross



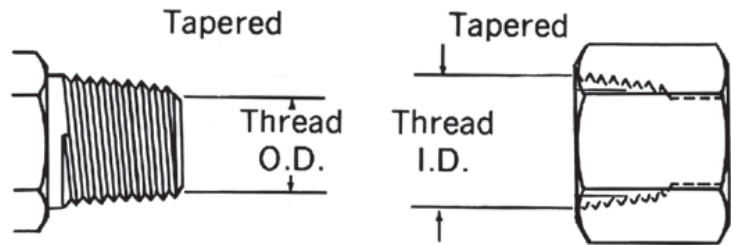
1.3 THREAD IDENTIFICATION

AMERICAN CONNECTIONS NPTF (NATIONAL PIPE TAPERED FUEL)

NPTF Threads

This connection is still widely used in fluid power systems, even though it is not recommended by the National Fluid Power Association (NFPA) for use in hydraulic applications. The thread is tapered and the seal takes place by deformation of the threads.

Measure thread diameter and subtract 1/4-inch to find the nominal pipe size.

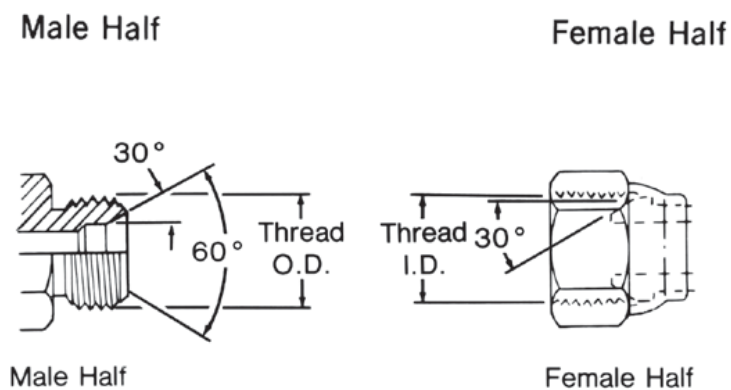


Inch Size	Dash Size	Nominal Thread Size	Male Thread O.D. Inch		Female Thread I.D. Inch	
			Fraction	Decimal	Fraction	Decimal
1/8	02	1/8-27	13/32	0.41	3/8	0.38
1/4	04	1/4-18	17/32	0.54	1/2	0.49
3/8	06	3/8-18	11/16	0.68	5/8	0.63
1/2	08	1/2-14	27/32	0.84	25/32	0.77
3/4	12	3/4-14	1-1/16	1.05	1	0.98
1	16	1-11-1/2	1-5/16	1.32	1-1/4	1.24
1-1/4	20	1-1/4-11-1/2	1-21/32	1.66	1-19/32	0.58
1-1/2	24	1-1/2-11-1/2	1-29/32	1.90	1-13/16	1.82
2	32	2-11-1/2	2-3/8	2.38	2-5/16	2.30

NPSM (National Pipe Straight Mechanical)

This connection is some times used in fluid power systems. The female half has a straight thread and an inverted 30° seat. The male half of the connection has a straight thread and a 30° internal chamfer. The seal takes place by compression of the 30° seat on the chamfer. The threads hold the connection mechanically.

Note: A properly chamfered NPTF male will also seal with the NPSM female.



Inch Size	Dash Size	Nominal Thread Size	Male Thread O.D. Inch		Female Thread I.D. Inch	
			Fraction	Decimal	Fraction	Decimal
1/8	02	1/8-27	13/32	0.41	3/8	0.38
1/4	04	1/4-18	17/32	0.54	1/2	0.49
3/8	06	3/8-18	11/16	0.68	5/8	0.63
1/2	08	1/2-14	27/32	0.84	25/32	0.77
3/4	12	3/4-14	1-1/16	1.05	1	0.98
1	16	1-11-1/2	1-5/15	1.32	1-1/4	1.24
1-1/4	20	1-1/4-11-1/2	1-21/32	1.66	1-19/32	0.58
1-1/2	24	1-1/2-11-1/2	1-29/32	1.90	1-13/16	1.82
2	32	2-11-1/2	2-3/8	2.38	2-5/16	2.30

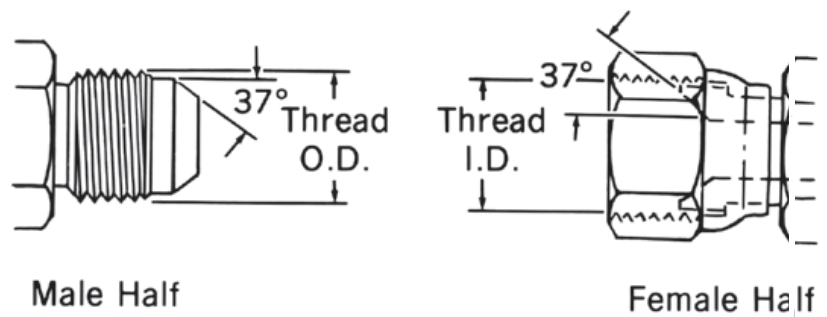


THREAD IDENTIFICATION

AMERICAN CONNECTIONS SAE J514 37° HYDRAULIC

This connection is still widely used in fluid power systems, even though it is not recommended by the National Fluid Power Association (NFPA) for use in hydraulic applications. The thread is tapered and the seal takes place by deformation of the threads.

Measure thread diameter and subtract 1/4-inch to find the nominal pipe size.



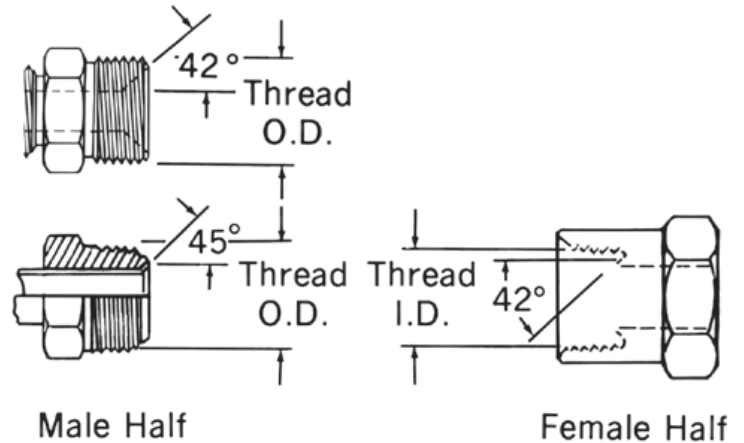
Inch Size	Dash Size	Nominal Thread Size	Male Thread O.D. Inch		Female Thread I.D. Inch	
			Fraction	Decimal	Fraction	Decimal
1/8	02	5/16-24	5/16	0.31	9/32	0.27
3/16	03	3/8-24	3/8	0.38	11/32	0.34
1/4	04	7/16-20	7/16	0.44	13/32	0.39
5/16	05	1/2-20	1/2	0.50	15/32	0.45
3/8	06	9/16-18	9/16	0.56	17/32	0.51
1/2	08	3/4-16	3/4	0.75	11/16	0.69
5/8	10	7/8-14	7/8	0.88	13/16	0.81
3/4	12	1-1/16-12	1-1/16	1.06	1	0.98
7/8	14	1-3/16-12	1-3/16	1.19	1-1/8	1.13
1	16	1-5/16-12	1-5/16	1.31	1-1/4	1.23
1-1/4	20	1-5/8-12	1-5/8	1.63	1-9/16	1.54
1-1/2	24	1-7/8-12	1-7/8	1.88	1-13/16	1.79
2	32	2-1/2-12	2-1/2	2.50	2-7/16	2.42



THREAD IDENTIFICATION

AMERICAN CONNECTIONS SAE J512 INVERTED

This connection is frequently used automotive systems. The male connec can either be a 45° flare in the tube fitting form or a 42° seat in the machined adapter form. The female has a strai thread with a 42° inverted flare. The seal takes place on the flared surfaces. The threads hold the connect mechanically.



Inch Size	Dash Size	Nominal Thread Size	Male Thread O.D. Inch	Female Thread I.D. Inch
			Fraction	Fraction
			Decimal	Decimal
1/8	02	5/16-28	5/16	9/32
3/16	03	3/8-24	3/8	11/32
1/4	04	7/16-24	7/16	13/32
5/16	05	1/2-20	1/2	15/32
3/8	06	5/8-18	5/8	9/16
7/16	07	11/16-18	11/16	5/8
1/2	08	3/4-18	3/4	23/32
5/8	10	7/8-18	7/8	13/16
3/4	12	1-1/16-16	11/16	1



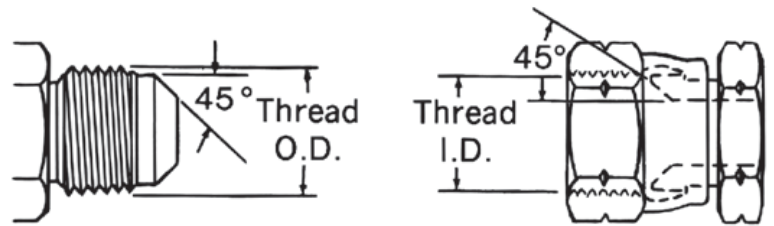
THREAD IDENTIFICATION

AMERICAN CONNECTIONS SAE J512 45°

This connection is commonly used in refrigeration, automotive and truck piping systems. The connector is frequently made of brass. Both the male and female connectors have 45° seats. The seal takes place between the male flare the female cone seat. The threads hold the connection mechanically.

Caution:

In the -02, -03, -04, -05, -08 and -10 sizes, the threads of the SAE 45° flare and the SAE 37° flare are the same. However, the sealing surface angles are not the same.



Male Half

Female Half

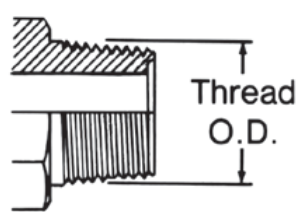
Inch Size	Dash Size	Nominal Thread Size	Male Thread O.D. Inch		Female Thread I.D. Inch	
			Fraction	Decimal	Fraction	Decimal
1/8	02	5/16-24	5/16	0.31	9/32	0.27
3/16	03	3/8-24	3/8	0.38	11/32	0.34
1/4	04	7/16-20	7/16	0.44	13/32	0.39
5/16	05	1/2-20	1/2	0.50	15/32	0.45
3/8	06	5/8-18	5/8	0.63	9/16	0.57
1/2	08	3/4-16	3/4	0.75	11/16	0.69
5/8	10	7/8-14	7/8	0.88	13/16	0.81
3/4	12	1-1/16-14	1-1/16	1.06	1	0.99
7/8	14	1-1/4-12	1-1/4	1.25	1-5/32	1.16
1	16	1-3/8-12	1-3/8	1.38	1-9/32	1.29



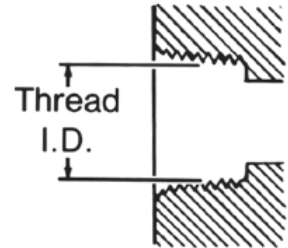
THREAD IDENTIFICATION

BRITISH CONNECTIONS BRITISH STANDARD PIPE (BSP)

This BSPT (tapered) connection is similar to the NPT, except that the thread pitches are different in most sizes, and the thread form and O.D.s are close but not the same. Sealing is accomplished by thread distortion. A thread sealant is recommended.

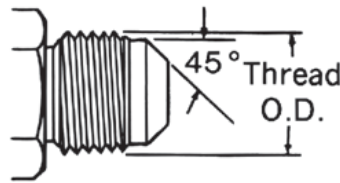


Male Half

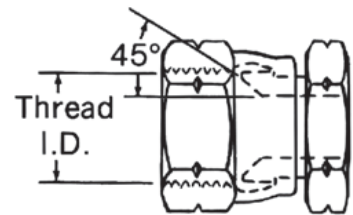


Female Half

The BSP (parallel) male is similar to the NPSM male except the thread pitches are different in most sizes. The female swivel BSPP has a tapered nose/ Globeseal flareless swivel which seals on the cone seat of the male.



Male Half



Female Half

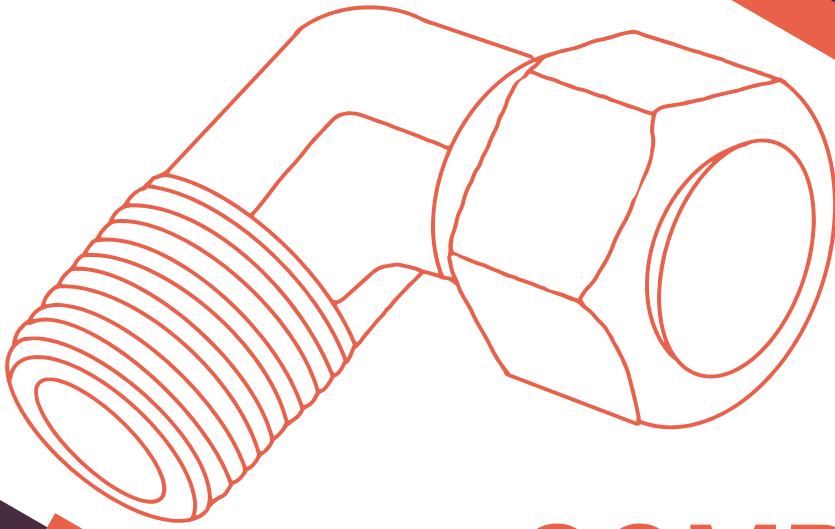
BSPT/BSPP Threads

Inch Size	Dash Size	Nominal Thread Size*	Male Thread O.D. Inch		Female thread I.D. Inch	
			Fraction	Decimal	Fraction	Decimal
1/8	02	1/8-28	3/8	0.38	11/32	0.35
1/4	04	1/4-19	33/64	0.52	15/32	0.47
3/8	06	3/8-19	21/32	0.65	19/32	0.60
1/2	08	1/2-14	13/16	0.82	3/4	0.75
5/8	10	5/8-14	7/8	0.88	13/16	0.80
3/4	12	3/4-14	11/32	1.04	31/32	0.97
1	16	1-11	15/16	1.30	1-7/32	1.22
1-1/4	20	1-1/4-11	1-21/32	1.65	1-9/16	1.56
1-1/2	24	1-1/2-11	1-7/8	1.88	1-25/32	1.79
2	32	2-11	2-11/32	2.35	2-1/4	2.26

*Frequently, the thread size is expressed as a fractional dimension preceded by the letter "G" or the letter "R". The "G" represents a parallel thread and the "R" indicates a tapered thread.

For example, BSPP 3/8-19 may be expressed as G 3/8, and BSPT 3/8-19 may be expressed as R3/8.





COMPRESSION FITTINGS

2.1 INDUSTRIAL COMPRESSON FITTINGS

2.1 INDUSTRIAL COMPRESSION FITTINGS

Compression Fittings provide users with an economical choice with numerous connection options for a wide variety of tube materials without the need for flaring, soldering or other tube preparation necessary to assemble.

Product Features:

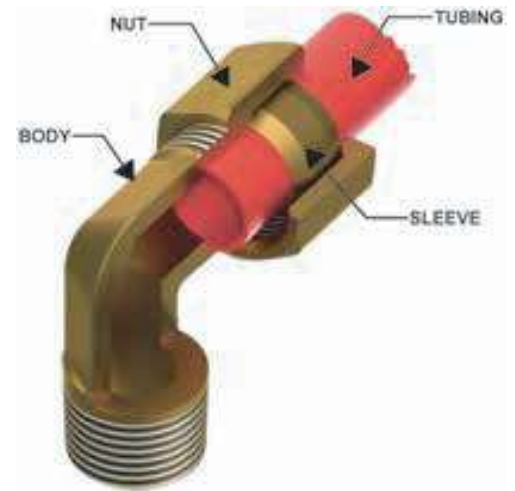
- Meets functional requirements of SAEJ-512
- Brass or Acetal sleeve available
- No tube preparation
- Forged and Extruded shapes

Applications:

- Airlines
- Lubrication lines
- Cooling lines
- Industry
- Machinery
- Compressors
- Fluid transfer

Markets:

- Industrial
- Packaging
- Pneumatic
- Printing



Assembly Instructions-

1. Slide nut then sleeve onto tubing. The thread end of the nut must face out.
2. Insert tube and bottom on the fitting shoulder
3. Assemble nut to body and tighten "hand tight". Then wrench tighten the number of turns indicated in the table

Compatible Tubing:

- Copper
- Aluminium
- Thermoplastic Tubing

Specifications:

Temperature Range: 0.65° to +200° F (-53.8° to +93.3° C)

Pressure Range

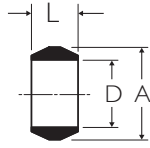
TUBE SIZE	PSI	bar	TUBE SIZE	PSI
1/8	2800	193.0	1/2	750
3/16	1900	131.0	5/8	650
1/4	1400	96.5	3/4	550
5/16	1200	82.7	7/8	450
3/8	1000	68.9		

Note: Pressures listed in above table are with brass



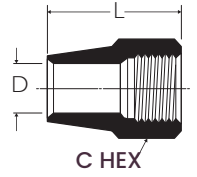
INDUSTRIAL COMPRESSION FITTINGS

Sleeve 60C REF. SAE 060115



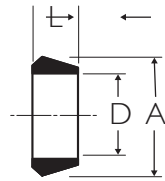
PART NO.	TUBE SIZE	A	D	L
AI 60C-2	1/8	.187	.130	.19
AI 60C-3	3/16	.266	.192	.22
AI 60C-4	1/4	.344	.255	.25
AI 60C-5	5/16	.406	.318	.25
AI 60C-6	3/8	.469	.382	.25
AI 60C-7	7/16	.531	.444	.31
AI 60C-8	1/2	.594	.507	.38
AI 60C-10	5/8	.719	.632	.38
AI 60C-12	3/4	.875	.758	.44
AI 60C-14	7/8	1.000	.883	.41

Long Nut 61CL REF. SAE 060111



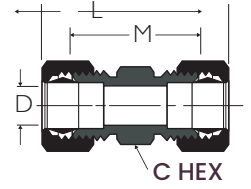
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
AI 61CL-4	1/4	7/16-24	1/2	.255	.75
AI 61CL-5	5/16	1/2-24	9/16	.318	.84
AI 61CL-6	3/8	9/16-24	5/8	.382	.97
AI 61CL-8	1/2	11/16-20	13/16	.507	1.06
AI 61CL-10	5/8	13/16-18	15/16	.632	1.19
AI 61CL-12	3/4	1-18	1-3/16	.758	1.38

Acetal Sleeve



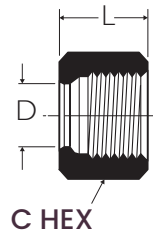
PART NO.	PLASTIC TUBE WALL	TUBE WALL	A	D	L
AI 60PT-4	1/4	.040	.375	.254	.19
AI 60PT-5	5/16	.062	.438	.317	.19
AI 60PT-6	3/8	.062	.500	.379	.19
AI 60PT-8	1/2	.062	.631	.507	.25
AI 60PT-10	5/8	.062	.747	.632	.22

Union 62C REF. SAE 060101 BA



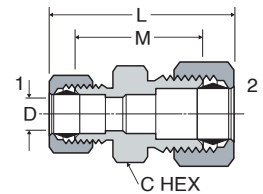
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	M	FLOW DIA. D
AI 62C-2	1/8	5/16-24	5/16	1.05	.64	.094
AI 62C-3	3/16	3/8-24	3/8	1.21	.72	.125
AI 62C-4	1/4	7/16-24	7/16	1.33	.79	.188
AI 62C-5	5/16	1/2-24	1/2	1.39	.85	.250
AI 62C-6	3/8	9/16-24	9/16	1.52	.97	.312
AI 62C-7	7/16	5/8-24	5/8	1.70	1.02	.312
AI 62C-8	1/2	11/16-20	11/16	1.90	1.08	.406
AI 62C-10	5/8	13/16-18	13/16	2.06	1.23	.500
AI 62C-12	3/4	1-18	1	2.37	1.41	.562
AI 62C-14	7/8	1-1/8-18	1-1/8	2.07	1.19	.766

Nut 61C REF. SAE 060110



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
AI 61C-2	1/8	5/16-24	3/8	.130	.38
AI 61C-3	3/16	3/8-24	7/16	.192	.41
AI 61C-4	1/4	7/16-24	1/2	.255	.44
AI 61C-5	5/16	1/2-24	9/16	.318	.44
AI 61C-6	3/8	9/16-24	5/8	.382	.47
AI 61C-7	7/16	5/8-24	11/16	.444	.50
AI 61C-8	1/2	11/16-20	13/16	.507	.62
AI 61C-10	5/8	13/16-18	15/16	.632	.62
AI 61C-12	3/4	1-18	1-3/16	.758	.69
AI 61C-14	7/8	1-1/8-18	1-1/4	.890	.62

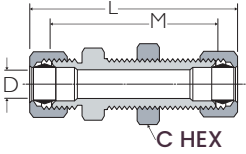
Union Reducers 62C REF. SAE 060101 BA



PART NO.	1 TUBE SIZE	2 TUBE SIZE	1 THREAD	2 THREAD	C HEX	L	M	FLOW DIA. D
AI 62C-4-3	3/16	1/4	3/8-24	7/16-24	7/16	1.29	.78	.125
AI 62C-6-4	1/4	3/8	7/16-24	9/16-24	9/16	1.46	.91	.188
AI 62C-8-6	3/8	1/2	9/16-24	11/16-20	11/16	1.71	1.03	.312
AI 62C-10-6	3/8	5/8	9/16-24	13/16-18	13/16	1.82	1.13	.312

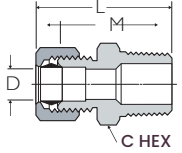


INDUSTRIAL COMPRESSION FITTINGS



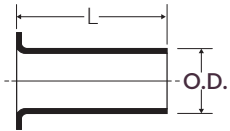
Bulkhead Union 62CBH

PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	M	BULKHEAD HOLE DIA.	FLOW DIA. D
AI 62CBH-4	1/4	7/16-24	9/16	2.29	1.75	7/16	.188
AI 62CBH-6	3/8	9/16-24	11/16	2.42	1.88	9/16	.312



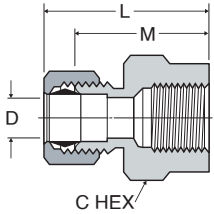
Male Connector 68C REF.SAE 060102 BA

PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	M	FLOW DIA. D
AI 68C-2-1	1/8	1/16	5/16-24	3/8	.99	.78	.095
AI 68C-2-2	1/8	1/8	5/16-24	7/16	.97	.77	.094
AI 68C-3-1	3/16	1/16	3/8-24	3/8	1.08	.84	.125
AI 68C-3-2	3/16	1/8	3/8-24	7/16	1.08	.84	.125
AI 68C-3-4	3/16	1/4	3/8-24	9/16	1.27	1.03	.125
AI 68C-4-2	1/4	1/8	7/16-24	7/16	1.10	.86	.188
AI 68C-4-4	1/4	1/4	7/16-24	9/16	1.30	1.06	.188
AI 68C-4-6	1/4	3/8	7/16-24	11/16	1.27	1.03	.188
AI 68C-4-8	1/4	1/2	7/16-24	7/8	1.55	1.31	.188
AI 68C-5-2	5/16	1/8	1/2-24	1/2	1.15	.89	.234
AI 68C-5-4	5/16	1/4	1/2-24	9/16	1.33	1.07	.250
AI 68C-6-2	3/8	1/8	9/16-24	9/16	1.25	.97	.250
AI 68C-6-4	3/8	1/4	9/16-24	9/16	1.42	1.14	.312
AI 68C-6-6	3/8	3/8	9/16-24	11/16	1.44	1.16	.312
AI 68C-6-8	3/8	1/2	9/16-24	7/8	1.53	1.25	.312
AI 68C-7-4	7/16	1/4	5/8-24	5/8	1.50	1.17	.312
AI 68C-8-4	1/2	1/4	11/16-20	11/16	1.60	1.20	.312
AI 68C-8-6	1/2	3/8	11/16-20	11/16	1.60	1.20	.406
AI 68C-8-8	1/2	1/2	11/16-20	7/8	1.71	1.31	.406
AI 68C-10-6	5/8	3/8	13/16-18	13/16	1.73	1.31	.406
AI 68C-10-8	5/8	1/2	13/16-18	7/8	1.90	1.48	.500
AI 68C-10-12	5/8	3/4	13/16-18	1-1/16	1.98	1.56	.500
AI 68C-12-8	3/4	1/2	1-18	1	2.05	1.60	.562
AI 68C-12-12	3/4	3/4	1-18	1-1/16	2.08	1.63	.656
AI 68C-14-12	7/8	3/4	1-1/8-18	1-1/8	1.76	1.41	.750



Brass Insert 63PT

PART NO.	TUBE O.D.	TUBE WALL	L	O.D.
AI 63PT-2-16	1/8	.016	.46	.080
AI 63PT-2-23	1/8	.023	.45	.073
AI 63PT-3-25	3/16	.025	.45	.135
AI 63PT-3-40	3/16	.040	.52	.095
AI 63PT-4-62	1/4	.062	.33	.110
AI 63PT-5-40	5/16	.040	.50	.232
AI 63PT-5-62	5/16	.062	.53	.187
AI 63PT-10-62	5/8	.062	.72	.483



Female Connector 66C REF.SAE 060103 BA

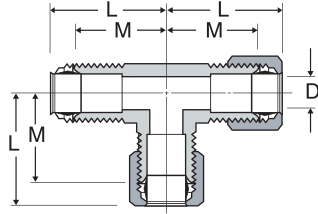
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	M	FLOW DIA. D
AI 66C-2-2	1/8	1/8	5/16-24	9/16	.95	.75	.094
AI 66C-3-2	3/16	1/8	3/8-24	9/16	1.02	.78	.125
AI 66C-3-4	3/16	1/4	3/8-24	11/16	1.20	.96	.125
AI 66C-4-2	1/4	1/8	7/16-24	9/16	1.02	.78	.188
AI 66C-4-4	1/4	1/4	7/16-24	11/16	1.24	1.00	.188
AI 66C-5-2	5/16	1/8	1/2-24	9/16	1.07	.81	.250
AI 66C-5-4	5/16	1/4	1/2-24	11/16	1.29	1.03	.250
AI 66C-6-2	3/8	1/8	9/16-24	9/16	1.06	.78	.312
AI 66C-6-4	3/8	1/4	9/16-24	11/16	1.34	1.06	.312
AI 66C-6-6	3/8	3/8	9/16-24	13/16	1.34	1.06	.312
AI 66C-6-8	3/8	1/2	9/16-24	1	1.54	1.27	.312
AI 66C-7-6	7/16	3/8	5/8-24	13/16	1.43	1.09	.312
AI 66C-8-4	1/2	1/4	11/16-20	11/16	1.49	1.09	.406
AI 66C-8-6	1/2	3/8	11/16-20	13/16	1.52	1.12	.406
AI 66C-8-8	1/2	1/2	11/16-20	1	1.71	1.31	.406
AI 66C-10-8	5/8	1/2	13/16-18	1	1.80	1.38	.500



INDUSTRIAL COMPRESSION FITTINGS

Union Tee 164C- 264C

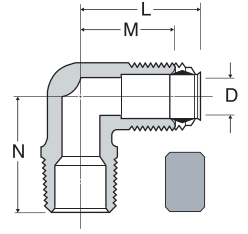
REF.SAE 060401 BA



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

Male Elbow 169C- 269C

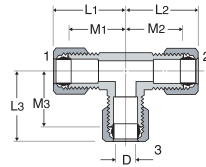
REF. SAE 060202 BA



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 +	5/16	1/8	1/2-24	.88	.61	.74	.234
Al 269C-5-2 +	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 +	3/8	1/8	9/16-24	1.03	.74	.74	.234
Al 269C-6-2 +	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 +	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

Union Tee 164C- 264C Combination Sizes

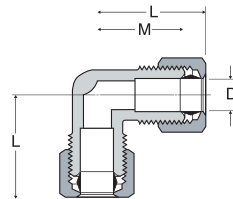
REF. SAE 060401 BA



PART NO.	1 TUBE SIZE	2 TUBE SIZE	3 TUBE SIZE	L1	L2	L3	M1	M2	M3	FLOW DIA. D
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

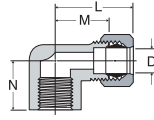
* For these parts the pipe thread through hole is smaller than the through hole on the flare end.



INDUSTRIAL COMPRESSION FITTINGS

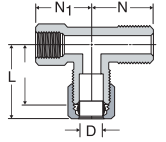
Female Elbow 170C- 270C

REF. SAE 060203 BA



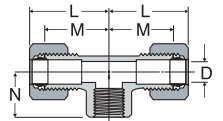
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
170C-2-2	1/8	1/8	5/16-24	.89	.69	.56	.094
170C-3-2	3/16	1/8	3/8-24	.98	.69	.56	.125
170C-4-2	1/4	1/8	7/16-24	.93	.69	.56	.188
270C-4-2	1/4	1/8	7/16-24	.91	.67	.54	.188
170C-4-4	1/4	1/4	7/16-24	1.02	.78	.67	.188
170C-6-4	3/8	1/4	9/16-24	1.06	.79	.73	.312
170C-6-6	3/8	3/8	9/16-24	1.22	.89	.69	.312
170C-7-4	7/16	1/4	5/8-24	1.27	.93	.73	.312
170C-8-6	1/2	3/8	11/16-20	1.34	1.00	.69	.406
170C-8-8	1/2	1/2	11/16-20	1.56	1.15	.97	.408
170C-12-12	3/4	3/4	1-18	2.06	1.58	1.58	.563

Adapter Tee 176C



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	N1	FLOW DIA. D
176C-4-2	1/4	1/8	7/16-24	.93	.69	.75	.66	.188

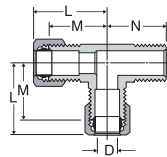
Female Branch Tee 177C



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
177C-4-2	1/4	1/8	7/16-24	.86	.63	.53	.188

Male Run Tee 171C

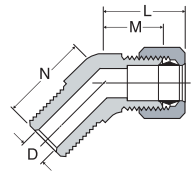
REF. SAE 060424 BA



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
171C-2-2	1/8	1/8	5/16-24	.82	.61	.67	.094
171C-3-2	3/16	1/8	3/8-24	.86	.61	.67	.125
171C-4-2	1/4	1/8	7/16-24	.90	.64	.75	.188
171C-4-4	1/4	1/4	7/16-24	.93	.69	.92	.188
171C-6-4	3/8	1/4	9/16-24	1.09	.81	1.03	.312

45° Elbow 179C

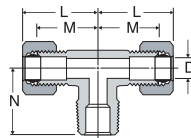
Compression to male pipe



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
179C-4-2	1/4	1/8	7/16-24	.90	.66	.56	.188
179C-4-4	1/4	1/4	7/16-24	.80	.56	.84	.188
179C-6-2	3/8	1/8	9/16-24	.90	.63	.65	.234
179C-6-4	3/8	1/4	9/16-24	.90	.63	.84	.312
179C-6-6	3/8	3/8	9/16-24	.97	.75	.95	.312
179C-8-6	1/2	3/8	11/16-20	1.15	.81	.95	.406

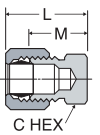
Male Branch Tee 172C

REF. SAE 060425 BA



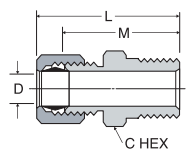
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
172C-2-2	1/8	1/8	5/16-24	.82	.61	.67	.094
172C-3-2	3/16	1/8	3/8-24	.86	.61	.67	.125
172C-4-2	1/4	1/8	7/16-24	.86	.61	.74	.188
172C-4-4	1/4	1/4	7/16-24	.93	.69	.92	.188
172C-6-2	3/8	1/8	9/16-24	1.03	.75	.75	.234
172C-6-4	3/8	1/4	9/16-24	1.09	.77	.92	.312
172C-6-6	3/8	3/8	9/16-24	1.09	.81	1.00	.312
172C-8-6	1/2	3/8	11/16-20	1.34	.93	1.10	.406

Seal Plug 639C



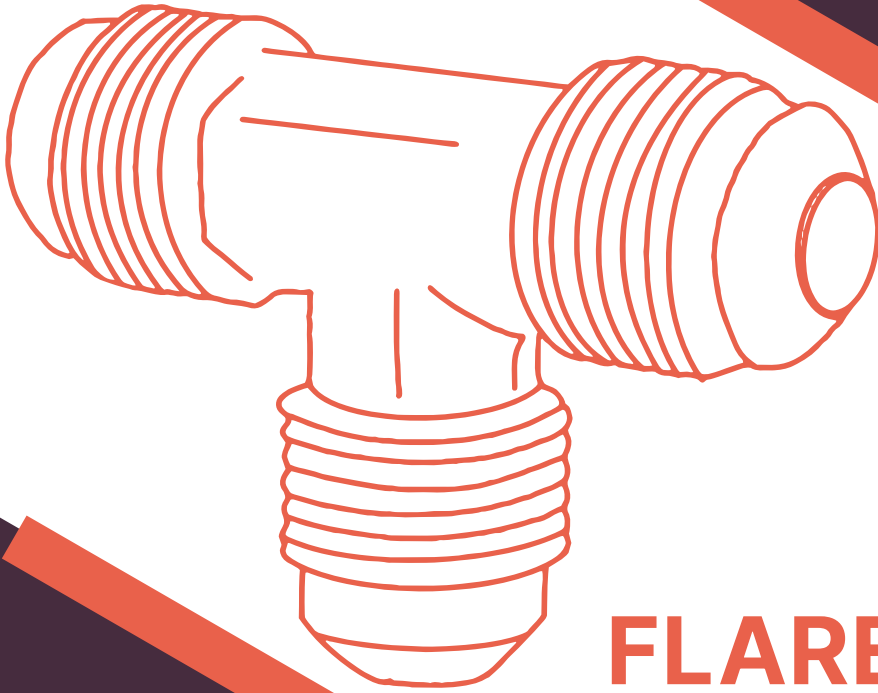
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	M
639C-4	1/4	7/16-24	7/16	.74	.50

Straight Through Tank Fitting 682C



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	M	FLOW DIA. D
682C-3-2	3/16	1/8	3/8-24	7/16	1.06	.84	.195
682C-6-6	3/8	3/8	9/16-24	11/16	1.44	1.16	.387
682C-8-8	1/2	1/2	11/16-20	7/8	1.90	1.31	.516





FLARE FITTINGS

3.1 45° FLARE FITTINGS

3.2 INVERTED FLARE FITTINGS



3.1 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



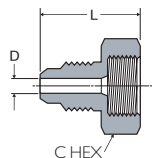
Assembly Instructions:

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

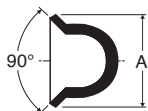
Gasket Furnished with each 1F adapter

Copper Flare Gasket 2GF REF. SAE 010113



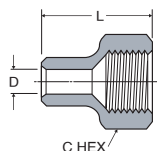
PART NO.	TUBE SIZE	A
AI 2GF-3	3/16	.32
AI 2GF-4	1/4	.36
AI 2GF-5	5/16	.43
AI 2GF-6	3/8	.56
AI 2GF-8	1/2	.67
AI 2GF-10	5/8	.78
AI 2GF-12	3/4	.97

Seal Bonnet 3GF REF. SAE 010114



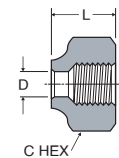
PART NO.	TUBE SIZE	A
AI 3GF-3	3/16	.32
AI 3GF-4	1/4	.37
AI 3GF-5	5/16	.43
AI 3GF-6	3/8	.56
AI 3GF-8	1/2	.67
AI 3GF-10	5/8	.78
AI 3GF-12	3/4	.97

Long Forged Nut 14FL REF. SAE 010167



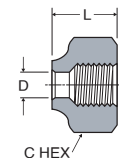
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
AI 14FL-4	1/4	7/16-20	5/8	.257	.94
AI 14FL-6	3/8	5/8-18	13/16	.382	1.06
AI 14FL-8	1/2	3/4-16	15/16	.507	1.19
AI 14FL-10	5/8	7/8-14	1-1/16	.632	1.44

Short Forged Nut 14FSX REF. SAE 010166



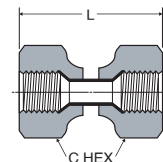
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
AI 14FSX-4	1/4	7/16-20	5/8	.257	.63
AI 14FSX-5	5/16	1/2-20	11/16	.320	.67
AI 14FSX-6	3/8	5/8-18	13/16	.382	.74
AI 14FSX-8	1/2	3/4-16	15/16	.507	.86
AI 14FSX-10	5/8	7/8-14	1-1/16	.632	.97
AI 14FSX-12	3/4	1-1/16-14	1-5/16	.757	1.17

Short Forged Reducing Nuts 14FS



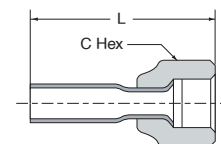
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
AI 14FS-6-4	3/8 TO 1/4	5/8-18	13/16	.257	.74
AI 14FS-8-6	1/2 TO 3/8	3/4-16	15/16	.382	.86
AI 14FS-10-8	5/8 TO 1/2	7/8-14	1-1/16	.507	.99

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

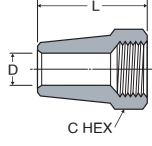


PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L
AI US5-4	1/4	7/16-20	5/8	1.50
AI US5-6	3/8	5/8-18	13/16	1.58
AI US5-8	1/2	3/4-16	15/16	1.80



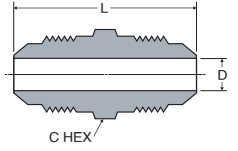
45° FLARE FITTINGS

Long Nut 41FL REF. SAE 010111



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

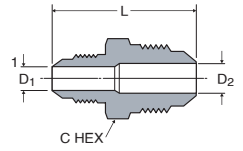
Union 42F REF. SAE 010101 *THREAD PROTECTORS



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

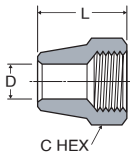


Union Reducers 42F REF. SAE 010101



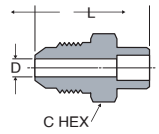
PART NO.	1 TUBE SIZE	2 TUBE SIZE	1 STRAIGHT THREAD	2 STRAIGHT THREAD	C HEX	L	FLOW DIA. D1	DIA. D2
AI 42F-6-4	1/4	3/8	7/16-20	5/8-18	5/8	1.36	.189	.282
AI 42F-6-5	5/16	3/8	1/2-20	5/8-18	5/8	1.42	.220	.282
AI 42F-8-4	1/4	1/2	7/16-20	3/4-16	3/4	1.54	.189	.407
AI 42F-8-6	3/8	1/2	5/8-18	3/4-16	3/4	1.67	.282	.407
AI 42F-10-6	3/8	5/8	5/8-18	7/8-14	7/8	1.86	.282	.501
AI 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
AI 41FS-2	1/8	5/16-24	3/8	.132	.50
AI 41FS-3	3/16	3/8-24	7/16	.195	.62
AI 41FS-4	1/4	7/16-20	9/16	.257	.75
AI 41FS-5	5/16	1/2-20	5/8	.320	.88
AI 41FS-6	3/8	5/8-18	3/4	.382	1.00
AI 41FX-6	3/8	5/8-18	3/4	.382	.91
AI 41FS-8	1/2	3/4-16	7/8	.507	1.12
AI 41FX-8	1/2	3/4-16	7/8	.507	1.00
AI 41FS-10	5/8	7/8-14	1-1/16	.632	1.31
AI 41FX-10	5/8	7/8-14	1-1/16	.632	1.06
AI 41FX-12	3/4	1-1/16-14	1-1/4	.757	1.17
AI 41FS-12	3/4	1-1/16-14	1-1/4	.757	1.50
AI 41FS-14	7/8	1-1/4-12	1-1/2	.882	1.62

Flare to Solder 43F REF. SAE 010104

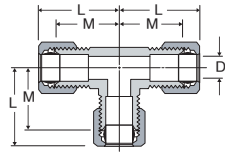


PART NO.	TUBE SIZE	SOLDER OD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
AI 43F-4-4	1/4	1/4	7/16-20	7/16	.98	.189
AI 43F-4-5	1/4	5/16	7/16-20	7/16	.98	.189
AI 43F-4-6	1/4	3/8	7/16-20	1/2	.98	.189
AI 43F-6-4	3/8	1/4	5/8-18	5/8	1.17	.189
AI 43F-6-5	3/8	5/16	5/8-18	5/8	1.17	.252
AI 43F-6-6	3/8	3/8	5/8-18	5/8	1.17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



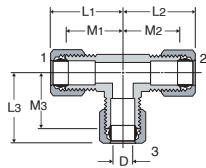
45° FLARE FITTINGS

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



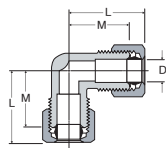
PART NO.	TUBE SIZE	STRAIGHT THREAD	L	M	FLOW DIA. D
Al 164C-2	1/8	5/16-24	.82	.61	.094
Al 264C-3	3/16	3/8-24	.84	.60	.125
Al 164C-4	1/4	7/16-24	.86	.63	.188
Al 264C-4	1/4	7/16-24	.84	.60	.188
Al 164C-5	5/16	1/2-24	.98	.71	.250
Al 164C-6	3/8	9/16-24	1.03	.74	.312
Al 164C-8	1/2	11/16-20	1.34	.93	.406
Al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



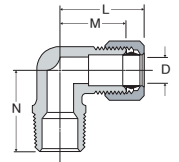
PART NO.	1 TUBE SIZE	2 TUBE SIZE	3 TUBE SIZE	L1	L2	L3	M1	M2	M3	FLOW DIA D
Al 164C-6-4-4	3/8	1/4	1/4	1.03	.96	.96	.75	.72	.72	.188
Al 164C-6-6-4	3/8	3/8	1/4	1.03	.96	.96	.75	.75	.72	.188
Al 164C-8-8-6	1/2	1/2	3/8	1.34	1.16	1.16	.94	.94	.88	.312

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



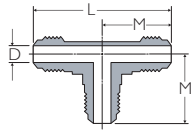
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
Al 169C-2-1	1/8	1/16	5/16-24	.81	.60	.67	.095
Al 269C-2-2	1/8	1/8	5/16-24	.80	.60	.67	.094
Al 169C-3-1	3/16	1/16	3/8-24	.85	.61	.67	.126
Al 169C-3-2	3/16	1/8	3/8-24	.84	.61	.69	.125
Al 269C-3-2	3/16	1/8	3/8-24	.84	.60	.67	.125
Al 169C-3-4	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 [†]	5/16	1/8	1/2-24	.88	.61	.74	.234
Al 269C-5-2 [†]	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 [†]	3/8	1/8	9/16-24	1.03	.74	.74	.234
Al 269C-6-2 [†]	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 [†]	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

[†] For these parts the pipe thread through hole is smaller than the through hole on the flare end.



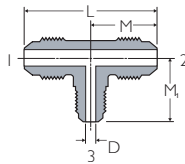
45° FLARE FITTINGS

Union Tee 144F- 244F REF. SAE 010401



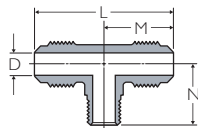
PART NO.	TUBE SIZE	STRAIGHT THREAD	L	M	FLOW DIA. D
Al 144F-3	3/16	3/8-24	1.46	.73	.125
Al 144F-4	1/4	7/16-20	1.72	.86	.189
Al 244F-4	1/4	7/16-20	1.72	.86	.189
Al 144F-5	5/16	1/2-20	1.82	.91	.220
Al 144F-6	3/8	5/8-18	2.08	1.04	.282
Al 144F-8	1/2	3/4-16	2.46	1.23	.407
Al 144F-10	5/8	7/8-14	2.78	1.39	.501

Union Tee 144F combination sizes



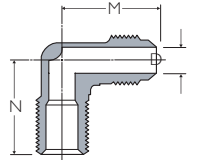
PART NO.	1 TUBE SIZE	2 TUBE SIZE	3 TUBE SIZE	L	M	M1	FLOW DIA. D
Al 144F-6-6-4	3/8	3/8	1/4	2.08	1.04	.89	.189
Al 144F-8-8-6	1/2	1/2	3/8	2.40	1.20	1.10	.282

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



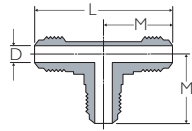
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	N	FLOW DIA. D
Al 149F-2-2	1/8	1/8	5/16-24	.63	.69	.079
Al 149F-3-2	3/16	1/8	3/8-24	.75	.75	.125
Al 249F-3-2	3/16	1/8	3/8-24	.73	.73	.125
Al 149F-4-2	1/4	1/8	7/16-20	.79	.76	.189
Al 249F-4-2	1/4	1/8	7/16-20	.79	.76	.189
Al 149F-4-4	1/4	1/4	7/16-20	.89	.92	.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 ⁺	3/8	1/8	5/8-18	1.01	.90	.220
Al 249F-6-2 ⁺	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 ⁺	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 ⁺	5/8	1/4	7/8-14	1.41	1.25	.314
Al 149F-10-6 ⁺	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* ⁺	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.



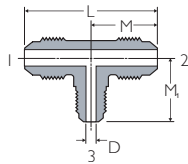
45° FLARE FITTINGS

Union Tee 144F- 244F REF. SAE 010401



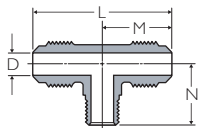
PART NO.	TUBE SIZE	STRAIGHT THREAD	L	M	FLOW DIA. D
AI 144F-3	3/16	3/8-24	1.46	.73	.125
AI 144F-4	1/4	7/16-20	1.72	.86	.189
AI 244F-4	1/4	7/16-20	1.72	.86	.189
AI 144F-5	5/16	1/2-20	1.82	.91	.220
AI 144F-6	3/8	5/8-18	2.08	1.04	.282
AI 144F-8	1/2	3/4-16	2.46	1.23	.407
AI 144F-10	5/8	7/8-14	2.78	1.39	.501

Union Tee 144F combination sizes



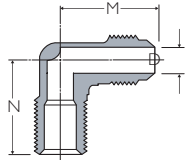
PART NO.	1 TUBE SIZE	2 TUBE SIZE	3 TUBE SIZE	L	M	M1	FLOW DIA. D
AI 144F-6-6-4	3/8	3/8	1/4	2.08	1.04	.89	.189
AI 144F-8-8-6	1/2	1/2	3/8	2.40	1.20	1.10	.282

Male Branch Tee 145F REF. SAE 010425



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

Male Elbow 149F- 249F REF. SAE 010202



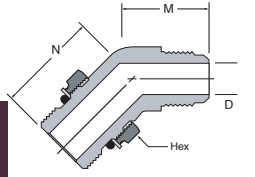
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	N	FLOW DIA. D
AI 149F-2-2	1/8	1/8	5/16-24	.63	.69	.079
AI 149F-3-2	3/16	1/8	3/8-24	.75	.75	.125
AI 249F-3-2	3/16	1/8	3/8-24	.73	.73	.125
AI 149F-4-2	1/4	1/8	7/16-20	.79	.76	.189
AI 249F-4-2	1/4	1/8	7/16-20	.79	.76	.189
AI 149F-4-4	1/4	1/4	7/16-20	.89	.92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

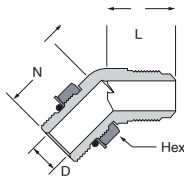
45° Flare Elbow to SAE Metric Straight Thread 159F-X-MIX



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

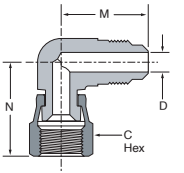
45° Flare to SAE Straight Thread 1595F



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

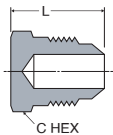
Note: Fluorocarbon o-ring is standard

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

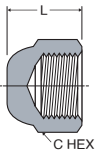
Flared Seal Plug 639F REF. SAE 010109



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

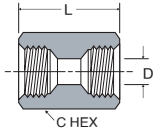
*Comes standard with thread protectors
Should be used with 2GF flare gasket

Cap Nut 640F REF. SAE 010112



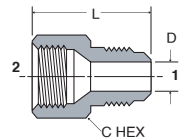
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L
AI 640F-3 [†]	3/16	3/8-24	1/2	.47
AI 640F-4 [†]	1/4	7/16-20	9/16	.53
AI 640F-5 [†]	5/16	1/2-20	5/8	.62
AI 640F-6 [†]	3/8	5/8-18	3/4	.69
AI 640F-8 [†]	1/2	3/4-16	7/8	.84
AI 640F-10 [†]	5/8	7/8-14	1-1/16	.97

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



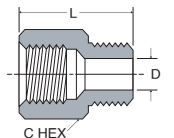
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
AI 660FHD-4 [†]	1/4	7/16-20	5/8	.98	.251
AI 660FHD-6 [†]	3/8	5/8-18	13/16	1.24	.376
AI 660FHD-8 [†]	1/2	3/4-16	15/16	1.43	.501
AI 660FHD-10 [†]	5/8	7/8-14	1-1/16	1.67	.626

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



3.2 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



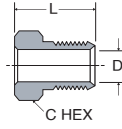
Assembly Instructions:

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.



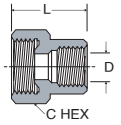
INVERTED FLARE FITTINGS

Nut 41IF REF. SAE 040110



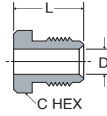
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	D
Al 41IF-2	1/8	5/16-28	5/16	.52	.133
Al 41IF-3	3/16	3/8-24	3/8	.56	.196
Al 41IF-4	1/4	7/16-24	7/16	.56	.259
Al 41IF-5	5/16	1/2-20	1/2	.62	.321
Al 41IF-6	3/8	5/8-18	5/8	.66	.384
Al 41IF-8	1/2	3/4-18	3/4	.74	.508

Female Connector 46IFHD REF. SAE 040103



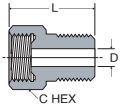
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
Al 46IFHD-3-2	3/16	1/8	3/8-24	1/2	.76	.125
Al 46IFHD-4-2	1/4	1/8	7/16-24	17/32	.78	.189
Al 46IFHD-5-2	5/16	1/8	1/2-20	19/32	.79	.220
Al 46IFHD-6-4	3/8	1/4	5/8-18	3/4	1.04	.282
Al 46IFHD-8-6	1/2	3/8	3/4-18	29/32	1.10	.407

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



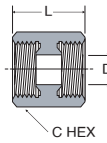
PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	D
Al 41IFF-2	1/8	5/16-28	5/16	.52	.133
Al 41IFF-3	3/16	3/8-24	3/8	.56	.196
Al 41IFF-4	1/4	7/16-24	7/16	.56	.259
Al 41IFF-5	5/16	1/2-20	1/2	.62	.321
Al 41IFF-6	3/8	5/8-18	5/8	.66	.384
Al 41IFF-8	1/2	3/4-18	3/4	.74	.508

Male Connector 48IFHD REF. SAE 040102



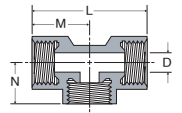
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
Al 48IFHD-2-2	1/8	1/8	5/16-28	13/32	.63	.078
Al 48IFHD-3-2	3/16	1/8	3/8-24	15/32	.70	.125
Al 48IFHD-4-2	1/4	1/8	7/16-24	17/32	.74	.189
Al 48IFHD-4-4	1/4	1/4	7/16-24	9/16	.89	.189
Al 48IFHD-5-2	5/16	1/8	1/2-20	19/32	.79	.220
Al 48IFHD-5-4	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

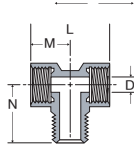
Union Tee244IFHD REF. SAE 040401



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

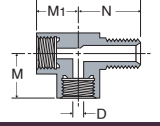


INVERTED FLARE FITTINGS



Male Branch Tee 245IFHD
REF. SAE 040425

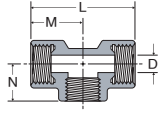
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI 245IFHD-4-2	1/4	1/8	7/16-24	.85	.43	.64	.189
AI 245IFHD-6-4	3/8	1/4	5/8-18	1.17	.58	.94	.282



Male Run Tee 251IFHD
REF. SAE 040424

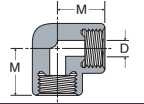
PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	M	M1	N	FLOW DIA. D
AI 251IFHD-3-2	3/16	1/8	3/8-24	.39	.53	.72	.125
AI 251IFHD-5-2	5/16	1/8	1/2-20	.45	.62	.85	.220
AI 251IFHD-6-4	3/8	1/4	5/8-18	.56	.75	1.08	.282

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

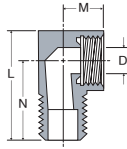
Union Elbow 255IFHD



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

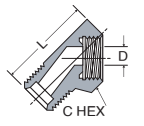


PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI 249IFHD-2-2	1/8	1/8	5/16-28	.79	.27	.58	.078
AI 249IFHD-3-2	3/16	1/8	3/8-24	.85	.27	.61	.125
AI 249IFHD-4-2 [†]	1/4	1/8	7/16-24	.92	.33	.65	.189
AI 249IFHD-4-4	1/4	1/4	7/16-24	1.10	.28	.82	.189
AI 249IFHD-5-4	5/16	1/4	1/2-20	1.16	.45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

[†]Light Duty Series

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

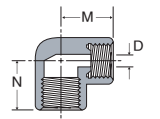
45° Elbow 259IFHD
REF. SAE 040302



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

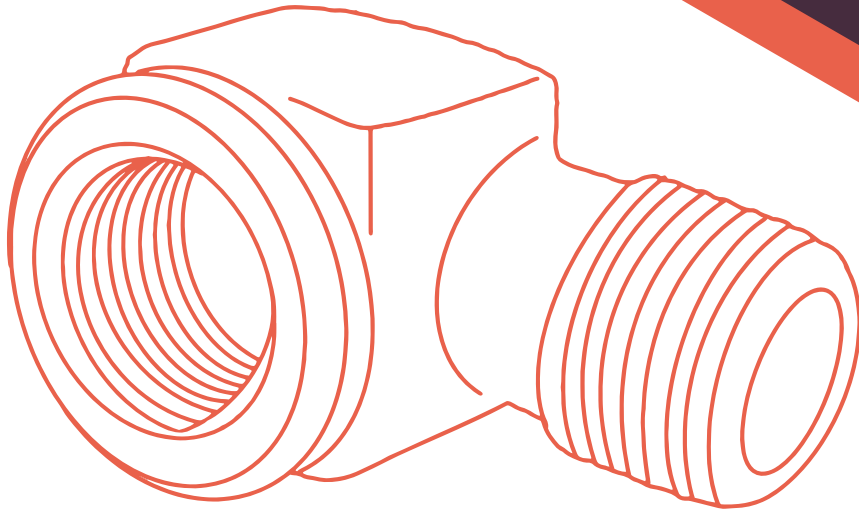
*Does not meet SAE or UL.

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





INDUSTRIAL FITTINGS & ADAPTERS

4.1 PIPE FITTINGS

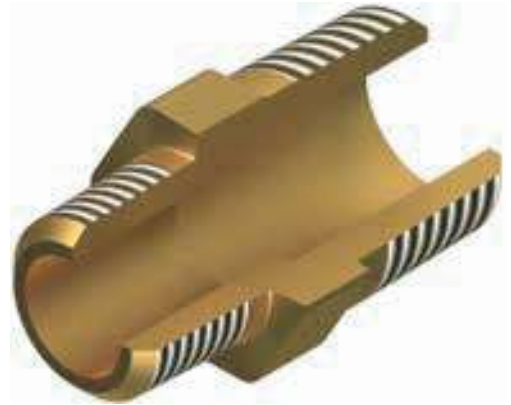


4.1 PIPE FITTINGS

PIPE FITTINGS MEET ALL FUNCTIONAL REQUIREMENTS OF SAE J530 AND SAE J531. ALL THREADS ON THE PIPE FITTINGS ARE MADE TO DRYSEAL STANDARDS.

Product Features:

- All brass construction
- Meets functional requirements of SAE J530 and SAE J531
- Threads made to dryseal standards
- Both forgings and extrusions available



Applications:

- Air Lines
- Water Line
- Cooling Lines

Markets:

- Industrial Marine
- Construction
- Heavy duty truck
- Mobile
- Factory/process automation

Specifications:

Temperature Range: -65° to $+250^{\circ}$ F (-53.9° to $+121.1^{\circ}$ C)

Pressure Range:

Up to 1000 PSI (68.9 bar)

Assembly Instructions:

1. Hand tighten external thread into internal thread .
2. Tighten an additional 2 turns with a wrench up to 1/2" male pipe thread.
3. Above 1/2" 1 1/2 to 2 1/2 turns.

Elbow or Tee Fittings

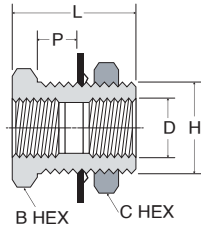
1. Hand tighten external thread into internal thread .
2. Tighten an additional 1 to 1 1/2 turns with a wrench
3. Tighten fitting, clockwise to align with tubing. (Never counter clockwise)

Note: To minimize the possibility of a leaking threaded joint after assembling Male to female pipe threads, neither end should be backed out (loosened) Once the assembly has been made.



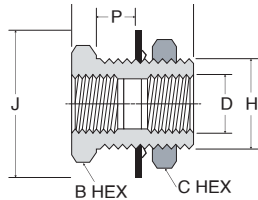
PIPE FITTINGS

Bulkhead 207ACBH



PART NO.	FEAMLE PIPE THREAD	STRAIGHT THREAD	MAI. BULK HEAD P	B HEX	C HEX	L	BLKHD HOLE DIA. H	FLOW DIA. D
AI 207ACBH-2	1/8	5/8-18	.89	7/8	15/16	1.50	5/8	.339
AI 207ACBHS-2	1/8	5/8-18	.35	7/8	15/16	.96	5/8	.339
AI 207ACBH-4	1/4	3/4-16	.81	1	1-1/8	1.50	3/4	.441
AI 207ACBHS-4	1/4	3/4-16	.26	1	1	.94	3/4	.441
AI 207ACBH-6	3/8	1-14	.62	1-1/8	1-1/4	1.31	1	.571
AI 207ACBH-8	1/2	1-1/8-14	.75	1-1/4	1-3/8	1.50	1-1/8	.703
AI 207ACBH-12	3/4	1-5/16-12	.65	1-1/2	1-1/2	1.50	1-5/16	.906
AI 207ACBH-16*	1	1-5/8-14	1.00	2	2	1.68	1-5/8	1.140

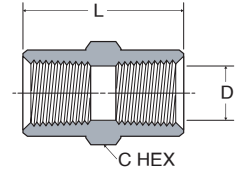
*Lock Washer not Available



Sealed Bulkhead 207ACBH-S

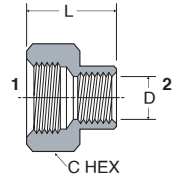
PART NO.	FEAMLE PIPE THREAD	STRAIGHT THREAD	MAI. BULK HEAD P	B HEX	C HEX	J	L	BLKHD HOLE DIA. H	FLOW DIA. D
AI 207ACBH-2-S	1/8	5/8-18	.84	7/8	15/16	1.19	1.50	.656	.339
AI 207ACBHS-2-S	1/8	5/8-18	.30	7/8	15/16	1.19	.96	.656	.339
AI 207ACBH-4-S	1/4	3/4-16	.75	1	1-1/8	1.31	1.50	.781	.441
AI 207ACBHS-4-S	1/4	3/4-16	.20	1	1	1.31	.94	.781	.441
AI 207ACBH-6-S	3/8	1-14	.56	1-1/8	1-1/4	1.75	1.31	1.031	.571

Coupling 207P



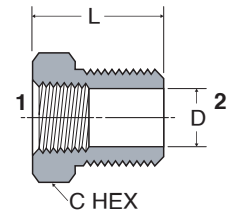
PART NO.	PIPE THREAD	C HEX	L	FLOW DIA. D
AI 207P-2	1/8	9/16	.75	.339
AI 207P-4	1/4	3/4	1.12	.441
AI 207P-6	3/8	7/8	1.12	.571
AI 207P-8	1/2	1-1/16	1.50	.703
AI 207P-12	3/4	1-3/8	1.53	.906

Reducer Coupling 208P



PART NO.	1 PIPE THREAD	2 PIPE THREAD	C HEX	L	FLOW DIA. D
AI 208P-4-2	1/4	1/8	3/4	.97	.339
AI 208P-6-4	3/8	1/4	7/8	1.16	.441
AI 208P-8-4	1/2	1/4	1-1/16	1.28	.441
AI 208P-8-6	1/2	3/8	1-1/16	1.38	.571
AI 208P-12-6	3/4	3/8	1-3/8	1.32	.571
AI 208P-12-8	3/4	1/2	1-3/8	1.50	.703

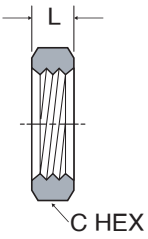
Bushing 209P



PART NO.	1 PIPE THREAD	2 PIPE THREAD	C HEX	L	FLOW DIA. D
AI 209P-4-2	1/8	1/4	9/16	.75	.339
AI 209P-6-2	1/8	3/8	11/16	.75	.339
AI 209P-6-4	1/4	3/8	3/4	.75	.441
AI 209P-8-2	1/8	1/2	7/8	1.00	.339
AI 209P-8-4	1/4	1/2	7/8	1.00	.441
AI 209P-8-6	3/8	1/2	7/8	1.00	.571
AI 209P-12-2	1/8	3/4	1-1/8	1.00	.339
AI 209P-12-4	1/4	3/4	1-1/8	1.00	.441
AI 209P-12-6	3/8	3/4	1-1/8	1.00	.571
AI 209P-12-8	1/2	3/4	1-1/8	1.00	.703
AI 209P-16-8	1/2	1	1-3/8	1.31	.703
AI 209P-16-12	3/4	1	1-3/8	1.31	.906

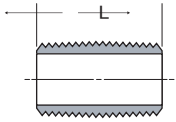


PIPE FITTINGS



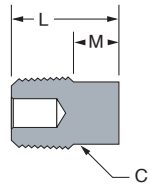
Lock Nut 210P

PART NO.	PIPE THREAD	C HEX	L
AI 210P-2	1/8 NPSL	11/16	.19
AI 210P-4	1/4 NPSL	7/8	.25
AI 210P-6	3/8 NPSL	1	.25
AI 210P-8	1/2 NPSL	1-1/8	.25



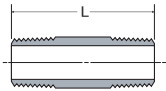
Close Nipple 215PN

PART NO.	PIPE THREAD	L	FLOW DIA.D
AI 215PN-2	1/8	.75	.281
AI 215PN-4	1/4	.88	.375
AI 215PN-6	3/8	1.00	.500
AI 215PN-8	1/2	1.13	.625
AI 215PN-12	3/4	1.31	.750



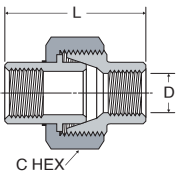
Square-Head Plug 211P

PART NO.	PIPE THREAD	C	L	M
AI 211P-2	1/8	9/32	.59	.25
AI 211P-4	1/4	3/8	.80	.29
AI 211P-6	3/8	7/16	.83	.32
AI 211P-8	1/2	9/16	1.07	.39
AI 211P-12	3/4	5/8	1.14	.45



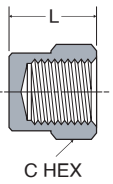
Long Nipple 215PNL

PART NO.	PIPE THREAD	L	FLOW DIA.D
AI 215PNL-2-15	1/8	1-1/2	.250
AI 215PNL-4-15	1/4	1-1/2	.375
AI 215PNL-6-15	3/8	1-1/2	.500
AI 215PNL-8-15	1/2	1-1/2	.625
AI 215PNL-2-20	1/8	2	.250
AI 215PNL-4-20	1/4	2	.375
AI 215PNL-6-20	3/8	2	.500
AI 215PNL-8-20	1/2	2	.625
AI 215PNL-2-25	1/8	2-1/2	.250
AI 215PNL-4-25	1/4	2-1/2	.375
AI 215PNL-6-25	3/8	2-1/2	.500
AI 215PNL-8-25	1/2	2-1/2	.625
AI 215PNL-2-30	1/8	3	.250
AI 215PNL-4-30	1/4	3	.375
AI 215PNL-6-30	3/8	3	.500
AI 215PNL-8-30	1/2	3	.625
AI 215PNL-2-35	1/8	3-1/2	.250
AI 215PNL-4-35	1/4	3-1/2	.375
AI 215PNL-6-35	3/8	3-1/2	.500
AI 215PNL-8-35	1/2	3-1/2	.625



Union 212P

PART NO.	PIPE THREAD	C HEX	L	D
AI 212P-4	1/4	1-3/16	1.54	.441
AI 212P-6	3/8	1-1/4	1.76	.571



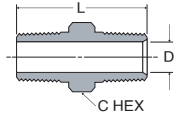
Cap 213P

PART NO.	PIPE THREAD	C HEX	L
AI 213P-2	1/8	9/16	.50
AI 213P-4	1/4	11/16	.63
AI 213P-6	3/8	13/16	.63
AI 213P-8	1/2	1-1/16	.87
AI 213P-12	3/4	1-1/4	.89



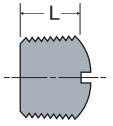
PIPE FITTINGS

Hex Nipple 216P



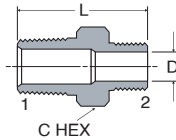
PART NO.	PIPE THREAD	C HEX	L	FLOW DIA. D
AI 216P-2	1/8	7/16	.97	.220
AI 216P-4	1/4	9/16	1.38	.314
AI 216P-6	3/8	11/16	1.41	.440
AI 216P-8	1/2	7/8	1.81	.564
AI 216P-12	3/4	1-1/16	1.81	.752

Slotted-Head Plug 220P



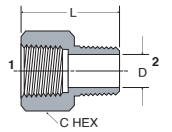
PART NO.	PIPE THREAD	L
AI 220P-2	1/8	.31
AI 220P-4	1/4	.42
AI 220P-6	3/8	.43

Hex Nipple Reducers 216P



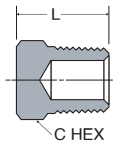
PART NO.	1 PIPE THREAD	2 PIPE THREAD	C HEX	L	FLOW DIA. D
AI 216P-4-2	1/4	1/8	9/16	1.19	.220
AI 216P-6-2	3/8	1/8	11/16	1.22	.220
AI 216P-6-4	3/8	1/4	11/16	1.41	.314
AI 216P-8-4	1/2	1/4	7/8	1.62	.314
AI 216P-8-6	1/2	3/8	7/8	1.62	.440
AI 216P-12-8	3/4	1/2	1-1/16	1.80	.564

Adapter 222P



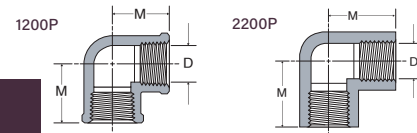
PART NO.	1 PIPE THREAD	2 PIPE THREAD	C HEX	L	FLOW DIA. D
AI 222P-2-2	1/8	1/8	9/16	.88	.220
AI 222P-4-2	1/4	1/8	3/4	1.06	.220
AI 222P-4-4	1/4	1/4	3/4	1.25	.314
AI 222P-6-2	3/8	1/8	7/8	1.10	.220
AI 222P-6-4	3/8	1/4	7/8	1.25	.314
AI 222P-6-6	3/8	3/8	7/8	1.25	.440
AI 222P-8-4	1/2	1/4	1	1.47	.314
AI 222P-8-6	1/2	3/8	1-1/16	1.47	.440
AI 222P-8-8	1/2	1/2	1-1/16	1.66	.564
AI 222P-12-6	3/4	3/8	1-3/8	1.50	.440
AI 222P-12-8	3/4	1/2	1-3/8	1.69	.564
AI 222P-12-12	3/4	3/4	1-3/8	1.69	.752

Hex-Head Plug 218P



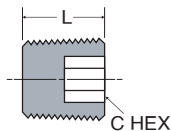
PART NO.	PIPE THREAD	C HEX	L
AI 218P-2	1/8	7/16	.560
AI 218P-4	1/4	9/16	.747
AI 218P-6	3/8	11/16	.780
AI 218P-8	1/2	7/8	.970
AI 218P-12	3/4	1-1/16	1.054

90° Union Elbow 1200P-2200P



PART NO.	PIPE THREAD	M	FLOW DIA. D
AI 1200P-2-2	1/8	.56	.329
AI 2200P-2-2	1/8	.55	.339
AI 1200P-4-4	1/4	.81	.441
AI 2200P-4-4	1/4	.78	.441
AI 1200P-6-6	3/8	.84	.571
AI 2200P-6-6	3/8	.84	.571
AI 2200P-8-8	1/2	1.07	.703

Countersunk Hex-Head Plug 219P

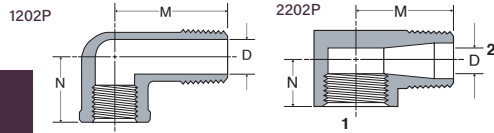


PART NO.	PIPE THREAD	C HEX	L
AI 219P-2	1/8	3/16	.30
AI 219P-4	1/4	1/4	.46
AI 219P-6	3/8	5/16	.46
AI 219P-8	1/2	3/8	.61
AI 219P-12	3/4	9/16	.62



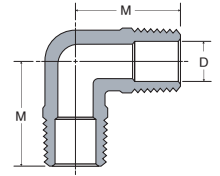
PIPE FITTINGS

90° Street Elbow 1202P-2202P



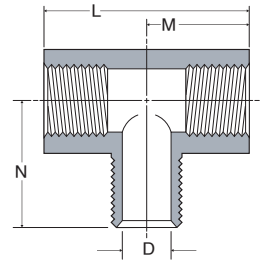
PART NO.	1 PIPE THREAD	2 PIPE THREAD	M	N	FLOW DIA. D
AI 1202P-2-2	1/8	1/8	.81	.56	.22
AI 2202P-2-2	1/8	1/8	.62	.48	.22
AI 2202PA-2-2*	1/8	1/8	.66	.48	.22
AI 2202P-4-2	1/4	1/8	.72	.45	.23
AI 1202P-4-4	1/4	1/4	1.08	.69	.31
AI 2202P-4-4	1/4	1/4	.91	.45	.34
AI 2202PA-4-4*	1/4	1/4	.91	.72	.31
AI 2202P-4-6	1/4	3/8	.97	.78	.43
AI 1202P-6-4	3/8	1/4	1.25	.78	.31
AI 1202P-6-6	3/8	3/8	1.25	.78	.42
AI 2202P-6-6	3/8	3/8	.98	.54	.41
AI 2202PA-6-6*	3/8	3/8	.97	.78	.43
AI 1202P-6-8	3/8	1/2	1.53	1.01	.56
AI 1202P-8-6	1/2	3/8	1.25	.97	.42
AI 2202P-8-8	1/2	1/2	1.25	1.03	.56
AI 2202P-12-8	3/4	1/2	1.39	1.10	.56
AI 2202P-12-12	3/4	3/4	1.39	1.10	.75

Male Elbow 1204P



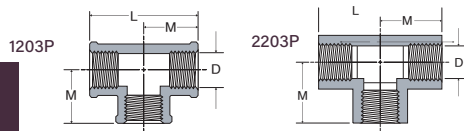
PART NO.	PIPE THREAD	M	FLOW DIA. D
AI 1204P-2	1/8	.71	.220
AI 1204P-4	1/4	1.09	.312
AI 1204P-6	3/8	1.09	.408
AI 1204P-8	1/2	1.41	.502

Male Branch Tee 2224P



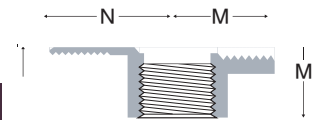
PART NO.	PIPE THREAD	L	M	N	FLOW DIA. D
AI 2224P-2	1/8	1.06	.53	.66	.220
AI 2224P-4	1/4	1.52	.76	.91	.314
AI 2224P-6	3/8	1.68	.84	.97	.440
AI 2224P-8	1/2	2.18	1.09	1.25	.564
AI 2224P-12	3/4	2.32	1.16	1.38	.752

Union Tee 1203P-2203P



PART NO.	PIPE THREAD	L	M	FLOW DIA. D
AI 1203P-2	1/8	1.12	.56	.339
AI 2203P-2	1/8	1.06	.53	.339
AI 1203P-4	1/4	1.38	.69	.441
AI 2203P-4	1/4	1.52	.76	.441
AI 2203P-6	3/8	1.68	.84	.571
AI 1203P-8	1/2	2.14	1.07	.703
AI 2203P-8	1/2	2.14	1.07	.703
AI 2203P-12	3/4	2.28	1.14	.906

Street Tee 2225P

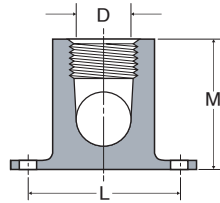


PART NO.	PIPE THREAD	M	N	DIA. D
AI 2225P-2	1/8	.53	.66	.220
AI 2225P-4	1/4	.76	.91	.314
AI 2225P-6	3/8	.84	.98	.440
AI 2225P-8	1/2	1.07	1.26	.564
AI 2225P-12	3/4	1.14	1.38	.752



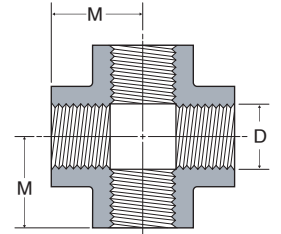
PIPE FITTINGS

Drop-ear 90° Elbow 2200PDE



PART NO.	PIPE THREAD	L	M	FLOW DIA. D
AI 2200PDE-2	1/8	1.38	1.00	.339

Cross 2205P

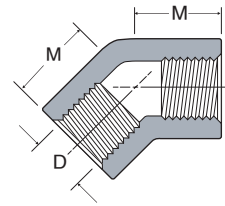


PART NO.	PIPE THREAD	M	FLOW DIA. D
AI 2205P-2	1/8	.53	.339
AI 2205P-4	1/4	.75	.441
AI 2205P-6	3/8	.81	.571
AI 2205P-8	1/2	1.07	.703
AI 2205P-12	3/4	1.14	.906

45° Female Elbow 1201P- 2201P

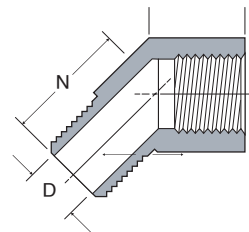
1201P

2201P



PART NO.	PIPE THREAD	M	FLOW DIA. D
AI 2201P-2-2	1/8	.43	.339
AI 1201P-8-8	1/2	.89	.703

45° Street Elbow 2214P



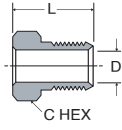
PART NO.	PIPE THREAD	M	N	FLOW DIA. D
AI 2214P-2-2	1/8	.38	.50	.220
AI 2214P-4-4	1/4	.54	.70	.314
AI 2214P-6-6	3/8	.56	.78	.440
AI 2214P-8-8	1/2	.73	1.00	.564
AI 2214P-12-12	3/4	.75	1.35	.750



PIPE FITTINGS

Nut 411F

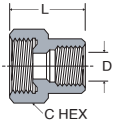
REF. SAE 040110



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	D
AI 411F-2	1/8	5/16-28	5/16	.52	.133
AI 411F-3	3/16	3/8-24	3/8	.56	.196
AI 411F-4	1/4	7/16-24	7/16	.56	.259
AI 411F-5	5/16	1/2-20	1/2	.62	.321
AI 411F-6	3/8	5/8-18	5/8	.66	.384
AI 411F-8	1/2	3/4-18	3/4	.74	.508

Female Connector 461FHD

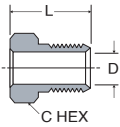
REF. SAE 040103



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
AI 461FHD-3-2	3/16	1/8	3/8-24	1/2	.76	.125
AI 461FHD-4-2	1/4	1/8	7/16-24	17/32	.78	.189
AI 461FHD-5-2	5/16	1/8	1/2-20	19/32	.79	.220
AI 461FHD-6-4	3/8	1/4	5/8-18	3/4	1.04	.282
AI 461FHD-8-6	1/2	3/8	3/4-18	29/32	1.10	.407

Steel Nut-Zinc 411FS

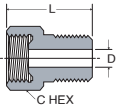
REF. SAE 040110



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	D
AI 411FS-3	3/16	3/8-24	3/8	.56	.196
AI 411FS-4	1/4	7/16-24	7/16	.56	.259
AI 411FS-5	5/16	1/2-20	1/2	.62	.321
AI 411FS-6	3/8	5/8-18	5/8	.66	.384
AI 411FS-8	1/2	3/4-18	3/4	.74	.508
AI 411FS-10	5/8	7/8-18	7/8	.80	.633

Male Connector 481FHD

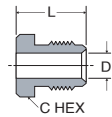
REF. SAE 040102



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	FLOW DIA. D
AI 481FHD-2-2	1/8	1/8	5/16-28	13/32	.63	.078
AI 481FHD-3-2	3/16	1/8	3/8-24	15/32	.70	.125
AI 481FHD-4-2	1/4	1/8	7/16-24	17/32	.74	.189
AI 481FHD-4-4	1/4	1/4	7/16-24	9/16	.89	.189
AI 481FHD-5-2	5/16	1/8	1/2-20	19/32	.79	.220
AI 481FHD-5-4	5/16	1/4	1/2-20	19/32	.98	.220
AI 481FHD-6-2	3/8	1/8	5/8-18	3/4	.89	.220
AI 481FHD-6-4	3/8	1/4	5/8-18	3/4	1.03	.282
AI 481FHD-6-6	3/8	3/8	5/8-18	3/4	1.03	.282
AI 481FHD-8-4	1/2	1/4	3/4-18	29/32	1.07	.346
AI 481FHD-8-6	1/2	3/8	3/4-18	29/32	1.07	.407
AI 481FHD-8-8	1/2	1/2	3/4-18	29/32	1.26	.407
AI 481FHD-10-8	5/8	1/2	7/8-18	1-1/16	1.32	.533
AI 481FHD-12-12	3/4	3/4	1-1/16-16	1 1/4	1.38	.626

Piloted Nut 411FF for Single Flared Tubing

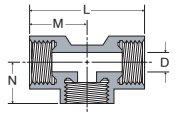
REF. SAE 040110



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	D
AI 411FF-2	1/8	5/16-28	5/16	.52	.133
AI 411FF-3	3/16	3/8-24	3/8	.56	.196
AI 411FF-4	1/4	7/16-24	7/16	.56	.259
AI 411FF-5	5/16	1/2-20	1/2	.62	.321
AI 411FF-6	3/8	5/8-18	5/8	.66	.384
AI 411FF-8	1/2	3/4-18	3/4	.74	.508

Union Tee 2441FHD

REF. SAE 040401

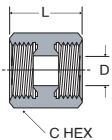


PART NO.	TUBE SIZE	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI 2441FHD-3	3/16	3/8-24	1.10	.55	.39	.125
AI 2441FHD-4	1/4	7/16-24	1.13	.56	.42	.189
AI 2441FHD-5	5/16	1/2-20	1.26	.63	.45	.220
AI 2441FHD-6	3/8	5/8-18	1.48	.74	.56	.282
AI 2441FHD-8*	1/2	3/4-18	1.76	.88	.67	.407

*Does not meet SAE or UL.

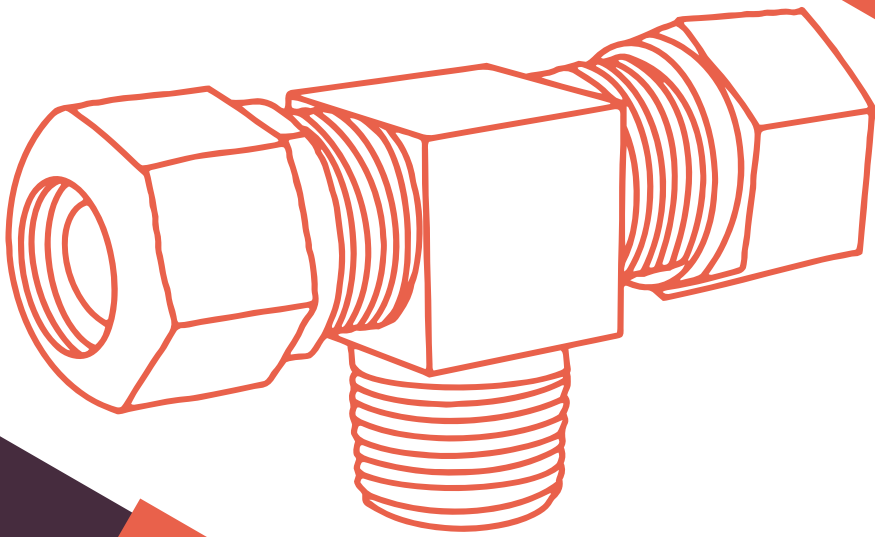
Union 421FHD

REF. SAE 040101



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	D
AI 421FHD-2	1/8	5/16-28	13/32	.60	.078
AI 421FHD-3	3/16	3/8-24	15/32	.63	.125
AI 421FHD-4	1/4	7/16-24	17/32	.63	.189
AI 421FHD-5	5/16	1/2-20	19/32	.71	.220
AI 421FHD-6	3/8	5/8-18	3/4	.81	.282
AI 421FHD-8	1/2	3/4-18	29/32	.92	.407





AUTOMOTIVE COMPRESSION FITTINGS

**5.1 AIR BRAKE- NTA
FITTINGS**

5.2 TRANSMISSION FITTINGS

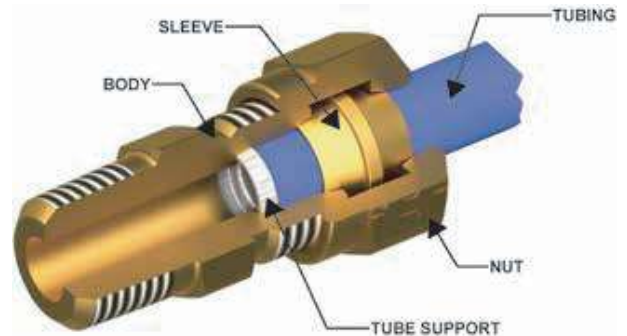
**5.3 AIR BRAKE
AB FITTINGS**

5.1 AIR BRAKE - NTA FITTINGS

NTA FITTINGS UTILIZE A RIBBED SLEEVE FOR COMPRESSION AND POSITIVE GRIP. FITTINGS MEET SAE AND D.O.T. SPECIFICATIONS. DESIGNED FOR ALL D.O.T TRUCK AND TRAILER APPLICATIONS. ELECTROLESS NICKEL PLATED BODIES CAN BE USED WITH BIO-DIESEL.

Product Features:

- Meets D.O.T. FMVSS571.106 Performance
- Meets functional Requirements SAE J246 & SAE J1131
- Pre-applied Thread Sealant
- Nickel Plated Versions Available for Bio-diesel



Applications:

- Air Brakes
- Air Tanks
- Air Ride
- Sliders
- Primary & Secondary Air Lines
- Cab Controls

Markets:

- Heavy Duty Truck
- Trailer
- Mobile

Specifications:

Temperature Range: -40° to +200° F (-40° to +93.3° C)

Pressure Range:

Up to 150 PSI (10.3 bar)

Compatible Tubing:

SAE J844 Type A & B nylon tubing)

Assembly Instructions:

1. Cut tubing squarely – maximum of 15° angle allowable.
2. Check that port or mating part is clean and free of debris.
3. Insert tubing until it bottoms on seat.
4. Tighten nut with wrench until one thread remains visible on the number of remakes) or, the nut tight, then wrench-tightened as indicated in the following table.



AIR BRAKE - NTA FITTINGS

Sleeve 60NTA

REF. SAE 100115

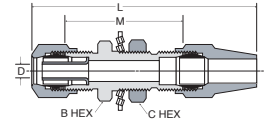


PART NO.	TUBE SIZE	A	D	L
AI 60NTA-3*	3/16	.255	.194	.23
AI 60NTA-4	1/4	.359	.256	.30
AI 60NTA-6	3/8	.479	.384	.39
AI 60NTA-8	1/2	.624	.509	.43
AI 60NTA-10	5/8	.746	.634	.49
AI 60NTA-12	3/4	.922	.760	.54

*Meets D.O.T. FMVSS 571.106 specification. No applicable SAE specification for this tube size.

Bulkhead Union 62ANBH

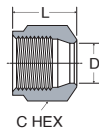
(NTA* & AIR BRAKE)



PART NO.	TUBE SIZE	STRAIGHT THREAD	B HEX	C HEX	L	M	FLOW DIA. D	BULKHEAD HOLE DIA.
AI 62ANBH-4	1/4	7/16-24	9/16	9/16	2.28	1.38	.137	7/16
AI 62ANBH-6	3/8	17/32-24	11/16	3/4	2.97	1.62	.217	17/32
AI 62ANBH-8	1/2	11/16-20	13/16	1	3.36	1.88	.338	11/16

Nut 61NTA

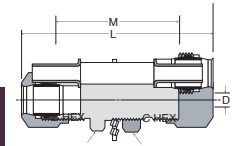
REF. SAE 100110



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
AI 61NTA-3*	3/16	5/16-24	7/16	.194	.40
AI 61NTA-4	1/4	7/16-24	9/16	.256	.45
AI 61NTA-6	3/8	17/32-24	5/8	.384	.63
AI 61NTA-8	1/2	11/16-20	13/16	.509	.72
AI 61NTA-10	5/8	13/16-18	15/16	.634	.77
AI 61NTA-12	3/4	1-18	1-1/8	.760	.81

*Meets D.O.T. FMVSS 571.106 specification. No applicable SAE specification for this tube size.

Bulkhead Union 62NBH

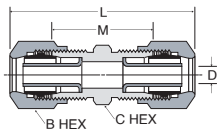


PART NO.	TUBE SIZE	STRAIGHT THREAD	B HEX	C HEX	L	M	FLOW DIA. D	BULKHEAD HOLE DIA.
AI 62NBH-3*	3/16	5/16-24	7/16	7/16	1.80	1.21	.087	5/16
AI 62NBH-4	1/4	7/16-24	9/16	9/16	2.04	1.38	.137	7/16
AI 62NBH-6	3/8	17/32-24	11/16	3/4	2.54	1.62	.217	17/32
AI 62NBH-8	1/2	11/16-20	13/16	1	2.92	1.88	.338	11/16
AI 62NBH-10	5/8	13/16-18	15/16	1	2.99	2.01	.398	13/16

*Meets D.O.T. FMVSS 571.106 specification. No applicable SAE specification for this tube size.

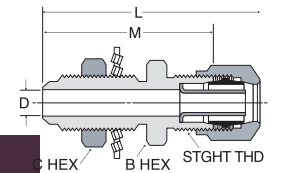
Union 62NTA

REF. SAE 100101 BA



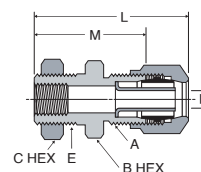
PART NO.	TUBE SIZE	STRAIGHT THREAD	B HEX	C HEX	L	M	FLOW DIA. D
AI 62NTA-4	1/4	7/16-24	9/16	7/16	1.49	.83	.137
AI 62NTA-6	3/8	17/32-24	5/8	9/16	2.00	1.08	.217
AI 62NTA-8	1/2	11/16-20	13/16	11/16	2.32	1.29	.338
AI 62NTA-10	5/8	13/16-18	15/16	13/16	2.39	1.41	.398
AI 62NTA-12	3/4	1-18	1-1/8	1	2.60	1.58	.523

Bulkhead Union 62NFBH



PART NO.	TUBE SIZE	FLARE SIZE	STGHT THD	B HEX	C HEX	L	M	FLOW DIA. D	BKHD HOLE DIA.
AI 62NFBH-4	1/4	1/4	7/16-24	9/16	9/16	1.86	1.53	.137	7/16
AI 62NFBH-6	3/8	3/8	17/32-24	3/4	3/4	2.24	1.78	.217	5/8
AI 62NFBH-8	1/2	1/2	11/16-20	7/8	7/8	2.73	2.22	.338	3/4
AI 62NFBH-10	5/8	5/8	13/16-18	1	1	2.68	2.21	.398	7/8
AI 62NFBH-10-8	5/8	1/2	13/16-18	7/8	7/8	2.90	2.40	.398	3/4

AI Bulkhead Union 66NBH



PART NO.	TB SZ	PIPE THD	A STGHT THD	E STGHT THD	B HEX	C HEX	L	M	FLOW DIA. D	BKHD HOLE DIA.
AI 66NBH-8-6	1/2	3/8	11/16-20	7/8-14	1-1/16	1-1/16	1.94	1.42	.338	7/8



AIR BRAKE - NTA FITTINGS

Sleeve 60NTA

REF. SAE 100115

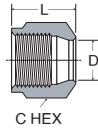


PART NO.	TUBE SIZE	A	D	L
AI 60NTA-3*	3/16	.255	.194	.23
AI 60NTA-4	1/4	.359	.256	.30
AI 60NTA-6	3/8	.479	.384	.39
AI 60NTA-8	1/2	.624	.509	.43
AI 60NTA-10	5/8	.746	.634	.49
AI 60NTA-12	3/4	.922	.760	.54

*Meets D.O.T. FMVSS 571.106 specification. No applicable SAE specification for this tube size.

Nut 61NTA

REF. SAE 100110

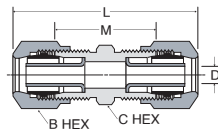


PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
AI 61NTA-3*	3/16	5/16-24	7/16	.194	.40
AI 61NTA-4	1/4	7/16-24	9/16	.256	.45
AI 61NTA-6	3/8	17/32-24	5/8	.384	.63
AI 61NTA-8	1/2	11/16-20	13/16	.509	.72
AI 61NTA-10	5/8	13/16-18	15/16	.634	.77
AI 61NTA-12	3/4	1-18	1-1/8	.760	.81

*Meets D.O.T. FMVSS 571.106 specification. No applicable SAE specification for this tube size.

Union 62NTA

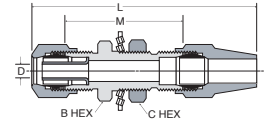
REF. SAE 100101 BA



PART NO.	TUBE SIZE	STRAIGHT THREAD	B HEX	C HEX	L	M	FLOW DIA. D
AI 62NTA-4	1/4	7/16-24	9/16	7/16	1.49	.83	.137
AI 62NTA-6	3/8	17/32-24	5/8	9/16	2.00	1.08	.217
AI 62NTA-8	1/2	11/16-20	13/16	11/16	2.32	1.29	.338
AI 62NTA-10	5/8	13/16-18	15/16	13/16	2.39	1.41	.398
AI 62NTA-12	3/4	1-18	1-1/8	1	2.60	1.58	.523

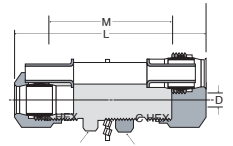
Bulkhead Union 62ANBH

(NTA® & AIR BRAKE)



PART NO.	TUBE SIZE	STRAIGHT THREAD	B HEX	C HEX	L	M	FLOW DIA. D	BULKHEAD HOLE DIA.
AI 62ANBH-4	1/4	7/16-24	9/16	9/16	2.28	1.38	.137	7/16
AI 62ANBH-6	3/8	17/32-24	11/16	3/4	2.97	1.62	.217	17/32
AI 62ANBH-8	1/2	11/16-20	13/16	1	3.36	1.88	.338	11/16

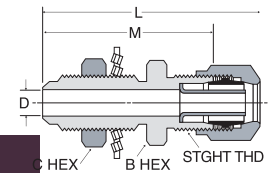
Bulkhead Union 62NBH



PART NO.	TUBE SIZE	STRAIGHT THREAD	B HEX	C HEX	L	M	FLOW DIA. D	BULKHEAD HOLE DIA.
AI 62NBH-3*	3/16	5/16-24	7/16	7/16	1.80	1.21	.087	5/16
AI 62NBH-4	1/4	7/16-24	9/16	9/16	2.04	1.38	.137	7/16
AI 62NBH-6	3/8	17/32-24	11/16	3/4	2.54	1.62	.217	17/32
AI 62NBH-8	1/2	11/16-20	13/16	1	2.92	1.88	.338	11/16
AI 62NBH-10	5/8	13/16-18	15/16	1	2.99	2.01	.398	13/16

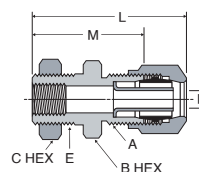
*Meets D.O.T. FMVSS 571.106 specification. No applicable SAE specification for this tube size.

Bulkhead Union 62NFBH



PART NO.	TUBE SIZE	FLARE SIZE	STGHT THD	B HEX	C HEX	L	M	FLOW DIA. D	BKHD HOLE DIA.
AI 62NFBH-4	1/4	1/4	7/16-24	9/16	9/16	1.86	1.53	.137	7/16
AI 62NFBH-6	3/8	3/8	17/32-24	3/4	3/4	2.24	1.78	.217	5/8
AI 62NFBH-8	1/2	1/2	11/16-20	7/8	7/8	2.73	2.22	.338	3/4
AI 62NFBH-10	5/8	5/8	13/16-18	1	1	2.68	2.21	.398	7/8
AI 62NFBH-10-8	5/8	1/2	13/16-18	7/8	7/8	2.90	2.40	.398	3/4

AI Bulkhead Union 66NBH



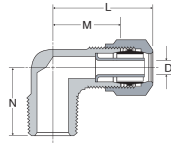
PART NO.	TB SZ	PIPE THD	A STGHT THD	E STGHT THD	B HEX	C HEX	L	M	FLOW DIA. D	BKHD HOLE DIA.
AI 66NBH-8-6	1/2	3/8	11/16-20	7/8-14	1-1/16	1-1/16	1.94	1.42	.338	7/8



AIR BRAKE - NTA FITTINGS

Male Elbow VS269NTA

SAE 100202 BA

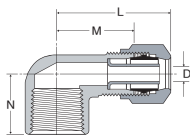


PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI VS269NTA-3-2*	3/16	1/8	5/16-24	.90	.60	.67	.087
AI VS269NTA-3-4*	3/16	1/4	5/16-24	.91	.62	.87	.087
AI VS269NTA-4-2	1/4	1/8	7/16-24	.95	.62	.66	.137
AI VS269NTA-4-4	1/4	1/4	7/16-24	1.00	.68	.87	.137
AI VS269NTA-4-6	1/4	3/8	7/16-24	1.16	.73	.86	.137
AI VS269NTA-6-2	3/8	1/8	17/32-24	1.19	.73	.75	.217
AI VS269NTA-6-4	3/8	1/4	17/32-24	1.25	.79	.92	.217
AI VS269NTA-6-6	3/8	3/8	17/32-24	1.30	.84	.91	.217
AI VS269NTA-6-8	3/8	1/2	17/32-24	1.40	.94	1.10	.217
AI VS269NTA-8-4	1/2	1/4	11/16-20	1.38	.86	.99	.338
AI VS269NTA-8-6	1/2	3/8	11/16-20	1.44	.92	.99	.338
AI VS269NTA-8-8	1/2	1/2	11/16-20	1.55	1.03	1.18	.338
AI VS269NTA-10-6	5/8	3/8	13/16-18	1.49	1.00	1.05	.398
AI VS269NTA-10-8	5/8	1/2	13/16-18	1.58	1.09	1.24	.398
AI VS269NTA-10-12	5/8	3/4	13/16-18	1.76	1.25	1.32	.400
AI VS269NTA-12-8	3/4	1/2	1-18	1.70	1.19	1.33	.523
AI VS269NTA-12-12	3/4	3/4	1-18	1.77	1.26	1.32	.523

*Meets D.O.T. FMVSS 571.106 specification. No applicable SAE specification for this tube size.

Female Elbow 270NTA

REF. SAE 100203 BA

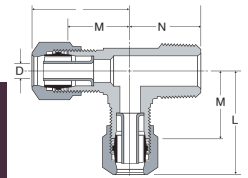


PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI 270NTA-3-2*	3/16	1/8	5/16-24	.96	.67	.52	.087
AI 270NTA-4-2	1/4	1/8	7/16-24	1.02	.69	.52	.137
AI 270NTA-4-4	1/4	1/4	7/16-24	1.11	.78	.71	.137
AI 270NTA-6-2	3/8	1/8	17/32-24	1.29	.83	.59	.217
AI 270NTA-6-4	3/8	1/4	17/32-24	1.35	.89	.77	.217
AI 270NTA-6-6	3/8	3/8	17/32-24	1.39	.93	.77	.217
AI 270NTA-8-6	1/2	3/8	11/16-20	1.55	1.03	.82	.338
AI 270NTA-8-8	1/2	1/2	11/16-20	1.65	1.13	1.01	.338
AI 270NTA-10-8	5/8	1/2	13/16-18	1.70	1.19	1.07	.398

*Meets D.O.T. FMVSS 571.106 specification. No applicable SAE specification for this tube size.

Male Run Tee VS271NTA

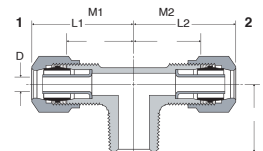
REF. SAE 100424 BA



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI VS271NTA-4-2	1/4	1/8	7/16-24	.95	.62	.66	.137
AI VS271NTA-4-4	1/4	1/4	7/16-24	1.00	.68	.87	.137
AI VS271NTA-6-4	3/8	1/4	17/32-24	1.25	.79	.92	.217
AI VS271NTA-6-6	3/8	3/8	17/32-24	1.30	.84	.91	.217
AI VS271NTA-8-6	1/2	3/8	11/16-20	1.45	.93	.99	.338
AI VS271NTA-8-8	1/2	1/2	11/16-20	1.55	1.03	1.18	.338
AI VS271NTA-10-8	5/8	1/2	13/16-18	1.60	1.09	1.24	.398

Male Branch Tee VS272NTA

REF. SAE 100425 BA

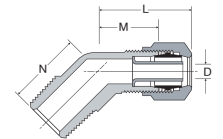


PART NO.	TB 1	TB 2	PIPE THD	STGHT THD	L1	L2	M1	M2	N	FLOW DIA. D
AI VS272NTA-3-2*	3/16	3/16	1/8	5/16-24	.90	.90	.61	.61	.66	.087
AI VS272NTA-4-2	1/4	1/4	1/8	7/16-24	.95	.95	.62	.62	.66	.137
AI VS272NTA-4-4	1/4	1/4	1/4	7/16-24	1.00	1.00	.68	.68	.87	.137
AI VS272NTA-6-2	3/8	3/8	1/8	17/32-24	1.18	1.18	.75	.75	.73	.217
AI VS272NTA-6-4	3/8	3/8	1/4	17/32-24	1.25	1.25	.91	.91	.92	.217
AI VS272NTA-6-4-4	3/8	1/4	1/4	17/32-24	.99	1.25	.67	.79	.91	.137
AI VS272NTA-6-6	3/8	3/8	3/8	17/32-24	1.27	1.27	.84	.84	.91	.217
AI VS272NTA-8-4	1/2	1/2	1/4	11/16-20	1.45	1.45	.93	.93	.99	.338
AI VS272NTA-8-6	1/2	1/2	3/8	11/16-20	1.45	1.45	.93	.93	.99	.338
AI VS272NTA-8-8	1/2	1/2	1/2	11/16-20	1.55	1.55	1.03	1.03	1.18	.338
AI VS272NTA-10-8	5/8	5/8	1/2	13/16-18	1.60	1.60	1.09	1.09	1.24	.398

*Meets D.O.T. FMVSS 571.106 specification. No applicable SAE specification for this tube size.

45° Elbow VS279NTA

REF. SAE 100302 BA



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI VS279NTA-4-2	1/4	1/8	7/16-24	.81	.49	.63	.137
AI VS279NTA-4-4	1/4	1/4	7/16-24	.93	.60	.85	.137
AI VS279NTA-6-2	3/8	1/8	17/32-24	1.17	.71	.68	.217
AI VS279NTA-6-4	3/8	1/4	17/32-24	1.17	.71	.85	.217
AI VS279NTA-6-6	3/8	3/8	17/32-24	1.21	.75	.94	.217
AI VS279NTA-6-8	3/8	1/2	17/32-24	1.24	.78	1.16	.217
AI VS279NTA-8-4	1/2	1/4	11/16-20	1.36	.84	.94	.338
AI VS279NTA-8-6	1/2	3/8	11/16-20	1.36	.84	.94	.338
AI VS279NTA-8-8	1/2	1/2	11/16-20	1.39	.87	1.16	.338
AI VS279NTA-10-6	5/8	3/8	13/16-18	1.43	.94	.98	.398
AI VS279NTA-10-8	5/8	1/2	13/16-18	1.42	.93	1.16	.398
AI VS279NTA-12-8	3/4	1/2	1-18	1.61	1.10	1.18	.523



5.2 TRANSMISSION FITTINGS

TRANSMISSION FITTINGS UTILIZES A SPECIALLY DESIGNED SLOTTED SLEEVE TO HELP ELIMINATE NOTCH STRESS RELATED TO OVER-TORQUE. IDEAL FOR PRESSURE PROTECTED PNEUMATIC TRANSMISSION APPLICATIONS. ELECTROLESS NICKEL PLATED BODIES CAN BE USED WITH BIO-DIESEL.

Product Features:

- Brass Body
- D.O.T. Approved with Staked in Tube Support
- 3/16" & 5/32" Tube sizes
- Slotted Sleeve
- Nickel Plated Versions Available for Bio-diesel

Applications:

- Air Shift Transmissions
- Seat Controls
- Dash Controls

Markets:

- Heavy Duty Truck

Specifications:

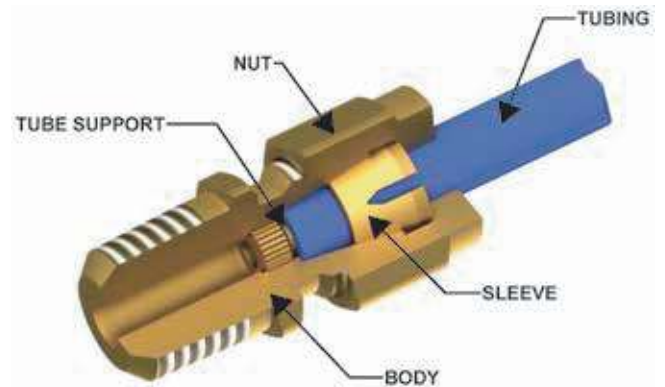
Temperature Range: -40° to +200° F (-40° to +93.3° C)

Pressure Range:

Up to 150 PSI (10.3 bar)

Compatible Tubing:

SAE J844 Type A & B nylon tubing)



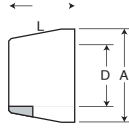
Assembly Instructions:

1. Cut tubing squarely and remove burrs
2. Tighten nut 1 1/2 turns from



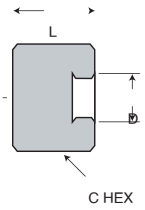
TRANSMISSION FITTINGS

Sleeve 60TF



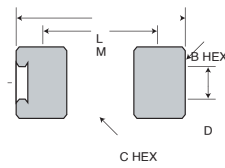
PART NO.	TUBE SIZE	A	D	L
AI 60TF-2	1/8	.235	.130	0.17
AI 60TF-5/32	5/32	.251	.165	0.18

Nut 61TF



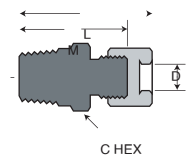
PART NO.	TUBE SIZE	D	L	STRT THD	C HEX
AI 61TF-2	1/8	.133	.32	5/16-24	3/8
AI 61TF-5/32	5/32	.163	.32	5/16-24	3/8

Union 62TF



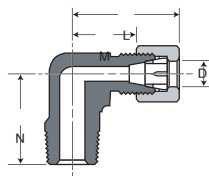
PART NO.	TUBE SIZE	D	L	STRT THD	M	C HEX	B HEX
AI 62TF-2	1/8	.109	1.04	5/16-24	.68	5/16	3/8
AI 62TF-5/32	5/32	.068	1.04	5/16-24	.68	5/16	3/8

Male Connector 68TF



PART NO.	TUBE SIZE	PIPE THREAD	D	L	STRT THD	M	C HEX
AI 68TF-2-1	1/8	1/16	.109	.96	5/16-24	.78	11/32
AI 68TF-2-2	1/8	1/8	.109	.96	5/16-24	.78	7/16
AI 68TF-5/32-1	5/32	1/16	.068	.84	5/16-24	.66	11/32
AI 68TF-5/32-2	5/32	1/8	.068	.96	5/16-24	.78	7/16

Male Elbow 269TF



PART NO.	TUBE SIZE	PIPE THREAD	D	L	STRT THD	M	N
AI 269TF-2-2	1/8	1/8	.109	.79	5/16-24	.61	.66
AI 269TF-5/32-2	5/32	1/8	.068	.79	5/16-24	.61	.66



5.3 AIR BRAKE - AB FITTINGS

AIR BRAKE - AB FITTINGS ARE ECONOMICAL COMPRESSION STYLE FITTINGS FOR COPPER AIR BRAKE LINES. AB FITTINGS MEET THE FUNCTIONAL REQUIREMENTS OF SAE AND THE PERFORMANCE REQUIREMENTS OF D.O.T.

Product Features:

- Brass Body
- Meets D.O.T. FMVSS571.106 Performance
- Meets functional Requirements SAE J246
- Reusable
- Pre-applied Thread Sealant

Applications:

- Copper Air Brake Lines
- Coolant Lines
- Fuel Lines

Markets:

- Heavy Duty Truck
- Trailer
- Mobile

Specifications:

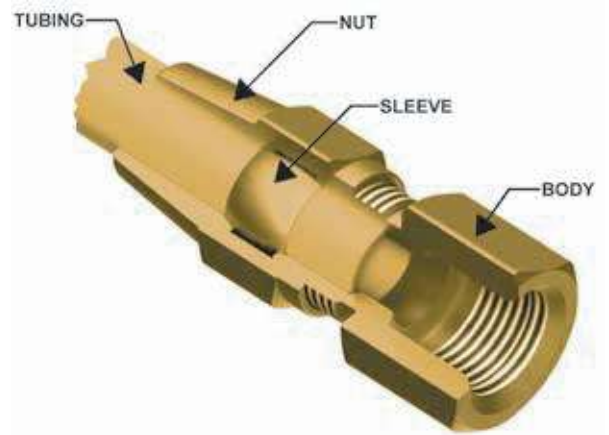
Temperature Range: -65° to +250° F (-53.8° to +121.1° C)

Pressure Range:

Up to 400 PSI (27.5 bar)

Compatible Tubing:

SAE J844 Type A & B nylon tubing)



Assembly Instructions:

1. Cut tubing squarely and remove burrs
2. Slide nut and sleeve onto tubing.
3. bottomed on seat. The nut tight, then wrench tightened as indicated in the chart



AIR BRAKE - AB FITTINGS

Sleeve 60AB

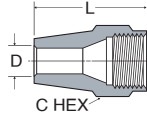
REF. SAE 120115



PART NO.	TUBE SIZE	A	D	L
Al 60AB-4	1/4	.322	.255	.250
Al 60AB-6	3/8	.461	.382	.310
Al 60AB-8	1/2	.594	.507	.380
Al 60AB-10	5/8	.734	.632	.440
Al 60AB-12	3/4	.874	.758	.500

Nut 61AB

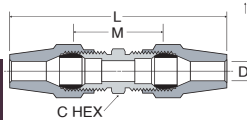
REF. SAE 120111



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	D	L
Al 61AB-4	1/4	7/16-24	9/16	.256	.75
Al 61AB-6	3/8	17/32-24	5/8	.384	1.13
Al 61AB-8	1/2	11/16-20	13/16	.509	1.25
Al 61AB-10	5/8	13/16-18	15/16	.634	1.38
Al 61AB-12	3/4	1-18	1-1/8	.760	1.56

Union 62AB

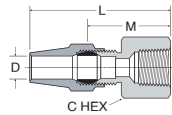
REF. SAE 120101 BA



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	M	FLOW DIA. D
Al 62AB-4	1/4	7/16-24	7/16	1.98	.83	.189
Al 62AB-6	3/8	17/32-24	9/16	2.87	1.08	.314
Al 62AB-8	1/2	11/16-20	11/16	3.21	1.29	.405
Al 62AB-10	5/8	13/16-18	13/16	3.59	1.41	.531
Al 62AB-12	3/4	1-18	1	4.08	1.59	.656

Female Connector 66AB

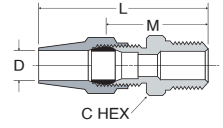
REF. SAE 120103 BA



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	M	FLOW DIA. D
Al 66AB-4-2	1/4	1/8	7/16-24	9/16	1.42	.84	.188
Al 66AB-4-4	1/4	1/4	7/16-24	11/16	1.65	1.07	.188
Al 66AB-6-2	3/8	1/8	17/32-24	9/16	1.89	1.00	.314
Al 66AB-6-4	3/8	1/4	17/32-24	11/16	2.07	1.18	.314
Al 66AB-6-6	3/8	3/8	17/32-24	7/8	2.07	1.18	.314
Al 66AB-8-6	1/2	3/8	11/16-20	7/8	2.23	1.27	.408
Al 66AB-8-8	1/2	1/2	11/16-20	1-1/16	2.40	1.44	.408
Al 66AB-10-6	5/8	3/8	13/16-18	7/8	2.40	1.31	.533
Al 66AB-10-8	5/8	1/2	13/16-18	1-1/16	2.59	1.50	.533

Male Connector VS68AB

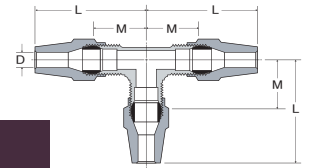
REF. SAE 120102 BA



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	C HEX	L	M	FLOW DIA. D
Al VS68AB-4-2	1/4	1/8	7/16-24	7/16	1.47	.89	.189
Al VS68AB-4-4	1/4	1/4	7/16-24	9/16	1.68	1.10	.189
Al VS68AB-4-6	1/4	3/8	7/16-24	11/16	1.72	1.14	.189
Al VS68AB-6-2	3/8	1/8	17/32-24	9/16	1.92	1.03	.189
Al VS68AB-6-4	3/8	1/4	17/32-24	9/16	2.10	1.21	.314
Al VS68AB-6-6	3/8	3/8	17/32-24	11/16	2.13	1.24	.314
Al VS68AB-6-8	3/8	1/2	17/32-24	7/8	2.32	1.43	.314
Al VS68AB-8-4	1/2	1/4	11/16-20	11/16	2.29	1.33	.314
Al VS68AB-8-6	1/2	3/8	11/16-20	11/16	2.29	1.33	.408
Al VS68AB-8-8	1/2	1/2	11/16-20	7/8	2.48	1.52	.408
Al VS68AB-10-6	5/8	3/8	13/16-18	13/16	2.48	1.39	.408
Al VS68AB-10-8	5/8	1/2	13/16-18	7/8	2.67	1.58	.533
Al VS68AB-12-8	3/4	1/2	1-18	1	2.92	1.68	.533
Al VS68AB-12-12	3/4	3/4	1-18	1-1/8	2.95	1.71	.658

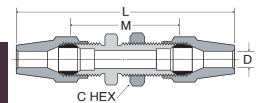
Union Tee 264AB

REF. SAE 120401 BA



PART NO.	TUBE SIZE	STRAIGHT THREAD	L	M	FLOW DIA. D
Al 264AB-4	1/4	7/16-24	1.20	.62	.189
Al 264AB-6	3/8	17/32-24	1.67	.78	.314
Al 264AB-8	1/2	11/16-20	1.89	.93	.408
Al 264AB-10	5/8	13/16-18	2.18	1.09	.533

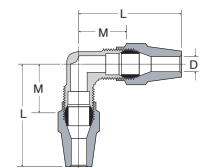
Bulkhead Union 62ABH



PART NO.	TUBE SIZE	STRAIGHT THREAD	C HEX	L	M	FLOW DIA. D	BULKHEAD HOLE DIA.
Al 62ABH-4	1/4	7/16-24	9/16	2.53	1.38	.188	7/16
Al 62ABH-6	3/8	17/32-24	3/4	3.41	1.62	.314	17/32
Al 62ABH-8	1/2	11/16-20	1	3.80	1.88	.408	11/16

Union Elbow 265AB

REF. SAE 120201 BA



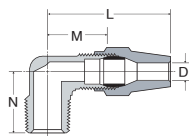
PART NO.	TUBE SIZE	STRAIGHT THREAD	L	M	FLOW DIA. D
Al 265AB-4	1/4	7/16-24	1.20	.62	.189
Al 265AB-6	3/8	17/32-24	1.68	.79	.314
Al 265AB-8	1/2	11/16-20	1.89	.93	.408
Al 265AB-10	5/8	13/16-18	2.18	1.09	.533



AIR BRAKE - AB FITTINGS

Male Elbow VS269AB

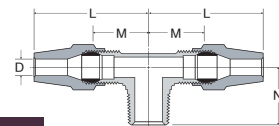
REF. SAE 120202 BA



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI VS269AB-4-2	1/4	1/8	7/16-24	1.20	.62	.66	.189
AI VS269AB-4-4	1/4	1/4	7/16-24	1.26	.68	.87	.189
AI VS269AB-4-6	1/4	3/8	7/16-24	1.31	.73	.86	.189
AI VS269AB-6-2	3/8	1/8	17/32-24	1.62	.73	.75	.189
AI VS269AB-6-4	3/8	1/4	17/32-24	1.68	.79	.92	.314
AI VS269AB-6-6	3/8	3/8	17/32-24	1.73	.84	.91	.314
AI VS269AB-6-8	3/8	1/2	17/32-24	1.83	.94	1.10	.314
AI VS269AB-8-4	1/2	1/4	11/16-20	1.82	.86	.99	.314
AI VS269AB-8-6	1/2	3/8	11/16-20	1.88	.93	.99	.408
AI VS269AB-8-8	1/2	1/2	11/16-20	1.99	1.03	1.18	.408
AI VS269AB-10-6	5/8	3/8	13/16-18	2.09	1.00	1.05	.408
AI VS269AB-10-8	5/8	1/2	13/16-18	2.18	1.09	1.24	.533
AI VS269AB-12-8	3/4	1/2	1-18	2.33	1.19	1.32	.533
AI VS269AB-12-12	3/4	3/4	1-18	2.50	1.26	1.32	.533

Male Branch Tee VS272AB

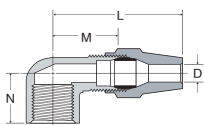
REF. SAE 120425 BA



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI VS272AB-4-2	1/4	1/8	7/16-24	1.20	.62	.66	.189
AI VS272AB-4-4	1/4	1/4	7/16-24	1.26	.68	.87	.189
AI VS272AB-6-2	3/8	1/8	17/32-24	1.61	.72	.75	.189
AI VS272AB-6-4	3/8	1/4	17/32-24	1.68	.79	.92	.314
AI VS272AB-6-6	3/8	3/8	17/32-24	1.73	.84	.91	.314
AI VS272AB-8-6	1/2	3/8	11/16-20	1.89	.93	.99	.408
AI VS272AB-8-8	1/2	1/2	11/16-20	1.99	1.03	1.18	.408
AI VS272AB-10-8	5/8	1/2	13/16-18	2.18	1.09	1.24	.533

Female Elbow 270AB

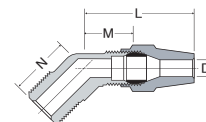
REF. SAE 120203 BA



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI 270AB-4-2	1/4	1/8	7/16-24	1.27	.69	.52	.189
AI 270AB-4-4	1/4	1/4	7/16-24	1.36	.78	.71	.189
AI 270AB-6-2	3/8	1/8	17/32-24	1.72	.83	.59	.314
AI 270AB-6-4	3/8	1/4	17/32-24	1.78	.89	.77	.314
AI 270AB-6-6	3/8	3/8	17/32-24	1.82	.93	.77	.314
AI 270AB-8-6	1/2	3/8	11/16-20	1.99	1.03	.82	.408
AI 270AB-8-8	1/2	1/2	11/16-20	2.09	1.13	1.01	.408
AI 270AB-10-8	5/8	1/2	13/16-18	2.28	1.19	1.07	.533

45° Elbow VS279AB

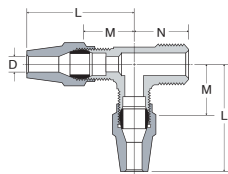
REF. SAE 120302 BA



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI VS279AB-4-2	1/4	1/8	7/16-24	1.07	.49	.63	.189
AI VS279AB-4-4	1/4	1/4	7/16-24	1.18	.60	.85	.189
AI VS279AB-6-2	3/8	1/8	17/32-24	1.60	.71	.68	.189
AI VS279AB-6-4	3/8	1/4	17/32-24	1.64	.71	.85	.314
AI VS279AB-6-6	3/8	3/8	17/32-24	1.64	.75	.94	.314
AI VS279AB-6-8	3/8	1/2	17/32-24	1.67	.78	1.16	.314
AI VS279AB-8-6	1/2	3/8	11/16-20	1.80	.84	.94	.408
AI VS279AB-8-8	1/2	1/2	11/16-20	1.83	.87	1.16	.408
AI VS279AB-10-6	5/8	3/8	13/16-18	2.03	.94	.98	.408
AI VS279AB-10-8	5/8	1/2	13/16-18	2.13	1.05	1.16	.533
AI VS279AB-12-8	3/4	1/2	1-18	2.34	1.10	1.18	.533

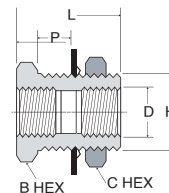
Male Run Tee VS271AB

REF. SAE 120424 BA



PART NO.	TUBE SIZE	PIPE THREAD	STRAIGHT THREAD	L	M	N	FLOW DIA. D
AI VS271AB-4-2	1/4	1/8	7/16-24	1.20	.62	.66	.189
AI VS271AB-4-4	1/4	1/4	7/16-24	1.26	.68	.87	.189
AI VS271AB-6-4	3/8	1/4	17/32-24	1.68	.79	.92	.314
AI VS271AB-6-6	3/8	3/8	17/32-24	1.73	.84	.91	.314
AI VS271AB-8-6	1/2	3/8	11/16-20	1.89	.93	.99	.408
AI VS271AB-8-8	1/2	1/2	11/16-20	1.99	1.03	1.18	.408
AI VS271AB-10-8	5/8	1/2	13/16-18	2.18	1.09	1.24	.533

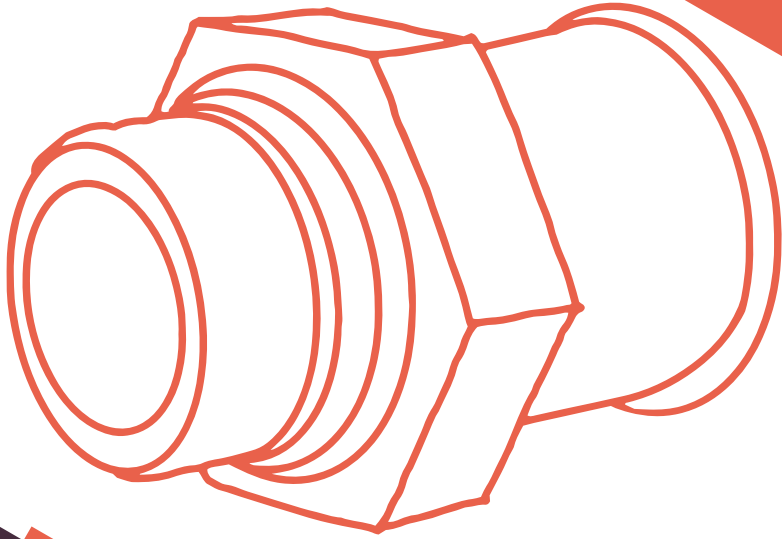
Anchor Coupling 207ACBH



PART NO.	FEMALE PIPE THREAD	STRAIGHT THREAD	MAI .BKHD P	B HEX	C HEX	L	BKHD HOLE DIA. H	FLOW DIA. D
AI 207ACBH-2	1/8	5/8-18	.89	7/8	15/16	1.50	5/8	.339
AI 207ACBHS-2	1/8	5/8-18	.35	7/8	15/16	.96	5/8	.339
AI 207ACBH-4	1/4	3/4-16	.81	1	1-1/8	1.50	3/4	.441
AI 207ACBHS-4	1/4	3/4-16	.26	1	1	.94	3/4	.441
AI 207ACBH-6	3/8	1-14	.62	1-1/8	1-1/4	1.31	1	.571
AI 207ACBH-8	1/2	1-1/8-14	.75	1-1/4	1-3/8	1.50	1-1/8	.703
AI 207ACBH-12	3/4	1-5/16-12	.65	1-1/2	1-1/2	1.50	1-5/16	.906
AI 207ACBH-16*	1	1-5/8-14	1.00	2	2	1.68	1-5/8	1.140

*Lock Washer not Available





HOSE FITTINGS

6.1 HOSE BARB

6.2 PUSH ON BARB



6.1 HOSE BARB

Rigid Male Adapter

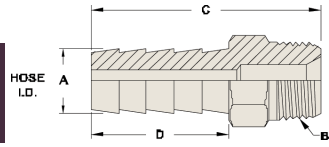
•These are not lead free

Part No.	Hose I.D. x Male NPTF	A	B	C	Approx. Wt. Lbs.	List Price
Al 32-001 *	1/8" x 1/8"	1.19	0.69	0.43	0.02	1.04
Al 32-027	1/8" x 1/4"	1.16	0.46	0.56	0.02	1.43
Al 32-002 *	3/16" x 1/8"	1.19	0.75	0.43	0.02	0.99
Al 32-003 *	3/16" x 1/4"	1.37	0.69	0.56	0.04	1.70
Al 32-301	1/4" x 1/16"	1.44	0.88	0.43	0.02	3.10
Al 32-004 *	1/4" x 1/8"	1.47	0.97	0.43	0.02	1.25
Al 32-005 *	1/4" x 1/4"	1.72	0.97	0.56	0.04	1.39
Al 32-006 *	1/4" x 3/8"	1.72	0.97	0.68	0.05	2.08
Al 32-007	1/4" x 1/2"	1.72	0.81	0.87	0.10	3.66
Al 32-008 *	5/16" x 1/8"	1.47	0.97	0.43	0.02	1.17
Al 32-009 *	5/16" x 1/4"	1.72	0.97	0.56	0.04	1.63
Al 32-010 *	5/16" x 3/8"	1.76	0.97	0.68	0.06	2.17
Al 32-390	5/16" x 1/2"	1.88	0.95	0.87	0.10	4.10
Al 32-011 *	3/8" x 1/8"	1.53	0.97	0.56	0.03	1.52
Al 32-012 *	3/8" x 1/4"	1.75	0.97	0.56	0.05	1.41
Al 32-013 *	3/8" x 3/8"	1.72	0.96	0.68	0.06	1.97
Al 32-014 *	3/8" x 1/2"	1.87	0.97	0.87	0.09	3.57
Al 32-026 *	3/8" x 3/4"	1.97	0.97	1.06	0.16	4.78
Al 32-302	1/2" x 1/8"	1.57	0.95	0.56	0.06	3.95
Al 32-015 *	1/2" x 1/4"	1.72	0.97	0.56	0.04	2.04
Al 32-016 *	1/2" x 3/8"	1.76	0.97	0.68	0.07	2.46
Al 32-017 *	1/2" x 1/2"	1.87	0.96	0.87	0.11	3.14
Al 32-018 *	1/2" x 3/4"	1.94	0.97	1.06	0.16	5.14
Al 32-303	1/2" x 1"	2.31	0.99	1.37	0.33	14.75
Al 32-304	5/8" x 1/4"	1.67	0.92	0.68	0.06	4.83
Al 32-019 *	5/8" x 3/8"	1.76	0.97	0.68	0.08	2.72
Al 32-020 *	5/8" x 1/2"	1.87	0.96	0.87	0.11	3.38
Al 32-021 *	5/8" x 3/4"	1.87	0.96	1.06	0.14	4.69
Al 32-305	5/8" x 1"	2.31	0.96	1.37	0.36	17.68
Al 32-306	3/4" x 3/8"	1.65	0.87	0.81	0.12	5.93
Al 32-022 *	3/4" x 1/2"	1.87	0.96	0.87	0.14	4.69
Al 32-023 *	3/4" x 3/4"	1.87	0.96	1.06	0.15	5.66
Al 32-316	3/4" x 1"	2.55	1.15	1.37	0.38	13.06
Al 32-307	1" x 1/2"	1.80	0.87	1.06	0.18	7.90
Al 32-024 *	1" x 3/4"	2.19	1.19	1.06	0.32	7.05
Al 32-025 *	1" x 1"	2.48	1.19	1.37	0.39	12.25
Al 32-029	1-1/4" x 3/4"	2.37	1.19	1.37	0.35	16.56
Al 32-028	1-1/4" x 1"	2.55	1.19	1.37	0.46	15.74



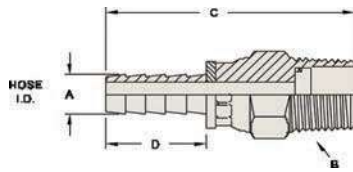
HOSE BARB

Brass Rigid Male BSPT Barb Adapter



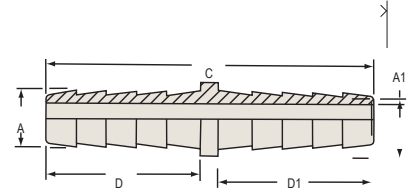
Part No	Hose I. D. x Male BSPT	List Price
AI 32-450	1/4" x 1/8"	1.47
AI 32-451	1/4" x 1/4"	2.10
AI 32-452	3/8" x 1/4"	2.43
AI 32-453	3/8" x 3/8"	6.15
AI 32-454	3/8" x 1/2"	4.12
AI 32-455	1/2" x 3/8"	3.17
AI 32-456	1/2" x 1/2"	4.57
AI 32-457	3/4" x 3/4"	7.90
AI 32-458	1" x 1"	14.66

Swivel Male Adapter



Part No.	Hose I. D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	List Price
AI 32-329	3/16" x 1/8"	2.00	0.78	0.56	0.06	6.16
AI 32-331	3/16" x 1/4"	1.95	0.78	0.56	0.06	6.04
AI 32-332	1/4" x 1/8"	2.19	0.97	0.56	0.06	5.83
AI 32-349	1/4" x 1/4"	2.12	0.97	0.56	0.06	5.26
AI 32-351	3/8" x 1/8"	2.12	0.97	0.56	0.07	6.06
AI 32-201	3/8" x 1/4"	2.12	0.97	0.56	0.07	4.26
AI 32-360	3/8" x 3/8"	2.12	0.97	0.69	0.08	6.47
AI 32-355	1/2" x 3/8"	2.12	0.97	0.68	0.10	6.81
AI 32-356	1/2" x 1/2"	2.33	0.97	0.87	0.14	9.44
AI 32-357	3/4" x 3/4"	2.33	0.97	1.06	0.20	11.11
AI 32-386	1" x 1"	2.88	1.19	1.38	0.40	72.18

Mender / Splicer

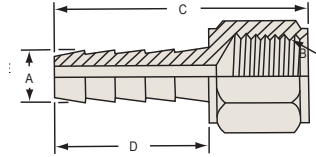


Part No.	Hose I. D. x Hose I. D.	A	B	C	O. D.	List Price
AI 32-091 *	1/8"	0.98	0.45	0.31	0.01	1.36
AI 32-092	3/16"	1.62	0.77	0.36	0.02	1.82
AI 32-093 *	1/4"	2.00	0.96	0.37	0.02	1.52
AI 32-079 *	1/4" x 1/8"	1.50	0.97	0.37	0.02	3.48
AI 32-094 *	5/16"	2.00	0.96	0.39	0.02	1.44
AI 32-090 *	5/16" x 1/4"	2.00	0.97	0.50	0.03	2.41
AI 32-095 *	3/8"	2.00	0.97	0.51	0.04	1.53
AI 32-080 **	3/8" x 1/4"	2.06	0.97	0.56	0.03	4.18
AI 32-375 *	3/8" x 5/16"	2.00	0.97	0.50	0.03	2.34
AI 32-096 *	1/2"	2.00	0.96	0.62	0.06	2.22
AI 32-087 *	1/2" x 3/8"	2.06	0.97	0.71	0.06	6.01
AI 32-097	5/8"	2.05	0.96	0.75	0.08	3.00
AI 32-088	5/8" x 3/8"	2.06	0.97	0.75	0.06	6.85
AI 32-376	5/8" x 1/2"	2.06	0.97	0.75	0.07	6.78
AI 32-098 *	3/4"	2.50	1.15	0.87	0.10	5.22
AI 32-089	3/4" x 1/2"	2.28	1.19	0.87	0.10	9.43
AI 32-379	3/4" x 5/8"	2.02	0.96	0.87	0.10	5.44
AI 32-380	1" x 3/4"	2.58	1.19	1.12	0.18	5.94
AI 32-099	1"	3.00	1.44	1.02	0.23	9.94

PART NO.	Hose I. D. x Male NPTF	A	B	Hex	Approx. Wt. Lbs.	List Price
AI 32-200	1/4" x 1/4"	1.65	.89	0.56	0.04	4.16
AI 32-202	3/8" x 3/8"	1.75	1.00	0.68	0.08	5.66



HOSE BARB



Rigid Female Adapter

Part No.	Hose I. D. x female NPTF	A	B	Hex	Approx. Wt. Lbs.	List Price
AI 32-050	1/8" x 1/8"	0.96	0.46	0.50	0.02	1.69
AI 32-317	1/8" x 1/4"	1.15	0.46	0.62	0.04	5.14
AI 32-051	3/16" x 1/8"	1.10	0.68	0.50	0.02	1.46
AI 32-062	3/16" x 1/4"	1.44	0.75	0.62	0.04	5.85
AI 32-052	1/4" x 1/8"	1.35	0.93	0.50	0.02	1.87
AI 32-053	1/4" x 1/4"	1.60	0.97	0.62	0.06	1.88
AI 32-054	1/4" x 3/8"	1.65	1.03	0.75	0.04	2.66
AI 32-441	1/4" x 1/2"	1.66	0.97	0.93	0.08	8.17
AI 32-055	5/16" x 1/8"	1.47	0.97	0.56	0.04	2.93
AI 32-056	5/16" x 1/4"	1.66	0.97	0.62	0.04	2.55
AI 32-318	5/16" x 3/8"	1.66	0.97	0.75	0.06	5.75
AI 32-320	5/16" x 1/2"	1.67	0.96	0.93	0.08	6.50
AI 32-057	3/8" x 1/8"	1.47	0.97	0.56	0.04	2.59
AI 32-058	3/8" x 1/4"	1.61	0.97	0.62	0.06	2.21
AI 32-059	3/8" x 3/8"	1.63	1.00	0.81	0.08	2.42
AI 32-063	3/8" x 1/2"	1.72	0.94	0.93	0.12	4.35
AI 32-442	3/8" x 3/4"	1.97	0.97	1.18	0.20	14.65
AI 32-064	1/2" x 1/4"	1.66	0.96	0.62	0.08	2.98
AI 32-060	1/2" x 3/8"	1.66	0.97	0.75	0.08	5.51
AI 32-061	1/2" x 1/2"	1.76	0.96	0.93	0.12	4.39
AI 32-443	1/2" x 3/4"	1.97	0.97	1.18	0.26	14.91
AI 32-444	5/8" x 3/8"	1.66	0.97	0.75	0.08	6.53
AI 32-445	5/8" x 1/2"	1.66	0.97	0.93	0.10	8.27
AI 32-446	5/8" x 3/4"	1.97	0.97	1.18	0.21	14.80
AI 32-447	3/4" x 1/2"	1.88	1.19	0.93	0.13	9.25
AI 32-065	3/4" x 3/4"	2.19	1.21	1.18	0.22	7.86
AI 32-049	1" x 3/4"	2.19	1.19	1.18	0.26	19.43
AI 32-321	1" x 1"	2.32	1.19	1.44	0.35	25.29
AI 32-448	1-1/4" x 1"	2.32	1.19	1.43	0.44	24.67



Swivel Female Adapter NPTF

Part No.	Hose I. D. x Female NPTF	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 32-470	1/4" x 1/4"	1.80	0.97	0.62	0.06	10.22
AI 32-472	3/8" x 1/4"	1.80	0.97	0.62	0.06	10.50
AI 32-473	3/8" x 3/8"	1.82	0.97	0.75	0.09	10.89
AI 32-475	1/2" x 3/8"	1.82	0.97	0.75	0.09	13.04
AI 32-476	1/2" x 1/2"	1.86	0.97	0.93	0.14	13.63

High Volume Male Swivel

- 300 PSI
- Nitrile Buna (NBR) O-Ring

Part No.	Hose I. D. x Male NPTF	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 32-781	3/8" x 1/4"	1.83	0.87	0.62	0.07	17.80
AI 28-415	1/4" x 1/4"	1.30	0.94	0.81	0.14	35.18

209A 128 29A 29F 126HB 126 FPB 105B-2 KF-RS 104 144

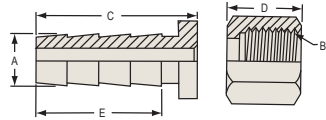


HOSE BARB

Swivel Female Adapter - With Gasket

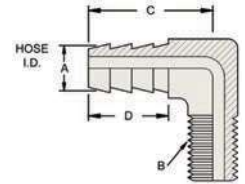
• NPSM Thread

National Pipe Straight Gasket Seal Swivel



Part No.	Hose I. D. x female NPSM	A	B	Hex	Approx. Wt. Lbs.	List Price
Al 32-131	1/8" x 1/8"	0.90	0.46	0.50	0.02	7.98
Al 32-132	3/16" x 1/8"	1.19	0.75	0.50	0.03	7.74
Al 32-133	3/16" x 1/4"	1.28	0.75	0.62	0.04	8.56
Al 32-120	1/4" x 1/8"	1.41	0.97	0.50	0.02	9.55
Al 32-121	1/4" x 1/4"	1.50	0.97	0.62	0.02	3.15
Al 32-129	1/4" x 3/8"	1.63	0.97	0.75	0.04	9.46
Al 32-130	5/16" x 1/4"	1.50	0.97	0.62	0.04	11.89
Al 32-122	3/8" x 1/4"	1.54	1.00	0.62	0.06	5.20
Al 32-123	3/8" x 3/8"	1.60	0.97	0.75	0.06	9.77
Al 32-354	3/8" x 1/2"	1.66	0.97	0.93	0.10	11.30
Al 32-124	1/2" x 3/8"	1.60	0.97	0.75	0.08	11.84
Al 32-125	1/2" x 1/2"	1.66	0.97	0.93	0.12	8.48
Al 32-117	1/2" x 3/4"	1.82	1.19	1.18	0.16	12.12
Al 32-118	5/8" x 3/4"	1.82	1.19	1.18	0.18	13.00
Al 32-119	3/4" x 3/4"	1.82	1.19	1.18	0.14	8.46

Forged Hose Barb 90° ELBOW



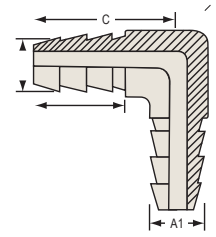
Part No.	Hose I. D. x Female NPTF	A	B	C	Body Size	Approx. List Price	Wt. Lbs.
Al 32-308	3/16" x 1/8"	0.95	0.70	0.66	0.37	0.02	2.94
Al 32-391	3/16" x 1/4"	1.00	0.84	0.63	0.46	0.10	3.77
Al 32-038	1/4" x 1/8"	1.01	0.81	0.71	0.47	0.06	2.52
Al 32-039	1/4" x 1/4"	1.01	0.87	0.63	0.47	0.06	3.49
Al 32-309 **	1/4" x 3/8"	1.08	0.97	0.73	0.69	0.12	4.47
Al 32-036	5/16" x 1/8"	1.01	0.81	0.63	0.47	0.04	3.08
Al 32-040	5/16" x 1/4"	1.01	0.87	0.63	0.47	0.06	4.06
Al 32-310	5/16" x 3/8"	1.06	0.94	0.63	0.50	0.06	6.62
Al 32-046	3/8" x 1/8"	1.01	0.81	0.63	0.47	0.06	2.74
Al 32-041	3/8" x 1/4"	1.02	0.88	0.65	0.47	0.06	3.49
Al 32-042	3/8" x 3/8"	1.09	0.93	0.68	0.50	0.08	4.20
Al 32-047	3/8" x 1/2"	1.11	1.09	0.63	0.59	0.10	4.50
Al 32-048	1/2" x 1/4"	1.06	1.00	0.68	0.59	0.10	4.29
Al 32-043	1/2" x 3/8"	1.06	1.09	0.69	0.59	0.10	5.20
Al 32-311	1/2" x 1/2"	1.31	1.19	0.87	0.56	0.12	6.47
Al 32-044	5/8" x 3/8"	1.12	1.06	0.61	0.56	0.12	7.03
Al 32-045	5/8" x 1/2"	1.12	1.12	0.61	0.63	0.14	6.39
Al 32-312	5/8" x 3/4"	1.46	1.26	0.93	1.06	0.32	11.45
Al 32-313	3/4" x 1/2"	1.31	1.28	0.87	0.85	0.22	8.75
Al 32-314	3/4" x 3/4"	1.46	1.26	0.91	1.06	0.32	14.03
Al 32-330 **	3/4" x 1"	1.57	1.64	0.90	1.34	0.64	27.06
Al 32-315	1" x 3/4"	1.60	1.40	0.95	1.06	0.32	12.90
Al 32-319	1" x 1"	1.69	1.64	0.98	1.30	0.43	52.77



HOSE BARB

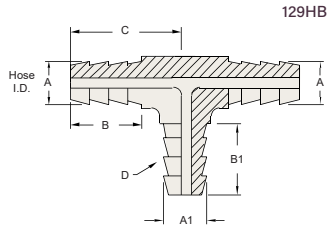
Barstock Hose Barb 90° Elbow

Part No.	Hose I. D. x Male NPTF	A	B	C	Body Size	Approx. Wt. Lbs.	List Price
AI 32-038B	1/4" X 1/8"	1.00	0.75	0.75	0.50	0.02	5.52
AI 32-039B	1/4" X 1/4"	1.02	0.91	0.74	0.56	0.04	6.12
AI 32-041B	3/8" X 1/4"	1.32	0.89	0.97	0.58	0.08	8.75
AI 32-042B	3/8" X 3/8"	1.50	1.06	0.97	0.75	0.14	14.91
AI 32-043B	1/2" X 3/8"	1.53	1.07	0.97	0.72	0.16	13.99



90° Hose Barb Elbow

Part No.	Hose I. D. x Hose I. D.	A	B	Body Size	Approx. Wt. Lbs.	List Price
AI 32-429	1/8" x 1/8"	0.55	0.55	0.37	0.03	7.02
AI 32-433	3/16" x 3/16"	0.90	0.90	0.37	0.03	5.90
AI 32-412	1/4" x 1/8"	1.02	1.02	0.44	0.04	3.67
AI 32-413	1/4" x 1/4"	1.01	1.01	0.44	0.04	3.87
AI 32-425	5/16" x 5/16"	1.15	1.15	0.48	0.05	9.03
AI 32-414	3/8" x 1/8"	1.01	1.01	0.44	0.04	5.05
AI 32-415	3/8" x 1/4"	1.00	1.00	0.44	0.04	4.20
AI 32-416	3/8" x 3/8"	1.02	1.02	0.44	0.04	6.95
AI 32-417	3/8" x 1/2"	1.24	1.10	0.50	0.06	6.37
AI 32-418	1/2" x 1/4"	1.24	1.08	0.50	0.06	5.57
AI 32-419	1/2" x 3/8"	1.22	1.09	0.50	0.06	9.69
AI 32-420	1/2" x 1/2"	1.24	1.24	0.50	0.06	5.83
AI 32-434	5/8" x 5/8"	1.20	1.20	0.75	0.16	20.27
AI 32-435	3/4" x 1/2"	1.41	1.41	0.88	0.21	21.08
AI 32-436	3/4" x 3/4"	1.41	1.41	0.88	0.21	25.22



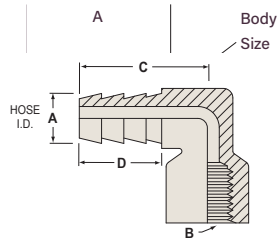
Hose Barb Tees

Part No.	Hose I. D. x Size (1 & 2) x 3	A	B	Body Size	Approx. Wt. Lbs.	List Price
AI 32-367	1/8"	0.84	0.83	0.25	0.02	3.99
AI 32-368	3/16"	1.02	1.02	0.37	0.03	3.73
AI 32-365	1/4"	1.00	1.00	0.44	0.06	3.37
AI 32-350	(1/4") x 1/8"	0.94	0.94	0.44	0.04	8.09
AI 32-366	5/16"	1.00	1.00	0.44	0.06	4.19
AI 32-126	3/8"	1.01	1.01	0.43	0.06	4.22
AI 32-400	1/2"	1.02	1.00	0.43	0.08	5.13
AI 32-352	(1/2") x 3/8"	1.26	1.26	0.43	0.10	13.81
AI 32-361	5/8"	1.26	1.26	0.75	0.16	19.55
AI 32-363	3/4"	1.26	1.26	0.88	0.18	26.91
AI 32-353	(3/4") x 1/2"	1.41	1.41	0.88	0.23	28.32
AI 32-128	3/8" HB x 1/4" MIP	1.00	0.94	0.43	0.06	11.95



HOSE BARB

90° Female Hose Barb Elbow

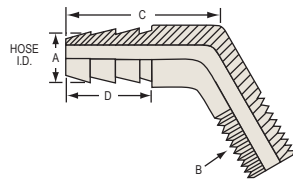


Ball End Swivel NPSM - Ball Seat Type

Part No.	Hose I. D. x Female NPTF	A	B	Body Size	Approx. Wt. Lbs.	List Price
AI 32-401	1/4" x 1/8"	1.01	0.82	0.47	0.06	4.88
AI 32-402	1/4" x 1/4"	1.13	0.91	0.56	0.10	6.25
AI 32-403	3/8" x 1/8"	1.01	0.82	0.47	0.06	5.77
AI 32-404	3/8" x 1/4"	1.15	0.91	0.56	0.10	6.29
AI 32-405	3/8" x 3/8"	1.15	1.11	0.68	0.14	14.02
AI 32-406	3/8" x 1/2"	1.26	1.39	0.75	0.20	12.43
AI 32-407	1/2" x 1/4"	1.26	0.91	0.56	0.10	7.37
AI 32-410	1/2" x 3/8"	1.24	1.11	0.68	0.14	10.15
AI 32-411	1/2" x 1/2"	1.37	1.39	0.75	0.20	11.55
AI 32-409	3/4" x 3/4"	1.52	1.75	0.81	0.50	16.20

Part No.	Hose I. D. x NPSM	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 32-066	1/8" x 1/8"	0.46	0.44	0.50	0.03	5.64
AI 32-067	3/16" x 1/8"	0.75	0.44	0.50	0.03	4.45
AI 32-068	3/16" x 1/4"	0.75	0.52	0.62	0.04	3.04
AI 32-069	1/4" x 1/8"	0.97	0.44	0.50	0.04	2.80
AI 32-070	1/4" x 1/4"	0.97	0.53	0.62	0.06	2.90
AI 32-078	1/4" x 3/8"	0.97	0.63	0.75	0.06	6.32
AI 32-071	5/16" x 1/4"	0.97	0.52	0.62	0.05	3.90
AI 32-389	5/16" x 3/8"	0.97	0.63	0.75	0.07	8.94
AI 32-072	3/8" x 1/4"	0.97	0.53	0.62	0.06	2.62
AI 32-073	3/8" x 3/8"	0.97	0.59	0.75	0.08	3.14
AI 32-074	3/8" x 1/2"	0.97	0.69	0.94	0.14	9.38
AI 32-075	1/2" x 3/8"	0.97	0.59	0.75	0.08	3.18
AI 32-076	1/2" x 1/2"	0.97	0.69	0.94	0.10	4.19
AI 32-077	3/4" x 3/4"	0.97	0.70	1.12	0.14	7.30

45° Elbow



Ballseat Male Adapter Beveled seat

Part No.	Hose I. D. x Male NPTF	A	B	Body Size	Approx. Wt. Lbs.	List Price
AI 32-110	1/4" x 1/8"	0.91	0.62	0.53	0.04	3.88
AI 32-109*	1/4" x 1/4"	1.00	0.62	0.57	0.06	7.94
AI 32-111	3/8" x 1/8"	0.83	0.66	0.53	0.04	5.48
AI 32-112	3/8" x 1/4"	0.82	0.84	0.53	0.06	4.93
AI 32-113	3/8" x 3/8"	0.93	0.87	0.59	0.08	6.31
AI 32-346	1/2" x 1/4"	1.00	0.84	0.59	0.08	10.06
AI 32-114	1/2" x 3/8"	1.00	0.88	0.59	0.08	8.26
AI 32-116	1/2" x 1/2"	1.15	0.94	0.59	0.12	13.61
AI 32-115	5/8" x 3/8"	0.97	0.88	0.59	0.10	8.80
AI 32-345	3/4" x 1/2"	1.15	0.94	0.81	0.13	25.37

Part No.	NPSM x Male NPTF	A	HEX	Approx. Wt. Lbs.	List Price
AI 32-359	1/8" x 1/8"	0.94	0.43	0.03	4.78
AI 32-034	1/4" x 1/8"	1.06	0.56	0.04	3.90
AI 32-030	1/4" x 1/4"	1.25	0.56	0.06	3.69
AI 32-362	3/8" x 1/4"	1.28	0.68	0.08	6.12
AI 32-031	3/8" x 3/8"	1.30	0.68	0.08	5.15
AI 32-392	3/8" x 1/2"	1.47	0.88	0.13	11.68
AI 32-364	1/2" x 3/8"	1.35	0.87	0.10	8.87
AI 32-032	1/2" x 1/2"	1.53	0.87	0.14	6.87
AI 32-033	3/4" x 3/4"	1.53	1.06	0.20	10.45

* Barstock

Crosses

Part No	Hose ID	List Price
AI 32-608	1/4	3.68
AI 32-609	5/16	4.27
AI 32-610	3/8	5.47

Ballseat Union

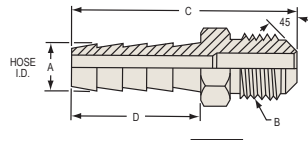
Part No.	NPSM x NPSM	A	HEX	Approx. Wt. Lbs.	List Price
AI 32-460	1/8"	0.79	0.43	0.02	4.45
AI 32-461	1/4"	1.09	0.56	0.04	5.30
AI 32-462	3/8"	1.19	0.68	0.07	8.65
AI 32-463	1/2"	1.31	0.87	0.10	10.15

HOSE WYES AVAILABLE WITH EXTENDED LEAD TIME.



HOSE BARB

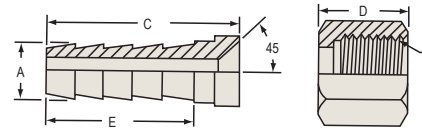
45° Flare Adapter



Part No.	Hose I. D. x 45° Flare	Thread	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 32-322	3/16" x 1/4"	7/16-20	1.5	0.75	0.43	0.03	6.46
AI 32-081	1/4" x 1/4"	7/16-20	1.72	0.97	0.43	0.03	3.62
AI 32-082	1/4" x 3/8"	5/8-18	1.82	0.97	0.62	0.07	4.84
AI 32-083	5/16" x 5/16"	1/2-20	1.75	0.97	0.50	0.08	6.24
AI 32-084	3/8" x 3/8"	5/8-18	1.82	0.97	0.62	0.08	5.24
AI 32-085	3/8" x 1/2"	3/4-16	1.97	0.97	0.75	0.10	8.44
AI 32-086	1/2" x 1/2"	3/4-16	1.97	0.97	0.75	0.10	7.22

142 201BF KF-MS KDS

45° Flare Swivel

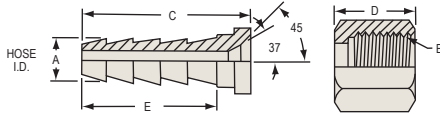


Part No	Hose I. D. x Female 45° Flare	Thread	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 32-326	3/16" x 3/16"	3/8-24	1.19	0.75	0.43	0.04	7.41
AI 30-295**	3/16" x 3/8"	5/8-18	1.82	0.90	0.75	0.04	4.26
AI 32-101	1/4" x 1/4"	7/16-20	1.57	0.97	0.56	0.04	2.27
AI 32-103	1/4" x 3/8"	5/8-18	1.64	0.97	0.75	0.08	2.73
AI 32-104	5/16" x 5/16"	1/2-20	1.61	0.97	0.62	0.05	5.58
AI 32-327	5/16" x 3/8"	5/8-18	1.67	0.97	0.75	0.08	3.98
AI 32-105	3/8" x 3/8"	5/8-18	1.64	0.97	0.75	0.08	3.64
AI 32-105C**	3/8" x 3/8"	5/8-18	1.71	0.97	0.75	0.07	4.55
AI 32-106	3/8" x 1/2"	3/4-16	1.81	0.97	0.87	0.10	8.85
AI 32-100	1/2" x 1/2"	3/4-16	1.68	0.97	0.87	0.12	4.59
AI 32-328	3/4" x 3/4"	1-1/16-14	2.00	0.97	1.25	0.20	18.90

29SAE 209ASF 146HBLFSV KF-NS 128 FSS 146 144

** Swivel crimp style (crimped on the outside of fitting)

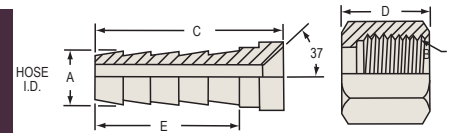
Dual 45° / 37° Flare Swivel



Part No.	Hose I. D. x Dual Seat	Thread	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 32-107	3/16" x 1/4"	7/16-20	1.34	0.75	0.56	0.04	3.53
AI 32-107C**	3/16" x 1/4"	7/16-20	1.42	0.78	0.56	0.04	3.79
AI 32-337	1/4" x 1/4"	7/16-20	1.56	0.97	0.56	0.04	2.73
AI 32-337C**	1/4" x 1/4"	7/16-20	1.60	0.97	0.56	0.04	2.98
AI 32-102	1/4" x 5/16"	1/2-20	1.61	0.97	0.62	0.06	3.20
AI 32-339	5/16" x 5/16"	1/2-20	1.60	0.97	0.62	0.06	3.97
AI 32-340	3/8" x 1/2"	3/4-16	1.68	0.97	0.87	0.10	5.52
AI 32-341	1/2" x 1/2"	3/4-16	1.68	0.97	0.87	0.10	4.93
AI 32-341C**	1/2" x 1/2"	3/4-16	1.75	0.97	0.87	0.09	5.97
AI 32-342	1/2" x 5/8"	7/8-14	1.76	0.97	1.00	0.12	7.07
AI 32-394**	5/8" x 5/8"	7/8-14	1.83	0.97	1.00	0.14	7.57

KDS

Female 37° J.I.C Flare Swivel



Part No	Hose I. D. x Female 37° Flare	Thread	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 32-334	1/4" x 3/8"	9/16-18	1.60	0.97	0.68	0.06	4.14
AI 32-335	5/16" x 3/8"	9/16-18	1.60	0.97	0.68	0.06	4.28
AI 32-336	3/8" x 3/8"	9/16-18	1.60	0.97	0.68	0.10	3.76
AI 32-336C**	3/8" x 3/8"	9/16-18	1.66	0.97	0.68	0.06	3.80
AI 32-338*	3/4" x 3/4"	1-1/16-12	2.00	0.97	1.25	0.20	19.56
AI 32-338SS	3/4" x 3/4"	1-1/16-12	2.00	0.97	1.25	0.24	23.94
AI 32-338C	3/4" x 3/4"	1-1/16-12	2.13	1.19	1.25	0.20	12.29
AI 32-397**	1" x 1"	1-5/16-12	2.31	1.19	1.50	0.33	18.14

** Swivel crimp style



6.2 PUSH ON BARB

AIR BRAKE - AB FITTINGS ARE ECONOMICAL COMPRESSION STYLE FITTINGS FOR COPPER AIR BRAKE LINES. AB FITTINGS MEET THE FUNCTIONAL REQUIREMENTS OF SAE AND THE PERFORMANCE REQUIREMENTS OF D.O.T.

Product Features:

- Brass Body
- Meets D.O.T. FMVSS571.106 Performance
- Meets functional Requirements SAE J246
- Reusable
- Pre-applied Thread Sealant

Applications:

- Copper Air Brake Lines
- Coolant Lines
- Fuel Lines

Markets:

- Heavy Duty Truck
- Trailer
- Mobile



Assembly Instructions:

1. Cut tubing squarely and remove burrs
2. Slide nut and sleeve onto tubing.
3. bottomed on seat. The nut tight, then wrench tightened as indicated in the chart

Specifications:

Temperature Range: -65° to +250° F (-53.8° to +121.1° C)

Pressure Range:

Up to 400 PSI (27.5 bar)

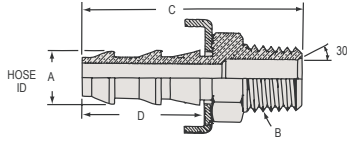
Compatible Tubing:

SAE J844 Type A & B nylon tubing)



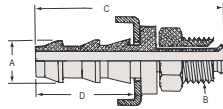
PUSH ON BARB

Male Adapter



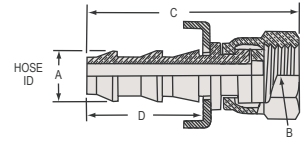
Part No.	Hose I. D. x Male NPTF	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 30-200	1/4" x 1/8"	1.43	0.87	0.50	0.04	1.43
AI 30-201	1/4" x 1/4"	1.66	0.87	0.56	0.06	2.03
AI 30-211	1/4" x 3/8"	1.66	0.87	0.68	0.06	2.94
AI 30-212	5/16" x 1/8"	1.42	0.77	0.43	0.04	3.14
AI 30-213	5/16" x 1/4"	1.66	0.87	0.56	0.06	3.13
AI 30-202	3/8" x 1/8"	1.53	0.97	0.50	0.04	2.18
AI 30-203	3/8" x 1/4"	1.69	0.89	0.56	0.07	2.31
AI 30-204	3/8" x 3/8"	1.76	0.97	0.68	0.08	2.81
AI 30-205	3/8" x 1/2"	1.97	0.97	0.87	0.10	5.04
AI 30-392	3/8" x 3/4"	1.97	0.92	1.06	0.16	13.28
AI 30-216	1/2" x 1/4"	1.76	0.97	0.68	0.08	2.98
AI 30-206	1/2" x 3/8"	1.76	0.97	0.68	0.09	2.93
AI 30-207	1/2" x 1/2"	1.97	0.97	0.87	0.14	4.86
AI 30-217	1/2" x 3/4"	1.97	0.97	1.06	0.16	7.10
AI 30-219	5/8" x 3/8"	2.34	1.50	0.75	0.12	7.69
AI 30-209	5/8" x 1/2"	2.45	1.45	0.87	0.16	6.71
AI 30-214	5/8" x 3/4"	2.45	1.45	1.06	0.18	7.98
AI 30-215	3/4" x 1/2"	2.45	1.45	0.87	0.21	8.24
AI 30-210	3/4" x 3/4"	2.45	1.45	1.06	0.20	7.72
AI 30-238	1" x 3/4"	2.93	1.50	1.25	0.43	28.65
AI 30-239	1" x 1"	3.11	1.50	1.37	0.49	31.44

Male Swivel



Part No.	Hose I. D. x Male NPTF	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 30-422	1/4" x 1/8"	2.07	0.87	0.56	0.06	6.10
AI 30-385	1/4" x 1/4"	2.02	0.87	0.56	0.06	5.54
AI 30-423	3/8" x 1/8"	2.12	0.97	0.56	0.07	5.88
AI 30-386	3/8" x 1/4"	2.12	0.97	0.56	0.08	6.39
AI 30-387	3/8" x 3/8"	2.12	0.97	0.68	0.08	7.16
AI 30-388	1/2" x 3/8"	2.12	0.97	0.68	0.10	6.70
AI 30-389	1/2" x 1/2"	2.33	0.97	0.87	0.14	9.17
AI 30-424	5/8" x 1/2"	2.80	1.45	0.88	0.18	12.72
AI 30-390	3/4" x 3/4"	2.80	1.45	1.06	0.24	11.13

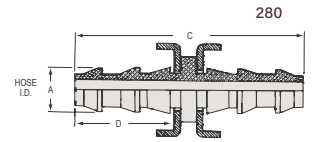
Female Gasket Seal Swivel - NPSM



Part No.	Hose I. D. x Gasket Swivel(NPSM)	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 30-359	1/4" x 1/8"	1.39	0.77	0.50	0.03	14.98
AI 30-358	1/4" x 1/4"	1.47	0.82	0.68	0.06	6.69
AI 30-360	3/8" x 1/4"	1.61	1.00	0.68	0.06	6.26
AI 30-361	3/8" x 3/8"	1.77	0.97	0.81	0.08	9.99
AI 30-362	3/8" x 1/2"	1.80	0.92	0.93	0.09	15.75
AI 30-363	1/2" x 1/2"	1.90	1.02	0.93	0.11	12.64
AI 30-366	3/4" x 3/4"	2.36	1.55	1.18	0.32	25.27

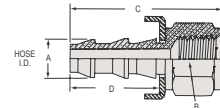
• Not recommend for water due to fiber gasket - for air service only.

Hose Splicer



Part No.	Hose I. D.	A	Approx. Wt. Lbs.	List Price
AI 30-300	1/4"	1.87	0.04	1.78
AI 30-305	5/16"	1.80	0.04	2.94
AI 30-301	3/8"	2.00	0.06	2.21
AI 30-302	1/2"	2.01	0.08	3.36
AI 30-303	5/8"	3.03	0.14	7.71
AI 30-304	3/4"	3.03	0.14	8.08
AI 30-306	1"	3.21	0.28	22.28

Rigid Female Adapter

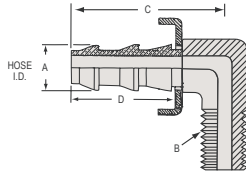


Part No.	Hose I. D. x Female NPTF	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 30-220	1/4" x 1/8"	1.35	0.87	0.50	0.02	2.56
AI 30-221	1/4" x 1/4"	1.51	0.87	0.62	0.06	2.20
AI 30-384	1/4" x 3/8"	1.51	0.77	0.75	0.06	7.78
AI 30-391	5/16" x 1/8"	1.32	0.77	0.50	0.03	6.70
AI 30-222	5/16" x 1/4"	1.51	0.87	0.62	0.06	4.01
AI 30-393	3/8" x 1/8"	1.47	0.92	0.56	0.06	7.93
AI 30-224	3/8" x 1/4"	1.61	0.97	0.62	0.06	2.54
AI 30-225	3/8" x 3/8"	1.63	0.97	0.75	0.06	3.62
AI 30-394	3/8" x 1/2"	1.66	0.92	0.93	0.12	8.54
AI 30-397	3/8" x 3/4"	1.97	0.97	1.18	0.20	20.90
AI 30-223	1/2" x 1/4"	1.76	1.02	0.68	0.08	12.56
AI 30-226	1/2" x 3/8"	1.63	0.97	0.75	0.08	4.12
AI 30-227	1/2" x 1/2"	1.77	0.97	0.93	0.14	7.06
AI 30-396	1/2" x 3/4"	2.07	1.02	1.18	0.20	17.62
AI 30-398	5/8" x 3/8"	2.24	1.55	0.75	0.10	10.85
AI 30-229	5/8" x 1/2"	2.24	1.48	0.93	0.11	9.09
AI 30-399	3/4" x 1/2"	2.24	1.50	0.93	0.14	12.22
AI 30-395	3/4" x 3/4"	2.55	1.50	1.18	0.24	16.68
AI 30-400	1" x 3/4"	2.55	1.55	1.18	0.25	24.30
AI 30-402	1" x 1"	2.68	1.55	1.43	0.37	30.49



PUSH ON BARB

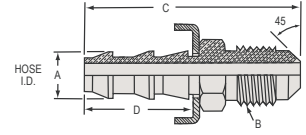
Male Elbow



Part No.	Hose I. D. x Male NPTF	A	B	Body Width	Approx. Wt. Lbs.	List Price
AI 30-372	1/4" x 1/8"	0.98	0.75	0.50	0.04	8.16
AI 30-373	1/4" x 1/4"	1.04	0.95	0.56	0.06	7.86
AI 30-374	5/16" x 1/8"	1.02	0.94	0.50	0.06	20.38
AI 30-375	5/16" x 1/4"	1.09	0.94	0.56	0.08	10.53
AI 30-370	3/8" x 1/8"	1.11	0.75	0.50	0.10	5.67
AI 30-371	3/8" x 1/4"	1.13	0.90	0.56	0.10	5.28
AI 30-376	3/8" x 3/8"	1.21	0.92	0.70	0.12	5.88
AI 30-377	3/8" x 1/2"	1.30	1.19	0.87	0.22	20.69
AI 30-382	1/2" x 3/8"	1.32	1.02	0.70	0.13	14.02
AI 30-378	1/2" x 1/2"	1.50	1.19	0.87	0.22	12.77
AI 30-379	5/8" x 1/2"	1.98	1.19	0.87	0.26	17.53
AI 30-383	3/4" x 1/2"	2.15	1.24	0.87	0.25	35.35
AI 30-381	3/4" x 3/4"	2.07	1.28	1.06	0.34	17.25

100-C 29EPO 273

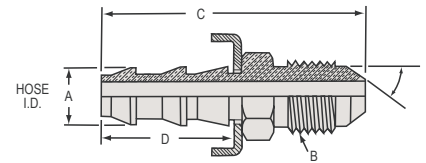
Male SAE Flare Adapter



Part No.	Hose I. D. x 45° Male Flare	UNF Thread	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 30-240	1/4" x 1/4"	7/16-20	1.45	0.75	0.43	0.04	4.41
AI 30-241	1/4" x 5/16"	1/2-20	1.59	0.84	0.50	0.04	5.20
AI 30-249	5/16" x 5/16"	1/2-20	1.60	0.80	0.50	0.06	4.12
AI 30-271	3/8" x 5/16"	1/2-20	1.64	0.86	0.50	0.08	3.96
AI 30-243	3/8" x 3/8"	5/8-18	1.83	0.92	0.62	0.08	4.41
AI 30-245	1/2" x 1/2"	3/4-16	1.98	1.02	0.875	0.10	10.86
AI 30-246	5/8" x 5/8"	7/8-14	2.73	1.50	0.87	0.19	13.29
AI 30-247	3/4" x 3/4"	1-1/16-14	2.98	1.50	1.06	0.32	20.87

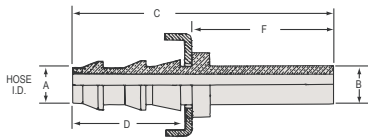
100B-3 KA-MS 727 945 682 302 282

37° Male JIC Flare Adapter



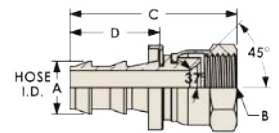
Part No.	Hose I. D. x Male JIC	UNF Thread	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 32-900	1/4" x 1/4"	7/16-20	1.57	0.84	0.50	0.04	5.26
AI 32-901	1/4" x 5/16"	1/2-20	1.60	0.83	0.56	0.04	6.18
AI 32-906	1/4" x 3/8"	9/16-18	1.63	0.77	0.62	0.05	8.70
AI 32-902	3/8" x 3/8"	9/16-18	1.78	0.97	0.62	0.06	8.27
AI 32-903	1/2" x 1/2"	3/4-16	1.97	0.97	0.75	0.10	13.80
AI 32-907	5/8" x 5/8"	7/8-14	2.62	1.50	0.93	0.19	15.00
AI 32-905	3/4" x 3/4"	1-1/16-12	2.79	1.50	1.12	0.29	19.79

Rigid Tube Adapter



Part No.	Hose I. D. x O.D Tube	A	B	Approx. Wt. Lbs.	List Price
AI 30-290	1/4" x 3/16"	1.68	0.77	0.04	7.46
AI 30-291	1/4" x 1/4"	1.88	0.77	0.04	2.05
AI 30-292	1/4" x 5/16"	1.88	0.77	0.04	7.61
AI 30-293	5/16" x 5/16"	1.91	0.79	0.04	4.59
AI 30-294	3/8" x 3/8"	2.03	0.92	0.06	3.55
AI 30-426	3/8" x 1/2"	1.81	0.97	0.04	5.15
AI 30-297	1/2" x 1/2"	2.13	1.02	0.06	7.51
AI 30-298	5/8" x 5/8"	2.61	1.50	0.10	11.75
AI 30-299	3/4" x 3/4"	2.61	1.50	0.25	13.86

SAE/JIC DUAL 45°/37° Female Swivel

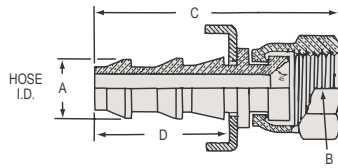


Part No.	Hose I. D. x Dual Seat	UNF Thread	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 30-230	1/4" x 1/4"	7/16-20	1.53	0.87	0.56	0.06	2.44
AI 30-231	1/4" x 5/16"	1/2-20	1.53	0.87	0.62	0.04	3.87
AI 30-232	5/16" x 5/16"	1/2-20	1.56	0.87	0.62	0.04	4.02
AI 30-427	3/8" x 5/16"	1/2-20	1.74	0.87	0.62	0.06	11.34
AI 30-233	3/8" x 1/2"	3/4-16	1.79	0.97	0.87	0.10	4.99
AI 30-234	1/2" x 1/2"	3/4-16	1.77	0.97	0.87	0.10	4.80
AI 30-235	1/2" x 5/8"	7/8-14	1.84	0.97	1.00	0.12	7.55
AI 30-236	5/8" x 1/2"	3/4-16	2.27	1.45	0.87	0.18	8.62
AI 30-237	5/8" x 5/8"	7/8-14	2.33	1.45	1.00	0.14	8.55
AI 30-428	3/4" x 5/8"	7/8-14	2.33	1.45	1.00	0.20	11.56

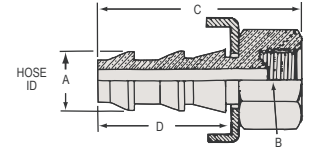
29FDS 287 HDF 309 735 690 P990-K 305 935/ 934

PUSH ON BARB

45° SAE Flare Female Swivel



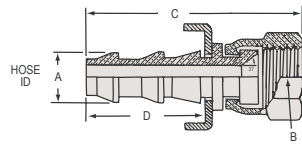
Inverted Flare Female Adapter



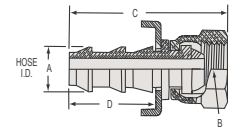
Part No.	Hose I. D. x 45° female flare	UNF Thread	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 30-250	1/4" x 1/4"	7/16-20	1.54	0.87	0.56	0.04	2.75
AI 30-251	1/4" x 5/16"	1/2-20	1.57	0.87	0.62	0.04	4.35
AI 30-253	1/4" x 3/8"	5/8-18	1.63	0.87	0.75	0.06	4.06
AI 30-254	5/16" x 5/16"	1/2-20	1.58	0.87	0.68	0.06	17.80
AI 30-260	5/16" x 3/8"	5/8-18	1.63	0.87	0.75	0.08	5.96
AI 30-252	3/8" x 3/8"	5/8-18	1.73	0.97	0.75	0.10	3.96
AI 30-257	3/8" x 1/2"	3/4-16	1.85	0.87	0.87	0.10	10.18
AI 30-261	1/2" x 3/8"	5/8-18	1.92	1.05	0.75	0.10	8.08
AI 30-255	1/2" x 1/2"	3/4-16	1.77	0.97	0.87	0.12	6.43
AI 30-258	5/8" x 5/8"	7/8-14	2.35	1.45	1.00	0.14	11.92
AI 30-259	3/4" x 3/4"	1-1/16-14	2.42	1.45	1.25	0.22	10.51

Part No.	Hose I. D. x Female INV flare	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 30-310	1/4" x 3/16"	1.12	0.84	0.50	0.02	8.05
AI 30-311	1/4" x 1/4"	1.14	0.84	0.56	0.02	5.45
AI 30-312	1/4" x 5/16"	1.18	0.82	0.62	0.02	9.25
AI 30-316	5/16" x 5/16"	1.25	0.81	0.62	0.04	7.26
AI 30-313	3/8" x 5/16"	1.32	0.87	0.62	0.04	9.41
AI 30-314	3/8" x 3/8"	1.35	0.95	0.75	0.06	5.70
AI 30-315	1/2" x 1/2"	1.73	1.04	0.87	0.12	23.51

Female 37° JIC Flare Swivel



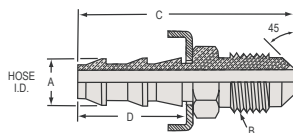
Female Ballseat Swivel



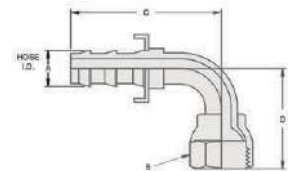
Part No.	Hose I. D. x Female JIC	UNF Thread	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 30-265	1/4" x 1/4"	7/16-20	1.54	0.87	0.56	0.04	2.31
AI 30-264	1/4" x 3/8"	9/16-18	1.57	0.87	0.68	0.06	4.48
AI 30-270	5/16" x 3/8"	9/16-18	1.60	0.82	0.68	0.06	3.73
AI 30-266	3/8" x 3/8"	9/16-18	1.70	0.97	0.68	0.08	3.64
AI 30-267	1/2" x 1/2"	3/4-16	1.78	0.97	0.87	0.10	5.63
AI 30-268	5/8" x 5/8"	7/8-14	2.33	1.45	1.00	0.14	7.32
AI 30-269	3/4" x 3/4"	1-1/16-12	2.40	1.45	1.25	0.22	10.09
AI 30-429	1" x 1"	1-5/16-12	2.60	1.45	1.50	0.39	27.59

Part No.	Hose I. D. x Female NPSM	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 30-340	1/4" X 1/8"	1.39	0.85	0.50	0.06	11.29
AI 30-341	1/4" X 1/4"	1.47	0.80	0.68	0.06	7.98
AI 30-342	1/4" x 3/8"	1.40	0.77	0.68	0.09	8.44
AI 30-343	3/8" X 1/4"	1.61	0.97	0.68	0.08	11.75
AI 30-344	3/8" X 3/8"	1.75	0.95	0.81	0.10	10.86
AI 30-430	3/8" x 1/2"	1.79	0.97	0.93	0.11	13.44
AI 30-346	1/2" X 1/2"	1.88	1.09	0.93	0.12	16.13
AI 30-345	1/2" x 3/4"	2.36	1.02	1.18	0.18	20.34
AI 30-349	3/4" X 3/4"	2.36	1.55	1.18	0.22	22.83

Inverted Flare Male Swivel



SAE/JIC 37° /45° Female Swivel 90° Zinc Plated Steel



Part No.	Hose I. D. x Male INV flare	UNF Thread	A	B	HEX	Approx. Wt. Lbs.	List Price
AI 30-275	1/4" x 3/16"	3/8-24	1.52	0.87	0.37	0.04	8.47
AI 30-276	1/4" x 1/4"	7/16-24	1.56	0.87	0.43	0.04	4.11
AI 30-277	1/4" x 5/16"	1/2-20	1.62	0.87	0.50	0.04	4.49
AI 30-280	5/16" x 5/16"	1/2-20	1.62	0.87	0.50	0.06	7.44
AI 30-283	5/16" x 3/8"	5/8-18	1.63	0.87	0.62	0.06	8.90
AI 30-284	3/8" x 5/16"	1/2-20	1.72	0.97	0.50	0.06	6.63
AI 30-279	3/8" x 3/8"	5/8-18	1.76	0.97	0.62	0.06	5.18
AI 30-282	1/2" x 1/2"	3/4-18	1.84	0.97	0.75	0.10	10.20
AI 30-286	5/8" x 5/8"	7/8-18	2.50	1.57	0.87	0.14	21.77

Part No.	Hose I. D. x Female 37°/45°	UNF Thread	A	B	Approx. Wt. Lbs.	List Price
AI 30-480	1/4"	7/16-20	1.55	0.83	.064	39.00
AI 30-482	3/8"	9/16-18	1.85	0.91	.095	36.60
AI 30-483*	3/8"	5/8-18	1.98	0.85	.095	52.68
AI 30-484	1/2"	3/4-16	2.33	1.09	.171	43.22
AI 30-486	3/4"	1-1/16-12	3.26	1.81	.281	115.97

* SAE



MANUFACTURING TECHNIQUES

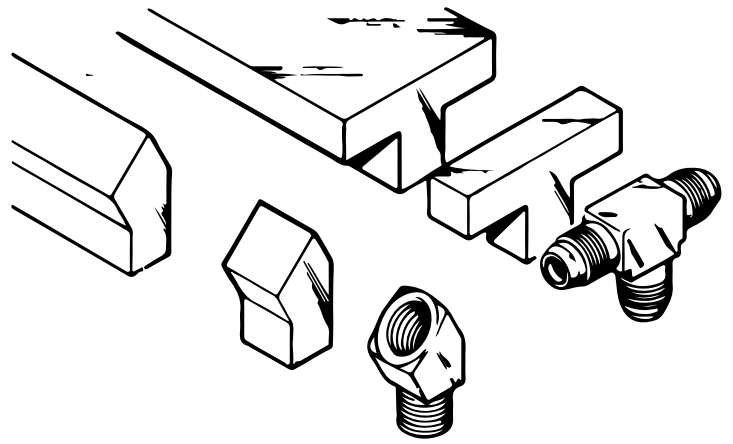
The image features a dark purple background with several white geometric shapes. A large white triangle is positioned in the lower-left quadrant. To its right, there is a white trapezoidal shape. A thick orange-red line runs diagonally across the upper half of the image, starting from the top right and extending towards the bottom left. Another similar line is visible in the upper right corner, partially cut off. The overall design is minimalist and modern.

PIPE FITTINGS

Extruded Fittings-

Hexagon, round and shaped bars are extruded in the configuration required, drawn to size, cut to length and straightened. First a solid round billet (8 to 12 inches in diameter) is heated to the pliable state and forced by pressure of approximately 80,000 pounds per square inch through a die. The resulting continuous length of bar is cooled and then drawn through dies to the desired external size. (The drawing process also controls the temper.) After straightening, the bar is ready for machining.

The process produces a dense, nonporous material somewhat stronger in the longitudinal direction due to an oriented flow of the grain.

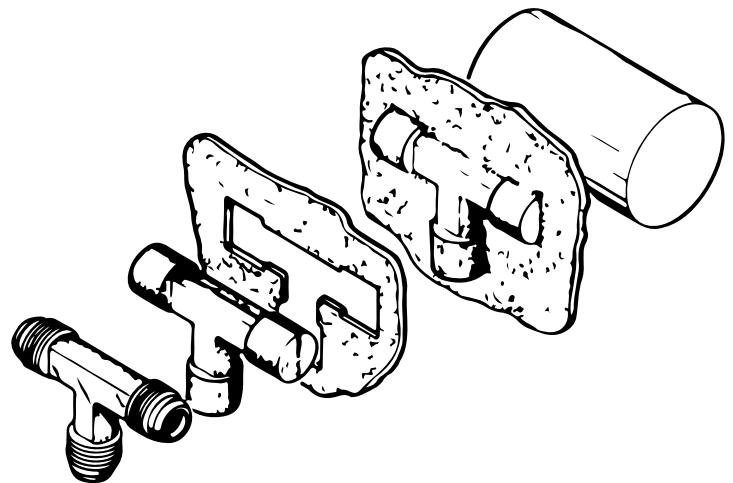


Material used for our Brass Fittings:

(Reference SAE J461)

Material for forgings is extruded in round bars, cut to length and straightened. (At this point in the process, forging rod differs from round extruded machinable bars only in temper and chemical properties.) After straightening, the bars are cut again into slugs (short lengths), reheated to the pliable state and pressed under a pressure of approximately 25,000 pounds per square inch between upper and lower die cavities. After cooling the flash is trimmed away and the forging blank is ready for machining.

This process of forming under extreme pressure produces a uniformly dense material of exceptional strength. Because grain flow follows the contour, the fitting has high impact strength and is more resistant to mechanical shock and vibration.



The background features a dark purple field with a large white triangle on the left side. Two thick, parallel orange-red lines run diagonally across the page, one above and one below the main title. The title itself is centered in a bold, orange-red font.

TUBE LINE FABRICATION GUIDE

TUBE LINE FABRICATION GUIDE FOR LEAK FREE SYSTEMS

Every hydraulic, pneumatic and lubrication system requires some form of tube line fabrication and fitting installation for completion. Proper fabrication and installation are essential for the overall efficiency, leak free performance, and general appearance of any system. Start by planning ahead. After sizing the tube lines and selecting the appropriate style of fitting considering the following in the design of your system:

1. Accessibility of joints
2. Proper routing of lines
3. Adequate tube line supports
4. Available fabricating tools

Routing of Lines

Routing of lines is probably the most difficult yet most significant of these system design considerations. Proper routing involves getting a connecting line from one point to another through the most logical path.

Always try to leave fitting joints as accessible as possible. Hard to reach joints are hard to assemble and tighten properly. Inaccessible joints are also more difficult and time consuming to service.

The most logical path should have the following characteristics:

- Avoid excessive strain on joint — A strained joint will eventually leak. (See Figures A1 through A8.)
- Allow for expansion and contraction — Use a “U” bend or a hose in long lines to allow for expansion and contraction. (See Figure A9.)
- Allow for motion under load — Even some apparently rigid systems do move under load. (See Figure A10.)
- Get around obstructions without using excessive amount of 90° bends — Pressure drop due to one 90° bend is greater than that due to two 45° bends. (See Figures A11 and A12.)
- Keep tube lines away from components that require regular maintenance. (See Figures A13 and A14.)
- Have a neat appearance and allow for easy troubleshooting, maintenance and repair. (See Figures A15 and A16.)

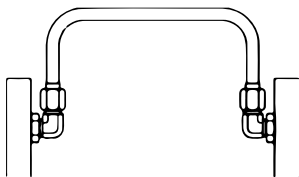


Fig.A1 — Correct Routing

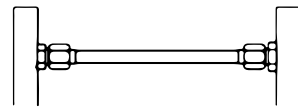


Fig.A2 — Incorrect Routing

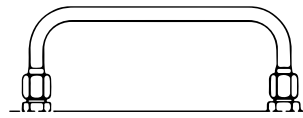


Fig.A5 — Correct Routing

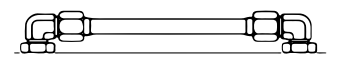


Fig.A6 — Incorrect Routing

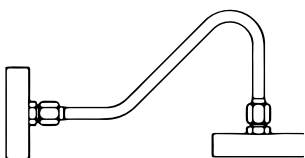


Fig.A3 — Correct Routing

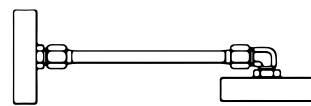


Fig.A4 — Incorrect Routing

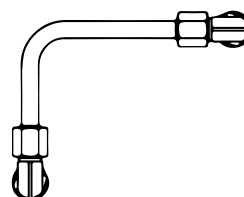


Fig.A7 — Correct Routing

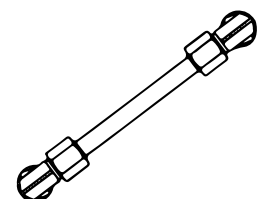


Fig.A8 — Incorrect Routing



TUBE LINE FABRICATION GUIDE FOR LEAK FREE SYSTEMS

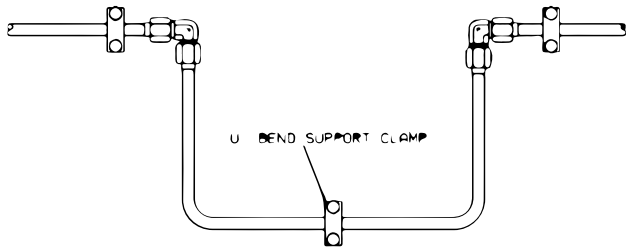


Fig.A9 — U-Bend Allowing Expansion and Contraction

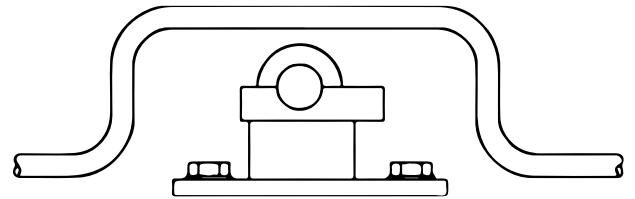


Fig.A12 — Incorrect

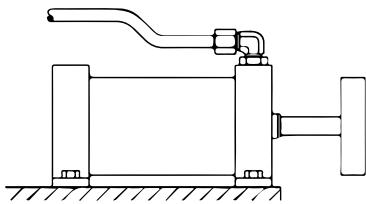


Fig.A10 — Bent Tube Allowing for Motion Under Load

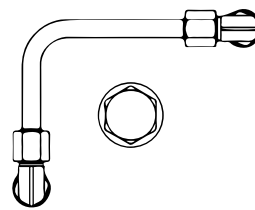


Fig.A13 — Correct

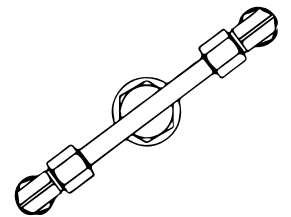


Fig.A14 — Incorrect

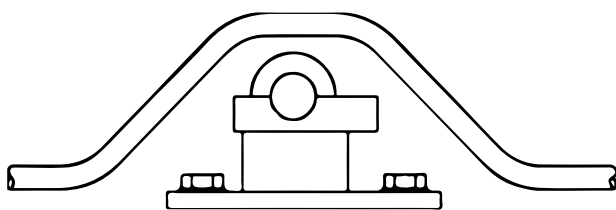


Fig. I1 — Correct

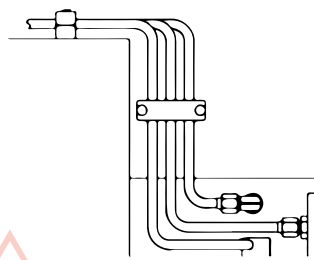


Fig.A15 — Correct

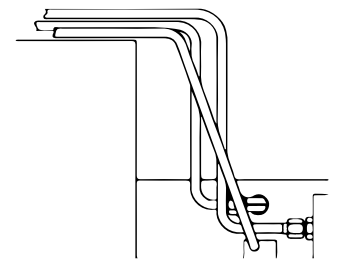


Fig.A16 — Incorrect



The background features a dark purple field with a large white triangle pointing downwards. Two thick, orange-red diagonal lines cross the white triangle. The text 'ENGLISH / METRIC CONVERSION' is centered in the white area.

ENGLISH / METRIC CONVERSION

ENGLISH / METRIC CONVERSIONS

Inches x 25.4 = Millimeters (mm)

Inches x 2.54 = Centimeters (cm)

Inches x .254 = Decimeters (dm)

Feet x .3048 = Meters (m)

Yards x .9144 = Meters (m)

PSI x .0689 = Bars (bar)

Bars x 100 = Kilopascals (kPa)

PSI x .0069 = Megapascals (MPa)

Pound Inches x .113 = Newton Meters (N•m)

Pound Feet x 1.356 = Newton Meters (N•m)

Millimeters x .0394 = Inches

Centimeters x .3937 = Inches

Meters x 3.281 = Feet

Meters x 1.0936 = Yards

Bars x 14.5 = PSI

Megapascals x 145 = PSI

Newton Meters x 8.85 = Pound Inches

Newton Meters x .737 = Pound Feet

Millimeters to Fractions to Decimals

MM	INCHES		MM	INCHES		MM	INCHES		MM	INCHES	
	FRACTION	DECIMAL		FRACTION	DECIMAL		FRACTION	DECIMAL		FRACTION	DECIMAL
.3969	1/64	.0156	6.7469	17/64	.2656	13.0969	33/64	.5156	19.4469	49/64	.7656
.7938	1/32	.0312	7.1438	9/32	.2812	13.4938	17/32	.5312	19.8438	25/32	.7812
1.1906	3/64	.0468	7.5406	19/64	.2968	13.8906	35/61	.5468	20.2406	51/64	.7968
1.5875	1/16	.0625	7.9375	5/16	.3125	14.2875	9/16	.5625	20.2375	13/16	.8125
1.9844	5/64	.0781	8.3344	21/64	.3281	14.6844	37/64	.5781	21.0344	53/64	.8281
2.3812	3/32	.0937	8.7312	11/32	.3437	15.0812	19/32	.5937	21.4312	27/32	.8437
2.7781	7/64	.1093	9.1281	23/64	.3593	14.4781	39/64	.6093	21.8281	55/64	.8593
3.1750	1/8	.1250	9.5250	3/8	.3750	15.8750	5/8	.6250	22.2250	7/8	.8750
3.5719	9/64	.1406	9.9219	25/64	.3906	16.2719	41/64	.6406	22.6219	57/64	.8906
3.9688	5/32	.1562	10.3188	13/32	.4062	16.6688	21/32	.6562	23.0188	29/32	.9062
4.3656	11/64	.1718	10.7156	27/64	.4218	17.0656	43/64	.6718	23.4156	59/64	.9218
4.7625	3/16	.1875	11.1125	7/16	.4375	17.4625	11/16	.6875	23.8125	15/16	.9375
5.1594	13/64	.2031	11.5094	29/64	.4531	17.8594	45/64	.7031	24.2094	61/64	.9531
5.5562	7/32	.2187	11.9062	15/32	.4687	18.2562	23/32	.7187	24.6062	31/32	.9687
5.9531	15/64	.2343	12.3031	31/64	.4843	18.6531	47/64	.7343	25.0031	63/64	.9843
6.3500	1/4	.2500	12.7000	1/2	.5000	19.0500	3/4	.7500	25.4000	1	1.0000





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