

# Flareless Bite Type Fittings

Steel and stainless steel bite type fittings meet all design and performance requirements for hydraulic flareless tube fittings in Standard J514 published by the Society of Automotive Engineers (SAE).

(080112/MS# 51590)



**CAP NUT**  
F820

(080110/MS# 51823)

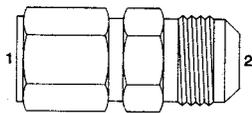


**NUT**  
F818

(080115A/MS# 51825A)



**FERRULE**  
F819



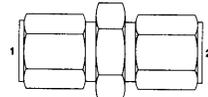
**BT - MJ**  
F814

(080101/MS# 51814)



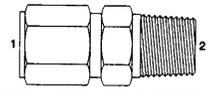
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STRAIGHT**  
F815

(080119/MS# 51856)



**BT - BT TUBE UNION  
LARGE HEX STRAIGHT**  
F815LH

(080102/MS# 51819)

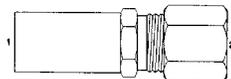


**BT - MP ADAPTER  
STRAIGHT**  
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(080103)



**BT - FP ADAPTER  
STRAIGHT**  
F854



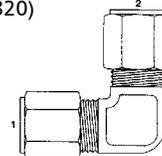
**TUBE - BT REDUCER**  
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(080109)



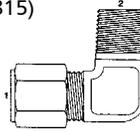
**PLUG**  
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(080201/  
MS# 51820)



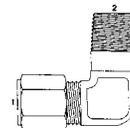
**BT - BT ELBOW 90°**  
F821

(080202/  
MS# 51815)



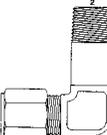
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F822

(071502)



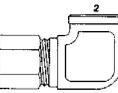
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90° LONG**  
F877

(081602)



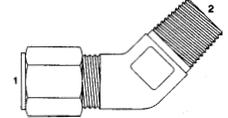
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(080203/MS# 51813)

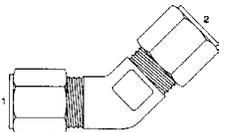


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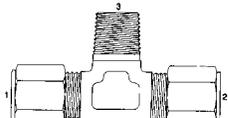


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F823



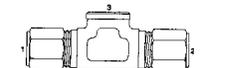
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(080425/MS# 51818)



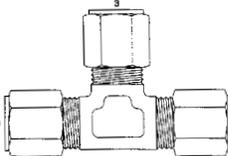
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(080427/MS# 51821)



**BT - BT - FP TEE**  
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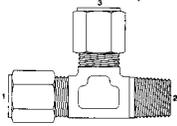
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MS# 51811)



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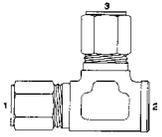
**Hydraulic  
Adapters**

(080424/MS# 51824)



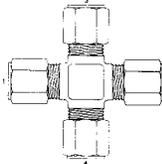
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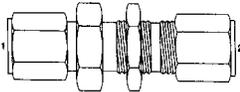


**BT - FP - BT TEE**  
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(080501/MS# 51894)

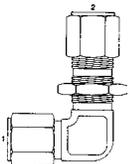


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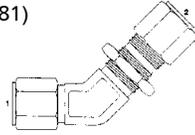
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F832

(080701/MS# 51855)



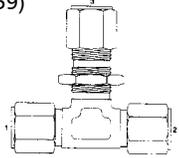
**BT - BT BULKHEAD  
UNION 90°**  
F833

(08081)



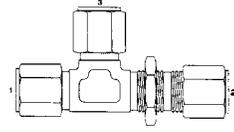
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UNION 45°**  
F837

(080959)

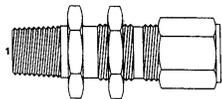


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BRANCH TEE**  
F834

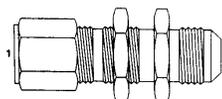
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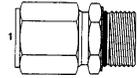


**BT - MP BULKHEAD**  
F840



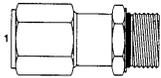
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(08120/MS# 51843)



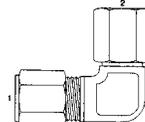
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(080122)



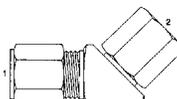
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(080221/MS# 51852)



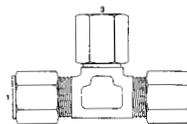
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F622

(080321)



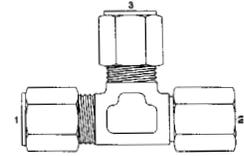
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(080433/MS# 51853)



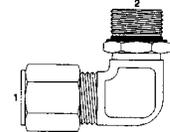
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(080432/MS# 51854)



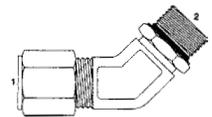
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(080220/MS# 51839)



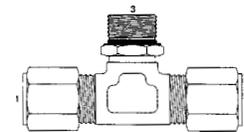
**BT - MAORB 90°**  
F522

(080320/MS# 51842)



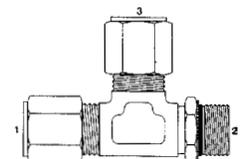
**BT - MAORD 45°**  
F523

(080320/MS# 51842)



**BT - BT - MAORB TEE**  
F525

(080428/MS# 51892)



**BT - MAORB - BT TEE**  
F526

**Hydraulic  
Adapters**



# Flareless Bite Type Fittings

## Assembly Instructions

The assembly of Brennan Steel and Stainless Steel Bite-Type Fittings involves four steps:

- 1) cutting, deburring and cleaning
- 2) presetting the ferrule to the tubing
- 3) ferrule bite inspection
- 4) installation.

### **Cutting, Deburring & Cleaning**

1. Square-cut the seamless or welded-and-drawn tubing using a hacksaw with a fine-tooth blade, or a circular-toothed cut-off saw. Use only tubing that is fully annealed for bending and flaring.
2. Remove all burrs and sharp edges on the tube by lightly deburring the I.D. and O.D. Emery paper may be used to perform this task.
3. Wipe the tube end completely with a clean cloth. Be sure to remove all metal chips from the tube end.

### **Pre-Setting Ferrule to the Tubing**

This procedure must be followed to ensure the proper location of the ferrule to the tubing.

1. Lubricate the fitting body thread and the thread of the nut.
2. Slip the nut and ferrule over the deburred end of the tube. The long, straight end of the ferrule must point toward the deburred tube end.
3. Lubricate the ferrule.
4. Position the deburred tube end squarely on the shoulder of the fitting body.
5. Manually screw the nut onto the fitting body until it is finger-tight.
6. Put a reference mark on the nut and the tube.
7. Hold the tube firmly on the fitting body and tighten the nut an additional 1% turns. Proper assembly of bite-type fittings is dependent upon the ferrule traveling a prescribed distance into the fitting throat. This allows it to "bite" into the tube, creating a strong grip and seal.

8. The use of a Ferulset tool is recommended for sizes -08 through -32".

### **Ferrule Bite Inspection**

The following inspection procedures must be completed prior to final assembly.

1. Disassemble the fitting.
2. The tube surface must have a raised ridge of metal that is at least 50% of the thickness of the leading edge of the ferrule.
3. There must be a slight bow to the pilot section of the ferrule.
4. The tail of the ferrule should be snug against the tube.
5. A slight indentation around the deburred end of the tube indicates that the tube was bottomed in the fitting. If this indentation is not visible, the ferrule may not be properly seated.
6. Do not rotate the ferrule.

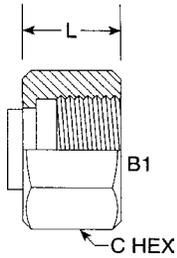
### **Installation**

1. Finger-tighten the nut.
2. Wrench\*tighten the nut another 1/3 to 1/2 turn.

# Cap Nut

## F820 Series

SAE # 080112 / MS # 51590



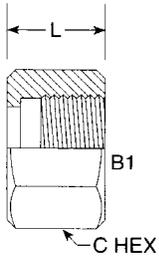
PART NO. SIZE	TUBE O.D.	B1 THREAD	L LGTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
								S	FG	SS	B
F820-02	1/8	5/16-24	0.500	12.70	3/8	0.375	9.52	•		•	
F820-04	1/4	7/16-20	0.590	14.99	9/16	0.562	15.87	•		•	
F820-05	5/16	1/2-20	0.610	15.49	5/8	0.625	15.87	•		•	
F820-06	3/8	9/16-18	0.630	16.00	11/16	0.688	17.47	•		•	
F820-08	1/2	3/4-16	0.750	19.05	7/8	0.875	22.22	•		•	
F820-10	5/8	7/8-14	0.840	21.34	1	1.000	25.40	•		•	
F820-12	3/4	1 1/16-12	0.910	23.11	1 1/4	1.250	31.75	•		•	
F820-16	1	1 5/16-12	1.020	25.91	1 1/2	1.500	38.10	•		•	
F820-20	1 1/4	1 5/8-12	1.060	26.92	2	2.000	50.80	•		•	

Hydraulic Adapters

# Nut

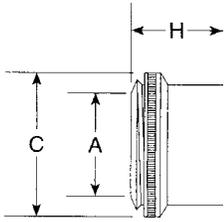
## F818 Series

SAE # 080110 / MS # 51823



PART NO. SIZE	TUBE O.D.	B1 THREAD	L LGTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
								S	FG	SS	B
F818-02	1/8	5/16-24	0.540	13.72	3/8	0.375	9.52	•		•	
F818-03	3/16	3/8-24	0.600	15.24	7/16	0.438	11.12	•		•	
F818-04	1/4	7/16-20	0.610	15.49	9/16	0.562	14.27	•		•	•
F818-05	5/16	1/2-20	0.670	17.02	5/8	0.625	15.87	•		•	
F818-06	3/8	9/16-18	0.720	18.29	11/16	0.688	17.47	•		•	•
F818-08	1/2	3/4-16	0.840	21.34	7/8	0.875	22.22	•		•	
F818-10	5/8	7/8-14	0.970	24.64	1	1.000	25.40	•		•	
F818-12	3/4	1 1/16-12	1.020	25.91	1 1/4	1.250	31.75	•		•	
F818-14	7/8	1 3/16-12	1.080	27.43	1 3/8	1.375	34.92	•		•	
F818-16	1	1 5/16-12	1.120	28.45	1 1/2	1.500	38.10	•		•	
F818-20	1 1/4	1 5/8-12	1.220	30.99	2	2.000	50.80	•		•	
F818-24	1 1/2	1 7/8-12	1.410	35.81	2 1/4	2.250	57.15	•		•	
F818-32	2	2 1/2-12	1.740	44.20	2 7/8	2.875	73.02	•		•	





**Ferrule**

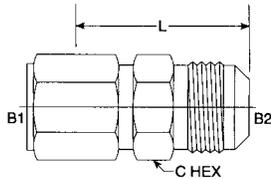
**F819 Series**

SAE # 080115A / MS # 51825

PART NO. SIZE	TUBE O.D.	A	C	H	Standard Material From Stock			
					S	FG	SS	B
F819-02	1/8	0.130	0.240	0.290	•		•	
F819-03	3/16	0.190	0.310	0.330	•		•	
F819-04	1/4	0.260	0.370	0.360	•		•	•
F819-05	5/16	0.320	0.430	0.370	•		•	
F819-06	3/8	0.380	0.500	0.390	•		•	•
F819-08	1/2	0.510	0.660	0.430	•		•	
F819-10	5/8	0.630	0.780	0.440	•		•	
F819-12	3/4	0.760	0.930	0.480	•		•	
F819-14	7/8	0.880	1.060	0.480	•		•	
F819-16	1	1.010	1.190	0.480	•		•	
F819-20	1 1/4	1.260	1.450	0.480	•		•	
F819-24	1 1/2	1.510	1.690	0.480	•		•	
F819-32	2	2.010	2.210	0.051	•		•	

**BT - MJ**

**F814 Series**



PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	L LGTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
									S	FG	SS	B
F814-04-04	1/4	7/16-20	1/4-18	1.1875	30.00	1/2	0.50	12.70	•		•	
F814-06-06	3/8	9/16-18	9/16-18	1.280	32.51	5/8	0.625	15.87	•		•	
F814-08-08	1/2	3/4-16	3/4-16	1.470	37.34	13/16	0.812	20.62	•		•	
F814-08-12											•	
F814-12-12	3/4	1 1/16-12	1 1/16-12	1.940	49.28	1 1/8	1.125	28.57	•		•	
F814-16-16	1	1 5/16-12	1-11 1/2	1.970	50.00	1 5/8	1.625	41.28	•		•	
F814-20-20	1 1/4	1 5/8-12	1 1/2-11 1/2	2.000	51.00	1 3/4	1.75	44.45	•		•	

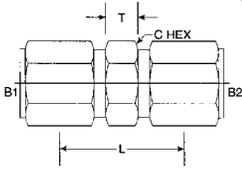
**Hydraulic  
Adapters**



# BT - BT Tube Union Straight

## F815 Series

SAE # 080101 / MS # 51814



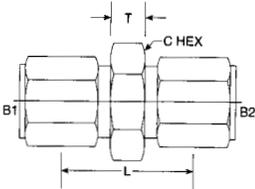
PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	L LGTH	M.M.	T WIDTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
											S	FG	SS	B
F815-02-02	1/8	5/16-24	5/16-24	1.020	25.91	0.220	5.59	7/16	0.438	11.12	•		•	
F815-03-03	3/16	3/8-24	3/8-24	1.110	28.19	0.220	5.59	7/16	0.438	11.12	•		•	
F815-04-04	1/4	7/16-20	7/16-20	1.190	30.23	0.220	5.59	1/2	0.500	12.70	•		•	
F815-05-05	5/16	1/2-20	1/2-20	1.190	30.23	0.220	5.59	9/16	0.562	14.27	•		•	
F815-06-04	3/8 1/4	9/16-18	7/16-20	1.240	31.50	0.250	6.35	5/8	0.625	15.87	•		•	
F815-06-06	3/8	9/16-18	9/16-18	1.220	30.99	0.250	6.35	5/8	0.625	15.87	•		•	
F815-08-08	1/2	3/4-16	3/4-16	1.420	36.07	0.250	6.35	13/16	0.812	20.62	•		•	
F815-10-10	5/8	7/8-14	7/8-14	1.610	40.89	0.310	7.87	15/16	0.038	23.82	•		•	
F815-12-08	3/4	1 1/16-12	1/2-14	1.690	42.93	0.380	9.65	1 1/4	1.125	28.58	•		•	
F815-12-12	3/4	1 1/16-12	1 1/16-12	1.810	45.97	0.380	9.65	1 1/8	1.125	28.57	•		•	
F815-14-14	7/8	1 3/16-12	1 3/16-12	1.810	45.97	0.380	9.65	1 1/8	1.125	28.57	•		•	
F815-16-16	1	1 5/16-12	1 5/16-12	1.810	45.97	0.380	9.65	1 3/8	1.375	34.92	•		•	
F815-20-20	1 1/4	1 5/8-12	1 5/8-12	1.890	48.01	0.460	11.68	1 11/16	1.688	42.87	•		•	
F815-24-24	1 1/2	1 7/8-12	1 7/8-12	1.960	49.78	0.530	13.46	2	2.000	50.80	•		•	
F815-32-32	2	2 1/2-12	2 1/2-12	2.110	53.59	0.680	17.27	2 5/8	2.625	66.67	•		•	

Hydraulic Adapters

# BT - BT Tube Union Large Hex Straight

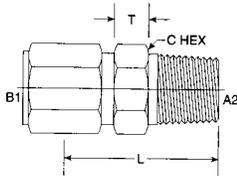
## F815LH Series

SAE # 080119 / MS # 51856



PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	L LGTH	M.M.	T WIDTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
											S	FG	SS	B
F815LH-04-04	1/4	7/16-20	7/16-20	1.190	30.23	0.220	5.588	11/16	0.688	17.47	•		•	
F815LH-06-06	3/8	9/16-18	9/16-18	1.230	31.24	0.250	6.350	13/16	0.812	20.62	•		•	
F815LH-08-06	1/2 3/8	3/4-16	9/16-18	1.220	30.99	0.250	6.350	1	1.000	25.40	•		•	
F815LH-08-08	1/2	3/4-16	3/4-16	1.420	36.07	0.250	6.350	1	1.000	25.40	•		•	
F815LH-10-10	5/8	7/8-14	7/8-14	1.330	33.78	0.310	7.874	1 1/8	1.125	28.57	•		•	
F815LH-12-12	3/4	1 1/16-12	1 1/16-12	1.610	40.89	0.380	9.652	1 3/8	1.375	34.92	•		•	
F815LH-16-16	1	1 5/16-12	1 5/16-12	1.810	45.97	0.380	9.652	1 5/8	1.625	41.27	•		•	





# BT - MP Adapter Straight

## F816 Series

SAE # 080102 / MS # 51819

PART NO. SIZE	TUBE O.D.	B1 THREAD	A2 NPTF	L LGTH	M.M.	T WIDTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock				
											S	FG	SS	B	
NEW	F816-02-02	1/8	5/16-24	1/8-27	1.040	26.42	0.220	5.59	7/16	0.438	11.12	•		•	
	F816-02-04	1/8	5/16-24	1/4-18	1.250	31.75	0.250	6.35	9/16	0.562	14.27	•		•	
	F816-03-02											•		•	
	F816-04-02	1/4	7/16-20	1/8-27	1.120	28.45	0.250	6.35	1/2	0.500	12.70	•		•	•
	F816-04-04	1/4	7/16-20	1/4-18	1.330	33.78	0.250	6.35	9/16	0.562	14.27	•		•	•
	F816-04-06	1/4	7/16-20	3/8-18	1.330	33.78	0.250	6.35	3/4	0.750	19.05	•		•	•
	F816-04-08	1/4	7/16-20	1/2-14	1.580	40.13	0.250	6.35	7/8	0.875	22.22	•		•	•
	F816-05-02	5/16	1/2-20	1/8-27	1.120	28.45	0.250	6.35	9/16	0.562	14.27	•		•	•
	F816-05-04	5/16	1/2-20	1/4-18	1.330	33.78	0.250	6.35	9/16	0.562	14.27	•		•	•
	F816-05-06	5/16	1/2-20	3/8-18	1.420	36.09	0.250	6.35	3/4	0.750	19.05	•		•	•
	F816-06-02	3/8	9/16-18	1/8-27	1.160	29.46	0.250	6.35	5/8	0.625	15.87	•		•	•
	F816-06-04	3/8	9/16-18	1/4-18	1.340	34.04	0.250	6.35	5/8	0.625	15.87	•		•	•
	F816-06-06	3/8	9/16-18	3/8-18	1.340	34.04	0.250	6.35	13/16	0.812	20.62	•		•	•
	F816-06-08	3/8	9/16-18	1/2-14	1.600	40.65	0.250	6.35	15/16	0.938	23.82	•		•	•
	F816-08-04	1/2	3/4-16	1/4-18	1.440	36.58	0.250	6.35	13/16	0.812	20.62	•		•	•
F816-08-06	1/2	3/4-16	3/8-18	1.440	36.58	0.250	6.35	13/16	0.812	20.62	•		•	•	
F816-08-08	1/2	3/4-16	1/2-14	1.690	42.93	0.310	7.87	15/16	0.938	23.82	•		•	•	
F816-08-12	1/2	3/4-16	3/4-14	1.750	44.45	0.380	9.65	1-1/8	1.125	28.57	•		•	•	
F816-10-06	5/8	7/8-14	3/8-16	1.560	39.62	0.380	9.65	15/16	0.938	23.82	•		•	•	
F816-10-08	5/8	7/8-14	1/2-14	1.750	44.45	0.310	7.87	15/16	0.938	23.82	•		•	•	
F816-10-12	5/8	7/8-14	3/4-14	1.830	46.48	0.380	9.65	1 1/8	1.125	28.57	•		•	•	
F816-12-08	3/4	1 1/16-12	1/2-14	1.880	47.75	0.380	9.65	1 1/8	1.125	28.57	•		•	•	
F816-12-12	3/4	1 1/16-12	3/4-14	1.880	47.75	0.380	9.65	1 1/8	1.125	28.57	•		•	•	
F816-12-16	3/4	1 1/16-12	1-11 1/2	2.080	52.83	0.380	9.65	1 3/8	1.375	34.92	•		•	•	
NEW	F816-14-12											•		•	
	F816-16-12	1	1 5/16-12	3/4-14	1.880	47.75	0.380	9.65	1 3/8	1.375	34.92	•		•	
	F816-16-16	1	1 5/16-12	1-11 1/2	2.070	52.58	0.380	9.65	1 3/8	1.375	34.92	•		•	
	F816-20-20	1 1/4	1 5/8-12	1 1/4-11 1/2	2.180	55.37	0.460	11.68	1 11/16	1.688	42.93	•		•	
	F816-24-20	1 1/2	1 7/8-12	1 1/4-11 1/2	2.280	57.91	0.562	14.22	2	2.000	50.80	•		•	
	F816-24-24	1 1/2	1 7/8-12	1 1/2-11 1/2	2.280	57.91	0.530	13.46	2	2.000	50.80	•		•	
	F816-32-32	2	2 1/2-12	2-11 1/2	2.460	62.48	0.680	17.27	2 5/8	2.625	66.80	•		•	

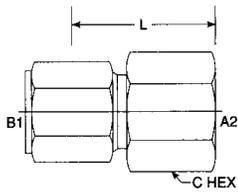
Hydraulic Adapters



# BT - FP Adapter Straight

## F854 Series

SAE # 080103

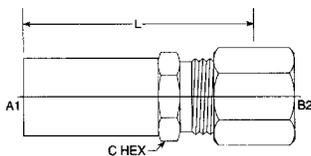


PART NO. SIZE	TUBE O.D.	B1 THREAD	A2 NPTF	L LGTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
									S	FG	SS	B
F854-02-02	1/8	5/16-24	1/8-27	1.050	26.67	9/16	0.562	14.27	•		•	
F854-04-02	1/4	7/16-20	1/8-27	1.090	27.70	9/16	0.562	14.27	•		•	
F854-04-04	1/4	7/16-20	1/4-18	1.290	32.77	3/4	0.750	19.05	•		•	
F854-05-02	5/16	1/2-20	1/8-27	1.080	27.45	9/16	0.562	14.27	•		•	
<b>NEW</b> F854-05-04											•	
F854-06-04	3/8	9/16-18	1/4-28	1.310	33.27	3/4	0.750	19.05	•		•	
F854-06-06	3/8	9/16-18	3/8-18	1.340	34.04	7/8	0.875	22.22	•		•	
F854-06-08	3/8	9/16-18	1/2-14	1.590	40.39	1 1/8	1.125	28.57	•		•	
F854-08-04	1/2	3/4-16	1/4-18	1.460	37.08	13/16	0.812	20.62	•		•	
F854-08-06	1/2	3/4-16	3/8-18	1.470	37.34	7/8	0.875	22.22	•		•	
F854-08-08	1/2	3/4-16	1/2-14	1.690	42.93	1 1/8	1.125	28.57	•		•	
<b>NEW</b> F854-10-06											•	
F854-10-08	5/8	7/8-14	1/2-14	1.770	44.96	1 1/8	1.125	28.57	•		•	
F854-12-12	3/4	1 1/16-12	3/4-14	1.890	48.01	1 3/8	1.375	34.92	•		•	
<b>NEW</b> F854-14-12											•	
F854-16-16	1	1 15/16-12	1-11 1/2	2.130	54.10	1 5/8	1.625	41.27	•		•	
F854-20-20	1 1/4	1 5/8-12	1 1/4-11 1/2	2.220	56.39	2	2.000	50.80	•		•	
F854-24-24	1 1/2	1 7/8-12	1 1/2-11 1/2	2.230	56.64	2 3/8	2.375	60.32	•		•	

Hydraulic Adapters

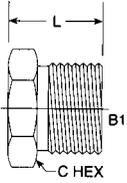
# Tube - BT Reducer

## F860 Series



PART NO. SIZE	TUBE O.D.	A1 TUBE	B2 THREAD	L LGTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
									S	FG	SS	B
F860-06-04	3/8	0.375	7/16-20	1.610	40.89	1/2	0.500	12.70	•		•	
F860-08-04	1/2	0.500	7/16-20	1.730	43.94	9/16	0.562	14.27	•		•	
F860-08-06	1/2	0.500	9/16-18	1.770	44.96	9/16	0.562	14.27	•		•	
F860-10-08	5/8	0.625	7/8-14	1.950	49.53	13/16	0.812	20.62	•		•	
F860-12-06	3/4	0.750	1 1/16-12	1.940	49.28	13/16	0.812	20.62	•		•	
F860-12-08	3/4	0.750	1 1/16-12	2.030	51.56	13/16	0.812	20.62	•		•	
F860-16-08	1	1.000	1 5/16-12	2.050	52.07	1 1/16	1.062	26.97	•		•	
F860-16-12	1	1.000	1 5/16-12	2.250	57.15	1 1/8	1.125	28.57	•		•	
F860-20-16	1 1/4	1.250	1 5/8-12	2.280	57.91	1 3/8	1.375	34.92	•		•	





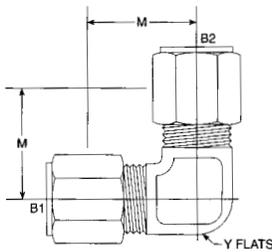
**Plug**  
**F806 Series**  
SAE # 080109

PART NO. SIZE	TUBE O.D.	B1 THREAD	L LGTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
								S	FG	SS	B
F806-02	1/8	5/16-24	0.630	16.00	7/16	0.438	11.12	•			
F806-04	1/4	7/16-20	0.710	18.03	1/2	0.500	12.70	•			
F806-06	3/8	9/16-18	0.750	19.05	5/8	0.625	15.87	•			
F806-08	1/2	3/4-16	0.850	21.59	13/16	0.812	20.62	•			
F806-10	5/8	7/8-14	0.970	24.64	15/16	0.938	23.82	•			
F806-12	3/4	1 1/16-12	1.100	27.94	1 1/8	1.125	28.57	•			
F806-16	1	1 5/16-12	1.100	27.94	1 3/8	1.375	34.92	•			
F806-20	1 1/4	1 5/8-12	1.180	29.97	1 11/16	1.688	42.87				

**BT - BT Elbow 90°**

**F821 Series**

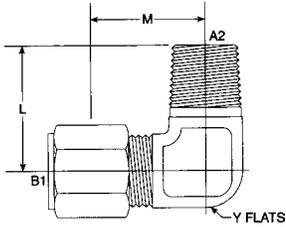
SAE # 080201 / MS # 51820



PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
									S	FG	SS	B
F821-02-02	1/8	5/16-24	5/16-24	0.770	19.56	7/16	0.438	11.12				
F821-04-04	1/4	7/16-20	7/16-20	0.890	22.61	7/16	0.438	11.12				
F821-05-05	5/16	1/2-20	1/2-20	0.950	24.13	9/16	0.562	14.27				
F821-06-06	3/8	9/16-18	9/16-18	1.050	26.67	9/16	0.562	14.27				
F821-08-08	1/2	3/4-16	3/4-16	1.250	31.75	3/4	0.750	19.05				
F821-10-10	5/8	7/8-14	7/8-14	1.420	36.07	7/8	0.875	22.22				
F821-12-12	3/4	1 1/16-12	1 1/16-12	1.580	40.13	1 1/16	1.062	26.97				
F821-16-16	1	1 5/16-12	1 5/16-12	1.730	43.94	1 5/16	1.312	33.32				
F821-20-20	1 1/4	1 5/8-12	1 5/8-12	1.890	48.01	1 5/8	1.625	41.27				
F821-24-24	1 1/2	1 7/8-12	1 7/8-12	2.020	51.31	1 7/8	1.875	47.62				

**Hydraulic  
Adapters**





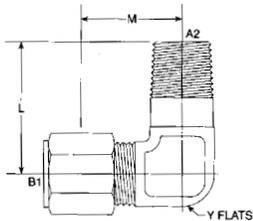
**BT - MP Elbow 90°**

**F822 Series**

SAE # 080202 / MS # 51815

PART NO. SIZE	TUBE O.D.	B1 THREAD	A2 NPTF	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
											S	FG	SS	B
F822-02-02	1/8	5/16-24	1/8-27	0.720	18.29	0.780	19.81	7/16	0.438	11.12		•	•	
F822-03-02	3/16	3/8-24	1/8-27	0.720	18.29	0.840	21.34	7/16	0.438	11.12		•	•	
F822-04-02	1/4	7/16-20	1/8-27	0.780	19.81	0.890	22.61	7/16	0.438	11.12		•	•	
F822-04-04	1/4	7/16-20	1/4-18	1.090	27.69	1.030	26.16	9/16	0.562	14.27		•	•	
F822-04-06	1/4	7/16-20	3/8-18	1.220	30.99	1.130	28.70	13/16	0.812	20.62		•	•	
F822-04-08	1/4	7/16-20	3/4-16	1.470	37.34	1.220	30.99	7/8	0.875	22.22		•	•	
F822-05-02	5/16	1/2-20	1/8-27	0.810	20.57	0.950	24.13	9/16	0.562	14.27		•	•	
F822-05-04	5/16	1/2-20	1/4-18	1.090	27.69	1.030	26.16	9/16	0.562	14.27		•	•	
F822-06-02	3/8	9/16-18	1/8-27	0.880	22.35	1.050	26.67	9/16	0.562	14.27		•	•	
F822-06-04	3/8	9/16-18	1/4-18	1.090	27.69	1.050	26.67	9/16	0.562	14.27		•	•	
F822-06-06	3/8	9/16-18	3/8-18	1.220	30.99	1.140	28.96	3/4	0.750	19.05		•	•	
F822-06-08	3/8	9/16-18	1/2-14	1.470	37.34	1.230	31.24	7/8	0.875	22.22		•	•	
F822-08-04	1/2	3/4-16	1/4-18	1.160	29.46	1.250	31.75	3/4	0.750	19.05		•	•	
F822-08-06	1/2	3/4-16	3/8-18	1.220	30.99	1.250	31.75	3/4	0.750	19.05		•	•	
F822-08-08	1/2	3/4-16	1/2-14	1.470	37.34	1.340	34.04	7/8	0.875	22.22		•	•	
F822-08-12	1/2	3/4-16	3/4-14	1.590	40.39	1.420	36.07	1 1/16	1.062	26.97		•	•	
F822-10-06	5/8	7/8-14	3/8-18	1.300	33.02	1.420	36.07	7/8	0.875	22.22		•	•	
F822-10-08	5/8	7/8-14	1/2-14	1.470	37.34	1.420	36.07	7/8	0.875	22.22		•	•	
F822-10-12	5/8	7/8-14	3/4-14	1.590	40.39	1.430	36.32	1 1/16	1.062	26.97		•	•	
F822-12-08	3/4	1 1/16-12	1/2-14	1.590	40.39	1.580	40.13	1 1/16	1.062	26.97		•	•	
F822-12-12	3/4	1 1/16-12	3/4-14	1.590	40.39	1.580	40.13	1 1/16	1.062	26.97		•	•	
F822-16-12	1	1 5/16-12	3/4-14	1.780	45.21	1.730	43.95	1 3/8	1.375	34.92		•	•	
F822-16-16	1	1 5/16-12	1-11 1/2	1.970	50.04	1.730	43.94	1 5/16	1.312	33.32		•	•	
F822-20-20	1 1/4	1 5/8-12	1 1/4-11 1/2	2.380	60.45	1.890	48.01	1 5/8	1.625	41.27		•	•	
F822-24-24	1 1/2	1 7/8-12	1 1/2-11 1/2	2.640	67.06	2.020	51.31	1 7/8	1.875	47.62		•	•	
F822-32-32	2	2 1/2-12	2-11 1/2	3.000	76.20	2.450	62.23	2 9/16	2.562	65.07		•	•	

**Hydraulic  
Adapters**



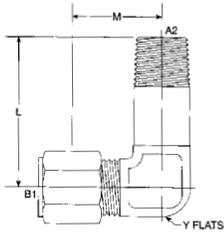
**BT - MP Elbow 90° Long**

**F877 Series**

SAE # 071502

PART NO. SIZE	TUBE O.D.	B1 THREAD	A2 NPTF	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
											S	FG	SS	B
F877-04-02	1/4	7/16-20	1/8-27	1.170	29.72	0.890	22.61	7/16	0.438	11.12			•	
F877-04-04	1/4	7/16-20	1/4-18	1.580	40.13	1.030	26.16	9/16	0.562	14.27			•	
F877-05-04	5/16	1/2-20	1/4-18	1.440	36.58	1.030	26.16	9/16	0.562	14.27			•	
F877-06-06	3/8	9/16-18	3/8-18	1.830	46.48	1.140	28.96	3/4	0.750	19.05			•	
F877-12-12	3/4	1 1/16-12	3/4-14	2.440	61.98	1.580	40.13	1 1/16	1.062	26.97			•	
F877-16-16	1	1 5/16-12	1-11 1/2	3.010	76.45	1.730	43.94	1 5/16	1.312	33.32			•	
F877-20-20	1 1/4	1 5/8-12	1 1/4-11 1/2	3.690	93.73	1.890	48.01	1 5/8	1.625	41.27			•	
F877-24-24	1 1/2	1 7/8-12	1 1/2-11 1/2	4.100	104.14	2.020	51.31	1 7/8	1.875	47.62			•	
F877-32-32	2	2 1/2-12	2-11 1/2	4.810	122.17	2.450	62.23	2 1/2	2.500	63.50			•	



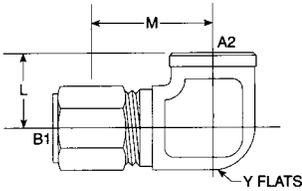


# BT - MP Elbow 90° X-Long

## F878 Series

SAE # 081602

NO. SIZE	O.D.	THREAD	NPTF	LGTH	M.M.	LGTH	M.M.	FLATS	FLATS	M.M.	Standard Material From Stock			
											S	FG	SS	B
F878-04-02	1/4	7/16-20	1/8-27	1.560	39.62	0.890	22.61	7/16	0.438	11.12			•	
F878-04-04	1/4	7/16-20	1/4-18	2.030	51.56	1.030	26.16	9/16	0.562	14.27			•	
F878-05-02	5/16	1/2-20	1/8-27	1.630	41.40	0.950	24.13	9/16	0.562	14.27			•	
F878-06-04	3/8	9/16-18	1/4-18	2.070	52.58	1.050	26.67	9/16	0.562	14.27			•	
F878-08-06	1/2	3/4-16	3/8-18	2.420	61.47	1.250	31.75	3/4	0.750	19.05			•	
F878-10-08	5/8	7/8-14	1/2-14	2.870	72.90	1.420	36.07	7/8	0.875	22.22			•	
F878-12-12	3/4	1 1/16-12	3/4-14	3.280	83.31	1.580	40.13	1 1/16	1.062	26.97			•	
F878-16-16	1	1 5/16-12	1-11 1/2	4.050	102.82	1.730	43.94	1 5/16	1.312	33.32			•	
F878-20-20	1 1/4	1 5/8-12	1 1/4-11 1/2	5.000	127.00	1.890	48.01	1 5/8	1.625	41.27			•	
F878-24-24	1 1/2	1 7/8-12	1 1/2-11 1/2	5.550	140.97	2.020	51.32	1 7/8	1.875	47.62			•	
F878-32-32	2	2 1/2-12	2-11 1/2	6.630	168.40	2.450	62.23	2 1/2	2.500	63.50			•	



# BT - FP Elbow 90°

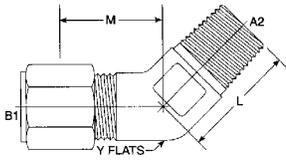
## F855 Series

SAE # 080203 / MS# 51813

PART NO. SIZE	TUBE O.D.	B1 THREAD	A2 NPTF	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
											S	FG	SS	B
F855-04-02	1/4	7/16-20	1/8-27	0.660	16.76	0.890	22.61	9/16	0.562	14.27		•	•	
F855-04-04	1/4	7/16-20	1/4-18	0.880	22.35	1.030	26.16	3/4	0.750	19.05		•	•	
F855-05-02	5/16	1/2-20	1/8-27	0.660	16.76	0.950	24.13	9/16	0.562	14.27		•	•	
F855-06-04	3/8	9/16-18	1/4-18	0.880	22.35	1.050	26.67	3/4	0.750	19.05		•	•	
F855-06-06	3/8	9/16-18	3/8-18	1.020	25.91	1.130	28.70	7/8	0.875	22.22		•	•	
F855-08-04	3/8	3/4-16	1/4-18	0.880	22.35	1.230	31.24	3/4	0.750	19.05		•	•	
F855-08-06	3/8	3/4-16	3/8-18	1.020	25.91	1.230	31.24	7/8	0.875	22.22		•	•	
F855-08-08	1/2	3/4-16	1/2-14	1.230	31.24	1.340	34.04	1 1/16	1.062	26.97		•	•	
F855-10-08	5/8	7/8-14	1/2-14	1.230	31.24	1.420	36.07	1 1/16	1.062	26.97		•	•	
F855-12-12	3/4	1 1/16-12	3/4-14	1.360	34.54	1.580	40.13	1 5/16	1.312	33.32		•	•	
F855-16-16	1	1 5/16-12	1-11 1/2	1.620	41.15	1.730	43.94	1 5/8	1.625	41.27		•	•	
F855-20-20	1 1/4	1 5/8-12	1 1/4-11 1/2	1.700	43.18	2.080	52.83	1 7/8	1.875	47.62		•	•	
F855-24-24	1 1/2	1 7/8-12	1 1/2-11 1/2	2.080	52.83	2.580	65.53	1 1/2	2.500	63.50		•	•	

Hydraulic Adapters





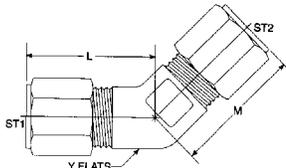
**BT - MP Elbow 45°**

**F823 Series**

SAE # 080302 / MS# 51817

PART NO. SIZE	TUBE O.D.	B1 THREAD	A2 NPTF	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	FROM STOCK			
											S	FG	SS	B
F823-04-02	1/4	7/16-20	1/8-27	0.640	16.26	0.700	17.78	7/16	0.438	11.12		•	•	
F823-04-04	1/4	7/16-20	1/4-18	0.860	21.84	0.810	20.57	9/16	0.562	14.27		•	•	
F823-06-04	3/8	9/16-18	1/4-18	0.860	21.84	0.830	21.08	9/16	0.562	14.27		•	•	
F823-06-06	3/8	9/16-18	3/8-18	0.950	24.13	0.830	21.08	3/4	0.750	19.05		•	•	
F823-06-08	3/8	9/16-18	1/2-14	1.170	29.72	0.900	22.86	7/8	0.875	22.22		•	•	
F823-08-06	1/2	3/4-16	3/8-18	0.950	24.13	0.980	24.89	3/4	0.750	19.05		•	•	
F823-08-08	1/2	3/4-16	1/2-14	1.170	29.72	0.980	24.89	7/8	0.875	22.22		•	•	
F823-08-12	1/2	3/4-16	3/4-14	1.200	30.48	1.120	28.45	1 1/16	1.062	26.97		•	•	
F823-10-06	5/8	7/8-14	3/8-18	0.980	24.89	1.080	27.43	7/8	0.875	22.22		•	•	
F823-10-08	5/8	7/8-14	1/2-14	1.170	29.72	1.080	27.43	7/8	0.875	22.22		•	•	
F823-12-08	3/4	1 1/16-12	1/2-4	1.200	30.48	1.270	32.26	1 1/16	1.062	26.97		•	•	
F823-12-12	3/4	1 1/16-12	3/4-14	1.200	30.48	1.270	32.26	1 1/16	1.062	26.97		•	•	
F823-16-16	1	1 5/16-12	1-11 1/2	1.480	37.59	1.360	34.54	1 5/16	1.312	33.32		•	•	
F823-20-20	1 1/4	1 5/8-12	1 1/4-11 1/2	1.670	42.42	1.450	36.83	1 5/8	1.625	41.27		•	•	

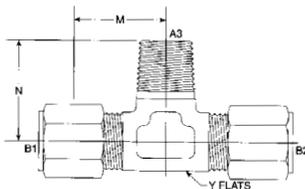
Hydraulic Adapters



**BT - BT Elbow 45°**

**F817 Series**

PART NO. SIZE	TUBE O.D.	ST1 THREAD	ST2 NPTF	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
											S	FG	SS	B
F817-12-12														
F817-16-16														
F817-20-20														



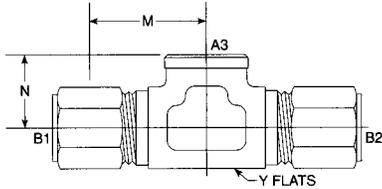
**BT - BT - MP Tee**

**F825 Series**

SAE # 080425 / MS# 51818

PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	A3 NPTF	M LGTH	M.M.	N LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
												S	FG	SS	B
F825-02-02-02	1/8	5/16-24	5/16-25	1/8-27	0.780	19.81	0.720	18.29	7/16	0.438	11.12			•	
F825-04-04-02	1/4	7/16-20	7/16-20	1/8-27	0.890	22.61	0.780	19.81	7/16	0.438	11.12		•	•	
F825-04-04-04	1/4	7/16-20	6/16-20	1/4-18	1.030	26.16	1.090	27.69	9/16	0.562	14.27		•	•	
F825-05-05-02	5/16	1/2-20	1/2-20	1/8-27	0.950	24.13	0.810	20.57	9/16	0.562	14.27		•	•	
F825-06-06-04	3/8	9/16-18	9/16-18	1/4-18	1.050	26.67	1.090	27.69	9/16	0.562	14.27		•	•	
F825-06-06-06	3/8	9/16-18	9/16-18	3/8-18	1.140	28.96	1.220	30.99	3/4	0.750	19.05		•	•	
F825-08-08-06	1/2	3/4-16	3/4-16	3/8-18	1.250	31.75	1.220	30.99	3/4	0.750	19.05		•	•	
F825-08-08-08	1/2	3/4-16	3/4-16	1/2-14	1.340	34.04	1.470	37.34	3/4	0.750	19.05		•	•	
F825-10-10-08	5/8	7/8-14	7/8-14	1/2-14	1.420	36.07	1.470	37.34	7/8	0.875	22.22		•	•	
F825-12-12-12	3/4	1 1/16-12	1 1/16-12	3/4-14	1.580	40.13	1.590	40.39	1 1/16	1.062	26.97		•	•	
F825-16-16-16	1	1 5/16-12	1 5/16-12	1-11 1/2	1.730	43.94	1.970	50.04	1 5/16	1.312	33.32		•	•	



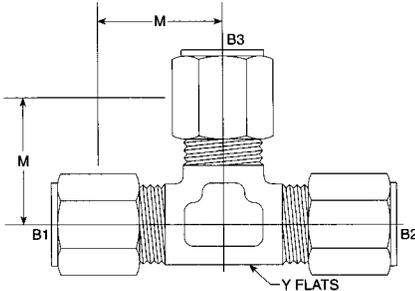


**BT - BT - FP Tee**

**F856 Series**

SAE # 080427 / MS# 51821

PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	A3 NPTF	M LGTH M.M.	N LGTH M.M.	Y FLATS M.M.	Y FLATS M.M.	Y FLATS M.M.	Standard Material From Stock					
										S	FG	SS	B		
F856-04-02	1/4	7/16-20	7/16-20	1/8-27	0.890	22.61	0.660	16.76	9/16	0.562	14.27		•	•	
F856-04-04	1/4	7/16-20	7/16-20	1/4-18	1.030	26.16	0.880	22.35	3/4	0.750	19.05		•	•	
F856-06-04	3/8	9/16-18	9/16-18	1/4-18	1.050	26.67	0.880	22.35	3/4	0.750	19.05		•	•	
F856-08-06	1/2	3/4-16	3/4-16	3/8-18	1.230	31.24	1.020	25.91	7/8	0.875	22.22		•	•	
F856-08-08	1/2	3/4-16	3/4-16	3/4-16	1.350	34.29	1.230	31.24	1 1/16	1.062	26.97		•	•	
F856-10-08	5/8	7/8-14	7/8-14	1/2-14	1.420	36.07	1.230	31.24	1 1/16	1.062	26.97		•	•	
F856-12-12	3/4	1 1/16-12	1 1/16-12	3/4-14	1.580	40.13	1.360	34.54	1 5/16	1.312	33.32		•	•	
F856-16-16	1	1 5/16-12	1 5/16-12	1-11 1/2	1.730	43.94	1.620	41.15	1 5/8	1.625	41.27		•	•	
F856-20-20	1 1/4	1 5/8-12	1 5/8-12	1 1/4-11 1/2	2.080	52.83	1.700	43.18	1 7/8	1.875	47.62		•	•	



**BT - BT - BT Tee**

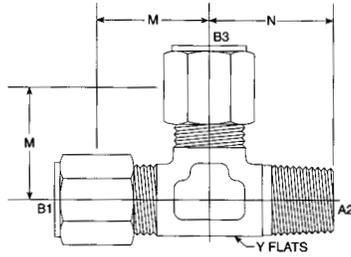
**F824 Series**

SAE # 080401 / MS# 51811

PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	B3 THREAD	M LGTH M.M.	Y FLATS M.M.	Y FLATS M.M.	Y FLATS M.M.	Standard Material From Stock				
									S	FG	SS	B	
F824-02-02	1/8	5/16-24	5/16-24	5/16-24	0.770	19.56	5/16	0.312	7.92		•	•	
F824-03-03	3/16	3/8-24	3/8-24	3/8-24	0.840	21.34	7/16	0.438	11.12		•	•	
F824-04-04	1/4	7/16-20	7/16-20	7/16-20	0.890	22.61	7/16	0.438	11.12		•	•	
F824-05-05	5/16	1/2-20	1/2-20	1/2-20	0.950	24.13	9/16	0.562	14.27		•	•	
F824-06-06	3/8	9/16-18	9/16-18	9/16-18	1.050	26.67	9/16	0.562	14.27		•	•	
F824-08-08	1/2	3/4-16	3/4-16	3/4-16	1.250	31.75	3/4	0.750	19.05		•	•	
F824-10-10	5/8	7/8-14	7/8-14	7/8-14	1.420	36.07	7/8	0.875	22.22		•	•	
F824-12-12	3/4	1 1/16-12	1 1/16-12	1 1/16-12	1.580	40.13	1 1/16	1.062	26.97		•	•	
<b>NEW</b> F824-14-14											•	•	
<b>NEW</b> F824-16-16	1	1 5/16-12	1 5/16-12	1 5/16-12	1.730	43.94	1 5/16	1.312	33.32		•	•	
F824-20-16											•	•	
F824-20-20	1 1/4	1 5/8-12	1 5/8-12	1 5/8-12	1.890	48.01	1 5/8	1.625	41.27		•	•	
F824-24-24	1 1/2	1 7/8-12	1 7/8-12	1 7/8-12	2.020	51.31	1 7/8	1.875	47.62		•	•	
F824-32-32	2	2 1/2-12	2 1/2-12	2 1/2-12	2.450	62.23	2 1/2	2.500	63.50		•	•	

**Hydraulic Adapters**





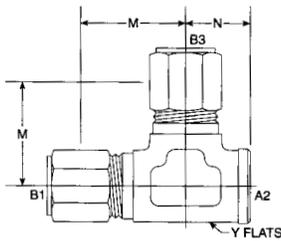
**BT - MP - BT Tee**

**F826 Series**

SAE # 080424 / MS# 51824

PART NO. SIZE	TUBE O.D.	B1 THREAD	A2 NPTF	B3 THREAD	M LGTH	M.M.	N LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
												S	FG	SS	B
F826-04-02	1/4	7/16-20	1/8-27	7/16-20	0.890	22.62	0.780	19.81	7/16	0.438	11.12		•	•	
F826-04-04	1/4	7/16-20	1/4-18	7/16-20	1.030	26.16	1.090	28.69	9/16	0.562	14.27		•	•	
F826-05-02	5/16	1/2-20	1/8-27	1/2-20	0.950	24.13	0.810	20.57	1/2	0.500	12.70		•	•	
F826-06-04	3/8	9/16-18	1/4-18	9/16-18	1.050	26.67	1.090	27.69	9/16	0.562	14.27		•	•	
F826-06-06	3/8	9/16-18	3/8-18	9/16-18	1.250	31.75	1.270	32.26	3/4	0.750	19.05		•	•	
F826-08-06	1/2	3/4-16	3/8-18	3/4-16	1.250	31.75	1.220	30.99	3/4	0.750	19.05		•	•	
F826-08-08	1/2	3/4-16	1/2-14	3/4-16	1.340	34.04	1.470	37.34	7/8	0.875	22.22		•	•	
F826-10-08	5/8	7/8-14	1/2-14	7/8-14	1.420	36.07	1.470	37.34	7/8	0.875	22.22		•	•	
F826-12-12	3/4	1 1/16-12	3/4-14	1 1/16-12	1.580	40.13	1.590	40.39	1 1/16	1.062	26.97		•	•	
F826-16-16	1	1 5/16-12	1-11 1/2	1 5/16-12	1.730	43.94	1.970	50.04	1 5/16	1.312	33.32		•	•	

Hydraulic Adapters



**BT - FP - BT Tee**

**F857 Series**

SAE # 080426 / MS# 51822

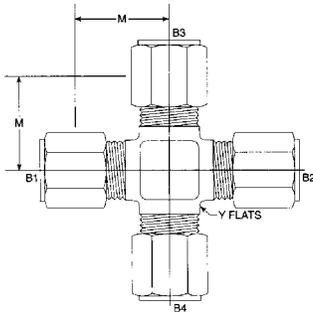
PART NO. SIZE	TUBE O.D.	B1 THREAD	A2 NPTF	B3 THREAD	M LGTH	M.M.	N LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
												S	FG	SS	B
F857-04-02	1/4	7/16-20	1/8-27	7/16-20	0.890	22.61	0.660	16.76	9/16	0.562	14.27		•	•	
F857-06-04	3/8	9/16-18	1/4-18	9/16-18	1.050	26.67	0.880	22.35	3/4	0.750	19.05		•	•	
F857-08-06	1/2	3/4-16	3/8-18	3/4-16	1.230	31.24	1.020	25.91	7/8	0.875	22.22		•	•	
F857-10-08	5/8	7/8-14	1/2-14	7/8-14	1.420	36.07	1.230	31.24	1 1/16	1.062	26.97		•	•	
F857-12-12	3/4	1 1/16-12	3/4-14	1 1/16-12	1.580	40.13	1.360	34.54	1 5/16	1.312	33.32		•	•	
F857-16-16	1	1 5/16-12	1-11 1/2	1 5/16-12	1.730	43.94	1.620	41.15	1 5/8	1.625	41.27		•	•	



**BT - BT - BT - BT Cross**

**F827 Series**

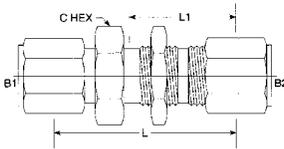
SAE # 080501 / MS# 51894



PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	B3 THREAD	B4 THREAD	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
											S	FG	SS	B
F827-04-04	1/4	7/16-20	7/16-20	7/16-20	7/16-20	0.890	22.62	7/16	0.438	11.12		•	•	
F827-06-06	3/8	9/16-18	9/16-18	9/16-18	9/16-18	1.050	26.67	9/16	0.562	14.27		•	•	
F827-08-08	1/2	3/4-16	3/4-16	3/4-16	3/4-16	1.250	31.75	3/4	0.750	19.05		•	•	
F827-10-10	5/8	7/8-14	7/8-14	7/8-14	7/8-14	1.420	36.07	7/8	0.875	22.22		•	•	
F827-16-16	1	1 5/16-12	1 5/16-12	1 5/16-12	1 5/16-12	1.730	43.94	1 5/16	1.312	33.32			•	
F827-20-20	1 1/4	1 5/8-12	1 5/8-12	1 5/8-12	1 5/8-12	1.890	48.01	1 5/8	1.625	41.27			•	
F827-24-24	1 1/2	1 7/8-12	1 7/8-12	1 7/8-12	1 7/8-12	2.020	51.31	1 7/8	1.875	47.62			•	
F827-32-32	2	2 1/2-12	2 1/2-12	2 1/2-12	2 1/2-12	2.450	62.23	2 1/2	2.500	63.50			•	

**BT - BT Bulkhead Union**

**F832 Series**



PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	L LGTH	M.M.	L1 LGTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
											S	FG	SS	B
F832-04-04	1/4	7/16-20	7/16-20	1.130	28.70	1.890	48.01	11/16	0.688	17.47	•		•	
F832-06-06	3/8	9/16-18	9/16-18	1.170	29.72	1.980	50.29	13/16	0.812	20.62	•		•	
F832-08-08	1/2	3/4-16	3/4-16	1.310	33.27	2.220	56.39	1	1.000	25.40	•		•	
F832-10-10	5/8	7/8-14	7/8-14	1.450	36.83	2.480	62.99	1 1/8	1.125	28.57	•		•	
F832-12-12	3/4	1 1/16-12	1 1/16-12	1.560	39.62	2.720	69.09	1 3/8	1.375	34.92	•		•	
F832-16-16	1	1 5/16-12	1 5/16-12	1.560	39.62	2.720	69.09	1 5/8	1.625	41.27			•	

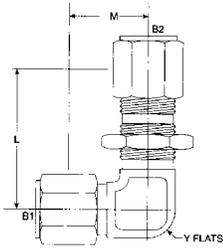
**Hydraulic Adapters**



# BT - BT Bulkhead Union 90°

## F833 Series

SAE # 080701 / MS# 51855

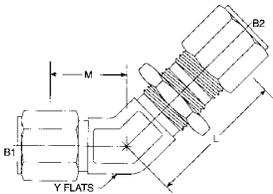


PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
											S	FG	SS	B
F833-03-03	3/16	3/8-24	3/8-24	1.410	35.81	0.920	23.37	7/16	0.438	11.12			•	
F833-04-04	1/4	7/16-20	7/16-20	1.520	38.61	0.950	24.13	7/16	0.438	11.12			•	
F833-06-06	3/8	9/16-18	9/16-18	1.700	43.18	1.080	27.43	9/16	0.562	14.27			•	
F833-08-08	1/2	3/4-16	3/4-16	1.970	50.04	1.330	33.78	3/4	0.750	19.05			•	
F833-10-10	5/8	7/8-14	7/8-14	2.270	57.66	1.520	38.61	7/8	0.875	22.22			•	
F833-12-12	3/4	1 1/16-12	1 1/16-12	2.480	62.99	1.640	41.66	1 1/16	1.062	26.97			•	
F833-16-16	1	1 5/16-12	1 5/16-12	2.610	66.29	1.730	43.94	1 5/16	1.312	33.32			•	
F833-20-20	1 1/4	1 5/8-12	1 5/8-12	2.890	73.41	2.020	51.31	1 5/8	1.625	41.27			•	

# BT - BT Bulkhead Union 45°

## F837 Series

SAE # 080801

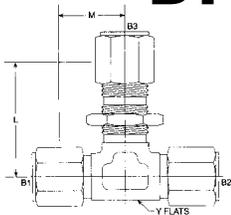


PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
											S	FG	SS	B
F837-04-04	1/4	7/16-20	7/16-20	1.450	36.83	0.700	17.78	7/16	0.438	11.12			•	
F837-06-06	3/8	9/16-18	9/16-18	1.560	39.62	0.830	21.08	9/16	0.562	14.27			•	
F837-08-08	1/2	3/4-16	3/4-16	1.810	45.97	0.980	24.89	3/4	0.750	19.05			•	
F837-12-12	3/4	1 1/16-12	1 1/16-12	2.250	57.15	1.270	32.26	1 1/16	1.062	26.97			•	

# BT - BT - BT Bulkhead Branch Tee

## F845 Series

SAE # 080959



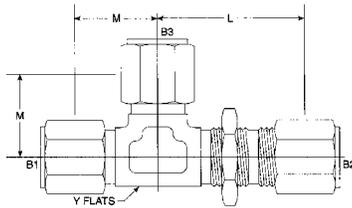
PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	B3 THREAD	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
												S	FG	SS	B
F845-04-04	1/4	7/16-20	7/16-20	7/16-20	1.520	38.61	0.950	24.13	7/16	0.438	11.12			•	
F845-05-05	5/16	1/2-20	1/2-20	1/2-20	1.550	39.37	1.050	26.67	9/16	0.562	14.27			•	
F845-06-06	3/8	9/16-18	9/16-18	9/16-18	1.700	43.18	1.080	27.43	9/16	0.562	14.27			•	
F845-10-10	1/2	3/4-16	3/4-16	3/4-16	1.970	50.04	1.330	33.78	3/4	0.750	19.05			•	
F845-12-12	3/4	1 1/16-12	1 1/16-12	1 1/16-12	2.480	62.99	1.640	41.66	1 1/16	1.062	26.97			•	



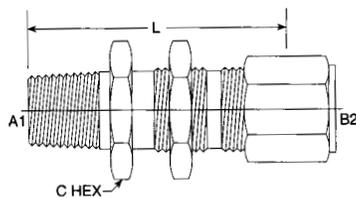
# BT - BT - BT Bulkhead Tee

## F846 Series

SAE # 080958



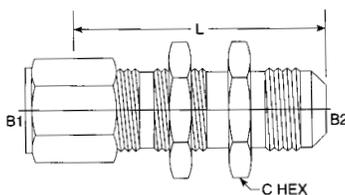
PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	B3 THREAD	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
												S	FG	SS	B
F846-04-04	1/4	7/16-20	7/16-20	7/16-20	1.520	38.61	0.950	24.13	7/16	0.438	11.12			•	
F846-06-06	3/8	9/16-18	9/16-18	9/16-18	1.700	43.18	1.080	27.43	9/16	0.562	14.27			•	
F846-08-08	1/2	3/4-16	3/4-16	3/4-16	1.970	50.04	1.330	33.78	3/4	0.750	19.05			•	
F846-12-12	3/4	1 1/16-12	1 1/16-12	1 1/16-12	2.480	62.99	1.640	41.66	1 1/16	1.062	26.97			•	



# BT - MP Bulkhead

## F840 Series

PART NO. SIZE	TUBE O.D.	A1 THREAD	B2 THREAD	L LGTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
									S	FG	SS	B
F840-02-04	1/4	1/8-27	7/16-20	1.820	46.23	11/16	0.688	17.45			•	
F840-04-04	1/4	1/4-18	7/16-20	2.080	52.83	3/4	0.750	19.05			•	
F840-04-06	3/8	1/4-18	9/16-18	2.100	53.34	13/16	0.812	20.62			•	
F840-06-06	3/8	3/8-18	9/16-18	2.140	54.36	13/16	0.812	20.62			•	
F840-08-06	1/2	3/8-18	3/4-16	2.300	58.42	1	1.000	25.40			•	
F840-08-08	1/2	1/2-14	3/4-16	2.560	65.02	1	1.000	25.40			•	
F840-12-12	3/4	3/4-14	1 1/16-12	2.760	70.10	1 3/8	1.375	34.92			•	
F840-16-16	1	1-11 1/2	1 5/16-12	3.100	78.74	1 5/8	1.625	41.27			•	



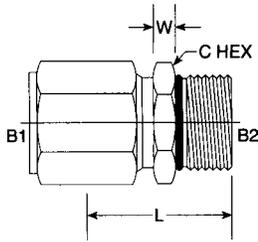
# BT - MJ Bulkhead

## F847 Series

PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	L LGTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
									S	FG	SS	B
F847-04-04	1/4	7/16-20	7/16-20	1.940	49.28	11/16	0.688	17.45			•	
F847-06-06	3/8	9/16-18	9/16-18	2.080	52.83	13/16	0.812	20.62			•	
F847-08-08	1/2	3/4-16	3/4-16	2.310	58.67	1	1.000	25.40			•	
F847-12-12	3/4	1 1/16-12	1 1/16-12	2.940	74.68	1 3/8	1.375	34.92			•	
F847-16-16	1	1 5/16-12	1 5/16-12	2.950	74.93	1 5/8	1.625	41.27			•	

Hydraulic Adapters





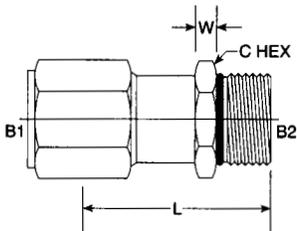
**BT - MORB**

**F516 Series**

SAE # 080120 / MS# 51843

PART NO. SIZE	TUBE/PORT	B1 THREAD	B2 THREAD	L LGTH	M.M.	W WIDTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
											S	FG	SS	B
F516-02-02	1/8	5/16-12	5/16-12	0.990	25.15	0.280	7.11	7/16	0.438	11.12			•	
F516-03-03	3/8	3/8-24	3/8-24	1.040	26.42	0.280	7.11	1/2	0.500	12.70	•		•	
F516-04-04	1/4	7/16-20	7/16-20	1.130	28.70	0.280	7.11	9/16	0.562	14.27	•		•	
F516-04-05	1/4 5/16	7/16-20	1/2-20	1.130	28.70	0.280	7.11	5/8	0.625	15.87	•		•	
F516-04-06	1/4 3/8	7/16-20	9/16-18	1.200	30.48	0.280	7.11	11/16	0.688	17.47	•		•	
F516-05-05	5/16	1/2-20	1/2-20	1.130	28.70	0.280	7.11	5/8	0.625	15.87	•		•	
F516-06-04	3/8 1/4	9/16-18	7/16-20	1.180	29.97	0.340	8.64	5/8	0.625	15.87	•		•	
F516-06-05	3/8 5/16	9/16-18	1/2-20	1.180	29.97	0.340	8.64	11/16	0.688	17.47	•		•	
F516-06-06	3/8	9/16-18	9/16-18	1.210	30.73	0.340	8.64	11/16	0.688	17.47	•		•	
F516-06-08	3/8 1/2	9/16-18	3/4-16	1.290	32.77	0.340	8.64	7/8	0.875	22.22	•		•	
F516-08-06	1/2 3/8	3/4-16	9/16-18	1.340	34.04	0.340	8.64	13/16	0.812	20.62	•		•	
F516-08-08	1/2	3/4-16	3/4-16	1.380	35.05	0.340	8.64	7/8	0.875	22.22	•		•	
F516-08-10	1/2 5/8	3/4-16	7/8-14	1.510	38.35	0.400	10.16	1	1.000	25.40	•		•	
F816-10-10	1/2 3/4	3/4-16	1 1/16-12	1.670	42.42	0.470	11.94	1 1/4	1.250	31.75	•		•	
F816-10-10	5/8	7/8-14	7/8-14	1.570	39.88	0.400	10.16	1	1.000	25.40	•		•	
F816-12-08	3/4 1/2	1 1/16-12	3/4-16	1.750	44.45	0.470	11.94	1 1/8	1.125	28.57	•		•	
F516-12-12	3/4	1 1/16-12	1 1/16-12	1.790	45.47	0.470	11.94	1 1/4	1.250	31.75	•		•	
F816-12-16	3/4 1	1 1/16-12	1 5/16-12	1.820	46.23	0.500	12.70	1 1/2	1.500	38.10	•		•	
F816-16-12	1 3/4	1 5/16-12	1 5/16-12	1.820	46.23	0.500	12.70	1 1/2	1.500	38.10	•		•	
F816-16-16	1	1 5/16-12	1 5/16-12	1.820	46.23	0.500	12.70	1 1/2	1.500	38.10	•		•	
F816-20-20	1 1/4	1 5/8-12	1 5/8-12	1.900	48.26	0.580	14.73	1 7/8	1.875	47.62	•		•	
F816-24-24	1 1/2	1 1/2-12	1 1/2-12	1.970	50.04	0.580	14.73	2 1/8	2.125	53.97	•		•	
F816-32-32	2	1 1/2-12	1 1/2-12	2.130	54.10	0.650	16.50	2 3/4	2.750	69.85	•		•	

Hydraulic Adapters



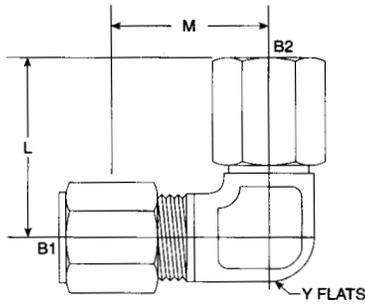
**BT - MORB Long**

**F516L Series**

SAE # 080122

PART NO. SIZE	TUBE/PORT	B1 THREAD	B2 THREAD	L LGTH	M.M.	W WIDTH	M.M.	C HEX	C HEX	M.M.	Standard Material From Stock			
											S	FG	SS	B
F516L-04-04	1/4	7/16-20	7/16-20	2.020	51.31	0.280	7.11	9/16	0.562	14.27	•			
F516L-06-06	3/8	9/16-18	9/16-18	2.230	56.64	0.340	8.64	11/16	0.688	17.47	•		•	
F516L-08-08	1/2	3/4-16	3/4-16	2.620	66.55	0.340	8.64	7/8	0.875	22.22	•		•	
F516L-10-10	5/8	7/8-14	7/8-14	2.980	75.69	0.400	10.16	1	1.000	25.40	•		•	
F816L-12-12	3/4	1 1/16-12	1 1/16-12	3.530	89.66	0.470	11.94	1 1/4	1.250	31.75	•		•	
F516L-16-16	1	1 5/16-12	1 5/16-12	3.910	99.31	0.500	12.70	1 1/2	1.500	38.10	•		•	



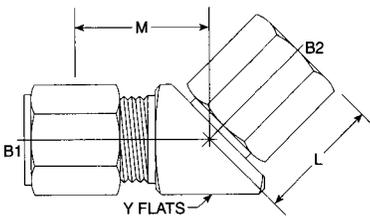


**BT - BTS 90°**

**F622 Series**

SAE # 080221 / MS# 51852

PART NO. SIZE	TUBE O.D.	B1 THREAD	B2	L		M		Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
				LGTH	M.M.	LGTH	M.M.				S	FG	SS	B
F622-04-04	1/4	7/16-20	7/16-20	0.890	22.61	0.890	22.61	7/16	0.438	11.12			•	
F622-06-06	3/8	9/16-18	9/16-18	1.050	26.67	1.050	26.67	9/16	0.562	14.27			•	
F622-08-08	1/2	3/4-16	3/4-16	1.230	31.24	1.250	31.75	3/4	0.750	19.05			•	
F622-10-10	5/8	7/8-14	7/8-14	1.420	36.07	1.420	36.07	7/8	0.875	22.22			•	
F622-12-12	3/4	1 1/16-12	1 1/16-12	1.580	40.13	1.580	40.13	1 1/16	1.062	26.97		•	•	
F822-16-16	1	1 5/16-12	1 5/16-12	1.730	43.94	1.730	43.94	1 5/16	1.312	33.32			•	
F822-20-20	1 1/4	1 5/8-12	1 5/8-12	1.890	48.01	1.890	48.01	1 5/8	1.625	41.27			•	



**BT - BTS 45°**

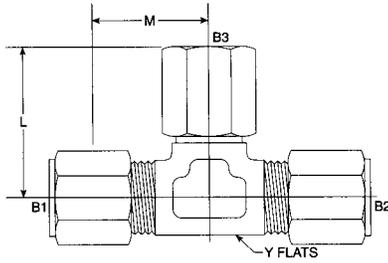
**F623 Series**

SAE # 080321

PART NO. SIZE	TUBE O.D.	B1 THREAD	B2	L		M		Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
				LGTH	M.M.	LGTH	M.M.				S	FG	SS	B
F623-04-04	1/4	7/16-20	7/16-20	0.980	24.89	0.700	17.78	7/16	0.438	11.12			•	
F623-06-06	3/8	9/16-18	9/16-18	1.200	30.48	0.830	21.08	9/16	0.562	14.27			•	
F623-08-08	1/2	3/4-16	3/4-16	1.330	33.78	0.980	24.89	3/4	0.750	19.05			•	
F623-12-12	3/4	1 1/16-12	1 1/16-12	1.610	40.89	1.270	32.26	1 1/16	1.062	26.97			•	
F623-16-16	1	1 5/16-12	1 5/16-12	1.700	43.18	1.360	34.54	1 5/16	1.312	33.32			•	
F823-20-20	1 1/4	1 5/8-12	1 5/8-12	1.800	45.72	1.450	36.83	1 5/8	1.625	41.27			•	
F823-24-24	1 1/2	1 7/8-12	1 7/8-12	1.920	48.77	1.520	38.61	1 7/8	1.875	47.62			•	

**Hydraulic Adapters**





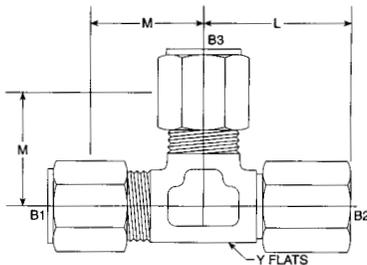
**BT - BT - BTS Tee**

**F625 Series**

SAE # 080433 / MS# 51853

PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	B3	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
												S	FG	SS	B
F625-04-04	1/4	7/16-20	7/16-20	7/16-20	1.050	26.67	0.890	22.61	7/16	0.438	11.12			•	
F625-06-06	3/8	9/16-18	9/16-18	9/16-18	1.280	32.50	1.050	26.67	9/16	0.562	14.27			•	
F625-08-08	1/2	3/4-16	3/4-16	3/4-16	1.470	37.34	1.250	31.75	3/4	0.750	19.05			•	
F625-12-12	3/4	1 1/16-12	1 1/16-12	1 1/16-12	1.770	45.96	1.580	40.13	1 1/16	1.062	26.97			•	

Hydraulic Adapters



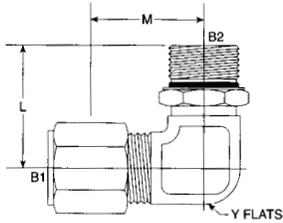
**BT - BTS - BT Tee**

**F626 Series**

SAE # 080432 / MS# 51854

PART NO. SIZE	TUBE O.D.	B1 THREAD	B2	B3 THREAD	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
												S	FG	SS	B
F626-04-04	1/4	7/16-20	7/16-20	7/16-20	1.050	26.67	0.890	22.61	7/16	0.438	11.12			•	
F626-06-06	3/8	9/16-18	9/16-18	9/16-18	1.280	32.52	1.050	26.67	9/16	0.562	14.27			•	
F626-08-08	1/2	3/4-16	3/4-16	3/4-16	1.470	37.34	1.250	31.75	3/4	0.750	19.05			•	
F626-12-12	3/4	1 1/16-12	1 1/16-12	1 1/16-12	1.770	44.96	1.580	40.13	1 1/16	1.062	26.97			•	
F626-16-16	1	1 5/16-12	1 5/16-12	1 5/16-12	1.860	47.24	1.730	43.94	1 5/16	1.312	33.32			•	





**BT - MAORB 90°**

**F522 Series**

SAE # 080220 / MS# 51839

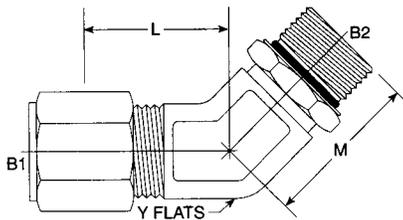
PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 ORB	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
											S	FG	SS	B
F522-03-03	3/16	3/8-24	3/16-24	0.940	23.88	0.830	21.08	7/16	0.438	11.12				
F522-04-04	1/4	7/16-20	7/16-20	1.030	26.16	0.890	22.61	7/16	0.438	11.12		•	•	
F522-05-05	5/16	1/2-20	1/2-20	1.130	28.70	0.950	24.13	1/2	0.500	12.70		•	•	
<b>NEW</b> F522-06-04													•	•
F522-06-06	3/8	9/16-18	9/16-18	1.250	31.75	1.060	26.92	9/16	0.562	14.27		•	•	
F522-06-08	3/8	9/16-18	3/4-16	1.450	36.83	1.150	29.21	3/4	0.750	19.05		•	•	
F522-08-06	1/2	3/4-16	9/16-18	1.330	33.78	1.250	31.75	3/4	0.750	19.05		•	•	
F522-08-08	1/2	3/4-16	3/4-16	1.450	36.83	1.250	31.75	3/4	0.750	19.05		•	•	
F522-08-10	1/2	3/4-16	7/8-14	1.700	43.18	1.340	34.04	7/8	0.875	22.22		•	•	
F522-08-12	1/2	3/4-16	1 1/16-12	1.940	49.27	1.410	35.81	1 1/16	1.062	26.97		•	•	
F522-10-10	5/8	7/8-14	7/8-14	1.700	43.18	1.420	36.07	7/8	0.875	22.22		•	•	
F522-12-08	3/4	1 1/16-12	3/4-16	1.640	41.66	1.580	40.13	1 1/16	1.062	26.97		•	•	
F522-12-10	3/4	1 1/16-12	7/8-14	1.780	45.21	1.580	40.13	1 1/16	1.062	26.97		•	•	
F522-12-12	3/4	1 1/16-12	1 1/16-12	1.940	49.28	1.580	40.13	1 1/16	1.062	26.97		•	•	
F522-12-16	3/4	1 1/16-12	1 5/16-12	2.050	52.07	1.730	43.94	1 5/16	1.312	33.32		•	•	
F522-16-12	1	1 5/16-12	1 5/16-12	2.050	52.07	1.730	43.94	1 5/16	1.312	33.32		•	•	
F522-16-16	1	1 5/16-12	1 5/16-12	2.050	52.07	1.730	43.94	1 5/16	1.312	33.32		•	•	
<b>NEW</b> F522-20-20												•	•	
<b>NEW</b> F522-24-24												•	•	

**Hydraulic Adapters**

**BT - MAORB 45°**

**F523 Series**

SAE # 080320 / MS# 51842



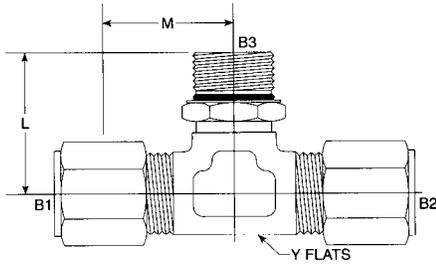
PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 ORB	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
											S	FG	SS	B
F523-04-04	1/4	7/16-20	7/16-20	1.050	26.67	0.700	17.78	7/16	0.438	11.12		•	•	
F523-06-06	3/8	9/16-18	9/16-18	1.140	28.96	0.830	21.08	9/16	0.562	14.27		•	•	
F523-08-08	1/2	3/4-16	3/4-16	1.300	33.02	0.980	24.89	3/4	0.750	19.05		•	•	
F523-10-10												•	•	
F523-12-12	3/4	1 1/16-12	1 1/16-12	1.730	43.94	1.270	32.26	1 1/16	1.062	26.97		•	•	
F523-16-16	1	1 5/16-12	1 5/16-12	1.860	47.24	1.360	35.54	1 5/16	1.312	33.32		•	•	



**BT - BT - MAORB Tee**

*F525 Series*

SAE # 080429 / MS# 51841



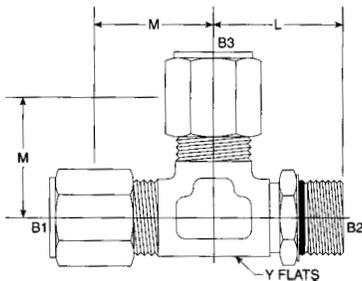
PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 THREAD	B3 ORB	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
												S	FG	SS	B
F525-04-04	1/4	7/16-20	7/16-20	7/16-20	1.030	26.16	0.890	22.61	7/16	0.438	11.12		•	•	
F525-06-06	3/8	9/16-18	9/16-18	9/16-18	1.250	31.75	1.050	26.67	9/16	0.562	14.27		•	•	
F525-08-08	1/2	3/4-16	3/4-16	3/4-16	1.450	36.83	1.250	31.75	3/4	0.750	19.05		•	•	
F525-12-12	3/4	1 1/16-12	1 1/16-12	1 1/16-12	1.940	49.28	1.580	40.13	1 1/16	1.062	26.97			•	
F525-16-16	1	1 5/16-12	1 5/16-12	1 5/16-12	2.050	52.07	1.730	43.94	1 5/16	1.312	33.32			•	

Hydraulic Adapters

**BT - MAORB - BT Tee**

*F526 Series*

SAE # 080428 / MS# 51892



PART NO. SIZE	TUBE O.D.	B1 THREAD	B2 ORB	B3 THREAD	L LGTH	M.M.	M LGTH	M.M.	Y FLATS	Y FLATS	M.M.	Standard Material From Stock			
												S	FG	SS	B
F526-04-04	1/4	7/16-20	7/16-20	7/16-20	1.030	26.16	0.890	22.61	7/16	0.438	11.12		•	•	
F526-06-06	3/8	9/16-18	9/16-18	9/16-18	1.250	31.75	1.050	26.67	9/16	0.562	14.27		•	•	
F526-08-08	1/2	3/4-16	3/4-16	3/4-16	1.450	36.83	1.250	31.75	3/4	0.750	19.05		•	•	
F526-10-10	5/8	7/8-14	7/8-14	7/8-14	1.700	43.18	1.430	36.32	7/8	0.875	22.22			•	
F526-12-12	3/4	1 1/16-12	1 1/16-12	1 1/16-12	1.940	49.28	1.580	40.13	1 1/16	1.062	26.97		•	•	
F526-16-16	1	1 5/16-12	1 5/16-12	1 5/16-12	2.050	52.07	1.730	43.94	1 5/16	1.312	33.32			•	

