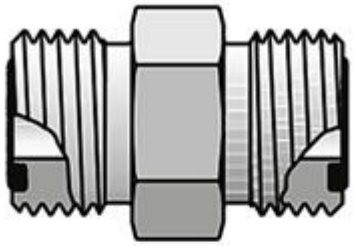
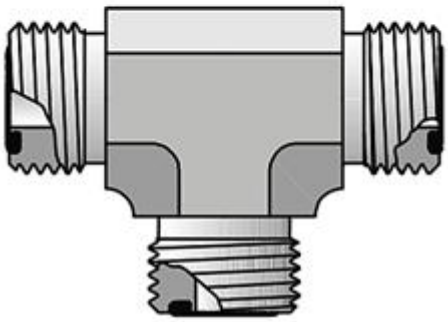
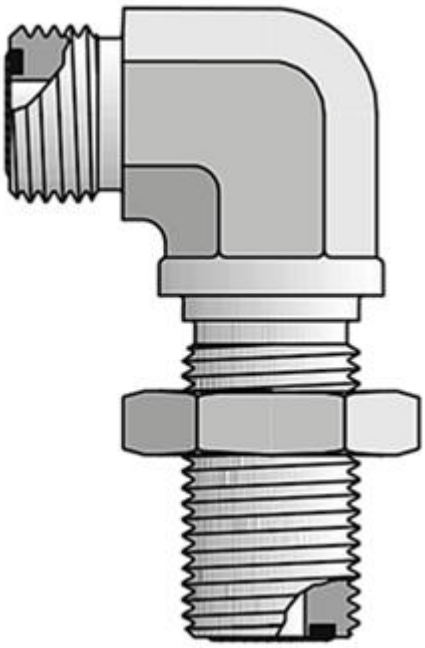
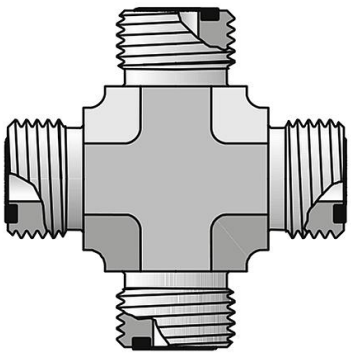
ORFS Tube Fittings/Union Bulkhead Connector









Industry Standard:

SAE J1453 / ISO 8434-3

Design And Shape Type:

Straight Union SAE 520101

Elbow Union SAE 520201

Tee Union SAE 520401

Cross Union SAE 520501

Straight Bulkhead Union SAE 520601

Elbow Bulkhead Union SAE 520701

45 degree Bulkhead Union SAE 520801

Branch Tee Bulkhead Union

Run Tee Bulkhead Union SAE 520958

Material:

Carbon Steel/Stainless Steel

Finish:

Zinc Plated/Zn-Ni Alloy Plated

FITSCH

Introduction Of ORFS Tube Fittings

ORFS (O-ring Face Seal) tube fittings is designed with O-ring groove flat face seal, meet the strict requirement of SAE J1453 and ISO 8434-3 standards. It uses an produced flange at the tube end to seal, held between the O-ring Seal Face(ORFS) fitting and the parflange sleeves by tightening the nut. ORFS fitting size chart can be attachable to inch tube, metric tubes or hose assembly.



Overview Types Of ORFS Tube Fittings Catalogue

Tube to tube connector is made of these shapes, from hex bar or forging body, it is interchangeable to Parker ORFS tube fittings catalog as follows

Straight Union SAE 520101

Elbow Union SAE 520201

Tee Union SAE 520401

Cross Union SAE 520501

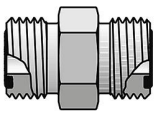
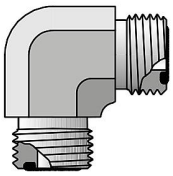
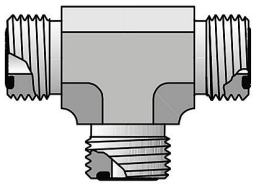
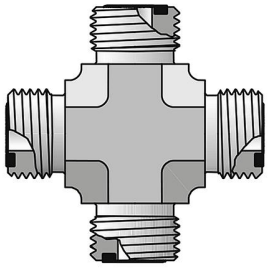
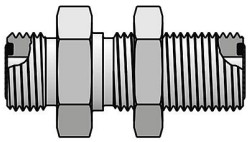
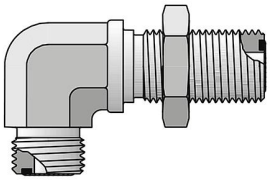
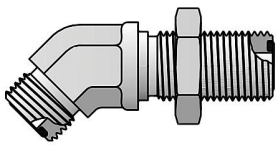
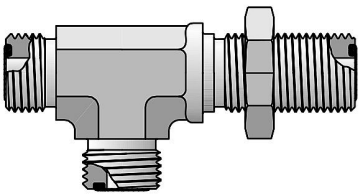
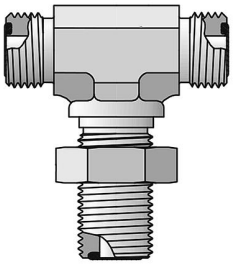
Straight Bulkhead Union SAE 520601

Elbow Bulkhead Union SAE 520701

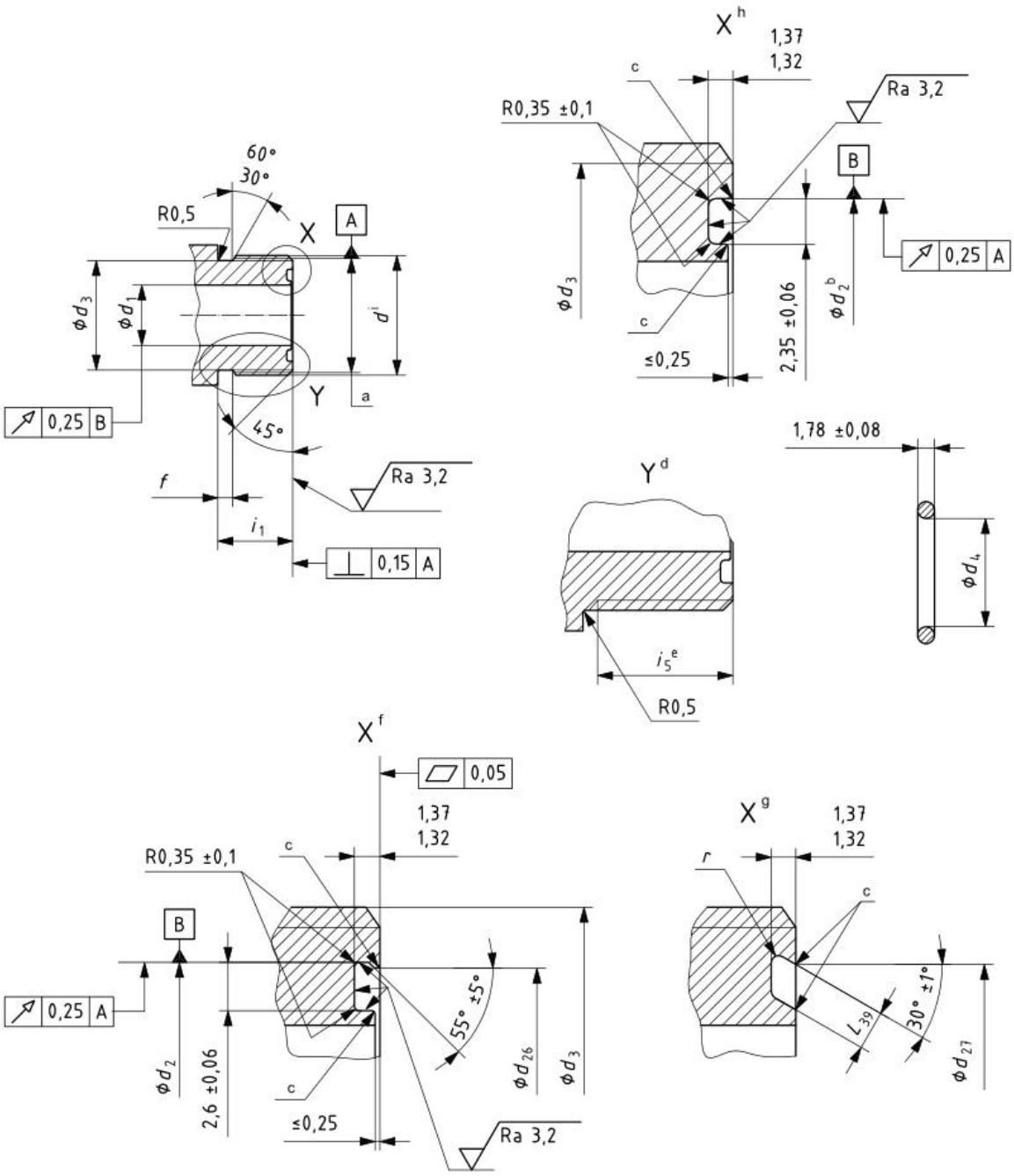
45 degree Bulkhead Union SAE 520801

Branch Tee Bulkhead Union

Run Tee Bulkhead Union SAE 520958

1F HMLO Straight Union 	1F9 EMLO Elbow Union 	AF JMLO Tee Union 
XF KLO Cross Union 	6F WMLO Straight Bulkhead Union 	6F9 WEMLO Elbow Bulkhead Union 
6F4 WNLO 45 degree Elbow Bulkhead Union 	AFF6F WJJLO Bulkhead Run Tee 	AFF6F WJLO Bulkhead Branch Tee 

Dimensions of JIC Flared End Fittings from ISO 8434-2/SAE J514



Dimensions of O-ring Face Seal connections

Tube outside diameter	d Thread [a]	f		i_1	i_5	O-ring d_4		Surface B Outside diameter	Surface B Inside diameter
		nom.	tol.	± 0,4	min.	nom.	tol.	min.	max.
6	9/16-18 UNF	2,4	± 0,3	10	9	7,65	± 0,16	11,08	6,1
8	5/8-18 UNF	2,4	± 0,3	10	9	8,5	± 0,16	11,93	6,95
10	11/16-16 UN	2,8	± 0,4	11	10,5	9,25	± 0,17	12,68	7,7
12	13/16-16 UN	2,8	± 0,4	13	12	12,42	± 0,19	15,85	10,87
16	1-14 UNS	3,1	± 0,4	15,5	14	15,6	± 0,2	19,08	14,1
20	1 3/16-12 UN	3,7	± 0,5	17	15	18,77	± 0,22	22,27	17,25
22	1 5/16-12 UN	3,7	± 0,5	17,5	15,5	21,95	± 0,23	25,45	20,43
25	1 7/16-12 UN	3,7	± 0,5	17,5	15,5	23,52	± 0,24	26,97	21,95
30	1 11/16-12 UN	3,7	± 0,5	17,5	15,5	29,87	± 0,29	33,38	28,3
38	2-12 UN	3,7	± 0,5	17,5	15,5	37,82	± 0,36	41,3	36,22

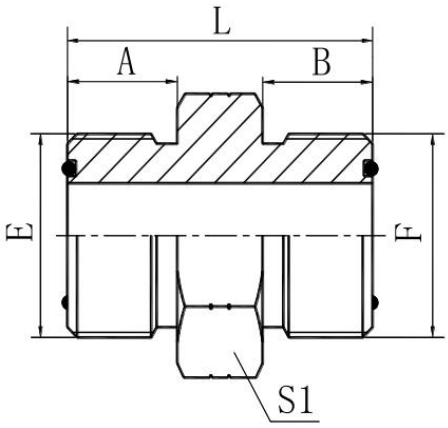
[a] In accordance with ISO 68-2 and ISO 5864:1993, Class 2A, and Annex A, except for 1-14 UNS. See Annex A for 1-14 UNS thread dimensions.

Tube outside diameter	d Thread [a]	d_1		d_2		d_3		Option 2 d_{27}		Option 2 L_{39}	Option 2 r	Option 1 d_{26}	Option 1 d_2	
		nom.	tol.	nom.	tol.	nom.	tol.	nom.	tol.	± 0,05		± 0,15	nom.	tol.
6	9/16-18 UNF	4,5	± 0,1	11	± 0,08	12,25	± 0,15	10,8	± 0,05	2,25	0,7	10,65	11	± 0,08
8	5/8-18 UNF	5,5	± 0,1	11,85	± 0,08	13,7	± 0,25	11,6	± 0,05	2,2	0,5	11,5	12,07	± 0,08
10	11/16-16 UN	6,5	± 0,2	12,6	± 0,08	15,1	± 0,25	12,4	± 0,05	2,2	0,5	12,25	12,8	± 0,08
12	13/16-16 UN	9,5	± 0,2	15,77	± 0,08	18,25	± 0,25	15,6	± 0,05	2,2	0,5	15,4	15,97	± 0,08
16	1-14 UNS	12,5	± 0,2	19	± 0,08	22,6	± 0,4	18,7	+0,05 −0,10	2,2	0,5	18,5	19,2	± 0,08
20	1 3/16-12 UN	15,5	± 0,2	22,17	± 0,1	27	± 0,4	21,9	+0,05 −0,10	2,2	0,5	21,65	22,37	± 0,1
22	1 5/16-12 UN	18	± 0,2	25,35	± 0,1	30,2	± 0,4	24,95	+0,05 −0,10	2,2	0,5	24,85	25,58	± 0,13
25	1 7/16-12 UN	20,5	± 0,2	26,87	± 0,1	33,35	± 0,4	26,6	+0,05 −0,10	2,2	0,5	26,4	27,1	± 0,13
30	1 11/16-12 UN	26	± 0,3	33,25	± 0,13	39,7	± 0,4	32,95	+0,05 −0,10	2,2	0,5	32,75	33,45	± 0,13
38	2-12 UN	32	± 0,3	41,17	± 0,13	47,65	± 0,4	40,8	+0,05 −0,10	2,2	0,5	40,65	41,37	± 0,13

[a] In accordance with ISO 68-2 and ISO 5864:1993, Class 2A, and Annex A, except for 1-14 UNS. See Annex A for 1-14 UNS thread dimensions.

1F HMLO Of Straight Union ORFS Fittings

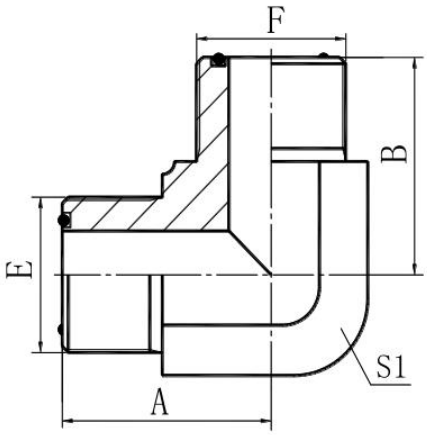
ORFS Straight Union Connectors REF: ISO 8434-3 / SAE J1453 SAE 520101



PART NO.	E	F	A	B	L	S1
1F-04	9/16"X18	9/16"X18	10	10	27.5	17
1F-04-06	9/16"X18	11/16"X16	10	11.2	29.7	19
1F-04-08	9/16"X18	13/16"X16	10	13	32.5	22
1F-06	11/16"X16	11/16"X16	11.2	11.2	31.1	19
1F-06-08	11/16"X16	13/16"X16	11.2	13	33.8	22
1F-06-10	11/16"X16	1"X14	11.2	15.5	38	27
1F-08	13/16"X16	13/16"X16	13	13	35.4	22
1F-08-10	13/16"X16	1"X14	13	15.5	40	27
1F-08-12	13/16"X16	1.3/16"X12	13	17	43	32
1F-10	1"X14	1"X14	15.5	15.5	42.5	27
1F-10-12	1"X14	1.3/16"X12	15.5	17	45.5	32
1F-12	1.3/16"X12	1.3/16"X12	17	17	47.1	32
1F-12-16	1.3/16"X12	1.7/16"X12	17	17.5	45.5	38
1F-12-20	1.3/16"X12	1.11/16"X12	17	17.5	50.5	46
1F-16	1.7/16"X12	1.7/16"X12	17.5	17.5	49.3	41
1F-16-20	1.7/16"X12	1.11/16"X12	17.5	17.5	51.3	46
1F-16-24	1.7/16"X12	2"X12	17.5	17.5	53	55
1F-20	1.11/16"X12	1.11/16"X12	17.5	17.5	51.3	46
1F-20-24	1.11/16"X12	2"X12	17.5	17.5	53	55
1F-24	2"X12	2"X12	17.5	17.5	53	55

1F9 EMLO Of Elbow Union ORFS Fittings

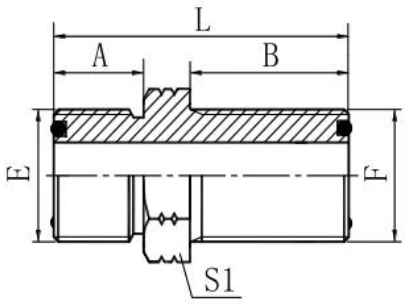
ORFS Elbow Union Connectors REF: ISO 8434-3 / SAE J1453 SAE 520201



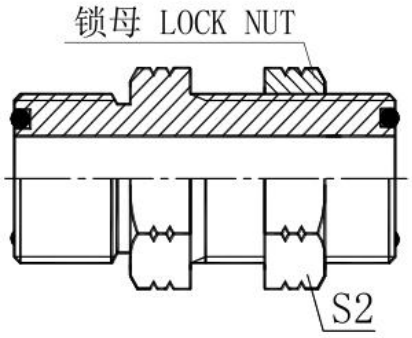
PART NO.	E	F	A	B	S1
1F9-04	9/16"X18	9/16"X18	23	23	14
1F9-04-06	9/16"X18	11/16"X16	25.5	27	19
1F9-06	11/16"X16	11/16"X16	27.5	27.5	19
1F9-06-08	11/16"X16	13/16"X16	29	31	22
1F9-08	13/16"X16	13/16"X16	31	31	22
1F9-08-12	13/16"X16	1.3/16"X12	35.5	40.3	30
1F9-10	1"X14	1"X14	36.5	36.5	27
1F9-12	1.3/16"X12	1.3/16"X12	41	41	30
1F9-16	1.7/16"X12	1.7/16"X12	44.5	44.5	36
1F9-20	1.11/16"X12	1.11/16"X12	47.5	47.5	41
1F9-24	2"X12	2"X12	53.5	53.5	50

6F WMLO Of Straight Bulkhead Union ORFS Fittings

ORFS Straight Bulkhead Union Connectors REF: ISO 8434-3 / SAE J1453 SAE 520601



6F

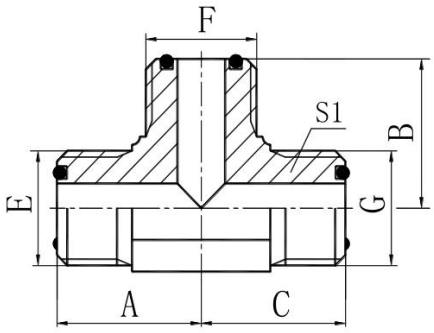


6F-LN

PART NO.		THREAD		O O-RING		DIMENSIONS				
BODY	ASSEMBLY	E	F	LEFT	RIGHT	A	B	L	S1	S2
6F-04	6F-04LN	9/16"X18	9/16"X18	O011	O011	10	31.5	48.2	22	22
6F-06	6F-06LN	11/16"X16	11/16"X16	O012	O012	11.2	34	53.2	27	27
6F-08	6F-08LN	13/16"X16	13/16"X16	O014	O014	13	36.5	58.3	30	30
6F-10	6F-10LN	1"X14	1"X14	O016	O016	15.5	40.6	66.6	36	36
6F-12	6F-12LN	1.3/16"X12	1.3/16"X12	O018	O018	17	41.7	69.2	38	38
6F-16	6F-16LN	1.7/16"X12	1.7/16"X12	O021	O021	17.5	42.2	70.2	46	46
6F-20	6F-20LN	1.11/16"X12	1.11/16"X12	O025	O025	17.5	42.2	70.2	50	50
6F-24	6F-24LN	2"X12	2"X12	O029	O029	17.5	42.2	70.2	60	60

AF JMLO Of Tee Union ORFS Fittings

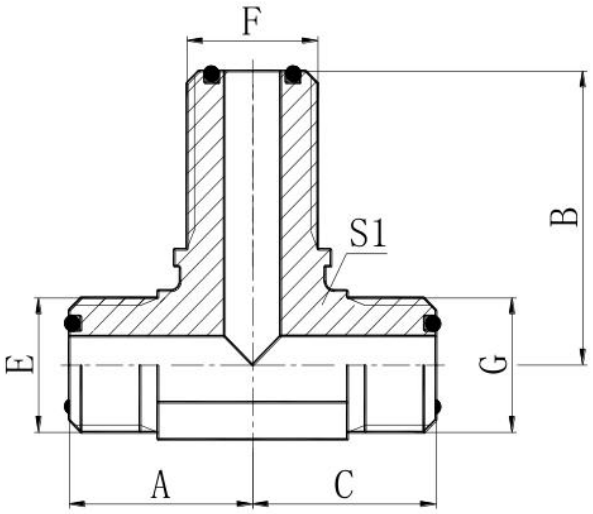
ORFS Tee Union Connectors REF: ISO 8434-3 / SAE J1453 SAE 520401



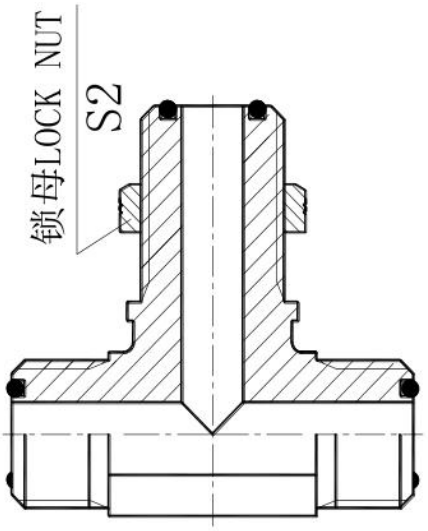
PART NO.	E	F	G	A	B	C	S1
AF-04	9/16"X18	9/16"X18	9/16"X18	23	23	23	14
AF-06	11/16"X16	11/16"X16	11/16"X16	27	27	27	19
AF-08	13/16"X16	13/16"X16	13/16"X16	31	31	31	22
AF-10	1"X14	1"X14	1"X14	36.5	36.5	36.5	27
AF-12	1.3/16"X12	1.3/16"X12	1.3/16"X12	40.3	40.3	40.3	30
AF-16	1.7/16"X12	1.7/16"X12	1.7/16"X12	44.5	44.5	44.5	36
AF-20	1.11/16"X12	1.11/16"X12	1.11/16"X12	44.5	44.5	44.5	41
AF-24	2"X12	2"X12	2"X12	53.5	53.5	53.5	50

AF 6FF WJLO Of Branch Tee Union ORFS Fittings

ORFS Branch Tee Union Connectors REF: ISO 8434-3 / SAE J1453



AF6FF

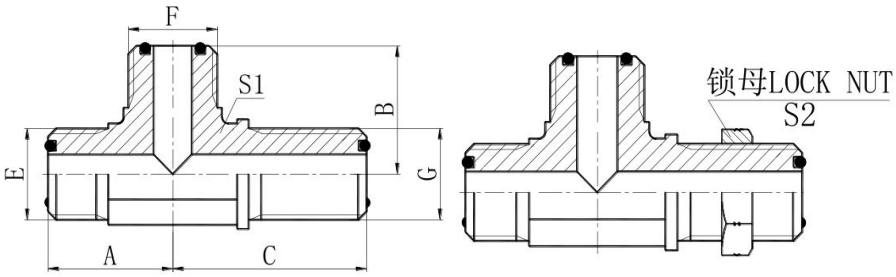


AF6FF-LN

PART NO.	ASSEMBLY	E,F,G	A	B	C	S1	S2
AF6FF-04	AF6FF-04LN	9/16"X18	23	22.5	47	14	22
AF6FF-06	AF6FF-06LN	11/16"X16	27	27	52	19	27
AF6FF-08	AF6FF-08LN	13/16"X16	31	31	55.5	22	30
AF6FF-10	AF6FF-10LN	1"X14	36.5	36.5	63	27	36
AF6FF-12	AF6FF-12LN	1.3/16"X12	38.5	38.5	67.2	30	38
AF6FF-16	AF6FF-16LN	1.7/16"X12	44.5	44.5	71.2	36	46
AF6FF-20	AF6FF-20LN	1.11/16"X12	47.5	47.5	75.5	41	50
AF6FF-24	AF6FF-24LN	2"X12	53.5	53.5	79.5	50	60

AFF6F WJJLO Of Branch Tee Union ORFS Fittings

ORFS Run Tee Union Connectors REF: ISO 8434-3 / SAE J1453 SAE 520958



AFF6F **AFF6F-LN**

PART NO.	ASSEMBLY	E	A	B	C	S1	S2
AFF6F-04	AFF6F-04LN	9/16"X18	23	47	23	14	22
AFF6F-06	AFF6F-06LN	11/16"X16	27	52	27	19	27
AFF6F-08	AFF6F-08LN	13/16"X16	29	55.5	29	22	30
AFF6F-10	AFF6F-10LN	1"X14	36.5	63	36.5	27	36
AFF6F-12	AFF6F-12LN	1.3/16"X12	41	67.2	41	30	41
AFF6F-16	AFF6F-16LN	1.7/16"X12	44.5	71.2	44.5	36	46
AFF6F-20	AFF6F-20LN	1.11/16"X12	47.5	75.5	47.5	41	50
AFF6F-24	AFF6F-24LN	2"X12	53.5	79.5	53.5	50	60