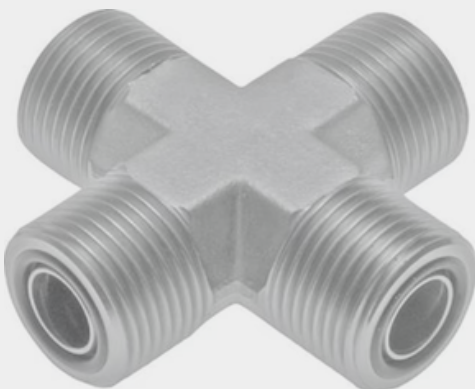
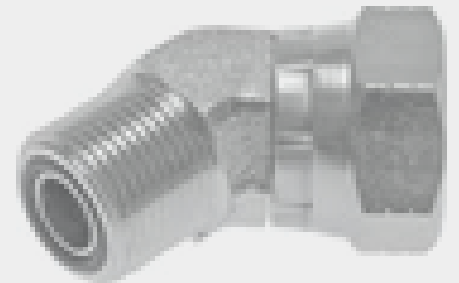


ORFS TUBE FITTINGS ISO8434-3



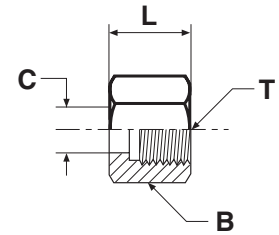
Manufacturer of Tube Fittings & Tube Clamps

Quality | Economical | Reliable

BML Nut

ORFS tube nut

SAE 52M0110 ISO 8434-3 NA

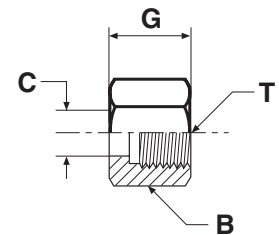


Tube O.D.		Thread UN/UNF-2B T	B mm	C mm	L mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel
mm	in.							
6	1/4	9/16-18	17	11	15	14	4BMLS	4BMLSS
8, 10	5/16, 3/8	11/16-16	22	14	17	17	6BMLS	6BMLSS
12	1/2	13/16-16	24	17	20	29	8BMLS	8BMLSS
14, 15, 16	5/8	1-14	30	21	24	46	10BMLS	10BMLSS
18, 20	3/4	1 3/16-12	36	24	27	69	12BMLS	12BMLSS
22, 25	1	1 7/16-12	41	29	28	109	16BMLS	16BMLSS
28, 30, 32	1 1/4	1 11/16-12	50	36	28	126	20BMLS	20BMLSS
35, 38	1 1/2	2-12	60	44	28	195	24BMLS	24BMLSS
50	2	2 1/2-12	75	56	33	800	32BMLS	32BMLSS

BL Nut

ORFS tube nut

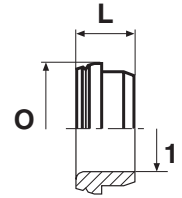
SAE 520110



Tube O.D.		Thread UN/UNF-2B T	B in.	C mm	G mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel
mm	in.							
6	1/4	9/16-18	11/16	10	15	16	4 BL-S	4 BL-SS
8, 10	5/16, 3/8	11/16-16	13/16	14	17	24	6 BL-S	6 BL-SS
12	1/2	13/16-16	15/16	17	21	37	8 BL-S	8 BL-SS
14, 15, 16	5/8	1-14	1 1/8	21	24	52	10 BL-S	10 BL-SS
18, 20	3/4	1 3/16-12	1 3/8	24	26	89	12 BL-S	12 BL-SS
22, 25	1	1 7/16-12	1 5/8	29	28	119	16 BL-S	16 BL-SS
28, 30, 32	1 1/4	1 11/16-12	1 7/8	36	28	132	20 BL-S	20 BL-SS
35, 38	1 1/2	2-12	2 1/4	44	28	220	24 BL-S	24 BL-SS
50	2	2 1/2-12	2 7/8	56	33	700	32 BL-S	32 BL-SS

TPL Sleeve metric tubing

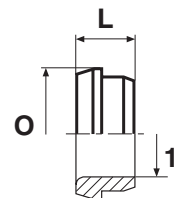
ORFS Parflange® tube sleeve



Tube O.D. 1 mm	L mm	O mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel
6	8	13	4	TPLS6	TPLSS6
8	9	16	4	TPLS8	TPLSS8
10	9	16	5	TPLS10	TPLSS10
10	11	19	6	TPLS12-10	TPLSS12-10
12	11	19	6	TPLS12	TPLSS12
14	11	23	10	TPLS14	TPLSS14
15	11	23	9	TPLS15	TPLSS15
16	11	23	8	TPLS16	TPLSS16
18	12	28	14	TPLS18	TPLSS18
20	12	28	15	TPLS20	TPLSS20
22	14	34	20	TPLS22	TPLSS22
25	14	34	23	TPLS25	TPLSS25
28	13	41	24	TPLS28	TPLSS28
30	13	41	25	TPLS30	TPLSS30
32	13	41	26	TPLS32	TPLSS32
35	13	48	36	TPLS35	TPLSS35
38	13	48	44	TPLS38	TPLSS38
50	14	61	180	TPLS50	TPLSS50

TPL Sleeve inch tubing

ORFS Parflange tube sleeve



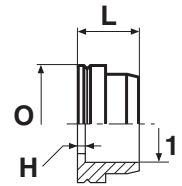
Tube O.D. 1 in.	L mm	O mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel
1/4	8	13	4	4 TPL-S	4 TPL-SS
3/8	9	16	5	6 TPL-S	6 TPL-SS
1/2	11	19	6	8 TPL-S	8 TPL-SS
5/8	11	23	11	10 TPL-S	10 TPL-SS
3/4	12	28	19	12 TPL-S	12 TPL-SS
7/8	14	34	19	14 TPL-S	14 TPL-SS
1	14	34	22	16 TPL-S	16 TPL-SS
1 1/4	13	41	28	20 TPL-S	20 TPL-SS
1 1/2	13	48	44	24 TPL-S	24 TPL-SS
2	14	61	180	32 TPL-S	32 TPL-SS

TL* Braze sleeve metric tubing

ORFS silver braze tube sleeve

SAE 52M0115 ISO 8434-3 BRSL

(*Parts delivered oil dipped finish only – steel)



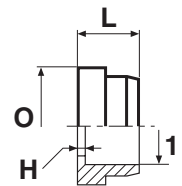
ORFS dash size	Tube O.D. 1 mm	H mm	L mm	O mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel
4	6	1	10	13	5	TLS6	TLSS6
4	8	1	10	13	5	TLS6-8	TLSS6-8
6	8	2	10	16	7	TLS10-8	TLSS10-8
6	10	1	10	16	7	TLS10	TLSS10
8	12	1	10	19	10	TLS12	TLSS12
10	15	2	11	23	16	TLS16-15	TLSS16-15
10	16	2	11	23	16	TLS16	TLSS16
12	18	2	14	28	26	TLS20-18	TLSS20-18
12	20	2	14	28	21	TLS20	TLSS20
16	22	2	16	34	33	TLS25-22	TLSS25-22
16	25	2	16	34	30	TLS25	TLSS25
20	28	2	16	41	41	TLS32-28	TLSS32-28
20	30	2	16	41	42	TLS32-30	TLSS32-30
20	32	2	16	41	40	TLS32	TLSS32
24	35	2	16	49	48	TLS38-35	TLSS38-35
24	38	2	16	49	63	TLS38	TLSS38
32	50	2	16	60	210	TLS50	TLSS50

TL* Braze sleeve inch tubing

ORFS silver braze tube sleeve

SAE 520115

(*Parts delivered oil dipped finish only – steel)



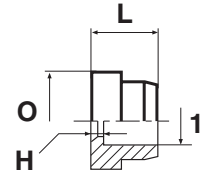
Tube O.D. 1 in.	H mm	L mm	O mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel
1/4	1	10	13	5	4 TL-S	4 TL-SS
3/8	1	10	16	6	6 TL-S	6 TL-SS
1/2	1	10	19	10	8 TL-S	8 TL-SS
5/8	2	11	23	18	10 TL-S	10 TL-SS
3/4	2	14	28	26	12 TL-S	12 TL-SS
1	2	16	34	33	16 TL-S	16 TL-SS
1 1/4	2	16	41	42	20 TL-S	20 TL-SS
1 1/2	2	16	49	63	24 TL-S	24 TL-SS
2	2	17	61	210	32 TL-S	32 TL-SS

TL* Reducing braze sleeve inch tubing

ORFS silver braze tube sleeve

SAE 520115

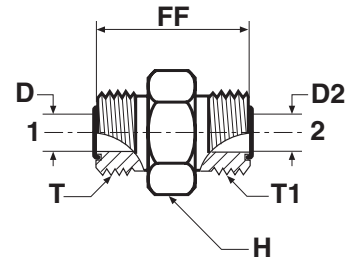
(*Parts delivered oil dipped finish only – steel)



ORFS dash size	Tube O.D. 1 in.	H mm	L mm	O mm	Weight (Steel) g/1 piece	ME Steel	ME Stainless Steel
6	1/4	2	10	16	10	6-4 TL-S	6-4 TL-SS
8	1/4	4	12	19	17	8-4 TL-S	8-4 TL-SS
8	3/8	4	12	19	17	8-6 TL-S	8-6 TL-SS
10	1/4	5	14	23	37	10-4 TL-S	10-4 TL-SS
10	3/8	5	14	23	32	10-6 TL-S	10-6 TL-SS
10	1/2	5	14	23	28	10-8 TL-S	10-8 TL-SS
12	1/4	6	15	28	54	12-4 TL-S	12-4 TL-SS
12	3/8	6	15	28	49	12-6 TL-S	12-6 TL-SS
12	1/2	6	15	28	44	12-8 TL-S	12-8 TL-SS
12	5/8	6	15	28	39	12-10 TL-S	12-10 TL-SS
12	7/8	2	17	28	25	12-14 TL-S	12-14 TL-SS
16	1/2	7	16	34	76	16-8 TL-S	16-8 TL-SS
16	5/8	7	16	34	71	16-10 TL-S	16-10 TL-SS
16	3/4	5	17	34	66	16-12 TL-S	16-12 TL-SS
16	7/8	3	17	34	50	16-14 TL-S	16-14 TL-SS
20	3/4	7	20	41	102	20-12 TL-S	20-12 TL-SS
20	1	7	21	41	79	20-16 TL-S	20-16 TL-SS
24	1	7	21	49	141	24-16 TL-S	24-16 TL-SS
24	1 1/4	7	21	49	107	24-20 TL-S	24-20 TL-SS

HMLO Union

ORFS tube ends
SAE 520101

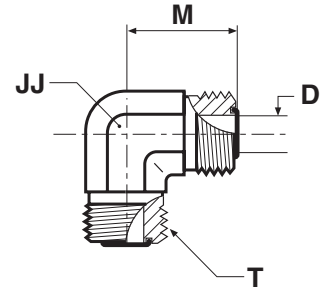


Tube 1 O.D.		Tube 2 O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2A T1	D mm	D2 mm	FF mm	H mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
6	1/4	6	1/4	9/16-18	9/16-18	5	5	27	16	26	4 HLO-S	4HMLOSS	630
8, 10	5/16, 3/8	8, 10	5/16, 3/8	11/16-16	11/16-16	7	7	31	19	49	6HMLOS	6HMLOSS	630
10	3/8	6	1/4	11/16-16	9/16-18	7	5	30	19	45	6-4HMLOS	6-4HMLOSS	630
12	1/2	12	1/2	13/16-16	13/16-16	10	10	35	22	77	8HMLOS	8HMLOSS	630
12	1/2	10	3/8	13/16-16	11/16-16	10	7	34	22	67	8-6 HLO-S	8-6HMLOSS	630
14, 15, 16	5/8	14, 15, 16	5/8	1-14	1-14	13	13	43	27	129	10HMLOS	10HMLOSS	420
16	5/8	12	1/2	1-14	13/16-16	13	10	40	27	112	10-8 HLO-S	10-8HMLOSS	420
18, 20	3/4	18, 20	3/4	1 3/16-12	1 3/16-12	16	16	47	32	204	12HMLOS	12HMLOSS	420
20	3/4	16	5/8	1 3/16-12	1-14	16	13	46	32	186	12-10HMLOS	12-10HMLOSS	420
22, 25	1	22, 25	1	1 7/16-12	1 7/16-12	21	21	49	38	291	16HMLOS	16HMLOSS	420
25	1	18, 20	3/4	1 7/16-12	1 3/16-12	21	16	49	41	285	16-12HMLOS	16-12HMLOSS	420
28, 30, 32	1 1/4	28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	26	26	51	46	299	20 HLO-S	20HMLOSS	420
28, 30, 32	1 1/4	22, 25	1	1 11/16-12	1 7/16-12	26	21	51	46	280	20-16HMLOS	20-16HMLOSS	420
35, 38	1 1/2	35, 38	1 1/2	2-12	2-12	32	32	53	55	552	24 HLO-S	24HMLOSS	350
35, 38	1 1/2	28, 30, 32	1 1/4	2-12	1 11/16-12	32	26	53	55	530	24-20HMLOS	24-20HMLOSS	350
50	2	50	2	2 1/2-12	2 1/2-12	45	45	73	70	990	32 HLO-S	32HMLOSS	200

Imperial and metric parts may vary in hexagon dimensions.

EMLO Union elbow

ORFS tube ends
SAE 520201

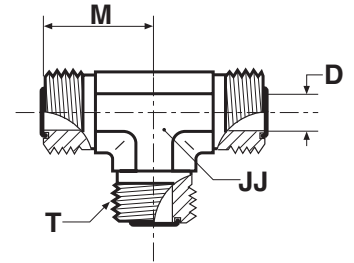


Tube O.D.		Thread UN/UNF-2A T	D mm	JJ mm	M mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.								
6	1/4	9/16-18	5	14	22	47	4 ELO-S	4EMLOSS	630
8, 10	5/16, 3/8	11/16-16	7	19	25	109	6 ELO-S	6EMLOSS	630
12	1/2	13/16-16	10	19	28	123	8 ELO-S	8EMLOSS	630
14, 15, 16	5/8	1-14	13	27	33	183	10 ELO-S	10EMLOSS	420
18, 20	3/4	1 3/16-12	16	30	37	255	12 ELO-S	12EMLOSS	420
22, 25	1	1 7/16-12	21	37	42	457	16 ELO-S	16EMLOSS	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	530	20 ELO-S	20EMLOSS	350
35, 38	1 1/2	2-12	32	48	49	687	24 ELO-S	24EMLOSS	280
50	2	2 1/2-12	45	64	70	1500	32 ELO-S		200

Imperial and metric parts may vary in hexagon dimensions.

JMLO Union tee

ORFS tube ends
SAE 520401

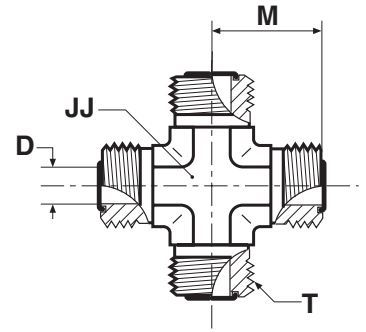


Tube O.D.		Thread UN/UNF-2A T	D mm	JJ mm	M mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.								
6	1/4	9/16-18	5	14	22	66	4JMLOS	4JMLOSS	630
8, 10	5/16, 3/8	11/16-16	7	19	25	114	6JMLOS	6JMLOSS	630
12	1/2	13/16-16	10	19	28	199	8JMLOS	8JMLOSS	630
14, 15, 16	5/8	1-14	13	27	33	239	10JMLOS	10JMLOSS	420
18, 20	3/4	1 3/16-12	16	30	37	321	12JMLOS	12JMLOSS	420
22, 25	1	1 7/16-12	21	36	42	488	16JMLOS	16JMLOSS	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	768	20 JLO-S	20JMLOSS	350
35, 38	1 1/2	2-12	32	48	49	866	24 JLO-S	24JMLOSS	280
50	2	2 1/2-12	45	64	70	2250	32 JLO-S	32JMLOSS	200

Imperial and metric parts may vary in hexagon dimensions.

KLO Union cross

ORFS tube ends
SAE 520501



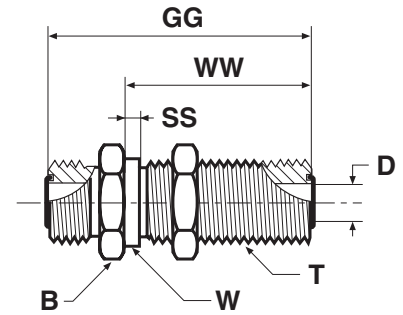
Tube O.D.		Thread UN/UNF-2A T	D mm	JJ mm	M mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.								
6	1/4	9/16-18	5	14	22	72	4 KLO-S	4 KLO-SS	630
8, 10	5/16, 3/8	11/16-16	7	19	25	140	6 KLO-S	6 KLO-SS	630
12	1/2	13/16-16	10	19	28	225	8 KLO-S	8 KLO-SS	630
14, 15, 16	5/8	1-14	13	27	33	288	10 KLO-S	10 KLO-SS	420
18, 20	3/4	1 3/16-12	16	30	37	415	12 KLO-S	12 KLO-SS	420
22, 25	1	1 7/16-12	21	37	42	967	16 KLO-S	16 KLO-SS	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	1247	20 KLO-S	20 KLO-SS	350
35, 38	1 1/2	2-12	32	48	49	1592	24 KLO-S	24 KLO-SS	280

Imperial and metric parts may vary in hexagon dimensions.

WMLO Bulkhead union

ORFS tube ends

SAE 520601 ISO 8434-3 BHS



Tube O.D.		Thread UN/UNF-2A T	B mm	D mm	GG mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.											
6	1/4	9/16-18	22	5	49	2	14	32	65	4 WLO-WLNL-S	4WMLOWLNMLSS	630
8, 10	5/16, 3/8	11/16-16	27	7	53	2	17	34	104	6WMLOWLNMLS	6WMLOWLNMLSS	630
12	1/2	13/16-16	30	10	58	3	20	37	141	8WMLOWLNMLS	8WMLOWLNMLSS	630
14, 15, 16	5/8	1-14	32	13	67	3	25	41	285	10WMLOWLNMLS	10WMLOWLNMLSS	420
18, 20	3/4	1 3/16-12	38	16	69	3	30	42	322	12WMLOWLNMLS	12WMLOWLNMLSS	420
22, 25	1	1 7/16-12	46	21	70	3	36	42	436	16WMLOWLNMLS	16WMLOWLNMLSS	420
28, 30, 32	1 1/4	1 11/16-12	51	26	70	2	43	42	510	20 WLO-WLNL-S	20WMLOWLNMLSS	420
35, 38	1 1/2	2-12	60	32	70	2	51	42	674	24 WLO-WLNL-S	24WMLOWLNMLSS	350

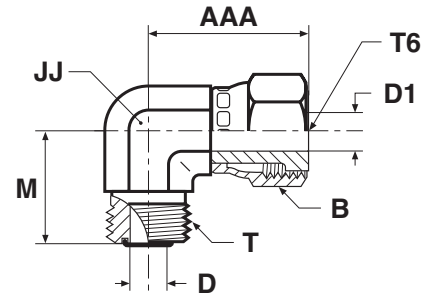
Imperial and metric parts may vary in hexagon dimensions.

Maximum bulkhead wallthickness

Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	13.5	13.5
6	3/8	10	13.5	13.5
8	1/2	12	13.5	13.5
10	5/8	14-16	13.2	13.2
12	3/4	18-20	12.7	12.7
16	1	22-25	13.0	13.0
20	1 1/4	28-32	13.0	13.0
24	1 1/2	35-38	13.0	13.0

C6MLO Swivel nut elbow

ORFS Female swivel end/ORFS tube end
SAE 52M0221 ISO 8434-3 SWE

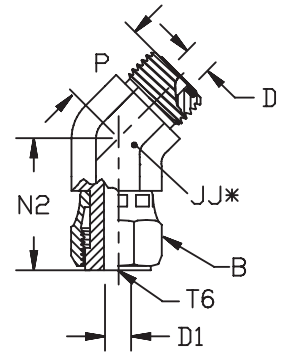


Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	AAA mm	B mm	D mm	D1 mm	JJ mm	M mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.												
6	1/4	9/16-18	9/16-18	26	17	5	4	14	22	45	4C6MLOS	4C6MLOSS	500
8, 10	5/16, 3/8	11/16-16	11/16-16	29	22	7	9	19	25	84	6C6MLOS	6C6MLOSS	630
12	1/2	13/16-16	13/16-16	38	24	10	9	19	28	126	8C6MLOS	8C6MLOSS	630
14, 15, 16	5/8	1-14	1-14	41	30	13	12	27	33	221	10C6MLOS	10C6MLOSS	420
18, 20	3/4	1 3/16-12	1 3/16-12	46	36	16	14	30	37	284	12C6MLOS	12C6MLOSS	420
22, 25	1	1 7/16-12	1 7/16-12	53	41	21	20	36	42	541	16C6MLOS	16C6MLOSS	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	58	48	26	26	41	45	557	20 C6LO-S	20C6MLOSS	350
35, 38	1 1/2	2-12	2-12	61	57	32	32	48	49	706	24 C6LO-S	24C6MLOSS	280

Imperial and metric parts may vary in hexagon dimensions.

V6LO 45° Swivel nut elbow

ORFS female swivel end/O-Lok® ORFS tube end



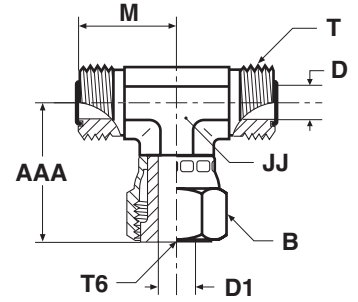
*JJ – Across wrench flats

Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	B mm	D mm	D1 mm	JJ mm	N2 mm	P mm	Weight (steel) g/1 piece	ME Steel	PN (bar)
mm	in.											
6	1/4	9/16-18	9/16-18	18	5	4	14	25	16	44	4 V6LO-S	500
8, 10	5/16, 3/8	11/16-16	11/16-16	21	7	7	19	28	19	82	6 V6LO-S	630
12	1/2	13/16-16	13/16-16	24	10	9	19	38	20	110	8 V6LO-S	630
14, 15, 16	5/8	1-14	1-14	29	13	12	27	39	23	190	10 V6LO-S	420
18, 20	3/4	1 3/16-12	1 3/16-12	35	16	14	30	44	26	288	12 V6LO-S	420
22, 25	1	1 7/16-12	1 7/16-12	42	21	20	36	48	30	300	16 V6LO-S	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	48	26	26	41	50	32	444	20 V6LO-S	350
35, 38	1 1/2	2-12	2-12	58	32	32	48	52	37	568	24 V6LO-S	280

Imperial and metric parts may vary in hexagon dimensions.

S6MLO Swivel nut branch tee

ORFS female swivel end/O-Lok® ORFS tube ends
SAE 52M0433 ISO 8434-3 SWBT

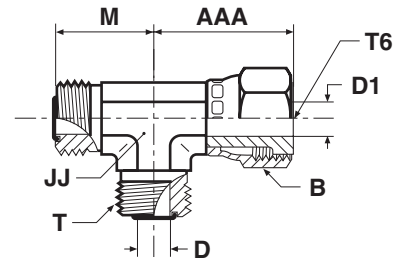


Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	AAA	B	D	D1	JJ	M	Weight (steel)	ME Steel	ME Stainless Steel	PN (bar)
mm	in.			mm	mm	mm	mm	mm	mm	g/1 piece			
6	1/4	9/16-18	9/16-18	26	17	5	4	14	22	66	4S6MLOS	4S6MLOSS	500
8, 10	5/16, 3/8	11/16-16	11/16-16	29	22	7	7	19	25	125	6S6MLOS	6S6MLOSS	630
12	1/2	13/16-16	13/16-16	38	24	10	9	19	28	150	8S6MLOS	8S6MLOSS	630
14, 15, 16	5/8	1-14	1-14	41	30	13	12	27	33	233	10S6MLOS	10S6MLOSS	420
18, 20	3/4	1 3/16-12	1 3/16-12	46	35	16	14	30	37	383	12 S6LO-S	12S6MLOSS	420
22, 25	1	1 7/16-12	1 7/16-12	53	41	21	20	37	42	518	16 S6LO-S	16S6MLOSS	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	58	48	26	26	41	45	775	20 S6LO-S	20S6MLOSS	350
35, 38	1 1/2	2-12	2-12	61	57	32	32	48	49	933	24 S6LO-S	24S6MLOSS	280

Imperial and metric parts may vary in hexagon dimensions.

R6MLO Swivel nut run tee

ORFS female swivel end/ ORFS tube ends
 SAE 52M0432 ISO 8434-3 SWRT

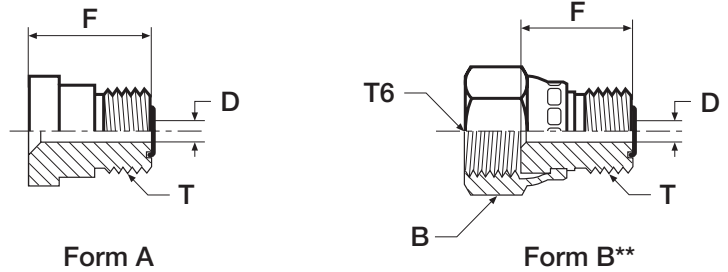


Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	AAA	B	D	D1	JJ	M	Weight (steel)	ME Steel	ME Stainless Steel	PN (bar)
mm	in.			mm	mm	mm	mm	mm	mm	g/1 piece			
6	1/4	9/16-18	9/16-18	26	17	5	4	14	22	66	4R6MLOS	4R6MLOSS	500
8, 10	5/16, 3/8	11/16-16	11/16-16	29	22	7	7	19	25	125	6R6MLOS	6R6MLOSS	630
12	1/2	13/16-16	13/16-16	38	24	10	9	19	28	150	8R6MLOS	8R6MLOSS	630
14, 15, 16	5/8	1-14	1-14	41	30	13	12	27	33	233	10R6MLOS	10R6MLOSS	420
18, 20	3/4	1 3/16-12	1 3/16-12	46	35	16	14	30	37	383	12 R6LO-S	12R6MLOSS	420
22, 25	1	1 7/16-12	1 7/16-12	53	41	21	20	37	42	518	16 R6LO-S	16R6MLOSS	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	58	48	26	26	41	45	775	20 R6LO-S	20R6MLOSS	350
35, 38	1 1/2	2-12	2-12	61	57	32	32	48	49	933	24 R6LO-S	24R6MLOSS	280

Imperial and metric parts may vary in hexagon dimensions.

TRMLO Tube end reducer

ORFS tube end/ORFS swivel female end
SAE 520123 /A



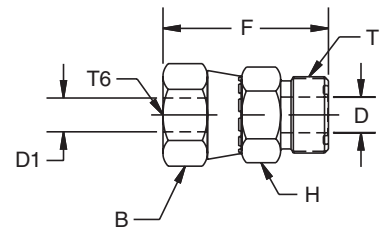
Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	B mm	D mm	F mm	Weight (steel) g/1 piece	Form	ME Steel	ME Stainless Steel	PN (bar)
mm	in.										
10	3/8	9/16-18	11/16-16	21	5	20	21	B	6-4TRMLONS	6-4TRMLONSS	630
12	1/2	9/16-18	—	—	5	22	30	A	8-4 TRLO-S	8-4TRMLOSS	630
12	1/2	11/16-16	13/16-16	24	7	22	33	B	8-6TRMLONS	8-6TRMLONSS	630
16	5/8	9/16-18	—	—	5	23	37	A	10-4 TRLO-S	10-4TRMLOSS	420
16	5/8	11/16-16	—	—	7	24	48	A	10-6 TRLO-S	10-6TRMLOSS	420
16	5/8	13/16-16	—	—	10	26	50	A	10-8 TRLO-S	10-8TRMLOSS	420
20	3/4	9/16-18	—	—	5	25	63	A	12-4 TRLO-S	12-4TRMLOSS	420
20	3/4	11/16-16	—	—	7	26	66	A	12-6 TRLO-S	12-6TRMLOSS	420
20	3/4	13/16-16	—	—	10	28	71	A	12-8 TRLO-S	12-8TRMLOSS	420
20	3/4	1-14	1 3/16-12	36	13	30	85	B	12-10TRMLONS	12-10TRMLONSS	420
25	1	13/16-16	—	—	10	29	103	A	16-8 TRLO-S	16-8TRMLOSS	420
25	1	1-14	—	—	13	32	118	A	16-10 TRLO-S	16-10TRMLOSS	420
25	1	1 3/16-12	1 7/16-12	41	16	33	133	B	16-12 TRLO-S	16-12TRMLONSS	420
32	1 1/4	1 3/16-12	—	—	16	34	169	A	20-12 TRLO-S	20-12TRMLOSS	420
32	1 1/4	1 7/16-12	1 11/16-12	48	21	38	183	B	20-16 TRLO-S	20-16TRMLONSS	350
38	1 1/2	1 7/16-12	—	—	21	31	205	A	24-16 TRLO-S	24-16TRMLOSS	350
38	1 1/2	1 11/16-12	—	—	26	34	209	A	24-20 TRLO-S	24-20TRMLOSS	350
50	2	1 11/16-12	—	—	26	36	420	A	32-20 TRLO-S	32-20TRMLOSS	200
50	2	2-12	—	—	32	36	420	A	32-24 TRLO-S	32-24TRMLOSS	200

Imperial and metric parts may vary in hexagon dimensions.

**These size come assembled with a crimp style nut (Form B).

LOHL6 Tube end expander

ORFS tube end/ORFS female swivel end

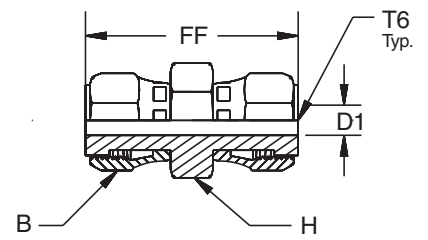


Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	B mm	D mm	D1 mm	H mm	F mm	Weight (steel) g/1 piece	ME Steel	PN (bar)
mm	in.										
8, 10	5/16, 3/8	11/16-16	9/16-18	18	7	4	19	35	33	6-4LOHL6	630
12	1/2	13/16-16	11/16-16	21	10	7	22	39	52	8-6LOHL6	630
14, 15, 16	5/8	1-14	13/16-16	24	13	9	27	46	92	10-8LOHL6	420
18, 20	3/4	1 3/16-12	1-14	29	16	12	32	51	146	12-10LOHL6	420
22, 25	1	1 7/16-12	1 3/16-12	35	21	14	41	55	205	16-12LOHL6	420
28, 30, 32	1 1/4	1 11/16-12	1 7/16-12	42	26	20	46	58	260	20-16LOHL6	350
35, 38	1 1/2	2-12	1 11/16-12	48	26	26	55	60	315	24-20LOHL6	280

Imperial and metric parts may vary in hexagon dimensions.

HL6 Swivel nut union

ORFS female swivel ends



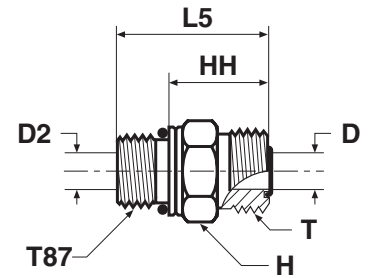
Tube O.D.		Thread UN/UNF-2B T6	B mm	D1 mm	FF mm	H mm	Weight (steel) g/1 piece	ME Steel	PN (bar)
mm	in.								
6	1/4	9/16-18	18	4.0	40.4	17	53	4 HL6-S	500
8, 10	5/16, 3/8	11/16-16	21	6.5	45.0	19	66	6 HL6-S	630
12	1/2	13/16-16	24	9.0	53.8	22	110	8 HL6-S	630
14, 15, 16	5/8	1-14	29	11.5	61.5	27	173	10 HL6-S	420
18, 20	3/4	1 3/16-12	35	14.0	69.6	32	275	12 HL6-S	420

Imperial and metric parts may vary in hexagon dimensions.

F87OMLO Male stud connector

ORFS tube end /Male metric thread – O-ring (ISO 6149-2)

SAE 52M0187 ISO 8434-3 SDS

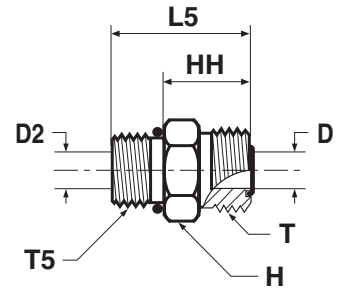


Tube O.D.		Thread metric T87	Thread UN/UNF-2A T	D mm	D2 mm	H mm	HH mm	L5 mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.											
6	1/4	M10×1.0	9/16-18	5	3	17	18	27	20	4M10F87OMLOS	4M10F87OMLOSS	630
6	1/4	M12×1.5	9/16-18	5	4	17	18	29	24	4M12F87OMLOS	4M12F87OMLOSS	630
6	1/4	M14×1.5	9/16-18	5	5	19	19	30	30	4M14F87OMLOS	4M14F87OMLOSS	630
8, 10	5/16, 3/8	M12×1.5	11/16-16	6	4	19	23	34	40	6M12F87OMLOS	6M12F87OMLOSS	630
8, 10	5/16, 3/8	M14×1.5	11/16-16	7	6	19	20	31	43	6M14F87OMLOS	6M14F87OMLOSS	630
8, 10	5/16, 3/8	M16×1.5	11/16-16	7	7	22	21	34	43	6M16F87OMLOS	6M16F87OMLOSS	630
8, 10	5/16, 3/8	M18×1.5	11/16-16	7	7	24	21	35	45	6M18F87OMLOS	6M18F87OMLOSS	630
8, 10	5/16, 3/8	M22×1.5	11/16-16	7	7	27	23	38	52	6M22F87OMLOS	6M22F87OMLOSS	420
12	1/2	M14×1.5	13/16-16	10	6	22	24	35	40	8M14F87OMLOS	8M14F87OMLOSS	630
12	1/2	M16×1.5	13/16-16	10	7	24	24	37	58	8M16F87OMLOS	8M16F87OMLOSS	630
12	1/2	M18×1.5	13/16-16	10	9	24	23	37	55	8M18F87OMLOS	8M18F87OMLOSS	630
12	1/2	M22×1.5	13/16-16	10	10	27	24	39	60	8M22F87OMLOS	8M22F87OMLOSS	420
12	1/2	M27×2	13/16-16	10	10	32	26	44	70	8M27F87OMLOS	8M27F87OMLOSS	420
14, 15, 16	5/8	M18×1.5	1-14	13	9	27	27	41	120	10M18F87OMLOS	10M18F87OMLOSS	420
14, 15, 16	5/8	M22×1.5	1-14	13	12	27	27	42	127	10M22F87OMLOS	10M22F87OMLOSS	420
18, 20	3/4	M22×1.5	1 3/16-12	16	12	32	35	50	170	12M22F87OMLOS	12M22F87OMLOSS	420
18, 20	3/4	M27×2	1 3/16-12	16	15	32	30	49	187	12M27F87OMLOS	12M27F87OMLOSS	420
18, 20	3/4	M33×2	1 3/16-12	16	16	41	31	50	200	12M33F87OMLOS	12M33F87OMLOSS	420
22, 25	1	M27×2	1 7/16-12	21	15	41	36	54	230	16M27F87OMLOS	16M27F87OMLOSS	420
22, 25	1	M33×2	1 7/16-12	21	20	41	34	52	270	16M33F87OMLOS	16M33F87OMLOSS	420
28, 30, 32	1 1/4	M33×2	1 11/16-12	26	20	46	36	54	370	20M33F87OMLOS	20M33F87OMLOSS	420
28, 30, 32	1 1/4	M42×2	1 11/16-12	26	26	50	36	55	390	20M42F87OMLOS	20M42F87OMLOSS	420
35, 38	1 1/2	M42×2	2-12	32	26	55	41	60	400	24M42F87OMLOS	24M42F87OMLOSS	350
35, 38	1 1/2	M48×2	2-12	32	32	55	36	57	412	24M48F87OMLOS	24M48F87OMLOSS	350
50	2	M60×2	2 1/2-12	40	40	65	41	65	800	32M60F87OMLOS	32M60F87OMLOSS	200

Imperial and metric parts may vary in hexagon dimensions.

F5OMLO Male stud connector

ORFS tube end /Male UN/UNF thread – O-ring (ISO 11926)
SAE 520120

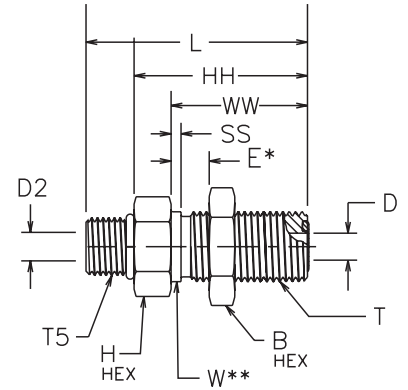


Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	D	D2	H	HH	L5	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.			mm	mm	mm	mm	mm				
6	1/4	7/16-20	9/16-18	5	5	17	18	29	21	4F5OMLOS	4F5OMLOSS	630
6	1/4	1/2-20	9/16-18	5	6	10	19	29	30	4-5 F5OLO-S	4-5F5OMLOSS	630
6	1/4	9/16-18	9/16-18	5	5	19	19	31	36	4-6F5OMLOS	4-6F5OMLOSS	630
6	1/4	3/4-16	9/16-18	5	5	22	20	34	67	4-8 F5OLO-S	4-8F5OMLOSS	630
8, 10	5/16, 3/8	9/16-18	11/16-16	7	7	19	20	32	45	6F5OMLOS	6F5OMLOSS	630
8, 10	5/16, 3/8	7/16-20	11/16-16	7	5	19	23	34	47	6-4F5OMLOS	6-4F5OMLOSS	630
8, 10	5/16, 3/8	1/2-20	11/16-16	7	6	19	21	31	50	6-5 F5OLO-S	6-5F5OMLOSS	630
8, 10	5/16, 3/8	3/4-16	11/16-16	7	7	22	21	35	51	6-8F5OMLOS	6-8F5OMLOSS	630
8, 10	5/16, 3/8	7/8-14	11/16-16	7	7	27	23	39	89	6-10F5OMLOS	6-10F5OMLOSS	420
10	1/2	3/4-16	13/16-16	10	10	22	23	37	56	8F5OMLOS	8F5OMLOSS	630
12	1/2	9/16-18	13/16-16	10	8	22	26	38	69	8-6F5OMLOS	8-6F5OMLOSS	630
12	1/2	7/8-14	13/16-16	10	10	27	24	40	105	8-10F5OMLOS	8-10F5OMLOSS	420
12	1/2	1 1/16-12	13/16-16	10	10	32	26	44	169	8-12F5OMLOS	8-12F5OMLOSS	420
12	1/2	1 5/16-12	13/16-16	10	10	38	27	46	227	8-16F5OMLOS	8-16F5OMLOSS	420
14, 15, 16	5/8	7/8-14	1-14	13	13	27	27	43	137	10F5OMLOS	10F5OMLOSS	420
14, 15, 16	5/8	3/4-16	1-14	13	10	27	31	45	120	10-8F5OMLOS	10-8F5OMLOSS	420
14, 15, 16	5/8	1 1/16-12	1-14	13	13	32	29	47	170	10-12F5OMLOS	10-12F5OMLOSS	420
18, 20	3/4	1 1/16-12	1 3/16-12	16	16	32	30	49	189	12F5OMLOS	12F5OMLOSS	420
18, 20	3/4	3/4-16	1 3/16-12	16	10	32	35	49	167	12-8 F5OLO-S	12-8F5OMLOSS	420
18, 20	3/4	7/8-14	1 3/16-12	16	13	32	35	51	177	12-10F5OMLOS	12-10F5OMLOSS	420
18, 20	3/4	1 5/16-12	1 3/16-12	16	16	38	31	50	280	12-16F5OMLOS	12-16F5OMLOSS	420
18, 20	3/4	1 5/8-12	1 3/16-12	16	16	46	32	51	350	12-20F5OMLOS	12-20F5OMLOSS	420
22, 25	1	1 5/16-12	1 7/16-12	21	21	41	32	50	271	16F5OMLOS	16F5OMLOSS	420
22, 25	1	1 1/16-12	1 7/16-12	21	16	41	36	55	275	16-12F5OMLOS	16-12F5OMLOSS	420
22, 25	1	1 5/8-12	1 7/16-12	21	21	46	34	52	428	16-20F5OMLOS	16-20F5OMLOSS	420
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	26	26	46	34	52	391	20F5OMLOS	20F5OMLOSS	420
28, 30, 32	1 1/4	1 5/16-12	1 11/16-12	26	21	48	39	58	401	20-16 F5OLO-S	20-16F5OMLOSS	420
28, 30, 32	1 1/4	1 7/8-12	1 11/16-12	26	32	54	36	54	557	20-24 F5OLO-S	20-24F5OMLOSS	350
35, 38	1 1/2	1 7/8-12	2-12	32	32	54	36	54	412	24 F5OLO-S	24F5OMLOSS	350
35, 38	1 1/2	1 5/8-12	2-12	32	26	54	41	60	581	24-20 F5OLO-S	24-20F5OMLOSS	350
50	2	2 1/2-12	2 1/2-12	45	40	70	40	59	900	32 F5OLO-S	32F5OMLOSS	200

Imperial and metric parts may vary in hexagon dimensions.

WF5OLO Bulkhead male connector

ORFS tube end/Male UN/UNF – O-ring (ISO 11926)

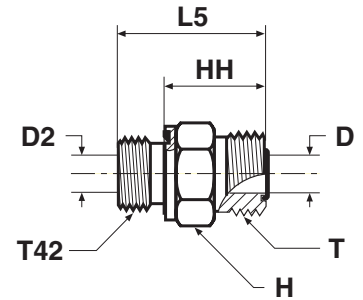


Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2A T5	B mm	D mm	D2 mm	E mm	H mm	HH mm	L mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	ME Steel	PN (bar)
6	1/4	9/16-18	7/16-20	21	5	5	14	21	43	54	2	14	32	75	4 WF5OLO-WLNL-S	630
6	1/4	9/16-18	9/16-18	21	5	8	14	21	43	55	2	14	32	88	4-6 WF5OLO-WLNL-S	630
8, 10	5/16, 3/8	11/16-16	9/16-18	25	7	8	14	25	46	58	2	18	34	112	6 WF5OLO-WLNL-S	630
12	1/2	13/16-16	3/4-16	29	10	10	14	29	52	65	2	21	37	147	8 WF5OLO-WLNL-S	630
14, 15, 16	5/8	1-14	7/8-14	33	13	13	13	33	51	67	2	25	41	295	10 WF5OLO-WLNL-S	420
18, 20	3/4	1 3/16-12	1 1/16-12	41	16	16	13	41	52	71	2	30	42	330	12 WF5OLO-WLNL-S	420

Imperial and metric parts may vary in hexagon dimensions.

F42EDMLO Male stud connector

ORFS tube end /Male BSPP thread – ED seal (ISO 1179)

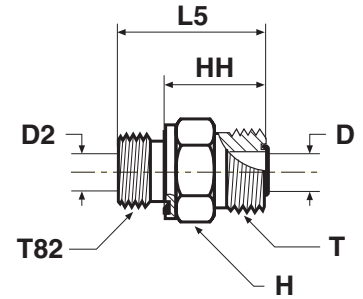


Tube O.D.		BSPP male thread T42	Thread UN/UNF-2A T	D mm	D2 mm	H mm	HH mm	L5 mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.											
6	1/4	1/8	9/16-18	5	4	17	18	26	29	4F42EDMLOS	4F42EDMLOSS	630
6	1/4	1/4	9/16-18	5	5	19	18	31	42	4-4F42EDMLOS	4-4F42EDMLOSS	630
6	1/4	3/8	9/16-18	5	5	22	20	32	61	4-6F42EDMLOS	4-6F42EDMLOSS	630
6	1/4	1/2	9/16-18	5	5	27	21	35	119	4-8F42EDMLOS	4-8F42EDMLOSS	420
8, 10	5/16, 3/8	1/4	11/16-16	7	5	19	20	32	45	6F42EDMLOS	6F42EDMLOSS	630
8, 10	5/16, 3/8	1/8	11/16-16	7	4	19	23	31	44	6-2F42EDMLOS	6-2F42EDMLOSS	630
8, 10	5/16, 3/8	3/8	11/16-16	7	7	22	21	33	63	6-6F42EDMLOS	6-6F42EDMLOSS	630
8, 10	5/16, 3/8	1/2	11/16-16	7	7	27	23	37	122	6-8F42EDMLOS	6-8F42EDMLOSS	420
8, 10	5/16, 3/8	3/4	11/16-16	7	7	32	24	40	192	6-12F42EDMLOS	6-12F42EDMLOSS	420
12	1/2	3/8	13/16-16	10	8	22	23	35	196	8F42EDMLOS	8F42EDMLOSS	630
12	1/2	1/4	13/16-16	10	5	22	25	38	193	8-4F42EDMLOS	8-4F42EDMLOSS	630
12	1/2	1/2	13/16-16	10	10	27	24	38	198	8-8F42EDMLOS	8-8F42EDMLOSS	420
12	1/2	3/4	13/16-16	10	10	32	26	42	205	8-12F42EDMLOS	8-12F42EDMLOSS	420
14, 15, 16	5/8	1/2	1-14	13	13	27	27	41	332	10F42EDMLOS	10F42EDMLOSS	420
14, 15, 16	5/8	3/8	1-14	13	8	27	31	43	315	10-6F42EDMLOS	10-6F42EDMLOSS	420
14, 15, 16	5/8	3/4	1-14	13	13	32	29	45	348	10-12F42EDMLOS	10-12F42EDMLOSS	420
14, 15, 16	5/8	1	1-14	13	13	41	30	48	360	10-16F42EDMLOS	10-16F42EDMLOSS	420
18, 20	3/4	3/4	1 3/16-12	16	16	32	30	46	200	12F42EDMLOS	12F42EDMLOSS	420
18, 20	3/4	1/2	1 3/16-12	16	12	32	34	49	183	12-8F42EDMLOS	12-8F42EDMLOSS	420
18, 20	3/4	1	1 3/16-12	16	16	41	31	49	362	12-16F42EDMLOS	12-16F42EDMLOSS	420
18, 20	3/4	1 1/4	1 3/16-12	16	16	50	33	53	505	12-20F42EDMLOS	12-20F42EDMLOSS	420
22, 25	1	1	1 7/16-12	21	20	41	32	50	343	16F42EDMLOS	16F42EDMLOSS	420
22, 25	1	1/2	1 7/16-12	21	12	41	36	50	380	16-8F42EDMLOS	16-8F42EDMLOSS	420
22, 25	1	3/4	1 7/16-12	21	16	41	36	52	411	16-12F42EDMLOS	16-12F42EDMLOSS	420
22, 25	1	1 1/4	1 7/16-12	21	21	50	34	54	487	16-20F42EDMLOS	16-20F42EDMLOSS	420
22, 25	1	1 1/2	1 7/16-12	21	21	55	36	58	715	16-24F42EDMLOS	16-24F42EDMLOSS	350
28, 30, 32	1 1/4	1 1/4	1 11/16-12	25	25	50	34	54	454	20F42EDMLOS	20F42EDMLOSS	420
28, 30, 32	1 1/4	1	1 11/16-12	26	20	46	39	57	412	20-16F42EDMLOS	20-16F42EDMLOSS	420
28, 30, 32	1 1/4	1 1/2	1 11/16-12	26	26	55	36	58	532	20-24F42EDMLOS	20-24F42EDMLOSS	350
35, 38	1 1/2	1 1/2	2-12	32	32	55	36	58	585	24F42EDMLOS	24F42EDMLOSS	350
35, 38	1 1/2	1 1/4	2-12	32	25	55	41	61	540	24-20F42EDMLOS	24-20F42EDMLOSS	350
50	2	2	2 1/2-12	40	40	75	41	65	900	32F42EDMLOS	32F42EDMLOSS	200

Imperial and metric parts may vary in hexagon dimensions.

F82EDMLO Male stud connector

ORFS tube end /Male metric thread – ED seal (ISO 9974)



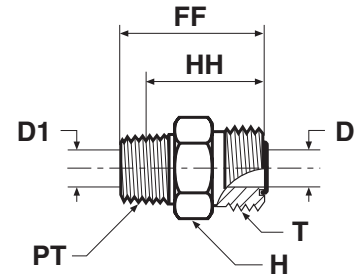
Tube O.D.		Thread metric T87	Thread UN/UNF-2A T	D mm	D2 mm	H mm	HH mm	L5 mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.											
6	1/4	M10×1.0	9/16-18	5	4	17	18	26	20	4M10F82EDMLOS	4M10F82EDMLOSS	630
6	1/4	M12×1.5	9/16-18	5	4	17	18	30	24	4M12F82EDMLOS	4M12F82EDMLOSS	630
6	1/4	M14×1.5	9/16-18	5	5	19	19	31	29	4M14F82EDMLOS	4M14F82EDMLOSS	630
6	1/4	M16×1.5	9/16-18	5	7	22	19	31	33	4M16F82EDMLOS	4M16F82EDMLOSS	630
8, 10	5/16, 3/8	M12×1.5	11/16-16	7	4	19	23	35	35	6M12F82EDMLOS	6M12F82EDMLOSS	630
8, 10	5/16, 3/8	M14×1.5	11/16-16	7	5	19	20	32	40	6M14F82EDMLOS	6M14F82EDMLOSS	630
8, 10	5/16, 3/8	M16×1.5	11/16-16	7	7	22	20	32	43	6M16F82EDMLOS	6M16F82EDMLOSS	630
12	1/2	M16×1.5	13/16-16	10	7	22	26	38	49	8M16F82EDMLOS	8M16F82EDMLOSS	630
12	1/2	M18×1.5	13/16-16	10	8	24	23	35	55	8M18F82EDMLOS	8M18F82EDMLOSS	630
14, 15, 16	5/8	M16×1.5	1-14	13	7	27	30	42	70	10M16F82EDMLOS	10M16F82EDMLOSS	420
14, 15, 16	5/8	M18×1.5	1-14	13	8	27	31	43	85	10M18F82EDMLOS	10M18F82EDMLOSS	420
14, 15, 16	5/8	M22×1.5	1-14	13	12	27	27	41	127	10M22F82EDMLOS	10M22F82EDMLOSS	420
18, 20	3/4	M27×2	1 3/16-12	16	16	32	30	46	187	12M27F82EDMLOS	12M27F82EDMLOSS	420
22, 25	1	M33×2	1 7/16-12	20	20	41	32	50	270	16M33F82EDMLOS	16M33F82EDMLOSS	420
28, 30, 32	1 1/4	M42×2	1 11/16-12	26	25	50	34	54	390	20M42F82EDMLOS	20M42F82EDMLOSS	420
35, 38	1 1/2	M48×2	2-12	32	32	55	36	58	412	24M48F82EDMLOS	24M48F82EDMLOSS	350

Imperial and metric parts may vary in hexagon dimensions.

FLO Male stud connector

ORFS tube end/Male NPTF* thread (SAE J476)

*Stainless Steel = NPT to prevent galling

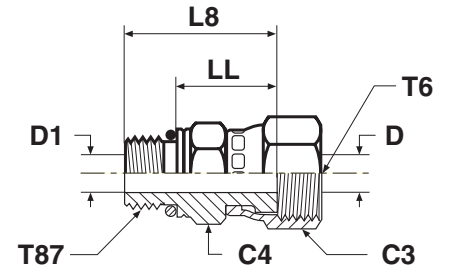


Tube O.D.		Thread NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	FF mm	H mm	HH mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.											
6	1/4	1/8-27	9/16-18	5	5	27	16	21	26	4 FLO-S	4 FLO-SS	420
6	1/4	1/4-18	9/16-18	5	7	32	16	23	34	4-4 FLO-S	4-4 FLO-SS	420
6	1/4	3/8-18	9/16-18	5	5	36	19	25	47	4-6 FLO-S	4-6 FLO-SS	420
8, 10	5/16, 3/8	1/4-16	11/16-16	7	7	32	19	23	39	6 FLO-S	6 FLO-SS	420
8, 10	5/16, 3/8	3/8-18	11/16-16	7	10	34	19	25	52	6-6 FLO-S	6-6 FLO-SS	420
8, 10	5/16, 3/8	1/2-14	11/16-16	7	13	39	22	28	82	6-8 FLO-S	6-8 FLO-SS	420
12	1/2	3/8-18	13/16-16	10	10	38	22	29	83	8 FLO-S	8 FLO-SS	420
12	1/2	1/2-14	13/16-16	10	13	42	22	30	84	8-8 FLO-S	8-8 FLO-SS	420
12	1/2	3/4-14	13/16-16	10	18	43	29	31	166	8-12 FLO-S	8-12 FLO-SS	380
14, 15, 16	5/8	1/2-14	1-14	13	13	46	27	35	115	10 FLO-S	10 FLO-SS	420
14, 15, 16	5/8	3/4-14	1-14	13	18	46	29	34	138	10-12 FLO-S	10-12 FLO-SS	380
18, 20	3/4	3/4-14	1 3/16-12	15	18	49	32	37	179	12 FLO-S	12 FLO-SS	380
18, 20	3/4	1/2-14	1 3/16-12	15	13	49	32	37	165	12-8 FLO-S	12-8 FLO-SS	420
18, 20	3/4	1-11 1/2	1 3/16-12	15	24	54	35	40	225	12-16 FLO-S	12-16 FLO-SS	310
22, 25	1	1-11 1/2	1 7/16-12	21	24	56	38	41	271	16 FLO-S	16 FLO-SS	310
22, 25	1	3/4-14	1 7/16-12	21	18	51	38	39	238	16-12 FLO-S	16-12 FLO-SS	380
28, 30, 32	1 1/4	1 1/4-11 1/2	1 11/16-12	26	32	58	48	43.5	424	20 FLO-S	20 FLO-SS	210
35, 38	1 1/2	1 1/2-11 1/2	2-12	32	38	61	54	46.0	534	24 FLO-S	24 FLO-SS	200

Imperial and metric parts may vary in hexagon dimensions.

F687OML Swivel male stud

ORFS Female swivel end/Male metric thread – O-ring (ISO 6149-2)

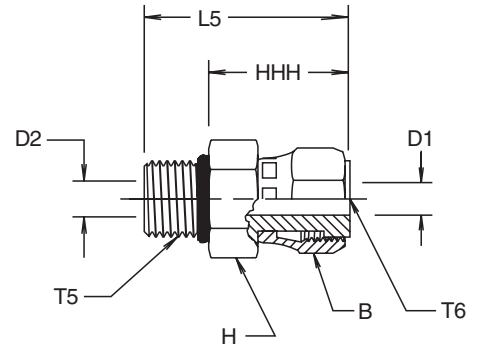


Tube O.D.		Thread metric T87	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	LL mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.												
6	1/4	M12×1.5	9/16-18	17	17	4	4	38	27	53	4M12F687OMLS	4M12F687OMLSS	500
6	5/16	M12×1.5	11/16-16	22	17	7	4	40	29	66	6M12F687OMLS	6M12F687OMLSS	630
8	3/8	M14×1.5	11/16-16	22	19	7	6	40	29	72	6M14F687OMLS	6M14F687OMLSS	630
8, 10	5/16, 3/8	M16×1.5	11/16-16	22	22	7	7	42	29	85	6M16F687OMLS	6M16F687OMLSS	630
12	1/2	M16×1.5	13/16-16	24	22	9	7	49	36	110	8M16F687OMLS	8M16F687OMLSS	630
14, 15, 16	5/8	M22×1.5	1-14	30	27	12	12	53	38	173	10M22F687OMLS	10M22F687OMLSS	420
18, 20	3/4	M22×1.5	1 3/16-12	36	30	14	12	57	42	230	12M22F687OMLS	12M22F687OMLSS	420
18, 20	3/4	M27×2	1 3/16-12	36	32	14	14	61	42	275	12M27F687OMLS	12M27F687OMLSS	420
22, 25	1	M27×2	1 7/16-12	41	36	20	15	68	49	420	16M27F687OMLS	16M27F687OMLSS	420
22, 25	1	M33×2	1 7/16-12	41	41	20	20	68	49	462	16M33F687OMLS	16M33F687OMLSS	420
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	50	26	26	68	49	622	20M42F687OMLS	20M42F687OMLSS	350
35, 38	1 1/2	M48×2	2-12	60	55	32	32	71	50	885	24M48F687OMLS	24M48F687OMLSS	280

Imperial and metric parts may vary in hexagon dimensions.

F65OL Swivel male stud

ORFS female swivel end/Male UN/UNF thread – O-ring (ISO 11926)
SAE 520181

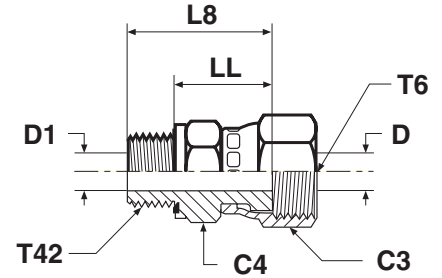


Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2B T6	B mm	D1 mm	D2 mm	H mm	HHH mm	L5 mm	Weight (steel) g/1 piece	ME Steel	PN (bar)
6	1/4	7/16-20	9/16-18	18	4	5	17	26	37	53	4 F65OL-S	500
8, 10	5/16, 3/8	9/16-18	11/16-16	21	7	7	19	28	40	66	6 F65OL-S	630
12	1/2	3/4-16	13/16-16	24	9	10	22	35	50	110	8 F65OL-S	630
14, 15, 16	5/8	7/8-14	1-14	29	12	13	27	38	54	173	10 F65OL-S	420
18, 20	3/4	1 1/16-12	1 3/16-12	35	14	16	32	41	59	275	12 F65OL-S	420
22, 25	1	1 5/16-12	1 7/16-12	42	20	21	41	49	68	462	16 F65OL-S	420
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	46	50	68	622	20 F65OL-S	350

Imperial and metric parts may vary in hexagon dimensions.

F642EDMLO Swivel male stud

ORFS Swivel female end/Male BSPP thread – ED seal (ISO 1179)

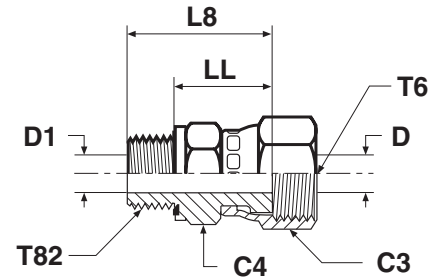


Tube O.D.		Thread BSPP T42	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	LL mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.												
6	1/4	1/8	9/16-18	17	14	4	4	34	26	43	4F642EDMLS	4F642EDMLSS	500
6	1/4	1/4	9/16-18	17	19	4	4	38	26	59	4-4F642EDMLS	4-4F642EDMLSS	500
8, 10	5/16, 3/8	1/4	11/16-16	22	19	7	5	40	28	72	6F642EDMLS	6F642EDMLSS	630
8, 10	5/16, 3/8	3/8	11/16-16	22	22	7	7	40	28	86	6-6F642EDMLS	6-6F642EDMLSS	630
8, 10	5/16, 3/8	1/2	11/16-16	22	27	7	7	42	28	92	6-8F642EDMLS	6-8F642EDMLSS	420
12	1/2	3/8	13/16-16	24	22	9	8	47	35	104	8F642EDMLS	8F642EDMLSS	630
12	1/2	1/4	13/16-16	24	22	9	5	47	35	98	8-4F642EDMLS	8-4F642EDMLSS	630
12	1/2	1/2	13/16-16	24	27	9	9	49	35	142	8-8F642EDMLS	8-8F642EDMLSS	420
14, 15, 16	5/8	1/2	1-14	30	27	12	12	52	38	165	10F642EDMLS	10F642EDMLSS	420
14, 15, 16	5/8	3/4	1-14	30	32	12	12	54	38	185	10-12F642EDMLS	10-12F642EDMLSS	420
18, 20	3/4	3/4	1 3/16-12	36	32	14	14	57	41	266	12F642EDMLS	12F642EDMLSS	420
18, 20	3/4	1/2	1 3/16-12	36	30	14	12	55	41	220	12-8F642EDMLS	12-8F642EDMLSS	420
22, 25	1	1	1 7/16-12	41	41	20	20	67	49	414	16F642EDMLS	16F642EDMLSS	420
28, 30, 32	1 1/4	1 1/4	1 11/16-12	50	50	26	25	69	49	623	20F642EDMLS	20F642EDMLSS	350
35, 38	1 1/2	1 1/2	2-12	60	55	32	32	72	50	885	24F642EDMLS	24F642EDMLSS	280

Imperial and metric parts may vary in hexagon dimensions.

F682EDMLO Swivel male stud

ORFS Swivel female end/Male metric thread – ED seal (ISO 9974)



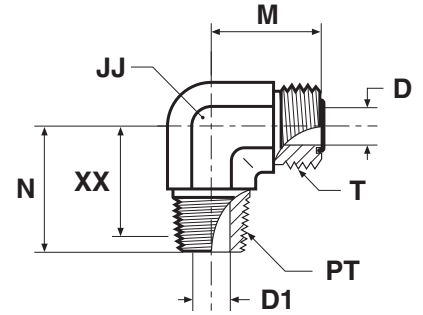
Tube O.D.		Thread metric T82	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	LL mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.												
6	1/4	M12×1.5	9/16-18	17	17	4	4	39	27	56	4M12F682EDMLS	4M12F682EDMLSS	500
8, 10	5/16, 3/8	M14×1.5	11/16-16	22	19	7	5	41	29	73	6M14F682EDMLS	6M14F682EDMLSS	630
8, 10	5/16, 3/8	M16×1.5	11/16-16	24	22	7	7	41	29	85	6M16F682EDMLS	6M16F682EDMLSS	630
12	1/2	M16×1.5	13/16-16	24	22	9	7	48	36	109	8M16F682EDMLS	8M16F682EDMLSS	630
14, 15, 16	5/8	M22×1.5	1-14	30	27	12	12	53	39	165	10M22F682EDMLS	10M22F682EDMLSS	420
18, 20	3/4	M27×2	1 3/16-12	36	32	14	14	58	42	282	12M27F682EDMLS	12M27F682EDMLSS	420
22, 25	1	M33×2	1 7/16-12	41	41	20	20	68	50	467	16M33F682EDMLS	16M33F682EDMLSS	420
28, 30, 32	1 1/4	M42×2	1 11/16-12	50	50	26	25	70	50	635	20M42F682EDMLS	20M42F682EDMLSS	350
35, 38	1 1/2	M48×2	2-12	60	55	32	32	72	50	885	24M48F682EDMLS	24M48F682EDMLSS	280

Imperial and metric parts may vary in hexagon dimensions.

CLO Male stud elbow

ORFS tube end/Male NPTF* thread (SAE J476)

*Stainless Steel = NPT to prevent galling

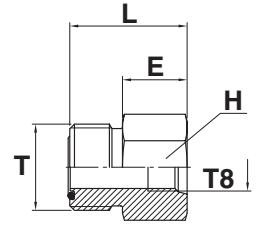


Tube O.D.		Thread NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.												
6	1/4	1/8-27	9/16-18	5	5	14	22	20	15	39	4 CLO-S	4 CLO-SS	420
6	1/4	1/4-18	9/16-18	5	7	14	22	29	20	50	4-4 CLO-S	4-4 CLO-SS	420
8, 10	5/16, 3/8	1/4-16	11/16-16	7	7	19	25	28	19	75	6 CLO-S	6 CLO-SS	420
8, 10	5/16, 3/8	3/8-18	11/16-16	7	10	19	25	31	22	81	6-6 CLO-S	6-6 CLO-SS	420
8, 10	5/16, 3/8	1/2-14	11/16-16	7	13	22	29	37	26	84	6-8 CLO-S	6-8 CLO-SS	420
12	1/2	3/8-18	13/16-16	10	10	19	28	31	22	89	8 CLO-S	8 CLO-SS	420
12	1/2	1/2-14	13/16-16	10	13	22	28	37	26	125	8-8 CLO-S	8-8 CLO-SS	420
12	1/2	3/4-14	13/16-16	10	18	27	34	40	28	168	8-12 CLO-S	8-12 CLO-SS	280
14, 15, 16	5/8	1/2-14	1-14	13	13	27	33	37	26	154	10 CLO-S	10 CLO-SS	420
14, 15, 16	5/8	3/4-14	1-14	13	18	30	36	40	28	237	10-12 CLO-S	10-12 CLO-SS	280
18, 20	3/4	3/4-14	1 3/16-12	16	18	30	37	40	28	246	12 CLO-S	12 CLO-SS	280
18, 20	3/4	1/2-14	1 3/16-12	16	13	30	37	40	29	257	12-8 CLO-S	12-8 CLO-SS	420
18, 20	3/4	1-11 1/2	1 3/16-12	16	24	33	41	50	36	363	12-16 CLO-S	12-16 CLO-SS	210
22, 25	1	1-11 1/2	1 7/16-12	21	24	37	42	50	36	387	16 CLO-S	16 CLO-SS	210
22, 25	1	3/4-14	1 7/16-12	21	18	37	42	45	33	401	16-12 CLO-S	16-12 CLO-SS	280
28, 30, 32	1 1/4	1 1/4-11 1/2	1 11/16-12	26	32	41	45	61	46	469	20 CLO-S	20 CLO-SS	175
35, 38	1 1/2	1 1/2-11 1/2	2-12	32	38	48	49	67	52	603	24 CLO-S	24 CLO-SS	175

Imperial and metric parts may vary in hexagon dimensions.

G87MLO Pressure gauge fitting

ORFS tube end/Female metric thread – O-ring (ISO 6149-1)

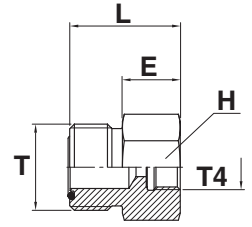


Tube O.D.		Thread metric T8	Thread UN/UNF-2A T	E mm	H mm	L mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.									
6	1/4	M14×1.5	9/16-18	19	19	29	20	4M14G87MLOS	4M14G87MLOSS	630
8, 10	5/16, 3/8	M14×1.5	11/16-18	19	19	30	44	6M14G87MLOS	6M14G87MLOSS	630
12	1/2	M14×1.5	13/16-16	19	22	32	66	8M14G87MLOS	8M14G87MLOSS	630
14, 15, 16	5/8	M14×1.5	1-14	19	27	35	82	10M14G87MLOS	10M14G87MLOSS	420
18, 20	3/4	M14×1.5	1 3/16-12	19	32	36	104	12M14G87MLOS	12M14G87MLOSS	420

Imperial and metric parts may vary in hexagon dimensions.

G4MLOSMO Pressure gauge connector

ORFS tube end/Female BSPP gauge thread (ISO 1179-1)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	E mm	H mm	L mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.									
6	1/4	1/4	9/16-18	19	17	27	32	4-4G4MLOSMO	4-4G4MLOSSMO	400
6	1/4	1/2	9/16-18	27	30	37	80	4-8G4MLOSMO	4-8G4MLOSSMO	400
8, 10	5/16, 3/8	1/4	11/16-16	17	19	28	49	6G4MLOSMO	6G4MLOSSMO	400
8, 10	5/16, 3/8	1/2	11/16-16	27	30	38	107	6-8G4MLOSMO	6-8G4MLOSSMO	400
12	1/2	1/4	13/16-16	17	22	30	60	8-4G4MLOSMO	8-4G4MLOSSMO	280
12	1/2	1/2	13/16-16	27	30	40	80	8-8G4MLOSMO	8-8G4MLOSSMO	280

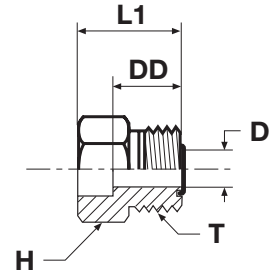
.Imperial and metric parts may vary in hexagon dimensions.

LOHB3* Braze connector

ORFS tube end/Braze socket

SAE 520104 / SAE 52M0104 ISO 8434-3 BRS

(*Parts delivered oil dipped finish only – steel)

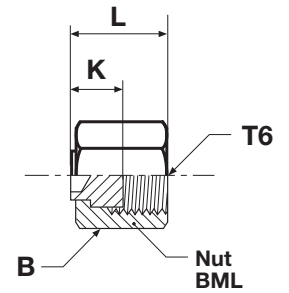


Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	D mm	DD mm	H in.	H mm	L1 mm	Weight (steel) g/1 piece	ME		PN (bar)
									Steel	Stainless Steel	
6		9/16-18	05	14	—	17	22	023	4-6MMLOHB3S		420
	1/4	9/16-18	5	13	5/8	—	22	24	4 LOHB3-S	4 LOHB3-SS	420
	3/8	9/16-18	5	13	5/8	—	22	23	4-6 LOHB3-S	4-6 LOHB3-SS	420
	3/8	11/16-16	7	14	3/4	—	23	36	6 LOHB3-S	6 LOHB3-SS	420
	1/4	11/16-16	7	14	3/4	—	23	42	6-4 LOHB3-S	6-4 LOHB3-SS	420
	1/2	11/16-16	7	14	3/4	—	23	36	6-8 LOHB3-S	6-8 LOHB3-SS	420
	5/8	11/16-16	7	15	—	19	23	30	6-10 LOHB3-S	6-10 LOHB3-SS	420
12		13/16-16	10	16	—	22	25	42	8-12MMLOHB3S		420
	1/2	13/16-16	10	16	7/8	—	25	44	8 LOHB3-S	8 LOHB3-SS	420
	1/4	13/16-16	10	16	7/8	—	25	58	8-4 LOHB3-S	8-4 LOHB3-SS	420
	3/8	13/16-16	10	16	7/8	—	25	43	8-6 LOHB3-S	8-6 LOHB3-SS	420
	5/8	13/16-16	10	16	7/8	—	25	42	8-10 LOHB3-S	8-10 LOHB3-SS	420
	3/4	13/16-16	10	17	1 1/16	—	30	74	8-12 LOHB3-S	8-12 LOHB3-SS	420
16		1-14	13	19	—	27	27	101	10-16MMLOHB3S		420
	5/8	1-14	13	19	1 1/16	—	27	104	10 LOHB3-S	10 LOHB3-SS	420
	3/8	1-14	13	19	1 1/16	—	27	99	10-6 LOHB3-S	10-6 LOHB3-SS	420
	1/2	1-14	13	19	1 1/16	—	27	96	10-8 LOHB3-S	10-8 LOHB3-SS	420
	3/4	1-14	13	19	1 1/16	—	31	97	10-12 LOHB3-S	10-12 LOHB3-SS	420
20		1 3/16-12	16	21	—	32	34	144	12-20MMLOHB3S		420
	3/4	1 3/16-12	16	21	1 1/4	—	34	149	12 LOHB3-S	12 LOHB3-SS	420
	1/2	1 3/16-12	16	21	1 1/4	—	30	174	12-8 LOHB3-S	12-8 LOHB3-SS	420
	5/8	1 3/16-12	16	21	1 1/4	—	30	171	12-10 LOHB3-S	12-10 LOHB3-SS	420
	1	1 3/16-12	16	21	1 1/2	—	35	220	12-16 LOHB3-S	12-16 LOHB3-SS	420
25		1 7/16-12	21	25	—	41	39	218	16-25MMLOHB3S		420
	1	1 7/16-12	21	25	1 1/2	—	39	225	16 LOHB3-S	16 LOHB3-SS	420
	1/2	1 7/16-12	21	25	1 1/2	—	33	237	16-8 LOHB3-S	16-8 LOHB3-SS	420
	3/4	1 7/16-12	21	25	1 1/2	—	37	228	16-12 LOHB3-S	16-12 LOHB3-SS	420
	1 1/4	1 7/16-12	21	25	1 3/4	—	39	276	16-20 LOHB3-S	16-20 LOHB3-SS	420
30		1 11/16-12	26	25	—	46	39	269	20-30MMLOHB3S		280
	1 1/4	1 11/16-12	26	25	1 3/4	—	39	278	20 LOHB3-S	20 LOHB3-SS	280
	1	1 11/16-12	26	25	1 3/4	—	39	278	20-16 LOHB3-S	20-16 LOHB3-SS	280
	1 1/2	1 11/16-12	26	25	2 1/8	—	39	371	20-24 LOHB3-S	20-24 LOHB3-SS	280
38		2-12	32	25	—	55	39	374	24-38MMLOHB3S		280
	1 1/2	2-12	32	25	2 1/8	—	39	384	24 LOHB3-S	24 LOHB3-SS	280
	1 1/4	2-12	32	25	2 1/8	—	39	442	24-20 LOHB3-S	24-20 LOHB3-SS	280

Imperial and metric parts may vary in hexagon dimensions.

FNML Cap

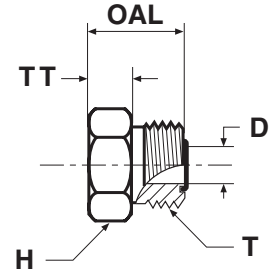
ORFS Female swivel cap end
SAE 520112



Thread UN/UNF-2B T6	B mm	K mm	L mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
9/16-18	17	9	17	6	4 FNL-S	4FNMLSS	630
11/16-16	22	11	18	10	6FNMLS	6FNMLSS	630
13/16-16	24	12	22	11	8FNMLS	8FNMLSS	630
1-14	30	14	25	31	10FNMLS	10FNMLSS	420
1 3/16-12	36	15	27	52	12FNMLS	12FNMLSS	420
1 7/16-12	41	16	29	81	16FNMLS	16FNMLSS	420
1 11/16-12	48	15	29	129	20 FNL-S	20FNMLSS	280
2-12	57	15	29	189	24 FNL-S	24FNMLSS	280
2 1/2-12	73	20	37	390	32 FNL-S	32FNMLSS	280

PNMLO Plug

ORFS tube end plug
SAE 520109

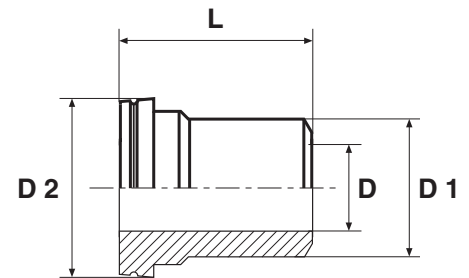


Tube O.D.		Thread UN/UNF-2A T	D mm	H mm	OAL mm	TT mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel	PN (bar)
mm	in.									
6	1/4	9/16-18	5	16	17	5	18	4 PNLO-S	4PNMLOSS	630
8, 10	5/16, 3/8	11/16-16	7	19	19	8	34	6PNMLOS	6PNMLOSS	630
12	1/2	13/16-16	10	22	22	9	45	8PNMLOS	8PNMLOSS	630
14, 15, 16	5/8	1-14	13	27	26	10	91	10 PNLO-S	10PNMLOSS	420
18, 20	3/4	1 3/16-12	16	32	27	10	138	12PNMLOS	12PNMLOSS	420
22, 25	1	1 7/16-12	21	38	28	10	203	16 PNLO-S	16PNMLOSS	420
28, 30, 32	1 1/4	1 11/16-12	26	45	28	10	266	20 PNLO-S	20PNMLOSS	420
35, 38	1 1/2	2-12	32	54	28	10	369	24 PNLO-S	24PNMLOSS	350
50	2	2 1/2-12	45	70	35	13	580	32 PNLO-S	32PNMLOSS	200

Imperial and metric parts may vary in hexagon dimensions.

TW3L Weld nipple

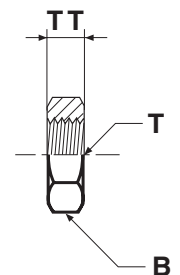
ORFS female end/Butt weld end



Tube O.D. mm	D mm	D1 mm	D2 mm	L mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel
6	2	6	13	25	10	TW3LS6	TW3LSS6
8	3	8	13	25	12	TW3LS8	TW3LSS8
10	4	10	16	26	15	TW3LS10	TW3LSS10
12	5	12	19	26	18	TW3LS12	TW3LSS12
16	10	16	23	32	25	TW3LS16	TW3LSS16
20	13	20	28	37	30	TW3LS20	TW3LSS20
25	16	25	34	42	37	TW3LS25	TW3LSS25
30	22	30	41	44	43	TW3LS30	TW3LSS30
38	28	38	48	49	70	TW3LS38	TW3LSS38

WLNML Bulkhead locknut

SAE 520118/SAE 52M0118 ISO 8434-3 BHLN



Thread UN/UNF-2B T	B mm	TT mm	Weight (steel) g/1 piece	ME Steel	ME Stainless Steel
9/16-18	22	7	11	4WLNMLS	4WLNMLSS
11/16-16	27	8	23	6WLNMLS	6WLNMLSS
13/16-16	30	9	26	8WLNMLS	8WLNMLSS
1-14	32	11	38	10WLNMLS	10WLNMLSS
1 3/16-12	38	11	44	12WLNMLS	12WLNMLSS
1 7/16-12	46	11	54	16WLNMLS	16WLNMLSS
1 11/16-12	51	10	73	20 WLNLS	20WLNMLSS
2-12	60	10	102	24 WLNLS	24WLNMLSS

Imperial and metric parts may vary in hexagon dimensions.

