



氢气管接件样本

Hydrogen Tube Fitting Cataloge V1.0

## 公司简介

上海未蓝工业技术有限公司创立于2009年，是专业的流体传动产品及服务提供商，致力于为全球客户提供优质的流体解决方案及产品配套服务。未蓝拥有资深的技术研发团队和专业的服务团队，具备较强的科技创新能力和技术服务优势，已通过ABS美国船级社ISO9001:2015质量体系认证，确保为客户持续提供高品质的产品及服务。

未蓝在工业和液压领域可提供包括硬管总成、软管总成，液压管件、无缝钢管、超高压接头及阀件等核心产品在内的各类优质产品及配套解决方案，并拥有丰富的产品库存，能够快速响应客户需求，为客户的不间断生产保驾护航。

未蓝专注流体传动十余年，在氢能源、风电、汽车制造、工程机械、石油化工、半导体、工业机器人、船舶、造纸、生物医药、食品饮料等十多个行业领域拥有成熟的流体传动解决方案，可提供硬管集成、液压系统等产品定制集成服务。截至目前，已为包括138家世界五百强企业在内的近万家客户提供配套服务。

未蓝坚持不断创新，截至2021年2月，已经获得的专利及软件著作权21项，其中实用新型专利19项、软件著作权2项，3项发明专利进入实质审查，已具备产品材料分析及合作研发的基本能力；已加入中国橡胶工业协会、美国软管与总成分销商协会 (NAHAD) 等行业组织，通过行业交流，不断提升服务品质；相继获得“上海市高新技术企业”、“上海嘉定区小巨人企业”、“上海市专精特新中小企业”、“上海南翔经济城创新突破奖”等荣誉资质。

未蓝始终聚焦为客户创造价值，在上海总部设立总成加工工厂与现代化仓储，可实现订单快速交付；投资设立金属件加工厂，可满足客户定制加工需要；在广州、南京、长沙、郑州、石家庄、大连等地设立了办事处，可实现本地化服务；上线以ERP系统为核心的全流程线上运营系统，初步实现了覆盖全国的业务网络布局，为客户提供7\*24小时的优质服务。

未来，未蓝将继续在流体传动领域精耕细作，打造卓越的产品和服务，持续为客户创造价值，推动行业发展和进步。

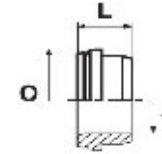


## Tube Fittings and Adapter Fittngs



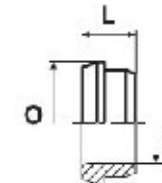
- Available in tube sizes from 1/4 inch to 2 in and 6mm to 50mm.
- ORFS (O-ring Face Seal) have good performance for Hydrogen application.
- Easy to disconnect and retighten.
- Standardized torque installation method.

## TPL Sleeve -Metric Tubing sleeve



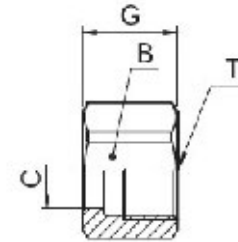
Tube O.D. 1 mm	L mm	O mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
6	8	13	4	TPLS6	TPLSS6
8	8	13	4	TPLS8-6	TPLSS8-6
8	9	16	4	TPLS8	TPLSS8
10	9	16	5	TPLS10	TPLSS10
10	11	19	6	TPLS12-10	TPLSS12-10
12	11	19	6	TPLS12	TPLSS12
14	11	23	10	TPLS14	TPLSS14
15	11	23	9	TPLS15	TPLSS15
16	11	23	8	TPLS16	TPLSS16
18	12	28	14	TPLS18	TPLSS18
20	12	28	15	TPLS20	TPLSS20
22	14	34	20	TPLS22	TPLSS22
25	19	34	23	TPLS25	TPLSS25
28	19	40	24	TPLS28	TPLSS28
30	19	40	25	TPLS30	TPLSS30
32	19	40	26	TPLS32	TPLSS32
35	19	48	36	TPLS35	TPLSS35
38	19	48	44	TPLS38	TPLSS38
50	14	61	180	TPLS50	TPLSS50

## TPL Sleeve -Inch Tubing Sleeve



Tube O.D. 1 in.	L mm	O mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® 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	18	12 TPL-S	12 TPL-SS
7/8	14	31	19	14 TPL-S	14 TPL-SS
1	14	34	22	16 TPL-S	16 TPL-SS
1 1/4	18	41	28	20 TPL-S	20 TPL-SS
1 1/2	19	48	44	24 TPL-S	24 TPL-SS
2	14	61	180	32 TPL-S	32 TPL-SS

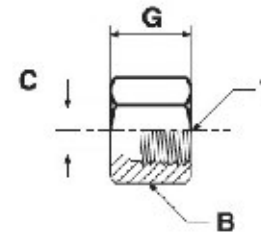
## BML Nut SAE 52M0110/ISO 8434-3



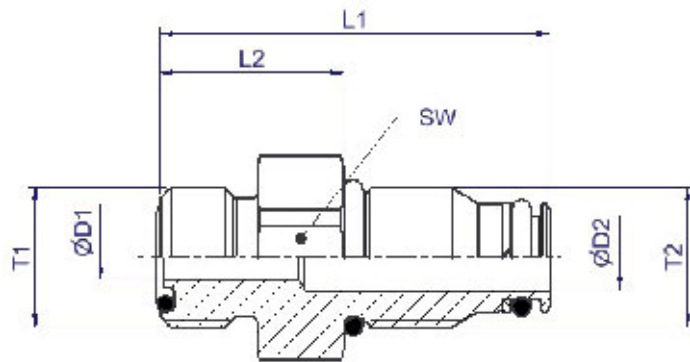
Tube O.D.		Thread UN/UNF-2B T	B mm	C mm	G mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
mm	in.							
6	1/4	9/16-18	17	10.5	15	14	4BMLS	4BMLSS
8, 10	3/8	11/16-16	22	13.5	18	17	6BMLS	6BMLSS
12	1/2	13/16-16	24	16.6	20	29	8BMLS	8BMLSS
14, 15, 16	5/8	1-14	30	21.1	24	46	10BMLS	10BMLSS
18, 20	3/4	1 3/16-12	36	24.2	27	69	12BMLS	12BMLSS
22, 25	1	1 7/16-12	41	29.1	28	109	16BMLS	16BMLSS
28, 30, 32	1 1/4	1 11/16-12	50	36.0	28	126	20BMLS	20BMLSS
35, 38	1 1/2	2-12	60	44.0	28	195	24BMLS	24BMLSS
50	2	2 1/2-12	75	56.0	33	300	32BMLS	32BMLSS

## BL Nut

SAE 520110



Tube O.D.		Thread UN/UNF-2B T	B in.	C mm	G mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
mm	in.							
6	1/4	9/16-18	11/16	10.5	15	16	4 BL-S	4 BL-SS
8, 10	3/8	11/16-16	13/16	13.5	17	24	6 BL-S	6 BL-SS
12	1/2	13/16-16	15/16	16.6	21	37	8 BL-S	8 BL-SS
14, 15, 16	5/8	1-14	1 1/8	22.1	24	52	10 BL-S	10 BL-SS
18, 20	3/4	1 3/16-12	1 3/8	24.1	26	89	12 BL-S	12 BL-SS
22, 25	1	1 7/16-12	1 5/8	29.1	28	119	16 BL-S	16 BL-SS
28, 30, 32	1 1/4	1 11/16-12	1 7/8	36.0	28	132	20 BL-S	20 BL-SS
35, 38	1 1/2	2-12	2 1/4	44.0	28	220	24 BL-S	24 BL-SS
50	2	2 1/2-12	2 7/8	56.0	33	700	32 BL-S	32 BL-SS

**F57OMLO – H2P Male stud connector**


70 MPa / 700 bar system							
Part Number	Thread T1 / UNF	Thread T2 / UNF	SW	L1	L2	D1*	D2*
4F57OMLOSSTI	9/16-18	7/16-20	17	38.2	18.3	4.3	4.3
4F57OMLOSS	9/16-18	7/16-20	17	38.2	18.3	4.3	4.3
4F57OMLOSSCL	9/16-18	7/16-20	17	38.2	18.3	4.3	4.3
4-6F57OMLOSSTI	9/16-18	9/16-18	19	41.0	19.8	4.5	6.7
4-6F57OMLOSS	9/16-18	9/16-18	19	41.0	19.5	4.5	6.7
4-6F57OMLOSSCL	9/16-18	9/16-18	19	41.0	19.5	4.5	6.7
6F57OMLOSSTI	11/16-16	9/16-18	19	41.0	19.5	6.7	6.7
6F57OMLOSS	11/16-16	9/16-18	19	41.0	19.5	6.7	6.7
6F57OMLOSSCL	11/16-16	9/16-18	19	41.0	19.5	6.7	6.7
8F57OMLOSSTI	13/16-16	3/4-16	22	46.3	21.5	9.5	9.5
8F57OMLOSS	13/16-16	3/4-16	22	46.3	21.5	9.5	9.5
8F57OMLOSSCL	13/16-16	3/4-16	22	46.3	21.5	9.5	9.5

All dimensions in millimeters.

Any combination of the sizes listed above is also approved

Part No. for material, for all the fittings.

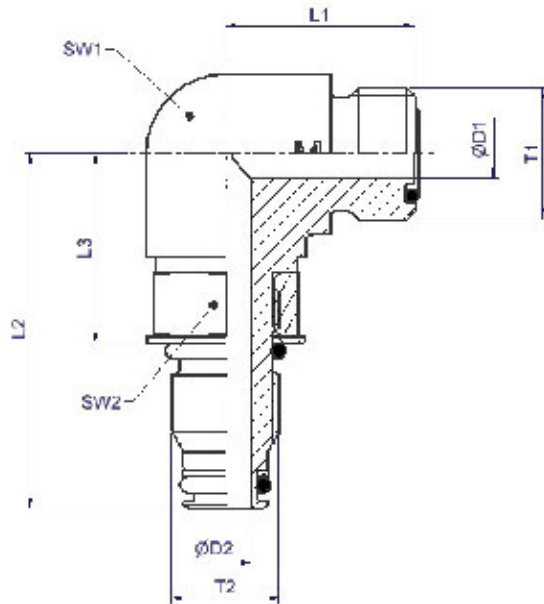
TI-316Ti

SS 316L

CL 304L

\* Manufacturer's option permits a single drill through equal to the smaller of D1 and D2

## C57OMLO – H2P Male stud elbow



70 MPa / 700 bar system

Part Number	Thread T1 / UNF	Thread T2 / UNF	SW 1	SW2	L1	L2	L3	D1*	D2*
4C57OMLOSSTI	9/16-18	7/16-20	14	17	22.0	39.6	22.0	4.5	4.3
4C57OMLOSS	9/16-18	7/16-20	14	17	22.0	39.6	22.0	4.5	4.3
4C57OMLOSSCL	9/16-18	7/16-20	14	17	22.0	39.6	22.0	4.5	4.3
4-6C57OMLOSSTI	9/16-18	9/16-18	19	19	22.0	46.7	25.0	4.5	6.7
4-6C57OMLOSS	9/16-18	9/16-18	19	19	22.0	46.7	25.0	4.5	6.7
4-6C57OMLOSSCL	9/16-18	9/16-18	19	19	22.0	46.7	25.0	4.5	6.7
6C57OMLOSSTI	11/16-16	9/16-18	19	19	25.0	46.7	25.0	6.5	6.7
6C57OMLOSS	11/16-16	9/16-18	19	19	25.0	46.7	25.0	6.5	6.7
6C57OMLOSSCL	11/16-16	9/16-18	19	19	25.0	46.7	25.0	6.5	6.7
8C57OMLOSSTI	13/16-16	3/4-16	27	24	31.0	60.3	35.0	9.5	9.5
8C57OMLOSS	13/16-16	3/4-16	27	24	31.0	60.3	35.0	9.5	9.5
8C57OMLOSSCL	13/16-16	3/4-16	27	24	31.0	60.3	35.0	9.5	9.5

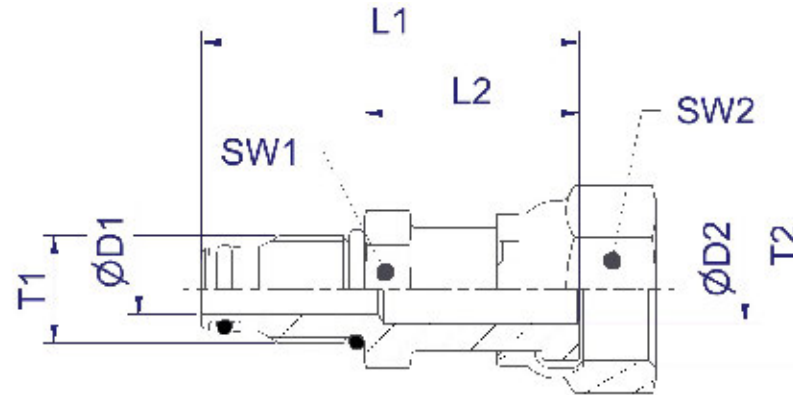
All dimensions in millimeters. Any combination of the sizes listed above is also approved

TI-316Ti

SS 316L

CL 304L

\* Manufacturer's option permits a single drill through equal to the smaller of D1 and D2

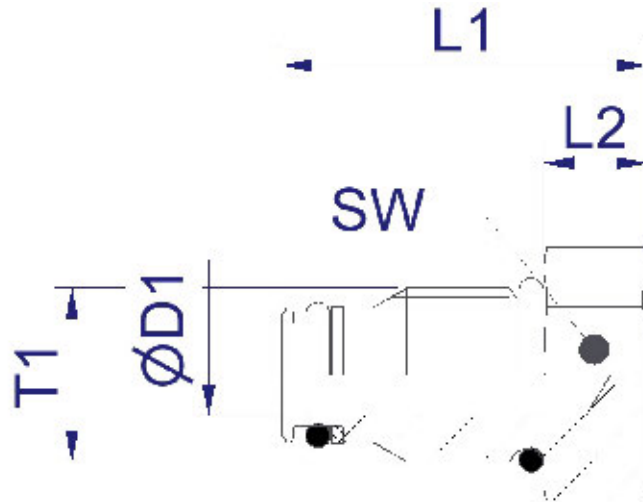
**F67OML – H2P Male stud connector with swivel nut union**


70 MPa / 700 bar system								
Part Number	Thread T1 / UNF	Thread T2 / UNF	SW 1	SW 2	L1	L2	D1*	D2*
4F67OMLSSTI	7/16-20	9/16-18	17	17	42.6	22.7	4.3	4.0
4F67OMLSS	7/16-20	9/16-18	17	17	42.6	22.7	4.3	4.0
4F67OMLSSCL	7/16-20	9/16-18	17	17	42.6	22.7	4.3	4.0
4-6F67OMLSSTI	9/16-18	11/16-16	19	21	48.0	26.5	6.7	4.0
4-6F67OMLSS	9/16-18	11/16-16	19	21	48.0	26.5	6.7	4.0
4-6F67OMLSSCL	9/16-18	11/16-16	19	21	48.0	26.5	6.7	4.0
6F67OMLSSTI	9/16-18	11/16-16	19	21	48.0	26.5	6.7	6.5
6F67OMLSS	9/16-18	11/16-16	19	21	48.0	26.5	6.7	6.5
6F67OMLSSCL	9/16-18	11/16-16	19	21	48.0	26.5	6.7	6.5
8F67OMLSSTI	3/4-16	13/16-16	22	24	56.3	31.4	9.5	9.0
8F67OMLSS	3/4-16	13/16-16	22	24	56.3	31.4	9.5	9.0
8F67OMLSSCL	3/4-16	13/16-16	22	24	56.3	31.4	9.5	9.0

All dimensions in millimeters. Any combination of the sizes listed above is also approved

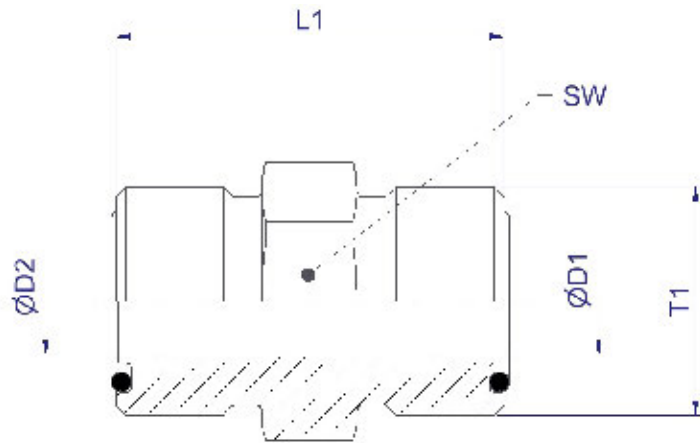
\* Manufacturer's option permits a single drill through equal to the smaller of D1 and D2



**P57ONM – H2P Plug**


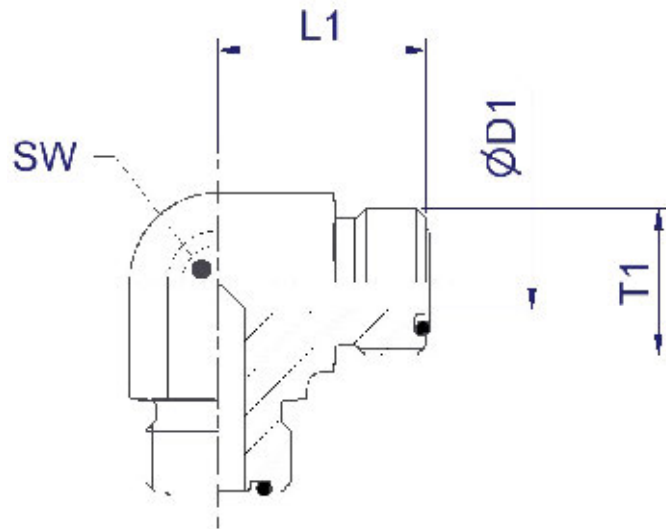
70 MPa / 700 bar system				
Part Number	Thread T1 / UNF	SW 1	L1	L2
4P57ONMSSTI	7/16-20	17	24.9	5.0
4P57ONMSS	7/16-20	17	24.9	5.0
4P57ONMSSCL	7/16-20	17	24.9	5.0
6P57ONMSSTI	9/16-18	19	29.5	8.0
6P57ONMSS	9/16-18	19	29.5	8.0
6P57ONMSSCL	9/16-18	19	29.5	8.0
8P57ONMSSTI	3/4-16	22	33.8	9.0
8P57ONMSS	3/4-16	22	33.8	9.0
8P57ONMSSCL	3/4-16	22	33.8	9.0

All dimensions in millimeters.

**HMLO – Union**


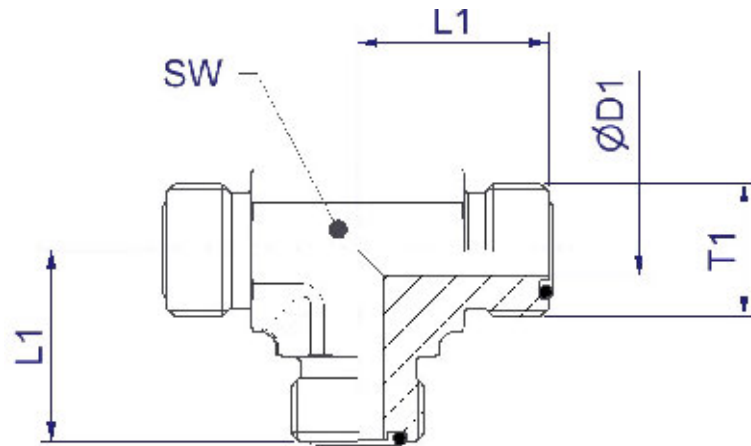
70 MPa / 700 bar system					
Part Number	Thread T1 / UNF	SW	L1	D1*	D2*
4HMLOSSTI	9/16-18	17	27.0	4.5	4.5
4HMLOSS	9/16-18	17	27.0	4.5	4.5
4HMLOSSCL	9/16-18	17	27.0	4.5	4.5
6HMLOSSTI	11/16-16	19	31.0	6.5	6.5
6HMLOSS	11/16-16	19	31.0	6.5	6.5
6HMLOSSCL	11/16-16	19	31.0	6.5	6.5
8HMLOSSTI	13/16-16	22	35.0	9.5	9.5
8HMLOSS	13/16-16	22	35.0	9.5	9.5
8HMLOSSCL	13/16-16	22	35.0	9.5	9.5

All dimensions in millimeters.

**EMLO – Union Elbow**


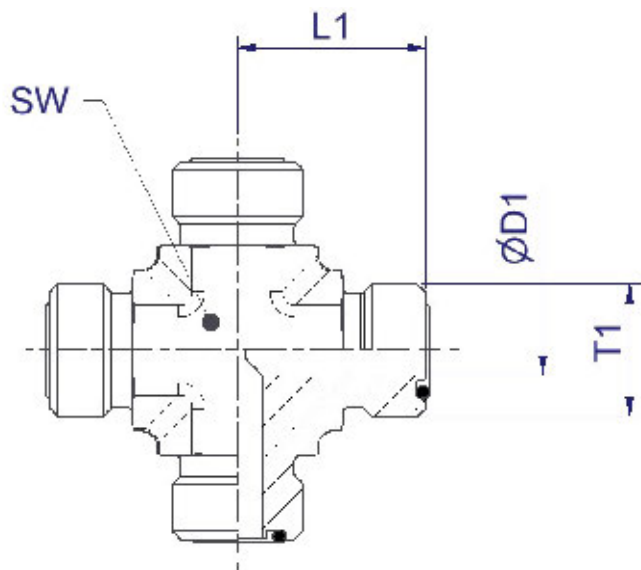
70 MPa / 700 bar system				
Part Number	Thread T1 / UNF	SW	L1	D1
4EMLOSSTI	9/16-18	14	22.0	4.5
4EMLOSS	9/16-18	14	22.0	4.5
4EMLOSSCL	9/16-18	14	22.0	4.5
6EMLOSSTI	11/16-16	19	25.0	6.5
6EMLOSS	11/16-16	19	25.0	6.5
6EMLOSSCL	11/16-16	19	25.0	6.5
8EMLOSSTI	13/16-16	19	28.0	9.5
8EMLOSS	13/16-16	19	28.0	9.5
8EMLOSSCL	13/16-16	19	28.0	9.5

All dimensions in millimeters. Any combination

**JMLO – Union tee**


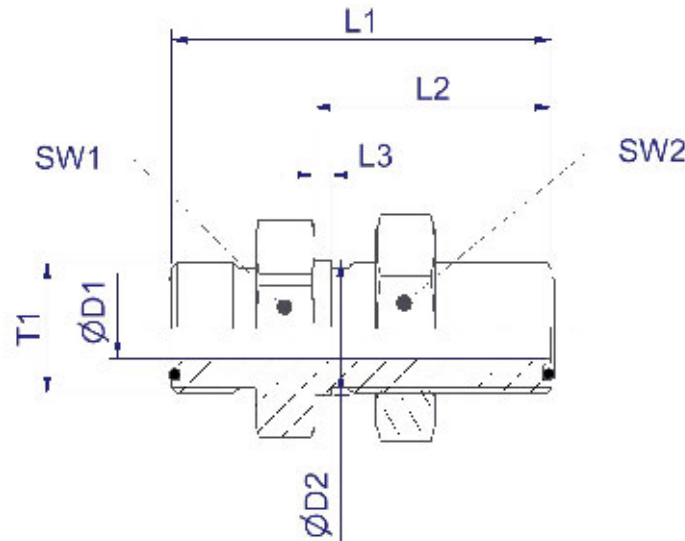
70 MPa / 700 bar system				
Part Number	Thread T1 / UNF	SW	L1	D1
4JMLOSSTI	9/16-18	14	22.0	4.5
4JMLOSS	9/16-18	14	22.0	4.5
4JMLOSSCL	9/16-18	14	22.0	4.5
6JMLOSSTI	11/16-16	19	25.0	6.5
6JMLOSS	11/16-16	19	25.0	6.5
6JMLOSSCL	11/16-16	19	25.0	6.5
8JMLOSSTI	13/16-16	19	28.0	9.5
8JMLOSS	13/16-16	19	28.0	9.5
8JMLOSSCL	13/16-16	19	28.0	9.5

All dimensions in millimeters.

**KMLO – Union cross**


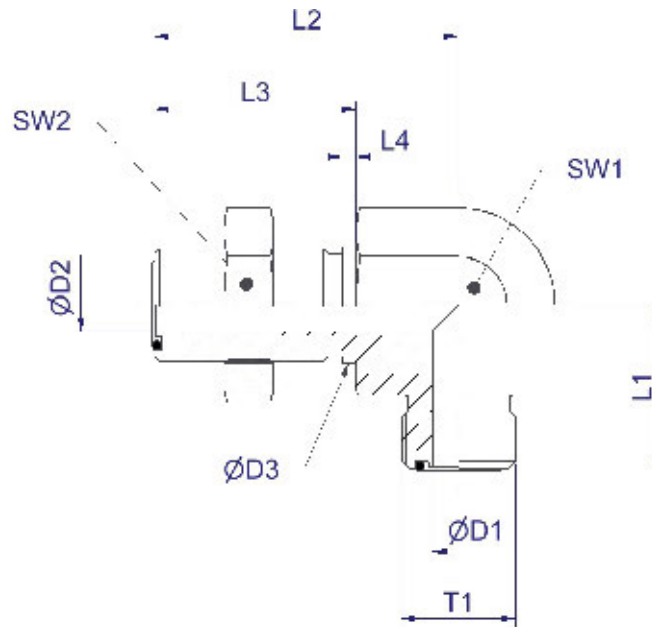
70 MPa / 700 bar system				
Part Number	Thread T1 / UNF	SW	L1	D1
4KMLOSSTI	9/16-18	14	22.0	4.5
4KMLOSS	9/16-18	14	22.0	4.5
4KMLOSSCL	9/16-18	14	22.0	4.5
6KMLOSSTI	11/16-16	19	25.0	6.5
6KMLOSS	11/16-16	19	25.0	6.5
6KMLOSSCL	11/16-16	19	25.0	6.5
8KMLOSSTI	13/16-16	19	28.0	9.5
8KMLOSS	13/16-16	19	28.0	9.5
8KMLOSSCL	13/16-16	19	28.0	9.5

All dimensions in millimeters.

**WMLO – Bulkhead union with locknut**


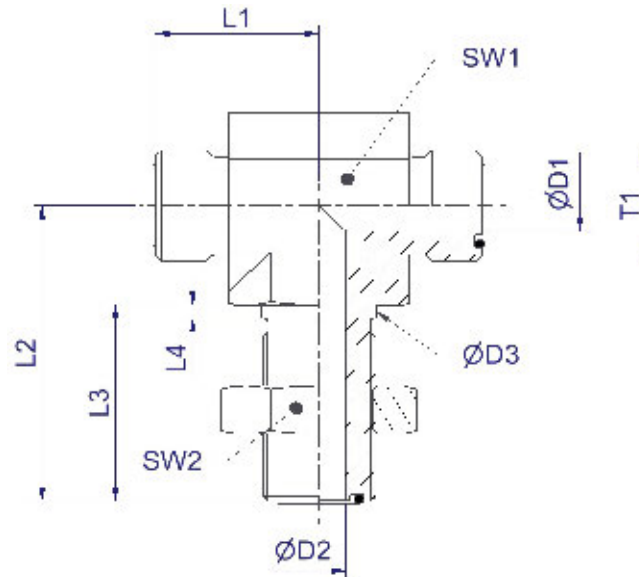
70 MPa / 700 bar system								
Part Number	Thread T1 / UNF	SW1	SW2	L1	L2	L3	D1	D2
4WMLOWLNMLSSTI	9/16-18	22	22	48.0	32.0	2.0	4.5	14.5
4WMLOWLNMLSS	9/16-18	22	22	48.0	32.0	2.0	4.5	14.5
4WMLOWLNMLSSCL	9/16-18	22	22	48.0	32.0	2.0	4.5	14.5
6WMLOWLNMLSSTI	11/16-16	27	27	53.0	34.0	2.0	6.5	17.5
6WMLOWLNMLSS	11/16-16	27	27	53.0	34.0	2.0	6.5	17.5
6WMLOWLNMLSSCL	11/16-16	27	27	53.0	34.0	2.0	6.5	17.5
8WMLOWLNMLSSTI	13/16-16	30	30	58.0	37.0	3.0	9.5	20.5
8WMLOWLNMLSS	13/16-16	30	30	58.0	37.0	3.0	9.5	20.5
8WMLOWLNMLSSCL	13/16-16	30	30	58.0	37.0	3.0	9.5	20.5

All dimensions in millimeters.

**WEMLO – Bulkhead union elbow with locknut**


70 MPa / 700 bar system									
Part Number	Thread T1 / UNF	SW1	SW2	L1	L2	L3	L4	D1	D2
4WEMLOWLNMLSSTI	9/16-18	14	22	23.0	46.0	32.0	2.0	4.5	4.5
4WEMLOWLNMLSS	9/16-18	14	22	23.0	46.0	32.0	2.0	4.5	4.5
4WEMLOWLNMLSSCL	9/16-18	14	22	23.0	46.0	32.0	2.0	4.5	4.5
6WEMLOWLNMLSSTI	11/16-16	19	27	26.0	52.0	34.0	2.0	6.5	6.5
6WEMLOWLNMLSS	11/16-16	19	27	26.0	52.0	34.0	2.0	6.5	6.5
6WEMLOWLNMLSSCL	11/16-16	19	27	26.0	52.0	34.0	2.0	6.5	6.5
8WEMLOWLNMLSSTI	13/16-16	19	30	29.0	56.0	37.0	3.0	9.5	9.5
8WEMLOWLNMLSS	13/16-16	19	30	29.0	56.0	37.0	3.0	9.5	9.5
8WEMLOWLNMLSSCL	13/16-16	19	30	29.0	56.0	37.0	3.0	9.5	9.5

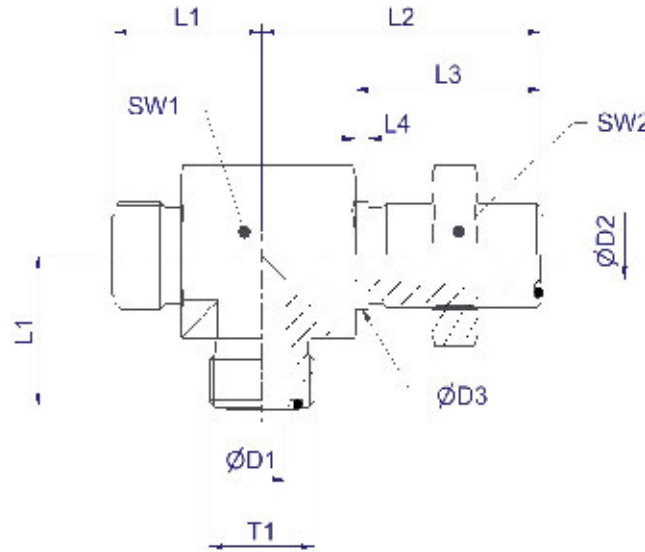
All dimensions in millimeters.

**WJMLO – Bulkhead branch tee with locknut**


70 MPa / 700 bar system									
Part Number	Thread T1 / UNF	SW1	SW2	L1	L2	L3	L4	D1	D2
4WJMLOWLNMLSSTI	9/16-18	14	22	23.0	47.0	32.0	2.0	4.5	4.5
4WJMLOWLNMLSS	9/16-18	14	22	23.0	47.0	32.0	2.0	4.5	4.5
4WJMLOWLNMLSSCL	9/16-18	14	22	23.0	47.0	32.0	2.0	4.5	4.5
6WJMLOWLNMLSSTI	11/16-16	19	27	26.0	52.0	34.0	2.0	6.5	6.5
6WJMLOWLNMLSS	11/16-16	19	27	26.0	52.0	34.0	2.0	6.5	6.5
6WJMLOWLNMLSSCL	11/16-16	19	27	26.0	52.0	34.0	2.0	6.5	6.5
8WJMLOWLNMLSSTI	13/16-16	19	30	29.0	55.0	37.0	2.0	9.5	9.5
8WJMLOWLNMLSS	13/16-16	19	30	29.0	55.0	37.0	2.0	9.5	9.5
8WJMLOWLNMLSSCL	13/16-16	19	30	29.0	55.0	37.0	2.0	9.5	9.5

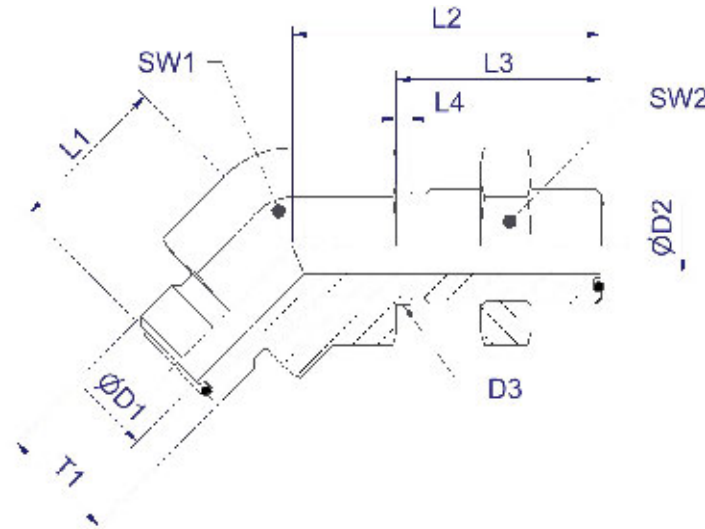
All dimensions in millimeters.



**WJJMLO – Bulkhead run tee with locknut**


70 MPa / 700 bar system									
Part Number	Thread T1 / UNF	SW1	SW2	L1	L2	L3	L4	D1	D2
4WJJMLOWLNMLSSTI	9/16-18	14	22	23.0	46.0	32.0	2.0	4.5	4.5
4WJJMLOWLNMLSS	9/16-18	14	22	23.0	46.0	32.0	2.0	4.5	4.5
4WJJMLOWLNMLSSCL	9/16-18	14	22	23.0	46.0	32.0	2.0	4.5	4.5
6WJJMLOWLNMLSSTI	11/16-16	19	27	26.0	52.0	34.0	2.0	6.5	6.5
6WJJMLOWLNMLSS	11/16-16	19	27	26.0	52.0	34.0	2.0	6.5	6.5
6WJJMLOWLNMLSSCL	11/16-16	19	27	26.0	52.0	34.0	2.0	6.5	6.5
8WJJMLOWLNMLSSTI	13/16-16	19	30	29.0	55.0	36.0	2.0	9.5	9.5
8WJJMLOWLNMLSS	13/16-16	19	30	29.0	55.0	36.0	2.0	9.5	9.5
8WJJMLOWLNMLSSCL	13/16-16	19	30	29.0	55.0	36.0	2.0	9.5	9.5

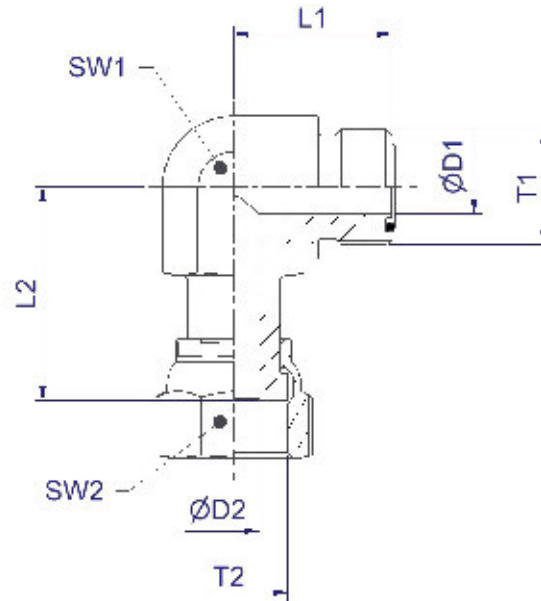
All dimensions in millimeters.

**WNMLO – Bulkhead union 45° elbow with locknut**


70 MPa / 700 bar system

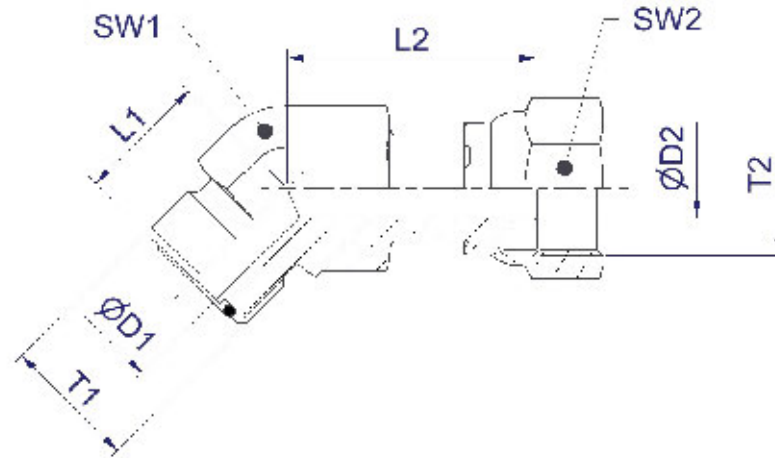
Part Number	Thread T1 / UNF	SW1	SW2	L1	L2	L3	L4	D1	D2
4WNMLOWLNMLSSTI	9/16-18	14	22	16.0	44.0	32.0	2.0	4.5	4.5
4WNMLOWLNMLSS	9/16-18	14	22	16.0	44.0	32.0	2.0	4.5	4.5
4WNMLOWLNMLSSCL	9/16-18	14	22	16.0	44.0	32.0	2.0	4.5	4.5
6WNMLOWLNMLSSTI	11/16-16	19	27	19.0	49.0	34.0	2.0	6.5	6.5
6WNMLOWLNMLSS	11/16-16	19	27	19.0	49.0	34.0	2.0	6.5	6.5
6WNMLOWLNMLSSCL	11/16-16	19	27	19.0	49.0	34.0	2.0	6.5	6.5
8WNMLOWLNMLSSTI	13/16-16	19	30	20.0	51.0	37.0	2.0	9.5	9.5
8WNMLOWLNMLSS	13/16-16	19	30	20.0	51.0	37.0	2.0	9.5	9.5
8WNMLOWLNMLSSCL	13/16-16	19	30	20.0	51.0	37.0	2.0	9.5	9.5

All dimensions in millimeters.

**C6MLO – Swivel nut elbow**


70 MPa / 700 bar system								
Part Number	Thread T1 / UNF	Thread T2 / UNF	SW1	SW2	L1	L2	D1	D2
4C6MLOSSTI	9/16-18	9/16-18	14	17	22.0	26.0	4.5	4.0
4C6MLOSS	9/16-18	9/16-18	14	17	22.0	26.0	4.5	4.0
4C6MLOSSCL	9/16-18	9/16-18	14	17	22.0	26.0	4.5	4.0
6C6MLOSSTI	11/16-16	11/16-16	19	22	25.0	29.0	6.5	6.5
6C6MLOSS	11/16-16	11/16-16	19	22	25.0	29.0	6.5	6.5
6C6MLOSSCL	11/16-16	11/16-16	19	22	25.0	29.0	6.5	6.5
8C6MLOSSTI	13/16-16	13/16-16	19	24	28.0	38.0	9.5	9.0
8C6MLOSS	13/16-16	13/16-16	19	24	28.0	38.0	9.5	9.0
8C6MLOSSCL	13/16-16	13/16-16	19	24	28.0	38.0	9.5	9.0

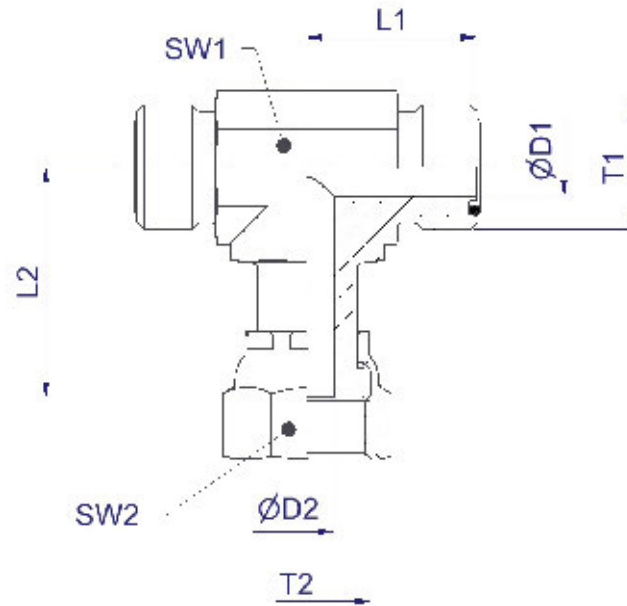
All dimensions in millimeters.

**V6MLO – 45° Swivel nut elbow**


70 MPa / 700 bar system								
Part Number	Thread T1 / UNF	Thread T2 / UNF	SW1	SW2	L1	L2	D1	D2
4V6MLOSSTI	9/16-18	9/16-18	14	17	16.0	25.0	4.5	4.0
4V6MLOSS	9/16-18	9/16-18	14	17	16.0	25.0	4.5	4.0
4V6MLOSSCL	9/16-18	9/16-18	14	17	16.0	25.0	4.5	4.0
6V6MLOSSTI	11/16-16	11/16-16	19	21	19.0	28.0	6.5	6.5
6V6MLOSS	11/16-16	11/16-16	19	21	19.0	28.0	6.5	6.5
6V6MLOSSCL	11/16-16	11/16-16	19	21	19.0	28.0	6.5	6.5
8V6MLOSSTI	13/16-16	13/16-16	19	24	20.0	38.0	9.5	9.0
8V6MLOSS	13/16-16	13/16-16	19	24	20.0	38.0	9.5	9.0
8V6MLOSSCL	13/16-16	13/16-16	19	24	20.0	38.0	9.5	9.0

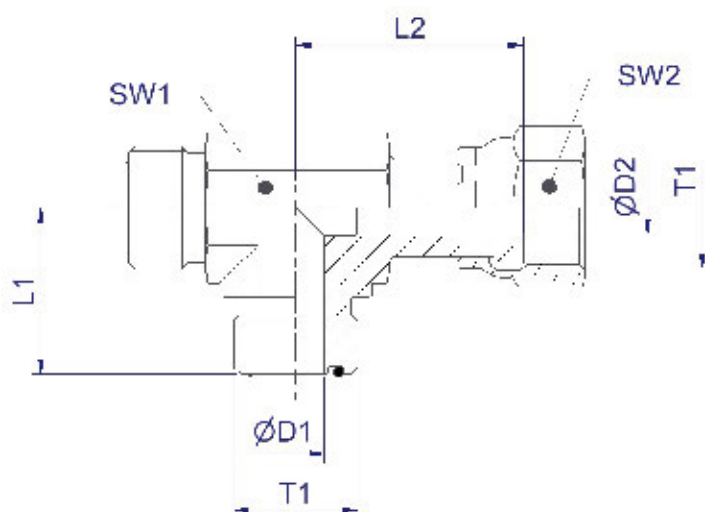
All dimensions in millimeters.

## S6MLO – Swivel nut branch tee



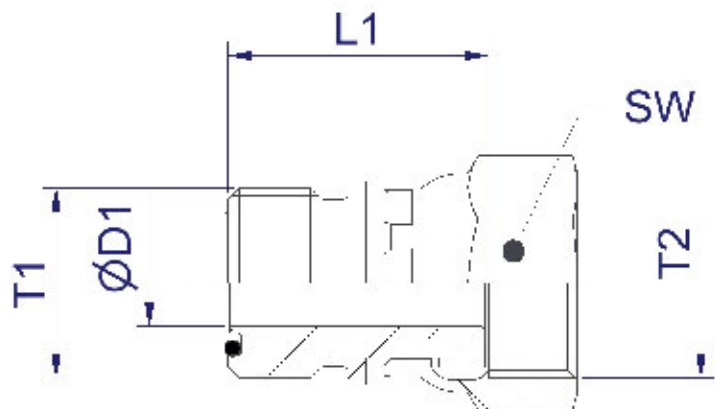
70 MPa / 700 bar system								
Part Number	Thread T1 / UNF	Thread T2 / UNF	SW1	SW2	L1	L2	D1	D2
4S6MLOSSTI	9/16-18	9/16-18	14	17	22.0	26.0	4.5	4.0
4S6MLOSS	9/16-18	9/16-18	14	17	22.0	26.0	4.5	4.0
4S6MLOSSCL	9/16-18	9/16-18	14	17	22.0	26.0	4.5	4.0
6S6MLOSSTI	11/16-16	11/16-16	19	22	25.0	29.0	6.5	6.5
6S6MLOSS	11/16-16	11/16-16	19	22	25.0	29.0	6.5	6.5
6S6MLOSSCL	11/16-16	11/16-16	19	22	25.0	29.0	6.5	6.5
8S6MLOSSTI	13/16-16	13/16-16	19	24	28.0	38.0	9.5	9.0
8S6MLOSS	13/16-16	13/16-16	19	24	28.0	38.0	9.5	9.0
8S6MLOSSCL	13/16-16	13/16-16	19	24	28.0	38.0	9.5	9.0

All dimensions in millimeters.

**R6MLO – Swivel nut run tee**


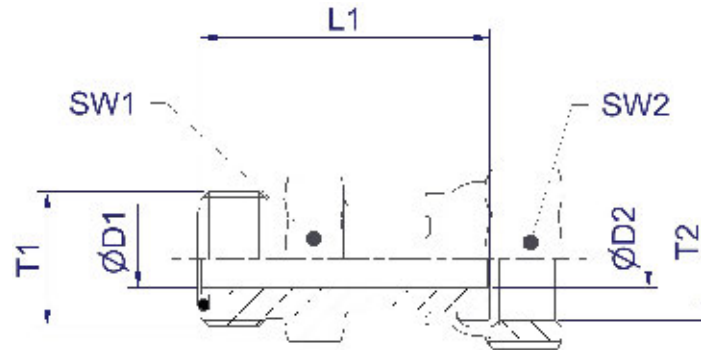
70 MPa / 700 bar system							
Part Number	Thread T1 / UNF	SW1	SW2	L1	L2	D1	D2
4R6MLOSSTI	9/16-18	14	17	22.0	26.0	4.5	4.0
4R6MLOSS	9/16-18	14	17	22.0	26.0	4.5	4.0
4R6MLOSSCL	9/16-18	14	17	22.0	26.0	4.5	4.0
6R6MLOSSTI	11/16-16	19	22	25.0	29.0	6.5	6.5
6R6MLOSS	11/16-16	19	22	25.0	29.0	6.5	6.5
6R6MLOSSCL	11/16-16	19	22	25.0	29.0	6.5	6.5
8R6MLOSSTI	13/16-16	19	24	28.0	38.0	9.5	9.0
8R6MLOSS	13/16-16	19	24	28.0	38.0	9.5	9.0
8R6MLOSSCL	13/16-16	19	24	28.0	38.0	9.5	9.0

All dimensions in millimeters.

**TRMLO – Tube end reducer**


70 MPa / 700 bar system					
Part Number	Thread T1 / UNF	Thread T2 / UNF	SW1	L1	D1
6-4TRMLOSSTI	9/16-18	11/16-16	22	20.0	4.5
6-4TRMLOSS	9/16-18	11/16-16	22	20.0	4.5
6-4TRMLOSSCL	9/16-18	11/16-16	22	20.0	4.5
8-4TRMLOSSTI	9/16-18	13/16-16	24	22.0	4.5
8-4TRMLOSS	9/16-18	13/16-16	24	22.0	4.5
8-4TRMLOSSCL	9/16-18	13/16-16	24	22.0	4.5
8-6TRMLOSSTI	11/16-16	13/16-16	24	22.0	6.5
8-6TRMLOSS	11/16-16	13/16-16	24	22.0	6.5
8-6TRMLOSSCL	11/16-16	13/16-16	24	22.0	6.5

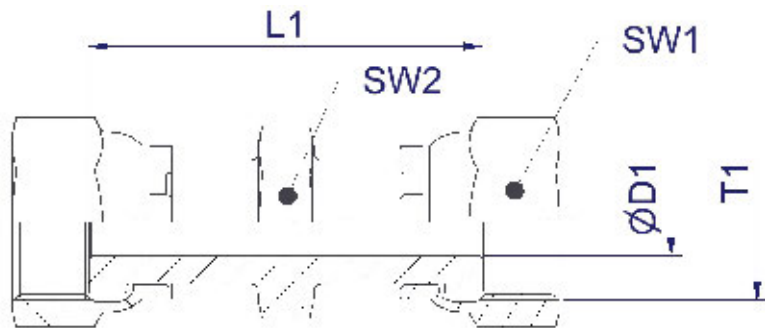
All dimensions in millimeters.

**LOHML60 – Tub end expander**


70 MPa / 700 bar system							
Part Number	Thread T1 / UNF	Thread T2 / UNF	SW1	SW2	L1	D1*	D2*
4LOHML6OSSTI	9/16-18	9/16-18	17	17	35.0	4.5	4.0
4LOHML6OSS	9/16-18	9/16-18	17	17	35.0	4.5	4.0
4LOHML6OSSCL	9/16-18	9/16-18	17	17	35.0	4.5	4.0
6-4LOHML6OTI	11/16-16	9/16-18	19	17	35.0	6.5	4.0
6-4LOHML6OSS	11/16-16	9/16-18	19	17	35.0	6.5	4.0
6-4LOHML6OSSCL	11/16-16	9/16-18	19	17	35.0	6.5	4.0
6LOHML6OSSTI	11/16-16	11/16-16	19	22	35.0	6.5	6.5
6LOHML6OSS	11/16-16	11/16-16	19	22	35.0	6.5	6.5
6LOHML6OSSCL	11/16-16	11/16-16	19	22	35.0	6.5	6.5
8LOHML6OSSTI	13/16-16	13/16-16	22	24	39.0	9.5	9.0
8LOHML6OSS	13/16-16	13/16-16	22	24	39.0	9.5	9.0
8LOHML6OSSCL	13/16-16	13/16-16	22	24	39.0	9.5	9.0

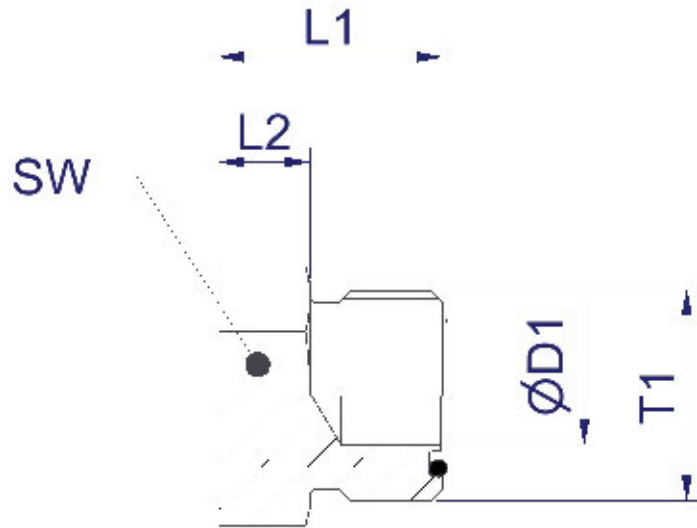
All dimensions in millimeters.



**HML6 – Swivel nut union**


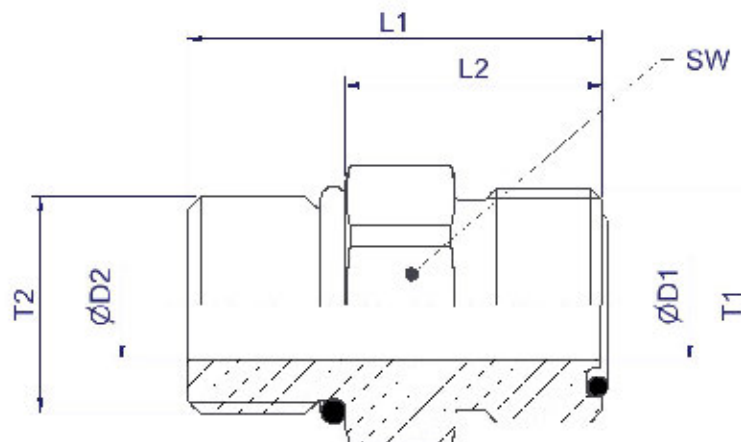
70 MPa / 700 bar system					
Part Number	Thread T1 / UNF	SW1	SW2	L1	D1
4HML6SSTI	9/16-18	17	17	40.4	4.0
4HML6SS	9/16-18	17	17	40.4	4.0
4HML6SSCL	9/16-18	17	17	40.4	4.0
6HML6SSTI	11/16-16	21	19	45.0	6.5
6HML6SS	11/16-16	21	19	45.0	6.5
6HML6SSCL	11/16-16	21	19	45.0	6.5
8HML6SSTI	13/16-16	24	22	53.8	9.0
8HML6SS	13/16-16	24	22	53.8	9.0
8HML6SSCL	13/16-16	24	22	53.8	9.0

All dimensions in millimeters.

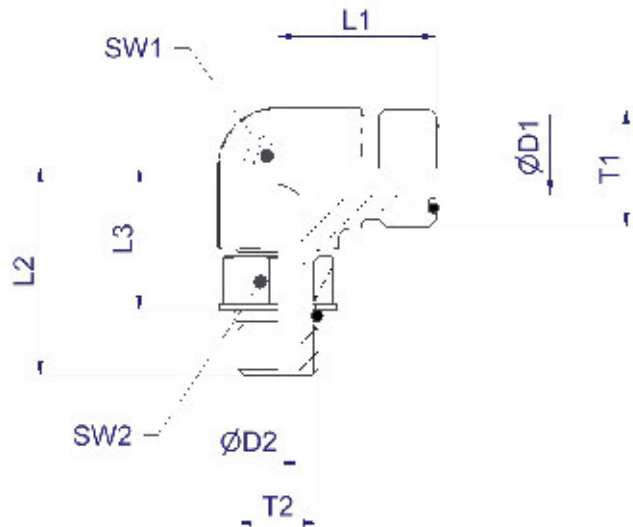
**PNMLO – Plug**


70 MPa / 700 bar system				
Part Number	Thread T1 / UNF	L1	L2	D1
4PNMLOSSTI	9/16-18	17.0	5.0	4.5
4PNMLOSS	9/16-18	17.0	5.0	4.5
4PNMLOSSCL	9/16-18	17.0	5.0	4.5
6PNMLOSSTI	11/16-16	19.0	8.0	6.5
6PNMLOSS	11/16-16	19.0	8.0	6.5
6PNMLOSSCL	11/16-16	19.0	8.0	6.5
8PNMLOSSTI	13/16-16	22.0	9.0	9.5
8PNMLOSS	13/16-16	22.0	9.0	9.5
8PNMLOSSCL	13/16-16	22.0	9.0	9.5

All dimensions in millimeters.

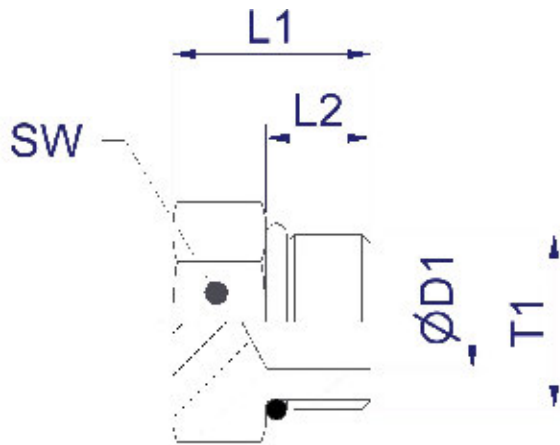
**F50MLO – Male stud connector**


35 MPa / 350 bar system							
Part Number	Thread T1 / UNF	Thread T2 / UNF	SW	L1	L2	D1*	D2*
4F50MLOSSTI	9/16-18	7/16-20	17	29.0	18.0	4.5	4.5
4F50MLOLSS	9/16-18	7/16-20	17	29.0	18.0	4.5	4.5
4F50MLOSSCL	9/16-18	7/16-20	17	29.0	18.0	4.5	4.5
4-6F50MLOSSTI	9/16-18	9/16-18	19	31.0	19.0	4.5	6.5
4-6F50MLOSS	9/16-18	9/16-18	19	31.0	19.0	4.5	6.5
4-6F50MLOSSCL	9/16-18	9/16-18	19	31.0	19.0	4.5	6.5
6F50MLOSSTI	11/16-16	9/16-18	19	32.0	20.0	6.5	6.5
6F50MLOSS	11/16-16	9/16-18	19	32.0	20.0	6.5	6.5
6F50MLOSSCL	11/16-16	9/16-18	19	32.0	20.0	6.5	6.5
8F50MLOSSTI	13/16-16	3/4-16	22	37.0	23.0	9.5	9.5
8F50MLOSS	13/16-16	3/4-16	22	37.0	23.0	9.5	9.5
8F50MLOSSCL	13/16-16	3/4-16	22	37.0	23.0	9.5	9.5

**C5OMLO – Male stud elbow**


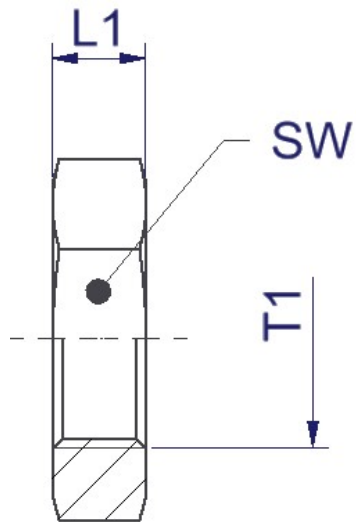
35 MPa / 350 bar system									
Part Number	Thread T1 / UNF	Thread T2 / UNF	SW 1	SW2	L1	L2	L3	D1	D2
4C5OMLOSSTI	9/16-18	7/16-20	14	16	22.0	33.0	22.0	4.5	4.5
4C5OMLOSS	9/16-18	7/16-20	14	16	22.0	33.0	22.0	4.5	4.5
4C5OMLOSSCL	9/16-18	7/16-20	14	16	22.0	33.0	22.0	4.5	4.5
4-6C5OMLOSSTI	9/16-18	9/16-18	19	19	24.0	37.0	25.0	4.5	7.5
4-6C5OMLOSS	9/16-18	9/16-18	19	19	24.0	37.0	25.0	4.5	7.5
4-6C5OMLOSSCL	9/16-18	9/16-18	19	19	24.0	37.0	25.0	4.5	7.5
6C5OMLOSSTI	11/16-16	9/16-18	19	19	25.0	37.0	25.0	6.5	7.5
6C5OMLOSS	11/16-16	9/16-18	19	19	25.0	37.0	25.0	6.5	7.5
6C5OMLOSSCL	11/16-16	9/16-18	19	19	25.0	37.0	25.0	6.5	7.5
8C5OMLOSSTI	13/16-16	3/4-16	19	24	28.0	41.0	27.0	9.5	10.0
8C5OMLOSS	13/16-16	3/4-16	19	24	28.0	41.0	27.0	9.5	10.0
8C5OMLOSSCL	13/16-16	3/4-16	19	24	28.0	41.0	27.0	9.5	10.0

All dimensions in millimeters.

**P50NM – Plug**


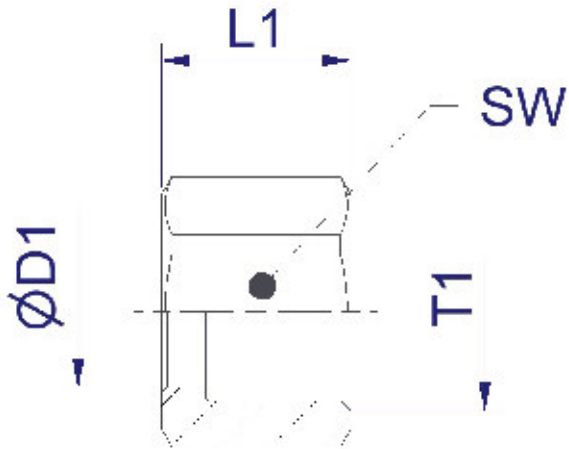
3 MPa / 30 bar system				
Part Number	Thread T1 / UNF	L1	L2	D1
4P50NMSSTI	7/16-20	16.0	11.0	4.5
4P50NMSS	7/16-20	16.0	11.0	4.5
4P50NMSSCL	7/16-20	16.0	11.0	4.5
6P50NMSSTI	9/16-18	20.0	12.0	7.5
6P50NMSS	9/16-18	20.0	12.0	7.5
6P50NMSSCL	9/16-18	20.0	12.0	7.5
8P50NMSSTI	3/4-16	33.0	14.0	10.0
8P50NMSS	3/4-16	33.0	14.0	10.0
8P50NMSSCL	3/4-16	33.0	14.0	10.0

All dimensions in millimeters.

**WLNML – Bulkhead locknut**


70 MPa / 700 bar system			
Part Number	Thread T1 / UNF	SW	L1
4WLNMLSSTI	9/16-18	22	7.0
4WLNMLSS	9/16-18	22	7.0
4WLNMLSSCL	9/16-18	22	7.0
6WLNMLSSTI	11/16-16	27	8.0
6WLNMLSS	11/16-16	27	8.0
6WLNMLSSCL	11/16-16	27	8.0
8WLNMLSSTI	13/16-16	30	9.0
8WLNMLSS	13/16-16	30	9.0
8WLNMLSSCL	13/16-16	30	9.0

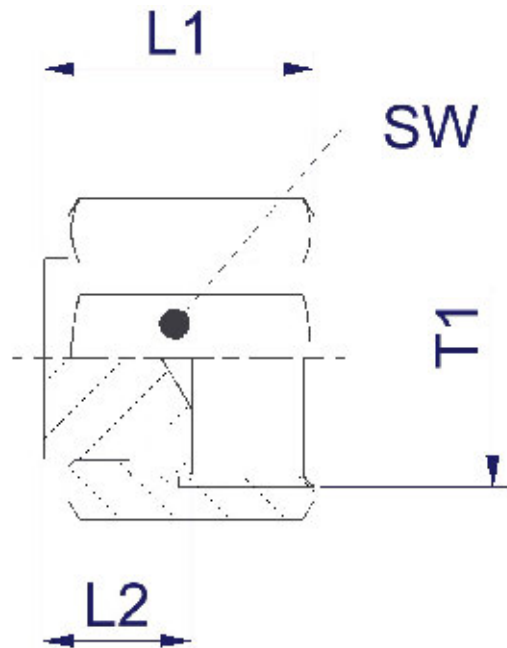
All dimensions in millimeters.

**BML – Nut**


70 MPa / 700 bar system				
Part Number	Thread T1 / UNF	SW	L1	D1
4BMLSSTI	9/16-18	17	15.0	10.5
4BMLSS	9/16-18	17	15.0	10.5
4BMLSSCL	9/16-18	17	15.0	10.5
6BMLSSTI	11/16-16	22	17.5	13.5
6BMLSS	11/16-16	22	17.5	13.5
6BMLSSCL	11/16-16	22	17.5	13.5
8BMLSSTI	13/16-16	24	20.0	16.5
8BMLSS	13/16-16	24	20.0	16.5
8BMLSSCL	13/16-16	24	20.0	16.5

All dimensions in millimeters.

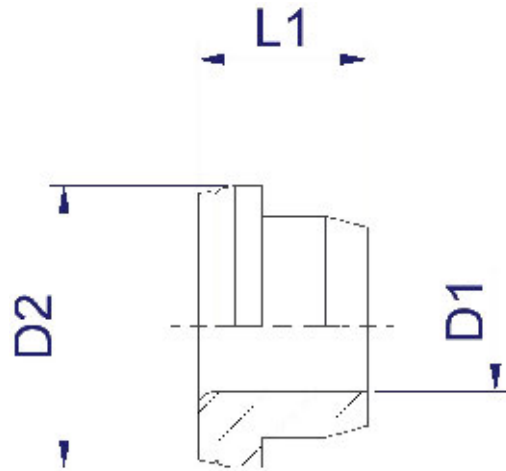
FNML – Cap



70 MPa / 700 bar system				
Part Number	Thread T1 / UNF	SW	L1	L2
4FNMLSSTI	9/16-18	17	17.0	9.0
4FNMLSS	9/16-18	17	17.0	9.0
4FNMLSSCL	9/16-18	17	17.0	9.0
6FNMLSSTI	11/16-16	22	18.0	11.0
6FNMLSS	11/16-16	22	18.0	11.0
6FNMLSSCL	11/16-16	22	18.0	11.0
8FNMLSSTI	13/16-16	24	22.0	12.0
8FNMLSS	13/16-16	24	22.0	12.0
8FNMLSSCL	13/16-16	24	22.0	12.0

All dimensions in millimeters.

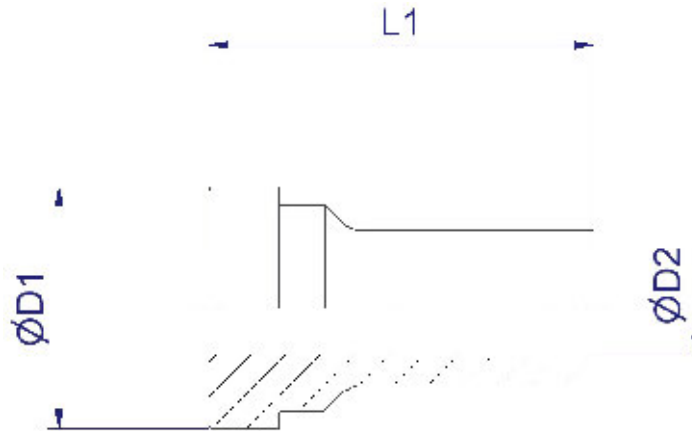


**TPL – Sleeve inch and metric tubing**


70 MPa / 700 bar system							
Inch tube				Metric tube			
Part Number	L1	D1	D2	Part Number	L1	D1	D2
4 TPL-SS	8,0	1/4	13,0	TPLSS6	7,5	6,0	13,0
6 TPL-SS	9,0	3/8	16,0	TPLSS8	8,5	8,0	16,0
8 TPL-SS	11,0	1/2	19,0	TPLSS10	8,5	10,0	16,0
				TPLSS10-12	10,5	10,0	19,0
				TPLSS12	11,0	12,0	19,0

All dimensions in millimeters; D1 also inch

## TLW – Weld nipple



70 MPa / 700 bar system \*

Inch tube								Metric tube							
Part Number	L1	D1	D2	Part Number	L1	D1	D2	Part Number	L1	D1	D2	Part Number	L1	D1	D2
4-4X049TLW1SSTI	20.0	12.7	3.8	8-8X065TLW1SSCL	21.0	19.0	9.4	4-6X10TLWWM1SSTI	20.0	12.7	4.0	6-10X15TLWWM1SSCL	21.0	16.0	7.0
4-4X049TLW1SS	20.0	12.7	3.8	8-8X083TLW1SSTI	21.0	19.0	8.5	4-6X10TLWWM1SS	20.0	12.7	4.0	6-10X20TLWWM1SSTI	21.0	16.0	6.0
4-4X049TLW1SSCL	20.0	12.7	3.8	8-8X083TLW1SS	21.0	19.0	8.5	4-6X10TLWWM1SSCL	20.0	12.7	4.0	6-10X20TLWWM1SS	21.0	16.0	6.0
4-4X065TLW1SSTI	20.0	12.7	3.0	8-8X083TLW1SSCL	21.0	19.0	8.5	4-6X15TLWWM1SSTI	20.0	12.7	3.0	6-10X20TLWWM1SSCL	21.0	16.0	6.0
4-4X065TLW1SS	20.0	12.7	3.0	8-8X095TLW1SSTI	21.0	19.0	7.9	4-6X15TLWWM1SS	20.0	12.7	3.0	6-10X25TLWWM1SSTI	21.0	16.0	5.0
4-4X065TLW1SSCL	20.0	12.7	3.0	8-8X095TLW1SS	21.0	19.0	7.9	4-6X15TLWWM1SSCL	20.0	12.7	3.0	6-10X25TLWWM1SS	21.0	16.0	5.0
6-6X065TLW1SSTI	21.0	16.0	6.2	8-8X095TLW1SSCL	21.0	19.0	7.9	6-8X15TLWWM1SSTI	20.0	12.7	5.0	6-10X25TLWWM1SSCL	21.0	16.0	5.0
6-6X065TLW1SS	21.0	16.0	6.2					6-8X15TLWWM1SS	20.0	12.7	5.0	8-12X15TLWWM1SSTI	21.0	19.0	9.0
6-6X065TLW1SSCL	21.0	16.0	6.2					6-8X15TLWWM1SSCL	20.0	12.7	5.0	8-12X15TLWWM1SS	21.0	19.0	9.0
6-6X083TLW1SSTI	21.0	16.0	5.3					6-8X20TLWWM1SSTI	20.0	12.7	4.0	8-12X15TLWWM1SSCL	21.0	19.0	9.0
6-6X083TLW1SS	21.0	16.0	5.3					6-8X20TLWWM1SS	20.0	12.7	4.0	8-12X20TLWWM1SSTI	21.0	19.0	8.0
6-6X083TLW1SSCL	21.0	16.0	5.3					6-8X20TLWWM1SSCL	20.0	12.7	4.0	8-12X20TLWWM1SS	21.0	19.0	8.0
6-6X095TLW1SSTI	21.0	16.0	4.7					6-8X25TLWWM1SSTI	20.0	12.7	3.0	8-12X20TLWWM1SSCL	21.0	19.0	8.0
6-6X095TLW1SS	21.0	16.0	4.7					6-8X25TLWWM1SS	20.0	12.7	3.0	8-12X25TLWWM1SSTI	21.0	19.0	7.0
6-6X095TLW1SSCL	21.0	16.0	4.7					6-8X25TLWWM1SSCL	20.0	12.7	3.0	8-12X25TLWWM1SS	21.0	19.0	7.0
8-8X065TLW1SSTI	21.0	19.0	9.4					6-10X15TLWWM1SSTI	21.0	16.0	7.0	8-12X25TLWWM1SSCL	21.0	19.0	7.0
8-8X065TLW1SS	21.0	19.0	9.4					6-10X15TLWWM1SS	21.0	16.0	7.0				

All dimensions in millimeters.

\* Berst pressure limited by tube wall thickness

## Seamless stainless steel tubes | Material 316/316L (1.4404)

Material 316L (1.4404)		Outer-Ø (mm)	Outer Tolerance (mm)	Wall thickness (mm)	Design pressure DIN 2413 I static PN bar	Design pressure DIN 2413 III dynamic PN (bar)	Burst pressure (bar)	Weight kg/m
Surface								
pickled	bright annealed							
4X1SS	4X1SSBA	04	±0.08	1	735	539	2961	0.075
6X1SS	6X1SSBA	06	±0.08	1	490	383	1832	0.125
6X1.5SS	6X1.5SSBA	06		1.5	735	539	2961	0.169
8X1SS	8X1SSBA	08	±0.08	1	368	297	1229	0.175
10X1SS	10X1SSBA	10	±0.08	1	294	242	953	0.225
10X1.5SS	10X1.5SSBA			1.5	441	349	1524	0.319
10X2SS	10X2SSBA			2	588	447	2182	0.401
12X1SS	12X1SSBA	12	±0.08	1	245	205	779	0.275
12X1.5SS	12X1.5SSBA			1.5	368	297	1229	0.394
12X2SS	12X2SSBA			2	490	383	1732	0.501
15X1.5SS	15X1.5SSBA	15	±0.08	1.5	294	242	953	0.507
16X2SS	16X2SSBA	16	±0.08	2	368	297	1229	0.701
16X2.5SS	16X2.5SSBA			2.5	459	362	1601	0.845
18X1.5SS	18X1.5SSBA	18	±0.08	1.5	245	205	779	0.620
18X2SS	18X2SSBA			2	327	267	1074	0.801
20X2SS	20X2SSBA	20	±0.08	2	294	242	953	0.901
20X2.5SS	20X2.5SSBA			2.5	368	297	1229	1.096
22X2SS	22X2SSBA	22	±0.08	2	267	222	857	1.002
25X2SS	25X2SSBA	25	±0.08	2	235	197	745	1.152
25X2.5SS	25X2.5SSBA			2.5	294	242	953	1.509
25X3SS	25X3SSBA			3	353	286	1172	1.653
28X2SS	28X2SSBA	28	±0.08	2	210	177	659	1.302
30X2.5SS	30X2.5SSBA	30	±0.08	2.5	245	205	779	1.722
30X3SS	30X3SSBA			3	294	242	953	2.028
35X3SS	35X3SSBA	35	±0.08	3	252	210	803	2.404
38X3SS	38X3SSBA			3				
38X3SS	38X3SSBA	38	±0.15	3.0	232	195	734	2.629
38X4SS	38X4SSBA	38		4.0	309	254	1010	3.405

## Seamless stainless steel tubes | Material 316/316L (1.4404)

MAXIMUM ALLOWABLE WORKING PRESSURE TABLES (Psi) According to American Standard																
Tube O.D. Size	0.010	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.156	0.188
1/16	5600	6900	8200	9500	12100	16800										
1/8						8600	10900									
3/16						5500	7000	10300								
1/4						4000	5100	7500	10300							
5/16							4100	5900	8100							
3/8							3300	4800	6600	9850						
1/2							2600	3700	5100	6700						
5/8								3000	4000	5200	6100					
3/4								2400	3300	4300	5000	5800				
7/8								2100	2800	3600	4200	4900				
1									2400	3200	3700	4200	4700			
1-1/4										2500	2900	3300	3700	4100	4900	
1-1/2											2400	2700	3000	3400	4000	4500
2												2000	2200	2500	2900	3200

MAXIMUM ALLOWABLE WORKING PRESSURE TABLES (Bar) to According to American Standard																
Tube O.D. Size	0.010	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.156	0.188
1/16	386	476	566	655	834	1159										
1/8						593	752									
3/16						379	483	710								
1/4						276	352	517	710							
5/16							283	407	559							
3/8							228	331	455	679						
1/2							179	255	352	462						
5/8								207	276	359	421					
3/4								166	228	297	345	400				
7/8								145	193	248	290	338				
1									166	221	255	290	324			
1-1/4										172	200	228	255	283	338	
1-1/2											166	186	207	234	276	310
2												138	152	172	200	221



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