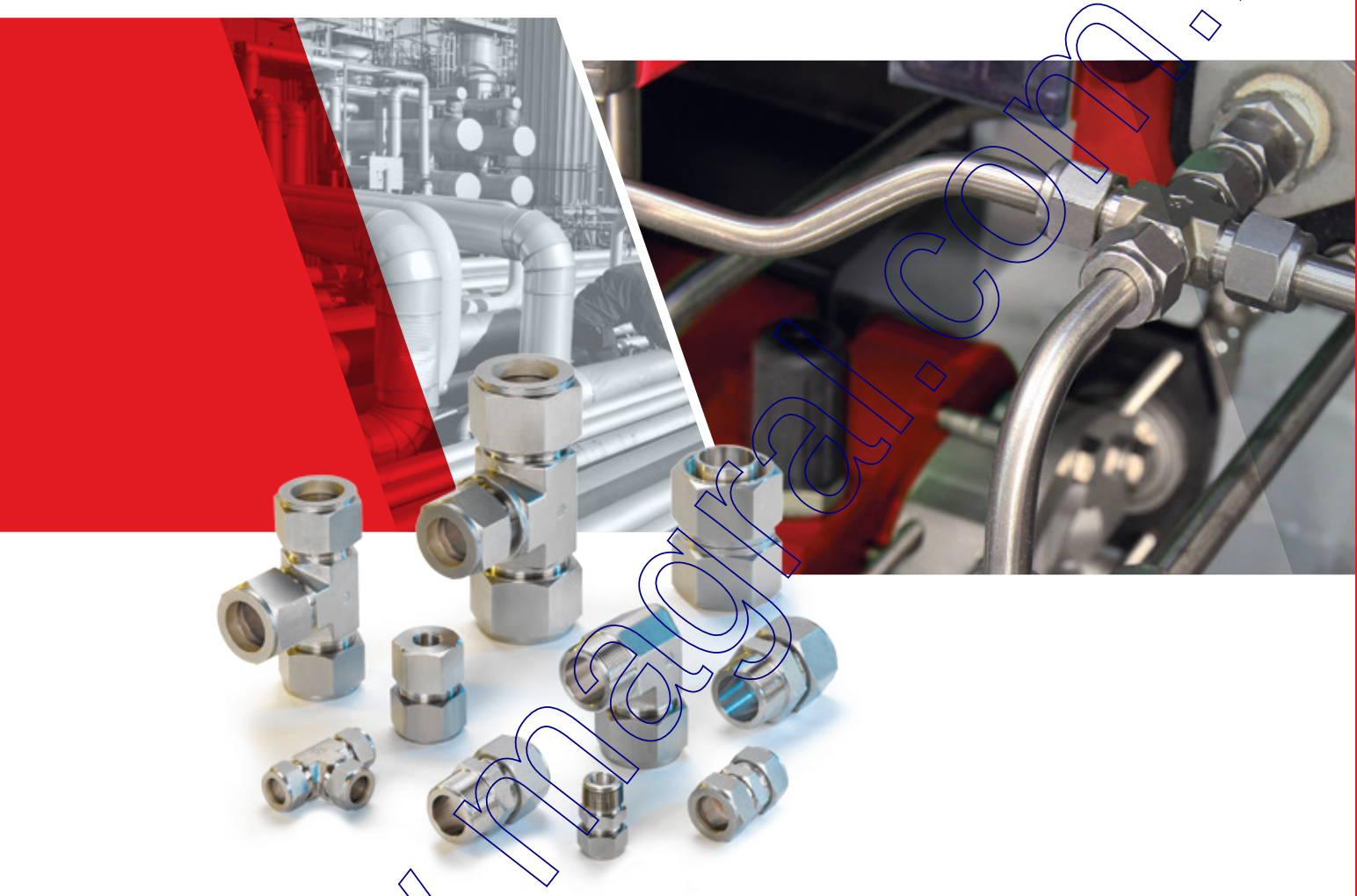
LET-LOK®
COMPRESSION TUBE FITTINGS



1/16” THROUGH 2” 2 MM THROUGH 50 MM

HAM-LET®
Advanced Control Technology

CONNECTORS

LET-LOK® HOW DOES IT WORK?

The **LET-LOK**® tube fitting is a mechanism used both to seal and to grip tubing. The mechanical advantage and geometry of this kind of fitting produces a leak-tight assembly.

To assemble, simply insert the tube into the complete assembly until the tube bottoms-out against the shoulder of the fitting body (**1**). The two ferrules are driven forward between the nut (**4**) and fitting body using the mechanical force created by rotating the nut clockwise. The back ferrule (**3**) is driven against the tapered rear of the front ferrule (**2**) and the front ferrule is driven by force into the tapered mouth of the body.
The rear ferrule is swaged radially inwards on the tube while lifting the front ferrule out to form a full-faced seal on the tapered surface of the body.

The 1 1/4 turn of the nut from the hand tight position assures consistent drive of the sealing members. This ensures an effective seal against high pressure as well as ultra high vacuum conditions.

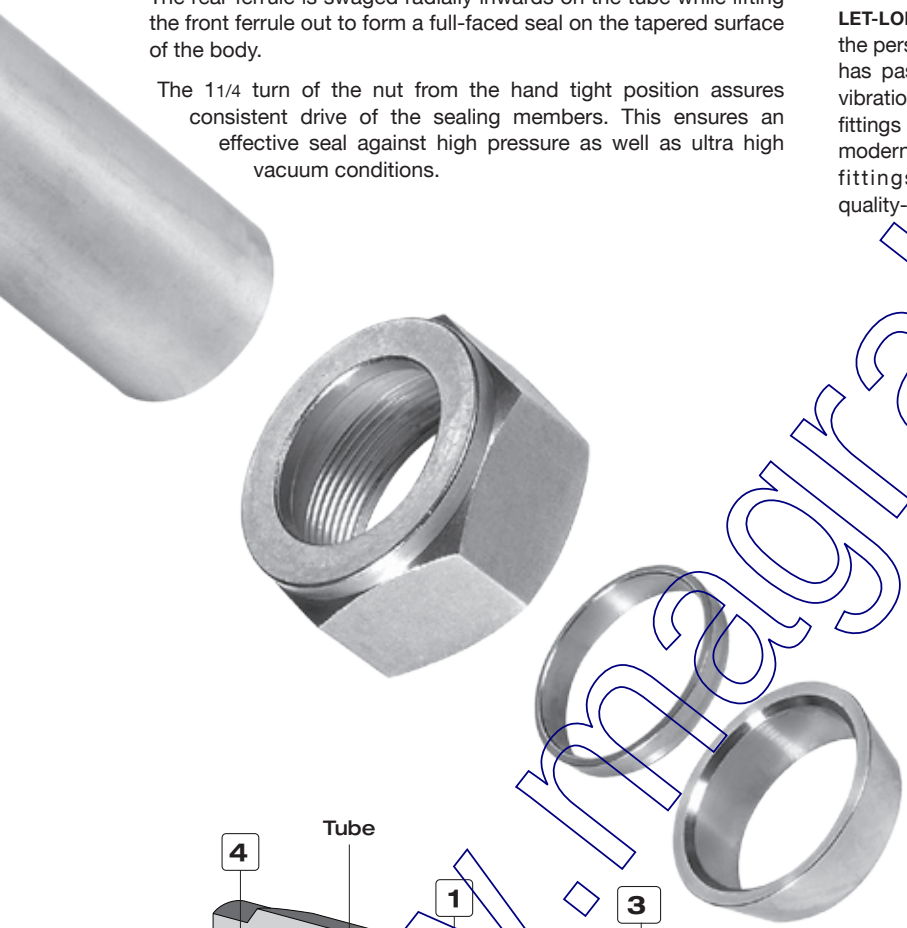
LET-LOK® TUBE FITTINGS DESCRIPTION

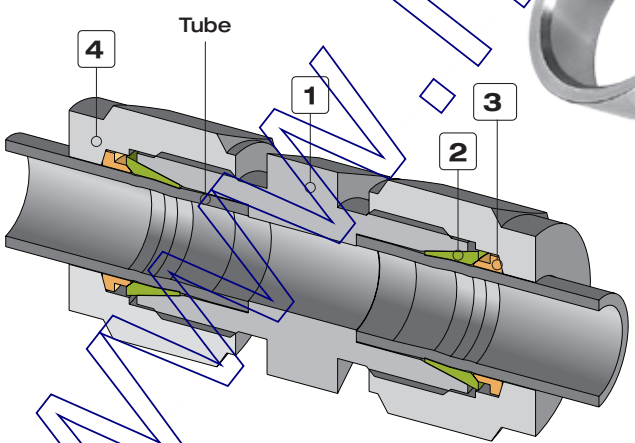
The **HAM-LET** GROUP has produced high quality tube and pipe fittings in various materials for high pressure applications since its establishment in 1950.

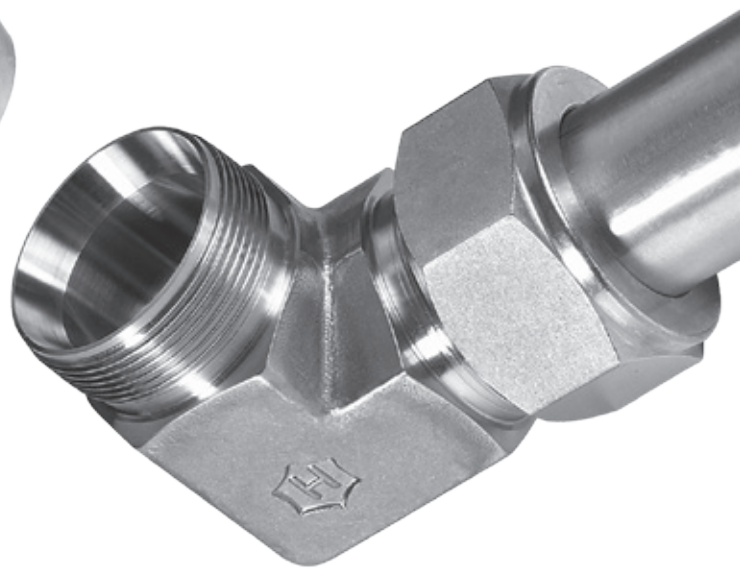
As a result of tremendous efforts in research and development during the last five decades, **HAM-LET** has gained an excellent reputation as a leading manufacturer of high pressure instrumentation products.

The **LET-LOK**® range of connectors has been developed to fill the rapidly increasing demand for tube fittings suitable for high pressure use in environments such as petrochemical, fluid, power, nuclear, electronic, as well as other major industrial settings.

LET-LOK® tube fittings have been carefully manufactured to withstand the persistent demands for high-performance tube fittings. Each one has passed a stringent tolerance test for high pressure, impulse, vibration, vacuum and temperature. These precision-machined fittings are manufactured to exacting standards, employing the most modern state-of-the-art computerized automation. All **LET-LOK**® fittings are backed by **HAM-LET**'s commitment to the highest quality-control standards and skilled craftsmanship.







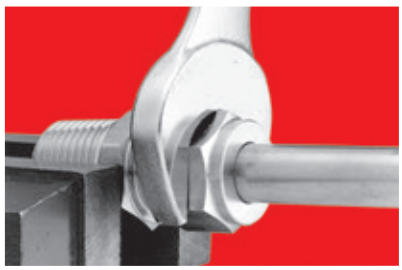
LET-LOK® TUBE FITTINGS CONSISTS OF FOUR PARTS:
1. BODY **2**. FRONT FERRULE **3**. BACK FERRULE **4**. NUT

LET-LOK® FITTINGS INSTALLATION INSTRUCTIONS

LET-LOK® fittings are supplied, assembled and finger tight. Disassembly before use can allow the entry of dirt or other particles.

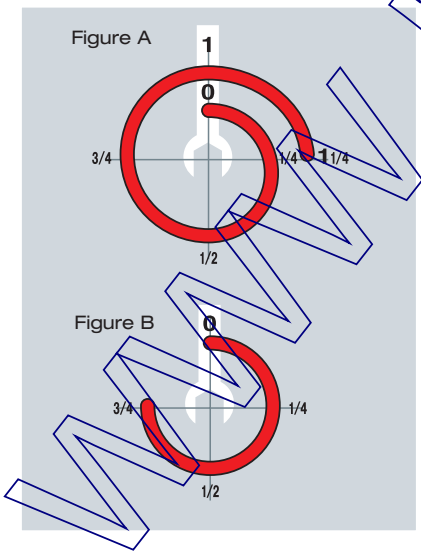
Insert the tubing into the LET-LOK® fitting.

Check that the tube rests firmly on the fitting shoulder and that the nut is finger tight. At this point it is recommended that a scribe mark be drawn on the hex of the nut extending onto the fitting body. This mark will serve as an indicator for the starting point and proper pull-up.



Tighten the nut.

1-1/4 turns of the nut are required for 1/4" (6 mm) and higher (see Fig. A). 3/4 turn of the nut is required for 3/16" (4 mm) and lower (see Fig. B).



REASSEMBLY INSTRUCTIONS

LET-LOK® connections may be disconnected and remade repeatedly, without the loss of the leaktight seal.

1. Before disconnecting, mark the position of the nut in relation to the fitting body.
2. To reassemble, use a wrench to tighten the nut to the original position.
3. Tighten slightly with a wrench until a slight rise in torque is felt.

TUBE CUTTING

Two differnet methods can be used to cut tubes

1. Tube Cutter
2. Hacksaw

TUBE CUTTER

To attain a leak free connection, the tubing must be cut squarely. A good quality tube cutter with an appropriate blade for tubing material is recommended. Do not try to reduce the time of cutting by taking deep cuts with each turn of the cutter. This will work harden the tube.
The end of the tube must be deburred to avoid damage to the fitting and to ensure that the tube reaches the bottom of the fitting.

HACKSAW CUTTING

In order to cut the tube with a hacksaw and get square ends, the tube must be cut with guide blocks.
This method of cutting necessitates deburring of the tube ends.

Warning

Do not hold the tube in a vise in the place where it will be inserted into the fitting (the vise will leave a mark on the tube that may cause leaks, and might cause ovality).

TUBE HANDLING

Scratches on the tube might cause leaks. It is, therefore, important to handle the tube carefully to reduce the risk of leaks.

SOME PRECAUTIONS TO BE TAKEN

1. Tubes must not be dragged on the floor.
2. Tubes must not be dragged out of a tubing rack, especially in cases of large O.D. tubes.

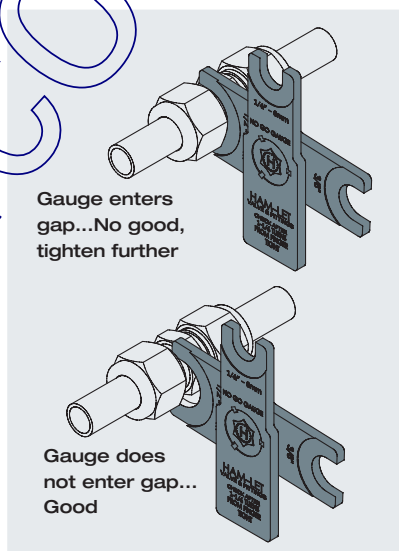
COPPER TUBING

If using copper tubing from a roll, hold the end of the tube and roll the roll outwards, allowing the tubing to lie on a flat surface.

INSPECTION GAUGE

Use: This is a "No-Go" gauge and should be used as follows:

1. Make up the fitting according to the following instructions:
   1/4 inch (6mm), 3/8 inch, 1/2 inch (12mm) make up 1-1/4 turns from the finger tight position.
2. Check gap between nut and body, using the appropriate sized gauge.
   If the gauge slides easily into the gap, tighten the nut further until gauge cannot enter the gap.



For Gauge Ordering Information: see page 91.

LET-LOK® FITTINGS INSTALLATION INSTRUCTIONS

PHYSICAL DIFFERENCES AND MARKINGS

LET-LOK® METRIC FITTINGS:

Tee & Elbow (see Fig. 1)
Body marked: MM
Straight Connectors: (see Fig. 2)

Body: Stepped shoulder
Marked: LET-LOK® 316 AV1(2)
Nut: (see Figs.1 & 2) Stepped shoulder
Marked: LET-LOK® 316 6M(1) SD8(2)

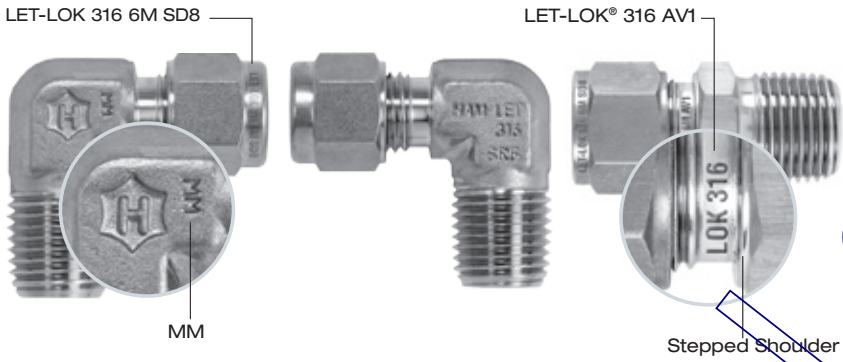


Fig. 1
Back side

Fig. 1
Front side

Fig. 2
Stepped Shoulder

(1) Tube O.D. (2) Material Batch

LET-LOK® INCH FITTINGS:

Tee & Elbow: (See Fig. 3)
Straight Fittings: (see Fig. 4)
Body: Shoulder marked:
LET-LOK 316 AV2(2)

Nut: (See Fig. 3 & 4): Shoulder marked
LET-LOK 316 1/2(1) BU2(2)

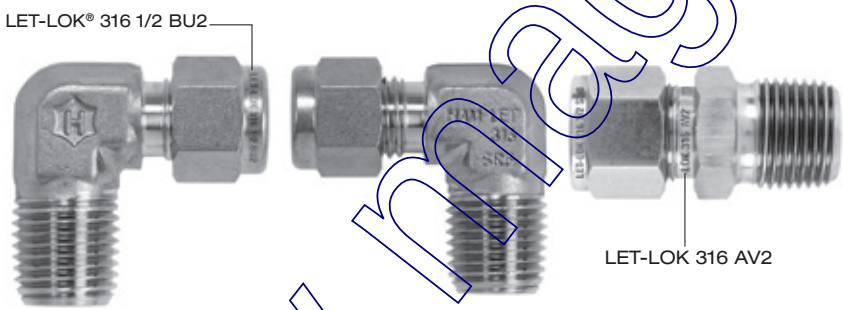


Fig. 3
Back side

Fig. 3
Front side

Fig. 4

(1) Tube O.D. (2) Material Batch

HIGH SAFETY

In applications where severe conditions and high pressure exist, we recommend the following installation procedures:

1. Check that the nut is finger tight.
2. Insert the tube (up to the shoulder).
3. Rotate the nut with a wrench until the tube does not rotate freely.
4. Mark the position of the nut.
5. Rotate the nut 1-1/4 turns.

This method ensures that even if the tube O.D. is at the minimum tolerance, the ferrules will be in contact with the tube for the full 1-1/4 rotation.

TUBING DATA FOR LET-LOK® FITTINGS

In order to assure maximum fitting reliability and performance, great care should be given when selecting the tubing for each application.

TUBE SELECTION

Four variables must be considered when ordering tube for use with **LET-LOK®** fittings:

1. Material
2. Tube wall thickness
3. Tube surface finish
4. Tube hardness

Tubing should comply with standard ASTM A213 or ASTM A269, be seamless, and fully annealed.
The tube must be free of scratches and suitable for bending and flaring.

TUBE O.D. TOLERANCES

1/16" - 1/8" 2mm - 3 mm	±	**0.003"** **0.076 mm**
3/16" - 1 1/4" 4mm - 25 mm	±	**0.005"** **0.127 mm**
1 1/2" - 2" 38mm - 50 mm	±	**0.006"** **0.152 mm**

The ovality of twice the O.D. tolerance is not suitable for LET-LOK® fittings. The tube must be reasonably round.
The ends of the tube must be free of burrs.

Tubing hardness: The hardness of the tube must be lower than the hardness of the fitting material.

The hardness must not exceed Rockwell 90 HRB (200HV).

TABLE 1: STAINLESS STEEL INCH TUBING

Tubing O.D.	WALL THICKNESS OF TUBE IN INCH															
inch	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	6860	8150	9480	11890											
1/8						8550	10730									
3/16						5500	7100	10150								
1/4						4100	5200	7600	10150							
5/16							4100	5900	7975							
3/8							3350	4850	6525							
1/2							2650	3750	5150	6525						
5/8								2950	4050	5250	5945					
3/4								2450	3350	4250	4950	5655				
7/8								2050	2850	3650	4250	4843				
1									2100	2700	3200	3700	3987			
1 1/4										2400	2800	3300	3600	4100	4785	
1 1/2											2300	2700	3000	3400	4000	4785
2												2000	2200	2500	2900	3600

Annealed 304 or 316 stainless steel tubing complying with ASTM A213, A269 or equivalent specifications. For metal temp. from -20°F - 100°F (-29°C - 37°C). Suggested ordering information: Fully annealed high quality (Type 304 or 316) stainless steel hydraulic tubing ASTM A269 or A213 or equivalent, seamless or welded and drawn with a hardness of 90HRB (200HV) or less. Tubing should be without scratches and suitable for flaring and bending.

TABLE 2: STAINLESS STEEL METRIC TUBING

Tubing O.D.	WALL THICKNESS OF TUBE IN MM													
mm	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0	3.5	4.0	4.5	5.0
3	670													
6	310	420	540	710										
8		310	390	520										
10		240	300	400	510									
12		200	250	330	410	470								
14		160	200	270	340	380	430							
15		150	190	250	310	360	400							
16			170	230	290	330	370	400						
18			150	200	260	290	320	370						
20			140	180	230	260	290	330	380					
22			120	160	200	230	260	300	340					
25					180	200	230	260	290	320				
38							140	160	190	200	240	270	310	
50										150	180	210	240	270

Annealed 304 or 316 stainless steel tubing complying with ASTM A213, A269 or equivalent specifications. For metal temp. from -20°F - 100°F (-29°C - 37°C). Suggested ordering information: Fully annealed high quality (Type 304 or 316) stainless steel hydraulic tubing ASTM A269 or A213 or equivalent, seamless or welded and drawn with a hardness of 90HRB (200HV) or less. Tubing should be without scratches and suitable for flaring and bending.

WARNING! The system designer and user have the sole responsibility to select products suitable for their special application requirements and to ensure the proper installation, operation and maintenance of the product. Please consider application details, material compatibility and product ratings when making your selection. Improper selection or use of products can cause property damage or personal injury.

TUBING DATA

TABLE 3: COPPER TUBING WALL THICKNESS OF TUBE IN INCH

Tubing O.D.		0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120
mm	inch								
2	1/8	2700	3600						
3	3/16	1800	2300	3400					
6	1/4	1300	1600	2500	3500				
8	5/16		1300	1900	2700				
10	3/8		1000	1600	2200				
12	1/2		800	1100	1600	2100			
16	5/8			900	1200	1600	1900		
20	3/4			700	1000	1300	1500	1800	
22	7/8			600	800	1100	1300	1500	
25	1			500	700	900	1100	1300	1500

Annealed copper seamless tubing complying with ASTM B68 and ASTM B75 specified in temper designation 060. Based on ultimate tensile strength of 30,000 psi (2067 bar). For metal temperatures from -20°C to 37°C). Suggested ordering information: High quality soft annealed seamless copper tubing ASTM B75 or equivalent.

TABLE 4: FACTORS USED TO DETERMINE ALLOWABLE PRESSURE AT HIGHER TEMPERATURES

°F	°C	A.I.S.I. 316	Copper
200	93	1	0.80
400	204	0.96	0.50
600	316	0.85	-
800	427	0.79	-
1000	538	0.76	-

To determine allowable pressure at higher temperatures, multiply allowable working pressure from Tables 1 & 2 & 3 by factor shown in Table 4.
For example: The allowable pressure for Type 316 stainless steel, size 1/2" OD x .049" wall at 800°F (427°C) would be equivalent to 3750 psi x 0.79 = 2962.5 psi.

TABLE 5: GAS APPLICATION TUBING

INCH		METRIC	
Tubing O.D.	Min. Nominal Wall Thickness	Tubing O.D.	Min. Nominal Wall Thickness
1/8"	0.028"	3 mm	0.8 mm
3/16"	0.028"	6 mm	0.8 mm
1/4"	0.028"	8 mm	1.0 mm
5/16"	0.035"	10 mm	1.0 mm
3/8"	0.035"	12 mm	1.0 mm
1/2"	0.049"	14 mm	1.2 mm
5/8"	0.065"	16 mm	1.5 mm
3/4"	0.065"	18 mm	1.5 mm
7/8"	0.083"	20 mm	1.8 mm
1"	0.083"	22 mm	2.0 mm
1 1/4"	0.109"	25 mm	2.2 mm
1 1/2"	0.134"	38 mm	3.5 mm
2"	0.188"	50 mm	5.0 mm

Gases are characterized by small molecules, which can escape through the smallest leak path. For gas applications, we recommend to select tubing with greater wall thickness. Table 5 shows the recommended wall thicknesses for greater safety and efficiency.

WARNING! For Your Safety The system designer and user have the sole responsibility to select products suitable for their special application requirements and to ensure the proper installation, operation and maintenance of the product. Please consider application details, material compatibility and product ratings when making your selection. Improper selection or use of products can cause property damage or personal injury.

Pressure Ratings for HAM-LET Tube Fittings

To ensure leak-tight systems, it is important to carefully select high-quality tubing (see page 11 - allowable working pressure).

Pipe End Thread (NPT and ISO 7) Pressure Ratings

Allowable pressure for male and female tapered pipe thread ends: Stainless Steel 316 and Brass.

TABLE 6: PRESSURE RATINGS

NPT / ISO PIPE SIZE	Stainless Steel 316		Brass	
	Male	Female	Male	Female
inch	psi			
1/16	11000	6700	5500	3300
1/8	10000	6500	5000	3200
1/4	8000	6600	4000	3300
3/8	7800	5300	3900	2600
1/2	7700	4900	3800	2400
3/4	7300	4600	3600	2300
1	5300	4400	2600	2200
1 1/4	6000	5000	3000	2500
1 1/2	5000	4600	2500	2300
2	3900	3900	1900	1900

Note: If the pressure on the LET-LOK® end is higher than the pipe side, then the pipe side needs a heavier wall thickness of the tapered pipe thread side.

Pressure Ratings for End Fittings per SAE J1926 (LOB) Surrounding Temperature

Pressure ratings are based on SAE J1926 at surrounding temperature.

TABLE 7: PRESSURE RATINGS

(LOB) SAE J1926 Thread Size	Stainless Steel 316	
	Nonpositionable	Positionable
inch	psi	
5/16 - 24	4568	4568
7/16 - 20	4568	4568
1/2 - 20	4568	4568
9/16 - 18	4568	3626
3/4 - 16	4568	3626
7/8 - 14	3626	2900
1 1/16 - 12	3626	2900
1 3/16 - 12	2900	2320
1 5/16 - 12	2900	2320
1 5/8 - 12	2320	1813
1 7/8 - 12	2320	1813
2 1/2 - 12	1813	1450

Note: 37° FLARE (AN) and LO ends can have lower pressure.

O-Seal Pressure Ratings (page 45)

Stainless steel 316 O-seal fittings up to 1" and 25 mm are rated to 3000 psi.

Positionable, ISO/BSP Parallel Thread (G) Pressure Ratings

Pressure ratings are at surrounding temperature.

TABLE 8: PRESSURE RATINGS

(G) ISO / BSPP Male Pipe Size	Stainless Steel 316
inch	psi
1/8	4568
1/4	4568
3/8	4568
1/2	2320
3/4	2320
1	2320

LET-LOK® INDEX

LET-LOK® MATERIAL DESCRIPTION

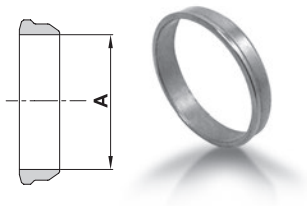
EXAMPLE: 768L

Material Description	
SS -	Stainless Steel 316
B -	Brass
M -	Alloy 400
HC -	Alloy C-276

1/4 X 1/4

All orders should include material description and ordering information (see product table).

760 LB
BACK FERRULE



METRIC

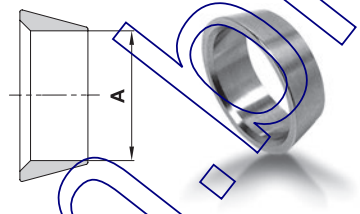
Ordering Information	A Tube O.D. mm
760LB _ 2	2
760LB _ 3	3
760LB _ 4	4
760LB _ 6	6
760LB _ 8	8
760LB _ 10	10
760LB _ 12	12
760LB _14	14
760LB _ 15	15
760LB _ 16	16
760LB _ 18	18
760LB _ 20	20
760LB _ 22	22
760LB _ 25	25
760LB _ 38 *	38
760LB _ 50 *	50

INCH

Ordering Information	A Tube O.D. inch	mm
760LB _ 1/16	1/16	1.58
760LB _ 1/8	1/8	3.17
760LB _ 3/16	3/16	4.76
760LB _ 1/4	1/4	6.35
760LB _ 5/16	5/16	7.93
760LB _ 3/8	3/8	9.52
760LB _ 1/2	1/2	12.70
760LB _ 5/8	5/8	15.87
760LB _ 3/4	3/4	19.05
760LB _ 7/8	7/8	22.25
760LB _ 1	1	25.40
760LB _ 1 1/4 *	1 1/4	31.75
760LB _ 1 1/2 *	1 1/2	38.10
760LB _ 2 *	2	50.80

*Without Ferrule Set.

760 LF
FRONT FERRULE



METRIC

Ordering Information	A Tube O.D. mm
760LF _ 2	2
760LF _ 3	3
760LF _ 4	4
760LF _ 6	6
760LF _ 8	8
760LF _ 10	10
760LF _ 12	12
760LF _ 14	14
760LF _ 15	15
760LF _ 16	16
760LF _ 18	18
760LF _ 20	20
760LF _ 22	22
760LF _ 25	25
760LF _ 38 *	38
760LF _ 50 *	50

INCH

Ordering Information	A Tube O.D. inch	mm
760LF _ 1/16	1/16	1.58
760LF _ 1/8	1/8	3.17
760LF _ 3/16	3/16	4.76
760LF _ 1/4	1/4	6.35
760LF _ 5/16	5/16	7.93
760LF _ 3/8	3/8	9.52
760LF _ 1/2	1/2	12.70
760LF _ 5/8	5/8	15.87
760LF _ 3/4	3/4	19.05
760LF _ 7/8	7/8	22.22
760LF _ 1	1	25.40
760LF _ 1 1/4 *	1 1/4	31.75
760LF _ 1 1/2 *	1 1/2	38.10
760LF _ 2 *	2	50.80

*Without Ferrule Set.

FERRULE SETS

All LET-LOK® Ferrules are available as sets. Ferrule sets simplify stocking and assembly. Ferrule sets prevent damage of single ferrules during shipping.

The back and front ferrules are arranged as pairs in the set; ready for easy assembly.

Note: Can be supplied also with Nuts.
Example: 760LNS SS 1/4

Ordering Information for Ferrule Sets

EXAMPLE: 760LS SS 1/4

SS	= Stainless Steel 316
B	= Brass
M	= Alloy 400
HC	= Alloy C-276
T	= PTFE

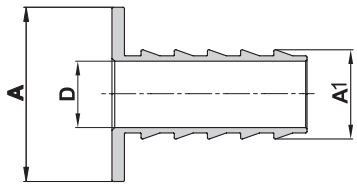
Ferrules Material

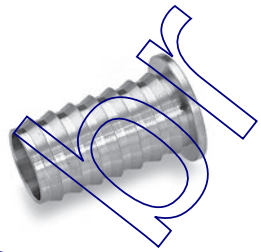
Tube O.D.

The O.D. size is always the first to be described

Dimensions are for reference only, and are subject to change without notice.

760 LI
TUBE INSERT





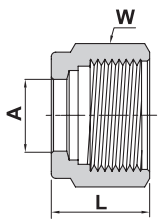
METRIC

Ordering Information	A Tube O.D.	A1 Tube I.D.	D
	mm	mm	mm
760LI _ 6 X 4	6	4	2.8
760LI _ 8 X 6	8	6	4.4
760LI _ 10 X 8	10	8	6.4
760LI _ 12 X 8	12	8	6.4
760LI _ 12 X 10	12	10	8.3

INCH

Ordering Information	A Tube O.D.		A1 Tube I.D.		D	
	inch	mm	inch	mm	inch	mm
760LI _ 3/16 X 1/8	3/16	4.76	1/8	3.17	.09	2.30
760LI _ 1/4 X 1/8	1/4	6.35	1/8	3.17	.09	2.30
760LI _ 1/4 X 0.17	1/4	6.35	.17	4.32	.11	2.70
760LI _ 1/4 X 3/16	1/4	6.35	3/16	4.76	.12	3.10
760LI _ 5/16 X 1/8	5/16	7.93	1/8	3.17	.09	2.30
760LI _ 5/16 X 3/16	5/16	7.93	3/16	4.76	.12	3.00
760LI _ 5/16 X 1/4	5/16	7.93	1/4	6.35	.18	4.65
760LI _ 3/8 X 3/16	3/8	9.52	3/16	4.76	.12	3.10
760LI _ 3/8 X 1/4	3/8	9.52	1/4	6.35	.18	4.65
760LI _ 1/2 X 1/4	1/2	12.70	1/4	6.35	.18	4.65
760LI _ 1/2 X 3/8	1/2	12.70	3/8	9.52	.31	7.80
760LI _ 5/8 X 3/8	5/8	15.87	3/8	9.52	.31	7.80
760LI _ 5/8 X 1/2	5/8	15.87	1/2	12.70	.44	11.10
760LI _ 3/4 X 1/2	3/4	19.05	1/2	12.70	.44	11.10
760LI _ 3/4 X 5/8	3/4	19.05	5/8	15.87	.56	14.20
760LI _ 1 X 3/4	1	25.40	3/4	19.05	.69	17.50

761 L
NUT



METRIC

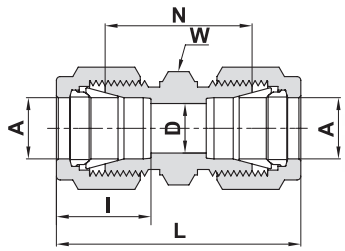
Ordering Information	A Tube O.D.	W Hex. Flat	L
	mm	mm	mm
761L _ 2	2	12	11.9
761L _ 3	3	12	11.9
761L _ 4	4	12	11.9
761L _ 6	6	14	12.7
761L _ 8	8	16	13.5
761L _ 10	10	19	15.1
761L _ 12	12	22	17.4
761L _ 14	14	25	17.4
761L _ 15	15	25	17.4
761L _ 16	16	25	17.4
761L _ 18	18	30	17.4
761L _ 20	20	32	17.4
761L _ 22	22	32	17.4
761L _ 25	25	38	20.6
761L _ 38	38	60	40.6
761L _ 50	50	3 inch	54.0

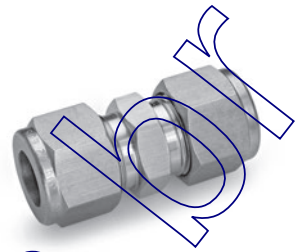
INCH

Ordering Information	A Tube O.D.		W Hex. Flat	L	
	inch	mm	inch	inch	mm
761L _ 1/16	1/16	1.58	5/16	.31	7.87
761L _ 1/8	1/8	3.17	7/16	.47	11.93
761L _ 3/16	3/16	4.76	1/2	.47	11.93
761L _ 1/4	1/4	6.35	9/16	.50	12.70
761L _ 5/16	5/16	7.93	5/8	.53	13.46
761L _ 3/8	3/8	9.52	11/16	.56	14.22
761L _ 1/2	1/2	12.70	7/8	.69	17.52
761L _ 5/8	5/8	15.87	1	.69	17.52
761L _ 3/4	3/4	19.05	1 1/8	.69	17.52
761L _ 7/8	7/8	22.22	1 1/4	.69	17.52
761L _ 1	1	25.40	1 1/2	.81	20.57
761L _ 1 1/4	1 1/4	31.75	1 7/8	1.25	31.75
761L _ 1 1/2	1 1/2	38.10	2 1/4	1.50	38.10
761L _ 2	2	50.80	3	2.06	52.32

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

762 L
UNION





TUBE (METRIC) TO TUBE (METRIC)

Ordering Information	A Tube O.D.	D	W Hex. Flat	N	L	I
	mm	mm	mm	mm	mm	mm
762L _ 2	2	1.7	12	22.4	35.6	12.9
762L _ 3	3	2.4	12	22.1	35.3	12.9
762L _ 4	4	2.4	12	24.1	37.3	13.7
762L _ 6	6	4.8	14	26.2	41.0	15.3
762L _ 8	8	6.4	15	28.2	43.2	16.2
762L _ 10	10	7.9	18	31.0	46.2	17.2
762L _ 12	12	9.5	22	31.0	51.2	22.8
762L _ 14	14	11.1	24	31.8	52.0	24.4
762L _ 15	15	11.9	24	31.8	52.0	24.4
762L _ 16	16	12.7	24	31.8	52.0	24.4
762L _ 18	18	15.1	27	33.3	53.5	24.4
762L _ 20	20	15.9	30	34.8	55.0	26.0
762L _ 22	22	18.3	30	34.8	55.0	26.0
762L _ 25	25	21.8	35	40.4	65.0	31.3
762L _ 38	*38	33.7	55	58.4	114.0	49.4
762L _ 50	*50	45.2	3 inch	71.7	146.0	65.0

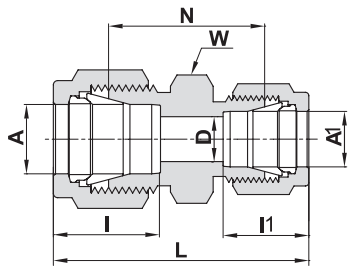
TUBE (INCH) TO TUBE (INCH)

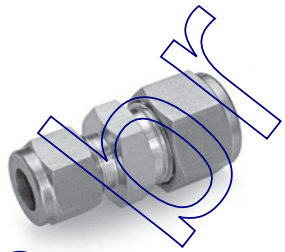
Ordering Information	A Tube O.D.		D		W Hex. Flat	N		L		I	
	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm
762L _ 1/16	1/16	1.58	.05	1.27	5/16	.69	17.52	.99	25.14	.34	8.6
762L _ 1/8	1/8	3.17	.09	2.28	7/16	.88	22.35	1.40	35.56	.50	12.7
762L _ 3/16	3/16	4.76	.12	3.04	7/16	.95	24.13	1.47	37.33	.54	13.7
762L _ 1/4	1/4	6.35	.19	4.82	1/2	1.03	26.16	1.61	40.89	.60	15.2
762L _ 5/16	5/16	7.93	.25	6.35	9/16	1.11	28.19	1.69	42.92	.64	16.2
762L _ 3/8	3/8	9.52	.28	7.11	5/8	1.19	30.22	1.77	44.95	.66	16.8
762L _ 1/2	1/2	12.70	.41	10.41	13/16	1.22	30.98	2.02	51.30	.90	22.9
762L _ 5/8	5/8	15.87	.50	12.70	15/16	1.25	31.75	2.05	52.07	.96	24.4
762L _ 3/4	3/4	19.05	.62	15.75	1 1/16	1.31	33.27	2.11	53.59	.96	24.4
762L _ 7/8	7/8	22.22	.72	18.28	1 3/16	1.37	34.80	2.17	55.11	1.02	25.9
762L _ 1	1	25.40	.88	22.35	1 3/8	1.59	40.38	2.55	64.77	1.23	31.2
762L _ 1 1/4	*1 1/4	31.75	1.09	27.70	1 3/4	1.89	48.00	3.63	92.20	1.62	41.2
762L _ 1 1/2	*1 1/2	38.10	1.34	34.00	2 1/8	2.11	53.60	4.25	107.95	1.97	50.0
762L _ 2	*2	50.80	1.81	45.97	2 3/4	2.94	74.67	5.88	149.35	2.66	67.6

* Including low friction paste, see page 91

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

763 L
REDUCING UNION





TUBE (METRIC) TO TUBE (METRIC)

Ordering Information	A Tube O.D.	A1 Tube O.D.	D	W Hex. Flat	N	L	I	I1
	mm	mm	mm	mm	mm	mm	mm	mm
763L _ 3 X 2	3	2	1.7	12	22.1	35.3	12.9	12.9
763L _ 6 X 2	6	2	1.7	14	24.6	38.6	15.3	12.9
763L _ 6 X 3	6	3	2.4	14	24.6	38.6	15.3	12.9
763L _ 6 X 4	6	4	2.4	14	25.4	39.4	15.3	13.7
763L _ 8 X 6	8	6	4.8	15	27.4	42.3	16.2	15.3
763L _ 10 X 6	10	6	4.8	18	29.5	44.5	17.2	15.3
763L _ 10 X 8	10	8	6.4	18	30.0	45.1	17.2	16.2
763L _ 12 X 6	12	6	4.8	22	29.5	47.0	22.8	15.3
763L _ 12 X 8	12	8	6.4	22	30.2	47.8	22.8	16.2
763L _ 12 X 10	12	10	7.9	22	31.0	48.7	22.8	17.2
763L _ 16 X 10	16	10	7.9	24	31.8	49.5	24.4	17.2
763L _ 16 X 12	16	12	9.5	24	31.8	52.0	24.4	22.8
763L _ 18 X 12	18	12	9.5	27	33.3	53.5	24.4	22.8
763L _ 25 X 18	25	18	15.1	35	38.6	61.0	31.3	24.4
763L _ 25 X 20	25	20	15.9	35	39.9	62.3	31.3	26.0
763L _ 38 X 20	*38	20	15.9	55	49.8	87.5	49.4	26.0
763L _ 38 X 25	*38	25	21.8	55	55.5	95.4	49.4	31.3

TUBE (METRIC) TO TUBE (INCH)

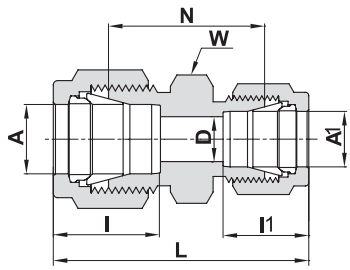
Ordering Information	A Tube O.D.	A1 Tube O.D.	D	W Hex. Flat	N	L	I	I1
	mm	inch	mm	mm	mm	mm	mm	mm
763L _ 2 X 1/4	2	1/4	1.7	14	24.6	38.6	12.9	15.2
763L _ 3 X 1/8	3	1/8	2.4	12	22.1	35.2	12.9	12.7
763L _ 4 X 1/8	4	1/8	2.4	12	23.4	36.5	13.7	12.7
763L _ 4 X 1/4	4	1/4	2.4	14	25.4	39.4	13.7	15.2
763L _ 6 X 1/8	6	1/8	2.4	14	24.6	38.5	15.3	12.7
763L _ 6 X 1/4	6	1/4	4.8	14	26.2	41.0	15.3	15.2
763L _ 6 X 5/16	6	5/16	4.8	14	27.4	42.3	15.3	16.2
763L _ 8 X 1/8	8	1/8	2.4	15	25.7	39.8	16.2	12.7
763L _ 8 X 1/4	8	1/4	4.8	15	27.4	42.3	16.2	15.2
763L _ 8 X 3/8	8	3/8	6.4	16	29.5	44.3	16.2	16.8
763L _ 10 X 1/8	10	1/8	2.4	18	27.7	41.8	17.2	12.7
763L _ 10 X 1/4	10	1/4	4.8	18	29.5	44.5	17.2	15.2
763L _ 10 X 5/16	10	5/16	6.4	18	30.0	45.1	17.2	16.2
763L _ 10 X 3/8	10	3/8	7.1	18	31.0	45.9	17.2	16.8
763L _ 12 X 5/16	12	5/16	6.4	22	30.2	47.8	22.8	16.2
763L _ 12 X 3/8	12	3/8	7.1	22	31.0	48.4	22.8	16.8
763L _ 12 X 1/2	12	1/2	9.5	22	31.0	51.2	22.8	22.9
763L _ 15 X 1/2	15	1/2	10.3	24	31.8	52.0	24.4	22.9
763L _ 16 X 5/8	16	5/8	12.7	24	31.8	52.0	24.4	24.4
763L _ 18 X 3/4	18	3/4	15.1	27	33.3	53.5	24.4	24.4

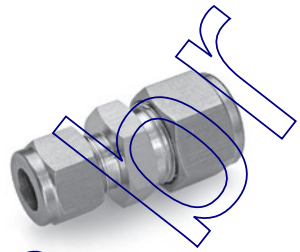
* Including low friction paste, see page 91 **"D"** - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

Cont'd next page

763 L

REDUCING UNION (Cont'd)

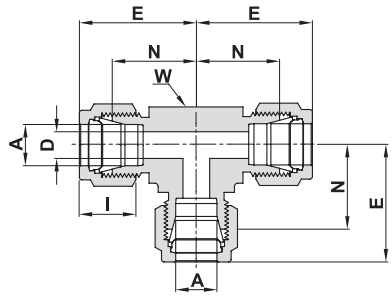


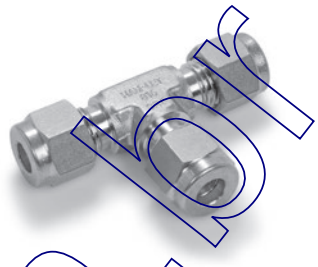


TUBE (INCH) TO TUBE (INCH)

Ordering Information	A Tube O.D.		A1 Tube O.D		D		W Hex. Flat	N		L		I		I1	
	inch	mm	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm
763L _ 1/8 X 1/16	1/8	3.17	1/16	1.58	.05	1.27	7/16	.81	20.57	1.22	30.98	.50	12.7	.34	8.6
763L _ 3/16 X 1/16	3/16	4.76	1/16	1.58	.05	1.27	7/16	.86	21.84	1.27	32.26	.54	13.7	.34	8.6
763L _ 3/16 X 1/8	3/16	4.76	1/8	3.17	.09	2.28	7/16	.92	23.36	1.44	36.57	.54	13.7	.50	12.7
763L _ 1/4 X 1/16	1/4	6.35	1/16	1.58	.05	1.27	1/2	.91	23.11	1.35	34.29	.60	15.2	.34	8.6
763L _ 1/4 X 1/8	1/4	6.35	1/8	3.17	.09	2.28	1/2	.97	24.63	1.52	38.60	.60	15.2	.50	12.7
763L _ 1/4 X 3/16	1/4	6.35	3/16	4.76	.12	3.04	1/2	1.00	25.40	1.55	37.37	.60	15.2	.54	13.7
763L _ 5/16 X 1/8	5/16	7.93	1/8	3.17	.09	2.28	9/16	1.01	25.65	1.56	39.62	.64	16.2	.50	12.7
763L _ 5/16 X 1/4	5/16	7.93	1/4	6.35	.19	4.82	9/16	1.08	27.43	1.66	42.16	.64	16.2	.60	15.2
763L _ 3/8 X 1/16	3/8	9.52	1/16	1.58	.05	1.27	5/8	1.00	25.40	1.44	36.58	.66	16.8	.34	8.6
763L _ 3/8 X 1/8	3/8	9.52	1/8	3.17	.09	2.28	5/8	1.06	26.92	1.61	40.89	.66	16.8	.50	12.7
763L _ 3/8 X 1/4	3/8	9.52	1/4	6.35	.19	4.82	5/8	1.12	28.44	1.70	43.18	.66	16.8	.60	15.2
763L _ 3/8 X 5/16	3/8	9.52	5/16	7.93	.25	6.35	5/8	1.16	29.46	1.74	44.19	.66	16.8	.64	16.2
763L _ 1/2 X 1/8	1/2	12.70	1/8	3.17	.09	2.28	13/16	1.12	28.44	1.78	45.21	.90	22.9	.50	12.7
763L _ 1/2 X 1/4	1/2	12.70	1/4	6.35	.19	4.82	13/16	1.16	29.46	1.85	46.99	.90	22.9	.60	15.2
763L _ 1/2 X 3/8	1/2	12.70	3/8	9.52	.28	7.11	13/16	1.22	30.98	1.91	48.51	.90	22.9	.66	16.8
763L _ 5/8 X 3/8	5/8	15.87	3/8	9.52	.28	7.11	15/16	1.25	31.75	1.94	49.27	.96	24.4	.66	16.8
763L _ 5/8 X 1/2	5/8	15.87	1/2	12.70	.41	10.41	15/16	1.25	31.75	2.05	52.07	.96	24.4	.90	22.9
763L _ 3/4 X 1/4	3/4	19.05	1/4	6.35	.19	4.82	1 1/16	1.25	31.75	1.94	49.28	.96	24.4	.60	15.2
763L _ 3/4 X 3/8	3/4	19.05	3/8	9.52	.28	7.11	1 1/16	1.31	33.27	2.00	50.80	.96	24.4	.66	16.8
763L _ 3/4 X 1/2	3/4	19.05	1/2	12.70	.41	10.41	1 1/16	1.31	33.27	2.11	53.59	.96	24.4	.90	22.9
763L _ 3/4 X 5/8	3/4	19.05	5/8	15.87	.50	12.70	1 1/16	1.31	33.27	2.11	53.59	.96	24.4	.96	24.4
763L _ 1 X 1/2	1	25.4	1/2	12.70	.41	10.41	1 3/8	1.50	38.10	2.38	60.45	1.23	31.2	.90	22.9
763L _ 1 X 3/4	1	25.4	3/4	19.05	.62	15.75	1 3/8	1.50	38.10	2.38	60.45	1.23	31.2	.96	24.4

764 L
UNION TEE





ALL TUBE (METRIC)

Ordering Information	A Tube O.D.	D	W Wrench Flat		N	E	I
	mm	mm	inch	mm	mm	mm	mm
764L _ 2	2	1.7	3/8	9.5	15.7	22.3	12.9
764L _ 3	3	2.4	3/8	9.5	15.7	22.3	12.9
764L _ 4	4	2.4	1/2	12.7	18.8	25.4	13.7
764L _ 6	6	4.8	1/2	12.7	19.6	27.0	15.3
764L _ 8	8	6.4	5/8	15.9	22.4	29.9	16.2
764L _ 10	10	7.9	11/16	17.5	23.9	31.5	17.2
764L _ 12	12	9.5	13/16	20.6	25.9	36.0	22.8
764L _ 14	14	11.1	15/16	23.8	28.7	38.8	24.4
764L _ 15	15	11.9	15/16	23.8	28.7	38.8	24.4
764L _ 16	16	12.7	15/16	23.8	28.7	38.8	24.4
764L _ 18	18	15.1	1 1/16	27.0	29.7	39.8	24.4
764L _ 20	20	15.9	1 3/8	34.9	34.5	44.6	26.0
764L _ 22	22	18.3	1 3/8	34.9	34.5	44.6	26.0
764L _ 25	25	21.8	1 3/8	34.9	36.8	49.1	31.3
764L _ 38	*38	33.7	-	55.0	56.4	84.0	49.4
764L _ 50	*50	45.2	2 3/4	69.9	68.9	106.0	65.0

ALL TUBE (INCH)

Ordering Information	A Tube O.D.		D		W Wrench Flat		N		E		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
764L _ 1/16	1/16	1.58	.05	1.27	3/8	9.5	.55	14.00	.70	17.80	.34	8.6
764L _ 1/8	1/8	3.17	.09	2.28	3/8	9.5	.62	15.74	.88	22.35	.50	12.7
764L _ 3/16	3/16	4.76	.12	3.04	1/2	12.7	.70	17.80	.96	24.40	.54	13.7
764L _ 1/4	1/4	6.35	.19	4.82	1/2	12.7	.77	19.55	1.06	26.90	.60	15.2
764L _ 5/16	5/16	7.93	.25	6.35	5/8	15.9	.88	22.35	1.17	29.71	.64	16.2
764L _ 3/8	3/8	9.52	.28	7.11	5/8	15.9	.91	23.11	1.20	30.48	.66	16.8
764L _ 1/2	1/2	12.70	.41	10.41	13/16	20.6	1.02	25.90	1.42	36.06	.90	22.9
764L _ 5/8	5/8	15.87	.50	12.70	15/16	23.8	1.13	28.70	1.53	38.90	.96	24.4
764L _ 3/4	3/4	19.05	.62	15.74	1 1/16	27.0	1.17	29.70	1.57	39.90	.96	24.4
764L _ 7/8	7/8	22.22	.72	18.29	1 3/8	34.9	1.36	34.54	1.76	44.70	1.02	25.9
764L _ 1	1	25.40	.88	22.35	1 3/8	34.9	1.45	36.83	1.93	49.00	1.23	31.2
764L _ 1 1/4	*1 1/4	31.75	1.09	27.7	1 11/16	42.9	1.75	44.50	2.62	66.55	1.62	41.2
764L _ 1 1/2	*1 1/2	38.10	1.34	34.0	2	50.8	2.00	50.80	3.07	77.98	1.97	50.0
764L _ 2	*2	50.80	1.81	45.97	2 3/4	69.9	2.75	69.85	4.22	107.19	2.66	67.6

* Including low friction paste, see page 91

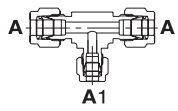
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

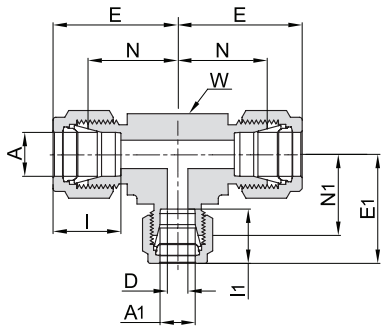
764 LR

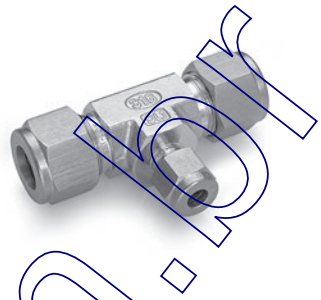
REDUCING TEE

HOW TO ORDER

764LR 3/8 X 3/8 X 1/4







ALL TUBE (METRIC)

Ordering Information	A Tube O.D.	A1 Tube O.D.	E	E1	I	I1	D	W Wrench Flat		N	N1
	mm	mm	mm	mm	mm	mm	mm	inch	mm	mm	mm
764LR_8MMX8MMX6MM	8	6	29.9	29.8	16.2	15.3	4.8	5/8	15.9	22.4	22.4
764LR_10MMX10MMX6MM	10	6	31.5	31.3	17.2	15.3	4.8	11/16	17.5	23.9	23.9
764LR_12MMX12MMX6MM	12	6	36.0	31.8	22.8	15.3	4.8	13/16	20.6	25.9	24.4
764LR_12MMX12MMX10MM	12	10	36.0	33.5	22.8	17.2	7.9	13/16	20.6	25.9	25.9
764LR_14MMX14MMX10MM	14	10	38.8	36.3	24.4	17.2	7.9	15/16	23.8	28.7	28.7
764LR_18MMX18MMX12MM	18	12	39.8	39.8	24.4	22.8	9.5	1 1/16	27.0	29.7	29.7
764LR_50MMX50MMX38MM	*50	*38	106.0	96.2	65.0	49.4	33.7	2 3/4	69.9	68.9	68.6

ALL TUBE (INCH)

Ordering Information	A Tube O.D.		A1 Tube O.D		E		E1		I		I1		D		W Wrench Flat		N		N1	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
764LR_1/4 X 1/4 X 1/8	1/4	6.35	1/8	3.17	1.06	26.9	1.03	26.2	.60	15.2	.50	12.7	.09	2.28	1/2	12.7	.77	19.6	.77	19.6
764LR_3/8 X 3/8 X 1/4	3/8	9.52	1/4	6.35	1.20	30.5	1.14	29.0	.66	16.8	.60	15.2	.19	4.82	5/8	15.9	.91	23.1	.85	21.6
764LR_1/2 X 1/2 X 1/4	1/2	12.70	1/4	6.35	1.42	36.1	1.25	31.8	.90	22.9	.60	15.2	.19	4.82	13/16	20.6	1.02	25.9	.96	24.4
764LR_1/2 X 1/2 X 3/8	1/2	12.70	3/8	9.52	1.42	36.1	1.31	33.3	.90	22.9	.66	16.8	.28	7.11	13/16	20.6	1.02	25.9	1.02	25.9
764LR_5/8 X 5/8 X 3/8	5/8	15.88	3/8	9.52	1.53	38.9	1.42	36.1	.96	24.4	.66	16.8	.28	7.11	15/16	23.8	1.13	28.7	1.13	28.7
764LR_3/4 X 3/4 X 1/4	3/4	19.05	1/4	6.35	1.57	39.9	1.46	37.1	.96	24.4	.60	15.2	.19	4.82	1 1/16	27.0	1.17	29.7	1.17	29.7
764LR_3/4 X 3/4 X 3/8	3/4	19.05	3/8	9.52	1.57	39.9	1.46	37.1	.96	24.4	.66	16.8	.28	7.11	1 1/16	27.0	1.17	29.7	1.17	29.7
764LR_3/4 X 3/4 X 1/2	3/4	19.05	1/2	12.70	1.57	39.9	1.57	39.9	.96	24.4	.90	22.9	.41	10.41	1 1/16	27.0	1.17	29.7	1.17	29.7
764LR_1 X 1 X 3/8	1	25.4	3/8	9.52	1.93	49.0	1.65	41.9	1.23	31.2	.66	16.8	.28	7.11	1 3/8	34.9	1.45	36.8	1.36	34.5
764LR_1 X 1 X 1/2	1	25.4	1/2	12.70	1.93	49.0	1.76	44.7	1.23	31.2	.90	22.9	.41	10.41	1 3/8	34.9	1.45	36.8	1.36	34.5
764LR_1 X 1 X 3/4	1	25.4	3/4	19.05	1.93	49.0	1.76	44.7	1.23	31.2	0.96	24.4	.62	15.75	1 3/8	34.9	1.45	36.8	1.36	34.5
764LR_1 1/4 X 1 1/4 X 1	*1 1/4	31.75	1	25.40	2.67	67.8	2.17	55.1	1.62	41.2	1.23	31.2	.88	22.35	1 11/16	42.9	1.75	44.5	1.69	42.9
764LR_1 1/2 X 1 1/2 X 1	*1 1/2	38.10	1	25.40	3.10	78.7	2.36	59.9	1.97	50.0	1.23	31.2	.88	22.35	2	50.8	2.00	50.8	1.88	47.8

* Including low friction paste, see page 91

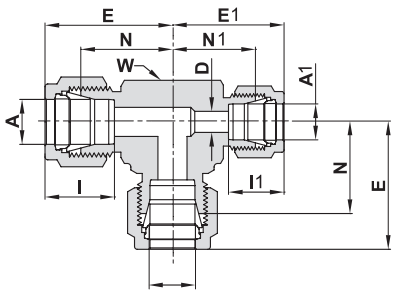
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

Cont'd next page

764 LR

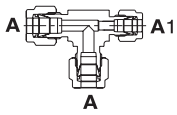
REDUCING TEE

(Cont'd)



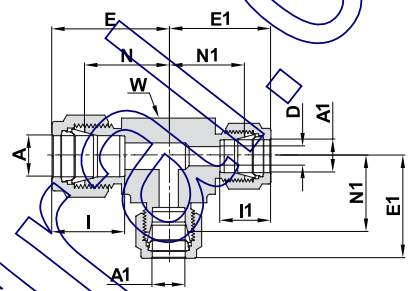
HOW TO ORDER

	A		A1		A
764LR	3/8	X	1/4	X	3/8



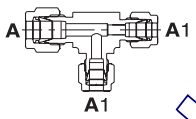
ALL TUBE (INCH)

Ordering Information	A Tube O.D.		A1 Tube O.D		E		E1		I		I1		D		W Wrench Flat		N		N1	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
764LR _ 1/4 X 1/8 X 1/4	1/4	6.35	1/8	3.17	1.06	26.9	1.03	26.2	.60	15.2	.50	12.7	.09	2.28	1/2	12.7	.77	19.6	.77	19.6
764LR _ 3/8 X 1/4 X 3/8	3/8	9.25	1/4	6.35	1.20	30.5	1.14	29.0	.66	16.8	.60	15.2	.19	4.82	5/8	15.9	.91	23.1	.85	21.6
764LR _ 1/2 X 1/4 X 1/2	1/2	12.7	1/4	6.35	1.42	36.1	1.31	33.3	.90	22.9	.60	15.2	.19	4.82	13/16	20.6	1.02	25.9	1.02	25.9
764LR _1/2 X 3/8 X 1/2	1/2	12.7	3/8	9.52	1.42	36.1	1.31	33.3	.90	22.9	.66	16.8	.28	7.11	13/16	20.6	1.02	25.9	1.02	25.9
764LR _ 3/4 X 3/8 X 3/4	3/4	19.05	3/8	9.52	1.57	39.9	1.46	37.1	.96	24.4	.66	16.8	.28	7.11	1 1/16	27.0	1.17	29.7	1.17	29.7



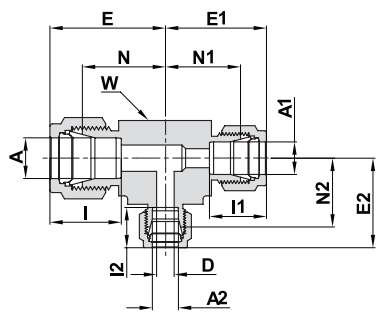
HOW TO ORDER

	A		A1		A1
764LR	1/2	X	3/8	X	3/8



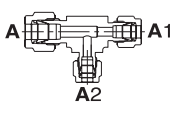
ALL TUBE (INCH)

Ordering Information	A Tube O.D.		A1 Tube O.D		E		E1		I		I1		D		W Wrench Flat		N		N1	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
764LR_1/2 X 3/8 X 3/8	1/2	12.70	3/8	9.52	1.42	36.1	1.31	33.3	.90	22.9	.66	16.8	.28	7.1	13/16	20.6	1.02	25.9	1.02	25.9
764LR_5/8 X 3/8 X 3/8	5/8	15.87	3/8	9.52	1.53	38.9	1.42	36.1	.96	24.4	.66	16.8	.28	7.1	15/16	23.8	1.13	28.7	1.13	28.7
764LR_3/4 X 3/8 X 3/8	3/4	19.05	3/8	9.52	1.57	39.9	1.46	37.1	.96	24.4	.66	16.8	.28	7.1	1 1/16	27.0	1.17	29.7	1.17	29.7



HOW TO ORDER

	A		A1		A2
764LR	5/8	X	1/2	X	3/8



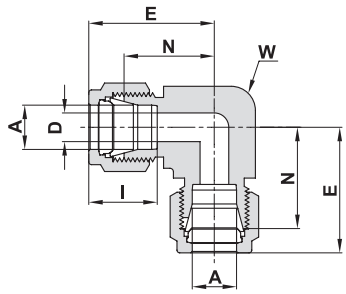
ALL TUBE (INCH)

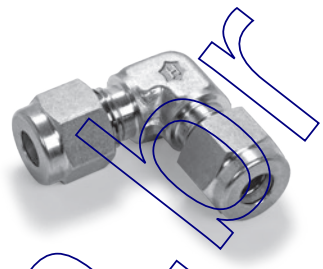
Ordering Information	A Tube O.D.		A1 Tube O.D		A2 Tube O.D		E		E1		E2		I		I1		I2		D		W Wrench Flat		N		N1&N2	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
764LR_5/8 X 1/2 X 3/8	5/8	15.87	1/2	12.70	3/8	9.52	1.53	38.9	1.53	38.9	1.42	36.1	.96	24.4	.90	22.9	.66	16.8	.28	7.11	15/16	23.8	1.13	28.7	1.13	28.7
764LR_3/4 X 1/2 X 3/8	3/4	19.05	1/2	12.70	3/8	9.52	1.57	39.9	1.57	39.9	1.46	37.1	.96	24.4	.90	22.9	.66	16.8	.28	7.11	1 1/16	27.0	1.17	29.7	1.17	29.7
764LR_1 X 3/4 X 3/8	1	25.40	3/4	19.05	3/8	9.52	1.93	49.0	1.76	44.7	1.65	41.9	1.23	31.2	.96	24.4	.66	16.8	.28	7.11	1 3/8	34.9	1.45	36.8	1.36	34.5

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

765 L

UNION ELBOW





TUBE (METRIC) TO TUBE (METRIC)

Ordering Information	A Tube O.D.	D	W Wrench Flat		N	E	I
	mm	mm	inch	mm	mm	mm	mm
765L _ 3	3	2.4	3/8	9.5	15.7	22.3	12.9
765L _ 4	4	2.4	1/2	12.7	18.8	25.4	13.7
765L _ 6	6	4.8	1/2	12.7	19.6	27.0	15.3
765L _ 8	8	6.4	9/16	14.3	21.3	28.8	16.2
765L _ 10	10	7.9	11/16	17.5	23.9	31.5	17.2
765L _ 12	12	9.5	13/16	20.6	25.9	36.0	22.8
765L _ 14	14	11.1	15/16	23.8	27.9	38.0	24.4
765L _ 15	15	11.9	15/16	23.8	27.9	38.0	24.4
765L _ 16	16	12.7	15/16	23.8	27.9	38.0	24.4
765L _ 18	18	15.1	1 1/16	27.0	29.7	39.8	24.4
765L _ 20	20	15.9	1 3/8	34.9	34.5	44.6	26.0
765L _ 22	22	18.3	1 3/8	34.9	34.5	44.6	26.0
765L _ 25	25	21.8	1 3/8	34.9	36.8	49.1	31.3
765L _ 38	*38	33.7	-	55.0	56.4	84.0	49.4
765L _ 50	*50	45.2	2 3/4	69.9	68.9	106.0	65.0

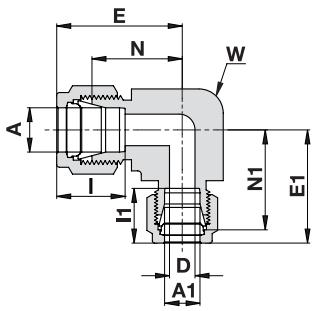
TUBE (INCH) TO TUBE (INCH)

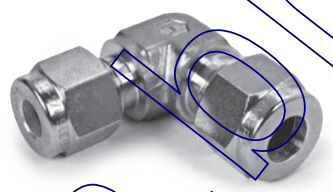
Ordering Information	A Tube O.D.		D		W Wrench Flat		N		E		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
765L _ 1/16	1/16	1.58	.05	1.27	3/8	9.5	.55	14.00	.70	17.80	.34	.86
765L _ 1/8	1/8	3.17	.09	2.28	3/8	9.5	.62	15.74	.88	22.35	.50	12.7
765L _ 3/16	3/16	4.76	.12	3.04	1/2	12.7	.74	18.80	1.00	25.40	.54	13.7
765L _ 1/4	1/4	6.35	.19	4.82	1/2	12.7	.77	19.55	1.06	26.92	.60	15.2
765L _ 5/16	5/16	7.93	.25	6.35	9/16	14.3	.84	21.33	1.13	28.70	.64	16.2
765L _ 3/8	3/8	9.52	.28	7.11	5/8	15.9	.91	23.11	1.20	30.48	.66	16.8
765L _ 1/2	1/2	12.70	.41	10.41	13/16	20.6	1.02	25.90	1.42	36.06	.90	22.9
765L _ 5/8	5/8	15.87	.50	12.70	15/16	23.8	1.10	27.94	1.50	38.10	.96	24.4
765L _ 3/4	3/4	19.05	.62	15.74	1 1/16	27.0	1.17	29.70	1.57	39.90	.96	24.4
765L _ 7/8	7/8	22.22	.72	18.29	1 3/8	34.9	1.36	34.54	1.76	44.70	1.02	25.9
765L _ 1	1	25.40	.88	22.35	1 3/8	34.9	1.45	36.83	1.93	49.00	1.23	31.2
765L _ 1 1/4	*1 1/4	31.75	1.09	27.70	1 11/16	42.9	1.75	44.50	2.62	66.55	1.62	41.2
765L _ 1 1/2	*1 1/2	38.10	1.34	34.00	2	50.8	2.00	50.80	3.07	77.98	1.97	50.0
765L _ 2	*2	50.80	1.81	45.97	2 3/4	69.9	2.75	69.85	4.22	107.19	2.66	67.6

* Including low friction paste, see page 91

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

765 LR
REDUCING UNION ELBOW





TUBE (METRIC) TO TUBE (INCH)

Ordering Information	A Tube O.D.	A1 Tube O.D	E	E1	I	I1	D	W Wrench Flat		N	N1
	mm	inch	mm	mm	mm	mm	mm	in	mm	mm	mm
765LR _ 6 X 1/4	6	1/4	27.0	26.9	15.3	15.2	4.8	1/2	12.7	19.6	19.6
765LR _ 8 X 1/4	8	1/4	28.8	28.7	16.2	15.2	4.8	9/16	14.3	21.3	21.3

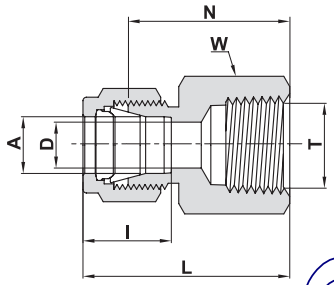
TUBE (INCH) TO TUBE (INCH)

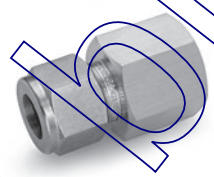
Ordering Information	A Tube O.D.		A1 Tube O.D		E		E1		I		I1		D		W Wrench Flat		N		N1	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
765LR _ 3/8 X 1/4	3/8	9.52	1/4	6.35	1.20	30.48	1.20	30.48	.66	16.8	.60	15.2	.19	4.82	5/8	15.9	.91	23.11	.91	23.11
765LR _ 5/8 X 3/8	5/8	15.87	3/8	9.52	1.50	38.10	1.39	35.31	.96	24.4	.66	16.8	.28	7.11	15/16	23.8	1.10	27.94	1.10	27.94

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

766 L

FEMALE CONNECTOR





TUBE (METRIC) TO FEMALE NPT THREAD

Ordering Information	A Tube O.D.	T (NPT)	D	W Hex. Flat	N	L	I
	mm	inch	mm	mm	mm	mm	mm
766L _ 3 X 1/8	3	1/8	2.4	14	22.1	28.7	12.9
766L _ 3 X 1/4	3	1/4	2.4	19	26.9	33.5	12.9
766L _ 4 X 1/8	4	1/8	2.4	14	23.1	29.7	13.7
766L _ 6 X 1/8	6	1/8	4.8	14	23.9	31.3	15.3
766L _ 6 X 1/4	6	1/4	4.8	19	28.4	35.8	15.3
766L _ 6 X 3/8	6	3/8	4.8	22	30.2	37.6	15.3
766L _ 6 X 1/2	6	1/2	4.8	27	35.1	42.5	15.3
766L _ 8 X 1/8	8	1/8	6.4	15	24.6	32.1	16.2
766L _ 8 X 1/4	8	1/4	6.4	19	29.5	37.0	16.2
766L _ 8 X 3/8	8	3/8	6.4	22	31.0	38.5	16.2
766L _ 8 X 1/2	8	1/2	6.4	27	35.8	43.3	16.2
766L _ 10 X 1/4	10	1/4	7.9	19	30.2	37.8	17.2
766L _ 10 X 3/8	10	3/8	7.9	22	31.8	39.4	17.2
766L _ 10 X 1/2	10	1/2	7.9	27	36.6	44.2	17.2
766L _ 12 X 1/4	12	1/4	9.5	22	30.2	40.3	22.8
766L _ 12 X 3/8	12	3/8	9.5	22	31.8	41.9	22.8
766L _ 12 X 1/2	12	1/2	9.5	27	36.6	46.7	22.8
766L _ 15 X 1/2	15	1/2	11.9	27	36.6	46.7	24.4
766L _ 16 X 1/2	16	1/2	12.7	27	36.8	46.9	24.4
766L _ 20 X 1/2	20	1/2	15.9	30	37.8	47.9	26.0
766L _ 20 X 3/4	20	3/4	15.9	35	39.6	49.7	26.0
766L _ 22 X 3/4	22	3/4	18.3	35	39.6	49.7	26.0
766L _ 22 X 1	22	1	18.3	41	47.8	57.9	26.0
766L _ 25 X 3/4	25	3/4	21.8	35	41.1	53.4	31.3
766L _ 25 X 1	25	1	21.8	41	50.0	62.3	31.3

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

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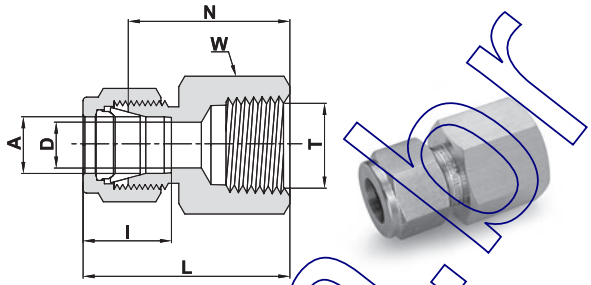
766 L

FEMALE CONNECTOR

(Cont'd)



TUBE (INCH) TO FEMALE NPT THREAD

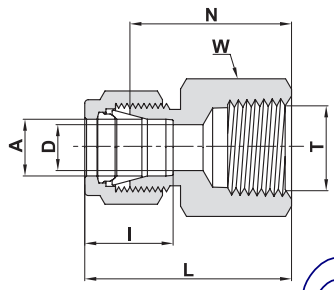
Ordering Information	A Tube O.D.		T (NPT)	D		W Hex Flat	N		L		I	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm	inch	mm
766L _ 1/16 X1/16	1/16	1.58	1/16	.05	1.27	7/16	.78	19.81	.93	23.62	.34	8.6
766L _ 1/16 X 1/8	1/16	1.58	1/8	.05	1.27	9/16	.81	20.57	.96	24.38	.34	8.6
766L _ 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	9/16	.87	22.10	1.13	28.70	.50	12.7
766L _ 1/8 X 1/4	1/8	3.17	1/4	.09	2.28	3/4	1.06	26.92	1.32	33.52	.50	12.7
766L _ 3/16 X 1/8	3/16	4.76	1/8	.12	3.04	9/16	.91	23.11	1.17	29.71	.54	13.7
766L _ 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	9/16	.94	23.87	1.23	31.24	.60	15.2
766L _ 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	3/4	1.12	28.44	1.41	35.81	.60	15.2
766L _ 1/4 X 3/8	1/4	6.35	3/8	.19	4.82	7/8	1.19	30.22	1.48	37.59	.60	15.2
766L _ 1/4 X 1/2	1/4	6.35	1/2	.19	4.82	1 1/16	1.38	35.00	1.67	42.42	.60	15.2
766L _ 5/16 X 1/8	5/16	7.93	1/8	.25	6.35	9/16	.97	24.63	1.26	32.00	.64	16.2
766L _ 5/16 X 1/4	5/16	7.93	1/4	.25	6.35	3/4	1.16	29.46	1.45	36.83	.64	16.2
766L _ 3/8 X 1/8	3/8	9.52	1/8	.28	7.11	5/8	1.00	25.40	1.29	32.76	.66	16.8
766L _ 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	3/4	1.19	30.22	1.48	37.59	.66	16.8
766L _ 3/8 X 3/8	3/8	9.52	3/8	.28	7.11	7/8	1.25	31.75	1.54	39.11	.66	16.8
766L _ 3/8 X 1/2	3/8	9.52	1/2	.28	7.11	1 1/16	1.44	36.57	1.73	43.94	.66	16.8
766L _ 3/8 X 3/4	3/8	9.52	3/4	.28	7.11	1 5/16	1.59	40.40	1.88	47.75	.66	16.8
766L _ 1/2 X 1/4	1/2	12.70	1/4	.41	10.41	13/16	1.19	30.22	1.59	40.38	.90	22.9
766L _ 1/2 X 3/8	1/2	12.70	3/8	.41	10.41	7/8	1.25	31.75	1.65	41.91	.90	22.9
766L _ 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	1 1/16	1.44	36.57	1.84	46.73	.90	22.9
766L _ 1/2 X 3/4	1/2	12.70	3/4	.41	10.41	1 5/16	1.50	38.10	1.90	48.26	.90	22.9
766L _ 5/8 X 3/8	5/8	15.87	3/8	.50	12.70	15/16	1.25	31.75	1.65	41.91	.96	24.4
766L _ 5/8 X 1/2	5/8	15.87	1/2	.50	12.70	1 1/16	1.44	36.57	1.84	46.73	.96	24.4
766L _ 5/8 X 3/4	5/8	15.87	3/4	.50	12.70	1 5/16	1.50	38.10	1.90	48.26	.96	24.4
766L _ 3/4 X 1/2	3/4	19.05	1/2	.62	15.75	1 1/16	1.44	36.57	1.84	46.73	.96	24.4
766L _ 3/4 X 3/4	3/4	19.05	3/4	.62	15.75	1 5/16	1.50	38.10	1.90	48.26	.96	24.4
766L _ 7/8 X 3/4	7/8	22.22	3/4	.72	18.28	1 5/16	1.56	39.62	1.96	49.78	1.02	25.9
766L _ 1 X 3/4	1	25.40	3/4	.88	22.35	1 3/8	1.62	41.14	2.10	53.34	1.23	31.2
766L _ 1 X 1	1	25.40	1	.88	22.35	1 5/8	1.97	50.03	2.45	62.23	1.23	31.2
766L _ 1 1/4 X 1 1/4	*1 1/4	31.75	1 1/4	1.09	27.70	2 1/4	2.07	52.59	2.94	74.68	1.62	41.2
766L _ 1 1/2 X 1 1/2	*1 1/2	38.10	1 1/2	1.34	34.00	2 3/8	2.21	56.13	3.28	83.31	1.97	50.0
766L _ 2 X 2	*2	50.80	2	1.81	45.97	2 7/8	2.53	64.26	4.00	101.60	2.66	67.6

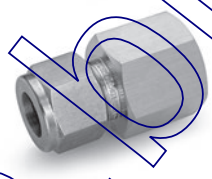
* Including low friction paste, see page 91

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

766 LR

FEMALE CONNECTOR





TUBE (METRIC) TO FEMALE ISO TAPERED THREAD

Ordering Information	A Tube O.D.	T (ISO)	D	W Hex. Flat	N	L	I
	mm	inch	mm	mm	mm	mm	mm
766LR _ 3 X 1/8	3	R-1/8	2.4	14	22.1	28.7	12.9
766LR _ 6 X 1/8	6	R-1/8	4.8	14	23.9	31.3	15.3
766LR _ 6 X 1/4	6	R-1/4	4.8	19	28.4	35.8	15.3
766LR _ 6 X 3/8	6	R-3/8	4.8	22	30.2	37.6	15.3
766LR _ 6 X 1/2	6	R-1/2	4.8	27	35.1	42.5	15.3
766LR _ 8 X 1/8	8	R-1/8	6.4	15	24.6	32.1	16.2
766LR _ 8 X 1/4	8	R-1/4	6.4	19	29.5	37.0	16.2
766LR _ 8 X 3/8	8	R-3/8	6.4	22	31.0	38.5	16.2
766LR _ 8 X 1/2	8	R-1/2	6.4	27	35.8	43.3	16.2
766LR _ 10 X 1/8	10	R-1/8	7.9	18	25.4	33.0	17.2
766LR _ 10 X 1/4	10	R-1/4	7.9	19	30.2	37.8	17.2
766LR _ 10 X 3/8	10	R-3/8	7.9	22	31.8	39.4	17.2
766LR _ 10 X 1/2	10	R-1/2	7.9	27	36.6	44.2	17.2
766LR _ 12 X 1/8	12	R-1/8	8.3	22	25.4	35.5	22.8
766LR _ 12 X 1/4	12	R-1/4	9.5	22	30.2	40.3	22.8
766LR _ 12 X 3/8	12	R-3/8	9.5	22	31.8	41.9	22.8
766LR _ 12 X 1/2	12	R-1/2	9.5	27	36.6	46.7	22.8
766LR _ 12 X 3/4	12	R-3/4	9.5	35	38.9	49.0	22.8
766LR _ 15 X 3/8	15	R-3/8	11.9	24	31.8	41.9	24.4
766LR _ 15 X 1/2	15	R-1/2	11.9	27	36.6	46.7	24.4
766LR _ 20 X 1/2	20	R-1/2	15.9	30	37.8	47.9	26.0
766LR _ 20 X 3/4	20	R-3/4	15.9	35	39.6	49.7	26.0
766LR _ 22 X 3/4	22	R-3/4	18.3	35	39.6	49.7	26.0
766LR _ 22 X 1	22	R-1	18.3	41	47.8	57.9	26.0
766LR _ 25 X 3/4	25	R-3/4	21.8	35	41.1	53.4	31.3
766LR _ 25 X 1	25	R-1	21.8	41	50.0	62.3	31.3

Reference Specifications:

DIN -2999
BS -21
JIS -B0203
ISO -7/1-BSP-T

Designation:
Marking LR on Hex.

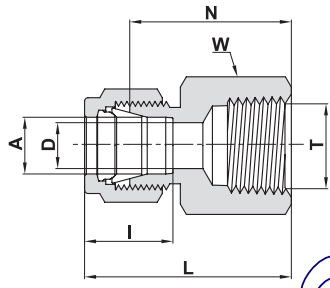
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

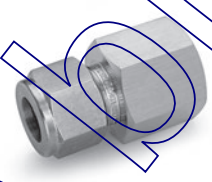
Cont'd next page

766 LR

FEMALE CONNECTOR

(Cont'd)





TUBE (INCH) TO FEMALE ISO TAPERED THREAD

Ordering Information	A Tube O.D.		T (ISO)	D		W Hex Flat	N		L		I	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm	inch	mm
766LR _ 1/16 X1/16	1/16	1.58	R-1/16	.05	1.27	7/16	.78	19.81	.93	23.62	.34	8.6
766LR _ 1/16 X 1/8	1/16	1.58	R-1/8	.05	1.27	9/16	.81	20.57	.96	24.38	.34	8.6
766LR _ 1/8 X 1/8	1/8	3.17	R-1/8	.09	2.28	9/16	.87	22.10	1.13	28.70	.50	12.7
766LR _ 1/8 X 1/4	1/8	3.17	R-1/4	.09	2.28	3/4	1.06	26.92	1.32	33.52	.50	12.7
766LR _ 3/16 X 1/8	3/16	4.76	R-1/8	.12	3.04	9/16	.91	23.11	1.17	29.71	.54	13.7
766LR _ 1/4 X 1/8	1/4	6.35	R-1/8	.19	4.82	9/16	.94	23.87	1.23	31.24	.60	15.2
766LR _ 1/4 X 1/4	1/4	6.35	R-1/4	.19	4.82	3/4	1.12	28.44	1.41	35.81	.60	15.2
766LR _ 1/4 X 3/8	1/4	6.35	R-3/8	.19	4.82	7/8	1.19	30.22	1.48	37.59	.60	15.2
766LR _ 1/4 X 1/2	1/4	6.35	R-1/2	.19	4.82	1 1/16	1.38	35.00	1.67	42.42	.60	15.2
766LR _ 5/16 X 1/4	5/16	7.93	R-1/4	.25	6.35	3/4	1.16	29.46	1.45	36.83	.64	16.2
766LR _ 3/8 X 1/8	3/8	9.52	R-1/8	.28	7.11	5/8	1.00	25.40	1.29	32.76	.66	16.8
766LR _ 3/8 X 1/4	3/8	9.52	R-1/4	.28	7.11	3/4	1.19	30.22	1.48	37.59	.66	16.8
766LR _ 3/8 X 3/8	3/8	9.52	R-3/8	.28	7.11	7/8	1.25	31.75	1.54	39.11	.66	16.8
766LR _ 3/8 X 1/2	3/8	9.52	R-1/2	.28	7.11	1 1/16	1.44	36.57	1.73	43.94	.66	16.8
766LR_ 1/2 X 1/4	1/2	12.70	R-1/4	.41	10.41	13/16	1.19	30.20	1.59	40.38	.90	22.9
766LR _ 1/2 X 3/8	1/2	12.70	R-3/8	.41	10.41	7/8	1.25	31.75	1.65	41.91	.90	22.9
766LR_ 1/2 X 1/2	1/2	12.70	R-1/2	.41	10.41	1 1/16	1.44	36.57	1.84	46.73	.90	22.9
766LR _ 5/8 X 1/2	5/8	15.87	R-1/2	.50	12.70	1 1/16	1.44	36.57	1.84	46.73	.96	24.4
766LR _ 3/4 X 1/2	3/4	19.05	R-1/2	.62	15.75	1 1/16	1.44	36.57	1.84	46.73	.96	24.4
766LR _ 3/4 X 3/4	3/4	19.05	R-3/4	.62	15.75	1 5/16	1.50	38.10	1.90	48.26	.96	24.4
766LR _ 1 X 3/4	1	25.40	R-3/4	.88	22.35	1 3/8	1.62	41.14	2.10	53.34	1.23	31.2
766LR _ 1 X 1	1	25.40	R-1	.88	22.35	1 5/8	1.97	50.03	2.45	62.23	1.23	31.2

Reference Specifications:

DIN -2999
BS -21
JIS -B0203
ISO -7/1-BSP-T

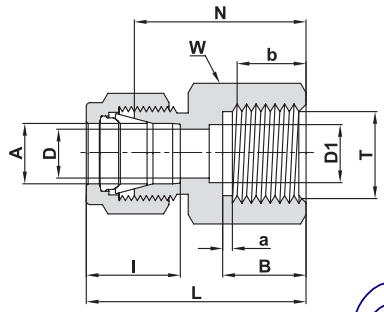
Designation:

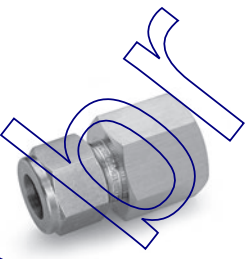
Marking LR on Hex.

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

766 LG

FEMALE CONNECTOR





TUBE (METRIC) TO FEMALE ISO PARALLEL THREAD

Ordering Information	A Tube O.D.	T (ISO)	D	D1	W Hex. Flat	B	b Min	a Min	N	L	l
	mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	mm
766LG _ 3 X 1/4	3	G-1/4	2.4	5.5	19	13.0	9.5	1.6	28.7	35.3	12.9
766LG _ 6 X 1/8	6	G-1/8	4.0	4.0	14	10.0	7.0	1.6	25.0	32.4	15.3
766LG _ 6 X 1/4	6	G-1/4	4.8	5.5	19	13.0	9.5	1.6	30.2	37.6	15.3
766LG _ 6 X 3/8	6	G-3/8	4.8	6.5	24	14.1	10.0	1.6	30.2	37.6	15.3
766LG _ 6 X 1/2	6	G-1/2	4.8	7.0	27	19.0	15.0	1.6	36.1	43.5	15.3
766LG _ 8 X 1/4	8	G-1/4	5.5	5.5	19	13.0	9.5	1.6	31.0	38.5	16.2
766LG _ 8 X 3/8	8	G-3/8	6.4	6.4	24	14.1	10.0	1.6	28.7	36.2	16.2
766LG _ 8 X 1/2	8	G-1/2	7.0	7.0	27	19.0	15.0	1.6	33.5	41.0	16.2
766LG _ 10 X 1/4	10	G-1/4	5.5	5.5	19	13.0	9.5	1.6	31.8	39.4	17.2
766LG _ 10 X 3/8	10	G-3/8	6.5	6.5	24	14.1	10.0	1.6	31.2	38.8	17.2
766LG _ 10 X 1/2	10	G-1/2	7.0	7.0	27	19.0	15.0	1.6	34.5	42.1	17.2
766LG _ 12 X 1/4	12	G-1/4	5.5	5.5	22	13.0	9.5	1.6	31.8	41.9	22.8
766LG _ 12 X 3/8	12	G-3/8	6.5	6.5	24	14.1	10.0	1.6	34.3	44.4	22.8
766LG _ 12 X 1/2	12	G-1/2	7.0	7.0	27	19.0	15.0	1.6	38.1	48.2	22.8
766LG _ 20 X 1/2	20	G-1/2	7.0	7.0	30	19.0	15.0	1.6	44.2	54.3	26.0
766LG _ 22 X 1/2	22	G-1/2	7.0	7.0	30	19.0	15.0	1.6	44.2	54.3	26.0

TUBE (INCH) TO FEMALE ISO PARALLEL THREAD

Ordering Information	A Tube O.D.		T (ISO)	D		D1		W Hex. Flat	B		b Min		a Min		N		L		l	
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
766LG _ 1/8 X 1/4	1/8	3.17	G-1/4	.09	2.3	.22	5.5	3/4	.51	13.0	.37	9.5	.06	1.6	1.13	28.7	1.39	35.3	.50	12.7
766LG _ 1/4 X 1/8	1/4	6.35	G-1/8	.16	4.0	.16	4.0	9/16	.40	10.0	.28	7.0	.06	1.6	.98	25.0	1.27	32.4	.60	15.2
766LG _ 1/4 X 1/4	1/4	6.35	G-1/4	.19	4.8	.22	5.5	3/4	.51	13.0	.37	9.5	.06	1.6	1.19	30.2	1.48	37.6	.60	15.2
766LG _ 1/4 X 3/8	1/4	6.35	G-3/8	.19	4.8	.26	6.5	15/16	.56	14.1	.39	10.0	.06	1.6	1.19	30.2	1.48	37.6	.60	15.2
766LG _ 1/4 X 1/2	1/4	6.35	G-1/2	.19	4.8	.28	7.0	1 1/16	.74	19.0	.59	15.0	.06	1.6	1.42	36.1	1.71	43.4	.60	15.2
766LG _ 5/16 X 1/4	5/16	7.93	G-1/4	.22	5.5	.22	5.5	3/4	.51	13.0	.37	9.5	.06	1.6	1.22	31.0	1.51	38.4	.64	16.2
766LG _ 5/16 X 1/2	5/16	7.93	G-1/2	.28	7.0	.28	7.0	1 1/16	.74	19.0	.59	15.0	.06	1.6	1.32	33.5	1.61	40.9	.64	16.2
766LG _ 3/8 X 1/4	3/8	9.52	G-1/4	.22	5.5	.22	5.5	3/4	.51	13.0	.37	9.5	.06	1.6	1.25	31.8	1.54	39.1	.66	16.8
766LG _ 3/8 X 3/8	3/8	9.52	G-3/8	.26	6.6	.26	6.6	15/16	.56	14.1	.39	10.0	.06	1.6	1.23	31.2	1.52	38.6	.66	16.8
766LG _ 3/8 X 1/2	3/8	9.52	G-1/2	.28	7.0	.28	7.0	1 1/16	.74	19.0	.59	15.0	.06	1.6	1.36	34.5	1.65	41.9	.66	16.8
766LG _ 1/2 X 3/8	1/2	12.7	G-3/8	.26	6.5	.26	6.5	15/16	.56	14.1	.39	10.0	.06	1.6	1.35	34.3	1.75	44.5	.90	22.9
766LG _ 1/2 X 1/2	1/2	12.7	G-1/2	.28	7.0	.28	7.0	1 1/16	.74	19.0	.59	15.0	.06	1.6	1.50	38.1	1.90	48.2	.90	22.9

Reference Specifications:

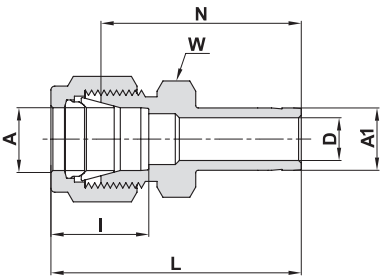
DIN -ISO 228/1
BS -2779
JIS -B0202
ISO -228/1-BSP-P

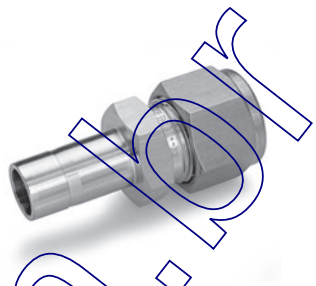
Designation:
Marking LG on Hex.

For Parallel Threads Sealing, see page 76

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

767 LT
REDUCER





TUBE (METRIC) TO STUB (METRIC)

Ordering Information	A Tube O.D.	A1 Tube O.D.	D	W Hex. Flat	N	L	I
	mm	mm	mm	mm	mm	mm	mm
767LT _ 2 X 3	2	3	1.7	12	26.9	33.5	12.9
767LT _ 3 X 4	3	4	2.2	12	28.4	35.0	12.9
767LT _ 3 X 6	3	6	2.4	12	29.5	36.1	12.9
767LT _ 3 X 10	3	10	2.4	14	37.8	38.4	12.9
767LT _ 4 X 6	4	6	2.4	12	30.5	37.1	13.7
767LT _ 6 X 3	6	3	2.1	14	29.5	36.9	15.3
767LT _ 6 X 8	6	8	4.8	14	32.5	39.9	15.3
767LT _ 6 X 10	6	10	4.8	14	33.3	40.7	15.3
767LT _ 6 X 12	6	12	4.8	14	38.9	46.3	15.3
767LT _ 6 X 18	6	18	4.8	22	42.2	49.6	15.3
767LT _ 8 X 6	8	6	4.0	15	32.8	40.3	16.2
767LT _ 8 X 10	8	10	6.4	15	34.5	42.0	16.2
767LT _ 8 X 12	8	12	6.4	15	40.1	47.6	16.2
767LT _ 10 X 6	10	6	4.0	18	34.8	42.4	17.2
767LT _ 10 X 8	10	8	5.6	18	35.8	43.4	17.2
767LT _ 10 X 12	10	12	7.9	18	42.2	49.8	17.2
767LT _ 10 X 15	10	15	7.9	18	43.7	51.3	17.2
767LT _ 10 X 18	10	18	7.9	22	43.7	51.3	17.2
767LT _ 12 X 6	12	6	4.0	22	34.8	44.9	22.8
767LT _ 12 X 8	12	8	5.6	22	35.8	45.9	22.8
767LT _ 12 X 10	12	10	7.1	22	36.6	46.7	22.8
767LT _ 12 X 16	12	16	9.5	22	43.7	53.8	22.8
767LT _ 12 X 18	12	18	9.5	22	43.7	53.8	22.8
767LT _ 12 X 20	12	20	9.5	22	46.0	56.1	22.8
767LT _ 12 X 22	12	22	9.5	24	46.0	56.1	22.8
767LT _ 12 X 25	12	25	9.5	27	52.3	62.4	22.8
767LT _ 16 X 12	16	12	8.8	24	42.9	53.0	24.4
767LT _ 18 X 12	18	12	8.8	27	44.5	54.6	24.4
767LT _ 18 X 16	18	16	12.7	27	46.0	56.1	24.4
767LT _ 18 X 20	18	20	15.1	27	47.5	57.6	24.4
767LT _ 18 X 22	18	22	15.1	27	47.5	57.6	24.4
767LT _ 18 X 25	18	25	15.1	27	52.3	62.4	24.4
767LT _ 20 X 16	20	16	12.7	30	47.8	57.9	26.0
767LT _ 20 X 18	20	18	13.9	30	47.8	57.9	26.0
767LT _ 20 X 22	20	22	15.9	30	49.3	59.4	26.0
767LT _ 20 X 25	20	25	15.9	30	54.1	64.2	26.0
767LT _ 22 X 18	22	18	13.9	30	47.8	57.9	26.0
767LT _ 22 X 20	22	20	15.1	30	49.3	59.4	26.0
767LT _ 22 X 25	22	25	18.3	30	54.1	64.2	26.0
767LT _ 25 X 18	25	18	13.9	35	50.8	63.1	31.3
767LT _ 25 X 20	25	20	15.1	35	52.3	64.6	31.3

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

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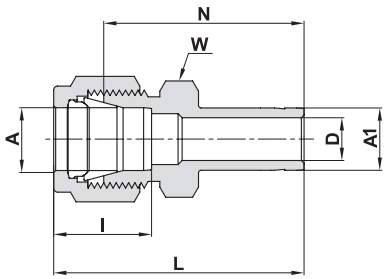
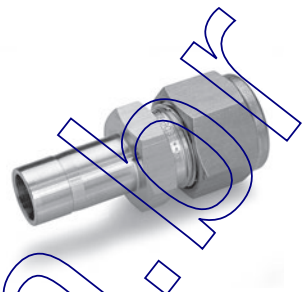
767 LT
REDUCER (Cont'd)



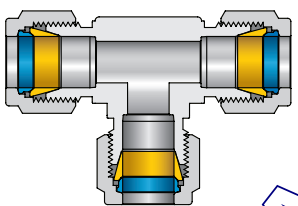


TUBE (METRIC) TO STUB (INCH)

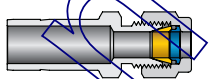
Ordering Information	A Tube O.D.	A1 Tube O.D.	D	W Hex. Flat	N	L	I
	mm	inch	mm	mm	mm	mm	mm
767LT _ 2 X 1/8	2	1/8	2.0	12	26.9	33.5	12.9
767LT _ 3 X 1/8	3	1/8	2.0	12	26.9	33.5	12.9
767LT _ 3 X 1/4	3	1/4	2.4	12	29.5	36.1	12.9
767LT _ 4 X 1/4	4	1/4	2.4	12	30.5	37.1	13.7
767LT _ 6 X 1/8	6	1/8	2.2	14	29.5	36.9	15.3
767LT _ 6 X 5/16	6	5/16	4.8	14	32.5	39.9	15.3
767LT _ 6 X 3/8	6	3/8	4.8	14	33.3	40.7	15.3
767LT _ 6 X 1/2	6	1/2	4.8	14	38.9	46.3	15.3
767LT _ 8 X 3/8	8	3/8	6.4	15	34.5	42.0	16.2
767LT _ 8 X 1/2	8	1/2	6.4	15	40.1	47.6	16.2
767LT _ 10 X 3/8	10	3/8	6.8	18	36.6	44.2	17.2
767LT _ 10 X 1/2	10	1/2	7.9	18	42.2	49.8	17.2
767LT _ 12 X 1/2	12	1/2	9.4	22	42.2	52.3	22.8
767LT _ 12 X 3/4	12	3/4	9.4	22	43.7	53.8	22.8
767LT _ 18 X 3/4	18	3/4	15.0	27	46.0	56.1	24.4
767LT _ 18 X 1	18	1	15.1	27	52.3	62.4	24.4
767LT _ 25 X 1	25	1	20.3	35	57.2	69.5	31.3

HEAT EXCHANGER TEE; INFORMATION

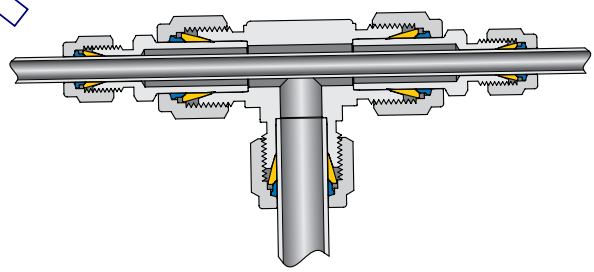
UNION TEE – 764 L



REDUCER – 767 LT



Heat exchanger tee made with Let-Lok® tube fittings:



"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

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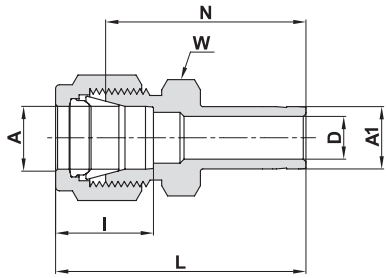
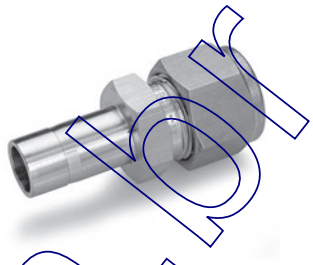
767 LT
REDUCER (Cont'd)



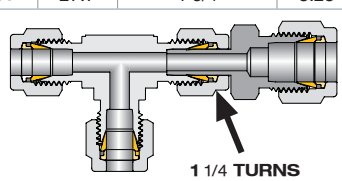


TUBE (INCH) TO STUB (INCH)

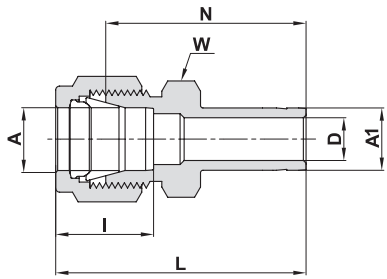
Ordering Information	A Tube O.D.		A1 Tube O.D.		D		W Hex Flat	N		L		I	
	inch	mm	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm
767LT _ 1/16 X 1/8	1/16	1.58	1/8	3.17	.05	1.27	5/16	1.00	25.40	1.15	29.21	.34	8.6
767LT _ 1/16 X 1/4	1/16	1.58	1/4	6.35	.05	1.27	5/16	1.09	27.68	1.24	31.50	.34	8.6
767LT _ 1/8 X 1/16	1/8	3.17	1/16	1.58	.03	.76	7/16	.88	22.35	1.14	28.96	.50	12.7
767LT _ 1/8 X 1/8	1/8	3.17	1/8	3.17	.08	2.03	7/16	1.06	26.92	1.32	33.52	.50	12.7
767LT _ 1/8 X 3/16	1/8	3.17	3/16	4.76	.09	2.28	7/16	1.09	27.68	1.35	34.29	.50	12.7
767LT _ 1/8 X 1/4	1/8	3.17	1/4	6.35	.09	2.28	7/16	1.16	29.46	1.42	36.06	.50	12.7
767LT _ 1/8 X 3/8	1/8	3.17	3/8	9.52	.09	2.28	7/16	1.22	30.98	1.48	37.59	.50	12.7
767LT _ 1/8 X 1/2	1/8	3.17	1/2	12.70	.09	2.28	9/16	1.48	37.59	1.74	44.20	.50	12.7
767LT _ 3/16 X 1/8	3/16	4.76	1/8	3.17	.08	2.03	7/16	1.11	28.19	1.37	34.80	.54	13.7
767LT _ 3/16 X 1/4	3/16	4.76	1/4	6.35	.12	3.04	7/16	1.20	30.48	1.46	37.08	.54	13.7
767LT _ 1/4 X 1/8	1/4	6.35	1/8	3.17	.08	2.03	1/2	1.16	29.46	1.45	36.83	.60	15.2
767LT _ 1/4 X 3/16	1/4	6.35	3/16	4.76	.12	3.04	1/2	1.19	30.22	1.48	37.59	.60	15.2
767LT _ 1/4 X 1/4	1/4	6.35	1/4	6.35	.17	4.20	1/2	1.25	31.75	1.54	39.11	.60	15.2
767LT _ 1/4 X 5/16	1/4	6.35	5/16	7.93	.19	4.82	1/2	1.28	32.51	1.57	39.87	.60	15.2
767LT _ 1/4 X 3/8	1/4	6.35	3/8	9.52	.19	4.82	1/2	1.31	33.27	1.60	40.64	.60	15.2
767LT _ 1/4 X 1/2	1/4	6.35	1/2	12.70	.19	4.82	9/16	1.53	38.86	1.82	46.22	.60	15.2
767LT _ 1/4 X 5/8	1/4	6.35	5/8	15.87	.19	4.82	11/16	1.60	40.64	1.89	48.00	.60	15.2
767LT _ 1/4 X 3/4	1/4	6.35	3/4	19.05	.19	4.82	13/16	1.59	40.39	1.88	47.75	.60	15.2
767LT _ 5/16 X 3/8	5/16	7.93	3/8	9.52	.25	6.35	9/16	1.36	34.54	1.65	41.91	.64	16.2
767LT _ 5/16 X 1/2	5/16	7.93	1/2	12.70	.25	6.35	9/16	1.58	40.13	1.87	47.49	.64	16.2
767LT _ 3/8 X 1/4	3/8	9.52	1/4	6.35	.17	4.20	5/8	1.34	34.03	1.63	41.40	.66	16.8
767LT _ 3/8 X 3/8	3/8	9.52	3/8	9.52	.27	6.85	5/8	1.41	35.81	1.70	43.18	.66	16.8
767LT _ 3/8 X 1/2	3/8	9.52	1/2	12.70	.28	7.11	5/8	1.62	41.14	1.91	48.51	.66	16.8
767LT _ 3/8 X 5/8	3/8	9.52	5/8	15.87	.28	7.11	11/16	1.69	42.92	1.98	50.29	.66	16.8
767LT _ 3/8 X 3/4	3/8	9.52	3/4	19.05	.28	7.11	13/16	1.69	42.92	1.98	50.29	.66	16.8
767LT _ 1/2 X 1/4	1/2	12.70	1/4	6.35	.17	4.20	13/16	1.37	34.80	1.77	44.96	.90	22.9
767LT _ 1/2 X 3/8	1/2	12.70	3/8	9.52	.27	6.85	13/16	1.44	36.58	1.84	46.74	.90	22.9
767LT _ 1/2 X 1/2	1/2	12.70	1/2	12.70	.37	9.40	13/16	1.66	42.16	2.06	52.32	.90	22.9
767LT _ 1/2 X 5/8	1/2	12.70	5/8	15.87	.41	10.41	13/16	1.72	43.68	2.12	53.84	.90	22.9
767LT _ 1/2 X 3/4	1/2	12.70	3/4	19.05	.41	10.41	13/16	1.72	43.68	2.12	53.84	.90	22.9
767LT _ 1/2 X 1	1/2	12.70	1	25.40	.41	10.41	1 1/16	1.97	50.03	2.37	60.19	.90	22.9
767LT _ 5/8 X 3/4	5/8	15.87	3/4	19.05	.50	12.70	15/16	1.75	44.45	2.15	54.61	.96	24.4
767LT _ 5/8 X 7/8	5/8	15.87	7/8	22.22	.50	12.70	15/16	1.81	45.97	2.21	56.13	.96	24.4
767LT _ 5/8 X 1	5/8	15.87	1	25.40	.50	12.70	1 1/16	2.00	50.80	2.40	60.96	.96	24.4
767LT _ 3/4 X 1/2	3/4	19.05	1/2	12.70	.37	9.40	1 1/16	1.75	44.45	2.15	54.61	.96	24.4
767LT _ 3/4 X 1	3/4	19.05	1	25.40	.62	15.75	1 1/16	2.06	52.32	2.46	62.48	.96	24.4
767LT _ 1 X 1 1/4	1	25.40	*1 1/4	31.75	.88	22.35	1 3/8	2.69	68.33	3.17	80.52	1.23	31.2
767LT _ 1 X 1 1/2	1	25.40	*1 1/2	38.10	.88	22.35	1 5/8	3.03	76.96	3.51	89.15	1.23	31.2
767LT _ 1 1/4 X 1 1/2	1 1/4	31.75	*1 1/2	38.10	1.09	27.7	1 3/4	3.23	82.00	4.10	104.1	1.62	41.2

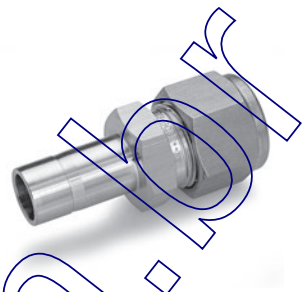
ASSEMBLY INSTRUCTIONS: Reducer tube to stub 767 LT

*Supplied assembled on tube stub end (A1) nut+front & back ferrule. Tighten the nut on the body 1/2 a turn with a wrench. Low friction paste, see page 91.
"**D**" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.



767 LT
REDUCER
(Cont'd)

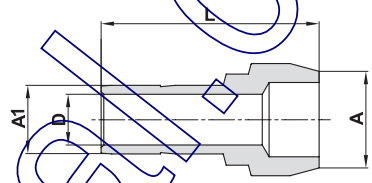




TUBE (INCH) TO STUB (METRIC)

Ordering Information	A Tube O.D.		A1 Tube O.D.	D		W Hex. Flat	N		L		I	
	inch	mm	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm
767LT _ 1/8 X 6	1/8	3.17	6	.09	2.30	7/16	1.16	29.46	1.42	36.06	.50	12.7
767LT _ 1/4 X 6	1/4	6.35	6	.16	4.00	1/2	1.25	31.75	1.54	39.11	.60	15.2
767LT _ 3/8 X 8	3/8	9.52	8	.22	5.60	5/8	1.42	36.06	1.71	43.43	.66	16.8
767LT _ 3/8 X 12	3/8	9.52	12	.28	7.11	5/8	1.62	41.15	1.91	48.51	.66	16.8

767 LM
REDUCING PORT CONNECTOR



CONNECTS TWO LET-LOK® PORTS (METRIC)

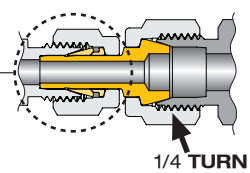
Ordering Information	A Tube O.D.	A1 Tube O.D.	D	L
	mm	mm	mm	mm
767LM _ 6 X 3	6	3	2.1	22.9
767LM _ 8 X 6	8	6	4.0	24.7
767LM _ 10 X 6	10	6	4.0	25.8
767LM _ 10 X 8	10	8	5.6	26.1
767LM _ 12 X 6	12	6	4.0	29.1
767LM _ 12 X 8	12	8	5.6	29.8
767LM _ 12 X 10	12	10	7.1	30.6
767LM _ 16 X 12	16	12	8.8	37.5
767LM _ 38 X 25	*38	25	19.8	65.8

CONNECTS TWO LET-LOK® PORTS (INCH)

Ordering Information	A Tube O.D.		A1 Tube O.D.		D		L	
	inch	mm	inch	mm	inch	mm	inch	mm
767LM _ 1/8 X 1/16	1/8	3.17	1/16	1.58	.03	0.75	.68	17.3
767LM _ 1/4 X 1/16	1/4	6.35	1/16	1.58	.03	0.75	.71	18.0
767LM _ 1/4 X 1/8	1/4	6.35	1/8	3.17	.08	2.03	.89	22.6
767LM _ 3/8 X 1/8	3/8	9.52	1/8	3.17	.08	2.03	.91	23.2
767LM _ 3/8 X 1/4	3/8	9.52	1/4	6.35	.17	4.20	.98	24.9
767LM _ 1/2 X 1/4	1/2	12.70	1/4	6.35	.17	4.20	1.15	29.2
767LM _ 1/2 X 3/8	1/2	12.70	3/8	9.52	.28	7.10	1.20	30.5
767LM _ 3/4 X 1/2	3/4	19.05	1/2	12.70	.39	9.90	1.49	37.9

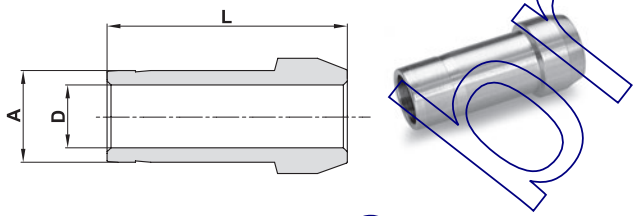
ASSEMBLY INSTRUCTIONS
Reducer Port Connector 767 LM

Tighten the nut.
1-1/4 turns of the nut are required for 1/4" (6 mm) and higher.
A 3/4 turn of the nut is required for 3/16" (4 mm) and lower.



* Including low friction paste, see page 91
"D" - Dimension is minimum opening.
Dimensions are for reference only, and are subject to change without notice.

767 LP
PORT CONNECTOR



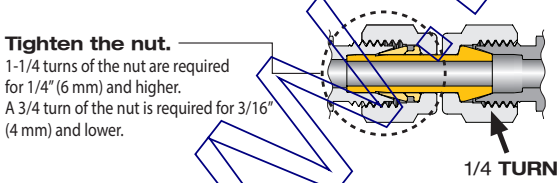
CONNECTS TWO LET-LOK® PORTS (METRIC)

Ordering Information	A Tube O.D.	D	L
	mm	mm	mm
767LP _ 3	3	2.1	22.2
767LP _ 6	6	4.0	25.0
767LP _ 8	8	5.6	25.9
767LP _ 10	10	7.1	27.1
767LP _ 12	12	8.8	36.2
767LP _ 16	16	12.7	37.4
767LP _ 18	18	13.9	37.4
767LP _ 38	*38	31.6	81.9
767LP _ 50	*50	42.8	114.0

CONNECTS TWO LET-LOK® PORTS (INCH)

Ordering Information	A Tube O.D.		D		L	
	inch	mm	inch	mm	inch	mm
767LP _ 1/16	1/16	1.58	.03	0.75	.54	13.7
767LP _ 1/8	1/8	3.17	.08	2.03	.88	22.4
767LP _ 1/4	1/4	6.35	.17	4.20	.98	24.9
767LP _ 5/16	5/16	7.93	.24	6.00	1.02	25.9
767LP _ 3/8	3/8	9.52	.27	6.85	1.03	26.2
767LP _ 1/2	1/2	12.70	.37	9.40	1.41	35.8
767LP _ 3/4	3/4	19.05	.59	15.00	1.47	37.3
767LP _ 1	1	25.40	.80	20.30	1.90	48.1
767LP _ 1 1/4	*1 1/4	31.75	1.02	26.00	2.72	69.1
767LP _ 1 1/2	*1 1/2	38.10	1.25	31.60	3.31	84.1
767LP _ 2	*2	50.80	1.72	43.67	4.56	115.8

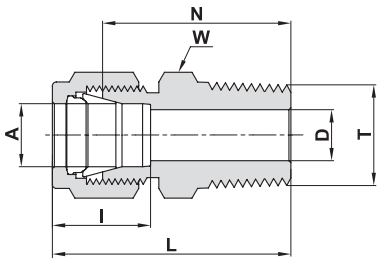
Port Connector 767LP

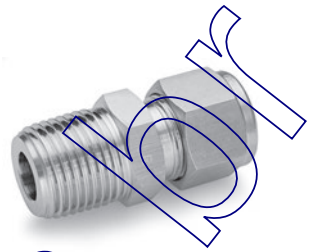


* Supplied assembled with Nuts and Ferrules. Low friction paste, see page 91
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

768 L

MALE CONNECTOR





TUBE (METRIC) MALE NPT THREAD

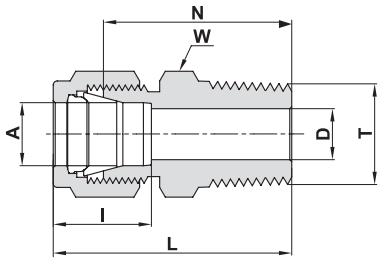
Ordering Information	A Tube O.D.	T (NPT)	D	W Hex. Flat	N	L	I
	mm	inch	mm	mm	mm	mm	mm
768L _ 2 X 1/8	2	1/8	1.7	12	23.9	30.5	12.9
768L _ 3 X 1/8	3	1/8	2.4	12	23.9	30.5	12.9
768L _ 3 X 1/4	3	1/4	2.4	14	29.0	35.6	12.9
768L _ 4 X 1/8	4	1/8	2.4	12	24.6	31.2	13.7
768L _ 4 X 1/4	4	1/4	2.4	14	29.7	36.3	13.7
768L _ 6 X 1/8	6	1/8	4.8	14	25.4	32.8	15.3
768L _ 6 X 1/4	6	1/4	4.8	14	30.5	37.9	15.3
768L _ 6 X 3/8	6	3/8	4.8	18	31.0	38.4	15.3
768L _ 6 X 1/2	6	1/2	4.8	22	37.3	44.7	15.3
768L _ 8 X 1/8	8	1/8	4.8	15	26.7	34.2	16.2
768L _ 8 X 1/4	8	1/4	6.4	15	31.2	38.7	16.2
768L _ 8 X 3/8	8	3/8	6.4	18	31.8	39.3	16.2
768L _ 8 X 1/2	8	1/2	6.4	22	38.1	45.6	16.2
768L _ 10 X 1/8	10	1/8	4.8	18	28.7	36.3	17.2
768L _ 10 X 1/4	10	1/4	7.9	18	33.3	40.9	17.2
768L _ 10 X 3/8	10	3/8	7.9	18	33.3	40.9	17.2
768L _ 10 X 1/2	10	1/2	7.9	22	38.9	46.5	17.2
768L _ 10 X 3/4	10	3/4	7.9	27	40.4	48.0	17.2
768L _ 12 X 1/8	12	1/8	4.8	22	28.7	38.8	22.8
768L _ 12 X 1/4	12	1/4	7.1	22	33.3	43.4	22.8
768L _ 12 X 3/8	12	3/8	9.5	22	33.3	43.4	22.8
768L _ 12 X 1/2	12	1/2	9.5	22	38.9	49.0	22.8
768L _ 12 X 3/4	12	3/4	9.5	27	40.4	50.5	22.8
768L _ 14 X 1/4	14	1/4	7.1	24	34.0	44.1	24.4
768L _ 14 X 3/8	14	3/8	9.5	24	34.0	44.1	24.4
768L _ 14 X 1/2	14	1/2	11.1	24	38.9	49.0	24.4
768L _ 15 X 1/2	15	1/2	11.9	24	38.9	49.0	24.4
768L _ 16 X 3/8	16	3/8	9.5	24	34.0	44.1	24.4
768L _ 16 X 1/2	16	1/2	11.9	24	38.9	49.0	24.4
768L _ 16 X 3/4	16	3/4	12.7	27	40.4	50.5	24.4
768L _ 18 X 1/2	18	1/2	11.9	27	40.4	50.5	24.4
768L _ 18 X 3/4	18	3/4	15.1	27	40.4	50.5	24.4
768L _ 20 X 1/2	20	1/2	11.9	30	42.2	52.3	26.0
768L _ 20 X 3/4	20	3/4	15.9	30	42.2	52.3	26.0
768L _ 22 X 3/4	22	3/4	15.9	30	42.2	52.3	26.0
768L _ 22 X 1	22	1	18.3	35	47.0	57.1	26.0
768L _ 25 X 1/2	25	1/2	11.9	35	45.2	57.5	31.3
768L _ 25 X 3/4	25	3/4	15.9	35	45.2	57.5	31.3
768L _ 25 X 1	25	1	21.8	35	50.0	62.3	31.3
768L _ 38 X 1 1/2	*38	1 1/2	33.7	55	64.0	91.6	49.4
768L _ 50 X 2"	*50	2	45.2	3 inch	76.2	113.3	65.0

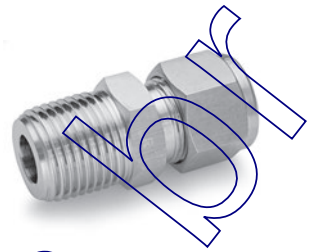
* Supplied assembled with Nuts and Ferrules. For low friction paste, see page 91
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

Cont'd next page

768 L

MALE CONNECTOR (Cont'd)





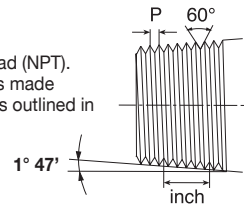
TUBE (INCH) MALE NPT THREAD

Ordering Information	A Tube O.D.		T (NPT)	D		W Hex. Flat	N		L		I	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm	inch	mm
768L _ 1/16 X 1/16	1/16	1.58	1/16	.05	1.27	5/16	.79	20.10	.94	23.88	.34	8.6
768L _ 1/16 X 1/8	1/16	1.58	1/8	.05	1.27	7/16	.88	22.35	1.03	26.10	.34	8.6
768L _ 1/16 X 1/4	1/16	1.58	1/4	.05	1.27	9/16	1.07	27.17	1.22	30.98	.34	8.6
768L _ 1/8 X 1/16	1/8	3.17	1/16	.09	2.28	7/16	.91	23.11	1.17	29.71	.50	12.7
768L _ 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	7/16	.94	23.90	1.20	30.48	.50	12.7
768L _ 1/8 X 1/4	1/8	3.17	1/4	.09	2.28	9/16	1.14	28.95	1.40	35.56	.50	12.7
768L _ 1/8 X 3/8	1/8	3.17	3/8	.09	2.28	11/16	1.15	29.21	1.41	35.81	.50	12.7
768L _ 1/8 X 1/2	1/8	3.17	1/2	.09	2.28	7/8	1.40	35.56	1.66	42.16	.50	12.7
768L _ 3/16 X 1/8	3/16	4.76	1/8	.12	3.04	7/16	.97	24.63	1.23	31.24	.54	13.7
768L _ 3/16 X 1/4	3/16	4.76	1/4	.12	3.04	9/16	1.17	29.72	1.43	36.32	.54	13.7
768L _ 1/4 X 1/16	1/4	6.35	1/16	.12	3.04	1/2	1.00	25.40	1.29	32.76	.60	15.2
768L _ 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	1/2	1.00	25.40	1.29	32.76	.60	15.2
768L _ 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	9/16	1.20	30.50	1.49	37.85	.60	15.2
768L _ 1/4 X 3/8	1/4	6.35	3/8	.19	4.82	11/16	1.22	30.98	1.51	38.35	.60	15.2
768L _ 1/4 X 1/2	1/4	6.35	1/2	.19	4.82	7/8	1.47	37.34	1.76	44.70	.60	15.2
768L _ 1/4 X 3/4	1/4	6.35	3/4	.19	4.82	1 1/16	1.53	38.86	1.82	46.22	.60	15.2
768L _ 5/16 X 1/8	5/16	7.93	1/8	.19	4.82	9/16	1.05	26.67	1.34	34.03	.64	16.2
768L _ 5/16 X 1/4	5/16	7.93	1/4	.25	6.35	9/16	1.23	31.24	1.52	38.60	.64	16.2
768L _ 5/16 X 3/8	5/16	7.93	3/8	.25	6.35	11/16	1.25	31.75	1.54	39.11	.64	16.2
768L _ 3/8 X 1/8	3/8	9.52	1/8	.19	4.82	5/8	1.10	27.90	1.39	35.30	.66	16.8
768L _ 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	5/8	1.28	32.51	1.57	39.87	.66	16.8
768L _ 3/8 X 3/8	3/8	9.52	3/8	.28	7.11	11/16	1.28	32.51	1.57	39.87	.66	16.8
768L _ 3/8 X 1/2	3/8	9.52	1/2	.28	7.11	7/8	1.53	38.90	1.82	46.23	.66	16.8
768L _ 3/8 X 3/4	3/8	9.52	3/4	.28	7.11	1 1/16	1.59	40.38	1.88	47.75	.66	16.8
768L _ 3/8 X 1	3/8	9.52	1	.28	7.11	1 3/8	1.85	46.99	2.14	54.35	.66	16.8
768L _ 1/2 X 1/8	1/2	12.70	1/8	.19	4.82	13/16	1.13	28.70	1.53	38.86	.90	22.9
768L _ 1/2 X 1/4	1/2	12.70	1/4	.28	7.11	13/16	1.31	33.27	1.71	43.43	.90	22.9
768L _ 1/2 X 3/8	1/2	12.70	3/8	.38	9.65	13/16	1.31	33.27	1.71	43.43	.90	22.9
768L _ 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	7/8	1.53	38.90	1.93	49.02	.90	22.9
768L _ 1/2 X 3/4	1/2	12.70	3/4	.41	10.41	1 1/16	1.59	40.38	1.99	50.54	.90	22.9
768L _ 1/2 X 1	1/2	12.70	1	.41	10.41	1 3/8	1.85	47.00	2.25	57.15	.90	22.9

Reference Specifications:

- 60° Thread angle
- Pitch measured in inches
- Truncation of root and crest is flat
- Taper angle 1° 47'

American Standard Pipe Thread (NPT). NPT (National Pipe Tapered) is made according to the specifications outlined in ANSI B1.20.1.



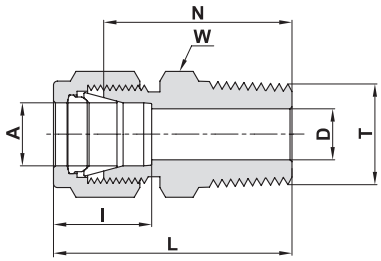
Thermoelement (see Page 38)

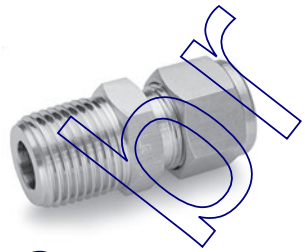
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

Cont'd next page

768 L

MALE CONNECTOR (Cont'd)





TUBE (INCH) MALE NPT THREAD

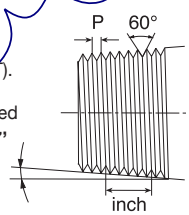
Ordering Information	A Tube O.D.		T (NPT)	D		W Hex. Flat	N		L		I	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm	inch	mm
768L _ 5/8 X 1/4	5/8	15.87	1/4	.28	7.11	15/16	1.34	34.03	1.74	44.19	.96	24.4
768L _ 5/8 X 3/8	5/8	15.87	3/8	.38	9.65	15/16	1.34	34.03	1.74	44.19	.96	24.4
768L _ 5/8 X 1/2	5/8	15.87	1/2	.47	11.90	15/16	1.53	38.86	1.93	49.02	.96	24.4
768L _ 5/8 X 3/4	5/8	15.87	3/4	.50	12.70	1 1/16	1.59	40.38	1.99	50.54	.96	24.4
768L _ 3/4 X 3/8	3/4	19.05	3/8	.38	9.50	1 1/16	1.38	35.05	1.78	45.21	.96	24.4
768L _ 3/4 X 1/2	3/4	19.05	1/2	.47	11.90	1 1/16	1.59	40.38	1.99	50.54	.96	24.4
768L _ 3/4 X 3/4	3/4	19.05	3/4	.62	15.75	1 1/16	1.59	40.38	1.99	50.54	.96	24.4
768L _ 3/4 X 1	3/4	19.05	1	.62	15.75	1 3/8	1.85	47.00	2.25	57.15	.96	24.4
768L _ 7/8 X 1/2	7/8	22.22	1/2	.47	11.90	1 3/16	1.59	40.38	1.99	50.54	1.02	25.9
768L _ 7/8 X 3/4	7/8	22.22	3/4	.62	15.75	1 3/16	1.59	40.38	1.99	50.54	1.02	25.9
768L _ 7/8 X 1	7/8	22.22	1	.72	18.28	1 3/8	1.85	46.99	2.25	57.15	1.02	25.9
768L _ 1 X 1/2	1	25.40	1/2	.47	11.90	1 3/8	1.78	45.21	2.26	57.40	1.23	31.2
768L _ 1 X 3/4	1	25.40	3/4	.62	15.75	1 3/8	1.78	45.21	2.26	57.40	1.23	31.2
768L _ 1 X 1	1	25.40	1	.88	22.35	1 3/8	1.97	50.03	2.45	62.23	1.23	31.2
768L _ 1 1/4 X 1	*1 1/4	31.75	1	.86	21.80	1 3/4	2.17	55.12	3.04	77.22	1.62	41.2
768L _ 1 1/4 X 1 1/4	*1 1/4	31.75	1 1/4	1.09	27.70	1 3/4	2.17	55.12	3.04	77.22	1.62	41.2
768L _ 1 1/2 X 1 1/2	*1 1/2	38.10	1 1/2	1.34	34.00	2 1/8	2.43	61.72	3.50	88.90	1.97	50.0
768L _ 2 X 2	*2	50.80	2	1.81	45.97	2 3/4	3.00	76.20	4.47	113.54	2.66	67.6

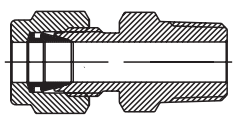
* Including low friction paste, See page 91

Reference Specifications:

- 60° Thread angle
- Pitch measured in inches
- Truncation of root and crest is flat
- Taper angle 1° 47'

American Standard Pipe Thread (NPT). NPT (National Pipe Tapered) is made according to the specifications outlined in ASNI B1.20.1.



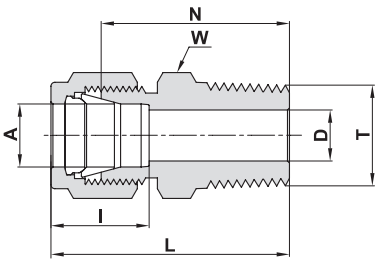


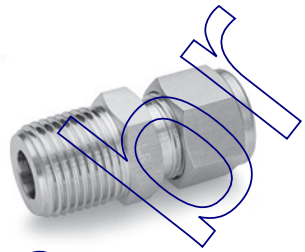
Thermoelement

For ordering: use the catalog number of the selected fitting and add the suffix TC.
Example: 768 L SS 1/4 x 1/4 **TC**

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

768 LR
MALE CONNECTOR





TUBE (METRIC) ISO TAPERED THREAD

Ordering Information	A Tube O.D.	T (ISO)	D	W Hex. Flat	N	L	I
	mm	inch	mm	mm	mm	mm	mm
768LR _ 2 X 1/8	2	R-1/8	1.7	12	23.9	30.5	12.9
768LR _ 3 X 1/8	3	R-1/8	2.4	12	23.9	30.5	12.9
768LR _ 3 X 1/4	3	R-1/4	2.4	14	29.0	35.6	12.9
768LR _ 4 X 1/8	4	R-1/8	2.4	12	24.6	31.2	13.7
768LR _ 4 X 1/4	4	R-1/4	2.4	14	29.7	36.3	13.7
768LR _ 6 X 1/8	6	R-1/8	4.8	14	25.4	32.8	15.3
768LR _ 6 X 1/4	6	R-1/4	4.8	14	30.5	37.9	15.3
768LR _ 6 X 3/8	6	R-3/8	4.8	18	31.0	38.4	15.3
768LR _ 6 X 1/2	6	R-1/2	4.8	22	37.3	44.7	15.3
768LR _ 8 X 1/8	8	R-1/8	4.8	15	26.7	34.2	16.2
768LR _ 8 X 1/4	8	R-1/4	6.4	15	31.2	38.7	16.2
768LR _ 8 X 3/8	8	R-3/8	6.4	18	31.8	39.2	16.2
768LR _ 8 X 1/2	8	R-1/2	6.4	22	38.1	45.6	16.2
768LR _ 10 X 1/8	10	R-1/8	4.8	18	28.7	36.3	17.2
768LR _ 10 X 1/4	10	R-1/4	7.9	18	33.3	40.9	17.2
768LR _ 10 X 3/8	10	R-3/8	7.9	18	33.3	40.9	17.2
768LR _ 10 X 1/2	10	R-1/2	7.9	22	38.9	46.5	17.2
768LR _ 10 X 3/4	10	R-3/4	7.9	27	40.4	48.0	17.2
768LR _ 12 X 1/4	12	R-1/4	7.1	22	33.3	43.4	22.8
768LR _ 12 X 3/8	12	R-3/8	9.5	22	33.3	43.4	22.8
768LR _ 12 X 1/2	12	R-1/2	9.5	22	38.9	49.0	22.8
768LR _ 12 X 3/4	12	R-3/4	9.5	27	40.4	50.5	22.8
768LR _ 14 X 1/4	14	R-1/4	7.1	24	34.0	44.1	24.4
768LR _ 14 X 3/8	14	R-3/8	9.5	24	34.0	44.1	24.4
768LR _ 15 X 1/2	15	R-1/2	11.9	24	38.9	49.0	24.4
768LR _ 16 X 1/4	16	R-1/4	7.1	24	34.0	44.1	24.4
768LR _ 16 X 3/8	16	R-3/8	9.5	24	34.0	44.1	24.4
768LR _ 16 X 1/2	16	R-1/2	11.9	24	38.9	49.0	24.4
768LR _ 16 X 3/4	16	R-3/4	12.7	27	40.4	50.5	24.4
768LR _ 18 X 1/2	18	R-1/2	11.9	27	40.4	50.5	24.4
768LR _ 18 X 3/4	18	R-3/4	15.1	27	40.4	50.5	24.4
768LR _ 20 X 1/2	20	R-1/2	11.9	30	42.2	52.3	26.0
768LR _ 20 X 3/4	20	R-3/4	15.9	30	42.2	52.3	26.0
768LR _ 22 X 3/4	22	R-3/4	15.9	30	42.2	52.3	26.0
768LR _ 22 X 1	22	R-1	18.3	35	47.0	57.1	26.0
768LR _ 25 X 1/2	25	R-1/2	11.9	35	45.2	57.5	31.3
768LR _ 25 X 3/4	25	R-3/4	15.9	35	45.2	57.5	31.3
768LR _ 25 X 1	25	R-1	21.8	35	45.2	57.5	31.3
768LR _ 38 X 1 1/2	*38	R-1 1/2	33.7	55	64.0	91.6	49.4
768LR _ 50 X 2"	*50	R-2	45.2	3 inch	76.2	113.3	65.0

Designation:
Marking LR on Hex

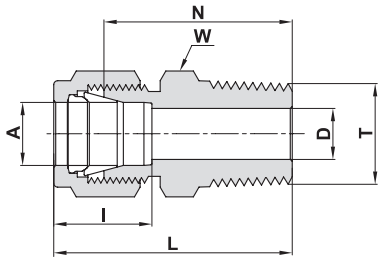
Reference Specifications: DIN -ISO 2999
BS - 21
JIS - B0203
ISO - 7/1-BSP-T

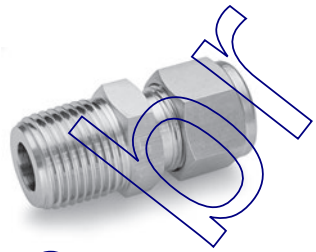
Thermoelement
(See Page 38)

* Including low friction paste, see page 91
"D" - Dimension is minimum opening.
Dimensions are for reference only, and are subject to change without notice.

768 LR

MALE CONNECTOR (Cont'd)





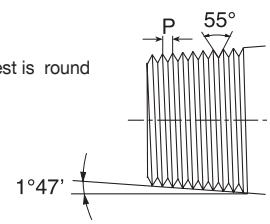
TUBE (INCH) ISO TAPERED THREAD

Ordering Information	A Tube O.D.		T (ISO)	D		W Hex. Flat	N		L		I	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm	inch	mm
768LR _ 1/8 X 1/8	1/8	3.17	R-1/8	.09	2.28	7/16	.94	23.90	1.20	30.48	.50	12.70
768LR _ 1/8 X 1/4	1/8	3.17	R-1/4	.09	2.28	9/16	1.14	28.95	1.40	35.56	.50	12.70
768LR _ 1/4 X 1/8	1/4	6.35	R-1/8	.19	4.82	1/2	1.00	25.40	1.29	32.76	.60	15.20
768LR _ 1/4 X 1/4	1/4	6.35	R-1/4	.19	4.82	9/16	1.20	30.50	1.49	37.85	.60	15.20
768LR _ 1/4 X 3/8	1/4	6.35	R-3/8	.19	4.82	11/16	1.22	30.88	1.51	38.35	.60	15.20
768LR _ 1/4 X 1/2	1/4	6.35	R-1/2	.19	4.82	7/8	1.47	37.34	1.76	44.70	.60	15.20
768LR _ 5/16 X 1/8	5/16	7.93	R-1/8	.19	4.82	9/16	1.05	26.67	1.34	34.03	.64	16.20
768LR _ 5/16 X 1/4	5/16	7.93	R-1/4	.25	6.35	9/16	1.23	31.24	1.52	38.60	.64	16.20
768LR _ 3/8 X 1/8	3/8	9.52	R-1/8	.19	4.82	5/8	1.10	27.90	1.39	35.30	.66	16.80
768LR _ 3/8 X 1/4	3/8	9.52	R-1/4	.28	7.11	5/8	1.28	32.51	1.57	39.87	.66	16.80
768LR _ 3/8 X 3/8	3/8	9.52	R-3/8	.28	7.11	11/16	1.28	32.51	1.57	39.87	.66	16.80
768LR _ 3/8 X 1/2	3/8	9.52	R-1/2	.28	7.11	7/8	1.53	38.90	1.82	46.23	.66	16.80
768LR _ 3/8 X 3/4	3/8	9.52	R-3/4	.28	7.11	1 1/16	1.59	40.38	1.88	47.75	.66	16.80
768LR _ 1/2 X 1/4	1/2	12.70	R-1/4	.28	7.11	13/16	1.31	33.27	1.71	43.43	.90	22.90
768LR _ 1/2 X 3/8	1/2	12.70	R-3/8	.38	9.65	13/16	1.31	33.27	1.71	43.43	.90	22.90
768LR _ 1/2 X 1/2	1/2	12.70	R-1/2	.41	10.41	7/8	1.53	38.90	1.93	49.02	.90	22.90
768LR _ 1/2 X 3/4	1/2	12.70	R-3/4	.41	10.41	1 1/16	1.59	40.38	1.99	50.54	.90	22.90
768LR _ 5/8 X 1/2	5/8	15.87	R-1/2	.47	11.90	15/16	1.53	38.86	1.93	49.02	.96	24.40
768LR _ 3/4 X 3/4	3/4	19.05	R-3/4	.62	15.74	1 1/16	1.59	40.38	1.99	50.54	.96	24.40
768LR _ 3/4 X 1	3/4	19.05	R-1	.62	15.74	1 3/8	1.85	47.00	2.25	57.15	.96	24.40
768LR _ 1 X 3/4	1	25.40	R-3/4	.63	15.90	1 3/8	1.78	45.21	2.26	57.40	1.23	31.20
768LR _ 1 X 1	1	25.40	R-1	.88	22.35	1 3/8	1.97	50.03	2.45	62.23	1.23	31.20
768LR _ 1 1/4 X 1 1/4	*1 1/4	31.75	R-1 1/4	1.09	27.70	1 3/4	2.17	55.12	3.04	77.22	1.62	41.20

* Including low friction paste, See page 91

Reference Specifications:
DIN -ISO 2999
BS - 21
JIS - B0203
ISO - 7/1-BSP-T

55° Thread angle
Truncation of root and crest is round
Taper angle 1°47'

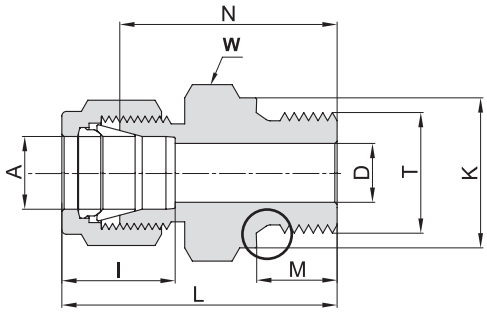


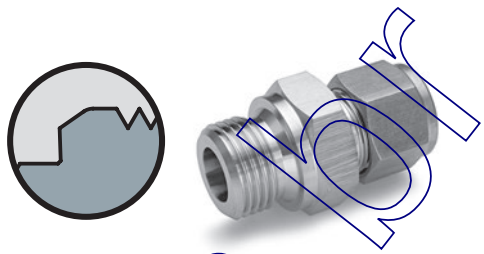
Designation:
Marking LR on Hex

Thermoelement (see Page 38)

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

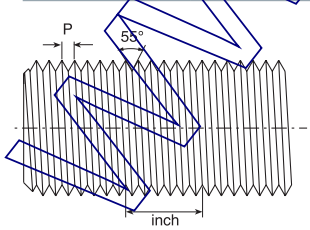
768 LG
MALE CONNECTOR





TUBE (METRIC) ISO PARALLEL THREAD

Ordering Information	A Tube O.D.	T (P-ISO)	D	K	W Hex. Flat	N	M	L	I
	mm	inch	mm	mm	mm	mm	mm	mm	mm
768LG _ 2 X 1/8	2	G-1/8	1.7	13.8	14	23.4	7.1	30.0	12.9
768LG _ 3 X 1/8	3	G-1/8	2.4	13.8	14	23.4	7.1	30.0	12.9
768LG _ 3 X 1/4	3	G-1/4	2.4	18.0	19	28.7	11.2	35.3	12.9
768LG _ 4 X 1/8	4	G-1/8	2.4	13.8	14	24.1	7.1	30.7	13.7
768LG _ 6 X 1/8	6	G-1/8	4.0	13.8	14	24.9	7.1	32.3	15.3
768LG _ 6 X 1/4	6	G-1/4	4.8	18.0	19	30.2	11.2	37.6	15.3
768LG _ 6 X 3/8	6	G-3/8	4.8	21.8	22	31.5	11.2	38.9	15.3
768LG _ 6 X 1/2	6	G-1/2	4.8	26.0	27	37.3	14.2	44.7	15.3
768LG _ 8 X 1/8	8	G-1/8	4.0	13.8	15	25.7	7.1	33.2	16.2
768LG _ 8 X 1/4	8	G-1/4	6.4	18.0	19	31.0	11.2	38.5	16.2
768LG _ 8 X 3/8	8	G-3/8	6.4	21.8	22	32.3	11.2	39.8	16.2
768LG _ 8 X 1/2	8	G-1/2	6.4	26.0	27	38.1	14.2	45.6	16.2
768LG _ 10 X 1/4	10	G-1/4	5.9	18.0	19	31.8	11.2	39.4	17.2
768LG _ 10 X 3/8	10	G-3/8	7.9	21.8	22	33.0	11.2	40.6	17.2
768LG _ 10 X 1/2	10	G-1/2	7.9	26.0	27	38.9	14.2	46.5	17.2
768LG _ 12 X 1/4	12	G-1/4	5.9	18.0	22	32.5	11.2	42.6	22.8
768LG _ 12 X 3/8	12	G-3/8	7.9	21.8	22	33.0	11.2	43.1	22.8
768LG _ 12 X 1/2	12	G-1/2	9.5	26.0	27	37.4	14.2	47.5	22.8
768LG _ 12 X 3/4	12	G-3/4	9.5	32.0	35	42.7	15.7	52.8	22.8
768LG _ 14 X 3/8	14	G-3/8	7.9	21.8	24	33.8	11.2	43.9	24.4
768LG _ 14 X 1/2	14	G-1/2	11.1	26.0	27	38.9	14.2	49.0	24.4
768LG _ 15 X 3/8	15	G-3/8	7.9	21.8	24	33.8	11.2	43.9	24.4
768LG _ 15 X 1/2	15	G-1/2	11.9	26.0	27	37.4	14.2	47.5	24.4
768LG _ 15 X 3/4	15	G-3/4	11.9	32.0	35	42.1	15.7	52.8	24.4
768LG _ 16 X 3/8	16	G-3/8	7.9	21.8	24	33.8	11.2	43.9	24.4
768LG _ 16 X 1/2	16	G-1/2	11.9	26.0	27	38.9	14.2	49.0	24.4
768LG _ 16 X 3/4	16	G-3/4	12.7	32.0	35	42.1	15.7	52.8	24.4
768LG _ 18 X 1/2	18	G-1/2	11.9	26.0	27	38.9	14.2	49.0	24.4
768LG _ 18 X 3/4	18	G-3/4	15.1	32.0	35	42.7	15.7	52.8	24.4
768LG _ 20 X 1/2	20	G-1/2	11.9	26.0	30	40.4	14.2	50.5	26.0
768LG _ 20 X 3/4	20	G-3/4	15.9	32.0	35	42.7	15.7	52.8	26.0
768LG _ 22 X 3/4	22	G-3/4	15.9	32.0	35	42.7	15.7	52.8	26.0
768LG _ 22 X 1	22	G-1	18.3	39.0	41	45.2	18.3	55.3	26.0
768LG _ 25 X 3/4	25	G-3/4	15.9	32.0	35	45.2	15.7	57.5	31.3
768LG _ 25 X 1	25	G-1	19.8	39.0	41	47.8	18.3	60.1	31.3
768LG _ 38 X1 1/2	38	G-1 1/2	31.8	54.7	55	63.2	22.1	90.9	49.4



Reference Specifications:

Designation:
Marking LG on Hex.

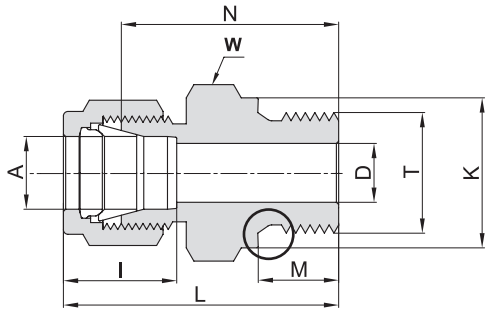
* Including low friction paste, See page 91.
"D" - Dimension is minimum opening.
Dimensions are for reference only, and are subject to change without notice.

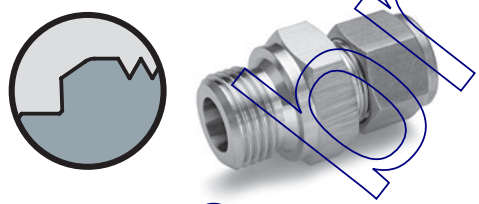
For Parallel Threads Sealing, see page 76

768 LG

MALE CONNECTOR

(Cont'd)





TUBE (INCH) TO ISO PARALLEL THREAD

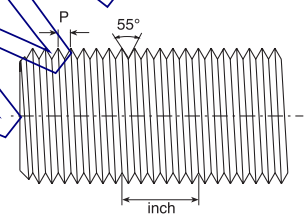
Ordering Information	A Tube O.D.		T (P-ISO)	D		K		W Hex. Flat	N		M		L		I	
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm
768LG _ 1/8 X 1/8	1/8	3.17	G-1/8	0.09	2.30	0.54	13.80	9/16	0.92	23.40	0.28	7.10	1.18	30.00	0.50	12.7
768LG _ 1/8 X 1/4	1/8	3.17	G-1/4	0.09	2.30	0.71	18.00	3/4	1.13	28.70	0.44	11.20	1.39	35.30	0.50	12.7
768LG _ 1/8 X 3/8	1/8	3.17	G-3/8	0.09	2.30	0.86	21.80	7/8	1.17	29.72	0.44	11.20	1.43	36.32	0.50	12.7
768LG _ 1/8 X 1/2	1/8	3.17	G-1/2	0.09	2.30	1.02	26.00	1 1/16	1.40	35.70	0.56	14.20	1.66	42.16	0.50	12.7
768LG _ 3/16 X 1/8	3/16	4.76	G-1/8	0.12	3.10	0.54	13.80	9/16	0.95	24.10	0.28	7.10	1.21	30.70	0.54	13.7
768LG _ 1/4 X 1/8	1/4	6.35	G-1/8	0.16	4.10	0.54	13.80	9/16	0.98	24.90	0.28	7.10	1.27	32.26	0.60	15.2
768LG _ 1/4 X 1/4	1/4	6.35	G-1/4	0.19	4.80	0.71	18.00	3/4	1.19	30.20	0.44	11.20	1.48	37.60	0.60	15.2
768LG _ 1/4 X 3/8	1/4	6.35	G-3/8	0.19	4.80	0.86	21.80	7/8	1.24	31.50	0.44	11.20	1.50	38.10	0.60	15.2
768LG _ 1/4 X 1/2	1/4	6.35	G-1/2	0.19	4.80	1.02	26.00	1 1/16	1.47	37.30	0.56	14.20	1.76	44.70	0.60	15.2
768LG _ 5/16 X 1/4	5/16	7.93	G-1/4	0.23	5.80	0.71	18.00	3/4	1.22	31.00	0.44	11.20	1.51	38.36	0.64	16.2
768LG _ 5/16 X 3/8	5/16	7.93	G-3/8	0.25	6.40	0.86	21.80	7/8	1.27	32.30	0.44	11.20	1.56	39.66	0.64	16.2
768LG _ 3/8 X 1/8	3/8	9.52	G-1/8	0.16	4.00	1.26	32.0	5/8	1.05	26.7	0.28	7.10	1.34	34.03	0.66	16.8
768LG _ 3/8 X 1/4	3/8	9.52	G-1/4	0.23	5.80	0.71	18.00	3/4	1.25	31.75	0.44	11.20	1.54	39.11	0.66	16.8
768LG _ 3/8 X 3/8	3/8	9.52	G-3/8	0.28	7.10	0.86	21.80	7/8	1.30	33.00	0.44	11.20	1.59	40.40	0.66	16.8
768LG _ 3/8 X 1/2	3/8	9.52	G-1/2	0.28	7.10	1.02	26.00	1 1/16	1.53	38.86	0.56	14.20	1.82	46.22	0.66	16.8
768LG _ 1/2 X 1/4	1/2	12.70	G-1/4	0.23	5.80	0.71	18.00	13/16	1.28	32.50	0.44	11.20	1.68	42.67	0.90	22.9
768LG _ 1/2 X 3/8	1/2	12.70	G-3/8	0.31	7.90	0.86	21.80	7/8	1.30	33.00	0.44	11.20	1.70	43.18	0.90	22.9
768LG _ 1/2 X 1/2	1/2	12.70	G-1/2	0.41	10.40	1.02	26.00	1 1/16	1.47	37.40	0.56	14.20	1.87	47.56	0.90	22.9
768LG _ 1/2 X 3/4	1/2	12.70	G-3/4	0.41	10.40	1.26	32.00	1 5/16	1.68	42.70	0.62	15.70	2.08	52.86	0.90	22.9
768LG _ 5/8 X 3/8	5/8	15.87	G-3/8	0.31	7.90	0.86	21.80	24mm	1.33	33.80	0.44	11.20	1.73	43.96	0.96	24.4
768LG _ 5/8 X 1/2	5/8	15.87	G-1/2	0.47	11.90	1.02	26.00	1 1/16	1.53	38.90	0.56	14.20	1.93	49.10	0.96	24.4
768LG _ 3/4 X 1/2	3/4	19.05	G-1/2	0.47	11.90	1.02	26.00	1 1/16	1.53	38.86	0.56	14.20	1.93	49.00	0.96	24.4
768LG _ 3/4 X 3/4	3/4	19.05	G-3/4	0.62	15.80	1.26	32.00	1 5/16	1.68	42.70	0.62	15.70	2.08	52.83	0.96	24.4
768LG _ 1 X 1/2	1	25.40	G-1/2	0.47	11.90	1.02	26.00	1 3/8	1.72	43.70	0.56	14.20	2.20	55.80	1.23	31.2
768LG _ 1 X 3/4	1	25.40	G-3/4	0.62	15.90	1.26	32.00	1 3/8	1.78	45.20	0.62	15.70	2.26	57.40	1.23	31.2
768LG _ 1 X 1	1	25.40	G-1	0.78	19.80	1.54	39.00	1 5/8	1.88	47.80	0.72	18.30	2.36	59.94	1.23	31.2

For Parallel Threads Sealing, see page 76

Designation:
Marking LG on Hex.

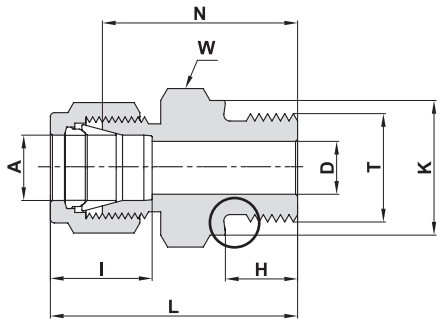
Reference Specifications:
DIN - ISO 228/1
BS - 2779
JIS - B0202
ISO - 228/1-BSP-P

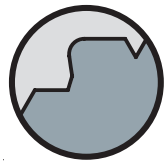
- 55° Thread angle
- Pitch measured in inches
- Truncation of root and crest is round
- Diameter measured in inches

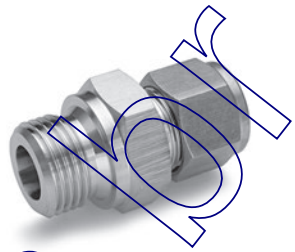


"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

768 LOK
MALE CONNECTOR







TUBE (METRIC) ISO PARALLEL THREAD

Ordering Information	A Tube O.D.	T (P-ISO)	D	K	W Hex. Flat	N	H	L	I
	mm	inch	mm	mm	mm	mm	mm	mm	mm
768LOK _ 3 X 1/8	3	G-1/8A	2.4	13.8	14	26.7	7.1	33.3	12.9
768LOK _ 3 X 1/4	3	G-1/4A	2.4	18.0	19	28.7	11.2	35.3	12.9
768LOK _ 4 X 1/8	4	G-1/8A	2.4	13.8	14	24.1	7.1	30.7	13.7
768LOK _ 6 X 1/8	6	G-1/8A	4.0	13.8	14	24.9	7.1	32.3	15.3
768LOK _ 6 X 1/4	6	G-1/4A	4.8	18.0	19	30.2	11.2	37.6	15.3
768LOK _ 6 X 3/8	6	G-3/8A	4.8	21.8	22	31.5	11.2	38.9	15.3
768LOK _ 6 X 1/2	6	G-1/2A	4.8	26.0	27	37.3	14.2	44.7	15.3
768LOK _ 8 X 1/8	8	G-1/8A	4.0	13.8	15	25.7	7.1	33.2	16.2
768LOK _ 8 X 1/4	8	G-1/4A	6.4	18.0	19	31.0	11.2	38.5	16.2
768LOK _ 8 X 3/8	8	G-3/8A	6.4	21.8	22	32.3	11.2	39.8	16.2
768LOK _ 8 X 1/2	8	G-1/2A	6.4	26.0	27	38.1	14.2	45.6	16.2
768LOK _ 10 X 1/4	10	G-1/4A	6.4	18.0	19	31.8	11.2	39.4	17.2
768LOK _ 10 X 3/8	10	G-3/8A	7.9	21.8	22	33.0	11.2	40.6	17.2
768LOK _ 10 X 1/2	10	G-1/2A	7.9	26.0	27	38.9	14.2	46.5	17.2
768LOK _ 12 X 1/4	12	G-1/4A	5.9	18.0	22	32.5	11.2	42.6	22.8
768LOK _ 12 X 3/8	12	G-3/8A	7.9	21.8	22	33.0	11.2	43.1	22.8
768LOK _ 12 X 1/2	12	G-1/2A	9.5	26.0	27	38.9	14.2	49.0	22.8
768LOK _ 12 X 3/4	12	G-3/4A	9.5	32.0	35	42.7	15.7	52.8	22.8
768LOK _ 15 X 1/2	15	G-1/2A	11.9	26.0	27	38.9	14.2	49.0	24.4
768LOK _ 16 X 3/8	16	G-3/8A	7.9	21.8	24	33.8	11.2	43.9	22.4
768LOK _ 16 X 1/2	16	G-1/2A	11.9	26.0	27	38.9	14.2	49.0	22.4
768LOK _ 18 X 1/2	18	G-1/2A	11.9	26.0	27	38.9	14.2	49.0	22.4
768LOK _ 18 X 3/4	18	G-3/4A	15.1	32.0	35	42.2	15.7	52.3	22.4
768LOK _ 20 X 1/2	20	G-1/2A	11.9	26.0	30	40.4	14.2	50.5	26.0
768LOK _ 20 X 3/4	20	G-3/4A	15.9	32.0	35	42.7	15.7	52.8	26.0
768LOK _ 22 X 3/4	22	G-3/4A	15.9	32.0	35	42.7	15.7	52.8	26.0
768LOK _ 22 X 1	22	G-1A	18.3	39.0	41	45.2	18.3	55.3	26.0
768LOK _ 25 X 3/4	25	G-3/4A	15.9	32.0	35	45.2	15.7	57.5	31.3
768LOK _ 25 X 1	25	G-1A	19.8	39.0	41	47.8	18.3	60.1	31.3
768LOK _ 38X1 1/2	*38	G-1 1/2A	31.8	54.7	55	64.9	20.6	92.1	49.4

* Including low friction paste, see page 91

For Parallel Threads Sealing, see page 76

Reference Specifications:

DIN - ISO 228/1
BS - 2779
JIS - B0202
ISO - 228/1-BSP-P

Designation:

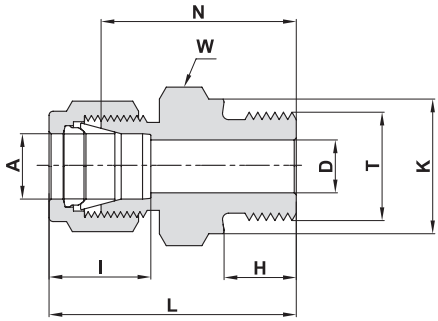
Marking LOK on Hex.

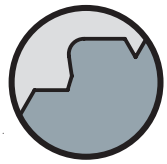
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

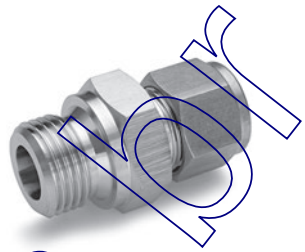
768 LOK

MALE CONNECTOR

(Cont'd)







TUBE (INCH) TO ISO PARALLEL THREAD

Ordering Information	A Tube O.D.		T Straight Thread UN	D		K		W Hex. Flat	N		H		L		I	
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm
768LOK _ 1/8 X 1/8	1/8	3.17	G-1/8A	0.09	2.30	0.54	13.80	9/16	0.92	23.40	0.28	7.10	1.18	30.00	0.50	12.7
768LOK _ 1/8 X 1/4	1/8	3.17	G-1/4A	0.09	2.30	0.71	18.00	3/4	1.13	28.70	0.44	11.20	1.39	35.30	0.50	12.7
768LOK _ 1/4 X 1/8	1/4	6.35	G-1/8A	0.16	4.10	0.54	13.80	9/16	0.98	24.90	0.28	7.10	1.27	32.26	0.60	15.2
768LOK _ 1/4 X 1/4	1/4	6.35	G-1/4A	0.19	4.80	0.71	18.00	3/4	1.19	30.20	0.44	11.20	1.48	37.60	0.60	15.2
768LOK _ 1/2 X 3/8	1/2	12.70	G-3/8A	0.31	7.90	0.86	21.80	7/8	1.30	33.00	0.44	11.20	1.70	43.18	0.90	22.9
768LOK _ 1/2 X 1/2	1/2	12.70	G-1/2A	0.41	10.40	1.02	26.00	1-1/16	1.53	39.86	0.56	14.20	1.93	49.02	0.90	22.9
768LOK _ 3/4 X 1/2	3/4	19.05	G-1/2A	0.47	11.90	1.02	26.00	1-1/16	3.65	41.91	0.56	14.20	2.05	52.07	0.96	24.4
768LOK _ 3/4 X 3/4	3/4	19.05	G-3/4A	0.62	15.80	1.26	32.00	1 3/8	1.68	42.70	0.62	15.70	2.08	52.83	0.96	24.4
768LOK _ 1 X 1	1	25.40	G-1A	0.78	19.80	1.54	39.00	1 5/8	1.88	47.80	0.72	18.30	2.36	59.94	1.23	31.2

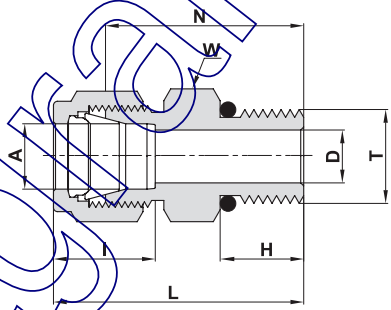
For Parallel threads Sealing, See page 76

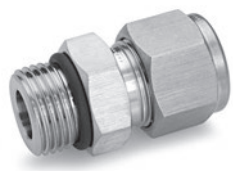
Reference Specifications:

DIN - ISO 228/1
BS - 2779
JIS - B0202
ISO - 228/1-BSP-P

Designation:

Marking LOK on Hex.





768 LOB

MALE CONNECTOR

SAE/MS STRAIGHT THREAD BOSS***

Ordering Information	A Tube O.D.	T Straight Thread UN	D	W Hex. Flat	N	H	L	I	O-Ring**
	mm	inch	mm	mm	mm	mm	mm	mm	
768LOB _ 3 X 5/16-24	3	5/16-24	2.4	7/16"	23.4	7.6	30.0	12.9	-902
768LOB _ 3 X 9/16-18	3	9/16-18	2.4	18	26.7	9.9	33.3	12.9	-906
768LOB _ 6 X 1/2-20	6	1/2-20	4.8	17	27.4	9.1	34.8	15.3	-905
768LOB _ 6 X 9/16-18	6	9/16-18	4.8	18	28.2	9.9	35.6	15.3	-906
768LOB _ 6 X 7/8-14	6	7/8-14	4.8	27	33.3	12.7	40.7	15.3	-910
768LOB _ 8 X 1/2-20	8	1/2-20	6.4	17	27.4	9.1	34.9	16.2	-905
768LOB _ 8 X 9/16-18	8	9/16-18	6.4	18	29.1	9.9	36.6	16.2	-906
768LOB _ 10 X 9/16-18	10	9/16-18	7.1	18	29.7	9.9	37.3	17.2	-906
768LOB _ 10 X 3/4-16	10	3/4-16	7.9	22	31.8	11.2	39.4	17.2	-908
768LOB _ 12 X 7/16-20	12	7/16-20	5.2	22	30.5	9.1	40.6	22.8	-904
768LOB _ 12 X 9/16-18	12	9/16-18	7.1	22	29.0	9.9	39.1	22.8	-906
768LOB _ 12 X 3/4-16	12	3/4-16	9.5	22	31.8	11.2	41.9	22.8	-908
768LOB _ 16 X 9/16-18	16	9/16-18	7.1	24	21.2	9.9	31.3	24.4	-906
768LOB _ 25 X 1 1/16-12	25	1 1/16-12	16.7	35	41.2	15.0	53.5	31.3	-912

Designation: Marking LOB on Hex.

*** Per SAE J1926 and MS 16142. See page 80 for mounting dimensions.

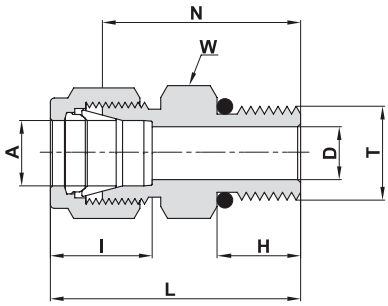
** O-rings used are Fluorocarbon FKM 90 Durometer. Other O-ring materials are available on request.

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

768 LOB

MALE CONNECTOR

(Cont'd)



SAE/MS STRAIGHT THREAD BOSS***

Ordering Information	A Tube O.D.		T Straight Thread UN	D		W Hex. Flat	N		H		L		I		O-RING**
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	
768LOB _ 1/8 X 5/16-24	1/8	3.17	5/16-24	.09	2.28	7/16	.92	23.37	.30	7.62	1.18	29.97	.50	12.7	-902
768LOB _ 1/8 X 7/16-20	1/8	3.17	7/16-20	.09	2.28	9/16	.98	24.89	.36	9.14	1.24	31.50	.50	12.7	-904
768LOB _ 1/8 X 9/16-18	1/8	3.17	9/16-18	.09	2.28	11/16	1.05	26.67	.39	9.90	1.31	33.27	.50	12.7	-906
768LOB _ 1/4 X 5/16-24	1/4	6.35	5/16-24	.09	2.28	9/16	.92	23.37	.30	7.62	1.21	30.73	.60	15.2	-902
768LOB _ 1/4 X 7/16-20	1/4	6.35	7/16-20	.19	4.82	9/16	1.05	26.67	.36	9.14	1.34	34.03	.60	15.2	-904
768LOB _ 1/4 X 9/16-18	1/4	6.35	9/16-18	.19	4.82	11/16	1.11	28.19	.39	9.90	1.40	35.56	.60	15.2	-906
768LOB _ 1/4 X 3/4 -16	1/4	6.35	3/4 -16	.19	4.82	7/8	1.19	30.20	.44	11.17	1.48	37.59	.60	15.2	-908
768LOB _ 1/4 X 7/8-14	1/4	6.35	7/8-14	.19	4.82	1	1.31	33.27	.50	12.70	1.60	40.64	.60	15.2	-910
768LOB _ 5/16 X 1/2-20	5/16	7.93	1/2-20	.25	6.40	5/8	1.08	27.43	.36	9.14	1.37	34.80	.64	16.2	-905
768LOB _ 3/8 X 7/16-20	3/8	9.52	7/16-20	.20	5.10	5/8	1.11	28.19	.36	9.14	1.40	35.56	.66	16.8	-904
768LOB _ 3/8 X 9/16-18	3/8	9.52	9/16-18	.28	7.11	11/16	1.17	29.71	.39	9.90	1.46	37.02	.66	16.8	-906
768LOB _ 3/8 X 3/4 -16	3/8	9.52	3/4 -16	.28	7.11	7/8	1.25	31.75	.44	11.17	1.54	39.11	.66	16.8	-908
768LOB _ 3/8 X 7/8-14	3/8	9.52	7/8-14	.28	7.11	1	1.37	34.80	.50	12.70	1.66	42.16	.66	16.8	-910
768LOB _ 1/2 X 9/16-18	1/2	12.70	9/16-18	.28	7.11	15/16	1.14	28.95	.39	9.90	1.54	39.11	.90	22.9	-906
768LOB _ 1/2 X 3/4 -16	1/2	12.70	3/4 -16	.41	10.41	7/8	1.25	31.75	.44	11.17	1.65	41.91	.90	22.9	-908
768LOB _ 1/2 X 7/8-14	1/2	12.70	7/8-14	.41	10.41	1	1.37	34.80	.50	12.70	1.77	44.96	.90	22.9	-910
768LOB _ 1/2 X 1 1/16-12	1/2	12.70	1 1/16-12	.41	10.41	1 1/4	1.53	38.86	.59	14.98	1.93	49.02	.90	22.9	-912
768LOB _ 5/8 X 3/4 -16	5/8	15.87	3/4 -16	.42	10.66	15/16	1.25	31.75	.44	11.17	1.65	41.91	.96	22.4	-908
768LOB _ 5/8 X 7/8 -14	5/8	15.87	7/8 -14	.50	12.70	1	1.38	35.05	.50	12.70	1.78	45.21	.96	22.4	-910
768LOB _ 3/4 X 3/4 -16	3/4	19.05	3/4 -16	.42	10.66	1 1/16	1.41	35.81	.44	11.17	1.81	46.0	.96	22.4	-908
768LOB _ 3/4 X 1 1/16 -12	3/4	19.05	1 1/16 -12	.62	15.74	1 1/4	1.53	38.86	.59	14.98	1.93	49.02	.96	22.4	-912
768LOB _ 3/4 X 1 5/16-12	3/4	19.05	1 5/16-12	.62	15.74	1 1/2	1.66	42.16	.59	14.98	2.06	52.32	1.02	25.9	-916
768LOB _ 7/8 X 1 3/16 -12	7/8	22.22	1 3/16 -12	.72	18.29	1 3/8	1.53	38.86	.59	14.98	1.93	49.02	1.02	25.9	-914
768LOB _ 1 X 1 1/16 -12	1	25.40	1 1/16 -12	.66	16.76	1 3/8	1.62	41.20	.59	14.98	2.10	53.34	1.23	31.2	-912
768LOB _ 1 X 1 5/16 -12	1	25.40	1 5/16 -12	.88	22.35	1 1/2	1.66	42.16	.59	14.98	2.14	54.35	1.23	31.2	-916
768LOB _ 1 1/4 X 1 5/8 -12	*1 1/4	31.75	1 5/8 -12	1.09	27.70	1 7/8	1.82	46.23	.59	15.10	2.69	68.33	1.62	41.2	-920
768LOB _ 1 1/2 X 1 7/8 -12	*1 1/2	38.10	1 7/8 -12	1.34	34.00	2 1/8	1.99	50.55	.59	15.10	3.06	77.72	1.97	50.0	-924
768LOB _ 2 X 2 1/2 -12	*2	50.80	2 1/2 -12	1.81	45.97	2 3/4	2.53	64.26	.59	15.10	4.00	101.60	2.66	67.6	-932

Designation: Marking LOB on Hex.

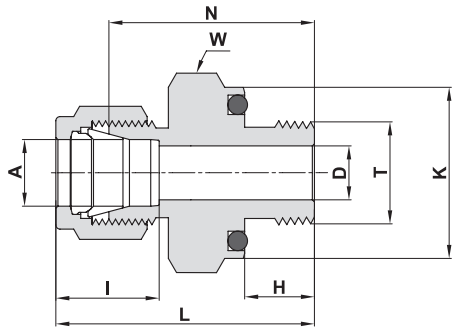
*** Per SAE J1926 and MS 16142. See page 80 for mounting dimensions.

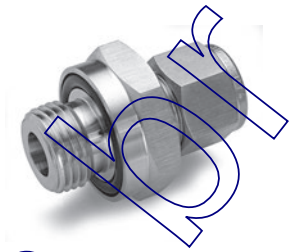
** O-rings used are Fluorocarbon FKM 90 Durometer. Other O-ring materials are available on request.

* Including low friction paste, see page 91

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

768 LOP
MALE CONNECTOR



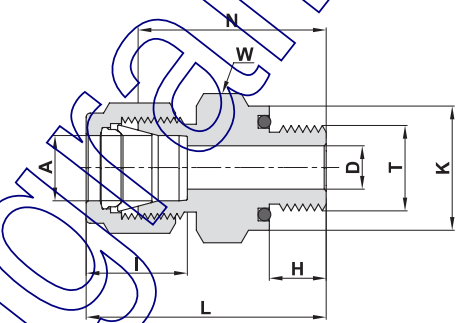


O-SEAL NPT TAPERED THREAD

Ordering Information	A Tube O.D.		T (NPT) Short	D Hex. Flat		K		W Hex. Flat	N		H		L		I		O-RING**
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	
768LOP _ 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	.74	18.79	3/4	1.03	26.16	.28	7.11	1.29	32.76	.50	12.7	-111
768LOP _ 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	.74	18.79	3/4	1.09	27.70	.28	7.11	1.38	35.05	.60	15.2	-111
768LOP _ 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	.93	23.62	15/16	1.22	31.00	.38	9.65	1.51	38.40	.60	15.2	-113
768LOP _ 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	.93	23.62	15/16	1.28	32.51	.38	9.65	1.57	39.88	.66	16.8	-113
768LOP _ 3/8 X 3/8	3/8	9.52	3/8	.28	7.11	1.12	28.45	1 1/8	1.34	34.04	.41	10.41	1.63	41.40	.66	16.8	-116
768LOP _ 3/8 X 1/2	3/8	9.52	1/2	.28	7.11	1.30	33.02	1 5/16	1.56	39.62	.53	13.46	1.85	46.99	.66	16.8	-212
768LOP _ 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	1.30	33.02	1 5/16	1.56	39.62	.53	13.46	1.96	49.78	.90	22.9	-212

Designation: Marking LOP on Hex.
** O-rings used are BUNA 70 Durometer.

768 LO
MALE CONNECTOR



O-SEAL MALE UN THREAD

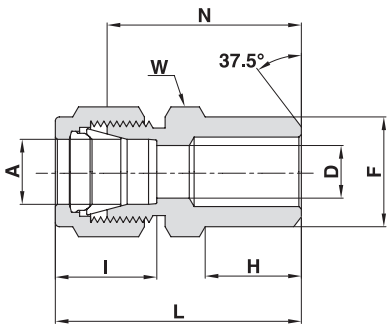
Ordering Information	A Tube O.D.		T Straight Thread UN	D		K		W Hex. Flat	N		H		L		I		O-RING**
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	
768LO _ 1/16 X 5/16-24	1/16	1.58	5/16-24	.05	1.27	.55	14.0	9/16	.90	22.86	.34	8.63	1.05	26.67	.34	8.6	-011
768LO _ 1/8 X 5/16-24	1/8	3.17	5/16-24	.09	2.28	.55	14.0	9/16	1.03	26.20	.34	8.63	1.29	32.77	.50	12.7	-011
768LO _ 3/16 X 3/8 -24	3/16	4.76	3/8 -24	.12	3.04	.62	15.75	5/8	1.09	27.70	.38	9.65	1.35	34.29	.54	12.7	-012
768LO _ 1/4 X 7/16-20	1/4	6.35	7/16-20	.19	4.82	.74	18.80	3/4	1.22	31.00	.41	10.41	1.51	38.35	.60	15.2	-111
768LO _ 5/16 X 1/2 -20	5/16	7.93	1/2 -20	.25	6.35	.86	21.84	7/8	1.31	33.30	.44	11.17	1.60	40.64	.64	16.2	-112
768LO _ 3/8 X 9/16-18	3/8	9.52	9/16-18	.28	7.11	.93	23.62	15/16	1.38	35.05	.47	11.93	1.67	40.89	.66	16.8	-113
768LO _ 1/2 X 3/4 -16	1/2	12.70	3/4 -16	.41	10.41	1.12	28.45	1 1/8	1.41	35.81	.47	11.93	1.81	45.77	.90	22.9	-116
768LO _ 3/4 X 1 1/16-12	3/4	19.05	1 1/16-12	.62	15.74	1.49	37.85	1 1/2	1.66	42.20	.56	14.22	2.06	52.32	.96	24.4	-215
768LO _ 1 X 1 5/16-12	1	25.40	1 5/16-12	.88	22.35	1.74	44.20	1 3/4	1.81	45.97	.56	14.22	2.29	58.17	1.23	32.2	-219

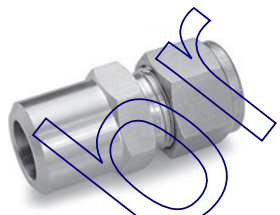
Designation: Marking LO on Hex.
** O-rings used are BUNA 70 Durometer.

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

768 LN

MALE PIPE WELD CONNECTOR





TUBE (METRIC)

Ordering Information	A Tube O.D.	F Pipe Size		D	W Hex. Flat	N	H	L	I
	mm	inch	mm	mm	mm	mm	mm	mm	mm
768LN _ 3 X 1/8	3	1/8	10.30	2.4	12	23.9	9.7	39.5	12.9
768LN _ 4 X 1/8	4	1/8	10.30	2.4	12	24.6	9.7	31.2	13.7
768LN _ 6 X 1/8	6	1/8	10.30	4.8	14	25.4	9.7	32.8	15.3
768LN _ 6 X 1/4	6	1/4	13.70	4.8	14	30.5	14.2	37.9	15.3
768LN _ 8 X 1/8	8	1/8	10.30	5.1	15	26.7	9.7	34.2	16.2
768LN _ 8 X 1/4	8	1/4	13.70	6.4	15	31.2	14.2	38.7	16.2
768LN _ 8 X 1/2	8	1/2	21.34	6.4	22	38.1	19.0	45.6	16.2
768LN _ 10 X 1/4	10	1/4	13.70	7.1	18	33.3	14.2	40.9	17.2
768LN _ 10 X 3/8	10	3/8	17.10	7.9	18	33.3	14.2	40.9	17.2
768LN _ 10 X 1/2	10	1/2	21.34	7.9	22	38.9	19.0	46.5	17.2
768LN _ 12 X 1/4	12	1/4	13.70	7.1	22	33.3	14.2	43.4	22.8
768LN _ 12 X 3/8	12	3/8	17.10	9.5	22	33.3	14.2	43.4	22.8
768LN _ 12 X 1/2	12	1/2	21.34	9.5	22	38.9	19.0	49.0	22.8
768LN _ 12 X 3/4	12	3/4	26.67	9.5	27	40.4	19.0	50.5	22.8
768LN _ 14 X 3/8	14	3/8	17.10	10.4	24	34.0	14.2	44.1	24.4
768LN _ 15 X 1/2	15	1/2	21.34	11.9	24	38.9	19.0	49.0	24.4
768LN _ 16 X 1/2	16	1/2	21.34	12.7	24	38.9	19.0	49.0	24.4
768LN _ 18 X 1/2	18	1/2	21.34	13.5	27	40.4	19.0	50.5	24.4
768LN _ 38 X 1 1/2	*38	1 1/2	48.30	33.7	55	64.0	26.2	91.2	49.4

Designation: Marking LN on Hex.

* Including low friction paste, see page 91

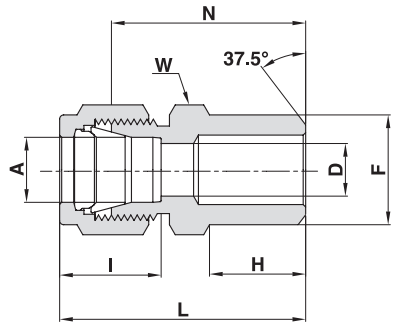
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

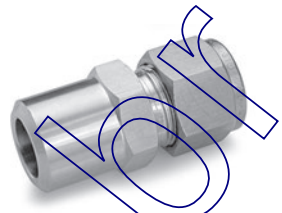
Cont'd next page

768 LN

MALE PIPE WELD CONNECTOR

(Cont'd)





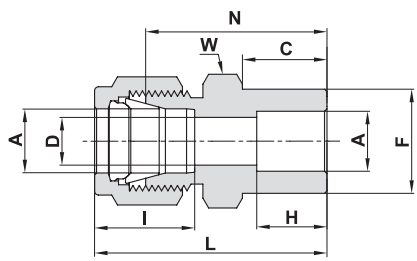
TUBE (INCH)

Ordering Information	A Tube O.D.		F Pipe Size		D		W Hex. Flat	N		H		L		I	
	inch	mm	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm
768LN _ 1/8 X 1/8	1/8	3.17	1/8	10.30	.09	2.28	7/16	.94	23.88	.38	9.65	1.20	30.48	.50	12.7
768LN _ 3/16 X 1/8	3/16	4.76	1/8	10.30	.12	3.04	7/16	.97	24.60	.38	9.65	1.23	31.25	.54	13.7
768LN _ 1/4 X 1/8	1/4	6.35	1/8	10.30	.19	4.82	1/2	1.00	25.40	.38	9.65	1.29	32.77	.60	15.2
768LN _ 1/4 X 1/4	1/4	6.35	1/4	13.70	.19	4.82	9/16	1.20	30.48	.56	14.22	1.49	37.85	.60	15.2
768LN _ 5/16 X 1/8	5/16	7.93	1/8	10.30	.20	5.08	9/16	1.05	26.67	.38	9.65	1.34	34.04	.64	16.2
768LN _ 5/16 X 1/4	5/16	7.93	1/4	13.70	.25	6.35	9/16	1.23	31.24	.56	14.22	1.52	38.61	.64	16.2
768LN _ 3/8 X 1/4	3/8	9.52	1/4	13.70	.28	7.11	5/8	1.28	32.51	.56	14.22	1.57	39.87	.66	16.8
768LN _ 3/8 X 3/8	3/8	9.52	3/8	17.10	.28	7.11	11/16	1.28	32.51	.56	14.22	1.57	39.87	.66	16.8
768LN _ 3/8 X 1/2	3/8	9.52	1/2	21.34	.28	7.11	7/8	1.53	38.86	.75	19.05	1.82	46.22	.66	16.8
768LN _ 3/8 X 3/4	3/8	9.52	3/4	26.67	.28	7.11	1 1/16	1.59	40.38	.75	19.05	1.88	47.75	.66	16.8
768LN _ 1/2 X 3/8	1/2	12.70	3/8	17.10	.41	10.41	13/16	1.31	33.27	.56	14.22	1.71	44.43	.90	22.9
768LN _ 1/2 X 1/2	1/2	12.70	1/2	21.34	.41	10.41	7/8	1.53	38.86	.75	19.05	1.93	49.00	.90	22.9
768LN _ 1/2 X 3/4	1/2	12.70	3/4	26.67	.41	10.41	1 1/16	1.59	40.40	.75	19.05	1.99	50.55	.90	22.9
768LN _ 1/2 X 1	1/2	12.70	1	33.40	.41	10.41	1 3/8	1.87	47.50	.94	23.87	2.27	57.65	.90	22.9
768LN _ 5/8 X 1/2	5/8	15.87	1/2	21.34	.50	12.70	15/16	1.53	38.86	.75	19.05	1.93	49.02	.96	24.4
768LN _ 3/4 X 1/2	3/4	19.05	1/2	21.34	.53	13.46	1 1/16	1.53	38.86	.75	19.05	1.93	49.00	.96	24.4
768LN _ 3/4 X 3/4	3/4	19.05	3/4	26.67	.62	15.74	1 1/16	1.59	40.40	.75	19.05	1.99	50.55	.96	24.4
768LN _ 1 X 1	1	25.40	1	33.40	.88	22.35	1 3/8	1.97	50.03	.94	23.87	2.45	62.23	1.23	31.2
768LN _ 1 1/4 X 1 1/4	*1 1/4	31.75	1 1/4	42.16	1.09	27.70	1 3/4	2.17	55.12	.94	23.88	3.04	77.22	1.62	41.2
768LN _ 1 1/2 X 1 1/2	*1 1/2	38.10	1 1/2	48.26	1.34	34.00	2 1/8	2.43	61.72	1.03	26.16	3.50	88.90	1.97	50.0
768LN _ 2 X 2	*2	50.80	2	60.33	1.81	45.97	2 3/4	3.00	76.20	1.06	26.92	4.47	113.34	2.66	67.6

Designation: Marking LN on Hex.

768 LW

TUBE SOCKET WELD UNION



TUBE (INCH)

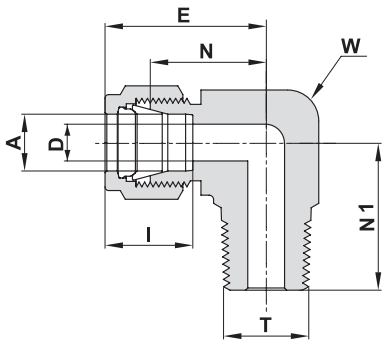
Ordering Information	A Tube O.D.		C		D		W Hex. Flat	F		H		I		L		N	
	inch	mm	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
768LW _ 1/8 X 1/8	1/8	3.17	.34	8.64	.09	2.28	7/16	.31	7.87	.25	6.35	.50	12.70	1.14	28.96	.88	22.35
768LW _ 1/4 X 1/4	1/4	6.35	.41	10.41	.19	4.80	1/2	.44	11.18	.31	7.90	.60	15.20	1.32	33.53	1.03	26.16
768LW _ 3/8 X 3/8	3/8	9.52	.47	11.94	.28	7.10	5/8	.62	15.75	.38	9.65	.66	16.80	1.48	37.60	1.19	30.23
768LW _ 1/2 X 1/2	1/2	12.70	.47	11.94	.41	10.40	13/16	.75	19.05	.50	12.70	.90	22.90	1.62	41.15	1.22	31.00
768LW _ 3/4 X 3/4	3/4	19.05	.47	11.94	.62	15.80	1 1/16	1.05	26.67	.56	14.20	.96	24.40	1.71	43.43	1.31	33.28
768LW _ 1 X 1	1	25.40	.56	14.22	.88	22.35	1 3/8	1.36	34.54	.75	19.05	1.23	31.20	2.07	52.58	1.59	40.40

Designation: Marking LW on Hex.

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

769 L

MALE ELBOW



TUBE (METRIC) MALE NPT THREAD

Ordering Information	A Tube O.D.	T (NPT)	D	W Wrench Flat		N	E	N1	I
	mm	inch	mm	inch	mm	mm	mm	mm	mm
769L _ 3 X 1/8	3	1/8	2.4	7/16	11.1	17.0	23.6	17.8	12.9
769L _ 3 X 1/4	3	1/4	2.4	1/2	12.7	18.0	24.6	23.4	12.9
769L _ 4 X 1/8	4	1/8	2.4	1/2	12.7	18.8	25.4	18.8	13.7
769L _ 4 X 1/4	4	1/4	2.4	1/2	12.7	18.8	25.4	23.4	13.7
769L _ 6 X 1/8	6	1/8	4.8	1/2	12.7	19.6	27.0	18.8	15.3
769L _ 6 X 1/4	6	1/4	4.8	1/2	12.7	19.6	27.0	23.4	15.3
769L _ 6 X 3/8	6	3/8	4.8	11/16	17.5	22.4	29.8	26.2	15.3
769L _ 6 X 1/2	6	1/2	4.8	13/16	20.6	24.4	31.8	33.0	15.3
769L _ 8 X 1/8	8	1/8	4.8	9/16	14.3	21.3	28.8	19.8	16.2
769L _ 8 X 1/4	8	1/4	6.4	9/16	14.3	21.3	28.8	24.4	16.2
769L _ 8 X 3/8	8	3/8	6.4	11/16	17.5	23.1	30.6	26.2	16.2
769L _ 8 X 1/2	8	1/2	6.4	13/16	20.6	25.1	32.6	33.0	16.2
769L _ 10 X 1/8	10	1/8	4.8	11/16	17.5	23.9	31.5	21.6	17.2
769L _ 10 X 1/4	10	1/4	7.1	11/16	17.5	23.9	31.5	26.2	17.2
769L _ 10 X 3/8	10	3/8	7.9	11/16	17.5	23.9	31.5	26.2	17.2
769L _ 10 X 1/2	10	1/2	7.9	13/16	20.6	25.9	33.5	33.0	17.2
769L _ 12 X 1/8	12	1/8	4.8	13/16	20.6	25.9	36.0	23.6	22.8
769L _ 12 X 1/4	12	1/4	7.1	13/16	20.6	25.9	36.0	28.2	22.8
769L _ 12 X 3/8	12	3/8	9.5	13/16	20.6	25.9	36.0	28.2	22.8
769L _ 12 X 1/2	12	1/2	9.5	13/16	20.6	25.9	36.0	33.0	22.8
769L _ 12 X 3/4	12	3/4	9.5	1 1/16	27.0	29.7	39.8	36.8	22.8
769L _ 15 X 1/2	15	1/2	11.9	15/16	23.8	27.9	38.0	35.1	24.4
769L _ 16 X 3/8	16	3/8	9.5	15/16	23.8	27.9	38.0	30.2	24.4
769L _ 16 X 1/2	16	1/2	11.9	15/16	23.8	27.9	38.0	35.1	24.4
769L _ 16 X 3/4	16	3/4	12.7	1 1/16	27.0	29.7	39.8	36.8	24.4
769L _ 18 X 1/2	18	1/2	11.9	1 1/16	27.0	29.7	39.8	36.8	24.4
769L _ 18 X 3/4	18	3/4	15.1	1 1/16	27.0	29.7	39.8	36.8	24.4
769L _ 20 X 1/2	20	1/2	11.9	1 3/8	34.9	34.5	44.6	41.7	26.0
769L _ 20 X 3/4	20	3/4	15.9	1 3/8	34.9	34.5	44.6	41.7	26.0
769L _ 22 X 3/4	22	3/4	15.9	1 3/8	34.9	34.5	44.6	41.7	26.0
769L _ 22 X 1	22	1	18.3	1 3/8	34.9	34.5	44.6	46.5	26.0
769L _ 25 X 3/4	25	3/4	15.9	1 3/8	34.9	36.8	49.1	41.7	31.3
769L _ 25 X 1	25	1	21.8	1 3/8	34.9	36.8	49.1	46.5	31.3
769L _ 38 X 1 1/2	*38	1 1/2	33.7	-	55.0	56.4	84.0	60.4	49.4

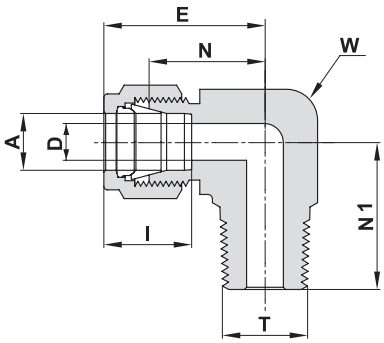
* Including low friction paste, see page 91

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

769 L

MALE ELBOW

(Cont'd)



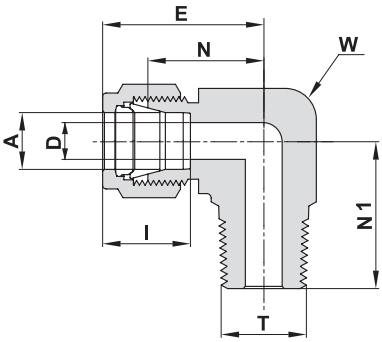
TUBE (INCH) MALE NPT THREAD

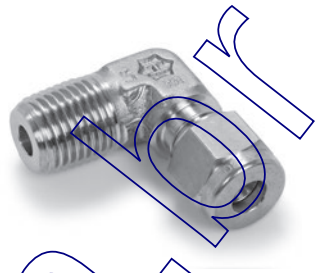
Ordering Information	A Tube O.D.		T (NPT)	D		W Wrench Flat		N		E		N1		I	
	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
769L _ 1/16 X 1/16	1/16	1.58	1/16	.05	1.27	7/16	11.1	.60	15.24	.75	19.05	.70	17.78	.34	8.6
769L _ 1/16 X 1/8	1/16	1.58	1/8	.05	1.27	7/16	11.1	.60	15.24	.75	19.05	.70	17.78	.34	8.6
769L _ 1/8 X 1/16	1/8	3.17	1/16	.09	2.28	7/16	11.1	.67	17.02	.93	23.62	.70	17.78	.50	12.7
769L _ 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	7/16	11.1	.67	17.02	.93	23.62	.70	17.78	.50	12.7
769L _ 1/8 X 1/4	1/8	3.17	1/4	.09	2.28	1/2	12.7	.71	18.03	.97	24.64	.92	23.37	.50	12.7
769L _ 3/16 X 1/8	3/16	4.76	1/8	.12	3.04	1/2	12.7	.74	18.80	1.00	25.40	.74	18.80	.54	13.7
769L _ 3/16 X 1/4	3/16	4.76	1/4	.12	3.04	1/2	12.7	.74	18.80	1.00	25.40	.92	23.37	.54	13.7
769L _ 1/4 X 1/16	1/4	6.35	1/16	.12	3.04	1/2	12.7	.77	19.56	1.06	26.92	.74	18.80	.60	15.2
769L _ 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.74	18.80	.60	15.2
769L _ 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.92	23.37	.60	15.2
769L _ 1/4 X 3/8	1/4	6.35	3/8	.19	4.82	11/16	17.5	.88	22.35	1.17	29.71	1.03	26.16	.60	15.2
769L _ 1/4 X 1/2	1/4	6.35	1/2	.19	4.82	13/16	20.6	.96	24.38	1.25	31.75	1.30	33.02	.60	15.2
769L _ 5/16 X 1/8	5/16	7.93	1/8	.19	4.82	9/16	14.3	.84	21.34	1.13	28.70	.78	19.81	.64	16.2
769L _ 5/16 X 1/4	5/16	7.93	1/4	.25	6.35	9/16	14.3	.84	21.34	1.13	28.70	.96	24.38	.64	16.2
769L _ 5/16 X 3/8	5/16	7.93	3/8	.25	6.35	11/16	17.5	.91	23.11	1.20	30.48	1.03	26.16	.64	16.2
769L _ 3/8 X 1/8	3/8	9.52	1/8	.19	4.82	5/8	15.9	.91	23.11	1.20	30.48	.82	20.83	.66	16.8
769L _ 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	5/8	15.9	.91	23.11	1.20	30.48	1.00	25.40	.66	16.8
769L _ 3/8 X 3/8	3/8	9.52	3/8	.28	7.11	11/16	17.5	.94	23.87	1.23	31.24	1.03	26.16	.66	16.8
769L _ 3/8 X 1/2	3/8	9.52	1/2	.28	7.11	13/16	20.6	1.02	25.90	1.31	33.28	1.30	33.02	.66	16.8
769L _ 3/8 X 3/4	3/8	9.52	3/4	.28	7.11	1 1/16	27.0	1.17	29.71	1.46	37.08	1.45	36.83	.66	16.8
769L _ 1/2 X 1/4	1/2	12.70	1/4	.28	7.11	13/16	20.6	1.02	25.90	1.42	36.07	1.11	28.19	.90	22.9
769L _ 1/2 X 3/8	1/2	12.70	3/8	.38	9.50	13/16	20.6	1.02	25.90	1.42	36.07	1.11	28.19	.90	22.9
769L _ 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	13/16	20.6	1.02	25.90	1.42	36.07	1.30	33.02	.90	22.9
769L _ 1/2 X 3/4	1/2	12.70	3/4	.41	10.41	1 1/16	27.0	1.17	29.71	1.57	39.88	1.45	36.83	.90	22.9
769L _ 5/8 X 3/8	5/8	15.87	3/8	.38	9.61	15/16	23.8	1.10	27.94	1.50	38.10	1.19	30.23	.96	24.4
769L _ 5/8 X 1/2	5/8	15.87	1/2	.47	11.94	15/16	23.8	1.10	27.94	1.50	38.10	1.38	35.05	.96	24.4
769L _ 5/8 X 3/4	5/8	15.87	3/4	.50	12.70	1 1/16	27.0	1.17	29.71	1.57	39.88	1.45	36.83	.96	24.4
769L _ 3/4 X 1/2	3/4	19.05	1/2	.47	11.94	1 1/16	27.0	1.17	29.71	1.57	39.88	1.45	36.83	.96	24.4
769L _ 3/4 X 3/4	3/4	19.05	3/4	.62	15.74	1 1/16	27.0	1.17	29.71	1.57	39.88	1.45	36.83	.96	24.4
769L _ 7/8 X 3/4	7/8	22.22	3/4	.62	15.74	1 3/8	34.9	1.36	34.54	1.76	44.70	1.64	41.66	1.02	25.9
769L _ 1 X 3/4	1	25.40	3/4	.62	15.74	1 3/8	34.9	1.45	36.83	1.93	49.02	1.64	41.66	1.23	31.2
769L _ 1 X 1	1	25.40	1	.86	21.84	1 3/8	34.9	1.45	36.83	1.93	49.02	1.83	46.48	1.23	31.2
769L _ 1 1/4 X 1 1/4	*1 1/4	31.75	1 1/4	1.09	27.70	1 11/16	42.9	1.75	44.45	2.62	66.50	1.88	47.75	1.62	41.2
769L _ 1 1/2 X 1 1/2	*1 1/2	38.10	1 1/2	1.34	34.00	2	50.8	2.00	50.80	3.07	78.00	2.38	60.45	1.97	50.0
769L _ 2 X 2	*2	50.80	2	1.81	45.97	2 3/4	69.9	2.75	69.85	4.22	107.19	2.78	70.61	2.66	67.6

* Including low friction paste, see page 91

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

769 LR
MALE ELBOW





TUBE (METRIC) ISO TAPERED THREAD

Ordering Information	A Tube O.D.	T (ISO)	D	W Wrench Flat		N	E	N1	I
	mm	inch	mm	inch	mm	mm	mm	mm	mm
769LR _ 3 X 1/8	3	R-1/8	2.4	7/16	11.1	17.0	23.6	17.8	12.9
769LR _ 3 X 1/4	3	R-1/4	2.4	1/2	12.7	18.0	24.6	23.4	12.9
769LR _ 4 X 1/8	4	R-1/8	2.4	1/2	12.7	18.8	25.4	18.8	13.7
769LR _ 4 X 1/4	4	R-1/4	2.4	1/2	12.7	18.8	25.4	23.4	13.7
769LR _ 6 X 1/8	6	R-1/8	4.8	1/2	12.7	19.6	27.0	18.8	15.3
769LR _ 6 X 1/4	6	R-1/4	4.8	1/2	12.7	19.6	27.0	23.4	15.3
769LR _ 6 X 3/8	6	R-3/8	4.8	11/16	17.5	22.4	29.8	26.2	15.3
769LR _ 6 X 1/2	6	R-1/2	4.8	13/16	20.6	24.4	31.8	33.0	15.3
769LR _ 8 X 1/8	8	R-1/8	4.8	9/16	14.3	21.3	28.8	19.8	16.2
769LR _ 8 X 1/4	8	R-1/4	6.4	9/16	14.3	21.3	28.8	24.4	16.2
769LR _ 8 X 3/8	8	R-3/8	6.4	11/16	17.5	23.1	30.6	26.2	16.2
769LR _ 8 X 1/2	8	R-1/2	6.4	13/16	20.6	25.1	32.6	33.0	16.2
769LR _ 10 X 1/8	10	R-1/8	4.8	11/16	17.5	23.9	31.5	21.6	17.2
769LR _ 10 X 1/4	10	R-1/4	7.1	11/16	17.5	23.9	31.5	26.2	17.2
769LR _ 10 X 3/8	10	R-3/8	7.9	11/16	17.5	23.9	31.5	26.2	17.2
769LR _ 10 X 1/2	10	R-1/2	7.9	13/16	20.6	25.9	33.5	33.0	17.2
769LR _ 12 X 1/8	12	R-1/8	4.8	13/16	20.6	25.9	36.0	23.6	22.8
769LR _ 12 X 1/4	12	R-1/4	7.1	13/16	20.6	25.9	36.0	28.2	22.8
769LR _ 12 X 3/8	12	R-3/8	9.5	13/16	20.6	25.9	36.0	28.2	22.8
769LR _ 12 X 1/2	12	R-1/2	9.5	13/16	20.6	25.9	36.0	33.0	22.8
769LR _ 12 X 3/4	12	R-3/4	9.5	1 1/16	27.0	29.7	39.8	36.8	22.8
769LR _ 14 X 1/2	14	R-1/2	11.9	15/16	23.8	27.9	38.0	35.0	24.4
769LR _ 15 X 1/2	15	R-1/2	11.9	15/16	23.8	27.9	38.0	35.1	24.4
769LR _ 16 X 3/8	16	R-3/8	9.5	15/16	23.8	27.9	38.0	30.2	24.4
769LR _ 16 X 1/2	16	R-1/2	11.9	15/16	23.8	27.9	38.0	35.1	24.4
769LR _ 18 X 1/2	18	R-1/2	11.9	1 1/16	27.0	29.7	39.8	36.8	24.4
769LR _ 18 X 3/4	18	R-3/4	15.1	1 1/16	27.0	29.7	39.8	36.8	24.4
769LR _ 20 X 1/2	20	R-1/2	11.9	1 3/8	34.9	34.5	44.6	41.7	26.0
769LR _ 20 X 3/4	20	R-3/4	15.9	1 3/8	34.9	34.5	44.6	41.7	26.0
769LR _ 22 X 3/4	22	R-3/4	15.9	1 3/8	34.9	34.5	44.6	41.7	26.0
769LR _ 22 X 1	22	R -1	18.3	1 3/8	34.9	34.5	44.6	46.5	26.0
769LR _ 25 X 3/4	25	R-3/4	15.9	1 3/8	34.9	36.8	49.1	41.7	31.3
769LR _ 25 X 1	25	R -1	21.8	1 3/8	34.9	36.8	49.1	46.5	31.3

Reference Specifications:
DIN - 2999
BS - 21
JIS - B0203
ISO - 7/1-BSP-T

Designation:
Marking LR on Flat

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

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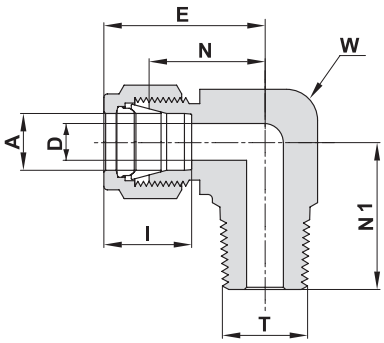
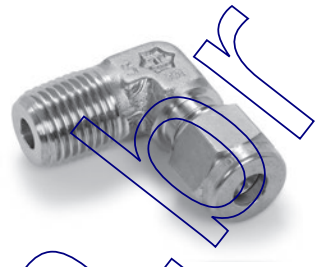
769 LR

MALE ELBOW

(Cont'd)





TUBE (INCH) ISO TAPERED THREAD

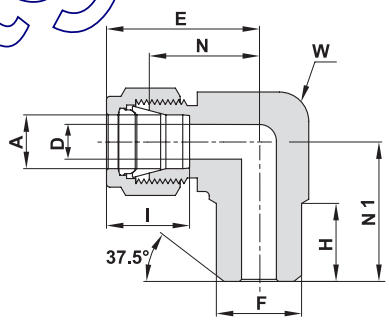
Ordering Information	A Tube O.D.		T (ISO)	D		W Wrench Flat		N		E		N1		I	
	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
769LR _ 1/8 X 1/8	1/8	3.17	R-1/8	.09	2.28	7/16	11.1	.67	17.02	.93	23.62	.70	17.78	.50	12.7
769LR _ 1/8 X 1/4	1/8	3.17	R-1/4	.09	2.28	1/2	12.7	.71	18.03	.97	24.64	.92	23.37	.50	12.7
769LR _ 1/4 X 1/8	1/4	6.35	R-1/8	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.74	18.80	.60	15.2
769LR _ 1/4 X 1/4	1/4	6.35	R-1/4	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.92	23.37	.60	15.2
769LR _ 1/4 X 3/8	1/4	6.35	R-3/8	.19	4.82	11/16	17.5	.88	22.35	1.17	29.71	1.03	26.16	.60	15.2
769LR _ 1/4 X 1/2	1/4	6.35	R-1/2	.19	4.82	13/16	20.6	.96	24.38	1.25	31.75	1.30	33.02	.60	15.2
769LR _ 5/16 X 1/4	5/16	7.93	R-1/4	.25	6.35	9/16	14.3	.84	21.34	1.13	28.70	.96	24.38	.64	16.2
769LR _ 3/8 X 1/8	3/8	9.52	R-1/8	.19	4.82	5/8	15.9	.91	23.11	1.20	30.48	.82	20.83	.66	16.8
769LR _ 3/8 X 1/4	3/8	9.52	R-1/4	.28	7.11	5/8	15.9	.91	23.11	1.20	30.48	1.00	25.40	.66	16.8
769LR _ 3/8 X 3/8	3/8	9.52	R-3/8	.28	7.11	11/16	17.5	.94	23.87	1.23	31.24	1.03	26.16	.66	16.8
769LR _ 1/2 X 1/4	1/2	12.70	R-1/4	.28	7.11	13/16	20.6	1.02	25.90	1.42	36.07	1.11	28.19	.90	22.9
769LR _ 1/2 X 3/8	1/2	12.70	R-3/8	.38	9.50	13/16	20.6	1.02	25.90	1.42	36.07	1.11	28.19	.90	22.9
769LR _ 1/2 X 1/2	1/2	12.70	R-1/2	.41	10.41	13/16	20.6	1.02	25.90	1.42	36.07	1.30	33.02	.90	22.9
769LR _ 3/4 X 1/2	3/4	19.05	R-1/2	.47	11.94	1 1/16	27.0	1.17	29.71	1.57	39.88	1.45	36.83	.96	24.4
769LR _ 1 X 1	1	25.40	R-1	.86	21.84	1 3/8	34.9	1.45	36.83	1.93	49.02	1.83	46.48	1.23	31.2

Reference Specifications:
DIN - 2999
BS - 21
JIS - B0203
ISO - 7/1-BSP-T

Designation:
Marking LR on Flat

769 LN

MALE PIPE WELD ELBOW



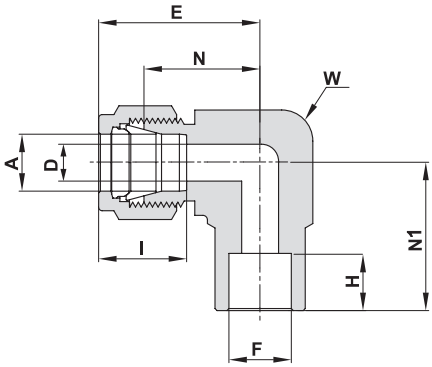
TUBE (INCH)

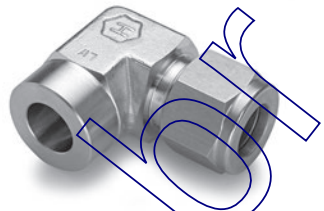
Ordering Information	A Tube O.D.		F Pipe Size		D		W Wrench Flat		N		H		E		N1		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
769LN _ 1/4 X 1/8	1/4	6.35	1/8	10.30	.19	4.82	1/2	12.7	.77	19.56	.38	9.65	1.06	26.92	.74	18.8	.60	15.2
769LN _ 1/4 X 1/4	1/4	6.35	1/4	13.70	.19	4.82	1/2	12.7	.77	19.56	.56	14.22	1.06	26.92	.92	23.37	.60	15.2
769LN _ 3/8 X 1/4	3/8	9.52	1/4	13.70	.28	7.11	5/8	15.9	.91	23.11	.56	14.22	1.20	30.48	1.00	25.40	.66	16.8
769LN _ 1/2 X 1/2	1/2	12.70	1/2	21.34	.41	10.41	13/16	20.6	1.02	25.90	.75	19.05	1.42	36.06	1.30	33.02	.90	22.9
769LN _ 3/4 X 3/4	3/4	19.05	3/4	26.67	.62	15.75	1 1/16	27.0	1.17	29.72	.75	19.05	1.57	39.88	1.45	36.83	.96	24.4

Designation:
Marking LN on Flat

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

769 LW
TUBE SOCKET WELD ELBOW



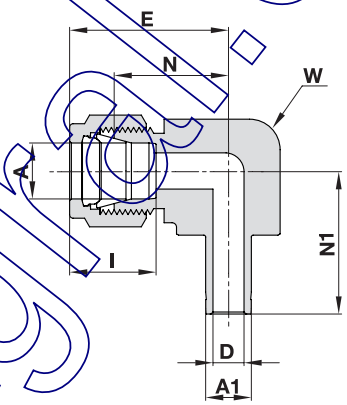


TUBE (INCH)

Ordering Information	A Tube O.D.		F Tube O.D.		D		W Wrench Flat		N		H		E		N1		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
769LW _ 1/4 X 1/4	1/4	6.35	1/4	6.35	.19	4.82	1/2	12.7	.77	19.60	.31	7.87	1.06	26.98	.77	19.60	.60	15.2
769LW _ 3/8 X 3/8	3/8	9.52	3/8	9.52	.28	7.11	5/8	15.9	.91	23.11	.38	9.65	1.20	30.98	.91	23.11	.66	16.8
769LW _ 1/2 X 1/2	1/2	12.70	1/2	12.70	.41	10.41	15/16	23.8	1.02	25.90	.50	12.70	1.42	36.06	1.02	25.90	.90	22.9
769LW _ 3/4 X 3/4	3/4	19.05	3/4	19.05	.62	15.74	1 1/16	27.0	1.17	29.71	.56	14.22	1.57	39.87	1.17	29.71	.96	24.4
769LW _ 1 X 1	1	25.40	1	25.40	.88	22.35	1 3/8	34.9	1.45	36.83	.75	19.05	1.93	49.02	1.45	36.83	1.23	31.2

Designation:
Marking LW on Flat

769 LT
REDUCING ELBOW



TUBE (METRIC) TO STUB (METRIC)

Ordering Information	A Tube O.D.	A1 Tube O.D.	D	W Wrench Flat		N	E	N1	I
	mm	mm	mm	inch	mm	mm	mm	mm	mm
769LT _ 6 X 6	6	6	4.0	1/2	12.7	19.6	27.0	23.8	15.3
769LT _ 12 X 12	12	12	8.8	1 1/8	28.6	27.9	38.0	40.4	22.8
769LT _ 15 X 15	15	15	12.0	1 1/8	28.6	27.9	38.0	41.0	24.4
769LT _ 22 X 22	22	22	18.3	1 3/8	34.9	34.5	44.6	50.0	26.0

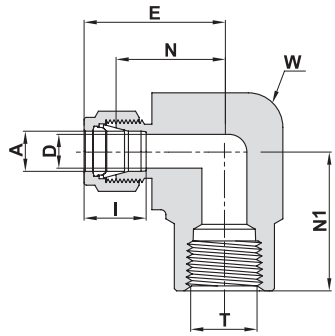
TUBE (INCH) TO STUB (INCH)

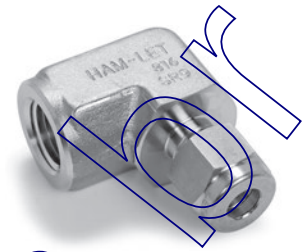
Ordering Information	A Tube O.D.		A1 Tube O.D.		D		W Wrench Flat		N		E		N1		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
769LT _ 1/4 X 3/8	1/4	6.35	3/8	9.52	.19	4.82	5/8	15.9	.91	23.1	1.20	30.5	1.24	31.5	.60	15.2
769LT _ 1/4 X 1/2	1/4	6.35	1/2	12.7	.19	4.82	5/8	15.9	.91	23.1	1.20	30.5	1.28	32.5	.60	15.2

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

770 L

FEMALE ELBOW





TUBE (METRIC) TO FEMALE NPT THREAD

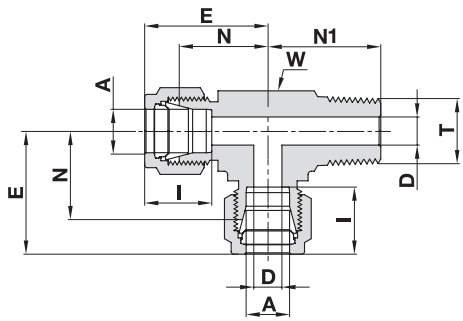
Ordering Information	A Tube O.D.	T (NPT)	D	W Wrench Flat		N	E	N1	I
	mm	inch	mm	inch	mm	mm	mm	mm	mm
770L _ 6 X 1/8	6	1/8	4.8	1/2	12.7	19.6	27.0	19.0	15.3
770L _ 6 X 1/4	6	1/4	4.8	11/16	17.5	22.4	29.8	22.4	15.3
770L _ 6 X 1/2	6	1/2	4.8	1 1/16	27.0	27.2	34.6	28.4	15.3
770L _ 8 X 1/4	8	1/4	6.4	11/16	17.5	23.1	30.6	22.4	16.2
770L _ 10 X 1/8	10	1/8	7.9	11/16	17.5	23.9	31.5	19.0	17.2
770L _ 10 X 1/4	10	1/4	7.9	13/16	20.6	25.9	33.5	22.4	17.2
770L _ 12 X 1/4	12	1/4	9.5	13/16	20.6	25.9	36.0	22.4	22.8
770L _ 12 X 1/2	12	1/2	9.5	1 1/16	27.0	28.7	38.8	28.4	22.8
770L _ 16 X 1/2	16	1/2	12.7	1 1/16	27.0	29.7	39.8	28.4	24.4

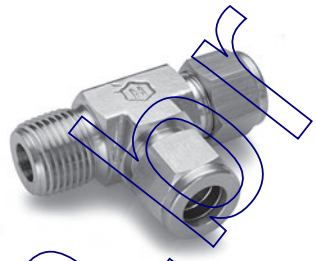
TUBE (INCH) TO FEMALE NPT THREAD

Ordering Information	A Tube O.D.		T (NPT)	D		W Wrench Flat		N		E		N1		I	
	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
770L _ 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	1/2	12.7	.71	18.03	.97	24.64	.75	19.05	.50	12.7
770L _ 1/8 X 1/4	1/8	3.17	1/4	.09	2.28	11/16	17.5	.82	20.80	1.08	27.43	.88	22.40	.50	12.7
770L _ 3/16 X 1/8	3/16	4.76	1/8	.12	3.04	1/2	12.7	.74	18.80	1.00	25.40	.75	19.05	.54	13.7
770L _ 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	1/2	12.7	.77	19.55	1.06	26.92	.75	19.05	.60	15.2
770L _ 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	11/16	17.5	.88	22.40	1.17	29.72	.88	22.40	.60	15.2
770L _ 1/4 X 3/8	1/4	6.35	3/8	.19	4.82	15/16	23.8	.96	24.38	1.25	31.75	.88	22.40	.60	15.2
770L _ 1/4 X 1/2	1/4	6.35	1/2	.19	4.82	1 1/16	27.0	1.07	27.18	1.36	34.54	1.12	28.45	.60	15.2
770L _ 5/16 X 1/8	5/16	7.93	1/8	.25	6.35	9/16	14.3	.84	21.30	1.13	28.70	.75	19.05	.64	16.2
770L _ 5/16 X 1/4	5/16	7.93	1/4	.25	6.35	11/16	17.5	.91	23.11	1.20	30.48	.88	22.40	.64	16.2
770L _ 3/8 X 1/8	3/8	9.52	1/8	.28	7.11	5/8	15.9	.91	23.11	1.20	30.48	.75	19.05	.66	16.8
770L _ 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	11/16	17.5	0.94	23.87	1.23	31.24	.88	22.40	.66	16.8
770L _ 3/8 X 3/8	3/8	9.52	3/8	.28	7.11	15/16	23.8	1.02	25.90	1.31	33.27	.88	22.40	.66	16.8
770L _ 3/8 X 1/2	3/8	9.52	1/2	.28	7.11	1 1/16	27.0	1.13	28.70	1.42	36.07	1.12	28.45	.66	16.8
770L _ 1/2 X 1/4	1/2	12.70	1/4	.41	10.41	13/16	20.6	1.02	25.90	1.42	36.07	.88	22.40	.90	22.9
770L _ 1/2 X 3/8	1/2	12.70	3/8	.41	10.41	15/16	23.8	1.02	25.90	1.42	36.07	.88	22.40	.90	22.9
770L _ 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	1 1/16	27.0	1.13	28.70	1.53	36.86	1.12	28.45	.90	22.9
770L _ 5/8 X 3/8	5/8	15.87	3/8	.50	12.70	15/16	23.8	1.10	27.90	1.50	38.10	.88	22.40	.96	24.4
770L _ 5/8 X 1/2	5/8	15.87	1/2	.50	12.70	1 1/16	27.0	1.17	29.70	1.57	39.86	1.12	28.45	.96	24.4
770L _ 3/4 X 1/2	3/4	19.05	1/2	.62	15.74	1 1/16	27.0	1.17	29.70	1.57	39.86	1.12	28.45	.96	24.4
770L _ 3/4 X 3/4	3/4	19.05	3/4	.62	15.74	1 3/8	34.9	1.36	34.54	1.76	44.70	1.25	31.75	.96	24.4
770L _ 7/8 X 3/4	7/8	22.22	3/4	.72	18.28	1 3/8	34.9	1.36	34.54	1.76	44.70	1.25	31.75	1.02	25.9
770L _ 1 X 3/4	1	25.40	3/4	.88	22.35	1 3/8	34.9	1.45	36.83	1.93	49.02	1.25	31.75	1.23	31.2
770L _ 1 X 1	1	25.40	1	.88	22.35	1 11/16	42.9	1.63	41.40	2.11	53.59	1.50	38.10	1.23	31.2

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

771 L
MALE RUN TEE





TUBE (METRIC) TO MALE NPT THREAD

Ordering Information	A Tube O.D.	T (NPT)	D	W Wrench Flat		N	E	N1	I
	mm	inch	mm	inch	mm	mm	mm	mm	mm
771L _ 6 X 1/8	6	1/8	4.8	1/2	12.7	19.6	27.0	18.8	15.3
771L _ 6 X 1/4	6	1/4	4.8	1/2	12.7	19.6	27.0	23.4	15.3
771L _ 8 X 1/8	8	1/8	4.8	5/8	15.9	22.4	29.9x	20.8	16.2
771L _ 8 X 1/4	8	1/4	6.4	5/8	15.9	22.4	29.9	25.4	16.2
771L _ 10 X 1/4	10	1/4	7.1	13/16	20.6	25.9	33.5	28.2	17.2
771L _ 12 X 1/4	12	1/4	7.1	13/16	20.6	25.9	36.0	28.2	22.8
771L _ 12 X 3/8	12	3/8	9.5	13/16	20.6	25.9	36.0	28.2	22.8
771L _ 12 X 1/2	12	1/2	9.5	13/16	20.6	25.9	36.0	33.0	22.8
771L _ 16 X 1/2	16	1/2	11.9	15/16	23.8	27.9	38.0	35.0	24.4

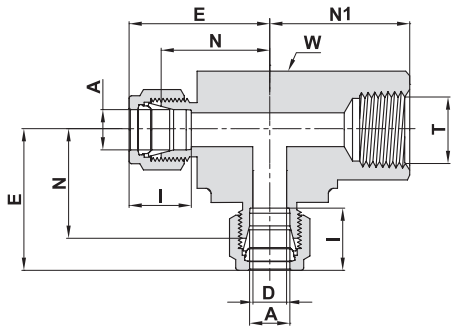
TUBE (INCH) TO MALE NPT THREAD

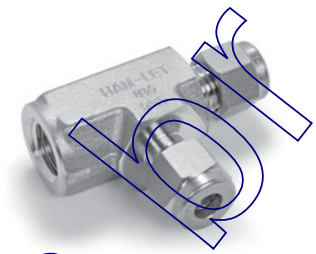
Ordering Information	A Tube O.D.		T (NPT)	D		W Wrench Flat		N		E		N1		I	
	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
771L _ 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	7/16	11.1	.67	17.02	.93	23.62	.70	17.78	.50	12.7
771L _ 1/8 X 1/4	1/8	3.17	1/4	.09	2.28	1/2	12.7	.71	18.03	.97	24.64	.92	23.40	.50	12.7
771L _ 3/16 X 1/8	3/16	4.76	1/8	.12	3.05	7/16	11.1	.70	17.78	.96	24.38	.70	17.78	.54	13.7
771L _ 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.74	18.8	.60	15.2
771L _ 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.92	23.37	.60	15.2
771L _ 5/16 X 1/8	5/16	7.93	1/8	.19	4.82	5/8	15.9	.88	22.35	1.17	29.71	.82	20.83	.64	16.2
771L _ 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	5/8	15.9	.91	23.11	1.20	30.48	1.00	25.40	.66	16.8
771L _ 3/8 X 3/8	3/8	9.52	3/8	.28	7.11	13/16	20.6	1.02	25.91	1.31	33.27	1.11	28.19	.66	16.8
771L _ 1/2 X 3/8	1/2	12.70	3/8	.38	9.5	13/16	20.6	1.02	25.91	1.42	36.07	1.11	28.19	.90	22.9
771L _ 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	13/16	20.6	1.02	25.91	1.42	36.07	1.30	33.00	.90	22.9
771L _ 5/8 X 1/2	5/8	15.87	1/2	.47	11.94	15/16	23.8	1.10	27.94	1.50	38.1	1.38	35.05	.96	24.4
771L _ 3/4 X 3/4	3/4	19.05	3/4	.62	15.75	1 1/16	27.0	1.17	29.72	1.57	39.88	1.45	36.83	.96	24.4

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

771 LF

FEMALE RUN TEE





TUBE (METRIC) TO FEMALE NPT THREAD

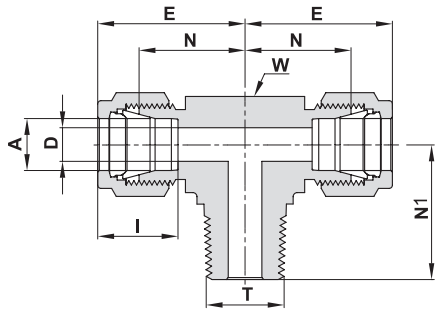
Ordering Information	A	T (NPT)	D	W Wrench Flat		N	E	N1	I
	mm	inch	mm	inch	mm	mm	mm	mm	mm
771LF _ 6 X 1/8	6	1/8	4.8	5/8	15.9	19.6	27.0	19.0	15.3
771LF _ 6 X 1/4	6	1/4	4.8	13/16	20.6	22.4	29.8	22.4	15.3
771LF _ 8 X 1/8	8	1/8	6.4	5/8	15.9	22.4	29.9	22.4	16.2
771LF _ 8 X 1/4	8	1/4	6.4	13/16	20.6	23.1	30.6	22.4	16.2
771LF _ 10 X 1/4	10	1/4	7.9	13/16	20.6	25.9	33.5	22.4	17.2
771LF _ 12 X 1/4	12	1/4	9.5	13/16	20.6	25.9	36.0	22.4	22.8
771LF _ 12 X 3/8	12	3/8	9.5	15/16	23.8	25.9	36.0	22.4	22.8
771LF _ 12 X 1/2	12	1/2	9.5	1 1/16	27.0	29.7	39.8	28.4	22.8
771LF _ 16 X 1/2	16	1/2	12.7	1 1/16	27.0	29.7	39.8	28.4	24.4

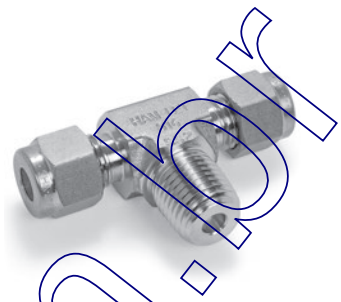
TUBE (INCH) TO FEMALE NPT THREAD

Ordering Information	A Tube O.D.		T (NPT)	D		W Wrench Flat		N		E		N1		I	
	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
771LF _ 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	5/8	15.9	.71	18.00	.97	24.63	.75	19.05	.50	12.7
771LF _ 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	5/8	15.9	.77	19.55	1.06	26.92	.75	19.05	.60	15.2
771LF _ 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	13/16	20.6	.88	22.35	1.17	29.71	.88	22.35	.60	15.2
771LF _ 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	13/16	20.6	.94	23.87	1.23	31.24	.88	22.35	.66	16.8
771LF _ 1/2 X 3/8	1/2	12.70	3/8	.41	10.41	15/16	23.8	1.02	25.9	1.42	36.07	.88	22.35	.90	22.9
771LF _ 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	1 1/16	27.0	1.17	29.72	1.57	39.88	1.12	28.45	.90	22.9
771LF _ 3/4 X 3/4	3/4	19.05	3/4	.62	15.75	1 3/8	34.9	1.36	34.54	1.76	44.70	1.25	31.75	.96	24.4
771LF _ 1 X 3/4	1	25.4	3/4	.88	22.35	1 3/8	34.9	1.45	36.83	1.93	49.02	1.25	31.75	1.23	31.2
771LF _ 1 X 1	1	25.4	1	.88	22.35	1 11/16	42.9	1.63	41.40	2.11	53.59	1.50	38.10	1.23	31.2

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

772 L
MALE BRANCH TEE





TUBE (METRIC) TO MALE NPT THREAD

Ordering Information	A Tube O.D.	T (NPT)	D	W Wrench Flat		N	E	N1	I
	mm	inch	mm	inch	mm	mm	mm	mm	mm
772L _ 6 X 1/8	6	1/8	4.8	1/2	12.7	19.6	27.0	18.8	15.3
772L _ 6 X 1/4	6	1/4	4.8	1/2	12.7	19.6	27.0	23.4	15.3
772L _ 8 X 1/8	8	1/8	4.8	5/8	15.9	22.4	29.9	20.8	16.2
772L _ 8 X 1/4	8	1/4	6.4	5/8	15.9	22.4	29.9	25.4	16.2
772L _ 10 X 1/4	10	1/4	7.1	13/16	20.6	25.9	33.5	28.2	17.2
772L _ 12 X 1/4	12	1/4	7.1	13/16	20.6	25.9	36.0	28.2	22.8
772L _ 12 X 3/8	12	3/8	9.5	13/16	20.6	25.9	36.0	28.2	22.8
772L _ 12 X 1/2	12	1/2	9.5	13/16	20.6	25.9	36.0	33.0	22.8
772L _ 16 X 1/2	16	1/2	11.9	15/16	23.8	28.7	38.8	35.8	24.4

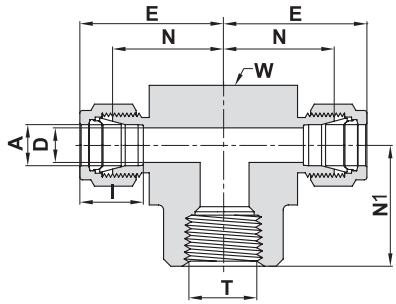
TUBE (INCH) TO MALE NPT THREAD

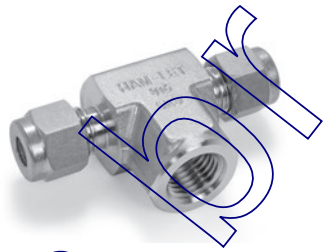
Ordering Information	A Tube O.D.		T (NPT)	D		W Wrench Flat		N		E		N1		I	
	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
772L _ 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	7/16	11.1	.67	17.02	.93	23.62	.70	17.78	.50	12.7
772L _ 1/8 X 1/4	1/8	3.17	1/4	.09	2.28	1/2	12.7	.71	18.03	.97	24.64	.92	23.37	.50	12.7
772L _ 3/16 X 1/8	3/16	4.76	1/8	.12	3.04	7/16	11.1	.70	17.78	.96	24.38	.70	17.78	.54	13.7
772L _ 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.74	18.80	.60	15.2
772L _ 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	.92	23.37	.60	15.2
772L _ 5/16 X 1/8	5/16	7.93	1/8	.19	4.82	5/8	15.9	.88	22.35	1.17	29.71	.82	20.83	.64	16.2
772L _ 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	5/8	15.9	.91	23.11	1.20	30.48	1.00	25.40	.66	16.8
772L _ 3/8 X 3/8	3/8	9.52	3/8	.28	7.11	13/16	20.6	1.02	25.91	1.31	33.27	1.11	28.19	.66	16.8
772L _ 1/2 X 3/8	1/2	12.70	3/8	.38	9.65	13/16	20.6	1.02	25.91	1.42	36.07	1.11	28.19	.90	22.9
772L _ 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	13/16	20.6	1.02	25.91	1.42	36.07	1.30	33.02	.90	22.9
772L _ 5/8 X 1/2	5/8	15.87	1/2	.47	11.94	15/16	23.8	1.13	28.7	1.53	38.86	1.41	35.81	.96	24.4
772L _ 3/4 X 3/4	3/4	19.05	3/4	.62	15.75	1 1/16	27.0	1.17	29.72	1.57	39.88	1.45	36.83	.96	24.4

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

772 LF

FEMALE BRANCH TEE





TUBE (METRIC) TO FEMALE NPT THREAD

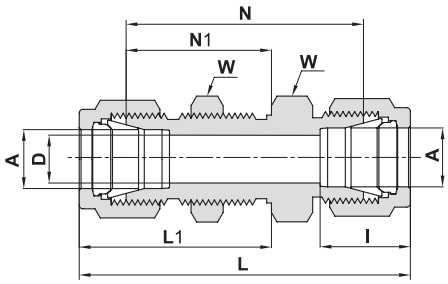
Ordering Information	A Tube O.D.	T (NPT)	D	W Wrench Flat		N	E	N1	I
	mm	inch	mm	inch	mm	mm	mm	mm	mm
772LF _ 6 X 1/8	6	1/8	4.8	5/8	15.9	19.6	27.0	19.0	15.3
772LF _ 6 X 1/4	6	1/4	4.8	13/16	20.6	22.4	29.8	22.4	15.3
772LF _ 8 X 1/8	8	1/8	6.4	5/8	15.9	22.4	29.9	19.0	16.2
772LF _ 8 X 1/4	8	1/4	6.4	13/16	20.6	23.1	30.6	22.4	16.2
772LF _ 10 X 1/4	10	1/4	7.9	13/16	20.6	25.9	33.5	22.4	17.2
772LF _ 10 X 3/8	10	3/8	7.9	15/16	23.8	25.9	33.5	22.4	17.2
772LF _ 12 X 1/4	12	1/4	9.5	13/16	20.6	25.9	36.0	22.4	22.8
772LF _ 12 X 3/8	12	3/8	9.5	15/16	23.8	25.9	36.0	22.4	22.8
772LF _ 12 X 1/2	12	1/2	9.5	1 1/16	27.0	28.7	38.8	28.4	22.8
772LF _ 16 X 1/2	16	1/2	12.7	1 1/16	27.0	28.7	38.8	28.4	24.4

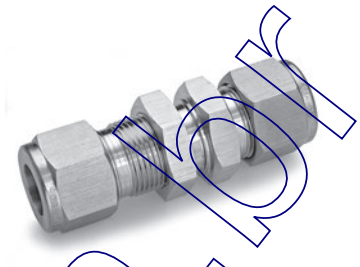
TUBE (INCH) TO FEMALE NPT THREAD

Ordering Information	A Tube O.D.		T (NPT)	D		W Wrench Flat		N		E		N1		I	
	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
772LF _ 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	5/8	15.9	.70	18.00	.97	24.64	.75	19.05	.50	12.7
772LF _ 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	5/8	15.9	.77	19.56	1.06	26.96	.75	19.05	.60	15.2
772LF _ 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	13/16	20.6	.88	22.35	1.17	29.71	.88	22.35	.60	15.2
772LF _ 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	13/16	20.6	.94	23.88	1.23	31.24	.88	22.35	.66	16.8
772LF _ 3/8 X 3/8	3/8	9.52	3/8	.28	7.11	15/16	23.8	1.02	25.90	1.31	33.27	.88	22.35	.66	16.8
772LF _ 3/8 X 1/2	3/8	9.52	1/2	.28	7.11	1 1/16	27.0	1.13	28.70	1.42	36.07	1.12	28.45	.66	16.8
772LF _ 1/2 X 1/4	1/2	12.70	1/4	.41	10.41	13/16	20.6	1.02	25.90	1.42	36.07	.88	22.35	.90	22.9
772LF _ 1/2 X 3/8	1/2	12.70	3/8	.41	10.41	15/16	23.8	1.02	25.90	1.42	36.07	.88	22.35	.90	22.9
772LF _ 1/2 X 1/2	1/2	12.70	1/2	.41	10.41	1 1/16	27.0	1.13	28.70	1.53	38.86	1.12	28.45	.90	22.9
772LF _ 5/8 X 1/2	5/8	15.87	1/2	.50	12.70	1 1/16	27.0	1.13	28.70	1.53	38.86	1.12	28.44	.96	24.4
772LF _ 3/4 X 3/4	3/4	19.05	3/4	.62	15.74	1 3/8	34.9	1.36	34.50	1.76	44.70	1.25	31.75	.96	24.4
772LF _ 1 X 3/4	1	25.4	3/4	.88	22.35	1 3/8	34.9	1.45	36.83	1.93	49.02	1.25	31.75	1.23	31.2
772LF _ 1 X 1	1	25.4	1	.88	22.35	1 11/16	42.9	1.63	41.40	2.11	53.60	1.50	38.10	1.23	31.2

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

774 L
BULKHEAD UNION





TUBE (METRIC) TO TUBE (METRIC)

Ordering Information	A Tube O.D.	D	W Hex. Flat	N	N1	L	L1	I	Panel Hole Drill Size	Panel Hole Drill Size
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
774L _ 3	3	2.4	14	38.1	24.6	51.3	31.2	12.9	8.30	12.7
774L _ 4	4	2.4	14	40.4	25.4	53.6	32.0	13.7	9.90	12.7
774L _ 6	6	4.8	16	42.9	26.2	57.7	33.6	15.3	11.50	10.2
774L _ 8	8	6.4	18	46.0	28.6	61.0	36.1	16.2	13.10	11.2
774L _ 10	10	7.9	22	48.5	29.4	63.7	37.0	17.2	16.25	11.2
774L _ 12	12	9.5	24	50.8	31.8	71.0	41.9	22.8	19.50	12.7
774L _ 14	14	11.0	27	52.3	32.5	72.5	42.6	24.4	22.80	12.7
774L _ 15	15	11.9	27	52.3	32.5	72.5	42.6	24.4	22.80	12.7
774L _ 16	16	12.7	27	52.3	32.5	72.5	42.6	24.4	22.80	12.7
774L _ 18	18	15.1	30	58.7	37.3	78.9	47.4	24.4	26.00	16.8
774L _ 20	20	15.9	35	64.3	42.9	84.5	53.0	26.0	29.00	19.0
774L _ 25	25	21.8	41	71.4	45.2	96.0	57.5	31.3	33.70	19.0
774L _ 38	*38	33.7	60	89.8	51.9	145.0	79.5	49.4	50.50	19.0

TUBE (INCH) TO TUBE (INCH)

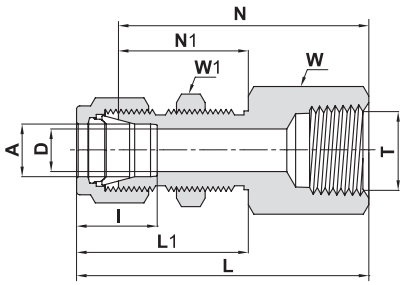
Ordering Information	A Tube O.D.		D		W Hex. Flat	N		N1		L		L1		I		Panel Hole Drill Size		Panel Hole Drill Size	
	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
774L _ 1/16	1/16	1.58	.05	1.27	5/16	.94	23.88	.53	13.46	1.24	31.5	.68	17.3	.34	8.6	13/64	5.16	.12	3.05
774L _ 1/8	1/8	3.17	.09	2.28	1/2	1.50	38.10	.97	24.63	2.02	51.30	1.23	31.24	.50	12.7	21/64	8.33	.50	12.70
774L _ 3/16	3/16	4.76	.12	3.04	9/16	1.59	40.38	1.00	25.40	2.11	53.59	1.26	32.00	.54	13.7	25/64	9.92	.50	12.70
774L _ 1/4	1/4	6.35	.19	4.82	5/8	1.69	42.92	1.03	26.16	2.27	57.65	1.32	33.52	.60	15.2	29/64	11.50	.40	10.16
774L _ 5/16	5/16	7.93	.25	6.35	11/16	1.81	45.97	1.12	28.44	2.39	60.70	1.41	35.81	.64	16.2	33/64	13.09	.44	11.17
774L _ 3/8	3/8	9.52	.28	7.11	3/4	1.87	47.5	1.16	29.46	2.45	62.2	1.45	36.83	.66	16.8	37/64	14.68	.44	11.17
774L _ 1/2	1/2	12.70	.41	10.41	15/16	2.00	50.80	1.25	31.75	2.80	71.12	1.65	41.91	.90	22.9	49/64	19.44	.50	12.70
774L _ 5/8	5/8	15.87	.50	12.70	1 1/16	2.06	52.32	1.28	32.51	2.86	72.64	1.68	42.67	.96	24.4	57/64	22.62	.50	12.70
774L _ 3/4	3/4	19.05	.62	15.75	1 3/16	2.31	58.67	1.47	37.33	3.11	78.99	1.87	47.49	.96	24.4	1 1/64	25.79	.66	16.76
774L _ 1	1	25.40	.88	22.35	1 5/8	2.81	71.37	1.78	45.21	3.77	95.76	2.26	57.40	1.23	31.2	1 21/64	33.73	.75	19.05
774L _ 1 1/4	*1 1/4	31.75	1.09	27.70	1 7/8	3.11	79.00	1.88	47.75	4.85	123.19	2.75	69.85	1.62	41.2	1 41/64	41.67	.75	19.05
774L _ 1 1/2	*1 1/2	38.10	1.34	34.00	2 1/4	3.34	84.80	1.94	49.28	5.48	139.19	3.01	76.45	1.97	50.0	1 61/64	49.61	.75	19.05
774L _ 2	*2	50.80	1.81	45.97	2 3/4	4.16	105.66	2.22	56.39	7.10	180.34	3.69	93.73	2.66	67.6	2 41/64	67.07	.75	19.05

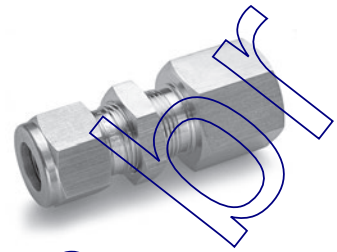
* Including low friction paste, see page 91

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

774 LF

BULKHEAD FEMALE CONNECTOR





TUBE (METRIC) TO FEMALE NPT THREAD

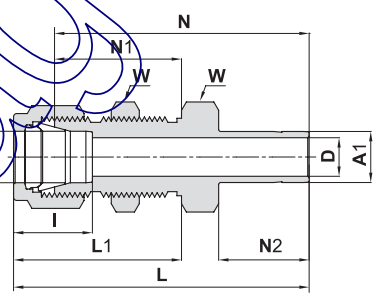
Ordering Information	A Tube O.D.	T (NPT)	D	W Hex. Flat	W1 Hex. Flat	N	N1	L	L1	I	Panel Hole Drill Size	Panel Hole Drill Size
	mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
774LF_6 X 1/4	6	1/4	4.8	19	16	44.4	26.2	51.8	33.6	15.3	11.5	10.2
774LF_12 X 1/2	1 2	1/2	9.5	27	24	56.4	31.8	66.5	41.9	22.8	19.5	12.7

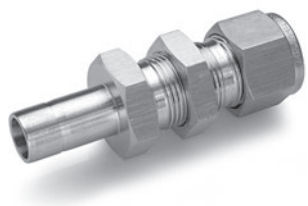
TUBE (INCH) TO FEMALE NPT THREAD

Ordering Information	A Tube O.D.		T (NPT)	D		W Hex. Flat	W1 Hex. Flat	N		N1		L		L1		I		Panel Hole Drill Size		Panel Hole Drill Size	
	inch	mm	inch	inch	mm	inch	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
774LF_1/8X1/8	1/8	3.17	1/8	.09	2.28	9/16	1/2	1.50	38.10	.97	24.63	1.76	44.70	1.23	31.24	.50	12.7	21/64	8.33	.50	12.70
774LF_1/4X1/8	1/4	6.35	1/8	.19	4.82	5/8	5/8	1.56	39.62	1.03	26.16	1.85	46.99	1.32	33.52	.60	15.2	29/64	11.50	.40	10.16
774LF_1/4X1/4	1/4	6.35	1/4	.19	4.82	3/4	5/8	1.75	44.45	1.03	26.16	2.04	51.81	1.32	33.52	.60	15.2	29/64	11.50	.40	10.16
774LF_3/8X1/4	3/8	9.52	1/4	.28	7.11	3/4	3/4	1.88	47.75	1.16	29.46	2.17	55.11	1.45	36.83	.66	16.8	37/64	14.68	.44	11.17
774LF_1/2X3/8	1/2	12.70	3/8	.41	10.41	15/16	15/16	2.03	51.56	1.25	31.75	2.43	61.72	1.65	41.91	.90	22.9	49/64	19.44	.50	12.70
774LF_1/2X1/2	1/2	12.70	1/2	.41	10.41	1 1/16	15/16	2.22	56.38	1.25	31.75	2.62	66.54	1.65	41.91	.90	22.9	49/64	19.44	.50	12.70

774 LT

BULKHEAD REDUCER





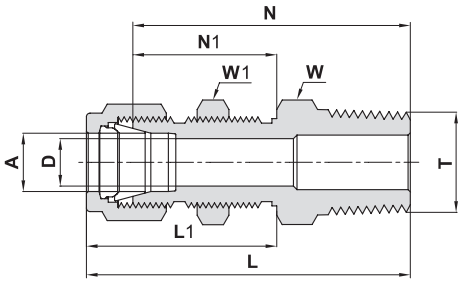
TUBE (INCH) TO TUBE (INCH)

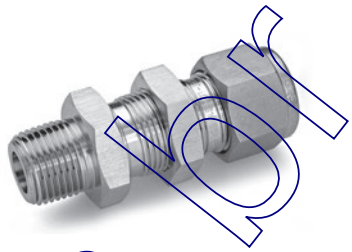
Ordering Information	A Tube O.D.		A1 Tube O.D.	D		W Hex. Flat	N		N1		N2		L		L1		I		Panel hole drill size		Max. Panel thickness	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
774LT_1/8X1/8	1/8	3.17	1/8	.08	2.03	1/2	1.69	42.92	.97	24.63	.53	13.46	1.95	49.53	1.23	31.24	.50	12.7	21/64	8.33	.50	12.70
774LT_1/4X1/4	1/4	6.35	1/4	.17	4.20	5/8	1.91	48.50	1.03	26.16	.62	15.74	2.20	55.88	1.32	33.52	.60	15.2	29/64	11.50	.40	10.16
774LT_3/8X3/8	3/8	9.52	3/8	.28	7.11	3/4	2.12	53.85	1.16	29.46	.69	17.52	2.41	61.21	1.45	36.83	.66	16.8	37/64	14.68	.44	11.17
774LT_1/2X1/2	1/2	12.7	1/2	.39	9.90	15/16	2.47	62.73	1.25	31.75	.91	23.11	2.87	72.89	1.65	41.91	.90	22.9	49/64	19.44	.50	12.70
774LT_5/8X5/8	5/8	15.87	5/8	.50	12.70	1 1/16	2.56	65.02	1.28	32.51	.97	24.64	2.96	75.18	1.68	42.67	.96	24.4	57/64	22.62	.50	12.70
774LT_3/4X3/4	3/4	19.05	3/4	.59	15.00	1 3/16	2.81	71.37	1.47	37.33	.97	24.64	3.21	81.53	1.87	47.49	.96	24.4	1 1/64	25.79	.66	16.76
774LT_1X1	1	25.40	1	.80	20.30	1 5/8	3.47	88.14	1.78	45.21	1.30	33.02	3.95	100.33	2.26	57.40	1.23	31.2	1 21/64	33.73	.75	19.05

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

774 LM

BULKHEAD MALE CONNECTOR





TUBE (METRIC) TO MALE NPT THREAD

Ordering Information	A Tube O.D.	T (NPT)	D	W Hex. Flat	W1 Hex. Flat	N	N1	L	L1	Panel Hole Drill Size	Max. Panel Thickness
	mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	mm
774LM _ 6 X 1/8	6	1/8	4.8	16	16	42.2	26.2	49.6	33.6	11.5	10.2
774LM _ 6 X 1/4	6	1/4	4.8	16	16	46.2	26.2	53.6	33.6	11.5	10.2
774LM _ 12 X 1/2	12	1/2	9.5	24	24	58.7	31.8	68.8	41.9	19.5	12.7

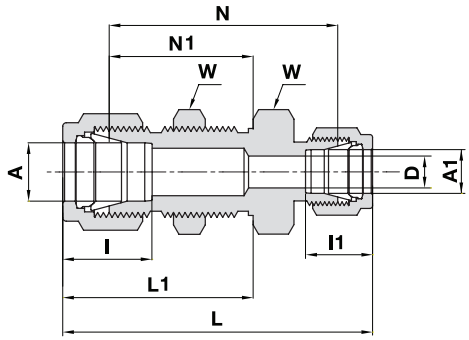
TUBE (INCH) TO MALE NPT THREAD

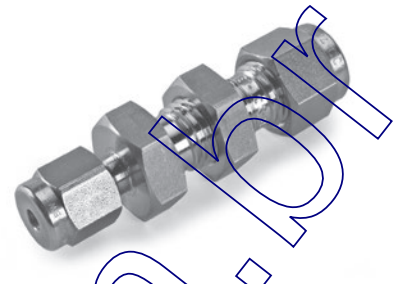
Ordering Information	A Tube O.D.		T (NPT)	D		W Hex. Flat	W1 Hex. Flat	N		N1		L		L1		Panel Hole Drill Size		Max. Panel Thickness	
	inch	mm	inch	inch	mm	inch	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
774LM _ 1/8 X 1/8	1/8	3.17	1/8	.09	2.28	1/2	1/2	1.57	39.90	.97	24.60	1.83	46.48	1.23	31.24	21/64	8.33	.50	12.70
774LM _ 1/4 X 1/8	1/4	6.35	1/8	.19	4.82	5/8	5/8	1.66	42.20	1.03	26.20	1.95	49.53	1.32	33.52	29/64	11.50	.40	10.16
774LM _ 1/4 X 1/4	1/4	6.35	1/4	.19	4.82	5/8	5/8	1.84	46.70	1.03	26.16	2.13	54.10	1.32	33.52	29/64	11.50	.40	10.16
774LM _ 3/8 X 1/4	3/8	9.52	1/4	.28	7.11	3/4	3/4	1.97	50.00	1.16	29.46	2.26	57.40	1.45	36.83	37/64	14.68	.44	11.17
774LM _ 3/8 X 3/8	3/8	9.52	3/8	.28	7.11	3/4	3/4	1.97	50.04	1.16	29.46	2.26	57.40	1.45	36.83	37/64	14.68	.44	11.17
774LM _ 3/8 X 1/2	3/8	9.52	1/2	.28	7.11	7/8	3/4	2.22	56.39	1.16	29.46	2.51	63.75	1.45	36.83	37/64	14.68	.44	11.17
774LM _ 1/2 X 3/8	1/2	12.70	3/8	.40	10.40	15/16	15/16	2.09	53.10	1.25	31.75	2.49	83.25	1.65	41.91	49/64	19.44	.50	12.70
774LM _ 1/2 X 1/2	1/2	12.70	1/2	.40	10.40	15/16	15/16	2.31	58.70	1.25	31.70	2.71	68.83	1.65	41.91	49/64	19.44	.50	12.70
774LM _ 3/4 X 3/4	3/4	19.05	3/4	.62	15.74	1 3/16	1 3/16	2.60	66.04	1.47	37.33	3.00	76.20	1.87	47.49	1 1/64	25.79	.66	16.76
774LM _ 1 X 1	1	25.4	1	.88	22.35	1 5/8	1 5/8	3.19	81.02	1.78	45.21	3.67	93.21	2.26	57.40	1 21/64	33.73	.75	19.05

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

775 L

BULKHEAD REDUCING UNION





TUBE (METRIC) TO TUBE (INCH)

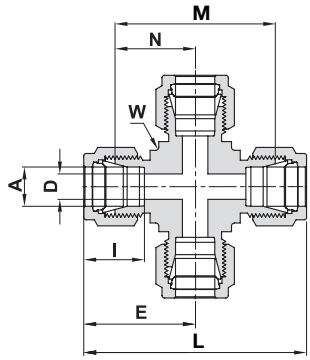
Ordering Information	A Tube O.D.	A1 Tube O.D.	D	W Hex. Flat	N	N1	L	L1	I	I1	Panel Hole Drill Size	Max. Panel Thickness
	mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
775L _ 6 X 1/8	6	1/8	2.4	16	41.1	26.2	55.1	33.6	15.3	12.7	11.5	10.2
775L _ 6 X 1/4	6	1/4	4.8	16	42.9	26.2	57.7	33.6	15.8	15.2	11.5	10.2
775L _ 12 X 1/2	12	1/2	9.5	24	50.8	31.8	71.1	41.9	22.8	22.9	19.5	12.7
775L _ 18 X 3/4	18	3/4	15.1	30	58.7	37.3	79.0	47.4	24.4	24.4	26.0	16.8

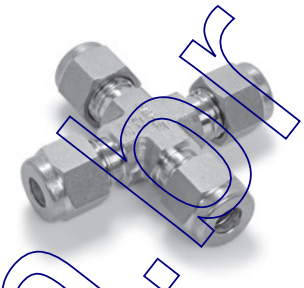
TUBE (INCH) TO TUBE (INCH)

Ordering Information	A Tube O.D.		A1 Tube O.D.		D		W Hex. Flat	N		N1		L		L1		I		I1		Panel Hole Drill Size		Max. Panel Thickness	
	inch	mm	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
775L _ 1/8 X 1/16	1/8	3.17	1/16	1.58	.05	1.27	1/2	1.44	36.57	.97	24.64	1.85	46.99	1.23	31.24	.50	12.7	.34	8.6	21/64	8.33	.50	12.70
775L _ 3/16 X 1/4	3/16	4.76	1/4	6.35	.12	3.04	9/16	1.62	41.15	1.00	25.40	2.17	55.12	1.26	32.00	.54	13.7	.60	15.2	25/64	9.92	.50	12.70
775L _ 1/4 X 1/8	1/4	6.35	1/8	3.17	.09	2.28	5/8	1.62	41.15	1.03	26.16	2.17	55.12	1.32	33.53	.60	15.2	.50	12.7	29/64	11.50	.40	10.16
775L _ 1/4 X 3/8	1/4	6.35	3/8	9.52	.19	4.82	5/8	1.74	44.20	1.03	26.16	2.61	66.29	1.32	33.53	.60	15.2	.66	16.8	29.64	11.50	.40	10.16
775L _ 3/8 X 1/4	3/8	9.52	1/4	6.35	.19	4.82	3/4	1.81	45.97	1.16	29.46	2.39	60.71	1.45	36.83	.66	16.8	.60	15.2	37/64	14.68	.44	11.17
775L _ 1/2 X 1/4	1/2	12.70	1/4	6.35	.19	4.82	15/16	1.94	49.28	1.25	31.75	2.63	66.80	1.65	41.91	.90	22.9	.60	15.2	49/64	19.44	.50	12.70
775L _ 1/2 X 5/8	1/2	12.70	5/8	15.87	.41	10.41	15/16	2.03	51.56	1.25	31.75	2.83	71.88	1.65	41.91	.90	22.9	.96	24.4	49/64	19.44	.50	12.70
775L _ 5/8 X 3/8	5/8	15.87	3/8	9.52	.28	7.11	1 1/16	2.06	52.32	1.28	32.51	2.75	69.85	1.68	42.67	.96	24.4	.66	16.8	57/64	22.62	.50	12.70

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

7102 L
UNION CROSS





ALL TUBES (METRIC)

Ordering Information	A Tube O.D.	D	W Wrench Flat		N	E	M	L	I
	mm	mm	inch	mm	mm	mm	mm	mm	mm
7102L _ 3	3	2.4	3/8	9.5	15.7	22.3	31.5	44.7	12.9
7102L _ 6	6	4.8	1/2	12.7	19.6	27.0	39.1	53.9	15.3
7102L _ 8	8	6.4	5/8	15.9	22.4	29.9	44.7	59.7	16.2
7102L _ 10	10	7.9	13/16	20.6	25.9	33.5	51.8	67.0	17.2
7102L _ 12	12	9.5	13/16	20.6	25.9	36.0	51.8	72.0	22.8
7102L _ 16	16	12.7	15/16	23.8	26.9	37.0	53.8	74.0	24.4
7102L _ 18	18	15.1	1 1/16	27.0	28.2	38.3	56.4	76.6	24.4
7102L _ 20	20	15.9	1 3/8	34.9	34.5	44.6	69.0	89.3	26.0
7102L _ 22	22	18.3	1 3/8	34.9	34.6	44.7	69.1	89.4	26.0
7102L _ 25	25	21.8	1 3/8	34.9	36.8	49.1	73.7	98.3	31.3

ALL TUBES (INCH)

Ordering Information	A Tube O.D.		D		W Wrench Flat		N		E		M		L		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
7102L _ 1/8	1/8	3.17	.09	2.28	3/8	9.5	.62	15.74	.88	22.35	1.24	31.48	1.76	44.70	.50	12.7
7102L _ 1/4	1/4	6.35	.19	4.82	1/2	12.7	.77	19.56	1.06	26.92	1.54	39.12	2.12	53.84	.60	15.2
7102L _ 5/16	5/16	7.93	.25	6.35	5/8	15.9	.88	22.35	1.17	29.71	1.76	44.70	2.34	59.42	.64	16.2
7102L _ 3/8	3/8	9.52	.28	7.11	5/8	15.9	.91	23.11	1.20	30.48	1.82	46.22	2.40	60.96	.66	16.8
7102L _ 1/2	1/2	12.70	.41	10.41	13/16	20.6	1.02	25.9	1.42	36.07	2.04	51.80	2.84	72.14	.90	22.9
7102L _ 3/4	3/4	19.05	.62	15.74	1 1/16	27.0	1.17	29.72	1.57	39.88	2.34	59.44	3.14	79.76	.96	24.4
7102L _ 1	1	25.40	.88	22.35	1 3/8	34.9	1.45	36.8	1.93	49.02	2.90	73.60	3.86	98.04	1.23	31.2

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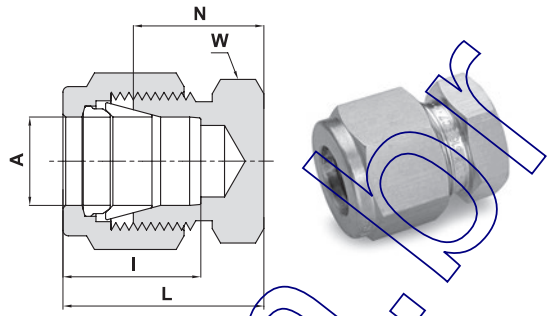
7108 L

CAP



CAPPING END OF TUBE (METRIC)

Ordering Information	A Tube O.D.	W Hex. Flat	N	L	I
	mm	mm	mm	mm	mm
7108L _ 2	2	12	13.5	20.1	12.9
7108L _ 3	3	12	13.5	20.1	12.9
7108L _ 4	4	12	14.7	21.3	13.7
7108L _ 6	6	14	15.7	23.1	15.3
7108L _ 8	8	15	17.0	24.5	16.2
7108L _ 10	10	18	19.0	26.6	17.2
7108L _ 12	12	22	19.0	29.1	22.8
7108L _ 14	14	24	19.8	29.9	24.4
7108L _ 15	15	24	19.8	29.9	24.4
7108L _ 16	16	24	19.8	29.9	24.4
7108L _ 18	18	27	21.3	31.4	24.4
7108L _ 20	20	30	23.9	34.0	26.0
7108L _ 22	22	30	23.9	34.0	26.0
7108L _ 25	25	35	26.2	38.5	31.3
7108L _ 38	*38	55	37.8	65.4	49.4

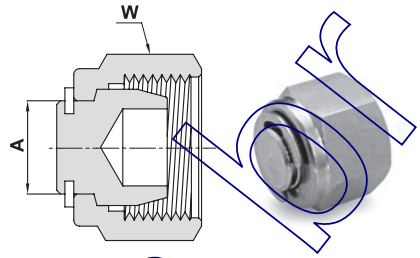
CAPPING END OF TUBE (INCH)

Ordering Information	A Tube O.D.		W Hex. Flat	N		L		I	
	inch	mm	inch	inch	mm	inch	mm	inch	mm
7108L _ 1/16	1/16	1.58	5/16	.44	11.17	.59	14.98	.34	8.6
7108L _ 1/8	1/8	3.17	7/16	.53	13.46	.79	20.06	.50	12.7
7108L _ 3/16	3/16	4.76	7/16	.58	14.73	.84	21.84	.54	13.7
7108L _ 1/4	1/4	6.35	1/2	.63	16.00	.92	23.37	.60	15.2
7108L _ 5/16	5/16	7.93	9/16	.67	17.01	.96	24.38	.64	16.2
7108L _ 3/8	3/8	9.52	5/8	.72	18.28	1.01	26.65	.66	16.8
7108L _ 1/2	1/2	12.70	13/16	.75	19.05	1.15	29.21	.90	22.9
7108L _ 5/8	5/8	15.87	15/16	.78	19.81	1.18	29.97	.96	24.4
7108L _ 3/4	3/4	19.05	1 1/16	.84	21.33	1.24	31.49	.96	24.4
7108L _ 7/8	7/8	22.22	1 3/16	.94	23.88	1.34	34.04	1.02	25.9
7108L _ 1	1	25.40	1 3/8	1.03	26.16	1.51	38.35	1.23	31.2
7108L _ 1 1/4	*1 1/4	31.75	1 3/4	1.23	31.24	2.10	53.34	1.62	41.2
7108L _ 1 1/2	*1 1/2	38.10	2 1/8	1.47	37.33	2.54	64.52	1.97	50.0
7108L _ 2	*2	50.80	2 3/4	1.94	49.28	3.41	86.61	2.66	67.6

* Including low friction paste, see page 91

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

7121 L
PLUG



PLUGGING UNUSED PORT OF FITTING (METRIC)

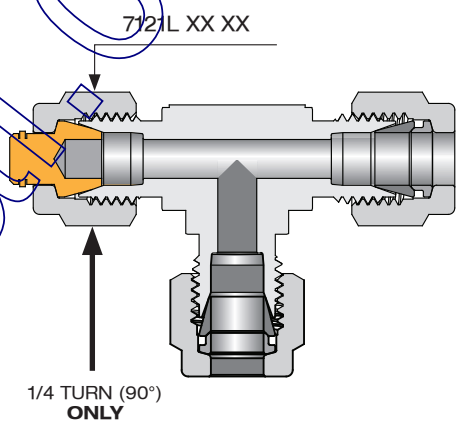
Ordering Information	A	W Hex. Flat
	mm	mm
7121L _ 2	2	14
7121L _ 3	3	12
7121L _ 4	4	12
7121L _ 6	6	14
7121L _ 8	8	16
7121L _ 10	10	19
7121L _ 12	12	22
7121L _ 14	14	25
7121L _ 15	15	25
7121L _ 16	16	25
7121L _ 18	18	30
7121L _ 20	20	32
7121L _ 22	22	32
7121L _ 25	25	38
7121L _ 38	*38	60
7121L _ 50	*50	3 inch

PLUGGING UNUSED PORT OF FITTING (INCH)

Ordering Information	A		W Hex. Flat
	inch	mm	inch
7121L _ 1/16	1/16	1.58	5/16
7121L _ 1/8	1/8	3.17	7/16
7121L _3/16	3/16	4.76	1/2
7121L _1/4	1/4	6.35	9/16
7121L _ 5/16	5/16	7.93	5/8
7121L _ 3/8	3/8	9.52	11/16
7121L _ 1/2	1/2	12.70	7/8
7121L _ 5/8	5/8	15.87	1
7121L _ 3/4	3/4	19.05	1 1/8
7121L _ 7/8	7/8	22.22	1 1/4
7121L _ 1	1	25.40	1 1/2
7121L _ 1 1/4	*1 1/4	31.75	1 7/8
7121L _ 1 1/2	*1 1/2	38.10	2 1/4
7121L _ 2	*2	50.80	3

* Including low friction paste, see page 91

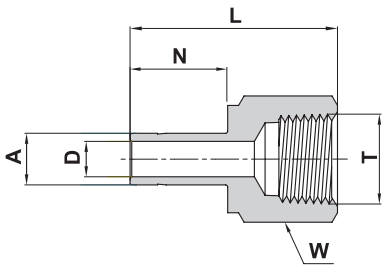
PLUG ASSEMBLY INSTRUCTIONS

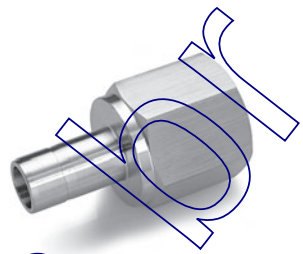


"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

739 LF

FEMALE ADAPTER TUBE TO PIPE





TUBE (METRIC) FEMALE PIPE

Ordering Information	A Tube O.D.	T (NPT)	D	W Hex. Flat	N	L
	mm	inch	mm	mm	mm	mm
739LF _ 3 X 1/8	3	1/8	2.1	14	13.5	31.5
739LF _ 3 X 1/4	3	1/4	2.1	19	13.5	35.3
739LF _ 4 X 1/4	4	1/4	2.2	19	14.2	35.0
739LF _ 6 X 1/8	6	1/8	4.0	14	15.7	32.5
739LF _ 6 X 1/4	6	1/4	4.0	19	15.7	37.1
739LF _ 6 X 3/8	6	3/8	4.0	22	15.7	39.6
739LF _ 6 X 1/2	6	1/2	4.0	27	15.7	45.5
739LF _ 8 X 1/8	8	1/8	5.6	14	16.8	34.3
739LF _ 8 X 1/4	8	1/4	5.6	19	16.8	37.6
739LF _ 8 X 1/2	8	1/2	5.6	27	16.8	46.0
739LF _ 10 X 1/4	10	1/4	7.1	19	17.5	38.1
739LF _ 10 X 3/8	10	3/8	7.1	22	17.5	40.1
739LF _ 10 X 1/2	10	1/2	7.1	27	17.5	46.5
739LF _ 12 X 1/4	12	1/4	8.8	19	23.1	43.4
739LF _ 12 X 3/8	12	3/8	8.8	22	23.1	45.5
739LF _ 12 X 1/2	12	1/2	8.8	27	23.1	52.3
739LF _ 16 X 3/8	16	3/8	12.7	24	24.7	48.0
739LF _ 16 X 1/2	16	1/2	12.7	27	24.7	53.1
739LF _ 20 X 1/2	20	1/2	15.1	27	26.6	56.0
739LF _ 20 X 3/4	20	3/4	15.1	35	26.6	56.0

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

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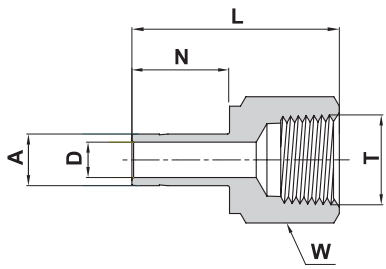
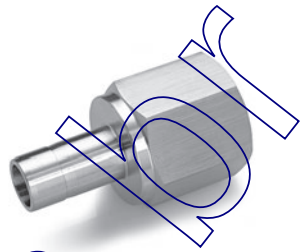
739 LF

FEMALE ADAPTER TUBE TO PIPE

(Cont'd)





TUBE (INCH) FEMALE PIPE

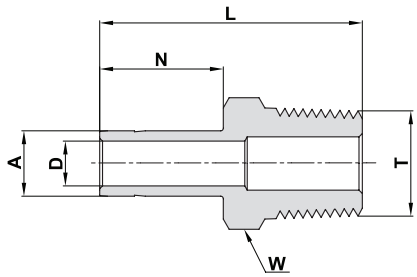
Ordering Information	A Tube O.D.		T (NPT)	D		W Hex. Flat	N		L	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm
739LF _ 1/8 X 1/8	1/8	3.17	1/8	.08	2.0	9/16	.53	13.45	1.24	31.5
739LF _ 1/8 X 1/4	1/8	3.17	1/4	.08	2.0	3/4	.53	13.45	1.39	35.3
739LF _ 3/16 X 1/4	3/16	4.76	1/4	.12	3.0	3/4	.56	14.20	1.41	35.8
739LF _ 1/4 X 1/8	1/4	6.35	1/8	.17	4.2	9/16	.62	15.75	1.30	33.0
739LF _ 1/4 X 1/4	1/4	6.35	1/4	.17	4.2	3/4	.62	15.75	1.46	37.1
739LF _ 1/4 X 3/8	1/4	6.35	3/8	.17	4.2	7/8	.62	15.75	1.55	39.4
739LF _ 1/4 X 1/2	1/4	6.35	1/2	.17	4.2	1 1/16	.62	15.75	1.79	45.5
739LF _ 5/16 X 1/4	5/16	7.93	1/4	.22	5.6	3/4	.66	16.75	1.48	37.6
739LF _ 3/8 X 1/8	3/8	9.52	1/8	.27	6.9	9/16	.69	17.50	1.35	34.3
739LF _ 3/8 X 1/4	3/8	9.52	1/4	.27	6.9	3/4	.69	17.50	1.50	38.1
739LF _ 3/8 X 3/8	3/8	9.52	3/8	.27	6.9	7/8	.69	17.50	1.59	40.4
739LF _ 3/8 X 1/2	3/8	9.52	1/2	.27	6.9	1 1/16	.69	17.50	1.84	46.7
739LF _ 1/2 X 1/4	1/2	12.70	1/4	.37	9.4	3/4	.91	23.10	1.71	43.4
739LF _ 1/2 X 3/8	1/2	12.70	3/8	.37	9.4	7/8	.91	23.10	1.79	45.5
739LF _ 1/2 X 1/2	1/2	12.70	1/2	.37	9.4	1 1/16	.91	23.10	2.05	52.1
739LF _ 5/8 X 1/2	5/8	15.87	1/2	.50	12.7	1 1/16	.97	24.65	2.09	53.1
739LF _ 3/4 X 1/2	3/4	19.05	1/2	.59	15.0	1 1/16	.97	24.65	2.08	52.8
739LF _ 3/4 X 3/4	3/4	19.05	3/4	.59	15.0	1 5/16	.97	24.65	2.16	54.9
739LF _ 3/4 X 1	3/4	19.05	1	.59	15.0	1 5/8	.97	24.65	2.30	58.4
739LF _ 1 X 3/4	1	25.40	3/4	.80	20.3	1 5/16	1.23	31.20	2.39	60.7
739LF _ 1 X 1	1	25.40	1	.80	20.3	1 5/8	1.23	31.20	2.53	64.3
739LF _ 1 1/4 X 1 1/4	* 1 1/4	31.75	1 1/4	1.02	25.9	2 1/8	1.73	43.82	3.06	77.7
739LF _ 1 1/2 X 1 1/2	* 1 1/2	38.10	1 1/2	1.25	31.8	2 3/8	2.14	54.33	3.50	88.9

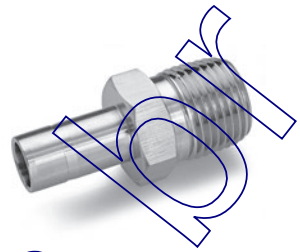
* Supplied assembled with Nut and Ferrules. Including low friction paste, see page 91

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

739 LM

MALE ADAPTER TUBE TO PIPE





TUBE (METRIC) MALE PIPE

Ordering Information	A Tube O.D.	T (NPT)	D	W Hex. Flat	N	L
	mm	inch	mm	mm	mm	mm
739LM _ 3 X 1/8	3	1/8	2.1	12	13.5	30.0
739LM _ 3 X 1/4	3	1/4	2.1	14	13.5	35.3
739LM _ 6 X 1/8	6	1/8	4.0	12	15.7	32.8
739LM _ 6 X 1/4	6	1/4	4.0	14	15.7	38.1
739LM _ 6 X 3/8	6	3/8	4.0	18	15.7	37.0
739LM _ 6 X 1/2	6	1/2	4.0	22	15.7	43.4
739LM _ 8 X 1/8	8	1/8	4.8	12	16.8	33.5
739LM _ 8 X 1/4	8	1/4	5.6	14	16.8	39.1
739LM _ 8 X 3/8	8	3/8	5.6	11/16 inch	16.8	37.8
739LM _ 8 X 1/2	8	1/2	5.6	22	16.8	43.0
739LM _ 10 X 1/4	10	1/4	7.1	9/16 inch	17.5	39.9
739LM _ 10 X 3/8	10	3/8	7.1	18	17.5	40.6
739LM _ 10 X 1/2	10	1/2	7.1	22	17.5	46.2
739LM _ 12 X 1/4	12	1/4	7.1	16	23.1	46.5
739LM _ 12 X 3/8	12	3/8	8.8	18	23.1	46.5
739LM _ 12 X 1/2	12	1/2	8.8	22	23.1	52.0
739LM _ 16 X 1/2	16	1/2	11.9	22	24.7	50.5
739LM _ 20 X 3/4	20	3/4	15.1	27	26.6	54.3

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

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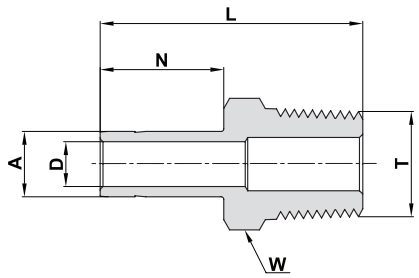
739 LM

MALE ADAPTER TUBE TO PIPE

(Cont'd)



TUBE (INCH) MALE PIPE

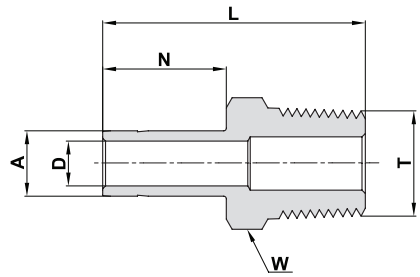
Ordering Information	A Tube O.D.		T (NPT)	D		W Hex. Flat	N		L	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm
739LM _ 1/8 X 1/8	1/8	3.17	1/8	.08	2.0	7/16	.53	13.45	1.16	29.5
739LM _ 1/8 X 1/4	1/8	3.17	1/4	.08	2.0	9/16	.53	13.45	1.37	34.8
739LM _ 3/16 X 1/8	3/16	4.76	1/8	.12	3.0	7/16	.56	14.20	1.19	30.2
739LM _ 3/16 X 1/4	3/16	4.76	1/4	.12	3.0	9/16	.56	14.20	1.40	35.6
739LM _ 1/4 X 1/8	1/4	6.35	1/8	.17	4.2	7/16	.62	15.75	1.25	31.8
739LM _ 1/4 X 1/4	1/4	6.35	1/4	.17	4.2	9/16	.62	15.75	1.46	37.1
739LM _ 1/4 X 3/8	1/4	6.35	3/8	.17	4.2	11/16	.62	15.75	1.49	37.9
739LM _ 1/4 X 1/2	1/4	6.35	1/2	.17	4.2	7/8	.62	15.75	1.71	43.4
739LM _ 5/16 X 1/8	5/16	7.93	1/8	.22	5.6	7/16	.66	16.75	1.29	32.7
739LM _ 5/16 X 1/4	5/16	7.93	1/4	.22	5.6	9/16	.66	16.75	1.50	38.1
739LM _ 3/8 X 1/8	3/8	9.52	1/8	.27	6.9	7/16	.69	17.50	1.32	33.5
739LM _ 3/8 X 1/4	3/8	9.52	1/4	.27	6.9	9/16	.69	17.50	1.53	38.9
739LM _ 3/8 X 3/8	3/8	9.52	3/8	.27	6.9	11/16	.69	17.50	1.56	39.6
739LM _ 3/8 X 1/2	3/8	9.52	1/2	.27	6.9	7/8	.69	17.50	1.78	45.2
739LM _ 1/2 X 1/4	1/2	12.70	1/4	.28	7.1	9/16	.91	23.10	1.75	44.5
739LM _ 1/2 X 3/8	1/2	12.70	3/8	.37	9.4	11/16	.91	23.10	1.78	45.2
739LM _ 1/2 X 1/2	1/2	12.70	1/2	.37	9.4	7/8	.91	23.10	2.0	50.8
739LM _ 5/8 X 3/8	5/8	15.87	3/8	.37	9.5	11/16	.97	24.65	1.81	47.6
739LM _ 5/8 X 1/2	5/8	15.87	1/2	.47	11.9	7/8	.97	24.65	2.06	52.3
739LM _ 5/8 X 3/4	5/8	15.87	3/4	.50	12.7	1 1/16	.97	24.65	2.06	52.3
739LM _ 3/4 X 1/2	3/4	19.05	1/2	.47	11.9	7/8	.97	24.65	2.06	52.3
739LM _ 3/4 X 3/4	3/4	19.05	3/4	.59	15.0	1 1/16	.97	24.65	2.06	52.3
739LM _ 3/4 X 1	3/4	19.05	1	.59	15.0	1 3/8	.97	24.65	2.28	57.3
739LM _ 7/8 X 3/4	7/8	22.22	3/4	.60	15.9	1 1/16	1.05	26.60	2.09	54.3
739LM _ 1 X 3/4	1	25.40	3/4	.60	15.8	1 1/16	1.30	33.00	2.31	58.7
739LM _ 1 X 1	1	25.40	1	.80	20.3	1 3/8	1.30	33.00	2.60	66.0
739LM _ 1 1/4 X 1 1/4	* 1 1/4	31.75	1 1/4	1.02	25.9	1 3/4	1.73	43.82	3.16	80.3
739LM _ 1 1/2 X 1 1/2	* 1 1/2	38.10	1 1/2	1.25	31.6	2 1/8	2.14	54.33	3.72	94.5

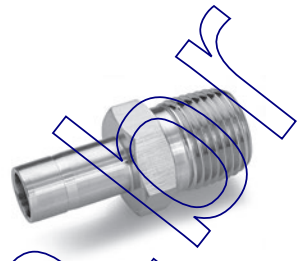
* Supplied assembled with Nut and Ferrules. Including low friction paste, see page 91

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

739 LMR

MALE ADAPTER TUBE TO PIPE





TUBE (METRIC) MALE PIPE

Ordering Information	A Tube O.D.	T (ISO)	D	W Hex. Flat	N	L
	mm	inch	mm	mm	mm	mm
739LMR _ 6 X 1/8	6	R-1/8	4.0	12	15.7	32.8
739LMR _ 6 X 1/4	6	R-1/4	4.0	14	15.7	38.1
739LMR _ 6 X 1/2	6	R-1/2	4.0	22	15.7	43.4
739LMR _ 8 X 1/8	8	R-1/8	4.8	12	16.8	33.5
739LMR _ 8 X 1/4	8	R-1/4	5.6	14	16.8	39.1
739LMR _ 8 X 3/8	8	R-3/8	5.6	11/16 inch	16.8	37.8
739LMR _ 10 X 1/4	10	R-1/4	7.1	14	17.5	39.9
739LMR _ 10 X 3/8	10	R-3/8	7.1	18	17.5	40.6
739LMR _ 10 X 1/2	10	R-1/2	7.1	22	17.5	46.2
739LMR _ 12 X 1/4	12	R-1/4	7.1	16	23.1	46.5
739LMR _ 12 X 3/8	12	R-3/8	8.8	18	23.1	46.2
739LMR _ 12 X 1/2	12	R-1/2	8.8	22	23.1	52.0
739LMR _ 20 X 3/4	20	R-3/4	15.1	27	26.6	54.3

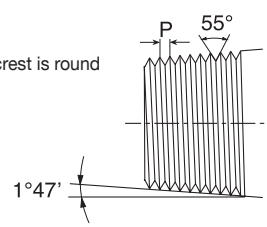
TUBE (INCH) MALE PIPE

Ordering Information	A Tube O.D.		T (ISO)	D		W Hex. Flat	N		L	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm
739LMR _ 1/8 X 1/8	1/8	3.17	R-1/8	.08	2.0	7/16	.53	13.45	1.16	29.5
739LMR_ 1/8 X 1/4	1/8	3.17	R-1/4	.08	2.0	9/16	.53	13.45	1.37	34.8
739LMR _ 1/4 X 1/8	1/4	6.35	R-1/8	.17	4.2	7/16	.62	15.75	1.25	31.8
739LMR _ 1/4 X 1/4	1/4	6.35	R-1/4	.17	4.2	9/16	.62	15.75	1.46	37.1
739LMR _ 1/4 X 3/8	1/4	6.35	R-3/8	.17	4.2	11/16	.62	15.75	1.49	37.9
739LMR _ 1/4 X 1/2	1/4	6.35	R-1/2	.17	4.2	7/8	.62	15.75	1.71	43.4
739LMR _ 3/8 X 1/4	3/8	9.52	R-1/4	.27	6.9	9/16	.69	17.50	1.53	38.9
739LMR _ 3/8 X 3/8	3/8	9.52	R-3/8	.27	6.9	11/16	.69	17.50	1.56	39.6
739LMR _ 3/8 X 1/2	3/8	9.52	R-1/2	.27	6.9	7/8	.69	17.50	1.78	45.2
739LMR _ 1/2 X 1/4	1/2	12.70	R-1/4	.28	7.1	9/16	.91	23.10	1.75	44.5
739LMR _ 1/2 X 3/8	1/2	12.70	R-3/8	.37	9.4	11/16	.91	23.10	1.78	45.2
739LMR _ 1/2 X 1/2	1/2	12.70	R-1/2	.37	9.4	7/8	.91	23.10	20.0	50.8
739LMR _ 5/8 X 1/2	5/8	15.87	R-1/2	.47	11.9	7/8	.97	24.65	2.06	52.3
739LMR _ 3/4 X 1/2	3/4	19.05	R-1/2	.47	11.9	7/8	.97	24.65	2.06	52.3
739LMR _ 3/4 X 3/4	3/4	19.05	R-3/4	.59	15.0	1 1/16	.97	24.65	2.06	52.3
739LMR _ 1 X 1	1	25.40	R-1	.80	20.3	1 3/8	1.30	33.00	2.60	66.0

Reference Specifications:
DIN -ISO 2999
BS - 21JIS - B0203ISO - 7/1-BSP-T

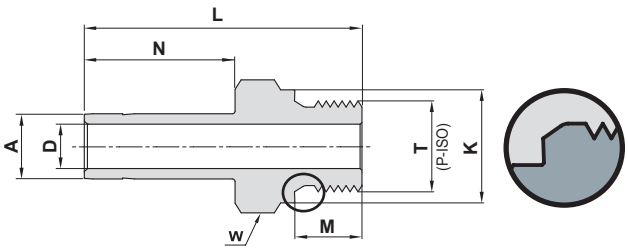
Designation:
Marking LR on Hex

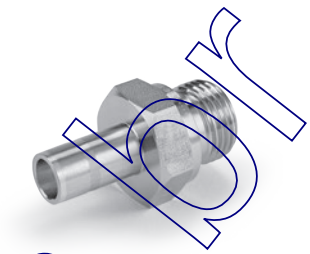
55° Thread angle
Truncation of root and crest is round
Taper angle 1°47'



"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

739 LMG
MALE ADAPTER TUBE TO PIPE





TUBE (METRIC) TO ISO PARALLEL THREAD

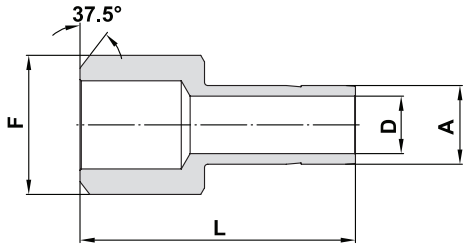
Ordering Information	A TUBE O.D.	T (ISO)	D	K	W Hex. Flat	N	M	L
	mm	inch	mm	mm	mm	mm	mm	mm
739LMG _ 6 X 1/8	6	G-1/8	4.0	13.8	9/16	15.7	7.1	30.4
739LMG _ 6 X 1/4	6	G-1/4	4.0	18.0	19	15.7	11.2	38.9
739LMG _ 8 X 1/4	8	G-1/4	5.6	18.0	19	16.8	11.2	40.1
739LMG _ 10 X 1/4	10	G-1/4	5.9	18.0	19	17.5	11.2	40.9
739LMG _ 10 X 3/8	10	G-3/8	7.1	21.8	22	17.5	11.2	41.7
739LMG _ 10 X 1/2	10	G-1/2	7.1	26.0	27	17.5	14.2	44.7
739LMG _ 12 X 1/4	12	G-1/4	6.4	18.0	19	23.1	11.2	47.0
739LMG _ 12 X 3/8	12	G-3/8	7.9	21.8	22	23.1	11.2	47.2
739LMG _ 12 X 1/2	12	G-1/2	8.8	26.0	27	23.1	14.2	50.5
739LMG _ 18 X 1/2	18	G-1/2	11.9	26.0	27	24.6	14.2	51.3
739LMG _ 18 X 3/4	18	G-3/4	13.9	32.0	35	24.6	15.7	55.9
739LMG _ 38 X 1 1/2	38	G-1 1/2	31.6	54.7	55	52.8	22.1	91.9

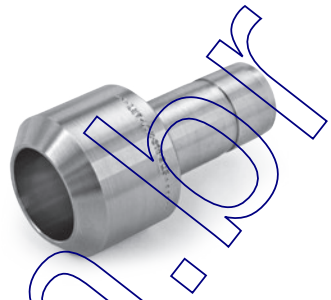
TUBE (INCH) TO ISO PARALLEL THREAD

Ordering Information	A TUBE O.D.		T (ISO)	D		K		W Hex. Flat	N		M		L	
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm
739LMG _ 1/8 X 1/8	1/8	3.17	G-1/8	.08	2.0	.54	13.8	9/16	.53	13.45	.28	7.1	1.22	31.0
739LMG _ 1/8 X 1/4	1/8	6.35	G-1/4	.08	2.0	.71	18.0	3/4	.53	13.45	.44	11.2	1.41	35.8
739LMG _ 1/4 X 1/8	1/4	3.17	G-1/8	.16	4.0	.54	13.8	9/16	.62	15.75	.28	7.1	1.20	30.5
739LMG _ 1/4 X 1/4	1/4	6.35	G-1/4	.17	4.2	.71	18.0	3/4	.62	15.75	.44	11.2	1.42	36.0
739LMG _ 3/8 X 1/4	3/8	6.35	G-1/4	.23	5.8	.71	18.0	3/4	.69	17.50	.44	11.2	1.57	39.9
739LMG _ 3/8 X 3/8	3/8	9.52	G-3/8	.27	6.9	.86	21.8	7/8	.69	17.50	.44	11.2	1.60	40.6
739LMG _ 1/2 X 1/4	1/2	6.35	G-1/4	.23	5.8	.71	18.0	3/4	.91	23.10	.44	11.2	1.85	47.0
739LMG _ 1/2 X 3/8	1/2	9.52	G-3/8	.31	7.9	.86	21.8	7/8	.91	23.10	.44	11.2	1.88	47.7
739LMG _ 1/2 X 1/2	1/2	12.70	G-1/2	.37	9.4	1.02	26.0	1 1/16	.91	23.10	.56	14.2	1.96	49.8
739LMG _ 3/4 X 3/4	3/4	19.05	G-3/4	.59	15.0	1.26	32.0	1 5/16	.97	24.65	.62	15.7	2.16	54.9
739LMG _ 1 X 1	1	25.40	G-1	.78	19.8	1.54	39.0	1 5/8	1.23	31.20	.72	18.3	2.59	65.8

For Parallel Threads Sealing, see page 76

739 LN
WELD ADAPTER TUBE TO PIPE

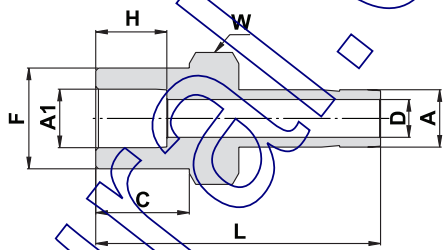




TUBE (INCH)

Ordering Information	A Tube O.D.		F Pipe Size		D		L	
	inch	mm	inch	mm	inch	mm	inch	mm
739LN _ 1/4 X 1/4	1/4	6.35	1/4	13.70	.17	4.20	1.14	28.96
739LN _ 3/8 X 1/2	3/8	9.52	1/2	21.34	.27	6.85	1.46	37.08
739LN _ 1/2 X 1/2	1/2	12.7	1/2	21.34	.37	9.40	1.66	42.15
739LN _ 1/2 X 3/4	1/2	12.7	3/4	26.67	.37	9.40	1.68	42.67
739LN _ 3/4 X 3/4	3/4	19.05	3/4	26.67	.59	15.00	1.87	47.50

739 LW
SOCKET WELD ADAPTER



TUBE (METRIC) TO TUBE (INCH)

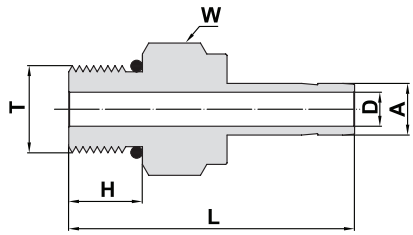
Ordering Information	A Tube O.D.	A1 Pipe Size	C	D	W	F	H	L
	mm	inch	mm	mm	inch	mm	mm	mm
739LW _ 6 X 1/4	6	1/4	10.4	4.0	1/2	11.2	7.9	31.7
739LW _ 10 X 1/4	10	1/4	10.4	4.8	9/16	11.2	7.9	34.0
739LW _ 10 X 3/8	10	3/8	11.9	7.1	5/8	15.8	9.7	36.0

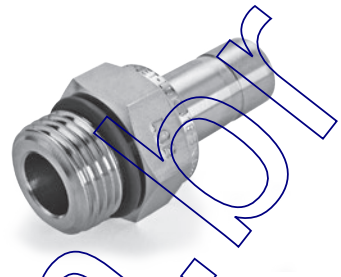
TUBE (INCH) TO TUBE (INCH)

Ordering Information	A Tube O.D.		A1 Pipe Size		C		D		W		F		H		L	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
739LW _ 1/4 X 1/4	1/4	6.35	1/4	6.35	.41	10.41	.17	4.20	1/2	12.7	.44	11.18	.31	7.90	1.25	31.70
739LW _ 3/8 X 3/8	3/8	9.52	3/8	9.52	.47	11.94	.28	7.11	5/8	15.9	.62	15.75	.38	9.65	1.42	36.70
739LW _ 1/2 X 1/2	1/2	12.7	1/2	12.7	.47	11.94	.39	9.91	13/16	20.6	.75	19.05	.50	12.7	1.67	42.42

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

739 LMOB
MALE ADAPTER





TUBE (INCH) TO SAE/MS STRAIGHT THREAD BOSS***

Ordering Information	A Tube O.D.		T Straight Thread UN	D		W		H		L		O-Ring**
	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	
739LMOB _ 1/8 X 5/16-24	1/8	3.18	5/16-24	.08	2.03	7/16	11.1	.30	7.62	1.20	30.48	-902
739LMOB _ 1/4 X 7/16-20	1/4	6.35	7/16-20	.17	4.20	9/16	14.3	.36	9.14	1.39	35.3	-904
739LMOB _ 1/4 X 9/16-18	1/4	6.35	9/16-18	.17	4.20	11/16	17.5	.39	9.90	1.42	36.07	-906
739LMOB _ 3/8 X 7/16-20	3/8	9.52	7/16-20	.20	5.10	9/16	14.3	.36	9.14	1.46	37.08	-904
739LMOB _ 3/8 X 9/16-18	3/8	9.52	9/16-18	.27	6.85	11/16	17.5	.39	9.90	1.52	38.61	-906
739LMOB _ 3/8 X 3/4-16	3/8	9.52	3/4-16	.27	6.85	7/8	22.2	.44	11.17	1.60	40.64	-908
739LMOB _ 1/2 X 9/16-18	1/2	12.7	9/16-18	.28	7.11	11/16	17.5	.39	9.90	1.74	44.20	-906
739LMOB _ 1/2 X 3/4-16	1/2	12.7	3/4-16	.37	9.40	7/8	22.2	.44	11.17	1.82	46.23	-908
739LMOB _ 5/8 X 7/8-14	5/8	15.87	7/8-14	.47	11.94	1	25.4	.50	12.70	1.94	49.28	-910
739LMOB _ 3/4 X 1 1/16-12	3/4	19.05	1 1/16-12	.59	15.00	1 1/4	31.8	.59	14.98	2.10	53.34	-912
739LMOB _ 1 X 1 5/16-12	1	25.40	1 5/16-12	.80	20.32	1 1/2	38.1	.59	14.98	2.41	61.21	-916
739LMOB _ 1 1/4 X 1 5/8-12	* 1 1/4	31.75	1 5/8-12	1.02	26.00	1 7/8	47.6	.59	15.10	2.81	71.37	-920
739LMOB _ 1 1/2 X 1 7/8-12	*1 1/2	38.10	1 7/8-12	1.25	31.60	2 1/8	54.0	.59	15.10	3.28	83.31	-924

Designation: Marking LOB on Hex.

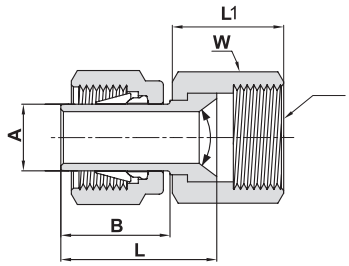
*** Per SAE J1926 and MS 16142. See page 80 for mounting dimensions.

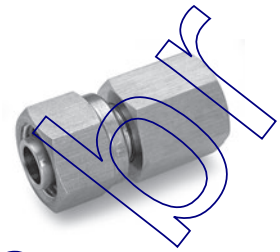
** O-rings used are Fluorocarbon FKM 90 Durometer. Other O-ring materials are available on request.

* Supplied assembled with Nut + Front and Back Ferrule. Including low friction paste, see page 91.

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

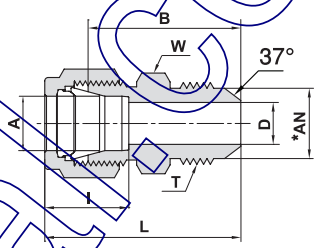
761 LFL
LET-LOK® TO AN ADAPTER





Ordering Information	A Tube O.D.		* AN Tube Flare Size		W Hex. Flat	L		L1		B	
	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm
761LFL _ 1/8 X 1/8	1/8	3.17	1/8	3.17	3/8	.75	19.05	.54	13.71	.53	13.46
761LFL _ 1/8 X 1/4	1/8	3.17	1/4	6.35	9/16	.75	19.05	.61	15.50	.53	13.46
761LFL _ 1/4 X 1/4	1/4	6.35	1/4	6.35	9/16	.84	21.33	.61	15.50	.62	15.75
761LFL _ 3/8 X 3/8	3/8	9.52	3/8	9.52	11/16	.98	24.89	.72	18.30	.69	17.53
761LFL _ 1/2 X 1/2	1/2	12.70	1/2	12.70	7/8	1.25	31.75	.84	21.30	.91	23.11

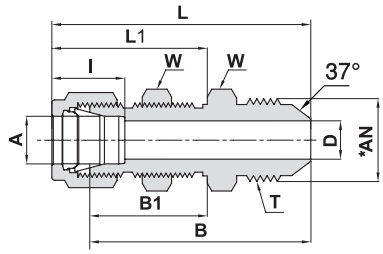
762 LFL
LET-LOK® TO AN UNION

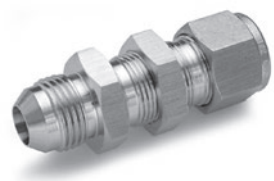


TUBE (INCH) TO TUBE (INCH)

Ordering Information	A Tube O.D.		*AN Tube Flare size		D		W Hex. Flat	B		L		I		T Straight Thread
	inch	mm	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	
762LFL _ 1/16 X 1/8	1/16	1.58	1/8	3.17	.05	1.27	7/16	.92	23.36	1.07	27.18	.34	8.6	5/16-24
762LFL _ 1/8 X 1/8	1/8	3.17	1/8	3.17	.06	1.52	7/16	1.01	25.65	1.27	32.26	.50	12.7	5/16-24
762LFL _ 1/8 X 1/4	1/8	3.17	1/4	6.35	.09	2.28	1/2	1.12	28.44	1.38	35.05	.50	12.7	7/16-20
762LFL _ 1/4 X 1/4	1/4	6.35	1/4	6.35	.17	4.31	1/2	1.19	30.22	1.48	37.59	.60	15.2	7/16-20
762LFL _ 3/8 X 1/4	3/8	9.52	1/4	6.35	.17	4.31	5/8	1.27	32.25	1.56	39.62	.66	16.8	7/16-20
762LFL _ 3/8 X 3/8	3/8	9.52	3/8	9.52	.28	7.11	5/8	1.27	32.25	1.56	39.62	.66	16.8	9/16-18
762LFL _ 1/2 X 1/2	1/2	12.70	1/2	12.70	.39	9.90	13/16	1.41	35.8	1.81	45.96	.90	22.9	3/4-16
762LFL _ 3/4 X 3/4	3/4	19.05	3/4	19.05	.61	15.49	1 1/8	1.70	43.18	2.10	53.34	.96	24.4	1 1/16-12
762LFL _ 1 X 1	1	25.40	1	25.40	.84	21.34	1 3/8	1.94	49.28	2.42	61.47	1.23	31.2	1 5/16-12

774 LFL
LET-LOK® TO AN BULKHEAD UNION





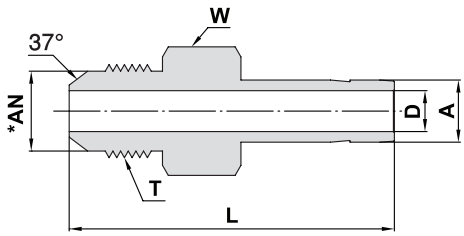
TUBE (INCH) TO TUBE (INCH)

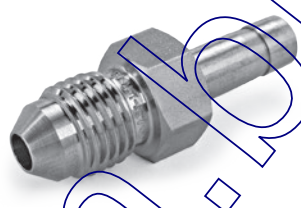
Ordering Information	A Tube O.D.		*AN Tube Flare size		D		W Hex. Flat		B		B1		L		L1		T Straight Thread	Panel hole drill size		Max. panel thickness		I	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm
774LFL _1/4 X 1/4	1/4	6.35	1/4	6.35	.17	4.30	5/8	15.9	1.83	46.48	1.03	26.16	2.12	53.84	1.32	33.52	7/16-20	29/64	11.50	.40	10.16	.60	15.2
774LFL _3/8 X 3/8	3/8	9.52	3/8	9.52	.28	7.11	3/4	19.1	1.96	49.78	1.16	29.46	2.25	57.15	1.45	36.83	9/16-18	37/64	14.68	.44	11.17	.66	16.8
774LFL _1/2 X 1/2	1/2	12.70	1/2	12.70	.39	9.90	15/16	23.8	2.19	55.63	1.25	31.75	2.59	65.79	1.65	41.91	3/4-16	49/64	19.45	.50	12.70	.90	22.9
774LFL _3/4 X 3/4	3/4	19.05	3/4	19.05	.61	15.49	1 3/16	30.2	2.71	68.83	1.47	37.34	3.11	78.99	1.87	47.50	1 1/16-12	1 1/64	25.80	.66	16.76	.96	24.4
774LFL _1 X 1	1	25.40	1	25.40	.84	21.33	1 5/8	41.3	3.16	80.26	1.78	45.21	3.64	92.46	2.26	57.40	1 5/16-12	1 21/64	33.73	.75	19.05	.23	31.2

* Flare 37° per SAE J514. **"D"** - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

739 LTFL

MALE ADAPTER TUBE TO AN





TUBE (INCH) TO TUBE (INCH)

Ordering Information	A Tube O.D.		*AN Thread Flare Size		D		W		L		T Straight Thread
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
739LTFL _ 1/4 X 1/4	1/4	6.35	1/4	6.35	.17	4.20	1/2	12.7	1.46	37.08	7/16-20
739LTFL _ 3/8 X 1/4	3/8	9.52	1/4	6.35	.17	4.20	1/2	12.7	1.53	38.86	7/16-20
739LTFL _ 3/8 X 3/8	3/8	9.52	3/8	9.52	.28	7.11	5/8	15.9	1.56	39.62	9/16-18
739LTFL _ 1/2 X 1/2	1/2	12.7	1/2	12.7	.39	9.90	13/16	20.6	1.91	48.51	3/4-16
739LTFL _ 5/8 X 5/8	5/8	15.87	5/8	15.87	.484	12.30	15/16	23.8	2.10	53.20	7/8-14
739LTFL _ 3/4 X 3/4	3/4	19.05	3/4	19.05	.59	15.00	1 1/8	28.6	2.21	56.13	1 1/16-12
739LTFL _ 1 X 1	1	25.40	1	25.40	.80	20.32	1 3/8	34.9	2.58	65.53	1 5/16-12

* Flare 37° per SAE J514.

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

PARALLEL THREADS SEALING

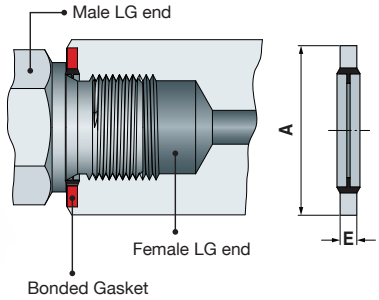
Sealing the parallel thread as 228/1
is done on the shoulder, metal on metal or with the gasket
(See tabels below)

REFERENCE SPECIFICATIONS:

DIN - ISO 228/1
BS - 2779
JIS - B0202
ISO - 228/1-BSP-P

SEALING WASHER FOR LG END

Bonded Stainless Steel / Carbon Steel Washer



Ordering information		ISO Thread Size	A	E
Stainless Steel 316	Carbon Steel			
SS-GA-LG-1/8	S-GA-LG-1/8	1/8	15.88	2.03
SS-GA-LG-1/4	S-GA-LG-1/4	1/4	20.57	2.03
SS-GA-LG-3/8	S-GA-LG-3/8	3/8	23.80	2.03
SS-GA-LG-1/2	S-GA-LG-1/2	1/2	28.58	2.49
SS-GA-LG-3/4	S-GA-LG-3/4	3/4	34.93	2.49
SS-GA-LG-1	S-GA-LG-1	1	42.80	2.49

HOW TO ORDER:
Example:

SS - GA-LG-1/4 - Buna

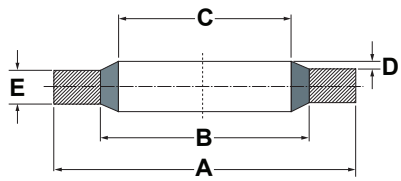
Material Description	
SS -	Stainless Steel 316
S -	Carbon Steel

Inner Ring
Fluorocarbon FKM
Buna

All orders should include material description and ordering information (see product table).

Bonded Stainless Steel Washer Recommended in ISO 1179-1973

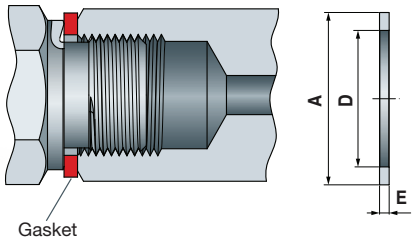
Compatible with end connections compliant with DIN 3852 Part 2.



Ordering information	ISO Thread Size	A	B	C	D	E
SS-GA-LG-1/8-ISO-FKM	1/8	14.70	12.00	10.40	0.25	1.25
SS-GA-LG-1/4-ISO- FKM	1/4	18.70	15.75	13.85		
SS-GA-LG-3/8-ISO- FKM	3/8	22.70	19.25	17.35		
SS-GA-LG-1/2-ISO- FKM	1/2	26.70	23.55	21.65		
SS-GA-LG-3/4-ISO- FKM	3/4	32.50	29.20	27.30		
SS-GA-LG-1-ISO- FKM	1	39.50	36.10	34.20		2.00

Note: • There is a permitted moulding flashline on the inner diameter C in accordance with AGS 1186.
• All dimensions in mm.

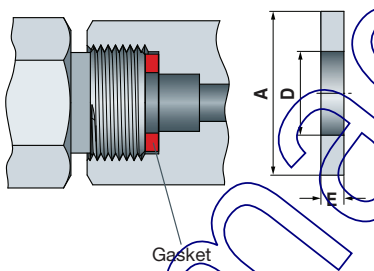
COPPER SEAL GASKET LOK* MALE END



Ordering information	ISO Thread Size	A		D		E	
		mm	inch	mm	inch	mm	inch
COPPER SEAL GASKET LOK 1/8	1/8	15.0	0.59	9.9	0.39	1.0	0.04
COPPER SEAL GASKET LOK 1/4	1/4	18.8	0.75	13.5	0.52	1.5	0.06
COPPER SEAL GASKET LOK 3/8	3/8	22.9	0.91	17.0	0.66	1.5	0.06
COPPER SEAL GASKET LOK 1/2	1/2	27	1.06	21.3	0.83	1.5	0.06
COPPER SEAL GASKET LOK 3/4	3/4	33.0	1.30	26.7	1.05	2.0	0.08
COPPER SEAL GASKET LOK 1	1	40.6	1.58	33.5	1.31	2.0	0.08

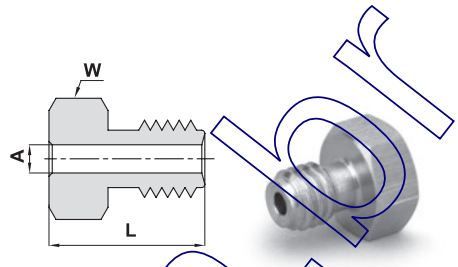
* Note: Can be used on LG ends

COPPER SEAL GASKET LG FEMALE END



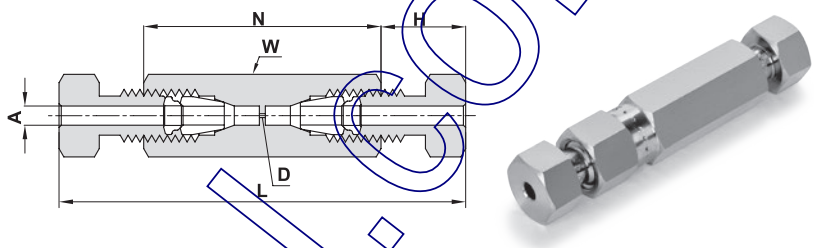
Ordering information	ISO Thread Size	A		D		E	
		mm	inch	mm	inch	mm	inch
COPPER SEAL GASKET LG 1/4	1/4	10.7	0.42	7.6	0.30	1.8	0.07
COPPER SEAL GASKET LG 3/8	3/8	14.2	0.56	8.6	0.34	2.3	0.09
COPPER SEAL GASKET LG 1/2	1/2	17.8	0.70	9.1	0.36	2.5	0.10

961 L
MALE NUT



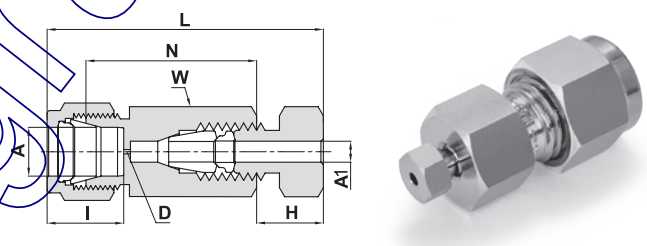
Ordering Information	A Tube O.D.		W Hex. Flat	L	
	inch	mm	inch	inch	mm
961L _ 1/16	1/16	1.58	1/4	.38	9.50

962 L
UNION



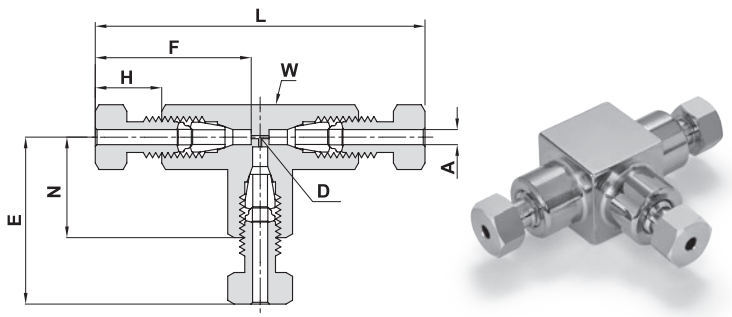
Ordering Information	A Tube O.D.		D		W Hex. Flat	N		H		L		Dead Space
	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	
962L _ 1/16	1/16	1.58	.013	.33	1/4	.84	21.34	.20	5.08	1.25	31.75	6.6 X 10^{-5}CC

963 L
REDUCING UNION



Ordering Information	A Tube O.D.		A1 Tube O.D.		D		W Hex. Flat	N		L		H		I		Dead Space
	inch	mm	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	
963L _ 1/4 X 1/16	1/4	6.35	1/16	1.58	.013	.33	1/2	.75	19.05	1.24	31.50	.20	5.08	.60	15.2	6.8 X 10^{-5}CC
963L _ 3/8 X 1/16	3/8	9.52	1/16	1.58	.013	.33	5/8	.81	20.57	1.30	33.02	.20	5.08	.66	16.8	6.8 X 10^{-5}CC

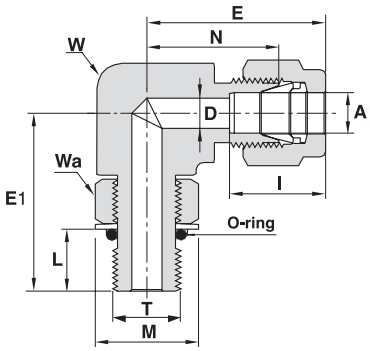
964 L
UNION TEE

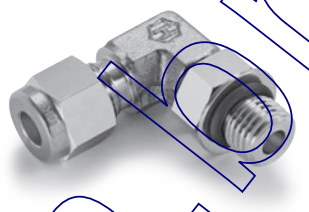


Ordering Information	A Tube O.D.		D		W Wrench Flat		N		H		F		E		L		Dead Space
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
964L _ 1/16	1/16	1.58	.013	.33	3/8	9.52	.45	11.43	.20	5.08	.61	15.49	.65	16.51	1.30	33.02	2.8 X 10^{-4}CC

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

769 LOB
MALE ELBOW

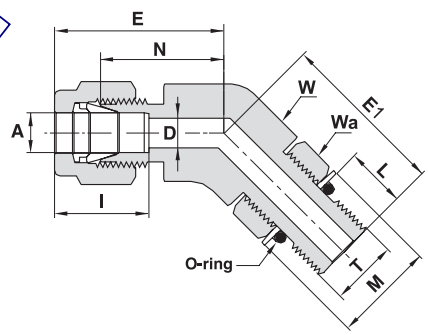


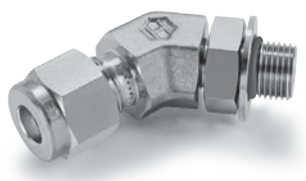


TUBE TO SAE/MS STRAIGHT THREAD BOSS (POSITIONABLE)*

Ordering Information	A Tube O.D.		T SAE/MS	D		W Wrench Flat		Wa Hex. Flat	N		E		E1		L		M		I		O-ring**
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Dash No.
769LOB SS 1/4 X 7/16-20 POS.	1/4	6.35	7/16-20	.19	4.8	1/2	12.7	9/16	.83	21.10	1.12	28.45	1.12	28.45	.39	9.9	.65	16.5	.60	15.2	-904
769LOB SS 1/4 X 9/16-18 POS.	1/4	6.35	9/16-18	.19	4.8	5/8	15.9	11/16	.91	23.11	1.20	30.48	1.27	32.26	.44	11.2	.79	20.1	.60	15.2	-906
769LOB SS 3/8 X 7/16-20 POS.	3/8	9.52	7/16-20	.20	5.1	5/8	15.9	9/16	.97	24.64	1.26	32.00	1.12	28.45	.39	9.9	.65	16.5	.66	16.8	-904
769LOB SS 3/8 X 9/16-18 POS.	3/8	9.52	9/16-18	.28	7.1	5/8	15.9	11/16	.97	24.64	1.26	32.00	1.27	32.26	.44	11.2	.79	20.1	.66	16.8	-906
769LOB SS 3/8 X 3/4-16 POS.	3/8	9.52	3/4-16	.28	7.1	13/16	20.6	7/8	1.08	27.43	1.37	34.80	1.49	37.85	.50	12.7	1.01	25.7	.66	16.8	-908
769LOB SS 1/2 X 9/16-18 POS.	1/2	12.70	9/16-18	.28	7.1	13/16	20.6	11/16	1.08	27.43	1.48	37.59	1.38	35.05	.44	11.2	.79	20.1	.90	22.9	-906
769LOB SS 1/2 X 3/4-16 POS.	1/2	12.70	3/4-16	.41	10.4	13/16	20.6	7/8	1.08	27.43	1.48	37.59	1.49	37.85	.50	12.7	1.01	25.7	.90	22.9	-908
769LOB SS 3/4 X 1 1/16-12 POS.	3/4	19.05	1 1/16-12	.62	15.8	1 1/16	27.0	1 1/4	1.23	31.24	1.63	41.40	1.92	48.77	.66	16.8	1.44	36.7	.96	24.4	-912
769LOB SS 1 X 1 1/16-12 POS.	1	25.40	1 1/16-12	.62	15.8	1 3/8	34.9	1 1/4	1.51	38.35	1.99	50.55	2.05	52.07	.66	16.8	1.44	36.7	1.23	31.2	-912
769LOB SS 1 X 1 5/16-12 POS.	1	25.40	1 5/16-12	.88	22.3	1 3/8	34.9	1 1/2	1.51	38.35	1.99	50.55	2.11	53.59	.66	16.8	1.73	44.0	1.23	31.2	-916

769 LOB 45°
MALE ELBOW 45°



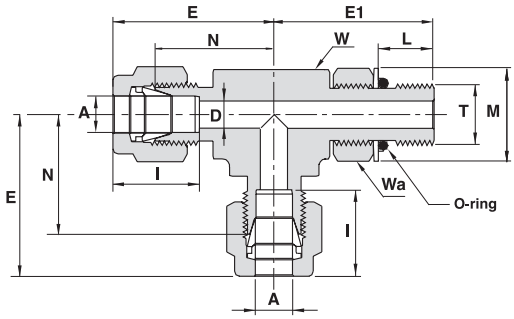


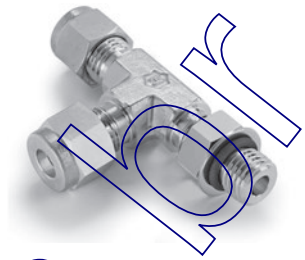
TUBE TO SAE/MS STRAIGHT THREAD BOSS (POSITIONABLE)*

Ordering Information	A Tube O.D.		T SAE/MS	D		W Wrench Flat		Wa Hex. Flat	N		E		E1		L		M		I		O-ring**
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Dash No.
769LAOB SS 1/4 X 7/16-20 POS.	1/4	6.35	7/16-20	.19	4.8	9/16	14.3	9/16	.72	18.29	1.01	25.65	1.01	25.65	.39	9.9	.65	16.5	.60	15.2	-904
769LAOB SS 3/8 X 9/16-18 POS.	3/8	9.52	9/16-18	.28	7.1	13/16	20.6	11/16	.81	20.57	1.10	27.94	1.06	27.00	0.40	10.2	.79	20.1	.66	16.8	-906

* Per SAE J1926 and MS 16142. See page 80 for mounting dimensions. ** O-rings used are Fluorocarbon FKM 90 Durometer. Other O-ring materials are available on request.
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

771 LOB
MALE RUN TEE



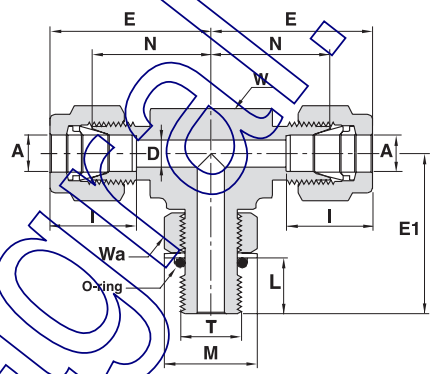


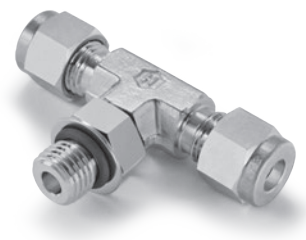
TUBE TO SAE/MS STRAIGHT THREAD BOSS (POSITIONABLE)*

Ordering Information	A Tube O.D.		T SAE/MS	D		W Wrench Flat		Wa Hex. Flat	N		E		E1		L		M		I		O-ring**
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Dash No.
771LOB SS 1/4 X 7/16-20 POS.	1/4	6.35	7/16-20	.19	4.8	1/2	12.7	9/16	.83	21.10	1.12	28.45	1.12	28.45	.39	9.9	.65	16.5	.60	15.2	-904
771LOB SS 3/8 X 9/16-18 POS.	3/8	9.52	9/16-18	.28	7.1	5/8	15.9	11/16	.97	24.64	1.26	32.00	1.27	32.26	.44	11.2	.79	20.1	.66	16.8	-906

* Per SAE J1926 and MS 16142. See page 80 for mounting dimensions.
** O-rings used are Fluorocarbon FKM 90 Durometer. Other O-ring materials are available on request.

772 LOB
MALE BRANCH TEE





TUBE TO SAE/MS STRAIGHT THREAD BOSS (POSITIONABLE)*

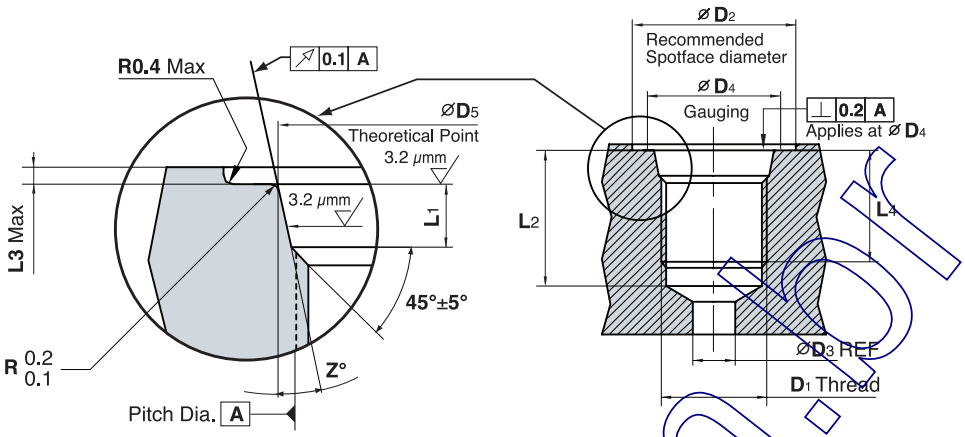
Ordering Information	A Tube O.D.		T SAE/MS	D		W Wrench Flat		Wa Hex. Flat	N		E		E1		L		M		I		O-ring**
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Dash No.
772LOB SS 1/4 X 7/16-20 POS.	1/4	6.35	7/16-20	.19	4.8	1/2	12.7	9/16	.83	21.10	1.12	28.45	1.12	28.45	.39	9.9	.65	16.5	.60	15.2	-904
772LOB SS 3/8 X 9/16-18 POS.	3/8	9.52	9/16-18	.28	7.1	5/8	15.9	11/16	.97	24.64	1.26	32.00	1.27	32.26	.44	11.2	.79	20.1	.66	16.8	-906

* Per SAE J1926 and MS 16142. See page 80 for mounting dimensions.
** O-rings used are Fluorocarbon FKM 90 Durometer. Other O-ring materials are available on request.

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

DIMENSIONS

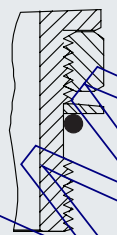
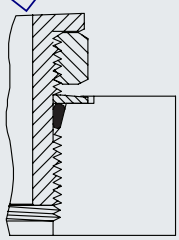
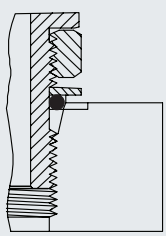
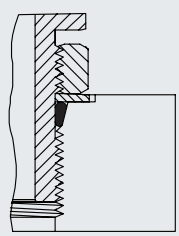
FOR SAE J1926 & MS 16142 BOSS



MOUNTING DIMENSIONS FOR O-SEAL CONNECTORS (SAE/MS)

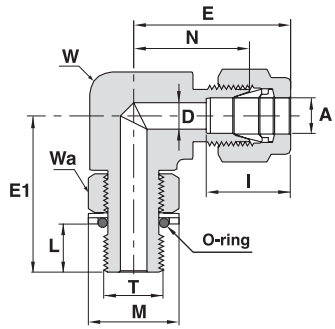
TUBE O.D.		DI Thread Size	D2 Min Diameter ±0.05	D3 Min Diameter	D4 Min	D5 ±0.05	L1 ±0.20	L2 Min	L3 Max	L4 Min Full Thread	z° ±1°
inch	mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	
1/8	3.17	5/16 - 24 UNF - 2B	17	1.6	11	9.15	2.1	12	1.6	10	12
3/16	4.76	3/8 - 24 UNF - 2B	19	3.5	13	10.75	2.1	12	1.6	10	12
1/4	6.35	7/16 - 20 UNF - 2B	21	4.5	15	12.45	2.6	14	1.6	11.5	12
5/16	7.93	1/2 - 20 UNF - 2B	23	6	16	14.05	2.6	14	1.6	11.5	12
3/8	9.52	9/16 - 18 UNF- 2B	25	7.5	18	15.70	2.7	15.5	1.6	12.7	12
1/2	12.70	3/4 - 16 UNF -2B	30	10	22	20.65	2.7	17.5	2.4	14.3	15
5/8	15.87	7/8 - 14 UNF - 2B	34	12.5	26	24	2.7	20	2.4	16.7	15
3/4	19.05	1 1/16 - 12 UNF - 2B	41	16	32	29.2	3.5	23	2.4	19	15
7/8	22.22	1 3/16 - 12 UN - 2B	45	18	35	32.4	3.5	23	2.4	19	15
1	25.40	1 5/16 - 12 UN - 2B	49	21	38	35.55	3.5	23	3.2	19	15
1 1/4	31.75	1 5/8 - 12 UN - 2B	58	27	48	43.55	3.5	23	3.2	19	15
1 1/2	38.10	1 7/8 - 12 UN - 2B	65	33	54	49.9	3.5	23	3.2	19	15
2	50.80	2 1/2 - 12 UN - 2B	88	45	70	65.75	3.5	23	3.2	19	15

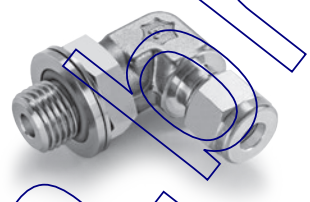
INSTALLATION INSTRUCTIONS

Figure 1	Figure 2	Figure 3	Figure 4
Locking backed off	**Fitting install hand tight**	**Fittings backed-off for alignment (1 turn maximum)**	**Fitting locknut tightly to appropriate torque**
			
Lubricate the O-ring by inserting it into the groove adjacent to the face of the metal back-up washer which is assembled at the extreme end of the groove as shown in Figure 1.	Install the fitting into the S.A.E. straight thread boss, figure 2, until the metal back-up washer contacts the face of the boss as shown in Figure 2.	Position the fitting by turning it counter clockwise up to a maximum of one turn (see Figure 3).	Holding the pad of the fitting with a spanner, tighten the locknut and washer against the face as shown in Figure 4.

Dimensions are for reference only, and are subject to change without notice.

769 LG
MALE ELBOW





TUBE (METRIC) TO ISO PARALLEL THREAD (POSITIONABLE)*

Ordering Information	A Tube O.D.	T (ISO)	D	W Wrench Flat		Wa Hex. Flat	N	E	E1	L	M	I	O-ring**
	mm	inch	mm	inch	mm	inch	mm	mm	mm	mm	mm	mm	Dash No.
769LG SS 6 X 1/8 POS.	6	G-1/8-28	4.0	1/2	12.7	9/16	19.6	27.0	26.4	8.1	17.3	15.3	***
769LG SS 6 X 1/4 POS.	6	G-1/4-19	4.8	5/8	15.9	3/4	21.6	29.0	32.2	9.1	22.9	15.3	-111
769LG SS 8 X 1/8 POS.	8	G-1/8-28	4.0	5/8	15.9	9/16	21.3	28.8	27.4	8.1	17.3	16.2	***
769LG SS 8 X 1/4 POS.	8	G-1/4-19	5.9	5/8	15.9	3/4	22.4	29.9	32.2	9.1	22.9	16.2	-111
769LG SS 10 X 1/4 POS.	10	G-1/4-19	5.9	13/16	20.6	3/4	25.9	33.5	35.0	9.1	22.9	17.2	-111
769LG SS 10 X 3/8 POS.	10	G-3/8-19	7.9	13/16	20.6	7/8	25.9	33.5	37.1	9.4	26.4	17.2	-113
769LG SS 12 X 1/4 POS.	12	G-1/4-19	5.9	13/16	20.6	3/4	25.9	36.0	35.0	9.1	22.9	22.8	-111
769LG SS 12 X 3/8 POS.	12	G-3/8-19	7.9	13/16	20.6	7/8	25.9	36.0	37.1	9.4	26.4	22.8	-113
769LG SS 12 X 1/2 POS.	12	G-1/2-14	9.5	15/16	23.8	1 1/16	27.9	38.0	43.4	13.0	32.0	22.8	-593

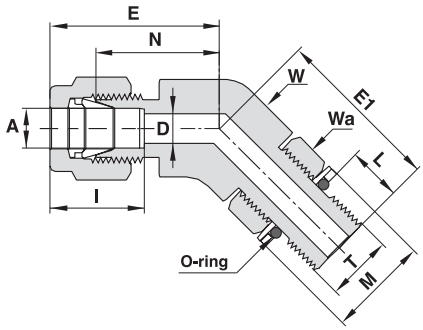
TUBE (INCH) TO ISO PARALLEL THREAD (POSITIONABLE)*

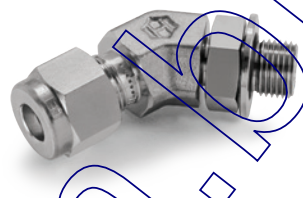
Ordering Information	A Tube O.D.		T (ISO)	D		W Wrench Flat		Wa Hex. Flat	N		E		E1		L		M		I		O-ring**
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Dash No.
769LG SS 1/4 X 1/8 POS.	1/4	6.35	G-1/8-28	.16	4.0	1/2	12.7	9/16	.77	19.60	1.06	26.9	1.04	26.4	.32	8.1	.68	17.3	.60	15.2	***
769LG SS 1/4 X 1/4 POS.	1/4	6.35	G-1/4-19	.19	4.8	5/8	15.9	3/4	.85	21.60	1.14	28.9	1.27	32.2	.36	9.1	.90	22.9	.60	15.2	-111
769LG SS 1/4 X 1/2 POS.	1/4	6.35	G-1/2-14	.19	4.8	15/16	23.8	1 1/16	.96	24.38	1.25	31.8	1.71	43.4	.51	13.0	1.26	32.0	.60	15.2	-593
769LG SS 3/8 X 1/4 POS.	3/8	9.52	G-1/4-19	.23	5.9	5/8	15.9	3/4	.91	23.11	1.20	30.5	1.27	32.2	.36	9.1	.90	22.9	.66	16.8	-111
769LG SS 3/8 X 3/8 POS.	3/8	9.52	G-3/8-19	.28	7.1	13/16	20.6	7/8	1.02	25.91	1.31	33.3	1.46	37.1	.37	9.4	1.04	26.4	.66	16.8	-113
769LG SS 1/2 X 1/4 POS.	1/2	12.70	G-1/4-19	.23	5.9	13/16	20.6	3/4	1.02	25.91	1.42	36.1	1.27	32.2	.36	9.1	.90	22.9	.90	22.9	-111
769LG SS 1/2 X 3/8 POS.	1/2	12.70	G-3/8-19	.31	7.9	13/16	20.6	7/8	1.02	25.91	1.42	36.1	1.46	37.1	.37	9.4	1.04	26.4	.90	22.9	-113
769LG SS 1/2 X 1/2 POS.	1/2	12.70	G-1/2-14	.41	10.4	15/16	23.8	1 1/16	1.10	27.94	1.50	38.1	1.71	43.4	.51	13.0	1.26	32.0	.90	22.9	-593
769LG SS 5/8 X 1/2 POS.	5/8	15.87	G-1/2-14	.47	11.9	15/16	23.8	1 1/16	1.10	27.94	1.50	38.1	1.71	43.4	.51	13.0	1.26	32.0	.96	24.4	-593

* Per: DIN - ISO 228/1
BS - 2779
JIS - B0202
ISO - 228/1-BSP-P

** O-rings used are Fluorocarbon FKM 90 Durometer. Other O-ring materials are available on request.
*** Not standard O-ring size.
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

769 LG 45°
MALE ELBOW 45°





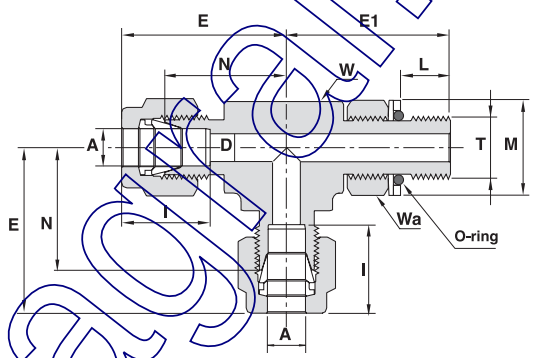
TUBE (METRIC) TO ISO PARALLEL THREAD (POSITIONABLE)*

Ordering Information	A Tube O.D.	T (ISO)	D	W Wrench Flat		Wa Hex. Flat	N	E	E1	L	M	I	O-ring**
	mm	inch	mm	inch	mm	inch	mm	mm	mm	mm	mm	mm	Dash No.
769LAG SS 6 X 1/8 POS.	6	G-1/8-28	4.0	9/16	14.3	9/16	17.5	24.9	24.0	8.1	17.3	15.3	***

TUBE (INCH) TO ISO PARALLEL THREAD (POSITIONABLE)*

Ordering Information	A Tube O.D.		T (ISO)	D		W Wrench Flat		Wa Hex. Flat	N		E		E1		L		M		I		O-ring**
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Dash No.
769LAG SS 1/4X1/8 POS.	1/4	6.35	G-1/8-28	.16	4.0	9/16	14.3	9/16	.69	17.5	.98	24.9	.94	24.0	.32	8.1	.68	17.3	.60	15.2	***

771 LG
MALE RUN TEE



TUBE (METRIC) TO ISO PARALLEL THREAD (POSITIONABLE)*

Ordering Information	A Tube O.D.	T (ISO)	D	W Wrench Flat		Wa Hex. Flat	N	E	E1	L	M	I	O-ring**
	mm	inch	mm	inch	mm	inch	mm	mm	mm	mm	mm	mm	Dash No.
771LG SS 6 X 1/8 POS.	6	G-1/8-28	4.0	1/2	12.7	9/16	19.6	27.0	26.4	8.1	17.3	15.3	***
771LG SS 6 X 1/4 POS.	6	G-1/4-19	4.8	5/8	15.9	3/4	21.6	29.0	32.2	9.1	22.9	15.3	-111
771LG SS 8 X 1/4 POS.	8	G-1/4-19	5.9	5/8	15.9	3/4	22.4	29.9	32.2	9.1	22.9	16.2	-111
771LG SS 10 X 1/4 POS.	10	G-1/4-19	5.9	15/16	23.8	3/4	25.9	33.5	35.0	9.1	22.9	17.2	-111

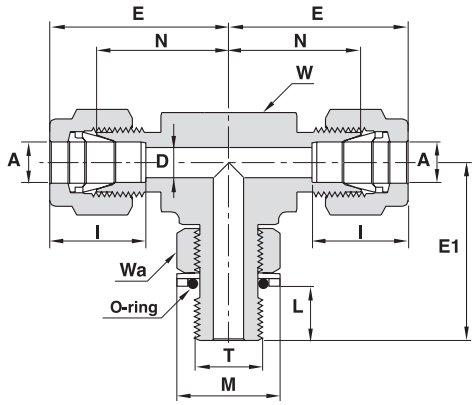
TUBE (INCH) TO ISO PARALLEL THREAD (POSITIONABLE)*

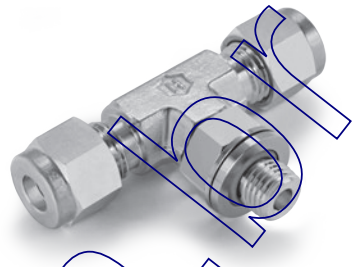
Ordering Information	A Tube O.D.		T (ISO)	D		W Wrench Flat		Wa Hex. Flat	N		E		E1		L		M		I		O-ring**
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Dash No.
771LG SS 1/4 X 1/8 POS.	1/4	6.35	G-1/8-28	.16	4.0	1/2	12.7	9/16	.77	19.6	1.06	26.9	1.04	26.4	.32	8.1	.68	17.3	.60	15.2	***
771LG SS 1/4 X 1/4 POS.	1/4	6.35	G-1/4-19	.19	4.8	5/8	15.9	3/4	.85	21.6	1.14	28.9	1.27	32.2	.36	9.1	.90	22.9	.60	15.2	-111
771LG SS 3/8 X 1/4 POS.	3/8	9.52	G- 1/4-19	.23	5.9	5/8	15.9	3/4	.91	23.1	1.20	30.5	1.27	32.2	.36	9.1	.90	22.9	.66	16.8	-111

* Per: DIN - ISO 228/1
BS - 2779
JIS - B0202
ISO - 228/1-BSP-P

** O-rings used are Fluorocarbon FKM 90 Durometer. Other O-ring materials are available on request.
*** Not standard O-ring size.
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

772 LG
MALE BRANCH TEE





TUBE (METRIC) TO ISO PARALLEL THREAD (POSITIONABLE)*

Ordering Information	A Tube O.D.	T (ISO)	D	W Wrench Flat		Wa Hex. Flat	N	E	E1	L	M	I	O-ring**
	mm	inch	mm	inch	mm	inch	mm	mm	mm	mm	mm	mm	Dash No.
772LG SS 6 X 1/8 POS.	6	G-1/8-28	4.0	1/2	12.7	9/16	19.6	27.0	26.4	8.1	17.3	15.3	***
772LG SS 6 X 1/4 POS.	6	G-1/4-19	4.8	5/8	15.9	3/4	21.6	29.0	32.2	9.1	22.9	15.3	-111
772LG SS 8 X 1/4 POS.	8	G-1/4-19	5.9	5/8	15.9	3/4	22.4	29.9	32.2	9.1	22.9	16.2	-111
772LG SS 10 X 1/4 POS.	10	G-1/4-19	5.9	15/16	23.8	3/4	25.9	33.5	35.0	9.1	22.9	17.2	-111

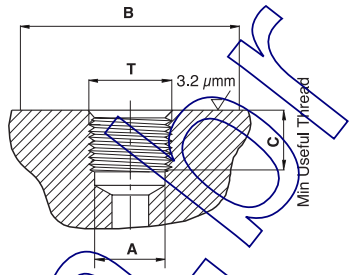
TUBE (INCH) TO ISO PARALLEL THREAD (POSITIONABLE)*

Ordering Information	A Tube O.D.		T (ISO)	D		W Wrench Flat		Wa Hex. Flat	N		E		E1		L		M		I		O-ring**
	inch	mm	inch	inch	mm	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Dash No.
772LG SS 1/4 X 1/8 POS.	1/4	6.35	G-1/8-28	0.16	4.0	1/2	12.7	9/16	0.77	19.6	1.06	26.9	1.04	26.4	0.32	8.1	0.68	17.3	0.60	15.2	***
772LG SS 1/4 X 1/4 POS.	1/4	6.35	G-1/4-19	0.19	4.8	5/8	15.9	3/4	0.85	21.6	1.14	28.9	1.27	32.2	0.36	9.1	0.90	22.9	0.60	15.2	-111
772LG SS 3/8 X 1/4 POS.	3/8	9.52	G-1/4-19	0.23	5.9	5/8	15.9	3/4	0.91	23.1	1.20	30.5	1.27	32.2	0.36	9.1	0.90	22.9	0.66	16.8	-111

* Per: DIN - ISO 228/1
BS - 2779
JIS - B0202
ISO - 228/1-BSP-P

** O-rings used are Fluorocarbon FKM 90 Durometer. Other O-ring materials are available on request.
*** Not standard O-ring size.
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

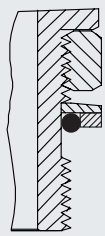
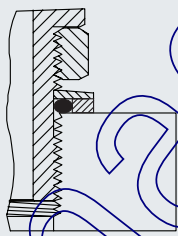
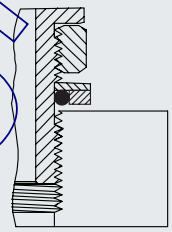
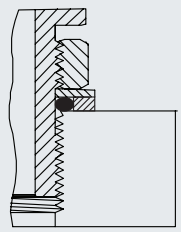
ISO PARALLEL THREAD PER ISO 228



MOUNTING DIMENSIONS CONNECTORS

T Female	A Thread Minor Diameter				B Min Machined and Flat Area		C Min Useful Thread	
	max		min					
	inch	mm	inch	mm	inch	mm	inch	mm
G-1/8-28	.337	8.566	.348	8.848	.68	17.3	.31	7.87
G-1/4-19	.450	11.445	.468	11.890	.90	22.9	.47	11.94
G-3/8-19	.588	14.950	.606	15.395	1.04	26.4	.47	11.94
G-1/2-14	.733	18.631	.755	19.172	1.26	32.0	.55	13.97

INSTALLATION INSTRUCTIONS

Figure 1	Figure 2	Figure 3	Figure 4
Locking backed off	**Fitting install hand tight**	**Fittings backed-off for alignment (1 turn maximum)**	**Fitting locknut tightly to appropriate torque**
			
Lubricate the O-ring by inserting it in the groove adjacent to the face of the metal back-up washer, which is assembled at the extreme end of the groove as shown in Figure 1.	Install the fitting into the S.A.E. straight thread boss, Figure 2, untill the metal back-up washer contacts the face of the boss as shown in Figure 2.	Position the fitting by turning counter clockwise up to maximum of one turn. See Figure 3.	Holding the pad of the fitting with a wrench, tighten the locknut and washer against the face as shown in Figure 4.

HAM-LET DIELECTRIC FITTINGS

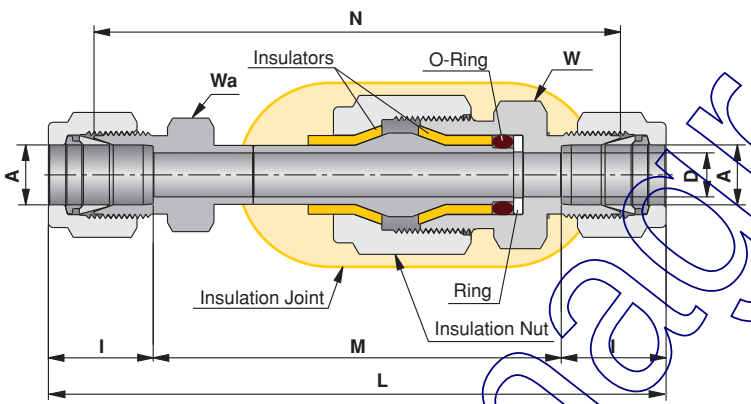
Dielectric fittings are designed to insulate subsystems from electrical current, voltages and static charges.

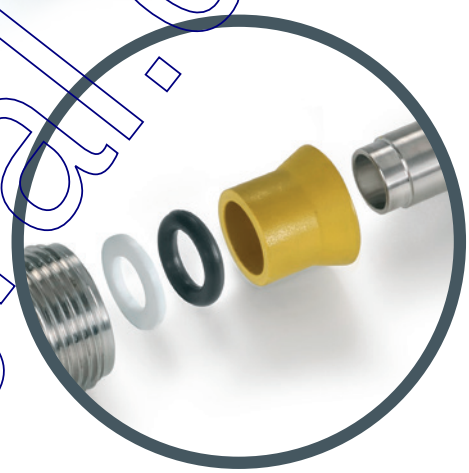
MATERIAL OF CONSTRUCTION

1. Body: A.I.S.I. 316.
2. Insulators: Polyamide-Imide.
3. O-Ring: Fluorocarbon FKM 70 Durometer.
4. Ring: PTFE.

WORKING CONDITIONS:

1. Pressure rating: 5000 psi
2. Temperature rating: -40°c to 93°c (-40°F to 200°F).
3. Electrical resistance at 20°c-25°c (68°F-77°F): $10X10^{6}\Omega$ at 30V DC.





TUBE (METRIC) TO TUBE (METRIC)

Ordering Information	A Tube O.D.	D	W Hex. Flat	Wa Hex. Flat	M	I	N	L
	mm	mm	mm	mm	mm	mm	mm	mm
762L _ 10 mm Dielectric	10	7.1	22	18	65.85	17.2	84.85	100.3
762L _ 12 mm Dielectric	12	7.1	22	22	61.70	22.8	87.10	107.3

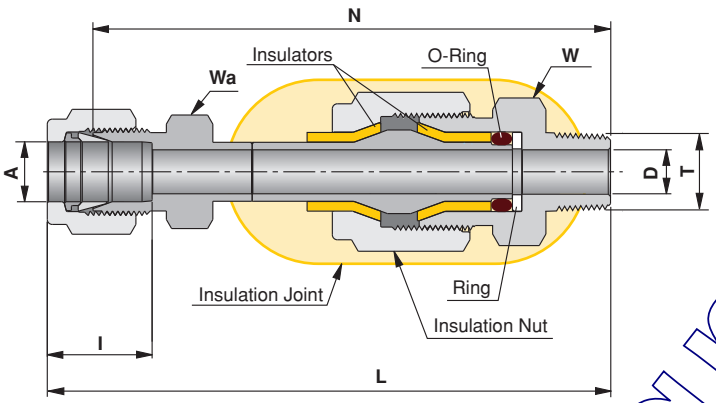
TUBE (INCH) TO TUBE (INCH)

Ordering Information	A Tube O.D.		D		W Hex. Flat	Wa Hex. Flat	M		I		N		L	
	inch	mm	inch	mm	inch	inch	inch	mm	inch	mm	inch	mm	inch	mm
762L _ 1/8 Dielectric	1/8	3.17	.09	2.28	13/16	1/2	2.56	65.10	.50	12.7	3.07	77.94	3.59	9.11
762L _ 1/4 Dielectric	1/4	6.35	.19	4.80	13/16	1/2	2.57	65.30	.60	15.2	3.19	81.02	3.77	95.8
762L _ 3/8 Dielectric	3/8	9.52	.28	7.11	13/16	5/8	2.59	65.80	.66	16.8	3.34	84.87	3.92	99.6
762L _ 1/2 Dielectric	1/2	12.70	.28	7.11	13/16	13/16	2.37	60.20	.90	22.9	3.37	85.68	4.17	106.0

"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

TUBE (INCH) TO MALE NPT THREAD

Ordering Information	A Tube O.D.		T (NPT)	D		W Hex. Flat	Wa Hex. Flat	I		N		L	
	inch	mm	inch	inch	mm	inch	inch	inch	mm	inch	mm	inch	mm
768L _ 3/8 X 1/4 Dielectric	3/8	9.52	1/4	.28	7.11	7/8	5/8	.66	16.8	3.44	87.4	3.73	94.7

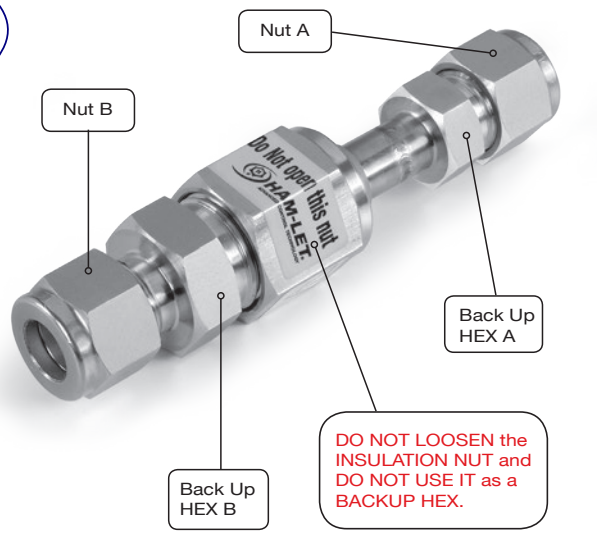


Assembly Instructions for Dielectric Fittings

1. Hold Hex A (Back-Up) and tighten nut A according to the LET-LOK® assembly instructions (see the LET-LOK® catalog for more information).
2. Hold Hex B (Back-Up) and tighten nut B according to the LET-LOK® assembly instructions.
   CAUTION: DO NOT LOOSEN the INSULATION NUT and DO NOT USE IT as a BACK UP HEX.

Notes:

1. If the end connection is a Taper Pipe Thread - apply pipe sealant on thread and use Hex A or B as wrenching or as the Backup Hex.
2. For additional types of end connection, please contact your authorized HAM-LET representative.

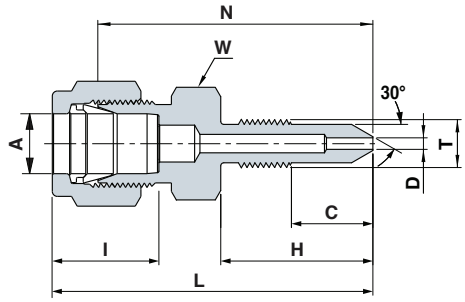


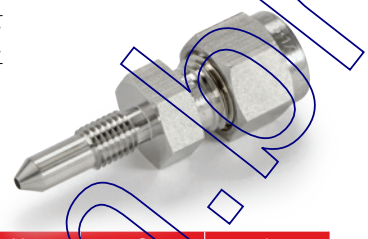
Warning!

The system designer and user have the sole responsibility to select products suitable for their special application requirements and to ensure the proper installation, operation and maintenance of the product. Please consider application details, material compatibility and product ratings when making your selection. Improper selection or use of products can cause property damage or personal injury.

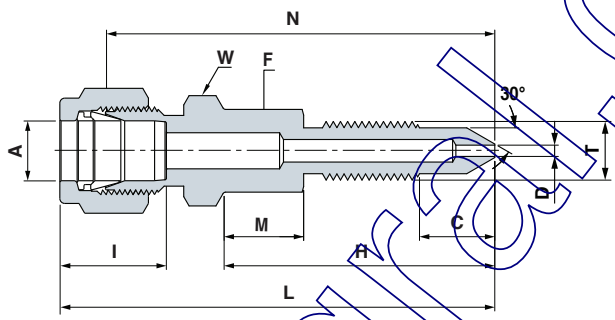
"D" - Dimension is minimum opening. Dimensions are for reference only, and are subject to change without notice.

768LC
MALE CONNECTOR



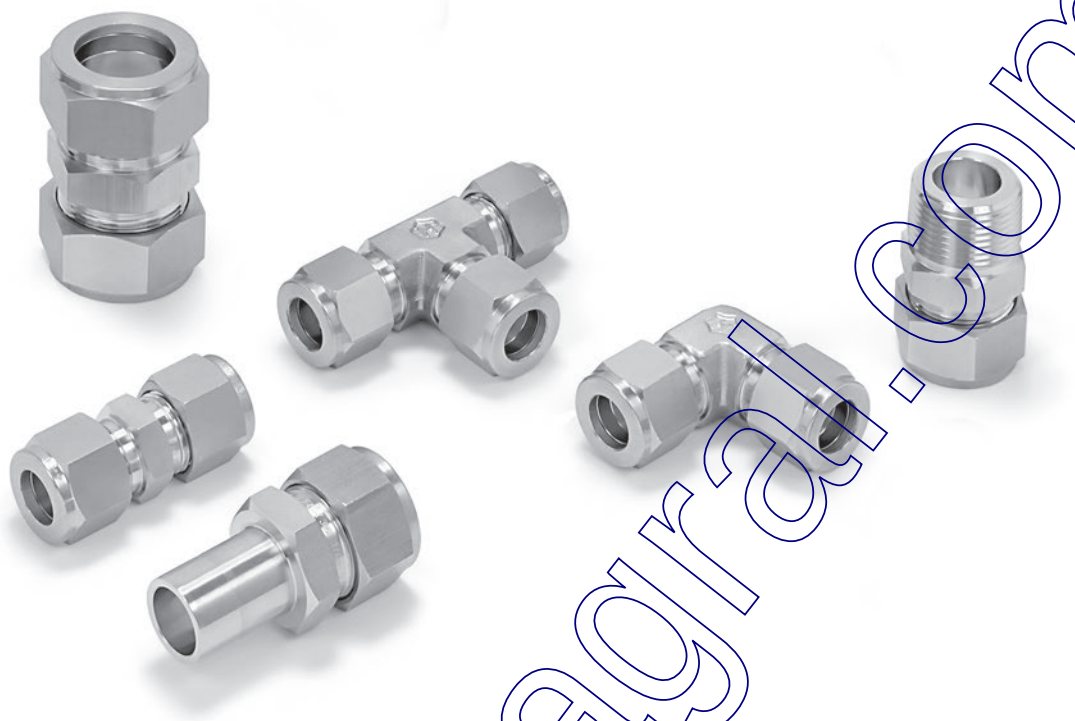


Ordering Information	A Tube O.D.		T Thraed UN	D		W Wrench Flat	N		L		H		C		I	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
768LC SS 1/4 X 1/4-28	1/4	6.35	1/4-28	0.07	1.80	1/2	1.41	35.80	1.70	43.17	0.78	19.80	0.42	10.60	0.60	15.20



Ordering Information	A Tube O.D.		T Thraed UN	D		W Wrench Flat	N		L		H		M		C		F		I	
	inch	mm	inch	inch	mm	inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
768LC SS 1/4 X 5/16-24	1/4	6.35	5/16-24	0.07	1.80	1/2	2.03	51.60	2.43	61.76	1.41	35.80	0.41	10.40	.0.39	10.00	0.43	11.00	0.60	15.20

HAM-LET
Alloy 400 NICKEL-COPPER
ALLOY 400/R-405 CONNECTORS



Alloy 400, made of nickel-copper is a solid-solution alloy that can be hardened only by cold working. It has high strength and toughness over a wide temperature range and excellent resistance to many corrosive environments. Alloy 400 is widely used in many fields, especially marine and chemical processing.

Alloy 400 MATERIAL STD	
Barstock	Forging
ASTM B 164	ASTM B 564

760LB - Back Ferrule*

Ordering info.	Tube O.D.
760LB M 1/4	1/4
760LB M 3/8	3/8
760LB M 1/2	1/2

760LF - Front Ferrule*

Ordering info.	Tube O.D.
760LF M 1/4	1/4
760LF M 3/8	3/8
760LF M 1/2	1/2

761L - Nut

Ordering info.	Tube O.D.
761L M 1/4	1/4
761L M 3/8	3/8
761L M 1/2	1/2

762L - Union

Ordering info.	Tube O.D.
762L M 1/4	1/4
762L M 3/8	3/8
762L M 1/2	1/2

764L - Union Tee

Ordering info.	Tube O.D.
764L M 1/4	1/4
764L M 3/8	3/8
764L M 1/2	1/2

765L - Union Elbow

Ordering info.	Tube O.D.
765L M 1/4	1/4
765L M 3/8	3/8
765L M 1/2	1/2

767LP - Port Connector

Ordering info.	Tube O.D.
767LP M 1/4	1/4
767LP M 3/8	3/8
767LP M 1/2	1/2

7108L - Cap

Ordering info.	Tube O.D.
7108L M 1/4	1/4
7108L M 3/8	3/8
7108L M 1/2	1/2

Dimensions are for reference only, and are subject to change without notice.

ALLOY 400/R-405

774L - Bulkhead Union

Ordering info.	Tube O.D.
774L M 1/4	1/4
774L M 3/8	3/8

7121L - Plug

Ordering info.	Tube O.D.
7121L M 1/4	1/4
7121L M 3/8	3/8
7121L M 1/2	1/2

767LT - Reducer

Ordering info.	Tube O.D.	Tube O.D.
767LT M 1/4 x 1/4	1/4	1/4
767LT M 1/4 x 3/8	1/4	3/8
767LT M 1/4 x 1/2	1/4	1/2
767LT M 3/8 x 1/4	3/8	1/4
767LT M 3/8 x 3/8	3/8	3/8
767LT M 3/8 x 1/2	3/8	1/2
767LT M 1/2 x 1/4	1/2	1/4
767LT M 1/2 x 3/8	1/2	3/8
767LT M 1/2 x 1/2	1/2	1/2

769L - Male Elbow

Ordering info.	Tube O.D.	Male pipe size
769L M 1/4 x 1/4	1/4	1/4
769L M 3/8 x 1/4	3/8	1/4
769L M 1/2 x 1/2	1/2	1/2

766L - Female Connector

Ordering info.	Tube O.D.	Female pipe size
766L M 1/4 x 1/4	1/4	1/4
766L M 3/8 x 1/4	3/8	1/4

739LF - Female Adapter

Ordering info.	Tube O.D.	Female pipe size
739LF M 1/4 x 1/8	1/4	1/8
739LF M 1/4 x 1/4	1/4	1/4
739LF M 1/4 x 1/2	1/4	1/2
739LF M 3/8 x 1/4	3/8	1/4
739LF M 3/8 x 1/2	3/8	1/2
739LF M 1/2 x 1/4	1/2	1/4
739LF M 1/2 x 1/2	1/2	1/2

768L - Male Connector

Ordering info.	Tube O.D.	Male pipe size
768L M 1/4 x 1/8	1/4	1/8
768L M 1/4 x 1/4	1/4	1/4
768L M 1/4 x 3/8	1/4	3/8
768L M 1/4 x 1/2	1/4	1/2
768L M 3/8 x 1/4	3/8	1/4
768L M 3/8 x 3/8	3/8	3/8
768L M 3/8 x 1/2	3/8	1/2
768L M 1/2 x 1/4	1/2	1/4
768L M 1/2 x 3/8	1/2	3/8
768L M 1/2 x 1/2	1/2	1/2
768L M 1/2 x 3/4	1/2	3/4

739LM - Male Adapter

Ordering info.	Tube O.D.	Male pipe size
739LM M 1/4 x 1/8	1/4	1/8
739LM M 1/4 x 1/4	1/4	1/4
739LM M 1/4 x 1/2	1/4	1/2
739LM M 3/8 x 1/4	3/8	1/4
739LM M 3/8 x 1/2	3/8	1/2
739LM M 1/2 x 1/4	1/2	1/4
739LM M 1/2 x 1/2	1/2	1/2

LET-LOK TUBING DATA FOR ALLOY 400

Alloy 400 tubes should be ordered according to ASTM B-165. Hydraulic tubing is suitable for flaring and bending.

Tubing should be seamless and annealed. Hardness: 75 HRB maximum.

Tube O.D. inch	0.028	0.035	0.049	0.065
1/4	3700	4800	7000	9500
3/8		3100	4400	6100
1/2		2300	3200	4400

Allowable working pressure in psig at -20° to 100°F (-28° to 37°C)

GAS APPLICATION TUBING

Tube O.D.	Min. Nominal wall thickness
1/2"	.035"

Dimensions are for reference only, and are subject to change without notice.

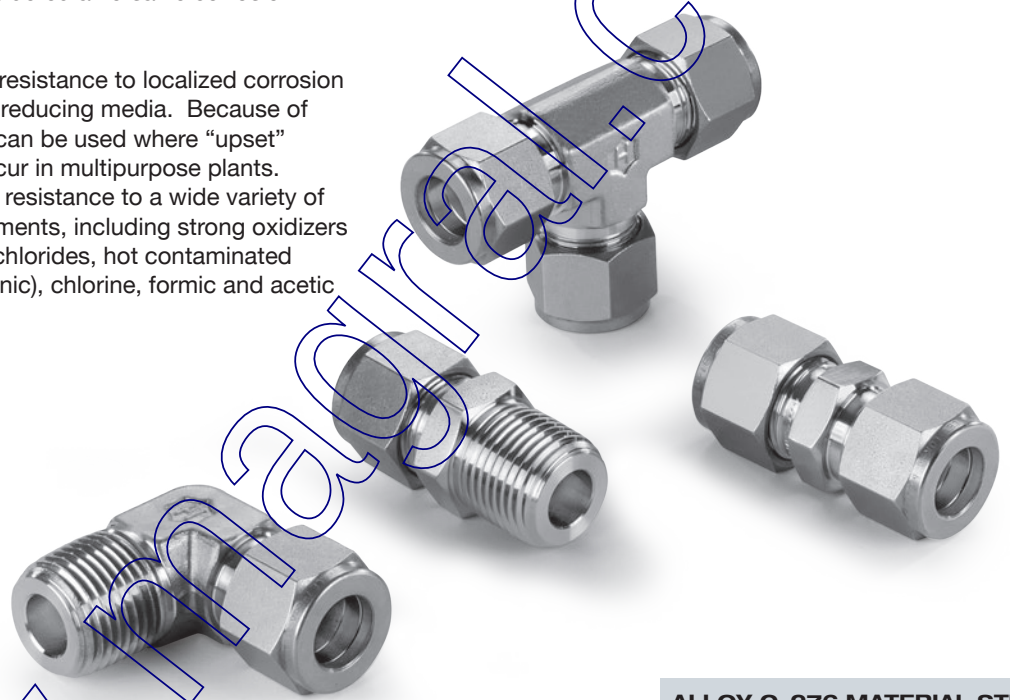
HAM-LET
ALLOY C-276
CONNECTORS

In aggressive/corrosive service, when nothing else works, many industries have traditionally turned to **Alloy C-276**. Many years of outstanding performance in a variety of industrial applications have confirmed the advantages of using this alloy.

Excellent Resistance to Corrosion

Alloy C-276 is a nickel-molybdenum-chromium wrought alloy that is generally considered a versatile corrosion-resistant alloy.

C-276 alloy has excellent resistance to localized corrosion and to both oxidizing and reducing media. Because of its versatility, C-276 alloy can be used where "upset" conditions are likely to occur in multipurpose plants. **Alloy C-276** has excellent resistance to a wide variety of chemical process environments, including strong oxidizers such as ferric and cupric chlorides, hot contaminated media (organic and inorganic), chlorine, formic and acetic acids, acetic anhydride, and seawater and brine solutions. It is used in flue gas desulfurization systems because of its excellent resistance to sulfur compounds and chloride ions encountered in most scrubbers. **C-276** alloy has excellent resistance to pitting and to stress-corrosion cracking. It is also one of the few materials that withstands the corrosive effects of wet chlorine gas, hypochlorite and chlorine dioxide.



ALLOY C-276 MATERIAL STD	
Barstock	Forging
ASTM B574	ASTM B564

760LB - Back Ferrule*

Ordering info.	Tube O.D.
760LB HC 1/4	1/4
760LB HC 3/8	3/8
760LB HC 1/2	1/2

760LF - Front Ferrule*

Ordering info.	Tube O.D.
760LF HC 1/4	1/4
760LF HC 3/8	3/8
760LF HC 1/2	1/2

761L - Nut

Ordering info.	Tube O.D.
761L HC 1/4	1/4
761L HC 3/8	3/8
761L HC 1/2	1/2

762L - Union

Ordering info.	Tube O.D.
762L HC 1/4	1/4
762L HC 3/8	3/8
762L HC 1/2	1/2

764L - Union Tee

Ordering info.	Tube O.D.
764L HC 1/4	1/4
764L HC 3/8	3/8
764L HC 1/2	1/2

765L - Union Elbow

Ordering info.	Tube O.D.
765L HC 1/4	1/4
765L HC 3/8	3/8
765L HC 1/2	1/2

767LP - Port Connector

Ordering info.	Tube O.D.
767LP HC 1/4	1/4
767LP HC 3/8	3/8
767LP HC 1/2	1/2

7108L - Cap

Ordering info.	Tube O.D.
7108L HC 1/4	1/4
7108L HC 3/8	3/8
7108L HC 1/2	1/2

* All LET-LOK ferrules are available as sets.

Dimensions are for reference only, and are subject to change without notice.

ALLOY C-276

774L - Bulkhead Union

Ordering info.	Tube O.D.
774L HC 1/4	1/4
774L HC 3/8	3/8

7121L - Plug

Ordering info.	Tube O.D.
7121L HC 1/4	1/4
7121L HC 3/8	3/8
7121L HC 1/2	1/2

767LT - Reducer

Ordering info.	Tube O.D.	Tube O.D.
767LT HC 1/4 x 1/4	1/4	1/4
767LT HC 1/4 x 3/8	1/4	3/8
767LT HC 1/4 x 1/2	1/4	1/2
767LT HC 3/8 x 1/4	3/8	1/4
767LT HC 3/8 x 3/8	3/8	3/8
767LT HC 3/8 x 1/2	3/8	1/2
767LT HC 1/2 x 1/4	1/2	1/4
767LT HC 1/2 x 3/8	1/2	3/8
767LT HC 1/2 x 1/2	1/2	1/2

769L - Male Elbow

Ordering info.	Tube O.D.	Male pipe size
769L HC 1/4 x 1/4	1/4	1/4
769L HC 3/8 x 1/4	3/8	1/4
769L HC 1/2 x 1/2	1/2	1/2

766L - Female Connector

Ordering info.	Tube O.D.	Female pipe size
766L HC 1/4 x 1/4	1/4	1/4
766L HC 3/8 x 1/4	3/8	1/4

739LF - Female Adapter

Ordering info.	Tube O.D.	Female pipe size
739LF HC 1/4 x 1/8	1/4	1/8
739LF HC 1/4 x 1/4	1/4	1/4
739LF HC 1/4 x 1/2	1/4	1/2
739LF HC 3/8 x 1/4	3/8	1/4
739LF HC 3/8 x 1/2	3/8	1/2
739LF HC 1/2 x 1/4	1/2	1/4
739LF HC 1/2 x 1/2	1/2	1/2

768L - Male Connector

Ordering info.	Tube O.D.	Male pipe size
768L HC 1/4 x 1/8	1/4	1/8
768L HC 1/4 x 1/4	1/4	1/4
768L HC 1/4 x 3/8	1/4	3/8
768L HC 1/4 x 1/2	1/4	1/2
768L HC 3/8 x 1/4	3/8	1/4
768L HC 3/8 x 3/8	3/8	3/8
768L HC 3/8 x 1/2	3/8	1/2
768L HC 1/2 x 1/4	1/2	1/4
768L HC 1/2 x 3/8	1/2	3/8
768L HC 1/2 x 1/2	1/2	1/2
768L HC 1/2 x 3/4	1/2	3/4

739LM - Male Adapter

Ordering info.	Tube O.D.	Male pipe size
739LM HC 1/4 x 1/8	1/4	1/8
739LM HC 1/4 x 1/4	1/4	1/4
739LM HC 1/4 x 1/2	1/4	1/2
739LM HC 3/8 x 1/4	3/8	1/4
739LM HC 3/8 x 1/2	3/8	1/2
739LM HC 1/2 x 1/4	1/2	1/4
739LM HC 1/2 x 1/2	1/2	1/2

LET-LOK® TUBING DATA FOR ALLOY C-276

Alloy C-276 tubes should be ordered according to ASTM B-622.
Hydraulic tubing is suitable for flaring and bending.

Tubing should be seamless and annealed.
Hardness: 100 HRB maximum.

Tube O.D. inch	0.035	0.049	0.065
1/4	5100	7500	10200
3/8	3300	4800	6500
1/2	2600	3700	5100

GAS APPLICATION TUBING

Tube O.D.	Min. Nominal wall thickness
1/2"	.035"

Dimensions are for reference only, and are subject to change without notice.

HAM-LET
SUPER DUPLEX 2507
CONNECTORS

Duplex stainless-steels are becoming more common, being used for number of reasons:

- Higher strength levels
- Greater corrosion resistance-particularly Stress Corrosion Cracking (S.C.C.) in chloride-bearing environments.
- Much better resistance for localized corrosion, such as pitting and crevice.

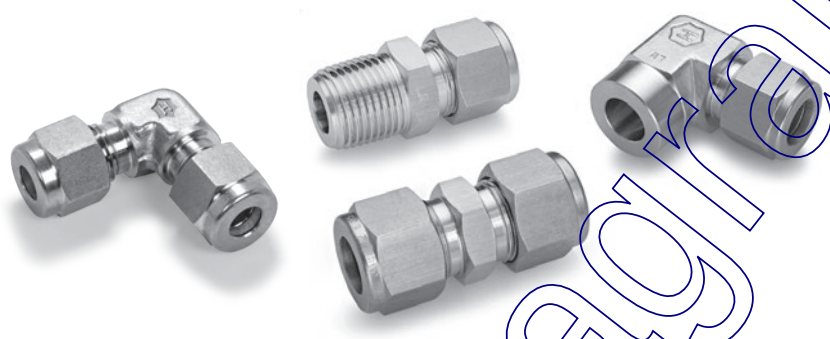
The “Pitting Resistances Equivalent Number” (P.R.E.N.) of “SD 2507” (1.4410/S32750) is roughly twice as good as standard Austenitic Stainless Steels such as 304 (1.4301/S30400), or 316 (1.4401/S31600).

- High resistance to erosion-corrosion and corrosion-fatigue mechanism

Common designation/names/trade names include:

- SAF 2507
- UNS S32750
- EN#1.4410
- SD 2507

The nominal Chemical composition of this alloy is 25% chromium, 7% nickeled 4% molybdenum.



Super Duplex 2507 MATERIAL STD	
Barstock	Forging
ASTM A 479	ASTM A 182

760LB - Union Cross

Ordering info.	Tube O.D.
760LB 6XN 1/4	1/4
760LB 6XN 3/8	3/8
760LB 6XN 1/2	1/2

760LF - Union Elbow

Ordering info.	Tube O.D.
760LF SD 1/4	1/4
760LF SD 3/8	3/8
760LF SD 1/2	1/2

761L - Nut

Ordering info.	Tube O.D.
761L SD 1/4	1/4
761L SD 3/8	3/8
761L SD 1/2	1/2

762L - UNION

Ordering info.	Tube O.D.
762 SD 1/4	1/4
762 SD 3/8	3/8
762 SD 1/2	1/2

764L - Union Tee

Ordering info.	Tube O.D.
764L SD 1/4	1/4
764L SD 3/8	3/8
764L SD 1/2	1/2

765L - Union Elbow

Ordering info.	Tube O.D.
765L SD 1/4	1/4
765L SD 3/8	3/8
765L SD 1/2	1/2

767LP - Port Connector

Ordering info.	Tube O.D.
767LP SD 1/4	1/4
767LP SD 3/8	3/8
767LP SD 1/2	1/2

7108L - Cap

Ordering info.	Tube O.D.
7108L SD 1/4	1/4
7108L SD 3/8	3/8
7108L SD 1/2	1/2

774L - Bulkhead Union

Ordering info.	Tube O.D.
774L SD 1/4	1/4
774L SD 3/8	3/8
774L SD 1/2	1/2

7121L - Plug

Ordering info.	Tube O.D.
7121L SD 1/4	1/4
7121L SD 3/8	3/8
7121L SD 1/2	1/2

767LT - Reducer

Ordering info.	Tube O.D.	Tube O.D.
767LT SD 1/4 X 3/8	1/4	3/8
767LT SD 1/4 X 1/2	1/4	1/2
767LT SD 3/8 X 1/4	3/8	1/4
767LT SD 3/8 X 1/2	3/8	1/2
767LT SD 1/2 X 1/4	1/2	1/4
767LT SD 1/2 X 3/8	1/2	3/8

769L - Male Elbow

Ordering info.	Tube O.D.	Male pipe size
769L SD 1/4 X 1/4	1/4	1/4
769L SD 3/8 X 3/8	3/8	3/8
769L SD 1/2 X 1/2	1/2	1/2

739LMOB - Male Adapter

Ordering info.	Tube O.D.	Male size
739LMOB SD 1/4 X 7/16-20	1/4	7/16-20
739LMOB SD 3/8 X 7/16-20	3/8	7/16-20
739LMOB SD 3/8 X 9/16-18	3/8	9/16-18
739LMOB SD 1/2 X 9/16-18	1/2	9/16-18
739LMOB SD 1/2 X 3/4-16	1/2	3/4-16

768LOB - Male Connector

Ordering info.	Tube O.D.	Male size
768LOB SD 1/4 X 7/16-20	1/4	7/16-20
768LOB SD 1/4 X 9/16-18	1/4	9/16-18
768LOB SD 3/8 X 9/16-18	3/8	9/16-18
768LOB SD 1/2 X 9/16-18	1/2	9/16-18
768LOB SD 1/2 X 3/4-16	1/2	3/4-16

739LF - Male to Pipe

Ordering info.	Tube O.D.	Female pipe size
739LF SD 1/4 X 1/8	1/4	1/8
739LF SD 1/4 X 1/4	1/4	1/4
739LF SD 1/4 X 1/2	1/4	1/2
739LF SD 3/8 X 1/4	3/8	1/4
739LF SD 3/8 X 1/2	3/8	1/2
739LF SD 1/2 X 1/4	1/2	1/4
739LF SD 1/2 X 1/2	1/2	1/2

768L - Male Connector

Ordering info.	Tube O.D.	Male pipe size
768L SD 1/4 X 1/4	1/4	1/4
768L SD 1/4 X 1/2	1/4	1/2
768L SD 3/8 X 1/4	3/8	1/4
768L SD 3/8 X 3/8	3/8	3/8
768L SD 3/8 X 1/2	3/8	1/2
768L SD 1/2 X 1/4	1/2	1/4
768L SD 1/2 X 3/8	1/2	3/8
768L SD 1/2 X 1/2	1/2	1/2

739LM - Male Adapter

Ordering info.	Tube O.D.	Male pipe size
739LM SD 1/4 X 1/4	1/4	1/4
739LM SD 3/8 X 1/4	3/8	1/4
739LM SD 3/8 X 3/8	3/8	3/8
739LM SD 3/8 X 1/2	3/8	1/2
739LM SD 1/2 X 1/4	1/2	1/4
739LM SD 1/2 X 1/2	1/2	1/2

7102L - Union Cross

Ordering info.	Tube O.D.
7102L SD 1/4	1/4
7102L SD 3/8	3/8
7102L SD 1/2	1/2

LET-LOK TUBING DATA FOR SAF 2507 SUPER DUPLEX TUBING

Alloy 2507 UNS Designation S32750 tubes should be ordered according to ASTM A789 or equivalent.
Hydraulic tubing is suitable for bending, flaring and should be free of scratches.
Tubing should be seamless and annealed.
Hardness: 32 HRC maximum.

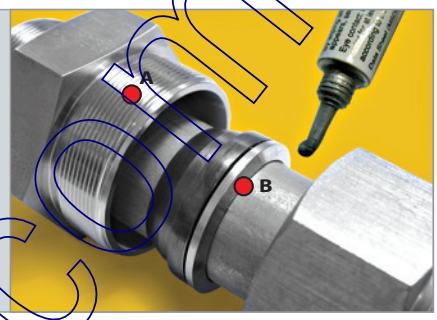
Tube O.D. inch	0.035	0.049	0.065
1/4	10,000	15,000	-
3/8	6,500	10,000	12,700
1/2	5,000	7,200	10,000

ACCESSORIES

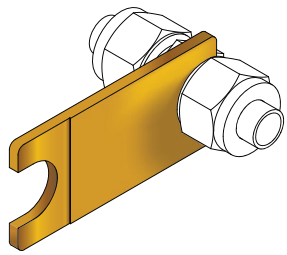
G-RAPID PLUS LOW FRICTION PASTE

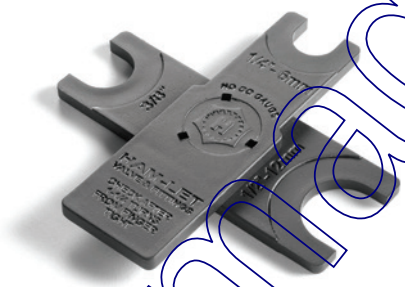
INSTALLATION INSTRUCTIONS FOR LET-LOK® FITTINGS
38mm–50mm
1¼”–2”

1. Close the nut and ferrules on the tube with a hydraulic tool.
2. Open and release from the tool.
3. Apply the G-Rapid paste on areas A and B.
4. Tighten the nut on body 1/2 a turn with a wrench



To order:
use part No. 3900753





HIGH SAFETY
In applications where severe conditions and high pressure exist, we recommend the following installation procedures:

1. Check that the nut is finger tight.
2. Insert the tube (up to the shoulder).
3. Rotate the nut with a wrench until the tube does not rotate freely.
4. Mark position of the nut.
5. Rotate the nut 1-1/4 turns.

This method ensures that even if the tube O.D. is at the minimum tolerance, the ferrules will be in contact with the tube for the full 1-1/4 rotation.

GOLDEN GAUGE

SIZE:

GAUGE	
PART NO.	AVAILABLE ONLY IN
3900098	1/4” (6mm), 3/8”, 1/2” (12mm)

ADDITIONAL SIZES:

GOLDEN GAUGE	
PART NO.	LET-LOK® SIZE
3901508	Golden Gauge 1/16”
3901509	Golden Gauge 1/8”–2–3 mm
3901510	Golden Gauge 3/16”– 4 mm
3901513	Golden Gauge 5/16”– 8 mm
3901511	Golden Gauge 10 mm
3901247	Golden Gauge 5/8”–14–15–16 mm
3901246	Golden Gauge 3/4”–18 mm
3901512	Golden Gauge 7/8”–20–22 mm
3901245	Golden Gauge 1”–25 mm

Dimensions are for reference only, and are subject to change without notice.

HAM-LET PREASSEMBLY TOOL

In constrained installation areas, LET-LOK® fittings can be assembled with the preassembly tool and a second step on the system.

PART NO.	LET–LOK® SIZE
3902419	PREASSEMBLY TOOL 1/8
3901658	PREASSEMBLY TOOL 1/4
3901659	PREASSEMBLY TOOL 3/8
3901660	PREASSEMBLY TOOL 1/2
3902719	PREASSEMBLY TOOL 5/8
3902402	PREASSEMBLY TOOL 6MM
3902420	PREASSEMBLY TOOL 8MM
3902421	PREASSEMBLY TOOL 10MM
3902422	PREASSEMBLY TOOL 12MM
3902720	PREASSEMBLY TOOL 14MM
3902721	PREASSEMBLY TOOL 15MM
3902538	PREASSEMBLY TOOL 16MM

Instruction for using "Preassembly Tool" 6mm-16mm, 1/4"-5/8"

1. Assemble HAM-LET ferrules and nut on the Preassembly Tool, tighten the nut to finger tight position.
2. Insert the tube through the nut and ferrules until the tube touches the bottom (shoulder).
3. From the finger tight position, rotate the nut 1-1/4 turns (450°).
4. Release the nut from the Preassembly Tool; pull out the tube with the ferrules swaged into the tube.
5. Insert tube with swaged ferrules into the fitting body.
6. Tighten the nut to the finger tight position (mark the place).
7. To assemble on the fitting, use a wrench to tighten the nut to the original position. An increase of torque will be felt, from this point turn the wrench slightly.
   Tightening to the original position depends on the tube size.
   A large tube size will need more tightening than a small size, and the wall thickness has some effect on the tightening.

Note:

1. When using the Preassembly Tool, make sure the tool is free of damage and is clean prior to use.
2. Usage of the Preassembly Tool is limited, after permanent use please send tool to HAM-LET for evaluation.
3. Soft tubing and tubing at the maximum diameter tolerance can cause the tube to stick to Preassembly Tool.
   In order to remove the stuck tube, please rock the tube back and forth until the tube gets released from the tool.

Instruction for using "Preassembly Tool" 1/8"-3/16", 2mm-4mm

1. Assemble HAM-LET ferrules and nut on the Preassembly Tool, tighten the nut to the finger tight position.
2. Insert the tube through the nut and ferrules until the tube touches the bottom (shoulder).
3. From the finger tight position, rotate the nut 3/4 of a turn (270°).
4. Release the nut from the Preassembly Tool; pull out the tube with the ferrules swaged into the tube.
5. Insert tube with swaged ferrules into the fitting body.
6. Tighten the nut to the finger tight position (mark the place).
7. To assemble on the fitting, use a wrench to tighten the nut to the original position. An increase of torque will be felt, from this point turn the wrench slightly.
   Tightening to the original position depends on tube size.
   A large tube size will need more tightening than a small size, and the wall thickness has some effect on the tightening.

ACCESSORIES

STAINLESS STEEL TUBE CUTTER

Ordering Information	Capacity	
	inch	mm
Tube Cutter	3/16–1	5–25
Replacement Wheel	3/16–1	5–25

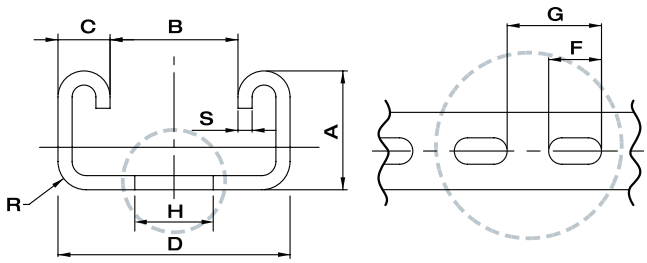
REAMERS, DEBURRING TOOLS

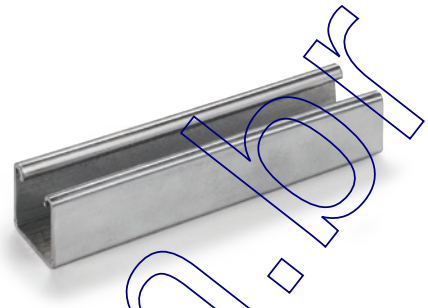
Ordering Information	Capacity
In.Out.Reamer 1/4”–1 1/4”	1/4” (5mm) through 1 1/4” (36mm)
In.Out.Reamer 1/2”–2”	1/2” (12mm) through 2” (54mm)

LEVER TUBE BENDERS

Ordering Information	Capacity	
	Tube Size	Bend Radius
Lever Bender 3/16	3/16"	5/ 8"
Lever Bender 1/4	1/4"	5/8"
Lever Bender 5/16	5/16'	15/16"
Lever Bender 3/8	3/8"	15/16"
Lever Bender 1/2	1/2"	1 1/2"
Lever Bender 6	6mm	16mm
Lever Bender 8	8mm	24mm
Lever Bender 10	10mm	24mm
Lever Bender 12	12mm	38mm

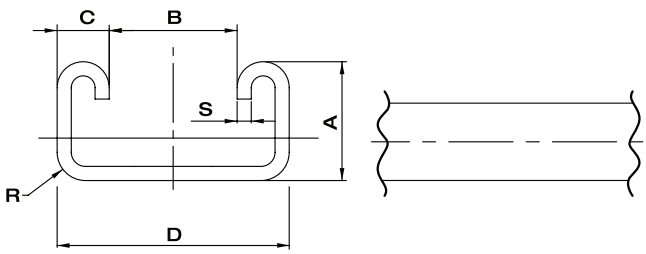
TUBE HOLDERS





PERFORATED STAINLESS STEEL TUBE HOLDER SUPPORT

HL / PN	A, mm	B, mm	C, mm	D, mm	L, m	S, mm	R, mm	F, mm	G, mm	H, mm
P–L–G	41.0	22.6	9.2	41.0	6.0	2.5	5.0	28.0	50.0	14.0
P–S–G	21.0	22.6	9.2	41.0	6.0	2.5	5.0	28.0	50.0	14.0
P–L–Z	41.0	22.6	9.2	41.0	6.0	2.5	5.0	28.0	50.0	14.0
P–S–Z	21.0	22.6	9.2	41.0	6.0	2.5	5.0	28.0	50.0	14.0

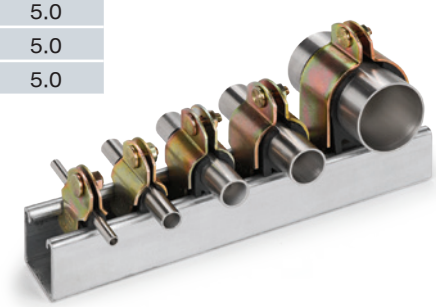


BLANK STAINLESS STEEL TUBE HOLDER SUPPORT

HL / PN	A, mm	B, mm	C, mm	D, mm	L, m	S, mm	R, mm
B–L–G	41.0	22.6	9.2	41.0	6.0	2.5	5.0
B–S–G	21.0	22.6	9.2	41.0	6.0	2.5	5.0
B–L–Z	41.0	22.6	9.2	41.0	6.0	2.5	5.0
B–S–Z	21.0	22.6	9.2	41.0	6.0	2.5	5.0

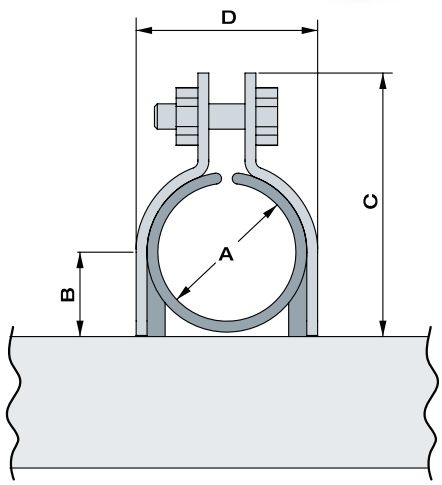
ORDERING INFORMATION

Perforation		Size		Finish Type	
P =	Perforated	S =	Small	Z =	Zink Coating Yellow
B =	Blank	L =	Large	G =	Hot dip galvanized



CLAMPED TUBE HOLDERS

HL / PN	A, mm	B, mm	C, mm	D, mm
CTH–1/4	1/4	5.7	29.2	18.2
CTH–3/8	3/8	7.3	32.2	23.0
CTH–1/2	1/2	7.8	36.6	23.7
CTH–5/8	5/8	22.6	41.7	25.0
CTH–3/4	3/4	13.8	48.3	32.7
CTH–7/8	7/8	22.6	51.2	34.0
CTH–1	1	16.8	53.8	40.8
CTH–1 1/8	1–1/8	22.6	59.4	40.9
CTH–1 5/8	1–5/8	22.6	71.8	58.3
CTH–2	2	30.4	82.0	64.1

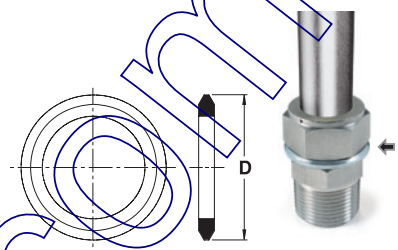


STOP COLLAR

LET-LOK®	D	
inch	inch	mm
1/4	.69	17.5
3/8	.84	20.6
1/2	1.10	27.0
3/4	1.31	33.3
1	1.68	42.7

Assembly Instructions - Stop Collar

1. Remove the nut and ferrules from the fitting.
2. Insert the stop collar.
3. Assemble the nut and ferrules until finger tight.
4. Make up the fitting until the stop collar no longer rotates (feel with finger). At this stage it is guaranteed that the fitting is assembeled correctly.



ORDERING INFORMATION FOR ASSEMBLED STOP COLLAR (WITH FITTING)

768L	SS	1/4		1/4	SC
Fitting Type	**SS** = Stainless Steel 316	**Tube O.D.**	X	**1/4 NPT**	**Stop Collar**
Male LET-LOK® Connector Male End Connection	**B** = Brass	The O.D. size is always the first to be described			
	M = Alloy 400				
	HC = Alloy C-276				
	Fitting Material				

HOW TO ORDER STOP COLLAR ONLY

STOP COLLAR	1/4
Stop Collar	**Tube O.D.**
	The O.D. size is always the first to be described

Dimensions are for reference only, and are subject to change without notice.