TUBE FITTING

INTRODUCTION

D-LINE tube fittings are designed to provide a leak-free connection and applied in chemical, petrochemical, oil reineries, shipbuilding, power generation and pulp and papers. The double ferrule design is a mechanism used for sealing and gripping tubing. Through the mechanical for sealing and gripping.

FEATURES

When the nut is tightened, the black and front ferrules move axially, The axial movement does not allow any torque transfer from the fitting to tubing and the mechanical properties of tubing are maintained. The front ferrule creates a seal against the fitting body and on the tubing outside diameter while the back ferrule axially advance the front ferrule and radially provides an effective tube grip.

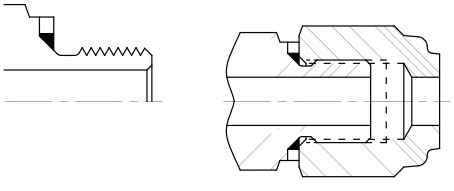
SEALING

Taper Thread

NPT, BSPT (BS21) and ISO7/1 taper threads must use a thread sealant and proper lubrication to provide leak-free connection and prevent from galling that is mostly cormon in stainless steel.

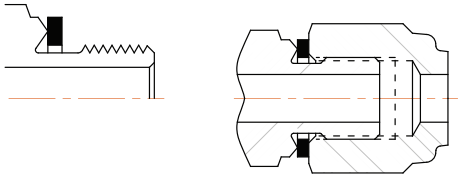
Form A

No reverse angle is used. A self centering taper is used at hex wich centers a “Bonded” washer seal (usually metal and elastomer” to seal the surface surrounding the female thread.



Form B

A metal gasket (usually copper) gasket performs the sealing between the face of body and the surface surrounding the female threads



MATERIAL

D-LINE twin ferrule tube fittings are made of 316 stainless steel and supplied in imperial size from 1/8” O.D. to 1” O.D.

TEMPERATURE

316 Stainless steel: -321 °F TO 1200°F (-196°C to 649°C)

The working pressure varies depending on temperature. The working pressure at various temperatures can be obtained by multiplying the working pressure at ambient temperature (-20°F to 100°F or -29°C to 37°C) by the temperature derating factor in the table below.

TEMPERATURE (°F)	316 SS
100	1.00
200	1.00
300	1.00
400	0.96
500	0.90
600	0.85
700	0.82
800	0.79
900	0.78
1000	0.76
1100	0.62
1200	0.37

TUBING

In order to ensure reliable and leak-free installation, tubing should be considered as one of fitting components.

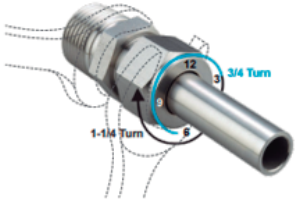
FRACTIONAL TUBING			
TUBING O.D.	NOMINAL MIN. WALL THICKNESS	TUBING O.D.	NOMINAL MIN. WALL THICKNESS
1/8”	0.028”	1/2”	0.049”
1/4”	0.028”	5/8”	0.065”
5/16”	0.035”	3/4”	0.065”
3/8”	0.035”	1”	0.083”

TUBE FITTING

INSTALLATION INSTRUCTIONS

D-LINE two ferrule tube fittings are supplied finger tight and ready for immediate use. A leak tight and mechanically safe installation is easily made by turning the nut 1.1/4 turns or 3/4 turn for a smaller size in 1/8” O.D.
Prior to installation, make sure to have tubeend cut 90 degree and remove burrs from inside and outside tube ends.

1. Insert well prepared tubing into D-LINE two ferrule tube fittingsuntil tubing end is firmly seated on the body shoulder.



2. Mark the nut at position no. 6 for identification of starting point to count the number of turns

3. When holding the fitting body with a wrench to prevent the body from turning, tighten the nut with another wrench 1.1/4 turns to position no.9.

Note:
It is the responsibility of users to use the products for their specific application and adequately apply sealant and lubrication to system installation.

Improper installation or intermixing components of other manufacturers may cause personal injury or property losses.

MAXIMUM ALLOWABLE WORKING PRESSURE TABLE

Fully annealed austenitic type 304 or 316 seamless tubing ASTM A269 or ASTM A213, or equivalent. Tubing to be free from dirt, scratches, weld seam, draw mark and suitable for bending and flaring. Recommended hardness: 80 HRB or less.

STAINLESS STEEL TUBE INCH SIZE

TUBE WALL THICKNESS IN INCHES

TUBE O.D. (INCHES)	0.035	0.049	0.065	0.083
1/8”	10,900	7,500		
1/4”	5,100	5,800	10,200	
5/16”	4,000	4,800	8,000	
3/8”	3,300	3,700	6,500	
1/2”	2,600	2,400	5,100	6,700
3/4”	For gas service, applying the wall thickness only on outside of shade boundary	2,000	3,300	4,200
7/8”			2,800	3,600
1”			2,400	3,100

- Allowable stress of 20,000 psi between -20°F and 100°F and (-29°C and 37°C) based on ultimate tensile strenght 75,000 psi

- Based on minimum wall thickness and maximum O.D. allowable by ASTM A269

NOTE:

1. Pressure calculations are based on maximum O.D. and minimum wall thickness without allowance for corrosion and erosion.

2. Figures shown are not for design purpose but for reference only. The accuracy of information here is not liability of out company.