

# Tools and Installation Instructions



Medium & High Pressure  
Fittings and Tubing

Quick Couplings

Medium & High Pressure  
Valves

Line Filters

Sour Service Products

Subsea Valves

Tools and Installation  
Instructions

Technical Information

# Tools

## Manual Presetting Tools

To preset double ferrules onto DHL Series tubing. Tubing sizes available in 1/8", 1/4", 3/8" and 1/2" O.D.

Ordering Number	Tube O.D., in.
PST-2D	1/8
PST-4D	1/4
PST-6D	3/8
PST-8D	1/2



## Hydraulic Presetting Tools

To preset double ferrules onto DHL Series tubing. Tubing sizes available in 1/2", 9/16" and 3/4" O.D.

Ordering Number	Description
HPT-DHF	With full set of die heads
HPT-H	Without die heads The die heads can be ordered individually.



Die Heads

### Die Heads

Ordering Number	Tube O.D., in.
HPT-H-DHL8	1/2
HPT-H-DHL9	9/16
HPT-H-DHL12	3/4

## Manual Coning Tools

Applied in medium and high pressure tubing for concentric cone processing. All the manual coning tools use the same basic tools on which the cutter heads and the collets of different sizes can be replaced. A complete ordering number shall include that of the basic tool, collet and cutter head. The collet and the cutter head can be ordered separately. For detailed information, please refer to the instruction manual or contact FITOK Group.



Cutter Head

Collet

Connection	Tube O.D. x I.D. in.	Complete Ordering Number	Ordering Number of Collet	Ordering Number of Cutter Head
2FH4	1/4 x 0.109	HCT-M4	HCT-4-CO	HCT-M4-DT
2FH6	3/8 x 0.203	HCT-M6	HCT-6-CO	HCT-M6-DT
2FH9	9/16 x 0.312	HCT-M9	HCT-9-CO	HCT-M9-DT
6FH4	1/4 x 0.083	HCT-H4	HCT-4-CO	HCT-H4-DT
6FH6	3/8 x 0.125	HCT-H6	HCT-6-CO	HCT-H6-DT
6FH9	9/16 x 0.188	HCT-H9	HCT-9-CO	HCT-H9-DT

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Medium & High Pressure

Line Filters

Sour Service Products

Subsea Valves

Tools and Installation Instructions

Technical Information

## Manual Threading Tools

Applied in medium and high pressure tubing for thread processing. All the manual threading tools use the same basic tools to process threads by replacing threading dies and guide bushings of different sizes. A complete ordering number shall include that of the basic tool, threading die and guide bushing. The threading die and the guide bushing can be ordered separately. For detailed information please refer to the instruction manual or contact FITOK Group.



Threading Die      Bushing

Connection	Tube O.D. x I.D. in.	Thread Size (Left Hand)	Complete Ordering Number	Ordering Number of Threading Die	Ordering Number of Bushing
2FH4	1/4 x 0.109	1/4-28 UNF	HTT-4	HTT-4-D	HTT-4-GS
2FH6	3/8 x 0.203	3/8-24 UNF	HTT-6	HTT-6-D	HTT-6-GS
2FH9	9/16 x 0.312	9/16-18 UNF	HTT-9	HTT-9-D	HTT-9-GS
6FH4	1/4 x 0.083	1/4-28 UNF	HTT-4	HTT-4-D	HTT-4-GS
6FH6	3/8 x 0.125	3/8-24 UNF	HTT-6	HTT-6-D	HTT-6-GS
6FH9	9/16 x 0.188	9/16-18 UNF	HTT-9	HTT-9-D	HTT-9-GS

## Manual Reseating Tools

The tool is used for repairing the wearing cone seat of medium and high pressure fitting or valve. A complete ordering number shall include that of the cutter, antifriction gasket, orientation nut and handle. The cutter, antifriction gasket, orientation nut and handle can be ordered separately. For detailed information, please refer to the instruction manual or contact FITOK Group.



Connection	Complete Ordering Number	Ordering Number of Cutter	Ordering Number of Antifriction Gasket	Ordering Number of Orientation Nut	Ordering Number of Handle
2FH4	HRT-M4	HRT-4-C	HRT-4-G	HRT-M4-G	HRT-H-1
2FH6	HRT-M6	HRT-6-C	HRT-6-G	HRT-M6-G	HRT-H-2
2FH9	HRT-M9	HRT-9-C	HRT-9-G	HRT-M9-G	HRT-H-3
2FH12	HRT-M12	HRT-12-C	HRT-12-G	HRT-M12-G	HRT-H-4
2FH16	HRT-M16	HRT-16-C	HRT-16-G	HRT-M16-G	HRT-H-4
6FH4	HRT-H4	HRT-4-C	HRT-4-G	HRT-H4-G	HRT-H-1
6FH6	HRT-H6	HRT-4-C	HRT-4-G	HRT-H6-G	HRT-H-1
6FH9	HRT-H9	HRT-9-C	HRT-9-G	HRT-H9-G	HRT-H-3

## Cutting Oil

Metal cutting oil is required for the operation of manual coning tools, manual threading tools and manual reseating tools. Quality cutting oil serves to reduce the heat and friction between the cutter and the metal, optimize the surface finish, and extend the life of the cutter.

FUCHS RENOFORM MZAN 51 is offered by FITOK as cutting oil.

Ordering Number: HT-CO

Medium & High Pressure Fittings and Tubing

Quick Couplings

Medium & High Pressure Valves

Line Filters

Scour Service Products

Subsea Valves

Tools and Installation Instructions

Technical Information

# Installation Instructions

## Installation of DHL Series Tubing Connections

### For Tube O.D. 1/8", 1/4", 3/8" and 1/2"

#### Without Manual Presetting Tool

1. Put the nut and ferrules onto the tubing in fixed sequence and orientation (Fig. 1).
2. Insert the tubing into the fitting body or the valve. Finger tight the nut. Make sure that the tubing rests firmly on the shoulder of the fitting body or the valve (Fig. 2).
3. Mark the nut and the fitting body or the valve (Fig. 3).
4. Hold the fitting body or the valve steady. For tube O.D. 1/8", tighten the nut 1 1/4 turns with a wrench. For tube O.D. 1/4", 3/8" and 1/2", tighten the nut 1 1/2 turns with a wrench (Fig. 4).

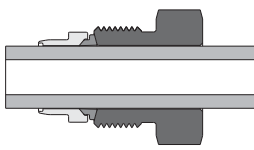


Fig.1

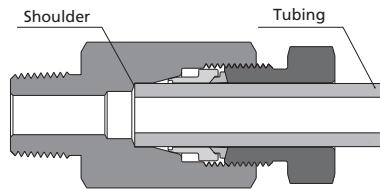


Fig.2

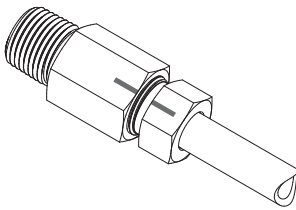


Fig.3

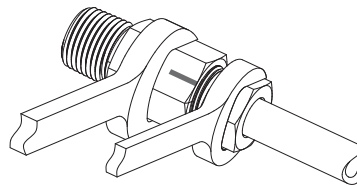


Fig.4

#### With Manual Presetting Tool

1. Put the nut and ferrules onto the tubing in fixed sequence and orientation (Fig. 1).
2. Insert the tubing into the manual presetting tool. Finger tight the nut. Make sure that the tubing rests firmly on the shoulder of the presetting tool (Fig. 5).
3. Mark the nut and the manual presetting tool (Fig. 6).
4. Hold the manual presetting tool steady. For tube O.D. 1/8", tighten the nut 1 1/4 turns with a wrench. For tube O.D. 1/4", 3/8" and 1/2", tighten the nut 1 1/2 turns with a wrench.
5. Loosen the nut and remove the tubing with preassembled ferrules from the manual presetting tool (Fig. 7).

NOTE: If the tubing sticks into the manual presetting tool, remove the tubing by gently rocking it back and forth. Do not rotate the tubing.

6. Insert the tubing with preassembled ferrules into the fitting body or the valve. Finger tight the nut (Fig. 8).
7. Tighten the nut 1/4 turn with a wrench while holding the fitting body or the valve steady.

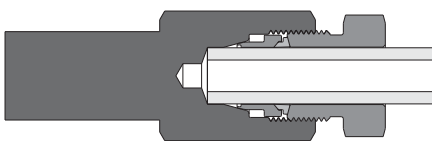


Fig.5

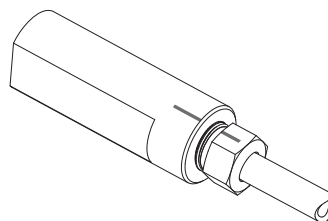


Fig.6

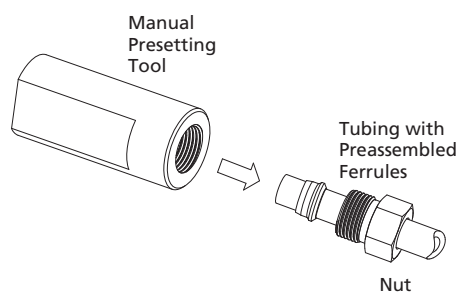


Fig.7

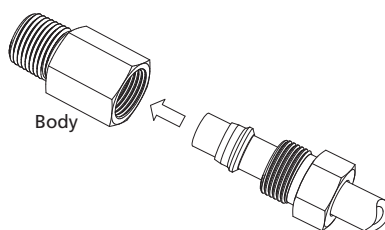


Fig.8

### For Tube O.D. 9/16", 3/4" and 1/2"

1. Preassemble the ferrules onto tubing using the hydraulic presetting tool. For details, please contact FITOK for instruction manual **Hydraulic Presetting Tools**.
2. Insert the tubing with preassembled ferrules into the fitting body or the valve. Finger tight the nut.
3. Tighten the nut 1/4 turn with a wrench while holding the fitting body or the valve steady.

### For Plugs

1. Insert the plug into the fitting body or the valve. Finger tight the nut.
2. Tighten the nut 1/4 turn with a wrench while holding the fitting body or the valve steady.

### Reinstallation Instructions

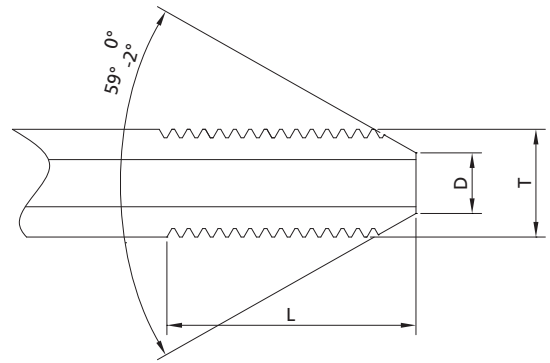
1. Insert the tubing with preassembled ferrules into the fitting body or the valve. Finger tight the nut.
2. Tighten the nut 1/4 turn with a wrench while holding the fitting body or the valve steady. After frequent reassemblies, 1/8 turn might be sufficient.

### Cautions

1. Do not loosen or tighten fittings when the system is pressurized.
2. When assembling a tube fitting, screw the nut while holding the body steady.

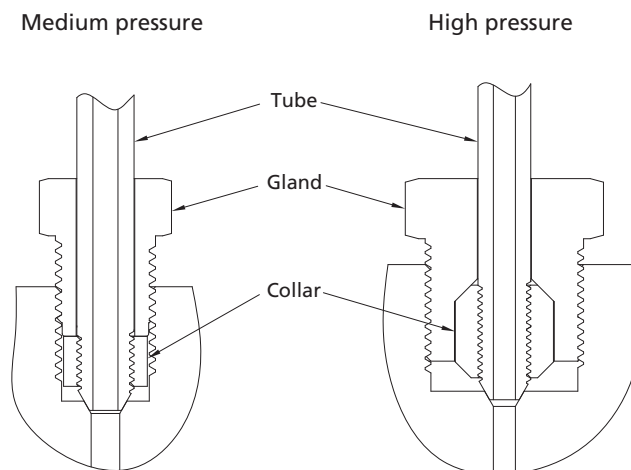
## Installation of Medium & High Pressure Coned and Threaded Connections

1. Process the tube end into the structure as shown on the right. For dimensions please see the table below.



Tube O.D. x I.D. in.	Connection	T - Thread Size (Left Hand)	D in. (mm)	L in. (mm)
1/4 x 0.109	2FH4	1/4-28 UNF	0.14 (3.6)	0.34 (8.7)
3/8 x 0.203	2FH6	3/8-24 UNF	0.25 (6.4)	0.44 (11.1)
9/16 x 0.312	2FH9	9/16-18 UNF	0.41 (10.3)	0.50 (12.7)
3/4 x 0.438	2FH12	3/4-16 UNF	0.56 (14.3)	0.63 (15.9)
1 x 0.562	2FH16	1-14 UNS	0.72 (18.3)	0.78 (19.8)
1/4 x 0.083	6FH4	1/4-28 UNF	0.13 (3.2)	0.56 (14.3)
3/8 x 0.125	6FH6	3/8-24 UNF	0.22 (5.6)	0.75 (19.1)
9/16 x 0.188	6FH9	9/16-18 UNF	0.28 (7.1)	0.94 (23.8)

2. First, insert the tube through the gland, and then screw in the collar until the conical end of the tube showing 1-2 threads.  
 3. If possible, coat the cone tip with a small amount of lubricant which is compatible with the system media.



4. Insert the tubing into the connecting port and finger tighten the gland.  
 5. Use a torque wrench to tighten the gland with the required torque shown in the table below while holding fitting body or valve steady.

Medium & High Pressure Fittings and Tubing  
 Quick Couplings  
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 Line Filters  
 Sour Service Products  
 Subsea Valves  
 Tools and Installation Instructions  
 Technical Information

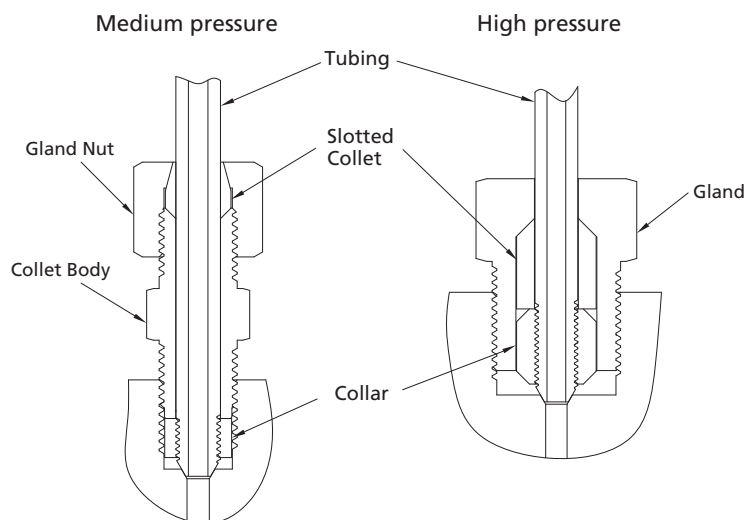
Tube O.D. x I.D. in.	Connection	Required Torque for Standard Service Products ft.-lbs. (N.m)	Required Torque for Sour Service Products ft.-lbs. (N.m)
1/4 x 0.109	2FH4	20 (27.1)	10 (13.6)
3/8 x 0.203	2FH6	30 (40.6)	15 (20.3)
9/16 x 0.312	2FH9	55 (74.5)	30 (40.7)
3/4 x 0.438	2FH12	90 (122)	45 (61.0)
1 x 0.562	2FH16	125 (170)	100 (135.6)
1/4 x 0.083	6FH4	25 (33.9)	15 (20.3)
3/8 x 0.125	6FH6	50 (67.8)	25 (33.9)
9/16 x 0.188	6FH9	110 (149.1)	55 (74.6)

## Installation of Medium & High Pressure Anti-vibration Gland Assembly

Anti-vibration Gland Assembly replaces the standard gland.

1. Insert coned and threaded tubing through the Anti-vibration Gland Assembly in the correct order as shown in the following figure, and then screw in the collar until the conical end of the tube showing 1-2 threads.
2. For medium pressure Anti-vibration Gland Assembly, tighten collet body to required torque for standard tube fittings while holding fitting body or valve steady. Then finger tighten the gland nut, and tighten the gland nut 1-1/4 turns for initial installation with a wrench while holding the collet body steady. For reinstallation, tighten the gland nut with a wrench from finger tight to 3/4 turn.
3. For high pressure Anti-vibration Gland Assembly, use a torque wrench to tighten the gland with the required torque shown in the table below while holding fitting body or valve steady.

Tube O.D. x I.D. in.	Connection	Required Torque ft.-lbs. (N.m)
1/4 x 0.083	6FH4	10 (13.6)
3/8 x 0.125	6FH6	28 (38.0)
9/16 x 0.188	6FH9	75 (101.7)



NOTE: When installing, please follow the given method and required torque; otherwise it will affect the performance of the product.

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