

# INSTALLATION, USAGE, CAUTIONS IN APPLICATION OF 316L STAINLESS STEEL PUSH IN FITTINGS

## 1. FEATURES

- 1.1 Body, thread and collar are all made from 316L Stainless Steel.
- 1.2 FKM seal material to ensure that the fluid temperature could be -20~150°C | -4~302°F.
- 1.3 Grease-free, can be used with Air, Vacuum, Water (no freezing), Steam ....
- 1.4 FDA Compliance.
- 1.5 Applicable soft tubing material: PTFE, PU, PA, PE, PVC ...

## 2. INSTALLATION

### 2.1 To Connect and Disconnect the Tubing

- 2.1.1 We advise you to use PNEUFLEX's high quality tubing. If you use other suppliers' tubing, the different tubing tolerance might cause leakage or incorrect connection and disconnection. You must check if tubing OD is in compliance with the specification as listed in following table.

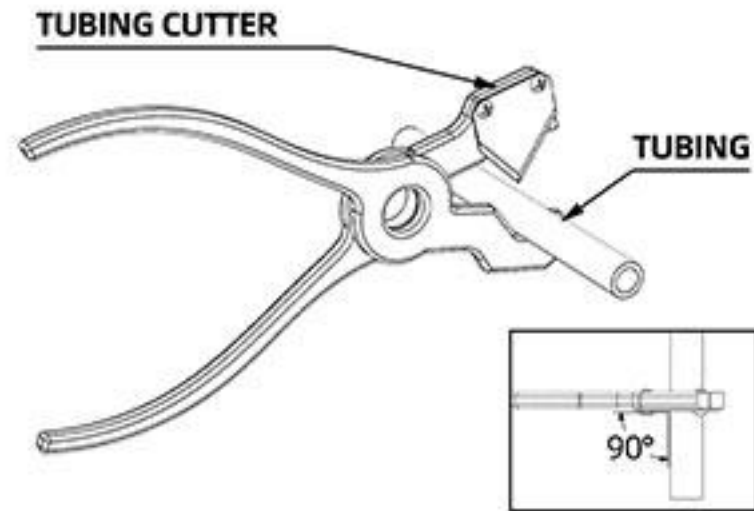
SIZE	POLYURETHANE TUBE	NYLON TUBE
Φ3mm	±0.10	±0.08
Φ4mm	±0.10	±0.08
Φ6mm	±0.12	±0.10
Φ8mm	±0.12	±0.10
Φ10mm	±0.15	±0.12
Φ12mm	±0.15	±0.12
Φ14mm	±0.15	±0.12
Φ16mm	±0.15	±0.12

SIZE	POLYURETHANE TUBE	NYLON TUBE
Φ1/8"	±0.10	±0.08
Φ5/32"	±0.10	±0.08
Φ3/16"	±0.12	±0.10
Φ1/4"	±0.12	±0.10
Φ5/16"	±0.12	±0.10
Φ3/8"	±0.15	±0.12
Φ1/2"	±0.15	±0.12
Φ5/8"	±0.15	±0.12

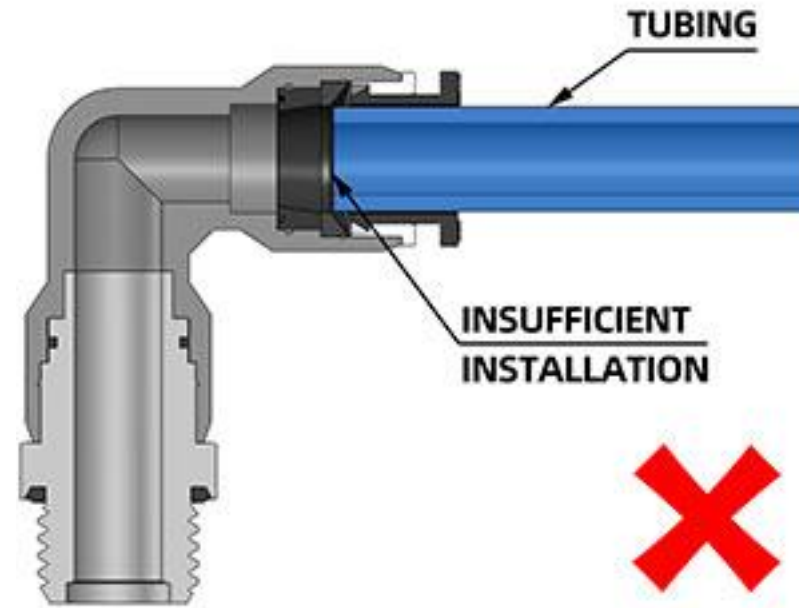
- 2.1.2 Always check the end of tubing for a right angle cutting. Make sure that there is no any damage or scratch on the outer surface of tubing (see 2.1.2 ①).

Please refer to following instruction in connection of tubing. When you insert the air tubing into fitting, you will have two-step feeling. Section One (see 2.1.2 ②) is locking claw while Section Two (2.1.2 ③) is sealing ring. You must insert the tube into Section Two to ensure that the tubing is inserted fully to the end of the fitting. Finally, pull the tube gently to make sure the tubing isn't released.

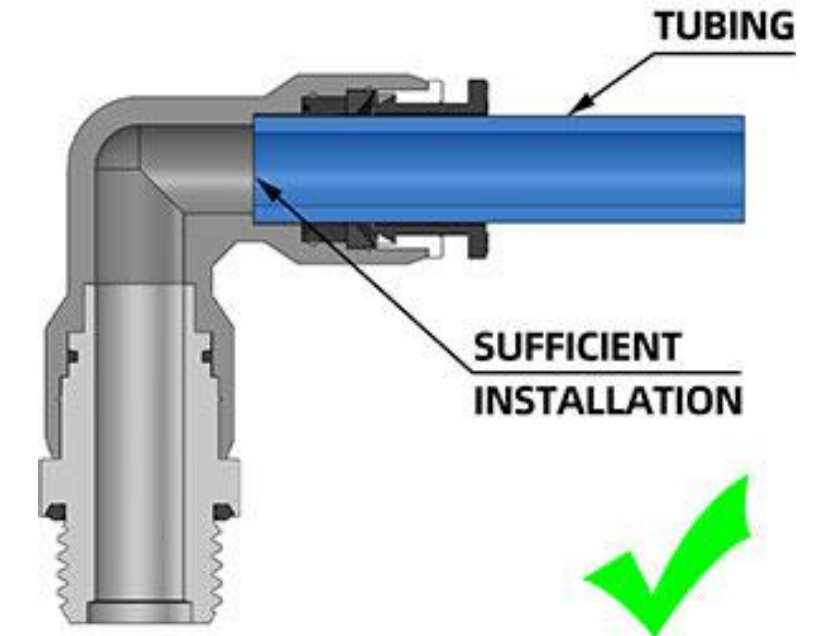
### TUBING CUTTING



2.1.2 ①



2.1.2 ②

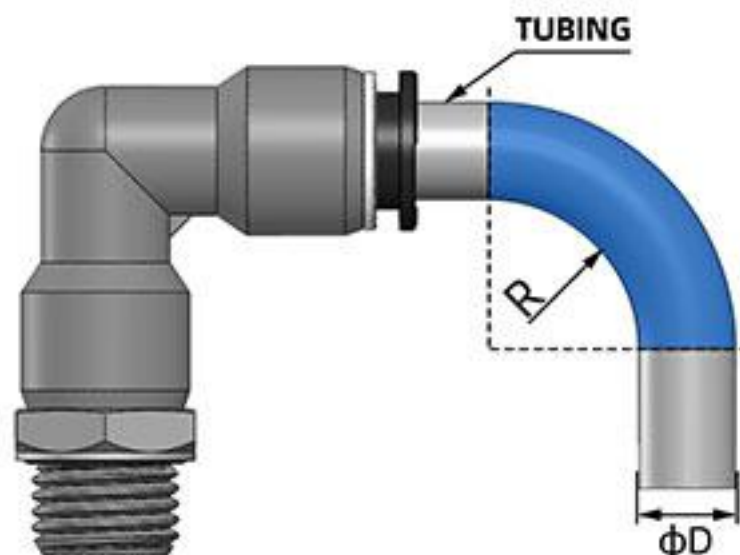


2.1.2 ③

2.1.3 The minimum insertion length of tubing is listed in the dimensions table of each part, however, the tubing length tolerance is necessary in practice.

2.1.4 Pulling or twisting the tubing excessively may damage the fitting. For a mount guide, see the table below:

### MINIMUM BENDING RADIUS



#### MINIMUM BENDING RADIUS (R) OF THE TUBING O.D (mm)

Tubing O.D (Φ)	Φ3	Φ4	Φ6	Φ8	Φ10	Φ12	Φ14	Φ16
Minimum Bending Radius (R)	15	20	30	50	80	150	230	350

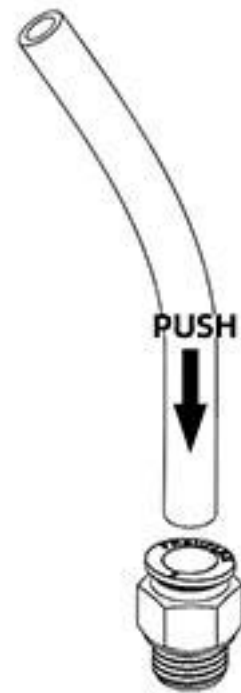
#### MINIMUM BENDING RADIUS (R) OF THE TUBING O.D (mm)

Tubing O.D (Φ)	Φ1/8"	Φ5/32"	Φ3/16"	Φ1/4"	Φ5/16"	Φ3/8"	Φ1/2"	Φ5/8"
Minimum Bending Radius (R)	15	20	30	30	50	80	150	350

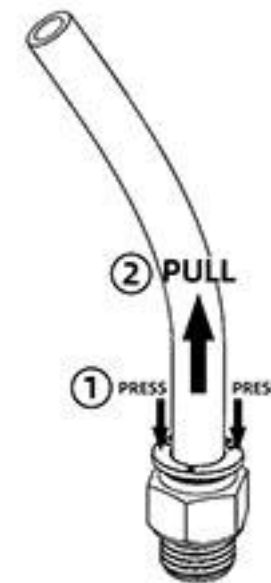
2.1.5 Before removing the tubing from the fitting, make sure that internal pressure of tube is zero. For disconnection of tubing, always press sleeve heavily and then pull out tubing. If sleeve is not pressed with enough force, it is hard to pull out tubing and external surface scratch might be resulted by locking claw, which would cause leakage. Don't swing or rotate tubing in disconnection otherwise groove might be resulted on the tubing surface by locking claw to prevent tubing from pulling.

PNEUFLEX's fitting sleeve is designed as an oval shape, which is convenient in connection and disconnection. However, round sleeve is also available to meet any customer special demand if the customer product has limited space for oval sleeve.

### CONNECTING



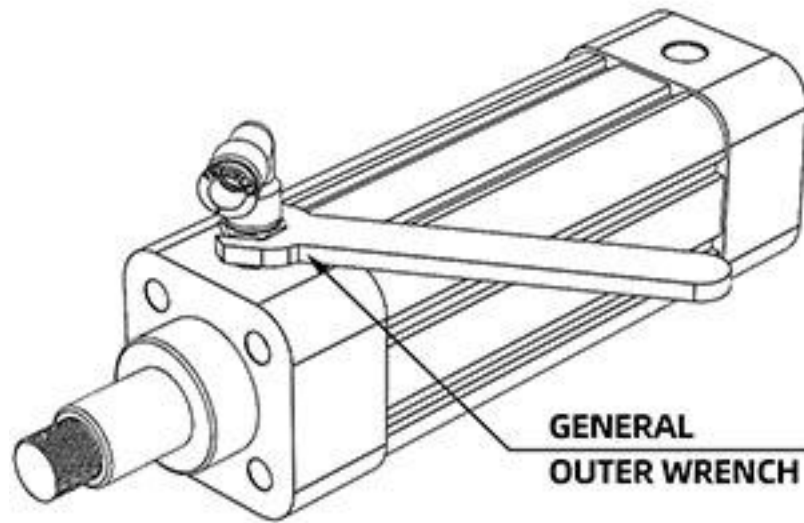
### DISCONNECTING



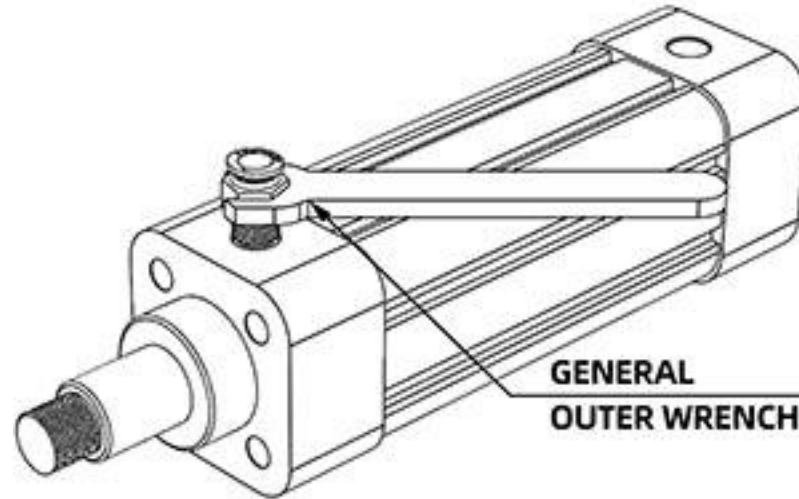
## 2.2 Connection Thread Tightening Method

2.2.1 Always use proper tool to tighten external hexagonal and internal hexagonal fitting as show in the pictures below. Always apply recommended torque on screws otherwise extra torque might damage thread and cause air leakage while insufficient torque might cause loose screws and air leakage. After screws are tightened, you may adjust the direction of tubing. If it is hard in adjustment, you may apply recommended torque to turn screw to adjust direction of tubing.

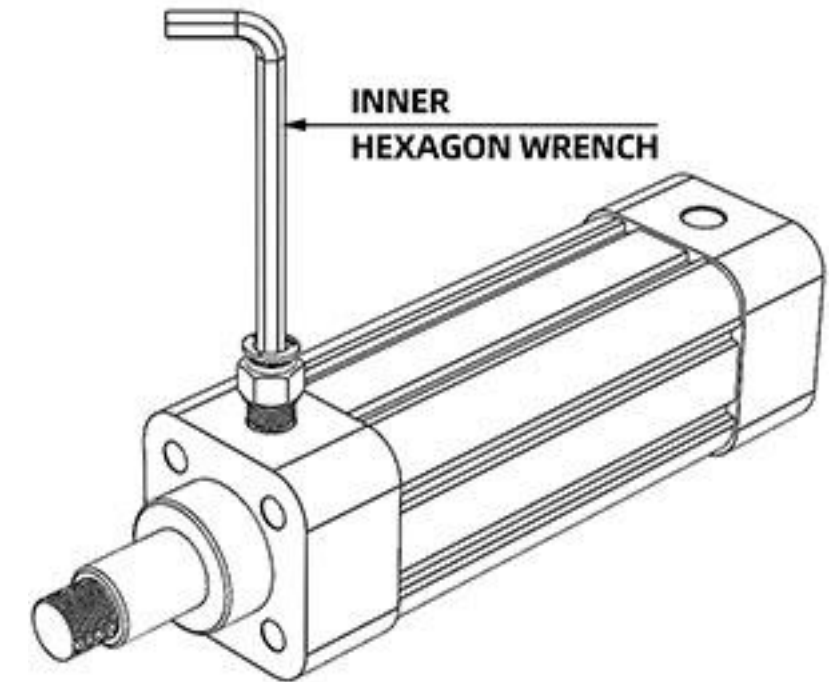
### OUTER HEXAGON TIGHTENING



### OUTER HEXAGON TIGHTENING



### INNER HEXAGON TIGHTENING



### RECOMMENDED TORQUE FOR DIFFERENT THREAD SPECIFICATION

Thread Type	Thread Specification	Torque (kgf.cm)
Metric Thread	M3	7
	M5	15-19
	M6	20-27
R/Rc Thread	R/Rc 1/8	70-90
	R/Rc 1/4	120-140
	R/Rc 3/8	220-240
	R/Rc 1/2	280-300
UNF (Unified)	NO. 10-32 UNF	15-19
NPT Thread	1/16 NPT	70-90
	1/8 NPT	70-90
	1/4 NPT	120-140
	3/8 NPT	220-240
	1/2 NPT	280-300