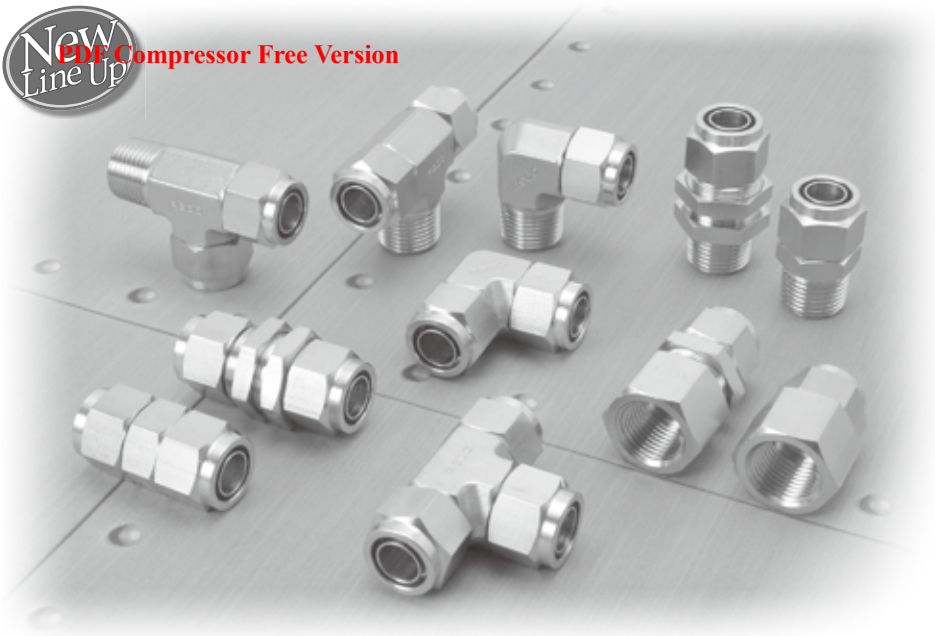


Compression Fitting of Corrosion Resistant Stainless Steel

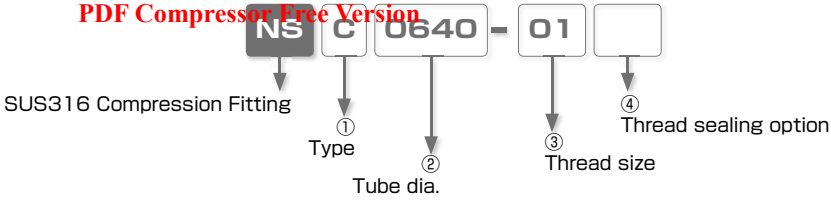
Tube Fitting Stainless **SUS316** Compression Fitting Series

Copper alloy free material | Non-grease | Clean-room packaging

Chemical Industry | Medical Industry | Medicine Industry | Food Industry

- *Corrosion Resistance SUS316 for All Parts.*
- *No Sleeve Required. No Worry about Forgetting or Losing Sleeve.*
- *Cleaned and Packed in Clean Room Class 1000.*
- *Newly Added Inch Size. Wide Variety of Products.*

Model Designation (Example)



① Type

Code	Type	Code	Type	Code	Type	Code	Type
C	Straight	L	Elbow	B	Branch Tee	D	Run Tee
MC	Bulkhead Straight	U	Union Straight	V	Union Elbow	E	Union Tee
M	Bulkhead Union Straight	CF	Female Straight	MF	Bulkhead Female Straight	MFF	Bulkhead Socket
N	Cap Nut Only	P	Disc spring washer for Bulkhead type				

② Tube dia. (※ No code for "MC" and "MFF")

Tube dia.	mm size								
Code	0420	0425	0640	0860	1075	1080	1290	1210	1613
Tube O.D. (mm)	ø4		ø6	ø8	ø10		ø12		ø16
Tube I.D. (mm)	ø2	ø2.5	ø4	ø6	ø7.5	ø8	ø9	ø10	ø13
Code for Cap nut only	4		6	8	10		12		16
Code for Disc spring washer only	12		14	16	18		20		24

※ When only nut is required, enter the code for cap nut only.
※ When only washer for Bulkhead type is required, enter the code for disc spring washer only. As for Bulkhead Socket, select the code from ③.

Tube dia.	inch size		
Code	1/4	3/8	1/2
Tube O.D. (mm)	ø6.35	ø9.53	ø12.7
Tube I.D. (mm)	ø4.57	ø6.99	ø9.56

※. Inch size compatible: 5/32 = 0425 and 5/16 = 0860.

③ Thread size

Thread size	Taper pipe thread			
Code	01	02	03	04
R	R1/8	R1/4	R3/8	R1/2
Rc	Rc1/8	Rc1/4	Rc3/8	Rc1/2
Code for Disc spring washer only	14	18	22	27

※. When washer for Bulkhead type is required, enter the code for disc spring washer only.

④ Thread sealing option

No code : Standard (No Sealock and seal tape)
TP : Seal tape on thread (Seal tape wrapping on thread)

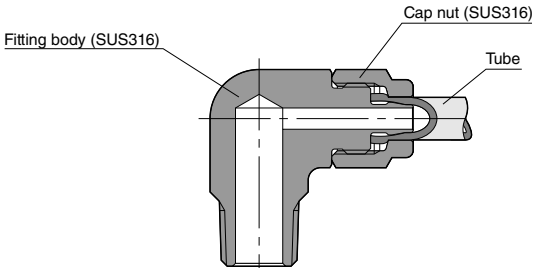
Specifications

Fluid medium	Air / Water / Others (※)
Max. operating pressure	Follow the max. operation pressure of tube specification
Max. vacuum	-100kPa
Operating temp. range	Depends on the range of tube specification（No freezing）

⚠ Warning

※ The specification above may not be applied, depending on the kind of chemicals or mixed gases used as fluid medium. Make sure to use PISCO products after verifying their suitability on the user side.

Construction (Elbow: NSL)



※ Since this series is available for special applications such as chemical and food industries, there is no Sealock coating on the thread.

⚠ Detailed Safety Instructions

Before using PISCO products, be sure to read “Safety Instructions” and “Safety Instruction Manual” on page 23 to 27 and “Common Safety Instructions for Fittings” on page 33 to 35.

Warning

1. When using chemicals or mixed gases as a fluid medium, be sure to contact us first. Depending on conditions, it may cause damage to the products, the escape of tubes and a fluid leakage.

Caution

1. Taper thread is not coated with Sealock. When coating the thread with seal tape or sealant, do not coat 1.5 to 2 screw ridges from the tip of the thread.

FITTING

Standard Size List

Connection: Thread ⇔ Tube

Type	Page	Thread size	Tube size: mm size (O.D. x I.D.) (mm) 4 X 2	4 X 2.5	6 X 4	8 X 6	10 X 7.5	10 X 8	12 X 9	12 X 10	16 X 13	inch size 1/4	3/8	1/2
NSC Straight	P.125	R1/8	●	●	●	●						●		
		R1/4	●	●	●	●	●	●	●	●		●	●	●
		R3/8			●	●	●	●	●	●	●	●	●	●
		R1/2					●	●	●	●	●		●	●
NSL Elbow	P.127	R1/8	●	●	●	●						●		
		R1/4	●	●	●	●	●	●	●	●		●	●	●
		R3/8			●	●	●	●	●	●	●	●	●	●
		R1/2					●	●	●	●	●		●	●
NSB Branch Tee	P.130	R1/8	●	●	●	●								
		R1/4	●	●	●	●	●	●	●	●				
		R3/8			●	●	●	●	●	●	●			
		R1/2					●	●	●	●	●			
NSD Run Tee	P.131	R1/8	●	●	●	●								
		R1/4	●	●	●	●	●	●	●	●				
		R3/8			●	●	●	●	●	●	●			
		R1/2					●	●	●	●	●			
NSMC Bulkhead Straight	P.132	R1/8	●	●	●	●	●	●						
		R1/4	●	●	●	●	●	●	●	●				
		R3/8			●	●	●	●	●	●	●			
		R1/2					●	●	●	●	●			

Type	Page	Thread size	Tube size: mm size (O.D. x I.D.) (mm) 4 X 2	4 X 2.5	6 X 4	8 X 6	10 X 7.5	10 X 8	12 X 9	12 X 10	16 X 13	inch size 1/4	3/8	1/2
NSCF Female Straight	P.128	Rc1/8	●	●	●	●	●	●				●	●	
		Rc1/4	●	●	●	●	●	●	●	●		●	●	●
		Rc3/8			●	●	●	●	●	●	●	●	●	●
		Rc1/2					●	●	●	●	●		●	●
NSMF Bulkhead Female Straight	P.133	Rc1/8	●	●	●	●	●	●				●	●	
		Rc1/4	●	●	●	●	●	●	●	●		●	●	●
		Rc3/8			●	●	●	●	●	●	●	●	●	●
		Rc1/2					●	●	●	●	●		●	●

Connection: Tube ⇔ Tube (Equal dia.)

Type	Page	Tube size: mm size (O.D. x I.D.) (mm) 4 X 2	4 X 2.5	6 X 4	8 X 6	10 X 7.5	10 X 8	12 X 9	12 X 10	16 X 13	inch size 1/4	3/8	1/2
NSU Union Straight	P.126	●	●	●	●	●	●	●	●	●			
NSV Union Elbow	P.126	●	●	●	●	●	●	●	●	●			
NSE Union Tee	P.129	●	●	●	●	●	●	●	●	●	●	●	●
NSM Bulkhead Union	P.129	●	●	●	●	●	●	●	●	●			

Connection: Thread ⇔ Thread

Type	Page	Thread size 1	Thread size 2: Rc1/8	Rc1/4	Rc3/8	Rc1/2
NSMFF Bulkhead Socket	P.134	Rc1/8	●			
		Rc1/4		●		
		Rc3/8			●	
		Rc1/2				●

Nut

Type	Page	Tube size: mm size (O.D. x I.D.) (mm) 4 X 2	4 X 2.5	6 X 4	8 X 6	10 X 7.5	10 X 8	12 X 9	12 X 10	16 X 13	inch size 1/4	3/8	1/2
NSN Cap Nut Only	P.134	●	●	●	●	●	●	●	●	●	●	●	●

Washer

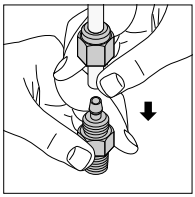
Type	Page	隔壁部 Thread size (mm) 12	14	16	18	20	22	24	27
NSP Disk spring washer for Bulkhead type	P.135	●	●	●	●	●	●	●	●

How to insert and disconnect

1. How to insert and disconnect tubes

① Tube insertion

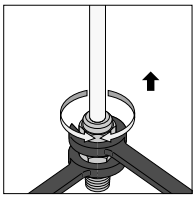
Pass the tube through the nut and insert the barb into the tube up to the barb end. Use a spanner to tighten the nut until the screw end.



② Tube disconnection

Loosen the nut by a spanner first and pull the tube out.

Before tube disconnection, make sure to stop fluids such as air, water, etc.



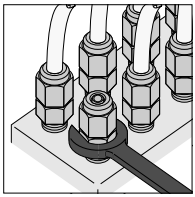
2. How to tighten thread

① Tightening thread

Use a spanner to tighten a hexagonal-column or square part of the fitting.

Since there is no Sealock coating on taper pipe thread, use seal tape or sealant if necessary.

Refer to "Table 2: Recommended tightening torque / Sealock color / Gasket materials" under "4. Instructions for Installing a fitting" in "Common Safety Instructions for Fittings".

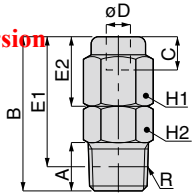


Applicable Tube and Related Products

Fluororesin (PFA) Tube·····P.628
Polyamide Tube·····P.634
Needle Valve Stainless SUS316·····P.460

NSC Straight

RoHS compliant



3D CAD CAD

Unit : mm

Model code	Tube O.D. x I.D. øD	R	A	B	E1	E2	C	Hex. H1	Hex. H2	Weight (g)	Orifice dia. (ø mm)	Effective area (mm^2)	CAD file name
NSC0420-01☐	4 × 2	R1/8	8	25.5	21.5	11.5	5.5	10	10	13	1.3	0.8	NSC0420-01
NSC0420-02☐		R1/4	11	28.5	22.5				14	23			NSC0420-02
NSC0425-01☐	4 × 2.5 (※1)	R1/8	8	25.5	21.5	11.5	5.5	10	10	13	1.4	1	NSC0425-01
NSC0425-02☐		R1/4	11	28.5	22.5				14	24			NSC0425-02
NSC0640-01☐	6 × 4	R1/8	8	25.5	21.5	11.5	6	12	12	16	3	6	NSC0640-01
NSC0640-02☐		R1/4	11	28.5	22.5				14	21			NSC0640-02
NSC0640-03☐		R3/8	12	29.5	23.2				17	30			NSC0640-03
NSC0860-01☐	8 × 6 (※2)	R1/8	8	27.5	23.5	13.5	7	14	14	22	5	17	NSC0860-01
NSC0860-02☐		R1/4	11	30.5	24.5					25			NSC0860-02
NSC0860-03☐		R3/8	12	31.5	25.2				17	34			NSC0860-03
NSC1075-02☐	10 × 7.5	R1/4	11	33.5	27.5	16.5	9	17	17	39	6	20	NSC1075-02
NSC1075-03☐		R3/8	12	34.5	28.2					44			NSC1075-03
NSC1075-04☐		R1/2	15	37.5	29.3				21	61			NSC1075-04
NSC1080-02☐	10 × 8	R1/4	11	33.5	27.5	16.5	9	17	17	38	6.5	26	NSC1080-02
NSC1080-03☐		R3/8	12	34.5	28.2					43			NSC1080-03
NSC1080-04☐		R1/2	15	37.5	29.3				21	60			NSC1080-04
NSC1290-02☐	12 × 9	R1/4	11	33.5	27.5	16.5	9	19	19	46	7.5	30	NSC1290-02
NSC1290-03☐		R3/8	12	34.5	28.2					50			NSC1290-03
NSC1290-04☐		R1/2	15	37.5	29.3				21	65			NSC1290-04
NSC1210-02☐	12 × 10	R1/4	11	33.5	27.5	16.5	9	19	19	44	8.5	45	NSC1210-02
NSC1210-03☐		R3/8	12	34.5	28.2					50			NSC1210-03
NSC1210-04☐		R1/2	15	37.5	29.3				21	63			NSC1210-04
NSC1613-03☐	16 × 13	R3/8	12	37	30.7	18	9.5	23	23	65	11.5	78	NSC1613-03
NSC1613-04☐		R1/2	16	41	32.8					78			NSC1613-04
NSC1/4-01☐	6.35 × 4.57	R1/8	8	25.5	21.5	11.5	6	12	12	15	3.5	7.5	NSC1'4-01
NSC1/4-02☐		R1/4	11	28.5	22.5				14	20			NSC1'4-02
NSC1/4-03☐		R3/8	12	29.5	23.2				17	28			NSC1'4-03
NSC3/8-02☐	9.53 × 6.99	R1/4	11	33.5	27.5	16.5	9	17	17	39	5.5	18	NSC3'8-02
NSC3/8-03☐		R3/8	12	34.5	28.2					43			NSC3'8-03
NSC3/8-04☐		R1/2	15	37.5	29.3				21	60			NSC3'8-04
NSC1/2-02☐	12.7 × 9.56	R1/4	11	33.5	27.5	16.5	9	19	19	44	8.1	35	NSC1'2-02
NSC1/2-03☐		R3/8	12	34.5	28.2					48			NSC1'2-03
NSC1/2-04☐		R1/2	15	37.5	29.3				21	62			NSC1'2-04

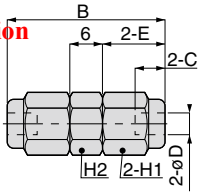
※1. Equal to inch size 5/32
※2. Equal to inch size 5/16
※3. "E1" is a reference value for dimension after tightening thread.
※4. ☐ in Model code / Replaced with "TP" for Seal tape

3D CAD 3D CAD data is available at PISCO website.

CAD CAD data is available at PISCO website.

NSU Union Straight

RoHS compliant

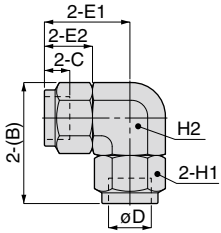


Unit：mm

Model code	Tube O.D. x I.D. øD	B	E	C	Hex. H1	Hex. H2	Weight (g)	Orifice dia. (ø mm)	Effective area (mm^2)	CAD file name
NSU0420	4 × 2	29	11.5	5.5	10	10	17	1.3	0.8	NSU0420
NSU0425	4 × 2.5	29	11.5	5.5	10	10	17	1.4	1	NSU0425
NSU0640	6 × 4	29	11.5	6	12	12	22	3	5.5	NSU0640
NSU0860	8 × 6	33	13.5	7	14	14	32	5	15	NSU0860
NSU1075	10 × 7.5	39	16.5	9	17	17	56	6	20	NSU1075
NSU1080	10 × 8	39	16.5	9	17	17	54	6.5	24	NSU1080
NSU1290	12 × 9	39	16.5	9	19	19	67	7.5	30	NSU1290
NSU1210	12 × 10	39	16.5	9	19	19	65	8.5	40	NSU1210
NSU1613	16 × 13	47	18	9.5	23	23	105	11.5	78	NSU1613

NSV Union Elbow

RoHS compliant

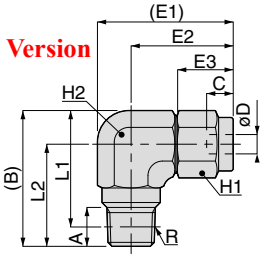


Unit：mm

Model code	Tube O.D. x I.D. øD	B	E1	E2	C	Hex. H1	Hex. H2	Weight (g)	Orifice dia. (ø mm)	Effective area (mm^2)	CAD file name
NSV0420	4 × 2	27.9	21	11.5	5.5	10	12	30	1.3	0.7	NSV0420
NSV0425	4 × 2.5	27.9	21	11.5	5.5	10	12	30	1.4	0.8	NSV0425
NSV0640	6 × 4	27.9	21	11.5	6	12	12	33	3	5.5	NSV0640
NSV0860	8 × 6	34.8	25	13.5	7	14	17	65	5	14.5	NSV0860
NSV1075	10 × 7.5	40	29	16.5	9	17	19	97	6	20	NSV1075
NSV1080	10 × 8	40	29	16.5	9	17	19	96	6.5	22	NSV1080
NSV1290	12 × 9	40	29	16.5	9	19	19	103	7.5	30	NSV1290
NSV1210	12 × 10	40	29	16.5	9	19	19	100	8.5	38	NSV1210
NSV1613	16 × 13	45.3	32	18	9.5	23	23	146	11.5	64	NSV1613

NSL Elbow

RoHS compliant



3D CAD CAD

Unit : mm

Model code	Tube O.D. x I.D. øD	R	A	B	L1	L2	E1	E2	E3	C	Hex. H1	Hex. H2	Weight (g)	Orifice dia. (ø mm)	Effective area (mm^2)	CAD file name
NSL0420-01☐	4 × 2	R1/8	8	27.9	24	21	27.9	21	11.5	5.5	10	12	27	1.4	0.7	NSL0420-01
NSL0420-02☐		R1/4	11	30.1	24.1	22	30.1	22				14	35			NSL0420-02
NSL0425-01☐	4 × 2.5 (※1)	R1/8	8	27.9	24	21	27.9	21	11.5	5.5	10	12	27	1.4	0.9	NSL0425-01
NSL0425-02☐		R1/4	11	30.1	24.1	22	30.1	22				14	35			NSL0425-02
NSL0640-01☐	6 × 4	R1/8	8	27.9	24	21	27.9	21	11.5	6	12	12	28	3	5.5	NSL0640-01
NSL0640-02☐		R1/4	11	30.1	24.1	22	30.1	22				14	37			NSL0640-02
NSL0640-03☐		R3/8	12	40	33.6	29	40	29				19	87			NSL0640-03
NSL0860-01☐	8 × 6 (※2)	R1/8	8	34.8	30.8	25	34.8	25	13.5	7	14	17	62	5	14.5	NSL0860-01
NSL0860-02☐		R1/4	11		28.8								59			NSL0860-02
NSL0860-03☐		R3/8	12	40	33.6	29	40	29				19	87			NSL0860-03
NSL1075-02☐	10 × 7.5	R1/4	11	40	34	29	40	29	16.5	9	17	19	90	6	20	NSL1075-02
NSL1075-03☐		R3/8	12		33.6											NSL1075-03
NSL1075-04☐		R1/2	15	44.3	36.1	31	44.3	31				23	130			NSL1075-04
NSL1080-02☐	10 × 8	R1/4	11	40	34	29	40	29	16.5	9	17	19	88	6	23	NSL1080-02
NSL1080-03☐		R3/8	12		33.6											NSL1080-03
NSL1080-04☐		R1/2	15	44.3	36.1	31	44.3	31				23	127			NSL1080-04
NSL1290-02☐	12 × 9	R1/4	11	40	34	29	40	29	16.5	9	19	19	90	7.5	30	NSL1290-02
NSL1290-03☐		R3/8	12		33.6								91			NSL1290-03
NSL1290-04☐		R1/2	15	44.3	36.1	31	44.3	31				23	133			NSL1290-04
NSL1210-02☐	12 × 10	R1/4	11	40	34	29	40	29	16.5	9	19	19	88	7.5	38	NSL1210-02
NSL1210-03☐		R3/8	12		33.6								90			NSL1210-03
NSL1210-04☐		R1/2	15	44.3	36.1	31	44.3	31				23	131			NSL1210-04
NSL1613-03☐	16 × 13	R3/8	14	45.3	38.9	32	45.3	32	18	9.5	23	23	125	11.5	64	NSL1613-03
NSL1613-04☐		R1/2	17		37.1								130	11.5	64	NSL1613-04
NSL1/4-01☐	6.35 × 4.57	R1/8	8	27.9	24	21	27.9	21	11.5	6	12	12	27	3.5	7	NSL1'4-01
NSL1/4-02☐		R1/4	11	30.1	24.1	22	30.1	22				14	35			NSL1'4-02
NSL1/4-03☐		R3/8	12	40	33.6	29	40	29				19	86			NSL1'4-03
NSL3/8-02☐	9.53 × 6.99	R1/4	11	40	34	29	40	29	16.5	9	17	19	88	5.5	18	NSL3'8-02
NSL3/8-03☐		R3/8	12		33.6								89			NSL3'8-03
NSL3/8-04☐		R1/2	15	44.3	36.1	31	44.3	31				23	132			NSL3'8-04
NSL1/2-02☐	12.7 × 9.56	R1/4	11	40	34	29	40	29	16.5	9	19	19	88	8.1	30	NSL1'2-02
NSL1/2-03☐		R3/8	12		33.6								89			NSL1'2-03
NSL1/2-04☐		R1/2	15	44.3	36.1	31	44.3	31				23	131			NSL1'2-04

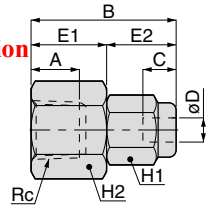
※1. Equal to inch size 5/32
※2. Equal to inch size 5/16
※3. "L1" is a reference value for height dimension after tightening thread.
※4. ☐ in Model code / Replaced with "TP" for Seal tape

3D CAD 3D CAD data is available at PISCO website.

CAD CAD data is available at PISCO website.

NSCF Female Straight

RoHS compliant



3D CAD CAD

Unit：mm

Model code	Tube O.D. x I.D. øD	Rc	A	B	E1	E2	C	Hex. H1	Hex. H2	Weight (g)	Orifice dia. (ø mm)	Effective area (mm^2)	CAD file name
NSCF0420-01	4 × 2	Rc1/8	8	24	12.5	11.5	5.5	10	14	18	1.3	0.8	NSCF0420-01
NSCF0420-02		Rc1/4	11	27.5	16				17	25			NSCF0420-02
NSCF0425-01	4 × 2.5 (※1)	Rc1/8	8	24	12.5	11.5	5.5	10	14	17	1.4	1	NSCF0425-01
NSCF0425-02		Rc1/4	11	27.5	16				17	25			NSCF0425-02
NSCF0640-01	6 × 4	Rc1/8	8	24	12.5	11.5	6	12	14	19	3	6	NSCF0640-01
NSCF0640-02		Rc1/4	11	27.5	16				17	27			NSCF0640-02
NSCF0640-03		Rc3/8	12	29.5	18				22	46			NSCF0640-03
NSCF0860-01	8 × 6 (※2)	Rc1/8	8	26	12.5	13.5	7	14	14	24	5	17	NSCF0860-01
NSCF0860-02		Rc1/4	11	28	14.5				17	29			NSCF0860-02
NSCF0860-03		Rc3/8	12	29.5	16				22	45			NSCF0860-03
NSCF1075-01	10 × 7.5	Rc1/8	8	29	12.5	16.5	9	17	17	42	6	20	NSCF1075-01
NSCF1075-02		Rc1/4	11	31	14.5					39			NSCF1075-02
NSCF1075-03		Rc3/8	12	32.5	16				22	54			NSCF1075-03
NSCF1075-04		Rc1/2	15	37.5	21				27	84			NSCF1075-04
NSCF1080-01	10 × 8	Rc1/8	8	29	12.5	16.5	9	17	17	41	6.5	23	NSCF1080-01
NSCF1080-02		Rc1/4	11	31	14.5					39			NSCF1080-02
NSCF1080-03		Rc3/8	12	32.5	16				22	54			NSCF1080-03
NSCF1080-04		Rc1/2	15	37.5	21				27	84			NSCF1080-04
NSCF1290-02	12 × 9	Rc1/4	11	31	14.5	16.5	9	19	19	50	7.5	30	NSCF1290-02
NSCF1290-03		Rc3/8	12	32.5	16				22	58			NSCF1290-03
NSCF1290-04		Rc1/2	15	37.5	21				27	89			NSCF1290-04
NSCF1210-02	12 × 10	Rc1/4	11	31	14.5	16.5	9	19	19	50	8.5	38	NSCF1210-02
NSCF1210-03		Rc3/8	12	32.5	16				22	57			NSCF1210-03
NSCF1210-04		Rc1/2	15	37.5	21				27	88			NSCF1210-04
NSCF1613-03	16 × 13	Rc3/8	12	34	16	18	9.5	23	23	73	11.5	78	NSCF1613-03
NSCF1613-04		Rc1/2	15	39	21				27	97			NSCF1613-04
NSCF1/4-01	6.35 × 4.57	Rc1/8	8	24	12.5	11.5	6	12	14	19	3.5	7.5	NSCF1'4-01
NSCF1/4-02		Rc1/4	11	27.5	16				17	27			NSCF1'4-02
NSCF1/4-03		Rc3/8	12	29.5	18				22	46			NSCF1'4-03
NSCF3/8-01	9.53 × 6.99	Rc1/8	8	29	12.5	16.5	9	17	17	42	5.5	18	NSCF3'8-01
NSCF3/8-02		Rc1/4	11	31	14.5					40			NSCF3'8-02
NSCF3/8-03		Rc3/8	12	32.5	16				22	55			NSCF3'8-03
NSCF3/8-04		Rc1/2	15	37.5	21				27	85			NSCF3'8-04
NSCF1/2-02	12.7 × 9.56	Rc1/4	11	31	14.5	16.5	9	19	19	50	8.1	35	NSCF1'2-02
NSCF1/2-03		Rc3/8	12	32.5	16				22	57			NSCF1'2-03
NSCF1/2-04		Rc1/2	15	37.5	21				27	87			NSCF1'2-04

※1. Equal to inch size 5/32

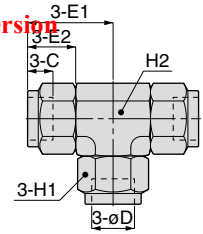
※2. Equal to inch size 5/16

3D CAD 3D CAD data is available at PISCO website.

CAD CAD data is available at PISCO website.

NSE Union Tee

RoHS compliant



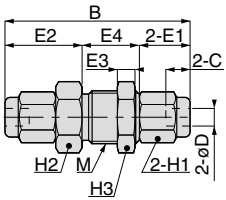
Unit : mm

Model code	Tube O.D. x I.D. øD	E1	E2	C	Hex. H1	Hex. H2	Weight (g)	Orifice dia. (ø mm)	Effective area (mm²)	CAD file name
NSE0420	4 × 2	21	11.5	5.5	10	12	41	1.3	0.7	NSE0420
NSE0425	4×2.5 (※1)	21	11.5	5.5	10	12	41	1.4	0.8	NSE0425
NSE0640	6 × 4	21	11.5	6	12	12	46	3	5.5	NSE0640
NSE0860	8×6 (※2)	25	13.5	7	14	17	85	5	13	NSE0860
NSE1075	10 × 7.5	29	16.5	9	17	19	130	6	20	NSE1075
NSE1080	10 × 8	29	16.5	9	17	19	128	6.5	22	NSE1080
NSE1290	12 × 9	29	16.5	9	19	19	140	7.5	30	NSE1290
NSE1210	12 × 10	29	16.5	9	19	19	134	8.5	38	NSE1210
NSE1613	16 × 13	32	18	9.5	23	23	188	11.5	64	NSE1613
NSE1/4	6.35×4.57	21	11.5	6	12	12	44	3.5	7	NSE1'4
NSE3/8	9.53×6.99	29	16.5	9	17	19	134	5.5	18	NSE3'8
NSE1/2	12.7×9.56	29	16.5	9	19	19	136	8.1	35	NSE1'2

※1. Equal to inch size 5/32
※2. Equal to inch size 5/16

NSM Bulkhead Union Straight

RoHS compliant



Unit : mm

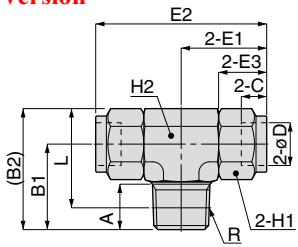
Model code	Tube O.D. x I.D. øD	M	B	E1	E2	E3	E4	C	Hex. H1	Hex. H2	Hex. H3	Weight (g)	Orifice dia. (ø mm)	Effective area (mm²)	CAD file name
NSM0420	4 × 2	12 × 1	42	11.5	17.5	4	13	5.5	10	14	14	32	1.3	0.8	NSM0420
NSM0425	4 × 2.5	12 × 1	42	11.5	17.5	4	13	5.5	10	14	14	32	1.4	1	NSM0425
NSM0640	6 × 4	14 × 1	42	11.5	17.5	4	13	6	12	17	17	44	3	5.5	NSM0640
NSM0860	8 × 6	16 × 1	46	13.5	19.5	4	13	7	14	19	19	59	5	15	NSM0860
NSM1075	10 × 7.5	18 × 1	52	16.5	22.5	4	13	9	17	22	22	90	6	20	NSM1075
NSM1080	10 × 8	18 × 1	52	16.5	22.5	4	13	9	17	22	22	90	6.5	25	NSM1080
NSM1290	12 × 9	20 × 1	53	16.5	22.5	5	14	9	19	24	24	110	7.5	30	NSM1290
NSM1210	12 × 10	20 × 1	53	16.5	22.5	5	14	9	19	24	24	106	8.5	45	NSM1210
NSM1613	16 × 13	24 × 1	56	18	24	6	14	9.5	23	27	27	142	11.5	78	NSM1613

3D CAD data is available at PISCO website.

CAD data is available at PISCO website.

NSB Branch Tee

RoHS compliant



Unit：mm

Model code	Tube O.D. x I.D. øD	R	A	B1	(B2)	L	E1	E2	E3	C	Hex. H1	Hex. H2	Weight (g)	Orifice dia. (ø mm)	Effective area (mm²)	CAD file name
NSB0420-01□	4 × 2	R1/8	8	21	27.9	24	21	42	11.5	5.5	10	12	37	1.3	0.7	NSB0420-01
NSB0420-02□		R1/4	11	22	30.1	24.1	22	44				14	47			NSB0420-02
NSB0425-01□	4 × 2.5	R1/8	8	21	27.9	24	21	42	11.5	5.5	10	12	37	1.4	0.9	NSB0425-01
NSB0425-02□		R1/4	11	22	30.1	24.1	22	44				14	48			NSB0425-02
NSB0640-01□	6 × 4	R1/8	8	21	27.9	24	21	42	11.5	6	12	12	40	3	5.5	NSB0640-01
NSB0640-02□		R1/4	11	22	30.1	24.1	22	44				14	50			NSB0640-02
NSB0640-03□		R3/8	12	29	40	33.6	29	58				19	119			NSB0640-03
NSB0860-01□	8 × 6	R1/8	8	25	34.8	30.8	25	50	13.5	7	14	17	80	5	14.5	NSB0860-01
NSB0860-02□		R1/4	11	25		28.8							78			NSB0860-02
NSB0860-03□		R3/8	12	29	40	33.6	29	58				19	116			NSB0860-03
NSB1075-02□	10 × 7.5	R1/4	11	29	40	34	29	58	16.5	9	17	19	121	6	20	NSB1075-02
NSB1075-03□		R3/8	12			33.6										NSB1075-03
NSB1075-04□		R1/2	15	31	44.3	36.1	31	62				23	168			NSB1075-04
NSB1080-02□	10 × 8	R1/4	11	29	40	34	29	58	16.5	9	17	19	120	6.5	23	NSB1080-02
NSB1080-03□		R3/8	12			33.6							121			NSB1080-03
NSB1080-04□		R1/2	15	31	44.3	36.1	31	62				23	166			NSB1080-04
NSB1290-02□	12 × 9	R1/4	11	29	40	34	29	58	16.5	9	19	19	125	7.5	30	NSB1290-02
NSB1290-03□		R3/8	12			33.6							128			NSB1290-03
NSB1290-04□		R1/2	15	31	44.3	36.1	31	62				23	173			NSB1290-04
NSB1210-02□	12 × 10	R1/4	11	29	40	34	29	58	16.5	9	19	19	123	8.5	38	NSB1210-02
NSB1210-03□		R3/8	12			33.6							125			NSB1210-03
NSB1210-04□		R1/2	15	31	44.3	36.1	31	62				23	170			NSB1210-04
NSB1613-03□	16 × 13	R3/8	14	32	45.3	38.9	32	64	18	9.5	23	23	168	11.5	64	NSB1613-03
NSB1613-04□		R1/2	17			37.1							173			NSB1613-04

※. "L" is a reference value for height dimension after tightening thread.

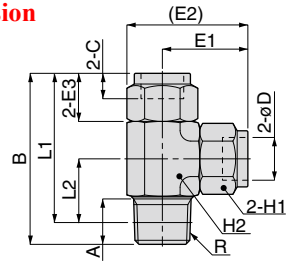
※. □ in Model code / Replaced with "TP" for Seal tape

3D CAD data is available at PISCO website.

CAD data is available at PISCO website.

NSD Run Tee

RoHS compliant



Unit : mm

Model code	Tube O.D. x I.D. øD	R	A	B	L1	L2	E1	(E2)	E3	C	Hex. H1	Hex. H2	Weight (g)	Orifice dia. (ø mm)	Effective area (mm^2)	CAD file name
NSD0420-01□	4 × 2	R1/8	8	42	38	17	21	27.9	11.5	5.5	10	12	36	1.3	0.7	NSD0420-01
NSD0420-02□		R1/4	11	44		16	22	30.1				14	45			NSD0420-02
NSD0425-01□	4 × 2.5	R1/8	8	42	38	17	21	27.9	11.5	5.5	10	12	36	1.4	1	NSD0425-01
NSD0425-02□		R1/4	11	44		16	22	30.1				14	45			NSD0425-02
NSD0640-01□	6 × 4	R1/8	8	42	38	17	21	27.9	11.5	6	12	12	39	3	5.8	NSD0640-01
NSD0640-02□		R1/4	11	44		16	22	30.1				14	48			NSD0640-02
NSD0640-03□		R3/8	12	58	51.7	22.7	29	40				19	113			NSD0640-03
NSD0860-01□	8 × 6	R1/8	8	50	46	21	25	34.8	13.5	7	14	17	80	5	15	NSD0860-01
NSD0860-02□		R1/4	11		44	19							77			NSD0860-02
NSD0860-03□		R3/8	12	58	51.7	22.7	29	40				19	112			NSD0860-03
NSD1075-02□	10 × 7.5	R1/4	11	58	52	23	29	40	16.5	9	17	19	121	6	20	NSD1075-02
NSD1075-03□		R3/8	12		51.7	22.7							120			NSD1075-03
NSD1075-04□		R1/2	15	62	53.8	22.8	31	44.3				23	164			NSD1075-04
NSD1080-02□	10 × 8	R1/4	11	58	52	23	29	40	16.5	9	17	19	120	6.5	23	NSD1080-02
NSD1080-03□		R3/8	12		51.7	22.7							119			NSD1080-03
NSD1080-04□		R1/2	15	62	53.8	22.8	31	44.3				23	162			NSD1080-04
NSD1290-02□	12 × 9	R1/4	11	58	52	23	29	40	16.5	9	19	19	126	7.5	30	NSD1290-02
NSD1290-03□		R3/8	12		51.7	22.7							127			NSD1290-03
NSD1290-04□		R1/2	15	62	53.8	22.8	31	44.3				23	170			NSD1290-04
NSD1210-02□	12 × 10	R1/4	11	58	52	23	29	40	16.5	9	19	19	124	8.5	38	NSD1210-02
NSD1210-03□		R3/8	12		51.7	22.7							125			NSD1210-03
NSD1210-04□		R1/2	15	62	53.8	22.8	31	44.3				23	167			NSD1210-04
NSD1613-03□	16 × 13	R3/8	14	64	57.7	25.7	32	45.3	18	9.5	23	23	168	11.5	64	NSD1613-03
NSD1613-04□		R1/2	17		55.8	23.8							173			NSD1613-04

※. "L" is a reference value for height dimension after tightening thread.

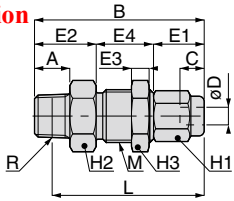
※. □ in Model code / Replaced with "TP" for Seal tape

3D CAD data is available at PISCO website.

CAD data is available at PISCO website.

NSMC Bulkhead Straight

RoHS compliant



Unit : mm

Model code	Tube O.D. x I.D. øD	R	A	M	B	L	E1	E2	E3	E4	C	Hex. H1	Hex. H2	Hex. H3	Weight (g)	Orifice dia. (ø mm)	Effective area (mm²)	CAD file name
NSMC0420-01□	4 × 2	R1/8	8	12 × 1	38.5	34.5	11.5	14	4	13	5.5	10	14	14	28	1.3	0.8	NSMC0420-01
NSMC0420-02□		R1/4	11		41.5	35.5		17							34			NSMC0420-02
NSMC0425-01□	4 × 2.5	R1/8	8	12 × 1	38.5	34.5	11.5	14	4	13	5.5	10	14	14	27	1.4	1	NSMC0425-01
NSMC0425-02□		R1/4	11		41.5	35.5		17							34			NSMC0425-02
NSMC0640-01□	6 × 4	R1/8	8	14 × 1	38.5	34.5	11.5	14	4	13	6	12	17	17	35	3	6	NSMC0640-01
NSMC0640-02□		R1/4	11		41.5	35.5		17							36			NSMC0640-02
NSMC0640-03□		R3/8	12		42.5	36.2		18							43			NSMC0640-03
NSMC0860-01□	8 × 6	R1/8	8	16 × 1	40.5	36.5	13.5	14	4	13	7	14	19	19	49	5	17	NSMC0860-01
NSMC0860-02□		R1/4	11		43.5	37.5		17							48			NSMC0860-02
NSMC0860-03□		R3/8	12		44.5	38.2		18							49			NSMC0860-03
NSMC1075-01□	10 × 7.5	R1/8	8	18 × 1	43.5	39.5	16.5	14	4	13	9	17	22	22	69	6	20	NSMC1075-01
NSMC1075-02□		R1/4	11		46.5	40.5		17							70			NSMC1075-02
NSMC1075-03□		R3/8	12		47.5	41.2		18							71			NSMC1075-03
NSMC1075-04□		R1/2	15		50.5	42.3		21							80			NSMC1075-04
NSMC1080-01□	10 × 8	R1/8	8	18 × 1	43.5	39.5	16.5	14	4	13	9	17	22	22	69	6.5	24	NSMC1080-01
NSMC1080-02□		R1/4	11		46.5	40.5		17							70			NSMC1080-02
NSMC1080-03□		R3/8	12		47.5	41.2		18							71			NSMC1080-03
NSMC1080-04□		R1/2	15		50.5	42.3		21							80			NSMC1080-04
NSMC1290-02□	12 × 9	R1/4	11	20 × 1	47.5	41.5	16.5	17	5	14	9	19	24	24	89	7.5	30	NSMC1290-02
NSMC1290-03□		R3/8	12		48.5	42.2		18										NSMC1290-03
NSMC1290-04□		R1/2	15		51.5	43.3		21							96			NSMC1290-04
NSMC1210-02□	12 × 10	R1/4	11	20 × 1	47.5	41.5	16.5	17	5	14	9	19	24	24	85	8.5	40	NSMC1210-02
NSMC1210-03□		R3/8	12		48.5	42.2		18							88			NSMC1210-03
NSMC1210-04□		R1/2	15		51.5	43.3		21							96			NSMC1210-04
NSMC1613-03□	16 × 13	R3/8	12	24 × 1	50	43.7	18	18	6	14	9.5	23	27	27	114	1.5	78	NSMC1613-03
NSMC1613-04□		R1/2	15		53	44.8		21							121			NSMC1613-04

※. □ in Model code / Replaced with "TP" for Seal tape

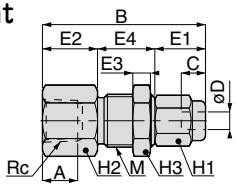
3D CAD data is available at PISCO website.

CAD data is available at PISCO website.

NSMF

Bulkhead Female Straight

RoHS compliant



3D CAD CAD

Unit : mm

Model code	Tube O.D. x I.D. øD	Rc	A	M	B	E1	E2	E3	E4	C	Hex. H1	Hex. H2	Hex. H3	Weight (g)	Orifice dia. (ø mm)	Effective area (mm^2)	CAD file name
NSMF0420-01	4 × 2	Rc1/8	8	12 × 1	37	11.5	12.5	4	13	5.5	10	14	14	28	1.3	0.8	NSMF0420-01
NSMF0420-02		Rc1/4	11		40.5		16					17		35			NSMF0420-02
NSMF0425-01	4 × 2.5	Rc1/8	8	12 × 1	37	11.5	12.5	4	13	5.5	10	14	14	28	1.4	1	NSMF0425-01
NSMF0425-02		Rc1/4	11		40.5		16					17		35			NSMF0425-02
NSMF0640-01	6 × 4	Rc1/8	8	14 × 1	37	11.5	12.5	4	13	6	12	17	17	41	3	6	NSMF0640-01
NSMF0640-02		Rc1/4	11		40.5		16							39			NSMF0640-02
NSMF0640-03		Rc3/8	12		42.5		18					22		56			NSMF0640-03
NSMF0860-01	8 × 6	Rc1/8	8	16 × 1	39	13.5	12.5	4	13	7	14	19	19	57	5	17	NSMF0860-01
NSMF0860-02		Rc1/4	11		41		14.5							56			NSMF0860-02
NSMF0860-03		Rc3/8	12		42.5		16					22		64			NSMF0860-03
NSMF1075-01	10 × 7.5	Rc1/8	8	18 × 1	42	16.5	12.5	4	13	9	17	22	22	84	6	20	NSMF1075-01
NSMF1075-02		Rc1/4	11		44		14.5							82			NSMF1075-02
NSMF1075-03		Rc3/8	12		45.5		16							78			NSMF1075-03
NSMF1075-04		Rc1/2	15		50.5		21					27		108			NSMF1075-04
NSMF1080-01	10 × 8	Rc1/8	8	18 × 1	42	16.5	12.5	4	13	9	17	22	22	84	6.5	23	NSMF1080-01
NSMF1080-02		Rc1/4	11		44		14.5							82			NSMF1080-02
NSMF1080-03		Rc3/8	12		45.5		16							78			NSMF1080-03
NSMF1080-04		Rc1/2	15		50.5		21					27		107			NSMF1080-04
NSMF1290-02	12 × 9	Rc1/4	11	20 × 1	45	16.5	14.5	5	14	9	19	24	24	106	7.5	30	NSMF1290-02
NSMF1290-03		Rc3/8	12		46.5		16							103			NSMF1290-03
NSMF1290-04		Rc1/2	15		51.5		21					27		122			NSMF1290-04
NSMF1210-02	12 × 10	Rc1/4	11	20 × 1	45	16.5	14.5	5	14	9	19	24	24	105	8.5	38	NSMF1210-02
NSMF1210-03		Rc3/8	12		46.5		16							101			NSMF1210-03
NSMF1210-04		Rc1/2	15		51.5		21					27		120			NSMF1210-04
NSMF1613-03	16 × 13	Rc3/8	12	24 × 1	48	18	16	6	14	9.5	23	27	27	137	11.5	78	NSMF1613-03
NSMF1613-04		Rc1/2	15		53		21							141			NSMF1613-04
NSMF1/4-01	6.35 × 4.57	Rc1/8	8	14 × 1	37	11.5	12.5	4	13	6	12	17	17	40	3.5	7.5	NSMF1'4-01
NSMF1/4-02		Rc1/4	11		40.5		16							38			NSMF1'4-02
NSMF1/4-03		Rc3/8	12		42.5		18					22		56			NSMF1'4-03
NSMF3/8-01	9.53 × 6.99	Rc1/8	8	18 × 1	42	16.5	12.5	4	13	9	17	22	22	85	5.5	18	NSMF3'8-01
NSMF3/8-02		Rc1/4	11		44		14.5							83			NSMF3'8-02
NSMF3/8-03		Rc3/8	12		45.5		16							79			NSMF3'8-03
NSMF3/8-04		Rc1/2	15		50.5		21					27		108			NSMF3'8-04
NSMF1/2-02	12.7 × 9.56	Rc1/4	11	20 × 1	45	16.5	14.5	5	14	9	19	24	24	105	8.1	35	NSMF1'2-02
NSMF1/2-03		Rc3/8	12		46.5		16							101			NSMF1'2-03
NSMF1/2-04		Rc1/2	15		51.5		21					27		121			NSMF1'2-04

※1. Equal to inch size 5/32
※2. Equal to inch size 5/16

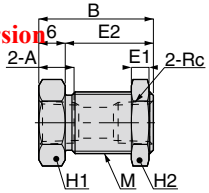
3D CAD 3D CAD data is available at PISCO website.

CAD CAD data is available at PISCO website.

NSMFF Bulkhead Socket

RoHS compliant

3D CAD CAD



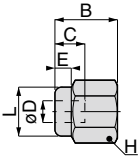
Unit：mm

Model code	Rc	A	M	B	E1	E2	Hex. H1	Hex. H2	Weight (g)	Orifice dia. (ø mm)	CAD file name
NSMFF01	Rc1/8	8	14×1	26	4	20	17	17	24	7	NSMFF01
NSMFF02	Rc1/4	11	18×1	25	4	19	22	22	37	10	NSMFF02
NSMFF03	Rc3/8	12	22×1	30	6	24	27	27	65	13	NSMFF03
NSMFF04	Rc1/2	15	27×1.5	35	6	29	32	32	95	16	NSMFF04

NSN Cap Nut Only

RoHS compliant

CAD



Unit：mm

Model code	Tube O.D. x I.D. øD	B	L	E	C	Hex. H	Weight (g)	CAD file name
NSN4	4×2, 4×2.5	11.5	9	3	5.5	10	4	TFCF-013
NSN6	6×4	11.5	11	3	6	12	5.2	
NSN8	8×6	13.5	13	3	7	14	7.8	
NSN10	10×7.5, 10×8	16.5	16	4	9	17	16	
NSN12	12×9, 12×10	16.5	18	4	9	19	18	
NSN16	16×13	18	21	4	9.5	23	24	–
NSN1/4	6.35×4.57	11.5	11	3	6	12	5.1	
NSN3/8	9.53×6.99	16.5	16	4	9	17	15.5	
NSN1/2	12.7×9.56	16.5	18	4	9	19	17.2	

3D CAD 3D CAD data is available at PISCO website.

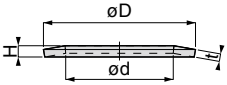
CAD CAD data is available at PISCO website.

Disc spring washer for Bulkhead type

NSP

RoHS compliant

CAD



Unit：mm

Model code	ød	øD	H	t	Weight (g)	CAD file name
NSP12	12	17	1.5	1	1	TFCF-014
NSP14	14	20	1.5	1	1.2	
NSP16	16	22	1.5	1	1.4	
NSP18	18	25	1.5	1	1.8	
NSP20	20	28	1.5	1	2.4	
NSP22	22	30	1.5	1	2.5	
NSP24	24	30	1.5	1	2	–
NSP27	27	36	1.5	1	3	TFCF-014

3D CAD 3D CAD data is available at PISCO website.

CAD CAD data is available at PISCO website.

⚠ SAFETY Instructions

This safety instructions aim to prevent personal injury and damage to properties by requiring proper use of PISCO products.

Be certain to follow ISO 4414 and JIS B 8370

ISO 4414 : Pneumatic fluid power···Recomendations for the application of equipment to transmission and control systems.

JIS B 8370 : General rules and safety requirements for systems and their components.

This safety instructions is classified into “Danger”, “Warning” and “Caution” depending on the degree of danger or damages caused by improper use of PISCO products.

⚠ Danger	Hazardous conditions. It can cause death or serious personal injury.
⚠ Warning	Hazardous conditions depending on usages. Improper use of PISCO products can cause death or serious personal injury.
⚠ Caution	Hazardous conditions depending on usages. Improper use of PISCO products can cause personal injury or damages to properties.

⚠ Warning

1. Selection of pneumatic products
   ① A user who is a pneumatic system designer or has sufficient experience and technical expertise should select PISCO products.
   ② Due to wide variety of operating conditions and applications for PISCO products, carry out the analysis and evaluation on PISCO products. The pneumatic system designer is solely responsible for assuring that the user's requirements are met and that the application presents no health or safety hazards. All designers are required to fully understand the specifications of PISCO products and constitute all systems based on the latest catalog or information, considering any malfunctions.

2. Handle the pneumatic equipment with enough knowledge and experience
   ① Improper use of compressed air is dangerous. Assembly, operation and maintenance of machines using pneumatic equipment should be conducted by a person with enough knowledge and experience.

3. Do not operate machine / equipment or remove pneumatic equipment until safety is confirmed.
   ① Make sure that preventive measures against falling work-pieces or sudden movements of machine are completed before inspection or maintenance of these machine.
   ② Make sure the above preventive measures are completed. A compressed air supply and the power supply to the machine must be off, and also the compressed air in the systems must be exhausted.
   ③ Restart the machines with care after ensuring to take all preventive measures against sudden movements.

Disclaimer

1. PISCO does not take any responsibility for any incidental or indirect loss, such as production line stop, interruption of business, loss of benefits, personal injury, etc., caused by any failure on use or application of PISCO products.

2. PISCO does not take any responsibility for any loss caused by natural disasters, fires not related to PISCO products, acts by third parties, and intentional or accidental damages of PISCO products due to incorrect usage.

3. PISCO does not take any responsibility for any loss caused by improper usage of PISCO products such as exceeding the specification limit or not following the usage the published instructions and catalog allow.

4. PISCO does not take any responsibility for any loss caused by remodeling of PISCO products, or by combinational use with non-PISCO products and other software systems.

5. The damages caused by the defect of Pisco products shall be covered but limited to the full amount of the PISCO products paid by the customer.

⚠ SAFETY INSTRUCTION MANUAL

PISCO products are designed and manufactured for use in general industrial machines. Be sure to read and follow the instructions below.

⚠ Danger

1. Do not use PISCO products for the following applications.
   ① Equipment used for maintaining / handling human life and body.
   ② Equipment used for moving / transporting human.
   ③ Equipment specifically used for safety purposes.

⚠ Warning

1. Do not use PISCO products under the following conditions.
   ① Beyond the specifications or conditions stated in the catalog, or the instructions.
   ② Under the direct sunlight or outdoors.
   ③ Excessive vibrations and impacts.
   ④ Exposure / adhere to corrosive gas, inflammable gas, chemicals, seawater, water and vapor. *
   * Some products can be used under the condition above(④), refer to the details of specification and condition of each product.
2. Do not disassemble or modify PISCO products, which affect the performance, function, and basic structure of the product.
3. Turn off the power supply, stop the air supply to PISCO products, and make sure there is no residual air pressure in the pipes before maintenance and inspection.
4. Do not touch the release-ring of push-in fitting when there is a working pressure. The lock may be released by the physical contact, and tube may fly out or slip out.
5. Frequent switchover of compressed air may generate heat, and there is a risk of causing burn injury.
6. Avoid any load on PISCO products, such as a tensile strength, twisting and bending. Otherwise, there is a risk of causing damage to the products.
7. As for applications where threads or tubes swing / rotate, use Rotary Joints, High Rotary Joints or Multi-Circuit Rotary Block only. The other PISCO products can be damaged in these applications.
8. Use only Die Temperature Control Fitting Series, Tube Fitting Stainless SUS316 Series, Tube Fitting Stainless SUS316 Compression Fitting Series or Tube Fitting Brass Series under the condition of over 60℃ (140° F) water or thermal oil. Other PISCO products can be damaged by heat and hydrolysis under the condition above.
9. As for the condition required to dissipate static electricity or provide an antistatic performance, use EG series fitting and antistatic products only, and do not use other PISCO products. There is a risk that static electricity can cause system defects or failures.
10. Use only Fittings with a characteristic of spatter-proof such as Anti-spatter or Brass series in a place where flame and weld spatter is produced. There is a risk of causing fire by sparks.
11. Turn off the power supply to PISCO products, and make sure there is no residual air pressure in the pipes and equipment before maintenance. Follow the instructions below in order to ensure safety.
    ① Make sure the safety of all systems related to PISCO products before maintenance.
    ② Restart of operation after maintenance shall be proceeded with care after ensuring safety of the system by preventive measures against unexpected movements of machines and devices where pneumatic equipment is used.
    ③ Keep enough space for maintenance when designing a circuit.
12. Take safety measures such as providing a protection cover if there is a risk of causing damages or fires on machine / facilities by a fluid leakage.

⚠ Caution

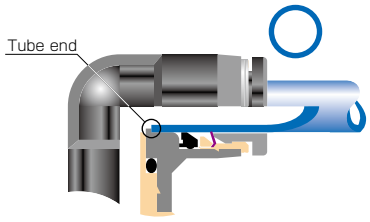
1. Remove dusts or drain before piping. They may get into the peripheral parts and facilities and cause malfunction.
2. When inserting an ultra-soft tube into push-in fitting, make sure to place an Insert Ring into the tube edge. There is a risk of causing the escape of tube and a fluid leakage without using an Insert Ring.
3. The product incorporating NBR as seal rubber material has a risk of malfunction caused by ozone crack. Ozone exists in high concentrations in static elimination air, clean-room, and near the high-voltage motors, etc. As a countermeasure, material change from NBR to HNBR or FKM is necessary. Consult with PISCO for more information.
4. Special option "Oil-free" products may cause a very small amount of a fluid leakage. When a fluid medium is liquid or the products are required to be used in harsh environments, contact us for further information.
5. In case of using non-PISCO brand tubes, make sure the tolerance of the outer tube diameter is within the limits of Table 1.

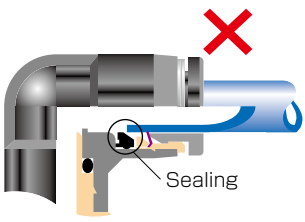
● Table 1. Tube O.D. Tolerance

mm size	Nylon tube	Polyurethane tube
ø1.8mm	—	±0.05mm
ø3mm	—	±0.15mm
ø4mm	±0.1mm	±0.15mm
ø6mm	±0.1mm	±0.15mm
ø8mm	±0.1mm	±0.15mm
ø10mm	±0.1mm	±0.15mm
ø12mm	±0.1mm	±0.15mm
ø16mm	±0.1mm	±0.15mm

inch size	Nylon tube	Polyurethane tube
ø1/8	±0.1mm	±0.15mm
ø5/32	±0.1mm	±0.15mm
ø3/16	±0.1mm	±0.15mm
ø1/4	±0.1mm	±0.15mm
ø5/16	±0.1mm	±0.15mm
ø3/8	±0.1mm	±0.15mm
ø1/2	±0.1mm	±0.15mm
ø5/8	±0.1mm	±0.15mm

6. Instructions for Tube Insertion
   ① Make sure that the cut end surface of the tube is at right angle without a scratch on the surface and deformations.
   ② When inserting a tube, the tube needs to be inserted fully into the push-in fitting until the tubing edge touches the tube end of the fitting as shown in the figure below. Otherwise, there is a risk of leakage.





Tube is not fully inserted up to tube end.

   ③ After inserting the tube, make sure it is inserted properly and not to be disconnected by pulling it moderately.
   ※. When inserting tubes, Lock-claws may be hardly visible in the hole, observed from the front face of the release-ring. But it does not mean the tube will surely escape. Major causes of the tube escape are the followings;
   ①Shear drop of the lock-claws edge
   ②The problem of tube diameter (usually small)
   Therefore, follow the above instructions from ① to ③, even lock-claws is hardly visible.

7. Instructions for Tube Disconnection
   ① Make sure there is no air pressure inside of the tube, before disconnecting it.
   ② Push the release-ring of the push-in fitting evenly and deeply enough to pull out the tube toward oneself. By insufficient pushing of the release-ring, the tube may not be pulled out or damaged by scratch, and tube shavings may remain inside of the fitting, which may cause the leakage later.

8. Instructions for Installing a fitting
   ① When installing a fitting, use proper tools to tighten a hexagonal-column or an inner hexagonal socket. When inserting a hex key into the inner hexagonal socket of the fitting, be careful so that the tool does not touch lock-claws. The deformation of lock-claws may result in a poor performance of systems or an escape of the tube.
   ② Refer to Table 2 which shows the recommended tightening torque. Do not exceed these limits to tighten a thread. Excessive tightening may break the thread part or deform the gasket and cause a fluid leakage. Tightening thread with tightening torque lower than these limits may cause a loosened thread or a fluid leakage.
   ③ Adjust the tube direction while tightening thread within these limits, since some PISCO products are not rotatable after the installation.

● Table 2: Recommended tightening torque / Sealock color / Gasket materials

Thread type	Thread size	Tightening torque	Sealock color	Gasket materials
Metric thread	M3 × 0.5	0.7N·m	—	SUS304 NBR
	M5 × 0.8	1.0 ~ 1.5N·m		
	M6 × 1	2 ~ 2.7N·m		
	M3 × 0.5	0.5 ~ 0.6N·m		POM
	M5 × 0.8	1 ~ 1.5N·m		
	M6 × 0.75	0.8 ~ 1N·m		
	M8 × 0.75	1 ~ 2N·m		
Taper pipe thread	R1/8	7 ~ 9N·m	White	—
	R1/4	12 ~ 14N·m		
	R3/8	22 ~ 24N·m		
	R1/2	28 ~ 30N·m		
Unified thread	No.10-32UNF	1.0 ~ 1.5N·m	—	SUS304、NBR
National pipe thread taper	1/16-27NPT	7 ~ 9N·m	White	—
	1/8-27NPT	7 ~ 9N·m		
	1/4-18NPT	12 ~ 14N·m		
	3/8-18NPT	22 ~ 24N·m		
	1/2-14NPT	28 ~ 30N·m		

※ These values may differ for some products. Refer to each specification as well.

9. Instructions for removing a fitting
   ① When removing a fitting, use proper tools to loosen a hexagonal-column or an inner hex bolt.
   ② Remove the sealant stuck on the mating equipment. The remained sealant may get into the peripheral equipment and cause malfunctions.
10. Arrange piping avoiding any load on fittings and tubes such as twist, tensile, moment load, shaking and physical impact. These may cause damages to fittings, tube deformations, bursting and the escape of tubes.

⚠ Common Safety Instructions for Fittings

Before selecting or using PISCO products, read the following instructions. Read the detailed instructions for individual series as well as the instructions below.

⚠ Warning

1. Do not use fittings with fluid medium other than air or water. (Water can be used with some series.) Contact us for using other kind of fluid medium except air and water.

2. Do not use fittings except Anti-spatter, Brass and Brass Compression Fitting series in a place where the flame and weld spatter is produced. There is a risk of causing fire by sparks.

3. As for applications where threads or tubes swing / rotate, use Rotary Joints, High Rotary Joints or Multi-Circuit Rotary Block only. The other PISCO products can be damaged in these applications.

4. Use only Die Temperature Control Fitting Series, Tube Fitting Stainless SUS316 Series, Tube Fitting Stainless SUS316 Compression Fitting Series or Tube Fitting Brass Series under the condition of over 60℃ (140° F) water or thermal oil. Other PISCO products can be damaged by heat and hydrolysis under the condition above.

5. As for the condition required to dissipate static electricity or provide an antistatic performance, use EG Series fitting and antistatic products only, and do not use other PISCO products. There is a risk that static electricity can cause system defects or failures.

6. Avoid any load on PISCO products, such as a tensile strength, twisting and bending. Otherwise, there is a risk of causing damage to the products.

⚠ Caution

1. In case of using non-PISCO brand tubes, make sure the tolerance of the outer tube diameter is within the following limits of Table 1.

● Table 1. Tube O.D. Tolerance

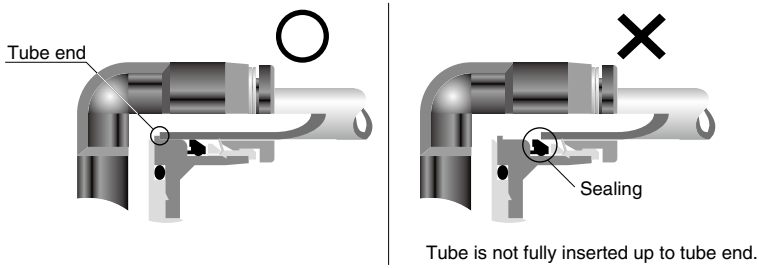
mm size	Nylon tube	Urethane tube
ø1.8mm	—	±0.05mm
ø3mm	—	±0.15mm
ø4mm	±0.1mm	±0.15mm
ø6mm	±0.1mm	±0.15mm
ø8mm	±0.1mm	±0.15mm
ø10mm	±0.1mm	±0.15mm
ø12mm	±0.1mm	±0.15mm
ø16mm	±0.1mm	±0.15mm

inch size	Nylon tube	Urethane tube
ø1/8	±0.1mm	±0.15mm
ø5/32	±0.1mm	±0.15mm
ø3/16	±0.1mm	±0.15mm
ø1/4	±0.1mm	±0.15mm
ø5/16	±0.1mm	±0.15mm
ø3/8	±0.1mm	±0.15mm
ø1/2	±0.1mm	±0.15mm
ø5/8	±0.1mm	±0.15mm

2. Instructions for Tube Insertion

① Make sure that the cut end surface of the tube is at right angle without a scratch on the tube surface and deformations.

② When inserting a tube, the tube needs to be inserted fully into the push-in fitting until the tubing edge touches the tube end of the fitting as shown in the figure below. Otherwise, there is a risk of leakage.



Tube is not fully inserted up to tube end.

③ After inserting the tube, make sure it is inserted properly and not to be disconnected by pulling it moderately.

3. Instructions for Tube Disconnection

① Make sure there is no air pressure inside of the tube, before disconnecting it.

② Push the release-ring of the push-in fitting evenly and deeply enough to pull out the tube toward oneself. By insufficient pushing of the release-ring, the tube may not be pulled out or damaged by scratch, and tube shavings may remain inside of the fitting, which may cause the leakage later.

4. Instructions for Installing a fitting

① When installing a fitting, use proper tools to tighten a hexagonal-column or an inner hexagonal socket. When inserting a hex key into the inner hexagonal socket of the fitting, be careful so that the tool does not touch lock-claws. The deformation of lock-claws may result in a poor performance of systems or an escape of the tube.

② Refer to Table 2 which shows the recommended tightening torque. Do not exceed these limits to tighten a thread. Excessive tightening may break the thread part or deform the gasket and cause a fluid leakage. Tightening thread with tightening torque lower than these limits may cause a loosened thread or a fluid leakage.

③ Adjust the tube direction while tightening thread within these limits, since some PISCO products are not rotatable the installation.

● Table 2: Recommended tightening torque / Sealock color / Gasket materials

Thread type	Thread size	Tightening torque	Sealock color	Gasket materials
Metric thread	M3 × 0.5	0.7N·m	—	SUS304 NBR
	M5 × 0.8	1.0 ~ 1.5N·m		
	M6 × 1	2 ~ 2.7N·m		
	M3 × 0.5	0.5 ~0.6N·m		POM
	M5 × 0.8	1 ~1.5N·m		
	M6 × 0.75	0.8 ~ 1N·m		
	M8 × 0.75	1 ~ 2N·m		
Taper pipe thread	R1/8	7 ~ 9N·m	White	—
	R1/4	12 ~ 14N·m		
	R3/8	22 ~ 24N·m		
	R1/2	28 ~ 30N·m		
Unified thread	No.10-32UNF	1.0 ~ 1.5N·m	—	SUS304、NBR
National pipe thread taper	1/16-28NPT	7 ~ 9N·m	White	—
	1/8-27NPT	7 ~ 9N·m		
	1/4-18NPT	12 ~ 14N·m		
	3/8-18NPT	22 ~ 24N·m		
	1/2-14NPT	28 ~ 30N·m		

※.These values may differ for some products. Refer to each specification as well

5.Instructions for removng a fitting

① When removing a fitting, use proper tools to loosen a hexagonal-column or an inner hexagonal socket.

② Remove the sealant stuck on the mating equipment. The remained sealant may get into the peripheral equipment and cause malfunctions.

6.Arrange piping avoiding any load on fittings and tubes such as twist, tensile, moment load, shaking and physical impact. These may cause damages to fittings, tube deformations, bursting and the escape of tubes.