

UP.F.U.NU.KX.SR2

Tube

O.D.1.8/3.2/4/6/8/10/12/15mm

● Wide tube variation

A great variety of tubes are available according to the purpose and applications. Furthermore, they are highly reliable, meeting needs of space saving and complex piping, etc.

Antistatic tube	Soft nylon tube	New urethane tube	Urethane tube	Coiling tube
 <p>O.D. x I.D. (mm)</p> <p>3.2 x 1.8</p> <p>4 x 2.5</p> <p>6 x 4</p> <p>8 x 5</p> <p>10 x 6.5</p> <p>12 x 8</p>	<p>Manufacturer of colors other than white: Aoi Co., Ltd.</p>  <p>O.D. x I.D. (mm)</p> <p>3.2 x 2.0</p> <p>3.2 x 2.4</p> <p>4 x 2.5</p> <p>6 x 4</p> <p>8 x 6</p> <p>10 x 7.5</p> <p>12 x 9</p> <p>15 x 11.5</p> <p>16 x 12</p>	 <p>O.D. x I.D. (mm)</p> <p>4 x 2.5</p> <p>6 x 4.5</p> <p>8 x 6</p> <p>10 x 7.5</p> <p>12 x 9</p>	<p>Aoi Co., Ltd.</p>  <p>O.D. x I.D. (mm)</p> <p>3.2 x 1.8</p> <p>4 x 2</p> <p>6 x 4</p> <p>8 x 5</p> <p>10 x 6.5</p> <p>12 x 8</p>	<p>Aoi Co., Ltd.</p>  <p>O.D. x I.D. (mm)</p> <p>6 x 4</p> <p>8 x 6</p> <p>10 x 7.5</p> <p>12 x 9.2</p>
Flame-resistant tube	Tube cutter			
<p>Aoi Co., Ltd.</p>  <p>O.D. x I.D. (mm)</p> <p>4 x 2.3</p> <p>6 x 3.8</p> <p>8 x 5.5</p> <p>10 x 7</p> <p>12 x 8.5</p>	<p>Aoi Co., Ltd.</p> 			

Tube cutter

Aoi Co., Ltd.
AZ-1200

Features

- (1) Sharp cut with a right cut
Prevents air trouble.
- (2) Extremely lightweight and compact.
- (3) Easy blade replacement.

Applicable material

- Nylon tube
- Urethane tube
- PTFE tube
- Other plastic tubes

Sharp edge





Pneumatic, Vacuum and Auxiliary Components
Catalog No. CB-024SA

Tube

F.U.NU.KX.SR2 Series

Wide bore size available according to purposes and applications.
Highly reliable piping tubes.

● O.D.: 3.2/4/6/8/10/12/15/16 mm

P4 compliant as standard

Soft nylon tube

Manufacturer of colors other than white: Aoi Co., Ltd.

The soft nylon tube is very flexible compared to the conventional nylon tubes, and optimal for piping in small or complicated spaces. The tube also has sufficient characteristics such as cold resistance, weather resistance, oil resistance and chemical resistance, etc.

How to order

FH-3224 - W

Size of soft nylon tube
ø3.2 x ø2.4



For miniature fitting.

A Tube color	
Blank	Black
W	White

Specifications

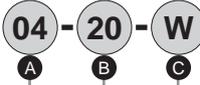
This table indicates the value at 20°C.

Item	FH-3224	F-1532	F-1504	F-1506	F-1508	F-1510	F-1512	F-1515	F-1516	
Working fluid	Compressed air									
O.D. x I.D. mm x mm	3.2 x 2.4	3.2 x 2.0	4 x 2.5	6 x 4	8 x 6	10 x 7.5	12 x 9	15 x 11.5	16 x 12	
Ambient temperature °C	-10 to 60 (no freezing)									
Burst pressure MPa	5.39		4.9		3.9		3.43		2.94	3.3
Max. working pressure MPa	1.76		1.67		1.27		1.18		1	1.1
Durometer hardness	HDD 63			HDD 52						
Min. bending radius (JIS B 8381) mm	13	4.5	5	8	15	20	26	43	46	
Min. installation radius mm	21	7	10	20	30	40	55	80	90	
Tube color	White/black		White (20 m only)/black/red/ Blue/yellow/green/orange			White/black		Black		
Standard length per roll m	20		20/100			20/100 (only black)		20/100		

* Outer diameter dimension tolerance may vary within ±0.1 mm.

F-15 04 - 20 - W

Soft nylon Tube

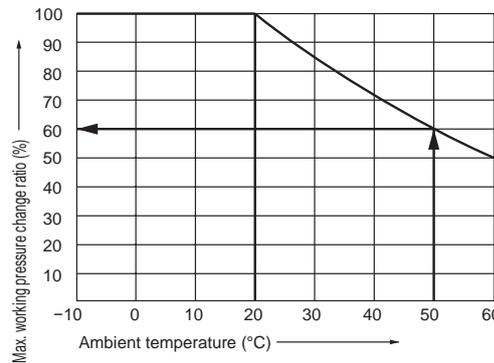


A Tube size (O.D.)		B Length per roll		C Tube color	
32	ø3.2 10 ø10	20	20m	Blank	Black (Standard)
04	ø4 12 ø12	100	100m	W	White (Standard)
06	ø6 15 ø15			R	Red
08	ø8 16 ø16			BU	Blue
				Y	Yellow
				G	Green
				O	Orange

Note: When tube color is white "W", length per roll 100m is not available.

Note: Use the FH-3224 for miniature fitting. F-1532 cannot be used.

Relation of ambient temperature and max. working pressure



(Example) Tube F-1504 (ø4xø2.5) At an ambient temperature of 50°C, the max. working pressure is 60% of that at 20°C.

$$1.76 \times \frac{60}{100} = 1.06 \text{ (MPa)}$$

New urethane tube



P4 Series

Due to the adoption of a new manufacturing process, larger inner diameter and increased strength are realized simultaneously with the same outer diameter. This piping tube is also used for larger flow rates. Also economical.

Common specifications

Item	Description
Working fluid	Air
Ambient temperature °C	0 to 60
Burst pressure MPa	4 (at 20°C)
Max. Working pressure MPa	1.0 (at 20°C)
Working vacuum pressure kPa	-100

Specifications

Item	NU-04	NU-06	NU-08	NU-10	NU-12
O.D. x I.D. mm x mm	4 x 2.5	6 x 4.5	8 x 6	10 x 7.5	12 x 9
Burst pressure MPa	4 to 2.4				
Ambient temperature °C	0 to 60 (no freezing)				
Durometer hardness (JIS K7215)	HDD 64				
Min. bending radius (JIS B 8381) mm	8	16	24	30	36
Min. installation radius mm	12	26	36	42	52
Outer diameter accuracy mm	0			+0.1 -0.15	
Weight g/m	10	15	28	42	62
Tube color	Black/white				
Standard length per roll m	20/100 (only black)				

Note: Refer to "Pneumatic, Vacuum and Auxiliary Components" (catalog No. CB-024SA) for relation of the tube length to the effective cross-sectional area.

How to order

NU - 04 - 20 - W

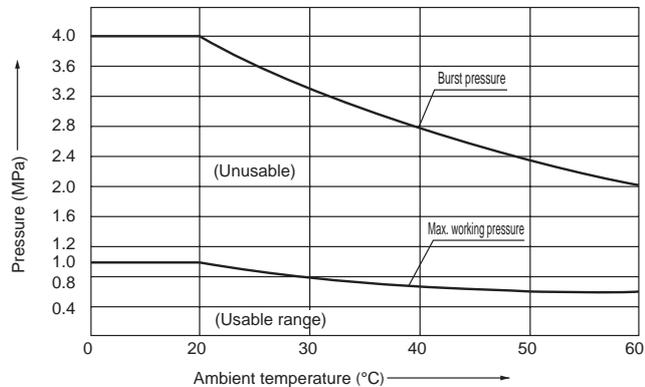
A	Tube size (O.D.)	B	Length per roll	C	Tube color
04	ø4	20	20m	Blank	Black (standard)
06	ø6	100	100m	w	White (standard)
08	ø8	Note: "W" Length per roll 100 m is not available for white.			
10	ø10				
12	ø12				

Clean-room specifications (Catalog No. CB-033SA)

- Anti-dust generation structure for use in cleanrooms

NU- P80

Relation of ambient temperature and pressure (use/burst)



Soft urethane tube

Aoi Co., Ltd.

How to order

U-92 - 06 - 20 - N

A	Compatible tube O.D. size	B	Length per roll	C	Tube color
04	ø4	20	20m	Blank	Black
06	ø6	100	100m	N	Transparent
08	ø8				
10	ø10				
12	ø12				
				PW	Pure white
				R	Red
				BU	Blue
				Y	Yellow
				G	Green
				O	Orange

Clean-room specifications

(Catalog No. CB-033SA)

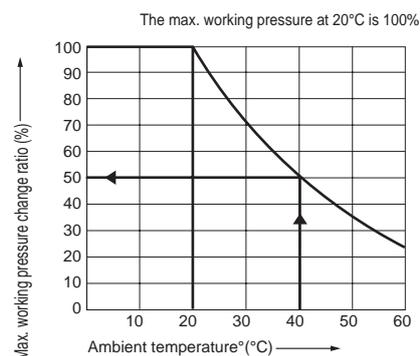
U-92- P80

Specifications

This table indicates the value at 20°C.

Item	U-9204	U-9206	U-9208	U-9210	U-9212
Working fluid	Compressed air				
O.D. x I.D. mm x mm	4 x 2	6 x 3.7	8 x 5	10 x 6.5	12 x 8
Burst pressure MPa	4.1	2.9	2.8	2.6	2.6
Max. working pressure MPa	1.3	0.9	0.9	0.8	0.8
Durometer hardness JIS K 7215	HDA 92				
Min. bending radius mm	4	10	11	13	16.5
Min. mounting radius mm	8	17	25	30	36
Tube color	Black/transparent/red/blue/yellow/green/orange/pure white				
Standard length per roll m	20, 100				

Relation of ambient temperature and max. working pressure



When the temperature rises, the constant pressure gradually drops. Special consideration must be given for the ambient temperature.

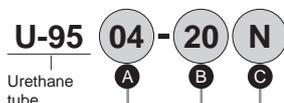
(Example) In U-9208, the max. working pressure at an ambient temperature of 40°C is 50% of that at 20°C.

$$0.9 \times \frac{50}{100} \approx 0.45 \text{ (MPa)}$$

Pneumatic cylinders
 Pneumatic actuator
 Hand/Chuck
 Produced
 Cylinder
 Switch
 Vacuum components
 Pneumatic valves
 Clean air components
 controller
 Pneumatic auxiliary components
 Fitting
 Auxiliary valve
 Silencer
 Tube
 Gas generator
 Fluid control components
 Electric actuator
 Motor
 Motorless specifications

Since urethane tube has high mechanical strength, the tube strongly endures external force, and also has flexibility. This is widely used in general pneumatic lines, etc.

How to order



A Compatible tube O.D. size		B Length per roll		C Tube color	
32	ø3.2	20	20m	Blank	Black
04	ø4	100	100m	N	Transparent
06	ø6				
08	ø8				
10	ø10				
12	ø12				

Note: Indicate tube color in the remarks on the order slip.

Clean-room specifications (Catalog No. CB-033SA)

U-95

P80

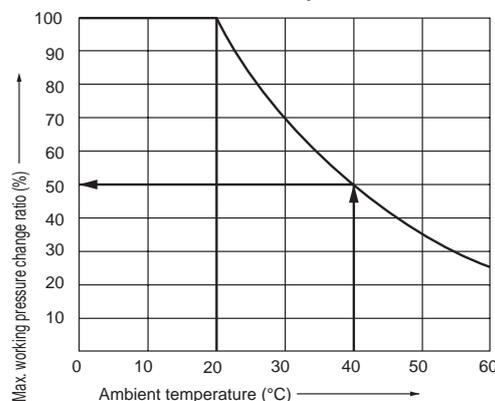
Specifications

This table indicates the value at 20°C.

Item	U-9532	U-9504	U-9506	U-9508	U-9510	U-9512
Working fluid	Compressed air					
O.D. x I.D. mm x mm	3.2 x 1.8	4 x 2	6 x 4	8 x 5	10 x 6.5	12 x 8
Ambient temperature °C	0 to 60 (no freezing)					
Burst pressure MPa	6.1	5.2	3.2	3.6	3.4	3.2
Max. working pressure MPa	1.5	1.7	1.0	1.2	1.1	1.0
Durometer hardness JIS K 7215	HDA 97					
Min. bending radius (JIS B 8381) mm	4	5	13	14	16	20
Min. installation radius mm	7	10	20	30	40	50
Tube color	Transparent/black					
Standard length per roll m	20	20, 100		20		

* Tolerance of outer diameter is manufactured within $^{+0.1}_{-0.15}$ mm for U-9506 or less, and within $^{+0.1}_{-0.2}$ mm for U-9508 and over.

Relation of ambient temperature and max. working pressure



When the temperature rises, the constant pressure gradually drops. Special consideration must be given for the ambient temperature.

(Example) In U-9506, the max. working pressure at an ambient temperature of 40°C is 50% of that at 20°C.

$$1.0 \times \frac{50}{100} \approx 0.5(\text{MPa})$$

Coiling tube

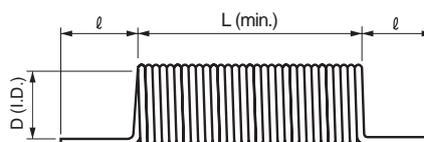
A coiling tube is a coil-like manufactured extensible tube. Unlike conventional products, fittings are easily installed and the coil contracts and expands very smoothly due to the straight section provided with the specified length in the direction of expansion and contraction. Durability of coil end is also excellent.

Specifications

Item	KX-1206	KX-1208	KX-1210	KX-1212
O.D. x Bore size mm x mm	6 x 4	8 x 6	10 x 7.5	12 x 9.2
Ambient temperature °C	-10 to 60 (no freezing)			
Working extension m	2.5			
D mm	50	70		90
L mm	250	240	290	275
ℓ	100			
Tube color	Orange			

* Tolerance of outer diameter is manufactured within $^{+0.07}_{-0.1}$ mm.

* Tube is made of hard nylon.



How to order



A O.D. size	
06	ø6
08	ø8
10	ø10
12	ø12

Flame-resistant tube

Aoi Co., Ltd.

P4
Series

Single-core flame-resistant tube using flame-resistant materials. Even if welding sparks, etc., come into contact, the tube will not continue to burn.

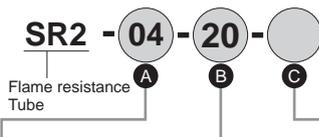
(UL standard 94V-0 or equivalent...self-extinguishing)

Specifications

Item	SR2-4x2	SR2-6x3.8	SR2-8x5.5	SR2-10x7	SR2-12x8.5
O.D.x Bore size mm x mm	4 x 2	6 x 3.8	8 x 5.5	10 x 7	12 x 8.5
Ambient temperature °C	0 to 60 (no freezing)				
Burst pressure MPa	4.8	4.3	3.4	3.3	3.3
Max. working pressure MPa	1.6	1.4	1.1	1.1	1.1
Min. bending radius mm	8	14	24	32	35
Tube color	Black/red/blue/green				
Standard length per roll m	20, 100				

This table indicates the value at 23°C.

How to order



A Compatible tube O.D. size		B Length per roll		C Tube color	
4 x 2	ø4	20	20m	Blank	Black
6 x 3.8	ø6	100	100m	R	Red
8 x 5.5	ø8			BU	Blue
10 x 7	ø10			G	Green
12 x 8.5	ø12				

Note: Indicate tube color in the remarks on the order slip.

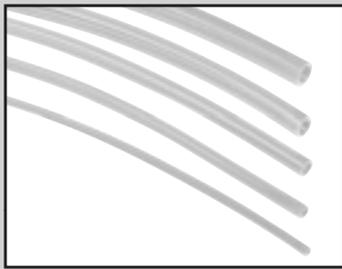
Max. working pressure change ratio by working and ambient temperature

Working and ambient temperature	23°C or less	30°C	40°C	60°C	80°C	100°C	120°C
Change ratio	100%	80%	70%	55%	35%	20%	10%

Ex.) Max. working pressure at 60°C for SR2-8 x 5.5

1.1 MPa (max. working pressure at conditions below 23°C) x 55% (change ratio for 60°C) = 0.6 MPa

Pneumatic actuator
Pneumatic cylinders
Hand/Chuck
Related products
Cylinder Switch
Vacuum components
Pneumatic valves
Clean air components
Pneumatic auxiliary components
Speed controller
Fitting
Auxiliary valve
Silencer
Tube
Gas generator
Fluid control components
Electric actuator
Motor specification
Motorless specifications



Fluoro resin tube ET Series

● O.D.: 4 mm, 6 mm, 8 mm, 10mm, 12mm

P4 compliant as standard



Features

- Fluorine resin (FEP) tube with excellent cost performance
- 8 size variations are set (O.D.: $\varnothing 4$ to $\varnothing 12$)

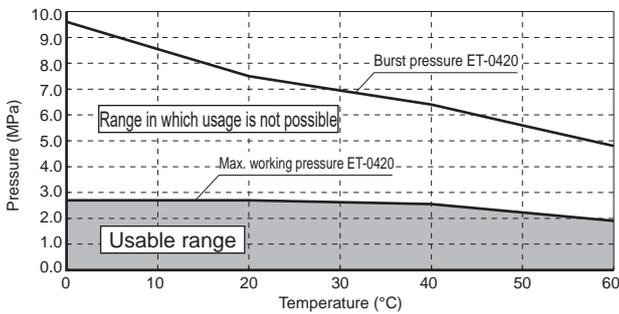
Specifications

Item	ET-0420	ET-0425	ET-0640	ET-0860	ET-1075	ET-1080	ET-1290	ET-1210
O.D. x I.D. mm x 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
Working fluid	Air							
Max. working pressure (*1) MPa	2.7	1.6	1.6	1	1	0.7	1	0.7
Burst pressure (*1) MPa	7.5	4.6	4.6	3.3	3.3	2.1	3.3	2.1
Operating vacuum pressure kPa	-100							
Operating ambient temperature range °C	-20 to 80 (no freezing)							
Min. bending radius (JIS B 8381) mm	7	14	14	27	40	50	47	67
Min. installation radius mm	10	20	30	55	60	100	80	150
Material	Fluorine resin (FEP)							
Compatible tube fitting	Fitting ZSP, ZSF Series							

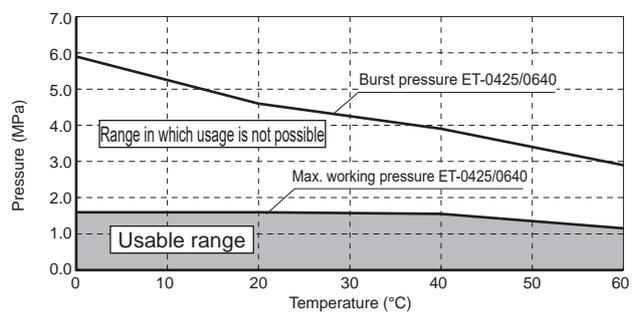
*1: The max. working pressure and burst pressure are the values at 20°C. When using in other temperature ranges, refer to the graph of "Relation of operating ambient temperature and pressure (use/burst)".

Relation of operating ambient temperature and pressure (use burst)

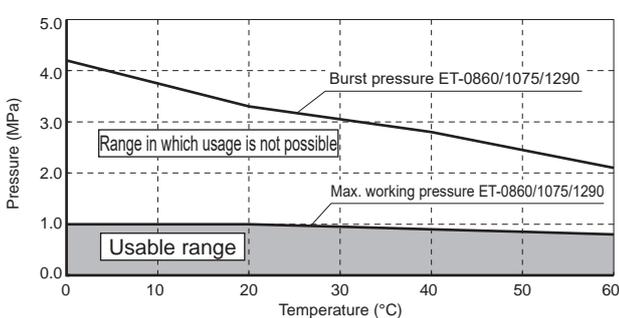
● ET-0420-*



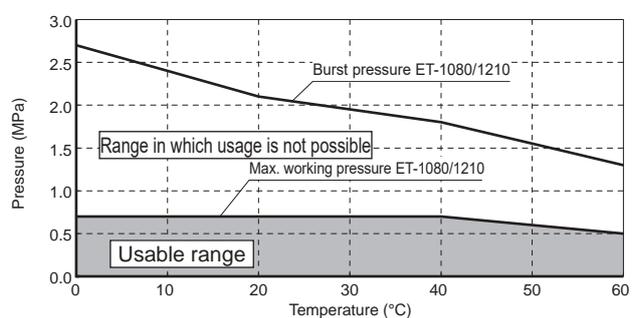
● ET-0425/0640-*



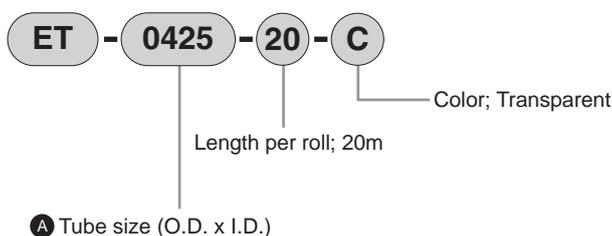
● ET-0860/1075/1290-*



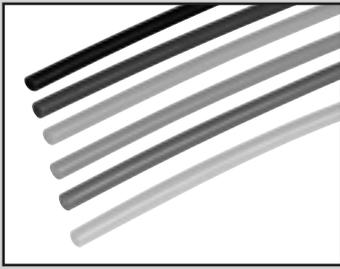
● ET-1080/1210-*



How to order



Code	Description
A Tube size (O.D. x I.D.)	
0420	$\varnothing 4 \times \varnothing 2$
0425	$\varnothing 4 \times \varnothing 2.5$
0640	$\varnothing 6 \times \varnothing 4$
0860	$\varnothing 8 \times \varnothing 6$
1075	$\varnothing 10 \times \varnothing 7.5$
1080	$\varnothing 10 \times \varnothing 8$
1290	$\varnothing 12 \times \varnothing 9$
1210	$\varnothing 12$ to $\varnothing 10$



Polyolefin tube

PFH/S Series

● O.D.: 4 mm, 6 mm, 8 mm, 10mm, 12mm

P4 compliant as standard



P4 Series

Pneumatic cylinders
Hand/Chuck
Related products
Cylinder Switch

Pneumatic actuator

Vacuum components
Pneumatic valves

Clean air components controller
Speed Fitting
Auxiliary valve
Silencer

Pneumatic auxiliary components

Tube

Gas generator
Fluid control components

Motor specification
Motorless specifications

Electric actuator

Features

- Uses polyolefin-based resin suitable for clean environments
- O.D.: $\varnothing 4$, $\varnothing 6$, $\varnothing 8$, $\varnothing 10$, $\varnothing 12$
- 2 types of hardness, standard and soft, can be selected
- 6 tube colors as standard.

Specifications

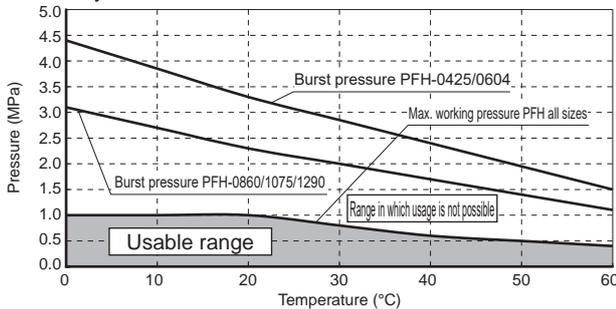
Item	PFH-0425	PFH-0640	PFH-0860	PFH-1075	PFH-1290	PFS-0425	PFS-0640	PFS-0850	PFS-1065	PFS-1280	
O.D. x I.D.	mm x mm	4 x 2.5	6 x 4	8 x 6	10 x 7.5	12 x 9	4 x 2.5	6 x 4	8 x 5	10 x 6.5	12 x 8
Working fluid	Air(*1)										
Max. working pressure (*2)	1.0					0.8					
Burst pressure (*2)	3.3		2.3			2.1					
Operating vacuum pressure	-100										
Operating ambient temperature range	0 to 60 (no freezing)										
Min. bending radius (JIS B 8381)	mm	7	12	23	27	33	7	12	12	18	20
Min. installation radius	mm	15	25	37	46	54	15	25	25	29	41
Material	Polyolefin-based resin										
Compatible tube fitting	Fitting ZSP, ZSF Series										

*1: Polyolefin-based resin is not suitable for piping in general pneumatic circuits, since it is susceptible to mineral oil.

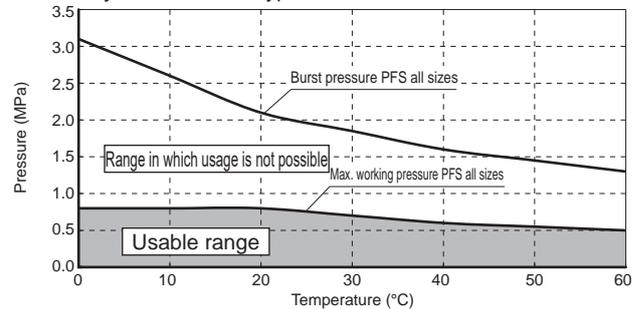
*2: The max. working pressure and burst pressure are the values at 20°C. When using in other temperature ranges, refer to the graph of "Relation of operating ambient temperature and pressure (use/burst)".

Relation of operating ambient temperature and pressure (use/burst)

● PFH; Polyolefin tube standard



● PFS; Polyolefin tube soft type



How to order

PF H - 0425 - 100 - CW - P4

A Type

B Tube size (O.D. x I.D.)

C Color

Length per roll; 100m

Model No.

PFH PFS

Code	Description	PFH	PFS
A Type			
H	Standard	●	
S	Soft		●
B Tube size (O.D. x I.D.)			
0425	$\varnothing 4 \times \varnothing 2.5$	●	●
0640	$\varnothing 6 \times \varnothing 4$	●	●
0850	$\varnothing 8 \times \varnothing 5$		●
0860	$\varnothing 8 \times \varnothing 6$	●	
1065	$\varnothing 10 \times \varnothing 6.5$		●
1075	$\varnothing 10 \times \varnothing 7.5$	●	
1280	$\varnothing 12 \times \varnothing 8$		●
1290	$\varnothing 12 \times \varnothing 9$	●	
C Color			
B	Black	●	●
CW	Transparent white	●	●
CR	Transparent red	●	●
CB	Transparent blue	●	●
CG	Transparent green	●	●
CY	Transparent yellow	●	●