

Refrigerating type dryer
Desiccant type dryer
High polymer membrane dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending



Tube F.U.NU.KX.SR Series

Wide bore size available according to purposes and applications.

High reliable piping tubes

- Outer diameter: 3.2, 4, 6, 8, 10, 12, 15mm

Soft nylon tube

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

Soft nylon tube is very flexible comparing to conventional nylon tube, and optimum for piping in the limited space. The tube also has sufficient characteristics such as cold resistance, weather ability, oil resistance and chemical resistance, etc.

How to order

FH-3224



Soft nylon tube size
φ 3.2 x φ 2.4

For miniature joint (F)
(page 940)

A Tube color	
Blank	Black
W	White

F-15



Soft nylon tube

A Tube size (outer diameter)		B Length per roll		C Tube color	
32	φ 3.2	10	φ 10	20	20m
04	φ 4	12	φ 12	100	100m
06	φ 6	15	φ 15		
08	φ 8	16	φ 16		
				Blank	Black (standard)
				w	White (standard)

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

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

Note: Use the FH-3224 for miniature joint. F-1532 can not be used.

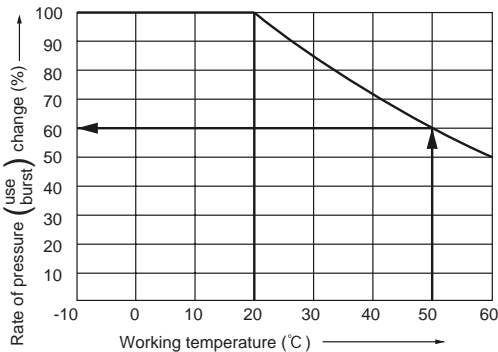
Specifications

This table indicates the value at 20 °C.

Descriptions	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 range °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
Standard color	White/black		White (20mm only), black, red, blue, yellow, green, orange			White/black		Black	
Standard length per roll m	20		20/100			20/100 (only black)		20/100	

* External dimensions tolerance may vary within ±0.1mm.

Relevant of working temperature and pressure (use / burst)



$$\text{Working pressure} = \text{burst pressure} \times \frac{1}{3}$$

(Example) Tube F-1504 (φ 4 x φ 2.5)

If temperature is 50°C, working pressure is 60% of working pressure of 20°C.

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

Urethane tube



Realizing magnified bore size and strength increases but still same outer diameter due to new manufacturing process. Meeting needs of large flow rate. Also economical.

Common specifications

Descriptions	Descriptions
Working fluid	Air
Ambient temperature range °C	0 to 60
Burst pressure MPa	4 (20°C)
Working pressure MPa	1.0 (20°C)
Use vacuum kPa	-100

Specifications

Descriptions	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 range °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 precision mm	+ 0.1 -0.1		+ 0.1 -0.15		
Weight g/m	10	15	28	42	62
Tube color	Black/white				
Length per roll m	20, 100 (only black)				

Note: Refer to Intro 63 for relation of tube length and effective sectional area.

How to order

NU	04	20	W
A Tube size (outer diameter)	B Length per roll	C Tube color	
04 ϕ 4	20 20m	Blank Black (standard)	
06 ϕ 6	100 100m	W White (standard)	
08 ϕ 8			
10 ϕ 10			
12 ϕ 12			

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

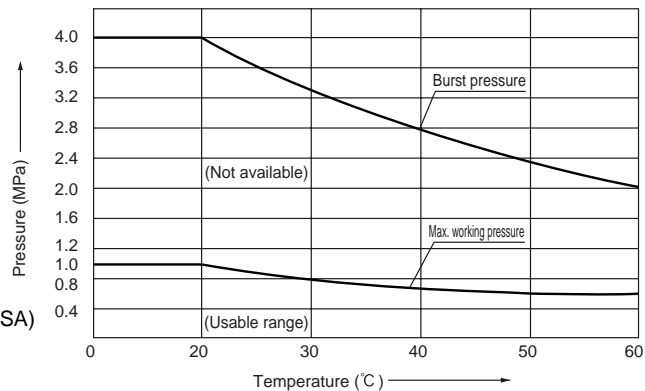
Note: Consult with CKD.

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

● Dust generation preventing structure for use in cleanrooms

NU - - **P80**

Relevant of working temperature and pressure (use / burst)



Soft urethane tube

AOI Co, Ltd.

How to order

U-92	06	N	20
A Applicable tube O.D. size	B Tube color	C Length per roll	
04 ϕ 4	B Black	20 20m	
06 ϕ 6	N Transparent	100 100m	
08 ϕ 8	PW White pure		
10 ϕ 10	R Red		
12 ϕ 12	BU Blue		
	Y Yellow		
	G Green		
	O Orange		

Clean room specifications

(Catalog No. CB-033SA)

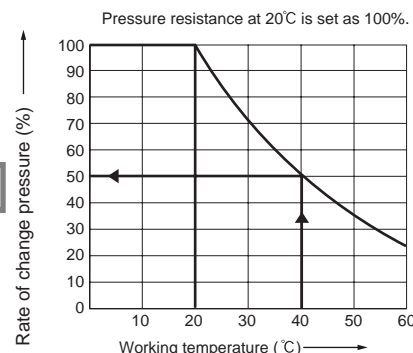
U-92 - - **P80**

Specifications

This table indicates the value at 20°C.

Descriptions	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
Working pressure MPa	1.3	0.9	0.9	0.8	0.8
durometer hardness JIS K7215	HDA 92				
Minimum bending radius mm	4	10	11	13	16.5
Min. installation radius mm	8	17	25	30	36
Standard color	Black, transparent, red, blue, yellow, green, orange, white pure				
Standard length per roll m	20, 100				

Relevant of working temperature and working pressure



Working pressure = Vacuum breaker pressure x variation rate x 1/3 at 20°C

When the temperature rises, the constant pressure gradually drops. Special care must be taken for temperature in use.

Example) U-9208, working temperature 40°C

Working pressure = burst pressure x rate of change x 1/3

$$= 2.0 \times \frac{50}{100} \times \frac{1}{3}$$

$$= 0.33 \text{ MPa}$$

Urethane tube

AOI Co, Ltd.

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

U-95

04

N

Urethane tube

A Applicable tube O.D. size		B Tube color	
32	φ 3.2	N	Transparent
04	φ 4	B	Black
06	φ 6		
08	φ 8		
10	φ 10		
12	φ 12		

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

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

U-95 - - P80

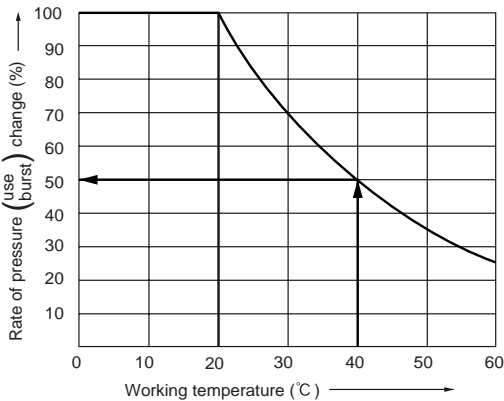
Specifications

This table indicates the value at 20 °C.

Descriptions	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 range °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	2.0	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
Standard color	Transparent and black					
Standard length per roll m	20	20, 100			20	

* IF U-9506 or less, tolerance of outer diameter may vary within $+0.1/-0.15$ mm, U-9508 over, may vary within $+0.1/-0.2$ mm.

Relevant of working temperature and pressure (use / burst)



Working pressure = Vacuum breaker pressure x variation rate x 1/3 at 20 °C
When the temperature rises, the constant pressure gradually drops. Special care must be taken for temperature in use.
Example) U-9506, working temperature 40 °C
Working pressure = Vacuum breaker pressure x variation rate x 1/3
 $= 3.2 \times \frac{50}{100} \times \frac{1}{3}$
 $= 0.53 \text{ MPa}$

Coiling tube

AOI Co, Ltd.

A coiling tube is a coil-like manufactured extensible tube. Differing from the conventional way, a joint is easily installed, since a straight section is provided with the specified length to the extensible direction from end of the coil, and the coil shrinks and extends very smoothly. Durability of coil end is also excellent.

How to order

KX-12

06

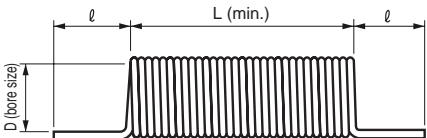
Coiling tube

A Outer diameter	
06	φ 6
08	φ 8
10	φ 10
12	φ 12

Specifications

Descriptions	KX-1206	KX-1208	KX-1210	KX-1212
O.D. X I.D. mm x mm	6 x 4	8 x 6	10 x 7.5	12 x 9.2
Ambient temperature range °C	-10 to 60 (no freezing)			
Use extension m	2.5			
D mm	50	70	90	
L mm	250	240	290	275
ℓ	100			
Color	Orange			

* Tolerance of outer diameter may vary within $+0.07/-0.1$ mm.
* Tubing is made of hard nylon. Consult with CKD for urethane tubing.



Flame resistant tube

AOI Co, Ltd.

Flame retardant material used epoch-making tube. If welding spatter, etc. contact, the tube is not burning.
(Equivalent to UL standards 94V-0: Self extinguish)

How to order

SR - 04
Flame resistant tube

A Applicable tube O.D. size	
04	φ4
06	φ6
08	φ8
10	φ10
12	φ12

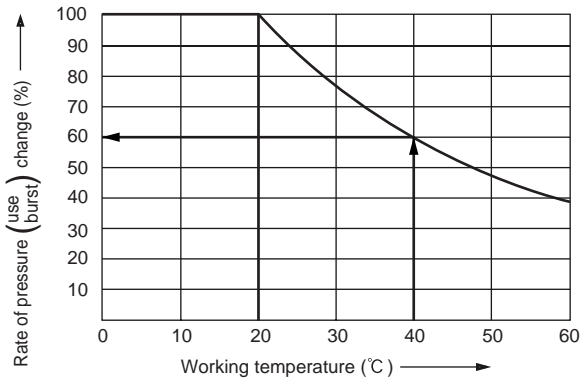
Note: Indicate tube color in the remarks on the order slip.

Specifications

Descriptions	SR-04	SR-06	SR-08	SR-10	SR-12
O.D. x I.D. mm x mm	4 x 2	6 x 3.8	8 x 5.5	10 x 7	12 x 8.5
Ambient temperature range °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
Minimum bending radius mm	15	22	30	40	50
Standard color	Black, red, blue, green				
Standard length per roll m	100				

This table indicates the value at 20°C.

Relevant of working temperature and pressure (use / burst)



Working pressure = Vacuum breaker pressure at 20°C x variation rate x 1/3

When the temperature rises, the constant pressure gradually drops. Special care must be taken for temperature in use.

Example) SR-06, working temperature 40°C

Working pressure = Vacuum breaker pressure x variation rate x 1/3
= 4.3 x $\frac{60}{100}$ x 1/3
= 0.86MPa

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Air filter
Auto. drain / others
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F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)

Ending

tube Joint/tube