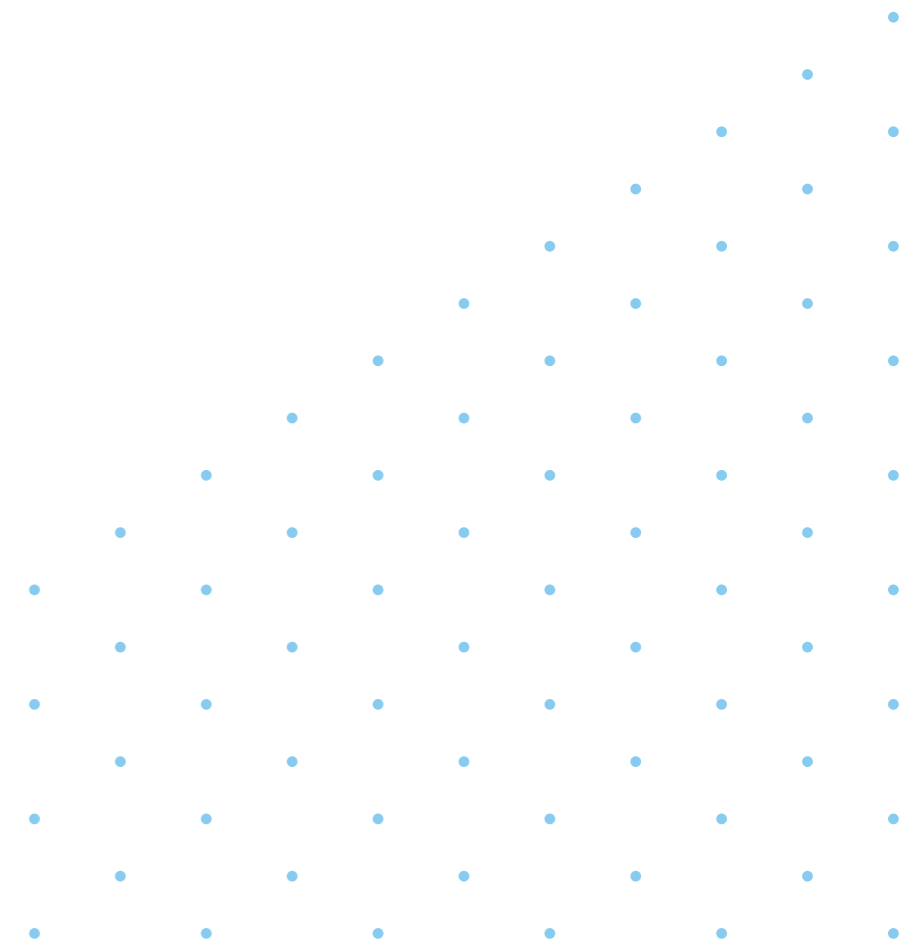


Junkosha

Fluid Transfer Tubing



Nylon Tubing



Features

- Superior in mechanical strength, particularly pressure resistance, abrasion resistance, and bending fatigue resistance.
- Superior in heat and cold resistance (resin no-load continuous operating temperature between -40 and +93°C).
- Highly-Flexible.
- Excellent in oil and chemical resistance (particularly alkali resistance).
- There are no risks of hazardous substances eluting.
- Lightweight and excellent in operability.

Use

- Hydraulic (oil) and pneumatic equipment tubing
- Centralized lubrication equipment tubing
- Painting equipment tubing
- Chemical plant tubing
- Air tools such as air impact drivers and hammers
- Tubing for moving parts

Specifications

Type	Shape	Fluid Used ^{*1}	Operating Temperature Range	Maximum Operating Pressure ^{*2}	Fitting Used	Fluid Used	Fitting Page
Soft Nylon Tubing: AS1	Straight	Air	-20~+70°C	Refer to Dimensions Table	Instant Fitting: M Series	Air/Water	139~153
		Water/Oil	0(-20)~+60°C		Instant Fitting: W Series		
High Pressure Resistant Nylon Tubing: AS2t	Straight	Air	-20~+80°C	Refer to Dimensions Table	Brass Fitting	Air/Water/Oil	175~184
		Water/Oil	0(-20)~+70°C		Stainless Fitting		
Extremely Soft Nylon Tubing: AS4	Straight	Air	-20~+60°C	Refer to Dimensions Table	Instant Fitting: M Series	Air/Water	139~153
		Water/Oil	0(-20)~+50°C		Instant Fitting: W Series		
Soft Nylon Control Tubing: AC1	Multi-Straight	Air	-20~+70°C	Refer to Dimensions Table	Brass Fitting	Air/Water/Oil	175~184
		Water/Oil	0(-20)~+60°C		Instant Fitting: M Series		
Soft Nylon Control Tubing: AC2	Multi-Straight	Air	-20~+70°C	Refer to Dimensions Table	Instant Fitting: M Series	Air/Water	139~153
		Water/Oil	0(-20)~+60°C		Instant Fitting: W Series		
Soft Nylon Coil Tubing: AT1	Coil	Air	-20~+70°C	Refer to Dimensions Table	AT1 Coil Fitting	Air/Water/Oil	20, 21
		Water/(Oil)	0(-20)~+60°C		Brass Fitting		
Extremely Soft Nylon Coil Tubing: AT4	Coil	Air	-20~+60°C	Refer to Dimensions Table	Stainless Fitting	Air/Water/Oil	175~184
		Water/(Oil)	0(-20)~+50°C		Stainless Fitting		

*1 Please refer to pages 217 to 219 for other fluids used.

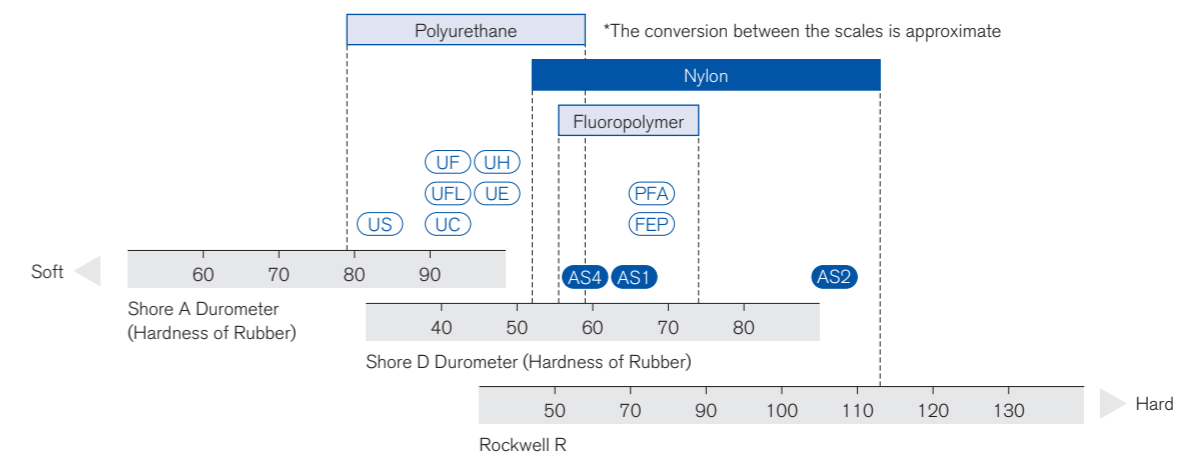
*2 The maximum operating pressure in the dimensions table is pressure under conditions using air at 23°C. It will change depending on the fluid and temperature; please refer to page 22 and use at the pressure below.

Air: 1/4 or below the burst pressure by temperature

Water/Oil: 1/6 or below the burst pressure by temperature

*3 Operating temperature and pressure range of AT1 coil fittings are based on AT1 soft nylon coil tubing.

Flexibility

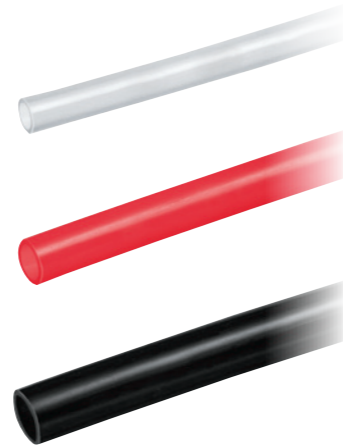


Nylon Tubing

AS1 Soft Nylon Tubing (Metric)

RoHS Compliant Product

Part No.	Size O.D.×I.D. (mm)	Burst Pressure 23°C (MPa)	Max. Operating Pressure 23°C (MPa)	Min. Bending Radius (mm)	Standard Length (m)
70-04	4× 3	6.1	<1.4	17	20 · 100
70-06	6× 4.5	6.1	<1.4	24	20 · 100
70-08	8× 6 *	6.1	<1.4	33	20 · 100
70-10	10× 7.5*	6.1	<1.4	41	20 · 100
70-12	12× 9 *	6.1	<1.4	50	20 · 100
70-16	16×12	6.1	<1.4	65	20 · 100
45-16	16×13	4.4	<1.1	100	20 · 100
100-04	4× 2.5*	9.8	<2.4	10	20 · 100
100-06	6× 4 *	8.6	<2.1	17	20 · 100



- Standard Colors: Black, Milky-White (Black, Milky-White, Red, Blue, Yellow, Green for 20m rolls with * symbol only)
- For standard length and color, please refer to page 22.
- * indicates tubing which complies with JIS B8381 class 1 AH.

AS1 Soft Nylon Tubing (Imperial)

RoHS Compliant Product

Part No.	Size O.D.×I.D. (mm)	Burst Pressure 23°C (MPa)	Max. Operating Pressure 23°C (MPa)	Min. Bending Radius (mm)	Standard Length (m)
70-1/8	3.18×2.36	6.3	<1.5	12	20 · 100
70-3/16	4.76×3.48	6.6	<1.6	18	20 · 100
70-1/4	6.35×4.57	7.0	<1.7	22	20 · 100
70-5/16	7.94×5.90	6.3	<1.5	31	20 · 100
70-3/8	9.53×6.99	6.6	<1.6	36	20 · 100
70-1/2	12.70×9.56	6.0	<1.4	52	20 · 100



- Standard Colors: Black, Milky-White
- For standard length and color, please refer to page 22.

AS2 High Pressure Resistant Nylon Tubing

RoHS Compliant Product

Part No.	Size O.D.×I.D. (mm)	Burst Pressure 23°C (MPa)	Max. Operating Pressure 23°C (MPa)	Min. Bending Radius (mm)	Standard Length (m)
170-04	4×2.5	17.6	<4.4	10	20
170-06	6×4	15.2	<3.7	17	20
125-08	8×6	10.7	<2.6	33	20
125-10	10×7.5	10.7	<2.6	41	20
125-12	12×9	10.7	<2.6	50	20

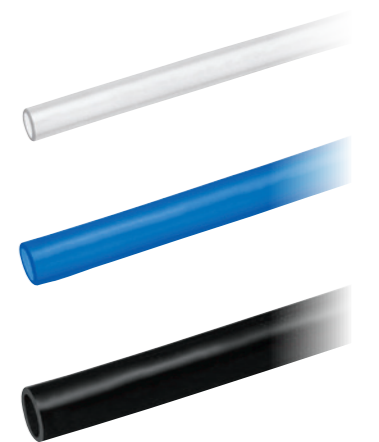


- Standard Colors: Milky-White
- For standard length and color, please refer to page 22.

AS4 Extremely Soft Nylon Tubing

RoHS Compliant Product

Part No.	Size O.D.×I.D. (mm)	Burst Pressure 23°C (MPa)	Max. Operating Pressure 23°C (MPa)	Min. Bending Radius (mm)	Standard Length (m)
50-04	4×2.5	5.0	<1.2	10	20 · 100
50-06	6×4	4.4	<1.0	17	20 · 100
35-08	8×6	3.1	<0.78	33	20 · 100
35-10	10×7.5	3.1	<0.78	40	20 · 100
35-12	12×9	3.1	<0.78	50	20 · 100

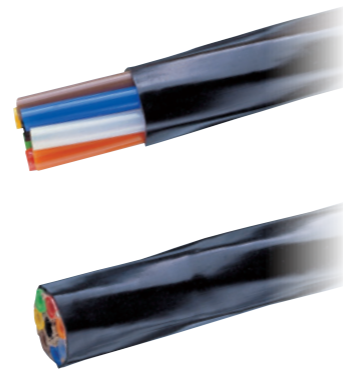


- Standard Colors: Black, Milky-White (Black, Milky-White, Red, Blue, Yellow, Green for 20m rolls only)
- Extremely Soft Nylon Tubing AS4 complies with JIS B8381 Type 2 AL.
- For standard length and color, please refer to page 22.
- ⚠ Instant Fitting cannot be used when the fluid is water or oil.

AC1 Soft Nylon Control Tubing

RoHS Compliant Product

Part No.	Number of Core Tubes	Size O.D.×I.D. (mm)	Finished O.D. (Approx.) (mm)	Burst Pressure 23°C (MPa)	Max. Operating Pressure 23°C (MPa)	Min. Bending Radius (mm)	Weight (Approx.) (g/m)	Standard Length (m)
AC1- 1	1	6×4	8.0	8.6	<2.1	30	50	100
AC1- 2	2	6×4	15.0	8.6	<2.1	30	120	100
AC1- 3	3	6×4	15.0	8.6	<2.1	40	130	100
AC1- 4	4	6×4	17.0	8.6	<2.1	40	160	100
AC1- 5	5	6×4	18.5	8.6	<2.1	45	180	100
AC1- 6	6	6×4	20.0	8.6	<2.1	45	210	100
AC1- 7	7	6×4	21.0	8.6	<2.1	50	210	100
AC1- 8	8	6×4	22.0	8.6	<2.1	50	250	100
AC1- 9	9	6×4	24.0	8.6	<2.1	60	270	100
AC1-10	10	6×4	26.0	8.6	<2.1	60	310	100
AC1-12	12	6×4	27.0	8.6	<2.1	70	360	100

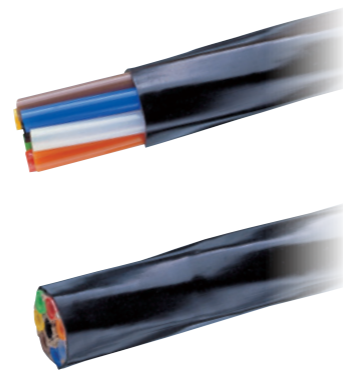


- Core Tubing: AS1 100-06 6×4
- For lengths exceeding the standard length, please contact us.

AC2 Soft Nylon Control Tubing

Made-to-Order RoHS Compliant Product

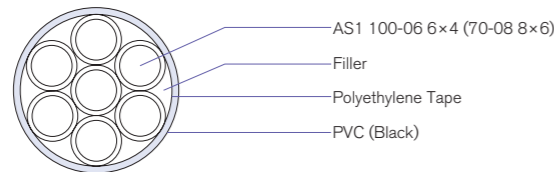
Part No.	Number of Core Tubes	Size O.D.×I.D. (mm)	Finished O.D. (Approx.) (mm)	Burst Pressure 23°C (MPa)	Max. Operating Pressure 23°C (MPa)	Min. Bending Radius (mm)	Weight (Approx.) (g/m)
AC2- 1	1	8×6	10.0	6.1	<1.4	40	70
AC2- 2	2	8×6	19.0	6.1	<1.4	40	180
AC2- 3	3	8×6	20.0	6.1	<1.4	45	200
AC2- 5	5	8×6	24.5	6.1	<1.4	65	270
AC2- 7	7	8×6	27.4	6.1	<1.4	70	310
AC2-10	10	8×6	34.5	6.1	<1.4	100	430



- Core Tubing: AS1 170-08 8×6
- For lengths exceeding the standard length, please contact us.

Structure

Example: AC1-7(AC2-7)



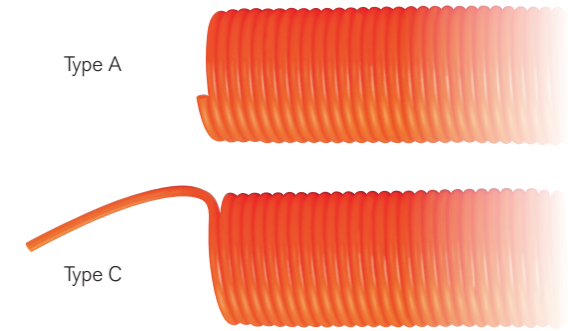
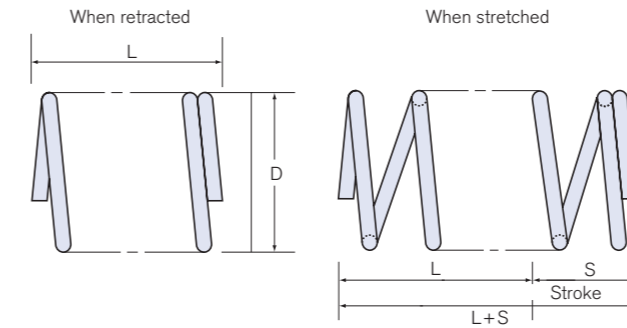
Core Tubing Color Array



*Please contact us for printing identification numbers on same-colored tubing

AT1 Soft Nylon Coil Tubing

RoHS Compliant Product



Part No.	Tube Size O.D.×I.D.×Length (mm)(mm) (m)	Max. Operating Length L+S (m)	Burst Pressure 23°C (MPa)	Max. Operating Pressure 23°C (MPa)	Coil Dimensions		
					L(mm)	S(m)	D(mm)
AT1-06- 7.5	7.6× 6 ×7.5	6	5.0	<1.2	230	5.7	95
AT1-06-10	7.6× 6 ×10.0	8	5.0	<1.2	310	7.6	95
AT1-06-15	7.6× 6 ×15.0	12	5.0	<1.2	460	11.5	95
AT1-06-20	7.6× 6 ×20.0	16	5.0	<1.2	620	15.3	95
AT1-09- 7.5	11 × 9 × 7.5	5	4.3	<1.0	290	4.7	115
AT1-09-10	11 × 9 ×10.0	7	4.3	<1.0	380	6.6	115
AT1-09-15	11 × 9 ×15.0	10	4.3	<1.0	560	9.4	115
AT1-09-20	11 × 9 ×20.0	14	4.3	<1.0	760	13.2	115
AT1-12- 7.5	15 ×12× 7.5	4	4.8	<1.1	260	3.7	155
AT1-12-10	15 ×12×10.0	6	4.8	<1.1	350	5.6	155
AT1-12-15	15 ×12×15.0	8	4.8	<1.1	530	7.4	155
AT1-12-20	15 ×12×20.0	12	4.8	<1.1	700	11.2	155

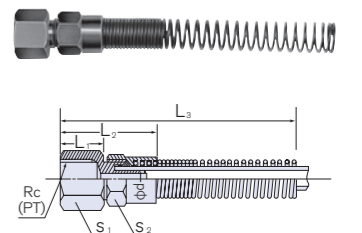
- Standard Color: Orange
- AT1-06-7.5 and AT1-09-7.5 are standard stock for Type C. Type C has horns on both ends. The length of the horn is 100mm.
- If you select Type C, please add C at the end of the part No. above.

AT1 Coil Fitting

RoHS Compliant Product

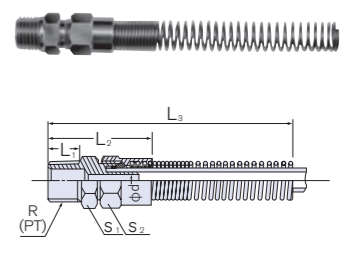
M (Female Connector)

Part No.	Applicable Tube Size O.D.×I.D. (mm)	Rc (PT)	φd	L ₁	L ₂	L ₃	HEX.		Weight (g)	Effective Cross-Sectional Area (mm ²)
							S ₁	S ₂		
M- 6-PT1/4	7.6×6	1/4	5.0	13	31	115	16	14	38	15
M- 9-PT3/8	11 ×9	3/8	7.5	15	37	128	19	19	71	36
M-12-PT1/2	15 ×12	1/2	10.5	17	43	148	25	23	123	89



O (Male Connector)

Part No.	Applicable Tube Size O.D.×I.D. (mm)	R (PT)	φd	L ₁	L ₂	L ₃	HEX.		Weight (g)	Effective Cross-Sectional Area (mm ²)
							S ₁	S ₂		
O- 6-PT1/8	7.6×6	1/8	5.0	7.5	31	115	12	14	33	14
O- 6-PT1/4	7.6×6	1/4	5.0	10.5	35	118	14	14	38	17
O- 9-PT3/8	11 ×9	3/8	7.5	12.0	41	130	17	19	77	43
O-12-PT1/2	15 ×12	1/2	10.5	15.0	49	155	22	23	124	101

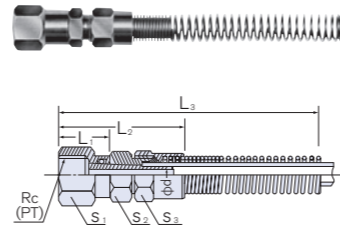


AT1 Coil Fitting

RoHS Compliant Product

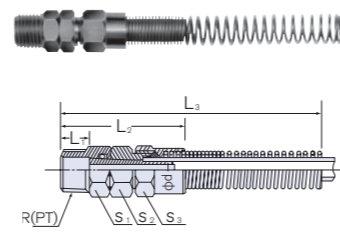
FM (Rotary Female Connector)

Part No.	Applicable Tube Size O.D.×I.D. (mm)	Rc (PT)	φd	L1	L2	L3	HEX.			Weight (g)	Effective Cross-Sectional Area (mm ²)
							S1	S2	S3		
FM- 6-PT1/4	7.6×6	1/4	4.6	18.5	41	124	16	14	14	49	14
FM- 9-PT3/8	11 ×9	3/8	7.0	20.0	47	135	19	17	19	91	35
FM-12-PT1/2	15 ×12	1/2	10.0	26.5	59	165	25	22	23	161	75



FO (Rotary Male Connector)

Part No.	Applicable Tube Size O.D.×I.D. (mm)	R (PT)	φd	L1	L2	L3	HEX.			Weight (g)	Effective Cross-Sectional Area (mm ²)
							S1	S2	S3		
FO- 6-PT1/4	7.6×6	1/4	4.6	10.5	39	122	14	14	14	44	14
FO- 9-PT3/8	11 ×9	3/8	7.0	12.0	46	134	17	17	19	86	35
FO-12-PT1/2	15 ×12	1/2	10.0	14.0	55	162	22	22	23	143	70



Cone

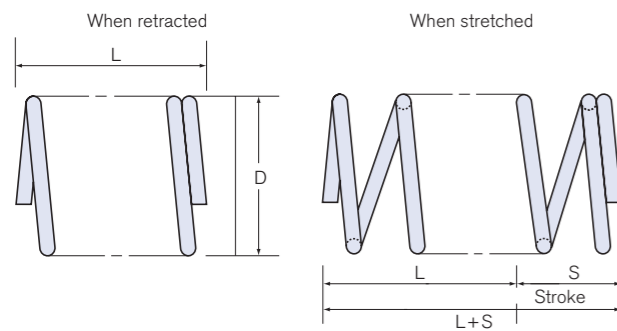
Part No.	Applicable Tube O.D. (mm)
S-06T	7.6
S-09T	11.0
S-12T	15.0

*Please install AT1 coil fittings by tightening the union nut by hand, then using a spanner to tighten to the end.



AT4 Extremely Soft Nylon Coil Tubing

RoHS Compliant Product

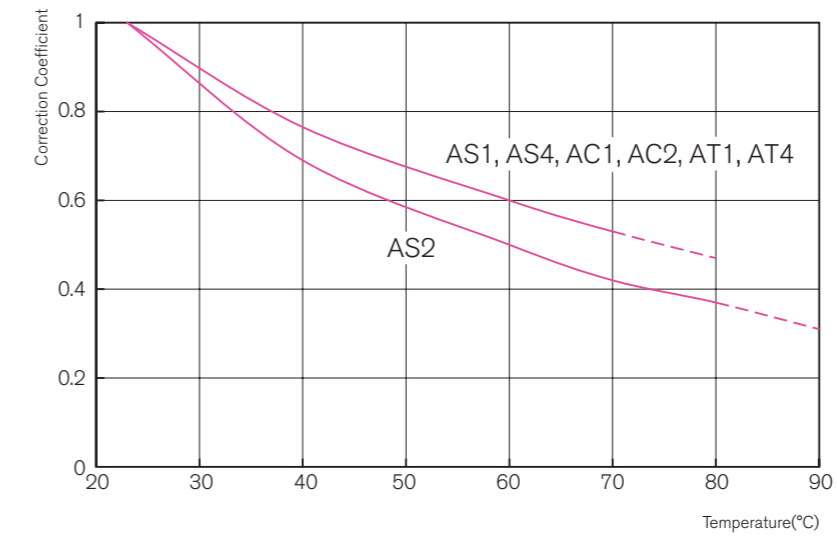


Part No.	Tube Size O.D.×O.D.×Length (mm)(mm) (m)	Max. Operating Length L+S (m)	Burst Pressure 23°C (MPa)	Max. Operating Pressure 23°C (MPa)	Coil Dimensions		
					L(mm)	S(m)	D(mm)
AT4-04	4×2.5×10	6	5.0	<1.2	540	5.5	30
AT4-06	6× 4×10	7	4.4	<1.0	540	6.5	45
AT4-08	8× 6×10	7	3.1	<0.78	510	6.5	67
AT4-10	10×7.5×10	7	3.1	<0.78	400	6.6	95

- Standard Color: Black
- You can cut it to your preferred length.

Technical Data

How to Calculate the Maximum Operating Pressure by Temperature for Nylon Tubing



Correction Coefficient Graph for Burst Pressure by Temperature for Nylon Tubing

$$[\text{Burst pressure at certain temperature}] = [\text{Burst pressure at 23°C (refer to table)}] \times [\text{Correction coefficient in graph}]$$

Operating Pressure

Please use at the pressure below.

Air: 1/4 or below the burst pressure by temperature

Water/Oil: 1/6 or below the burst pressure by temperature

Standard Length and Color

Type	Part No.	Tube Size O.D.×I.D. (mm)	Standard Length and Color								
			20m						100m		
			Black	Milky-White	Red	Blue	Yellow	Green	Black	Milky-White	
AS1	70-04	4×3	○	○						○	○
	70-06	6×4.5	○	○						○	○
	70-08	8×6	○	○	○	○	○	○		○	○
	70-10	10×7.5	○	○	○	○	○	○		○	○
	70-12	12×9	○	○	○	○	○	○		○	○
	70-16	16×12	○	○						○	○
	45-16	16×13	○	○						○	○
	100-04	4×2.5	○	○	○	○	○	○		○	○
	100-06	6×4	○	○	○	○	○	○		○	○
	70-1/8	3.18×2.36	○	○						○	○
70-3/16	4.76×3.48	○	○						○	○	
70-1/4	6.35×4.57	○	○						○	○	
70-5/16	7.94×5.90	○	○						○	○	
70-3/8	9.53×6.99	○	○						○	○	
70-1/2	12.7×9.56	○	○						○	○	
AS2	170-04	4×2.5		○							
	170-06	6×4		○							
	125-08	8×6		○							
	125-10	10×7.5		○							
AS4	50-04	4×2.5	○	○	○	○	○	○	○	○	○
	50-06	6×4	○	○	○	○	○	○	○	○	○
	35-08	8×6	○	○	○	○	○	○	○	○	○
	35-10	10×7.5	○	○	○	○	○	○	○	○	○
35-12	12×9	○	○	○	○	○	○	○	○	○	