TOGAWA®
INDUSTRY CORPORATION

Guide of JAPAN-MADE Plastic Hose Products

Industrial Hose
Food Hose
Painting Hose
Air tool Hose
Features
Engineering Data

Togawa Industry Corporation
http://www.togawa-sangyo.co.jp

Global Standard
Natural Environment

Our goal is to develop and produce world-class environmental friendly products through our leading-edge technology.

Anticipating the needs of the age and reacting by our leading-edge technology is TOGAWA®'s deep-rooted fundamental policy.

In this 21st century, remarkable achievement of technology is demanded in a variety of fields.

Through our plastic hoses, TOGAWA® is always trying to manufacture "environmentally-friendly products" based on our world-class quality and technology.

Giving the quality top priority, TOGAWA® is engaged in customer satisfaction and aiming to be an environmental friendly company.

Our effort on ISO9001 "Quality Management System" and ISO14001 "Environmental Management System."

In July of 2001, our Kyoto Plant and in November of 2003, our Tokyo Plant have acquired approval of ISO9001. Placing the "Customer First" for our quality policy, we have been engaged in promoting full employee participation quality assurance activities. In the midst of ever changing social environment, we are trying to identify the customer's needs in order to suggest, produce and deliver products in an appropriate time for further "Customer Satisfaction".

Kyoto Plant

Shanghai Plant

In March of 2005, our Kyoto Plant has acquired the approval of ISO14001 In an effort to becoming an "Environmentally Friendly Company",we have defined our environmental policy and conduct environmental countermeasures. We also provide "Environmentally Friendly Products" while conforming to the laws and regulations, and keeping the balance with the people and nature.

ISO 9001
ISO 14001
BUREAU VERITAS
Certification

ISO 9001:Kyoto Plant,Tokyo Plant
ISO 14001:Kyoto Plant

Our Effort in Shanghai Togawa

Shanghai Togawa, our subsidiary, has also acquired approval of ISO9001 in May of 2005 and ISO 14001 in June of the same year. We are trying to engage in the "Improvement of Management" to meet our customer's needs.

Tokyo Head Office／Tokyo Plant

Osaka office

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TOGAWA® INDUSTRY CORPORATION

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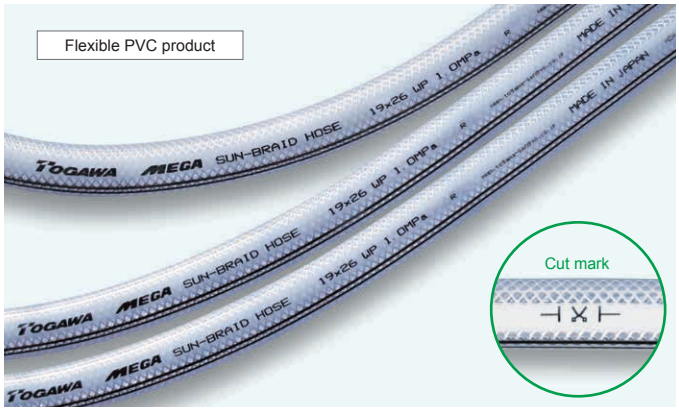
For industrial use

Industrial Hose

This series of hoses can be applied for piping of equipment at factories, installing with various machines (molding and printing machines), and various fluids such as cement fluids used for machine tools, drilling machines, and bridge construction works. Superior in flexibility, transparency, pressure resistance, negative pressure resistance, and oil resistance, this series of hoses are appropriate for industrial use.

MEGA Sun Braid Hose

Renewed design with white lines. Rubber-like touch of highly elastic resin. The fluids can be visually checked easily.



Use	For water supply of machines and factories, air piping, and water supply for engineering, and construction sites.
Features	Highly elastic resin is used. The fluids can be visually checked easily.
Fluids	Water Oil Note: Cannot be used for fuel oil

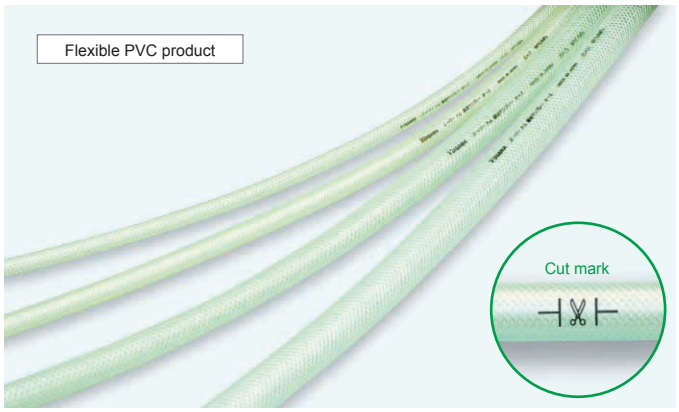
Specifications: Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
SB-4	4.0	9.0	100	1.5	16	7
SB-6	6.0	11.0	100	1.5	24	9
SB-8	8.0	13.5	100	1.4	32	12
SB-9	9.0	15.0	100	1.4	36	15
SB-10	10.0	16.0	100	1.1	40	16
SB-12	12.0	18.0	100	1.0	48	18
SB-15	15.0	22.0	100	1.0	60	26
SB-19	19.0	26.0	50	1.0	76	16
SB-22	22.0	29.0	50	1.0	88	18
SB-25	25.0	33.0	50	1.0	100	23
SB-32	32.0	41.0	50	0.7	128	33
SB-38	38.0	48.0	50	0.6	152	43
SB-50	50.0	62.0	40	0.6	200	55
SB-63	63.0	80.0	20	0.3	252	52
SB-75	75.0	92.0	20	0.3	300	60
SB-90	90.0	108.0	20	0.3	450	73.8
SB-100	100.0	118.0	20	0.3	500	77.8

* The white lines are available only for the products in which inner diameter is between 12 and 75, and are not applied for the products in which inner diameter is between 6 and 10, 90 and 100.

Super Tom Oil resistance Sun Braid Hose

Superior in oil resistance of the specialized resin used. Use this hose for color coding with the MEGA Sun Braid Hose.

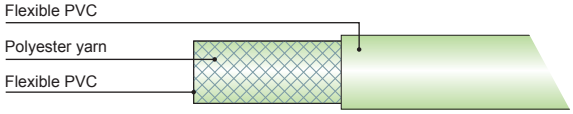


Use	For water supply of machines and factories, air piping, and water supply for engineering, and construction sites.
Features	Superior in oil resistance, which is appropriate for lubricating oil piping. Can be used for color coding with the MEGA Sun Braid Hose.
Fluids	Water Oil Note: Cannot be used for fuel oil

Specifications: Working temperature limit: Between -5℃ and + 60℃

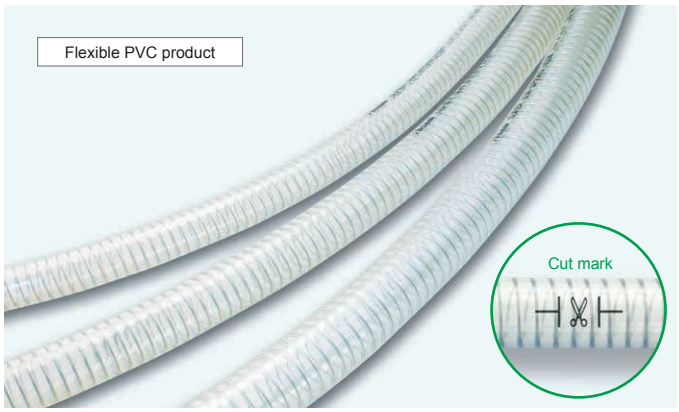
Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
TB-6	6.0	10.5	100	1.1	24	8
TB-8	8.0	13.0	100	1.1	32	11
TB-9.5	9.5	15.0	100	1.1	38	15
TB-12	12.0	17.0	100	1.0	48	16
TB-15	15.0	21.0	50	0.8	60	11.5
TB-19	19.0	25.0	50	0.7	76	14.5
TB-25	25.0	32.0	50	0.6	100	22
TB-32	32.0	39.5	50	0.5	128	29
TB-38	38.0	46.5	50	0.4	152	38.5
TB-50	50.0	60.0	40	0.3	200	47

[Structure]



Super Sun Spring Hose

With hard steel wires put inside, this hose withstands to decompression, which is appropriate for vacuuming applications. Superior in transparency, this hose is appropriate for piping of operating oil.

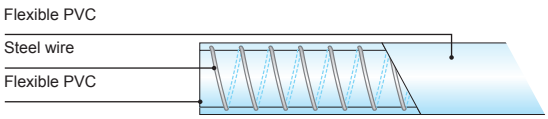


Use	For water supply of machines and factories, air piping, and water supply for engineering, and construction sites.
Features	With steel wires put inside, this hose can be used as a ground wire for conveying powders etc.
Fluids	Water Oil Powders Note: Cannot be used for fuel oil

Specifications: Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
SP-6	6.0	11.0	100	0.9	30	10
SP-8	8.0	13.5	100	0.9	40	14
SP-9	9.0	15.0	100	0.8	45	16
SP-12	12.0	18.0	100	0.7	60	23
SP-15	15.0	22.0	100	0.6	75	32
SP-19	19.0	26.0	50	0.5	95	22
SP-25	25.0	33.0	50	0.5	125	27
SP-32	32.0	41.0	40	0.4	160	31
SP-38	38.0	48.0	40	0.4	190	39
SP-50	50.0	62.0	40	0.3	250	59
SP-63	63.0	80.0	20	0.3	315	54
SP-75	75.0	92.0	20	0.3	375	63
SP-90	90.0	108.0	20	0.3	450	76.2
SP-100	100.0	118.0	20	0.3	500	84

[Structure]



Super Tom Flex Hose

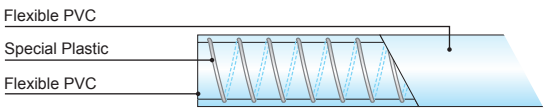
Both inner and outer surface are rich in smoothness. Excellent oil resistance.

Use	For working machine, printing machine, molding machine, piping of plant (Vacuum Hoses)
Features	Easy to cut with scissors! It is hard to be squashed.
Fluids	Water Oil Note: Cannot be used for fuel oil

Specifications: Working temperature limit: TP-9～TP19 Between -5℃ ～+70℃
TP-25 Between -5℃ ～+60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
TP-9	9.0	15.0	40	0.8	36	5.6
TP-12	12.0	18.0	60	0.5	48	10.4
TP-15	15.0	22.0	60	0.5	60	15
TP-19	19.0	26.0	50	0.4	76	15.2
TP-25	25.4	33.0	20	0.4	100	9

[Structure]



MEGA Touch

No leak! No loose! Joints for Hoses!

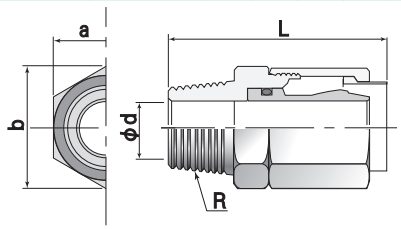
Features

- Original structure to fasten hoses tightly and strongly.
- High adhesion without damage your hoses.
- No breakage due to excessive fastening.
- Easy attach and remove, improve maintenance workability.
- Variety of materials : SUS and BsBM also available with RoHS enabled Cd-less BsBM.

Size List: - For material selection, please add "S" for SUS, "B" for BsBM, "Ro" for Cd-less BsBM at the end of the Model name. -

Nominal designation of MEGA SUN-BRAID HOSE	MEGA TOUCH Model	R	a	b	ϕd	L
SB-4	TH4—1/8	1/8	17	19.6	4.0	34.8
	TH4—1/4	1/4			4.0	35.8
SB-6	TH6—1/4	1/4	21	24.3	5.0	45.3
	TH6—3/8	3/8			5.0	47.3
SB-8	TH8—1/4	1/4	22	25.4	7.0	44.7
	TH8—3/8	3/8			7.0	46.7
SB-9	TH9—1/4	1/4	24	27.7	7.0	46.4
	TH9—3/8	3/8			7.0	48.4
SB-10	TH10—1/4	1/4	24	27.7	8.0	46.4
	TH10—3/8	3/8			8.0	48.4
	TH10—1/2	1/2			8.0	50.4
SB-12	TH12—1/4	1/4	26	30.0	8.0	46.3
	TH12—3/8	3/8			10.0	48.3
	TH12—1/2	1/2			10.0	50.3
SB-15	TH15—1/4	1/4	30	34.6	8.0	47.7
	TH15—3/8	3/8			10.0	49.7
	TH15—1/2	1/2			14.0	51.7
	TH15—3/4	3/4			14.0	53.7

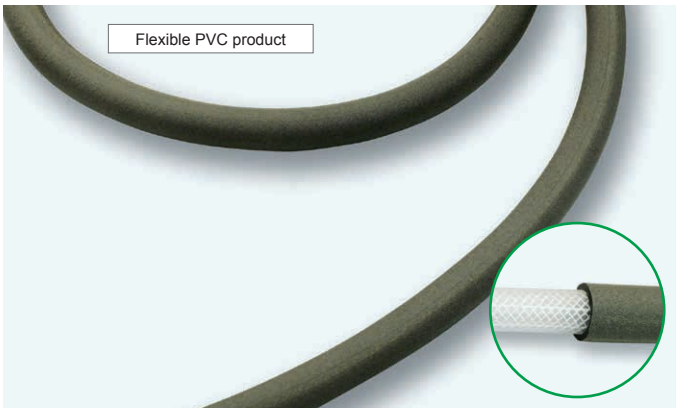
Nominal designation of MEGA SUN-BRAID HOSE	MEGA TOUCH Model	R	a	b	ϕd	L
SB-19	TH19—1/2	1/2	35	40.5	14.0	59.8
	TH19—3/4	3/4			17.4	63.8
	TH19—1	1			17.4	64.8
SB-22	TH22—1/2	1/2	38	43.9	14.0	61.0
	TH22—3/4	3/4			19.4	65.0
	TH22—1	1			21.0	66.0
SB-25	TH25—3/4	3/4	42	48.5	18.0	65.8
	TH25—1	1			24.0	67.8
SB-32	TH32—1 1/4	1 1/4	54	62.4	28.0	74.3
	TH32—1 1/2	1 1/2			28.0	75.3



For unlisted sizes or any questions , please contact our sales department.
Available with : MEGA Sun Braid Hose.

Foam Sun Braid Hose

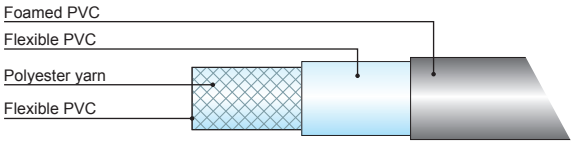
A hose for cooling water used for printing or molding machines.
The foamed materials keep away waterdrops from the hose surface.



Specifications: Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
FB-12	12.0	24.0	50	1.0	48	14
FB-15	15.0	29.0	50	0.8	60	20
FB-19	19.0	32.0	50	0.7	76	23

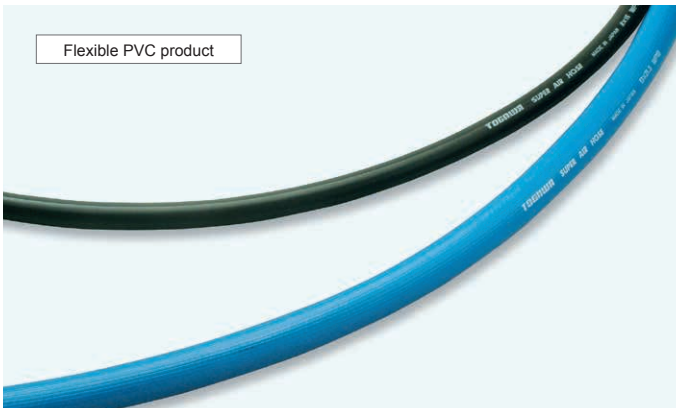
[Structure]



Use	For the cooling water used for printing or molding machine (for condensation prevention).
Features	The foamed materials keep away waterdrops from the hose surface.
Fluids	Water

Super Air Hose

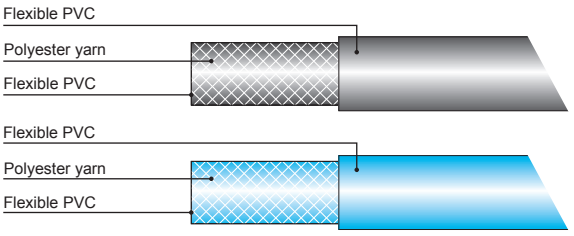
Lighter than rubber hoses and superior in workability. Withstanding to direct sunlight and blocking cracks.



Specifications: Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)	Lines	
SA-6	6.5	13.0	100	1.0	32.5	12	●	–
SA-7	7.0	13.5	100	1.0	35	12.5	●	–
SA-8	8.0	15.0	100	1.0	40	15	●	●
SA-9	9.5	16.5	100	1.0	47.5	17	●	●
SA-12	13.0	21.5	100	1.0	65	28	●	●
SA-19	19.0	27.5	100	1.0	95	39	–	●
SA-25	25.0	34.5	100	1.0	125	55	–	●

[Structure]



Use	For compressors, car maintenance, paint and body works, quarrying etc.
Features	Lighter than rubber hoses and superior in workability.
Fluids	Air

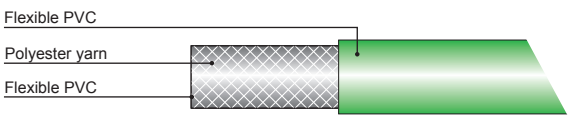
Super Water Hose

Appropriate for washing and sprinkling water on vessels, gas stations, factories, farmlands, golf courses etc.

Specifications: Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)	Lines
SW-12	12.7	19.0	100	0.7	63.5	19.5	●
SW-15	15.0	22.5	100	0.7	75	25.5	●
SW-19	19.0	27.0	100	0.7	95	38	●
SW-25	25.0	33.5	100	0.7	125	48	●
SW-32	32.0	43.0	60	0.5	160	48	●
SW-38	38.0	50.0	60	0.5	190	61.2	●

[Structure]



Use	Washing and sprinkling water on vessels, factories, farmlands, golf courses, engineering sites, etc.
Features	Lighter than rubber hoses and superior in workability.
Fluids	Water

Transparent Vinyl Tube

From small to large, variety of sizes are available to fit your usage.

Use	For piping at factories, sprinkling water for farmlands and gardening.
Features	From small to large, variety of sizes are available to fit your usage.
Fluids	Air Water

Specifications:
Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Inner diameter (mm)	Regular size (m)	Packages (number of pieces)
TV-3×5	3.0	200	Five drums/case
TV-4×6	4.0	200	〃
TV-5×7	5.0	200	〃
TV-5×8	5.0	200	〃
TV-6×8	6.0	200	〃
TV-6×9	6.0	200	Four drums/case
TV-6×10	6.0	100	Five drums/case
TV-7×9	7.0	200	Four drums/case
TV-7×10	7.0	100	Five drums/case
TV-7×11	7.0	100	〃
TV-8×10	8.0	100	〃
TV-8×11	8.0	100	〃
TV-8×12	8.0	100	Four drums/case
TV-9×11	9.0	100	Five drums/case
TV-9×12	9.0	100	Four drums/case
TV-9×13	9.0	100	〃
TV-10×12	10.0	100	〃
TV-10×13	10.0	100	〃
TV-10×14	10.0	50	Five drums/case
TV-12×14	12.0	50	〃
TV-12×15	12.0	50	〃
TV-12×16	12. 0	50	Four drums/case
TV-15×17	15.0	50	〃
TV-15×18	15.0	50	〃
TV-18×21	18.0	50	Three drums/case
TV-18×22	18.0	50	〃
TV-19×23	19.0	50	〃
TV-19×25	19.0	50	Rings
TV-22×26	22.0	50	〃
TV-25×29	25.0	50	〃
TV-25×30	25.0	50	〃
TV-25×31	25.0	50	〃
TV-32×37	32.0	50	〃
TV-32×38	32.0	50	〃
TV-38×44	38.0	50	〃
TV-45×51	45.0	30	〃
TV-50×58	50.0	30	〃
TV-63×73	63.0	30	〃
TV-75×86	75.0	30	〃
TV-90×104	90.0	20	〃

Super Tom Fusso Tube

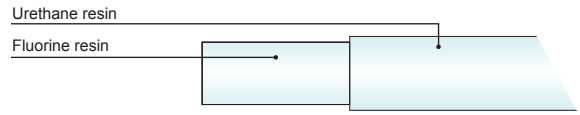
The super soft fusso tube with the excellent non-adhesive, low leachability and chemical resistance.

Use	For piping of paints, solvents, chemicals, drinking water and foods
Features	Excellent solvent and chemical resistance and low leachability.
Fluids	Paints Solvents Chemicals Various foods

Specifications: Working temperature limit: Between -40℃ and +80℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Weight (kg/m)
FST-4	4.0	6.0	20･100	0.9	17	0.019
FST-6	6.0	9.0	20･100	0.7	26	0.041
FST-8	8.0	12.0	20･100	0.7	46	0.072

[Structure]

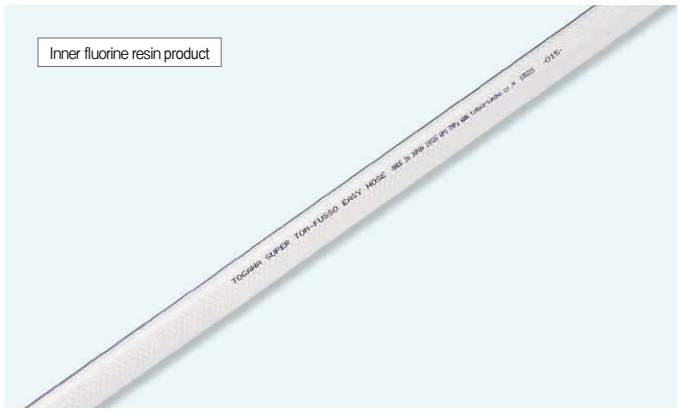


Features

- A multipurpose tube with excellent chemical resistance and low permeability against the organic solvent.
  Also has high transparency and flexibility.

Super Tom Fusso-easy Hose

The super soft fusso hose with a conductive resin line.

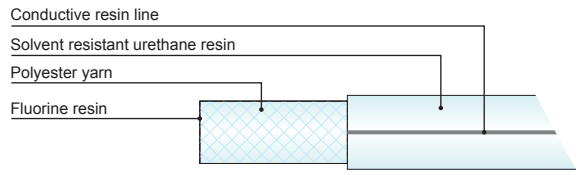


Use	For piping of paints, solvents, chemicals, drinking water and foods.
Features	Excellent solvent and chemical resistance and low leachability.
Fluids	Paints Solvents Chemicals Various foods

Specifications: Working temperature limit: Between -20℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
FE-9	9.0	15.0	20	1.1	45	2.8
FE-12	12.0	18.0	20	1.0	60	3.5
FE-15	15.0	22.0	20	0.8	75	5.1
FE-19	19.0	26.0	20	0.7	95	6.2
FE-25	25.0	33.0	20	0.6	125	9.0

[EASY Structure]



Features

A versatile chemical hose is now available!

- As a conductive sleeve is applied around the outer layer, the grounding can be completed just by tightening the metallic joint (when the resistance value is “9× 10^6 W” or less, and the whole length is 15m or less).

Food Hose

The food hoses that contain no substances which are suspected of having an environmental hormone or dioxin such as phthalate ester and nonyl phenol. Superior in heat and cold resistances, this series of hoses are harmless and safe.

Heat-Resistant Eco Hose

A non-PVC hose which can be used for fatty foods. It is also superior in chemical resistance.

Usege	Foods
Features	A non-PVC hose which can be used for fatty foods. It is also superior in chemical resistance.
Fluids	Water, Various foods, Chemicals

Specifications: Working temperature limit: Between -20℃ and + 80℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
TEH-12	12.0	18.0	60	1.0	48	7.8
TEH-15	15.0	22.0	60	0.8	60	11.4
TEH-19	19.0	26.0	50	0.7	76	11.5
TEH-25	25.0	33.0	40	0.6	100	13.6
TEH-32	32.0	41.0	40	0.5	128	19.2
TEH-38	38.0	48.0	40	0.4	152	24.8
TEH-50	50.0	62.0	40	0.3	200	38.8

* The sizes or colors other than listed above are available by a lot production. The burst pressure is estimated under the condition of 20℃.

Notes on the operating temperature and maximum working pressure

If you use this product out of the normal temperatures range, refer to the maximum working pressure fluctuations described in the graph of the pressure resistance data in the P.22, and use the hose in the condition below the specified value. In addition, if you use the hose in more than the maximum working pressure (in accordance with the operating temperature), please take care because it may cause a danger of bursting or significantly shorten the service time of the hose.

Important notice on food hoses

Odor and taste

Odor and/or taste may be generated in some rare cases by the reaction between the hose and fluids (water, foods, or cleaning agents). Check the odor and taste before and after using the hose, as there may be great difference between persons.

Pure Foods Hose (JHP)

A PVC food hose conforming to JHP (PVC food sanitation association)

Flexible PVC product

Specifications: Working temperature limit: Between -5℃ and + 70℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
PFH-12	12.0	18.0	50	1.0	48	9
PFH-15	15.0	22.0	50	0.8	60	13
PFH-19	19.0	26.0	50	0.7	76	16
PFH-25	25.0	33.0	50	0.6	100	23
PFH-32	32.0	41.0	50	0.7	128	33
PFH-38	38.0	48.0	50	0.6	152	43
PFH-50	50.0	62.0	40	0.6	200	55

What are JHP specifications
(self-imposed specifications of Japan Hygienic PVC Association)?

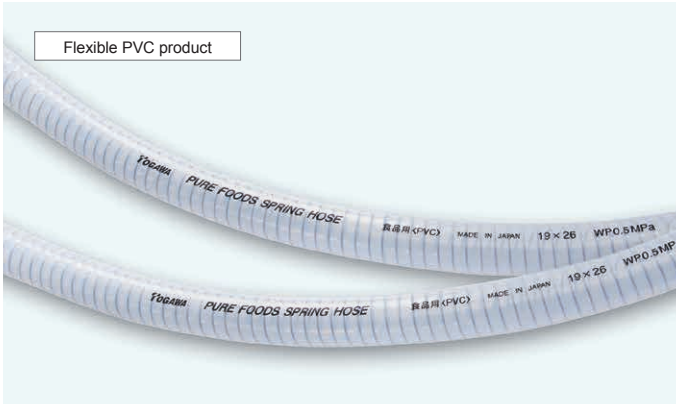
Based on the food sanitation law, the specifications define the recommended materials, unintended materials for use, and the methods of material and dissolve tests. The display of JHP logo is allowed for the products approved by the association. Pure Foods Hose does not contain any phthalate acid, which is registered with the JHP specifications and allowed to display the logo.

Usege	For conveyance of foods and beverages
Features	A safe hose conforming to the JHP specifications (refer to P.9) without harmful substances contained.
Fluids	Foods and beverages

Pure Foods Spring Hose (JHP)

A PVC food hose conforming to JHP (PVC food sanitation assosiation)

Flexible PVC product



Specifications: Working temperature limit: Between -5℃ and + 70℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
PFS-12	12.0	18.0	50	0.7	60	11.5
PFS-15	15.0	22.0	50	0.6	75	16
PFS-19	19.0	26.0	50	0.5	95	22
PFS-25	25.0	33.0	50	0.5	125	27
PFS-32	32.0	41.0	40	0.4	160	31
PFS-38	38.0	48.0	40	0.4	190	39
PFS-50	50.0	62.0	40	0.3	250	59

What are JHP specifications
(self-imposed specifications of Japan Hygienic PVC Association)?

Based on the food sanitation law, the specifications define the recommended materials, unintended materials for use, and the methods of material and dissolve tests. The display of JHP logo is allowed for the products approved by the association. Pure Foods Spring Hose does not contain any phthalate acid, which is registered with the JHP specifications and allowed to display the logo.

Usege	For conveyance of foods and beverages
Features	A safe hose conforming to the JHP specifications (refer to P.9) without harmful substances contained.
Fluids	Foods and beverages

Silicon Hose

This hose can be used in a wide range of temperature between -30℃ and 150℃.

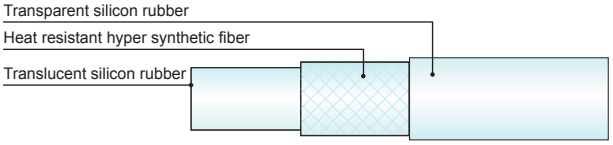
Silicon product

Specifications: Working temperature limit: Between -30℃ and + 150℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)	Derivery unit (roll)
SH-5	4.8	10.6	10	1.0	70	0.8	5
SH-6	6.3	12.3	10	1.0	80	1.1	5
SH-8	7.9	14.3	10	1.0	90	1.3	4
SH-9	9.5	16.5	10	1.0	100	1.7	3
SH-12	12.7	20.1	10	0.5	130	2.3	2
SH-15	15.9	24.1	10	0.5	150	3.1	1
SH-19	19.0	28.2	10	0.5	180	4.1	1
SH-25	25.4	35.6	10	0.5	300	5.9	1
SH-32	32.0	43.8	10	0.5	360	8.4	1
SH-38	38.1	50.7	10	0.5	430	10.5	1
SH-50	50.8	65.0	6	0.3	550	9.3	1

* The sizes or colors other than listed above are available by a lot production. The burst pressure is estimated under the condition of 20℃.

[Structure] Transparent silicon rubber
Heat resistant hyper synthetic fiber
Translucent silicon rubber



Usege	For soft drinks, and high-and-low temperature equipment such as air-conditioners, transducers, and office automation devices.
Features	It can be used in a wide range of temperature between -30℃ and +150℃.
Fluids	Water, Various foods, Chemicals

Food hoses and applicable specifications

Food sanitation law (Announcement No. 370 by the Ministry of Health and Welfare)

		Descriptions of tests		Specifications			
				PVC		Polyethylene (PE) and Polypropylene (PP)	Nylon (PA)
					Utensils or container packages that contact fatty foods		
				JHP specifications			
				Announcement No.595	Announcement No.267	Announcement No.595	Announcement No.595
General specifications	Materials	Lead		100 μg/g or less	-	100 μg/g or less	100 μg/g or less
		Cadmium		100 μg/g or less	-	100 μg/g or less	100 μg/g or less
		Bis phthalate (2-ethylhexyl)		-	Do not use.(Less than 0.1%)	-	-
	Elution	Precious metals		1 μg/m or less	-	1 μg/m or less	1 μg/m or less
		Potassium permanganate consumed		10 μg/m or less	-	10 μg/m or less	10 μg/m or less
Individual specifications	Material test	Dibutyltin compound		50 μg/g or less	-	-	-
		Cresol phosphoric adid ester		1000 μg/g or less	-	-	-
		Polyvinyl chloride		1 μg/m or less	-	-	-
	Elution test	Evaporation residue	heptane	150 μg/m or less	-	150 μg/m or less	30 μg/m or less
			20% ethanol	30 μg/m or less	-	30 μg/m or less	
			Water		-		
			4% acetic acid		-		
		Caprolactam	20% ethanol	15 μg/m or less	-	-	15 μg/m or less

Outline of the specifications

	Announcement and name of the specifications	Descriptions	Target food products
Food sanitation law	Announcement No.595 by the Health, labour and Welfare Ministry in 2011	Utensils or container packages made of synthetic resin	Fatty foods, alcoholic beverages, and other food products
JHP specifications	Established by Japan Hygienic PVC Association (JHPA)	Self-imposed control of the food sanitation for vinyl chloride resin products	

Food sanitation law (Announcement No. 595 by the Ministry of Health and Welfare)

Material test		
2-mercaptoimidazoline	Pb	Cd
ND (conducted for chlorinated rubbers)	100 μg/g or less	100 μg/g or less

Our accepted products	Elution condition	Elution test						
Silicone hose	The test is conducted by soaking in an immersion solution of 2ml per 1cm² in 60℃ for 30 minutes, and the resulted solution is studied (for the products to be used in the temperature of 100 degrees or more, they are soaked in 95℃ for 30 minutes).	Phenol	Formic aldehyde	Zn	Precious metals	Evaporation residue		
		Water	Water	4% acetic acid	4% acetic acid	Water	4% acetic acid	20% ethanol
		5 μg/ml or less	Negative	15 μg/ml or less	1 μg/ml or less	Food and water exceeding PH5	Food of below PH5	Alcoholic beverages and fatty foods
						60 μg/ml or less		

Our approved products and test menus

Foods Hose		Announcement and general application	Descriptions	Target foods		Specifications standard
Pure Foods Hose Pure Foods Spring Hose	Food sanitation law of the Ministry of Health, Labour and Welfare	Announcement No.267 (2002)	Utensils or container packages made of vinyl chloride resin	Fatty foods	Materials and elution test	The compounding agent “Bis phthalate (2-ethylhexyl)” is below the standard value. Content: 0.1% or less Elution amount: 1μg/ml or less (immersion condition: 25℃ for one hour)
Pure Foods Hose Pure Foods Spring Hose Heat-Resistant Eco Hose		Announcement No.595 (2011)	Utensils or container packages made of synthetic resin	Fatty foods	Elution test and evaporation residue	In the specifications test, elution amount is 150 μg/ml or less in the condition where the heptane is used for the immersion solution in 25℃ for an hour.
				Alcoholic beverages		In the specifications test, elution amount is 30 μg/ml or less in the condition where the 20% ethanol is used for the immersion solution in 25℃ for 30 minutes.
				Other foods		In the specifications test, elution amount is 30 μg/ml or less in the condition where the 4% acetic acid and water are used for the immersion solution in 60℃ for 30 minutes.
Silicone Hose		Announcement No.595 (2011)	Utensils or container packages made of rubbers	Fatty foods		In the specifications test, elution amount is 60 μg/ml or less in the condition where the 20% ethanol is used for the immersion solution in 60℃ for 30 minutes.
				Alcoholic beverages		In the specifications test, elution amount is 60 μg/ml or less in the condition where the 20% ethanol is used for the immersion solution in 60℃ for 30 minutes.
				Other foods		In the specifications test, elution amount is 60 μg/ml or less in the condition where the 4% acetic acid and water are used for the immersion solution in 60℃ for 30 minutes (if the operating temperature exceeds 100℃, they must be 95℃ for 30 minutes).

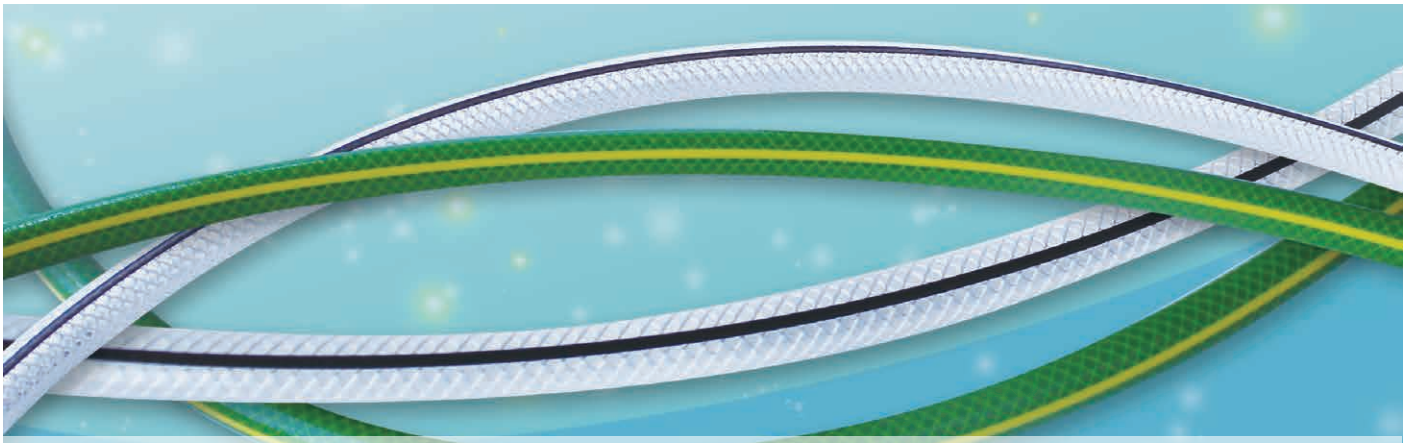
Penalty: Sentence of six months or less, or fine of 300,000 yen or less (applicable for both provider and user)

Hoses are regarded as one of the utensils. For the food sanitation law, only the provision, “utensils or container packages that contact foods or food additives”, is applicable.

JHP specifications (self-imposed control on the food sanitation for vinyl chloride resin products) have following meanings:

* JHPA(Japan Hygienic PVA Association) voluntarily defines the material list (postive list) which can be used for PVC products, specifications of the products, and test method (applying the announcement of the Health and Welfare Ministry based on the food sanitation law) in order to protect the health and safety of Japanese citizens with the view of conforming to the food sanitation law.
* Health and Welfare Ministry announcement No.595

According to the Notice of the Ministry of Health and Welfare No. 85, April 1st in 1986. The Notice of the Ministry of Health and Welfare No. 20 prescribes only for nursing equipments as Rubber Products so No.85 was newly prescribed for the whole field of rubber products as below but due to the revision of the test method, No.595 was prescribed in 2012.



Painting Hose

A wide variety of products are prepared in this series to support manual spray, spray robot and automatic spray machines. Each product in this series has following features: swelling property is improved; inner roughness is ultimately studied to shorten the setup time; and a ground connection is added for removing the static electricity.

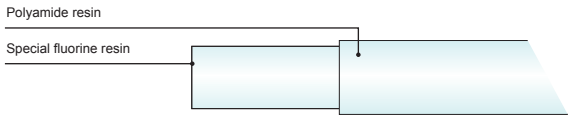
FA Tube

Compared to conventional fluorine tube, the softness and smoothness of inner tube have been improved, attaining superior workability.

Specifications: Working temperature limit: Between -20℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
FA-6	4.0	6.0	100	1.2	18	2.0
FA-8	6.0	8.0	100	1.2	30	2.8
FA-10	8.0	10.0	100	1.2	50	3.5

[FA Structure]



Usege	For piping of paints, solvents, and paint robots, and conveyance of foods and beverages.
Features	Compared to conventional fluorine tubes, the retention power against burst pressure after bending the tube has been greatly upgraded.
Fluids	Paints Solvents Various foods

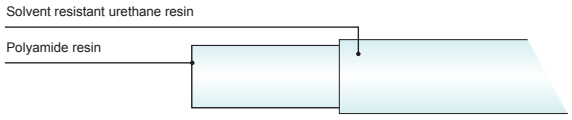
Sun Paint Tube (P)

Superior in flexibility by using solvent resistant urethane resin for the outer layer. This tube is designed to improve the workability of painting processes.

Specifications: Working temperature limit: Between -20℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
P-7	7.0	10.0	100	0.5	45	5.1

[P Structure]



Usege	Piping for paints and solvents
Features	Reduces the load of workers.
Fluids	Paints Solvents

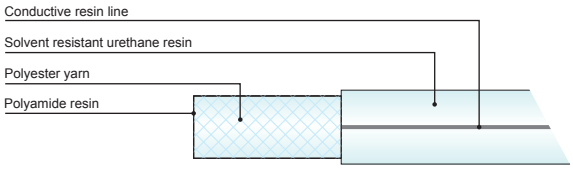
Sun Paint Hose (PB-easy)

With the use of polyamide resin, the solvent resistance is significantly improved compared to conventional painting hoses.

Specifications: Working temperature limit: Between -20℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
PB-easy-7	6.5	10.0	100	1.5	35	5.7

[EASY Structure]



Usege	For piping of paints and solvents
Features	Superior in flexibility and pressure resistance, this hose will improve the workability.
Fluids	Paints Solvents

Features

A versatile painting hose is now available!

- As a conductive sleeve is applied around the outer layer, the grounding can be completed just by tightening the metallic joint (when the resistance value is “9 x 10^6 W” or less, and the whole length is 15m or less).

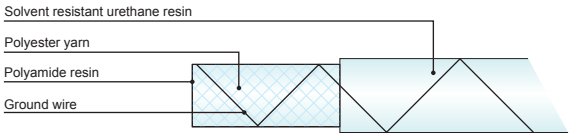
Sun Paint Hose (PB-with a ground wire)

With the use of polyamide resin, the solvent resistance is significantly improved compared to conventional painting hoses.

Specifications: Working temperature limit: Between -20℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
PB-7	6.5	10.0	100	1.5	35	5.7

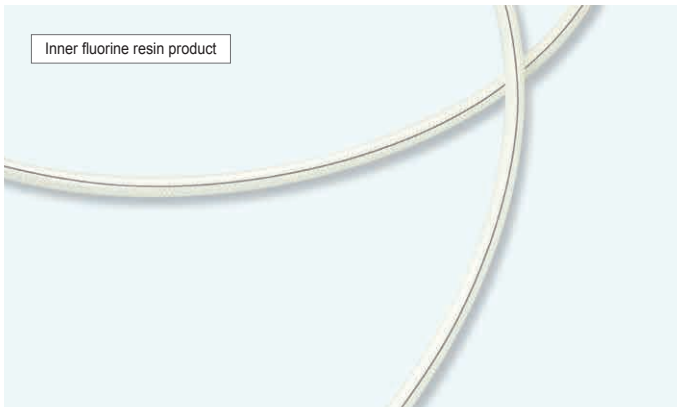
[PB Structure]



Usege	For piping of paints and solvents
Features	Superior in flexibility and pressure resistance, this hose will improve the workability.
Fluids	Paints Solvents

Sun Paint Hose (FUB-easy)

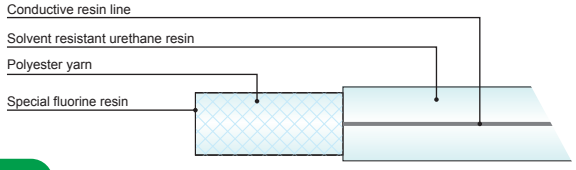
With the use of special resin for the outer layer, this hose is superior in significant flexibility.
The fluorine resin, used for the wetted layer, will also demonstrate the significant resistance to water paints.



Specifications: Working temperature limit: Between -20℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
FUB-easy-7	7.0	10.0	100	1.5	33	5.5

[EASY Structure]



Usege	For piping of paints and solvents
Features	The fluorine resin, used for the wetted layer, will demonstrate the significant resistance to water paints in addition to oil paints.
Fluids	Paints

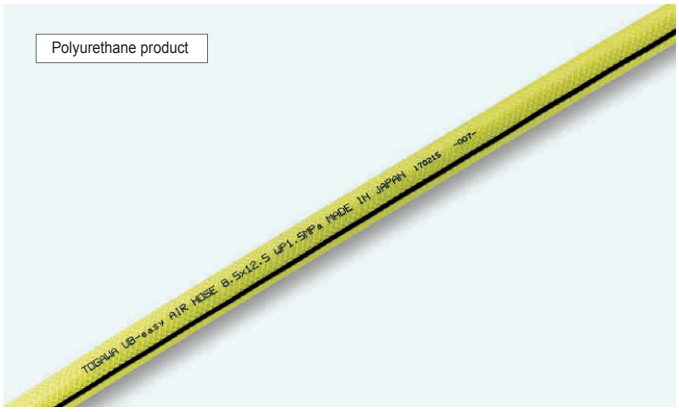
Features

Best choice of manual paint hose!

- As the inner fluorine resin is superior in inner roughness, this hose will help to shorten the setup time for color change.

UB-easy Air Hose

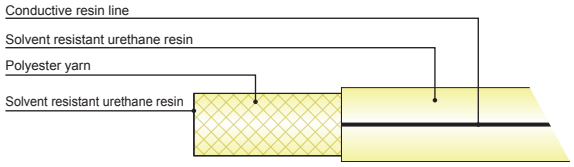
A versatile conductive air hose is now available!



Specifications: Working temperature limit: Between -5℃ and +60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
UB-6510	6.5	10.0	100	1.5	35	5.4
UB-8512	8.5	12.5	100	1.5	45	8.3

[EASY Structure]

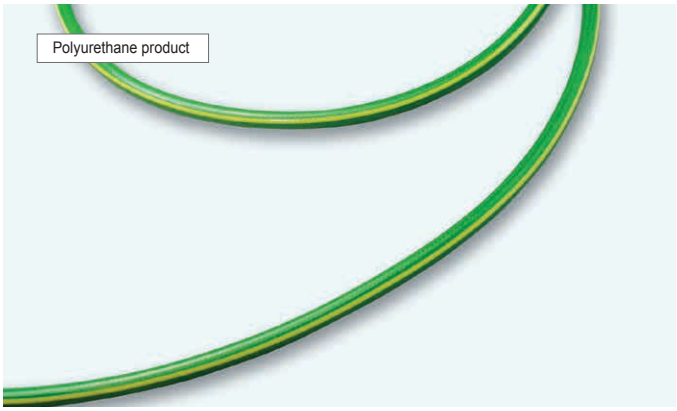


Usege	Conductive air hose for painting
Features	Just tighten the metal fittings! No need to bare ground wire.
Fluids	Air

● As a conductive sleeve is applied around the outer layer, the grounding can be completed just by tightening the metalic joint (when the resistance value is $9\times10^{6}\Omega$ or less, and the whole length is 15m or less).

Conductive Air Hose (SEH)

A conductive material is used for inner layer and the grounding can be completed just by connecting a metallic joint.



Specifications: Working temperature limit: Between -20℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
SEH-6	6.5	10.0	100	1.5	35	5.7
SEH-8	8.5	12.5	100	1.5	45	8.4

Electric resistance value (Ω)

Nominal designation	Length of hose (m)	
	10m	20m
SEH-6	1.0×10^{5}	2.0×10^{5}
SEH-8	1.0×10^{5}	1.5×10^{5}

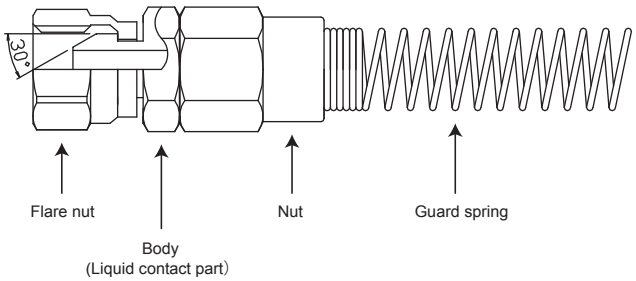
*1. Purpose: The values of electric resistance of conductive air hoses, 6.5 x 1B x 10 and 8.5 x 1B x 12.5 in 10m and 20m, are measured.
*2. Test method: A joint (brass) is attached to the conductive air hoses, SE-H6 and SE-H8, and the electric resistance values between the hoses are measured.

Usege	For antistatic piping of painting
Features	Stripping off the ground wire is not necessary, which improves the workability. A reliable grounding can be achieved.
Fluids	Air

Joints for Painting Hose

Nominal designation	Joint type	Screw size	Guard spring	Conformed hose	Material
T05-6510 1/4 SB	Female	G 1/4	×	PB-easy 7 PB-7 Fub-easy 7	Liquid contact part:SUS304 Nut: Brass (electroless nickel plating)
T05-6510 1/4 SBGS	Female	G 1/4	○		
T05-6510 3/8 SB	Female	G 3/8	×		
T05-6510 3/8 SBGS	Female	G 3/8	○		

Structure



List of painting hoses

Air Hose

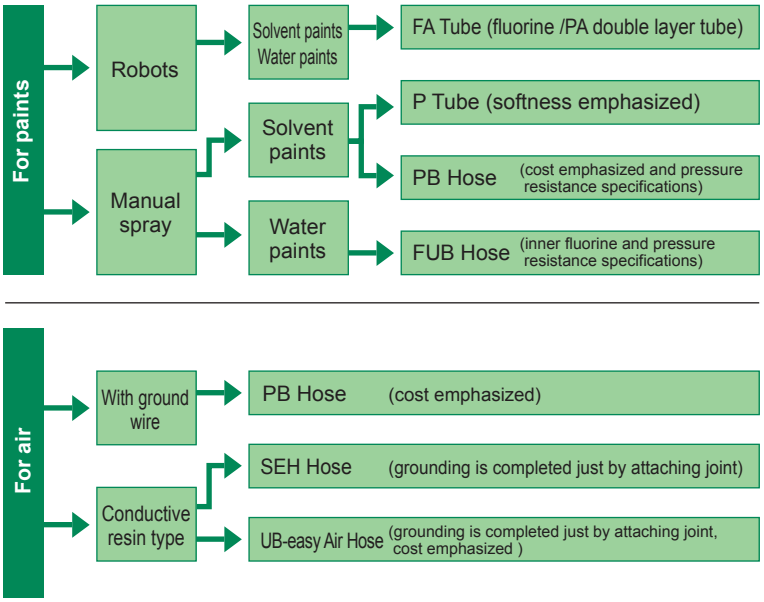
To be recommended use Electric Conducted Air hoses for both of the Air Spray and Electric Static Spray Gun.

- Conductive Air Hose (SEH)
- UB-easy

Actual working pressure (MPa) 0.5～0.6

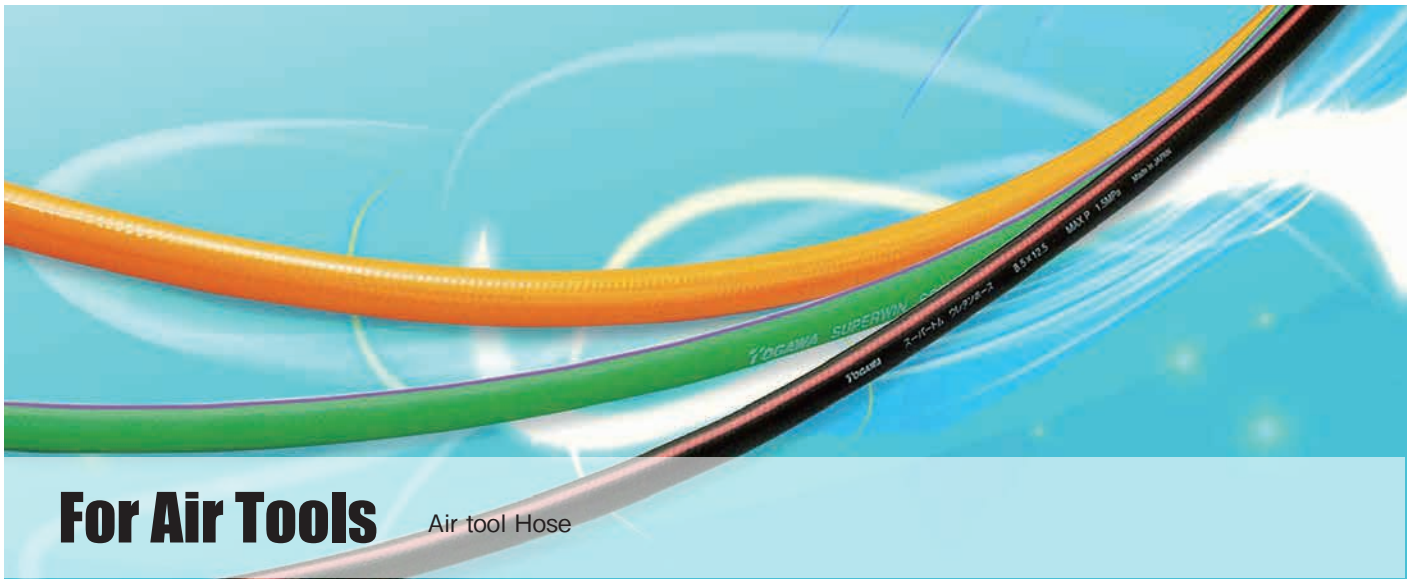
Paint Hose

	Paint Type	Typical Spray Gun	Actual working pressure(MPa)	Tube & Hose
Robot Auto machine	Under Body Coat	Air Less Gun	15～25	Airless Hose
	Stone Guard Coat	Air-Airless Gun	7～8	Airless Hose
	Primer Coat	ES Gun	0.4～0.5	FA Tube PA Tube
	Surface Coat	ES Gun / Bell		
	To Coat / Base & Clear	ES Gun / Bell		
Manual Spray Gun	Under Body Coat	Air Less Gun	15～25	Airless Hose
	Stone Guard Coat	A-A Gun	7～8	Airless Hose
	Primer Coat	Air Spray Gun E/S Spray Gun	0.2～0.3	PB Hose FUB Hose
		HVLP Gun	0.2～0.6	



Comparison data of manual spray hose

Description (unit)		For solvent paints		For water paints	Test method
		Tube	With reinforced yarns		
		P Tube	PB Hose	FUB Hose	
Hose size (mm)		7x10	6.5x10	7x10	
Immersion test <Immersion solvents: solvent thinner>		+22% (△)	+26% (△)	35% (△)	Togawa method: The hose (25mm) is soaked in an immersion solvent for 20 days and the fluctuation of weight is measured.
Amount of deflection (mm)		49 (○)	54 (○)	41 (○)	Togawa method: A load weight of 100g is applied to the edge of a 150mm tube, and the amount of deflection is measured.
Checking of water paint appropriateness A water paint base is filled in the hose, which is left for 20 days	Condition of paint	The paint is somewhat sticky (△)	The paint is somewhat sticky (△)	The paint is watery (◎)	After leaving the hose for 20 days, the degree of removability by natural force is compared.
	Condition of inner hose	A few residual paints (△)	A few residual paints (△)	No residual paints (○)	After removing the residual paints, a water thinner (2 cc) is poured for two times, and the inner part is checked.



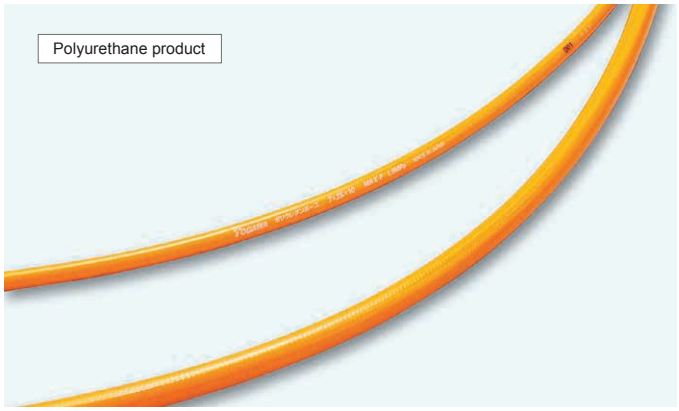
For Air Tools

Air tool Hose

A series of air hoses that support maximum working pressure of each application. The hoses can be used for various air tools, spray paint, and air piping at factories with a variety of different colors for color coding.

Polyurethane Hose (TPH)

Appropriate for air tools (air-tucker, pegger machine, and impact wrench), paint, spray, in-factory air tools.



Specifications: Working temperature limit: Between -40℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)	Color
TPH-6510	6.5	10.0	100	1.5	30	5.7	● ●
TPH-8512	8.5	12.5	100	1.5	40	8.3	● ●
TPH-1116	11.0	16.0	50	1.5	45	6.5	●

Performance evaluation

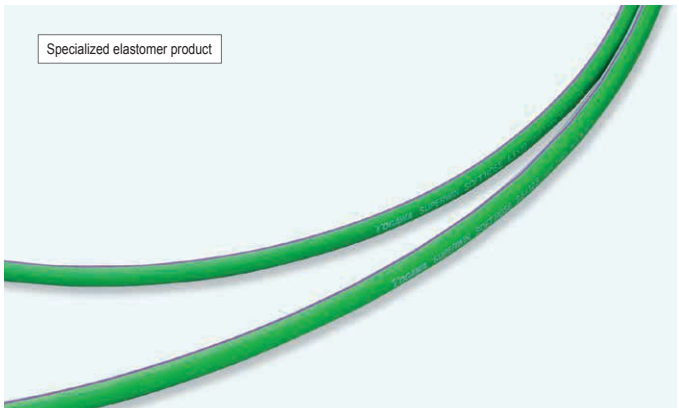
Descriptions	Evaluation	Descriptions	Evaluation
Lightness	☆☆☆☆☆	Smoothness	☆☆☆
Softness	☆☆☆	Spattering resistance	☆☆

* All the evaluations were made in-house
* Use our specified brackets

Usege	For air-paint, air-spray, and in-factory air tools
Features	With flexibility and light weight, this hose is appropriate for construction sites.
Fluids	Air

Super Win Soft Hose

With further softness and smoothness, this hose is free from winding or hopping.



Specifications: Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
SWH-6510	6.5	10.0	100	1.5	20	5.8
SWH-8512	8.5	12.5	100	1.5	40	8.3
SWH-1116	11.0	16.0	100	1.5	45	6.7

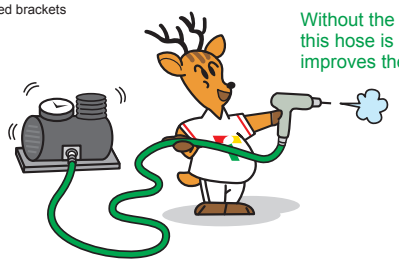
Performance evaluation

Descriptions	Evaluation	Descriptions	Evaluation
Lightness	☆☆☆☆☆	Smoothness	☆☆☆☆☆
Softness	☆☆☆☆☆	Spattering resistance	☆☆☆

* All the evaluations were made in-house
* Use our specified brackets

Usege	For air-paint, air-spray, and in-factory air tools
Features	With the increased smoothness, this hose is easy to carry and improves the workability. Superior in water resistance, elasticity, and airtightness, this hose is appropriate for air tool piping.
Fluids	Air

Without the winding or hopping, this hose is easy to carry and improves the workability.



Super Tom Spatter Hose

Compared to conventional air hoses, this hose has greater resistance against sparks due to the inclusion of spark resistance substances, which is appropriate for using at welding sites and automobile service garages, etc.

Usege For air-paint, air-spray, and in-factory air tools

Features Compared to conventional urethane hoses, this hose has greater resistance against sparks due to the inclusion of spark resistance substances, which is appropriate for using at welding sites and automobile service garages, etc.

Fluids Air

Specifications: Working temperature limit: Between -40℃ and + 60℃

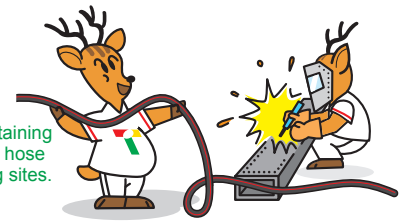
Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size weight (kg)
STH-6510	6.5	10.0	100	1.5	30	5.7
STH-8512	8.5	12.5	100	1.5	40	8.3

Performance evaluation

Descriptions	Evaluation	Descriptions	Evaluation
Lightness	★★★★★	Smoothness	★★★★★
Softness	★★★★	Spattering resistance	★★★★★

* All the evaluations were made in-house
* Use our specified brackets

With the specialized material containing spark resistance substances, this hose is appropriate for using at welding sites.



Takumi Air Reel

Usege For air-paint, air-spray, and in-factory air tools.

Features Reels with rotation function, you can choose the direction. Super flexible hose 'Takumi' Air Hose attached.

Fluids Air

Specifications: Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Hose size	Regular size (m)	Maximum working pressure MPa at 20℃	Regular size weight (kg)
Takumi Air Reel (TAR)	6.5×10	30	1.5	8.0

Quattro Air Reel

Usege For air-paint, air-spray, and in-factory air tools.

Features Reels with rotation function, you can choose the direction. High pressure and super flexible hose Quattro Hose attached.

Fluids Air

Specifications: Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Hose size	Regular size (m)	Maximum working pressure MPa at 20℃	Regular size weight (kg)
Quattro Reel (QAR)	6.0×10	30	4.0	8.3

Sun Tech Air Reel

Usege For air-paint, air-spray, and in-factory air tools.

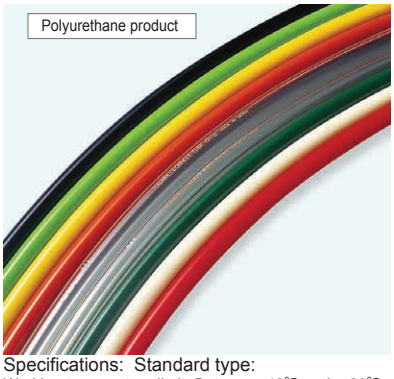
Features Reels with rotation function, you can choose the direction. Sun Tech Air Hose attaced. You can order the reel stand without a hose.

Fluids Air

Specifications: Working temperature limit: Between -40℃ and + 60℃

Nominal designation	Hose size	Regular size (m)	Maximum working pressure MPa at 20℃	Regular size weight (kg)
Sun Tech Air Reel (STR)	7.0×10	30	1.5	7.8

Connect Tube (CH)



Usege A tube for various pneumatic machines

Features Superior in oil resistance, this tube is appropriate for in-factory air piping.

Fluids Air

Specifications: Standard type:
Working temperature limit: Between -40℃ and + 80℃

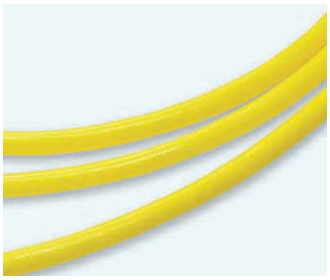
Nominal designation	Outer diameter (mm)	Inner diameter (mm)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Regular size (m)	Regular size weight (kg)
CH-4 BK	4.0	2.5	0.7	10	100	0.9
CH-6 BK	6.0	4.0	0.7	15	100	1.9
CH-8 BK	8.0	5.0	0.7	24	100	3.7
CH-10 BK	10.0	6.5	0.7	30	50	2.7
CH-12 BK	12.0	8.0	0.7	36	50	3.75

Sun Tech Air Hose

A convenient and affordable air hose combined with a pair of couplers.
The hose is available in a variety of different colors.

Specifications: Working temperature limit: Between -40℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Brackets used	Delivery unit	Color
STC-7010	7.0	10.0	10	1.5	40	Two-touch coupler	10	● ● ●
STC-7020	7.0	10.0	20	1.5	40		10	● ● ●
STC-7030	7.0	10.0	30	1.5	40		10	● ● ●
STC-7100	7.0	10.0	100	1.5	40	–	–	●



Usege	For air-paint, air-spray, and in-factory air tools
Features	A convenient and affordable air hose with a pair of couplers. Available in a variety of different colors as orange, green, and yellow.
Fluids	Air

Takumi Air Hose

Characterized by the extraordinary flexibility of the special resin. You may feel as if no hose is attached.

Specifications: Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Brackets used	Delivery unit
TAC-6510	6.5	10.0	10	1.5	20	One-touch aluminum coupler	10
TAC-6520	6.5	10.0	20	1.5	20		10
TAC-6530	6.5	10.0	30	1.5	20		10
TAC-6100	6.5	10.0	100	1.5	20	–	–

Super flexible hose with light weight coupler!

This hose can be used in a wide variety of applications such as pegger machines, air-tuckers, and air-spray guns. This hose may be well praised even by professional skilled workers. The couplers, made of aluminum, are characterized by the light weigh, resistance to damages, and increased removability and operability. In addition, the couplers are superior in versatility which can be used for a variety of applications ranging from in-factory air piping to hose connection with air tools.

Usege	For air-paint, air-spray, and in-factory air tools
Features	Characterized by the extraordinary light weight with the aluminum couplers.
Fluids	Air

Quattro Air Hose

The high pressure hose of super flexibility and smoothness which can support up to 4MPa maximum operating pressure.

Specifications: Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Minimum bending radius (mm)	Brackets used	Delivery unit
QHC-6010	6.0	10.0	10	4.0	18	One-touch aluminum coupler	10
QHC-6020	6.0	10.0	20	4.0	18		10
QHC-6030	6.0	10.0	30	4.0	18		10

Performance evaluation

Descriptions	Evaluation	Descriptions	Evaluation
Lightness	☆ ☆ ☆ ☆ ☆	Smoothness	☆ ☆ ☆ ☆ ☆
Softness	☆ ☆ ☆ ☆	Spattering resistance	☆ ☆ ☆ ☆ ☆

* All the evaluations were made in-house
* Use our specified brackets

Usege	For air tools (pegger machines and air-tuckers) and in-factory air tools.
Features	A high pressure hose that supports up to 4MPa maximum operating pressure and significantly shorten the work hours. With the new proprietary special material, this hose cannot get stuck or kinked easily.
Fluids	Air

Connect Coil

With its spring characteristic, this coil won't get kinks easily, which is appropriate for air tools.

Polyurethane product

Usege	For air-paint, air-spray, and in-factory air tools
Features	Because of a coil form, this product will cover broader working space with fewer kinks and wears. As the edges are straightened, no hoses are necessary, and the couplers will improve the workability.
Fluids	Air

Specifications: Working temperature limit: Between -40℃ and + 80℃

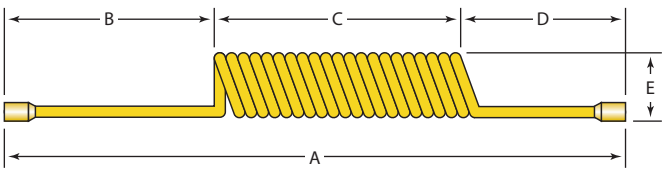
Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Working space (m)	Brackets of both ends	Maximum working pressure MPa at 20℃	Delivery Unit
CHU-5080-3	5.0	8.0	2.0	PF 1/4 Female connector	0.7	10
CHU-5080-5	5.0	8.0	4.0	PF 1/4 Female connector	0.7	10
CHU-5080-7	5.0	8.0	6.0	PF 1/4 Female connector	0.7	10
CHU-5080-10	5.0	8.0	8.0	PF 1/4 Female connector	0.7	10
CHU-6510-3	6.5	10.0	2.0	PF 1/4 Female connector	0.7	10
CHU-6510-5	6.5	10.0	4.0	PF 1/4 Female connector	0.7	10
CHU-6510-7	6.5	10.0	6.0	PF 1/4 Female connector	0.7	10
CHU-6510-10	6.5	10.0	8.0	PF 1/4 Female connector	0.7	10
CHU-8012-3	8.0	12.0	2.0	PF 1/4 Female connector	0.7	10
CHU-8012-5	8.0	12.0	4.0	PF 1/4 Female connector	0.7	10
CHU-8012-7	8.0	12.0	6.0	PF 1/4 Female connector	0.7	10
CHU8012-10	8.0	12.0	8.0	PF 1/4 Female connector	0.7	10

Description of nominal designation: CHU [b] [c] — [d]

b: inner diameter
50=Φ5.0
65=Φ6.5
80=Φ8.0

c: outer diameter
80=Φ8.0
10=Φ10.0
12=Φ12.0

d: length of straight line
3=3.0m 7=7.0m
5=5.0m 10=10.0m



Nominal designation	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
CHU-5080-3	780	500	180	100	42.0
CHU-5080-5	1,000	500	400	100	42.0
CHU-5080-7	1,230	500	630	100	42.0
CHU-5080-10	1,400	500	800	100	42.0
CHU-6510-3	785	500	185	100	52.0
CHU-6510-5	1,000	500	400	100	52.0
CHU-6510-7	1,235	500	635	100	52.0
CHU-6510-10	1,400	500	800	100	52.0
CHU-8012-3	780	500	180	100	65.0
CHU-8012-5	990	500	390	100	65.0
CHU-8012-7	1,190	500	590	100	65.0
CHU8012-10	1,380	500	780	100	65.0

Sun Tech Coil

Superior in robustness in addition to high flexibility, elasticity, and wear resistance.

Polyurethane product

Usege	For air-paint, air-spray, and in-factory air tools
Features	Because of a coil form, this product will cover broader working space with fewer kinks and wears. As the edges are straightened, no hoses are necessary, and the couplers will improve the workability.
Fluids	Air

*This product is made in China.

Specifications: Working temperature limit: Between -40℃ and + 80℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Working space (m)	Brackets of both ends	Maximum working pressure MPa at 20℃	Delivery Unit
SCH-5080-3	5.0	8.0	2.0	Two-touch coupler	0.7	10
SCH-5080-5	5.0	8.0	4.0	Two-touch coupler	0.7	10

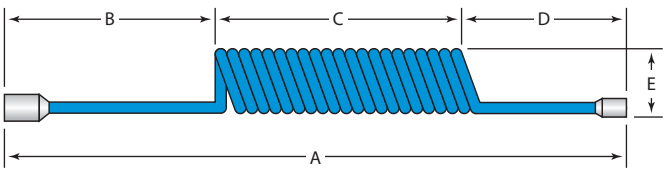
Superior in flexibility, elasticity, and wear resistance.

Description of nominal designation: SCH [b] [c] — [d]

b: inner diameter
50=Φ5.0

c: outer diameter
80=Φ8.0

d: length of straight line
3=3.0m
5=5.0m



Nominal designation	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
SCH-5080-3	780	500	180	100	42.0
SCH-5080-5	1,000	500	400	100	42.0

Debut as a new standard

Revolution of Pressure Hose!

High Pressure Resistance

Industrial Hose suitable for use with water supply of machines and factories, air piping, and water supply for engineering and construction sites.

MEGA SUN-BRAID HOSE

Flexible PVC product

MADE IN JAPAN

Pressure resistance of 4-25mm exceeded 1.0MPa!

Specifications: Working temperature limit: Between -5℃ and + 60℃

Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃		Minimum bending radius (mm)	Regular size weight (kg)
				Previous product	MEGA SUN-BRAID HOSE		
SB-4	4.0	9.0	100	1.1	1.5	16	7
SB-6	6.0	11.0	100	1.1	1.5	24	9
SB-8	8.0	13.5	100	1.1	1.4	32	12
SB-9	9.0	15.0	100	1.1	1.4	36	15
SB-10	10.0	16.0	100	1.1	1.1	40	16
SB-12	12.0	18.0	100	1.0	1.0	48	18
SB-15	15.0	22.0	100	0.8	1.0	60	26
SB-19	19.0	26.0	50	0.7	1.0	76	16
SB-22	22.0	29.0	50	0.7	1.0	88	18
SB-25	25.0	33.0	50	0.6	1.0	100	23
SB-32	32.0	41.0	50	0.5	0.7	128	33
SB-38	38.0	48.0	50	0.4	0.6	152	43
SB-50	50.0	62.0	40	0.3	0.6	200	55
SB-63	63.0	80.0	20	0.3	0.3	252	52
SB-75	75.0	92.0	20	0.3	0.3	300	60

Use

For water supply of machines and factories, air piping, and water supply for engineering and construction sites.

Features

Highly elastic resin is used.
The fluids can be visually checked easily.

Fluids

Water　Oil

Note: Cannot be used for fuel oil

e-mail global@togawa-sangyo.co.jp

With four times pressure resistance of ordinary pressure resistant hose!

High Pressure Resistance

MEGA HIGH PRESSURE HOSE

Flexible PVC product

MADE IN JAPAN

Nominal designation	I.D. (mm)	O.D. (mm)	Maximum Working Pressure (MPa at 20℃)	Minimum bending radius (mm)	Weight (kg/m)	Length (m)
MB-19	19.0	28.0	4.0	90	0.408	100
MB-25	25.0	35.0		100	0.579	100
MB-32	32.0	42.0	2.0	160	0.715	50

●Working temperature: -5℃~+60℃ * MB-32 will be lot production.

Usage	Features	Fruid
For water supply of machine and factories, air piping, and water supply for engineering and construction sites.	High pressure resistance. The fluid can be visualy checked easily.	Water Chemicals Note: Cannot be used for fuel oil

*To improve quality, specs are subjected to change without notice.
*Due to the characteristics of the print, the color of the hose might be slightly different from the actual products.

A versatile conductive air hose is now available!

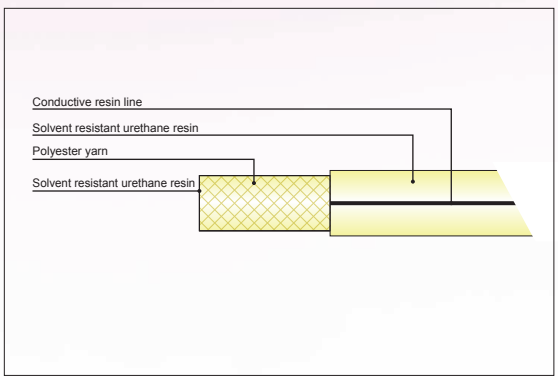
Antistatic

UB-easy AIR HOSE

Polyurethane product

MADE IN JAPAN

Nominal designation	I.D. (mm)	O.D. (mm)	Regular Size (m)	Max.Working Pressure MPa at 20℃	Min Bending radius (mm)	Regular size weight (kg)
UB-6510	6.5	10.0	100	1.5	35	5.4
UB-8512	8.5	12.5	100	1.5	45	8.3



Working temperature limit: Between -5℃~+60℃

Applications	Features	Fruids
Conductive air hose for painting	Just tighten the metal fittings! No need to bare ground wire.	Air

●As a conductive sleeve is applied around the outer layer, the grounding can be completed just by tightening the metalic joint (when the resistance value is $9\times10^{6}\Omega$ or less, and the whole length is 15m or less).

e-mail global@togawa-sangyo.co.jp

Japan market No.1 "TOGAWA"Brand Spray Hose

Very Light weight Long Life

HIGH PRESSURE HOSE

Flexible PVC product

MADE IN JAPAN

Special features by using at high pressure...

- Can sprinkle agrochemicals to all surfaces of farm products.
- Can supply liquid fertilizer with uniformly and density.
- Fog cooling effect will keep greenhouses at a suitable temperature.

Specifications: Working temperature limit : Between -5℃ and + 60℃

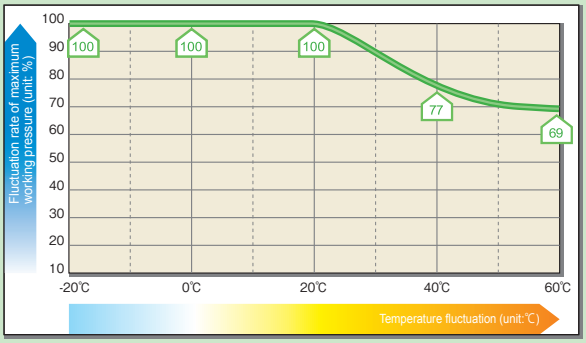
Nominal designation	Inner diameter (mm)	Outer diameter (mm)	Regular size (m)	Maximum working pressure MPa at 20℃	Burst puressure MPa at 20℃	Brackets
HP-8.5	8.5	14.5	50・100	4.0	14.0	ISO
HP-10	10.0	17.0	50・100	4.0	14.0	ISO

Use	Features	Fluids
For agricultural machines	Very flexible and easy to handle Very light weight	Water Agrichemicals Note: Cannot be used for fuel oil

Pressure Resistance Data

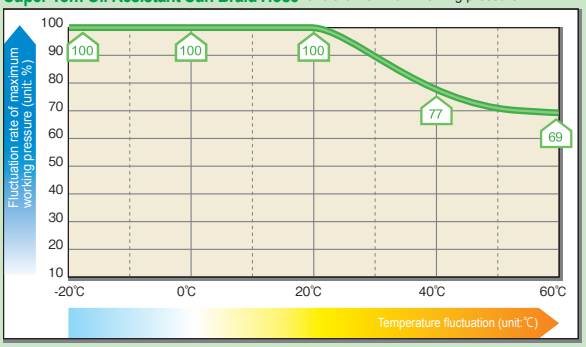
MEGA Sun Braid Hose

Relationship between the working temperature and the maximum working pressure



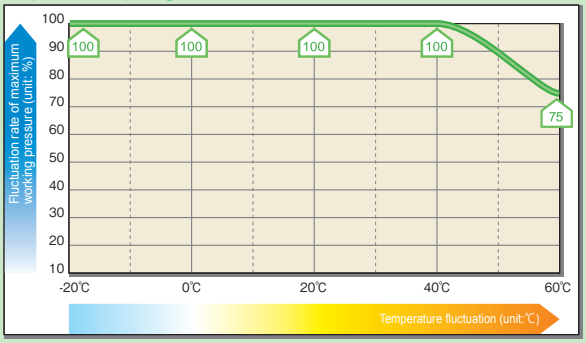
Super Tom Oil Resistant Sun Braid Hose

Relationship between the working temperature and the maximum working pressure



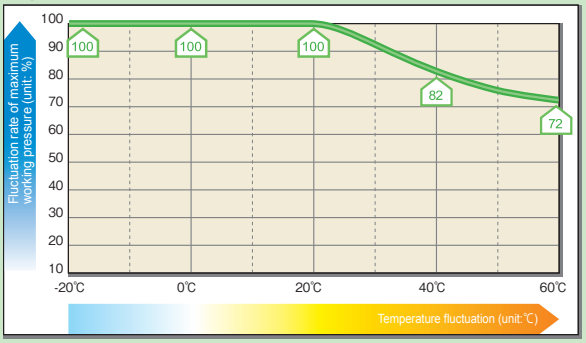
Super Sun Spring Hose

Relationship between the working temperature and the maximum working pressure



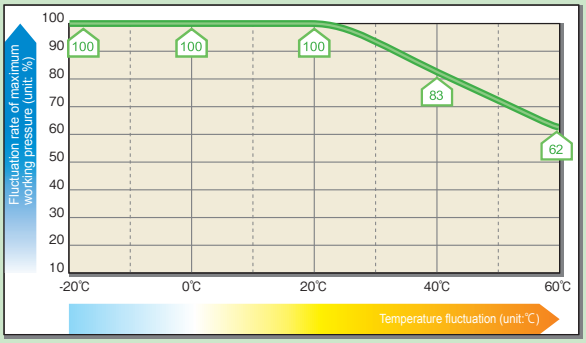
Super Air Hose

Relationship between the working temperature and the maximum working pressure



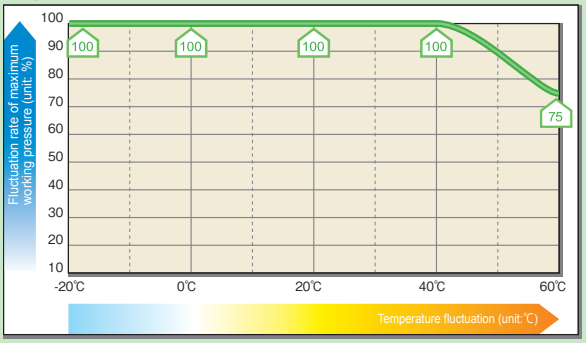
Polyurethane Hose

Relationship between the working temperature and the maximum working pressure



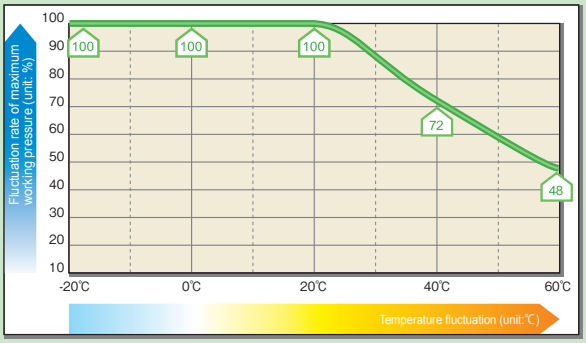
Super Win Soft Hose

Relationship between the working temperature and the maximum working pressure



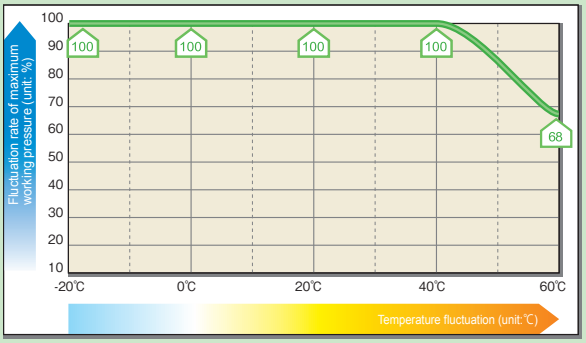
Super Tom Spatter Hose

Relationship between the working temperature and the maximum working pressure



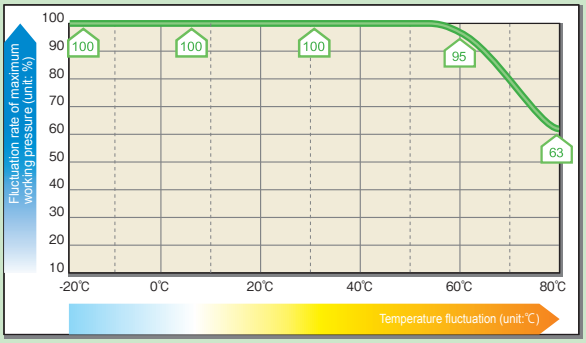
Quattro Air Hose

Relationship between the working temperature and the maximum working pressure



Heat-Resistant Eco Hose

Relationship between the working temperature and the maximum working pressure



* The above pressure resistant data on the graph does not indicate the guaranteed value. Use the data for your reference only.

TOGAWA INDUSTRY CORPORATION

Series Selection Chart

Series	Product name	Flexibility	Transparency	Oil resistance	Pressure resistance	Robustness	Negative pressure resistance	Main Usage	Materials	Outer layer color	Page placed
Industrial Hose	MEGA Sun Braid Hose	◎	◎	○	◎	△	×	Piping for factory equipment	PVC	Transparent blue	3
	Super Tom Oil resistance Sun Braid Hose	◎	○	◎	◎	△	×	Machine tools	Oil resistance PVC	Transparent green	3
	Super Sun Spring Hose	○	◎	◎	△	◎	○	For conveyance	Oil resistance PVC	Transparent	4
	Super Tom Flex Hose	○	○	◎	△	◎	○	For chemical	Oil resistance PVC	Transparent blue	4
	Foam Sun Braid Hose	△	×	○	◎	△	×	Cooling chiller piping	PVC	Black	5
	Super Air Hose	○	×	○	◎	◎	×	Air piping	PVC	Black and blue	5
	Super Water Hose	○	×	○	◎	◎	×	Water piping	PVC	Green	5
	Transparent Vinyl Tube	◎	◎	△	×	×	×	Piping and protective	PVC	Transparent	6
	Super Tom Fusso Tube	○	○	◎	×	△	×	For chemical	Fluorine	Transparent	6
	Super Tom Fusso-easy Hose	△	○	◎	◎	○	×	For chemical	Fluorine	Transparent	6

Series	Product name	Flexibility	Transparency	Oil resistance	Robustness	Heat resistance	Negative pressure resistance	Main Usage	Materials	Outer layer color	Page placed
Food Hose	Heat-Resistant Eco Hose	○	○	○	△	◎	×	For food and beverages	TPE	Transparent	7
	Pure Foods Hose (JHP)	◎	○	△	△	○	—	For food and beverages	PVC	Milky white and blue line	8
	Pure Foods Spring Hose (JHP)	○	○	△	◎	○	◎	For food and beverages	PVC	Milky white	8
	Silicone Hose	◎	△	×	×	○	×	For food and chemicals	Silicone	Milky white	8

Series	Product name	Flexibility	Transparency	Solvent resistance	Pressure resistance	Conductivity	Inner smoothness	Main Usage	Materials	Outer layer color	Page placed
Painting Hose	FA Tube	△	○	◎	○	×	◎	For paints	Fluorine	Transparent	10
	Sun Paint Tube (P)	◎	◎	○	△	×	○	For paints	PA	Transparent	10
	Sun Paint Hose (PB-easy)	◎	◎	○	◎	◎	○	For paints	PA	Transparent	11
	Sun Paint Hose (PB-with a ground wire)	◎	◎	○	◎	◎	○	For paints	PA	Transparent	11
	Sun Paint Hose (FUB-easy)	○	○	◎	◎	◎	◎	For paints	Fluorine	Transparent	11
	UB-easy Air Hose	○	○	×	◎	◎	—	For air tool	TPU	Transparent Yellow	12
	Conductive Air Hose (SEH)	○	—	×	◎	◎	—	For air tool	TPU	Green and yellow line	12

Series	Product name	Flexibility	Smoothness	Pressure resistance	Kink resistance	Spattering resistance		Main Usage	Materials	Outer layer color	Page placed
Air tool Hose	Polyurethane Hose (TPH)	○	○	○	○	×	—	Piping for factory equipment	TPU	Orange	14
	Super Win Soft Hose	◎	◎	○	◎	×	—	For air tool	Special TPE	Green and purple lines	14
	Super Tom Spatter Hose	○	◎	○	◎	◎	—	Welding site	Special TPE	Black and red lines	15
	Connect Tube (CH)	△	△	○	×	×	—	Piping for factory equipment	TPU	Black	15
	Sun Tech Air Hose	○	○	○	○	×	—	For air tool	TPU	Orange,yellow,and green	16
	Takumi Air Hose	◎	◎	○	◎	×	—	For air tool	Special TPE	Red and yellow line	16
	Quattro Air Hose	◎	◎	◎	◎	×	—	For air tool	Special TPE	Pink and yellow line	16
	Connect Coil	○	△	○	◎	×	—	Piping for factory equipment	TPU	Yellow	17
	Sun Tech Coil	○	△	○	◎	×	—	Piping for factory equipment	TPU	Blue	17

Flexibility : Easy piping work. Brackets can be inserted and attached easily. Tranceparency : Fluids can be visually checked. Find acumulation easily.
Oil resistance : Flexibility lasts long. Prevent fluids leakage due to hose harden and cracks. Pressure resistance : Stable pressure resistance will avoid troubles.
Robustness : Flattening resistance enables shorter bending radius.Withstanding external pressure enables smooth conveyance of fluids.
Heat resistance : High temperature of melting,softening and heat decomposition will keep stable heat resistant.
Conductivity : Electrically conducting materials improve electroconductivity and enhance working safety.
Inner smoothness : High viscosity fluids also can flow smoothly.

Engineering Data

Read the following engineering data carefully in order to choose an appropriate hose for the safe use. If you have any questions, please feel free to contact us.

e-mail global@togawa-sangyo.co.jp

Chemical resistance and oil resistance data

Fluid name	Tube and hose				
	Flexible PVC	Polyethylene	Polypropylene	Polyamide	Fluorine
Acetaldehyde	▲	△	△	▲	△
Acetic acid (10%)	△	○	○	△	○
Acetic acid (50%)	×	△	△	▲	○
Acetone	×	▲	▲	▲	○
Acetylene	○	○	○	○	○
Aluminum acetate	○	○	○	○	○
Aluminum chloride	△	○	○	△	○
Aluminum nitrate	△	○	○	▲	○
Aluminum sulfate	○	○	○	○	○
Ammonia (anhydrous)	△	○	○	○	○
Ammonia gas	▲	○	—	○	○
Ammonium carbonate	○	○	○	○	○
Ammonium chloride	○	○	○	○	○
Ammonium hydroxide	△	○	○	○	○
Ammonium nitrate	△	○	○	○	○
Ammonium sulfate	○	○	○	○	○
Aqua regia	×	×	▲	×	○
ASTM Oil No. 1	▲	△	△	○	○
ASTM Oil No. 2	▲	△	△	○	○
ASTM Oil No. 3	▲	△	△	○	○
ASTM standard fuel A	—	▲	▲	○	○
ASTM standard fuel B	—	▲	▲	○	○
ASTM standard fuel C	—	▲	▲	○	○
Beer	△	○	○	○	○
Benzene	×	▲	▲	△	○
Benzine	▲	×	▲	△	○
Boric acid	△	○	○	○	○
Brine	○	○	○	○	○
Bromine	×	×	×	×	○
Butyl alcohol	×	△	—	▲	○
Calcium chloride	○	○	○	○	○
Calcium hydroxide	○	○	○	○	○
Carbon dioxide gas	○	○	○	○	○
Carbonate	△	▲	△	—	○
Castor oil	▲	○	○	○	○
Caustic soda (10%)	△	○	○	○	○
Caustic soda (30%)	△	○	○	○	○
Caustic soda (30%, high temperature)	×	△	○	×	○
Chlorinated solvent	×	×	×	×	△
Chlorine gas	▲	▲	▲	×	△
Chloroform	×	×	×	×	△
Citric acid	△	○	○	○	○
Coconut oil	▲	△	○	○	○
Cresol	▲	△	△	×	○
Cupric chloride	△	○	○	○	○
Cyclohexanone	×	▲	▲	▲	○
Dichlorobenzene	×	×	▲	×	○
Diethylether	×	×	▲	△	△
Ethyl acetate	×	▲	▲	○	○
Ethyl alcohol	×	△	△	△	○
Ethylene glycol	×	○	△	○	○
Ferric chloride	○	○	○	○	○
Formaldehyde	△	△	○	▲	○
Formic acid	▲	○	○	▲	○

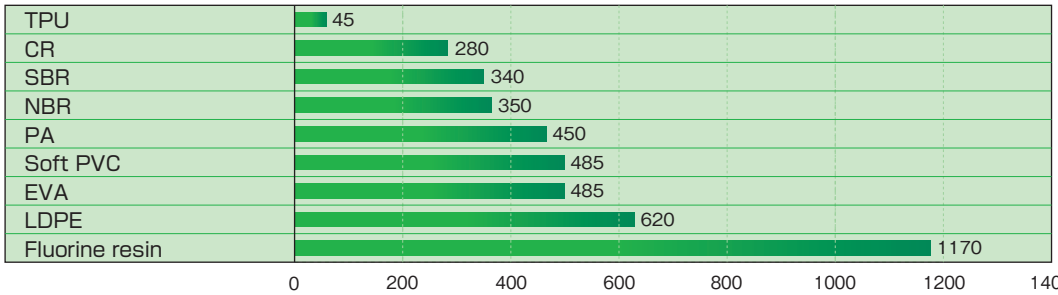
Chemical resistance and oil resistance data

Fluid name	Tube and hose				
	Flexible PVC	Polyethylene	Polypropylene	Polyamide	Fluorine
Fuel oil	×	×	—	○	○
Gasoline	×	△	△	○	○
Glycerin	▲	○	○	○	○
Grease	×	▲	▲	△	○
Hydrochloric acid (10%)	△	○	○	△	○
Hydrochloric acid (20%)	△	○	○	▲	○
Hydrochloric acid (20%, high temperature)	×	▲	△	×	○
Hydrogen	○	○	○	○	○
Hydrogen cyanide	△	○	○	—	○
Hydrogen peroxide (30%)	△	△	○	—	○
Hydrogen peroxide (5%)	△	○	○	—	○
Hydrogen peroxide (5%, high temperature)	△	△	○	—	○
Hypochlorous acid	△	○	○	×	○
Isobutyl alcohol	×	○	○	▲	○
Isopropyl alcohol	×	○	○	△	○
Lactic acid	△	○	○	△	○
Linseed oil	▲	○	○	○	○
Liquid ammonia	△	○	△	○	○
Methyl alcohol	×	△	△	▲	○
Methyl ethyl ketone	×	×	▲	▲	○
Methyl isobutyl ketone	×	▲	▲	▲	○
Mineral oil	▲	▲	△	○	○
Natural gas	○	○	○	○	○
Nikawa	○	○	○	○	○
Nitric acid (10%)	△	○	○	▲	○
Nitric acid (30%, high temperature)	×	▲	▲	×	○
Nitrogen	○	○	○	○	○
Olive oil	▲	△	△	○	○
Oxalic acid	△	○	○	○	○
Oxygen	○	○	○	○	○
Ozone	△	▲	—	×	○
Palmitic acid	△	○	○	○	○
Petroleum	▲	▲	△	○	○
Phosphoric acid (50%)	○	○	○	△	○
Potassium chloride	○	○	○	○	○
Potassium hydroxide	○	○	○	△	○
Propane	○	○	○	○	○
Salt	○	○	○	○	○
Soapy water	○	○	○	○	○
Sodium carbonate	○	○	○	○	○
Sodium hypochlorite (5%)	△	○	○	▲	○
Sodium nitrate	○	○	○	○	○
Soybean oil	▲	○	○	○	○
Sulfuric acid (10%)	○	○	○	○	○
Sulfuric acid (10%, high temperature)	×	△	○	▲	○
Sulfuric acid (30%)	△	○	○	▲	○
Sulfurous acid (10%)	△	○	○	△	○
Toluene	×	▲	▲	△	△
Vegetable oil	▲	○	○	○	○
Vinegar	△	○	○	△	○
Water	○	○	○	○	○
Whisky	○	△	○	×	○
Xylene	×	△	▲	△	○

[Description of signs] ○ : No influence or almost no influence △ : Slight influence, but can be used depending on conditions ▲ : Better not to use × : Not suitable — : No data

The temperature is normal temperature. High temperature means 50 ℃ or more. Since this data is only for reference, please test before actual use.

Wear performance comparison data



* Taper wear circle H18 Measured by the load weight of 2kg for 1000 rounds

⚠ Safety notice

Notes on safety

Follow the safety notices described below to use the Togawa hoses and tubes safe. Although we take utmost care on product quality through our proper quality control, bear in mind following points for using the hose as long as possible. Never fail to follow these safety notices as we cannot assume the responsibilities on the damages caused by the ignorance of these safety notices. If you have any uncertainties, please feel free to contact our sales staff .

* The following descriptions are common to all of our products. Each product has individual safety notice. Please check the details attached to the product.

Notice before using hoses and tubes

1) The performance and durability of hoses and tubes are largely influenced by the ambient temperature, fluid temperature, and fluid type. Choose a hose or a tube corresponding to the temperature and the fluid.
2) Use the hose or tube within the working temperature limit and below the maximum working pressure.
3) For the hose and tube that anticipate a hardening or sudden expansion by the fluid used (chemical, agent, acid, alkali, oil, paint etc.), do not use the hose or tube in the maximum upper limit (refer to the article for the chemical resistance in the catalog). Especially, when using a strong toxic chemical, high concentrated acid or alkali, etc., please consult us in advance.
4) For painting, use the Sun Paint Hose (PB-with a ground wire), Sun Paint Hose (PB-easy・FUB-easy) or Conductive Air Hose, UB-easy Air Hose as there are possibility of fire etc., by the electrostatic charge.
5) For foods, use a food hose. Even if the hoses or tubes are conforming to the guidelines, ordinances etc. of the Ministry of Health, Labour and Welfare, check them carefully before use as the odors or tastes may be sensed differently from person to person. For fatty foods, please feel free to contact our sales staff.
6) For special purposes other than above, please feel free to contact our sales staff.

Notice for using hoses and tubes

1) Do not use the hoses or tubes in less than minimum bending radius as it may deteriorate the performance and shorten the life time. If the minimum bending radius is not indicated in the catalog, homepage, or instruction manual, please contact us.
2) For attaching a hose or tube, do not bend too much around the area close to the brackets. It may cause damages in an early stage.
3) Give some allowance in piping as the length of hoses and tubes may be elastic by the inner pressure.
4) Do not give impact on or drag the hoses or tubes, and do not place the hoses or tubes under a vehicle or a heavy object. For the parts which may be bumped into by hard objects such as metals or concrete or the parts which may be contacted by other objects because of vibration or bending, protect these parts with cushioning materials, protective equipment, or springs before use.
5) Do not use hoses or tubes at the maximum working pressure for using with equipment that cause a vibration or an impact.
6) Before using hoses or tubes, never forget to check whether there are no kinks or twists.
7) Do not damage the hoses or tubes with a sharp object (including the package opening). It may cause a burst.
8) Use the main cock to stop the water flow. Open or close the valve slowly for adjusting pressure.
9) The tube without reinforcement material cannot be used for pressurized applications. However, FA Tube, Sun Tech Coil, and Connect Coil are exculuded.
10) Please take care so that you won't get hurt from the edge of reinforcement material when cutting the Super Sun Spring Hose.

Notice for using bracket assemblies

1) When inserting a telescopic part of a nipple, do not dip oils or give fire to the hose, tube, or the telescopic part of the nipple. If it is difficult to insert, warm the hose or the tube with lukewarm water.
2) Choose a nipple which is appropriate for the hose or tube size, use the nipple in which telescopic part is bigger than the inner diameter of the hose or tube, and insert the nipple into the hose or tube completely. Use a nipple which has no burr or edge. An edge or burr may cause a burst or disconnection of the nipple.
3) Fasten the band on the center of telescopic part by using specified tightening torgue. When the temperature is high, the hose and tube may become softened. Please refasten the band from time to time.
4) Do not use metal wires etc. in place of hose bands and fasten excessively, do not give impacts on the hose or tube with a tool such as a hammer
5) Please consult us about the bracket type and the materials/characteristics of the hose and tube, because there are possibility of fluid leakage, bracket disconnection, and a burst by the permanent deformation of the resin after the bracket assembling.
6) For the hoses, never use the outer surface seal one-touch bracket for tubes.

Inspections

1) Never fail to conduct a visual inspection (flaws, hardening, softening, color changes, etc.) of hoses and tubes for daily use.
2) Never fail to conduct a regular inspection once a month during use of a hose or tube.
3) If following abnormalities are found in the daily or regular inspections, discontinue to use the hose or tube immediately and replace it with a new one.

(1) Abnormalities around metal parts ... Local expansion, swelling, curving and leakage
(2) External flaws ... Outer surface flaws, cracks and water immersion into the reinforcement layer
(3) Peeling off of the inner and outer layers
(4) Other remarkable deterioration (hardening, oil expansion, cracks, swelling, adhesiveness, deformation, twist, etc.)

For storage

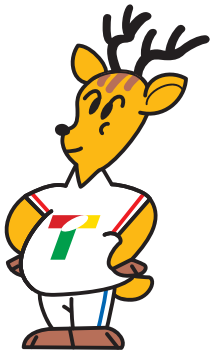
After the use, wash and remove the residue on the hose or tube, and keep it in an airy place without direct sunlight.
For the storage of the hose or tube, do not bend or pile up too much, or do not put anything on the hose or tube.

For disposal

1) Dispose the tube or hose after use according to the disposal method provided by the local government.
2) The product containing PVC may generate dioxin if incinerated in less the 800℃.

For any questions and inquires please contact us by email.

e-mail global@togawa-sangyo.co.jp



The leading manufacturer of plastic hoses

Togawa Industry Corporation

http://www.togawa-sangyo.co.jp

For any questions and inquires please contact us by email.

e-mail global@togawa-sangyo.co.jp

ISO 9001
ISO 14001
BUREAU VERITAS
Certification

ISO 9001:Kyoto Plant,Tokyo Plant
ISO 14001:Kyoto Plant

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