Hose Overview

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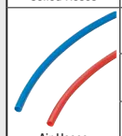
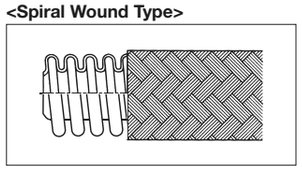
Applicable Fluids		Product Type		Max. Operating Pressure	Operating Temperature Range	General Application / Features	Page	Applicable Plumbing Parts / Fittings (Page)
Fluids such as oil and water	General Hydraulic Oil	 Hydraulic Hoses	Rubber Hoses - Standard	7.0~20.6MPa	-40~100°C	For Hydraulics (Plastic hoses are applicable also for water)	P.1305~ P.1306	Swivel Joints (P.1310) Swivel Fittings for Hydraulic Fluids (P.1310) Hydraulic Fittings (P.1311~) Thread Conversion Fittings (P.1282~) * Hereafter, only for PT thread shapes: High Pressure Screw Fittings (P.1277~) Extension Fittings (P.1284)
			Rubber Hoses - Quick Swaging					
			Plastic Hoses - Standard					
	Air, Oil, Water, Gas, Steam	 Flexible Hose	High Pressure	1.0~6.4MPa	-50~280°C	Misalignment prevention upon general purpose plumbing Thermal expansion absorption	P.1307~ P.1308	
			Medium Pressure					
			Low Pressure (Non-Welded)					
			Low Pressure (Non-Welded)					
	Air, Water, Gas, Steam, Solvent	 Flexible Fluororesin Hoses	Standard	17.0~20.5MPa	-54 ~ 232°C (Steam: 198°C or less)	Misalignment prevention upon general purpose plumbing High Adhesion / High Cleanliness Fluid	P.1309	
			High-Flex	2.0~3.0MPa	-100~120°C	Misalignment prevention upon general purpose plumbing Plumbing in high vibration environment and applications where damages from deformation are expected		
	Food, Drinking Water	 Food Sanitation Laws-compliant Hoses	Silicone Hoses Standard	0.3~1.0MPa	-30~150°C	Transport of High Adhesion Fluid	P.1313, 1314	For Food / Drinking Water: Sanitary Pipe Fittings (P.1347~) Application Other Than Above: Swivel Joints (P.1310) Swivel Fittings for Hydraulic Fluids (P.1310) Hydraulic Fittings (P.1311~) Thread Conversion Fittings (P.1282~) Hose Fittings (P.1319~) Hose Clamps (P.1322)
			Silicone Hoses Vacuum	0.3~0.7MPa				
			Fluororesin Hoses Reinforcing	0.3~1.0MPa	-20~70°C			
			Fluororesin Hoses Spring	0.2~0.5MPa				
			Fluororesin Hoses Antistatic	0.3~1.0MPa	-5~70°C			
	Water, Oil, Air	 Plastic Hoses for Ordinary Purposes	Standard	0.6~1.0MPa	-5~60°C	Hoses for Ordinary Purposes	P.1315~ P.1317	Hose Fittings (P.1319~) Hose Mounting Connectors (P.1321) Hose Clamps (P.1322) Arm Locking Coupling (P.1321) Fluid Coupler (P.1421~)
			Oil-Resistant			High Oil Resistance (Compared with HOTR□)		
			High Strength	0.4~0.8MPa		Vacuum Enabled / High Oil Resistance, and resistant to deformation (Compared with HOTR □)		
			High Pressure	1.0~1.5MPa		High Oil Resistance / High Pressure (Compared with HOTR □)		Hose Mounting Connectors (P.1321)
Air	Air	 Coiled Hoses	With Metal Fittings on Both Ends	1.1MPa	-40~80°C	Air Feed	P.1318	Swivel Joints (P.1310) Swivel Fittings for Hydraulic Fluids (P.1310) Hydraulic Fittings (P.1311~) Thread Conversion Fittings (P.1282~)
		 Air Hoses	Standard	1.5MPa	-20~60°C			Hose Fittings (P.1319~) Hose Clamps (P.1322) Fluid Coupler (P.1421~)
			Sliding					
			High-Flex	1.0MPa	-5~60°C			
	Air (Powder, Dust)	 Plastic Duct Hoses	Lightweight	0.0005~0.03MPa	-30~80°C	Supply and exhaust of air, wood dust, dust, etc.	P.1324~ P.1326	Plumbing Parts for Duct Hoses (P.1327~) Hose Clamps (P.1322)
			Swiveling			Spot Cooler		
			Flexible			Air supply and exhaust		
			Wear Resistant, Antistatic			Carriage of Powder / Grains		
			Oil-Resistant			Suction of exhaust emission of oil mist		
			Non-PVC			Air supply and exhaust: Supply and exhaust of hot air: Used in low dust generation environment / clean room		
		 Aluminum Duct Hoses	Standard	0.02MPa	-20~80°C	Ventilation Fan		Plumbing Parts for Aluminum Duct Hoses (P.1327~) Hose Clamps (P.1322)
		 Heat-Resistant Duct Hoses	Low Dust Generation	0.006~0.009MPa	-30~600°C	Supply and exhaust of hot air: Used in low dust generation environment / clean room		Plumbing Parts for Duct Hoses (P.1327~) * Plumbing Parts for Aluminum Duct Hoses only applicable for Size 75 (P.1329~) Hose Clamps (P.1322)
			Heat Resistant Temperature 180°C			Supply and exhaust of hot air		
			Heat Resistant Temperature 250°C			Supply and exhaust of hot air, spark collection, etc.		
			Heat Resistant Temperature 450°C			Supply and exhaust of hot air: Supply and exhaust of ambient temp. gases including acid, alkali, etc.		
			Heat Resistant Temperature 600°C			Supply and exhaust of hot air		
			Heat Insulating Layer Coated			Supply and exhaust of hot air		

- When selecting each combination of Hose & Plumbing Part, please conform its sizes / dimensions.
- For products designed for fixed plumbing, elbow plumbing is allowed, but operating areas are not applicable. Frequent inflection of hose may damage hose itself, and thus, may cause leakage.
- For details about each product, see relevant Product page.

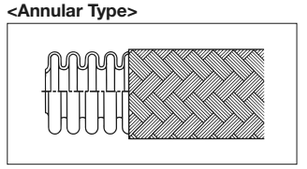
• Features of Flexible Hose Shapes

<Spiral Wound Type>



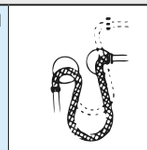
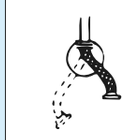
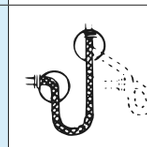
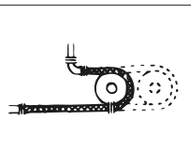
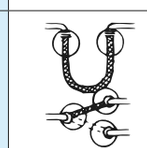
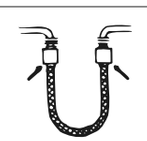
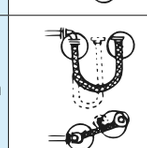
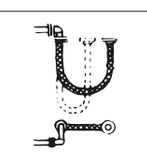
- Spiral reinforcement provides smooth bend around a small radius.
- Suitable for general purpose, as kink may occur if tension or compression is applied during movement.

<Annular Type>



- Convolutions are a series of complete rings (bellows).
- Unlikely to cause twist even it is stretched during operation.

■How to Mount Flexible Hoses Appropriately

Incorrect			Correct		
Excessively small bend radius will dramatically shorten the hose's service life.		×	Use pipes for tight radius sections and keep the hoses within allowed bend radius ranges.		○
Repeatedly flexed sections require extra cautions.		×	Use the curved pipes, and mount tubes in order to form U-shapes.		○
Hose twisting loads due to repeated horizontal motion are very dangerous.		×	Avoid excessive curvatures by attaching rollers that turn with movements of the hose.		○
The hose will be twisted if rotary motions are applied to the mounting points.		×	Avoid the hose twists by mounting rotary fittings.		○
The hose will twist if not mounted in-line with the direction of motion.		×	Be sure to mount the hose in-line with the direction of motion.		○

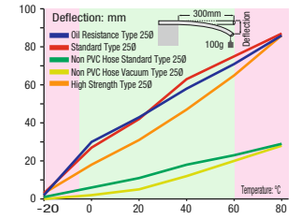
■Selection Table of Plastic Hoses for Ordinary Purposes

	Type	HOTR□	HOTRS□	HOTG□	HOTSG□
		Standard Type	Oil-Resistant	High Strength	High Pressure
		P.1315	P.1317	P.1317	P.1317
Material	Main Material Reinforcement	Polyvinyl Chloride Polyester Yarn	Polyvinyl Chloride Polyester Yarn	Polyvinyl Chloride PET	Polyvinyl Chloride Polyester Yarn
Specifications	I.D. (mm)	9~25	9~25	9~25.4	9~25
	Max. Operating Temperature Range (°C)	-5~60	-5~60	-5~60	-5~60
	Max. Operating Pressure (Mpa)	0.6~1.0	0.6~1.0	0.4~0.8	1.0~1.5
Specifications	Flexibility	★★★★★	★★★★★	★★★	★★★
	Transparency	★★★★★	★★★★	★★★★	★★
	Oil Resistance	★★★★	★★★★★	★★★★★	★★★★★
	Property of Withstanding Pressure	★★★★	★★★★	★★★	★★★★★
	Crush Strength	★★	★★	★★★★	★★
	Vacuum Strength			★★★★★	
	Lightness	★★★★	★★★★	★★★	★★★★

■Comparison Graph for Performance of Plastic Hoses for Ordinary Purposes

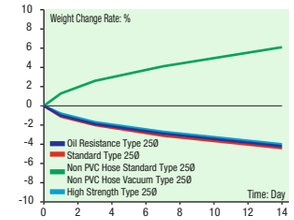
Flexibility

Measurement : Measures deflection of sample hose with 300mm protrusion after loaded with 100g load after 10 seconds.



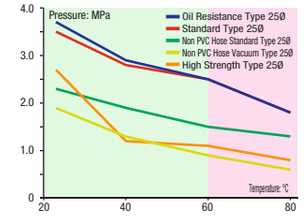
Oil Resistance

Measurement : Conforms to JIS6723.
Soaking Temperature: 40°C Soaking Oil: Compressor Oil



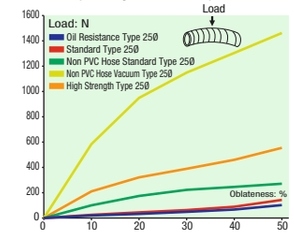
Property of Withstanding Pressure

Measurement : Measures after putting sample for 30 minutes under each temperature condition.



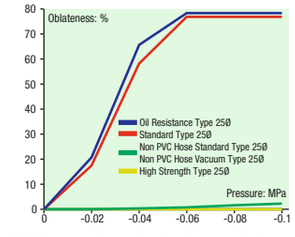
Crush Strength

Measurement : Measures variation rate of O.D. when providing load on 5cm square.



Vacuum Strength

Measurement : Measure after keeping samples for 5 minutes under each negative pressure.
(Temperature 23°C±3°C)



*-0.1MPa is an approximate value. It may be not applicable depending on application and conditions.