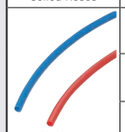
Hose Overview

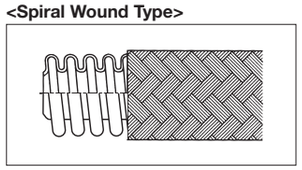
■Hose Overview

Applicable Fluid		Product Type		Max. Operating Pressure	Operating Temperature Range	General Application, Feature	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.1219~ P.1220**	Swivel Joints (**P.1224** ~) Hydraulic Oscillating Fittings (**P.1224** ~) Hydraulic Fittings (**P.1225**~) Thread Conversion Fittings (**P.1196**~) *Hereafter, only for PT thread shapes: High Pressure Screw Fittings (**P.1191**~) Extension Fittings (**P.1198**~)
			Rubber Hoses - Quick Swaging					
			Plastic Hoses - Standard					
	Air, Oil, Water, Gas, Steam	 Flexible Hose	High Pressure Type	1.0~6.4MPa	-50~280°C	Misalignment Prevention upon General Purpose Plumbing Thermal Expansion Absorption	**P.1221~ P.1222**	
			Medium Pressure Type					
			Low Pressure Type (Non-Welded)					
			Low Pressure Type (Non-Welded)					
	Air, Water, Gas, Steam, Solvent	 Flexible Fluororesin Hoses	Standard Type	17.0~20.5MPa	-54~232°C (Steam: 198°C)	Misalignment Prevention upon General Purpose Plumbing High Adhesion, High Cleanliness Fluid	**P.1223**	
			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 Type	0.3~1.0MPa	-30~150°C	Transport of High Adhesion Fluid	**P.1227**	For food / Drinking Water: Sanitary Pipe Fittings (**P.1257**~) Application Other Than Above Hydraulic Oscillating Fittings (**P.1224** ~) Hydraulic Fittings (**P.1225**~) Thread Conversion Fittings (**P.1196**~) Hose Fittings (**P.1231**~) Hose Clamps (**P.1234**~)
			Silicone Hoses Vacuum Type	0.3~0.7MPa				
			Fluororesin Hoses Reinforcing Type	0.3~1.0MPa	-20~70°C			
			Fluororesin Hoses Spring Type	0.2~0.5MPa				
			Fluororesin Hoses Antistatic	0.3~1.0MPa	-5~70°C			
	Water, Oil Air	 Plastic Hoses for Ordinary Purposes	Standard Type	0.6~1.0MPa	-5~60°C	Hoses for Ordinary Purposes	**P.1229**	Hose Fittings (**P.1231**~) Hose Mounting Connectors (**P.1233**~) Hose Clamps (**P.1234**~) Arm Locking Coupling (**P.1233**~) Quick Couplers (**P.1327**~)
			Oil-Resistant			High Oil Resistance (Compared with HOTR _)		
			High Strength	0.4~0.8MPa		Vacuum Enabled High Oil Resistance, and Resistent to Deformation (Compared with HOTR _)		
			High Pressure	1.0~1.5MPa		High Oil Resistance, High Pressure (Compared with HOTR _)		Hose Mounting Connectors (**P.1233**~)
Air	Air	 Coiled Hoses	With Metal Fittings on Both Ends	1.1MPa	-40~80°C	Air Feed	**P.1230**	Swivel Joints (**P.1224** ~) Hydraulic Oscillating Fittings (**P.1224** ~) Hydraulic Fittings (**P.1225**~) Thread Conversion Fittings (**P.1197**~)
		 Air Hoses	Standard Type	1.5MPa	-20~60°C			Hose Fittings (**P.1231**~) Hose Clamps (**P.1234**~) Quick Couplers (**P.1327**~)
			Sliding Type					
			High-Flex	1.0MPa	-5~60°C			
	Air (Powder, Dust)	 Plastic Duct Hoses	Lightweight Type	0.0005~ 0.03MPa	-30~80°C	For Blast and Exhaust of Air, Wooden Powder, Dust, Etc.	**P.1236~**	Plumbing Parts for Duct Hoses (**P.1239**~) Hose Clamps (**P.1234**~)
			Swiveling			Spot Cooler		
			Flexible			Blast and Exhaust		
			Friction Resistant Antistatic			Carriage of Powder, Grains		
			Oil-Resistant			Suction of Exhaust Emission of Oil Mist		
			Non-PVC			Blast and Exhaust Used in Low Particle Generation Environment, Clean Room		
		 Aluminum Duct Hoses	Standard Type	0.02MPa	-20~80°C	Ventilation Fan		Plumbing Parts for Aluminum Duct Hoses (**P.1241**~) Hose Clamps (**P.1234**~)
		 Heat-Resistant Duct Hoses	Low Particle Generation Type	0.006~ 0.009MPa	-30~600°C	Supply and Exhaust of Hot Air Used in Low Particle Generation Environment, Clean Room		Plumbing Parts for Duct Hoses (**P.1239**~) *Plumbing Parts for Aluminum Duct Hoses only applicable for Size 75 (**P.1241**~) Hose Clamps (**P.1234**~)
			Heat Resistant Temperature 180°C Type			Supply and Exhaust of Hot Air		
			Heat Resistant Temperature 250°C Type			Supply and Exhaust of Hot Air, Spark Collection, etc.		
			Heat Resistant Temperature 450°C Type			Supply and Exhaust of Hot Air Supply and Exhaust of Ambient Temp. Gases Including Acid, and Alkali		
			Heat Resistant Temperature 600°C Type			Supply and Exhaust of Hot Air		
			Heat Insulating Layer Coated Type			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.

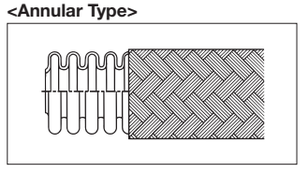
· Feature of Flexible Hose Shapes

<Spiral Wound Type>



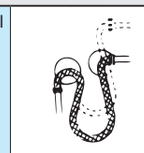
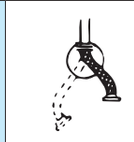
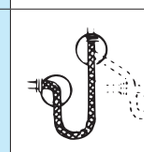
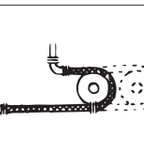
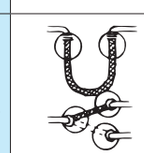
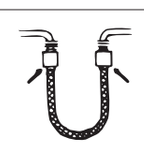
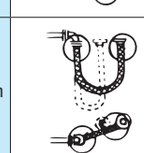
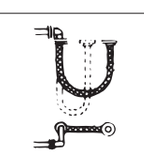
· Spiral reinforcement provides smooth bend around a small radius.
· Suitable for general purpose, as kink may occur if tension or compression is applied during movement.

<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 Properly

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 radiusranges.		○
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 thehose.		○
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.		○

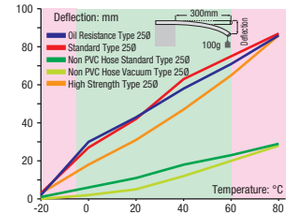
■Selection Table of Plastic Hoses for Ordinary Purposes

	Type	HOTR_	HOTRS_	HOTG_	HOTSG_
		Standard Type	Oil-Resistant	High Strength	High Pressure
		P.1229	P.1229	P.1229	P.1229
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
Specifications	Max. Operating Temperature Range (°C)	-5~60	-5~60	-5~60	-5~60
Specifications	Max. Operating Pressure (Mpa)	0.6~1.0	0.6~1.0	0.4~0.8	1.0~1.5
Specifications	Flexibility	*****	*****	***	***
Specifications	Transparency	*****	****	****	**
Specifications	Oil Resistance	****	*****	*****	*****
Specifications	Property of Withstanding Pressure	****	****	***	*****
Specifications	Crush Strength	**	**	****	**
Specifications	Vacuum Strength			*****	
Specifications	Lightness	****	****	***	****

■Comparison Graph for Performance of Plastic Hoses for Ordinary Purposes

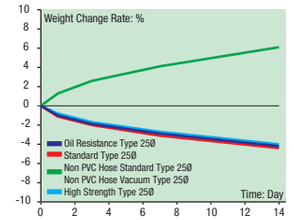
Flexibility

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



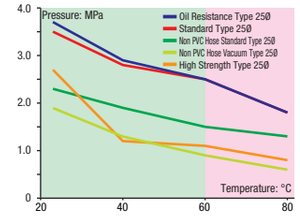
Oil Resistance

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



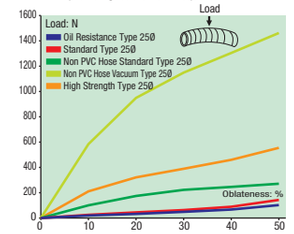
Property of Withstanding Pressure

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



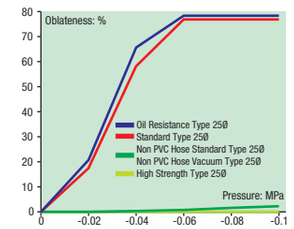
Crush Strength

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.

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