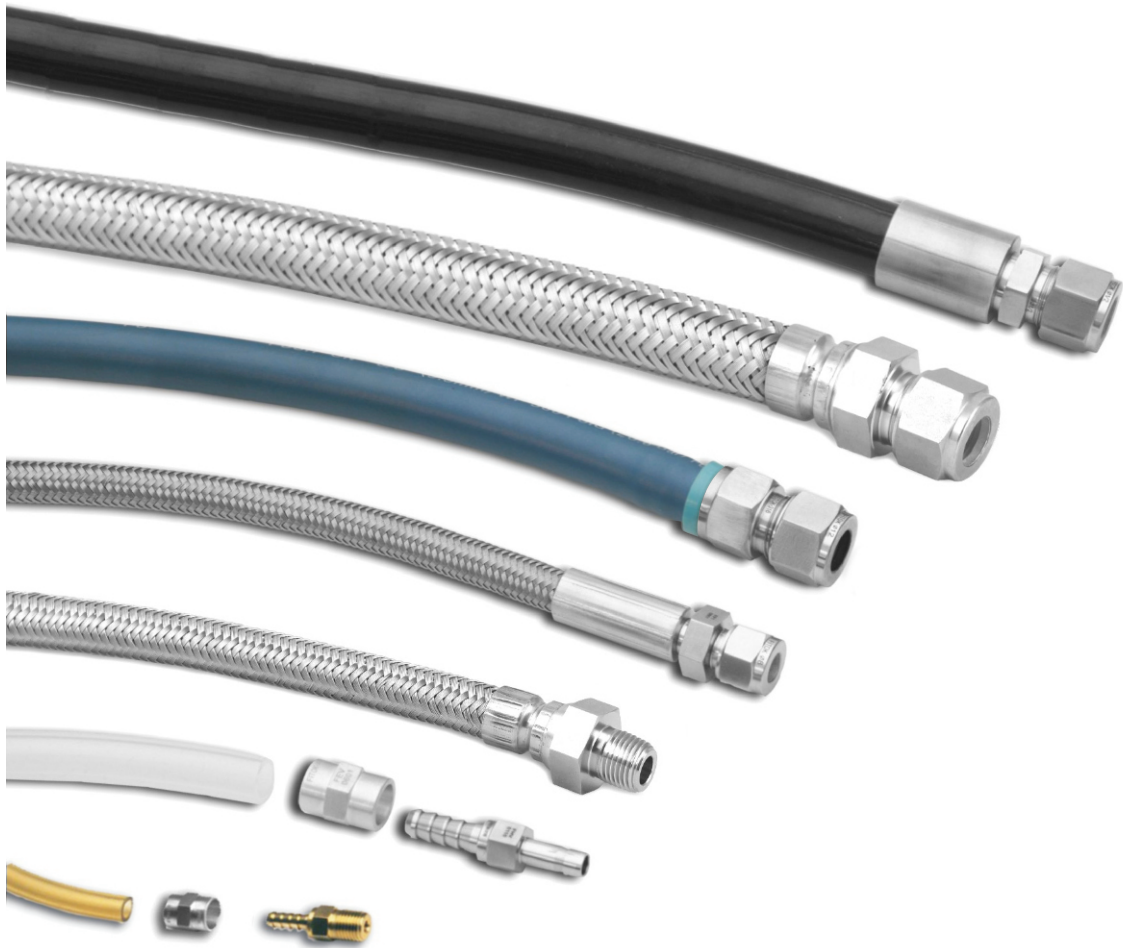


Hoses and Connectors

MH, MM, PS, MP, TH, HCH and HC Series



Hoses
Quick-Connects

Contents

Terms and Definitions

D-04

Considerations for Selecting a Hose Assembly Solution

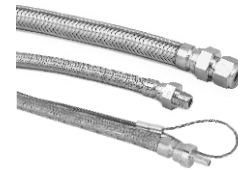
D-05

Installation and Use Guide

D-05

Metal Flexible Hoses

MH, MM Series



D-07

PTFE-lined, Stainless Steel Braided Hoses

PS Series



D-13

Multipurpose Push-on Hoses

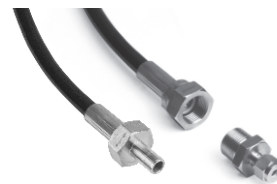
MP Series



D-16

Thermoplastic Hoses

TH Series



D-20

Compact Steel Wire Braided Hydraulic Hoses

HCH Series



D-22

Hose Connectors and Sleeves

HC Series



D-24

Terms and Definitions

Hose

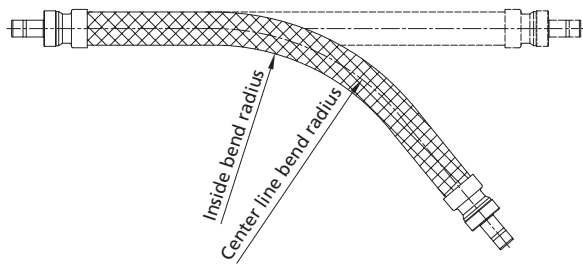
A multiple-layered flexible conduit through which fluid is conveyed from one point to another.

Nominal Hose Size

An approximation of the hose inside diameter.

Bend Radius

The radius of the bent section of a hose, measured to the center line or inside of the curved section.



End Connection

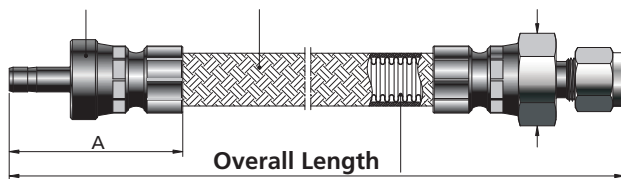
The fitting that is assembled onto each end of the hose to provide a means of installation into a fluid system.

Overbraid

A flexible, woven reinforcement.

Maximum Outside Dimension

The largest nominal outside dimension of the hose assembly.



Minimum Dynamic Bend Radius

The smallest bend radius that a hose is allowed to perform in applications where the hose undergoes dynamic bending and position changes.

Minimum Static Bend Radius

The smallest bend radius that a hose is allowed to perform in applications where the hose is stationary without any movement in any plane.

Flexibility

The relative ease or difficulty of bending a non-pressurized hose assembly.

Burst Pressure

The pressure at which leakage occurs in a laboratory burst test.

Permeation

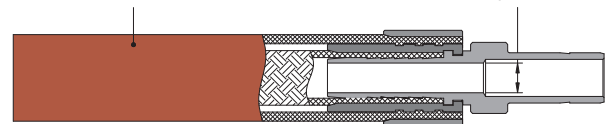
The movement of a liquid, gas, or vapor through a solid. All materials are permeable to a certain degree and must be tested for application compatibility before installation.

Fire Jacket

Woven fiberglass coated with specially compounded silicone rubber to provide insulation from internal system fluid temperature extremes.

Minimum Inside Diameter

The smallest inside diameter of inner flow path of the hose assembly.



Spring Guard

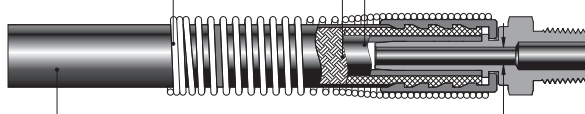
A helical metal spring used to protect the hose from abrasion overbending, and kinking.

Reinforcement

Material used to reinforce the core and increase its pressure-containing capacity.

Core

The hose's innermost material that comes into contact with the system media, often referred to as the wetted surface.



Cover

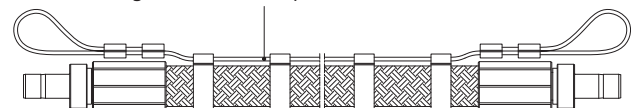
The hose's outermost material, used to protect the reinforcement and core from environmental conditions and wear.

Minimum Inside Diameter

The smallest inside diameter of inner flow path of the hose assembly.

Safety Cable

Prevent hoses from whipping around and causing serious injuries in the event of fitting blow-off or hose burst. The knot at each end of cable can be adjusted before being secured to fixed point.



Considerations for Selecting a Hose Assembly Solution

Temperature

Identify the minimum and maximum temperatures the hose assembly will be exposed to in the system media and environment.

Pressure

Identify the minimum and maximum pressures (or vacuum) within and outside the hose assembly.

Material

Identify the system media and the environment that the hose assembly will be exposed to. This will help determine the materials best suited to the application demands.

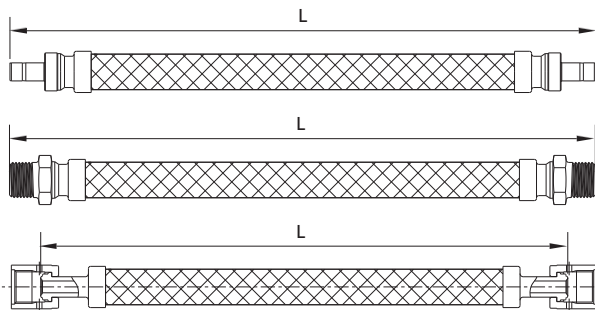
Movement

Confirm whether the hose assembly will be installed in dynamic applications as this will require different considerations than a static application.

Length

Determine the most likely route for installation of the hose, use this to identify required length.

Note: Different types of hoses vary in measuring position. For hoses with pipe fittings, length loss due to threading into the mating fitting should be taken into account.



Installation and Use Guide

⚠ Warning

Product failure or improper use may pose a threat to your personal safety and property.

Inspection

Inspect whether the hose length and layout are reasonable, and whether hose surface is free of defects and damage prior to installation. Establish an inspection schedule based on system application and replacement history.

Vibration

Evaluate the amount of system vibration when selecting a hose. Metal hose may not be appropriate for systems with constant or severe vibration.

Cleanliness

Identify the cleanliness need.

End Connection

Identify the type of end connections that are most compatible with the system requirements. End connections differ in materials of construction and pressure ratings.

Orientation

Address space constraint concerns. Hose assemblies with elbows and union ball joints may help resolve space constraint issues.

Desired Flow

Consider desired flow. Hose connection size, core tube construction, and installation route may impact flow.

Additional Protection

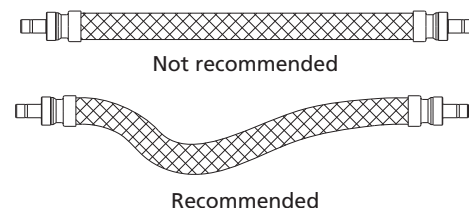
Identify whether additional protection is necessary for the hose assemblies or surrounding systems.

Permeability

Nylon, PFA, polyethylene, PTFE, and rubber are permeable materials. Gases and vapors may migrate through cores of these materials. The permeation rate is affected by many factor variables.

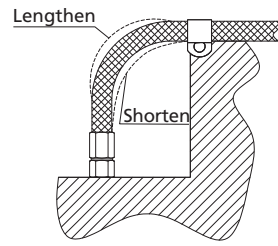
Length

Consider hose movement, system pressurization, and thermal expansion when identifying hose length. Installing hose that is not long enough to accommodate these factors may shorten hose life.



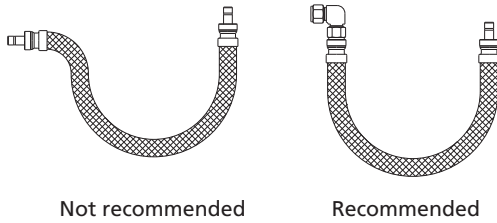
System Pressure Changes

Use sufficient hose length to accommodate system pressure changes. Do not connect high pressure hoses and low pressure hoses together.



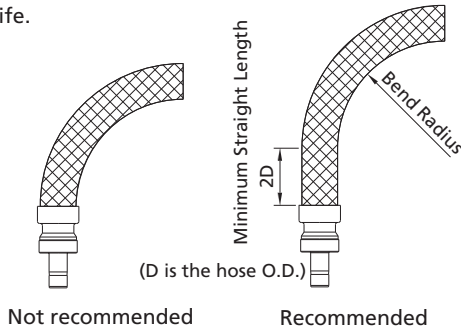
Hose Strain

Elbows and adapters can be used to relieve hose strain.

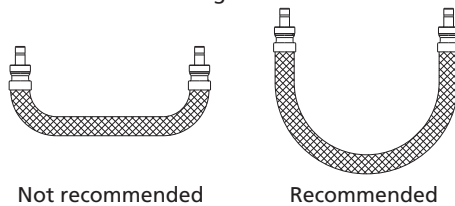


Minimum Bend Radius & Minimum Straight Length

Follow minimum bend radius requirements for your hose. Installing hose with smaller bends may kink hose and shorten hose life.

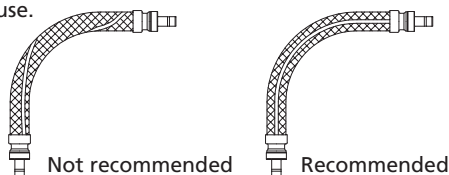


Maintain the minimum straight length for bent section, otherwise, hose rupture or leakage may result from bending too close to the hose/fitting connection.



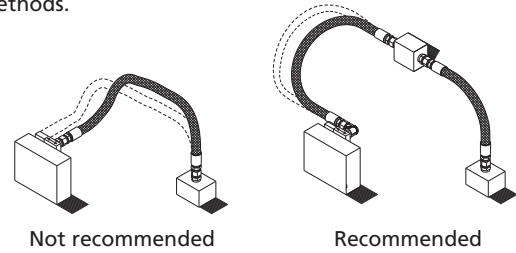
Twist Avoidance

Avoid twisting the hose assembly and causing stress that may affect its use.



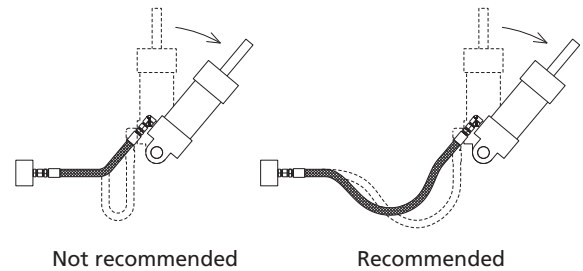
Bending in One Plane

Bend the hose in one plane only so as to avoid twisting. For a compound bend, use multiple hose pieces or other isolation methods.

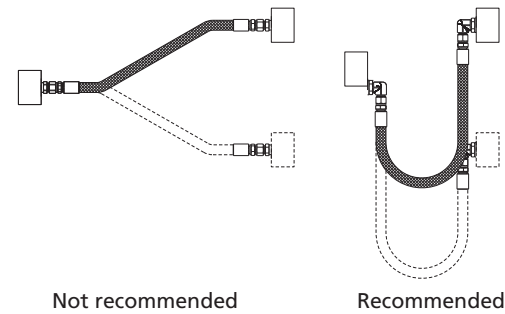


Motion Absorption

Distribute movement and prevent bends smaller than the hose's minimum bend radius by ensuring sufficient hose length.

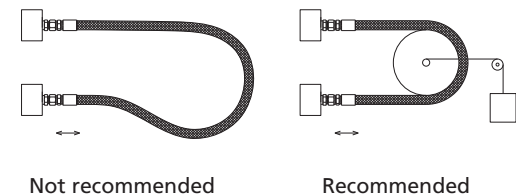


Elbow-connected hoses are better suited for vertical movement than hoses connected with straight fittings.



Necessary Limits and Protection Devices

Install necessary limits and protection devices to facilitate hose movement and avoid twisting.



Compact Steel Wire Braided Hydraulic Hoses

HCH Series

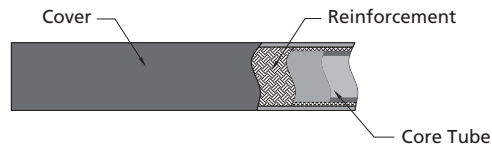
Introduction

HCH Series Compact Steel Wire Braided Hydraulic Hoses are designed with a synthetic rubber core for oil based or water based fluids. They feature multiple layers of high-tensile steel wire braiding for reinforcement, along with a weather-resistant, oil-resistant synthetic rubber cover. This construction provides excellent high-pressure resistance and a minimal bend radius. These hoses are primarily used with oil-based liquids such as hydraulic oil, gasoline, diesel, lubricating oil, as well as biodegradable hydraulic fluids, fire-resistant synthetic polyol esters, and other similar media.



Features

- ⦿ Cover: Weatherproof, oil-resistant synthetic rubber
- ⦿ Reinforcement: Double-layer of high-tensile steel wire braid
- ⦿ Core tube: Synthetic rubber for oil based or water based fluids
- ⦿ End connection material: Stainless steel
- ⦿ Nominal hose size: 1/4" to 1/2"
- ⦿ End connection sizes: 1/4" to 1" and 6 mm to 25 mm
- ⦿ Working pressure up to 5800 psig (400 bar)
- ⦿ Working temperature: -40°F to 212°F (-40°C to 100°C)



Hose Technical Parameters

Nominal Hose Size	Inside Diameter	Min. Bend Radius	Working Pressure at 70°F (20°C)	Min. Burst Pressure at 70°F (20°C)	Standard
in. (mm)	in. (mm)	in. (mm)	psig (bar)	psig (bar)	
1/4 (6.4)	0.26 (6.6)	2.95 (75)	5800 (400)	23200 (1600)	ISO 11237 2SC EN 857 2SC
1/2 (12.7)	0.51 (13.0)	5.12 (130)	3990 (275)	15950 (1100)	

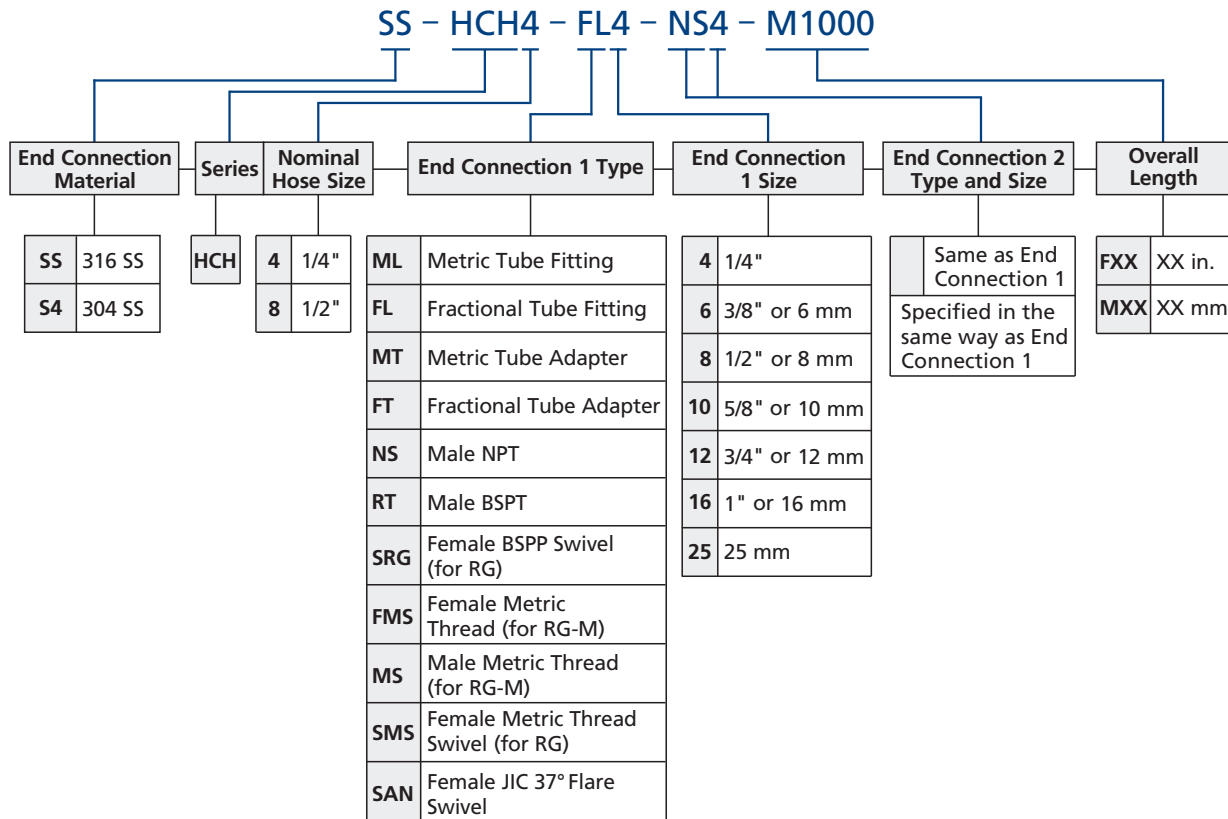
Testing

Every FITOK hydraulic hose assembly is factory tested with pure water at 2 times the maximum working pressure.

Cleaning and Packaging

FITOK hydraulic hose components are cleaned in accordance with FITOK Standard Cleaning and Packaging Process (FC-01). Shorter hoses are packed in cartons with suitable protective material, longer hoses are coiled, bagged and boxed or crated.

Ordering Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number.
Not all combinations are available.

Example: **SS-HCH4-FL4-NS4-F36**

SS: End connection material is 316 stainless steel

HCH4: HCH series, nominal hose size is 6.4 mm

FL4: End connection 1 is 1/4" tube fitting

NS4: End connection 2 is 1/4" male NPT

F36: Overall length is 36"

Connections are described based on the following rules:

1. Metric Tube Fitting - Fractional Tube Fitting - Metric Tube Adapters - Fractional Tube Adapters - NPT Threads - BSPT Threads - BSPP Threads - SAE/MS Parallel Threads - 37° Flare - Others
2. Put the sizes from the biggest down to the smallest if they are of the same type.
3. Put the female before male if they are of the same type and size.