

STAINLESS STEEL FLEXIBLE HOSE

INSTALLATION OPERATION AND MAINTENANCE MANUAL



GENERAL

There are several factors to consider when using metal hose assemblies. The most crucial is safety, as the assemblies are often used in applications that can pose significant risk to people and property in the event of a failure. Another important factor is the manner in which the assembly is installed since installation procedures have a significant effect on the performance and service life of the assembly. This section will address these issues and give practical advice on ways to maximize the performance and service life of the assembly, while minimizing the risk of injury and property damage. Employees who work with or around these assemblies should be adequately trained about the potential risks as well as proper installation, handling, and maintenance procedures.

REFERENCES AND STANDARDS

The following standards refer the requirements of ISO 10380

SAFETY ISSUES

Below are listed some of the potential safety risks that can lead to injury or property damage. This is not a complete list of all possible safety concerns. All users of hose assemblies must evaluate their particular hose applications, assess the potential risks and take preventative steps to address these risks.

- **Fluid/Gas injections**

Fine streams of fluid or gas can penetrate skin and enter the body. These wounds may cause severe damage. Consider the use of guards and shields to reduce the risk of these injections.

- **Fire and Explosions from Conveyed Media**

Many of the media conveyed through hose assemblies are flammable. Media that escapes from the assembly can explode upon contact with a source of ignition (e.g. open flames, sparks, and hot manifolds). These explosions can be very severe, causing injury, death, or serious property damage. Care should be taken to eliminate all possible ignition sources from contact with escaping media. Select and route hose assemblies in a way that minimizes the risk of combustion.

- **Burns from Conveyed Fluids**

Media conveyed may reach temperatures or may be of a chemical composition that can cause burns. If there is a risk of burns, consider guards or shields to prevent exposure to escaping media.

- **Fluid Controlled Mechanisms**

Mechanisms controlled by fluids in hose assemblies can become hazardous if the assembly fails. For example, if a hose assembly fails, objects supported by the fluid pressure within the hose assembly will no longer be supported and may fall.

- **Whipping Hose**

If a pressurized hose assembly is disconnected or comes apart, it can flail or whip with great force, throwing fittings at high speeds. This risk is particularly great in compressed gas systems. If the risk of hose whipping exists, consider the use of guards, whip checks, or other restraints.

- **Burns from Contact with the hose**

Metal hose assemblies conduct heat. Care should be taken to avoid contact with the hose assembly since the temperature of the hose assembly may be similar to that of the media being conveyed. The use of sleeves should be considered if contact with the hose assembly is possible.

- **Electrical Shock**

Metal hose assemblies are electrically conductive. Always use proper grounding to minimize the risk of electrical discharge and electrocution.

INSPECTIONS

• Pre-installation Inspection

Before installing the hose assembly check for:

• Damage

The assembly should be inspected for the following damage:

- Deformed or twisted braid
- Braid is excessively loose on the hose
- Broken or unattached braid wires

Kinks or sharp bends in the hose, particularly behind the fittings

- Damaged fitting threads
- Nicked or out-of-round sealing surfaces
- Damaged flange gasket surfaces
- Incorrect fitting alignment, particularly flanged or elbow fittings
- Improper fitting orientation
- Swivels or loose nuts not rotating freely

• Dimensions

Verify the following dimensions:

- Assembly OAL
- Fitting size

• Correct Components

Verify that the hose assembly's components are as specified:

- Fitting type
- Required guard, covers, liners
- Required tagging

• Other Checks

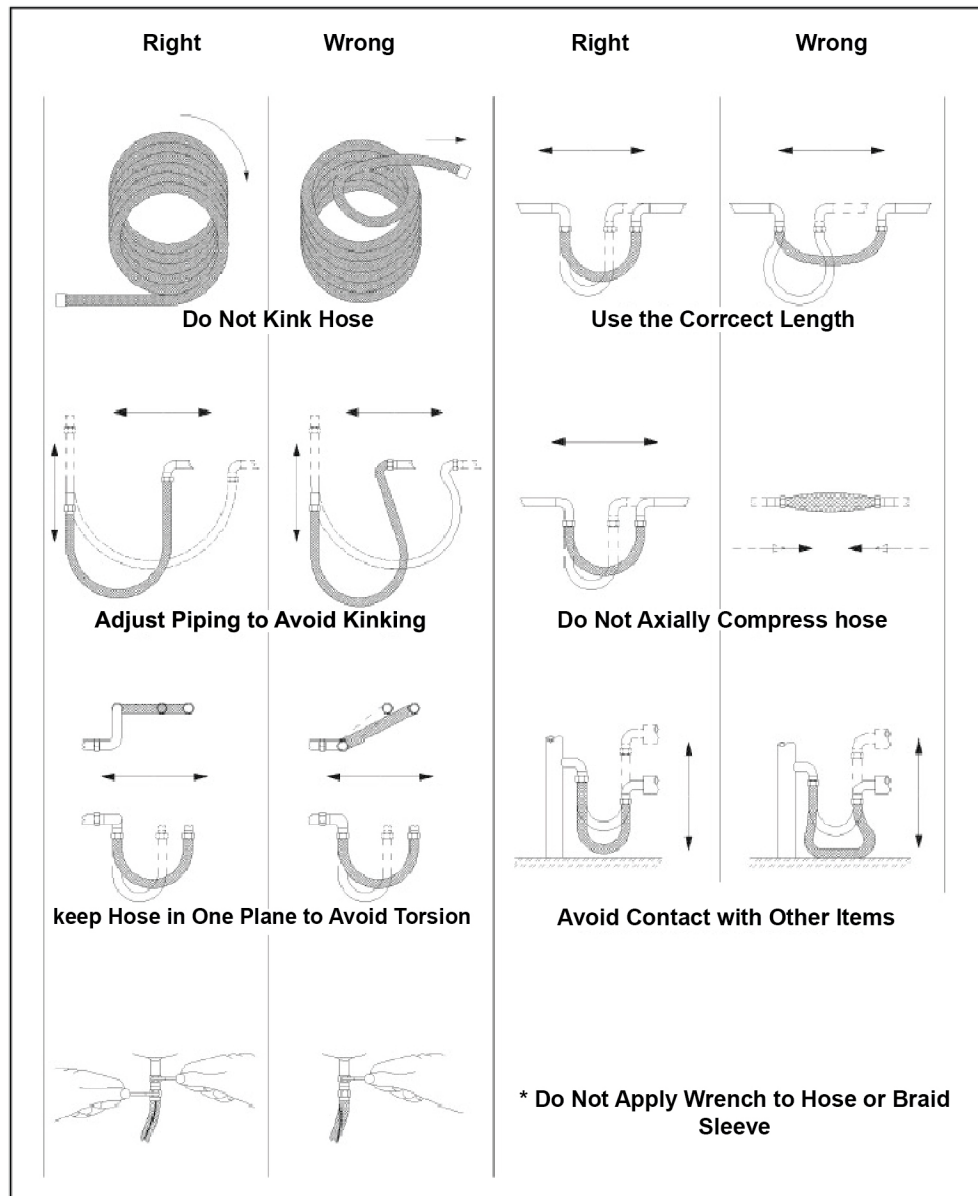
- No solid debris in fittings or hose (e.g. dirt, metal shavings)
- No fluid contamination in hose (e.g. water, grease, oil)

PREVENTATIVE MAINTENANCE

After the hose assembly has been installed, it should be periodically inspected. The frequency of the inspection is based upon the nature and severity of the application, past history, and any manufacturer's recommendations. If an appropriate inspection schedule has not been established, the assembly should be inspected daily. When conducting an inspection, look for the following:

- Loose, broken, bulged, frayed, or worn braid
- Deformation of the hose, including twisting
- Traces of media on or around the assembly
- Loose or damaged guard or covers
- Indications of corrosion on hose assembly
- Loose fitting attachments
- Hose assembly rubbing or making contact with adjacent machinery or piping
- Fluids or solids accumulating on the assembly

INSTALLATION AND HANDLING



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