

Hose and Hose Coupling Safety

"The very properties that make compressed gases useful in almost every area of modern life can also make them dangerous when mishandled. Years of experience with compressed gases have led to practices and equipment which, if employed, result in complete safety."¹

Dixon hose couplings have been carefully engineered to meet specific requirements. If hose or couplings are not used in correct applications or are incorrectly applied, accidents and downtime can result. It is up to the end user to inform the distributor of the application and pressures involved when ordering hose assemblies and it is up to the distributor to supply the right hose and coupling for that application. When in doubt, Dixon is here to help you with a proper coupling recommendation.

- 1. Air hose couplings** - This form of energy can be one of the most dangerous because it is used in so many applications and, when mishandled, can have more serious results than fluids. Air, as a gas, is compressible (fluids press only against hose or vessel walls and lose little volume under pressure). When pressurized air releases suddenly, it does so with explosive force and can cause rapid hose whip, which can do serious physical harm to personnel or damage to nearby objects. This is why the selection of proper hose and couplings for air lines is so important, along with their proper installation and maintenance. Never take for granted that a coupling is installed properly or a clamp fully tightened on an air hose - check it regularly and use safety devices (see paragraph 4).
- 2. Steam and gas** - The same rules apply for steam and gas, but, because these are inherently more hazardous materials, personnel tend to treat hose and couplings on these lines with more respect and care. Checking clamp tightness is very important with steam hose, where it is not unusual for clamps to loosen in service, in which case they must be retightened! Safety devices should also be used (see paragraph 4).
- 3. Fluid hose couplings** - Again, nothing should be taken for granted - in particular, check clamps for tightness each time the lines are used - especially when petroleum products or other hazardous liquids are involved. Large diameter hose, when suspended, can also be quite dangerous if it drops unexpectedly due to a coupling "pull-out" or sudden disconnection. A heavy fitting or clamp, plus the weight of the hose itself falling from any significant height, can cause injuries or damage. Be sure to use safety devices (see paragraph 4).
- 4. All hose assemblies** - All hose assemblies should be treated with respect as potential hazards. Worn-out fittings should be replaced. Retaining devices such as clips, cables, or chains should be used. Clamps should be checked regularly. Under no circumstances should any coupling be disconnected while under pressure, unless the coupling is specifically designed to do so. Disconnecting couplings under pressure could result in serious injury or death and destruction of property and equipment.

¹ "Handbook of Compressed Gases"

General Safety Information

Pressure Ratings

Pressure ratings for couplings, as stated in this catalog, are based upon ambient temperature **70°F (21°C)** applications with true hose I.D., new Dixon supplied couplings, new Dixon supplied clamps, new quality hose, and proper installation by a qualified assembler using Dixon procedures and equipment. In addition, temperature can affect coupling retention. For temperatures other than ambient (**70°F**), contact the hose manufacturer or call Dixon at 800.355.1991.

Product Selection

Many of the products in this catalog are used in hose assemblies in a variety of applications. The safety of any hose assembly rests on the proper selection, installation, testing, and use of each product. The safe use of any product in this catalog is dependent upon the correct selection of the hose, fittings, and method of attachment. To ensure such a proper selection, the user must inform the distributor of the application and pressure involved when ordering hose assemblies. The use of S.T.A.M.P.E.D. (Size, Temperature, Application, Media, Pressure, Ends, Dixon) will help in the proper selection of hose assembly components (see page 1105). The selection of couplings and clamping devices is the responsibility of the purchaser or user, based upon the hose manufacturer's recommendations. If the purchaser or user is uncertain about the use or application of a product, Dixon stands ready to provide information, including test results (if available), coupling and clamping recommendations, and other data to help resolve those matters.

Installation

To achieve a safe and reliable assembly, proper installation procedures must be followed. Each component of the assembly has a part in determining these procedures. The purchaser or user must follow proper procedures. If the purchaser or user has any questions regarding installation, please contact Dixon®.

Testing

Dixon recommends that all hose assemblies be tested in accordance with the hose manufacturer's recommendations.

Re-testing and Inspection

Dixon recommends inspection and re-testing of hose assemblies on a regular and consistent basis in accordance with the hose manufacturer's recommendations. The application determines the regularity of the inspection and re-testing schedule. Any worn-out fittings, damaged hoses, or missing safety devices should be replaced immediately. Bolt-style clamps must be checked and retightened on a regular and consistent basis.

All hose assemblies should be viewed as potential hazards. This document is designed to inform and educate anyone who manufactures, specifies, supplies, purchases, assembles, uses, maintains, or tests any hose assembly or its component parts. The proper selection and maintenance of hose, couplings, attachment devices, and accessories is imperative.

It is the end user's responsibility to identify to the distributor the application and any special conditions that the hose assembly must meet. It is the distributor's responsibility to supply the proper assembly for the intended application.

Accidents and down time may occur if hose assemblies are not properly selected for the specific application.

The performance and safety of the assembly is affected by the quality of the individual components. The use of the acronym S.T.A.M.P.E.D. (Size, Temperature, Application, Media, Pressure, Ends, Dixon) will help in the proper selection of the hose assembly components (see below). If anyone is uncertain about the use or application of a product, Dixon can provide test results, coupling and clamping recommendations, and other data to help resolve those matters. Call 800.355.1991 with any questions.