Kuri Tec®

Fitting Suggestions for Kuri Tec® Hose & Tubing

It is extremely important that the fitting and hose or tubing be properly matched in size and type. The insert should always be slightly larger than the tubing to create a slight expansion of the tube and provide a good consistent seal. If a clamp or ferrule is used to compress the hose, caution must be used to prevent over-crimping the ferrule or over-tightening the clamp. More pressure does not necessarily improve fitting retention.

We do not recommend the use of reusable fittings unless the hose and fitting have been specifically designed to be compatible and have been thoroughly tested in combination prior to use.

Clamps over barbed fittings

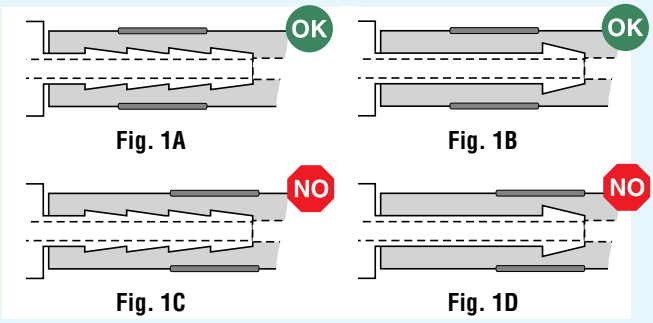


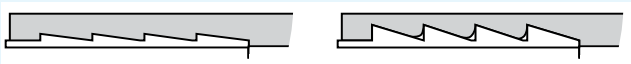
Fig. 1A Fig. 1B

Fig. 1C Fig. 1D

In the illustrations above, the clamps are properly positioned in Figure 1A and 1B, directly over the middle barbs and behind the first barb. This is extremely important in the case of single-barb fittings, as shown in Figure 1B, since the barb is generally much larger than the shank of the fitting. The compressed material cannot pass over the barb when under tension, thus securely holding the fitting to the hose.

In Figures 1C and 1D, the clamp has been improperly positioned too close to the end of the fitting. In Figure 1C, only the barb nearest the end of the fitting is effective in maintaining fitting retention. The first two barbs serve no purpose whatsoever in providing fitting retention or leak resistance. In Fig. 1D, the situation is even worse, since the clamp can very easily cut the core tube over the enlarged barb, leading to leakage and subsequent cover blisters or bursts.

When choosing multi-barb fittings for use with Kuri Tec hose, as in Fig. 1A and 1C, it is important that the barbs not be too deep. The core tubes in Kuri Tec hoses are generally somewhat harder than conventional rubber tubes and therefore the material cannot flow into the deep barb, as it would with a soft rubber compound.



Acceptable Unacceptable

Ferrules crimped over barbed fittings

When properly crimped, a metal ferrule over a multi-barbed fitting can provide excellent fitting retention and leak resistance. However, excessive crimping pressure can damage the core tube, leading to hose failure. Extreme care must also be taken to control the crimping diameter for hydraulic fittings. For this reason, as a general rule we do not recommend the use of one-piece crimped hydraulic fittings with Kuri Tec hoses.

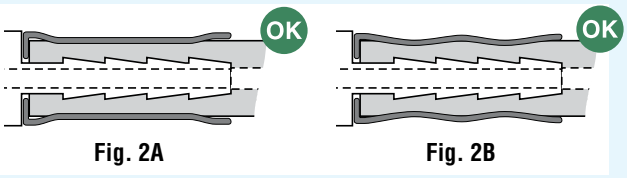


Fig. 2A Fig. 2B

In figures 2A and 2B above, two styles of crimping die have been used successfully. The ferrules and fittings are properly matched in length.

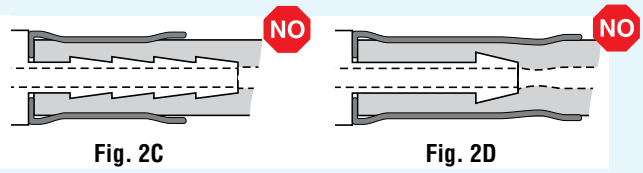


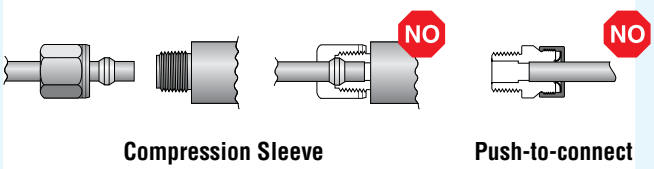
Fig. 2C Fig. 2D

In Fig. 2C, the ferrule is much shorter than the barbed insert. Without the protection of the ferrule, repeated harsh flexing of the hose at the fitting can damage the tube. In addition, the short ferrule does not take full advantage of the sealing or retention properties of the barbed insert.

In figure 2D, there are two potential problems: 1) The excessively-long ferrule can reduce the inside diameter of the hose just beyond the fitting; and 2) a single-barb fitting is not the ideal insert for a crimped ferrule. Because of the increased depth of the single barb, the tube can be cut by the force of the crimping before sufficient compression is exerted on the shank of the fitting.

Compression Fittings

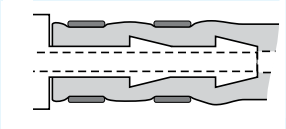
Compression fittings depend solely on contact with the outer surface of the tubing to provide sealing and holding power. There is no seal on the inner surface of the tubing. With the exception of 220/221 Series LLDPE tubing, we do not recommend the use of compression fittings with Kuri Tec hose and tubing. To work properly, the material must be hard and smooth and there must be no yarn reinforcement layer.



Compression Sleeve Push-to-connect

Fitting suggestions for Kuri Tec® spray hoses

In addition to the properly installed fittings shown in Fig. 1A, 1B, 2A and 2B above, we also suggest the use of a two-barb clamped fitting when high pressures are involved.



The double-barb fitting, held in place by two properly positioned clamps, provides excellent fitting retention and

leak resistance without risk of damage to the core tube or deterioration of the yarn reinforcement due to wicking.

Hose failure near a fitting

A hose is most susceptible to failure near the fitting. The installation of the fitting involves some risk of damage to the core tube. There is also some possibility of slight leakage along a fitting and subsequent yarn wicking, particularly if a one-piece crimped fitting is used. The greatest amount of flexing often occurs near the fitting at either the supply or service end of the hose.

In the investigation of a hose failure near the fitting, it is essential that the fitting/hose interface be examined. In the field, if the failure or deterioration is isolated to the area near the fitting, it is best to cut off the end of the hose, reinstall a new fitting, and monitor the hose in service to see if the problem reoccurs.

If the problem involves a spray hose and fluid slowly leaking through the cover perforations near the fitting, the most likely cause is wicking along the reinforcing yarn from the end of the hose or from a cut or break in the core tube. Such wicking can extend over several feet and a leak may be seen at a considerable distance from the source of the leak.

If a hose is being returned to the supplier for investigation of a failure, it is essential that the fitting . . . or at least the section of hose in contact with the fitting . . . be returned. Only by examining the inner surface of the tube that was in contact with the fitting can one determine with certainty if the problem began at the fitting.

WARNING

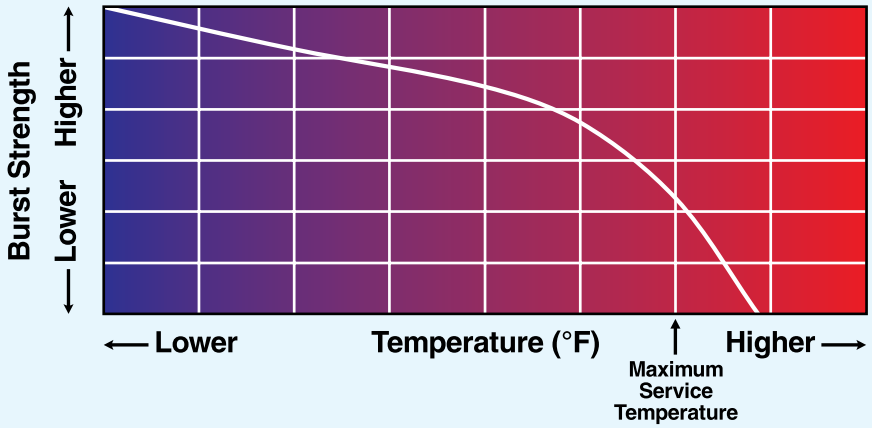
The above comments and fitting suggestions are intended for use as guidelines only. The information provided is based on tests which we believe to be reliable and on our past observations and experience. No warranty is expressed or implied, as applications and methods of fitting installation can vary widely. Before placing a hose in service, the user ***must*** determine the suitability of the fitting and hose/tube for his or her intended use. The user assumes all risk and liability resulting from the use of any Kuri Tec product with any fitting whatsoever.

Temperature Dependence of Pressure Rating

As a general rule, the working pressure ratings for plastic reinforced hoses are based on room temperature conditions. The maximum allowable pressure for a hose decreases as the temperature increases and the material becomes softer and more elastic. Fitting retention decreases at higher temperatures as the compression on the material declines.

Working pressure ratings can be affected significantly by the type of fitting used, the method of attachment, and the temperature to which the hose assembly is exposed in service. Repeated intermittent periods of exposure to elevated temperatures can affect fitting retention and it is, therefore, very difficult to assign working pressure ratings at high temperatures. The graph below demonstrates the overall trend.

Burst strength decreases as temperature increases



Working Pressure Ratings

Working pressure ratings are given in this catalog at 70°F and 122°F. Between 122°F and the maximum service temperature, it must be noted that a rapid decline in the pressure rating of the hose may occur, and all factors relating to the hose, fittings and service conditions must be taken into consideration.

No warranty is expressed or implied, as applications and methods of fitting installation may vary widely. Before placing a hose in service, the user ***must*** determine the suitability of the product under the correct working conditions, and assumes all risk and liability in connection therewith.