



Case Study: Tire Press Hoses

Extending Life through Flexibility & Fitting Attachment Improvements

Peerless; Buffalo, NY
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OVERVIEW:

A global Tire Manufacturer approached Peerless about a problem they were having with their steam hoses failing prematurely at their Tire Molding & Curing operations. They were currently getting hoses from a Compression Fitting manufacturer and they were having issues with both flexibility and leakage at the fittings. As these hoses are in a very dynamic application, they are constantly being cycled, thereby being impacted by stresses.



ACTIONS:

Peerless was provided a sacrificial hose that would be broken down in order to get a better understanding of the design, construction and methodology used for fitting attachment, to see where these stresses were having the greatest impact.

FINDING 1:

Flexibility: The flexibility of a metal hose is determined primarily by the number of convolutions per inch; the greater the number, the more flexible it becomes. It was determined that the construction of the hose did not allow for maximum flexibility.

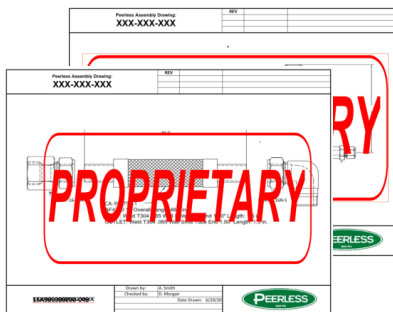
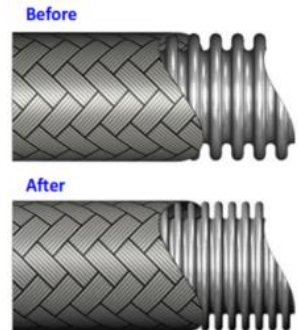


FINDING 2:

Leakage: The fittings were leaking where the fittings attachment method was inspected and opportunities for improvement were identified in both the attachment method used as well as the configuration of the hose and fittings.

RECOMMENDATIONS:

Peerless suggested a hose with a greater concentration of convolutions. This hose is manufactured in a proprietary manner that results in minimal work hardening, greater consistency in the wall thickness and eliminates residual torsional stress (RTS) during the forming process. These factors enable the hose to have greater deal of flexibility, while providing and a higher cycle life.



Then, based on earlier findings, the Peerless Engineering team made slight changes to the assembly method to ensure a reduction of stresses at any attachment point. Drawings were created and submitted to the customer for review. Two sample hoses were provided for customer to use in a trial.

OUTCOMES/TESTIMONIAL:

From the customer: “When I received the two hoses that I ordered for a trial the first thing I noticed is that they seemed to be more flexible. We installed them, have had great results with reliability, the price was much less and delivery time was shorter. All in all, this has been a big savings for the company!”. They have now been slowly replacing their existing hoses to use the Peerless-manufactured solution.

About Peerless:

Peerless is a manufacturer of metal hose assemblies and distributor of valves, specialized fittings and instrumentation. Located in Buffalo, NY they have been in business since 1914, under the same family ownership. For more information, call (800) 234-3033 or email at info@peerless-inc.com.