

Hose Reel Washdown Systems

Wicking Problems Technical Note

“Wicking” this is when the inner tube of the hose is pierced allowing the gas or fluid to then run through and around the braiding until it finds a weak spot in the outer tube and bubbles up or blows out. Although wicking can occur in all manner of hoses it is more common on softer compounded hoses like small bore rubber hoses used for Oxygen and Acetylene, Propane etc.



Cause

Piercing the inner layer is normally caused by one or more of the following reasons but not limited to these alone:

1. Incorrect fitment of the hose tail fitting
2. Over crimping of the fitting
3. The use of reusable fittings as they by design cut deep into the inner tube, these are also highly prone to poor installation techniques.
4. Pulling or working the hose end at tight angles forcing the hose barb into and through the inner layer
5. Incorrect ferule section for the hose barb, if the hose barb is longer than the ferule then it is easy to bend the hose pushing the barb into and through the inner tube.
6. Not so common, but plain and simple poor manufacture of the hose during extrusion.



The problem with wicking is that once it happens you can not just cut the hose back it will continue to happen as the adhesion between the inner and outer tubes has been compromised. This in itself allows the inner tube to rupture more easily as it is no longer supported properly.

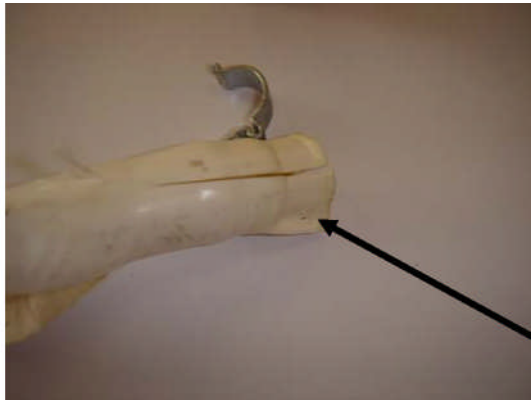
Prevention

1. Correct fitment of the hose tails and proper selection of barb to ferule configurations.
2. The installation and use of hose end protectors.
3. Instruct and explain to the operators the resultant problems of pulling the hose by the torch / nozzle and over stressing by excessive bending and rotation of the hose.

Recommendations

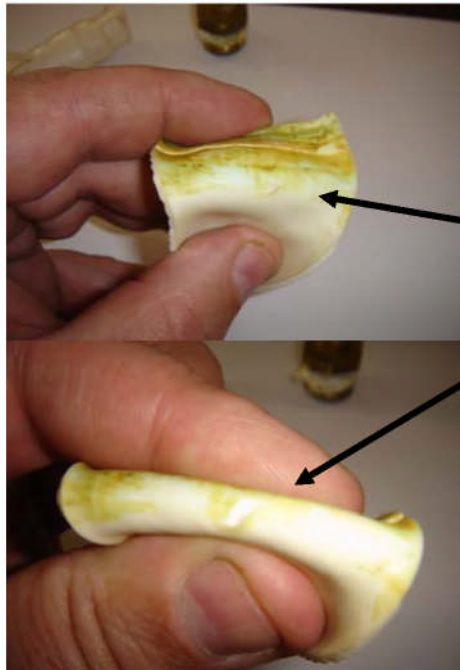
On the first sign of this failure contact our customer service department and explain in detail the application. From there we can help guide you through the repair process or take care of the repair through our service centre.

Note: In the assembly process the appropriate combination of ferule to hose barb is used ensuring correct fitment, however this will not eliminate wicking if incorrect operational techniques are used, such as over bending the hose, pulling the hose by the attached tool etc please refer to correct operation of the hose reel and use of hoses.



In this case the use of a twin eared clamp has crushed and pinched the outer tube of the hose.

See just to the left of the arrow a small hole.



Typical wicking mark, the barb has been forced through the inner tube allowing product to flow between the outer and inner tubes.



In this case the damaged and dented barb shows there has been severe impact crushing down through the hose onto the barb. The edge of the barb is forced through the inner tube causing wicking issues.