

Hydraulic User Brief Inspection Guide

Drilling machines and their support equipment need to be treated with care to ensure they remain in a good safe condition during use in the field. To achieve this, they need to be inspected by a user to spot obvious problems, developing defects or even tampering by a third party before it is started and used for its purpose. Hydraulics are just one aspect of many drilling machines.

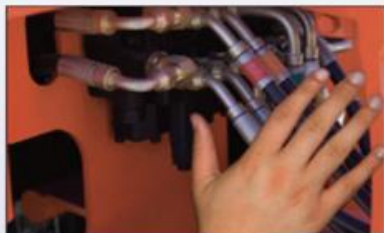
The 'User Inspection' is an effective safety measure common to a multitude of equipment and situations. The 'User Inspection' is typically required prior to first use, daily use, and after a significant/unusual event regarding pieces of work equipment. Many BDA members use equipment with hydraulics.

The British Fluid Power Association (BFPA) has assisted the BDA by sharing their Hydraulics Engineering Visual Inspection guide for professionals to assist with any 'Driller User Inspection'. To enhance the effectiveness of this part of a 'User Inspection' BDA have extracted some important points. (For more detailed and fitter level information the BFPA are happy to be consulted).

Hydraulic Visual Inspection Aide-Memoir

IMPORTANT NOTE: We all know faulty hydraulics are extremely hazardous and can cause significant injury (hydraulic fluid injection – impact injuries) or even death. Escaped hydraulic fluid can also cause a significant pollution event.

When examining hoses for damage/searching for a leak it is vital that the hands (and indeed any other part of the body) are kept away from equipment which is under pressure. The image below shows the incorrect way of doing this.



A long implement should be used when inspecting hoses for damage – this will reduce the risk of personal injury. A typical implement and how it is used is shown below.



Visual evidence of leaks along the full length of the hose assembly taking particular care to check around the hose/end connector interface and/or associated parts









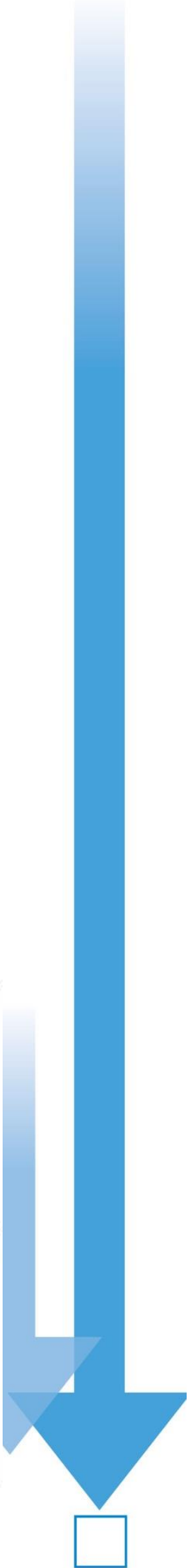
Witness of oil which shows on the hose cover



Degraded hose, hard, stiff, charred, blistered, soft, heat/ozone cracked



Hose cover extruding out of the ferrule

<p>Wear and abrasion</p> <p>Exposed, damaged, corroded or broken reinforcement</p>	
<p>Excessive corrosion of the hose end connectors and associated parts</p>	
<p>Bulges, blistered, soft, degraded or loose hose outer cover</p>	
<p>Outer cover damaged such that the environment can access the reinforcement</p>	
<p>Kinked, crushed, flattened or twisted hose</p>	
<p>Hose too close to a heat source temperature being around 20°C above the maximum temperature rating of the hose. The hose took set in the installed condition, bending the hose back in to the straight condition resulted in the hose cracking.</p>	



<p>Hose tangled with moving parts/other hose assemblies</p> <p>Particular attention for abrasion damage should be made when inspecting hoses which are located near to fabrications, running through bulkheads, hose supports etc. The photographs below show typical abrasion damage due to a combination of incorrect hose routing and inadequate protection. This would necessitate replacement of damaged hose assemblies.</p>	
<p>Cracked or damaged hose end connectors and/or associated parts</p>	 <p>Hose cover extruding out of the ferrule</p>

Please remember: When the user visual inspection is complete any defects should be reported to a supervisor/manager before continuing. The user should be informed by the supervisor/manager of their decision immediately before continuing to operate the equipment.

Thank you to:

British Fluid Power Association – WWW.HYDRAULICHOSESAFETY.CO.UK

For allowing us to use their content.

