



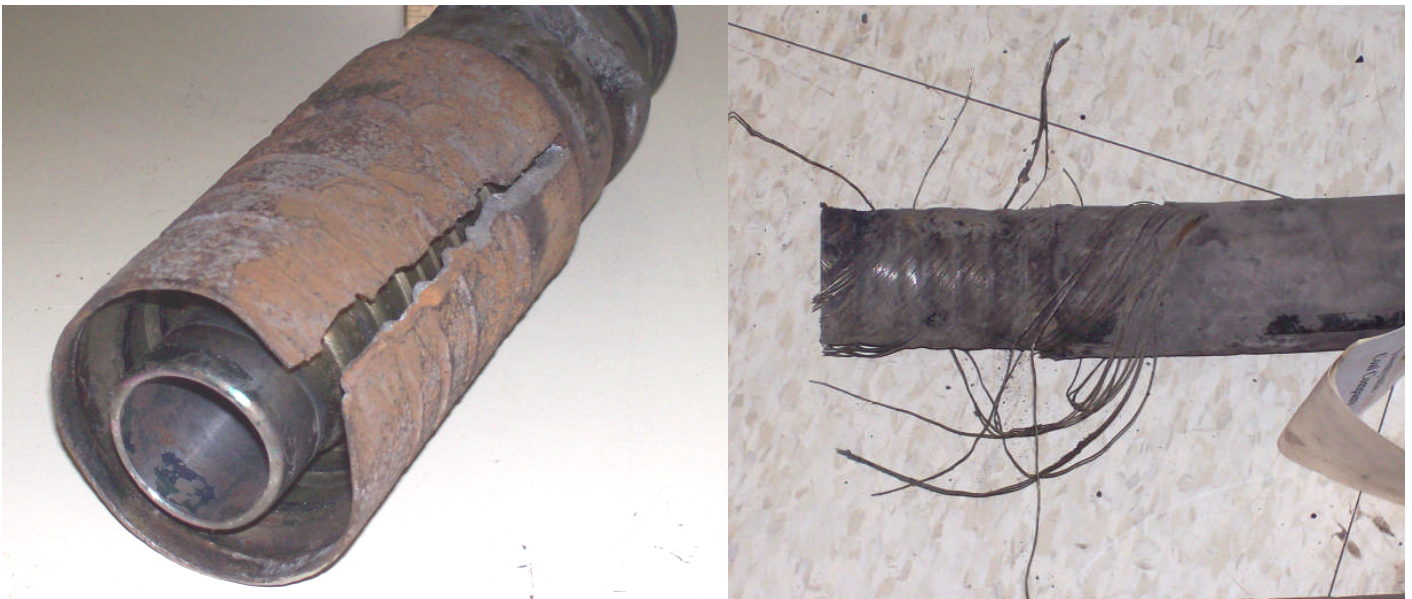
Reliability at work

Bulletin

Longwall High-Pressure Hosing Best Maintenance Practices

High-pressure hoses in longwall systems are subject to high operating design pressures, pulsations from pumping systems, impulse from normal shield operation, and environmental conditions that may damage the hoses.

Removal and installation of hoses can result in further physical damage. Hose ends are commonly packed with dust and corrosion, which makes removal and replacement difficult.



Hammers, punches, and chisels used to force fittings together can cause tiny cracks in the hose ferrule, which over time, may propagate along the entire length of the ferrule, leading to a catastrophic failure of the hose assembly, as shown in the pictures.

BULLETIN NO.	ORIGINAL DATE	ORIGINATOR	APPROVED	CORPORATE	REVISED	EFFECTIVE UNTIL
100-062409	6/24/09	J. Bell	J. Bell	L. Amoroso		



To minimize the need to use extreme physical measures when replacing hoses, the following “Best Maintenance Practices” are recommended when working on high-pressure hoses:

- Always make sure any hose being worked on has been hydraulically isolated from the supply or return system, and residual pressure has been relieved, before starting work.
- After removing the retaining staple, never “bump” the hose with pressure to cause it to blow itself out. Bumping can result in injury.
- Always use the exact diameter, length, and working pressure rating hose for all replacements. Otherwise premature hose damage and failure may occur.
- Use of penetrating oil to loosening fittings should be done so sparingly, and only after checking with the soluble oil supplier to insure there will not be any adverse reactions with the emulsion.
- During longwall moves, the end of the hose removed from a neighboring shield should be looped around and inserted into the manifold of the shield being moved, to prevent dirt from entering the hoses or contaminating the hose ends. If not possible, cover the exposed hose ends and tie the hose ends up to prevent contamination.
- Before inserting hose ends into manifolds or fittings, make sure all o-rings and backing rings are intact and in good condition. Always clean the hose end before reinserting it.
- Moly-disulfide (anti-seize compounds) may be applied to the outside of hose ends to make future removal easier. However, never allow these compounds to enter the inside of the hose or any other fittings. They can plug filters throughout the system, and cause significant operational problems.
- Channel lock pliers can be applied to the fitting body (not the ferrule) to attempt to loosen the fitting by twisting it back and forth.
- If impact is absolutely necessary to loosen or reinstall a fitting, never strike the crimped-on ferrule, and **never use a chisel of any kind** as the contact tool. This will cause an immediate stress riser, which can develop into a crack, and ultimately lead to a hose end failure. Only a brass punch or very mild steel rod (< 25 HRc) should be used in contact with the fitting body.

BULLETIN NO.	ORIGINAL DATE	ORIGINATOR	APPROVED	CORPORATE	REVISED	EFFECTIVE UNTIL
100-062409	6/24/09	J. Bell	J. Bell	L. Amoroso		