PolairDrill™ Rock Drill Oils

Maximizing air cylinder service life

Air cylinders are widely used in underground mining, including the following:

- Vent doors
- Refuge chambers
- De-watering pumps
- Skip loading
- Head frame
- Diverter gates
- Transfer stations

Some common causes of air cylinder failure include:

Solids: Gritty environments can wreak havoc with pneumatic cylinder systems. Once any type of particulate penetrates a nose seal, it can embed itself in seals and bearings, turning them into virtual sandpaper.

Water: Water vapor is present in all compressed air applications, where it collects within components to block orifice flowthrough, dilute pre-lubrication grease, adulterate airline lubricants, damage barrel or rod finish and freeze in cold weather.

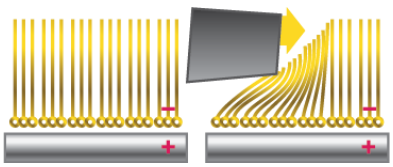
Incompatible Oils: Another type of pneumatic cylinder contaminant consists of oils resulting from air compressor lubrication carryover or synthetic oils (PAO's / PAG's) that are typically incompatible with air-line components, and conventional rock drill oils. Such oils can cause seal swelling and orifice plugging.

Insufficient lubrication

Catastrophic failure can also occur when cylinder seals have insufficient lubrication. High or fast cycle rates can generate high operating temperatures and unsustainable shock loads at the end of a stroke when the piston hits the end-cap, or seals can simply run dry from a lack of lubrication. Heat generated by the system could compromise component temperature limits, as well as cause the air line lubricant to break down (coke) and form abrasive particles that can cause accelerated wear. Overheated lubricant can become a problem.

PolairDrill™ rock drill oils provide superior protection for air cylinders by the following mechanisms:

- Rejects water & protects against corrosion. Negatively charged polar film adheres tenaciously to steel's positively charged surfaces. (see diagram)
- Tolerates heat much more +200°F. (93°C) than conventional rock drill oils which begin to break down above 390°F. **PolairDrill™** rock drill oils can tolerate temperatures up to 600°F.
- **PolairDrill™** rock drill oils are proven to reduce scarring / wear rates up to 70%



WHMIS & TDG

Non hazardous - Non Regulated

Liquid Solutions Inc. - 16 Community Avenue - Unit 1, Stoney Creek, Ontario, Canada L8E 2Y2 **liquidsolutions.ca**
Phone: (905) 510-2443 **Email:** kklayh@liquidsolutions.ca ***or*** vince@rockdrilloils.ca Fax: (844) 891-3845 **rockdrilloils.ca**