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O-ring Compositions

- Further to enquiries regarding O-Ring compositions and what makes each unique to Rock Truck applications, the following technical summation is offered:
- Usually, wet brake systems in Rock Trucks operate hot while under load. Yet, when standing idle over a period of time (overnight) in extremely cold latitudes, these same brake systems can drop well below freezing. Hence, the need for energizers that can function over a wide range of temperatures.
- SILICONE [SI] energizers are normally used in Rock Trucks operating in extremely cold and/or extremely hot temperatures. The basic temperature range is between -50°C and $+200^{\circ}\text{C}$. Unfortunately, many oils used in wet brake systems contain harsh additive packages (such as EP). These additive packages attack silicone and eventually cause silicone energizers to become soft, resulting in a loss of face pressure on the sealing surface and ultimately, premature seal failure. EP type oils should not be used with seals that have silicone o-rings.
- HYDROGENATED NITRILE [HN] (also called HIGHLY SATURATED NITRILE [HSN]) energizers are normally used in Rock Trucks operating in temperatures between -26°C and $+150^{\circ}\text{C}$. HN or HSN rubber is very resistant to harsh oil additives such as those found in EP type oils. Unfortunately, at low temperatures, standard HN/HSN compounds do not perform well (the o-rings will freeze).
- HYDROGENATED NITRILE - COLD FORMULA [HNC] energizers are the o-ring of choice for many OEMs who have found a need to operate in an environment dictated by harsh oils and extreme temperatures. The normal temperature range for HNC is between -40°C and $+140^{\circ}\text{C}$. This is the correct choice for Rock Trucks that need to live in cold temperatures and endure EP type oils.