



**Is it necessary for the system seal diameter to exactly match the wire rope diameter ?**

We recently received a quote request for a wire rope lubrication system from the purchasing arm of a fairly large overseas shipping line.

The system specification outlined in the bid stated that the required seal diameters were to be within 2mm of the purchaser's specified wire rope diameters. Obviously the specification was modelled around a product presentation of a company marketing a pressure lubrication system of their own. Unfortunately, for the customer the vendor did not understand the importance of seal to wire rope fit for optimum performance in pressure wire rope lubrication. Another factor may be that the vendor had not yet developed a range of tooling to allow the manufacture of seals that would match the exact wire rope diameters of their customer.

Matching Wire Rope and seal diameters are crucial for maximizing internal pressurization and lubricant containment within the lubrication collar. Sealing performance always is affected to some degree if a wire rope varies in diameter one-way or the other. Sometimes the effect is minimal if variance is not too much. However, we have found that a 2mm variance can be critical. This is especially true if the seal is 2mm smaller than the wire rope diameter. We have not only confirmed this with our own systems but also in testing of competitive systems.



In fact, Wire Rope Constructions such as double armour cables that are assembled around a solid internal core require an exact marriage between the seal and wire rope diameters. Multi Strand wire rope configurations are the same to a lesser degree.

**How Kirkpatrick Wire Rope Lubrication Systems addresses wire rope to Seal diameter variance:**



Our company has developed a complete core-tooling inventory that allows us to provide our users with seal diameters in .5 mm to 1mm increments. It has been our experience that rated wire rope diameters can sometimes be nominally different from the actual infield diameter of our customers' wire ropes. This is due to stretch or a ropes new condition where all of the strands have not yet seated or adjusted to one another. Therefore, We request our customers to micrometer their ropes prior to ordering seals to make certain the fit will be as close as possible to their specific wire rope diameter. In the event it is impossible to verify exact fit prior to delivery, Our company has developed an open return policy that

allows our customers the ability to exchange their seals if it is found the seal to wire rope fit is not close enough to provide them maximum sealing performance.

Thank you for your time and please feel free to contact us for further clarification concerning the topic of this correspondence or to provide us with input from your own experience.

Best Regards,

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