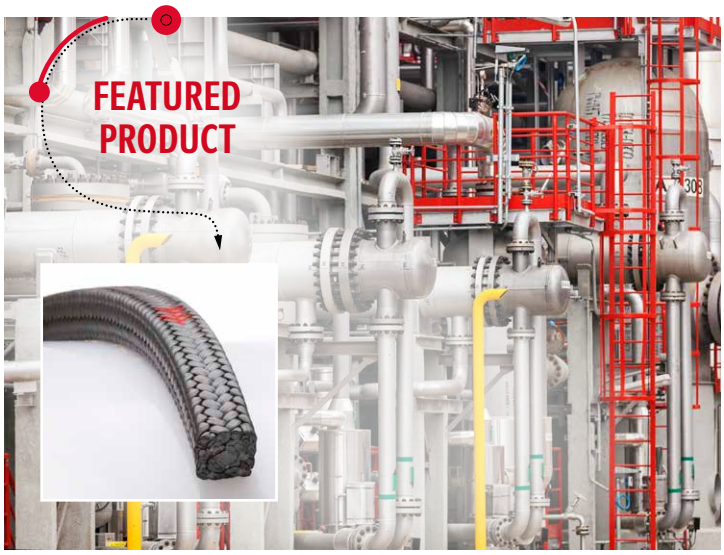
ProPack DICHTUNGEN UND PACKUNGEN AG

YOUR COMPETENT PARTNER
WORLDWIDE IN
SEALING TECHNOLOGY



NEWSLETTER 01-24



Trapez-Pack®1

Braid of ePTFE-yarn with incorporated graphite and silicone run-in lubricant

- Excellent heat conductivity
- Maximum protection of shaft against wear (HRC 25 is sufficient)
- Extended MTBF
- Easy and safe installation and handling
- No ageing process

QUESTIONS & ANSWERS ABOUT GLAND PACKING

QUESTION: IS IT POSSIBLE TO DETERMINE THE PACKING X SECTION FROM A SHAFT OR STEM DIAMETER?

There is some guidance Pump Shafts should be packed with a X Section which is 1.6 times the square root of the shaft diameter. Valve stems require slimmer X sections of 1,2 times the square root of the stem diameter. Example a 100mm shaft should be packed with a 16mm packing. A 25mm stem should use 6mm packing. Normally the X Section is determined by the machine builder therefore this is formulas are just useful to check if there are abnormities in the stuffing box design. This can be when a very thin packing is used around a big shaft diameter. The risk is then that the ID circumference length is too close to the OD circumference length which should give the packing ring enough grip to avoid spinning in the stuffing box when the shaft turns.

QUESTION: HOW MUCH WATER SHOULD FLOW THROUGH A LANTERN RING POSITIONED IN THE STUFFING BOX IN AN 2L2, 2L3 OR 3L3 ARRANGEMENT?

This depends on whether there is a drain hole in the stuffing box underneath the lantern ring and whether it is open or closed. It also depends on the pressure level between the product pressure at the inlet to the stuffing box and the supply pressure of the sealing/flushing medium. If the drain outlet is open, you may easily run 11 ltr through the lantern ring to drain and you neither will keep solids out of the stuffing box nor cool and lubricate the packing rings. If the drain is closed or throttled and the product pressure is higher than the pressure of the sealing/flushing medium, you will not stop solids to enter the stuffing box, but you may lubricate the outboard rings. The product could even enter the supply line via the lantern ring and clog it. A non-return valve near the stuffing box is always advisable. If the supply line pressure is higher than the product pressure and the drain outlet is closed, there will be a positive flow towards the product, and this is referred to as barrier pressure. Solids are kept out of the stuffing box. The packing seals clear barrier fluid. How much sealing water flows towards the product, and thus dilutes and cools the product, depends on the effective pressure difference. With a 50 mm shaft and a pressure difference of 1.5 bar this maybe as little as 0,15ltr/min since the gap between properly functioning inboard packing rings and the shaft is tiny. To achieve this all packing rings, need to be changed not just the rings outboard of lanterning and the bottom rings need to be properly seated to avoid the lantern ring moves away from port position and does not catch water.

QUESTION: IS THERE AN ADVANTAGE OF PTFE LANTERN RING STRIPS AGAINST MACHINED LANTERN RINGS?

A key advantage is that the strips can be used for multiple Stuffing box dimensions which have the same X Section of packing. Where machined lantern rings can only be used in the stuffing box they are designed for. Spare part stock holding is therefore much easier with strips as you can stock along with the packing X sections you use. Due to the slotted design lanterning strips are easier to remove then machined lantern rings. Machined lantern rings may eventually have extraction bores which are tough to find and usually plugged Just use a sharp head packing extractor and drill in the Lantern ring strips slot. This enables you to thoroughly remove all old packing rings as well underneath the lantern ring and start with fresh packing from the bottom up. PTFE as the dominant material for lantern ring strips has the advantage over bronze lantern rings that the material is chemically inert and does not score shafts.

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