

Liquid Ring Vacuum Pump Maintenance Tip

MAINTAIN PUMP PACKING

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While many situations can cause pump packing problems or failure, they can be prevented through regular inspection and maintenance. With the advent of environmentally friendly synthetic packing maintenance requirements, as well as start-up and break-in procedures, have changed. In this article from NASH Certified™ Service, learn how to correctly install and break-in new pump packing, to prevent packing problems and failure.

Developed from a variety of synthetic materials, most new pump packing offers a range of performance and environmental benefits, though requires a different approach to installation and maintenance than legacy packing products. In order to get the most out of your equipment, it is crucial that pump packing is installed correctly, broken-in as per manufacturer requirements, and regularly serviced.

When starting up a pump, or a pump with new packing, it is important to consider the following factors, as they can provide a warning of any potential issues during start-up or maintenance:

- **Age of the pump & pump packing:** It is important to consider the age of the equipment, as well as how long the pump and packing sat prior to being started. Pumps that sit idle for long periods are at high risk of having dry packing. Packing should be checked prior to pump start-up to make sure it has not dried out in storage.

- **Pump/Bearing temperature:** Bearings that continually run at increasing temperatures and do not peak out and start declining are a clear indication that there is a problem, and that the packing needs to be inspected, and potentially replaced, immediately

Excessive leaks or high temperatures typically indicate wear or other issues with pump packing. Operating under normal conditions, pump packing should be changed annually, however application and maintenance schedules may warrant more frequent replacement. This article will give you an overview of how to repack a pump, as well as some start-up and break-in tips to help you get the most out of your new pump and/or pump packing.



REPACKING A PUMP

When repacking make sure the slits in the packing are staggered. The goal is to stop an excessive leak at start-up or after repacking, not to prevent the water from getting to the outer rings.

The packing drip is decided by the two outer rings. Adjusting the gland in only these rings will compress the packing and make it tighter on the shaft. The last ring opening or slit should be at the bottom of the shaft, and the gland should be started or registered in the stuffing box. You do not want it to drop on the shaft.

To start the gland in the stuffing box, cut $\frac{1}{4}$ inch from the new ring and flatten it a bit. This will allow it to go into the stuffing box more easily. Do not force the gland into the packing box, as it will put too much pressure on the shaft and packing. Most of the packing is graphite impregnated Teflon and can wear into a shaft and groove it if you are not careful.

Install the first three rings into the stuffing box and use the gland to make sure they are seated correctly. Then install the fourth ring, start the pump and adjust the packing. If you can get the last ring in go ahead and install it - but make sure there is a drip, or that the packing is running at a temperature where you can leave your hand on it.

Packing that is too hot, or does not peak and then drops to a normal operating temperature is a cause for concern and may lead to packing or bearing failure. Check to make sure there is a slow drip, as no drip and high packing temperature may indicate that the packing is too tight and should be adjusted.

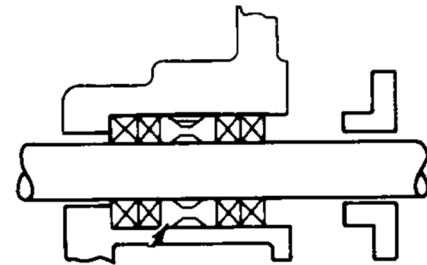
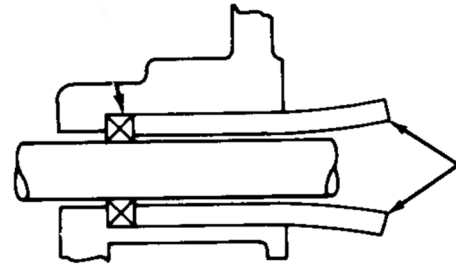
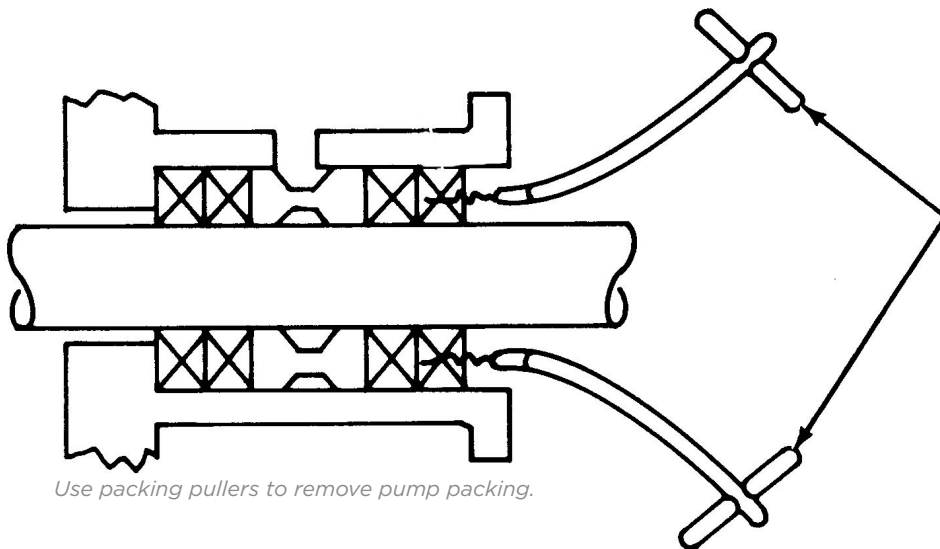


Diagram showing pump packing removal steps.



Use packing pullers to remove pump packing.

START-UP & BREAK-IN TIPS

When starting a new pump, or a pump with new packing, the following tips that will help extend the life and performance of your pump packing:

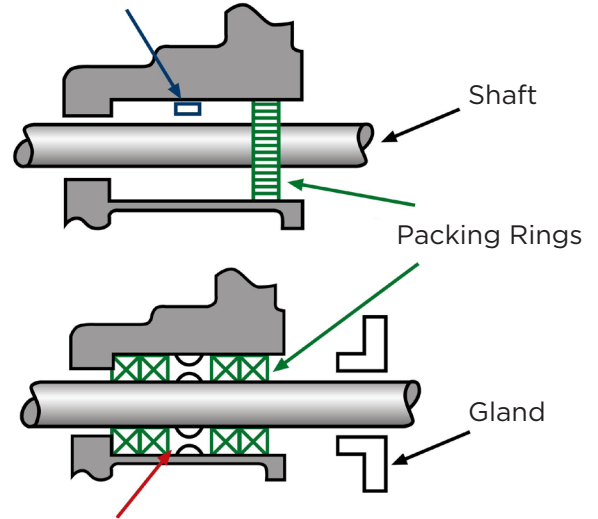
- Ensure that the gland is loose, but not riding on the shaft
- Let it leak for at least 30 minutes while the equipment is broken in
- An optimal leak is approximately one drip per second, to achieve this adjust one end of the pump at a time, monitoring the pump and its operating temperatures
- Adjustments should be made by turning gland nuts one flat at a time, on both sides of the shaft, and letting it run for at least 20 minutes
- Some pumps will not drip at all, in such cases, it is crucial to monitor pump temperature. If the pump is running at 130° or below, the packing is fine
- If the shaft is grooved from overtightening, it will be difficult to adjust the pump packing. To avoid overtightening, allow the seal to break in, then tighten as noted above

TRUST THE EXPERTS

Our NASH Certified Service team has decades of experience changing and troubleshooting pump packing and other problems. If your packing temperatures are elevated, if the packing is dripping excessively or not at all you should contact us for troubleshooting and advice. Our trained NASH Certified technicians can identify potential causes and help you adjust the packing before a problem occurs.

You invested in a NASH® pump for a reason - reliability. Let us help you keep your equipment running smoothly, reliably and efficiently.

Inlet Channel to Sealing-Water Distribution Ring (If Used)



Sealing-Water Distribution Ring (If Used)