

How to repack a... stern gland

SAILING
TODAY

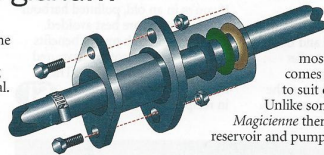
Project time: 1.5 hours
Project level: **Beginner**
Project cost: £10



Having sailed his Jeanneau Fantasia *Magicienne* for three years, **Geoff Westgarth** realised it was time to repack his increasingly dripping stern gland...

The stern gland, or 'stuffing box' as it is traditionally known, is the seal where the prop shaft passes through the hull. On *Magicienne*, this is in two halves, with a length of flexible rubber tube, through which the prop shaft passes. One half is fixed and sealed to the hull;

the other slides down the propeller shaft and compresses the packing material to form the seal. The packing, which is impregnated with PTFE grease, is



available from most chandlers and comes in a variety of sizes to suit different shafts. Unlike some installations, on *Magicienne* there is no external reservoir and pump for forcing extra

Tools & materials

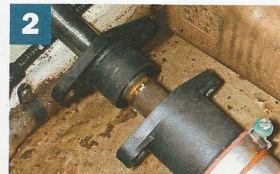
- Spanner
- Screwdriver
- Two large screwdrivers (as prising tools)
- Bradawl
- Ruler or vernier scale
- Brass panel pins
- Modelling knife or scalpel
- De-greaser
- New packing material

grease into the gland – it is merely a case of adjusting the seal when necessary. The idea is to allow just enough water to seep through the gland to help lubricate and cool the surfaces as the prop shaft turns, but not enough to flood the boat. The following procedure should be carried out with the vessel out of the water.

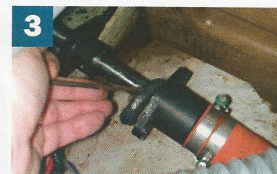
Repacking your stern gland Step-by-step



1 This is the overall assembly as described above. Before starting, rotate the shaft by hand to feel the general 'stiffness', so that you have some idea of how tight the stern gland should be once you've re-assembled it. *Magicienne* has a hose clip around the shaft to stop it falling out of the hull in the event of a catastrophic failure of the prop shaft/gear box link. If you have one, slacken this off and slide it back up the shaft



2 Remove the bolts holding the two halves of the stern gland together. Slide the moveable half of the stern gland up the shaft. If it's stiff, it might need two large screwdrivers – one either side to apply equal force – to prise the stern gland apart. Be careful not to break it as some are only plastic



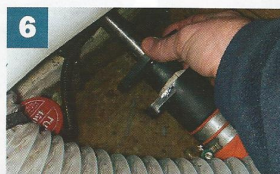
3 Using an appropriate tool, prise the packing out of the fixed section of the stern gland. Note how many layers or rings there are, so that you know how many to put back. The tool could be a sharpened screwdriver, a long screw or even a piece of wire coat hanger. In my case a bradawl did the job nicely, allowing me to carefully 'screw' into the packing – pulling and prising at the same time



4 Clean up the shaft and the inside of the stern gland with a proprietary de-greaser and then wash thoroughly with clean water. With a ruler, or better still a vernier scale, measure the distance between the shaft and the inner surface of the fixed part of the stern gland so that you purchase the correct size of packing material – you need the largest size that will just fit snugly



5 Make up each layer or ring (the same number as were taken out) of the new packing material separately, by winding a length around the shaft and cutting accurately with a sharp modelling knife or scalpel. This cut can be at 90°, but some fitters cut at 45° as shown. The material is quite squishy, so, if anything, cut slightly oversize, so that when the packing is squeezed down inside the stern gland the two cut ends butt up firmly together



6 The packing is heavily impregnated with PTFE grease, but I applied a little extra to the shaft. Then, using the moveable half of the stern gland, push each new ring along the shaft and into the fixed half of the gland. Ensure that the joints on each ring are staggered to improve the overall seal



7 Re-assemble the two halves of the stern gland with the moveable half seated down fairly firmly onto the packing inside the fixed half. For shakeproof protection you should either have two nuts on each bolt to act as lock nuts, or use nylon lock nuts (plastic inner thread) as above. Do the nuts up finger tight – equally on each side so as not to skew the moveable half – then turn the shaft by hand and check that the 'stiffness' feels about the same as before. If it feels tighter, slacken off the bolts equally until it turns as before



8 Slide the jubilee clip back into position and tighten. When the boat is re-launched, immediately adjust the bolts equally – 1/4 to 1/2 a turn at a time, while turning the shaft by hand so as to allow a very small amount of water (one or two drops a minute) to seep through the stern gland. Be careful not to over-tighten so much that no water at all gets through – this could cause the gland to get hot and damage the surface of the shaft

