How to service a ...

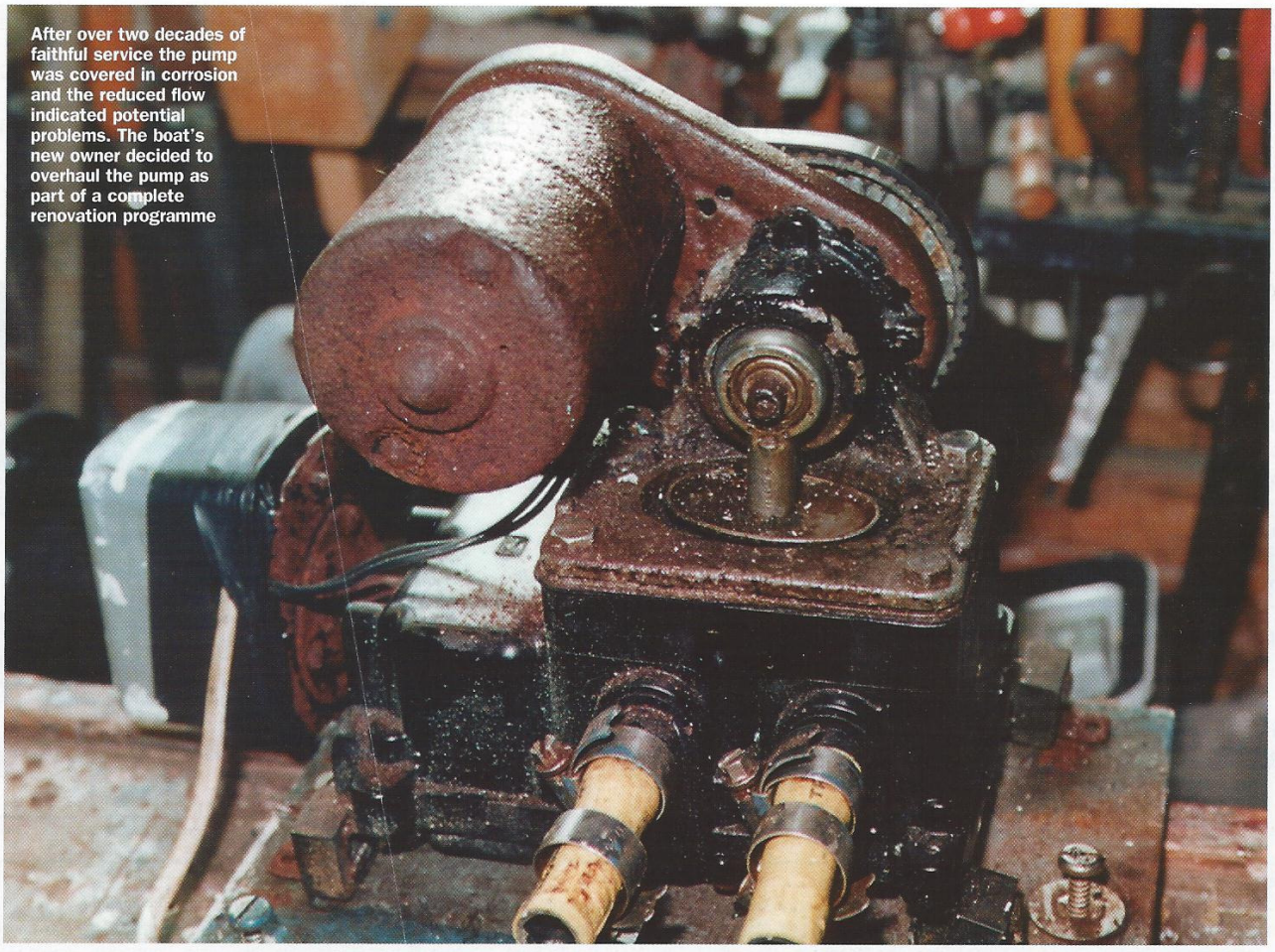
domestic water pump

SAILING TODAY
Project time: 7 hours
Project level: Intermediate
Project cost: £62

The domestic water pump often works for a long time in a neglected state. However, an occasional service will ensure it lasts for many more years as **Peter Caplen** explains

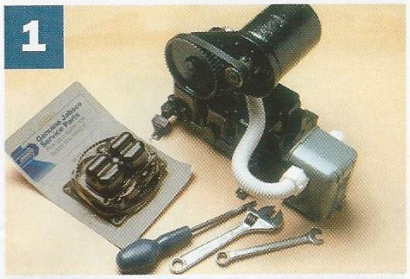
Water pump servicing is not difficult and can be performed as part of the winter lay-up schedule. Most boats are now fitted with an electric pressure system that provides running water similar to that found at home. The pump featured here is one of the most popular types found on medium-sized vessels – the Jabsco Par 36000 series. These have been around for well over 20 years, but are still available along with the inexpensive service kit that ensures they stay in top condition. They can often be found second-hand at bargain prices and, if the motor runs well and there is no physical damage, they can be a very good buy as a couple of hours spent overhauling them will result in a first-class pump.

The pump shown in this step-by-step is a 23-year-old 36000 series model that was suffering from reduced flow. You will find that Jabsco 36000 series bilge pumps are serviced in the same way as domestic water pumps, with minor differences when it comes to the valves.



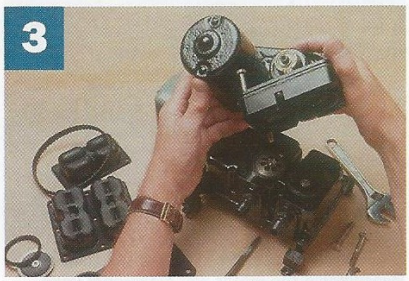
After over two decades of faithful service the pump was covered in corrosion and the reduced flow indicated potential problems. The boat's new owner decided to overhaul the pump as part of a complete renovation programme

Photo Peter Caplen

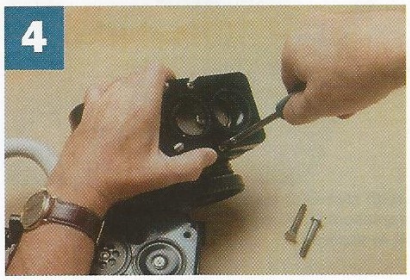


The first job was to remove all the corrosion using emery cloth and rust remover, clean all the electrical connections, remove all the grease and muck inside and out and then paint the metal parts with Smooth Hammerite. Once it looked presentable, the pump was ready for servicing. The service kit and tools needed for the job are also shown

Using a spanner or socket, evenly slacken and then remove the four securing bolts on the top of the diaphragm assembly

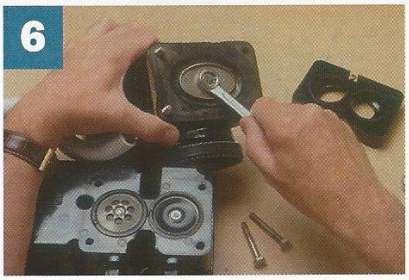


Lift the diaphragm assembly, together with the motor, away from the pump body

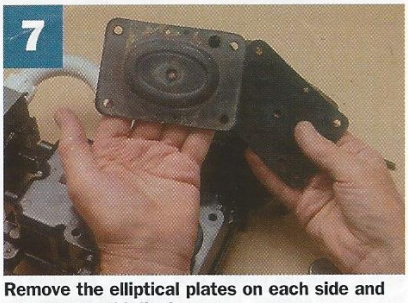


Invert the motor/diaphragm assembly and remove the two screws from the diaphragm ring plate

Lift the ring plate away to reveal the diaphragm itself

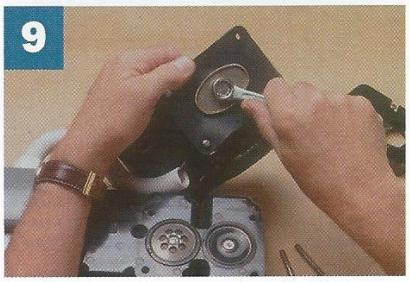


Undo the central holding bolt that locates the diaphragm onto the connecting rod



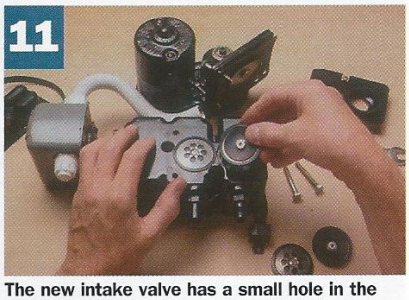
Remove the elliptical plates on each side and discard the old diaphragm

Sandwich the new diaphragm between the elliptical plates. Pass the holding bolt through them, ensuring the convex side of the moulding is facing away from the connecting rod



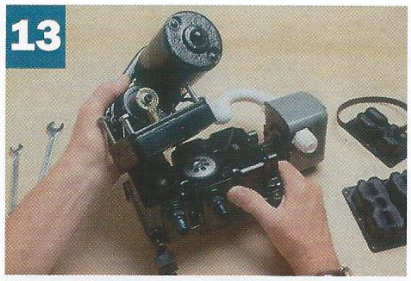
Screw the centre bolt into the end of the connecting rod. Slipping two of the securing bolts through the corresponding holes in the diaphragm will ensure correct alignment. Tighten the centre bolt

The old valves are removed by gently prising them up using a small screwdriver blade. Note the type, position and orientation of the valves before removal, as it is essential that the new valves are fitted in the correct positions and the proper way up



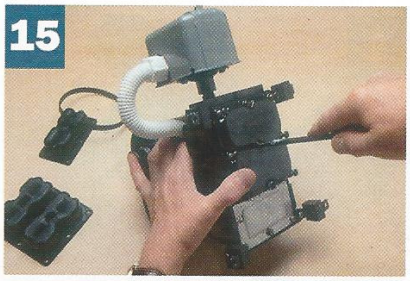
The new intake valve has a small hole in the rubber and is placed with the rubber disc upwards. The outlet valve is placed with the rubber disc downwards

The diaphragm ring plate can now be refitted, and the two screws tightened

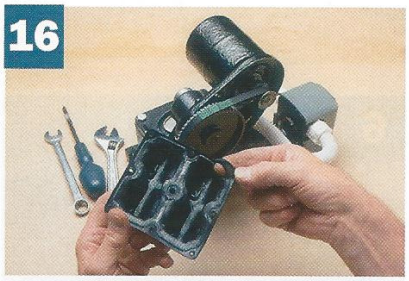


Reassemble the motor and diaphragm units, aligning the securing bolts

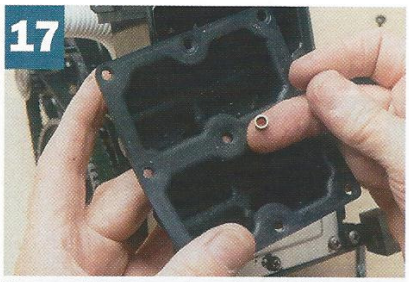
Evenly tighten the four securing bolts, taking care not to overtighten them



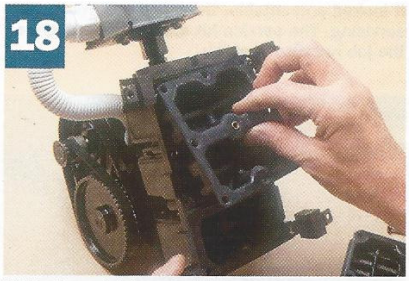
Pulsation dampers are accessed by inverting the pump and removing bottom plate screws. The large plate is plastic and covers the outlet damper. The smaller plate covers the inlet damper



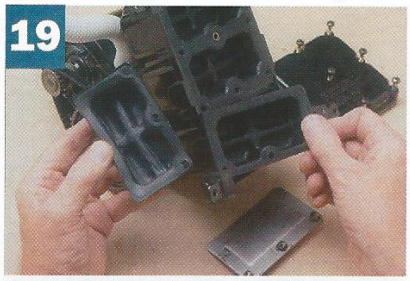
With the bottom plates removed, the dampers can be lifted out and examined. This large one has a tear in one corner, which explains the reduced efficiency of the pump



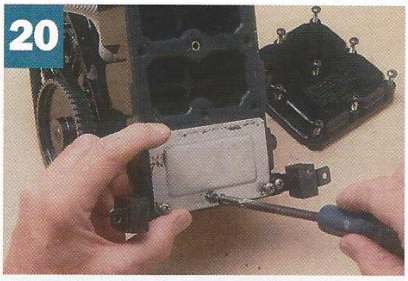
Some models have a sleeve in each hole of the damper; others, like this, have only one sleeve in central hole in large damper. Any inserts must be removed from old damper and fitted into replacement one – latest models don't use inserts



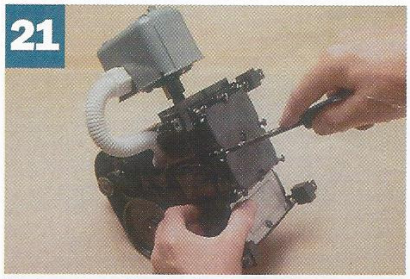
With sleeve(s) inserted into the large replacement damper as necessary, place it in position



Discard the old small damper and fit the new one, with the three holes to the outside edge corresponding with the holes in the body

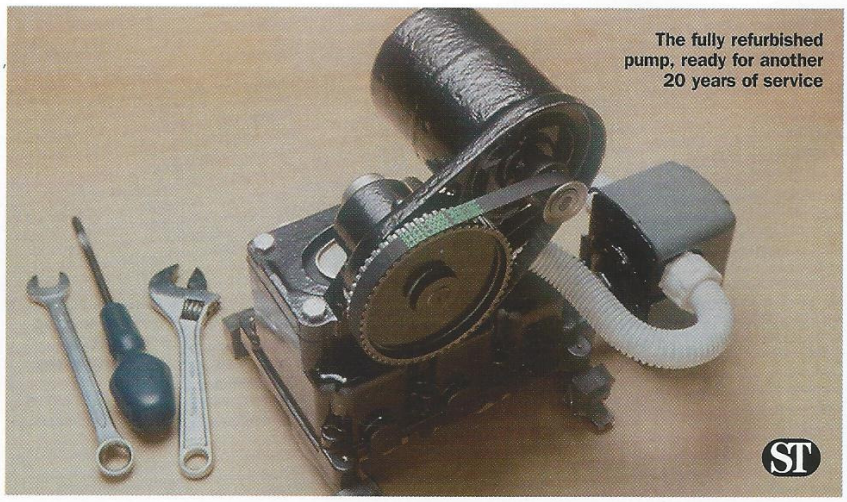


Fit the aluminium damper cover first, lightly tightening the three screws



Next, replace the plastic plate, which locates over the edge of the aluminium one, securing it in place. Begin by lightly tightening the central screw, then the middle side screws, followed by the corner screws. Finally tighten all screws in the same order, taking care not to overtighten

Finally, replace the drive belt with a new one. As with an engine alternator belt, the motor mounting bracket has a slotted hole to allow the correct belt tension adjustment of 1/4in free-play midway between pulleys. Do not bend the bracket out of alignment as the belt will jump off the pulleys when operating



The fully refurbished pump, ready for another 20 years of service