



How to service an... outboard

SAILING
TODAY

Project time: 2-3 hours
Project level: Intermediate
Project cost: £10-20



Getting your outboard serviced can be expensive – so why not do it yourself? **Peter Caplen** explains how in this essential step-by-step guide

Servicing a modern outboard is not difficult and generally involves changing the gearbox oil, cleaning or changing the plug and greasing the few points

that are still equipped with nipples. It is also worth checking the condition of the propeller, shaft and shear pin where fitted and greasing them before reassembly, while the fuel filter benefits from an occasional clean. Checking the condition of the starter cord and recoil assembly

helps to prevent unexpected, sudden failure while attempting to start the motor. Apart from keeping the motor clean, this is about the extent of routine servicing, but a couple of hours spent on the outboard at the end of the season will ensure trouble-free running throughout the next.



4 Smear the propeller shaft generously with waterproof grease prior to reassembly. The propeller nut should be tightened sufficiently to hold the propeller firmly against the shear pin before the locking pin is fitted. Other makes of motor may differ in this respect



Gearbox oil change

5 The gearbox oil should be changed once every season, not just to ensure that the gears are properly lubricated, but also that the seals are in good condition and no water is entering the gearbox. Place a receptacle beneath the leg and remove the drain screw located just below the propeller shaft housing in the motor skeg. Next, remove the level plug located just above the cavitation plate and next to the water flushing plug – both are usually clearly marked. Once the level plug is removed the oil will drain into the receptacle

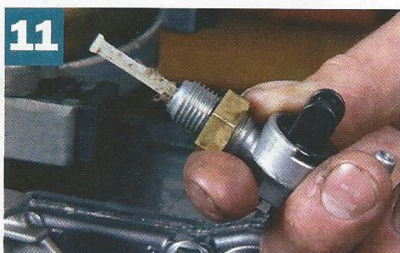


6 Check the condition of the oil as it drains out into a tray. If it is dark like this example there should be little to worry about inside the gearbox. If it is white or milky, indicating water contamination, the 'O' rings and oil seals will need replacing, plus an examination of the gear assembly for damage and corrosion will be required. These procedures are beyond the scope of this guide. While the oil is draining, check the condition of the seals on the drain and level plugs and, if damaged, replace them with new ones



Cleaning fuel tank & filter

10 The fuel filter is located within fuel shut-off cock under fuel tank and is accessed by removing fuel tank. Ensure fuel cock is off. Undo two bolts holding air intake housing onto carburettor and remove housing. This gives access to bolt holding fuel shut-off shaft. Remove bolt and pull shut-off shaft forward to disengage it from fuel cock. Disconnect fuel line from cock by releasing spring clip and pulling hose off. Remove two bolts securing fuel tank. These are located in a recess under engine. Lift fuel tank off and give it a swirl round to pick up any sediment within tank. Drain fuel into a receptacle for disposal



11 Unscrew the shut-off cock and check the filter screen for damage and dirt. Either clean or replace the screen as necessary. Reverse the procedure to refit the tank, fuel line and shut-off shaft



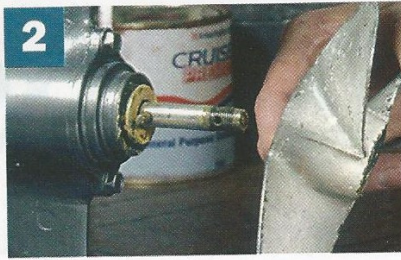
Recoil starter coil replacement

12 Remove the three bolts securing the recoil assembly and lift the assembly off. There is no spring pressure to contend with at this stage

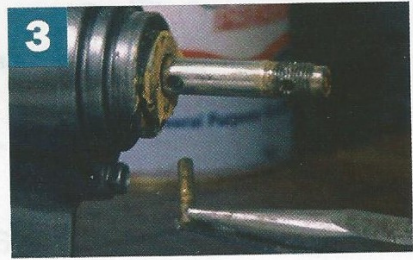


Propeller removal

Starting from the bottom and working up, one job that should ideally be performed every year is removal of the propeller. On small engines this allows the shear pin to be checked for signs of wear and avoids premature pin failure. More importantly, it prevents the propeller becoming seized to the shaft due to the effects of corrosion and lack of grease. Remove the locking pin from the propeller nut and then, holding the propeller securely, loosen the nut



Remove the nut and slide the propeller off the shaft. If it is corroded in place, set the outboard down with the shaft vertically upwards and run 'Plus-Gas' or a similar penetrating oil down the shaft and leave to soak overnight or longer. A puller may be required to finally get it moving. If it refuses to budge, heating with a blow lamp may break the corrosion seal, but care is needed to avoid heating the propeller shaft ring seal in the bottom of the leg. This procedure may best be left to a professional



Remove the shear pin and check it for cracks or bending. If it shows signs of serious wear, replace it with a new one of the correct size and type. Do not substitute it for a high tensile bolt with the idea of preventing it breaking. It is there to protect the propeller from excess damage in the event of the blades striking a hard bottom or floating debris

Tip
Before commencing any work on an outboard motor, set it up firmly eg on a workbench, where it is convenient to work on and cannot fall over

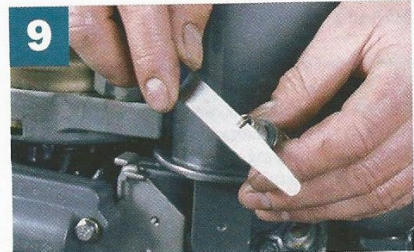


Once the oil has drained completely, refill the gearbox with the correct grade of lubricant. 'Quicksilver' gear-lube is the recommended type for the Mariner 4hp and the squeeze container makes filling easy. Cut off the end of the gear oil container spout and insert it into the oil drain hole. Squeeze oil into the leg until it appears at the level hole. This ensures there is no air in the gearbox and that the correct amount of oil has been added. Refit the level plug while maintaining the level, followed by the drain plug. Tighten both plugs and clean up any excess spilled oil



Sparkplug clean & set

Remove the spark plug using a proper spark plug socket with rubber insert. These prevent the ceramic part of the plug being broken. If one of these is not available use a standard deep socket, taking care not to apply any sideways pressure to the ceramic part of the plug with the top of the socket



Use a feeler gauge to set the gap of the new plug to 0.5-0.6mm (0.020-0.025in). The feeler gauge should be a snug fit in the gap, so that slight resistance is felt as the feeler blade is pulled through. Fit the plug, taking great care not to cross thread it. Screw it the first few turns by hand to ensure that it is running freely down the thread before finally tightening it with a socket, again taking care not to crack the ceramic if an ordinary deep socket is used



Pull the starter cord all the way out against spring pressure and, while holding the pulley to prevent the spring recoiling, examine the entire length of the cord

Note
In this guide we used the Mariner 4hp as an example. The principles generally apply to all small two-stroke outboards, although there may be some servicing differences between makes



If the cord is frayed or in any way damaged replace it with a new length by undoing the knot in the pulley recess, removing the old cord and fitting a new replacement. Tie a stopper knot in the engine end and push it flush into the pulley recess with the free end secured in the clip provided in the recess. Tie a figure-of-eight knot in the handle end of the cord. If the old cord was broken, fit the new one in exactly the same way after first tensioning the recoil spring 4 1/2 turns anti-clockwise with the recoil assembly upside down



Greasing

There is only one greasing point on this engine requiring the use of a grease gun and that is the gear shift arm. Other areas to be greased manually are the clamp screws, which should be screwed right out, greased and then screwed in to distribute the grease throughout the threads and the throttle control inside

