

DOLPHIN

2 STROKE

UPDATE

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PRACTICAL BOAT
OWNER circa 1990

[Manufacturers Comments in \(Brackets\).](#)

Small petrol auxiliaries have all but disappeared from the new engine market which is now dominated by an ever growing choice of compact, lightweight diesels. But there are still a few small petrol engines being built and recent changes to the DOLPHIN 12 hp two-stroke twin may well prove that two stroke auxiliaries are far from dead!

Most yachtsmen will have come across the Dolphin Direct Drive at sometime or another; even if they don't recognise the name they know of the engine as the one you have to stop and start in reverse to go astern. It is a trick I have seen demonstrated many times without any problems and, indeed, I've known owners who have become very nimble-handed at the manoeuvre. But there are still many who find it difficult to believe that the engine will restart just like that. They look upon the whole operation as an act of complete madness to switch off the engine just at the time when you may need it most.

That is one of the factors which prompted David Chapman MD of Dolphin Engines to re-think the whole concept of the Dolphin bringing it more into

line with conventional marine auxiliaries. The result is their new Dolphin Series II.

The main parts to go were the sailing clutch & the dynastart. The former was the device that connected the drive from the engine to the propshaft. Below about 1100 rpm the drive would remain disconnected. Above about 1200 rpm the clutch would have already engaged drive. All very smooth, but apart from not being able to engage reverse, except by reversing the engine, this system also limited the stern gear design to a one-to-one drive ratio. The result was a rather high revving prop shaft which in turn meant a rather small, finely pitched propeller which was not totally ideal for pushing a displacement yacht. [\(Whatever the theory - it worked very well in practice!! Hardly any owners complain of lacking power through the water!\).](#)

On went a ZF/Hurth gearbox which as well as giving neutral and reverse capabilities to the Dolphin, also gave them the chance to include a 2:1 gear reduction for a reasonable prop speed.

Having fitted the FNR gearbox there was no need for the rather elaborate start/stop switching system. So the Siba Dynastart, fitted to the front of the original Dolphin, was replaced by the more conventional separate starter [\(All gear driven\)](#) and belt driven alternator arrangement.

The engine itself has that very "traditional" almost antique look about it and we were interested to hear whether or not Dolphin Engines had taken the opportunity to bring that up to date. But, the only part of the engine they had seen fit to change was the electrics on the

ignition side. [\(Gearbox, Alternator & 12v Start etc etc?\).](#)

Following the example set by most manufacturers of two-stroke outboards, Dolphin has adopted electronic ignition in place of the old mechanical contact breakers. This was not so much a modification but more of a logical progression because the contact breakers on the original Dolphin were part of the Dynastart, and, the removal of this provided the ideal chance to 'modernise' the ignition. For the most part CD ignition means a complete absence of things to adjust. The electronics that supply the sparks are completely encased in potting resin. This, say its protagonists, makes it totally protected from the rigours of life in a wet environment and is far more reliable than opening and closing contacts. The other side of the argument, however, points out that if a CD ignition unit does go wrong, the only course of action is to replace the unit. A not inexpensive exercise, and, there's absolutely no way you could effect a temporary repair [\(keep a spare\)](#) to get you home. Old fashioned contact breaker points, on the other hand, can usually be cleaned, adjusted and persuaded to work at least for a little longer. [\(You can please some of the people all of the time and all of the people etc etc !!\)](#)

What's Changed?

The engine itself is exactly the same as before: "a watercooled three-port, twin-cylinder two-stroke with a compression ratio of around 8:1 and a five-bearing crankshaft".

Cylinder block and head are raw water cooled by a Jabsco [\(or Johnson\)](#) pump mounted at the front of the engine, belt driven from a crankshaft pulley. A rather surprising feature of this engine is the material mix.

It has a light alloy (aluminium base) cylinder head, cast nickel-iron cylinder block and aluminium alloy crankcase.

This, coupled with the bronze body of the water pump makes quite a cocktail of different materials for an engine that has raw water cooling. I put this to David Chapman who told me that in reality corrosion due to dissimilar metals has not seemed to be a problem. They have not even found it necessary to fit anodes which is something that we find rather difficult to fathom. [\(Keeping the engine running on the cool side helps to reduce electrolysis and also dramatically reduces build up of carbon internally\).](#)

More relevant to the cooling system, we were told, was the importance of flushing the waterways through with fresh water to dislodge silt that can settle in the bottom of the cooling passages. The occasional flush through with a hose pipe should keep the waterways in good order but for a real spring-clean, removing the exhaust manifold will enable you to see inside to check that all's well. [\(Once every five to six years as a maximum\).](#)

On no account, we were told, should the cylinder head be removed "just to have a look inside!" According to Dolphin Engines, they never become coked up, and removing the head creates more problems than it solves. Sounds like very good advice to us especially when you consider that the head is aluminium alloy which is notorious for warping given half a chance. [\(Not ours usually!\).](#)

Apart from belt tensioning, keeping the plugs clean and properly gapped is virtually the only other piece of maintenance that the engine will need during the sailing season. [\(See H/book\)](#)

All the bearings on the crank shaft are lubricated by oil from the two-stroke mixture. Even the winter lay-up demands very little from the owner. If you're worried about damp getting into 'the electrics', it may be a good idea to take the CD-ignition system home and put it in a nice dry cupboard. There is no engine oil to drain off from the sump [\(There isn't one\)](#) and provided you have run the carburettor dry after every run, [\(See the handbook\)](#) that should not need disturbing either. Indeed, the whole philosophy behind looking after your Dolphin seems to be "Leave well alone!"

Obviously it's a good idea to go around the engine once in a while to check that nothing has worked loose. But as far as maintenance involving deep engine exploration is concerned it's best left well alone.

[\(Well said Sir!!\).](#)

How Safe?

One factor above all others that deters owners from installing petrol engines is the risk of fire. But is the risk as great as some believe? There are those who say not, and, indeed, owners these days are perfectly happy with bottled gas aboard, which is arguably even more dangerous. We were a little surprised to learn that a drip tray under the carburettor is not fitted as standard. But how many cooker installations are fitted with over board gas drains to get rid of the unburned gas that leaks from a burner before it lights?

We carried out some test runs on a boat that had previously been fitted with a direct drive Dolphin. The installation was very neat, and she started very easily with just a slight enrichment from the tickler on the carburettor and a touch of

choke which is automatically closed when the engine is speeded up. [\(Except with cable operation\).](#) Although the exhaust had quite a crackle to it, (it was fitted with a non-standard waterlock/muffler arrangement, which could be improved upon), the engine was very smooth with hardly any vibration even at tickover. At higher revs, apart from the engine note, the only way you would know it was running was by watching the flywheel turning. Idle speed, however, needs to be carefully set because the load of the 35 amp alternator cutting in can cause the engine to cough before it is properly warmed up. Like all two-strokes it did not like to be left idling for too long and you should avoid being too timid when engaging drive or you seem to run the risk of stalling the engine. [\(This rather depends on the cable adjustment – a small adjustment would have improved things considerably\).](#) But once we were accustomed to the feel of the combined throttle and gear lever, it responded well and gave power the moment it was asked for.

If you are looking for an engine with a substantial weight advantage over its nearest diesel equivalent, and want to save something in the order of £300 to £500 in the bargain; you have previously been put off Dolphin two-strokes because of the start/stop control; the new Dolphin Series II with a gearbox could be just what you are looking for.

[N.B Twin optical trigger assemblies for the ignition system, fuel pump, sacrificial anode and Hurth gearbox etc are now standard equipment.](#)