Arona AD182M Engine Information

Introduction

The information enclosed here is based upon my own research and experiences with the Arona AD182M engine. It is offered in good faith, in order to help other Arona engine owners and is as accurate as I can make it. You will probably have already found that there is little information available about this engine, other than what is present on the website where you found this document. I therefore thought it would be helpful to pass on the knowledge that I have gained during the rebuild of my own engine and gearbox.

Engine Description

The engine is based mostly on the Lombardini 6LD360 diesel engine with the exception of the cylinder, cylinder head and exhaust manifold, which are special cast iron items with water cooling. These parts provide the substantial part of the Arona marinising process.

The basis for making this statement, which is based on my own research, is that 1) several parts of the engine have the Lombardini logo, 2) the Bosch fuel pump is listed in the Bosch catalogue as being fitted to the 6LD360 series of engines and 3) the piston size, shape and diameter matches that fitted to the 6LD series (as well as the LDA530 series of engines).

Parts Supply

The good news is that at the time of writing (December 2007) new parts for the Lombardini components of the engine are still available from Lombardini dealers. The bad news is that the Arona parts are not readily available, although you may strike lucky on eBay or the Web.

My engine needed a rebore, mainly due to corrosion on the cylinder walls and I was able to obtain a complete new piston from this company in the UK http://www.wgsearch.co.uk/ who were very helpful. They supplied me with a 1mm oversize piston for a Lombardini 6LD360 engine which had the same combustion chamber recess, piston crown height etc as my old one. My local machine shop then rebored the cylinder as well as recutting the valve seats etc.

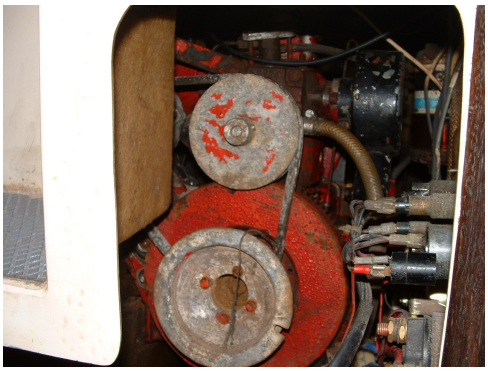
I obtained a new head gasket from Martin Morris who lives in Sweden (you can find his details on this website). He had a small number of head gaskets made several years ago for his own engine and still has a number left for sale. It is unlikely that the Lombardini 6LD360 head gasket will do the job, as the standard engine is air cooled, whereas the Arona engine is water cooled and needs holes in the head gasket for the water to pass from cylinder to head. I made other gaskets myself using sheet gasket material obtained from an engine specialist. It is probable that some gaskets are common with the 6LD360 engine but I did not need to check that out.

The fuel system is based on Bosch components and I was able to have my fuel pump and injector serviced and calibrated at a diesel injection specialist. The pipe and hose connections are also standard diesel sizes and were easy to replace.

The water pump is made by Johnson and is apparently a configuration of a 10-3538-1 pump but with a 09-808-b-1 impellor. I was able to obtain a repair kit easily from my local Johnson dealer.

My exhaust manifold had corroded badly and at first I thought I would need to get a new one fabricated from scratch. However, I was able to remove the corroded metal and make up a new section from heavy gauge pipe which I had brazed in by another specialist. So far, it has held up well.

The rebuild

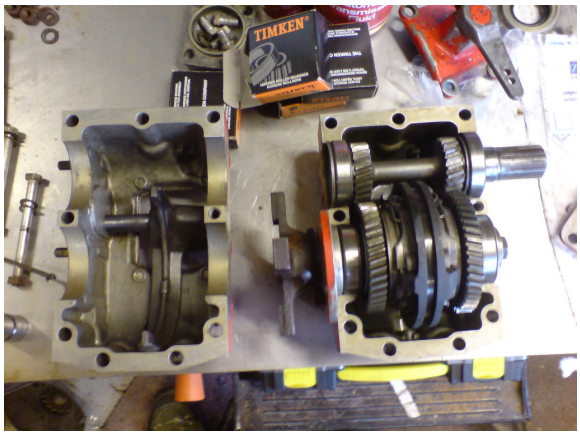


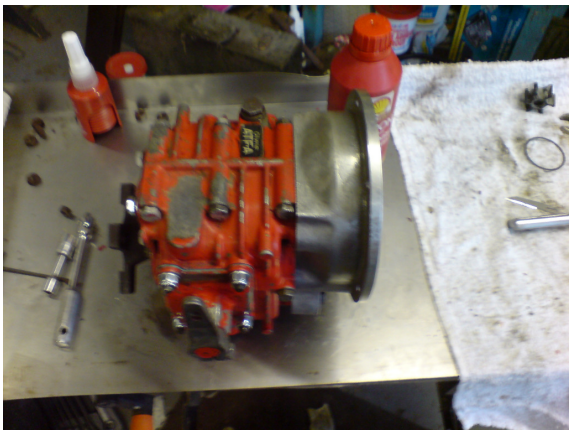
The engine was in a filthy and corroded state in the boat, as seen in these pictures.

I find it amazing that someone could let their engine and gearbox get in such a mess, who would want to do even routine servicing on it as you're going to get filthy just checking the oil !

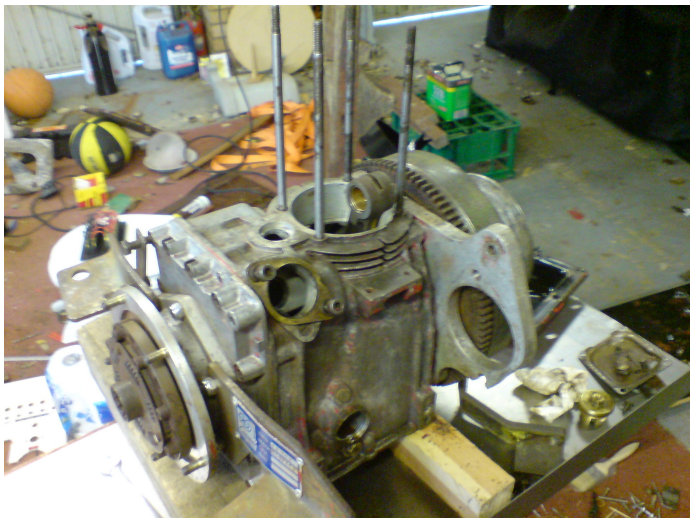
I therefore removed the engine from the boat completely, together with the gearbox as seen in this picture. The gearbox was a standard Hurth marine gearbox and was relatively easy to get parts for and mend although the manual at £25 which consisted of a few pages photocopied and plastic ring bound together seemed very expensive!

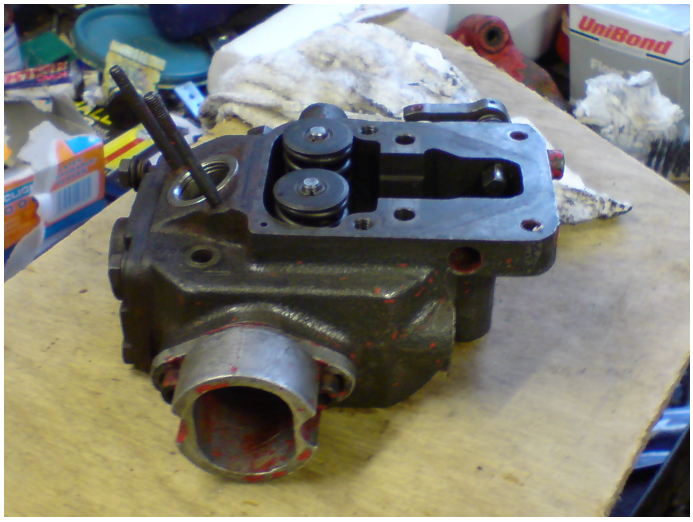
The pictures below are of the gearbox in pieces and then reassembled, as I said its very easy to work on so don't be put off if you think yours needs attention.





The engine itself is fairly simple and is easily stripped down, although I decided not to go any further than removing the cylinder head, barrel and piston. My reason is that typically marine engines in small sailing cruisers do not operate for hundreds of hours as they are mainly used for leaving and approaching harbours or moorings and therefore parts permanently submerged in oil will take a long time to wear out. A useful indicator of how much use the engine has had is the state of the cylinder bore, if there is a marked step at the top then it shows the engine has had a lot of use and therefore it's worth checking other components. In my case the bore had no noticeable step however; there was some pitting in the cylinder most likely due to water getting in the engine or it not being laid up properly. For this reason I had the cylinder rebored oversize and a new piston fitted. The pictures below show the engine partly dismantled, the cylinder head and the engine partly re-assembled. Note the shiny new piston top! The torque settings were obtained from the Arona website. I can be contacted on dave.reeve@btconnect.com if you have any questions etc.

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