

Header Tank rebuild

Updated over a year ago

After the aluminium heat exchanger unit on our 1972 Perkins 4236 M corroded beyond repair, we installed the stock standard header tank coupled to a freestanding Bowman heat exchanger. Front and back temperature on the block became divergent by an average of 10 - 25 degrees. If it was not for the fact that the engineers that did the last overhaul dropped the block from what must have been some dizzy height (they never told us), it would probably not have cracked. As it turned out it did en route to Mossel Bay, so we had to get a new block and do a complete rebuild. However, testing our system revealed that the front and back engine temperatures were still too divergent for comfort. We consulted all the Internet forums on the problem, and there are many. Everyone seems to have the same problem and answers are very complex, diverse and expensive indeed.

As it turns out, the usual conversion using separate header tanks and heat exchangers does not work because the engine driven water pump simply assists a system reliant on a 'siphon - convection system' used in those engines. As a result, the flow rate is messed up and the entire convection cycle is constricted.

Ordering a replacement system means you are again stuck with aluminium which corrodes away. About UK Pound 730 (R 14,311) for a conversion by Bowman (<http://www.asap-supplies.com/marine/perkins-4236-manifolds-hose/bowman-marine-heat-exchanger-pe390-3674>) that is made of steel and sits on the outlet manifold of all places. So it will eventually corrode away like the aluminium one Perkins

originally fitted and which costs almost three times as much again.

So I produced drawings for a stainless steel version of the header tank as it was configured on the original engine. Then we sent these out to most of the engineering firms in Mossel Bay. We were even taken to some of them by the Mossel Bay mooring manager, Schalk Bothma.

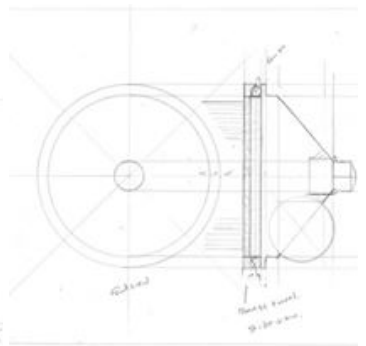
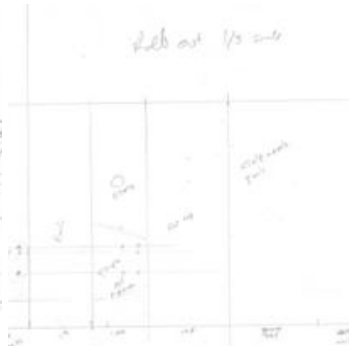
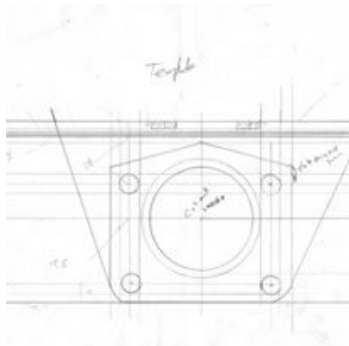
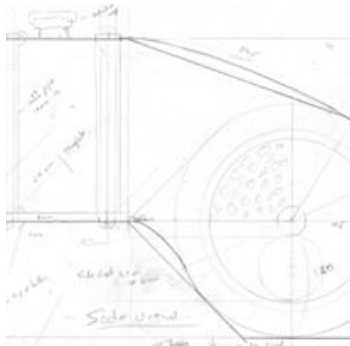
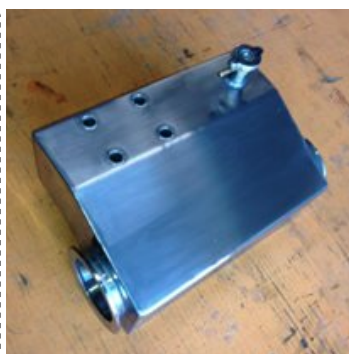
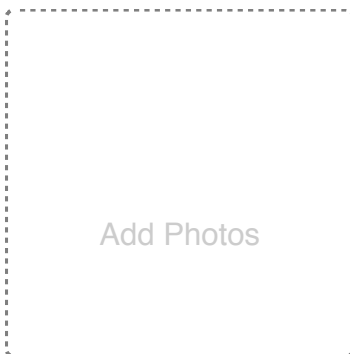
Manie Taljaard of Tallies Engineering in Mossel Bay was first off the mark with a really excellent quote and then produced a new header tank out of stainless steel for the pipe-stack of our old heat exchanger within a few days. He improved on our drawings by incorporating extra lateral reinforcing. In addition, he made the radiator cap aperture out of stainless and then he polishes it all up as well!

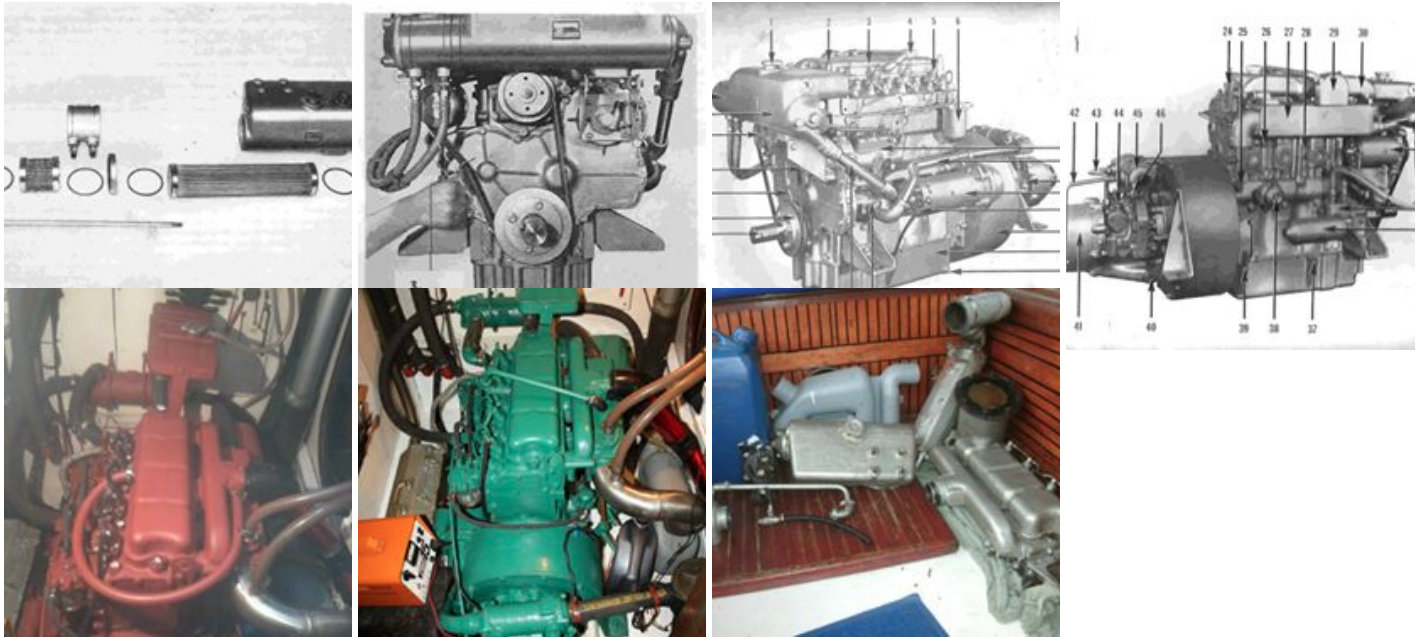
The cost of this tank was less than a quarter of the Bowman version and about 10% of the replacement part.

This guy should be taking orders from the many people worldwide that have a similar problem with an engine known as a favourite in the 40 ft + sailing yacht community.

We will test run this next week and post results here as well as on our www.sailblogs.com and Facebook sites. Postings on the Q&A forums re the problem on Noonsite and Cruising Sailor will link to this posting.

Manie can be contacted on +27 (0)720677895 or e-mail him on manietaljaard@yahoo.com





Like Comment Share



Jose Maria Marin Hernandez

Chronological



Yacht Sweet Waters We have just completed testing of the tank today, and the result is a resounding success. Front and back temperatures on the engine have equaled out completely. Overall temperature at peak performance does not exceed 90 degrees C - textbook. One tip: -... [See More](#)



Like · Reply · Commented on by Izak Labuschagne · August 3, 2015 at 6:24pm · Edited