

technical bulletin



To: ALL YANMARMARINE DISTRIBUTORS

No.: MSB 02-051

Date: July 4, 2002

Sub: Antifreeze coolant

Yanmar previously mentioned the relation between the quality of antifreeze coolant and corrosion on aluminum and other metals using by Service Advisory or other technical literature. To explain its importance Yanmar wishes to mention it again on this Technical Bulletin.

Yanmar requirement is that the antifreeze solution and/or coolant be changed every 500 hours. This is regardless of the coolant manufactures own recommendations. (For the 6LP-series engines the antifreeze coolant must be changed every 250 hours or once per year, whichever comes first.)

Purified or distilled water mixed with the approved coolant/antifreeze is the only protection approved by Yanmar. We do not recommend any other additives to be added to the cooling system.

The advantages of this type of coolant :

- Improved water pump life due to reduced water pump seal wear resulting from fewer dissolved abrasive solids.
- Reduces hard water scale.
- Offers excellent protection against pitting corrosion caused by cylinder liner cavitation.
- Better heat transfer than conventional coolants with regular SCA additions.
- No silica gel formation during use or storage.
- Outstanding hot surface aluminum protection.
- Superior protection in high operating temperature conditions.
- Effective, long term corrosion protection for aluminum, bronze, cast iron, steel, solder and copper alloys.

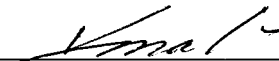
The coolants and antifreezes, which give good performance for example, are shown below ;

- **TEXACO LONG LIFE COOLANT ANTIFREEZE**, both standard and pre-mixed. Product codes 7997 and 7998. This product is available in different size containers and also in bulk. It is recommended that the engine cooling system be drained and flushed before filling. Only Texaco Long Life Coolant should be used for topping-up. This product has a much longer shelf-life than conventional coolants provided the integrity of the container is maintained. More details can be obtained by contacting your local Texaco sales office.
- **HAVOLINE EXTENDED LIFE ANTIFREEZE/COOLANT**. Product code 7994. This product is available through Texaco petrol/service stations. The procedures for use are the same as for Texaco Long Life Coolant Antifreeze.
- Texaco Extended Life products are available through various channels within the Asia, Australia and African area. The products are **CALTEX EXTENDED LIFE COOLANT**, **CALTEX EXTENDED LIFE COOLANT PREMIX 50/50** (a pre-diluted version of the coolant), **CALTEX XLC(N)** and **CALTEX XLC(N) PREMIX 50/50**.

The attachment A7-1-6 and A7-1-8 shows the corrosion inside of the exhaust manifold which was occurred using by bad quality of antifreeze coolant. The attachment A7-1-14 shows the comparison of exhaust manifold using both of Texaco Long Life Coolant and other brand of coolant.

For further knowledge we also would like to advise you to refer the manual "Trouble Diagnosis – Warranty Claim Judgement Standard" (Publication # M9961-H11220).

YANMAR CO.,LTD.



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Attachment : A7-1-6, A7-1-8, A7-1-14

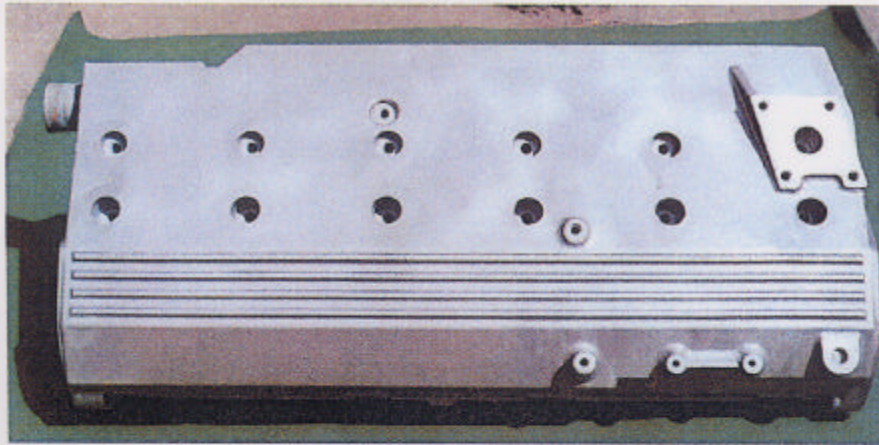


Photo 1
Exterior of product

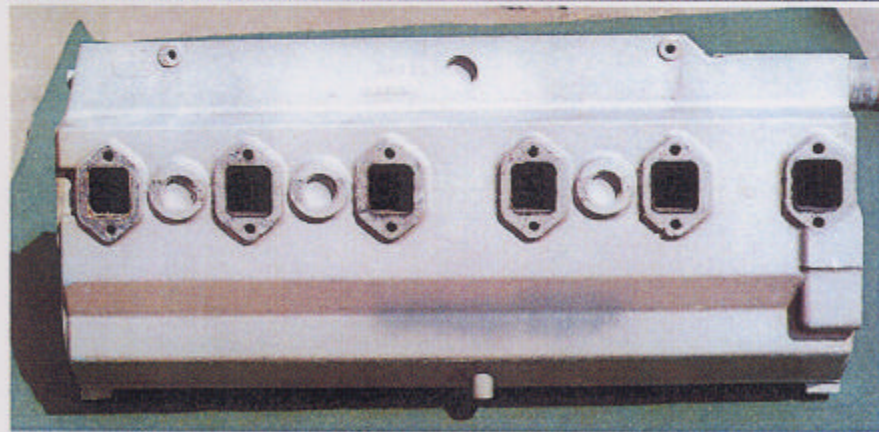


Photo 2
Exterior of product

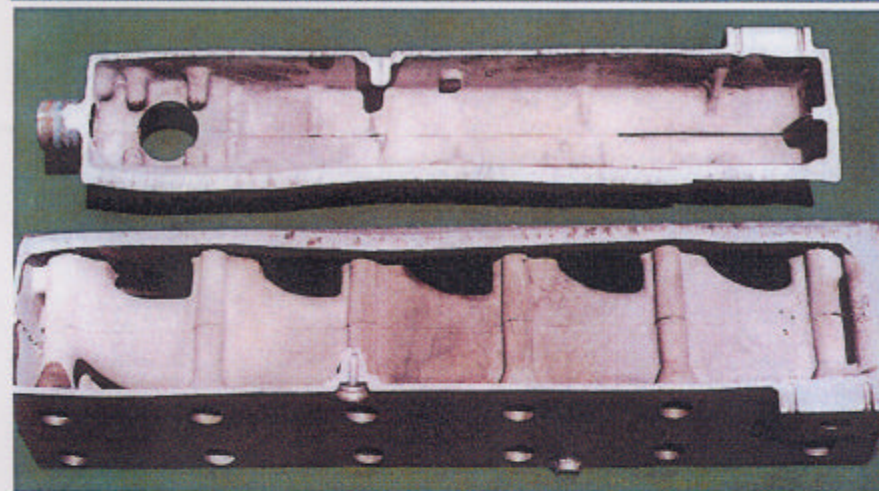


Photo 3
Interior of product
Seen from above the
installation direction

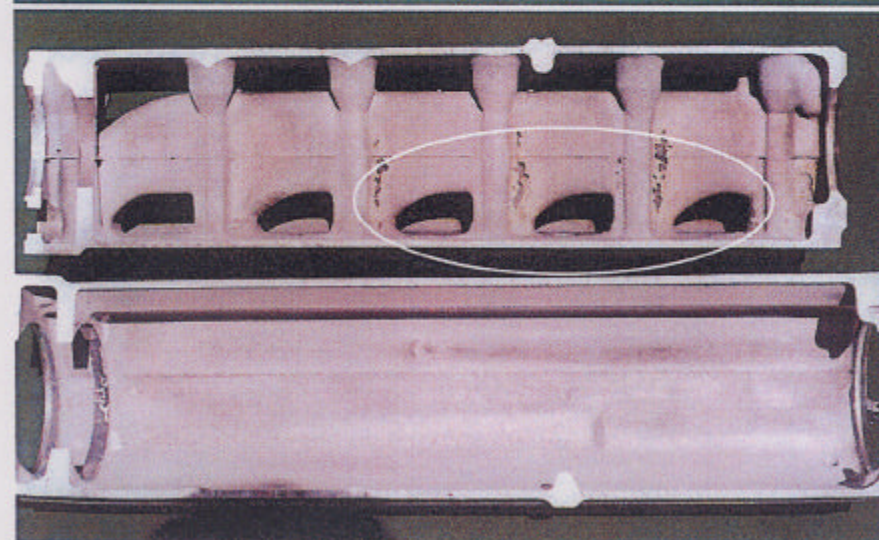


Photo 4
Interior of product
Seen from below the
installation direction

Photo 7

Defective part (seen from below
installation direction of manifold)

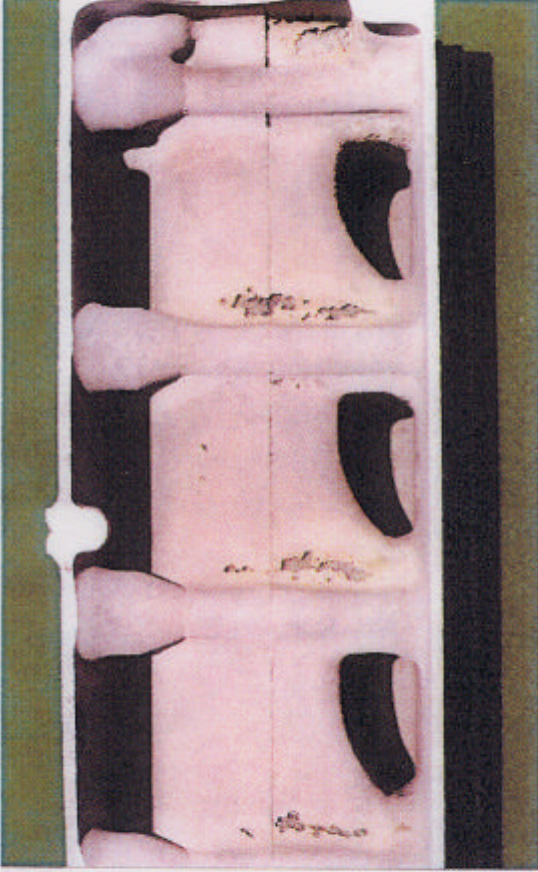
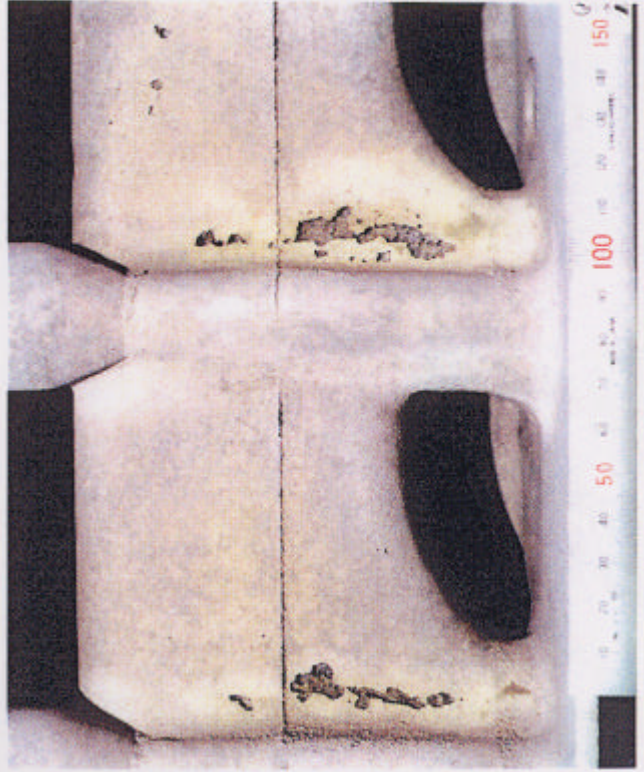


Photo 8, 9

Enlarged view of same part



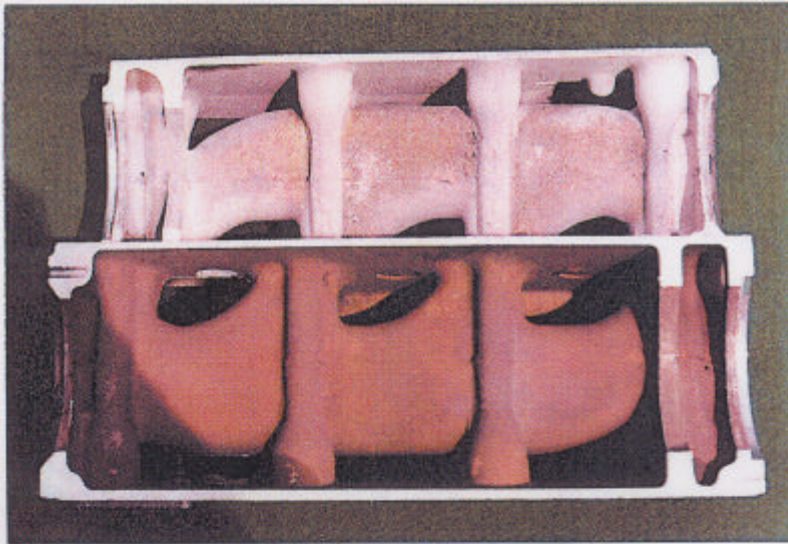


Photo 12. Exhaust pipe
Comparison of heat exchanger
sides
Top: "A" brand
Bottom: Texaco product

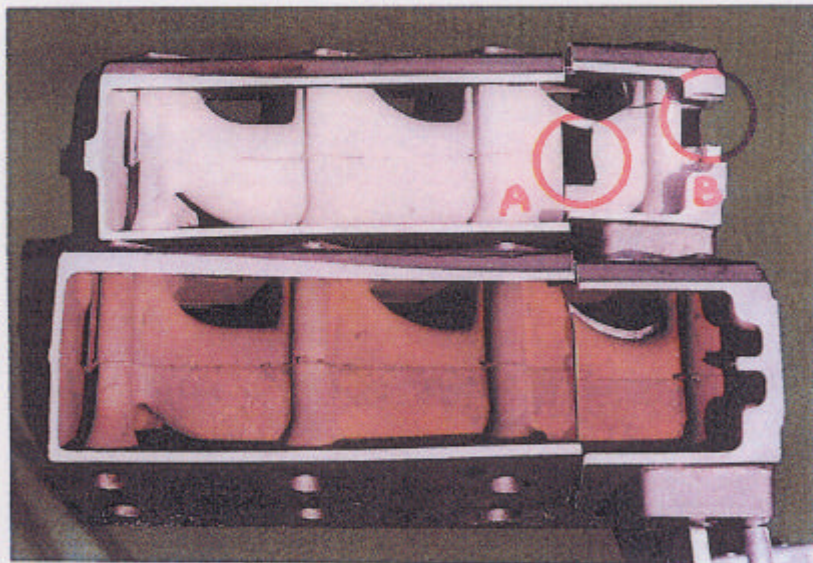


Photo 13. Exhaust pipe
Comparison of top sides
Top: "A" brand
Bottom: Texaco product

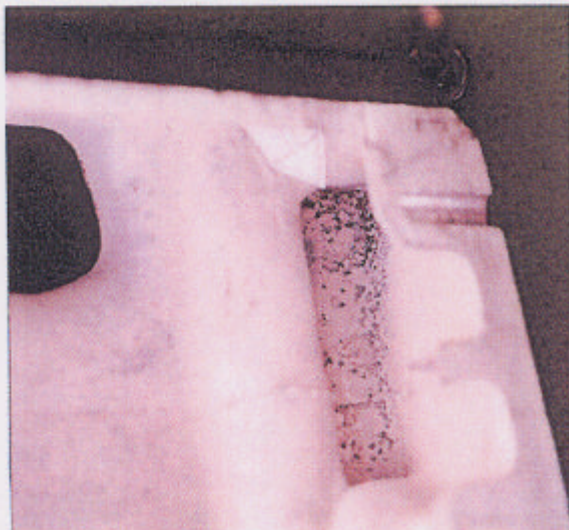


Photo 14. "A" brand
Enlarged view of area B
Location of most serious
corrosion