



Service Letter

SL05-447/HMH
January 2005

**New Recommendation for Overhauling of Exhaust Valves
Two-stroke Marine Engines with W-Seat Exhaust Valve
and Slide Fuel Valves**

Action Code: WHEN CONVENIENT

Dear Sirs

The exhaust valves have continuously been improved over the years, with all modifications being extensively tested in service to verify the improved performance. The above test results, and the general service results gained in recent years, have led us to introduce a new recommendation for the overhaul of today's standard exhaust valves on MAN B&W two-stroke marine engines.

The improved performance of today's exhaust valves has been achieved through design modifications to the following key components; the fuel valve, the exhaust valve spindle, and the exhaust valve bottom piece, which are all described in more detail below.

Fuel valve

The dent mark formation on valve seats is influenced by the amount of combustion residues and, especially, coke from unburnt fuel. Nowadays, this condition has been greatly improved on engines fitted with slide fuel valves, thanks to the considerably reduced amount of combustion residues. Thereby, the latest fuel valve design contributes to the improved exhaust valve performance.

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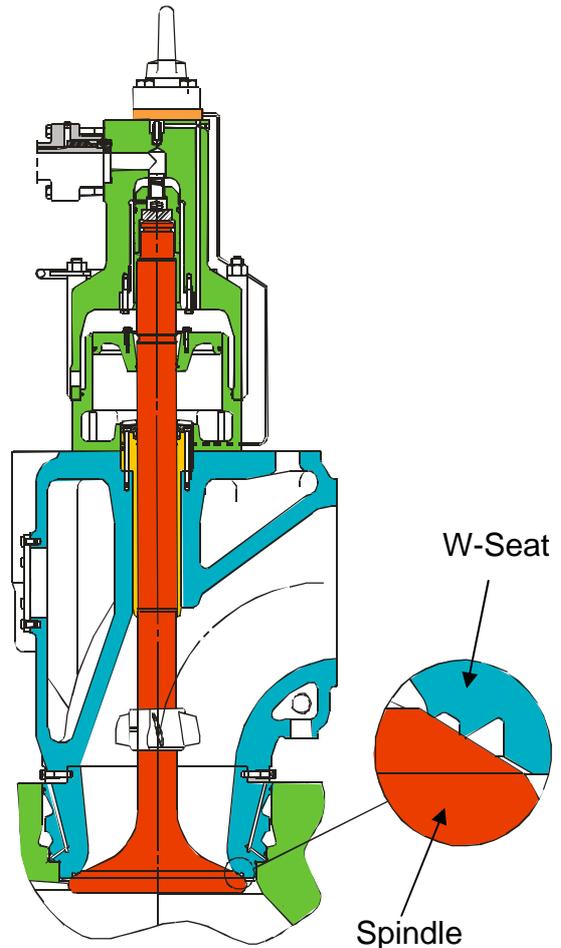
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Exhaust valve spindle

We have pursued the objective to develop a seat design that is extremely durable with respect to indentation marks and high temperature corrosion. During this process, we have succeeded in finding the most suitable base materials, developing high performance hard facings, and assuring the most suitable geometrical tolerances.

Exhaust valve bottom piece

By applying two narrow sealing surfaces with an intermediate chamber (W-seat), dent marking is reduced to an insignificant size, while the temperature of possible leaking gases is additionally lowered by the extra chamber, assuring a high safety margin against blow-by. In combination with the above valve spindle, the W-seat represents an exhaust valve seat design which is considerably less sensitive to the inevitable leakages across the seat.



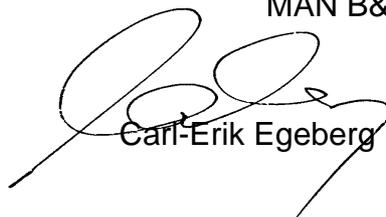
Extended service tests with the W-seat (logging up to 40,000 service hours) and standard MAN B&W hard facings, including Nimonic 80A on the spindle, have shown that the necessary overhauling/grinding of the seat is reduced to a minimum, and that it can be carried out as a routine job during regular docking of the vessel.

Therefore, we have decided to change our recommendation regarding overhaul of exhaust valves and, consequently, **delete the exhaust valve grinding machine from our standard tool list and include it on the optional tool list** on all MAN B&W two-stroke marine engines ordered from 1 February 2005.

Questions or comments regarding this SL should be directed to our Dept. 2140.

Yours faithfully

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