Dear Sir or Madam

By this Service Letter we would like to inform of our design options for safe operation at low-sulphur fuels, as service observations have shown higher wear rates on valve spindles/valve seats.

Operation on low-sulphur fuel oil (LSFO) can be challenging. The critical areas on the engine are the fuel equipment, which can suffer wear in case of low lubricity, and the inlet valves, exhaust valves and seats, where we have experienced cases of excessive wear.

Lubricity can be improved by adding lubricity improver to the fuel, whereas the valve wear requires attention to the application of valves and valve seats.

**Action code: WHEN CONVENIENT**

## Inlet and exhaust valve issues when operating on low-sulphur fuels

SL2022-724/JNN
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**Concerns**

Owners and operators of
MAN four-stroke engines.
Type:
Marine: L16/24, L21/31, L27/38, L23/30H, L28/32H
Stationary: L21/31S, L27/38S, L23/30S, L28/32S, V28/32S, V28/32H
Propulsion: L21/31, L27/38, L23/30A, V23/30A, L28/32A, V28/32A

**References**

SL2019-670, Operation on fuels with maximum 0.50% sulphur

SL2017-638, Cleaning of heavy fuel oil and maximum 0.10% sulphur fuels

SL2014-593, Guidelines for operation on fuels with less than 0.1% sulphur

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*Fig 1*

Fig. 1 showns a new valve versus a valve with extended visible wear on the sealing surface, causing the tappet clearance to be eliminated with following risk of valve burning issues.

Available design options for inlet valves, exhaust valves and seats:

- Operation on high-sulphur fuels: Standard material for inlet valves, exhaust valves and seats.
- Operation on low-sulphur fuels: Hard-faced inlet valves, exhaust valves and seats.

For engines intended to be operated permanently or occasionally at low-sulphur fuels we recommend installation of hard-faced inlet valves, exhaust valves and seats.
By the application of hard-faced inlet valves, exhaust valves and seats the engine is prepared for safe operation at both high-sulphur fuels and low-sulphur fuels according to the latest issue of ISO 8217.
For engines operated on low-sulphur fuels applied with standard valves and seats we recommend to monitor the tappet clearance frequently.
Reduced tappet clearance indicates wear at valves and seats and in a few cases we have experienced high wear rates causing valve issues just after approx. 2000 running hours after changing to low-sulphur fuel.

When changing to low-sulphur fuel, we therefore recommend to carry out spot checks of the tappet clearance at intervals of 500 hours for early detection of valve spindle and seat wear, in order to take preventive action in time.

Details of the various upgrade packages are available from our PrimeServ organisation; please contact your local PrimeServ agent or our PrimeServ department by e-mail to primeserv-hol@man-es.com with reference to this service letter.

Yours faithfully

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