

DuraSpindle™

Increasing performance



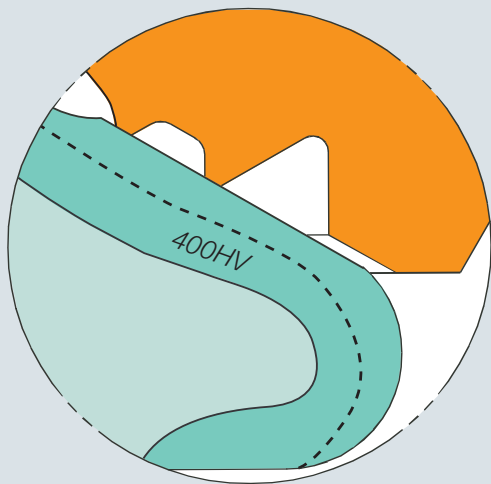


DuraSpindle

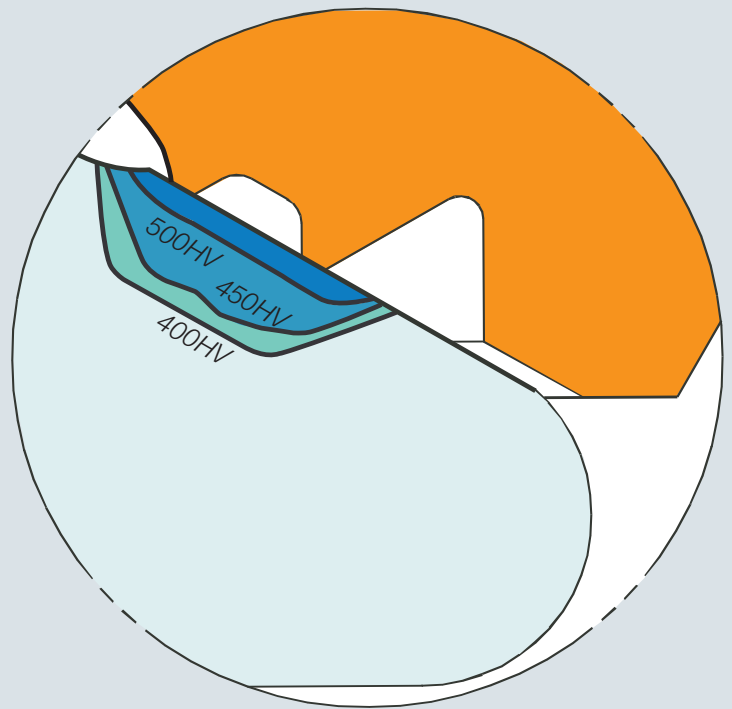


Nimonic valve

Service tests show a significant reduction in the number and size of dent marks. Further tests including residual stress measurements have confirmed a high level of resistance to cracks.



Hardness of Nimonic valve



Hardness of DuraSpindle

DuraSpindle

– the new standard of spindles

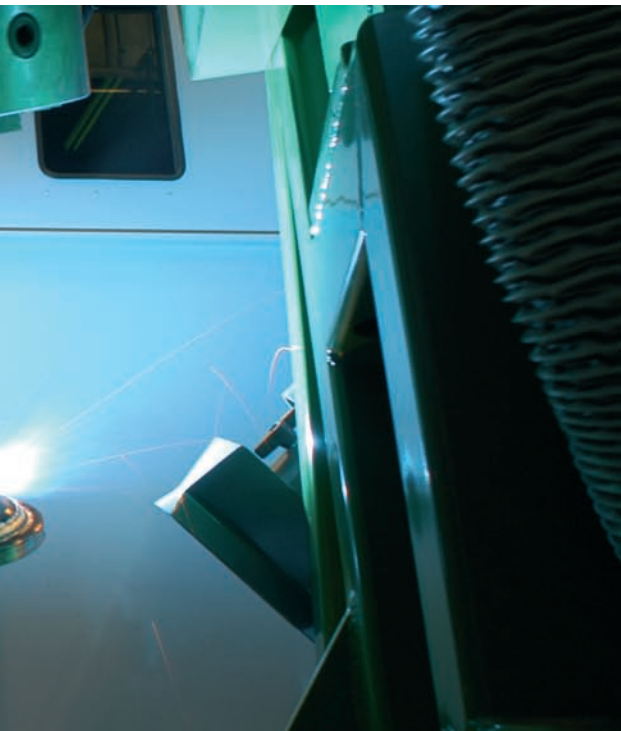
DuraSpindle is the new standard of stainless steel spindles in two-stroke diesel engines from MAN Diesel.

This new patented method of producing a resilient and durable hardfacing on valve spindles, including a special rolling procedure of the surface, is the result of several years of scientific research at our test facilities in Copenhagen as well as on MAN B&W engines in service.

Numerous tests have concluded that the welding of a high temperature-resistant Ni-Cr alloy onto the stainless steel spindle will extend the time between overhauls considerably when the surface is work-hardened.

The new manufacturing process dramatically improves the hardness and ductility of the seat. It also improves the spindle seat's resistance to cracks, compared to present hardfacings, including Nimonic 80A.





The improved material performance and quality of the product are achieved by the use of computer-controlled robots within the Copenhagen production facility

Advantages for the shipping industry

The DuraSpindle offers several advantages:

- Time Between Overhauls increased by 50%
- Increased durability
- Increased reliability
- Decreasing number of seat grindings
- Decreasing maintenance costs

The reliability of the DuraSpindle means that the Time Between Overhauls can be extended to a degree where it is possible to include planned overhauls of the valve in the normal docking procedures.

Engine types

The DuraSpindle can be applied to all MAN B&W two-stroke engines, specified with stainless steel spindles.



The spindle on the right shows the seat before the welding process

The spindle on the left shows the part-finished seat after the welding process

High pressure rolling on the welded spindle seat



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