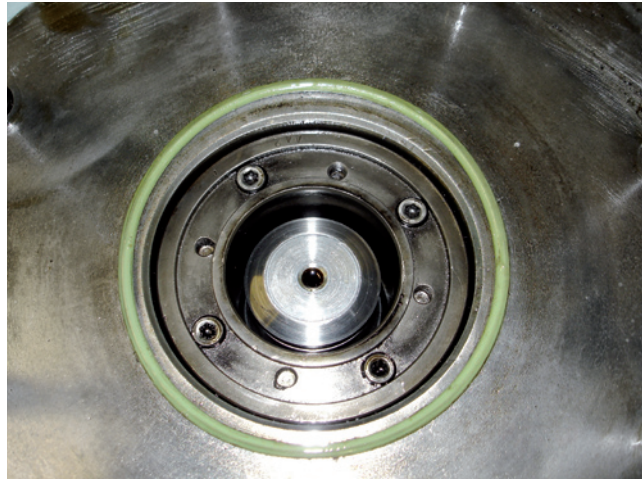


# COL

## Increasing TBOs



Before



After

### Retrofit your exhaust valves with COL

Controlled Oil Level (COL) is a new sealing system for the exhaust valve spindle stem.

For more than three years the new design has been tested on a large number of cylinder units in service.

This new COL sealing system is standard on all new MC engines and now we can offer it as retrofit for all MC engines in service. MAN Diesel has applied for a patent for the new COL sealing design.



# COL

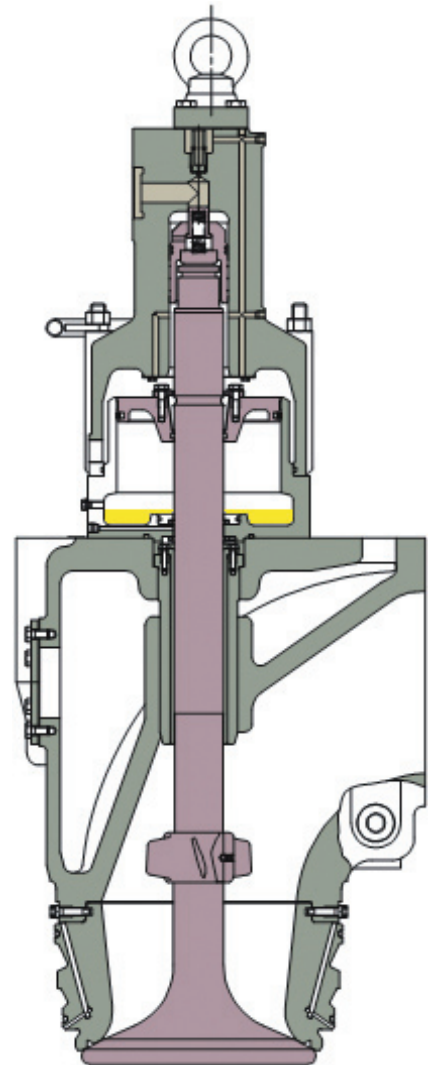
## Increasing TBOs

### Increase the TBOs for your exhaust valve spindles!

COL is based on a condition where the sealing ring is placed in oil and thereby consuming the necessary amount of lubrication oil to form a safe oil film surface during operating of the exhaust valve spindle. The oil used for this is already present in the air chamber. The reservoir is provided by “stemming up” the oil to a constant level.

As a benefit the spindle guide is lubricated by a reliable oil supply.

- The new COL sealing system will contribute to considerably longer time between overhaul for the complete exhaust valve
- The new COL sealing system replaces the sealing air system
- The new COL sealing system will ensure the reliability of the safety valve.
- The lifetime of the spindle guide is increased



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