

PrimeServ Copenhagen Retrofit and Upgrades



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Disclaimer



All data provided on the following slides is for information purposes only, explicitly non-binding and subject to changes without further notice.

PrimeServ Retrofit – 2 Stroke engines

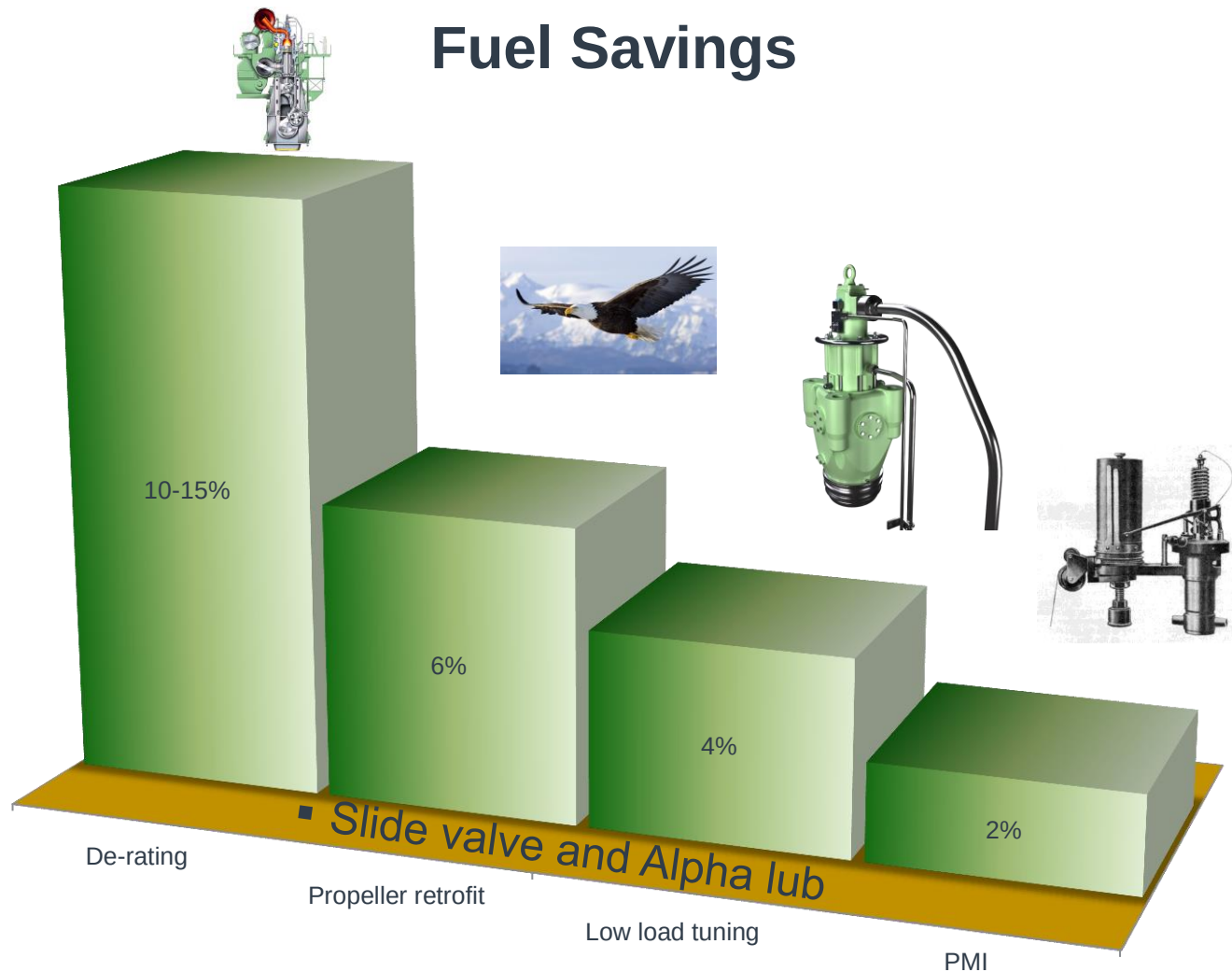


MAN EcoCam & MAN EcoNozzle:

The new
Low load tuning
method



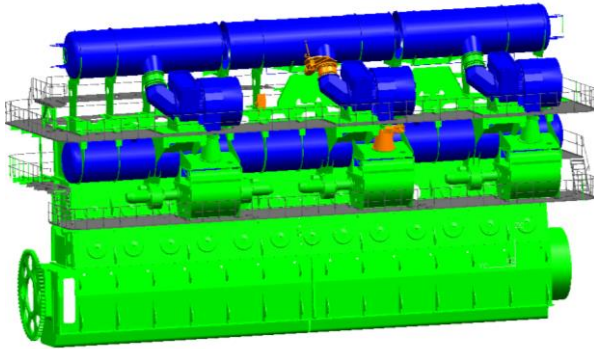
Fuel savings



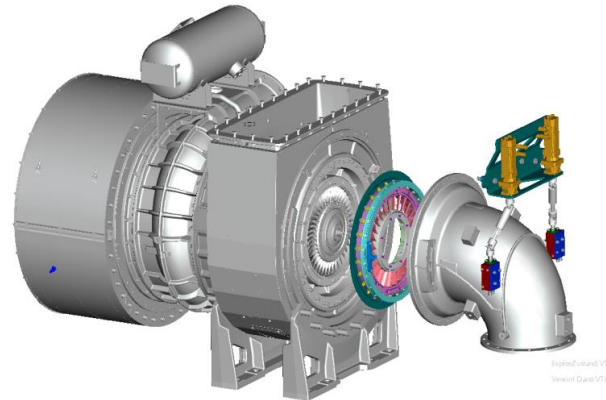
Low load tuning methods



T/C cut out



T/C with VTA



EGB



MAN EcoCam

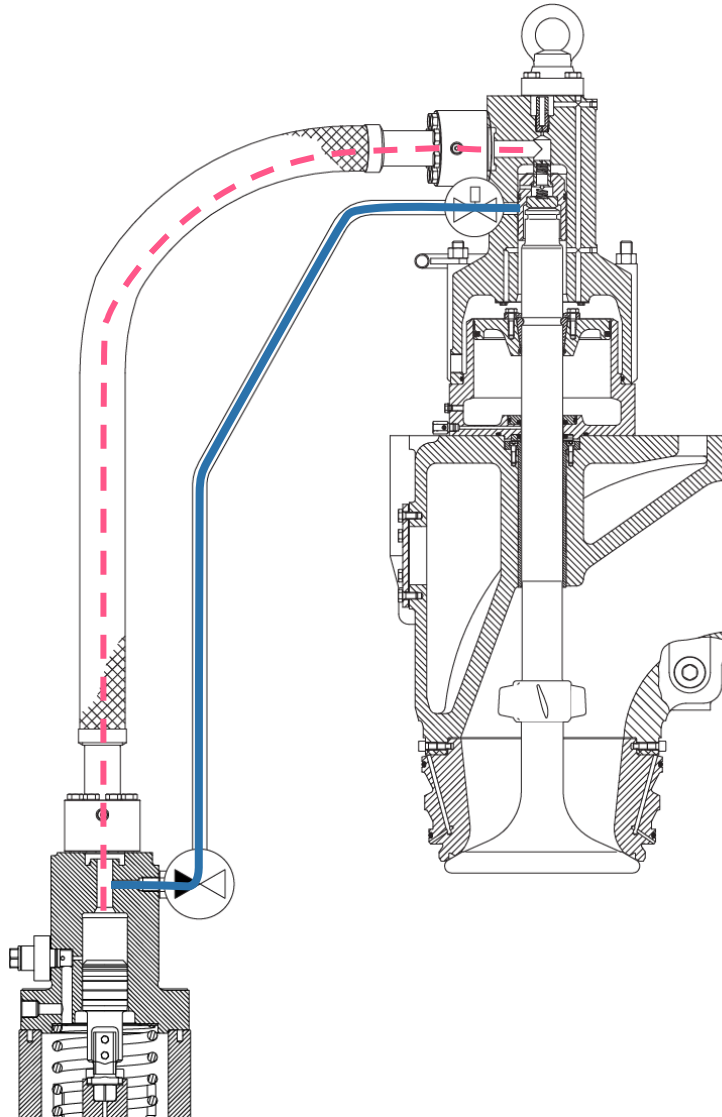


Introduction



MAN EcoCam

Draining off oil to close exhaust valve earlier



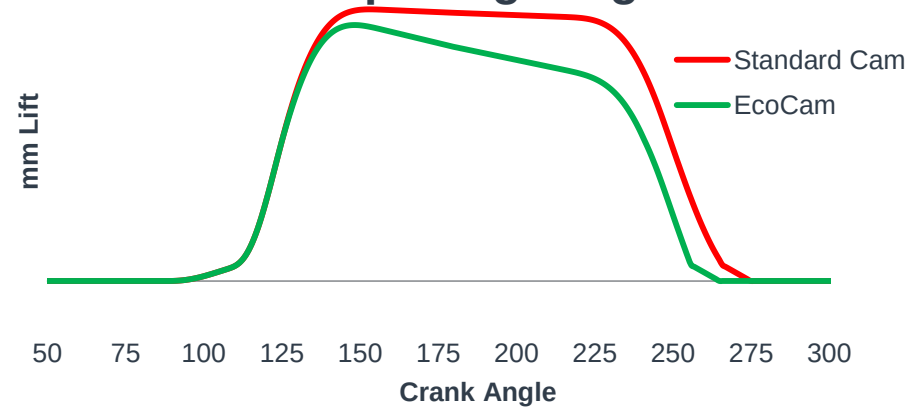
Standard Cam



MAN EcoCam

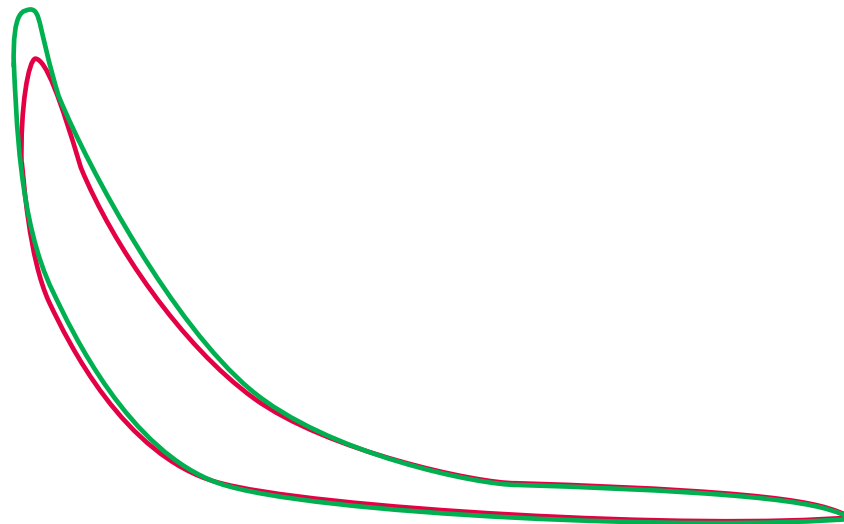


Valve Opening Diagram

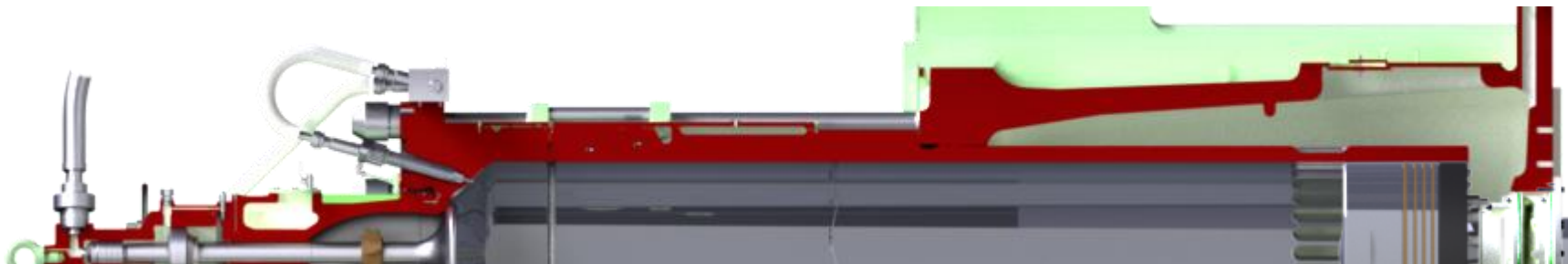


PV-Diagram effect

~10% higher pressure {



— Standard Cam
— EcoCam

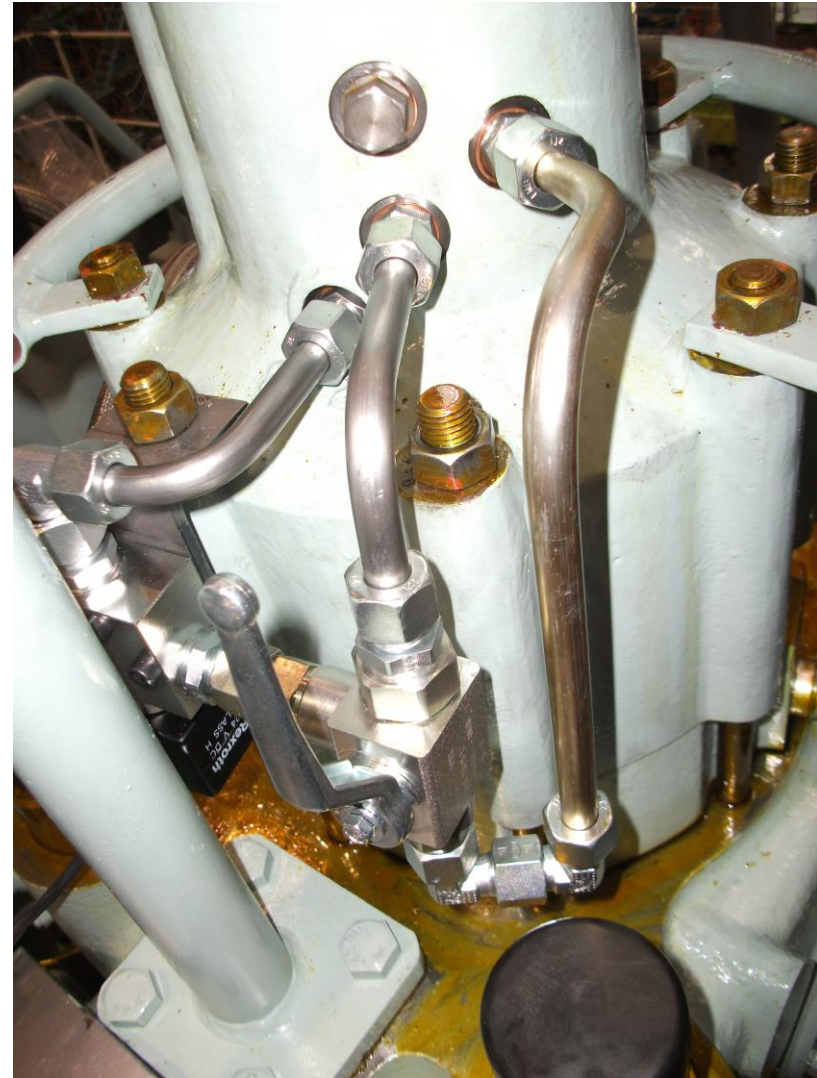


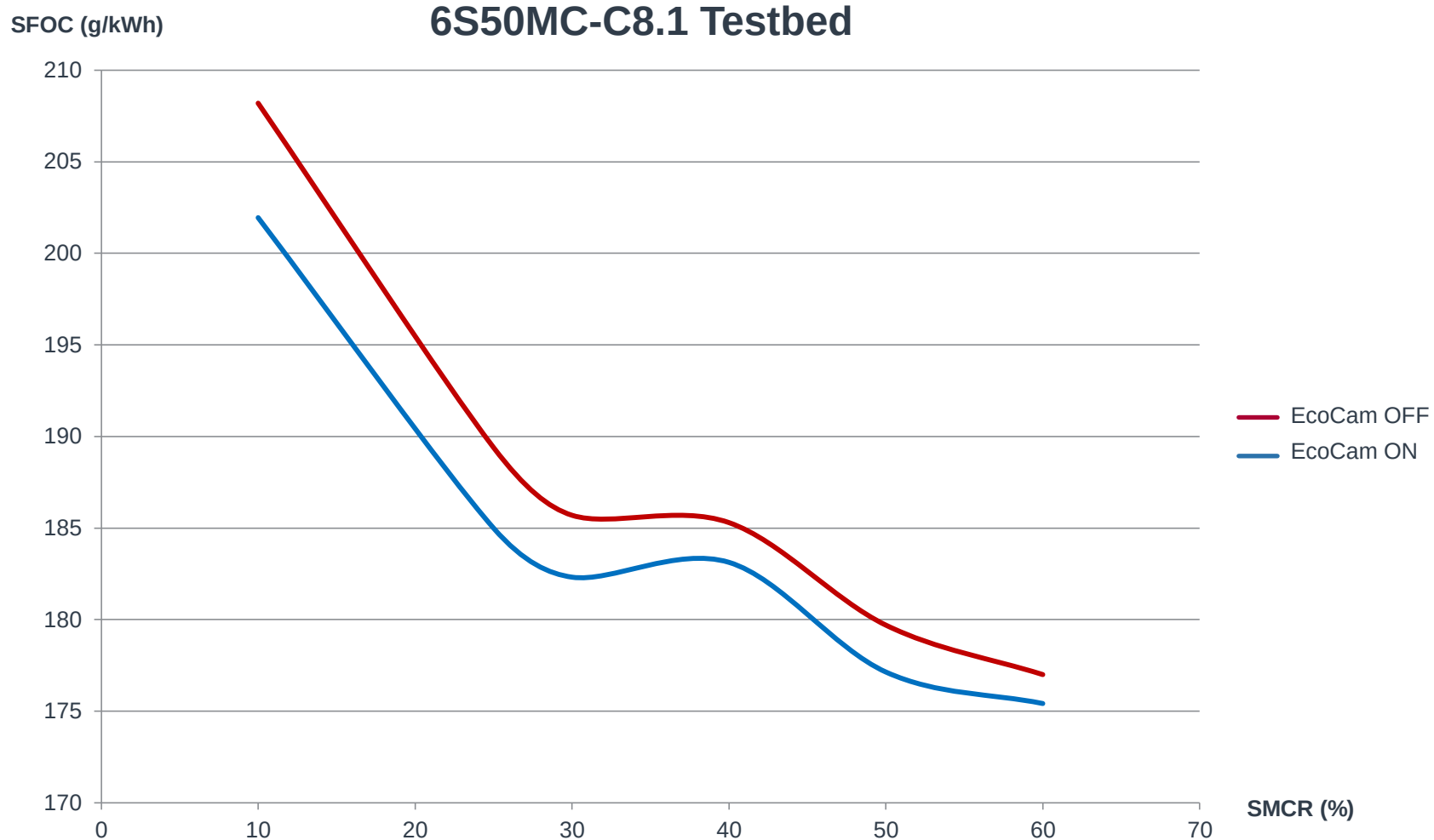
MAN EcoCam

MAN B&W Design



First test 6S50MC-C





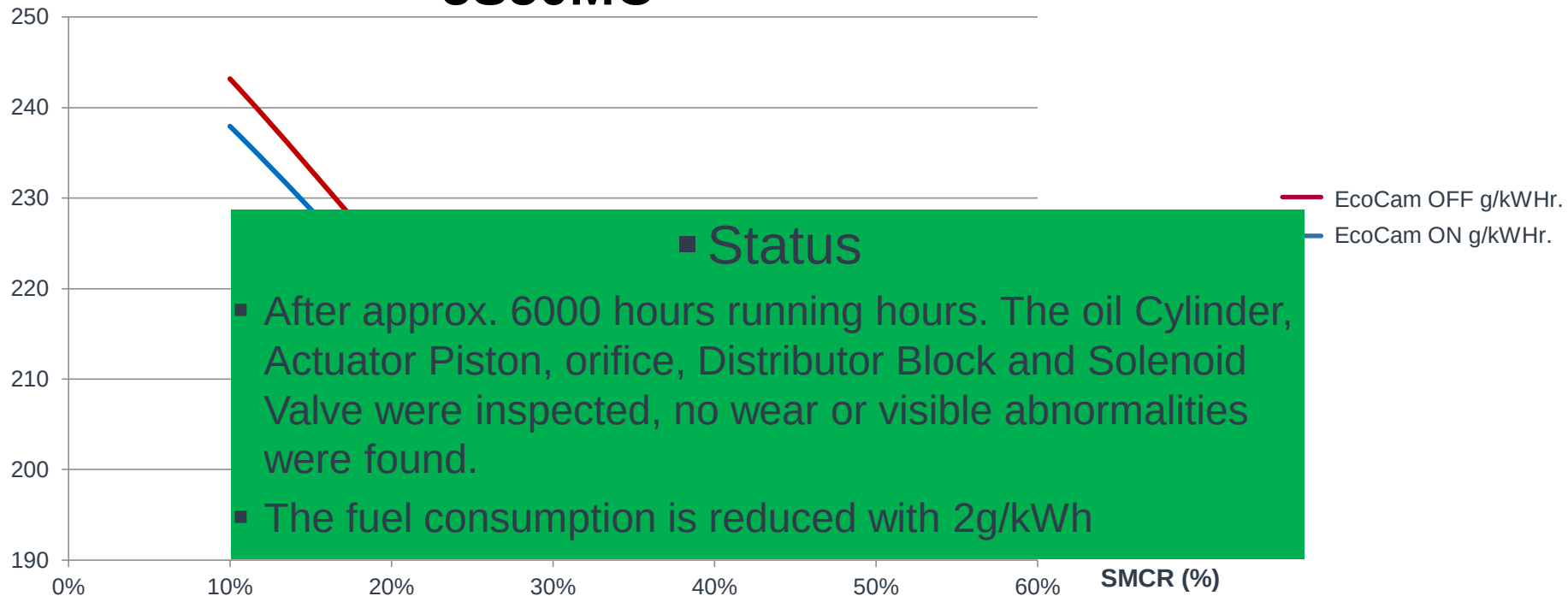
Field test Robert Maersk 5S50MC





Field test 5S50MC

SFOC (g/kWh)



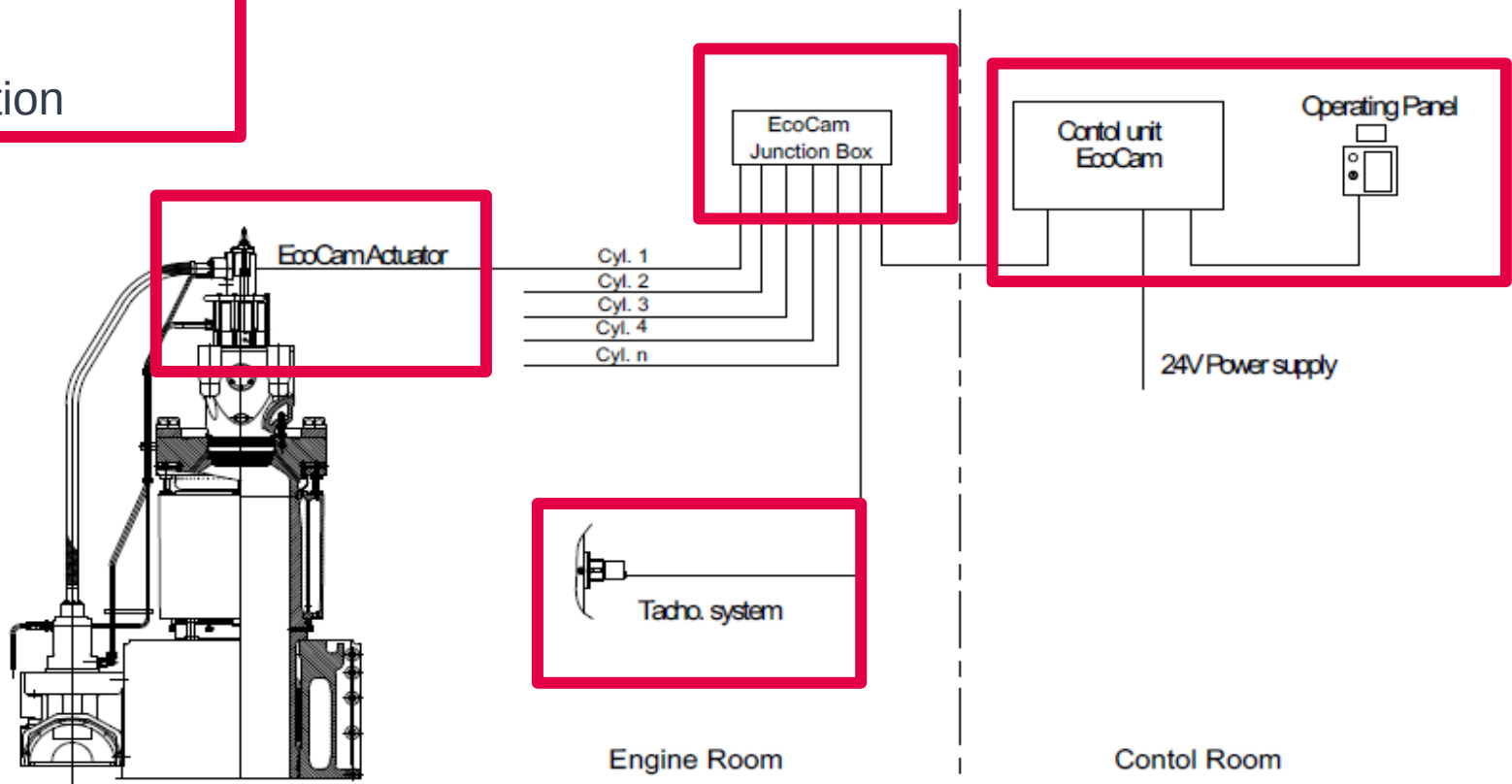
Influencing factors on performance

- Cam profile (16 different cams on 6S50MC/MC-C alone)
- Tier I/II/Pre-Tier engines
- Engine rating
- MK version

Arrangement of EcoCam System

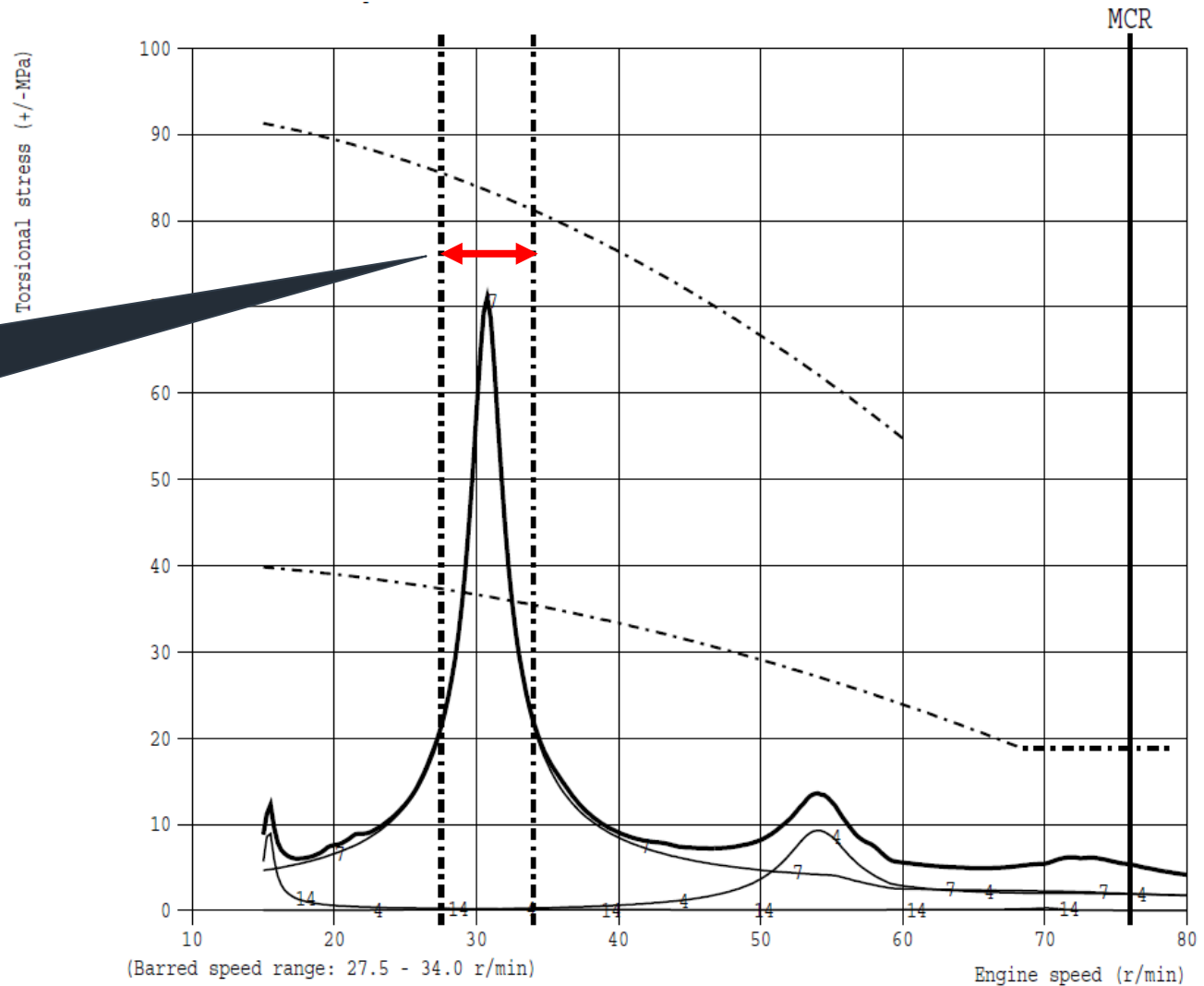
NO_x documents

T/V solution



T/V Challenge: 5-7 cyl.

Automatic
on-off switch in
barred speed
range



Benefits

- Low load tuning method to engines with one Turbocharger
- Easy to install
- Easy to operate
- Flexible operation range 10 to 60 % load



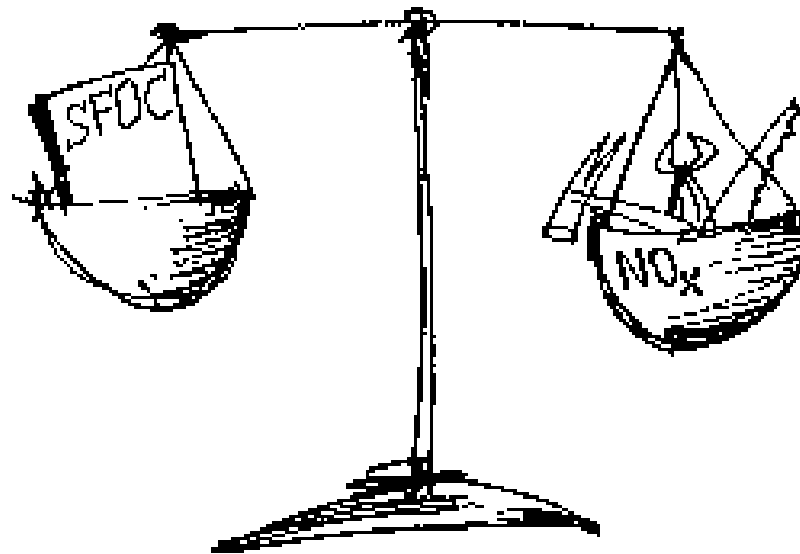
Comming product MAN EcoNozzle



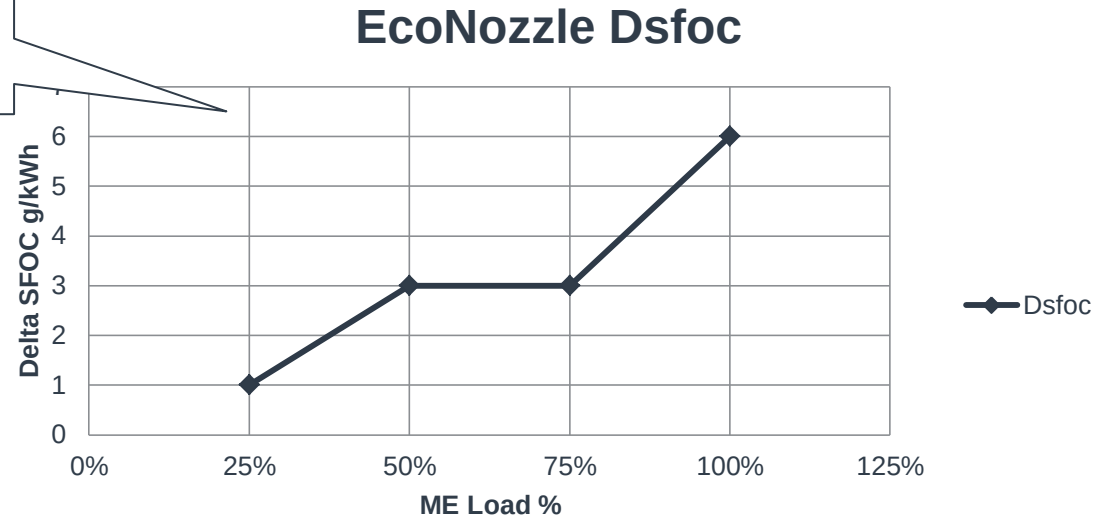
Combustion control



The diesel dilemma



Note: Included
some
conservativeness



Product under development
S50MC-C Mk 7/8 Tier 2 engines
Fuel injectors + NOx documentation

Do you have any more questions?



Thank you for your attention



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