For owner's seminar in 2015

Maintenance Service

for ME type engine

MES Technoservice Co., Ltd.
Diesel Engine Service Division
Technical Dept.

Aug. 2015

ME engine / Maintenance Service

ME engine
(Electronically controlled engine)

Crews
No experience with electronically controlled engine.
→Concern, Problem
→Trouble shooting delays

→Problem / Concern of crews is solved.
→Knowledge of ME engine / technical skill of crews is improved.
→Time-saving of trouble shooting.

- Function of new equipment and control system.
- Operation/Maintenance for new equipment.
- Trouble shooting for malfunction.

By MES Technoservice / Engineer
- Inspection of Main engine and ME-device / system.
- Technical advice for main engine condition.
- OJT of crews for inspection / maintenance work.

Support for the "SAFE OPERATION" on service vessels

ME engine / Maintenance Service

ME engine / Maintenance service content	
Basis	General Inspection of M/E
Step 1	Check Alarm List and Event Log Check the operation of equipment by MOP function test
Step 2	Accumulator (HCU, HPS) Check Nitrogen gas pressure Instruction and Supervision of re-charging Nitrogen gas
Step 3	Check for internal oil leakage at HCU, HPS Hydraulic oil pressure test by Start-up pump
Step 4	System View I/O Test and Check of Network status Back-up for ME-ECS parameter file
Step 5	Inspection of operation condition of Fine filter for hydraulic oil
Option	Instruction for ship staff / engineers Simple Training on board for ME engine

ME engine / Maintenance Service

General Inspection of M/E

- Inspection of Cylinder Condition:
  Through scavenging port
  Wear condition of Piston ring, Cylinder Liner.

- Check of Alpha Lubrication System:
  Operation condition, Alarm log/record.
  Optimal adjustment and feed rate setting.

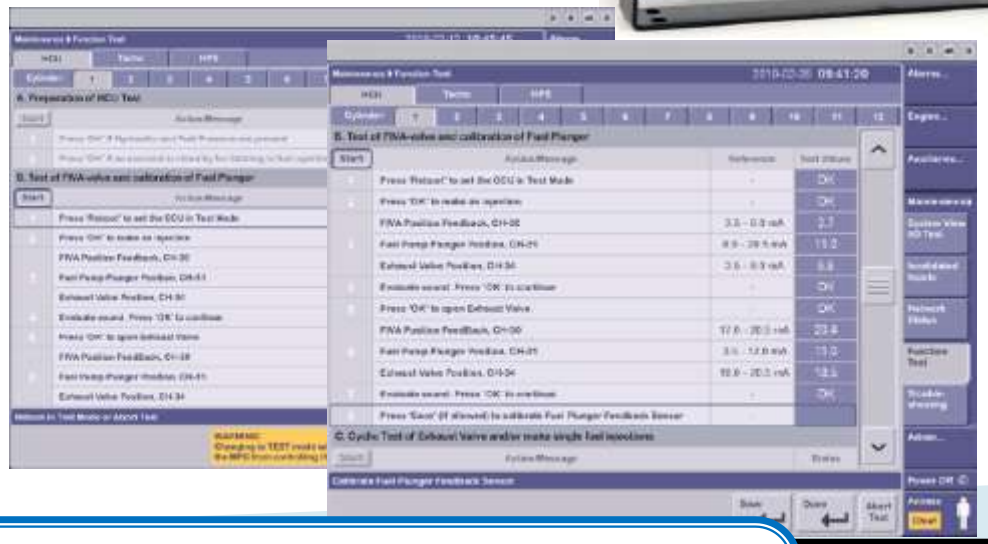
- General inspection according to actual operating condition:
  At the inspection before dry-dock (3 months prior), in addition to the above items, HPS driving chain, Exhaust Cam (for ME-B) and each bearing will be inspected visually.

ME engine / Maintenance Service

Step 1:
Check Alarm List and Event Log.
Check the operation of equipment by MOP function test.

Alarm List, Event Log

Function test



- Confirmation of M/E operating condition based on the alarm event log.
- Detailed investigation of the alarm records.
- Confirmation of equipment working condition, and check the feedback sensor's signal / current by MOP function test.

ME engine / Maintenance Service

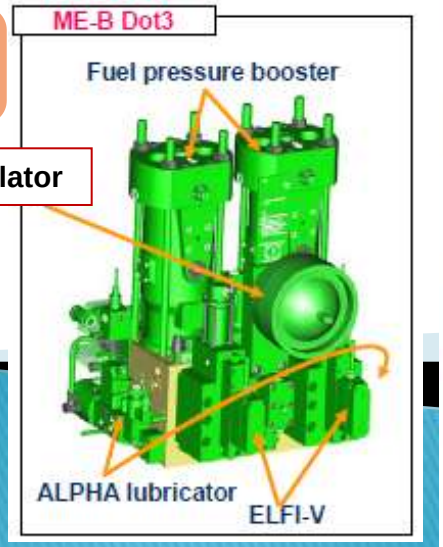
Step 2: Accumulator (for HCU & HPS)
Check the Nitrogen gas pressure.
Instruction and Supervision for re-charging Nitrogen gas.

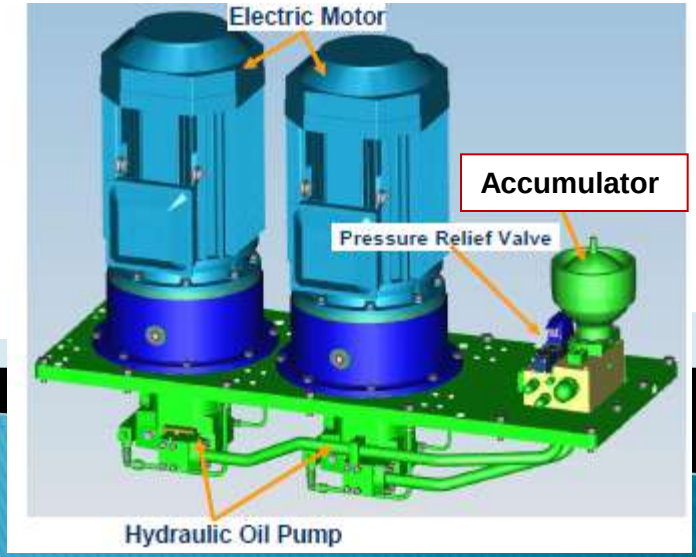
Check and measure the Nitrogen gas pressure in accumulator.
If the pressure is low, re-charging will be instructed.

※Nitrogen gas is to be re-charged by ship's crew.

Pressure check is recommended every 6 months.

Nitrogen gas bottle is to be provided by the vessel.

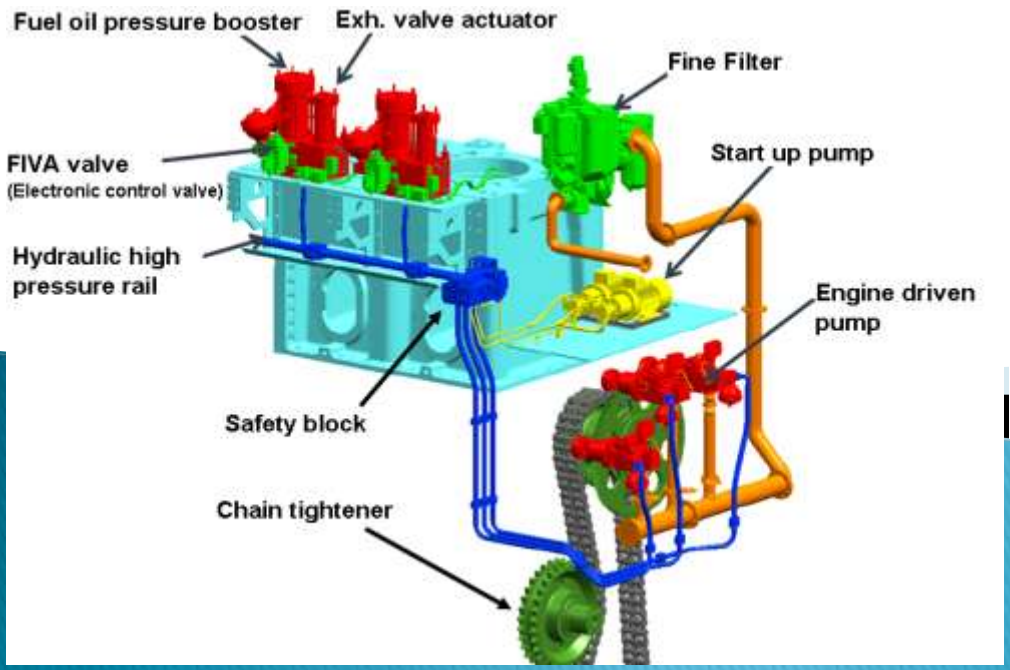


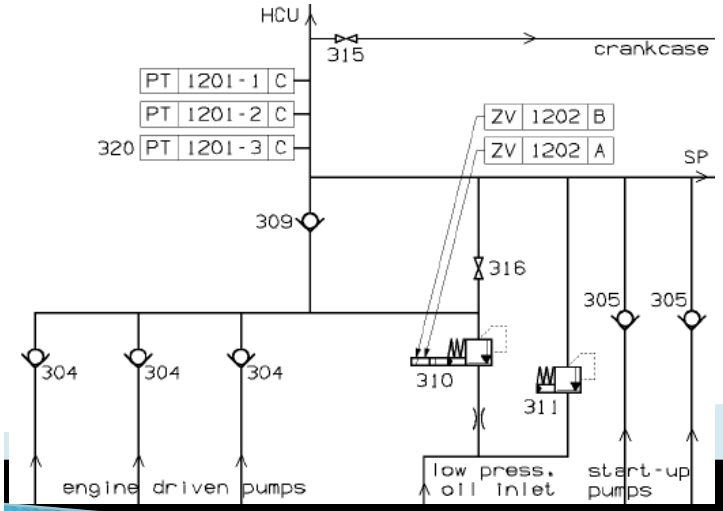


ME engine / Maintenance Service

Step 3:
Check for internal oil leakage at HCU, HPS.
Hydraulic oil pressure test by Start-up pump.

Hydraulic oil pressure is measured while operating Start-up pump, and the operation condition and abnormalities including wear on each valve is to be checked.





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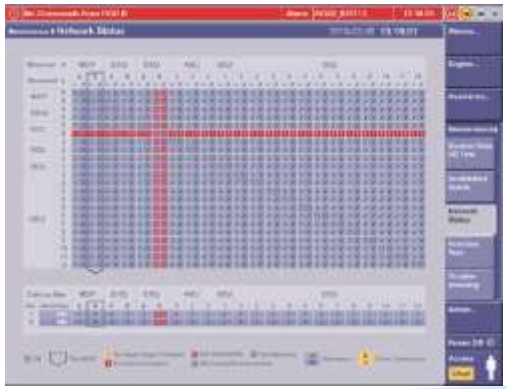
Step 4:
System View I/O Test, Check for Network Status.
Back-up of ME-ECS parameter file.

Check for any abnormalities on each PCB and network connection which is the structure of the M/E control system.



EICU	Engine Interface Control Unit
ECU	Engine Control Unit
CCU	Cylinder Control Unit
ACU	Auxiliary Control Unit
SCU	Scavenging Control Unit (for EGB, VTA)
MOP	Main Operating Panel

After no abnormality is confirmed on the system, ME ECS parameter file will be backed-up, and it will be stored in MES as the latest data file.

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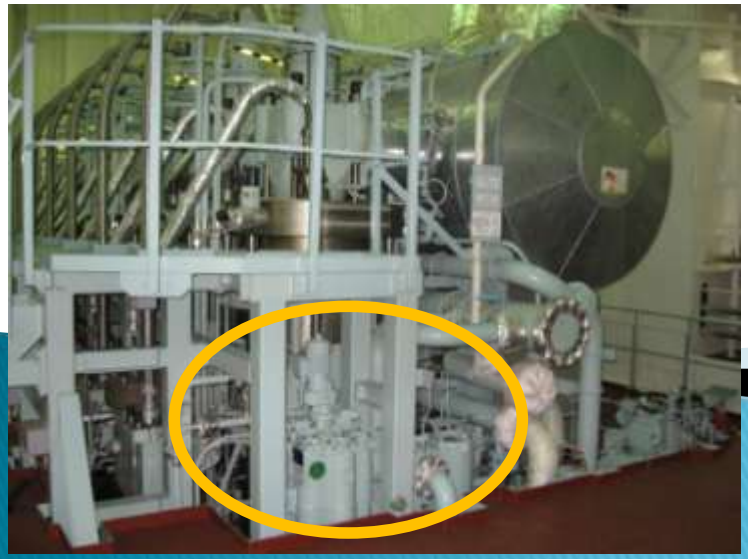
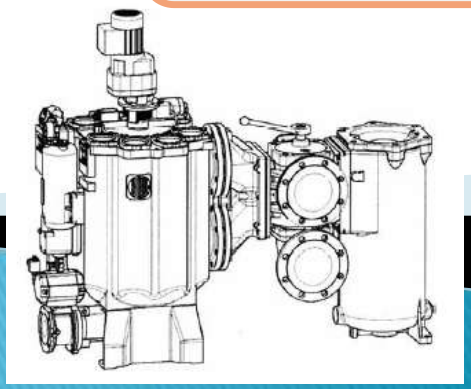
Step 5:
Inspection for the operation condition of
Fine filter for hydraulic oil.

- Check of differential pressure between hydraulic oil inlet and outlet.
- Function Check of back flushing.
- Explanation of maintenance and cleaning of elements.



In order to keep good condition of each device on M/E, regular maintenance is recommended.



ME engine / Maintenance Service

Option :
Instruction for ship staff / engineers
Simple Training on board for ME engine.

- Explanation of MOP functions
- Explanation of each equipment and sensor signal
- Engine side / Arrangement of each equipment and sensor
- How to respond at the time of alarm and trouble

On board Training for ME engine based on ME-training performed by the simulator at MES Tamano.

→ Increased knowledge and technical skill of crew = “SAFE OPERATION”
→ Early detection and early resolution of engine trouble


地球には、夢がある。
We have a dream for our earth.
ご清聴ありがとうございました。
Thank you for your attention.