



Ver.4

TDP-051

# Maintenance for ME type engines

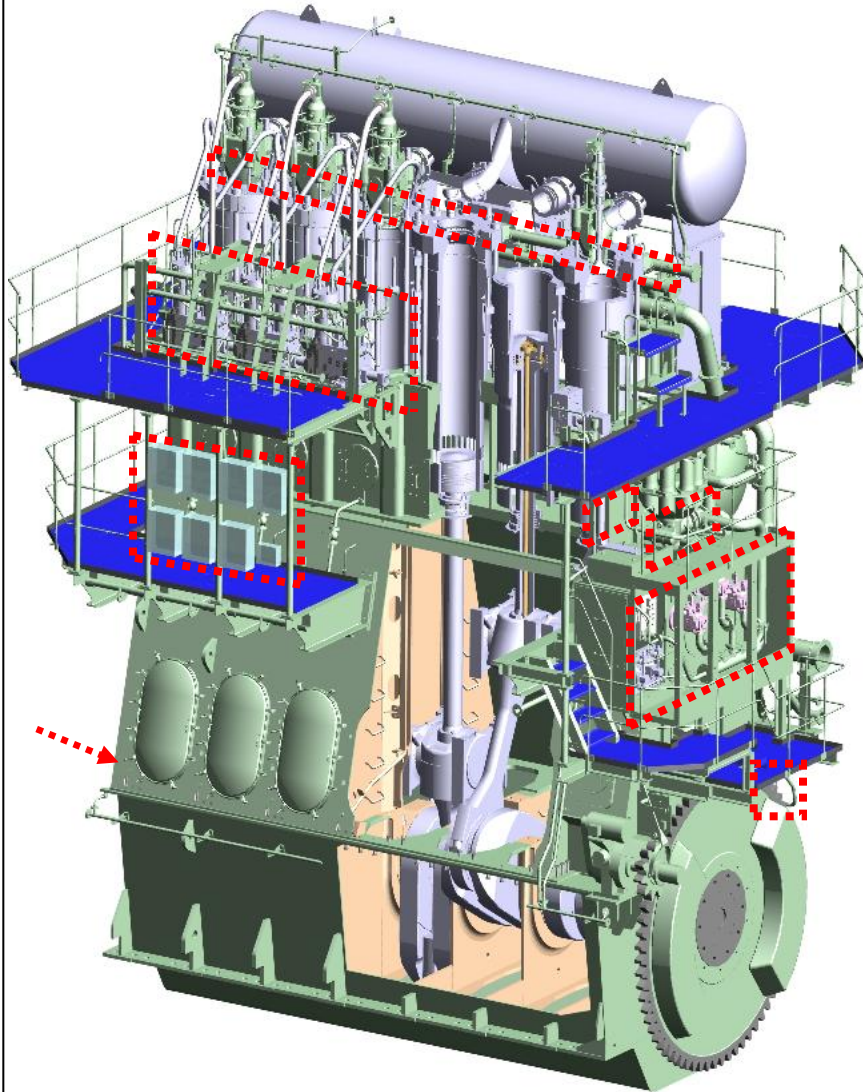
MES Technoservice Co., Ltd.  
Diesel Engine Service Division  
Technical Dept.

2016年5月



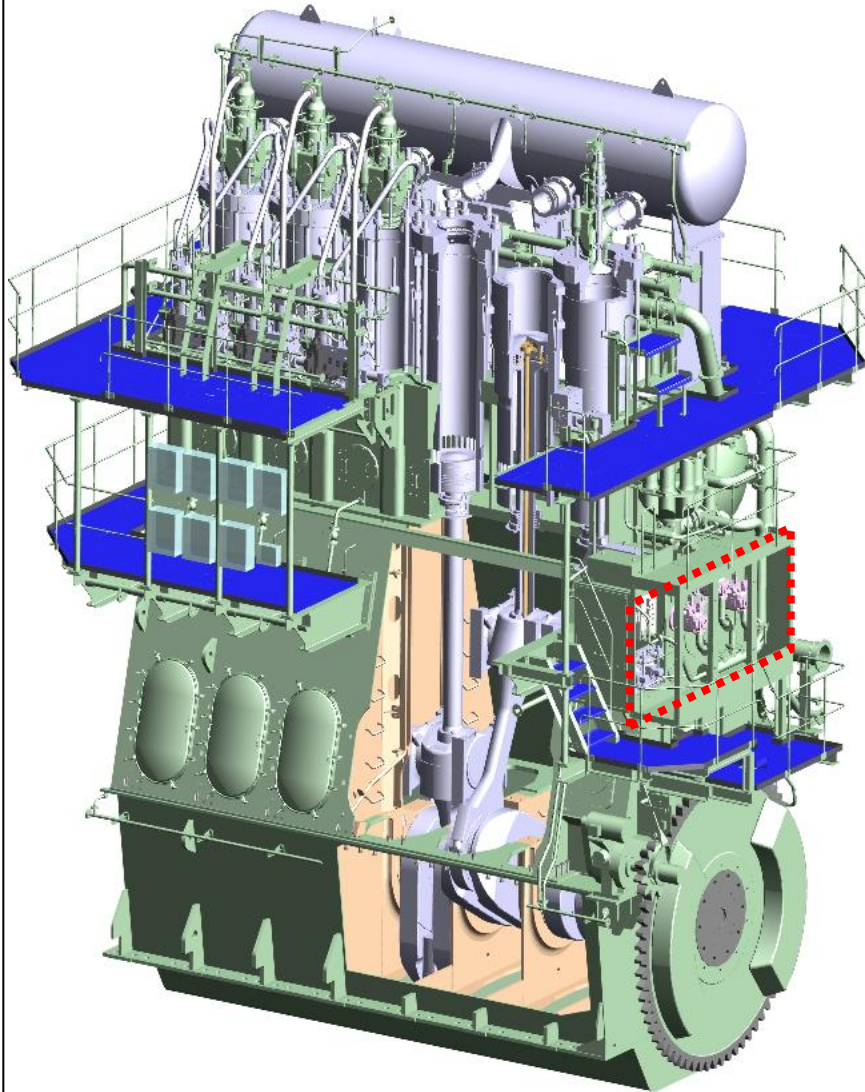
三井造船株式会社  
MITSUBISHI ENGINEERING & SHIPBUILDING CO.,LTD.

# Maintenance for ME type engines



- 1) HPS (Hydraulic Power Supply)
- 2) Accumulator block for HPS
- 3) HCU ( Hydraulic cylinder Unit)
- 3-2) Fuel oil pressure booster
- 3-3) Exh.valve driving actuator
- 3-4) Alpha lubricator
- 4) Tacho system
- 5) Start-up Pump
- 6) Solenoid Valve for starting valve
- 7) MOP (Main operating panel)
- 8) MPC (Multi purpose controller)

# Maintenance for ME type engines



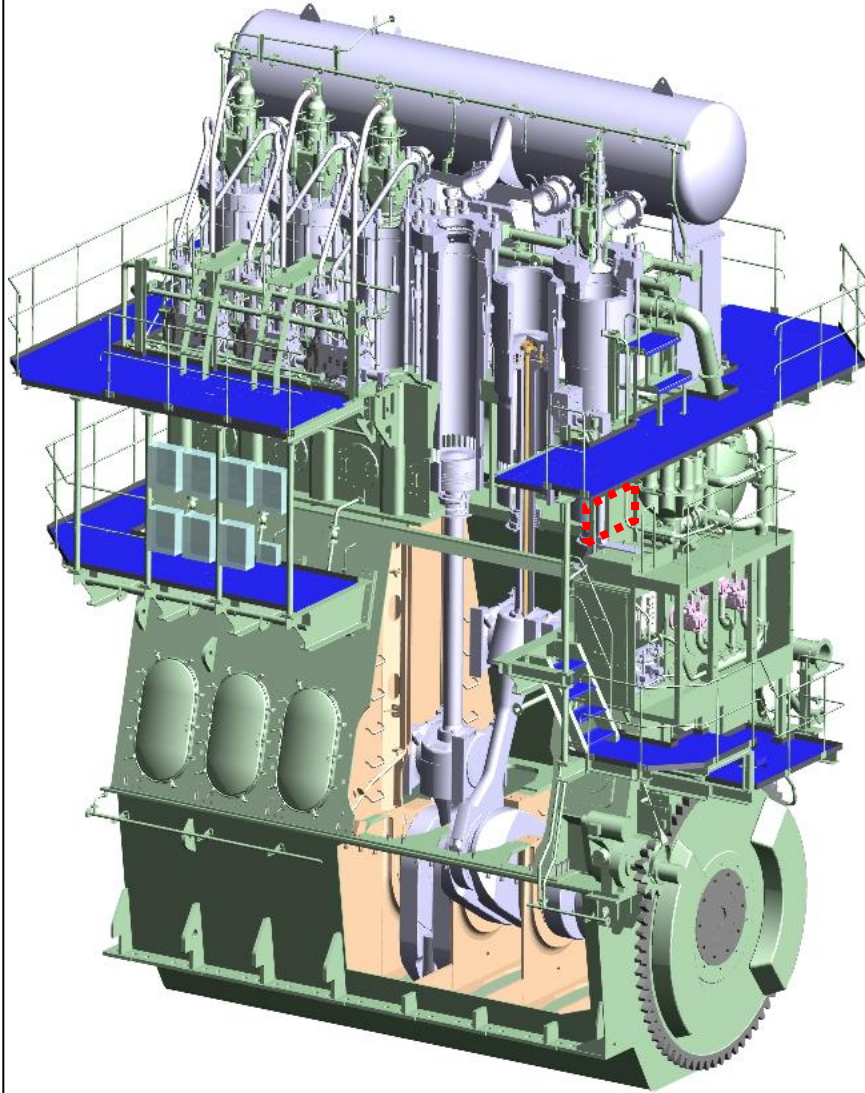
- 1) **HPS (Hydraulic Power Supply)**
- 2) Accumulator block for HPS
- 3) HCU (Hydraulic cylinder Unit)
- 4) Tacho system
- 5) Start-up Pump
- 6) Solenoid Valve for starting valve
- 7) MOP (Main operating panel)
- 8) MPC (Multi purpose controller)

# 1) HPS (Hydraulic Power Supply)

No.	Name	Interval	Action
①	Hydraulic oil pump	32,000hrs	Maintenance by maker
			or
	Replacement		
②	Proportional valve	20,000hrs	Replacement (*)
③	Accumulator: N <sub>2</sub> gas :Membrane	3,000hrs	Check / Re-charge
		32,000hrs	Replacement

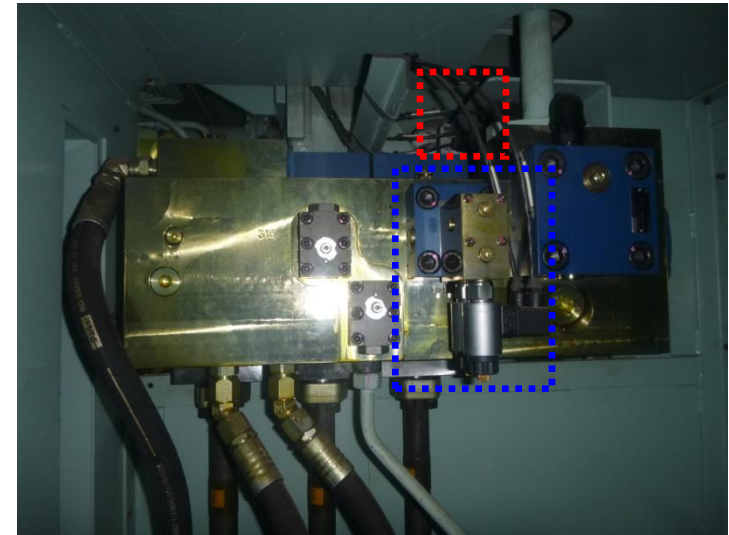
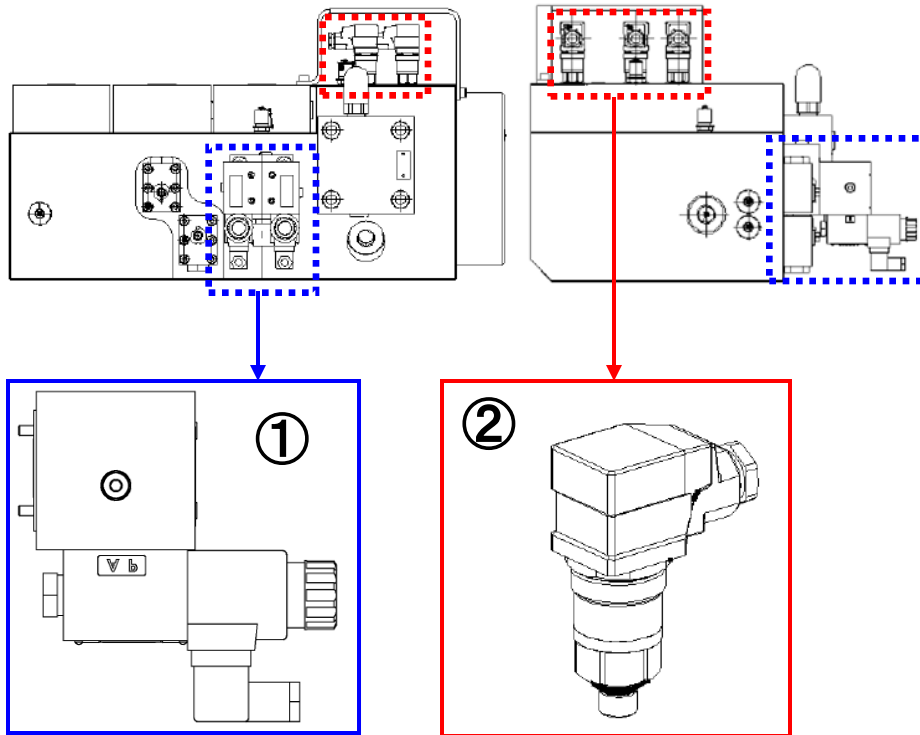
(\* based on service experiences.

# ME機関のメンテナンスについて



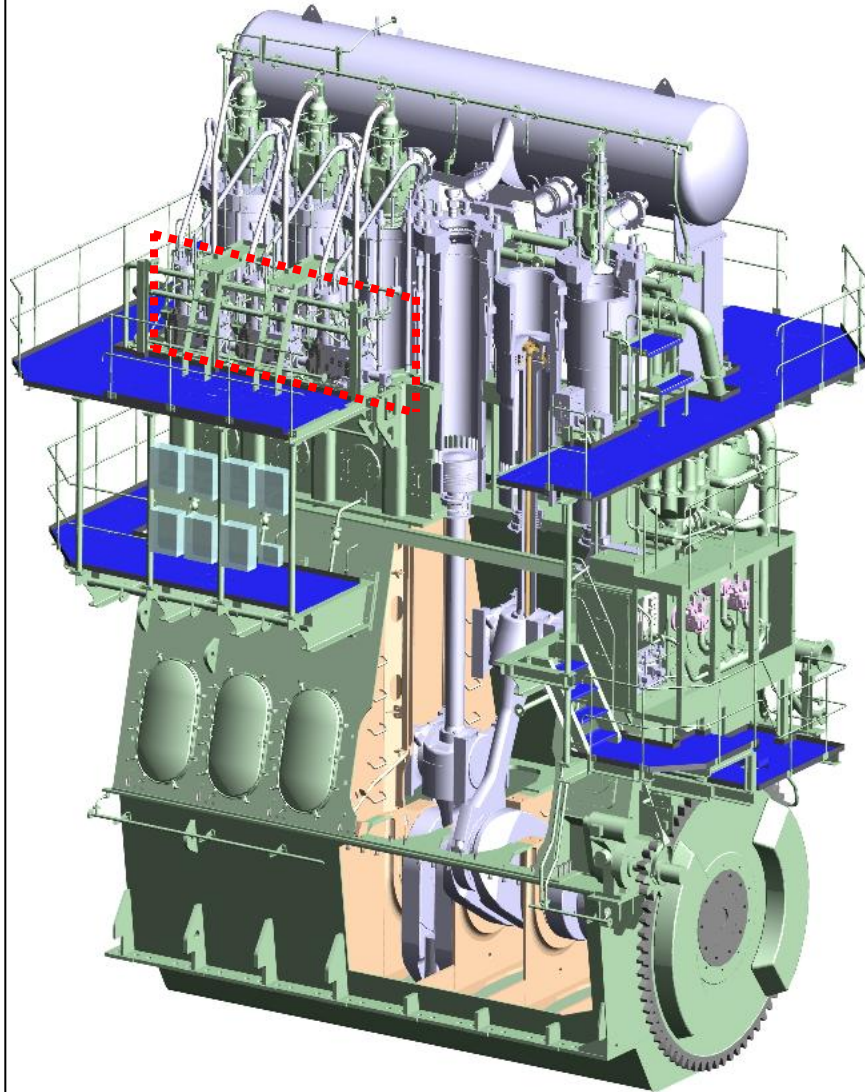
- 1) HPS (Hydraulic Power Supply)
- 2) Accumulator block for HPS**
- 3) HCU (Hydraulic cylinder Unit)
- 4) Tacho system
- 5) Start-up Pump
- 6) Solenoid Valve for starting valve
- 7) MOP (Main operating panel)
- 8) MPC (Multi purpose controller)

# 2) Accumulator block for HPS



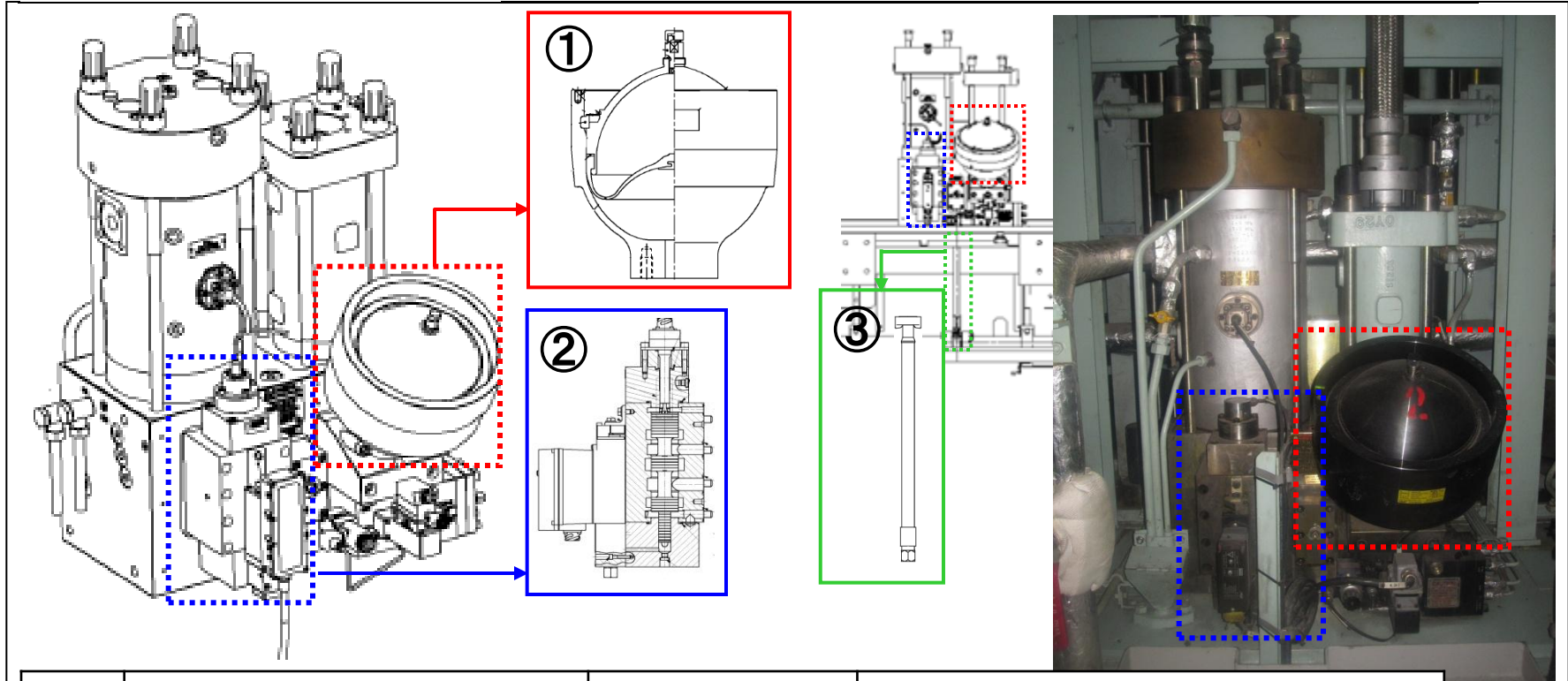
No.	Name	Interval	Action
①	Pressure relief valve	32,000hrs	Overhaul maintenance
②	Pressure transmitter	32,000hrs	Replacement

# ME機関のメンテナンスについて



- 1) HPS (Hydraulic Power Supply)
- 2) Accumulator block for HPS
- 3) HCU ( Hydraulic cylinder Unit)**
- 4) Tacho system
- 5) Start-up Pump
- 6) Solenoid Valve for starting valve
- 7) MOP (Main operating panel)
- 8) MPC (Multi purpose controller)

# 3-1) HCU ( Hydraulic cylinder Unit)

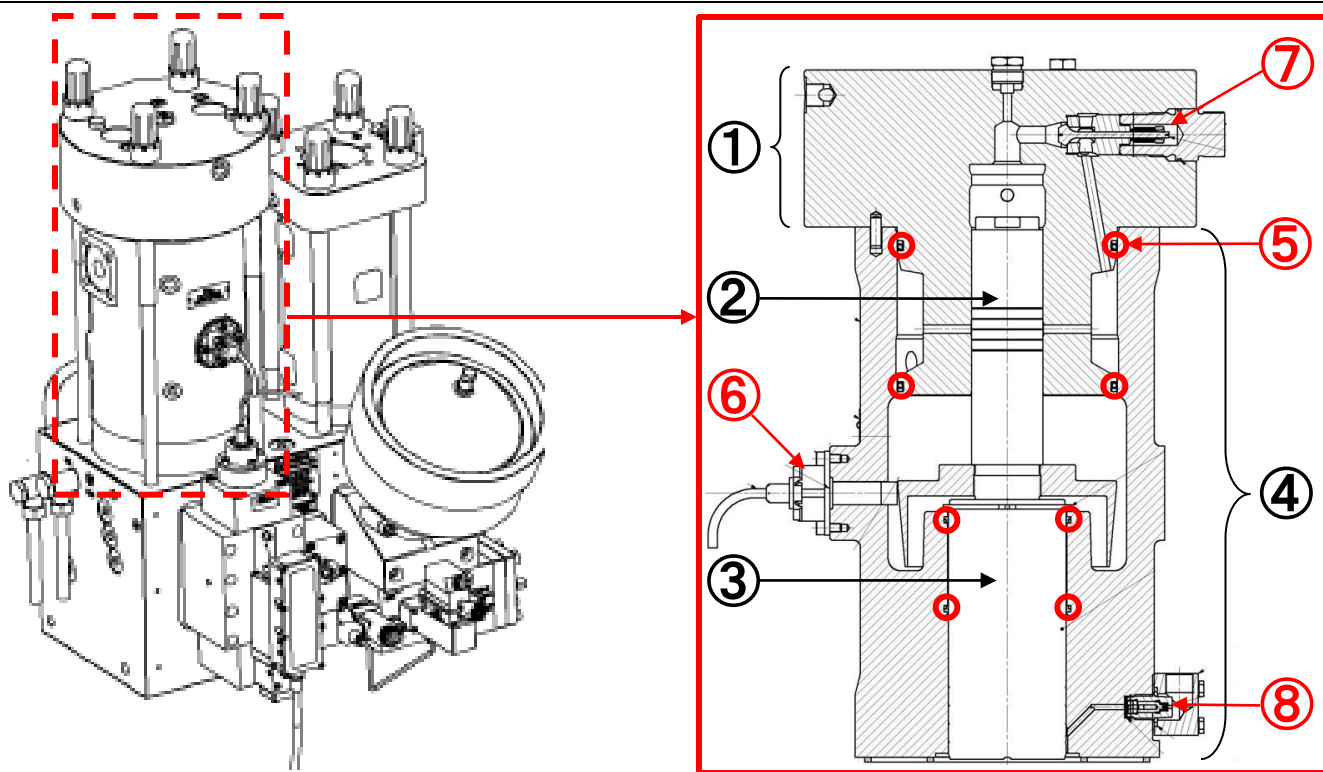


No.	Name	Interval	Action		
①	Accumulator: N <sub>2</sub> gas :Membrane	3,000hrs	Check/ Re-charge		
		32,000hrs	Replacement		
②	FIVA valve	32,000hrs	Maintenance*1	or	Replacement
③	High pressure hose	32,000hrs	Replacement		

\*1:Feed-back sensor and Control valve will be renewed at "Maintenance"



# 3-2) Fuel oil pressure booster

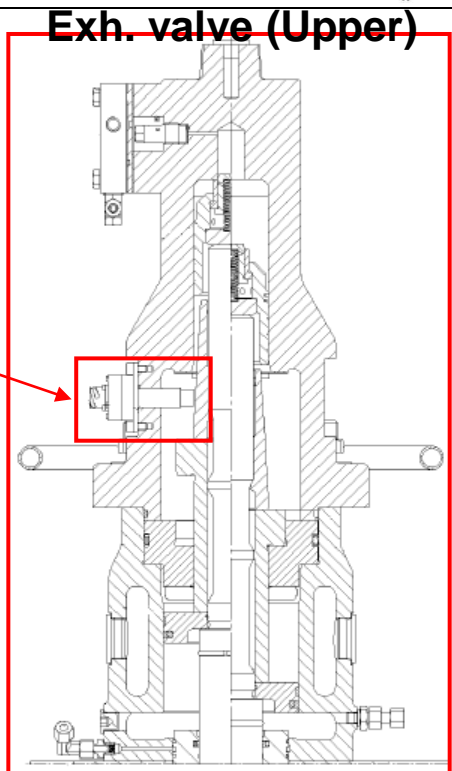
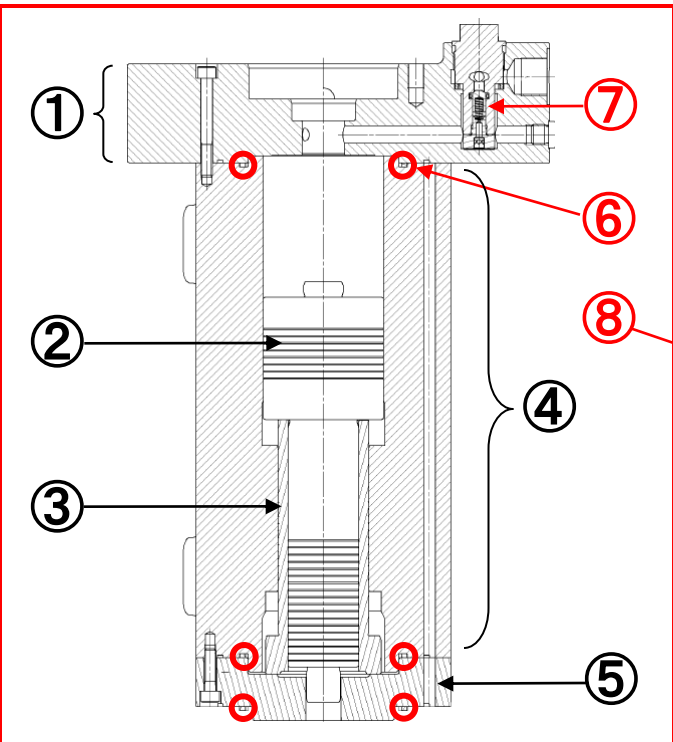
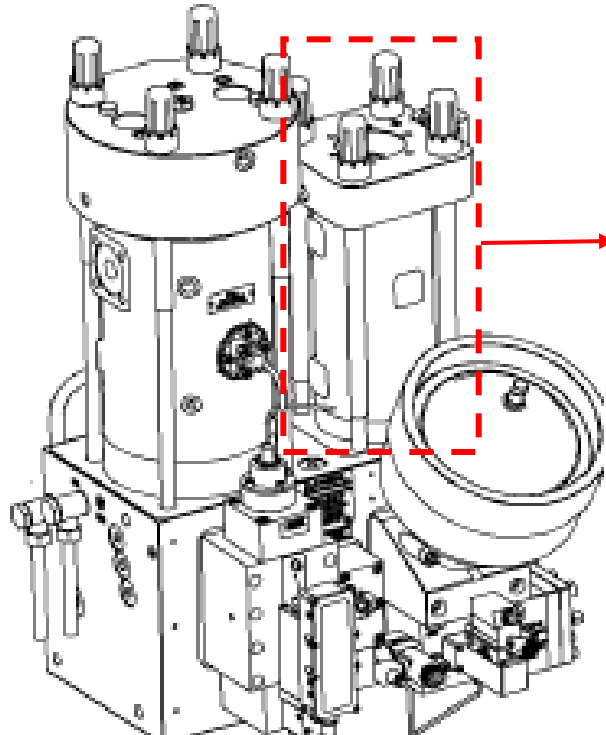


**Check :**

- ① Top cover
- ② FO plunger
- ③ Hydraulic piston
- ④ Housing

⑤	Seal rings	32,000hrs	Replacement
⑥	Stroke sensor	64,000hrs	Replacement
⑦	Suction valve	based on function condition	Replacement
⑧	Throttle valve	based on function condition	Replacement

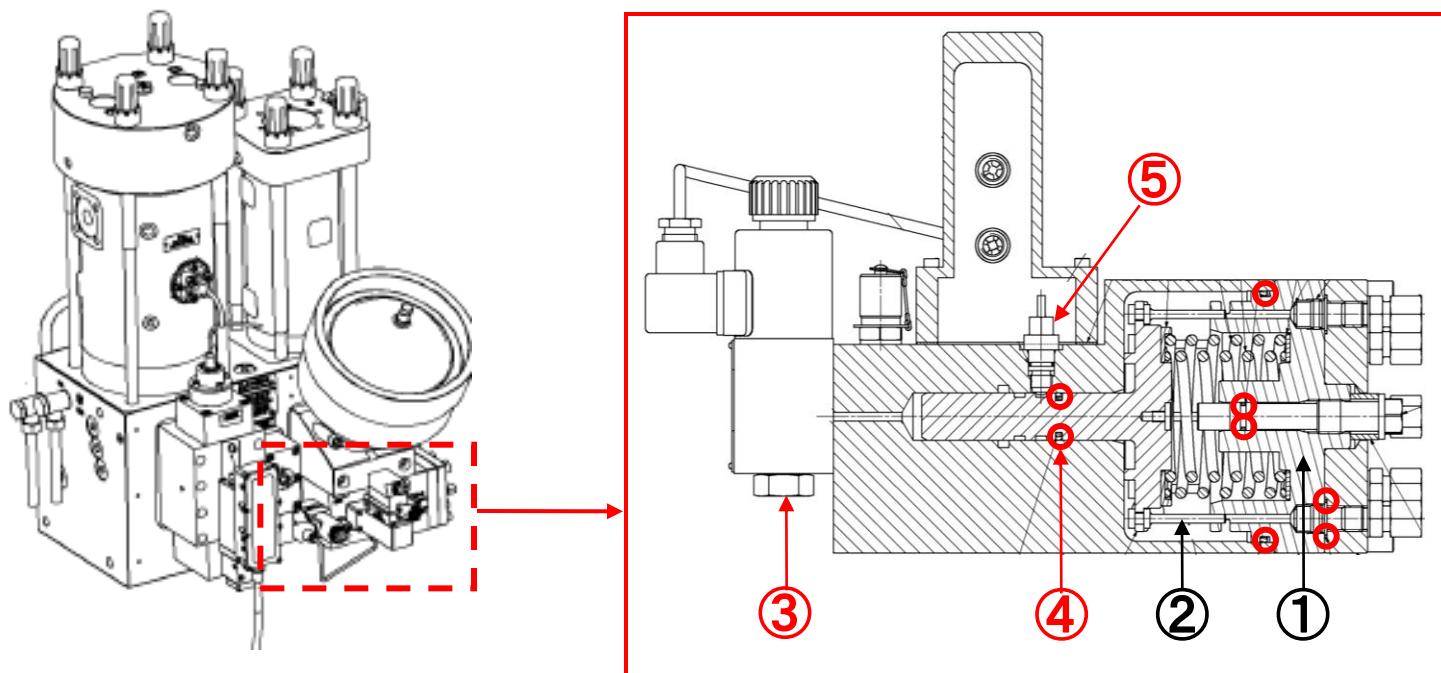
# 3-3) Exh.valve driving actuator



**Check** : ① Top cover      ② Piston      ③ Guide piston  
 ④ Oil cylinder      ⑤ Bottom piece

⑥	Seal rings	32,000hrs	Replacement
⑦	Non-return valve	based on function condition	Replacement
⑧	Stroke sensor for Exh. valve	64,000hrs	Replacement

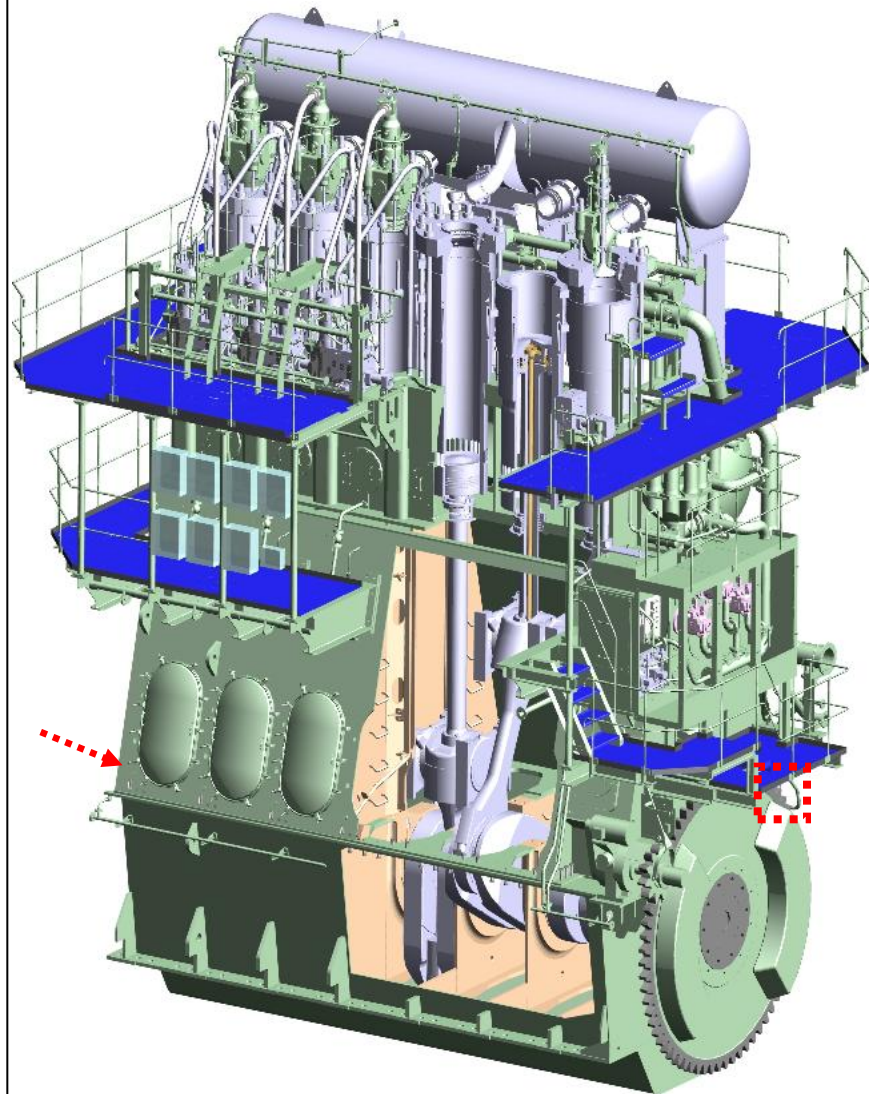
# 3-4) Alpha lubricator



**Check : ①Cylinder ②Plunger**

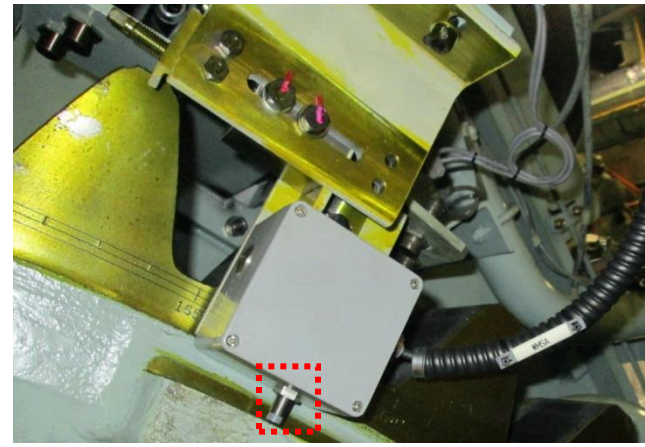
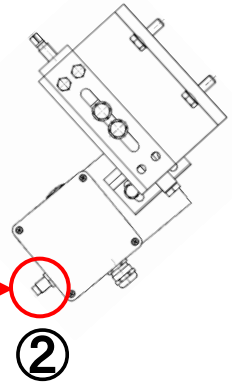
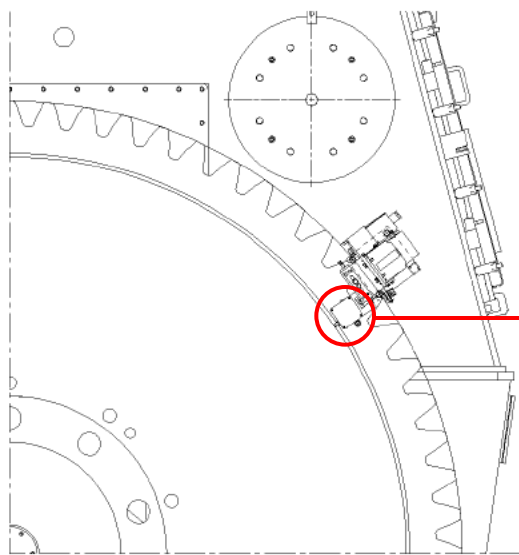
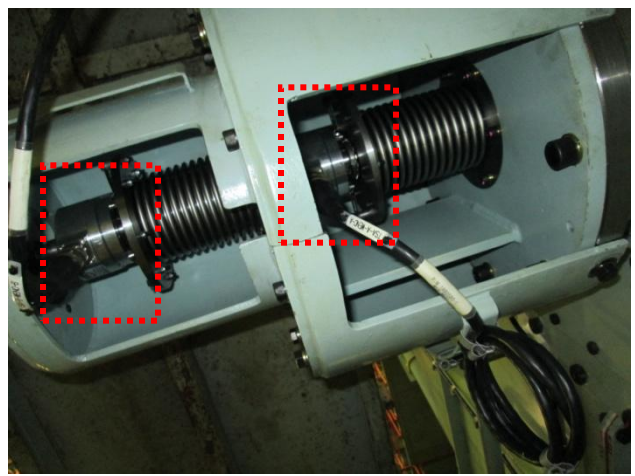
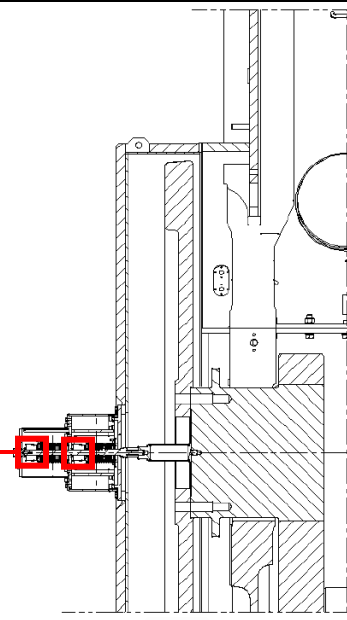
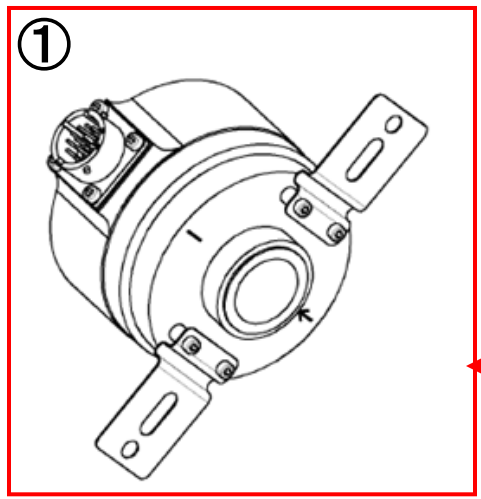
③	Solenoid valve	32,000hrs	Replacement
④	Seal rings	64,000hrs	Replacement
⑤	Feedback sensor	64,000hrs	Replacement

# ME機関のメンテナンスについて



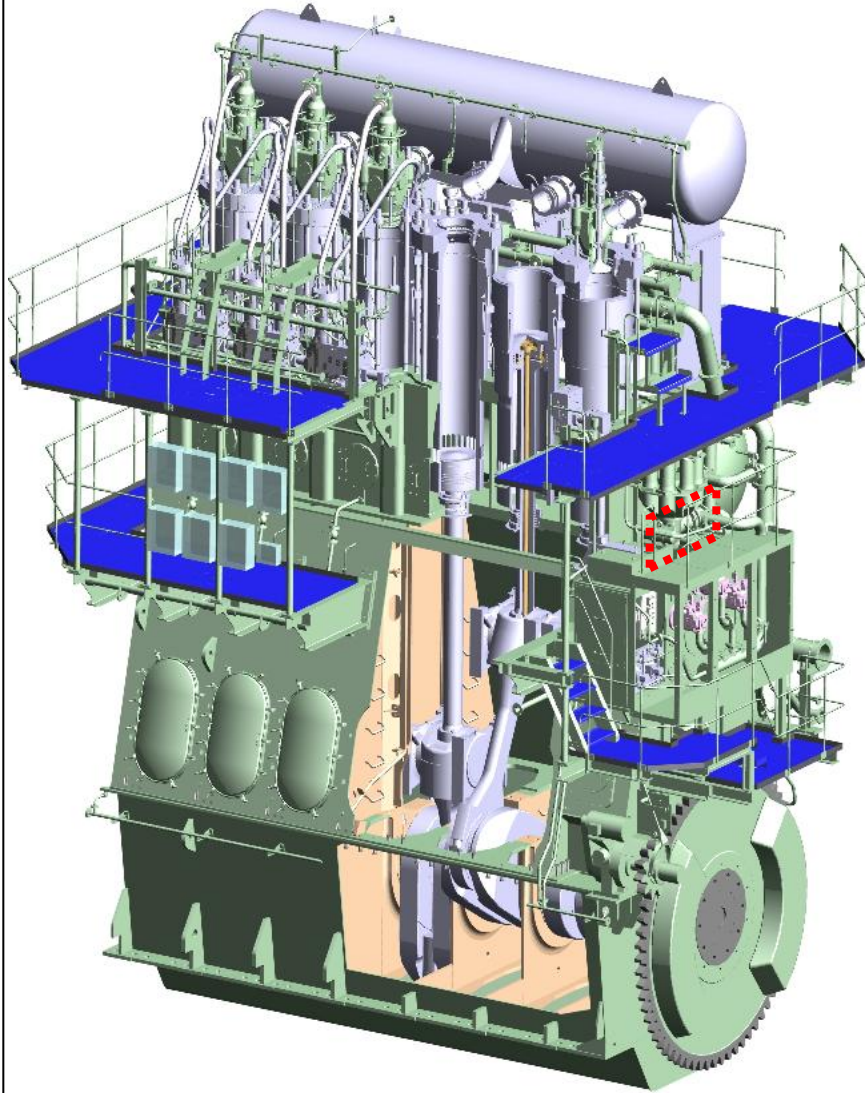
- 1) HPS (Hydraulic Power Supply)
- 2) Accumulator block for HPS
- 3) HCU (Hydraulic cylinder Unit)
- 4) Tacho system**
- 5) Start-up Pump
- 6) Solenoid Valve for starting valve
- 7) MOP (Main operating panel)
- 8) MPC (Multi purpose controller)

# 4) Tacho system



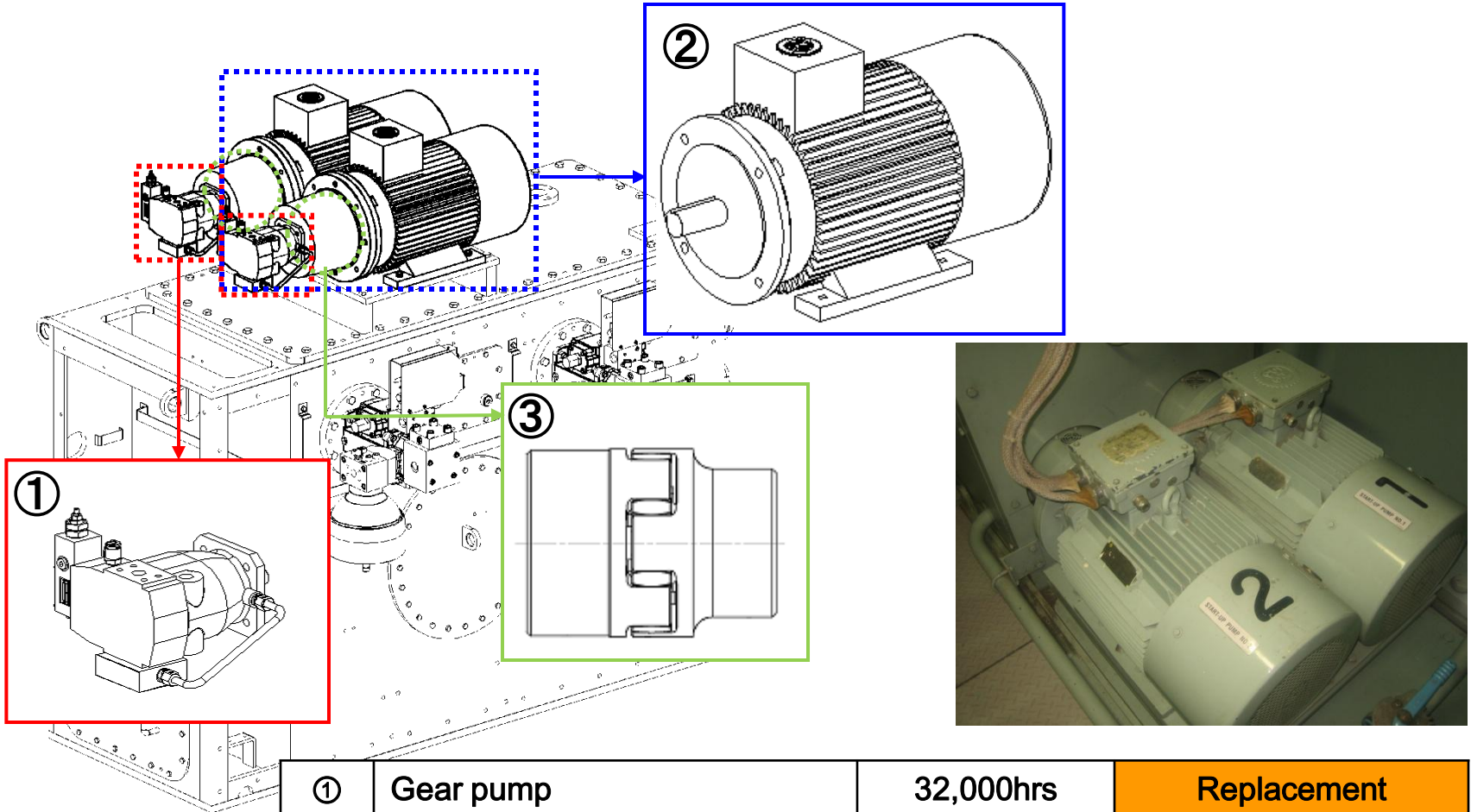
①	Angle encoder	64,000hrs	Replacement
②	Marker sensor	32,000hrs	Replacement

# ME機関のメンテナンスについて



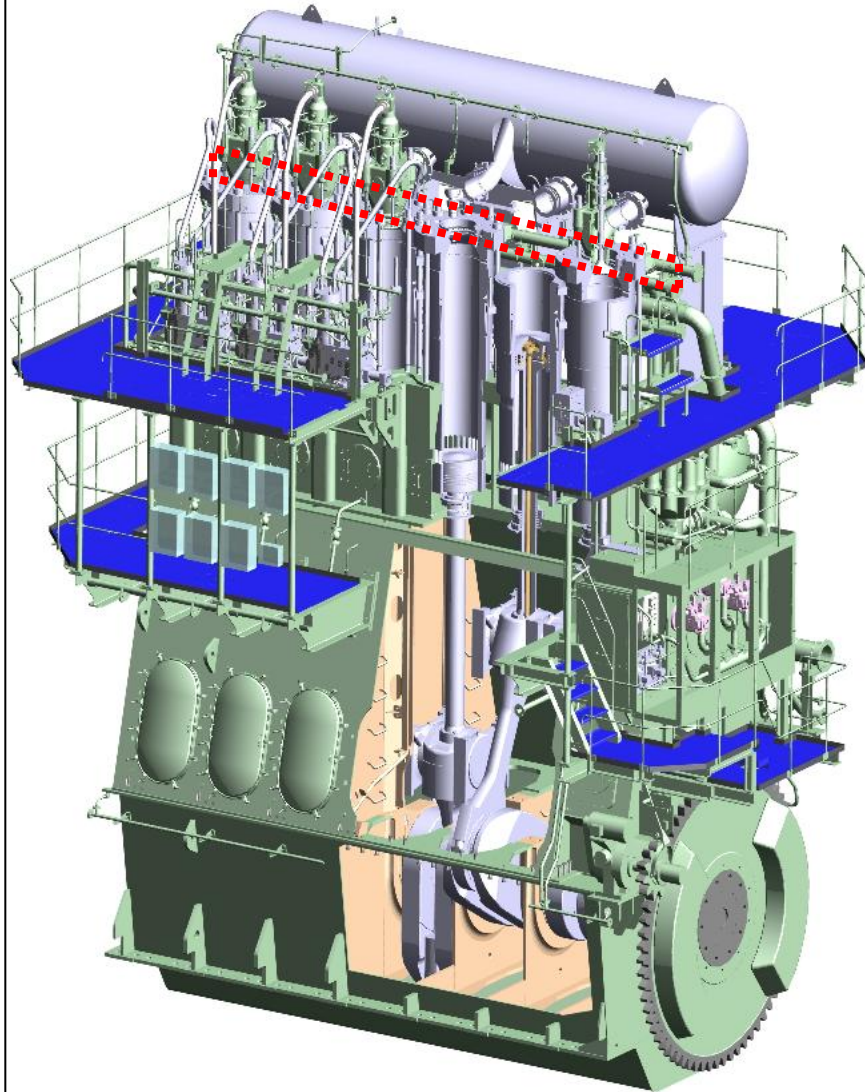
- 1) HPS (Hydraulic Power Supply)
- 2) Accumulator block for HPS
- 3) HCU (Hydraulic cylinder Unit)
- 4) Tacho system
- 5) Start-up Pump**
- 6) Solenoid Valve for starting valve
- 7) MOP (Main operating panel)
- 8) MPC (Multi purpose controller)

# 5) Start-up Pump



①	Gear pump	32,000hrs	Replacement
②	Electric motor	32,000hrs	Replacement
③	Claw Coupling	32,000hrs	Replacement

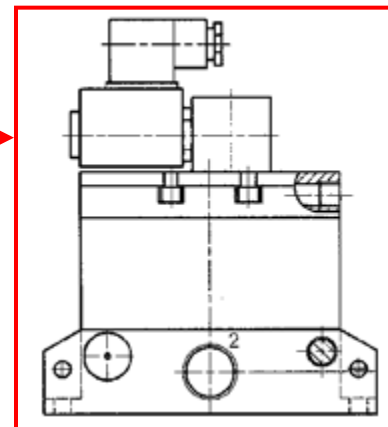
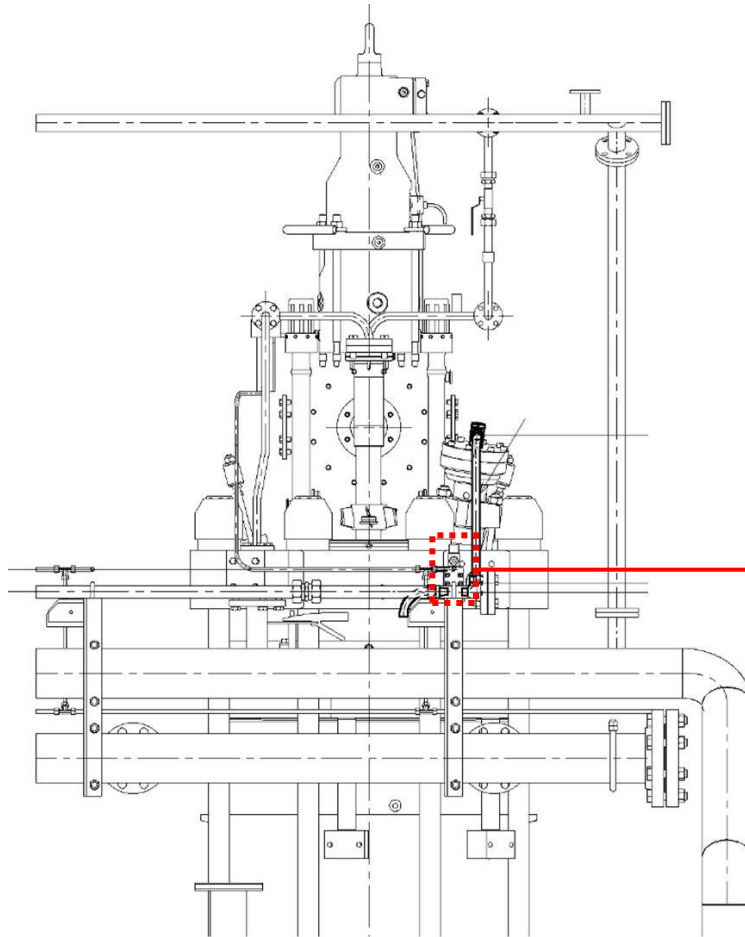
# ME機関のメンテナンスについて



- 1) HPS (Hydraulic Power Supply)
- 2) Accumulator block for HPS
- 3) HCU (Hydraulic cylinder Unit)
- 4) Tacho system
- 5) Start-up Pump
- 6) Solenoid Valve for starting valve**
- 7) MOP (Main operating panel)
- 8) MPC (Multi purpose controller)

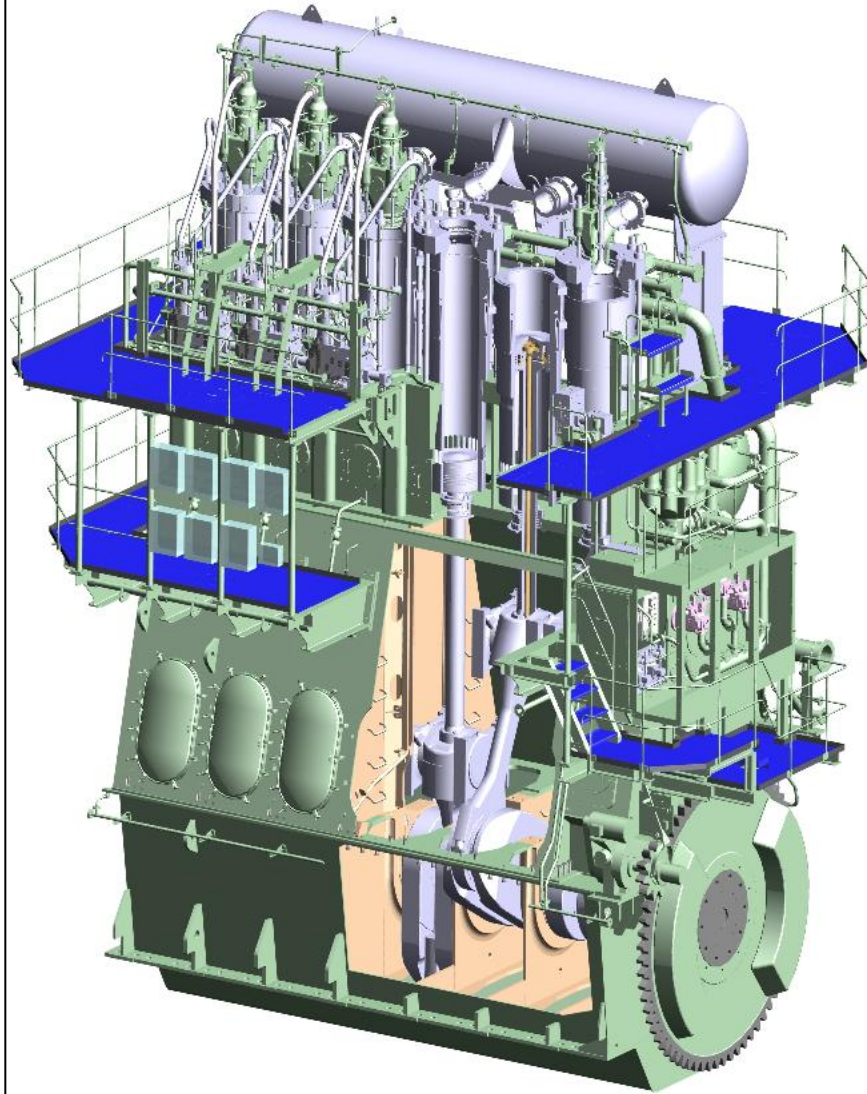


# 6) Solenoid Valve for starting valve



Solenoid valve	32,000hrs	Overhaul Maintenance
----------------	-----------	----------------------

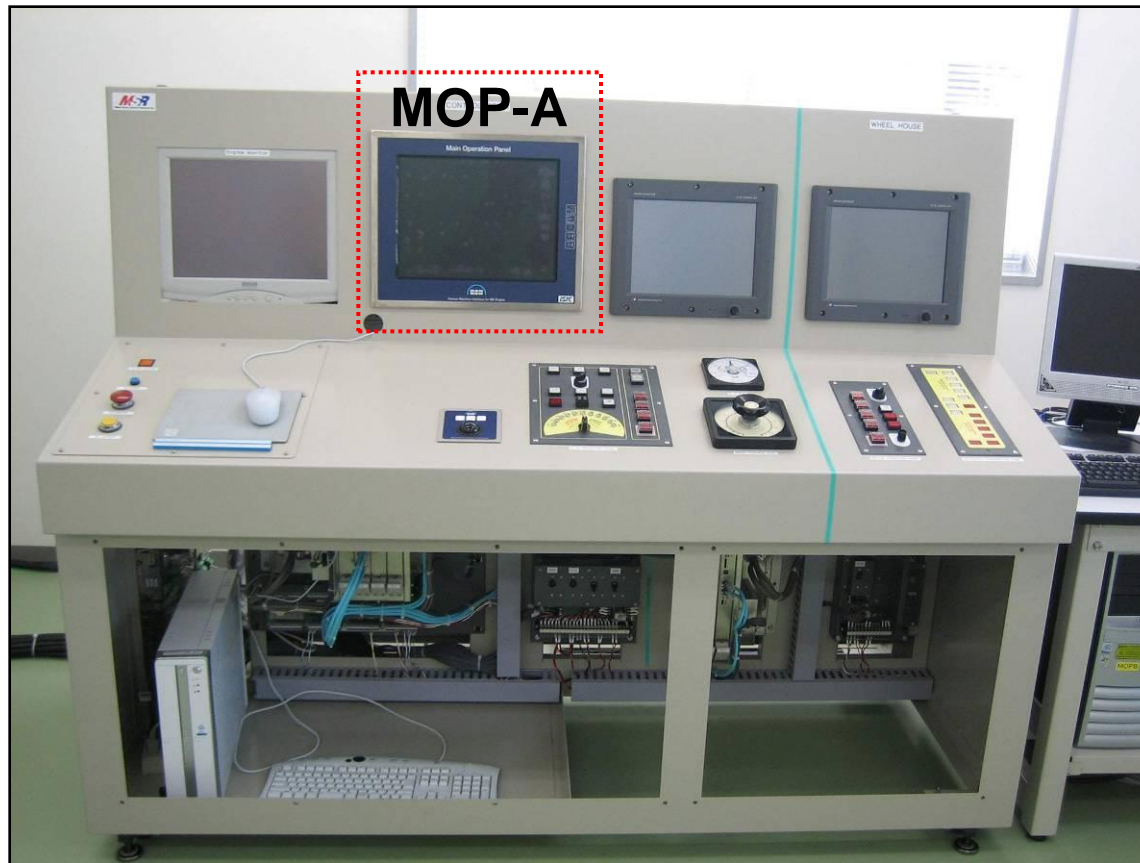
# ME機関のメンテナンスについて



- 1) HPS (Hydraulic Power Supply)
- 2) Accumulator block for HPS
- 3) HCU (Hydraulic cylinder Unit)
- 4) Tacho system
- 5) Start-up Pump
- 6) Solenoid Valve for starting valve
- 7) MOP (Main operating panel)**
- 8) MPC (Multi purpose controller)

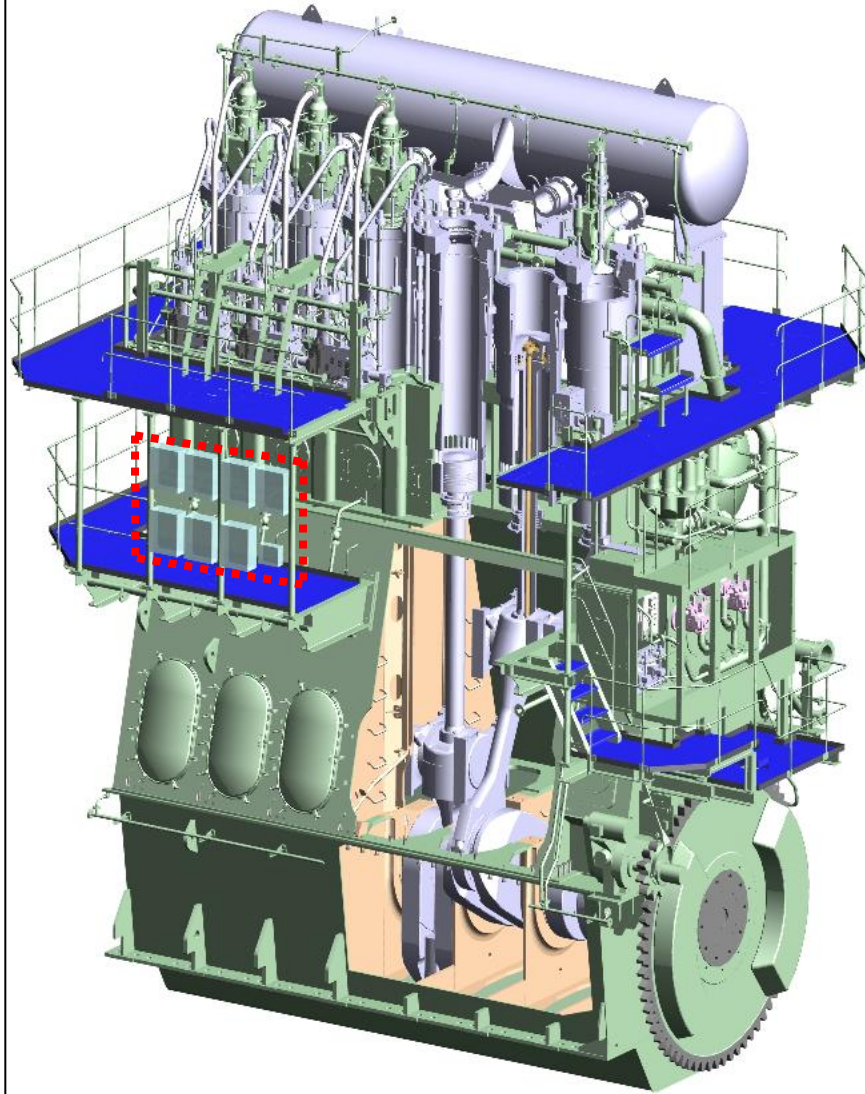
# 7) MOP (Main operating panel)

\*Inside the control room



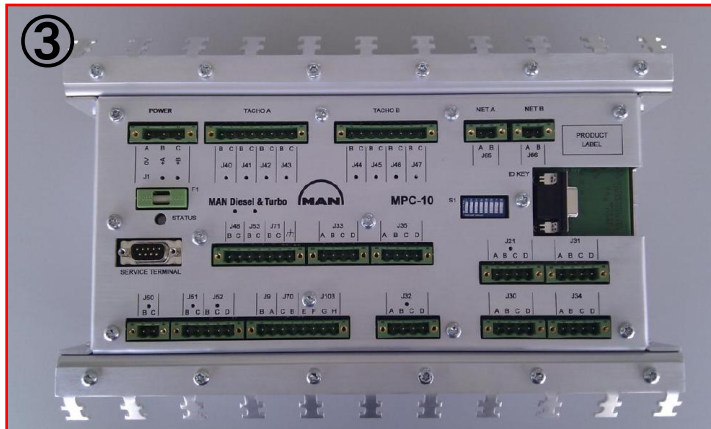
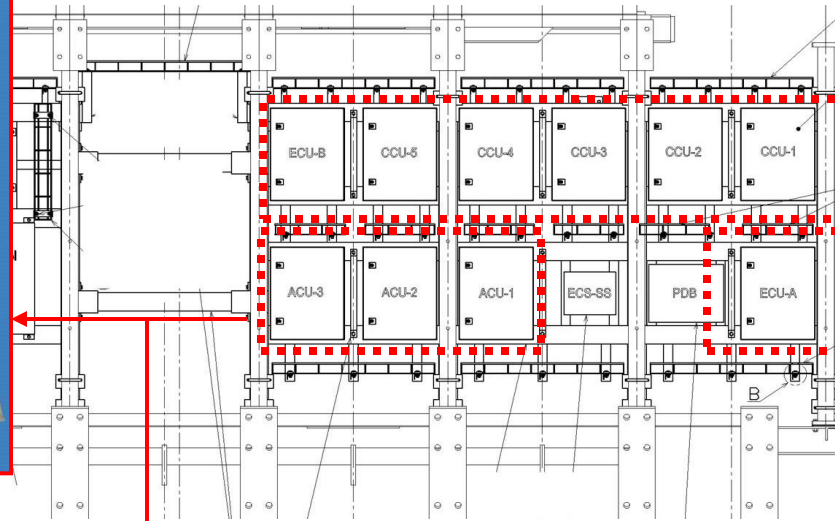
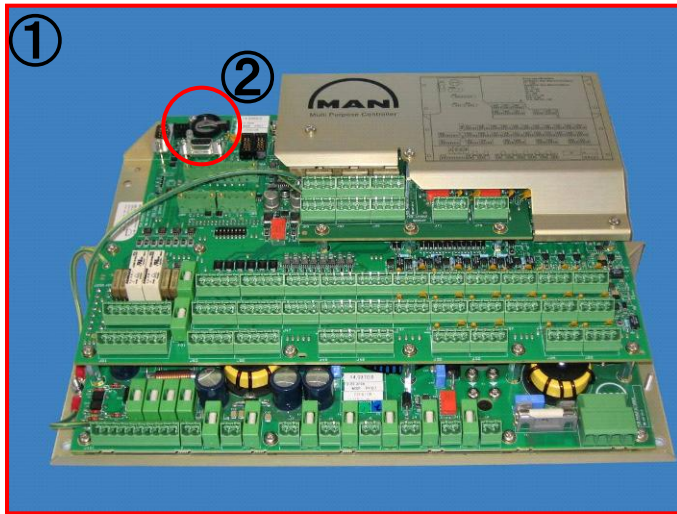
MOP-A,B	64,000hrs	Replacement
---------	-----------	-------------

# ME機関のメンテナンスについて



- 1) HPS (Hydraulic Power Supply)
- 2) Accumulator block for HPS
- 3) HCU (Hydraulic cylinder Unit)
- 4) Tacho system
- 5) Start-up Pump
- 6) Solenoid Valve for starting valve
- 7) MOP (Main operating panel)
- 8) MPC (Multi purpose controller)**

# 8) MPC (Multi Purpose controller)



①	MPC circuit board	64,000hrs	Replacement
②	Battery in MPC(**)	16,000hrs	Replacement
③	MPC10 circuit board	64,000hrs	Replacement

(\*\* based on our service experiences.

\*MPC10:compact type MPC for CCU