

Update of the Maintenance Schedule for TCA Turbocharger		No.191	
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ENGINE TYPE	All TCA type Turbocharger	DATE	2015.01.14

Rev. 1: Extension of overhaul interval of Compressor side $\triangle 1$ (2018.10.25)

Based on the good service experience, licensor, MAN Energy Solutions, has recently updated the overhaul items and interval in the instruction manual.

Since we have followed this updated maintenance schedule and hereby revise our instruction manual as follows, please replace the chapter in the instruction manual of the vessels in service and carry out the maintenance in accordance with the updated instruction manual.

Elimination of the inspection item and Extension of the overhaul item

$\square 931$ Clean and check "diffuser, Compressor casing $\triangle 1$, Insert $\triangle 1$ and Compressor wheel $\triangle 1$ "

- As the overhaul interval is extended, every 12,000h overhaul and cleaning is deleted and unified to $\square 951$ "Major overhaul" every 24,000-30,000h

$\square 941$ Check thrust bearing, counter-thrust bearing, bearing disc

- As the overhaul interval is extended, every 12,000h overhaul is deleted and unified to $\square 951$ "Major overhaul" every 24,000-30,000h

Page2,3 : Updated instruction manual "Maintenance Schedule (Turbocharger on the Two-stroke Engine) "

PRIORITY	
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IMMEDIATELY <input type="checkbox"/>	AT FIRST OPPORTUNITY <input type="checkbox"/>	WHEN CONVENIENT <input checked="" type="checkbox"/>	OTHERS <input type="checkbox"/>
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Maintenance

Maintenance Schedule

Reliability and Adaptability

Validity of the Maintenance Schedule

The maintenance schedule contains a summary of the maintenance and inspection work, down to the major overhaul of the turbocharger.

A major overhaul of the turbocharger must be carried out latest after

- 24 000–30 000 operating hours with two-stroke engines.

After each major overhaul, which best is carried out with a due engine service, the maintenance schedule starts from the beginning again.

A major overhaul includes the disassembly of the complete turbocharger for inspection of the actual condition, thorough cleaning and a check of all parts/components.

Important!

The maintenance must be scheduled ahead of time, meaning that e. g. ship timetables or auditioning periods of power plants must be planned. In order to ensure the operational safety of the turbocharger and the engine, maintenance work is to be performed as far as possible on schedule or beforehand.

Adaptation of the Maintenance Schedule

The maintenance schedule takes the following operating conditions and an annual operating period of approx. 6000 h into account:









- Uniform loading within a range of 60 to 90% of the rated power,
- Observation of the specified operating media temperatures and pressures,
- Usage of the specified lube oil and fuel qualities,
- Attentive separation of fuel and lubrication oil.

The maintenance intervals must be shortened when the following operating conditions are given:

- Longer-term operation with peak loads or low loads, long idle periods, frequent heavy load cycles,
- Frequent engine starts and repeated run-up phases without sufficient warming-up,
- High stress on the engine before reaching the specified operating media temperatures,
- Too low lube oil, cooling water and charge air temperatures,
- Use of problematic fuel qualities and insufficient separation,
- Insufficient filtration of the intake air (particularly with stationary engines).

Maintenance

Maintenance Schedule (Turbocharger on the Two-stroke Engine)

1, 2, 3					per	24	150	250	3000	12000	24000
Inspection (during operation)											
901	Check turbocharger for unusual noise or vibrations.	A	1	0.1	TCA	X					
903	Check turbocharger and system pipes for leaks (charge air, exhaust gas, lubricating oil)	A	1	0.2	TCA	X					
905	Check all the fixing screws, casing screws and pipe	C2-2.1	1	1	TCA			2	X		
Maintenance (during operation)											
911	Clean turbine -Dry clean, if available		1	0.3	TCA	1					
913	Clean turbine -Wet clean, if available		1	0.6	TCA			1			
915	Clean compressor (in operation)		1	0.3	TCA		1				
917	Clean air filter (if available)	500.24	1	0.4	TCA			1			
Maintenance (in common with an engine maintenance)											
951	Major overhaul 24 000 ... 30 000 operating hours: Dismantle, clean and check all components of the turbocharger. Check gaps and clearances upon assembly	C2-3.3..3.5 C2-2.2	2	20	TCA						X
1,2,3	Serial number of the maintenance work										
	Required time in man hours										
	Brief description of the maintenance work										
per	Size of ratio for the data of required time										
	Pertaining work card with detailed instructions										
A	No work card necessary/available										
24 - 24000	Repetition intervals in operating hours										
X	Maintenance work due										
1	As required/depending on condition										
2	Checking of new or overhauled parts required(once after the mentioned time)										
	Required personnel										