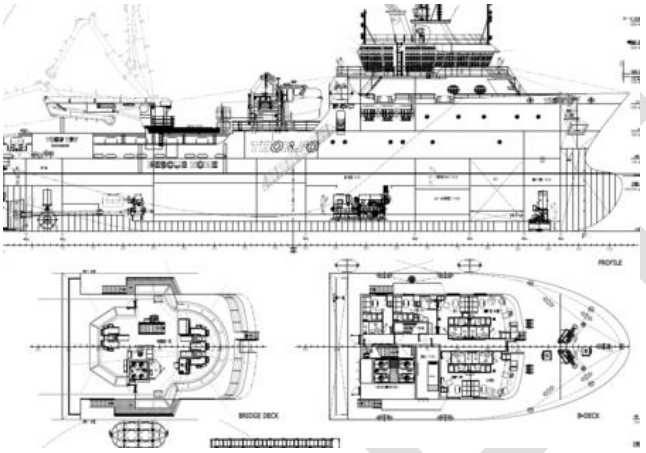
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Yanmar 6EY22ALW
Overhaul Extension 12K to 16K



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1. Extension Program

The extension program was based on the table of scheduled maintenance inspection found in the engine manual (0000-000-08-00)

a) Major Parts

Cylinder head

Maintenance	Keep in 12K	Move to 16K	Remarks
Inspection of the valve spring		x	
Disassembly, inspection and cleaning		x	
Valve seat grinding		x	
Scale cleaning and hydraulic test in water chamber		x	
Replacement of stem seal (intake/exhaust valves)		x	
Inspection of the hydraulic tightening of the cylinder head bolts		x	

Piston

Maintenance	Keep in 12K	Move to 16K	Remarks
Removal, cleaning, inspection and measurement of the piston		x	
Inspection and measurement of the rings		x	
Inspection and measurement of the pin		x	

Connecting Rod

Maintenance	Keep in 12K	Move to 16K	Remarks
Inspection and measurement of the piston pin bearing		x	
Inspection and measurement of the crank pin bearing		x	
Inspection of the hydraulic tightening of the connecting rod		x	Replacement of the bolts doing the OH

Cylinder Liner

Maintenance	Keep in 12K	Move to 16K	Remarks
Inspection, cleaning and measurement of the inner diameter		x	No observable wear, roughness in the low end.

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Crankshaft

Maintenance	Keep in 12K	Move to 16K	Remarks
Measurement of the outer diameter of the crank pin		x	
Inspection of the journal		x	

Main Bearing

Maintenance	Keep in 12K	Move to 16K	Remarks
Disassembly, inspection of the bearing and measurement		x	
Inspection of the hydraulic tightening of the main bearing bolts		x	
Inspection of the hydraulic tightening of the side bolts		x	

Camshaft

Maintenance	Keep in 12K	Move to 16K	Remarks
Disassembly, inspection of the fuel pump tappet		x	
Disassembly, inspection and measurement of the swing arm		x	

Timing gear

Maintenance	Keep in 12K	Move to 16K	Remarks
Inspection of tooth contact and back lash		x	

Fuel feed pump

Maintenance	Keep in 12K	Move to 16K	Remarks
Inspection of tooth contact and back lash		x	

Lubrication oil pump drive gear

Maintenance	Keep in 12K	Move to 16K	Remarks
Inspection of tooth contact and back lash		x	

b) Speed control device

Governor

Maintenance	Keep in 12K	Move to 16K	Remarks
Disassembly and inspection		x	

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Governor drive unit

Maintenance	Keep in 12K	Move to 16K	Remarks
Disassembly and inspection (tooth contact and bearing)		x	

c) Lubricating oil System

Lubricating oil cooler

Maintenance	Keep in 12K	Move to 16K	Remarks
Disassembly, inspection, cleaning and hydraulic test		x	

Lubricating oil pump

Maintenance	Keep in 12K	Move to 16K	Remarks
Disassembly, inspection and measurement		x	
Disassembly and inspection of the relief valve		x	

Pressure control valve

Maintenance	Keep in 12K	Move to 16K	Remarks
Disassembly, inspection and cleaning		x	

Lubricating oil strainer

Maintenance	Keep in 12K	Move to 16K	Remarks
Inspection of the filter candle	x		

d) Air system

Fuel cut-off air piston

Maintenance	Keep in 12K	Move to 16K	Remarks
Replace the O-ring			

e) Other

Turbo Charger

Maintenance	Keep in 12K	Move to 16K	Remarks
Disassembly and cleaning		x	

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Rotorcaps CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Rotorcaps

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

23 out of 24 in working condition - 96 % Working

Overhaul Scope

- Disassemble
- Clean
- Check wear parts, springs, spring plate and balls
- Function test

Comments

Current run. Hrs of the Rotorcaps is 12537 hours.
96 % of the parts in working conditions (23 out of 24).
Rotorcaps will reach targeted TBO - 16000 Hrs.

Pictures



Worn spring plate

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Rotorcaps CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		



Total condition check

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Piston CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Piston

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

12 out of 12 in working condition - 100 % Working

Overhaul Scope

-Clean
-Calibrated

Comments

Current run. Hrs of the Piston is 12537 hours.
100 % of the parts in working conditions (12 out of 12).
Piston will reach targeted TBO - 16000 Hrs.

Pictures



All pistons calibrated

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Inlet valve guide CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Inlet valve guide

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

17 out of 18 in working condition - 94 % Working

Overhaul Scope

-Clean
-Calibrated

Comments

Current run. Hrs of the Inlet valve guide is 12537 hours.
92 % of the parts in working conditions (17 out of 18).
Inlet valve guide will reach targeted TBO - 16000 Hrs.

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Inlet seat CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Inlet seat

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

18 out of 18 in working condition - 100 % Working

Overhaul Scope

- Clean
- Calibrated

Comments

Current run. Hrs of the Inlet seat is 12537 hours.
100 % of the parts in working conditions (18 out of 18).
Inlet seat will reach targeted TBO - 16000 Hrs.

Pictures



All seats calibrated and sealing surface refaced

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Rocker Arm CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Rocker Arm

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

18 out of 18 in working condition - 100 % Working

Comments

Current run. Hrs of the Rocker Arm is 12537 hours.
100 % of the parts in working conditions (12 out of 12).
Rocker Arm will reach targeted TBO - 16000 Hrs.

Pictures



Cleaned and calibrated, no remarks

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Exhaust Valves CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Exhaust Valves

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

18 out of 18 in working condition - 100 % Working

Overhaul Scope

- Clean
- Calibrated

Comments

Current run. Hrs of the Exhaust Valves is 12537 hours.
100 % of the parts in working conditions (18 out of 18).
Exhaust Valves will reach targeted TBO - 16000 Hrs.

Pictures



Cleaning and calibrations

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Exhaust Valves CONDITION	Order No.700.1572	Workshop
	Yanmar 6EY22L	



Re-grinding sealing surface

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Exhaust seat CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Exhaust seat

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

18 out of 18 in working condition - 100 % Working

Overhaul Scope

- Cleaning
- Calibration
- Refacing

Comments

Current run. Hrs of the Exhaust seat is 12537 hours.
100 % of the parts in working conditions (18 out of 18).
Exhaust seat will reach targeted TBO - 16000 Hrs.

Pictures



Before cleaning

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Exhaust seat CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		



After cleaning and refacing

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Inlet Valves CONDITION	Order No.700.1572	Workshop
	Yanmar 6EY22L	

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Inlet Valves

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

18 out of 18 in working condition - 100 % Working

Overhaul Scope

- Cleaning
- Calibration
- Refacing

Comments

Current run. Hrs of the Inlet Valves is 12537 hours.
100 % of the parts in working conditions (18 out of 18).
Inlet Valves will reach targeted TBO - 16000 Hrs.

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Fuel Injection Pump CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).
Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Fuel Injection Pump

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Cannot reach TBO target (16000 hrs)

12 out of 12 in working condition - 100 % Working

Overhaul Scope

- Disassembled
- Cleaned
- Evaluated, worn parts
- Body, corrosion below left side corrosion plug.
- Body damaged reconditinoed with 2 component plastic metal
- Corrosion plugs modified to change the internal flow, in order to lower the corrosion damaged inside the body.
- Pump re-assembled with new elements and return valve.

Comments

Current run. Hrs of the Fuel Injection Pump is 12537 hours.
100 % of the parts in working conditions (12 out of 12).
Fuel Injection Pump will not be able to reach targeted TBO - 16000 Hrs.
Based on the corrosion found inside the pump,
Wear on the plunger, noted around area for fuel cut.
Design change at the corrosion plugs for limiting the corrosion inside the housing.

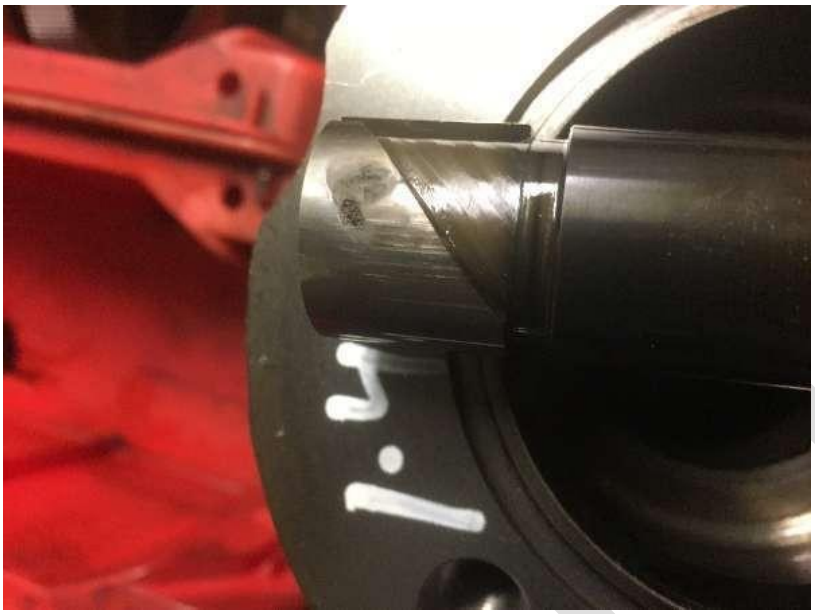
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Fuel Injection Pump CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Pictures





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Cylinder Head CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Cylinder Head

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

9 out of 9 in working condition - 100 % Working

Overhaul Scope

- Disassemble
- Clean
- Check wear parts
- Remove fuel sleeve and pressure test

Comments

Current run. Hrs of the Cylinder Head is 12537 hours.
100 % of the parts in working conditions (9 out of 9).
Cylinder Head will reach targeted TBO - 16000 Hrs.
Fuel sleeve, removed, resealed and pressure tested.

Pictures



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Cylinder Head CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		



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Exhaust valve guide CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Exhaust valve guide

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

18 out of 18 in working condition - 100 % Working

Overhaul Scope

-Clean
-Calibrated

Comments

Current run. Hrs of the Exhaust valve guide is 12537 hours.
100 % of the parts in working conditions (18 out of 18).
Exhaust valve guide will reach targeted TBO - 16000 Hrs.

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Fuel injector CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Fuel injector

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

12 out of 12 in working condition - 100 % Working

Overhaul Scope

- Disassembled
- Cleaned
- Exchanged worn parts
- Re-assembled, Pressure tested and calibration according to Makers recommendation

Comments

Current run. Hrs of the Fuel injector is 12537 hours.
100 % of the parts in working conditions (12 out of 12).
Fuel injector will reach targeted TBO - 16000 Hrs.

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Cylinder Liner CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).

Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Cylinder Liner

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

12 out of 12 in working condition - 100 % Working

Overhaul Scope

- Cleaning
- Calibration incl roughness
- Honing
- Calibration, antipolishing ring

Comments

Current run. Hrs of the Cylinder Liner is 12537 hours.
100 % of the parts in working conditions (12 out of 12).
Cylinder Liner will reach targeted TBO - 16000 Hrs.
Roughness found in the low end, will over time courses higher wear rate on the liner and piston rings.

Pictures



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Connecting Rod CONDITION	Order No.700.1572	Workshop	
	Yanmar 6EY22L		

Engine Data

Running Hour is 12537 Hrs (26/09/2017).
Last major Overhaul at 1 Hrs the 01/09/2015 (12536 hrs ago).

Connecting Rod

TBO target 16000 hrs

Runnning hrs since last major overhaul : 12537 Hrs.

Can reach TBO target (16000 hrs)

12 out of 12 in working condition - 100 % Working

Overhaul Scope

- Cleaning
- Crack test
- Calibration
- Calibration, small end bush
- Crank pin bearings, cleaned and calibrated, No remarks.

Comments

Current run. Hrs of the Connecting Rod is 12537 hours.
100 % of the parts in working conditions (12 out of 12).
Connecting Rod will reach targeted TBO - 16000 Hrs.
Connecting rod bolts, have to be replaced once mounted at the engine.

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