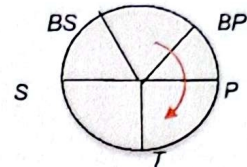
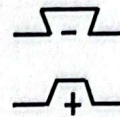
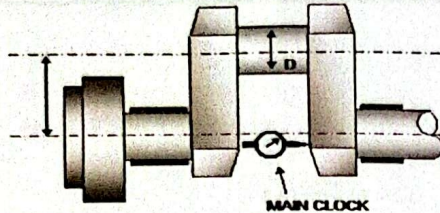


MEASURING RECORD MAIN ENGINE

DEFLECTION

Work	OVERHAULD	Kapal :	KM. KUTAI RAYA II
Engine	HANSHIN		
Type	6 EL 40	Site Work Position :	Pelabuhan Semarang
Rpm	240		
Ps	3300	Nop - Des 2025	1

Stroke : 800 mm

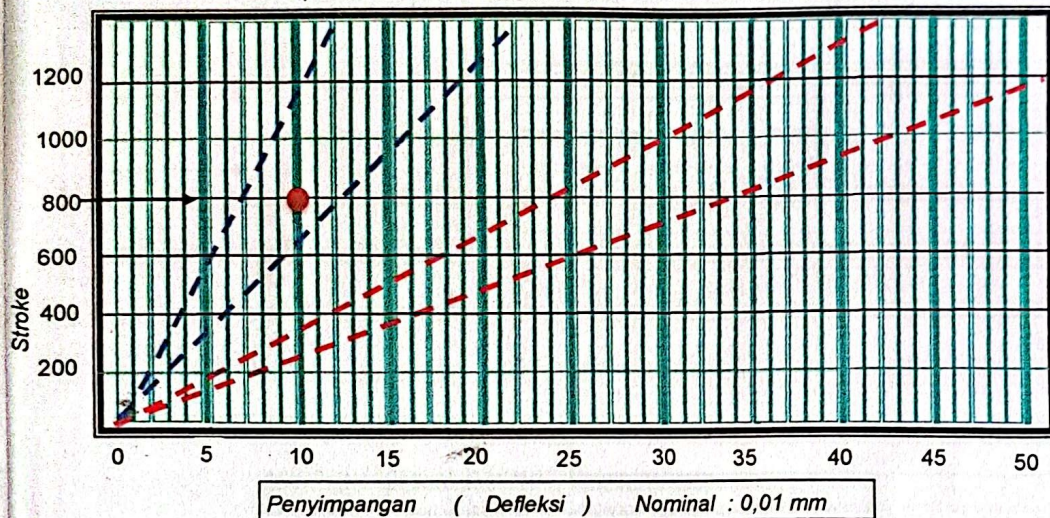


Sempurna

Baik

Di anjurkan Diluruskan

Harus diluruskan



posisi	Cylinder					
	1	2	3	4	5	6
BP	0	0	0	0	0	0
P	+3	+4	+3	+4	+1	+4
T	+5	+7	+5	+10	+6	+10
S	+3	+3	+2	+4	+3	+3
BS	+1	0	0	0	+1/2	+1

Standart : 0 - 0,04

Limit : 0,22

Yang melaporkan
DWI JAYA TENA
SURABAYA

Budi santoso
Mechanik

Mengetahui

Sumarjoko
KKM

Mengetahui
PT. Lintas Samudera Globalindo

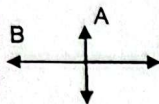
Owner Surveyor

MEASURING RECORD MAIN ENGINE

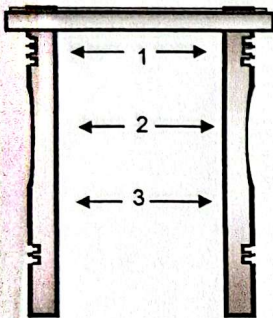
PENGUKURAN LINER, PISTON & PIN PISTON

Work	OVERHAULD	Kapal :	KM. KUTAI RAYA II
Engine	HANSHIN		
Type	6 EL 40	Site Work Position :	Pelabuhan Semarang
Rpm	240		
Ps	3300	Nop - Des 2025	2

A. LINER



A = Depan - belakang
B = Samping (kanan - kiri)



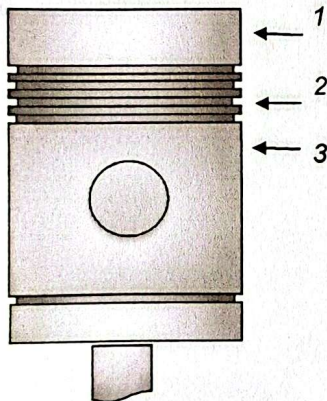
ϕ LINER = 400,00 mm

Wear Limit : Mm

Posisi	Cylander					
	1	2	3	4	5	6
A ¹	+ 19	+ 22	+ 17	+ 27	+ 29	+ 22
A ²	+ 19	+ 19	+ 20	+ 27	+ 29	+30
A ³	+ 21	+ 19	+ 24	+ 25	+ 25	+ 32
B ¹	+ 17	+ 19	+ 19	+ 30	+ 29	+ 28
B ²	+ 17	+ 24	+ 20	+ 18	+ 28	+28
B ³	+ 25	+ 24	+ 20	+ 20	+ 28	+ 27

Pengukuran menggunakan Dial Bore Gauge

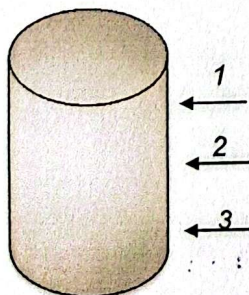
B. PISTON



Posisi	Cylander					
	1	2	3	4	5	6
A ¹	399,45	399,44	399,40	399,46	399,43	399,46
A ²	399,55	399,48	399,50	399,48	399,47	399,48
A ³	399,57	399,56	399,55	399,56	399,50	399,56
B ¹	399,48	399,40	399,43	399,42	399,45	399,42
B ²	399,55	399,48	399,52	399,48	399,50	399,48
B ³	399,57	399,50	399,57	399,50	399,56	399,50

Pengukuran Menggunakan Micrometer Outside.

C. PIN PISTON



ϕ Pin Piston = 195,00 mm

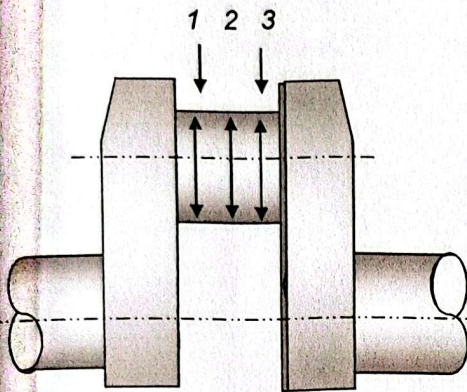
Posisi	Cylander					
	1	2	3	4	5	6
A ¹	195	195	195	195	195	195
A ²	195	195	195	195	195	195
A ³	195	195	195	195	195	195
B ¹	195	195	195	195	195	195
B ²	195	195	195	195	195	195
B ³	195	195	195	195	195	195

MEASURING RECORD MAIN ENGINE
CRANKPIN JURNAL & CONNECTING ROOD

Work	OVERHAULD	Kapal :	KM. KUTAI RAYA II
Engine	HANSHIN		
Type	6 EL 40	Site Work Position :	Pelabuhan Semarang
Rpm	240		
Ps	3300	Nop - Des 2025	3

A. CRANKPIN JURNAL

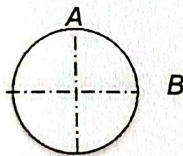
Standart $\varnothing$: 326,00 mm
 $\varnothing$ Crankpin Jurnal : 325,.... mm



Posisi	Cylinder					
	1	2	3	4	5	6
A ¹	85	85	84	85	85	85
A ²	85	85	84	85	85	85
A ³	85	85	85	85	85	85
B ¹	87	87	87	87	87	87
B ²	87	87	87	87	87	87
B ³	87	87	87	87	87	87

Pengukuran menggunakan Micrometer Outside

B. CONNECTING ROOD (Bushing)

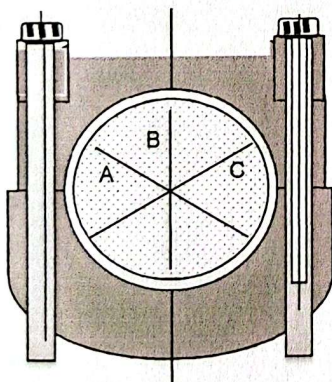


Bushing Pin Piston.
Standart Bushing ; 195,00 mm
 $\varnothing$ Bushing ; 195,.... mm

Posisi	Cylinder					
	1	2	3	4	5	6
A ¹	+23	+23	+23	+23	+23	+23
A ²	+23	+23	+23	+23	+23	+23
A ³	+23	+23	+23	+23	+23	+23
B ¹	+22	+22	+22	+22	+22	+22
B ²	+22	+22	+22	+22	+22	+22
B ³	+22	+22	+22	+22	+22	+22

Pengukuran menggunakan Dial Bore Gauge
(Micrometer Inside)

C. CRANKPIN BEARING



Crankpin Bearing Clarence.
Clarence : 0,18 - 0,27 mm Limit : 0,45 mm

Posisi	Cylinder					
	1	2	3	4	5	6
A ¹	0,24	0,24	0,24	0,24	0,24	0,24
A ²	0,24	0,24	0,24	0,24	0,24	0,24
B ¹	0,27	0,27	0,27	0,27	0,27	0,27
B ²	0,27	0,27	0,27	0,27	0,27	0,27
C ¹	0,25	0,25	0,25	0,25	0,25	0,25
C ²	0,25	0,25	0,25	0,25	0,25	0,25

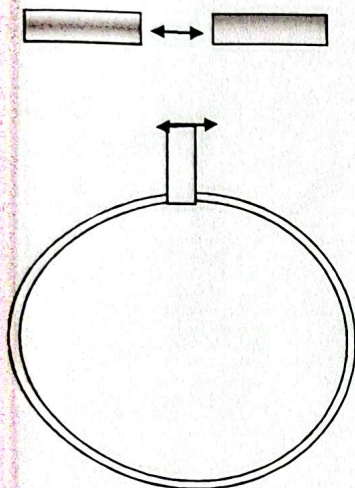
Pengukuran Menggunakan Dial Bore Gauge (Micrometer Inside).

MEASURING RECORD MAIN ENGINE

RING PISTON & MAIN BEARING

Work	OVERHAULD	Kapal :	KM. KUTAI RAYA II
Engine	HANSHIN		
Type	6 EL 40	Site Work Position :	Pelabuhan Semarang
Rpm	240		
Ps	3300	Nop - Des 2025	4

A. RING PISTON

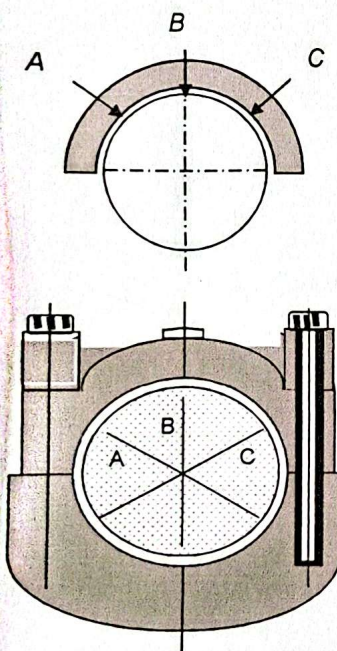


Gap Ring Piston Baru

Posisi	Cylinder					
	1	2	3	4	5	6
Comp	205	185	180	180	180	180
Comp	205	185	180	180	180	180
Comp	200	155	155	155	155	155
Comp	200	155	155	155	155	155
Oilscraw	130	135	145	145	145	145
Oilscraw	130	135	145	145	145	145

Pengambilan Clarence Gap Ring menggunakan Fuller Ring baru NPR (korea)

B. MAIN BEARING CLERENCE



a. Standart Clerence

0,17 - 0,27 mm Limit : 0,45 mm

Clerence main bearing :

samping : 0,25 mm

tengah : 0,28 mm

samping : 0,26 mm

Posisi	Main Bearing						
	1	2	3	4	5	6	7
A	0,25	0,25	0,25	0,25	0,25	0,25	0,25
B	0,28	0,28	0,28	0,28	0,28	0,28	0,28
C	0,26	0,26	0,26	0,26	0,26	0,26	0,26

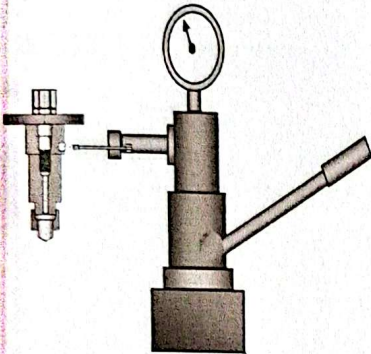
b. Pengambilan menggunakan kawat locis

MEASURING RECORD MAIN ENGINE

RING PISTON & MAIN BEARING

Work	OVERHAULD	Kapal :	KM. KUTAI RAYA II
Engine	HANSHIN		
Type	6 EL 40	Site Work Position :	Pelabuhan Semarang
Rpm	240		
Ps	3300	Nop - Des 2025	5

C. INJEKTOR PUMP



Prestest Injektor

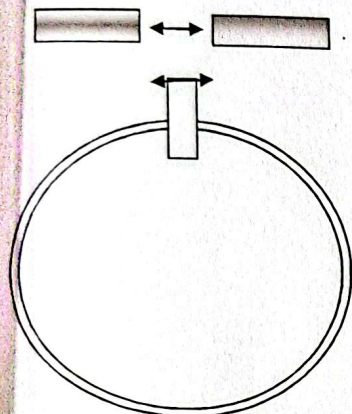
Posisi	Cylinder					
	1	2	3	4	5	6
Before	-	-	-	-	-	-
After	280	280	280	280	280	280

- Tidak ada Penggantian Nozel cyl 1 s/d cyl 6
- Prestest Injektor dengan presure gauge dg Tekanan :
280 kg / cm²

MEASURING RECORD MAIN ENGINE

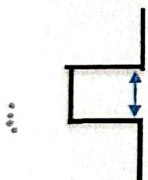
Work	OVERHAULD	Kapal :	KM. KUTAI RAYA II
Engine	HANSHIN		
Type	6 EL 40	Site Work Position :	Pelabuhan Semarang
bm	240		
s	3300	Nop - Des 2025	6

Gap Ring Lama



Posisi	Rata - rata / cyl
Comp	760 mm
Comp	600 mm
Comp	570 mm
Comp	570 mm
Oilscraw	245 mm
Oilscraw	245 mm

Grove ring piston



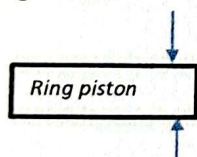
Grove

1. 8,60 mm
2. 8,40 mm
3. 8,40 mm
4. 8,40 mm
5. 8,20 mm
6. 8,20 mm

Kedalaman rumah ring

15,00 mm

Ring Piston



Tebal ring & Lebar ring

8,00 mm + 13,00 mm

LAPORAN PEKERJAAN

MAIN ENGINE

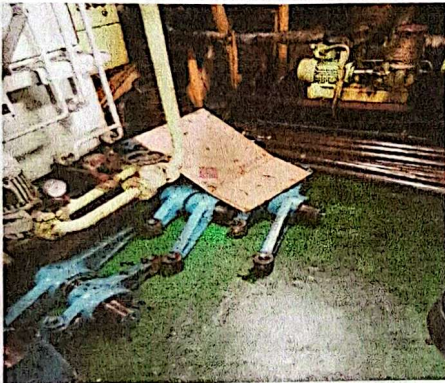
Work	OVERHAULD	Kapal :	KM. KUTAI RAYA II
Engine	HANSHIN		
Type	6 EL 40	Site Work Position :	Pelabuhan Semarang
Rpm	240		
Ps	3300	Nop - Des 2025	1

1 Roker Arm



1. Buka baut pengikat roker arm cyl 1 dan cyl 6
2. Bongkar-pasang pipa-pipa injektor cyl 1 dan cyl 6
3. Bongkar-pasang pipa pendingin injektor, pipa pelumasan - noken arm cyl 1 dan cyl 6
4. Bongkar pasang Roken arm cyl 1 dan cyl 6
5. Cabut pondasi noken arm, cabut Poshrood cyl 1 s/d cyl 6
6. Pipa pendingin cyl head 1 s/d cyl 6
7. Pipa pembuangan cyl1 s/d cyl 6

2



- a. cabut poshrood cyl 1 s/d cyl 6

3

Cyl head



Proses Pengangkatan cyl head :

- a. Buka baut manifold buang & Isap cyl 1 s/d cyl 6
- b. Buka baut pipa starting valve cyl 1 s/d 6
- c. Buka baut pipa angin stanby cyl 1 s/d 6
- d. Buka baut pengikat cyl head cyl 1 s/d 6
- d. Cabut cyl head cyl 1 s/d cyl 6, Cleaning dan diadakan Penyekiran Valve isap (6 pcs).
- e. Cleaning cyl head 1 s/d 6

4



LAPORAN PEKERJAAN

Work	OVERHAULD	Kapal : KM. KUTAI RAYA II
Engine	HANSHIN	
Type	6 EL 40	Site Work Position : Pelabuhan Semarang
Rpm	240	
Ps	3300	
		2

5 Housing Valve Inlet + Exhouse



- a. Valve Ex di lepas, di cleaning
- b. Cek kondisi Valve , setting dan Bushing kondisi baik
- c. Lepas Ring Valve di cleaning
- c. Diadakan Penyekiran:
 1. Setting dengan Housing (kedudukannya) cyl 1 s/d - cyl 6
 2. Valve dengan setting cyl 1 s/d cyl 6



Proses pelepasan / perakitan valve inlet atau exhouse
12 set (valve inlet dan valve exhouse)



1. Proses Penyekiran Valve Exshos cyl 1 s/d 6
2. penyekiran valve intake cyl 1 s/d cyl 6



- a. setelah penyekiran set kembali
- b. Housing valve Inlet dan Exhouse di cat ulang

LAPORAN PEKERJAAN

MAIN ENGINE

Work	OVERHAULD	Kapal :	KM. KUTAI RAYA II
Engine	HANSHIN		
Type	6 EL 40	Site Work Position :	Pelabuhan Semarang
Rpm	240		
Ps	3300	Nop - Des 2025	3

9

Piston



Proses pencabutan piston :

1. Lepas baut pengikat crankpin bearing cyl 1 s/d cyl 6
2. Cabut piston cyl 1 s/d 6
3. Lepas ring piston cyl 1 s/d cyl 6
4. Cleaning piston, grove dan diadakan pengukuran.



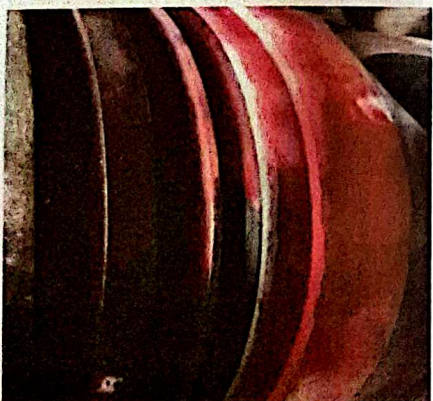
- a. Piston di pindahkan k e lantai belakang untuk proses pelepasan piston sama conrood cyl 1 s/d cyl 6
- b. cek kondisi bushpin piston & conrood
- c. Repair di bengkel Mahkota surabaya

11



- a. Penggantian sabuk piston skirt baru 6 cyl (6 pcs) di bengkel Mahkota surabaya (bahan brons)
- b. Piston skirt sama piston crown di lepas

12



Penggantian sabuk piston skirt di colour cek tes Keretakan

LAPORAN PEKERJAAN

MAIN ENGINE

Work	OVERHAULD	Kapal :	KM. KUTAI RAYA II
Engine	HANSHIN		
Type	6 EL 40	Site Work Position :	Pelabuhan Semarang
Rpm	240		
Ps	3300	Nop - Des 2025	4

Piston Crown

13



Proses pelepasan atau perakitan piston crown dan skirt

14



Pengukuran groove (rumah ring piston)

15



- setelah pemasangan piston crown - piston skirt
- diadakan pengambilan clarence antara piston crown & piston skirt menggunakan fuller.
- Clarence antara : 0,25 - 0,30 mm

16

Oring Crown



Penggantian oring Piston crown baru (dr jakarta)
terpasang di cyl 1 dan 2
Jenis Oring (viton)

LAPORAN PEKERJAAN

MAIN ENGINE

Work	OVERHAULD	Kapal : KM. KUTAI RAYA II	
Engine	HANSHIN		
Type	6 EL 40	Site Work Position : Pelabuhan Semarang	
Rpm	240		
Ps	3300	Nop - Des 2025	5

17

Oring crown



- Oring baru Crown (viton) dr surabaya 4 pcs terpasang di cyl no 3,4,5,6
- Ring piston NPR dr surabaya terpasang di cyl 1

18

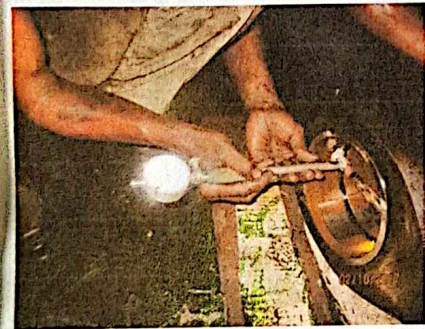
Pin Piston



- Pengukuran ϕ Pin piston
- Menggunakan micrometer outside

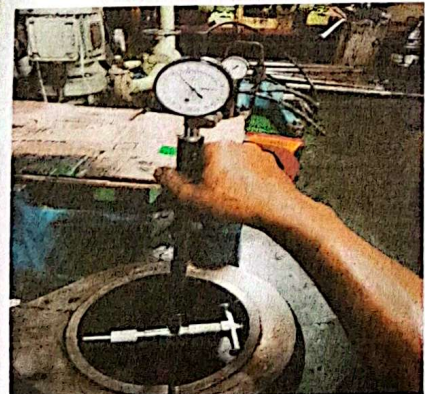
19

Conecting rood



- Proses Pengukuran ϕ Bushing pin piston
- Menggunakan dial bore gauge(micrometer inside)
- kondisi baik

20



- Proses Pengambilan clarence :
- Pengukuran ϕ Crankpin Bearing lama:
 - Menggunakan Dial Bore Gauge
 - kondisi bagus pasang kembali

LAPORAN PEKERJAAN

MAIN ENGINE

Work	OVERHAULD	Kapal :	KM KUTAI RAYA II
Engine	HANSHIN		
Type	6 EL 40	Site Work Position :	Pelabuhan Semarang
Rpm	240		
Ps	3300	Nop - Des 2025	6

21



- a. Ring Piston lama
- b. kondisi gap sudah besar : 7.60 mm
- c. di adakan penggantian ring piston baru

22



- a. Ring piston baru NPR 4 set (jakarta)
peamasangan di cyl 3,4,5,6
- b. Ring piston baru NPR 2 set (surabaya)
Pemasangan di cyl 1
- c. Ring piston baru spert Kapal 1 set (3 pcs)
pemasangan di cyl 2,
ring oli screver dr spert-part surabaya

23



Pemasangan Ring piston baru 6 cyl
Cyl 1 s/d cyl 6

24

Liner



Pengambilan data ukur $\varnothing$ liner dr cyl 1 s/d cyl 6

LAPORAN PEKERJAAN

MAIN ENGINE

Work	OVERHAULD	Kapal : KM.KUTAI RAYA II	
Engine	HANSHIN		
Type	6 EL 40	Site Work Position : Pelabuhan Semarang	
Rpm	240		
Ps	3300	Nop - Des 2025	7

PEMASANGAN

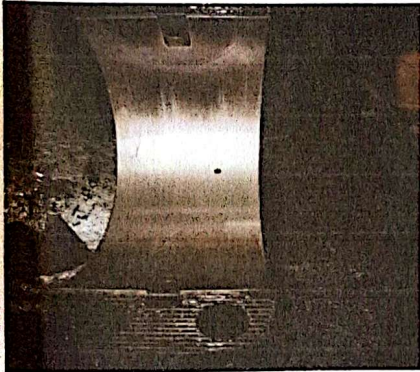
25

Pengukuran Crankpin Jurnal



- Pengambilan data / pengukuran ϕ Crankpin jurnal
- Menggunakan micrometer out side

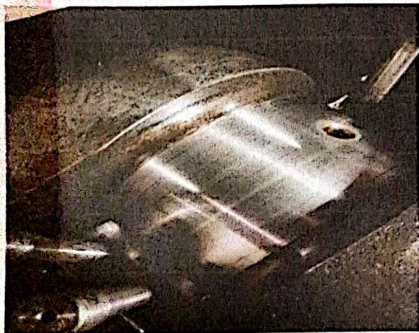
26



Kondisi crankpin bearing lama (metal jalan) pasang kembali

27

Main jurnal



Kondisi main jurnal
Diadakan pengambilan data clarence

28



- Main Bearing
- Pengambilan data menggunakan kawat locis (lodrat)
 - hasil locis : samping 0,25 mm
tengah 0,28 mm
samping 0,26 mm
 - metal lama pasang kembali

LAPORAN PEKERJAAN

MAIN ENGINE

Work	OVERHAULD	Kapal : KM. KUTAI RAYA II	
Engine	HANSHIN		
Type	6 EL 40	Site Work Position : Pelabuhan Semarang	
Rpm	240		
Ps	3300	Nop - Des 2025	8



Gap Ring Piston

Pengikatan nut conencting rood menggunakan kunci moment dengan ikatan 700 kg/cm



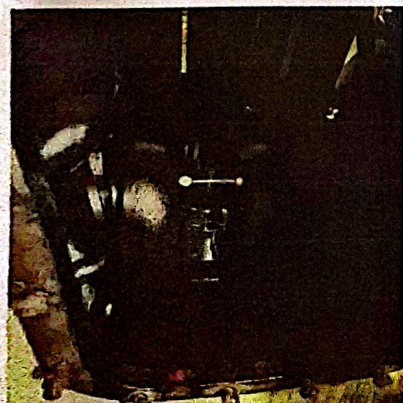
Injektor

Pengambilan data Gap ring piston lama
Gap ring piston lama : terutama compresi 7,60 mm



Deflection

Prest- test Injektor lama dg tekanan 280 kg/cm



Pengambilan data defleksi

PENGADAAN SPERT - PART

MAIN ENGINE

Work	OVERHAULD	Kapal :	KM. KUTAI RAYA II
Engine	HANSHIN		
Type	6 EL 40	Site Work Position :	Pelabuhan Semarang
Rpm	240		
Ps	3300	Nop - Des 2025	9

1	Ring piston (NPR) dr jakarta	4 set	Cyl no 3 s/d cyl no 6
2	Ring piston (NPR) dr surabaya	2 set	Cyl no 1 s/d cyl no 2
3			
4	Oring Crown	6 pcs	Cyl no 1 s/d cyl no 6
5	Oring Pendingin Cyl head	24 pcs	Cyl no 1 s/d cyl no 6
6	Ring tembaga Cyl head	6 pcs	Cyl no 1 s/d cyl no 6
7	Ring tembaga Valve Exshos + inlet	12 pcs	Cyl no 1 s/d cyl no 6
8	Packing manifold exhaus	6 pcs	Cyl no 1 s/d cyl no 6
9	Packing manifold isap	6 pcs	Cyl no 1 s/d cyl no 6
10	Ring tembaga injektor	6 pcs	Cyl no 1 s/d cyl no 6
11	Ring tembaga Indikator	6 pcs	Cyl no 1 s/d cyl no 6
12	Ring tembaga starting valve	6 pcs	Cyl no 1 s/d cyl no 6
13	Ring tembaga pipa angin stanby	24 pcs	Cyl no 1 s/d cyl no 6
14	Ring tembaga Nepel injektor	24 pcs	Cyl no 1 s/d cyl no 6
15	Ring tembaga nepel starting valve	12 pcs	Cyl no 1 s/d cyl no 6
16	Sypen	24 pcs	Cyl no 1 s/d cyl no 6
17	Kalibrasi Governour	1 unit	
18	Penggantian sabuk Piston skirt	6 set	Cyl no 1 s/d cyl no 6
19	Penggantian karet penutup pipa poshrood bawah	12 pcs	

Yang Melaporkan

DWI JAYA TEKNIK
SURABAYA

Budi santoso
Mechanik

Mengetahui

Sumarijoko
K.K.M

Mengetahui

PT. Lintas Samudra Globalindo

Owner Surveyor