

S H O P T E S T R E P O R T

MAN B&W DIESEL, Alpha Diesel

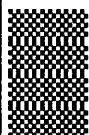
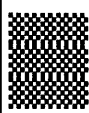

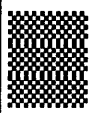
PLANT INFO	S-no: 5127 Customer: Åge Nicolajsen Yard :	Engine no:	18007
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ENGINE INFO	TEST INFO
Type : 8L23/30A	Test date : 94.10.27
MCR power : 890 kW	Test stand no. : 2
at : 810 rpm	Tested by : Ib Kingo Thomsen
Direct. of rotation: CLOCKWISE	Fuel type : MDO
Camshaft pos. A: 0,00	Lower cal. value: 42,78 MJ/kg
B:	Lub. oil type : BP DS3-153
Idle speed : 500 rpm	Built-on pumps : FW <input checked="" type="checkbox"/>
	SW <input checked="" type="checkbox"/>
	Bilge <input type="checkbox"/>
	Fuel <input checked="" type="checkbox"/>
	L.O. <input checked="" type="checkbox"/>
	Other <input type="checkbox"/>
GEAR INFO	Waterbrake : L 7
Type : 44KV13	
No. : 4278	
TURBOCHARGER INFO	GOVERNOR INFO
Make - : M.A.N.-B&W	Make: : Woodward
Type : NR 20/R182 *	Type: : UG 8 L
Serial no. A-bank: 1181550	Serial no. : 2608617
B-bank:	Compensation : 5
Max. speed : 44000 rpm	Overspeed adj. : 1035 rpm
Max. temperature : 650 °C	

REMARKS:	
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* TURBOCHARGER DIFFUSER A4K = 49,9 cm² PART NO. D 11,54200-0690

Approved by:	<i>S. Johansson</i>
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Test date:94.10.27	S H O P T E S T R E P O R T							Engine no:	18007		
Test no: 1	MAN B&W DIESEL, Alpha Diesel							Engine type:	8L23/30A		
Tested by:Ib Kingo Thomsen											
Load, Power, Fuel					Turbocharger			A		B	
Load:	%	100,0		Turbine, RPM:	RPM						
Engine speed:	RPM	810		Turbine Exh.temp.outlet:	°C	320					
Propeller speed:	RPM	186		Temp. after compressor:	°C	127					
Power engine:	kW	890		Ch. air cooler loss:	mmWc	130					
Power Gear flange:	kW	849		Exhaust back press.:	mmWc	126					
Mean press:	bar	13,8		Ch.air.temp.after cooler:	°C	32					
Fuel consump:	g/kWh	203,7		Ch.air pressure:	bar	1,20					
Fuel index (avrg.)	mm	21,5		Cooling system LT, HT							
Exhaust temp.(avrg.)	°C	308									
Lub. oil				LT.cooling water press.:	bar	2,40					
Press. after filter:	bar	4,1		LT. Inlet air cooler:	°C	25					
Temp., inlet:	°C	52		LT. Outlet air cooler:	°C	28					
Temp., outlet:	°C	65		LT. Outlet, F.W. cooler:	°C	38					
Instrument panel				HT. cooling water press.:	bar	1,90					
				HT. cooling water inlet:	°C	74					
				HT. cooling water outlet:	°C	78					
Lub.oil pres.bef.filter:	bar	4,7		Crankcase pressure:		mmWc	11				
Lub.oil pres.aft.filter:	bar	4,1									
Fuel oil press.:	bar	2,0		Ambient							
Ch. air press.:	bar	1,24									
Ch. air temp aft.cooler:	°C										
LT.cooling water press.:	bar	2,40		Fuel oil temp.:	°C	15					
HT.cooling water press.:	bar	1,90		Air inlet temp:	°C	26					
				Barometric pressure:	mbar	998					
	Cyl. no.	1	2	3	4	5	6	7	8	9	
Fuel pump - Index [mm]	A-bank B-bank	21,5	21,5	21,5	21,5	21,5	21,5	21,5	21,5		
Max. press. [bar]	A-bank B-bank	104	102	105	104	105	103	103	103		
Comp. press. [bar]	A-bank B-bank	79	79	79	80	79	80	78	79		
Exhaust temp. [°C]											
(Dial) (NiCr-Ni)	A-bank A-bank	310	320	300	300	300	310	315	310		
(Dial) (NiCr-Ni)	B-bank B-bank										

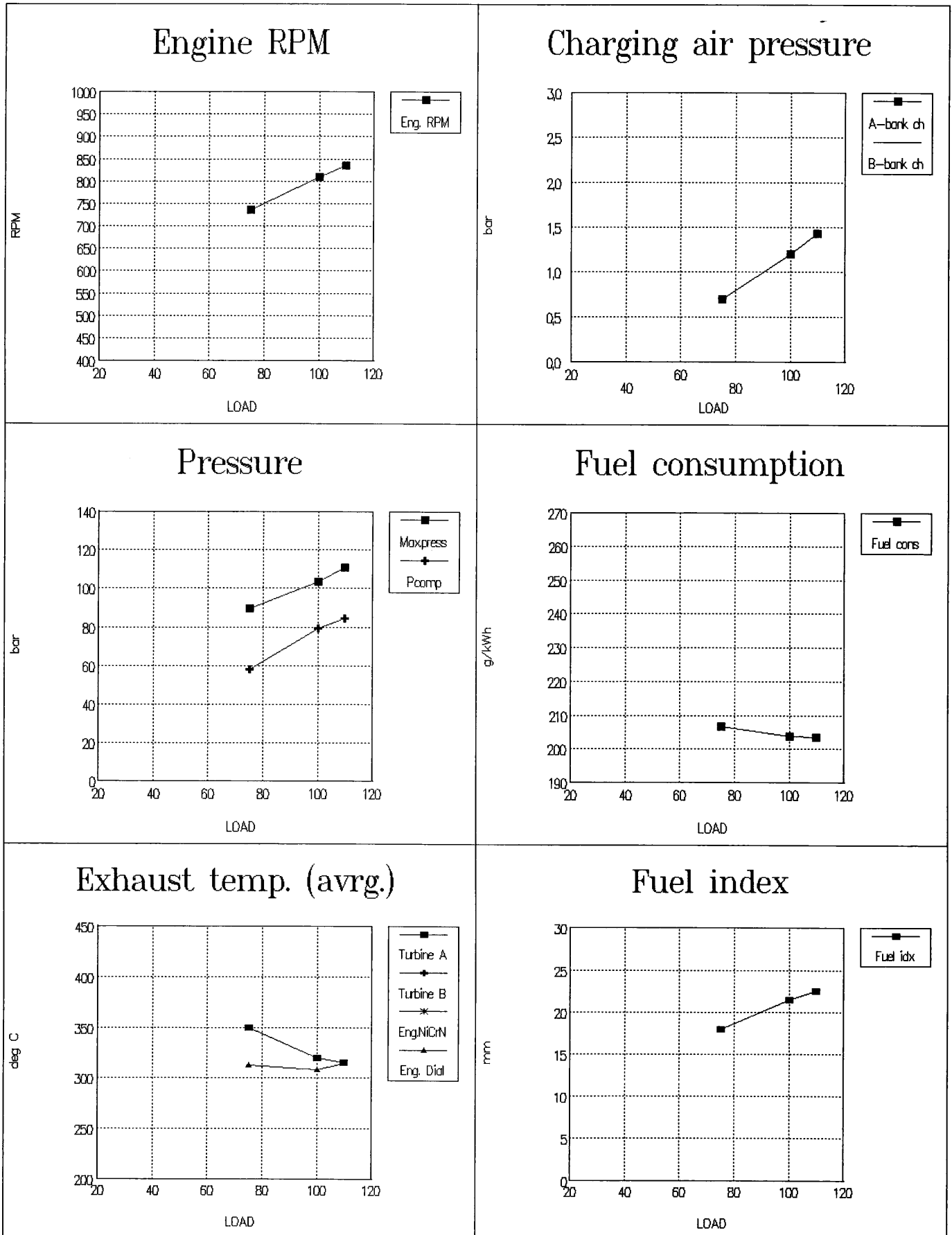
Test date:94.10.27		S H O P T E S T R E P O R T					Engine no: 18007			
Test no: 2		MAN B&W DIESEL, Alpha Diesel					Engine type: 8L23/30A			
Tested by: Ib Kingo Thomsen										
Load, Power, Fuel				Turbocharger					A	B
Load:	%	110,0	Turbine, RPM:		RPM					
Engine speed:	RPM	835	Turbine Exh.temp.outlet:		°C	315				
Propeller speed:	RPM	192	Temp. after compressor:		°C	138				
Power engine:	kW	979	Ch. air cooler loss:		mmWc	145				
Power Gear flange:	kW	936	Exhaust back press.:		mmWc	165				
Mean press:	bar	14,8	Ch.air.temp.after cooler:		°C	33				
Fuel consump:	g/kWh	203,6	Ch.air pressure:		bar	1,43				
Fuel index (avrg.)	mm	22,5	Cooling system LT, HT							
Exhaust temp.(avrg.)	°C	314	LT.cooling water press.:		bar	2,55				
Lub. oil			LT. Inlet air cooler:		°C	24				
Press. after filter:	bar	4,1	LT. Outlet air cooler:		°C	28				
Temp., inlet:	°C	52	LT. Outlet, F.W. cooler:		°C	38				
Temp., outlet:	°C	66	HT. cooling water press.:		bar	2,00				
Instrument panel			HT. cooling water inlet:		°C	74				
Lub.oil pres.bef.filter:	bar	4,7	HT. cooling water outlet:		°C	78				
Lub.oil pres.aft.filter:	bar	4,1	Crankcase pressure:		mmWc	11				
Fuel oil press.:	bar	2,0	Ambient							
Ch. air press.:	bar	1,47	Fuel oil temp.:		°C	15				
Ch. air temp aft.cooler:	°C		Air inlet temp:		°C	24				
LT.cooling water press.:	bar	2,55	Barometric pressure:		mbar	998				
HT.cooling water press.:	bar	2,00								
	Cyl. no.	1	2	3	4	5	6	7	8	9
Fuel pump - Index [mm]	A-bank B-bank	22,5 22,5	22,5 22,5	22,5 22,5	22,5 22,5	22,5 22,5	22,5 22,5	22,5 22,5	22,5 22,5	
Max. press. [bar]	A-bank B-bank	110 110	110 110	110 110	111 111	111 111	111 111	111 111	111 111	
Comp. press. [bar]	A-bank B-bank	85 84	84 84	84 85	85 85	84 84	84 84	84 84	84 84	
Exhaust temp. [°C]										
(Dial) (NiCr-Ni)	A-bank A-bank	320 320	330 330	300 300	305 305	310 310	315 315	320 320	315 315	
(Dial) (NiCr-Ni)	B-bank B-bank									

Test date:94.10.27	S H O P T E S T R E P O R T								Engine no:	18007		
Test no: 3	MAN B&W DIESEL, Alpha Diesel								Engine type:	8L23/30A		
Tested by:Ib Kingo Thomsen												
Load, Power, Fuel					Turbocharger						A	B
Load:	%	75,0	Turbine, RPM:			RPM						
Engine speed:	RPM	735	Turbine Exh.temp.outlet:			°C	350					
Propeller speed:	RPM	170	Temp. after compressor:			°C	95					
Power engine:	kW	668	Ch. air cooler loss:			mmWc	95					
Power Gear flange:	kW	632	Exhaust back press.:			mmWc	65					
Mean press:	bar	11,4	Ch.air.temp.after cooler:			°C	30					
Fuel consump:	g/kWh	206,7	Ch.air pressure:			bar	0,70					
Fuel index (avrg.)	mm	18,0	Cooling system LT, HT									
Exhaust temp.(avrg.)	°C	313										
Lub. oil			LT.cooling water press.:		bar	1,90						
Press. after filter:			bar	4,0	LT. Inlet air cooler:		°C	24				
Temp., inlet:			°C	54	LT. Outlet air cooler:		°C	28				
Temp., outlet:			°C	65	LT. Outlet, F.W. cooler:		°C	36				
Instrument panel			HT. cooling water press.:		bar	1,60						
Lub.oil pres.bef.filter:			bar	4,6	HT. cooling water inlet:		°C	73				
Lub.oil pres.aft.filter:			bar	4,0	HT. cooling water outlet:		°C	79				
Fuel oil press.:			bar	2,0	Crankcase pressure:		mmWc	10				
Ch. air press.:			bar	0,74	Ambient							
Ch. air temp aft.cooler:			°C		Fuel oil temp.:		°C	15				
LT.cooling water press.:			bar	1,90	Air inlet temp:		°C	24				
HT.cooling water press.:			bar	1,60	Barometric pressure:		mbar	998				
	Cyl. no.	1	2	3	4	5	6	7	8	9		
Fuel pump - Index [mm]	A-bank B-bank	18,0 18,0	18,0 18,0	18,0 18,0	18,0 18,0	18,0 18,0	18,0 18,0	18,0 18,0	18,0 18,0			
Max. press. [bar]	A-bank B-bank	90 90	88 88	89 89	90 90	90 90	90 90	90 90	89 89			
Comp. press. [bar]	A-bank B-bank	58 58	58 58	58 58	59 59	58 58	58 58	58 58	58 58			
Exhaust temp. [°C]												
(Dial) (NiCr-Ni)	A-bank A-bank	310 310	320 320	315 315	300 300	310 310	315 315	320 320	310 310			
(Dial) (NiCr-Ni)	B-bank B-bank											

Internal

Test date:94.10.27	S H O P T E S T R E P O R T								Engine no:	18007		
Test no: 4	MAN B&W DIESEL, Alpha Diesel								Engine type:	-		
Tested by: Ib KIngo Thomsen												
Load, Power, Fuel					Turbocharger						A	B
Load:	%	100,0	Turbine, RPM:			RPM						
Engine speed:	RPM	900	Turbine Exh.temp.outlet:			°C	310					
Propeller speed:	RPM	207	Temp. after compressor:			°C	177					
Power engine:	kW	1280	Ch. air cooler loss:			mmWc	185					
Power Gear flange:	kW	1232	Exhaust back press.:			mmWc	270					
Mean press:	bar	17,9	Ch.air.temp.after cooler:			°C	36					
Fuel consump:	g/kWh	204,7	Ch.air pressure:			bar	2,11					
Fuel index (avrg.)	mm	26,5	Cooling system LT, HT									
Exhaust temp.(avrg.)	°C	360	LT.cooling water press.:			bar	3,0					
Lub. oil			LT. Inlet air cooler:			°C	24					
Press. after filter:	bar	4,0	LT. Outlet air cooler:			°C	30					
Temp., inlet:	°C	57	LT. Outlet, F.W. cooler:			°C	42					
Temp., outlet:	°C	67	HT. cooling water press.:			bar	2,3					
Instrument panel			HT. cooling water inlet:			°C	74					
Lub.oil pres.bef.filter:	bar	4,6	HT. cooling water outlet:			°C	80					
Lub.oil pres.aft.filter:	bar	4,0	Crankcase pressure:			mmWc	15					
Fuel oil press.:	bar	2,0	Ambient									
Ch. air press.:	bar	2,14	Fuel oil temp.:			°C	15					
Ch. air temp aft.cooler:	°C		Air inlet temp:			°C	24					
LT.cooling water press.:	bar	3,0	Barometric pressure:			mbar	998					
HT.cooling water press.:	bar	2,3										
	Cyl. no.	1	2	3	4	5	6	7	8	9		
Fuel pump - Index [mm]	A-bank B-bank	26,5	26,5	26,5	26,5	26,5	26,5	26,5	26,5			
Max. press. [bar]	A-bank B-bank	136	135	135	136	137	136	136	137			
Comp. press. [bar]	A-bank B-bank	111	110	110	111	110	110	110	113			
Exhaust temp. [°C]												
(Dial) (NiCr-Ni)	A-bank A-bank	380	385	340	345	345	350	375	360			
(Dial) (NiCr-Ni)	B-bank B-bank											

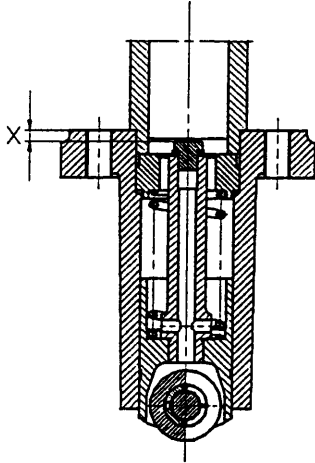
PERFORMANCE DIAGRAM ENGINE NO: 18007



Alpha Diesel

Emne Subject	ADJUSTING OF MAX. COMBUSTION PRESSURE; 23/30 and 23/30A	Nr. No.	2020715-5
	Product no.: _____	VKS no.:	<u>114939</u>
		Side Page	1 of 1 sider pages

Engine no.: 18007 Type: 8L23/30A S.no.: 5127



X-measure: 5.5 mm +/- 1 mm.

By altering the measure "X" 0.1 mm the maximum pressure is altered abt. 1 bar.

By turning the camshaft gearwheel 1 mark the maximum pressure is altered abt. 3 bar.

On the test bed the X-measure is adjusted as mentioned on the table below.

L23/30 and L23/30A - camshaft position

: 0

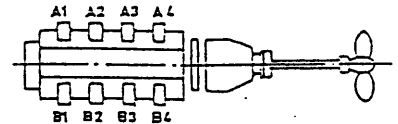


Cylinder no.	1	2	3	4	5	6	7	8	9
X-measure (mm)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.2	

V23/30 and V23/30A - camshaft position

A: _____

B: _____



A	A1	A2	A3	A4	A5	A6
X-measure (mm)						
B-bank	B1	B2	B3	B4	B5	B6
X-measure (mm)						

Udstedt den Issue day	900903	I kraft den Effect day	931217	Dette skema er udfyldt den This sheet is completed	94.10.26.
Udstedt af Issued by	<u>MAD</u> MAP/KONAM	Udgave Version	002	Dette skema er udfyldt af This sheet is completed by	<u>[Signature]</u>



Alpha Diesel

Emne Subject	CRANKSHAFT CONTROL FOR 23/30 AND 28/32A	Nr. No.	2020713-1
Product no.:	VKS no.:	Side Page	af of
		1	1
			sider pages

Engine no.: 18007

Type: 8L23/30A S.no.: 5127

Measurement in 1/100 mm
+ indicates increase of distance between webs
- indicates decrease of distance between webs

Condition measured before: <i>Test</i>		Engine temp. <i>17</i> °C								
Crank no.		1	2	3	4	5	6	7	8	9
Position	Bottom	0	0	0	0	0	0	0	0	0
	Port	±1/2	+1/2	+1	+1/2	0	±1/2	+1/2	±1/2	±1/2
	Top	±1/4	0	+2	+1	±3/4	±3/4	+1/2	±1	±1/4
	Starb.	±1/2	+1/2	+1/2	+3/4	±1/4	0	+1/2	±1/4	±1/4
	Bottom	±1/4	+1/4	0	+1/4	0	0	0	0	0
Sum										
Difference										

Condition measured after:		Engine temp. °C								
Crank no.		1	2	3	4	5	6	7	8	9
Position	Bottom									
	Port									
	Top									
	Starb.									
	Bottom									
Sum										
Difference										

Distance between points of measurement on the webs:

L23/30 : 104 mm
 V23/30 : 144 mm
 L28/32A : 120 mm
 V28/32A : 184 mm

Condition measured before: *Test*

Condition measured after:

Note: Above values refer to standard plants
 Deviations may occur, depending on type
 of gearbox and coupling.

Udstedt den Issued day	900531	I kraft den Effect day	930708
Udstedt af Issued by	<i>MAP</i> MAP/KONAM	Udgave Version	002
Dette skema er udfyldt den This sheet is completed		94.10.14	
Dette skema er udfyldt af This sheet is completed by		<i>A. Johansen</i>	

Alpha Diesel

Emne Subject	RECORDING OF GEAR TRIAL	Nr. No.	2020720-2
	Product no.: _____	Side Page	1 af 1 sider of pages

Prove nr. 4

Gear no. 4278 Gear type 44KV13 S.no. 5127

Lub. oil temperature (gr.C) 48

	Clutch shaft		Servo	Servo	Clutch	Clutch	Lub. oil	Lub. oil
	Rev. (rpm)	Power (kW)	Nom. (bar)	Manoe (bar)	Nom. (bar)	Manoeuv (bar)	Nom. (bar)	Manoeuv (bar)
1								
2								
3								
4	<u>900</u>	<u>1280</u>	<u>28</u>	<u>43</u>	<u>23</u>	<u>31</u>	<u>25</u>	<u>15</u>

RECORDING OF BEARING TEMPERATURE

	Access shaft		Intermediate shaft				Output shaft		
	FOR	AFT	STB		BB		FOR	AFT	Thrust bear.
			FOR	AFT	FOR	AFT			
1									
2									
3									
4									

THEORETIC PITCH CONTROL ROD STROKE

According to plant-information	NEUTRAL - AHEAD (mm)	NEUTRAL - ASTERN (mm)	ASTERN - AHEAD (mm)
--------------------------------	-------------------------	--------------------------	------------------------

Pitch control rod stroke is the distance between thrust shaft flange and pitch control rod flange. In astern-position the pitch control rod flange is aligned with the output shaft flange.

RECORDING OF PITCH CONTROL ROD STROKE

	AHEAD (mm)	NEUTRAL (mm)	ASTERN (mm)
Manual control A-measure:		0	
Remote control A-measure:		0	

Final adjusting and recording of servo, clutch, lub. oil pressure and pitch control after final sea trial.

Gear loaded 100% yes/~~no~~

Effect according to contract 890 kW, at 810 rpm (access shaft)

Class-marking UK1955E 211029

Udstedt den Issue day	921103	I kraft den Effect day	921103	Udgave Version	001	Udfyldt den Completed	94.10.29
Udarbejdet af Completed by	KONA/KVAL	Godkendt af Approved by	SMJ	Udfyldt af Completed by			

Alpha Diesel

Emne Subject RECORDING OF GEAR TRIAL	Nr. No. 2020720-2
Product no.: _____	Side Page 1 - af of 1 sider pages

Gear no. 4278 Gear type 44KV13 S.no. 5127

Lub. oil temperature (gr.C) 48

	Clutch shaft Rev. (rpm)	Power (kW)	Servo Nom. (bar)	Servo Manoe (bar)	Clutch Nom. (bar)	Clutch Manoeuv (bar)	Lub. oil Nom. (bar)	Lub. oil Manoeuv (bar)
1	810	890	28	41	23	29	2.5	1.7
2	835	979	28	41	23	29	2.5	1.7
3	735	668	27	39	22	27	2.9	1.5
4								

RECORDING OF BEARING TEMPERATURE

	Access shaft		Intermediate shaft				Output shaft		
	FOR	AFT	STB		BB		FOR	AFT	Thrust bear.
			FOR	AFT	FOR	AFT			
1									
2									
3									
4									

THEORETIC PITCH CONTROL ROD STROKE

According to plant-information	NEUTRAL - AHEAD (mm)	NEUTRAL - ASTERN (mm)	ASTERN - AHEAD (mm)
--------------------------------	-------------------------	--------------------------	------------------------

Pitch control rod stroke is the distance between thrust shaft flange and pitch control rod flange. In astern-position the pitch control rod flange is aligned with the output shaft flange.

RECORDING OF PITCH CONTROL ROD STROKE

A 	AHEAD (mm)	NEUTRAL (mm)	ASTERN (mm)
Manual control A-measure:		0	
Remote control A-measure:		0	

Final adjusting and recording of servo, clutch, lub. oil pressure and pitch control after final sea trial.

Gear loaded 100% yes/~~no~~
 Effect according to contract 890 kW, at 810 rpm (access shaft)
 Class-marking UK195set 21109.

Udstedt den Issue day 921103	I kraft den Effect day 921103	Udgave Version 001	Udfyldt den Completed 94.10.27
Udarbejdet af Completed by KONA/KVAL	Godkendt af Approved by SMJ	Udfyldt af Completed by	