

Technical Data D5A TA

Rating 2, rated speed 2300 rpm

General

In-line four stroke diesel engine with direct injection.

Number of cylinders		4
No of valves		2
Displacement, total	litres in ³	4,76 290,7
Firing order		1-3-4-2
Rotational direction, viewed towards flywheel		Anti-clockwise
Bore	mm in	108 4,25
Stroke	mm in	130 5,12
Compression ratio		17,6
Compression pressure at 240 rpm	MPa	
Maximum forward inclination:	°	
Max. intermittent backward tilt while running:	°	
Max. intermittent side tilt while running:	°	
Idling speed	rpm	775 ± 25
Rated speed	rpm	2300
Propeller selection range	rpm	2275-2325

Performance	Rating	r/min	1000	1200	1500	1800	1900	2100	2300			
Crankshaft power 1), 5)	2	kW	47	63	91	100	103	110	118			
		hp	64	86	124	136	140	149,6	160,5			
Propellershaft power 1) (At full load)	2	kW	46	61	88	97	100	107	114			
		hp	62	83	120	132	136	145	156			
Propellershaft power at prop.load x ^{2,5}	2	kW	14	22	39	62	71	91	114			
		hp	19	30	53	84	96	123	155			
Propellershaft power at prop.load x ³	2	kW	9	16	32	55	64	87	114			
		hp	12	22	44	75	87	118	155			
Torque at crankshaft 2)	2	Nm	448,8	501,3	579,3	530,5	517,7	500,2	489,9			
		lbf ft	331	370	427	391	382	369	361			
Mean piston speed		m/s	4,3	5,2	6,5	7,8	8,2	9,1	10,0			
		ft/s	14,2	17,1	21,3	25,6	27,0	29,9	32,7			
Effective mean pressure 2)	2	MPa	1,18	1,32	1,53	1,40	1,37	1,32	1,29			
		psi	171,7	191,8	221,7	203,0	198,1	191,4	187,4			
Max combustion pressure 2)	2	MPa psi										

Lubricating system

Specific lubricating oil consumption.		g/kWh	
Max oil volume excl. filters at following inclination:	°	litres	
Min oil volume excl. filters at following inclination:	°	litres	
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Min oil volume excl. filters at following inclination:	°	litres	

Fuel system	Rating	r/min	1000	1200	1500	1800	1900	2100	2300			
Specific fuel consumption 2)	2	g/kWh	225	215	205	202	202	206	210			
		lb/hph	0,365	0,348	0,332	0,327	0,327	0,334	0,34			
Fuel consumption at prop. load x ^{2,5}	2	l/h	4	6	10	15	17	22	29			
		US gal/h	1,0	1,5	2,5	3,9	4,5	5,9	7,5			
Fuel consumption at prop. load x ³	2	l/h	2	4	8	13	15	21	29			
		US gal/h	0,6	1,1	2,1	3,5	4,1	5,6	7,5			
Fuel consumption at full load	2	l/h	13	16	22	24	25	27	30			
		US gal/h	3,3	4,3	5,9	6,4	6,5	7,1	7,8			

1) ISO 3046, fuel temp 40°C.

ISO 8665 (=SAE J 1228=ICOMIA 28-83)

2) At power according to 1).

3) If reverse gear is used, 4% in heat rejection will be added for its oil cooler.

4) Acc. to ISO 3744

5) At installed back pressure

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Intake and exhaust system	Rating	r/min	1000	1200	1500	1800	1900	2100	2300				
Specific exhaust heating effect in percent of crankshaft power	2												
	2												
Exhaust temperature (at the exhaust pipe connecting flange after the turbo charger?)	2	°C	430	440	450	390	380	360	350				
		°F	806	824	842	734	716	680	662				
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)		kPa								Max	5,7		
		psi									0,8		
		kPa								Min	?		
		psi											
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%	2	m³/min			6	6,8	7,5	8,8	9,8				
		cu.ft./min			211,9	240,1	264,9	310,8	346,1				
Turbo charge pressure.	2	kPa											
		psi											
Exhaust gas flow (behind turbine)	2	m³/min			15	19,33	20,33	21,67	23,17				
		cu.ft./min			529,7	682,6	717,9	765,3	818,2				

Cooling system	Rating	r/min	1000	1200	1500	1800	1900	2100	2300				
Radiated heat in percent of crankshaft power.	2	%											
Heat rejection to after cooler in percent of of crankshaft power.	2	%			23	25	28	29	30				
Cooling water heating effect incl. oil cooler in percent of crankshaft power 3).	2	%			73	83	82	91	101				
Total pumphead freshwater circulation pump.		kPa											
		In H ₂ O											
Highest permissible pressure drop in outer circuit at keel cooling.		kPa	50										
		In H ₂ O	201										
Sea water pump flow.		m³/h			110,0	130,0	135,0	145,0	160,0				
		foot³/h			3885	4591	4767	5121	5650				
Cooling water circulation pump flow		m³/h			120,0	140,0	145,0	155,0	170,0				
		foot³/h			4238	4944	5121	5474	6003				
Max permissible temperature on fresh water circulation outlet from the engine		°C	105										
		°F	221										
Coolant volyme in engine with raw water.		litres	21										
		U.S. gal.	5,55										
Thermostat, start open at		°C	87										
		°F	189										
Thermostat, fully open at		°C	102										
		°F	216										

Emissions	Rating	r/min	1000	1200	1500	1800	1900	2100	2300				
Smoke at prop. load x ^{2,5}	2	BSU											
Smoke at prop. load x ³	2	BSU											
Noise at prop. load x ^{2,5} . 4)	2	dBA											
Noise at prop. load x ³ . 4)	2	dBA											

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