

Technical Data D5A TA

Rating 1, 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)	1	kW	45	57	77	86	89	96	102			
		hp	61	78	105	117	121	130.6	138.7			
Propellershaft power 1) (At full load)	1	kW	44	55	75	83	86	93	99			
		hp	59	75	102	113	117	127	135			
Propellershaft power at prop.load x ^{2.5}	1	kW	12	19	34	54	61	79	99			
		hp	16	26	46	73	83	107	135			
Propellershaft power at prop.load x ³	1	kW	8	14	27	47	56	75	99			
		hp	11	19	37	64	76	102	135			
Torque at crankshaft 2)	1	Nm	429.7	453.6	490.2	456.2	447.3	436.5	423.5			
		lbf ft	317	335	362	337	330	322	312			
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)	1	MPa	1.13	1.20	1.29	1.20	1.18	1.15	1.12			
		psi	164.4	173.5	187.6	174.6	171.1	167.0	162.0			
Max combustion pressure 2)	1	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
Max oil volume excl. filters at following inclination:	°	litres
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Max oil volume excl. filters at following inclination:	°	litres
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)	1	g/kWh	224	215	205	202	203	206	214			
		lb/hph	0.363	0.348	0.332	0.327	0.329	0.334	0.347			
Fuel consumption at prop. load x ^{2.5}	1	l/h	3	5	8	13	15	19	25			
		US gal/h	0.8	1.3	2.2	3.4	3.9	5.1	6.7			
Fuel consumption at prop. load x ³	1	l/h	2	4	7	11	14	18	25			
		US gal/h	0.6	0.9	1.7	3.0	3.6	4.9	6.7			
Fuel consumption at full load	1	l/h	12	15	19	21	22	24	26			
		US gal/h	3.2	3.9	5.0	5.5	5.7	6.2	6.9			

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	1												
	1												
Exhaust temperature (at the exhaust pipe connecting flange after the turbo charger?)	1	°C	430	440	410	370	360	345	335				
		°F	806	824	770	698	680	653	635				
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)		kPa								Max	5.7		
		psi								Min	0.8		
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPa and relative humidity 30%	1	m³/min			5.7	6.7	8	8.5	9.3				
		cu.ft./min			201.3	236.6	282.5	300.2	328.4				
Turbo charge pressure.	1	kPa											
		psi											
Exhaust gas flow (behind turbine)	1	m³/min			14.67	18.33	18.83	20.5	21.67				
		cu.ft./min			518.1	647.3	665	724	765.3				

Cooling system		Rating	r/min	1000	1200	1500	1800	1900	2100	2300			
Radiated heat in percent of crankshaft power.	1	%											
	1	%											
Heat rejection to after cooler in percent of of crankshaft power.	1	%				19	22	23	25	26			
		%				61	68	71	78	86			
Cooling water heating effect incl. oil cooler in percent of crankshaft power 3).	1	%											
		%											
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}	1	BSU											
Smoke at prop. load x ³	1	BSU											
Noise at prop. load x ^{2.5} . 4)	1	dBA											
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