

# Technical Data D5A TA

Rating 1, rated speed 1900 rpm

## General

In-line four stroke diesel engine with direct injection.

Number of cylinders		4
No of valves		2
Displacement, total	litres in <sup>3</sup>	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	1900
Propeller selection range	rpm	1875-1925

Performance	Rating	r/min	1000	1200	1500	1800	1900						
Crankshaft power 1), 5)	1	kW	45	57	77	86	89						
		hp	61	78	105	117	121						
Propellershaft power 1) (At full load)	1	kW	44	55	75	83	86						
		hp	59	75	102	113	117						
Propellershaft power at prop.load x <sup>2.5</sup>	1	kW	17	27	48	75	86						
		hp	23	37	65	102	117						
Propellershaft power at prop.load x <sup>3</sup>	1	kW	13	22	42	73	86						
		hp	18	30	57	99	117						
Torque at crankshaft 2)	1	Nm	429.7	453.6	490.2	456.2	447.3						
		lbf ft	317	335	362	337	330						
Mean piston speed		m/s	4.3	5.2	6.5	7.8	8.2						
		ft/s	14.2	17.1	21.3	25.6	27.0						
Effective mean pressure 2)	1	MPa	1.13	1.20	1.29	1.20	1.18						
		psi	164.4	173.5	187.6	174.6	171.1						
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	
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Fuel system	Rating	r/min	1000	1200	1500	1800	1900						
Specific fuel consumption 2)	1	g/kWh	224	215	205	202	203						
		lb/hph	0.363	0.348	0.332	0.327	0.329						
Fuel consumption at prop. load x <sup>2.5</sup>	1	l/h	5	7	12	18	21						
		US gal/h	1.2	1.8	3.1	4.8	5.5						
Fuel consumption at prop. load x <sup>3</sup>	1	l/h	3	6	10	18	21						
		US gal/h	0.9	1.5	2.7	4.6	5.5						
Fuel consumption at full load	1	l/h	12	15	19	21	22						
		US gal/h	3.2	3.9	5.0	5.5	5.7						

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						
Specific exhaust heating effect in percent of crankshaft power	1												
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Exhaust temperature (at the exhaust pipe connecting flange after the turbo charger?)	1	°C	430	440	410	370	360						
		°F	806	824	770	698	680						
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						
		cu.ft./min			201.3	236.6	282.5						
Turbo charge pressure.	1	kPa											
Exhaust gas flow (behind turbine)	1	m³/min			14.67	18.3	18.83						
		cu.ft./min			518.1	646.3	665						

Cooling system	Rating	r/min	1000	1200	1500	1800	1900						
Radiated heat in percent of crankshaft power.	1	%											
Heat rejection to after cooler in percent of crankshaft power.	1	%			19	22	23						
Cooling water heating effect incl. oil cooler in percent of crankshaft power 3).	1	%			61	68	71						
Total pumphead freshwater circulation pump.		kPa In H <sub>2</sub> O											
Highest permissible pressure drop in outer circuit at keel cooling.		kPa								50			
		In H <sub>2</sub> O								201			
Sea water pump flow.		m³/h			110.0	130.0	135.0						
		foot³/h			3885	4591	4767						
Cooling water circulation pump flow		m³/h			120.0	140.0	145.0						
		foot³/h			4238	4944	5121						
Max permissible temperature on fresh water circulation outlet from the engine		°C								105			
		°F								221			
Coolant volume 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						
Smoke at prop. load x <sup>2.5</sup>	1	BSU											
Smoke at prop. load x <sup>3</sup>	1	BSU											
Noise at prop. load x <sup>2.5</sup> . 4)	1	dBA											
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