VOLVO PENTA D5A TA R1, rated speed 1900 rpm	Document No 21374739	Issue Index 03

General

In-line four stroke diesel engine with direct injection.

Number of cylinders		4
No of valves		2
Displacement, total	litres in³	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
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 [2,5]	1	kW	17	27	48	75	86					
		hp	23	37	65	102	117					
Propellershaft power at prop.load x [3]	1	kW	13	22	42	73	86					
		hp	18	30	57	99	117					
Torque at crankshaft 2)	1	Nm	430	454	490	456	447					
		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					

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Fuel system	Rating	r/min	1000	1200	1500	1800	1900					
Specific fuel consumption 2)	1	g/kWh lb/hph	224 0,36	215 0,35	205 0,33	202 0,33	203 0,33					
Fuel consumption at prop. load x [2,5]	1	l/h US gal/h	5 1,2	7 1,8	12 3,1	18 4,8	21 5,5					
Fuel consumption at prop. load x [3]	1	l/h US gal/h	3 0,9	6 1,5	10 2,7	18 4,6	21 5,5					
Fuel consumption at full load	1	l/h US gal/h	12 3,2	15 3,9	19 5,0	21 5,5	22 5,7					

Intake and exhaust system	Rating	r/min	1000	1200	1500	1800	1900					
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 °F	430 806	440 824	410 770	370 698	360 680					
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)		kPa psi							Max	5,7 0,8		
		kPa psi							Min			
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%	1	m³/min cu.ft./min			5,7 201	6,7 237	8 283					
Exhaust gas flow (behind turbine)	1	m³/min cu.ft./min			14,7 518	18,3 646	18,8 665					

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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_2O										
Highest permissible pressure drop in outer circuit at keel cooling.		kPa In H_2O	50 201									
Sea water pump flow.		l/min cu.ft/min			110,0 3,9	130,0 4,6	135,0 4,8					
Cooling water circulation pump flow		l/min cu.ft/min			120,0 4,2	140,0 4,9	145,0 5,1					
Max permissible temperature on fresh water circulation outlet from the engine		°C °F	105 221									
Coolant volyme in engine with raw water.		litres U.S. gal.	21 5,55									
Thermostat, start open at		°C °F	87 189									
Thermostat, fully open at		°C °F	102 216									

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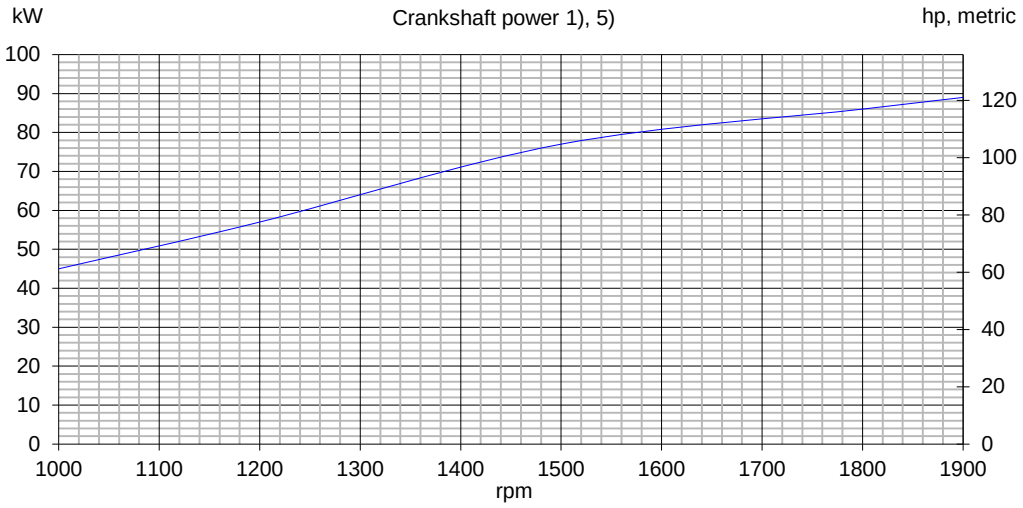

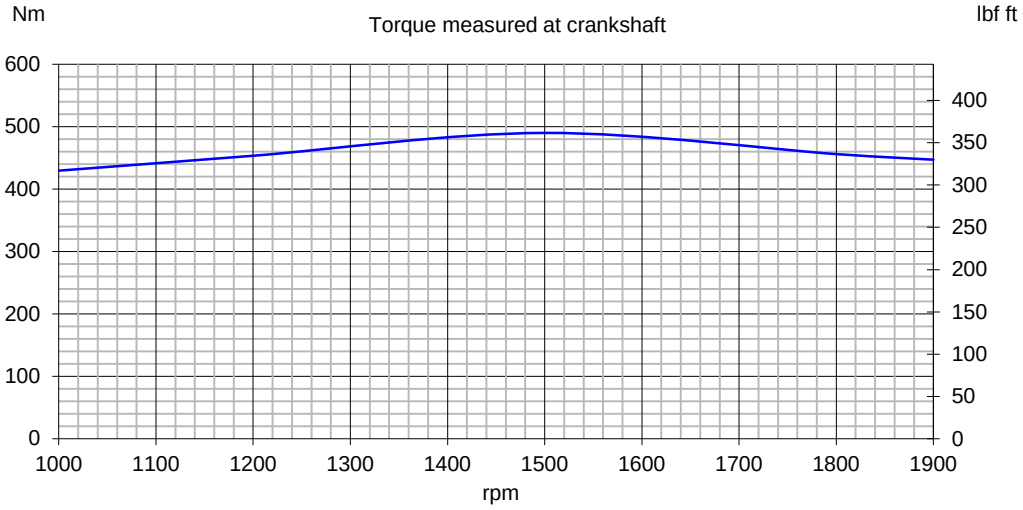

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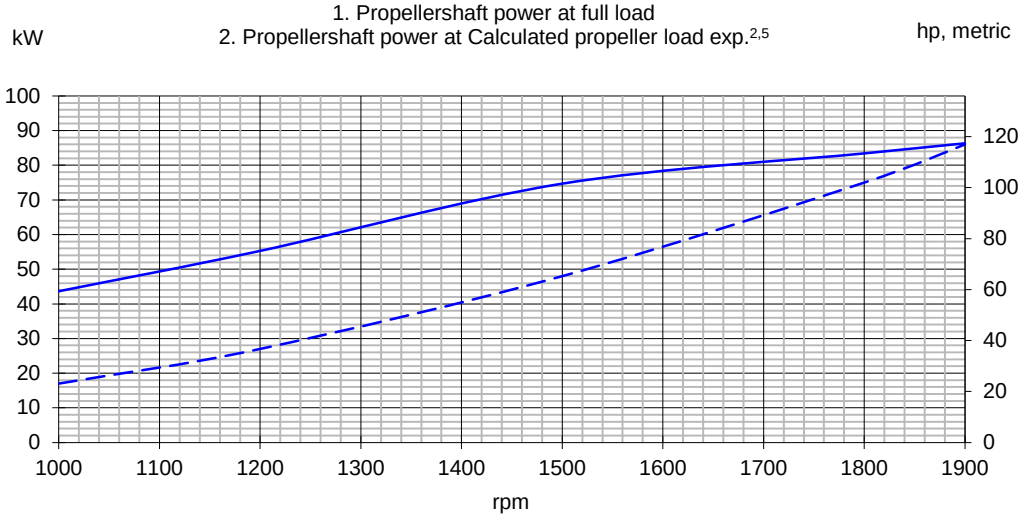
2. Propellershaft power at Calculated propeller load exp.[2,5]



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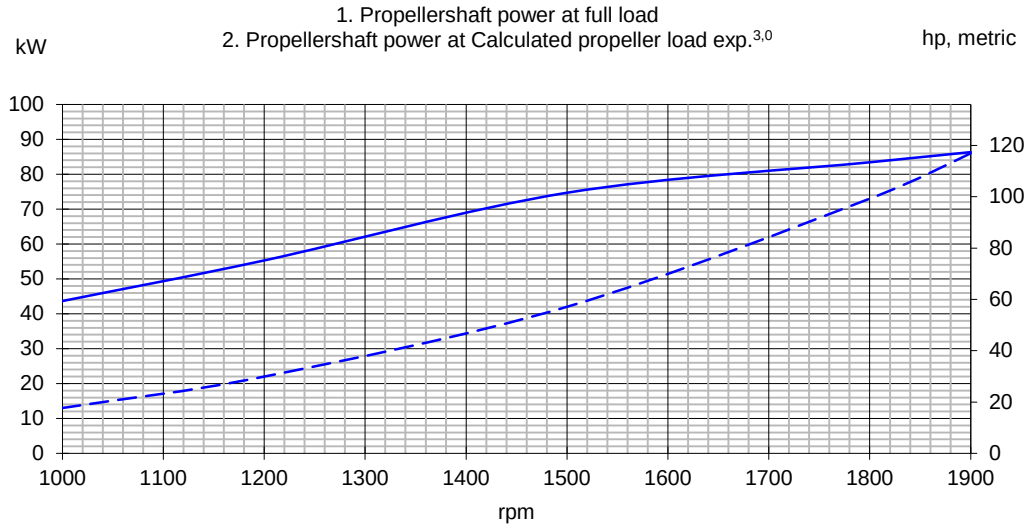

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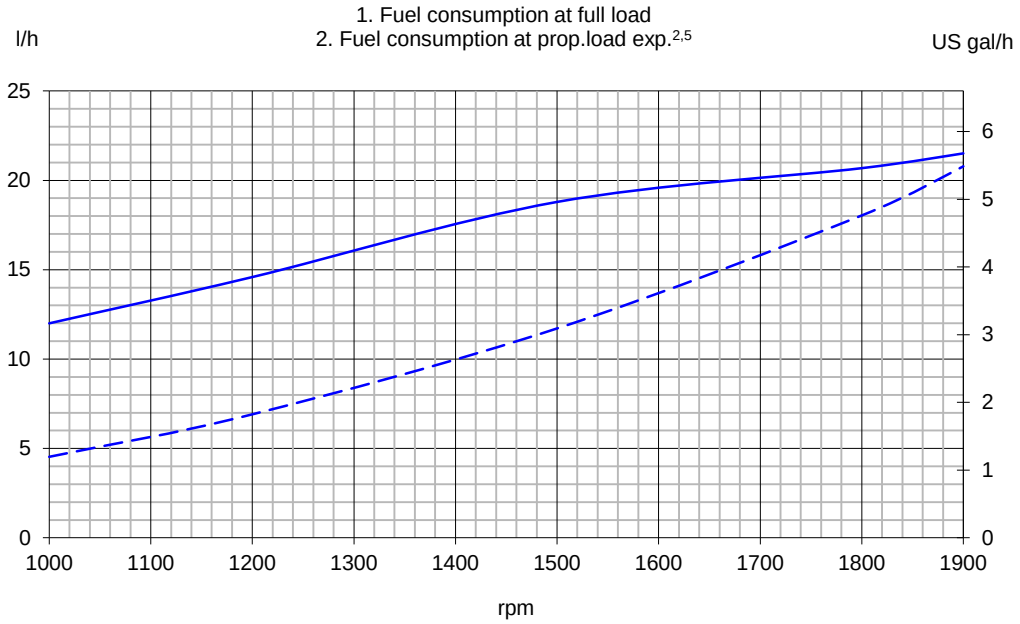

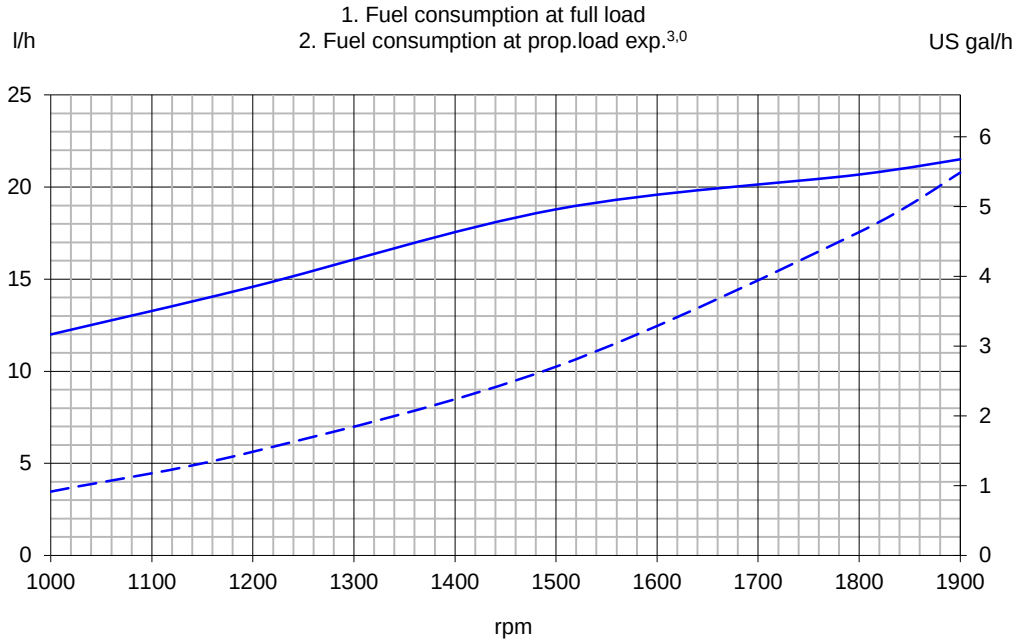

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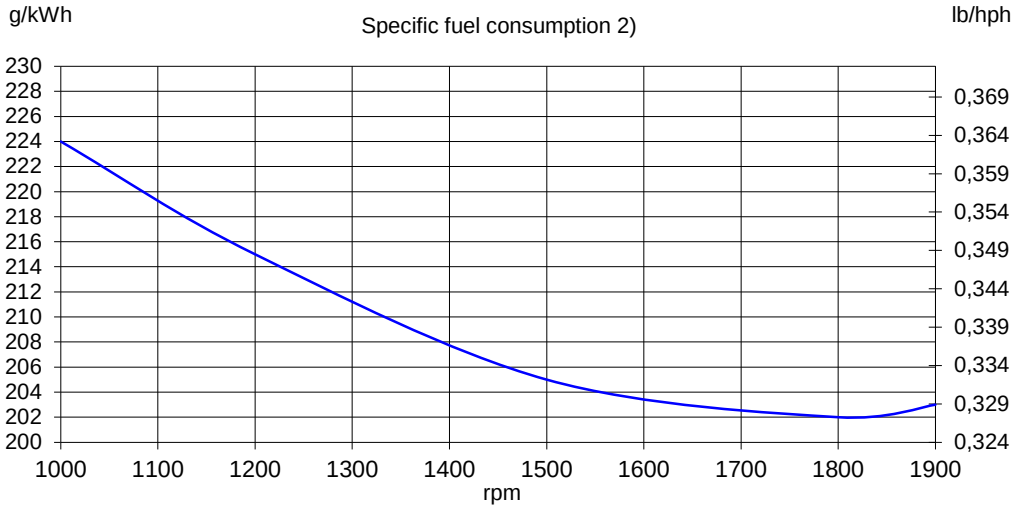

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