VOLVO PENTA

D7A-A T HE 1800 rpm

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21939977	**02**

General						
Number of cylinders	6					
Displacement, total	7,15 liters [437 cu. in]					
Firing order	1-5-3-6-2-4					
Bore	108 mm [4,25 in]					
Stroke mm	130 [5,12 in]					
Compression ratio	17,6:1					
Performance		25% load	50% load	75% load	100% load	**Overload 110% load**
ISO Standard Power	122 kW [166 hp]	30,5	61	91,5	122	134,2
Torque	647 Nm [478 lbf. ft]	156	315,7	479,4	647,2	715,5
Mean piston speed	7,8 m/s [25,6 ft/sec]					
Effective mean pressure	1,14 MPa [165 psi]	0,3	0,6	0,9	1,1	1,3
Max combustion pressure	MPa [psi]	7,1	8,2	9,2	10,5	11,1
Engine noise emission						
Measured sound power Lw at no load	87,5 dB(A)					
Measured sound power Lw	dB(A)				93	
Unsilenced exhaust noise emission						
Data calculated as sound pressure Lp. Assumed microphone distance 1m.	dB(A)				112	
Lubrication system						
Lubricating oil consumption at ISO Standard Power	liter/h [US Gal/h]				0,07	
Lubricating oil system capacity including filters	liters [US Gal]				20	
Fuel system						
Specific fuel consumption	g/kWh [lb/hph]	275	226	216	215	217
Total fuel flow	liter/h [US Gal/h]				450	
Maximum return flow	liter/h [US Gal/h]				445	
Feed pump pressure	kPa [in H2 O]				500	
Feed pump max suction head	m				1	
Max allowable back pressure in fuel return line	kPa [H2 O]				50	
Intake system						
Air consumption, (at 27oC)	m3/min [cu.ft/min]	6,8	7,57	8,65	9,9	10,3
Max permissible air intake restriction	kPa [in H2 O]				2,5	

Exhaust system						
Heat rejection to exhaust	kW [BTU/min]	28,8	45	63,5	84,7	92
Exhaust gas temperature after turbine	oC [oF]	215	290	355	405	420
Max allowable back pressure in exhaust line	kPa [H2 O]				3	
Exhaust gas flow at Exhaust gas temperature after turbine	m3/min [cu.ft/min]	12,3	15,6	20,4	25,3	26,8
Heat rejection the surrounding						
Heat rej. from engine to surrounding	kW [BTU/min]	3,6	4,9	5,9	7,9	8,7
Engine water circuit						
Engine water circuit capacity	14 liters [US gal]					
Raw water circuit						
Heat rejection to raw water	kW [BTU/min]	37,0	53,3	74,4	97,8	111,8
Maximum permissible raw water temp to engine	41 oC [oF]					
Maximum permissible temperature increase across raw water circuit of engine	oC [oF]	6	8	11	15	17
Maximum permissible test pressure	100 kPa [402 in H2 O]					
Raw water flow	7,8 m3/h [275 cu.ft/h]					
Maximum pressure head	100 kPa [402 in H2 O]					
Highest permissible suction head	20 kPa [80,4 in H2 O]					
Highest permissible pressure drop over external raw water circuit	50 kPa [201 in H2 O]					
Raw water capacity	4 liters [1,06 US gal]					

Power take off
Look in technical data for propulsion

Power Standards
The engine performance corresponds to ISO 3046, BS 5514, DIN 6271 and in general SAE J 1349. The technical data applies to an engine operation on a fuel with calorific value of 42,7 MJ/ kg (18360 BTU/ lb) and a density of 0,84 kg/ liters (7,01 lb/ US gal, 8,42 lb/Imp gal), also where this involves a deviation from the standards.
Engine speed governor in accordance with ISO 3046/IV, class A1 and ISO 8528-5 G2 (G3 with electronic speed governor).
Rating Guidlines
ISO Standard Power for continuous operation with 10% overload capability for 1 hour of 12.