

VOLVO PENTA D6-370A R5 370 hp (272 kW)	Document No	Issue Index
	21954803	02

General

4-stroke direct injected, turbocharged and aftercooled diesel engine

Number of cylinders		6
No of valves		24
Displacement, total	litres in ³	5,50 335,6
Firing order		1-5-3-6-2-4
Rotational direction, viewed from the front		Clockwise
Bore	mm in	103 4,06
Stroke	mm in	110 4,33
Compression ratio		17.5:1
Compression pressure at 240 rpm	MPa psi	
Max. static forward inclination:	°	0
Max. static backward inclination:	°	10
Max. intermittent forward inclination while running:	°	10
Max. intermittent backward inclination while running:	°	20
Max. intermittent side inclination while running:	°	30 for max 30 sec
Idling speed	rpm	600 - 650
Rated speed R5	rpm	3500
Propeller selection range R5	rpm	3400-3600
Dry weight engine BT	kg lb	580 1279
Dry weight with drive reverse gear: DPH	kg lb	766 1689
Dry weight with drive reverse gear: DPH and Power steering	kg lb	770 1698
Dry weight with drive IPS	kg lb	887 1956

Performance	Rating	rpm	1000	1500	2000	2500	3000	3500				
Crankshaft power 1), 5)	5	kW	74	130	185	230	265	272				
		hp	101	177	252	312	360	370				
Propeller shaft power 1) (At full load)	5	kW	71	125	177	219	253	260				
		With drive reverse gear: DPH hp	96	169	240	298	344	353				
With drive reverse gear: DPH	5	kW	71	125	177	220	253	260				
		hp	96	169	240	299	344	353				
Propellershaft power at prop. load x ^{2,5}	5	kW	11	31	64	112	177	260				
		With drive reverse gear: DPH hp	15	42	87	152	240	353				
With drive reverse gear: DPH	5	kW	11	31	64	112	177	260				
		hp	15	42	87	152	240	353				
Propellershaft power at prop. load x ³	5	kW	6	20	48	95	164	260				
		With drive reverse gear: DPH hp	8	28	66	129	222	353				
With drive reverse gear: DPH	5	kW	6	20	48	95	164	260				
		hp	8	28	66	129	222	353				
Torque at crankshaft 2)	5	Nm	706,6	830,2	883,3	876,6	843,5	742,1				
		lbf ft	521	612	651	647	622	547				
Mean piston speed		m/s	3,7	5,5	7,3	9,2	11,0	12,8				
		ft/s	12,0	18,0	24,1	30,1	36,1	42,1				
Effective mean pressure 2)	5	MPa	1,61	1,90	2,02	2,00	1,93	1,70				
		psi	234,2	275,1	292,7	290,5	279,6	246,0				
Max combustion pressure 2)	5	MPa	16	18	18	18	17	17				
		psi	2321	2611	2611	2611	2466	2466				

Lubricating system

Specific lubricating oil consumption.	g/kWh	< 0,2
Max. oil volume including filters for all allowed installation inclinations:	litres	20
	US gal	5,28
Min. oil volume excluding filters for all allowed installation inclinations:	litres	15
	US gal	3,96

Fuel system

	Rating	rpm	1000	1500	2000	2500	3000	3500				
Specific fuel consumption 2)	5	g/kWh	226	217	217	203	216	236				
		lb/hph	0,366	0,352	0,352	0,329	0,35	0,382				
Fuel consumption, Test cycle E5	5	g/kWh	231									
		lb/hph	0,37									
Fuel consumption at prop. load x ^{2,5}	5	l/h	3,6	8,8	17,5	30,3	49,6	76,8				
		US gal/h	1,0	2,3	4,6	8,0	13,1	20,3				
Fuel consumption at prop. load x ³	5	l/h	2,7	6,3	13,7	26,3	46,1	76,8				
		US gal/h	0,7	1,7	3,6	7,0	12,2	20,3				
Fuel consumption at full load	5	l/h	20,0	33,9	48,0	55,7	68,5	76,8				
		US gal/h	5,3	8,9	12,7	14,7	18,1	20,3				

Intake and exhaust system

	Rating	rpm	1000	1500	2000	2500	3000	3500				
Specific exhaust heating effect in percent of crankshaft power	5	%						64				
Exhaust temperature at the exhaust pipe connecting flange after the turbo charger.	5	°C	165	240	305	320	325	390				
		°F	329	464	581	608	617	734				
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)		kPa							Max	30		
		psi								4,4		
		kPa							Min	10		
		psi								1,5		

D6-370A
R5 370 hp (272 kW)

21954803**02**

Intake and exhaust system	Rating	rpm	1000	1500	2000	2500	3000	3500				
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%.	5	m ³ /min cu.ft./min						22,9 808,7				
Charge air pressure Inlet manifold	5	kPa psi						206 29,9				
Exhaust gas flow	5	m ³ /min cu.ft./min						42,7 1508				

Cooling system	Rating	rpm	1000	1500	2000	2500	3000	3500				
Radiated heat in percent of crankshaft power.	5	%						2				
Heat rejection to charge air cooler in percent of crankshaft power.	5	%						28				
Coolant heat rejection to HE, incl. engine oil cooler and excl. charge air cooler, in percent of crankshaft power.	5	%						84				
Coolant flow with fully open thermostat and std cooling system		l/min cu.ft./min						360 12,7				
Extra water pump flow through charge air cooler		l/min cu.ft./min						215 7,6				
Max. permissible temperature on coolant in engine outlet		°C °F						55 131				
Coolant volume engine, including heat exchanger and charge air cooler		litres US gal.						16 4,23				
Max. additional coolant for cabin heater etc. with std. Expansion tank		litres US gal.						5 1,32				
Maximum coolant flow to cabin heater etc.		l/min cu.ft./min						30 1,06				
Thermostat, start open at		°C °F						82 180				
Thermostat, fully open at		°C °F						92 198				

Raw water circuit	rpm	1000	1500	2000	2500	3000	3500					
Nominal raw water design flow	l/min cu.ft./min							215 7,6				
Maximum raw water temperature entering heat exchanger	°C °F							30 86				

Emissions	Rating	rpm	1000	1500	2000	2500	3000	3500				
Smoke at prop. load x ^{2,5}	5	*BSU	0,5	0,3	0,2	0,1	0,4	0,7				
Smoke at prop. load x ³	5	*BSU	0,4	0,3	0,3	0,2	0,4	0,7				

*NB.! BSU are calculated values. Measured values are acc. to ISO 10054 in FSN units