

Technical Data D9-500

Rating 4/5

General

4-stroke direct injected, turbocharged and aftercooled diesel engine

Number of cylinders		6
No of valves		24
Displacement, total	litres	9,36
	in ³	571,4
Firing order		1-5-3-6-2-4
Rotational direction, viewed from the front		Clockwise
Bore	mm	120
	in	4,72
Stroke	mm	138
	in	5,43
Compression ratio		16,5 : 1
Max installed forward inclination:	°	0
Max installed backward inclination:	°	7
Max. intermittent forward tilt while running:	°	10
Max. intermittent backward tilt while running:	°	12
Idling speed	rpm	550 (- 50 / + 200)
Rated speed	rpm	2600
Recommended WOT range	rpm	2400-2650
Dry weight engine BT	kg	1075
	lb	2370

Performance	Rating	r/min	800	1000	1200	1400	1600	1800	2000	2200	2400	2600
Crankshaft power 1), 5)		kW	67	114	178	239	274	307	342	368	368	367,6
		hp	91,12	155	242,1	325	372,6	417,5	465,1	500,5	500,5	500
Propeller shaft power 1) (At full load)		kW	64,99	110,6	172,7	231,8	265,8	297,8	331,7	357	357	356,6
		hp	88,39	150,4	234,8	315,3	361,5	405	451,2	485,5	485,5	485
Propellershaft power at prop.load x ^{2,5}		kW	19	33	52	76	106	142	185	235	292	357
		hp	25	44	70	103	144	193	252	319	397	485
Torque at crankshaft 2)		Nm	799,8	1089	1416	1630	1635	1629	1633	1597	1464	1350
		lbf ft	590	803	1045	1202	1206	1201	1204	1178	1080	996
Mean piston speed		m/s	3,7	4,6	5,5	6,4	7,4	8,3	9,2	10,1	11,0	12,0
		ft/s	12,1	15,1	18,1	21,1	24,1	27,2	30,2	33,2	36,2	39,2
Effective mean pressure 2)		MPa	1,07	1,46	1,90	2,19	2,19	2,19	2,19	2,14	1,96	1,81
		psi	155,7	211,9	275,7	317,3	318,3	317,0	317,8	310,9	285,0	262,8
Max combustion pressure 2)		MPa	11,6	13,1	16,8	19	19,7	19,5	19,7	19,8	19,7	19,4
		psi	1682	1900	2437	2756	2857	2828	2857	2872	2857	2814

Lubricating system

Specific lubricating oil consumption.		g/kWh	0,1
Max oil volume incl. filters at following inclination:	0°	litres	38
		US gal	10,04
Max oil volume excl. filters at following inclination:	0°	litres	33
		US gal	8,72
Min oil volume excl. filters at following inclination:	0°	litres	29
		US gal	7,66
Max oil volume incl. filters at following inclination:	7°	litres	30
		US gal	7,93
Max oil volume excl. filters at following inclination:	7°	litres	25
		US gal	6,60
Min oil volume excl. filters at following inclination:	7°	litres	21
		US gal	5,55

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 max permitted back pressure

2007-10-03

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Fuel system	Rating	r/min	800	1000	1200	1400	1600	1800	2000	2200	2400	2600
Specific fuel consumption 2)		g/kWh	255,6	241,7	226,9	210,9	199,6	196	198,6	202,8	207,8	214,3
		lb/hph	0,414	0,392	0,368	0,342	0,323	0,318	0,322	0,329	0,337	0,347
Fuel consumption at prop. load x ^{2,5}		l/h	6,005	9,826	14,64	20,73	28,82	37,37	48,22	60,96	76,92	94,05
		US gal/h	1,6	2,6	3,9	5,5	7,6	9,9	12,7	16,1	20,3	24,8
Fuel consumption at full load		l/h	20,46	32,92	48,26	60,23	65,35	71,9	81,16	89,17	91,37	94,14
		US gal/h	5,4	8,7	12,7	15,9	17,3	19,0	21,4	23,6	24,1	24,9

Intake and exhaust system	Rating	r/min	800	1000	1200	1400	1600	1800	2000	2200	2400	2600
Specific exhaust heating effect in percent of crankshaft power		%	64,18	73,68	74,72	68,2	64,96	65,8	68,71	73,37	75,82	76,7
Exhaust temperature at the exhaust pipe connecting flange after the turbo charger.		°C	456	564	605	555	489	455	440	442	437	429
		°F	853	1047	1121	1031	912	851	824	828	819	804
		°C										
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)		kPa									Max	15
		psi										2,2
		kPa									Min	0
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%.		m³/min	4,117	6,25	9,233	12,57	16	19,82	24,1	27,67	29	29,92
		cu.ft./min	145,4	220,7	326,1	443,8	565	699,8	851,1	977	1024	1056
Turbo charge pressure.		kPa	23	51	88	120	143	169	196	212	205	197
		psi	3,3	7,4	12,8	17,4	20,7	24,5	28,4	30,7	29,7	28,6
Exhaust gas flow		m³/min	11	19,22	29,45	37,07	42,13	48,42	55,6	62,12	63,87	64,7
		cu.ft./min	388,5	678,6	1040	1309	1488	1710	1963	2194	2255	2285

Cooling system	Rating	r/min	800	1000	1200	1400	1600	1800	2000	2200	2400	2600
Sea water pump flow.		m³/h	5,4	6,6	8,1	9,3	10,8	12,3	13,5	15,0	16,2	17,4
		foot³/h	191	233	286	328	381	434	477	530	572	614
Fresh water circulation pump flow		m³/h	14,0	18,2	22,5	26,5	30,8	34,7	38,7	43,0	46,8	51,0
		foot³/h	494	643	795	936	1088	1225	1367	1519	1653	1801
Max permissible temperature on fresh water circulation outlet from the engine		°C									96	
		°F									205	
Coolant content engine, incl. heat exchangers and air cooler		litres									39	
		U.S. gal.									10,30	
Maximum additional coolant for cabin heater etc. with std expansion tank		litres									40	
		U.S. gal.									10,57	
Thermostat, start open at		°C									86	
		°F									187	
Thermostat, fully open at		°C									96	
		°F									205	

Emissions	Rating	r/min	800	1000	1200	1400	1600	1800	2000	2200	2400	2600
Smoke at prop. load x ^{2,5}		*BSU	0,0	0,1	0,1	0,2	0,6	0,5	0,5	0,4	0,5	0,3
Noise at prop. load x ^{2,5} . 4)		dBA	106	107,4	108,7	109,5	110,4	111,6	113,3	114,7	116,4	119,6

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

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