

Technical Data D11-670

Rating 5

General

4-stroke direct injected, turbocharged and aftercooled diesel engine

Number of cylinders		6
No of valves		24
Displacement, total	litres in ³	10,84 661,3
Firing order		1-5-3-6-2-4
Rotational direction, viewed from the front		Clockwise
Bore	mm in	123 4,84
Stroke	mm in	152 5,98
Compression ratio		16,5:1
Compression pressure at 240 rpm	MPa psi	
Max. static forward inclination:	°	0
Max. static backward inclination:	°	7
Max. intermittent forward inclination while running:	°	10
Max. intermittent backward inclination while running:	°	17
Max. intermittent side inclination while running:	°	30
Idling speed	rpm	600 (-50 / +100)
Rated speed	rpm	2300
Propeller selection range	rpm	2300 - 2370
Recommended WOT range	rpm	2200 - 2370
Dry weight engine BT	kg lb	1130 2491

Performance	Rating	r/min	700	900	1100	1300	1500	1700	1900	2100	2300	2370
Crankshaft power 1), 5)	5	kW	70	130	229	337	397	444	488	493	493	493
			hp	95	176,8	311,4	458,3	539,9	603,8	663,7	670,5	670,5
Propeller shaft power 1) (At full load) With drive Reverse gear	5	kW	68	126	222	327	385	431	473	478	478	478
			hp	92	171	302	445	524	586	644	650	650
Propellershaft power at prop. load x ^{2,5} With drive Reverse gear	5	kW	23	42	70	107	152	208	275	353	444	478
			hp	31	58	95	145	207	283	374	481	603
Torque at crankshaft 2)	5	Nm	954,9	1379	1988	2475	2527	2494	2453	2242	2047	1986
			lbf ft	704	1017	1466	1826	1864	1840	1809	1653	1510
Mean piston speed		m/s	3,5	4,6	5,6	6,6	7,6	8,6	9,6	10,6	11,7	12,0
			ft/s	11,6	15,0	18,3	21,6	24,9	28,3	31,6	34,9	38,2
Effective mean pressure 2)	5	MPa	1,11	1,60	2,31	2,87	2,93	2,89	2,84	2,60	2,37	2,30
			psi	160,6	232,0	334,4	416,3	425,1	419,5	412,5	377,0	344,3
Max combustion pressure 2)	5	MPa	11,6	14,9	19,1	19,5	20	19,7	19,4	19,5	19,2	19,1
			psi	1682	2161	2770	2828	2901	2857	2814	2828	2785

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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Lubricating system

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

Fuel system

	Rating	r/min	700	900	1100	1300	1500	1700	1900	2100	2300	2370
Specific fuel consumption 2)	5	g/kWh	263	239	221	207	203	203	207	208	211	213
		lb/hph	0,426	0,387	0,358	0,335	0,329	0,329	0,335	0,337	0,342	0,345
Fuel consumption at prop. load x ^{2,5}	5	l/h	6,906	11,81	18,8	28,26	39,37	52,72	67,83	89,16	117,4	
		US gal/h	1,8	3,1	5,0	7,5	10,4	13,9	17,9	23,6	31,0	
Fuel consumption at full load	5	l/h	22,04	37,2	60,59	83,51	96,48	107,9	120,9	122,8	124,5	125,7
		US gal/h	5,8	9,8	16,0	22,1	25,5	28,5	31,9	32,4	32,9	33,2

Intake and exhaust system

	Rating	r/min	700	900	1100	1300	1500	1700	1900	2100	2300	2370	
Exhaust temperature at the exhaust pipe connecting flange after the turbo charger.	5	°C	491	618	604	542	525	543	552	533	517	517	
		°F	916	1144	1119	1008	977	1009	1026	991	963	963	
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)		kPa								Max	15		
		psi									2,2		
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%.	5	m³/min	4	6,8	11,4	17,5	22	25,5	29,8	31,6	33	33	
		cu.ft./min	141,3	240,1	402,6	618	776,9	900,5	1052	1116	1165	1165	
Turbo charge pressure.	5	kPa	23	58	117	183	198	216	231	242	234	233	
		psi	3,3	8,4	17,0	26,5	28,7	31,3	33,5	35,1	33,9	33,8	
Exhaust gas flow	5	m³/min	11,5	22,4	36,9	51,8	61	69,4	79	81,1	81,6	82,6	
		cu.ft./min	406,1	791	1303	1829	2154	2451	2790	2864	2882	2917	

Cooling system

	Rating	r/min	700	900	1100	1300	1500	1700	1900	2100	2300	2370
Sea water pump flow.		l/min	113	126	133	150	171	190	210	239	251	257
		cu.ft./min	4,0	4,4	4,7	5,3	6,0	6,7	7,4	8,4	8,9	9,1
Thermostat, start open at		°C	76									
		°F	169									
Thermostat, fully open at		°C	86									
		°F	187									

Emissions

	Rating	r/min	700	900	1100	1300	1500	1700	1900	2100	2300	2370
Smoke at prop. load x ^{2,5}	5	*BSU	0,1	0,1	0,1	0,4	0,5	0,2	0,1	0,2	0,3	0,3

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

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