

Technical Data D3-110I

Rating 5

General

4-stroke direct injected, turbocharged

Number of cylinders		5
No of valves		20
Displacement, total	litres in ³	2,40 146,5
Firing order		1-2-4-5-3
Rotational direction, viewed from the front		Clockwise
Bore	mm in	81 3,19
Stroke	mm in	93,2 3,67
Compression ratio		17,3:1
Maximum forward tilt while running	°	20
Max.backward tilt while running:	°	20
Max. side tilt while running:	°	20
Max seawater temp.	° C	30
Idling speed	rpm	700 ± 10
Rated speed	rpm	3000
Propeller selection range	rpm	2700-3000
Dry weight engine BT	kg lb	227 500

Performance	Rating	r/min	1400	1800	2000	2400	2800	3000
Crankshaft power 1), 5)	5	kW	39	63	71	77	78	81
		hp	53	86	97	105	106	110
Propeller shaft power 1) (At full load)	5	kW	37	60	68	74	75	78
		hp	51	82	93	101	102	106
Propellershaft power at prop.load x ³	5	kW	8	17	23	40	63	78
		hp	11	23	31	54	86	106
Torque at crankshaft 2)	5	Nm	266	334,2	339	306,4	266	257,8
		lbf ft	196	247	250	226	196	190
Mean piston speed	5	m/s	4,3	5,6	6,2	7,5	8,7	9,3
		ft/s	14,3	18,3	20,4	24,5	28,5	30,6
Effective mean pressure 2)	5	MPa	1,39	1,75	1,77	1,60	1,39	1,35
		psi	201,9	253,7	257,3	232,5	201,9	195,7

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 incl. filter at following inclination:	0°	litres	6,8
		US gal	1,80
Min oil volume incl. filter at following inclination:	0°	litres	4,8
		US gal	1,27

Fuel system

	Rating	r/min	1400	1800	2000	2400	2800	3000
Specific fuel consumption 2)	5	g/kWh	221	209	203	203	207	210
		lb/hph	0,358	0,339	0,329	0,329	0,335	0,34
Fuel consumption at prop. load x ³	5	l/h	2,5	4,9	6,5	10,7	16,7	20,4
		US gal/h	0,7	1,3	1,7	2,8	4,4	5,4
Fuel consumption at full load	5	l/h	10,32	15,77	17,26	18,72	19,34	20,37
		US gal/h	2,7	4,2	4,6	4,9	5,1	5,4

Intake and exhaust system

	Rating	r/min	1400	1800	2000	2400	2800	3000	
Exhaust temperature at the exhaust pipe connecting flange after the turbo charger.	5	°C	390	390	375	340	340	350	
		°F	734	734	707	644	644	662	
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)	5	kPa						Max	20
		psi							2,9
	5	kPa						Min	15
		psi							2,2
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%.	5	m ³ /min							6,9
		cu.ft./min							243,7
Turbo charge pressure. at prop load exp 3,0	5	kPa	5	15	30	85	105	110	
		psi	0,7	2,2	4,4	12,3	15,2	16,0	
Exhaust gas flow	5	m ³ /min							12,1
		cu.ft./min							427,3

Cooling system

	Rating	r/min	1400	1800	2000	2400	2800	3000	
Sea water pump flow.	5	m ³ /h							6,1
		foot ³ /h							215
Fresh water circulation pump flow	5	m ³ /h							7,0
		foot ³ /h							247
Coolant content engine, incl. heat exchanger	5	litres						8,2	
		U.S. gal.						2,17	
Thermostat, start open at	5	°C						80	
		°F						176	
Thermostat, fully open at	5	°C						95	
		°F						203	

Emissions

	Rating	r/min	1400	1800	2000	2400	2800	3000
Smoke at prop. load x ³	5	*BSU	0,1	0,1	0,1	0,1	0,1	0,0

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

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5) At installed back pressure