

Technical Data D6-435I (Inboard)

Rating 5 435 hp (320 kW)

General

4-stroke direct injected, turbocharged and aftercooled diesel engine

Number of cylinders		6
No of valves		24
Displacement, total	litres	5,50
	in ³	335,6
Firing order		1-5-3-6-2-4
Rotational direction, viewed from the front		Clockwise
Bore	mm	103
	in	4,06
Stroke	mm	110
	in	4,33
Compression ratio		17,5:1
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	rpm	3500
Propeller selection range	rpm	3400 - 3600
Dry weight engine BT	kg	594
	lb	1310
Dry weight with reverse gear HS80AE	kg	695
	lb	1532
Dry weight with reverse gear HS85AE	kg	699
	lb	1541
Dry weight with reverse gear HS80VE	kg	732
	lb	1614
Dry weight with reverse gear HS85VE	kg	735
	lb	1620

Performance	Rating	r/min				1000	1500	2000	2500	3000	3500
Crankshaft power 1), 5)	5	kW				51	101	208	274	308	320
		hp				69,36	137,4	282,9	372,6	418,9	435,2
Propeller shaft power 1) (At full load)	5	kW				49,47	97,97	201,8	265,8	298,8	310,4
		hp				67,28	133,2	274,4	361,5	406,3	422,1
Propellershaft power at prop. load x ^{2,5}	5	kW				14	37	77	134	211	310
		hp				18	51	104	182	287	422
Propellershaft power at prop. load x ³	5	kW				7	24	58	113	195	310
		hp				10	33	79	154	266	422

Performance	Rating	r/min				1000	1500	2000	2500	3000	3500
Torque at crankshaft 2)	5	Nm				487	643	993,1	1047	980,4	873,1
		lbf ft				359	474	732	772	723	644
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				1,11	1,47	2,27	2,39	2,24	2,00
		psi				161,4	213,1	329,1	346,9	324,9	289,4
Max combustion pressure 2)	5	MPa				12,5	14,8	19,9	19,6	19,6	19
		psi				1813	2147	2886	2843	2843	2756

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

Technical Data D6-435I-A (Inboard)

Rating 5 435 hp (320 kW)

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
Max. oil volume excluding filters for all allowed installation inclinations:	litres	16,5
	US gal	4,36

Fuel system

	Rating	r/min	1000	1500	2000	2500	3000	3500
Specific fuel consumption 2)	5	g/kWh	264	250	220	198	201	216
		lb/hph	0,428	0,405	0,356	0,321	0,326	0,35
Fuel consumption at prop. load x ^{2,5}	5	l/h	4,212	10,23	19,67	34,19	52,9	82,75
		US gal/h	1,1	2,7	5,2	9,0	14,0	21,9
Fuel consumption at prop. load x ³	5	l/h	2,555	6,755	15,23	28,9	49,46	82,75
		US gal/h	0,7	1,8	4,0	7,6	13,1	21,9
Fuel consumption at full load	5	l/h	16,12	30,23	54,78	64,95	74,11	82,75
		US gal/h	4,3	8,0	14,5	17,2	19,6	21,9

Intake and exhaust system

	Rating	r/min	1000	1500	2000	2500	3000	3500
Exhaust temperature at the exhaust pipe connecting flange after the turbo charger. At prop. Load exp. 2,5	5	°C	199	263	342	350	333	391
		°F	390	505	648	662	631	736
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
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%.	5	m³/min						23,5
		cu.ft./min						829,9
Turbo charge pressure.	5	kPa	3	12	32	82	152	205
		psi	0,4	1,7	4,6	11,9	22,0	29,7
Exhaust gas flow	5	m³/min						46
		cu.ft./min						1624

Cooling system

	Rating	r/min	1000	1500	2000	2500	3000	3500
Sea water pump flow.		m³/h						13
		foot³/h						459
Coolant volume engine, including heat exchangers and air cooler		litres					16	
		U.S. gal.					4,23	
Max. additional coolant for cabin heater etc. with std. Expansion tank		litres					5	
		U.S. gal.					1,32	
Thermostat, start open at		°C					82	
		°F					180	
Thermostat, fully open at		°C					92	
		°F					198	

Emissions

	Rating	r/min	1000	1500	2000	2500	3000	3500
Smoke at prop. load x ^{2,5}	5	*BSU	0,3	0,2	0,3	0,0	0,1	0,3
Smoke at prop. load x ³	5	*BSU	0,3	0,2	0,2	0,1	0,1	0,3
Noise at prop. load x ^{2,5} . 4)	5	dBA	95	102	106	108	111	113

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

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