

Technical Data D7C TA

Version D7C-B TA

Rating 2, rated speed 2300 rpm

General

In-line four stroke diesel engine with direct injection.

Number of cylinders		6
No of valves		2
Displacement, total	litres in ³	7,15 436,0
Firing order		1-5-3-6-2-4
Rotational direction, viewed towards flywheel		Anti-clockwise
Bore	mm in	108 4,25
Stroke	mm in	130 5,12
Compression ratio		19
Compression pressure at 240 rpm	MPa	3 - 3,8
Maximum forward inclination under duty:	°	10
Max. intermittent backward tilt while running:	°	
Max. intermittent side tilt while running:	°	
Idling speed	rpm	750 ± 25
Rated speed	rpm	2300
Propeller selection range	rpm	2275-2325

Performance	Rating	r/min	1000	1200	1500	1800	1900	2100	2300			
Crankshaft power 1), 5)	2	kW	61	100	142	163	169	182	195			
		hp	83	136	193	222	230	247,5	265,2			
Propellershaft power 1) (At full load)	2	kW	59	97	138	158	164	177	189			
		hp	80	132	187	215	223	240	257			
Propellershaft power at prop.load x ^{2,5}	2	kW	24	37	65	103	117	151	189			
		hp	33	50	88	139	160	205	257			
Propellershaft power at prop.load x ³	2	kW	16	27	52	91	107	144	189			
		hp	22	37	71	124	146	196	257			
Torque at crankshaft 2)	2	Nm	582,5	795,8	904	864,7	849,4	827,6	809,6			
		lbf ft	430	587	667	638	626	610	597			
Mean piston speed		m/s	4,3	5,2	6,5	7,8	8,2	9,1	10,0			
		ft/s	14,2	17,1	21,3	25,6	27,0	29,9	32,7			
Effective mean pressure 2)	2	MPa	1,02	1,40	1,59	1,52	1,49	1,46	1,42			
		psi	148,6	203,0	230,6	220,6	216,7	211,1	206,5			
Max combustion pressure 2)	2	MPa			14	15	15,4	15,7	16			
		psi			2031	2176	2234	2277	2321			

Lubricating system

Specific lubricating oil consumption.		g/kWh	Approx 0,3 % of fuel consumption
Max oil volume excl. filters at following inclination:	0 °	litres	16
Min oil volume excl. filters at following inclination:	0 °	litres	13
Max oil volume excl. filters at following inclination:	°	litres	
Min oil volume excl. filters at following inclination:	°	litres	
Max oil volume excl. filters at following inclination:	°	litres	
Min oil volume excl. filters at following inclination:	°	litres	

Fuel system	Rating	r/min	1000	1200	1500	1800	1900	2100	2300			
Specific fuel consumption 2)	2	g/kWh	222	225	212	211	212	218	228			
		lb/hph	0,36	0,365	0,343	0,342	0,343	0,353	0,369			
Fuel consumption at prop. load x ^{2,5}	2	l/h	6	10	16	26	30	39	51			
		US gal/h	1,7	2,6	4,3	6,8	7,8	10,3	13,6			
Fuel consumption at prop. load x ³	2	l/h	4	7	13	23	27	37	51			
		US gal/h	1,1	1,9	3,5	6,0	7,1	9,9	13,6			
Fuel consumption at full load	2	l/h	16	27	36	41	43	47	53			
		US gal/h	4,3	7,1	9,5	10,8	11,3	12,5	14,0			

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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Intake and exhaust system	Rating	r/min	1000	1200	1500	1800	1900	2100	2300				
Specific exhaust heating effect in percent of crankshaft power	2	%			66	66	66	70	75				
Exhaust temperature (at the exhaust pipe connecting flange after the turbo charger)	2	°C			445	375	345	345	350				
		°F			833	707	653	653	662				
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)	2	kPa								Max	7,5		
		psi									1,1		
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPa and relative humidity 30%	2	m³/min			9,4	13,5	15,3	17	19,5				
		cu.ft./min			332	476,7	540,3	600,3	688,6				
Turbo charge pressure.	2	kPa			105	152	162	182	200				
		psi			15,2	22,0	23,5	26,4	29,0				
Exhaust gas flow (behind turbine)	2	m³/min			23,7	30	33	36,5	42,5				
		cu.ft./min			837	1059	1165	1289	1501				

Cooling system	Rating	r/min	1000	1200	1500	1800	1900	2100	2300				
Radiated heat in percent of crankshaft power.	2	%			5,3	5,2	5,3	5,4	5,7				
Heat rejection to after cooler in percent of crankshaft power.	2	%			11	15	19	22	25				
Cooling water heating effect incl. oil cooler in percent of crankshaft power 3).	2	%			77	72	70	71	74				
Total pumphead freshwater circulation pump.		kPa			59	85	95	116	140				
Highest permissible pressure drop in outer circuit at keel cooling.		kPa			21	31	35	43	51				
Sea water pump flow.		m³/h			5,0	6,8	7,3	8,3	9,0				
		foot³/h			177	240	258	293	318				
Cooling water circulation pump flow		m³/h			9,4	11,3	11,9	13,0	14,5				
		foot³/h			332	399	420	459	512				
Max permissible temperature on fresh water circulation outlet from the engine		°C								105			
		°F								221			
Coolant volume in engine with raw water.		litres								26			
		U.S. gal.								6,87			
Thermostat, start open at		°C								83			
		°F								181			
Thermostat, fully open at		°C								98			
		°F								208			

Emissions	Rating	r/min	1000	1200	1500	1800	1900	2100	2300			
Smoke at prop. load x ^{2,5}	2	BSU			0,6	0,4	0,3	0,3	0,3			
Smoke at prop. load x ³	2	BSU			0,45	0,35	0,3	0,3	0,3			
Noise at full load	2	dBA			91	93	94	95	97			

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ISO 8665 (=SAE J 1228=ICOMIA 28-83)

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5) At installed back pressure