

# Technical Data D7C TA

Version D7C-B TA

Rating 1, rated speed 1900 rpm

## General

In-line four stroke diesel engine with direct injection.

Number of cylinders		6
No of valves		2
Displacement, total	litres	7,15
	in <sup>3</sup>	436,0
Firing order		1-5-3-6-2-4
Rotational direction, viewed towards flywheel		Anti-clockwise
Bore	mm	108
	in	4,25
Stroke	mm	130
	in	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	1900
Propeller selection range	rpm	1875-1925

	Rating	r/min	1000	1200	1500	1800	1900						
Crankshaft power 1), 5)	1	kW	60	86	119	141	145						
		hp	82	117	162	192	197						
Propellershaft power 1) (At full load)	1	kW	58	83	115	137	141						
		hp	79	113	157	186	191						
Propellershaft power at prop.load x <sup>2,5</sup>	1	kW	29	45	79	124	142						
		hp	39	61	107	169	193						
Propellershaft power at prop.load x <sup>3</sup>	1	kW	21	36	70	121	142						
		hp	29	49	95	165	193						
Torque at crankshaft 2)	1	Nm	573	684,4	757,6	748	728,8						
		lbf ft	423	505	559	552	538						
Mean piston speed		m/s	4,3	5,2	6,5	7,8	8,2						
		ft/s	14,2	17,1	21,3	25,6	27,0						
Effective mean pressure 2)	1	MPa	1,01	1,20	1,33	1,32	1,28						
		psi	146,1	174,6	193,2	190,8	185,9						
Max combustion pressure 2)	1	MPa			11,6	12,9	13,2						
		psi			1682	1871	1914						

## Lubricating system

Specific lubricating oil consumption.		g/kWh	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	

	Rating	r/min	1000	1200	1500	1800	1900						
Specific fuel consumption 2)	1	g/kWh	218	220	211	211	212,5						
		lb/hph	0,353	0,356	0,342	0,342	0,344						
Fuel consumption at prop. load x <sup>2,5</sup>	1	l/h	8	12	20	31	36						
		US gal/h	2,0	3,1	5,2	8,2	9,5						
Fuel consumption at prop. load x <sup>3</sup>	1	l/h	5	9	18	30	36						
		US gal/h	1,4	2,5	4,6	8,0	9,5						
Fuel consumption at full load	1	l/h	16	23	30	35	37						
		US gal/h	4,1	6,0	7,9	9,4	9,7						

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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Intake and exhaust system	Rating	r/min	1000	1200	1500	1800	1900						
Specific exhaust heating effect in percent of crankshaft power	1	%			64	64	65						
Exhaust temperature (at the exhaust pipe connecting flange after the turbo charger)	1	°C			390	340	325						
		°F			734	644	617						
Permitted back pressure in the exhaust line at rated speed. (Installed back pressure)		kPa							Max	7,5			
		psi								1,1			
		kPa							Min	0			
		psi								0			
Engine air consumption at 25°C / 77°F atmospheric pressure 100kPA and relative humidity 30%	1	m³/min			8,8	12,5	13,8						
		cu.ft./min			310,8	441,4	487,3						
Turbo charge pressure.	1	kPa			93	133	144						
		psi			13,5	19,3	20,9						
Exhaust gas flow (behind turbine)	1	m³/min			20,4	26,9	20,4						
		cu.ft./min			720,4	950	720,4						

Cooling system	Rating	r/min	1000	1200	1500	1800	1900						
Radiated heat in percent of crankshaft power.	1	%			5,3	5,2	5,3						
Heat rejection to after cooler in percent of crankshaft power.	1	%			10	16	18						
Cooling water heating effect incl. oil cooler in percent of crankshaft power 3).	1	%			79	73	73						
Total pumphead freshwater circulation pump.		kPa			59	85	95						
Highest permissible pressure drop in outer circuit at keel cooling.		kPa			21	31	35						
Sea water pump flow.		m³/h			5	6,8	7,3						
		foot³/h			177	240	258						
Cooling water circulation pump flow		m³/h			9,4	11,3	11,9						
		foot³/h			332	399	420						
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						
Smoke at prop. load x <sup>2,5</sup>	1	BSU			0,5	0,3	0,3						
Smoke at prop. load x <sup>3</sup>	1	BSU			0,5	0,3	0,3						
Noise at full load	1	dBA			91	93	94						

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5) At installed back pressure