

N45 TM1A

85 kW (1500 rpm) - 95 kW (1800 rpm)

Engine N45 TM1A

1/ GENERAL			1500 rpm	1800 rpm
Engine model			N45 TM1A	
Basic engine			F4GE0485C*F650 - 504241372	
Number cylinders			4	
Firing order (N°1 nearest to fan)			1-3-4-2	
Cylinder arrangement			in line	
Valves per cylinder			2	
Type			diesel 4 stroke	
Injection system			direct	
Induction System			Turbocharged aftercooled air/air	
Bore	mm		104	
Stroke	mm		132	
Total displacement	lit		4,5	
Mean piston speed	m/s		6,6	7,9
Compression ratio			17,5 : 1	
Flywheel rotation			anti clockwise viewed on flywheel	
Housing flywheel			SAE 3	
Flywheel			11"1/2	
Moment of inertia				
	without flywheel	kgm ²	0,14	
	flywheel only	kgm ²	0,71	
BMEP				
	Prime Power	bar/kPa	14,1 / 1406,1	13,2 / 1319,9
	Stand-by Power	bar/kPa	15,5 / 1546,7	14,5 / 1451,9
Dry weight (including cooling package)			kg ~ 500	
Energy to coolant			kcal/kWh 370,3	402,1
Energy to charge cooler			kcal/kWh 122,4	140,3
Energy to radiation			kcal/kWh 55	52
Dimensions L x W x H			mm 1367 x 753 x 1085	

2/ PERFORMANCES			1500 rpm	1800 rpm
Continuous Power	(gross)	kWm	63,8	72,1
Prime Power	(gross)	kWm	79,3	89,4
Stand-By Power	(gross)	kWm	87	98
Fan consumption			kWm 1,8	2,8
Continuous Power	(net)	kWm	62	69,3
Prime Power	(net)	kWm	77,5	86,6
Stand-By Power	(net)	kWm	85,2	95,2
Performance conditions				
	temperature	°C	≤ 40	
	altitude s.l.m	m	≤ 1000	
Derating				
	temperature > T 40°C	%/5°C	1%	
	altitude >1000 <3000 m	%/500m	2%	
	altitude >3000 m	%/500m	4%	

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3/ COOLING PACKAGE			1500 rpm	1800 rpm
Type			liquid	
Recommended coolant			water + 50%paraflu 11	
Coolant capacity				
motor only	liter		8,5	
radiator and hose	liter		10	
Coolant pump flow	l/min		103,3	123,9
Pression cap setting	kPa (bar)		75 (0,75)	
Shutdown switch setting	°C		103	
maximal additional restriction	Pa		147	
Air To Boil	Prime Power	°C	53	55
Fan				
diameter	mm		500	
number of pale			10	
drive ratio			1,41 : 1	
speed	rpm		2115	2538
air flow	m ³ /s		2,2	2,6
power consumption	kWm		1,8	2,8

4/ LUBRICATION SYSTEM			1500 rpm	1800 rpm
Oil sump capacity				
max	liter		8,5	
min	liter		5,5	
Oil system capacity including filters	liter		12,8	
Oil pressure at rated speed	kPa		300-500	
Oil temperature				
normal	°C		---	
max	°C		120	
Engine angularity				
longitudinal	degrees		25°	
trasverse	degrees		25°	
Servicing intervall	hours		600	
Oil specification			ACEA E3 /E5	
Oil consumption	%fuel		< 0,1	

5/ INTAKE SYSTEM			1500 rpm	1800 rpm
Air consumption at 100% of load	m ³ /h (Kg/h)		409 (491)	505 (607)
Air intake restriction clean filter	kPa (mbar)		2 (20)	
Air intake restriction dirty filter	kPa (mbar)		5 (50)	
Air filter type			dry	

6/ EXHAUST SYTEM			1500 rpm	1800 rpm
Gas flow at stand by power	kg/h		509	629
Max temperature at PRP (25°C)	°C		429	474
Max allowable back pressure	kPa (mbar)		5 (50)	
Energy to exhaust	kcal/kWh		620,9	753,6



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7/ FUEL SYSTEM			1500 rpm	1800 rpm
Fuel consumption at				
Stand-By	gr/kWh (l/h) [kg/h]		206,9 (21,4) [18,0]	220,4 (25,7) [21,6]
full load	gr/kWh (l/h) [kg/h]		204,8 (19,3) [16,2]	220,0 (23,3) [19,6]
80%	gr/kWh (l/h) [kg/h]		204,0 (14,4) [12,1]	220,0 (17,5) [14,7]
50%	gr/kWh (l/h) [kg/h]		207,4 (9,80) [8,20]	229,0 (12,1) [10,2]
Fuel specifications			EN 590	
Fuel pump max suction head		m	---	
Injection pump		type STANADYNE	DB4429-5954	

8/ ELECTRIC SYSTEM			1500 rpm	1800 rpm
Voltage (negative to ground)		V	12	
Starter motor				
make			Bosch	
power		kW	3	
pull current		Amp	60	
hold current		Amp	12	
break away current		Amp	1580	
cranking current		Amp	0	
Number of teeth on Starter motor			10	
Number of teeth on flywheel			125	
Starting batteries				
recommended capacity	Ah	1x	100	
discharge current		Amp	650	
(EN 50342)				
Stop solenoid energized to run		Amp	0	
Alternator				
voltage		V	14	
charge		Amp	90	

9/ COLD STARTING			1500 rpm	1800 rpm
Without air preheating		°C	-10	
With air preheating		°C	-25	

10/ EMISSION GASEOUS AND PARTICLES			1500 rpm	1800 rpm
No _x	Oxides of nitrogen	gr/kWh	5,79	-
HC	Hydrocarbons	gr/kWh	0,1	-
No _x +HC		gr/kWh	5,89	-
CO	Carbon monoxide	gr/kWh	0,34	-
PT	Particles	gr/kWh	0,122	-

Date of update: April 2009
Specifications subject to change without notice
Illustrations may include optional equipment.