

N45 TM2A

96 kW (1500 rpm) - 107 kW (1800 rpm)

Engine N45 TM2A

1/ GENERAL			1500 rpm	1800 rpm
Engine model			N45 TM2A	
Basic engine type			F4GE0485A*F650 - 504241371	
Number cylinders			4	
Firing order (N° 1 nearest to fan)			1-3-4-2	
Cylinder arrangement			in line	
Valves per cylinder			2	
Cycle			diesel 4 stroke	
Injection system			direct	
Induction System			Turbocharged aftercooled air/air	
Bore	mm		104	
Stroke	mm		132	
Total displacement	liter		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 gross				
	Prime Power	bar/kpa	15,8 / 1583,8	14,8 / 1481,5
	Stand By Power	bar/kpa	17,4 / 1742,2	16,3 / 1629,6
Dry weight (including cooling package)			kg	
			~500	
Energy to coolant			kcal/kWh	417,3
				409,3
Energy to charge cooler			kcal/kWh	128,6
				133,4
Energy to radiation			kcal/kWh	55
				52
Dimensions L x W x H			mm	
			1367 X 753 X 1086	

2/ PERFORMANCES			1500 rpm	1800 rpm
Continuous Power	(gross)	kWm	71,8	80,9
Prime Power	(gross)	kWm	89,3	100,3
Stand-By Power	(gross)	kWm	98	110
Fan consumption		kWm	1,8	2,8
Continuous Power	(net)	kWm	70	78,1
Prime Power	(net)	kWm	87,5	97,5
Stand by Power	(net)	kWm	96,2	107,2
Performance condition				
	temperature	°C	≤ 40	
	altitude a.s.l	m	≤ 1000	
Derating				
	temperature > T 40°C	%/5°C	2%	
	altitude >1000 <3000 m	%/500m	3%	
	altitude >3000 m	%/500m	6%	

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3/ COOLING PACKAGE			1500 rpm	1800 rpm
Type			liquid	
Recommended coolant			water + 50%paraflu 11	
Coolant capacity				
engine only	liter		8,5	
radiator and hoses	liter		10	
Coolant pump flow	l/min		103,3	123,9
Pressure cap setting	kpa (bar)		75 (0,75)	
Shutdown switch setting	°C		103	
Maximum additional restriction	Pa		147	
Air To Boil	Prime Power	°C	55	
Fan				
diamètre	mm		500	
number of blades			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 filter	liter		12,8	
Oil pressure at rated speed	kPa		300-500	
Oil temperature				
normal	°C		---	
max	°C		120	
Engine angularity				
longitudinale	degrees		25°	
transverse	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)		427 (512,5)	507 (609,3)
Air intake restriction, clean filter	kPa (mbar)		2 (20)	
Air intake restriction dirty filter	kPa (mbar)		5 (50)	
Air filter type			dry	

6/EXHAUST SYSTEM			1500 rpm	1800 rpm
Gas flow at stand by Power	kg/h		533	634
Max temperature at PRP (25°C)	°C		535	540
Max allowable back pressure	kPa (mbar)		5 (50)	
Energy to exhaust	kcal/kWh		731,6	785,3

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7/ FUEL SYSTEM

			1500 rpm	1800 rpm
Fuel consumption at				
Stand-By	gr/kWh (l/h) [kg/h]		209,2 (24,4) [20,5]	221,8 (29,0) [24,4]
Full load	gr/kWh (l/h) [kg/h]		207,7 (22,0) [18,4]	221,0 (26,3) [22,1]
80%	gr/kWh (l/h) [kg/h]		203,5 (16,2) [13,6]	220,0 (19,6) [16,5]
50%	gr/kWh (l/h) [kg/h]		206,5 (11,0) [9,20]	226,0 (13,5) [11,3]
Fuel specifications			EN 590	
Feed pump max suction head		m	---	
Injection pump		type STANADYNE	DB4429-5945	

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.