

N45 TM2A

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

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)			~500	
Energy to coolant			417,3	409,3
Energy to charge cooler			128,6	133,4
Energy to radiation			55	52
Dimensions L x W x H			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	0	
Pressure cap setting	kpa (bar)	75 (0,75)	
Shutdown switch setting	°C	103	
Maximum additional restriction	Pa	147	
Air To Boil	Prime Power	°C	
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

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.