

# N45 TE2F

98 kW (1500 rpm)

Engine N45 TE2F

## 1/ GENERAL

1500 rpm

Engine model			N45 TE2F
Basic engine type			F4HE0485B*J101 - 5801441593XY
Number cylinders			4
Firing order (N° 1 nearest to fan)			1-3-4-2
Cylinder arrangement			in line
Valves per cylinder			4
Cycle			diesel 4 stroke
Injection system			direct common rail
Electronic engine control unit			BOSCH EDC7 UC31
Induction System			Turbocharged aftercooled air/air
Bore	mm		104
Stroke	mm		132
Total displacement	liter		4,5
Mean piston speed	m/s		6,6
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 <sup>2</sup>		0,14
flywheel only	kgm <sup>2</sup>		0,71
Degree of irregularity at PRP			0,069
BMEP gross			
Prime Power	bar/kpa		17,8 / 1777
Stand By Power	bar/kpa		16,2 / 1617
Dry weight (including cooling package)	kg		~ 500
Energy to coolant	kcal/kWh		341
Energy to charge cooler	kcal/kWh		115
Energy to radiation	kcal/kWh		175
Dimensions L x W x H	mm		1367 X 753 X 1086

## 2/ PERFORMANCES

1500 rpm

Continuous Power	(gross)	kWm	73
Prime Power	(gross)	kWm	91
Stand-By Power	(gross)	kWm	100
Fan consumption		kWm	1,8
Continuous Power	(net)	kWm	71
Prime Power	(net)	kWm	89
Stand by Power	(net)	kWm	98
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%

### 3/ COOLING PACKAGE

**1500 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
Engine cooling outlet (max power)	°C	90
Engine cooling inlet (max power)	°C	85
Thermostat: start to open	°C	80
Thermostat: fully open	°C	96
Pressure cap setting	kpa (bar)	75 (0,75)
Shutdown switch setting	°C	103
Maximum additional restriction	Pa	150
Air To Boil	Prime Power	°C
		60
Fan		
diamètre	mm	500
number of blades		10
drive ratio		1,41 : 1
speed	rpm	2115
air flow	m <sup>3</sup> /s	2,2
power consumption	kWm	1,8

### 4/ LUBRICATION SYSTEM

**1500 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**

Air consumption at 100% of load	m <sup>3</sup> /h (kg/h)	525
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**

Gas flow at stand by Power	kg/h	546
Max temperature at PRP (25°C)	°C	460
Max allowable back pressure	kPa (mbar)	5 (50)
Energy to exhaust	kcal/kWh	608

### 7/ FUEL SYSTEM

**1500 rpm**

Fuel consumption at		
Stand-By	gr/kWh (l/h) [kg/h]	208,5 (24,8) [20,9]
Full load	gr/kWh (l/h) [kg/h]	210,7 (22,8) [19,2]
80%	gr/kWh (l/h) [kg/h]	215,4 (18,7) [15,7]
50%	gr/kWh (l/h) [kg/h]	225,4 (13,4) [11,3]
Fuel specifications		EN 590
Feed pump max suction head	m	---

### 8/ ELECTRIC SYSTEM

**1500 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	100
discharge current	Amp	650
(EN 50342)		
Alternator		
voltage	V	14
charge	Amp	90

### 9/ COLD STARTING

**1500 rpm**

Without air preheating	°C	-10
With air preheating	°C	-25

### 10/ EMISSION GASEOUS AND PARTICLES

**1500 rpm**

No <sub>x</sub>	Oxides of nitrogen	gr/kWh	-
HC	Hydrocarbons	gr/kWh	-
No <sub>x</sub> +HC		gr/kWh	3,973
CO	Carbon monoxide	gr/kWh	0,94
PT	Particles	gr/kWh	0,161