

# N45 TE1F

82 kW (1500 rpm) - 90 kW (1800rpm)

Engine N45 TE1F

1/ GENERAL			1500 rpm	1800 rpm
Engine model	N45 TE1F			
Basic engine	5802025392XY			
Engine Type	F4HE0485C*J/F4HE0485F*J			
Number cylinders	4			
Firing order (N°1 nearest to fan)	1-3-4-2			
Cylinder arrangement	in line			
Valves per cylinder	4			
Type	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	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 <sup>2</sup>	0,14	
	flywheel only	kgm <sup>2</sup>	0,71	
Degree of irregularity at PRP			0,057	0,038
BMEP				
	Prime Power	bar/kPa	13,2 / 1320	12,2 / 1215
	Stand-by Power	bar/kPa	14,6 / 1460	13,3 / 1350
Dry weight (including cooling package)	kg		~500	
Energy to coolant	kcal/kWh		416	451
Energy to charge cooler	kcal/kWh		115	132
Energy to radiation	kcal/kWh		84	79
Dimensions L x W x H	mm		1367 X 753 X 1086	

2/ PERFORMANCES			1500 rpm	1800 rpm
Continuous Power	(gross)	kWm	60	65,6
Prime Power	(gross)	kWm	74,5	82
Stand-By Power	(gross)	kWm	82	90
Fan consumption		kWm	1,6	2,8
Continuous Power	(net)	kWm	58,4	62,8
Prime Power	(net)	kWm	72,9	79,2
Stand-By Power	(net)	kWm	80,4	87,2
Performance conditions				
	temperature	°C	≤ 40	
	altitude s.l.m	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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<b>3/ COOLING PACKAGE</b>			1500 rpm	1800 rpm
Type			liquid	
Recommended coolant			see FPT specific document	
Coolant capacity				
motor only	liter		8,5	
radiator and hose	liter		10	
Coolant pump flow	l/min		103,3	123,9
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	
Pression cap setting	kPa (bar)		75 (0,75)	
Shutdown switch setting	°C		103	
maximal additional restriction	Pa		150	
Air To Boil	Prime Power	°C	65	65
Fan				
diameter	mm		500	500
number of blades			10	10
drive ratio			1,41 : 1	1,41 : 1
speed	rpm		2115	2538
air flow	m <sup>3</sup> /s		1,6	2
power consumption	kWm		1,6	2,8

<b>4/ LUBRICATION SYSTEM</b>			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			see FPT specific document	
Oil consumption	%fuel		< 0,1	

<b>5/ INTAKE SYSTEM</b>			1500 rpm	1800 rpm
Air consumption at 100% of load	Kg/h		500	584
Air intake restriction clean filter	kPa (mbar)		2 (20)	2 (20)
Air intake restriction dirty filter	kPa (mbar)		4,5 (45)	4,5 (45)
Air filter type			dry	dry

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<b>6/ EXHAUST SYTEM</b>			<b>1500 rpm</b>	<b>1800 rpm</b>
Gas flow at stand by power	kg/h		517	604
Max temperature at PRP (25°C)	°C		430	413
Max allowable back pressure	kPa (mbar)		18 (180)	
Energy to exhaust	kcal/kWh		630	765

<b>7/ FUEL SYSTEM</b>			<b>1500 rpm</b>	<b>1800 rpm</b>
Fuel consumption at				
Stand-By	gr/kWh [kg/h] (l/h)		209,7 [17,2] (20,3)	221 [19,8] (23,4)
full load	gr/kWh [kg/h] (l/h)		212,5 [15,8] (18,6)	224 [18,4] (21,9)
80%	gr/kWh [kg/h] (l/h)		220 [13,2] (15,4)	227[15,7] (18,5)
50%	gr/kWh [kg/h] (l/h)		234 [9,6] (11,3)	242 [11,1] (13)
Fuel specifications see FPT specific document				
Fuel pump max suction head	m		---	

<b>8/ ELECTRIC SYSTEM</b>			<b>1500 rpm</b>	<b>1800 rpm</b>
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)				
Alternator				
voltage	V		14	
charge	Amp		90	

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

<b>10/ EMISSION GASEOUS AND PARTICLES</b>			<b>1500 rpm</b>	<b>1800 rpm</b>
No <sub>x</sub>	Oxides of nitrogen	gr/kWh	3,28	3,34
HC	Hydrocarbons	gr/kWh	0,21	0,24
No <sub>x</sub> +HC		gr/kWh	3,5	3,59
CO	Carbon monoxide	gr/kWh	1,11	1
PT	Particles	gr/kWh	0,17	0,165