Technical Data

1300 Series EDi 1306C-E87TAG6

ElectropaK **246 kW @ 1500 rev/min**

Basic technical data

Rating code M433
Number of cylinders 6
Cylinder arrangement .. ..Vertical, in-line
Cycle ... ... Four stroke
Induction system .. .. .air to air charged cooled, turbocharged
Compression ratio ... ... 16·9:1
Bore . ... 116,6 mm
Stroke .. .. 135,9 mm
Cubic capacity . ... .8,7 litres
Direction of rotation .. ..Clockwise, from the front
Firing order 1, 5, 3, 6, 2, 4

Engine weight

-dry (1), (2) ... ... 671 kg
-wet (1), (2) .. .. 698 kg
-ElectropaK kit (3) ... ... 225 kg

(1) Includes SAE 2 flywheel and flywheel housing
(2) Without ElectropaK kit
(3) Includes radiator; fan; fan-guards; starter motor; alternator and air filter assembly. Does not include weight of radiator coolant

Overall dimensions (includes ElectropaK kit)

-height .. .. 1369 mm
-length .. .. 1822 mm
-width (including mounting brackets) ... ... 875 mm

Moments of inertia (mk²)

-engine . ... 0,536 kgf m²
-flywheel SAE 2 (option GL08) ... ... 1,005 kgf m²

Centre of gravity

Position of centre (dry, base engine)
-forward from rear of block ... ... 480,1 mm
-above centre line of block ... ... 185,4 mm
-offset to RHS of centre line .. .. 25,4 mm
Position of centre (dry, base engine plus accessories)
-forward from rear of block ... ... 449,6 mm
-above centre line of block ... ... 182,9 mm
-offset to RHS of centre line .. .. 10,2 mm

Performance

Data based on ISO/TR14396, SAE J1995 3.1, ISO3046/1, DIN6271
Engine speed control in
accordance with ... ... .BS5514 pt.4; ISO3046-4 and ISO8528-5
Cyclic irregularity
-at 110% stand-by power 0,0253

Test conditions

-air temperature ... ... 25 °C
-barometric pressure . ... 100 kPa
-relative humidity 30%

Sound level

-bare engine at 1 metre . ... 106 dB(A)
-all ratings certified to within . ...+3 % to -5 %

If the engine is to operate in ambient conditions other than those of the test conditions, suitable adjustments must be made for these changes. For full details, contact Perkins Technical Service Department; For details of load acceptance values, contact the applications department at Perkins Engines Company Limited, Stafford.

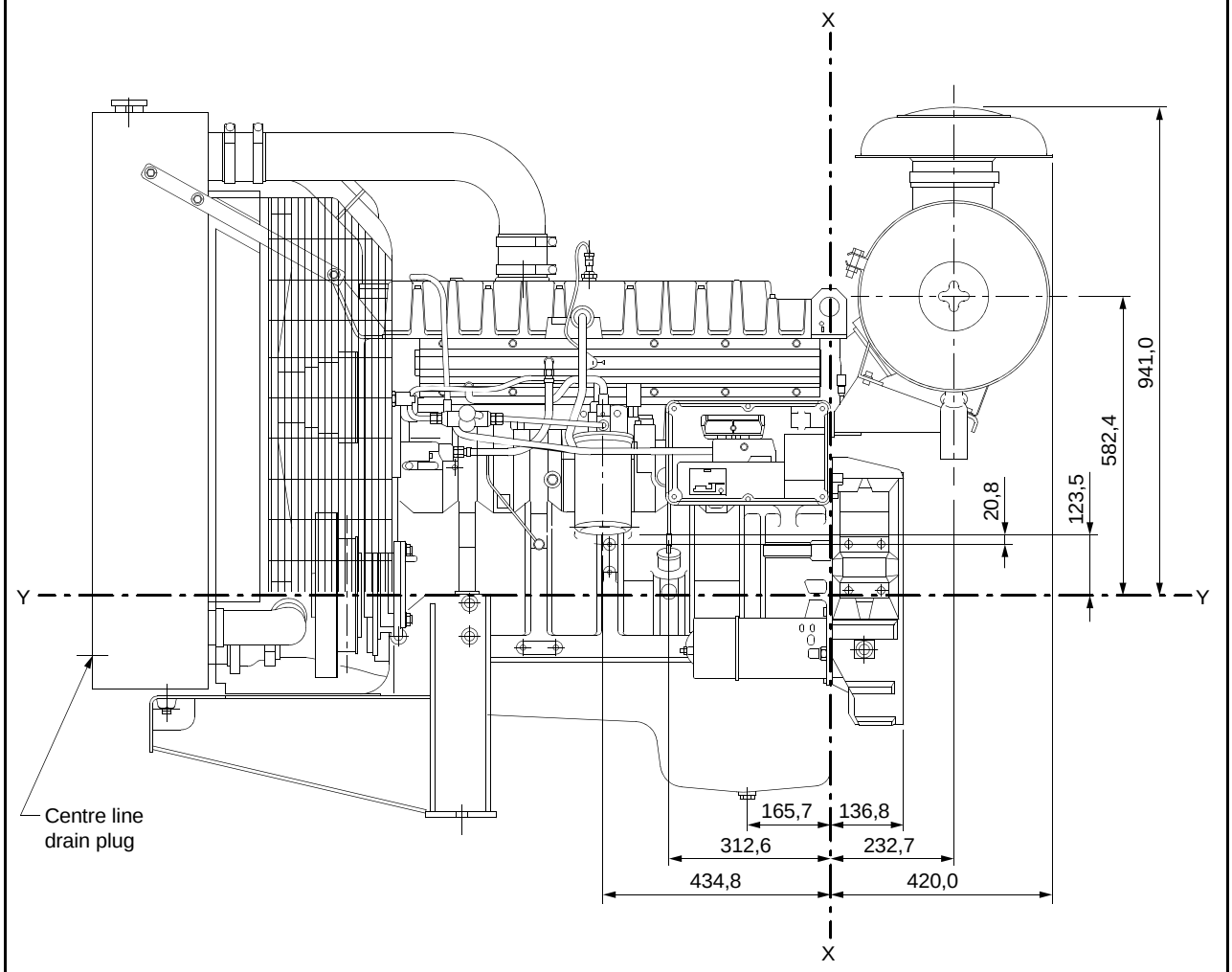
Certified against the requirements of EU2007 legislation for non-road mobile machinery, powered by constant speed engines (EU97/68/EC Stage II)

General installation

Designation	Units	Type of operation and application		
		Base	Prime	Stand-by
		50Hz	50Hz	50Hz
Gross engine power	kW	204	224	246
Fan power	kW	7	7	7
Brake mean effective pressure	kPa	1875	2058	2261
Mean piston speed	m/s	6,8	6,8	6,8
ElectropaK net engine power	kW	198	217	239
Engine coolant flow	l/min	238	238	238
Combustion air flow	m³/min	-	-	16,4
Exhaust gas flow (max)	m³/min	-	-	44,5
Exhaust gas temperature (max)	°C	-	-	528
Cooling fan air flow	m³/min	375	375	375
Typical Genset electrical output (0.8 pf)	kWe	-	200	220
	kVa	-	250	275
Energy balance				
Energy in fuel (Fuel heat of combustion)	kW	-	529	583
Gross heat to power	kW	-	224	246
Energy to coolant and lubricating oil	kW	-	103	110
Energy to exhaust	kW	-	126	142
Heat to radiation	kW	-	40	44
Heat charge cooler	kW	-	36	41

Caution: *The airflows shown in this table will provide acceptable cooling for an open power unit operating in ambient temperatures of up to 53 °C, 46 °C. if a canopy is fitted. If the power unit is to be enclosed totally, a cooling test should be done to check that the engine cooling is acceptable. If there is insufficient cooling, contact Perkins Technical Service Department.*

1306C-E87TAG6 ElectropaK, left side view



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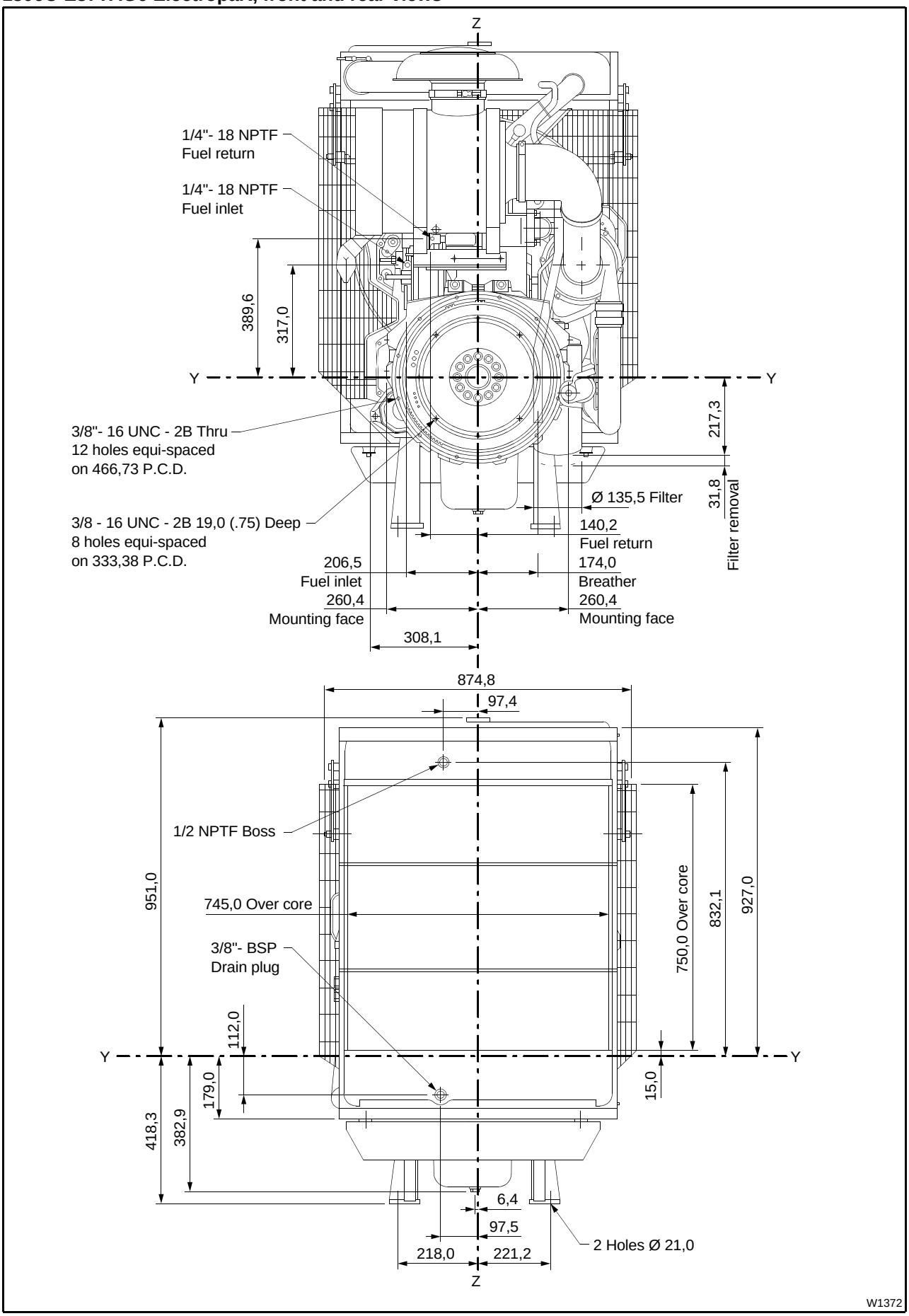
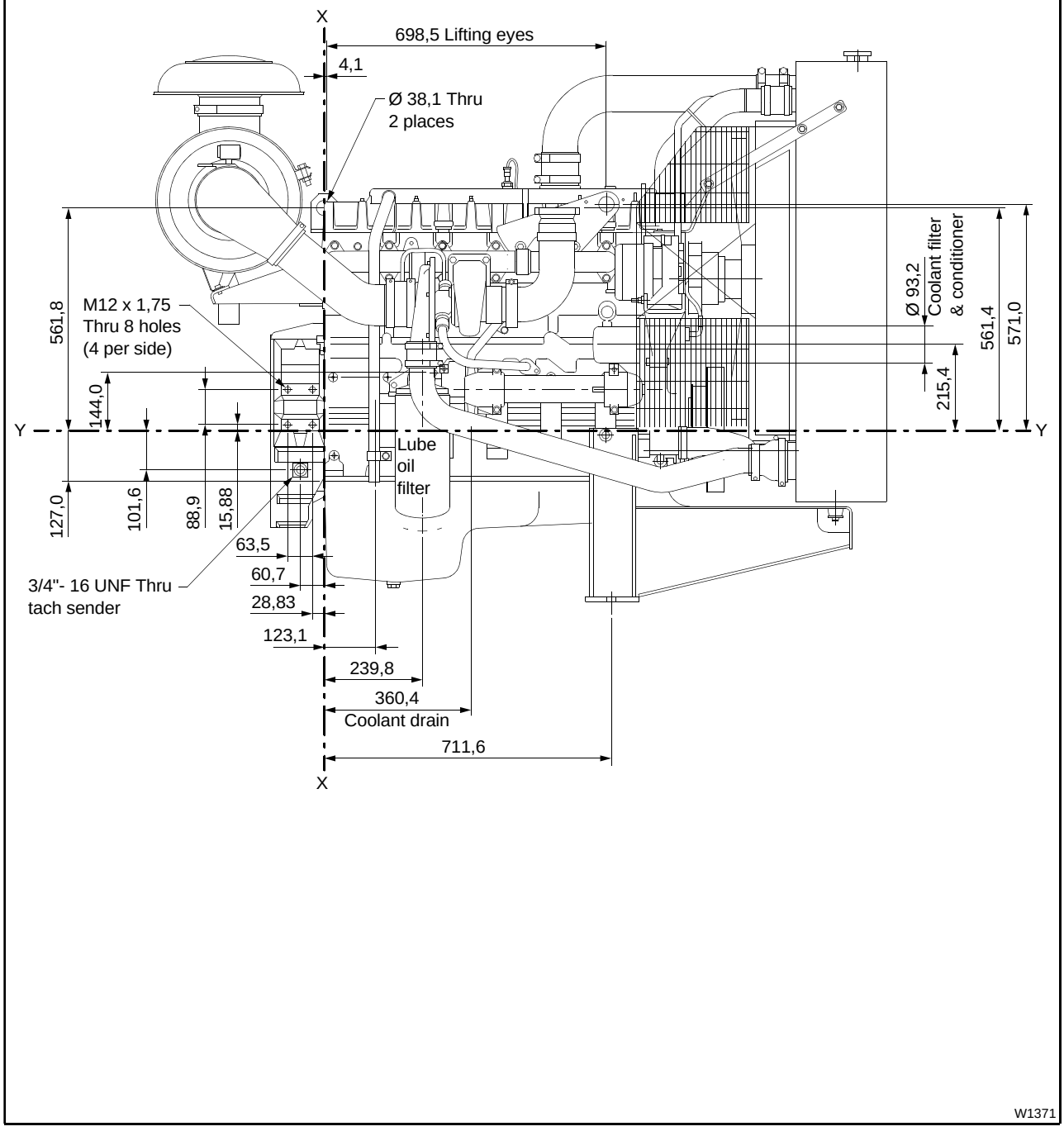
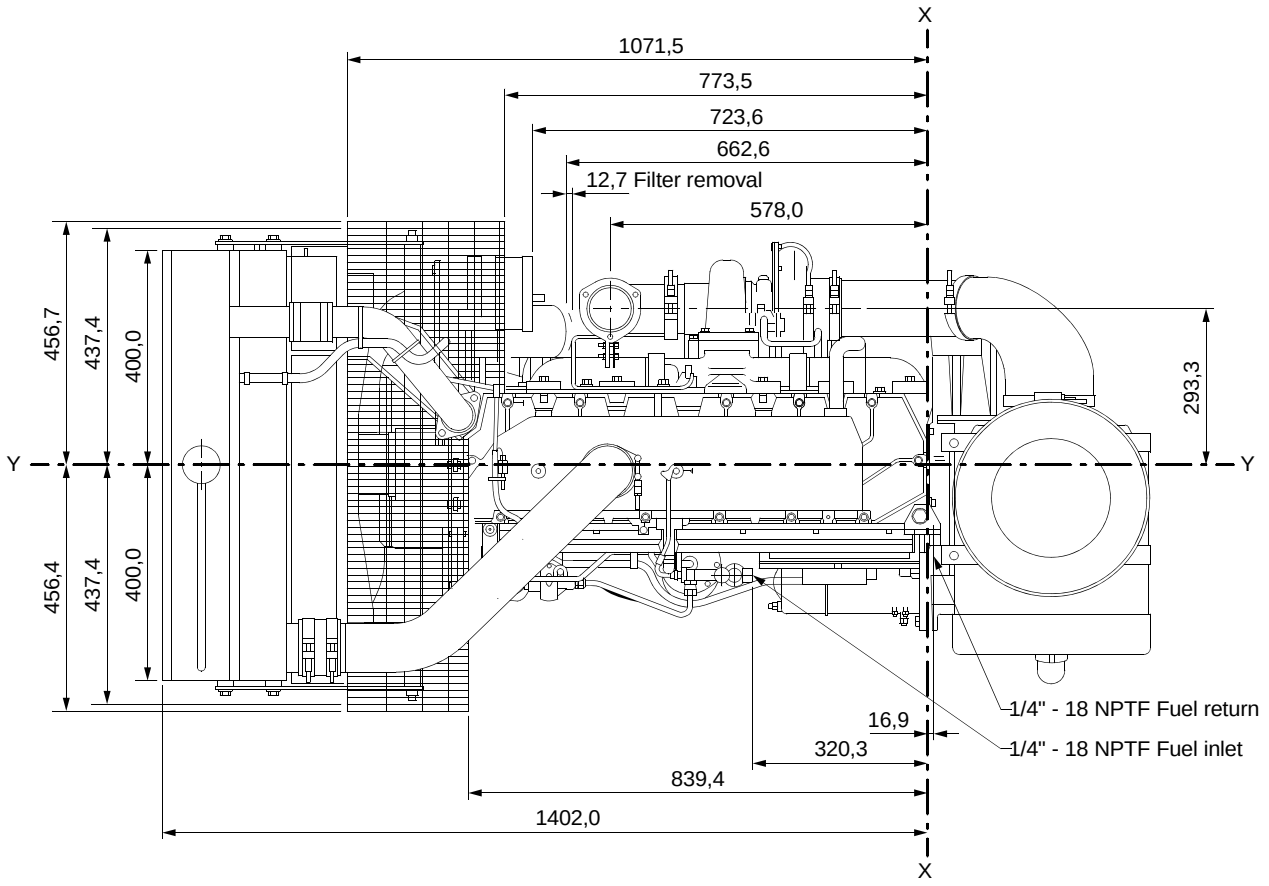
1306C-E87TAG6 ElectropaK, front and rear views



1306C-E87TAG6 ElectropaK, right side view



1306C-E87TAG6 ElectropaK, plan view



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Cooling system

Radiator

-face area .. ..0,6 m²
-rows and materials ... ... 3, brass
-matrix density and material .. .. 12, copper
-width of matrix .. .. 745 mm
-height of matrix. ... ... 750 mm
-pressure cap setting. ... ...68,9 kPa
Estimated cooling air flow reserve. ... ... 0,13 kPa

Fan

-diameter ... ... .711,2 mm
-drive ratio.. ... ...1·2 : 1
-number of blades.. 7
-material. ... ... Plastic
-type... ... ... Pusher

Coolant

Maximum pressure head at pump. ... ... 12,95 m
Total system capacity
-with radiator.. ... ... 37,2 litres
-without radiator. ... ... 12,8 litres
-draindown capacity .. ..1,3 litres
Maximum top tank temperature. ... ...103 °C
Minimum temperature to engine ... ... 79 °C
Temperature rise across engine ... ...5 °C
Max permissible external system resistance. ... ...35 kPa
Thermostat start to open ... ... .87,8 °C
Thermostat fully open ... ... .96,1 °C

Electrical system

-type... ... ... Negative ground
-alternator .. .. 12/24V Lucas AC5R
-starter motor. ... ...12V Lucas PE129 / 24V Lucas S115

Cold start recommendations

Minimum cranking speed... ... ...130 rev/min

Minimum starting temperature		Grade of engine lubricating oil	Battery specifications			
			BS3911 Cold start amps	SAEJ537 Cold cranking amps	Number of batteries needed	Perkins type
°C	°F					
-15	5	10W	440	660	2	A
-20	4	5W	440	660	2	A

Exhaust system

Maximum back pressure ... ...10,7 kPa
Note: For exhaust pipe details, see chapter five of the Gen Set Manual.

Fuel system

Type of injection.. ... ... Direct
Fuel feed pump ... ... Bosch
Hydraulic pump ... ...Rexroth
Fuel atomiser .. .. Heui
Feed pump operating pressure ... ... 417 kPa

Fuel lift pump

-flow/hour ... ... .180 litres/hr
-suction depression. ... ... 14 kPa
-pressure. ... ...137,9 kPa
Maximum suction head ... ... 1 m
Maximum static pressure head ... ... 3 m
Maximum fuel pump suction (clean system) ... ... 14 kPa
Governor type. ... ...electronic (isochronous or droop capability)
-speed control for diesel fuel to conform to. ... .. BS 2869 Class A2
... ... ASTM D975 66T Number 2D

Fuel specification

Fuel specification	USA Fed Off Highway EPA 2D 89.330-96
Density (kg/l @ 15 °C)	0,845 - 0,85
Viscosity (mm²/s @ 40 °C)	2,0 - 3,2
Sulphur Content	0,03 - 0,05%
Cetane Number	40 - 48

Fuel consumption

-at rated speed ... ... 56,9 litres/hr

Induction system

Maximum air intake restriction

-clean filter .. ..2,5 kPa
-dirty filter ... ... 6,22 kPa
-air filter type ... ... dry paper element
Turbocharger type .. .. Allied signal

Lubrication system

Lubricating oil capacity

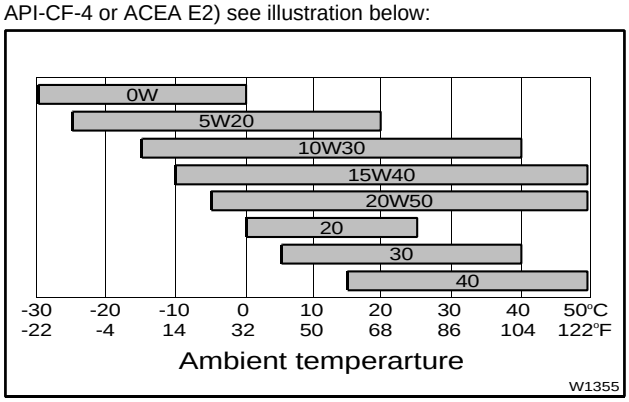
-dry engine with filter .. .. .28,3 litres
-oil change with filter .. .. .26,4 litres
-oil change without filter . ... .22,7 litres
Maximum engine operating angles
-front up, front down, right side or left side. ... ...30°

Lubricating oil pressure

-relief valve opens .. ..552 kPa
-at low idle (700 rev/min) ... ...103 kPa
-at high idle speed .. ..276 - 483 kPa
Normal oil temperature (sump) .. .. 121 °C
Oil consumption at full load as a % of fuel consumption ... ..<0,1%

Recommended SAE viscosity

A single or multigrade oil must be used which conforms to API-CH-4, API-CG-4 or ACEA E3 (if not available, use only API-CF-4 or ACEA E2) see illustration below:



Mountings

Maximum static bending moment
at rear face of block .. ..2644 Nm

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