

Technical Data

1300 Series EDi

1306C-E87TAG3

ElectropaK

227 kW @ 1800 rev/min

Basic technical data

Rating code	M430
Switchable rating code (with 205 kW @ 1500 rev/min)	M434
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 m ²
-flywheel SAE 2 (option GL08)	1,005 kgf m ²

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.

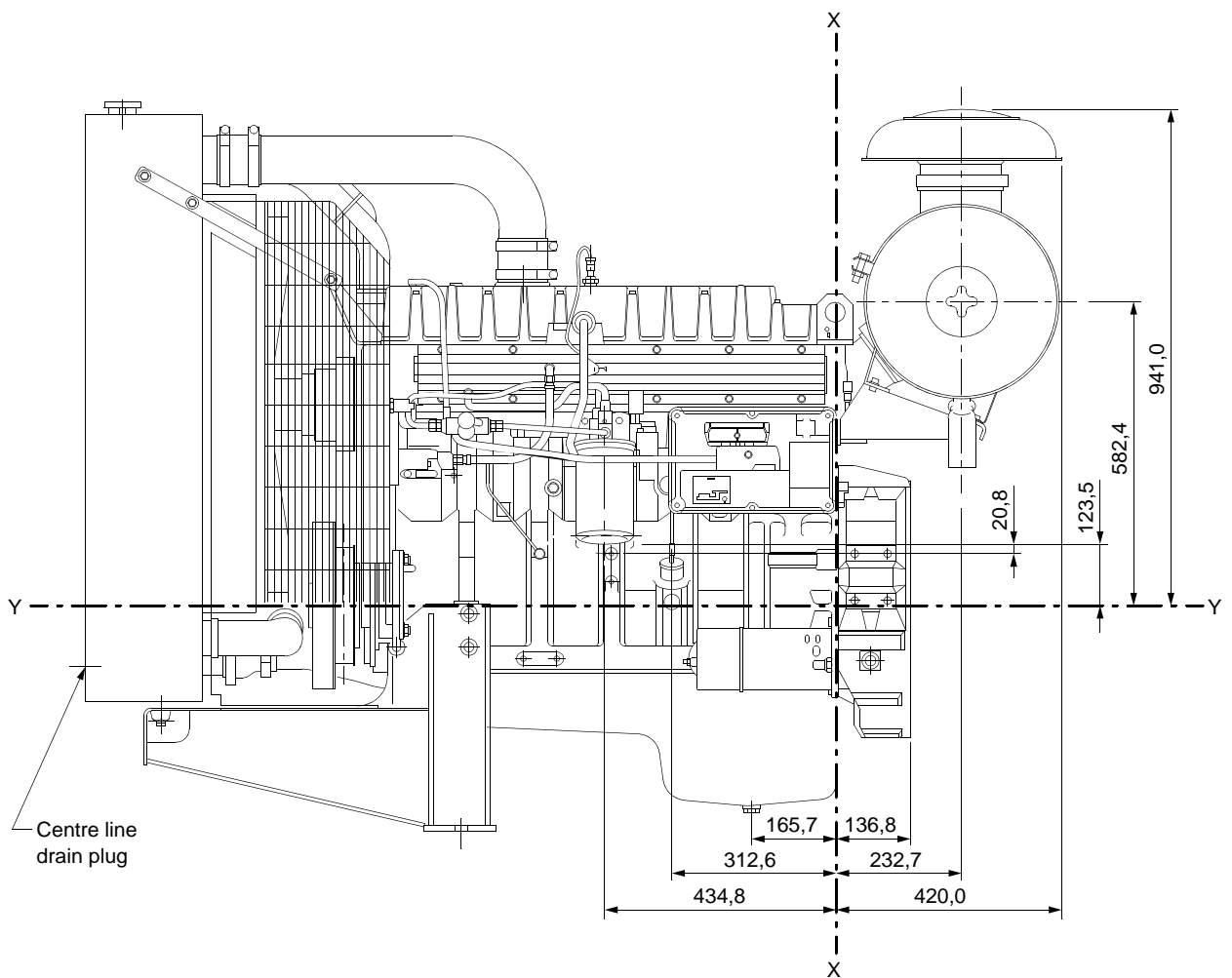
Certified against the requirements of EU2007 legislation for non-road mobile machinery, powered by constant speed engines (EU97/68/EC Stage II)

General installation

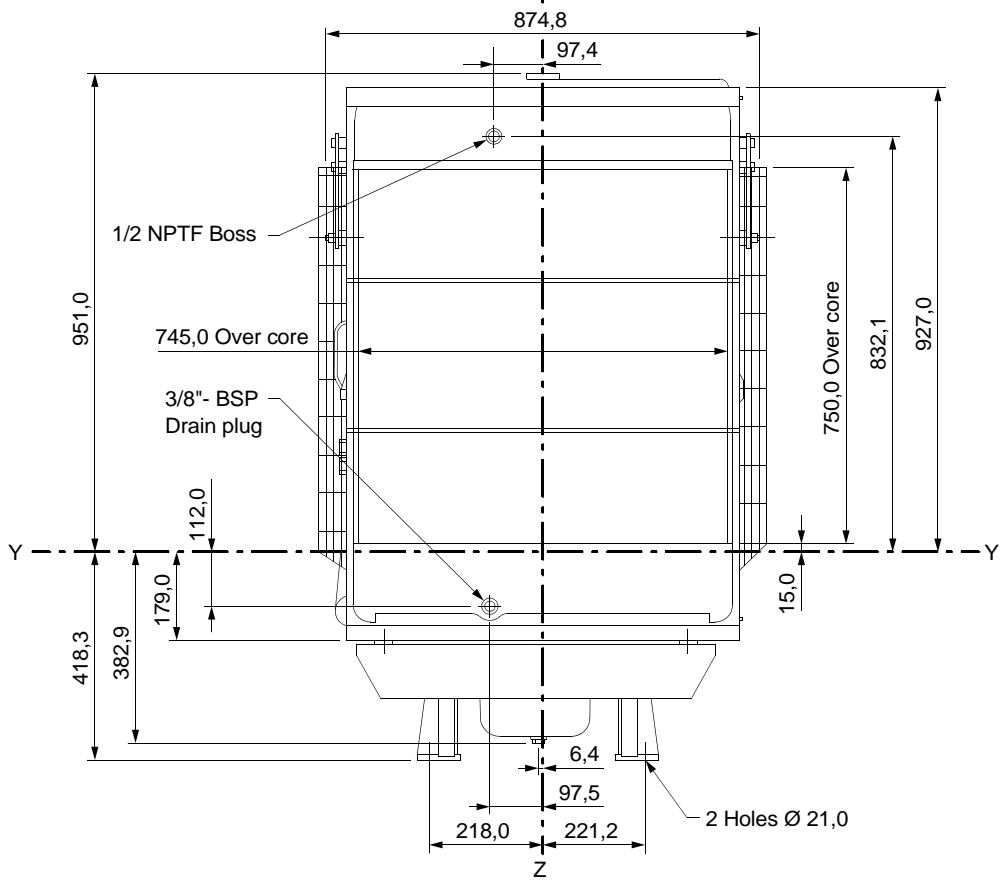
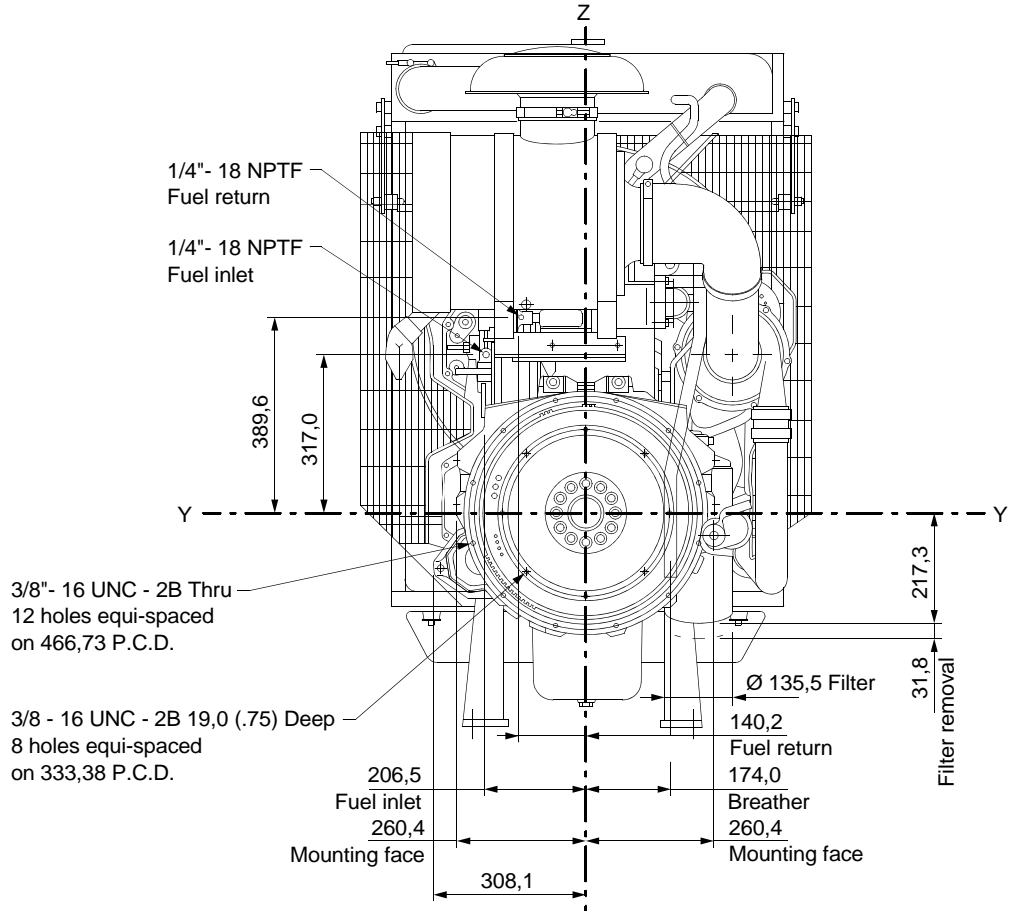
Designation	Units	Type of operation and application		
		Base	Prime	Stand-by
		60Hz	60Hz	60Hz
Gross engine power	kW	188	208	227
Fan power	kW	7	7	7
Brake mean effective pressure	kPa	1444	1590	1741
Mean piston speed	m/s	8,2	8,2	8,2
ElectropaK net engine power	kW	182	201	220
Engine coolant flow	l/min	285	285	285
Combustion air flow	m ³ /min	-	-	19,3
Exhaust gas flow (max)	m ³ /min	-	-	48,1
Exhaust gas temperature (max)	°C	-	-	461
Cooling fan air flow	m ³ /min	480	480	480
Typical Genset electrical output (0.8 pf)	kWe	-	185	202
	kVa	-	231	253
Energy balance				
Energy in fuel (Fuel heat of combustion)	kW	-	490	537
Gross energy to power	kW	188	208	227
Energy to coolant and lubricating oil	kW	-	98	108
Energy to exhaust	kW	-	116	128
Energy to radiation	kW	-	37	41
Energy to charge cooler	kW	-	30	33

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.

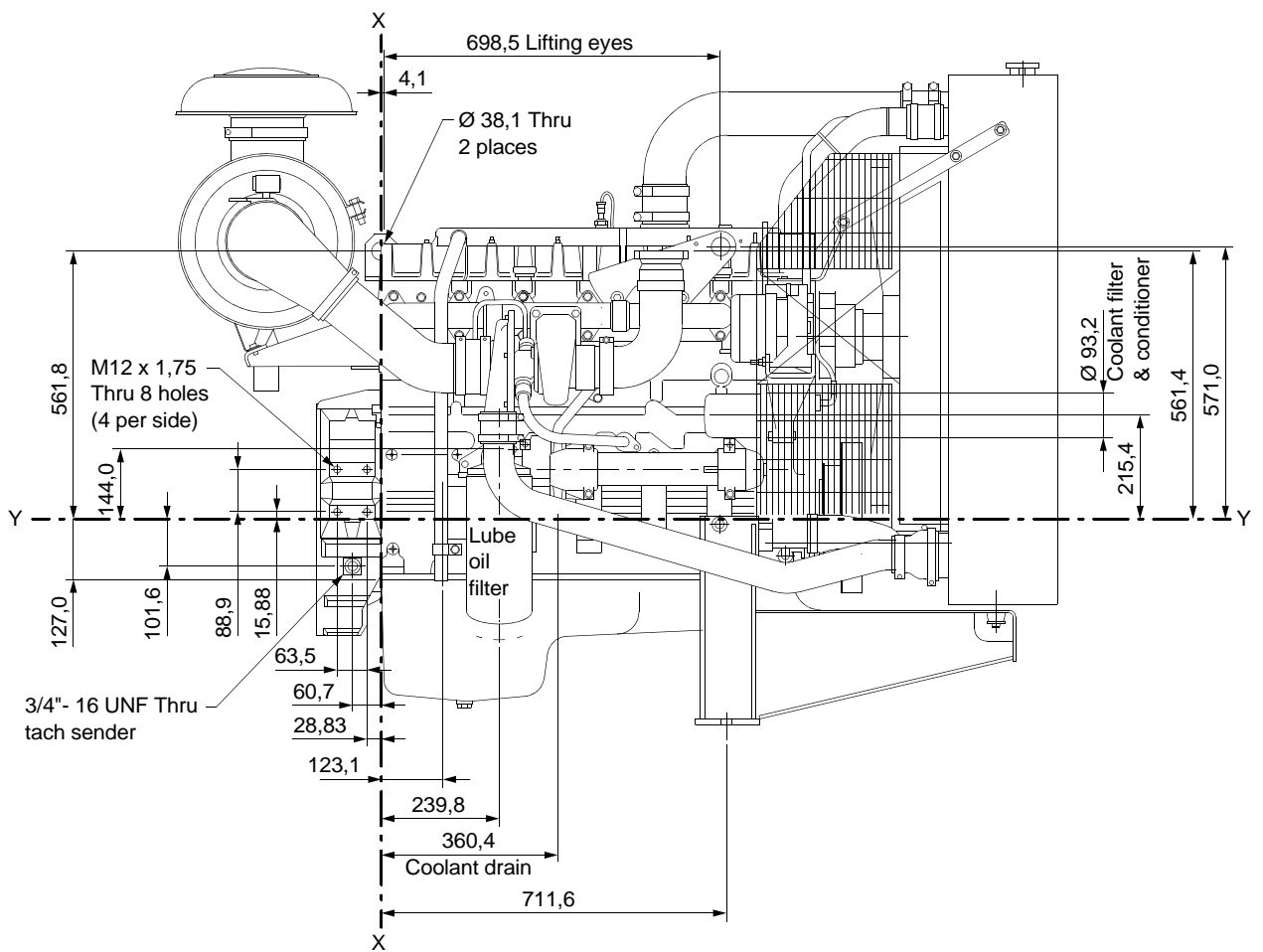
1306C-E87TAG3 ElectropaK, left side view



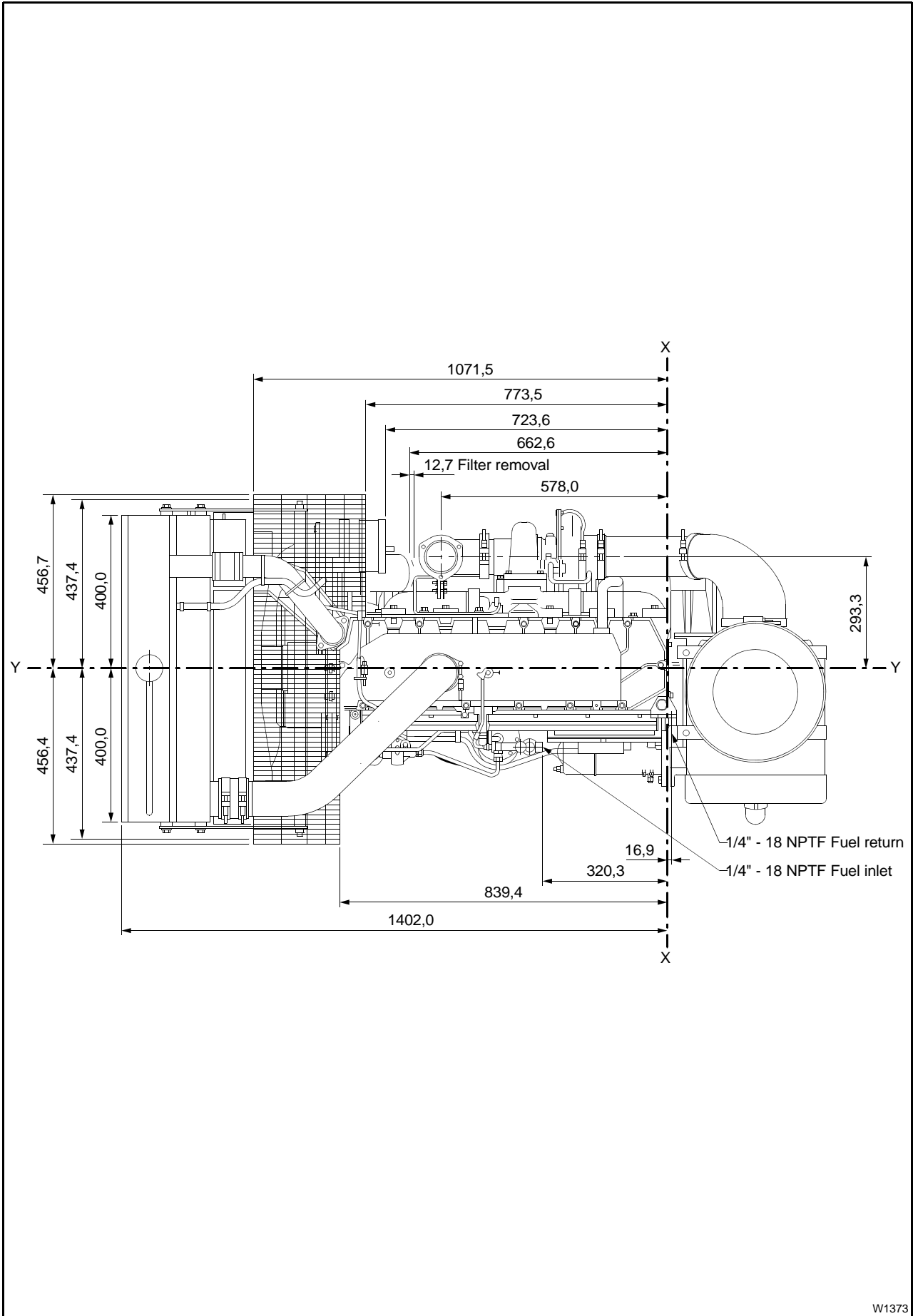
1306C-E87TAG3 ElectropaK, front and rear views



1306C-E87TAG3 ElectropaK, right side view



1306C-E87TAG3 ElectropaK, plan view



Cooling system

Radiator

-face area0,6 m²
 -rows and materials 3, brass
 -matrix density and material 12, copper
 -width of matrix 745 mm
 -height of matrix 750 mm
 -pressure cap setting68,9 kPa
 Estimated cooling air flow reserve 0,15 kPa

Fan

-diameter 711,2 mm
 -drive ratio1:2 : 1
 -number of blades 7
 -material Plastic
 -type Pusher

Coolant

Maximum pressure head at pump 15,54 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 (mm ² /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

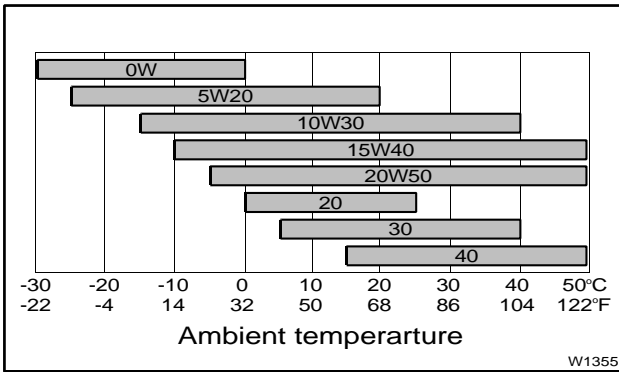
- dry engine with filter
- oil change with filter
- oil change without filter
- Maximum engine operating angles
- front up, front down, right side or left side.

Lubricating oil pressure

- relief valve opens
- at low idle (700 rev/min)
- at high idle speed
- Normal oil temperature (sump)
- Oil consumption at full load as a % of fuel consumption

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



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