

Technical Data

1000 Series

Electropak

1006TG2A

kW @ 1800 rev/min

Basic technical data

Number of cylinders 6
 Cylinder arrangement Vertical, in-line
 Cycle 4 stroke
 Induction system turbocharged
 Compression ratio 16:0 : 1
 Bore 100 mm (3.94 in)
 Stroke 127 mm (5 in)
 Cubic capacity 5,99 litres (365 in³)
 Direction of rotation clockwise, from the front
 Firing order 1, 5, 3, 6, 2, 4
 Estimated total weight (dry) 586 kg (1291 lb)
 Estimated total weight (wet) 623 kg (1373 lb)

Overall dimensions

-height 1124 mm (44.25 in)
 -length 1559 mm (61.4 in)
 -width (including mounting brackets) 709 mm (27.9 in)

Moments of inertia (mk²)

-engine 0,2996 kg m² (1024 lb in²)
 -flywheel See option drawings
 Complete Electropak (wet engine)
 -forward from rear of block 402 mm (15.8 in)
 -above block centre line 187 mm (7.3 in)
 -offset to RHS 41 mm (1.6 in)

Performance

Note: All data based on operation to BS5514 1987; ISO3046/1 1982; DIN6271

Cyclic irregularity for engine and flywheel (D8001 or D8005)

-at 110% stand-by power 0,0023
 Maximum overspeed limit 2860 rev/min
 Speed variation at constant load ± 0.8%

Test conditions

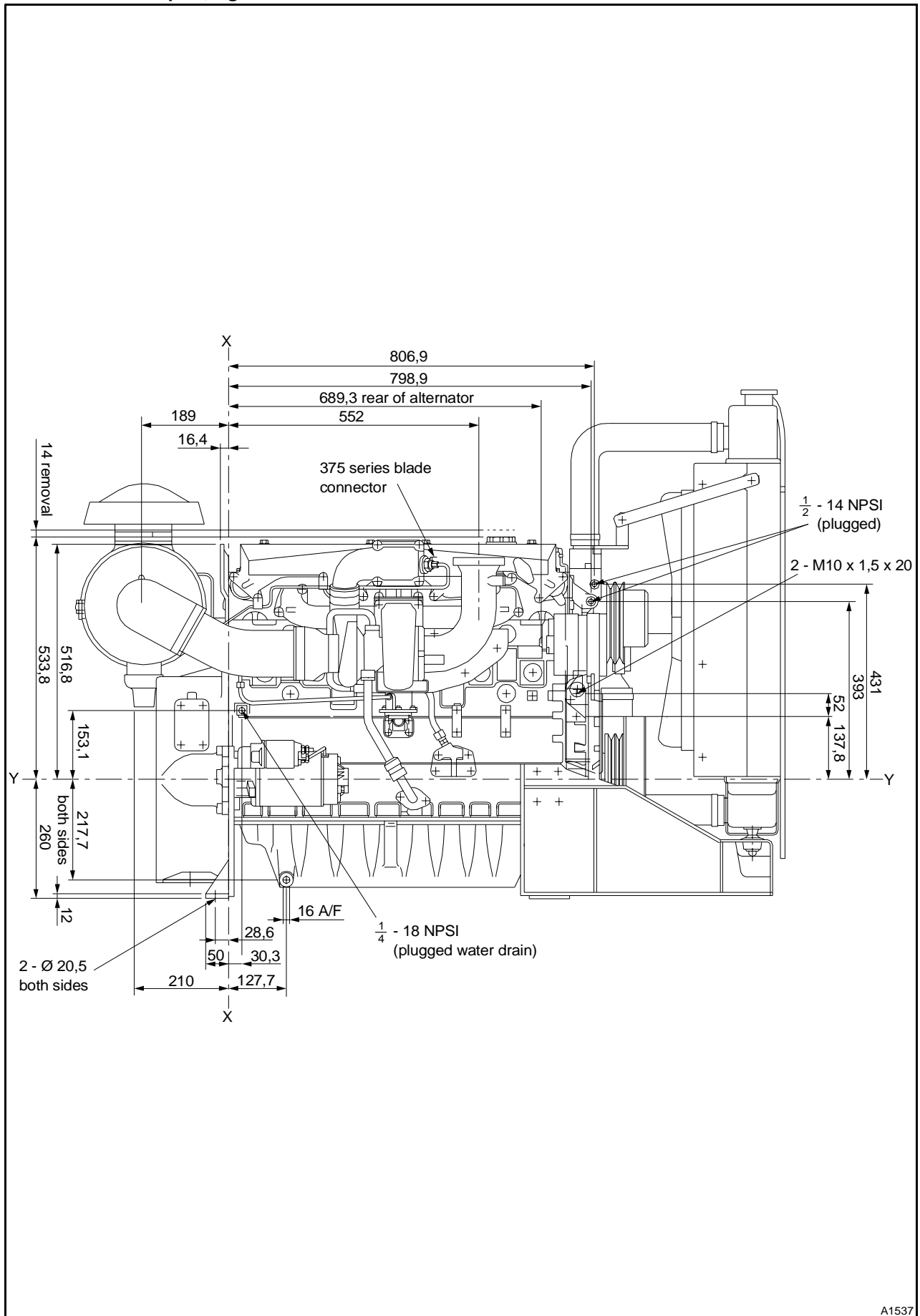
-air temperature 25 °C (80.6 °F)
 -relative humidity 30%
 -barometric pressure 100 kPa (29.5 in Hg)
 Average sound pressure level for bare engine (without inlet and exhaust) at 1 metre 95,2 dBA
 -all ratings certified to within ± 5%
 If the engine is to operate in ambient conditions other than those of the test conditions, suitable adjustments must be made for any change in inlet air temperature, barometric pressure or humidity. For full details, contact Perkins Technical Service Department. 90% of the prime power rating can be applied 10 seconds after the starter motor is energised. The remaining 10% can be applied 15 seconds after start if the ambient temperature is not less than 15 °C (59 °F). If it is less than 15 °C (59 °F), an immersion heater is recommended. For additional information, contact Perkins Technical Service Department.

General installation

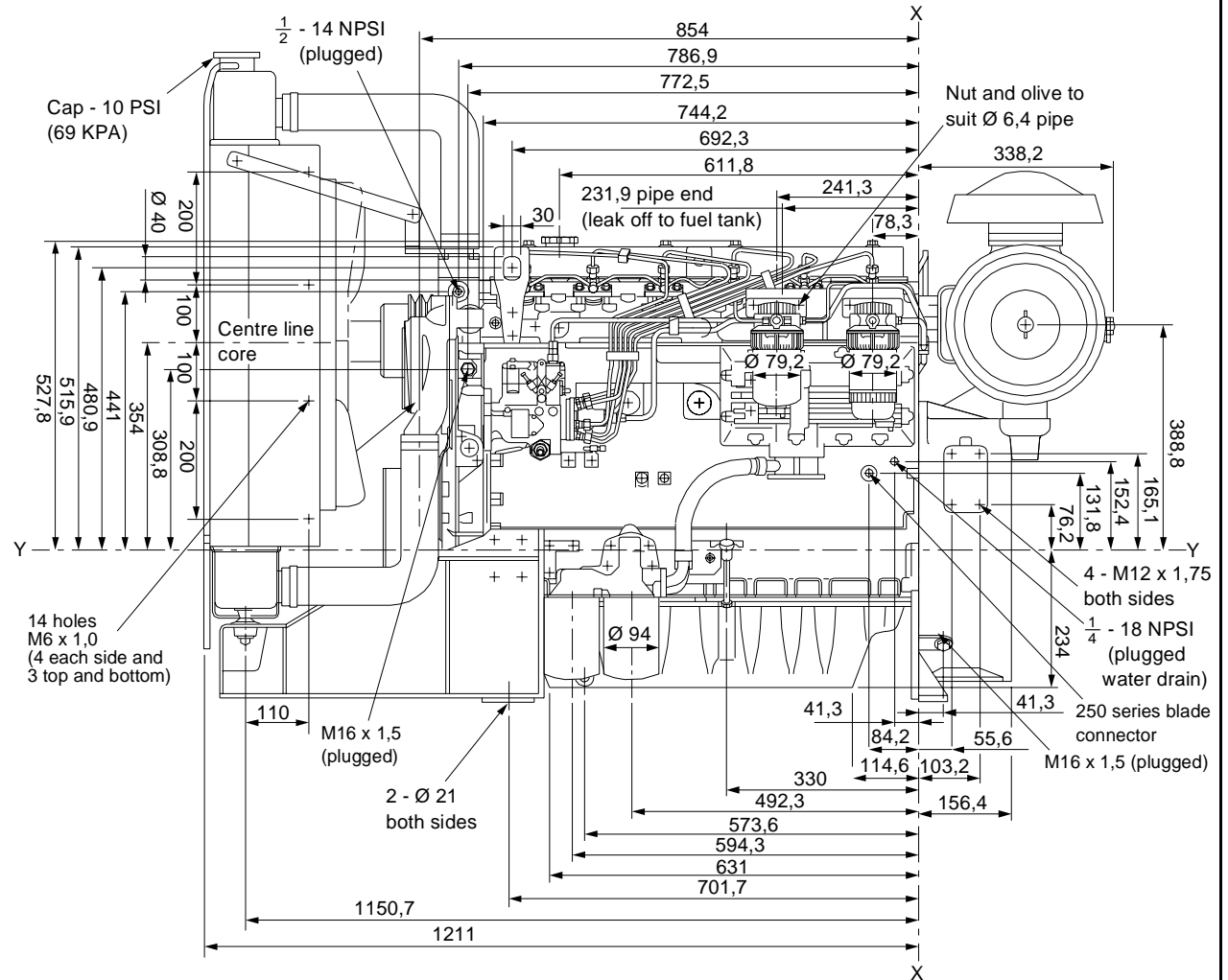
Designation	Units	Type of operation and application	
		Prime	Stand-by
		60Hz	60Hz
Gross engine power	kW (bhp)	112,4 (150.7)	123,6 (165.7)
Brake mean effective pressure	kPa (lbf/in ²)	1253 (181)	1393 (202)
Piston speed	m/s (ft/s)	7,62 (25)	7,62 (25)
Electropak net engine power	kW (bhp)	108,4 (145.4)	119,2 (159.8)
Engine coolant flow	l/min (UK gal/min)	168 (44.4)	168 (44.4)
Combustion air flow	m ³ /min (ft ³ /min)	7,38 (260)	7,79 (275)
Exhaust gas flow	m ³ /min (ft ³ /min)	19,96 (704)	22,49 (794)
Exhaust gas temperature	°C (°F)	540 (1004)	580 (1076)
Cooling fan air flow	m ³ /min (ft ³ /min)	140 (4954)	140 (4954)
Total heat from fuel	kW (Btu/min)	293 (16663)	326 (18539)
Gross heat to power	kW (Btu/min)	112,5 (6398)	125 (7108)
Net heat to power	kW (Btu/min)	117,9 (6704)	120,4 (6847)
Heat to water and lubricating oil	kW (Btu/min)	72,0 (4094)	80,0 (4549)
Heat to exhaust	kW (Btu/min)	84,7 (4816)	89,4 (5084)
Heat to radiation	kW (Btu/min)	23,8 (1353)	31,6 (1797)

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 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.

1006TG2A ElectropaK, right side view



1006TG2A ElectropaK, left side view



Cooling system

Radiator

- face area... .. 0,39 m² (3.36 ft²)
- rows and materials 4 brass
- gills/inch and material 12 copper
- width of matrix... .. 559 mm (22 in)
- height of matrix 698 mm (27.5 in)
- pressure cap setting 75 kPa (10.8 lbf/in²)
- maximum top tank temperature 103 °C (207 °F)
- Estimated cooling air flow reserve (see 'caution' on the bottom of the front page).. .. 0,2 kPa (0.79 in H₂O)

Fan

- diameter 559 mm (22 in)
- drive ratio 1:25 : 1
- number of blades 7
- material plastic

Coolant

- Maximum pressure head at pump 8 m (26.2 ft)
- Total system capacity 27,7 litres (48.7 UK pints)
- draindown capacity 27,6 litres (48.5 UK pints)
- Minimum temperature to engine 70 °C (158 °F)
- Temperature rise across engine 7,7 °C (13.8 °F)
- Max permissible external system resistance 35 kPa (5 lbf/in²)
- Thermostat operation range... .. 82-93 °C (180-199 °F)

Electrical System

- type Negative ground
- alternator 12/24V options
- starter motor 12/24V options

Cold start recommendations

Minimum starting temperature		Grade of engine lubricating oil	Battery specifications			Perkins Type
			BS3911 Cold start amps	SAEJ537 Cold cranking amps	Number of batteries needed	
°C	°F					
-7	19	20W	520	800	1	B
-15	5	10W	520	800	1	B
-18	0	10W	315	535	2	D
-20	-4	5W	315	535	2	D

Exhaust system

- Maximum back pressure for total system 6 kPa (1.77 in Hg)
- Inside diameter of outlet at maximum rating 78 mm (3.07 in)
- Note:** Changes to induction restriction, exhaust back pressure and fuel viscosity/temperature/specific gravity, can affect power output. For further details contact Perkins Technical Service Department.

Fuel system

- Type of injection Direct
- Fuel injection pump Rotary type
- Fuel atomiser Multi-hole
- Nozzle opening pressure 23,3 MPa (230 atm)

Fuel lift pump

- delivery/hour 133,7 litres (235 UK pints)
- pressure 30 kPa (4.35 lbf/in²)
- Maximum suction head 1,8 m (6 ft)
- Maximum static pressure head 3 m (9.8 ft)

Diesel Fuel to conform to BS2869 1983 Class A2 or ASTM D975 66T Number 2D.

Governor type Mechanical integral with fuel injection pump
 -speed control to... .. BS5514 Class A1

Induction system

Maximum air intake restriction at engine

- clean filter 3 kPa (12 in H₂O)
- dirty filter. 5 kPa (20 in H₂O)
- air filter type dry element
- minimum dirt capacity 353g/m³/min
- turbocharger Garret Airesearch TO4B/L3/0.8F

Lubrication system

Lubricating oil capacity

- total system 16,1 litres (28.3 UK pints)
- sump only 13,1 litres (23 UK pints)

Maximum engine operating angles

- front up, front down, right side or left side 25°

Lubricating oil pressure

- relief valve opens 345 - 414 kPa (50 - 59 lbf/in²)
- at maximum no-load speed 300 - 340 kPa (43 - 49 lbf/in²)
- idle speed... .. 62 - 90 kPa (9 - 13 lbf/in²)

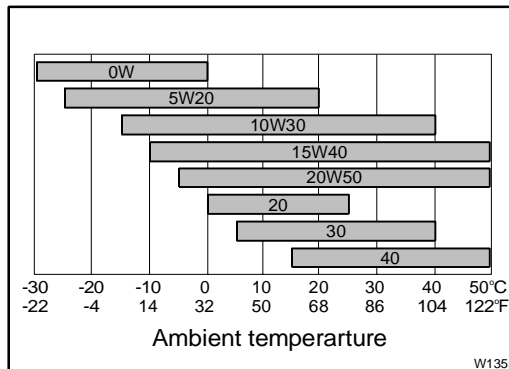
Lubricating oil temperature

- normal oil temperature 95 °C (203 °F)
- maximum 125 °C (257 °F)

Oil consumption as a % of fuel consumption 0.5% max

Recommended SAE viscosity

A Single of multigrade oil which conforms to API CD/SE or CCMC D4 must be used.



Mountings

- Maximum bending moment at rear face of block 1130 Nm (835 lbf ft)



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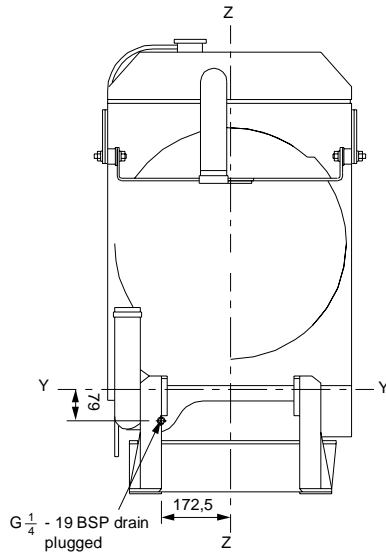
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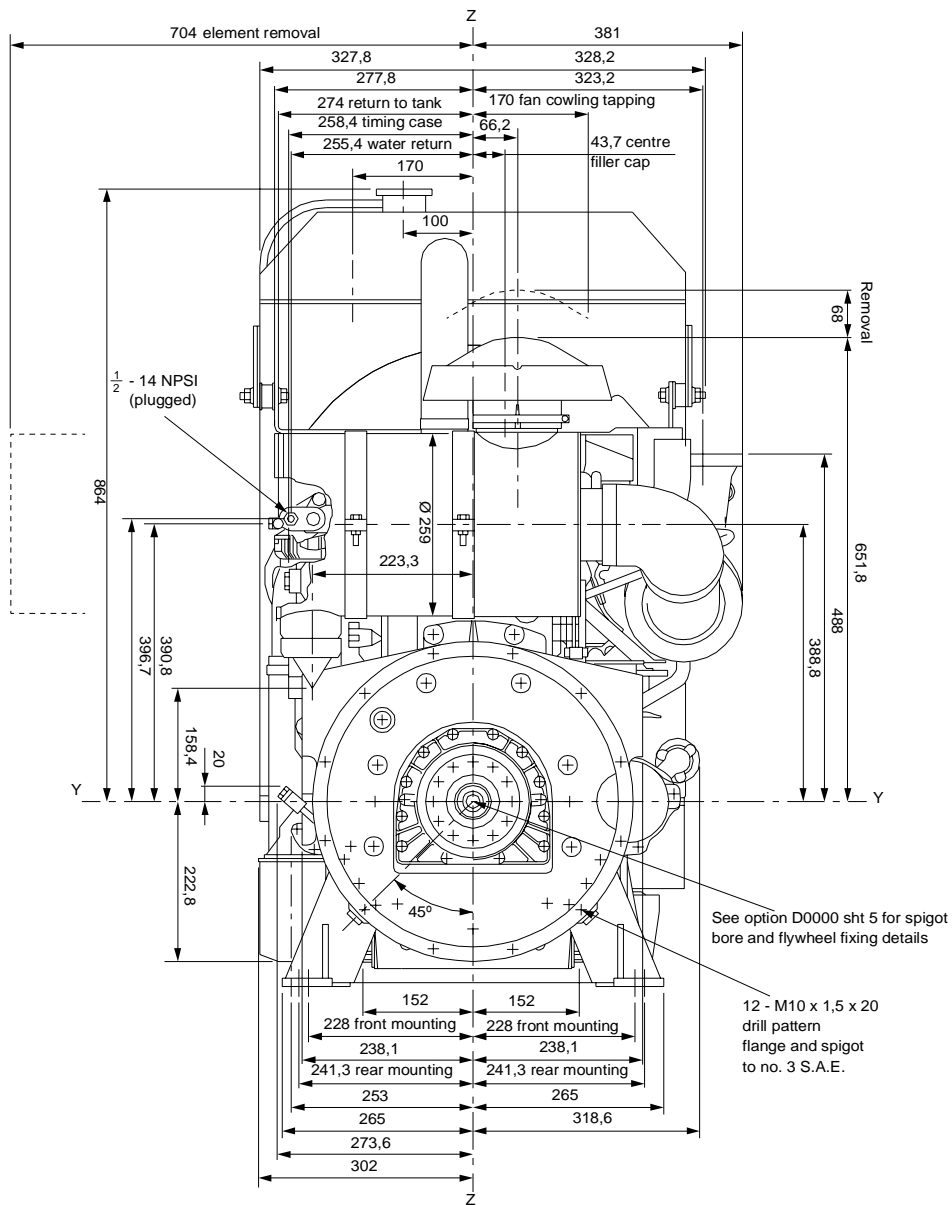
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1006TG2A ElectropaK, rear view



Engine front mounting bracket with radiator



Trim line

Trim line

1006TG2A ElectropaK, other details

Trim line

Trim line

