

1206F-E70TTAG4

1200

200 kW_e @ 1800 rpm

Electropak

Series

Basic technical data

Number of cylinders	6
Cylinder arrangement	Vertical, inline
Cycle	4 stroke
Induction system	Series turbocharged charge cooled
Combustion system	Direct injection (DI)
Compression ratio	16.5:1
Bore	105 mm
Stroke	135 mm
Displacement	7.01 litres
Direction of rotation when viewed from flywheel	Anticlockwise
Direction of rotation when viewed from front	Clockwise
Firing order	1, 5, 3, 6, 2, 4
Lifting points location	Baseframe
Mobile used g-load limitations	6g
Estimated total weight including radiator support brackets	
Dry	1125 kg
Wet	1162 kg

Overall dimensions

Height, including radiator support brackets	1461 mm
Length, front of radiator to rear of air cleaner	1769 mm
Width	916 mm

Moments of inertia (MK²)

Engine rotational components	0.18255 kgm ²
Crank pulley	0.01555 kgm ²
Flywheel inertia	0.89 kgm ²

Centre of gravity

Forward from rear of block (wet)	450 mm
Above crankshaft centre line (wet)	255 mm
Offset to RHS of crankshaft centre line (wet)	15 mm

Performance

All ratings certified to within $\pm 3\%$
Speed variation at constant load $\pm 0.25\%$

Note: All performance data based on operation to ISO standard reference: TR14396

Test conditions

Air temperature	25°C
Barometric pressure	100 kPa
Relative humidity	10.7%
Air inlet restriction at maximum power (nominal)	5 kPa
Exhaust back pressure at maximum power (nominal)	24 kPa
Fuel temperature (inlet pump)	80°C

Noise data

Average sound power level for bare engine without inlet and exhaust at 1 metre	@ 1800 rpm
At rated speed with pusher fan	117 dB(A)

Note: 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.

Emission statement

Derate curves for altitude, humidity and temperature.

General installation

Designation	Units	Engine speed @ 1800 rpm	
		Prime	Standby
Gross engine power (sales power)	kWm	217.5	239.0
Fan and battery charging alternator power	kWm	16	
Cooling fan airflow at zero duct - diameter 724 mm pusher	m ³ /sec	6.64	
Fan power absorption	kWm	15.5	
Nett engine power - full battery	kWm	201.5	223.0
Torque gross	Nm	1153.9	1268.0
Brake mean effective pressure	kPa	2069.1	2273.7
Inlet air flow volume - wet	m ³ /min	14.0	15.4
Exhaust gas flow - wet	m ³ /min	12.7	13.9
Exhaust gas mass flow - wet	kg/sec	16.4	17.9
Exhaust gas temperature maximum after turbocharger	C	498.2	531.0
Exhaust gas flow (maximum)	m ³ /min	12.7	13.9
Overall thermal efficiency (nett)	%	0.31	
Assumed alternator efficiency	%	92	
Engine coolant flow - minimum	l/min	262	
Typical GenSet electrical output (0.8pf)	kVa	225	250
	kWe	180	200

Energy balance

Designation	Units	Prime	Standby
Total energy (fuel and air)	kWt	641.6	714.9
Energy to power (gross)	kWt	217.5	239.0
Energy to cooling fan - puller	kWm	15.5	
Energy to power (nett)	kWm	201.5	223.0
Heat rejection to radiator	kWt	134.74	147.80
Energy to exhaust	kWt	224.30	253.76
Energy to charge cooler	kWt	36.96	44.17
Energy to radiation	kWt	28.18	29.68

Cooling system

Cooling pack

Overall weight (wet)	101.7 kg
Overall face area	0.6646 m ²
Width	890.4 mm
Height	1088.5 mm

Radiator

Maximum load on rad assembly from stone guard mounts	2.8 kg
Face area	0.444 m ²
Number of rows	57
Matrix density	10 fins/inch
Width of matrix	555 mm
Height of matrix	800 mm
Pressure cap setting	100 kPa

Charge cooler

Face area	0.203 m ²
Number of rows	13
Matrix density	10 fins/inch
Width of matrix	265.9 mm
Height of matrix	785 mm

Fan

Type	Pusher
Diameter	724 mm
Drive ratio	1.33:1
Number of blades	7
Material	Composite
Airflow at rated speed (1800 rpm)	4.92 m ² /sec
Power absorbed @ 1800 rpm	6.8 kW

Coolant

Total system capacity	24.25 litres
Bare engine capacity	12.25 litres
Maximum top tank temperature	108°C
Thermostat operation range	82 - 94°C
Temperature rise across engine (maximum)	8°C
Coolant pump drive	Gear
Recommended coolant immersion heater rating (minimum)	0.6 kW

Recommended coolant

BS6580 - 1992, and ELC coolants to 1E1966
Maximum additional restriction (duct allowance) to cooling airflow and resultant minimum airflow

Pusher

Description	Units	Engine speed rpm	
		1800	1800
Ambient clearance	°C	50	48
Duct allowance	Pa	120	200
Cooling fan airflow	m ³ /min	6.07	5.62
Radiator core resistance	Pa	490	430

Electrical system

Engine stop method Electronic

Alternator model	Unit	N0101
Alternator voltage	Volts	12
Alternator output	Amps	100

Starter model	Unit	E0101
Starter motor voltage	Volts	12
Starter motor power	kW	5
Number of teeth on flywheel		134
Number of teeth on starter pinion		13
Minimum cranking speed	rpm	100
Starter solenoid - Maximum pull-in current @ 0°C	Amps	2
Starter solenoid - Maximum hold-in current @ 0°C	Amps	2

Fuel injection system

Fuel pump type/model HP4
Injection system Electronic
Injector type Common rail
Injector pressure 200 kPa

Fuel priming

Priming pump type Gerotor
Maximum priming time seconds

Fuel feed

Maximum fuel supply restriction at primary filter -30 kPa
Maximum fuel return restriction at low idle 20 kPa
Maximum fuel return flow 2.5 litres/min
Maximum fuel flow through inlet connection 3.7 litres/min
Maximum lift pump delivery flow rate 3.7 litres/min
Maximum pump delivery pressure 8500 kPa
Maximum suction head at fuel pump inlet 50 KPa
Maximum static pressure head 20 kPa
Maximum fuel temperature at lift pump inlet 80°C
Maximum fuel filter service interval 500 hours

Fuel specification

ISO Specification 22241-1 Diesel Exhaust Fluid
ULSD (Ultra Low Sulphur Diesel) 15ppm Sulphur

Fuel consumption (SFC)

Load	Fuel consumption	
	Engine speed 1800 rpm	
	g/kWh	litre/hour
Standby	218	63
Prime power	210	55
75% of prime power	207	41

Note: Diesel exhaust fluid consumption typically 3-4% of fuel consumption.

Cold start recommendations

Minimum battery cold cranking amps

Air temperature/oil viscosity limit	With glow plugs 12V AZF and P5		Without glow plugs 12V AZF		With glow plugs 24V IMT		Without glow plugs 24V IMT		With glow plugs 24V AZF HP		Without glow plugs 24V AZF HP	
-5°C	15W40	950	15W40	950	15W40	525	15W40	525	15W40	525	15W40	525
-10°C	15W40	950	15W40	950	15W40	525	15W40	525	15W40	525	15W40	525
-15°C	15W40	1650	15W40	(1)	15W40	680	15W40	(1)	15W40	680	15W40	(1)
-20°C	10W40	1650	10W40	(1)	10W40	680	10W40	(1)	10W40	680	10W40	(1)
-25°C	5W30	1900	5W30	(1)	5W30	750	5W30	(1)	5W30	680	5W30	(1)
Maximum battery CCA		2400		2400		1400		1400		1200		1200

Note: Glow plugs needed below -10°C.

Note: For cable sizes see Applications and Installation Manual.

1. Must use glow plugs.

Lubrication system

Maximum system capacity (oil rail, oil filter, oil cooler).....	1.9 litres
Maximum sump capacity	16 litres
Minimum sump capacity	13 litres
Maximum oil temperature continuous operation	125°C
Maximum oil temperature intermittent operation	135°C

Lubricating oil pressure

At rated speed.....	440-540 kPa
Minimum	220 kPa
Oil relief valves opens at	480-520 kPa
Sump drain plug tapping size or hose connection size	3/4 UNF STOR port
Oil pump drive method	Gerotor (gear driven off crankshaft)
Oil pump speed	2 x engine speed
Lubricating oil flow at rated speed	60 litres/min
Oil consumption at full load rated speed.....	0.08% of fuel

Exhaust system

Aftertreatment system type	DOC, DPF, SCR/AMOX+DEF System
Type of regeneration (high/low temperature)	Low
Aftertreatment height	455 mm
Aftertreatment length	733 mm
Aftertreatment width	769 mm
Aftertreatment weight.....	107 Kg
Aftertreatment skin temperature	250°C
Maximum temperature for electronic components on aftertreatment	120°C
Maximum temperature for external electronic components for aftertreatment (Soot Sensor Box)	85°C
Typical maximum temperature exhaust out.....	475°C
Maximum system back pressure limit for HP 175 - 275/130 - 205 kW	49.1 kPa
Aftertreatment exhaust outlet connection	76.2 mm
Aftertreatment exhaust outlet connection load limit.....	60 Nm
Attenuation of the DPF	25 dB(A)
Ash service	NA
Maximum back pressure for customer installed pipe work	5.3 kPa

Induction system

Maximum air intake restriction

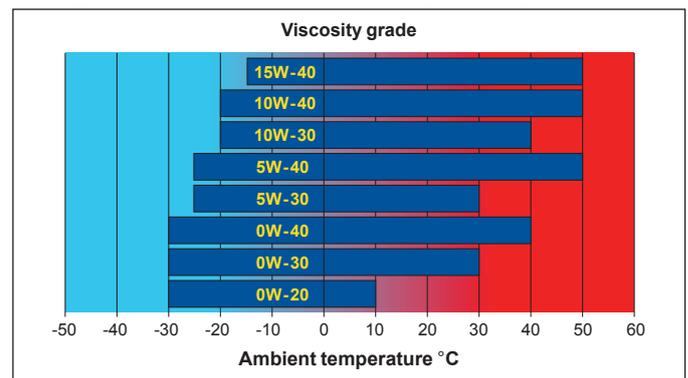
Clean filter.....	5 kPa
Dirty filter.....	8 kPa
Induction indicator setting	5 kPa
Air filter type	125 pm

Normal operating angles

Front, rear and side.....	25°
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Recommended SAE viscosity

A multigrade oil which conforms to API-CJ4 (ACEA-E9) must be used.



PTO capabilities

Flange type	SAE A
Torque capability intermittent (Nm)	N/A
Torque capability continuous (Nm)	N/A
Maximum bending moment at flange (Nm)	N/A

Note: Refer to "Applications and Installation Manual" for "PTO approval requirements".

Mountings

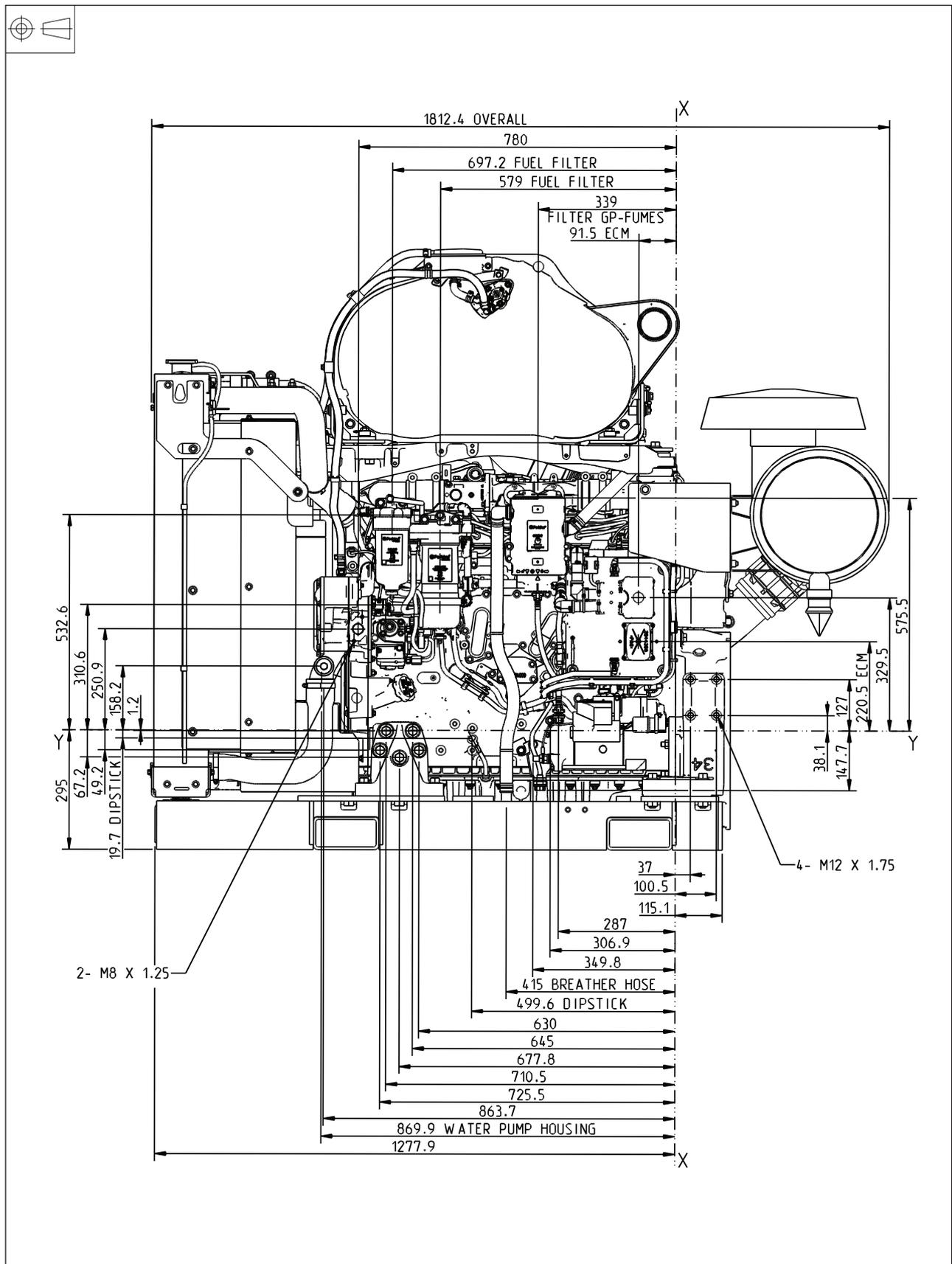
Maximum static bending moment (BM) at rear face of block	1130 Nm	
Maximum permissible overhung load on the flywheel	See Polar diagram chapter 6 of the ESM	
	Dynamic vertical BM	Dynamic lateral BM
Maximum bending moment at rear of flywheel housing - SAE 3	±3000 Nm	±1700 Nm
Maximum bending moment at rear of flywheel housing - SAE 2	±5600 Nm	±2800 Nm
Maximum bending moment at rear of flywheel housing - SAE 1	±8200 Nm	±5750 Nm

Note: Refer to "Applications and Installation Manual" for "Bending Moment approval requirements".

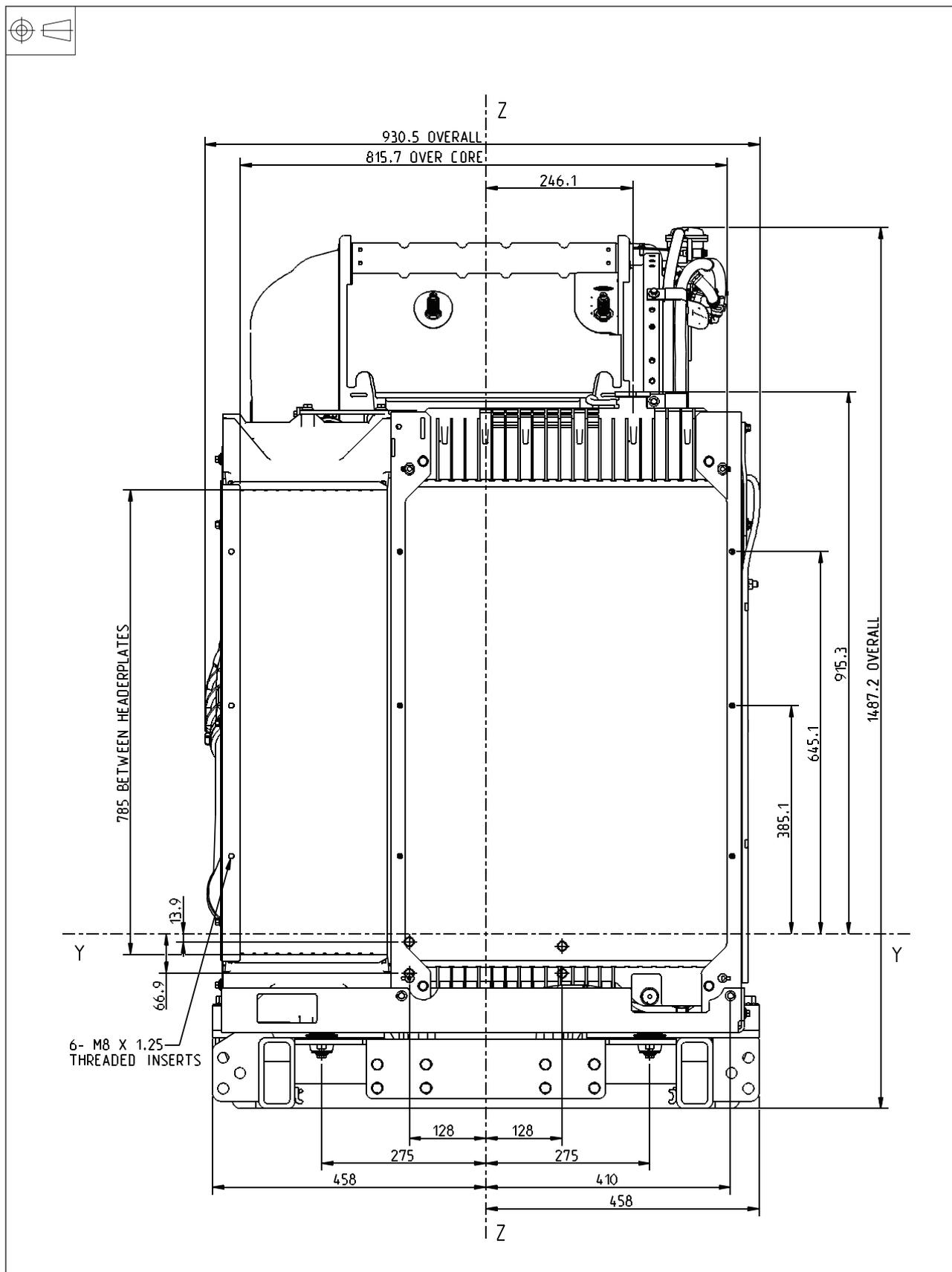
Additional Components

DEF tank
DEF lines
DEF valve
DEF pump

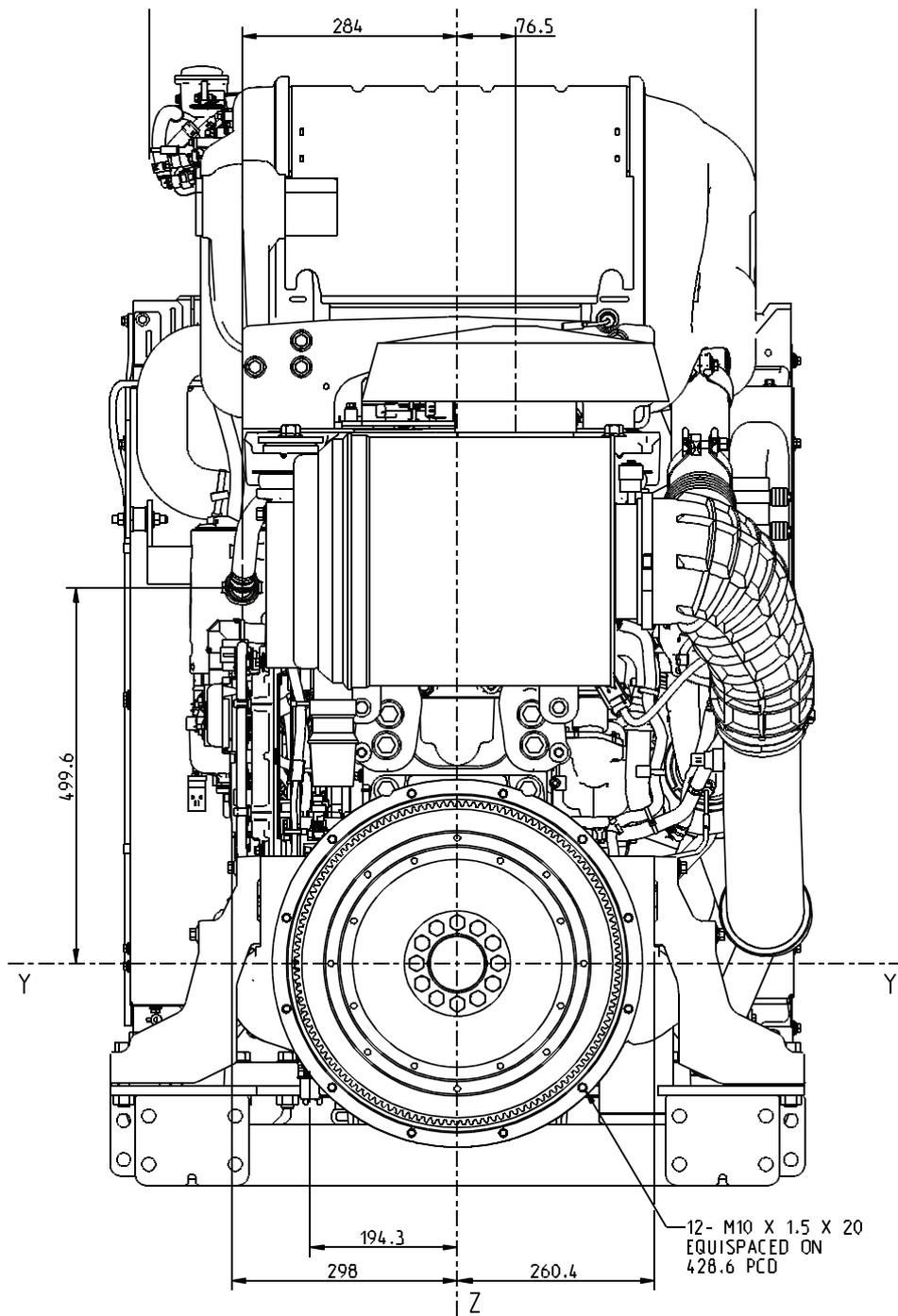
1206F-E70TTAG4 - 200 kWe - Left side view



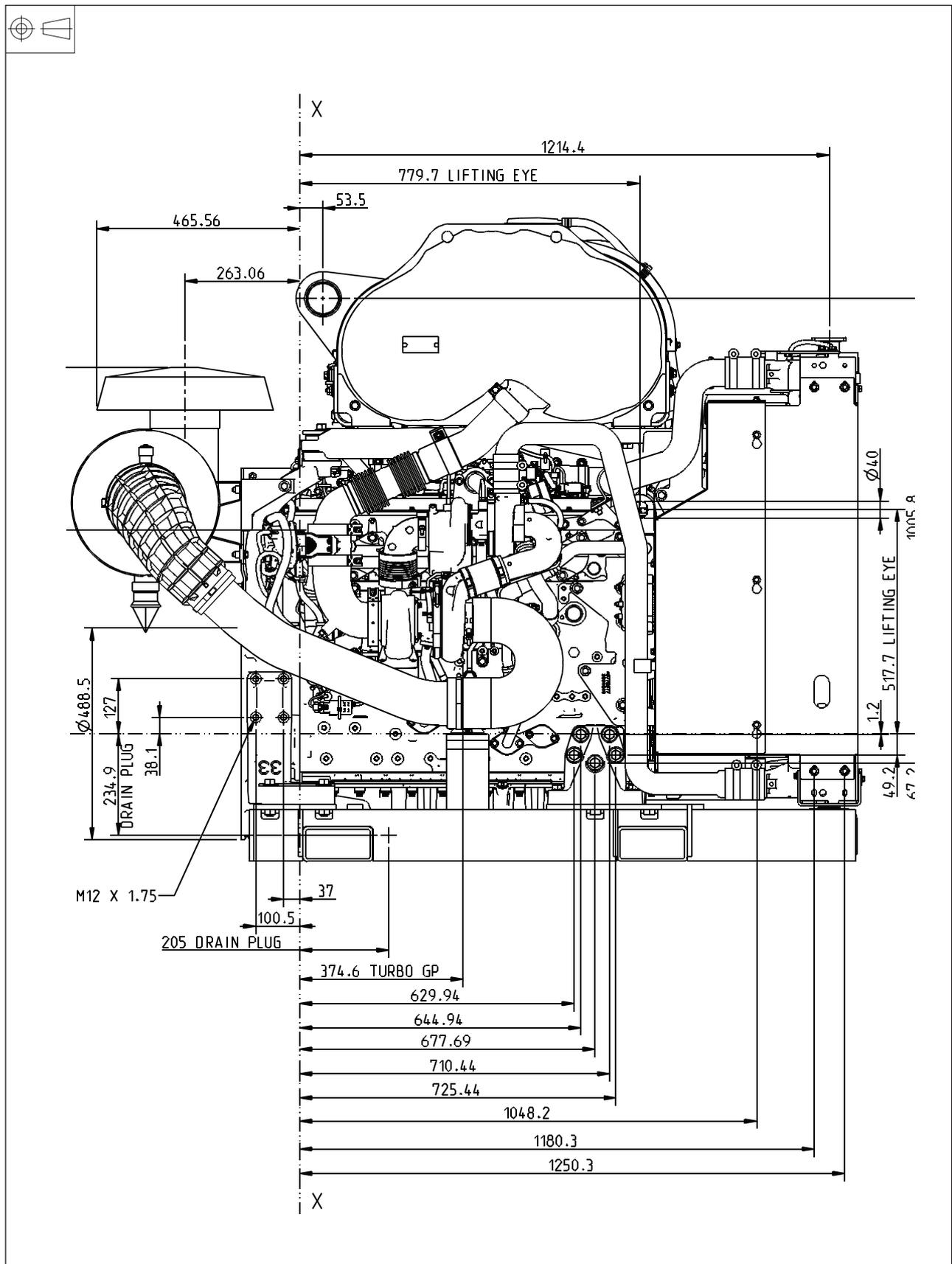
1206F-E70TTAG4 - 200 kWe - Front view



1206F-E70TTAG4 - 200 kWe - Right side view



1206F-E70TTAG4 - 200 kWe - Rear view



1206F-E70TTAG4 - 200 kWe - Plan view

