

@ Perkins

1300 Series EDi Diesel engine - Electropak

1306-E87TAG1

167 kWm 1500 rev/min

180 kWm 1800 rev/min

The Perkins 1300 Series EDi family of Electropak engines has become renowned throughout the power generation industry for the engines' superior performance and reliability.

The 1306-E87TAG1 engine is a turbocharged and air-to-air charge cooled unit, featuring hydraulically-actuated electronically controlled unit injectors (HEUI) with 'full authority' electronic engine management providing reliable, quiet, economic operation supported by the quick starting, fast response and close control demanded by the electrical power generation market.

High performance productive power

Hydraulically actuated Electronically controlled Unit Injectors – high-pressure fuel injection gives consistent, reliable high performance. Constant electronic engine management and monitoring enable precise fuel metering and injection timing to ensure reliable low temperature starting, superb economy with performance and very close governing.

Quiet, clean power

A rigid structure minimises noise transmission and helically cut gears provide quiet power transfer to auxiliaries.

Forced induction and electronic fuel injection control combine to reduce combustion noise while electronically optimised fuel/air mixing ensures complete combustion resulting in virtually smoke free operation with emissions capability matching current and future emissions legislation.

Durable power

A fully balanced induction-hardened steel crankshaft gives smooth performance with minimised bearing loads.

Oil cooled pistons with keystone top and second rings give longer life while positive rotational valves and roller cam followers reduce wear on valve seats, tappets and cam lobes.

Reliable power

Cylinder head coolant is directed to valve bridges and injectors and lubricating oil is cooled in a high efficiency oil cooler, both features enhancing engine reliability.

Electronic safety shutdown option protects the engine while event and fault warning codes protect operations.

Easy maintenance

Electronic diagnostics help to keep the engine at its productive best while enabling the operator to plan maintenance. Oil and filter changes at 450 hours reduce down time.

All engines are supported by the Perkins worldwide network of 4,000 distributors and dealers.

Engine Speed (rev/min)	Type of Operation	Typical Generator Output (net)		Engine Power			
				Gross		Net	
		kVA	kWe	kW	bhp	kW	bhp
1500	Baseload Power	159	127	142	190	138	184
Rating Code	Prime Power	174	139	156	209	151	203
M153	Standby (maximum)	192	154	172	230	167	223
1800	Baseload Power	171	137	154	206	149	200
Rating Code	Prime Power	189	151	169	227	164	220
M156	Standby (maximum)	207	166	186	250	180	243

1500/1800 rev/min switchable ratings are offered for stand-alone non-load sharing gen. set applications. Rating code M165 applies. The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS5514/1, DIN 6271. Derating may be required for conditions outside these; consult Perkins Engines Company Limited. Generator powers are typical and are based on an alternator efficiency of 92% and a power factor (cos. θ) of 0.8. Performance tolerance is $\pm 5\%$. Fuel specification: BS 2869: Part 2 1998 Class A2 or ASTM D975 D2. Lubricating oil: 15W40 to ACEA E3 or API CG4.

Rating Definitions

Baseload power: Power available for continuous full load operation. Overload of 10% permitted for 1 hour in every 12 hours' operation.

Prime power: Power available at variable load with a load factor not exceeding 80% of the prime power rating. Overload of 10% is permitted for 1 hour in every 12 hours' operation.

Standby power (maximum): Power available at variable load in the event of a main power network failure up to a maximum of 500 hours per year of which up to 300 hours may be continuous. No overload is permitted.

1300 Series EDi 1306-E87TAG1

Standard ElectropaK Specification

Air Inlet

Mounted air filter and turbocharger

Fuel System

Hydraulically actuated electronically controlled unit fuel injectors with full authority electronic control
Electronic governing to ISO3046-4 with stand alone isochronous or load sharing capabilities
Spin-on fuel filter with pre-filter and hand primer pump

Lubrication System

Wet rear well steel sump with filler and dipstick
Full-flow spin-on filter
Tube-type oil cooler thermostatically controlled

Cooling System

Thermostatically controlled system with belt-driven circulating pump and 28 inch belt-driven fan
Radiator mounted with all guards and pipes
Air/air charge cooler incorporated in radiator
Coolant filter/conditioner

Electrical Equipment

24 Volt starter motor and 24 Volt 45 Amp alternator with DC output
Electronic Control Module mounted on engine with wiring looms and sensors
3 level engine protection system

Flywheel and Housing

High inertia flywheel to SAE J620 Size 11½
Cast iron SAE 2 flywheel housing

Mountings

Front engine mounting bracket

Optional Equipment

12V starter and alternator
12V ECM

Sensor positions for:

- oil pressure
- oil temperature
- coolant temperature

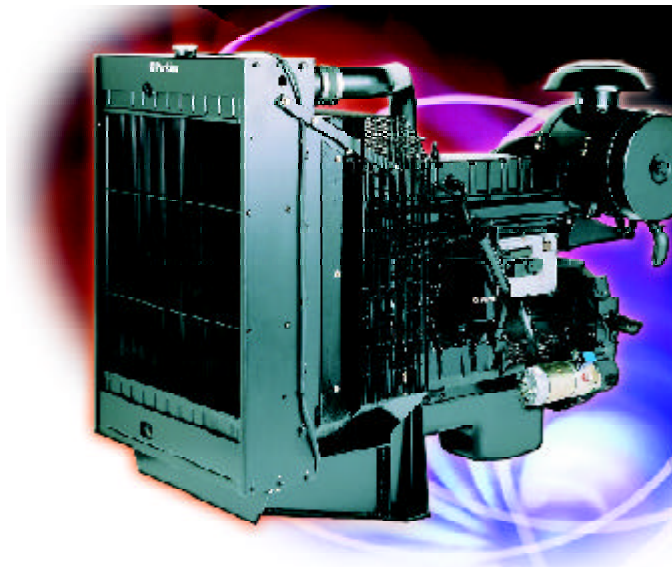
SAE 1 flywheel housing and flywheel
Turbocharger exhaust outlet
User's handbook and parts manual
Workshop manual

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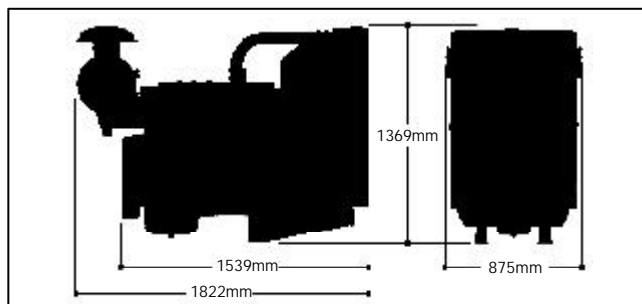
All information in this leaflet is substantially correct at the time of printing but may be changed subsequently by the Company



General Data

Number of Cylinders	6
Cylinder Arrangement	Vertical in-line
Cycle	4 stroke
Induction System	Turbocharged air/air charge cooled
Combustion System	Direct injection
Cooling System	Water-cooled
Bore and Stroke	116.6 x 135.9 mm
Displacement	8.7 litres
Compression Ratio	17.2:1
Direction of Rotation	Anti-clockwise viewed on flywheel
Total Lubrication System Capacity	26.4 litres
Total Coolant Capacity	37.2 litres
Dry Weight (Engine)	895 kg
Length	1822 mm
Width	875 mm
Height	1369 mm

Engine Speed	Fuel Consumption			
	1500 rev/min		1800 rev/min	
	l/hr	Imp gal/hr	l/hr	Imp gal/hr
At Standby Rating	41.0	9.0	46.1	10.1
At Prime Power Rating	37.7	8.3	42.5	9.3
At 75% of Prime Power	29.5	6.5	33.2	7.3
At 50% of Prime Power	19.5	4.3	24.0	5.2



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