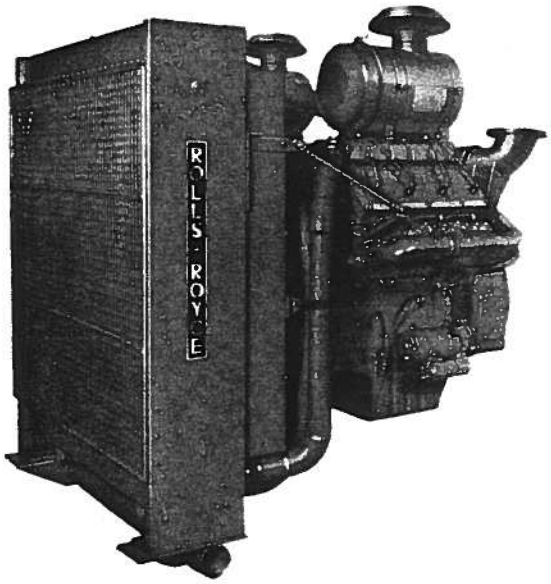
CV8-300G 'Electropak' Diesel Engine



Type:
Direct injection, liquid cooled, four stroke compression ignition diesel engine, turbo-charged and charge air cooled, 8 cylinder V form 17.4 litres capacity.
Bore: 135 mm. **Stroke:** 152 mm.
Rotation: Anti-clockwise viewed on flywheel.
Maximum governed speed:
1500 rev/min or 1800 rev/min for 50 Hz or 60 Hz operation. To BS. 5514:1982 and I.S.O. 3046/1:1981 specifications to the following test conditions:—
Air temperature: 27°C (80.6°F).
Barometric pressure: 100 kN/m² (750 mm Hg).
Relative humidity: 60%.
Air inlet restriction at max. power: 254 mm H_2O (10 in. H_2O).
Exhaust back pressure at max. power: 51 mm Hg (2 in. Hg).

Performance: Outputs stated are permitted for land based generating sets only.

50 Hz : 1500 rev/min

Continuous Power BS. 5514 : 1982 & ISO. 3046/1 : 1981 A.B.G.S.M. "A" Ratings				Fuel Stop Power BS. 5514 : 1982 & ISO. 3046/1 : 1981 Standby Duty Power Available for duration of emergency A.B.G.S.M. "B" Ratings				Emergency Power A.B.G.S.M. "C" Ratings Available for duration of emergency but with max. 200 hrs. annual utilization			
Generator output		Net engine flywheel output		Generator output		Net engine flywheel output		Generator output		Net engine flywheel output	
kVA	kWe	kW	bhp	kVA	kWe	kW	bhp	kVA	kWe	kW	bhp
375	300	326	437	413	330	359	481	as fuel stop power			
Overload power of 110% is permitted				No overload is permitted				No overload is permitted			

60 Hz : 1800 rev/min

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Generator output		Net engine flywheel output		Generator output		Net engine flywheel output		Generator output		Net engine flywheel output	
kVA	kWe	kW	bhp	kVA	kWe	kW	bhp	kVA	kWe	kW	bhp
413	330	359	481	454	363	395	529	as fuel stop power			
Overload power of 110% is permitted				No overload is permitted				No overload is permitted			

For all the above generator outputs a power factor of 0.8 is assumed with an assumed generator efficiency of 92%.
All the above rated powers are base line ratings to BS. 5514 and I.S.O. 3046 test conditions.
The above ratings may be subject to derating if required to operate below 100 kN/m² barometric pressure and above 27°C air temperature (refer to Perkins Engines (Shrewsbury) Ltd.).

Diesel Fuel
This should comply with BS. 2869 : 1970 Class A2 ASTM diesel fuel classification D975 No. 2D.

Lubricating Oil
A 15W/40 multi-grade lubricating oil should be used which adequately meets the requirements of API-CD or MIL-L-2104D.

For further details about fuel oils, lubricating oils and coolant recommendations see our publication T.S.D. 3085.

CV8-3006

Governing

The standard mechanical governor included in the specification meets BS. 5514: Part 4 1979 and I.S.O. 3046/IV: 1978. Class A1. Identical generating sets can operate in parallel.
In general, generating sets with mechanical governors can operate in parallel with non-identical sets providing the governors have the same droop characteristics.
For close governing better than Class A1 or for variable speed droop specification, engines will require electric governing. The "Ambac" electric governor is offered as an optional extra.
Generating sets operating in parallel will require "Ambac" electric governing, if the governor speed droop characteristics are not the same or if load sharing is a critical factor.
For applications requiring an electric means of load sharing or electric speed adjustment the "Ambac" electric governor is required.
This governor can be used where droop settings of less than 4% are required or when the specification demands governing to BS. 5514: Part 4 1979 or I.S.O. 3046/IV: 1978. Class A0.

"Electropak" Specification Engine

The CV8 300G is offered to one standard specification "Electropak" model developed by us specifically to meet customer needs. Variants to the specification can only be supplied as listed under "Optional Extras".
The CV8 300G "Electropak" radiator power pack engine is supplied fully equipped as follows:

Induction
Twin 12 in. mounted Donaldson cyclopac FHG air cleaners each with hood and restriction indicator.
Fuel System
Fuel injection pump complete with lift pump.
Mechanical governor to meet BS. 5514: Part 4 1979. Class A1.
Single "spin-on" fuel oil filter. Water separator/primary fuel oil filter (supplied loose).
Lubrication
Rear drop wet sump.
"Spin-on" full flow lube oil filters.
Oil cooler incorporated in filter head bracket.
Dipstick and oil filler.
Exhaust
Air cooled exhaust manifolds ducted to a single turbocharger mounted at the rear of the engine.
90° exhaust elbow fitted.
Exhaust mating flange gasket (supplied loose).
Cooling
Engine mounted radiator 1.53m² (16.5 ft²) suitable for operation in ambient temperatures up to 52°C (125°F).
Engine mounted belt driven "pusher" fan.
Thermostatically controlled cooling system with belt driven centrifugal circulating pump.
Electrics
24 volt starter motor suitable for attended or non-attended starting.
24 volt 32 amp alternator (D.C. output) with integral regulator.
Instruments
Connections for:—
Lub oil pressure and coolant temperature.
Controls
Vernier speed control.
24 volt low oil pressure switch.
24 volt high coolant temp. switch.
24 volt shut down solenoid (energised to run).
Mountings
Combined front mounting feet and radiator support.
No rear engine mounting feet.
Mounting faces on flywheel housing.
Flywheel Housing
Cast iron flywheel housing with SAE No. ½ flange size.
Flywheel
High inertia type with mounting faces/alignment conforming to SAE J.162a size 514.
Suitable for both single and twin bearing generators.
Other Details
Spare parts list.
Servicing manual.
Pipework and wiring extraneous to mounted components is for customer to arrange.

Standard Optional Extras

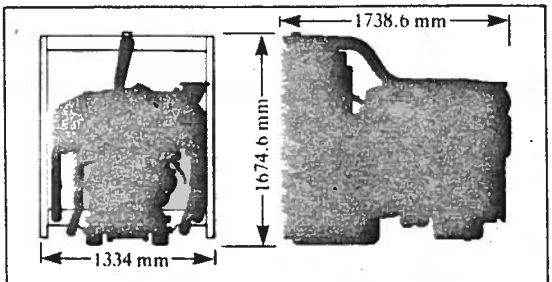
The following optional items are offered at extra prices to "Electropak" spec. as follows:
"Ambac" electric governor.
Standard tool kit (loose).
Cold start aid - recommended for ambients below 0°C.
Holset RB. 1.15 flexible coupling.
Exhaust silencer (loose).
Exhaust flexible pipe connection 1.2 metres (4 feet) (loose).
2 x 750 watt A.C. immersion heaters recommended for standby duty sets.
Lub oil pressure gauge, coolant temperature gauge and ammeter all 51 mm (2.0 in.) dia.

Load Capability Acceptance

For the CV8-300G 75% of the "continuous power" rating can be applied as the load, 10 secs after the starter motor is energised. The remaining 25% load can be applied 20 seconds after the starter motor is energised, providing the ambient or room temperature does not fall below 15°C (59°F).
It is recommended an immersion heater is fitted for this type of application.
For specific information submit your application requirements to Perkins Engines (Shrewsbury) Ltd.

Installation Details

Combustion air m³/min		Cooling air m³/min		Exhaust gas flow m³/min	
1500 rev/min	1800 rev/min	1500 rev/min	1800 rev/min	1500 rev/min	1800 rev/min
30.2	36.9	510	623	71	89.3



Electropak Weight (Dry): 1843 kg (4063 lb)
Total Lub Oil Capacity: 42.5 litres (9.34 gal)
Coolant Capacity
Engine & Radiator: 101 litres (22.2 gal)
Electropak Weight (Wet): 1980 kg (4363 lb)

Fuel consumptions calculated on engine nett rated powers

% rated power	kg/h	Litres/h	kg/kW-h	lb/bhp-h
At 1500 rev/min Ratings				
110	77.2	91.7	.215	.352
100	70.1	83.2	.215	.352
75	52.8	63.7	.216	.355
50	37.7	44.6	.231	.378
At 1800 rev/min Ratings				
110	94.7	113.1	.240	.395
100	85.1	101.5	.237	.390
75	64.0	76.2	.237	.390
50	46.4	55.4	.258	.425

Battery Recommendations

Ambient temp.	Capacity Ah at 20 hour rate	Cold start performance amps	Type	No. of batteries required
0°C (32°F)	265	—	713	4 x 6 volt in Series
—7°C (20°F)	360	600	324	4 x 12 volt 2 in Series & 2 in Parallel

"The information given in this leaflet was correct at the time of printing, but in view of the Company's continuing efforts to the development and improvement of its products, the information may have become out of date when you read it. Perkins Engines (Shrewsbury) Ltd will confirm or update the information on request. Neither this leaflet, nor the information given in it constitutes an offer for sale by Perkins Engines (Shrewsbury) Ltd".

Perkins Engines

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