

Perkins based INDUSTRIAL GAS ENGINES

Technical Data ElectropaK NG KVT-E15SI

Gas Engine

Basic technical data

Number of cylinders 3
 Cylinder arrangement Vertical, In line
 Cycle 4 stroke, spark ignition
 Induction system Naturally aspirated
 Compression ratio 12.1:1
 Bore 84 mm
 Stroke 90 mm
 Cubic capacity 1.5 litres
 Direction of rotation Anti-clockwise viewed on flywheel
 Firing order 1, 2, 3,
 Cylinder 1 Furthest from flywheel
 Total weight of electro unit (engine only)
 - estimated total weight (dry) 197 kg
 - estimated total weight (wet) 202 kg

Overall dimensions

-height 791 mm
 -length 820 mm
 -width 476 mm

Moments of inertia (mk²)

-engine flywheel 2.01 kgm²

Centre of gravity

	Unit	Wet	Dry
Forward from rear of block	mm (in)	TBA	TBA
Above centre line of block	mm (in)	TBA	TBA
Offset to Rhs of centre line	mm (in)	TBA	TBA

Performance

All data based on operation to ISO 14396, ISO 3046/1 standard reference conditions.
 Speed variation at constant load ISO 8528 G2 (Mech) ± 5 %

Test conditions

-air temperature 25 °C (77 °F)
 -barometric pressure 100 kPa (29.5 in hg)
 -relative humidity 30%
 -natural gas LCV 31,65MJ/Nm³

Cooling system

Radiator
 -weight (dry) 10 Kg
 -face area 0,167 m² (2.97 ft²)
 -rows and materials 2 rows aluminium
 -matrix density and material aluminium 14,5 fins/inch
 -width of matrix 334.2 mm (13.2 in)
 -height of matrix 500.0 mm (19.7 in)
 -pressure cap setting 90 kPa (13.05 lb/in²)

Fan

-diameter 320 mm (12.6 in)
 -drive ratio 1 : 15:01
 -number of blades 7
 -material Plastic
 -type pusher

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 (127 °F) or 46 °C (115 °F) if a canopy is fitted with an air flow restriction of up to 0,125 kPa. 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 Kemper en Van Twist Technical Service Department.

General installation

Designation	Units	Type of operation and application	
		Prime	Stand-by
		50 Hz	50 Hz
Gross engine power	kW	11.745	13.05
Mean piston speed	m/s	6.35	6.35
ElectropaK net engine power	kW	11.5	12.7
Engine coolant flow (coolant pump ratio 1.25:1)	l/min	45.4	45.4
Fuel consumption	Nm ³ /hr	4.3	4.5
Combustion air flow	kg/min	0.78	0.82
Exhaust gas temperature (max)	°C	680	680
Cooling fan air flow (zero duct allowance)	m ³ /min	TBA	TBA
Typical Genset Electrical output (0.8pf 25 °C)	kWe	10.97	11.54
	kVA	13.7	14.4
Assumed alternator efficiency	%	90	

Note: Cooling fan air flow (zero duct allowance) at 60 Hz Stand-by assumes 1.25:1 fan ratio and 120 kPa restriction

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Coolant

Total system capacity

-with radiator6 litres

-without radiator2.6 litres

Maximum top tank temperature 110 °C (230 °F)

Maximum permissible external system resistance 35 kPa

Thermostat operation range.....82 - 93 °C (180 - 199 °F)

Recommended coolant immersion heater ratingTBA kW

Recommended coolant:

50% ethylene glycol with a corrosion inhibitor (BS 658 :1992 or MOD AL39) and 50% clean fresh water.

Exhaust system

Maximum permitted back pressure of the complete exhaust system is 10.2 kPa

Exhaust outlet size 42 mm

Fuel system

Recommended fuel: Natural Gas LHV at 31.6 MJ/m³. Other fuels may be used, for example landfill or digester gas. Ratings will vary from those shown.

Where fuels other than Natural Gas are being considered it is imperative that a full gas analysis (including details of any solid or liquid components) be obtained. Reference should be made to Kemper en Van Twist Gas B.V. to determine suitability. Gas supplies must be filtered to the same standard as the engine intake air (i.e. Maximum particle size not to exceed 50 microns).

Gas supply pressure 1,5 kPa to 5 kPa at full rated flow
Carburettor type Woodward with zero pressure regulator

Installation of gas supply and shut off valves to be in accordance with local regulations.

Ignition system

Primary systemWoodward

Primary voltage 12 volts

Polarity Negative earth

Spark plug gap 0,25 mm

Ignition timing 32° BTDC

Electrical system

Type Insulated return

Starter motor 12 volts

Starter motor power 2 kW

Number of teeth on flywheel..... 126

Number of teeth on starter motor 10

Minimum cranking speed 120 rev/min

Lubrication system

Lubricating oil capacity

Total system..... 6.0 litres

Minimum4.5 litres

Maximum engine operating angles

-front up, front down, right side or left side. 35° continuous

Sump drain plug tapping size. ¾ in x 16 UNF

Shutdown switch setting (where fitted)60 - 90 kPa

Lubricating oil pressure

-relief valve opens.....352 - 448 kPa (51.1 – 64.9 lbf/in²)

Maximum continuous oil temperature (in rail) 125 °C (257 °F)

Oil consumption at full load as a % of fuel consumption:.....0,15%

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MANUFACTURED BY:

