

Technical Data ElectropaK NG Q3.3SI

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 105 mm (4.13 in)
 Stroke 127 mm (4.99 in)
 Cubic capacity 3,3 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) 329 kg
 - estimated total weight (wet) TBA kg

Overall dimensions

-height 915 mm
 -length 1045 mm
 -width 631 mm

Moments of inertia (mk²)

-engine flywheel 1,14 kgm²

Centre of gravity

Fan to flywheel	Unit	Wet	Dry
Forward from rear of block	mm (in)	192.9	TBA
Above centre line of block	mm (in)	139.9	TBA
Offset to Rhs of centre line	mm (in)	-4.7	TBA

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 application	
		Prime	Stand-by
		50 Hz	50 Hz
Gross engine power	kW	31	34
Mean piston speed	m/s	6.3	6.3
ElectropaK net engine power	kW	30	33
Engine coolant flow (coolant pump ratio 1.25:1)	l/min	125	125
Fuel consumption	Kg/h	9	9.2
Combustion air flow	kg/h	110	120
Exhaust gas temperature (max)	°C	610	620
Cooling fan air flow (zero duct allowance)	m ³ /min	45.6	45.6
Power Factor		0.8	0.8
Typical Genset Electrical output (0.8pf 25 °C)	kWe	27	30
	kVA	34	37.5
Assumed alternator efficiency	%	90	

Performance

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

Test conditions

-air temperature 25 °C (77 °F)
 -barometric pressure 101 kPa (29.5 in hg)
 -relative humidity 30%
 -natural gas LCV 31,65MJ/Nm³

Cooling system

Radiator
 -weight (dry) 10 Kg
 -face area 0,276m²
 -rows and materials single row aluminium
 -matrix density and material aluminium 12,7 fins/inch
 -width of matrix 526 mm (20.7 in)
 -height of matrix 524 mm (20.6 in)
 -pressure cap setting 107 kPa (15.5 lb/in²)

Fan

-diameter 457 mm (18 in)
 -drive ratio 0.85:1
 -number of blades 7
 -material composite
 -type pusher
 -power @ 1500 rev/min 0,7

Coolant

Total system capacity

-with radiator10, litres
 -without radiator4,4 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)
 Coolant pump ratio and method of drive gear driven 2:1
 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 4 kPa
 Exhaust outlet size56 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 Impco with zero pressure regulator

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

Ignition system

Primary system Gill
 Primary voltage 12 volts
 Polarity Negative earth
 Spark plug gap 0,25 mm
 Ignition timing 21° BTDC

Electrical system

Type Insulated return
 Starter motor 12 volts
 Starter motor power 3 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.....8,3 litres (14.1 UK pints)
 Minimum 6,2 litres (9.7 UK pints)
 Maximum7,8 litres (12.3 UK pints)
 Maximum engine operating angles
 -front up, front down, right side or left side. 25° continuous
 Sump drain plug tapping size. ¼ in x 16 UNF
 Shutdown switch setting (where fitted) 60 - 90 kPa
 Oil pump speed and method of drive gear driven @ 2 x engine speed
 Oil pump flow:
 1500 rev/min TBA
 1800 rev/minTBA

Lubricating oil pressure

-relief valve opens.....415 - 470 kPa (60 - 68 lbf/in²)
 -at maximum no-load speed 276 - 414 kPa (40 - 60 lbf/in²)
 Maximum continuous oil temperature (in rail) 125 °C (257 °F)
 Oil consumption at full load as a % of fuel consumption:..... 0,15%