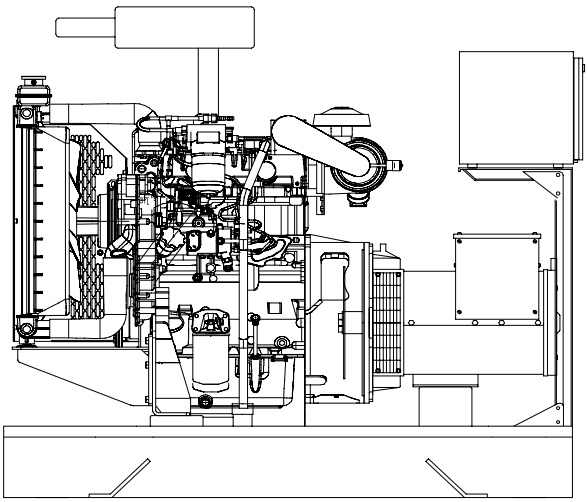
Perkins 1103A-33G diesel engine

Newage/Stamford BCI184G alternator



ISO 9001:2000

This generator is available with CE certification

Standard Generator Features

- AMF, Automatic mains failure unit
- Heavy duty type, 3 cylinder, water cooled engine
- 50°C tropical type radiator
- Starter motor
- Lead acid battery
- Charging alternator
- Battery charge redressor
- Heavy duty, brushless type alternator
- Base frame with anti-vibration units
- Industrial type silencers
- Flexible exhaust compensator
- Block water heater unit
- Control panel with digital-automatic main control module
- Fan, fan drive, charging alternator drive and all rotating parts covered
- Radiator matrix covered by metal mesh against the mechanical damages
- Fabricated and welded steel base frame
- Anti-vibration mountings
- Engine and alternator manufacturer test reports
- Factory load, performance and function tests

Optional Features

- Automatic load transfer panel
- Automatic syncronization and power sharing systems
- Soundproof canopy
- Container type enclosers
- Road trailer
- Job-site trailer
- Protection circuit breaker
- Air start
- Remote type radiator
- Base fuel tank
- External type fuel tank
- Automatic fuel transfer system
- Residential silencer

	Standby		Prime	
	kVA	kW	kVA	kW
	33	**26**	**30**	**24**

Perkins 1103A-33G Engine

Standard Features

Compact, efficient power

◇1100 Series is the result of an intensive period of customer research that has guided the development of the range.

◇The new 3.3 litre cylinder block ensures bore roundness is maintained under the pressures of operation. It also ensures combustion and mechanical noise is lowered.

◇A new cylinder head has re-established Perkins mastery of air control.

Quality by Design

◇Product design and Class A manufacturing improvements enhance product reliability while maintaining Perkins legendary reputation for durability.

Cost Effective Power

◇Compact size and low noise.

◇Lower fuel consumption and oil use.

◇500 hour service intervals.

Product Support

◇Total worldwide service is provided through a network of 4,000 distributors and dealers.

◇TIPSS - The Integrated Parts and Support System enables customers to specify and order parts electronically as well as service engines with on-line guides and service tools.

Model	Standby kW		Prime kW	
	Gross	Net	Gross	Net
1103A-33G	**31**	**30.4**	**28.2**	**27.7**

Lubricating System

Type	Pressurized
Capacity, Liters	8.3
Lub oil pressure (min), kPa	415-470

◇Wet sump with filler and dipstick

◇Spin-on full-flow lub oil filter

Fuel System

Type of injection system	Direct injection
Fuel atomiser	Multi-hole
Fuel injection Pump	Rotary
Delivery/hour at 1500rev/min, Liters	120-150
Governor type	Electronic, Woodward LCG2

◇Electronic governor speed control to ISO8528-G2

◇Rotary type pump

◇Ecoplus fuel filter

Technical Specifications

Manufacturer	PERKINS	تولید کننده
Model	1103A-33G	مدل
Type	4 cycle, water-cooled, diesel engine	تیپ
Number of cylinders	3	تعداد سیلندرها
Cylinder arrangement	Vertical in-line	آرایش سیلندرها
Displacement, Liters	3.3	جا به جایی
Bore X Stroke, mm	105 X 127	قطر سیلندر X کورس پیستون
Compression Ratio	19.25:1	نسبت تراکم
Combustion System	Direct injection	سیستم احتراق
Aspiration	Natural aspiration	سیستم تنفس
Rotation	Clockwise viewed from front	چرخش
Gross engine power, kWb	31	قدرت ناخالص موتور
Fan Power, kWm	0.6	قدرت فن
BMEP gross, bar	7.52	
Combustion air flow, m^3 / min	2.15	جریان هوای احتراق
Exhaust gas temp.(after turbo)	520 °C	دمای گاز خروجی از اگزوز
Exhaust gas flow (after turbo)	5.8 m^3 / min	جریان هوای خروجی از اگزوز
Mean piston speed, m / s	6.35	میانگین سرعت پیستون

Electrical System

Alternator	12 Volt, 65 Amp
Starter motor (DC)	12 Volt
Starter motor power	3 kW

◇Oil pressure and coolant temperature switches

◇12 volt shut off solenoid energised to run

◇Glow plug cold start aid and heater/starter switch

Fuel Consumption

liters per hour	%110 Load	7.9 L
	%100 Load	7.1 L
	%75 Load	5.4 L
	%50 Load	3.9 L
grams per kWh	%110 Load	214 g/kWh
	%100 Load	211 g/kWh
	%75 Load	214 g/kWh
	%50 Load	232 g/kWh

Cooling System

Type	Tropical, heavy duty type
Ambient temperature, °C	50
Engine+Radiator coolant cap., Liters	10.2
Pressure cap setting, kPa	107

◇Thermostatically-controlled system with belt driven circulating pump and pusher fan

◇Mounted radiator piping and guards

Newage/Stamford BCI184G Alternator

Standard Features

Winding&Electrical Performance

All generator stators are wound to 2/3 pitch.This eliminates triplen (3rd, 9th, 15th...) harmonics on the voltage waveform and is found to be the optimum design for trouble-free supply of non-linear loads.The 2/3 pitch design avoids excessive neutral currents sometimes seen with higher winding pitches, when in parallel with the mains.A fully connected damper winding reduces oscillations during paralelling.This winding, with the 2/3 pitch and carefully selected pole and tooth designs, ensures very low waveform distortion.

SX460 AVR

With this self excited control system the main stator supplies power via the Automatic Voltage Regulator (AVR) to the exciter stator.The high efficiency semiconductors of the AVR ensure positive build-up from initial low levels of residual voltage.

This exciter rotor output is fed to the main rotor through a three phase full wave bridge rectifier.This rectifier is protected by a surge suppressor against surges caused, for example, by short circuit.

Terminals&Terminal Box

Standard generators are 3-phase reconnectable with 12 ends brought out to the terminals, Which are mounted on a cover at the non-drive end of the generator. A sheet steel terminal box contains the AVR and provides ample space for the customers wiring and gland arrangements.It has removable panels for easy access.

Shaft&Keys

All generator rotors are dynamically balanced to better than BS6861:Part 1 Grade 2.5 for minimum vibration in operation. Two bearing generators are balanced with a half key.

Insulation / Impregnation

The insulation system is class 'H'

All wound components are impregnated with materials and processes designed specifically to provide the high build required for static windings and the high mechanical strength required for rotating components.

Standards

Newage Stamford industrial generators meet the requirements of **BS EN 60034** and the relevent section of other international standards such as **BS5000,VDE0530, NEMA MG1-32, IEC34, CSA C22.2-100, AS1359**
Other standards and certifications can be considered on request

Quaility Assurance

Generators are manufactured using production procedures having a quaility assurance level to BS EN ISO 9001.

Model	Standby		Prime	
	kVA	kW	kVA	kW
BCI184G	**33**	**26.4**	**31**	**25**

Technical Specifications

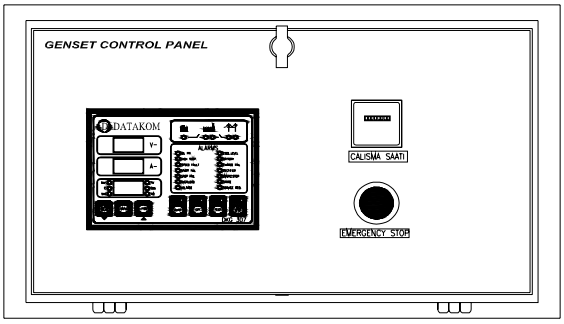
Manufacturer	NEWAGE / STAMFORD	تولید کننده
Model	BCI184G	مدل
Type	4-Poles, Rotating Field, Brushless	تیپ
Standby power at rated voltage	33 kVA	توان standby در ولتاژ نامی
Efficiency, %	86	راندمان
Power factor	0.8	ضریب قدرت
Phase	3	فاز
Frequency, Hz	50	فرکانس
Speed, Rpm	1500	سرعت
Voltage, V	380/415	ولتاژ
Excitation	Self excited	سیستم تحریک
Stator windings	2/3 Pitch factor	
Regulation	AVR, Automatic Voltage Regulator	تنظیم ولتاژ
Voltage Regulator	SX460	رگولاتور ولتاژ
Voltage Regulation, %	± 1.5	درصد تنظیم ولتاژ
R.F.I Suppression	BS EN 61000-6-2 & BS EN 61000-6-4 VDE0875G, VDE 0875N	
Waveform distortion	No Load <1.5% Non distorting balanced linear load<5.0%	
Rotor	Dynamic balanced	روتور
Overspeed, Rpm	2250	حداکثر سرعت مجاز
Short circuit current	< 300%	جریان اتصال کوتاه
TIF	Less than 50	
Insultion class	H	کلاس عایق
Construction	Single bearing, direct coupled	نحوه کوپلینگ
Coupling	Flexible	کوپلینگ
Stator winding	Double layer concentric	
Connection	WYE	اتصال
Protection class	IP23	کلاس حفاظت
Cooling air volume,m^3 / sec	0.095	دبی هوای خنک کننده

Optional Equipment

- Anti Condensation Heaters
- Air Filters
- RFI Suppression to EC Standards
- SX421 or SA465 AVRs for Parallel Operation
- Quadrature Droop kit for Parallel Operation
- SA465 AVR with 1% Regulation and 2 Phase Sensing
- SX421 AVR with improved Regulation 0.5% and 3 Phase Sensing (supplied loose)

Control Panel

Standard Equipments



- Datakom DKG307 digital automatic control module
- Hourmeter
- Emergency stop button

Features

Automatic mains failure with genset control and protection
Remote Start operation capability
Analogue temperature and oil pressure inputs
Genset KW and Power Factor measurement
Engine hours run counter
Periodic maintenance request display
165 programmable parameters
Battery backed-up real time clock
Weekly operation schedule programs
Daily, weekly, monthly exerciser
Event logging with time stamp
Statistical counters
Serial RS-232 data output for telemetry on PC
Free MS-Windows remote monitoring SW
Configurable analogue inputs: 2
Configurable digital inputs: 7
Configurable relay outputs: 2
Output expansion capability
Small dimensions (155x115x48mm)

Datakom DKG307 Control Module

Description

- The DKG-307 is a comprehensive AMF unit for a single generating set operating in standby mode.

- In AUTOMATIC position, DKG-307 monitors mains phase voltages and controls the automatic starting, stopping and load transfer of the generating set in case of a mains failure and once the generator is running, it monitors internal protections and external fault inputs. If a fault condition occurs, the unit shuts down the engine automatically and indicates the failure source with the corresponding red led lamp.

- The DKG-307 provides a comprehensive set of digitally adjustable timers, threshold levels, input and output configurations and operating sequences. The unauthorized access to program parameters is prevented by the program lock input.All programs may be modified via front panel pushbuttons, and do not require an external unit.

- The fault conditions are considered in 2 categories as Warnings and Alarms. Measured values have separate programmable limits for warning and alarm conditions.

- The service request indicator lamp turns on at the expiration of either engine hours or time limits.

- It is possible to monitor the operation of the system locally or remotely with the WINDOWS based PC utility program.

- The unit is designed for front panel mounting. It is fitted into the cut-out with the steel spring removed.Connections are made with 2 part plug and socket connectors.

Pushbutton Controls

STOP / START
AUTO, TEST, MANUAL
LCD PAGE

Input Functions display on LCD

Generator Volts	Volts L1-N, L2-N, L3-N
Generator Volts	Volts L1-L2, L2-L3, L3-L1
Generator Amps	Amps L1, L2, L3
Generator Frequency	Hz
Mains Volts	Volts L1-N, L2-N, L3-N
Mains Volts	Volts L1-L2, L2-L3, L3-L1
Mains Frequency	Hz
Engine Speed	RPM
Plant Battery Volts	Volts
Engine Hours Run	Hour
Generator total power	kVA L1, L2, L3,total
Generator total power	kW L1, L2, L3,total
Generator power factor	Cosφ L1, L2, L3,total

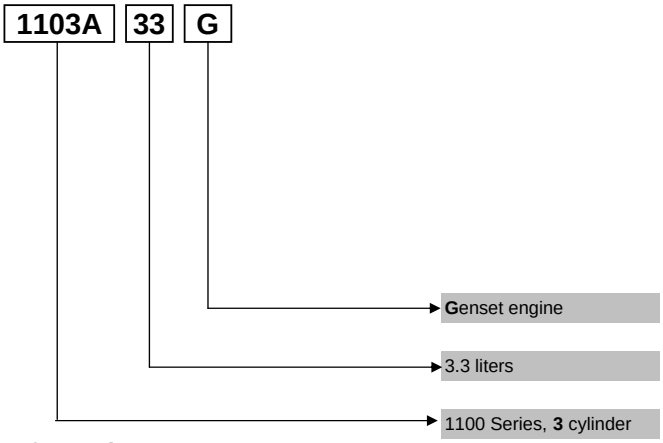
Optional Input Functions

Engine Oil pressure	kPa
Fuel level	%
Engine Temperature	°C

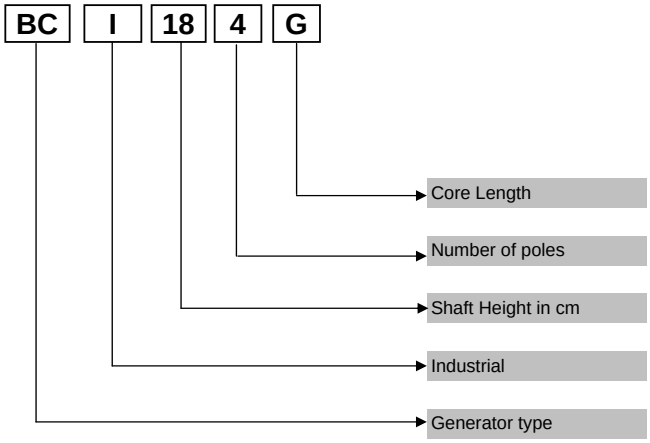
Alarm Channels

Under/over generator voltage
Over-current
Under/over generator frequency
Under/over speed
Charge fail
Emergency stop
Low oil pressure
High engine temperature
Fail to start
Low/high DC battery voltage
Reverse power
Generator phase rotation error
Generator short-circuit protection
Loss of speed sensing signal
Mains out of limits

Perkins 1100 Series Diesel Engine



Newage / Stamford Alternator



Information

Power Ratings

Standby power rating is for the supply of emergency power at variable load for the duration of the non-avalaibality of the mains power supply.No overload capacity is available at this rating.A standby rated engine should be sized for an avarage load factor of 80% based on published standby rating for 500 operating hours per year.Standby ratings should never be applied except in true emergency power failure conditions.

Prime power rating is available for unlimited hours per year with a variable load of which the average engine load factor is 80% of the published power rating, incorporation of a 10% overload for 1 hour in every 12 hours of operation which permitted

Continuous power rating is available for continuous full load operation.No overload is permitted.

Acc. to ISO 3046/1, BS 5514, DIN6271

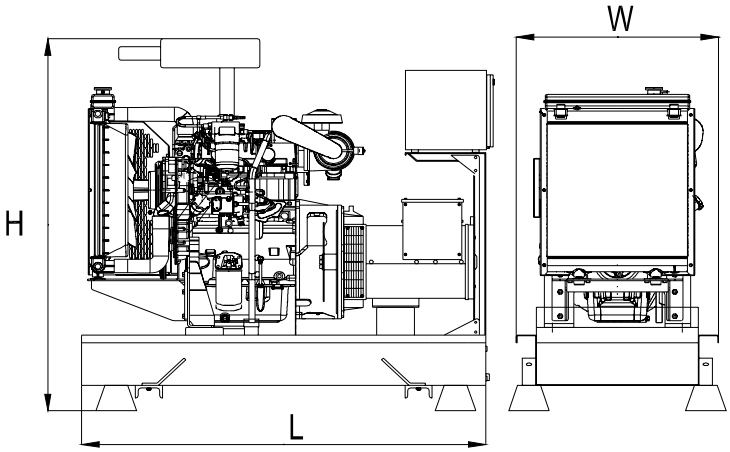
Electric Formulas

Values	Formula	
kWe	kWm X E	
kWe	(U x I x 1.73 x pf) / 1000	kVA x pf
kVA	(U x I x 1.73) / 1000	kWe / pf
I (Amp)	(kWe x 1000) / (U x 1.73 x pf)	(kVA x 1000) / (U x 1.73)
Frequency	(Rpm x N°Pole) / (2 x 60)	
Rpm	(2 x 60 x Frequency) / N°Pole	

kWm: Mechanical Power
kWe : Electrical Power
pf : Power factor
E : Alternator efficiency
I : Current (A)
U : Voltage (V)
kVA : Power
Rpm: Revolutions per minute

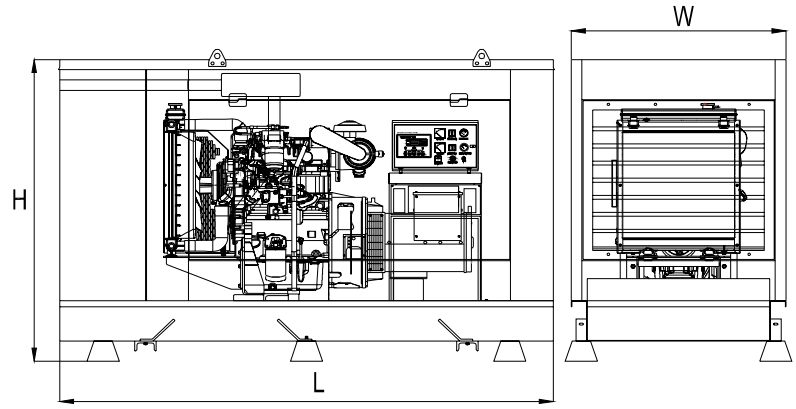
General Dimensions

Standard Generator



Length, L	1,5 m
Heigth, H	1,5 m
Width, W	0,75 m
Weight, Total	850 kg

Generator with Soundproof Canopy



Length, L	2,3 m
Heigth, H	1,55 m
Width, W	1 m
Weight, Total	1200 kg

Generator Room Layout