AYERBE MODEL : AY - 8000 KT MN E



Generating Set Specifications

Specification	AY - 8000 KT MN E
Model	AY 8000 KT MN E
AYERBE reference	5430045
Equipment type	Portable petrol generator, open frame
Maximum power	8 kVA / 6,400 W
Rated power (COP)	7 kVA / 5,600 W
Voltage / Frequency	230 V / 50 Hz
Number of phases	Single-phase
Rated current	30.4 A
Power factor	Cos phi 0.8
Operating speed	3,000 rpm
Engine	KIOTSU KT-420 E, 420 cm^3, 13 HP
Alternator	LINZ E1 C10 MI, brushless
Voltage regulation	Capacitor, ± 5 %
AC outlets	1 CEE socket 230 V, 32 A + 1 Schuko socket 230 V, 16 A
Protections	2 resettable thermal protectors (PRESS TO RESET)
Soundproof canopy	NO
Starting	Electric, key start (battery not included)
Transport	Tubular frame with wheels and handle
IP rating	IP 23
Sound power level	97 dB(A) LwA
Sound pressure level	74 dB(A) LpA at 7 m
Net weight	85 kg.
Marking	Stamped CE metal plate

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Engine Specifications



Engine	
Manufacturer	KIOTSU KT-420 E
Displacement	420 cm³
Type	Single-cylinder OHV, 4-stroke
Cooling	Forced air
Aspiration	Natural
Speed governor	Mechanical, centrifugal weights
Fuel	Unleaded petrol
Starting system	Electric, ignition key
Engine oil type	SAE 20W40 (grade CD / CF)
Oil capacity	1.1 L
Declared power	13 HP at 3,600 rpm

About this engine

- The KT-420 E is rated at 13 HP at 3,600 rpm. The set runs at 3,000 rpm, the speed that gives 50 Hz with a two-pole alternator, so the engine never runs at its maximum-power speed.
- It is a single-cylinder four-stroke OHV engine of 420 cm³ with forced-air cooling, a mechanical centrifugal governor and an electric starter operated by ignition key.
- Maintenance is limited to oil, air filter, spark plug and battery charge. Oil capacity is 1.1 L and it is best changed with the engine warm so that it carries the residues out.
- The battery is not supplied with the unit: it must be allowed for in the order and kept charged, because without it the set will not start.

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Alternator Specifications

Alternator	
Brand	LINZ
Model	E1 C10 MI
Type	Brushless, S1
Excitation system	Self-excited brushless, capacitor
Number of poles	2
Voltage / Frequency	230 V · 50 Hz
Voltage tolerance	± 5 %
Insulation class	Class H
IP rating	IP 23
Alternator output	6 kVA / 230 V / 26.1 A
Reference standards	EN 60034-1, IEC 34-1



What this means in practice

Capacitor regulation

Voltage is not regulated by AVR electronics but by an auxiliary winding loaded onto a capacitor. It is a solution with no electronic components to age, very tolerant of dust and damp, and it holds the output within ± 5 %. In exchange, voltage follows load variations more closely than on an alternator with AVR.

Brushless

With no brushes or slip rings there are no wearing parts in the excitation: periodic maintenance and the main failure cause of older alternators both disappear. That is what lets the unit stand idle for months and still start and deliver voltage.

Why a 32 A socket

At 7 kVA and 230 V the rated current is 30.4 A, well above what a 16 A socket accepts. That is why the main outlet is the 32 A CEE and the 16 A one is auxiliary. Whatever is plugged into both sockets adds up and cannot exceed the set's 5,600 W rating.

kVA and W: why there are two figures

kVA is apparent power and W is active power, and the ratio between them is the power factor. With Cos phi 0.8, the 7 kVA rating is equivalent to 5,600 W of usable power. When sizing the load, always look at the watts.

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Dimensions and Weight

Dimensions	
Length (L)	950 mm.
Height (H)	625 mm.
Width (W)	746 mm.
Packing volume	0.44 m³
Net weight	85 kg.
Power per kg	66 W/kg



Fuel and Running Time

Fuel	
Tank capacity	6.5 L
Fuel type	Unleaded petrol
Consumption at 75% load	2.1 L/h
Running time at 75% load	3 hours
Estimated running time at 50%	≈ 4 h 15 min
Estimated running time at 25%	≈ 7 hours

Altitude and operating temperature

- As with any naturally aspirated petrol engine, power drops by roughly 3.5 % for every 300 m of altitude above sea level.
- At altitude there may also be hard starting, higher consumption and spark-plug fouling.
- High ambient temperature also reduces the available power, because hot air is less dense.
- Both effects should be taken into account when sizing the load: a unit that is just adequate at sea level may fall short on a mountain site or in high summer.

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Starting and Operation

- Place the set outdoors on a firm, level surface, with clear space on all sides so that the air cooling works and exhaust gases do not build up.
- Check the oil level before every start. The engine has a low-level alert that prevents starting or stops the engine, and it is the most common reason for a set to look faulty when it is not.
- Check that the battery is connected, with clean, tight terminals and enough charge. It is the first thing to fail when the unit stands idle for weeks.
- Open the fuel tap, close the choke if the engine is cold and turn the ignition key to the on position.
- Crank in attempts of no more than five seconds, letting the starter motor rest for half a minute between attempts so that it does not overheat.
- Open the choke progressively as the engine warms up and let it run for a minute with no load before connecting anything.
- Connect loads one at a time, starting with the largest, and wait for the engine to recover speed between each one.
- To stop, disconnect the load first, let the engine run for a minute with no load so the temperature comes down, switch it off and close the fuel tap.
- If the set is to stand for more than a month, drain the carburettor or add fuel stabiliser: stale petrol is the most common failure on occasional-use equipment.

Before Every Start

Check	What to look at
Engine oil	Level between the dipstick marks, with the set level. SAE 20W40 oil, 1.1 L capacity.
Fuel	Tank filled with fresh unleaded petrol and the tap open. 6.5 L capacity.
Air filter	Element clean and properly seated. In dusty conditions, check it daily.
Siting	Level surface, outdoors, away from flammable materials and with room for ventilation.
Cables and sockets	Cables in good condition, with no makeshift joints and a cross-section suited to their length.
Earthing	Check the installation requirements before connecting site distribution boards or RCD-protected equipment.
Battery	Terminals clean and tight, enough charge and firmly secured in its housing.

Guidance only. The instructions in the engine manual and in the generating set manual always take precedence.

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Performance: permissible loads

Rough guide to what the unit can power with 5,600 W rated and 6,400 W peak.

Application	Typical consumption	Suitable
Site lighting	up to 4,000 W	YES
Fridge or freezer	150 – 400 W	YES
Drill, grinder or cut-off saw	500 – 2,400 W	YES
Electric breaker	1,500 – 2,000 W	YES
Domestic pressure washer	1,400 – 1,800 W	YES
Single-phase concrete mixer	700 – 1,500 W	YES
Single-phase submersible pump	750 – 2,200 W	YES
Single-phase cutting table	2,200 – 3,000 W	YES
Electric oven or ceramic hob	2,000 – 3,500 W	YES
Single-phase welding set	3,000 – 5,000 W	YES
Two large machines at once	over 5,600 W	NO

The starting surge

- Induction-motor loads draw three to four times their rated power at the instant of starting. With 6,400 W of peak available, the practical limit is motors of around 1.7 to 2.1 kW.
- Resistive and electronic loads such as lighting, chargers or IT equipment have no appreciable starting surge and can use the full rated power.
- Capacitor regulation copes well with these loads, but it is not the best choice for sensitive electronics. For medical equipment, servers or instrumentation, a set with AVR or inverter is preferable.

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Use, Maintenance and Storage

- Starting is electric by ignition key, with a starter motor powered by a battery. The battery is not supplied with the unit and must be allowed for in the order.
- The tubular frame protects the unit from side knocks and carries wheels and a folding handle, which on an 85 kg set allow it to be moved around a site single-handed.
- The alternator has no wearing parts in the excitation, so maintenance is limited to the engine: oil, air filter and spark plug. It also works well within its limits, because the output of the set is set by the engine and not by it.
- Cooling is by forced air and depends on the grilles being clean and on free space around the set. Working against a wall is the quickest way to overheat it.
- The noise level is 97 dB(A) LwA and 74 dB(A) LpA at 7 metres. This is an open-frame unit with no canopy, worth bearing in mind in urban areas or inside buildings under construction.
- The low-oil alert protects the engine by stopping it before damage occurs. If the set will not start, the first thing to check is the oil level, not the electrical system.
- The outlets are protected by the thermal protection on the socket panel. This guards the set against overload and does not replace the installation's RCD, which must be checked before connecting site distribution boards.
- Petrol left standing crystallises and blocks the carburettor. On occasional-use equipment, draining the carburettor or using a stabiliser prevents most failures.
- The engine uses an architecture that is very widespread on the market, with low-cost spares available immediately. That is what keeps maintenance cheap on occasional-use equipment.

Maintenance Schedule

Interval	Operation
Before every use	Check the engine oil level, the condition of the air filter and the battery connection. Inspect the unit for leaks or damage.
First running-in hours	Change the engine oil as set out in the unit's manual.
Periodically	Clean the air filter. Clean and gap the spark plug. Clean the spark arrester.
Annually	Change the oil. Replace the air filter and the spark plug. Check the fuel circuit.
Spark plug	Check the condition and the electrode gap. Spark plug as specified in the engine manual.
Long-term storage	Drain the tank and the carburettor or add stabiliser. Disconnect the battery and store it charged, in a dry, frost-free place.
Battery	Check terminals, mounting and state of charge. Recharge if the unit goes weeks without use.

Guidance only. The exact intervals are those in the unit manual and the engine manual.

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Safety Instructions

- Never use indoors, in garages, basements or enclosed spaces. Exhaust gases contain carbon monoxide, which is odourless and lethal.
- The rating is IP 23: it covers rain falling at up to 60° from vertical, but not jets or immersion. Do not expose the unit to water jets or use it on flooded ground.
- Keep at least 1.5 m away from any flammable material and leave clear space on all sides for ventilation.
- Refuel with the engine stopped and cold, outdoors and away from any source of ignition.
- Check the earthing requirements of the installation before connecting the unit to site distribution boards or to installations with an RCD.
- Connection to a building's fixed installation must always be made through a suitable changeover panel, never by plugging the generator into a household socket.
- Do not use or store the unit in rain, snow or damp environments.
- Connect loads one at a time, starting with the largest, and let the engine settle between each one.
- Do not alter the factory-set speed limiter: it voids the warranty and can damage the unit and the connected loads.
- The battery gives off hydrogen while charging: keep flames away, do not create sparks over it and never reverse the polarity of the terminals.
- Disconnect the battery before any work on the unit and wear gloves and eye protection when handling it.

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