MODEL : AY - 9500 KT TX E



Generating Set Specifications

Specification	AY - 9500 KT TX E
Model	AY 9500 KT TX E
AYERBE reference	5430075
Type of equipment	Portable petrol generator, open frame
Maximum power	9.5 kVA / 7,600 W (400 V) · 6.5 kVA / 5,200 W (230 V)
Rated power (COP)	8 kVA / 6,400 W (400 V) · 6 kVA / 4,800 W (230 V)
Voltage / Frequency	400 V III + 230 V I / 50 Hz
Number of phases	Three-phase with neutral
Rated current	11.6 A (400 V) / 26.1 A (230 V)
Power factor	Cos phi 0.8
Running speed	3,000 rpm
Engine	KIOTSU KT-420 E, 420 cm³, 13 CV
Alternator	LINZ E1S10L L, brushless
Voltage regulation	Compound, ± 5 %
AC outlets	1 CEE socket 400 V, 16 A + 1 schuko socket 230 V, 16 A
Protections	Resettable thermal protector (PRESS TO RESET)
Soundproof canopy	NO
Starting	Electric, key start
Battery	12 V, not supplied
Transport	Tubular frame with wheels and handle
IP protection	IP 23
Sound power level	97 dB(A) LwA
Sound pressure level	74 dB(A) LpA at 7 m
Net weight	90 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	Naturally aspirated
Speed governor	Mechanical centrifugal
Fuel	Unleaded petrol
Starting system	Electric key start (12 V battery not supplied)
Engine oil type	SAE 10W-40
Oil capacity	1.1 L.
Declared power	13 hp at 3,600 rpm

The engine of this unit

- The KT-420 is rated at 13 hp at 3,600 rpm, which is the speed at which engine power is measured. Inside the generating set it runs governed at 3,000 rpm, the speed that fixes 50 Hz with a two-pole alternator.
- A 420 cm³ single-cylinder air-cooled engine with a mechanical centrifugal governor: it holds its speed when a load comes on suddenly, and that is what keeps the frequency stable.
- It burns 2.1 L/h at 75 % load with a 6.5 L tank, which gives around 3.1 hours of continuous work. The oil is SAE 10W-40 and the sump holds 1.1 L.
- Simple mechanics and electric key starting are what give this series its reputation on site and in the hire trade: immediate start-up and basic maintenance.

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Alternator Specifications

Alternator	
Brand	LINZ
Model	E1S10L L
Type	Brushless, 2 poles, S1
Excitation system	Compound, self-excited
Voltage / Frequency	230 / 400 V · 50 Hz
Voltage tolerance	± 5 %
Insulation class	Class H
IP protection	IP 23
Alternator output	8 kVA / 400 V / 11.6 A
Coating type	Standard, no impregnation
Reference standards	EN 60034-1, IEC 34-1



What this means in practice

Compound regulation

Voltage is not regulated by AVR electronics but by an auxiliary compensating winding that reinforces the excitation as the load increases. It is a solution with no electronic components to age, very tolerant of dust and damp, and it holds the output within ± 5 %.

Brushless

With no brushes or slip rings there are no wearing parts in the excitation: periodic maintenance and the main cause of failure of older alternators are both eliminated. That is what allows the set to stand idle for months and still start and give voltage.

Three-phase and single-phase at once

The set delivers 8 kVA three-phase at 400 V or 6 kVA single-phase at 230 V, but not the two figures added together. In a three-phase alternator the single-phase output is taken from one phase, which is why it is limited to a part of the set's total output.

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 rated 8 kVA equals 6,400 usable W and the 6 kVA single-phase equals 4,800 W. 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	90 kg.
Power per kg	71 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	3.1 hours
Estimated running time at 50%	≈ 4 h 15 min
Estimated running time at 25%	≈ 7 hours

Altitude and operating temperature

- Like any naturally aspirated petrol engine, output falls by roughly 3.5 % for every 300 m of altitude above sea level.
- At altitude there may also be harder 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 set that is just adequate at sea level may fall short on a mountain site or in high summer.

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Starting up and use

- Place the set outdoors, on a firm level surface, with clear space on all sides so that the air cooling can work and the 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 frequent reason for a set to seem faulty when it is not.
- Open the fuel tap, close the choke if the engine is cold and turn the ignition key to the on position.
- Operate the starter motor in short bursts of no more than five seconds, waiting at least ten seconds between attempts so as not to overheat the starter motor or flatten the battery.
- Open the choke progressively as the engine warms up and let it run for a minute with no load before connecting anything.
- Before connecting a three-phase load, check the direction of rotation at the 400 V socket: a pump or a motor running backwards is damaged within seconds.
- Connect the loads one at a time, starting with the largest, and wait for the engine to recover its speed between each one.
- To stop, first disconnect the load, let the engine run for a minute with no load so the temperature drops, switch it off and close the fuel tap.
- If the set is going to stand for more than a month, drain the carburettor or add fuel stabiliser: standing petrol is the most common failure on occasionally used equipment.

Before every start

Check	What to look at
Engine oil	Level between the dipstick marks, with the set level. SAE 10W-40 oil and 1.1 L capacity.
Fuel	Tank filled with fresh unleaded petrol and the tap open. Capacity 6.5 L.
Air filter	Element clean and correctly seated. In dusty conditions, check it daily.
Location	Level surface, outdoors, away from flammable materials and with room for ventilation.
Cables and sockets	Leads in good condition, no temporary joints, and of a section suited to the run length.
Earthing	Check the earthing requirements of the installation before connecting site boards or RCD-protected equipment.

Indicative procedure. The instructions in the engine manual and in the generating set manual always take precedence.

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Performance: permissible loads

Indicative reference of what the set can feed with 6,400 W rated three-phase at 400 V and 4,800 W single-phase at 230 V.

Application	Typical consumption	Suitability
LED or halogen lighting (230 V)	up to 3,000 W	**YES**
Fridge or freezer	150 – 400 W	**YES**
Drill, grinder or hand saw	500 – 1,500 W	**YES**
230 V electric breaker hammer	1,500 – 2,000 W	**YES**
230 mm angle grinder	2,000 – 2,400 W	**YES**
400 V three-phase concrete mixer	1,500 – 2,200 W	**YES**
Site hoist or lift	2,000 – 3,000 W	**YES**
Three-phase table or cut-off saw	3,000 – 4,500 W	**YES**
400 V three-phase compressor	3,000 – 5,500 W	**YES**
Three-phase pressure washer	4,000 – 6,000 W	**AT THE LIMIT**
230 V hob or electric oven	over 4,800 W	**NO**

The starting surge

- Induction motor loads demand between 3 and 4 times their rated power at the instant of starting. With 7,600 W of three-phase peak, the practical limit is motors of around 1,900 to 2,500 W.
- Single-phase at 230 V the available output is 4,800 rated W, so the practical limit for a single-phase motor is around 1,200 to 1,600 W.
- Resistive and electronic loads such as lighting, chargers or IT equipment have no appreciable starting surge and can use the full rated power.
- Compound regulation copes well with these loads, but it is not the best choice for sensitive electronics. For medical equipment, servers or instrumentation an AVR or inverter set is preferable.

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Use, maintenance and storage

- Starting is electric, by ignition key. The 12 V battery is not supplied with the set and must be kept charged: a low battery is the most common reason for the set not to start.
- The tubular frame protects the assembly from knocks and carries wheels and a handle, which a 90 kg unit needs.
- The LINZ E1S10L L alternator has compound excitation and is brushless: there are no wearing parts in the excitation, so maintenance is limited to the engine.
- Cooling is by forced air and depends on the grilles being clean and on there being clear space around the set. Working against a wall is the quickest way to overheat it.
- Sound level is 97 dB(A) LwA and 74 dB(A) LpA at 7 metres. This is an open frame unit, not soundproofed, which should be borne in mind in urban areas or inside buildings under construction.
- The low oil level alert protects the engine by stopping it before damage occurs. If the set will not start, the first thing to check is the level, not the electrical system.
- The three-phase outlet is a 400 V 16 A CEE socket with 3P+N+E and an IP44 lid, and the single-phase one a 230 V 16 A schuko socket, also with an IP44 lid. Both are protected by a resettable thermal breaker marked SUPPLY PROT. – PRESS TO RESET, which does not replace the RCD of the installation.
- Before connecting a three-phase load it is worth checking the direction of rotation at the 400 V socket, especially with pumps and with motors coupled to a machine.
- Standing petrol crystallises and blocks the carburettor. On occasionally used equipment, draining the carburettor or using a stabiliser prevents most failures.

Maintenance Schedule

Interval	Operation
Before every use	Check the engine oil level and the condition of the air filter. Inspect the unit for leaks or damage.
First running-in hours	Change the engine oil as indicated in the equipment manual.
Periodically	Clean the air filter. Clean and adjust the spark plug. Clean the spark arrestor.
Annually	Change the oil. Replace the air filter and the spark plug. Check the fuel circuit.
Battery	Check the electrolyte level and the condition of the terminals. Keep the battery charged: a flat battery is the most common reason for the set not to start.
Alternator	Blow out the dust built up in the grilles and check the condition of the sockets and of the thermal protector.
Long-term storage	Drain the tank and the carburettor or add fuel stabiliser. Store in a dry, frost-free place.

Indicative schedule. The exact intervals are those of the equipment manual and of the engine manual.

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Safety Instructions

- Never use indoors, in garages, basements or enclosed spaces. The exhaust gases contain carbon monoxide, which is odourless and lethal.
- Keep a minimum clearance of 1.5 m 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.
- The 400 V socket delivers three-phase voltage: it must only be connected with a suitable CEE plug and lead, and by personnel familiar with the installation.
- Disconnect the negative terminal first when handling the battery. Do not create sparks or bring flames near the battery: it gives off hydrogen and can explode.
- Check the earthing requirements of the installation before connecting the unit to site boards or to RCD-protected installations.
- Connection to the fixed installation of a building must always be made through a suitable changeover panel, never by plugging the generator into a domestic socket.
- Do not use or store the unit in rain, snow or damp environments.
- Connect the loads one at a time, starting with the largest, and let the engine stabilise between each one.
- Do not handle the sockets or reset the thermal breaker with the engine running and a load connected.
- Do not alter the factory-set speed limiter: it voids the warranty and can damage the unit and the connected loads.

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