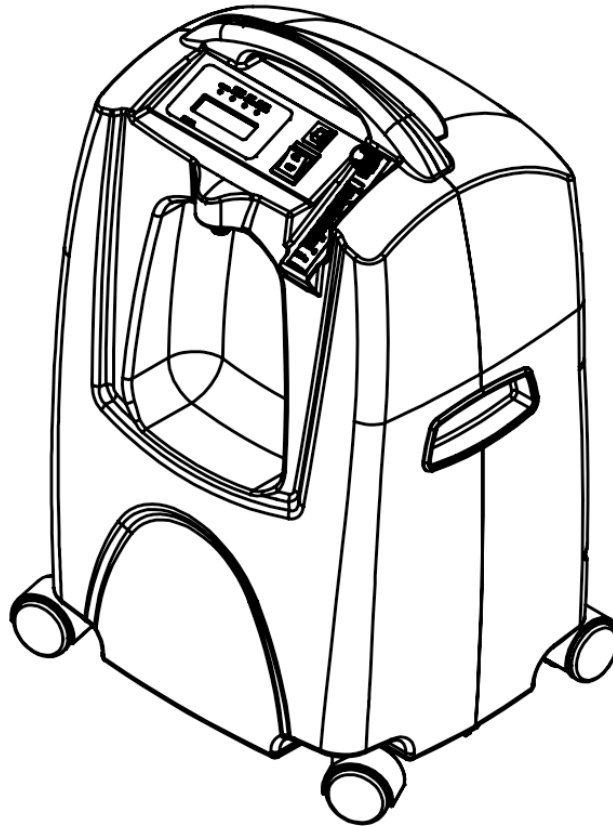




ZY-5AC / ZY5BA

Oxygen Concentrator



Instruction Guide

WARNING-Read instruction guide before operating this equipment.



DANGER---NO SMOKING

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INTRODUCTION

This User Manual gives details of the 5 litres/minute model of the ZY-5AC/ZY5BA oxygen concentrator. Please make sure that you read and understand this manual before operating the unit. Important safeguards are indicated throughout this manual and you should pay special attention to all safety information. Contact your supplier if you have any questions.

IMPORTANT SAFEGUARDS

The following terms are used throughout this manual to highlight important information.

WARNING Important safety information for hazards that might cause serious injury.

CAUTION Information for preventing damage to the product

NOTE Information to which you should pay special attention.

What is a ZY-5AC/ZY5BA oxygen concentrator?

The ZY-5AC/ZY5BA oxygen concentrator is designed to separate oxygen from ambient air and then continuously deliver it at flow rates of up to 5 litres per minute in concentrations of around 93%. It is easy to use, is very quiet in use and has very low running costs.

How does it work?

The air that we breathe consists of about 78% nitrogen and 21% oxygen the remaining 1% being trace gases such as argon. The concentrator works by removing the nitrogen from the air using a process known as Pressure Swing Adsorption or PSA. The air is first compressed and then passed through a zeolite tower which adsorbs the nitrogen so that the resulting gas flowing out of the tower contains about 93% oxygen. Adsorption is a reversible process and as the zeolite tower becomes saturated with nitrogen, the system switches to a second zeolite tower. Simultaneously, the first tower is vented to atmosphere and the adsorbed nitrogen is rapidly released and expelled so that the tower becomes fully capable of adsorbing nitrogen again. The two towers, regularly switching from one to the other, produce a steady flow of oxygen.

IMPORTANT PARTS OF THE OXYGEN CONCENTRATOR

Please take time to familiarize yourself with the ZY-5AC/ZY5BA oxygen concentrator before operating.

Packing checklist

User Manual

Oxygen Concentrator Set

Adaptor for Humidifier

Oxygen Outlet Connector

Controls and Features – See Page 5

Figure 1 Front View

- | | |
|-----------|---|
| 1 | Information Display Panel |
| 2 | Green Power Light – Lit when concentrator is turned on |
| 3 | Normal Oxygen light (green) |
| 4 | Low Oxygen light (yellow) |
| 5 | Service Required light (red) |
| 6 | LCD |
| 7 | Fuse/Circuit Breaker – resets the unit after electrical overload shutdown. |
| 8 | ON / OFF switch |
| 9 | Flowmeter control knob |
| 10 | Flowmeter |
| 11 | Oxygen outlet |

Figure 2 Rear View

- | | |
|-----------|-------------------|
| 12 | Air Filter |
| 13 | Exhaust |
| 14 | Power Cord |



Figure 1 Front View



Figure 2 Rear View

USING THE OXYGEN CONCENTRATOR

WARNING: Oxygen strongly supports combustion and will cause substances to burn vigorously, including some materials that do not normally burn in air. Smoking and any other forms of naked lights should be prohibited in areas where the concentrator is in use.

Before switching the concentrator on:

Ensure that the rear of the concentrator is clear of any obstruction that might prevent a flow of air in and out of the unit. Possible air-borne pollutants and fumes should be avoided.

Regularly check the condition of the Air Filter to make sure that it has not become contaminated and clean as necessary – see Maintenance, Page 6.

Screw the Oxygen Outlet Connector onto the Oxygen Outlet and tighten, then attach the Oxygen Tubing directly to the connector – see Figure 3 below



Figure 3

If required, connect the Humidifier as follows:

Fill the Humidifier Bottle with distilled water and then screw the bottle directly on to the Oxygen Outlet using the wing-nut on top of the bottle – see Figure 4 below. Make sure that the bottle is securely fastened. Attach the Oxygen Tubing directly to the outlet of the Humidifier Bottle – see Figure 5 below.



Figure 4



Figure 5

Check that the ON/OFF switch of the concentrator is at OFF and connect the unit to the power supply.

Switch the unit ON – the green “Power” light and the green “Normal Oxygen” light will illuminate and the top line of the LCD will briefly display “KAIYA Medical” then “Normal”.

The LCD provides two lines of information, the top line shows the status of the system, which can be “Normal”, “Low Oxygen” and “Oxygen Too Low” and the bottom line shows the total number of hours that the unit has been used, i.e. “Runtime 00028 hrs.”

Set the flow of oxygen so that the ball float is centered on the red indication line.

The unit is now ready for use.

The ZY-5AC/ZY5BA oxygen concentrator incorporates a system that continually monitors the oxygen as it is being produced.

Note. The concentrator is designed to work at flows of between 1 and 5 litres per minute, but not more than that indicated by the red line at the top of the flowmeter. When used in conjunction with an anaesthetic machine, and when using the flowmeter of that machine, the concentrator flow should be set at the red line. Flows above this will cause the concentrator to lose efficiency with a resulting decrease in the concentration of the delivered oxygen. Eventually, the green, Normal Oxygen light will extinguish, the yellow, Low Oxygen light will illuminate and flash and an audible alarm will sound. At the same time the top line of the LCD will change to “Low Oxygen”.

If not corrected and the concentration of the delivered oxygen is allowed to continue to fall, the yellow, Low Oxygen light will extinguish, the red Service Required light will illuminate and flash and the audible alarm will continue to sound. The top line of the LCD will change to “Oxygen Too Low”.

If either of the two conditions occurs, immediately check the oxygen flow to make sure that it is not set above the red line and adjust as necessary. After a few minutes, the Normal Oxygen light will re-illuminate, the audible alarm will no longer sound and the top line of the LCD will return to “Normal”.

Should the either of the low oxygen conditions persist, switch to the reserve oxygen supply and when convenient, refer to the Troubleshooting section on Page 9 of this manual.

NOTE. If, after first switching ON, the Red Service Required light illuminates, the Audible Alarm sounds and the unit does not turn on, refer to the Trouble shooting chart on Page 9.

WARNING: The flow of oxygen must not be set above the red indicator line as this will activate the Low Oxygen alarms

When not in use, the concentrator should be switched OFF.

MAINTENANCE

Do not use any lubricants, oils or greases

AIR FILTER

The ZY5AC/ZY5BA oxygen concentrator requires very little maintenance and regular checks on the condition of the air filter are all that are needed. In the unlikely event that the air filter becomes contaminated or blocked it will only be necessary to remove the filter, wash it in a solution of warm water and washing-up liquid, rinse it in clean, warm tap water and then thoroughly dry it before reinstalling.

CAUTION: The concentrator should not be operated without the air filter or whilst the filter is still damp.

CLEANING

WARNING: The unit must be turned OFF before carrying out any cleaning procedures.

The exterior of the concentrator may be cleaned using a damp cloth or sponge together with a mild house-hold cleaner, and then wiped dry.

WARNING: Do not apply liquid directly to the exterior of the concentrator or use any petroleum-based solvents or cleaning agents.
To avoid electric shock, do not remove the outer casing of the concentrator.










SPECIFICATIONS

No.	Item	Rating
1.	Delivery Rate (Lower delivery rates available for low application) (@ nominal outlet pressures of zero and 7 kPa)	1 to 5 LPM
2.	Outlet Pressure	8.5 ± 0.5 psi (58.6 kpa)
3.	Electrical Rating	110-120V/60Hz/2.6A (Max.) 340W 220-240V/50Hz/1.4A (Max.) 340W
4.	Oxygen Percentage	1~5 LPM 93%±2%
5.	Operating Environment Range	Temperature 10°C to 40°C, Humidity 30% to 70% Atmospheric pressure 50~106 kpa (7.3~15.4 psi)
6.	Operating Altitude (tested at 21°C only) 0-2000 M (0-6561 ft) 2000-4000 M (6561-13123 ft)	Across the voltage range: 93% ± 3% 93% ± 7%
7.	The visible" low oxygen "indicator will activate at the following level(only available with ZY5AC-O and ZY5BA-O)	82%±2%will activate at the following level (the red "service required" light will activate if purity dropped to 75%±3%)
8.	Pressure Relief Valve	40 psig±5psig (276 kPa±34.5 kPa)
9.	Weight	33.5 lbs. (15.2 kilograms)
10.	Sound Level (ISO 8359:1996 from front)	<40dbA (overall average)
11.	Dimensions	23"H x 14 .2"W x 11.4"D (58 x 36 x 29 cm)
12.	Operating System	Time Cycle / Pressure Swing
13.	Storage Conditions	Temperature -40°C to 70°C Humidity 10% to 100% Atmospheric pressure 50~106 kpa (7.3~15.4 psi)
14.	Equipment Class and Type	The type of protect against electric shock: Class II The degree of protect against electric shock: TYPE B Applied part

MINOR TROUBLESHOOTING

Symptom	Possible Cause	Remedy
A. Unit does not operate. Power light is off when the power switch is "on ." Audible alarm is pulsing and Service Required light is flashing.	1. Power cord not properly inserted into wall outlet.	Check power connection at the wall outlet. On 115 volt units, check the back of the unit.
	2. No power at wall outlet.	Check your home circuit breaker and reset if necessary. Use a different wall outlet if the situation occurs again.
	3. Oxygen concentrator circuit breaker activated (selected units).	Press the concentrator circuit breaker button (if equipped) located below the power switch. Use a different wall outlet if the situation occurs again.
B. Unit operates; the Power light is on when the Power switch is "On". Red Service Required light is illuminated. Audible alarm may be sounding.	1. Air filter is blocked.	Check the air filter. If the filter is dirty, wash it following the cleaning instructions on page 7.
	2. Exhaust is blocked.	Check the exhaust area; make sure there is nothing restricting the unit exhaust.
	3. Blocked or defective cannula, catheter, face mask or oxygen tubing.	Detach cannula, catheter, or face mask .If proper flow is restored, clean or replace if necessary. Disconnect the oxygen tubing at the oxygen outlet. If proper flow is restored, check oxygen tubing for obstructions or kinks. Replace if necessary
	4. Blocked or defective humidifier bottle.	Detach the humidifier from the oxygen outlet .If proper flow is obtained, clean or replace humidifier.
	5. Flow meter set too low.	Set flow meter to prescribed flow rate. If the above remedies do not work, contact your Medical provider
C. Unit operates the power light is on when power switch is "on ", audible low-frequency vibration sound is detected.		Turn your unit "off", Switch to your reserve oxygen system, and contact your Medical provider immediately.
D. If any other problems occur with your oxygen concentrator.		Turn your unit "Off". Switch to your reserve oxygen system, and contact your Medical provider immediately.
F. Red Service Required light is on and an intermittent audible signal is sounding.	1. Flow meter is not properly yet.	Ensure the flow meter is properly set to the prescribed.
	2. Air filter is blocked.	Check the air filter. If the filter is dirty, wash it following the cleaning instructions on page 7.
	3. Exhaust is blocked.	Check the exhaust area: make sure there is nothing restricting the unit exhaust. If the above remedies do not work, contact your provider.

SYMBOL

	General warning, caution, risk of danger Please read the instructions carefully before operating the product.
	Type B applied part Note: B = Body
	Class II equipment
SN	Manufacturer's serial number
	Date of manufacture
	Manufacturer
	Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE Directive) after over the valid term within 3 years, the machine should be treated on local law or regulation requirement. To avoid hurt users and pollute environment.
	FRAGILE Contents of the transport package are fragile therefore it shall be handled with care.
	THIS WAY UP Indicates correct upright position of the transport package.
	KEEP AWAY FROM RAIN Transport package shall be kept away from rain.

Warranty

KAIYA Medical warrants the ZY-5AC/ZY-5BA a period of 18 months from date of invoice, to be free from defects in material and workmanship. If during the specified warranty period you believe the purchased product or any part thereof has such a defect, you must return the product during such period, with proof of purchase to the factory for repair, or replacement of the defective part. If the product or part is found to have been defective in material or workmanship, it will be repaired or replaced, free of charge, and returned to the purchaser.

The warranty shall not apply to any product, which in KAIYA Medical's judgment has been subject to misuse, negligence or accident. The disposables are excluded under the terms of this warranty.

THE MANUFACTURER LIMITS THE DURATION OF THE IMPLIED WARRANTY OF MERCHANTABILITY TO THE LIMITED WARRANTY PERIOD SET FORTH ABOVE, AND OTHERWISE DISCLAIMS ALL IMPLIED WARRANTIES WITH RESPECT TO THE PRODUCT AND IT'S PARTS INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

The warranty does not cover damage caused by misuse, negligence, accident, abuse or alteration, modification of the unit by anyone other than KAIYA Medical or affixation of any disposable or accessory not manufactured by KAIYA Medical

KAIYA Medical total liability for any and all claims, damages, losses and injuries arising out of or relating to any breach of warranty shall not exceed the purchase price of the product. IN NO EVENT

WHETHER IN CONTRACT, OR TORT, OR OTHERWISE SHALL KAIYA Medical BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECT, CONSEQUENTIAL, OR INCIDENTAL ARISING OUT OF THE USE, MISUSE, OR INABILITY TO USE THIS PRODUCT.

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