

kingon

User Manual



















PORTABLE OXYGEN CONCENTRATOR # P2-E7




















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CONTENTS

I. INDICATIONS FOR USE, CONTRAINDICATIONS AND GENERAL PRECAUTION.....	3
Indications for Use.....	3
Intended Population.....	3
Intended Operator.....	3
Contraindications.....	3
Side Effects.....	3
Expected Life.....	3
General Precaution.....	4
II. DESCRIPTION OF KINGON P2-E7 PORTABLE OXYGEN CONCENTRATOR.....	10
Important Parts of the Kingon P2-E7.....	10
User Interface Instruction and Symbols Used on Kingon P2-E7.....	11
Alerts.....	15
Power Supply.....	18
Accessories.....	19
Accessories List.....	20
III. OPERATING INSTRUCTIONS.....	21
General Operation.....	21
IV. TROUBLESHOOTING.....	25
V. MAINTENANCE OF KINGON P2-E7.....	26
Cleaning and Disinfection the Outside Case.....	28
Cannula Replacement.....	28
Filter Cleaning and Replacement.....	28
Battery Care and Maintenance.....	29
Sieve Bed Replacement.....	30
Disposal of Device and Accessories.....	31
Maintenance Items Lists.....	31
VI. SYSTEM SPECIFICATIONS.....	32
Concentrator Specification.....	32
Classifications.....	33
Standards Compliance.....	34
EMC Information.....	35
VII. WARRANTY.....	37



Symbol	Meaning
WARNING	A warning indicates that the personal safety of the patient may be involved. Disregarding a warning could result in significant injury
CAUTION	A caution indicates that a precaution or service procedure must be followed. Disregarding a caution could lead to a minor injury or damage to device
	See User Manual for Instructions
	AC Power
	DC Power
	No Smoking
	Keep Away Form Open Flames
	Keep Dry
	Use No Oil or Grease
	Do Not Disassemble (contact your device provider for servicing by authorized personnel)
	Do Not Dispose of In Unsorted Municipal Waste
	Type BF Applied Part
	Class II (Double Insulated)
	See Instructions for Use
	Manufacturer
IP22	Protects against solid objects over 12 mm and direct sprays of water up to 15° of vertical (IEC 60529)
	Date of Manufacture
	Serial Number
	This Side Up

Symbol	Meaning
	Fragile
	Storage Humidity (Non-condensing)
	Storage Temperature
	MR Unsafe
	Medical Device
UDI	Unique Device Identifier
	Stacking Limit By 6
	Dimension
	Net Weight
	Gross Weight
	Quantity of Packaging Unit
	Output of Oxygen
	Input of Power Supply
	Model Number
	Importer
	Batch Code
	Made in China
	Complies With Applicable EU Directives; Including Medical Device Directive
	Authorised Representative in the European Community
	The manufacturer of this POC has determined this device conforms to all applicable FAA requirements for POC carriage and use on board aircraft

I. INDICATIONS FOR USE, CONTRAINDICATIONS AND GENERAL PRECAUTION

Indications for Use

The portable oxygen concentrator is intended to provide supplemental oxygen. It is to be used in home healthcare environment included indoors, outdoors and in vehicles. This device is not intended to be life-supporting.

Intended Population

The intended population for the use of portable oxygen concentrator encompasses individuals with various respiratory conditions who require supplemental oxygen therapy to manage their symptoms and improve their quality of life. This device is for adult only.

Intended Operator

An adult operator capable of understanding the user manual may be a healthcare professional, layperson, or the patient.

Contraindications

It is contraindicated in patients with oxygen poisoning.

Side Effects

Higher flow rates of cold and dry oxygen may have induced nasal mucosal drying and discomfort.

Expected Life

Service Item	Expected Life
Portable Oxygen Concentrator	5 Years
Battery	500 Full charge / discharge cycles
Molecular Sieve Beds	12 Months

General Precaution



WARNING

This device is not intended to be life-sustaining or life-supporting. This device is for adult only.



WARNING

A backup oxygen source is recommended for power outages or mechanical problems. Be sure to have an available backup oxygen source that is recommended by your doctor or healthcare provider.

CAUTION

This device restricted to sale by or on the order of a physician in many countries. May also be applicable in your country.

CAUTION

It is the responsibility of the patient to make back-up arrangements for alternative oxygen supply when traveling; assumes no liability for persons not to adhere to manufacturer recommendations.

CAUTION

The expected life is depending on the environment of usage and the maintenance. The bad condition will short the lifetime of the concentrator.



WARNING

The operator should read and understand this entire manual before using the device.

CAUTION

The device is not intended for life support, nor does it provide any patient monitoring capabilities.

CAUTION

Patients who are unable to hear or see an alert from the device, or who are unable to communicate discomfort while wearing the device, will require additional monitoring to avoid injury or harm. If the patient experiences any new symptoms, seek medical attention immediately.

CAUTION

In certain circumstances, oxygen therapy can be hazardous. Please seek medical advice before using this device.

CAUTION

The Kingon P2-E7 is not designed or specified to be used in conjunction with a humidifier, nebulizer or connected with any other equipment. Do not modify the Kingon P2-E7 concentrator. Any modifications performed on the equipment may impair performance or damage equipment and will void your warranty.

General Precaution-Continued



WARNING

Oxygen supports combustion. Oxygen should not be used while smoking or smoking in the same room, or in the presence of an open flame.



WARNING

Do not submerge the Kingon P2-E7 or any of the accessories in liquid.
Do not expose to water or precipitation.
Do not operate in the rain/wet weather conditions.
Exposure to moisture can lead to electrical shock and/or damage.

CAUTION

Do not use oil or grease on the concentrator or its components as these substances, when combined with oxygen, can greatly increase the potential for a fire hazard and personal injury.

CAUTION

Never leave the Kingon P2-E7 in an environment which can reach high temperatures or high humidity, such as an unoccupied car in high temperature environments or bathroom with high humidity. This could damage the device.



WARNING

Geriatric or any other patient unable to communicate discomfort, or hear or see the alarms while using this device may require additional monitoring.



WARNING

If you feel discomfort or are experiencing a medical emergency while undergoing oxygen therapy, seek medical assistance immediately to avoid harm.



WARNING

The oxygen delivery settings of the oxygen concentrator should be periodically reassessed for the effectiveness of the therapy.



WARNING

Set the device at the prescribed level and do not increase or decrease your flow rate from the prescribed level until you first consult with your physician or healthcare professional.



WARNING

Only use this device as prescribed. The use of oxygen therapy can be hazardous in some circumstances, so consult your health care practitioner before using Kingon P2-E7.



WARNING

The settings of the Kingon P2-E7 might not correspond with continuous flow oxygen.

General Precaution-Continued



WARNING

The settings of other models or brands of oxygen therapy equipment do not correspond with the settings of the Kingon P2-E7.



WARNING

There is a risk of fire associated with oxygen enrichment during oxygen therapy. Do not use the oxygen concentrator or accessories near sparks or open flames.



WARNING

Use only water-based lotions or skin creams that are oxygen compatible during setup or use during oxygen therapy. To avoid the risk of fire and burns, never use petroleum or oil-based lotions or salves.



WARNING

Smoking during oxygen therapy is dangerous and may result in fire which can cause serious injury or death of the patient and others.



WARNING

To ensure that you receive the correct therapeutic amount of oxygen delivery according to your medical condition:

- Kingon P2-E7 Must be used only after one or more settings have been individually determined or prescribed for you at your specific activity levels.
- Kingon P2-E7 Must use only the parts and accessories that were provided by the manufacturer, and those that were used while your personalized settings were configured.



WARNING

Do not lubricate replaceable fittings, connections, tubing, or other accessories of the oxygen concentrator to avoid the risk of fire and burns.



WARNING

Use only spare parts recommended by the manufacturer to ensure proper function and to avoid the risk of fire and burns.



WARNING

Wind or strong draughts can adversely affect accurate delivery of oxygen therapy.

EXAMPLE 1 Using this equipment beside an open window or in front of a fan can affect the accuracy of delivery of oxygen.

EXAMPLE 2 Using this equipment in the back seat of an open convertible car can affect the accuracy of delivery of oxygen.

General Precaution-Continued



WARNING

If you notice any of the following, STOP use immediately and contact your equipment provider:

- Unexplained changes in the performance of this device;
- Unusual or harsh sounds;
- Dropped or mishandled device or the power supply;
- Water spilled into the enclosure;
- Broken enclosure.



WARNING

Oxygen makes it easier for a fire to start and spread. Do not leave the nasal cannula or mask on bed coverings or chair cushions. If the oxygen concentrator is turned on, but not in use, the oxygen will make the materials flammable. Turn the oxygen concentrator off when not in use to prevent oxygen enrichment.



WARNING

To ensure proper function and to avoid the risk of fire and burns:

- Use only with Kingon P2-E7 AC and DC power supply;
- Use only with Kingon P2-E7 battery;
- Use only approved Kingon P2-E7 accessories.



WARNING

Remove the battery from the device if Kingon P2-E7 will not be used for a long period of time.



WARNING

Device operation exceed the voltage, breath rate, temperature, humidity and/or altitude values specified may decrease oxygen concentration levels.



WARNING

Do not modify this system or equipment in any way. Modifications could result in hazards to the user.



WARNING

Change in altitude may affect to actual oxygen supplied to you. Do consult your physician before travelling to a place with altitude changes.



WARNING

The P2-E7 portable oxygen concentrator is designed for continuous use. For optimal sieve bed life, the product should be used frequently.

General Precaution-Continued



WARNING

Smoking during oxygen therapy is dangerous and is likely to result in facial burns or death. Do not allow smoking within the same room where the oxygen concentrator or any oxygen carrying accessories are located. If unable to leave the room, you must wait 10 minutes after you have turned the oxygen concentrator off.



WARNING

Remove the battery from the device if Kingon oxygen concentrator (P2-E7) will not be used for a long period of time.



WARNING

Use of this device at an altitude above 10,000 ft (3,048 meters) or outside a temperature of 41°F to 104°F (5°C to 40°C) or a relative humidity above 90% is expected to adversely affect the flowrate and the percentage of oxygen and consequently the quality of the therapy.



WARNING

The Kingon oxygen concentrator (P2-E7) can be relied upon to deliver the set flowrate and concentration of oxygen after 2 minutes of switching on.



WARNING

Some respiratory efforts of the patient might not trigger the Kingon oxygen concentrator (P2-E7).



WARNING

The Kingon oxygen concentrator (P2-E7) is not intended for use with a tracheotomised patient.



WARNING

When the oxygen concentrator is stored and used, pollutants and fumes should be avoided.



WARNING

The nasal cannula is a single use medical device. It can cause respiratory infections and other illnesses if reused.



WARNING

After the oxygen concentrator is powered on and preheated for 2 minutes, please check whether there is an alarm signal-alarm sound, interface display and alarm indicator. "E15"(Absence of Breath alarm) is detected, the alarm will disappear after breathing is sensed. If an alarm occurs other than E15 (Absence of Breath alarm), please follow the main interface alarm display information to operate, please stop using and contact the supplier immediately. If not, it can be used normally.

General Precaution-Continued



WARNING

The connection between the nasal cannula and the oxygen outlet of the device can be tested with soapy water for the presence of air leakage. Apply soapy water to the joint. If there are obvious bubbles, remove the nasal cannula and reconnect it or contact the supplier.

CAUTION

In most countries, this device must be purchased from a doctor or with a doctor's prescription.

CAUTION

Must have backup oxygen supply when traveling. It is the responsibility of the patient to make backup arrangements for alternative oxygen supply when traveling. We assume no liability for persons that do not adhere to manufacturer recommendations.

CAUTION

The expected life is depending on the environment of usage and the maintenance. Operating the device outside of the recommended environmental conditions (temperature range: 41°F to 104°F (5°C to 40°C) ; humidity range: 10% to 90%, non-condensing; altitude range: 0 to 10,000 ft) will shorten the lifetime of the concentrator.

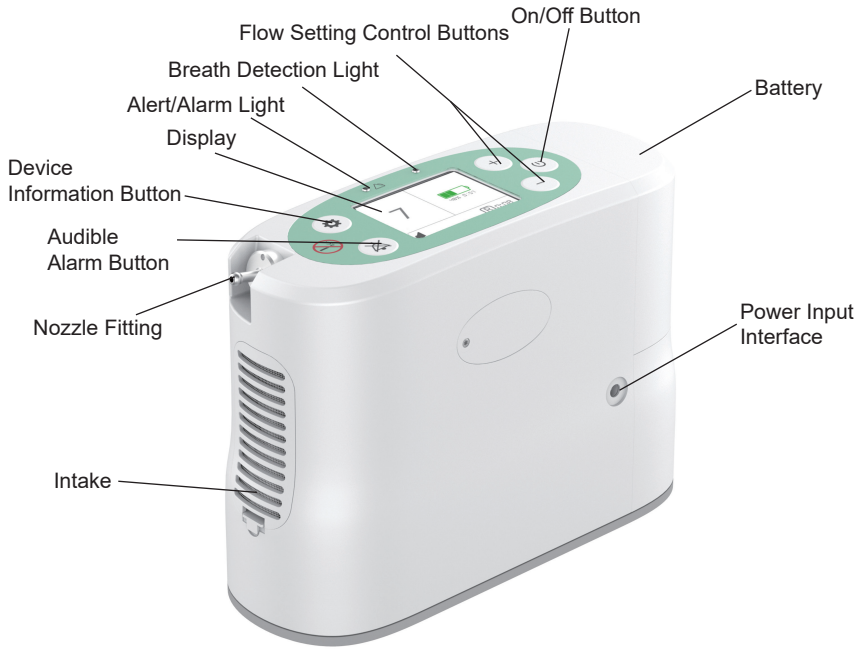
CAUTION

Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the member state in which the user and/or patient is established.

Note: Additional warnings, cautions, and notes are located throughout the manual.

II. DESCRIPTION OF THE KINGON P2-E7 OXYGEN CONCENTRATOR





Important Parts of the Kingon P2-E7



User Interface Instruction and Symbols Used on Kingon P2-E7

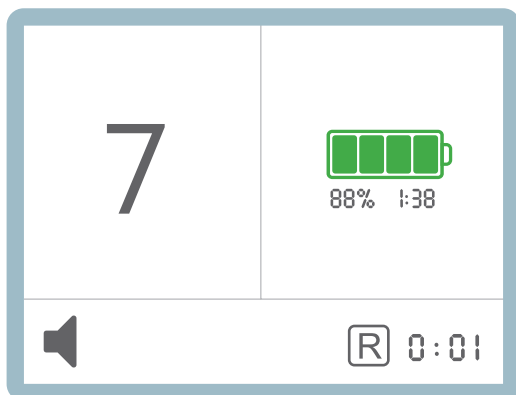
User Display Panel:



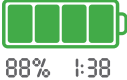



Symbol	Item	Description
	On/Off Button	Press once to turn "On". Press and hold for three seconds to turn "Off".
	Audible Alarm Button	Press once to toggle between Audible and Mute Modes. The panel will display the appropriate icon to indicate which mode is enabled.
	Flow Setting Control Buttons	Select the setting by pressing the – or + buttons, and swift from 1 to 7 different flow setting.
	Device Information Button	Press this button to display the information of device. The information includes battery temperature, battery status, battery model, molecular status, molecular runtime, device model, device temperature, device runtime, firmware version, hardware version.

Home Screen

Home screen will show the icon as:




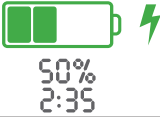






The icons mean:

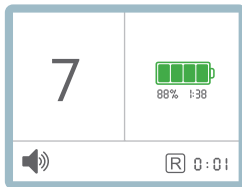
Icon	Description
7	Flow Setting (from 1 to 7)
	Battery charge level: <ul style="list-style-type: none"> • Battery percentage • Battery remaining time to use
	Device runtime (H:Min) (single time)
	Mute Mode
	Audible Mode

Description of the Kingon P2-E7 Oxygen Concentrator

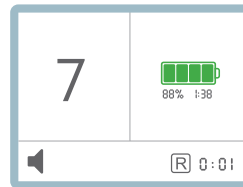
Additionally, screen will also display the following icons:

Icon	Description
	Powered by AC or DC only.
	<ol style="list-style-type: none"> 1. Powered by battery only, without AC or DC charge. 2. Battery level and remaining time to use. 3. Device On.
	<ol style="list-style-type: none"> 1. Battery installed and with AC or DC charge. 2. Battery level percentage and estimated time to fully charge the battery. 3. Device On.
	<ol style="list-style-type: none"> 1. Battery installed and with AC or DC charge. 2. Battery level percentage and estimated time to fully charge the battery. 3. Device Off.
	The device has detected an active alarm while in Mute Mode.
	The device has detected an active alarm while in Audible Mode.
	Runtime of concentrator since started for single time (2 hours 35 minutes).
	More than one alert are rolling and will display.

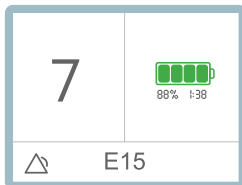
No Alerts in Audible Mode:



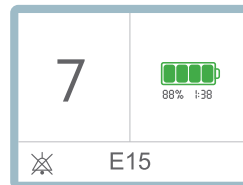
No Alerts in Mute Mode:



Alerts in Audible Mode:



Alerts in Mute Mode:



Description of the Kingon P2-E7 Oxygen Concentrator

Alerts in Audible Mode:

The device has detected an active alarm in Audible Mode.



Alerts in Mute Mode:

The device has detected an active alarm in Mute Mode.



Alerts

Adapter plug/unplug:

System automatic switch power supply and adapter icon appears/disappears with audio.

Battery plug/unplug:

System automatic switch power supply and battery icon appears/disappears with audio.

Alarm audio selection:

Global Off/On (Audible Alarm Button).

Alarm audio pulse duration:

150 ms On, 150 ms Off, Repeat 2 times.







Alarm audio pulse group interval:

15.5 s (until alarm returns to normal).

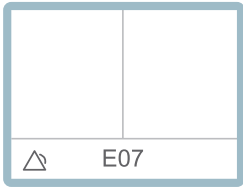
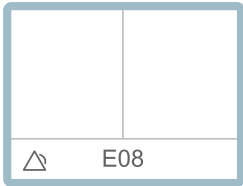

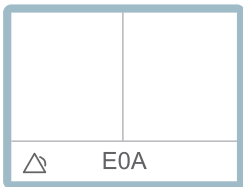
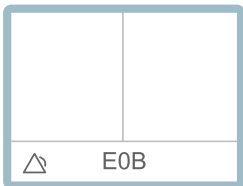
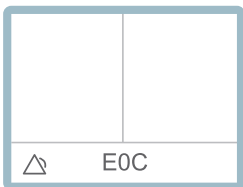
Alarm details:

Reference the table below.



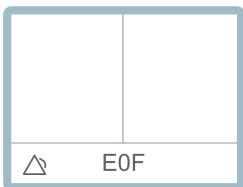


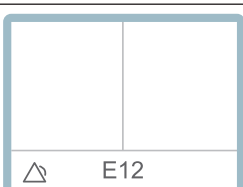
Alerts

Alarm Codes Display on Screen	Alarm Code Description	Alarm Condition	System process
 E01	Power Supply Fail Contact Provider	System voltage < 10.5 V	Auto-shut down after 10 seconds
 E02	System Startup Fail Contact Provider	Concentration less than 87% continuously > 120 s after system startup	Alarm only
 E03	Gas Supply Fail Contact Provider	Flow or concentration below normal after injection	Alarm only
 E04	Battery Hot Shut Down, Only Use Adapter	Battery temperature > 149°F/65°C	Auto-shut down after 10 seconds
 E05	System Hot Move to Cooler Place	System temperature > 140°F/60°C	Auto-shut down after 10 seconds
 E06	Battery Cold Move to Warmer Place	Battery temperature < 32°F/0°C	Alarm only



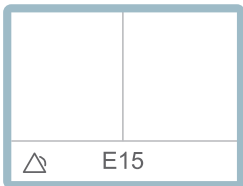

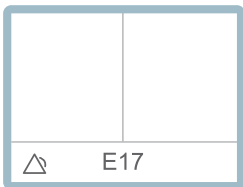
Alerts

Alarm Codes Display on Screen	Alarm Code Description	Alarm Condition	System process
	System Cold Move to Warmer Place	System temperature < 32°F/0°C	Alarm only
	Battery Depleted Replace Battery/ Connect Adapter	RSOC < 5% without adapter	Auto-shut down after 10 seconds
	Cooling Fan Fail Contact Provider	Cooling fan failed	Auto-shut down after 10 seconds
	Valve Check Fail Contact Provider	Valve switch failed	Auto-shut down after 10 seconds
	Compressor Fail Contact Provider	Compressor failed	Auto-shut down after 10 seconds
	Sieve Bed Fail Contact Provider	Sieve bed failure or invalid	Auto-shut down after 10 seconds

Alerts

Alarm Codes Display on Screen	Alarm Code Description	Alarm Condition	System process
	Tank Pressure Fail Contact Provider	Tank pressure failed	Alarm only
	Gas Obstruction Contact Provider	Pipe or Nasal Cannula blocked	Alarm only
	Gas Delivery Fail Contact Provider	No delivery detected after injection	Alarm only
	Oxygen Sensor Fail Contact Provider	Oxygen sensor failed	Alarm only, if improved then alarm clear If condition persists, contact provider
	Breath Sensor Fail Check if Cannula Kinked or Blocked	Breath sensor failed	Alarm only, if improved then alarm clear If condition persists, contact provider
	Oxygen Concentration < 50% Contact Provider	Concentration < 50% continuously for more than 10 minutes	Alarm only, if improved then alarm clear If condition persists, contact provider

Alerts

Alarm Codes Display on Screen	Alarm Code Description	Alarm Condition	System process
	Low Battery Charge Now	$5\% \leq \text{RSOC} \leq 20\%$ Without adapter	Alarm only
	Oxygen Concentration < 87% Contact Provider	Concentration < 87% continuously for more than 10 minutes	Alarm only
	Absence of Breath Check Cannula	No breath detected continuously for more than 60 seconds	Alarm only
	Low Input Voltage Check Adapter	Adapter input < 17.0 V	Auto-switch to battery until the adapter input > 18 V
	Battery Exhausted Replace Battery	Battery cycle > 500 or battery health < 50%	Alarm only

Power Supply

Standard Lithium Ion Battery # BA-P201

The Kingon P2-E7 will be powered by standard lithium ion battery. When full charged, the battery can serve for up to 6 hours of operation. Recharge the battery by AC or DC power when installed in the P2-E7. Recharging time is not more than 4 hours.



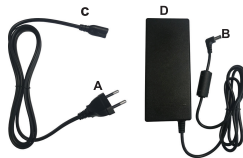
WARNING

The battery life at maximum flow setting is approximately 15 minutes, from low battery alarm when the battery level is 20% to automatic shutdown when the battery level is 4%.

AC Power Supply # EM11012E

The concentrator AC supply (EM11012E) is used to power the Kingon P2-E7 oxygen concentrator from an AC power source. When used with AC power sources, the power supply automatically adapts to input voltages from 100 V to 240 V (50-60 Hz) permitting use with most power sources throughout the world.

Connect A plug to nearest AC power outlet→connect C plug to D port→connect B plug to Kingon P2-E7.



DC Power Supply # ED1010C

The DC power supply (ED1010C) is designed for use with the Kingon P2-E7 oxygen concentrator. The DC power input cable connects directly to the automobile cigarette lighter or auxiliary DC power supply. The input DC power is 11-16 VDC, fuse rating is 15 A/125 V, and output is 19 V/6.3 A.



Description of the Kingon P2-E7 Oxygen Concentrator



WARNING

Do not use power supplies or power cable other than the specified above.
Do not use power supplies or accessories other than those specified above.
The use of non-specified accessories may create a safety hazard and/or impair device performance.

Accessories

Nasal Cannula # NOC-DAW0721

The Kingon P2-E7 oxygen concentrator must be used with a single-lumen nasal cannula to deliver oxygen to the patient.



WARNING

One single lumen nasal cannula should not be used by two or more persons.
DO NOT USE a cannula in combination with an extension tube with a length exceeding 25 ft (7.6 m).

CAUTION

When using a long cannula, the flow setting may be increased.

CAUTION

Increasing the cannula length may reduce the perceived noise during oxygen bolus delivery.

CAUTION

Single Patient Use for the cannula.

CAUTION

Chose a nasal cannula with CE mark (Recommended Choice is Runmai NOC-DAW0721).

Carry Bag # CB-P200

Kingon P2-E7 carry bag allows you to go out for daily activities with the Kingon P2-E7 concentrator. The bag is convenient to the patient.



Accessories List

Item	Qty	Model #
Nasal Cannula	1 pc	NOC-DAW0721
Carry Bag	1 pc	CB-P200
AC Power Supply	1 pc	EM11012E
DC Power Supply	1 pc	ED1010C
Intake Filter	5 pcs	FI-P201
Battery	1 pc	BA-P201

III. OPERATION INSTRUCTIONS

General Operation

1. Find a well ventilated location to place the Kingon P2-E7, and make sure it's turned off.

Be sure to keep the intake and exhaust with clear access. Try to locate the Kingon P2-E7 in a suitable place where any auditory alarms may be heard.



WARNING

Do not use Kingon P2-E7 in the presence of flammable anesthetics, detergents or other chemical vapors.

CAUTION

Do not block the air intake or air exhaust when operating the equipment.
Blocked air circulation or proximity to the heat source can cause internal heat build-up, shut down, or damage to the concentrator.

CAUTION

The Kingon P2-E7 concentrator is designed for continuous use. It is useful to operate the product frequently for optimal sieve bed life.

CAUTION

Kingon P2-E7 is shipped from factory with battery removed.

2. Ensure the particle filter is in place.



CAUTION

Do not operate the Kingon P2-E7 without intake filter. Inhalation of system particles can damage the device.

Operating Instructions

3. Install the battery.

Flat slide the battery into place until the latch returns to the upper position along with an audible sound.



4. Connect the AC or DC power to Kingon P2-E7.

The green LED on the power adapter will be on and the concentrator will generate a sound of beep.



CAUTION	Do not place anything in the power supply port other than the supplied wall cord. Avoid the use of electrical extension cords with the Kingon P2-E7.
----------------	--

CAUTION	Power supply is not waterproof. Do not disassemble the power supply.
----------------	---

CAUTION	When the power is disconnected from the AC outlet, disconnect it from the concentrator to avoid unnecessary battery discharge.
----------------	--

5. Connect the nasal cannula to the nozzle fitting by end connector.



Nozzle fitting is located on the top side of the Kingon P2-E7 near the pre-filter.


Connect a nasal cannula to the nozzle fitting.

CAUTION Ensure that the cannula is routed to prevent it from being pinched or kinked to avoid a disruption of oxygen flow.

CAUTION Disposable usage for the cannula.

6. Press the On/Off  button to turn on the concentrator.

At startup, the device will beep and the indicator light will flash.

"" will appear on the display at start up. A two-minute warm-up period will begin, during which the oxygen concentration will gradually increase but may not immediately reach the specified level.

In certain conditions, such as exposure to very cold temperatures during storage or use, a longer warm-up time may be necessary.

CAUTION Oxygen concentration may not reach specification during the two minutes warm up time.

CAUTION Kingon P2-E7 will enter mandatory auto pulse mode after 30 seconds of starting up and lasts for 30 seconds. No inhalation will work during the 30 seconds.

CAUTION When the ambient temperature is $\leq 20^{\circ}\text{C}$ (68°F), the time required for the device to operate stably from -20°C or 70°C (-4°F or 158°F) is 30 minutes.

7. Change the Kingon P2-E7 concentrator setting to the flow rate prescribed by your physician or clinician.

Press the + or – setting buttons to adjust the Kingon P2-E7 to the desired setting. The current setting can be viewed on the display from 1 to 7.

CAUTION

Make sure the power is in a well-ventilated place. During operation, the power supply may get hot. Make sure the power supply is cool before handling.

8. Wear the nasal cannula on your face and breathe through your nose.



The Kingon P2-E7 will sense if you are breathing from it. If you are not yet breathing through the cannula, the Kingon P2-E7 will begin to pulse automatically about once every 3 seconds. As soon as you begin breathing through the cannula, the device will begin delivering pulses based on your breathing. As your breathing rate changes, the Kingon P2-E7 will sense these changes and adjust the amount of oxygen at next inhale.



WARNING

If you feel uncomfortable or uncomfortable using the device, consult your doctor right now.

CAUTION

A low oxygen: < 87% alert will notify you if the oxygen level drops. If the alarm persists, contact your device provider.

CAUTION

The display could become darker if there is no operation of the device after 30 seconds. You can press any button to light up the display.

CAUTION

The Kingon P2-E7 will alert with audible and visual signals such as "E15" (Absence Of Breath) when this mode is enabled and no breath has been detected for 60 seconds. At 60 seconds, the device will enter into auto pulse mode and once another breath is detected, the device will exit auto pulse mode and deliver normally on inspiration.

General

To remove power, disconnect the input cord from AC or DC power source (like AC wall outlet, DC car cigarette lighter adapter) and disconnect it from the Kingon P2-E7.

IV. TROUBLESHOOTING

The table below lists some common problems and actions you can take. If you can't resolve a problem, please contact your device provider.

Problem	Possible Cause	Recommended Solution
Device Won't Turn On	Battery is not installed correctly.	Remove the battery and re-install it correctly.
	Battery is depleted.	Use the AC power adapter to operate the device (with the battery inserted) to recharge the battery. If this does not resolve the problem, contact your equipment provider.
	The AC supply is poor contact.	Check power supply connection and verify green light on adapter is solid.
	DC cable is not connected properly.	Check DC cable connection and at cigarette lighter or auxiliary DC power source.
No Oxygen	The device is not turned on.	Turn on the concentrator.
	Cannula is kinked or obstructed.	Check cannula and its connection to the oxygen outlet port.
	Equipment failure.	Contact your equipment provider.
Oxygen Not At Full Concentration	The device is warming-up.	Wait 2 minutes for the device. If the problem is not solved, please contact your equipment provider.
	The sieve beds may require servicing.	Contact your equipment provider to change the sieve beds.
Alarm Occurs	Refer to previous section-Alerts.	Refer to previous section-Alerts.

V. MAINTENANCE OF KINGON P2-E7

Cleaning and Disinfection the Outside Case

The outside case should be cleaned using a cloth dampened with a solution of mild detergent and water.

CAUTION

Do not allow liquids into any of the controls, the interior of the case, or the oxygen tubing connector. If this occurs, contact your equipment provider for assistance.



WARNING

Do not use alcohol, isopropyl alcohol, ethylene chloride or petroleum based cleaners on the cases or on the particle filters.

Cannula Replacement

The nasal cannula is designed for disposable usage. You can buy it from physician and/or equipment provider and/or cannula manufacturer's instructions.

CAUTION

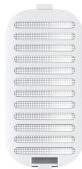
Nasal cannula should be rated for 5 liters per minute to ensure proper patient usage and oxygen delivery.

Filter Cleaning and Replacement

Filters are designed to adequate air flow through the device at the front of the Kingon P2-E7.

Pre Filter # FI-P202

This particle screen must be cleaned on a weekly basis to ensure adequate air flow through the device. Clean the pre filters with a mild liquid detergent and water. Be sure that the filter is dried without water before reuse.



CAUTION

It may be necessary to clean the particle filters more often in dusty or bad environments/conditions.

Maintenance of Kingon P2-E7

Intake Filter # FI-P201

The intake filter is designed to ensure the clean air into the compressor.

1. Lift the particle screen up by the bottom end then remove it.
2. Take out of the intake filter from the intake chamber.
3. Put a new intake filter into the chamber.
4. Install pre filters.

Pre and intake filters can be purchased from your equipment provider.



Battery Care and Maintenance

The Kingon P2-E7 lithium ion battery requires special care to ensure proper performance and long life. Use only Kingon P2-E7 battery # BA-P201 with your concentrator.

CAUTION	Keep liquids away from battery. If battery becomes wet, stop use immediately and dispose of battery properly.
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CAUTION	After being fully charged and discharged 500 times, the battery has a range of ≥ 55 minutes in the highest flow setting.
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Battery Replacement

1. Press down the latch, and flat slide the battery off.



2. Insert the Kingon P2-E7 battery by sliding battery into place until the latch returns to the upper position.



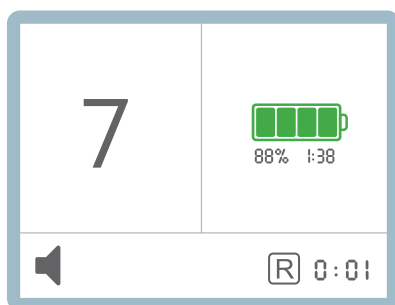
Effect of Temperature on Battery Performance

To extend the run-time of your battery, the device should be used in temperatures between 41°F (5°C) and 95°F (35°C) for extended periods of time. The number of cycles that the battery will last is highly dependent upon the temperature at which the battery is charged.

CAUTION Kingon suggests that the room temperature should not be exceeding 75°F (24°C) when battery is charged.

Battery Time Remaining Clock

The Kingon P2-E7 continuously displays battery time remaining. This displayed time is only an estimate and the actual time remaining may vary from this value.



CAUTION Store battery in a cool and dry place. Store with a charge of 40-50%. Battery should not be left dormant for more than 90 days at a time.

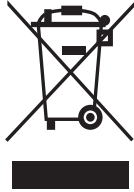
CAUTION If the device is not used in a long time, please remove the battery.

Sieve Bed Replacement

Molecular sieve bed needs to be replaced by professionals. If the molecular sieve bed expires and needs to be replaced, please contact the supplier promptly according to the device alarm prompt information for replacement.

Disposal of Equipment and Accessories

Follow your local governing ordinances for disposal and recycling of the Kingon P2-E7 accessories. The battery contains lithium ion cells and should be recycled and must not be incinerated.



Maintenance Items Lists

Item	Model #
Standard Lithium Ion Battery	BA-P201
Pre Filter	FI-P202
Intake Filter	FI-P201

For assistance, if there are some problems, contact your device provider, or manufacturer.



VI. SYSTEM SPECIFICATIONS

Concentrator Specification

Dimensions	L/W/H 8.70" × 3.35" × 6.30" 22.1 cm × 8.5 cm × 16.0 cm							
Weight	4.37 pounds 1.98 kg (with battery)							
User Interface	2.8 inch large LCD color display screen							
Sound Level	37 dB(A) (on setting 2) (Prüfmethode 14-1 10/2018 MDS-Hi)							
Warm-Up Time	2 minutes							
Oxygen Concentration	90%-3%/+6% at all settings							
Flow Control Settings and Pulse Volumes	Flow settings	1	2	3	4	5	6	7
	Breath Rate	Pulse Volumes (mL)						
	10	21	42	63	84	100	120	140
	15	14	28	42	56	66.7	80	93.3
	20	10.5	21	31.5	42	50	60	70
	25	8.4	16.8	25.2	33.6	40	48	56
	30	7	14	21	28	33.3	40	46.7
	35	6	12	18	24	28.6	34.3	40
	40	5.3	10.5	15.8	21	25	30	35
	± 15% at STPD* ± 25% over the rated environmental range *STPD is 101.3 kPa at an operating temperature of 20°C (68°F), dry							
Breathing Frequency	10 to 40 BPM							
Inspiratory Trigger Sensitivity	≤ -0.12 cm H ₂ O							
Time Delay from Onset of Inspiration	< 10 ms							
Delivery pressure at the device outlet	≤ 172 kPa (25 PSI)							
Use Mode	Continuous Use							
Available Mode	Triggered Pulse Delivery Mode							

Concentrator Specification-Continued

Power: AC Power Supply DC Power Supply Rechargeable Battery	AC Input: 100 to 240 VAC 50 to 60 Hz DC Input: 11-16 VDC DC Output: 19 V \approx 6.3 A Voltage: 14.4 VDC Rated capacity: 6.7 Ah
Battery Duration	Setting 1: 6 h Setting 2: 4.8 h Setting 3: 3.6 h Setting 4: 2.8 h Setting 5: 2.3 h Setting 6: 1.9 h Setting 7: 1.4 h
Battery Charging Time	Not more than 4 hours
Environmental Ranges Intended for Operation	Temperature: 41°F to 104°F (5°C to 40°C) Humidity: 10% to 90%, non-condensing Altitude: 0 to 10,000 ft. (0 to 3,048 meters, 70 kPa to 106 kPa).
Environmental Ranges Intended for Shipping and Storage	Temperature: -4°F to 158°F (-20°C to 70°C) Humidity: 5% to 90%, non-condensing Store in a dry environment Altitude: 0 to 10,000 ft (0 to 3,048 meters, 70 kPa to 106 kPa).
Transportation	Keep Dry, Handle With Care.

Classifications

Mode of Operation	Continuous Duty
Type of Protection Against Electrical Shock	Class II
Degree of Protection to Concentrator Components Against Electrical Shock	Type BF Not intended for cardiac application
Degree of Protection to Concentrator Components Against Ingress of Water	IP22 Protects against solid objects over 12 mm and direct sprays of water up to 15° of vertical (IEC 60529)
Classification of Installation and Use	Portable/Transit-operate

Standards Compliance

The device is designed to conform to the following standards:

- IEC 60601-1-2: 2014+A1: 2020 Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral standard: Electromagnetic disturbances - Requirements and tests
- IEC 60601-1: 2005+A1: 2012+A2: 2020 Medical electrical equipment - Part 1: General requirements for basic safety and essential performance
- IEC 60601-1-6: 2010+A1: 2013+A2: 2020 Medical electrical equipment - Part 1-6: General requirements for basic safety and essential performance - Collateral standard: Usability
- IEC 60601-1-8: 2006+A1: 2012+A2: 2020 Medical electrical equipment - Part 1-8: General requirements for basic safety and essential performance - Collateral standard: General requirements, tests, and guidance for alarm systems in medical electrical equipment and medical electrical systems
- IEC 60601-1-11: 2015+A1: 2020 Medical electrical equipment - Part 1-11: General requirements for basic safety and essential performance - Collateral standard: Requirements for medical electrical equipment and medical electrical systems used in the home healthcare environment
- ISO 80601-2-67: 2020 Medical electrical equipment - Part 2-67: Particular requirements for basic safety and essential performance of oxygen conserving equipment
- ISO 80601-2-69: 2020 Medical electrical equipment - Part 2-69: Particular requirements for basic safety and essential performance of oxygen concentrator equipment
- ISO 18562-1: 2017 Biocompatibility evaluation of breathing gas pathways in healthcare applications - Part 1: Evaluation and testing within a risk management process
- ISO 18562-2: 2017 Biocompatibility evaluation of breathing gas pathways in healthcare applications - Part 2: Tests for emissions of particulate matter
- ISO 18562-3: 2017 Biocompatibility evaluation of breathing gas pathways in healthcare applications - Part 3: Tests for emissions of volatile organic compounds (VOCs)
- ISO 10993-1: 2009 Biological evaluation of medical devices - Part 1: Evaluation and testing within a risk management process
- ISO 10993-10: 2010 Biological evaluation of medical devices - Part 10: Tests for irritation and skin sensitization
- ISO 10993-5: 2009 Biological evaluation of medical devices - Part 5: Tests for in vitro cytotoxicity

EMC Information


The device has been designed to meet EMC standards throughout its service life.

Guidance and Manufacturer's Declaration-Electromagnetic Immunity:

The concentrator is intended for use in the electromagnetic environment specified below. The user of the concentrator should make sure it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment-Guidance
Electrostatic Discharge (ESD) IEC 61000-4-2	± 8 kV Contact ± 15 kV Air	± 8 kV Contact ± 15 kV Air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical Fast Transient / Burst IEC 61000-4-4	± 2 kV for Power Supply Lines ± 1 kV for Input / Output Lines	± 2 kV for Power Supply Lines ± 1 kV for Input / Output Lines	Mains power quality should be that of a typical home or hospital environment.
Surge IEC 61000-4-5	± 1 kV Line to Line ± 2 kV Line to Ground	± 1 kV Line to Line ± 2 kV Line to Ground	Mains power quality should be that of a typical home or hospital environment.
Voltage Dips, Short Interruptions and Voltage Variations on Power Supply Input Lines IEC 61000-4-11	$< 5\% U_T$ ($> 95\%$ Dip in U_T) for 0.5 Cycle at 45 Degree Increments $70\% U_T$ (30% Dip in U_T) for 0.5 Seconds $< 5\% U_T$ ($> 95\%$ Dip in U_T) for 5 Seconds	$< 5\% U_T$ ($> 95\%$ Dip in U_T) for 0.5 Cycle at 45 Degree Increments $70\% U_T$ (30% Dip in U_T) for 0.5 Seconds $< 5\% U_T$ ($> 95\%$ Dip in U_T) for 5 Seconds	Mains power quality should be that of a typical home or hospital environment. If the user of the device required continued operation during power mains interruptions, it is recommended that the device be powered from an uninterruptible power supply or battery.
Power Frequency (50/60 Hz) Magnetic Field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical home or hospital environment.

EMC Information-Continued

Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms 150 kHz to 80 MHz	<p>Portable and mobile RF communications equipment should be used no closer to any part of the device, including cables, than the recommended 30 cm (11.8") separation distance.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol: </p>
Radiated RF IEC 61000-4-3	6 Vrms Amateur Radio & ISM Bands between 150 kHz and 80 MHz	6 Vrms Amateur Radio & ISM Bands between 150 kHz and 80 MHz	
Radiated RF IEC 61000-4-3	10 V/m 80 MHz to 2.7 GHz	10 V/m	
<p>Note: U_T is the A.C. mains voltage prior to application of the test level.</p>			

Guidance and Manufacturer's Declaration-Electromagnetic Emissions:

The concentrator is intended for use in the electromagnetic environment specified below. The user of the concentrator should make sure it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment-Guidance
RF Emissions CISPR 11	Group 1	The device uses RF energy only for its internal functioning. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF Emissions CISPR 11	Class B	The device is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic Emissions IEC6 1000-3-2	Class A	
Voltage Fluctuations / Flicker Emissions IEC 61000-3-3	Complies	

VI. WARRANTY

Under our warranty conditions we assume the warranty for our Kingon P2-E7 oxygen concentrator for perfect condition and function. The warranty term is 36 months and begins on the day of shipment. Please contact us by telephone or email for return of your defective equipment during the warranty term as well as smooth resolution of your problems. Well trained employees shall take up your concerns and support you in word and deed. Please make sure that your equipment is safe for transportation, if possible in its original packaging in order to avoid transport damages.

Excluded from the warranty are damages caused by improper usage, as well as to expendable parts and consumables, battery replacement. Sieve bed, filters, battery in the equipment are expressly excluded from the 36 months warranty, except as provided below:

Description	Period
Kingon P2-E7 Oxygen Concentrator	3 Years
Other Accessories (Battery, Carry Bag, External Battery Charger, Power Suppliers, and Power Cord)	1 Year
Sieve Bed	1 Year
Disposables (Nasal Cannula, Filters)	No Warranty

Further damage compensation claims of any kind, particularly owing to breach of obligations and unpermitted handling, as well as claims on repayment of expenses paid in vain, are not included in the warranty. The same shall apply to claims on repayments of consequential harm caused by a defect.

Any further claims are excluded in this warranty. The aforementioned limitations do not apply to claims on damages from harm to life, body or health or attributable to intent or gross negligence, or the product liability law.

This warranty does not cover damage or injury whether to Kingon P2-E7 or to personal property or persons caused by accident, misuse, abuse, negligence, failure to install in accordance with Kingon's installation instructions, failure to operate under conditions of normal use and in accordance with the terms of the operating manual and instructions, failure to maintain in accordance with the applicable service manuals, or alteration or any defects not related to materials or workmanship of Kingon P2-E7. This warranty does not cover damage which may occur in shipment. This warranty does not apply to any product or individual part of a product that may have been repaired or altered by anyone other than Kingon or an authorized Kingon service center. This warranty does not apply to any product which is not purchased new.



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