

Invacare® Platinum® Mobile

POC1-100 Series

en Oxygen Concentrator Service Manual



DEALER: Keep this manual. The procedures in this manual MUST be performed by a qualified technician.

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1 General

1.1 Symbols

Signal words are used in this manual and apply to hazards or unsafe practices which could result in personal injury or property damage. Refer to the information below for definitions of the signal words.



DANGER!

 Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING!

 Warning indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION!

 Caution indicates a potentially hazardous situation which, if not avoided, may result in property damage or minor injury or both.



IMPORTANT!

- Important indicates a hazardous situation that could result in damage to property if it is not avoided.
- Gives useful tips, recommendations and information for efficient, trouble-free use.

Refer to the following table for the meaning of symbols marked on the equipment and/or packaging.

| ^ | General Warning Sign | |
|----------|---|--|
| <u> </u> | The background color inside the triangle is yellow on product labels. | |
| | Follow Instructions for Use | |
| | $\mathring{\mathbb{I}}$ The color of the symbol background is blue on product labels. | |
| | No open flame | |
| | The color of the circle with diagonal bar is red on product labels. | |
| | DO NOT Smoke | |
| | The color of the circle with diagonal bar is red on product labels. | |
| | Consult Instructions for Use | |
| i | $\mathring{\underline{\mathbb{I}}}$ This symbol is located on the cannula packing. | |
| | Direct Current | |
| † | Type BF Applied Part | |

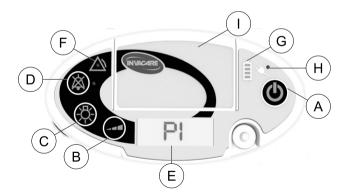
| | Class II Equipment | |
|--------------------------------------|--|--|
| Power On/Off | | |
| (*) | Data Output Terminal | |
| DO NOT dispose of in household waste | | |
| EC REP | European Community Authorized Representative | |
| ••• | Manufacturer | |
| Date of Manufacture | | |
| Recycle | | |
| REF | Reference Number | |
| SN Serial Number | | |

| 2 | DO NOT Reuse (Single Patient Use Only) This symbol refers to the cannula which is for single patient use only. | | |
|---|---|--|--|
| | Latex Free | | |
| | Indoor Use ONLY This symbol is included on the AC power adapter. | | |
| © | DO NOT use oil or grease | | |
| * | Keep dry | | |
| Protected against solid foreign objects mm diameter and greater. Protected against vertically falling water when enclosure tilted up to 15°. | | | |
| IP21 | Protected against solid foreign objects of 12.5 mm diameter and greater. Protected against vertically falling water drops. | | |
| -25C MIN | Transport and Storage Temperature | | |

| 90% MAX 19%— MIN | Transport and Storage Humidity |
|---|--|
| C € 85 | This product complies with Directive 93/42/EEC concerning medical devices. The launch date of this product is stated in the CE declaration of conformity. |
| | the CE declaration of conformity. |
| Electrical Safety Agency Certification Ma | |

1.2 Features

1.2.1 Control Panel

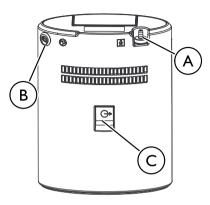


| A | On/Off Button |
|------------|---|
| | Press for one second to turn concentrator on or off. |
| | Flow Selection Button |
| B | Press to adjust the pulsed oxygen flow to your prescribed setting. The selected flow setting is shown on the display screen. Refer to Adjusting the Pulse Flow Setting in Usage for more details. |
| | Display Backlight Button |
| © | Press once to illuminate the display screen for 5 seconds. |
| | Audio Off Button |
| (D) | Press to mute the audible signal (beep) for both alarms and status indications. The blue indicator light next to the button illuminates when activated. Audio off can be activated during or prior to an alarm condition occurring. |
| | Display Screen |
| (E) | Displays information about the operating status of the concentrator. |
| F | Alarm Indicator |
| | The yellow indicator light at the center of the triangular symbol illuminates to indicate abnormal operating conditions. Refer to Alarm Conditions in Troubleshooting for more details. |

| © | Battery Gauge |
|----------|---|
| | Indicates the charge status of the battery(s). Refer to Reading the Battery Gauge for Installed and Uninstalled Battery(s) in Setup for more details. |
| \oplus | External Power Indicator |
| | The orange indicator light next to the plug symbol illuminates when an external power source is connected to the concentrator. |
| 1) | Battery Compartment Door |
| | Used to access the removable battery(s). |

| | Audible Signal (Beep) |
|--------------|--|
| Not Shown | Indicates a change in operating status or a condition which requires the operator's attention. |

1.2.2 Input/Output Connections



| A | Oxygen Outlet Port | |
|---|---|--|
| | Used to connect the nasal cannula to the concentrator. | |
| B | External Power Input Connector | |
| | Used to connect an external power source to the concentrator. | |
| © | USB Port | |
| | Used for service. Location of POC1–CONNECT dongle. | |

1.2.3 Filters

Air enters the concentrator through an air intake filter located on the carry bag. This filter prevents hair and other large particles in the air from entering the unit. Before you operate the concentrator, make sure this filter is clean and dry, and the concentrator is properly installed in the carry bag.

To clean the air intake filter, refer to Cleaning the Air Intake Filter Screen in Maintenance.

To ensure the concentrator is properly installed in the carry bag, refer to Installing the Carry Bag in Setup.

1.2.4 General Information

Refer to the User Manual for user information and technical data.

2 Safety

2.1 General Guidelines

In order to ensure the safe installation, assembly and operation of the concentrator these instructions MUST be followed.



DANGER!

Risk Of Death, Injury Or Damage

Improper use of the product may cause death, injury or damage. This section contains important information for the safe operation and use of this product.

- DO NOT use this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as user manuals, service manuals or instruction sheets supplied with this product or optional equipment.
- If you are unable to understand the warnings, cautions or instructions, contact a health care professional, dealer or technical personnel before attempting to use this equipment.
- THE INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.



DANGER!

Risk of Death, Injury Or Damage From Fire

Textiles, oil or petroleum substances, grease, greasy substances and other combustibles are easily ignited and burn with great intensity in oxygen enriched air and when in contact with oxygen under pressure. Smoking during oxygen therapy is dangerous and is likely to result in burns or death. To avoid fire, death, injury or damage:

- DO NOT SMOKE while using this device. DO NOT use near OPEN FLAME or IGNITION SOURCES.
- NO SMOKING signs should be prominently displayed.
- Keep all open flames, matches, lighted cigarettes, electronic cigarettes or other sources of ignition at least 10 ft (3 m) away from this concentrator or any oxygen carrying accessories such as cannulas or tanks.



DANGER!

Risk of Death, Injury Or Damage From Fire

Textiles, oil or petroleum substances, grease, greasy substances and other combustibles are easily ignited and burn with great intensity in oxygen enriched air and when in contact with oxygen under pressure. To avoid fire, death, injury or damage:

- Avoid creation of any spark near oxygen equipment. This includes sparks from static electricity created by any type of friction.
- Use only oxygen compatible water-based lotions or salves before and during servicing.
 To verify, refer to the lotion/salve container for oxygen compatible water-based statement.
 If necessary, contact the manufacturer. DO NOT use any lubricants on concentrator unless recommended by Invacare.
- Keep the oxygen tubing, cord, AC adapter and concentrator away from heated or hot surfaces including space heaters, stoves, and similar electrical appliances.
- Make sure concentrator is off when not in use.



WARNING!

Risk Of Injury Or Damage

- Invacare products are specifically designed and manufactured for use in conjunction with Invacare provided or Invacare specified accessories. Any other accessories have not been tested by Invacare and are not recommended for use with Invacare products.
- No modification of this equipment is allowed.



WARNING!

Risk of Injury or Damage

To avoid injury or damage which will void warranty:

- Use only Invacare specified power supplies.



DANGER!

Risk of Death, Injury, from Electric Shock

To reduce the risk of burns, electrocution, death or injury to persons:

- DO NOT come in contact with the concentrator while wet.
- DO NOT place or store concentrator where it can drop into water or other liquid.
- DO NOT reach for concentrator that has fallen into water. Unplug IMMEDIATELY.
- DO NOT block access to power outlet needed to unplug the AC power cord.
- DO NOT use frayed or damaged power cords.
- DO NOT use AC power adapter if its housing is cracked or separated.



WARNING!

Risk of Death, Injury or Damage

To prevent injury or damage from cord misuse:

- DO NOT move or relocate concentrator by pulling on the cord.
- DO NOT use extension cords with AC power adapters provided.
- Properly store and position electrical cords and/or tubing to prevent a tripping and strangulation hazards.



WARNING!

Risk of Injury or Damage

As a safety feature, this appliance may have a polarized plug (one blade is wider than the other). To avoid injury or damage from electrical shock:

- This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician.
- DO NOT alter the plug in any way.
- DO NOT use if the cord or plug are damaged.
 Call a qualified electrician for repair.



WARNING!

Risk of Injury or Damage

To prevent damage from liquid ingress:

- NEVER drop or insert any object or liquid into any opening.
- DO NOT use if cabinet of concentrator or housing of AC power adapter is cracked or separated.



WARNING!

Risk of Injury or Damage

To avoid injury or damage from airborne pollutants and/or fumes and for optimal performance:

- Locate and position the concentrator in a well ventilated space so that the air intake and the air exhaust openings are not obstructed.
- NEVER block the air openings of the concentrator or place it on a soft surface, such as a bed or couch, where the air opening may be blocked.
- Keep the openings free from lint, hair and similar foreign items.
- Keep concentrator at least 12 in (30.5 cm) away from walls, draperies and furniture.
- DO NOT use in presence of pollutants, smoke or fumes, flammable anesthetics, cleaning agents or chemical vapors.

2.2 Radio Frequency Interference

Medical Electrical Equipment needs to be installed and used according to the EMC information in this manual.

This equipment has been tested and found to comply with EMC limits specified by IEC/EN 60601-1-2. These limits are designed to provide a reasonable protection against electromagnetic interference in a typical home health care environment.

Portable and mobile RF communications equipment can affect the operation of this equipment. Use of this equipment adjacent to or stacked with other equipment should be avoided as it could result in improper operation. The concentrator operation should be observed to verify normal operation in the presence of such equipment.

Other devices may experience interference from even the low levels of electromagnetic emissions permitted by the above standards. To determine if the emissions from the concentrator are causing the interference, turn the concentrator off. If the interference with the other device(s) stops, then the concentrator is causing the interference. In such rare cases, interference may be reduced or corrected by one of the following measures:

- Reposition, relocate, or increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) is connected.

Refer to Electromagnetic Compliance (EMC) in Technical Data for additional information.

3 Setup

3.1 Viewing the Date and Time

 $_{\Pi}^{\circ}$ $\,\,$ This procedure displays the date and time.

The concentrator must be Off and connected to external power to perform this procedure.



Sample Date and Time Display Screen

Date: 06/12/2016 Time: 01:00:11PM

 Ensure unit is off and connected to an external power source.

2. Press and hold the display backlight button ©.

After 5 seconds the date and time are shown on the display screen ®.

Press the display backlight button to cancel viewing the date and time.

3.2 Changing the Date and Time

This procedure describes the process to change the date and time.

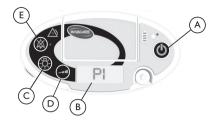
The concentrator must be Off and connected to external power to perform this procedure.

The time is displayed to the nearest second. The time is set to the nearest minute.

The format of the date and time are dependent on the selected display language. For English, the date is mm/dd/yyyy and time is hh:mm:ss AM/PM. For languages other than English, the date is dd/mm/yyyy and time is hh:mm:ss, where hh = 24 hour.

Sample Date and Time Display Screens

| Format for English | Format for Other Languages Except English |
|--------------------|--|
| Date:06/12/2016 | Date: 12/06/2016 |
| Time:01:00:11PM | Time: 13:00:11 |



- Ensure unit is off and connected to an external power source.
- 2. Press and hold the display backlight button ©.
 - After 5 seconds the date and time are shown on the display screen **®**.

Date: 06/12/2016 Time: 01:00:11PM

- 3. While the date and time are shown on the display screen, press and release the power button (A).
 - Pressing the power button activates the date and time change mode.
 The selected item is highlighted.

Date: <mark>06</mark>/12/2016 Time: 01:00 PM SET CANCEL 4. Press the flow selection button © to increase the selected value by one until the maximum is reached and then rolls over to the lowest value.

Date: <mark>27</mark>/12/2016 Time: 01:00 PM SET CANCEL

5. Press the display backlight button to decrease the selected value by one until the minimum is reached and then rolls over to the highest value.

Date: <mark>DG</mark>/12/2016 Time: 01:00PM SET CANCEL

6. Press the power button to highlight the next item.

Date: 06/1<mark>2</mark>/2016 Time: 01:00PM SET CANCEL

7. Press the audio off (mute) button © to highlight the previous item.

Date: <mark>05</mark>/12/2016 Time: 01:00PM SET CANCEL

8. When the time and date have been adjusted as desired, press the power button to highlight Set.

Date: 06/12/2016 Time: 01:00 PM SE CANCEL

- 9. Press the flow selection button to save the date and time and to exit the time and date screen.
- Highlight Cancel and press the flow selection button to cancel setting the time and date and to exit the time and date screen.

Date: 06/12/2016 Time: 01:00PM SET **XANGEL**

3.3 Changing the Language

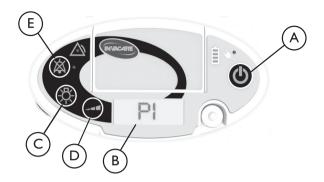
This procedure describes the process to change the display language.

Changing the display language may also change the date and time format. Refer to Changing the Date and Time for more information.

The concentrator must be Off and connected to external power to perform this procedure.

The following languages are available for selection: English, Danish, German, Finnish, French, Norwegian, Swedish, Spanish, Italian, Dutch, Polish, Latvian, Hungarian, Croatian and Portuguese.

| Current:English | Current:English |
|----------------------------------|----------------------------------|
| Proposed: <mark>Danish</mark> | Proposed: <mark>Italian</mark> |
| SET CANCEL | SET CANCEL |
| Current:English | Current:English |
| Proposed: <mark>Berman</mark> | Proposed: <mark>Dutch</mark> |
| SET CANCEL | SET CANCEL |
| Current:English | Current:English |
| Proposed: <mark>Finnish</mark> | Proposed: <mark>Polish</mark> |
| SET CANCEL | SET CANCEL |
| Current:English | Current:English |
| Proposed: <mark>French</mark> | Proposed: <mark>Latvian</mark> |
| SET CANCEL | SET CANCEL |
| Current:English | Current:English |
| Proposed: <mark>Norwegian</mark> | Proposed: <mark>Hungarian</mark> |
| SET CANCEL | SET CANCEL |
| Current:English | Current:English |
| Proposed: <mark>Swedish</mark> | Proposed: <mark>Croatian</mark> |
| SET CANCEL | SET CANCEL |
| Current:English | Current:English |
| Proposed: <mark>Spanish</mark> | Proposed: Portuguese |
| SET CANCEL | SET CANCEL |



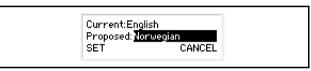
- Ensure unit is off and connected to an external power source.
- 2. Simultaneously press and hold the display backlight button © and audio off (mute) button © for at least five seconds to enter the Current Language Screen.
 - The Current Language Screen will continue to display until the backlight button is pressed again to exit this screen.

English

- 3. Press and release the On/Off button (A) to enter the Language Change Screen.
 - $\mathring{\parallel}$ The proposed language selection is highlighted.



4. Press the flow selection button © to move to the next language selection. Press the display backlight button © to move to the previous language selection.



5. When the desired language has been selected, press the On/Off power button to highlight "SET".

Current:English Proposed:Norwegian **SEII** CANCEL

6. Press the flow selection button to set the display language to the highlighted language and exit the Language Change Screen.

Norsk

If you do not want to change the display language, press the On/Off power button to highlight "CANCEL". Then press the flow selection button to exit the Language Change Screen.

Current:English
Proposed:Norwegian
SET
CANCEL

The Current Language Screen will appear on the display screen. Press the display backlight button to exit the Current Language Screen.

4 Service

4.1 Servicing Guidelines



WARNING!

Risk of Injury or Damage

Improper maintenance and servicing may lead to injury or damage. To avoid injury or damage:

- Use Invacare service parts only.
- Only professionals of the health care field or persons fully conversant with this process such as factory trained personnel should perform service, preventive maintenance or performance adjustments on the oxygen concentrator and its equipment.
- Disconnect all power sources prior to performing maintenance or service, unless otherwise directed by this service manual.
- The power supply, battery pack, and battery charger are not serviceable items. DO NOT attempt to disassemble, modify or service these items.
- DO NOT heat the battery pack above 140° F (60° C).
- Properly clean all tools prior to performing maintenance or service.
- Service technicians should adhere to the MSDS recommendations from material manufacturers for additional safety information.

- If dust is present inside of the concentrator, use the following precautions:
 - 1. Wear cotton gloves when handling components.
 - 2. Wear safety glasses.
 - 3. Wear a NIOSH/MSHA approved ventilator.

4.2 Service and Replacement Parts

Refer to the parts catalog at www.invacare.com for service and replacement part information.

4.3 Service Life

The expected service life of this product, with the exception of wear components (see 6.1 Wear and Tear, page 37), is three years of operation when used in accordance with the safety instructions, maintenance intervals and correct use stated in this manual. The effective service life can vary according to the frequency and intensity of use. Refer to the procedures in 6 Maintenance, page 37.

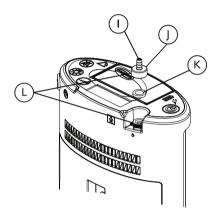
Perform all maintenance according to the recommended schedule in this manual.

4.4 Replacing Patient Outlet Filter

- 1. Ensure unit is off.
- Disconnect any external power source and remove the battery pack(s).
- 3. Remove the concentrator from carry bag.
- 4. Clean T-20 driver with alcohol pad.

- 5. Insert T-20 driver into opening of oxygen outlet port ① and turn counter-clockwise until barbed cap ① comes free from the lower half of the port.
 - Filter may lodge in the barbed cap after disassembling.
- 6. Remove old patient outlet filter (S.
- 7. Clean all exposed surfaces of both halves of the oxygen outlet port ① with a clean alcohol pad.
- 8. Install new patient outlet filter into the underside of the barbed cap.
 - Gently press seal in place against the sealing surface. Be careful not to rupture the filter element.
- 9. Clean T-20 driver with alcohol pad.

- 10. Reinstall barbed cap and hand tighten with T-20 driver until the barbed cap fits firmly against the lower half of the oxygen outlet port.
 - Be careful not to cross the threads when starting to install the cap.



- 11. Reinstall unit into carry bag.
- 12. Reinstall battery pack(s).
- 13. Close the battery compartment door.
- 14. Test the concentrator function. Refer to Function Test in Maintenance.

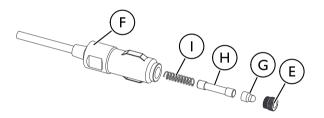
4.5 Replacing DC Power Cable Fuse



WARNING!

Risk of Injury or Damage

- Ensure that the DC power cable is disconnected from DC power.
- DO NOT replace fuse if the DC power cable is hot.
- $\mathring{\parallel}$ Only use fuses provided by Invacare.



- The DC power cable does not work unless it is assembled correctly.
 - When replacing the fuse, do not lose any of the small pieces and make sure they are reassembled correctly.

- 1. Use pliers to unscrew and remove the end piece E from the DC power cable F.
 - The tip © will come off as well.
- 2. Remove the existing fuse \oplus from the DC power cable.
 - The spring ① may come out of the DC power cable when the fuse is removed
- 3. Ensure the spring is installed into the DC power cable.
- 4. Seat the fuse into the tip ©.
- 5. Place the tip into the end piece **E**.
- 6. Slide the assembly of fuse, tip and end piece into the DC power cable.
- 7. Tightly screw the end piece onto the DC power cable.
- 8. Ensure proper cable function.

4.6 Replacing the Battery Pull Ring

1. Lift the rounded end of the existing pull ring.



2. Slide the existing pull ring out of its mount.



3. Remove the existing pull ring from the battery pack.



4. Press the new pull ring down to engage into the mount.



5. Slide the new pull ring into the mount.

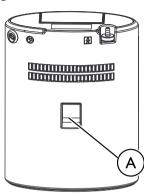


Continue sliding the new pull ring into the mount until it is fully engaged.



7. Ensure pull ring is seated correctly.

4.7 Replacing the POC1-CONNECT



- The POC1-CONNECT is not available in all regions. The POC1-CONNECT dongle is only compatible with Invacare Platinum Mobile oxygen concentrators beginning with serial number 17JF029716.
- 1. Remove the Platinum Mobile oxygen concentrator from the carry bag. Refer to the user manual.
 - Manuals are available online at www.invacare.com or call 800-333-6900.
- 2. Remove the existing POC1-CONNECT dongle (A) and insert the new one in its place.
- Register the new POC1-CONNECT dongle. Visit www.invacare.com/BreatheSmartBreatheEasy for instructions on how to register the new POC1-CONNECT and Platinum Mobile oxygen concentrator.

5 Troubleshooting

5.1 Alarm Codes

Basic troubleshooting and alarm condition information is contained in the user manual.

The Platinum Mobile concentrator has dozens of possible alarm conditions that are being monitored on a continuous basis.

The alarm code information can be accessed in two ways to gather the following information:

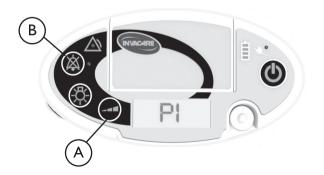
- Alarm Code History—The 20 most recent alarm codes along with the date, time and cumulative hours of operation when each alarm occurred.
- Active Alarm/Software Version—The alarm code of any active alarm condition with the software version number

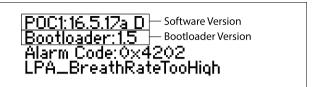
5.1.1 Viewing the Current Alarm Code and Software Version Number

This procedure displays the alarm code of any active alarm condition with the software version number.

The concentrator may be Off and connected to external power or turned On to perform this procedure.

- - The current alarm information displays for 5 seconds and then the display returns to its previous state. Refer to the table in alarm codes for more information about the alarm codes. The code will be 0xC200 with a description "NoAlarm" if no alarm condition exists.

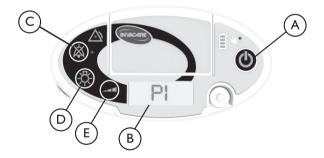




5.1.2 Viewing the Alarm Code History

This procedure displays the 20 most recent alarm codes along with the date, time and cumulative hours of operation when each alarm occurred.

The concentrator must be Off and connected to external power to perform this procedure.



Sample Alarm Code Display Screens

| 1:00:11PM 06/12/2016 | 11:00:40AM 06/09/2016 |
|----------------------|-----------------------|
| Total Hours:114.3 | Total Hours: 98.6 |
| Alarm:2 1105h | Alarm:2 4202h |
| SDA_LowOxY9enPuritY | LPA_BreathRateTooHi9h |

- The initial "0x" portion of the alarm code is not shown in the alarm code history screens.
- 1. Ensure that the unit is powered off and connected to an external power source.
- 2. Press and hold the audio off button (mute) ©.
 - After 5 seconds, the most recent alarm code and its related information is shown on the display screen. Refer to the table in alarm codes for more information about the alarm codes.
- 3. Release the audio off button (mute).
- Press the flow selection © button to cancel viewing the alarm codes.

5.1.3 Alarm Codes

Possible Reasons and Solutions are listed in order of most likely to occur to least likely to occur.

Follow the steps in the order listed for the alarm to clear.

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|---|---------------|-----------------------|--|--|---|
| No Breath Detected (Running) | 0x3201 | LPA_noBreathDetected | The display shows: "No Breath Detected Check Cannula" (not displayed if in "Warm Up" or "Prolonged Warm Up") | 1. The concentrator has not detected an inhalation for more than 15 secondsor- 2. Restriction after the conserver valve. | Verify cannula is connected, not kinked, properly positioned and user is breathing through his/her nose. Check the outlet filter/Replace filter. If alarm persists, contact Invacare for service. |
| Breath Rate Too High (Running) | 0x4202 | LPA_breathRateTooHigh | The display shows: "Breath Rate High Reduce Activity" | 1. The user breath rate has exceeded the capacity of the concentrator for more than 15 seconds. | Make sure breath rate is lower than 40BPM. If alarm persists, contact Invacare for service. |

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|--|---------------|-------------------------|--|---|---|
| Low Battery (~30 minutes left) | 0x7207 | LPA_lowBattery30MinLeft | The display shows: "Low Battery Charge Unit" | 1. The concentrator is running off battery power and the battery charge level is calculated to only be able to provide between 15 to 30 minutes of additional operation before reaching 0% state of charge. | Supply unit with external power (AC/DC) or install a charged battery into the unit. If alarm persists, contact Invacare for service. |
| Low Battery (~15 minutes left) | 0x2200 | LPA_lowBattery15MinLeft | The display shows: "Low Battery Charge Now" | 1. The concentrator is running off battery power and the battery charge level is calculated to only be able to provide 15 minutes or less of additional operation before reaching 0% state of charge. | Supply unit with external power (AC/DC) or install a charged battery into the unit. If alarm persists, contact Invacare for service. |

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|---|---------------|---------------------------------|--|---|--|
| Battery Too Hot To Charge (Running) | 0xb20b | LPA_batteryTooHot- ToCharge | The display shows: "Cannot Charge Allow to Cool" | 1. The concentrator is running off external power (AC/DC) and at least one of the battery temperatures is greater than or equal to 49° C. | Remove the hot battery and allow to cool. If alarm persists, contact Invacare for service. |
| Battery Too Cold To Charge (Running) | 0xb20c | LPA_batteryTooCold- ToCharge | The display shows: "Cannot Charge Allow to Warm | 1. The concentrator is running off external power (AC/DC) and at least one of the battery temperatures is less than or equal to 8° C. | Remove the cold battery and allow to warm. If alarm persists, contact Invacare for service. |
| Battery Hot (Running) | 0x6205 | LPA_batteryHot | The display shows: "Battery Hot Allow to Cool" | 1. The concentrator is running off battery power and at least one of the battery temperatures is greater than or equal to 55°C. | 1. Remove the hot battery and allow to cool. 2. If alarm persists, contact Invacare for service. |

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|------------------------------|---------------|-----------------|---|---|--|
| Battery Cold (Running) | 0x6206 | LPA_batteryCold | The display shows: "Battery Cold Allow to Warm" | 1. The concentrator is running off battery power and at least one of the battery temperatures is less than or equal to -15° C | Remove the cold battery and allow to warm. If alarm persists, contact Invacare for service. |
| Unit Hot (Running) | 0x5203 | LPA_unitHot | The display shows: "Unit Hot Allow to Cool" | 1. The concentrator is running off battery power or external power (AC/DC) and the unit internal temperature is greater than or equal to 50° C. | Allow the unit to cool. Clean air intake filter. If alarm persists, contact Invacare for service. |
| Unit Cold (Running) | 0x5204 | LPA_unitCold | The display shows: "Unit Cold Allow to Warm" | 1. The concentrator is running off battery power or external power (AC/DC) and the unit internal temperature is less than or equal to 5°C. | Allow unit to warm. If alarm persists, contact Invacare for service. |

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|--------------------------------------|---------------|---------------------|--|---|--|
| Low Oxygen Purity (Running) | 0xa20a | LPA_lowOxygenPurity | The display shows: "Low Oxygen See Manual" | 1. The concentrator is producing less than 85% O ₂ and greater than 73% O ₂ beginning 15 minutes after the power-on state. a. Unit running without cannula connected -or-b. Inlet airflow blockage -or-c. Outlet filter perforated -or-d. Sieve bed has been compromised -or-e. Oxygen sensor is not properly calibrated. | Ensure cannula is connected while unit is operating. Clean air intake filter screen. Change outlet filter. If alarm persists, contact Invacare for service. |

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|------------------------------|---------------|------------------------------|---------------------------------|---|--|
| Prolonged Unit Warm Up | 0x9209 | LPA_prolongedUnit- WarmUp | The display shows: "Warming Up" | 1. Concentrator is producing less than 87% O ₂ after warm up state. The standard warm up state has a maximum duration of 120 seconds before it becomes a prolonged warm up alarm state. a. Unit running without cannula connected -or-b. Inlet airflow blockage -or-c. Outlet filter perforated -or-d. Sieve bed has been compromised -or-e. Oxygen sensor is not properly calibrated. | Ensure cannula is connected while unit is operating. Clean air intake filter screen. Change outlet filter. If alarm persists, contact Invacare for service. |

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|--------------------------------------|---------------|-------------------------|---|---|---|
| Oxygen Sensor Failure | 0x8208 | LPA_oxygenSensorFailure | The display shows: "Sensor Fault See Manual" | Oxygen sensor is damaged or disconnected. | If alarm persists, contact Invacare for service. |
| Depleted Battery | 0x1100 | SDA_depletedBattery | The display shows: "Shut Down Battery Depleted" | 1. The concentrator is running off battery power and the battery charge level is less than or equal to 5%. | Supply unit with external power (AC/DC) or install a charged battery into the unit. If alarm persists: Inspect the battery connector for debris. Reinstall battery. If alarm persists, contact Invacare for service. |
| Battery Too Hot (shut down) | 0x1101 | SDA_batteryTooHot | The display shows: "Shut Down Battery Too Hot" | 1. The concentrator is running off battery power and at least one of the battery temperatures is greater than or equal to 60°C. | Remove the hot battery and allow to cool. Change the battery. If alarm persists, contact Invacare for service. |

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|---------------------------------------|---------------|--------------------|---|--|---|
| Battery Too Cold (shut down) | 0x1102 | SDA_batteryTooCold | The display shows: "Shut Down Battery Too Cold" | 1. The concentrator is running off battery power and at least one of the battery temperatures is less than or equal to -20° C. | Remove the cold battery and allow to warm. Change the battery. If alarm persists, contact Invacare for service. |
| Unit Too Hot (shut down) | 0x1103 | SDA_unitTooHot | The display shows: "Shut Down Unit Too Hot" | 1. The concentrator is running off battery power or external power and the unit temperature is greater than or equal to 55°C. | Allow unit to cool. Clean intake filter screen. If alarm persists, contact Invacare for service. |
| Unit Too Cold (shut down) | 0x1104 | SDA_unitTooCold | The display shows: "Shut Down Unit Too Cold" | 1. The concentrator is running off battery power or external power and the unit temperature is less than or equal to 0° C. | Allow unit to warm. If alarm persists, contact Invacare for service. |

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|---|---------------|---------------------|---|---|--|
| Low Oxygen Purity (shut down) | 0x1105 | SDA_lowOxygenPurity | The display shows: "Shut Down Oxygen Fault" | 1. The concentrator is producing less than 73% O ₂ beginning 15 minutes after the power-on state. a. Unit running without cannula connected -or-b. Inlet airflow blockage -or-c. Outlet filter perforated -or-d. Sieve bed has been compromised -or-e. Oxygen sensor is not properly calibrated. | Ensure cannula is connected while unit is operating. Clean air intake filter screen. Change outlet filter. If alarm persists, contact Invacare for service. |

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|---|---------------|----------------------|---|---|--|
| Stuck Button | 0x1107 | SDA_stuckButton | The display shows: "Shut Down Stuck Button" | 1. One of the buttons on the concentrator's control panel was pressed when a power source is being connected to the unit. | Make sure no control panel buttons are pressed. Disconnect all power sources then reconnect to a power source. If alarm persists, contact Invacare for service. |
| No Breath Detected (shut down) | 0x110c | SDA_noBreathDetected | The display shows: "Shut Down No Breath Detected" | An inhalation has not been detected by the unit for more than 120 seconds. | Verfy cannula is connected, not kinked, properly positioned and user is breathing through his/her nose. Check the outlet filter/Replace filter. If alarm persists, contact Invacare for service. |

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|--------------------------|---------------|------------------------|---|--|--|
| Internal Fault | 0x1120 | highPressureAlarm | The display shows: "Shut Down Internal Fault" | Blockage in outlet gas stream. Blockage may be internal or external. | Remove any kinks or blockage in cannula. Replace the patient outlet filter. If alarm persists, contact Invacare for service. |
| Internal Fault | 0x1121 | lowPressureAlarm | The display shows: "Shut Down Internal Fault" | Internal leakage of pneumatic circuit. Blockage of inlet flow. | Clean air intake filter screen. If alarm persists, contact Invacare for service. |
| Internal Fault | 0x1122 | compressorRunningAlarm | The display shows: "Shut Down Internal Fault" | Compressor or compressor's wire harness is damagedor- The compressor wire harness is damaged or loose. | If alarm persists, contact Invacare for service. |

Invacare® Platinum® Mobile

| General Alarm Name | Alarm Code | Alarm Code Name | Display Message | Possible Reason | Solution |
|--------------------------|---|--|---|--|--|
| Internal Fault | 0x1123 | compressorNotRun- ningAlarm | The display shows: "Shut Down Internal Fault" | Compressor or compressor's wire harness is damagedor- The compressor wire harness is damaged or loose. | If alarm persists, contact Invacare for service. |
| Internal Fault | 0x1109- 0x111f, 0x1124- 0x11ff | The alarm code name will be displayed when pressing the MUTE+SETTING buttons at the same time. | The display shows: "Shut Down Internal Fault" | PCB or software fault. | If alarm persists, contact Invacare for service. |

6 Maintenance

6.1 Wear and Tear

Refer to the User Manual for the list of normal wear and tear items and components for this product.

6.2 Viewing Hour Meter

To view the elapsed hours of concentrator run time perform the following steps:

- Ensure that the unit is powered off and connected to an external power source.
- Press and hold the flow selection button for five seconds.

Compressor Hours 115.4

- The cumulative hours of concentrator operation (compressor hours) will be shown on the display screen for as long as the button is continually pressed. The concentrator run time is displayed to the nearest 0.1 hours.
- 4. Release the flow selection button.

6.3 Cleaning the Air Intake Filter Screen

CAUTION! Risk of Damage

To avoid damage from clogging:

- Replace the carry bag if the air intake filter screen is torn or frayed.
- Clean the air intake filter screen at least once each week. The air intake filter screen is part of the carry bag.



- Turn off concentrator.
- 2. Use a vacuum cleaner or nylon brush to clean dust/debris from air intake filter screen **(A)**.

6.4 Cleaning and Disinfection Between Patients

Cleaning and disinfection must be performed between patients and as necessary.



WARNING!

Risk of Injury or Damage

To prevent injury from infection or damage to concentrator:

- Only qualified personnel should perform cleaning and disinfection of the oxygen concentrator and accessories between patients.
- Follow these instructions to eliminate possible pathogen exchange between patients due to contamination of components or accessories.
- Dispose of and replace all patient side accessories not suitable for multiple patient use, including but not limited to: cannula and oxygen tubing.
- Clean concentrator and accessories as described in Maintenance section of the user manual.

3. Disinfect the surfaces of the concentrator and accessories using Clorox® 4 in One Disinfectant & Sanitizer or substantially equivalent product.



WARNING!

Risk of Injury or Damage

- Follow the cleaning/disinfectant product manufacturer's instructions for use, handling, storage and disposal of the product.
- Use of inappropriate disinfecting products may degrade device materials and negatively affect device safety and performance.
- if the accessories, such as the carry bag, are unable to be cleaned or disinfected, discard the accessory and replace.
- 4. Perform the tasks on Preventive Maintenance Checklist.
- Before repackaging and distribution to new patient, ensure packaging contents contain the concentrator, battery, carry bag with shoulder straps, AC power adapter, AC power cord, DC power cable, labels and user manual.

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6.5 Preventative Maintenance Checklist

REF

| On Each Inspection | | | | |
|---|--|--|--|--|
| Record Date of Service. | | | | |
| Record Elapsed Hours on Hour Meter. (Refer to Viewing Hour Meter in Maintenance.) | | | | |
| Clean Air Intake Filter Screen. | | | | |
| Inspect Cabinet of Concentrator and AC Adapter for Damage. Do not use if damage found. Return to Invacare for repair. | | | | |
| Inspect Carry Bag Strap(s) and hardware for Damage. Replace strap or carry bag if damage is found. | | | | |
| Inspect Electrical Cords for Damage. Replace Electrical Cord if damage found. | | | | |
| Check for presence and legibility of all Labels. Replace Labels as needed. Refer to user manual for label locations. | | | | |

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REF

SN

| EVERY 4,380 HOURS, EVERY 3 YEARS, AND BETWEEN PATIENTS, WHICHEVER COMES FIRST | | | | | | |
|---|--|--|--|--|--|--|
| Check Oxygen Purity | | | | | | |
| Perform Functional Test | | | | | | |
| DURING PREVENTATIVE MAINTENANCE SCHEDULE AND BETWEEN PATIENTS | | | | | | |
| Check Intake Filter Screen for damage. Replace carry bag if damage is found. | | | | | | |
| Check/Replace Patient Outlet Filter | | | | | | |

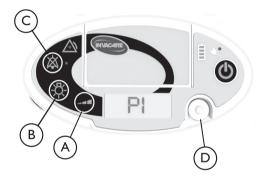
Inspection periods shown as hours is in reference to hours of concentrator operation since last date of service. Refer to Viewing Hour Meter in Maintenance section. Inspection periods shown as months or years is in reference to duration of time since the last date of service.

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6.6 Checking O₂ Purity

Although the Platinum Mobile oxygen concentrator offers pulse dose only, the oxygen purity can be checked with a hand held oxygen analyzer.

Oxygen purity should be checked annually, or between patients, or every 4,320 hours, whichever comes first.



- 1. Connect an oxygen cannula to the patient outlet port ①.
- 2. Turn the unit On.
- 3. Press the flow selection button (a) to increase the flow to setting P4.

- 4. Enter autopulse mode by simultaneously pressing and holding the display backlight button ® and audio off (mute) button © until P4 appears on the display screen.
 - The oxygen concentrator must be out of the warm up phase to enter autopulse mode.

 15 seconds after exiting the warm up phase, a "No Breath Detected" alarm will occur if autopulse mode is not entered correctly. If this occurs, repeat step 3.

 The unit will remain in auto-pulse mode until flow setting is changed or unit is turned off.
- Connect a standard hand held oxygen analyzer to the oxygen cannula.
- 6. Follow the directions provided by the analyzer manufacturer. Some analyzers will also measure flow and pressure, but only if connected to a continuous flow of oxygen (so these options are not usable on this pulse only unit).
 - The oxygen purity reading may fluctuate slightly due to the pulse flow. It is recommended that you record a high and a low over a 60 second time period.
- 7. The oxygen concentrator is functioning properly when the oxygen purity level is 87% or above after a five minute warm-up period.
- If oxygen purity level is 87% or less, check the air intake filter screen and clean if necessary. If still getting an oxygen purity level less than 87%, contact Invacare for service.

6.7 Function Test

- Install a battery in the unit and connect to AC power source using the AC power adapter.
- Check that the battery charging indicator operates as defined in the user manual.
- 3. Connect an oxygen cannula to the oxygen outlet port.
- Turn the unit on. Each time the unit is turned on, a brief alarm will sound and all control panel indicator lights will illuminate briefly. The unit pulse flow setting will be the same flow setting selected the last time the unit was turned off.
- "Warming Up" will display on the screen for approximately 2–5 minutes. During this period the concentrator will automatically deliver a pulse of oxygen approximately every four seconds.
- 6. While warming up, check the function of the Backlight button.
- 7. The current pulse flow setting will be shown on the display screen after warm up is complete.
- 8. The "No Breath Detected" alarm will occur after approximately fifteen seconds of operation.
- 9. Verify that the "No Breath Detected" alarm is operating as defined by the unit user manual.
- Press the Audio Off button to confirm it mutes the audible indicator.
 - The "No Breath Detected" shut down alarm will sound if Steps 9–10 are not completed within two minutes of Step 8. Restart unit and proceed to Step 11 if this occurs.

- 11. Breathe with the cannula to ensure the unit pulses at each pulse flow setting. Confirm that the pulse icon is shown on the display screen with each oxygen pulse. Change the setting as required. There will be a short audible beep each time the pulse flow setting is changed.
- 12. Check the oxygen purity using a hand held analyzer. Refer to Checking O2 Purity.
- 13. Use the flow selection (-) button to select setting "P2".
- 14. Turn unit off. "Powering Down" is displayed on the screen as the unit turns off.
- 15. Disconnect the AC power adapter.
- 16. Turn the unit on to confirm operation with battery power only.
- 17. Turn the unit off to complete the test.

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7 After Use

7.1 Disposal

Recycle

DO NOT dispose of in household waste





This product has been supplied from an environmentally aware manufacturer who complies with the Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EC. This product may contain substances that could be harmful to the environment if disposed of in places (landfills) that are not appropriate according to legislation.

Follow local governing ordinances and recycling plans regarding disposal of the concentrator or components normally used in operation. The concentrator does not generate waste or residue in operation.

- DO NOT dispose of the concentrator in the normal waste stream.
- Any accessories not part of the concentrator MUST be handled in accordance with the individual product marking for disposal.
- DO NOT dispose of the internal or supplemental batteries. Batteries should be returned to your dealer/provider.

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Notes

Notes

Notes

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|-----------------------------------|--|
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| Deutschland | Invacare GmbH, Alemannenstraße 10, D-88316 Isny • Tel: (49) (0)75 62 7 00 0 • Fax: (49) (0)75 62 7 |
| Santana Santana Middle | 00 66 • kontakt@invacare.com • www.invacare.de |
| Eastern Europe, Middle East & CIS | Invacare EU Export • Kleiststraße 49 • D-32457 Porta Westfalica • Germany • Tel: (49) 5731 754540 • |
| España | Fax: (49) 5731 754541 • webinfo-eu-export@invacare.com • www.invacare-eu-export.com Invacare SA, c/Areny s/n, Polígon Industrial de Celrà, E-17460 Celrà (Girona) • Tel: (34) (0)972 49 32 |
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