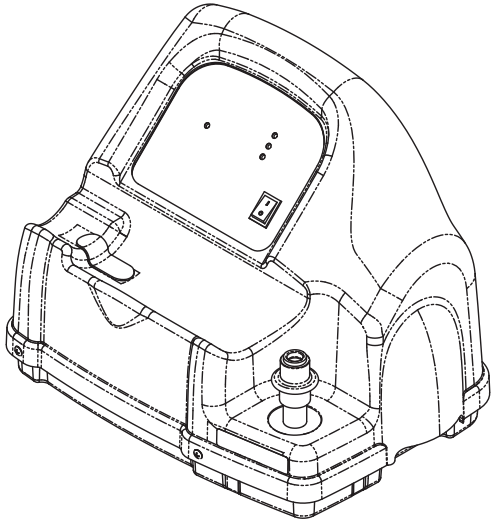
Invacare® HomeFill® II Oxygen System

Model IOH200AW



en Compressor
User Manual 3

CE 1639

This manual MUST be given to the user of the product.
BEFORE using this product, this manual MUST be read and saved for future reference.

INVACARE

Yes, you can.

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Updated versions of this manual are available on www.invacare.com.
Making Life's Experiences Possible is a registered trademark in the U.S.A.

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This manual MUST be given to the user of the product.
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1 General

1.1 Symbols

Symbols in the Manual

Signal words are used in this manual and apply to hazards or unsafe practices which could result in personal injury or property damage. See 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
– 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.

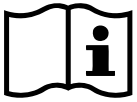
Symbols on the Product

The following symbols are found on the compressor, compressor packaging or the oxygen cylinder.



Read the Manual (Compressor)

The color of the symbol background is blue on product labels.



Read the Manual (Cylinder)



Electrical Hazard



Alternating Current



Type BF equipment — Applied Parts



Power switch “ON”



Power switch “OFF”



DO NOT smoke



No Open Flame



Class II, Double Insulation. Refer to Double Insulated products in the Safety section of the manual.



Keep dry in transport or storage and during use

IP21

Protected against solid foreign objects of 12.5 mm diameter and greater.

Protected against vertically falling water drops.



Fuse



Oxidizer

The color of the symbol background is yellow on product labels.



Non-flammable gas, class 2 type (oxygen)

The color of the symbol background is green on product labels.



Transport and Storage Temperature



Transport and Storage Humidity



Recycle this product. Refer to Disposal of Equipment and Accessories in the After Use section of the manual.



Complies With Applicable EU Directives Including Medical Device Directive (MDD) (93/42/EEC)



Authorized Representative in the European Community



Manufacturer

1.2 Intended Use

The Invacare HomeFill compressor was designed to be used only with oxygen concentrators that meet the input specifications listed in *8.3 Specifications, page 35*.

DO NOT use the Invacare HomeFill compressor with anything other than an oxygen concentrator that meets the compressor input requirements.

The intended use of an Invacare HomeFill compressor is an accessory device to an oxygen concentrator that enables the patient to refill custom portable oxygen cylinders for personal use.

This product is intended for single patient use in the indoor homecare environment only and is not to be used for bulk cylinder refilling.

No specific product knowledge or training is required, other than what is contained in this manual, to operate the product.

It is not intended for supplying oxygen therapy during refilling.

This product is intended to be used by or under adult supervision only after reading and understanding the instructions and warnings of this user manual.

WARNING!
– The use of this device is limited to refilling a specific patient's own oxygen cylinders. The designated cylinders MUST be used ONLY by the specific oxygen patient and are not to be distributed to any other individual for any purpose.
– No other use of this device is indicated.

1.3 Indications For Use

Indicated to enable the patient to refill custom portable oxygen cylinders for personal use.

1.4 Replacement Parts

The following replacement parts are available from Invacare:

- Supply Line, Part number 1105177
- Power Cord, Part number 1085605

These parts are base models. Please contact Invacare or your provider for country specific part numbers.

1.5 Contraindications

There are no known contraindications.

1.6 Warranty

Terms and conditions of the warranty are part of the general terms and conditions particular to the individual countries in which this product is sold.

2 Safety

2.1 General Guidelines

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 healthcare professional, provider or technical personnel before attempting to use this equipment.
- Check ALL external components and carton for damage. In case of damage, or if the product is not working correctly, contact a technician or Invacare for repair.
- In order to ensure the safe installation, assembly and operation of the HomeFill Compressor these instructions MUST be followed.
- 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. To avoid fire, death, injury or damage:

- DO NOT SMOKE while using this device.
- DO NOT use near OPEN FLAME or IGNITION SOURCES.
- DO NOT use any lubricants on the compressor unless recommended by Invacare.
- NO SMOKING signs should be prominently displayed.
- Avoid creation of any spark near oxygen equipment. This includes sparks from static electricity created by any type of friction.
- Keep all matches, lighted cigarettes or other sources of ignition out of the room in which this compressor is located and away from where oxygen is being delivered.
- Keep the oxygen tubing, cord, and compressor out from under such items as blankets, bed coverings, chair cushions, clothing, and away from heated or hot surfaces including space heaters, stoves, and similar electrical appliances.

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:

– DO NOT allow oil from your hands or other sources to come into contact with the compressor coupling or cylinder fittings. These substances may become flammable in the presence of oxygen and cause injury. Avoid touching the cylinder fitting whenever possible. Example of items to avoid are hand creams or lotions, cooking oils, suntan oils or sunblocks and similar oily products. If you use these types of products Invacare suggests you wash your hands prior to using the HomeFill unit. If the cylinder fitting should come in contact with such substances it should be cleaned off with a damp cloth prior to connecting it to the compressor.
– NEVER oil or lubricate the compressor coupler or cylinder fittings. NEVER use any penetrating oil or lubricant such as WD-40® or 3-in-1 Oil®. If connection difficulty is experienced verify that the cylinder fitting is being inserted straight down into the compressor coupler. If continued difficulty is experienced contact your supplier for assistance.

DANGER!
Risk of Electric Shock
This unit contains moving and high pressure components. There are no user serviceable parts inside the cover. To avoid electric shock, injury or death:

– DO NOT remove the cover.
– Refer servicing to qualified personnel.

WARNING!
Risk of Serious Injury or Damage
Use of non-Invacare accessories may result in serious injury or damage.

– Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.
– No modifications of this equipment is allowed.
– DO NOT use non-Invacare accessories.
– To obtain Invacare accessories, contact Invacare by phone or at www.invacare.com

WARNING!
Risk of injury or damage
Blocking the air flow into and out of the compressor may cause injury or damage.
– NEVER block the air openings of the product 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.

WARNING!
Risk of Injury or Damage
A damaged product may malfunction and cause injury or damage. To avoid injury or damage:
– DO NOT get the compressor wet.
– If the compressor has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or submersed in water, call a qualified technician for examination and repair.

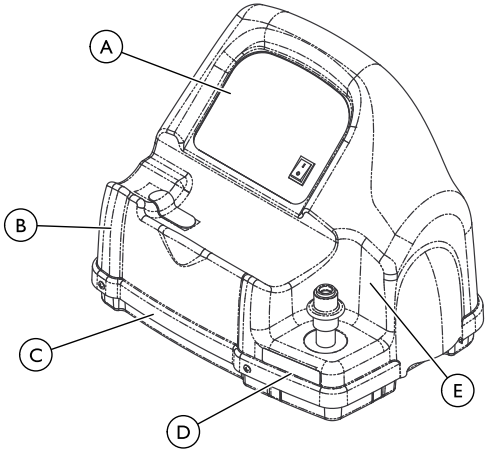
WARNING!
– DO NOT use the compressor outdoors. Indoor use only.
– If any leakage of the oxygen cylinder is detected DO NOT attempt to use the cylinder. Turn the flow selector knob on the regulator to “Off”. If leakage persists, place the cylinder outdoors and notify your Home Health Care Provider or Service Representative of this condition.
– Children should ALWAYS be supervised around the HomeFill unit. When used with the HomeFill table or similar elevated support surfaces, a child could pull over any such table causing the unit to fall. Failure to observe this warning may result in personal injury or product damage.

WARNING!
Risk of injury or damage
The HomeFill is equipped with a high pressure relief valve to ensure the user’s safety. When activated, this safety feature will make an extremely loud noise. To avoid injury or damage:
– If this noise occurs, turn the unit Off and contact your Home Health Care Provider or Service Representative.

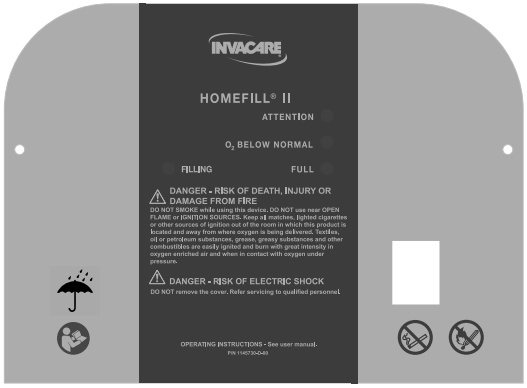
WARNING!
Risk of death, injury or damage
If improperly positioned and secured, the power cord and interconnect hose can cause injury due to tripping, falling, and strangulation. Product damage may also occur.
– Properly store and position electrical cords and/or tubing to prevent tripping and strangulation hazards.
– Avoid positioning power cords across areas of high traffic.
– Before moving or repositioning either the compressor or concentrator, ALWAYS disconnect the AC power cords and the interconnect hose between the compressor and concentrator.

CAUTION!
Statutory law restricts this device sale to or on the order of a medical practitioner licensed by a governmental agency where he/she practices.
– ONLY a licensed medical practitioner may order the purchase or use of this device.

2.2 Label Locations



Ⓐ



Ⓑ

⚠ DANGER Risk of Death, Injury or Damage from Fire

Keep all connections free of oil and grease to avoid violent ignition. See user manual before cleaning. 1075220-D-00

Ⓒ

⚠ DANGER Risk of Electric Shock

DO NOT REMOVE UNIT COVER

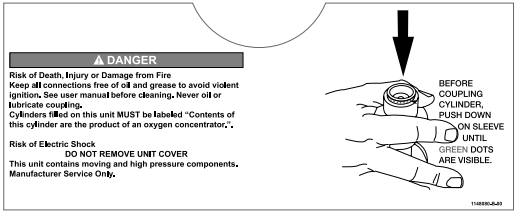
This unit contains moving and high pressure components. Manufacturer Service Only. 1075221-C-01

Ⓓ

⚠ DANGER Risk of Death, Injury or Damage from Fire

Keep all connections free of oil and grease to avoid violent ignition. See user manual before cleaning. Never oil or lubricate coupling. Cylinders filled on this unit MUST be labeled "Contents of this cylinder are the product of an oxygen concentrator.". 1075238-D-00

Ⓔ



2.3 Provider Information

Invacare recommends leaving a full cylinder of oxygen with the patient after setting up the HomeFill compressor.

Before leaving a HomeFill Compressor with a user, the following checklist MUST be completed:

- ❑ Make sure the pressure test on cylinder has not expired.
- ❑ Check the EMC section for operational information and possible RF issues. Refer to EMC Information.
- ❑ Instruct the user on the safe operation of the concentrator and review all warnings.
- ❑ Instruct the user on the safe operation of the HomeFill compressor and review all warnings.
- ❑ Leave a full cylinder of oxygen with the user.
- ❑ Leave a copy of all warnings and filling instructions with the user.

2.4 Double-Insulated Products

CAUTION!
– DO NOT unplug the power cord by pulling on the cord. To unplug, grasp the plug not the cord, otherwise damage may occur.

In a double-insulated product, two systems of insulation are provided instead of grounding. No grounding means is required on a double-insulated product, nor is a means for grounding to be added to the product. A double-insulated product is marked with the words “DOUBLE INSULATION” or “DOUBLE INSULATED” or the symbol:



2.5 EMC Information

WARNING!
Risk of Injury or Damage
To reduce the risk of injury or product damage from interference with wireless equipment:
– Keep the compressor at least 9.8 ft (3.0 m) away from wireless communication equipment such as wireless home network devices, mobile phones, cordless phones and base stations, walkie-talkies, etc.

WARNING!
– Use of accessories and cables other than those specified or provided by Invacare could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

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 for Type BF equipment. These limits are determined to provide reasonable protection against electromagnetic interference in a typical home healthcare environment. Use of this equipment in an environment with higher levels of interference could affect the accuracy of the oxygen

concentration in the cylinder. This equipment is not intended for use in a professional healthcare environment.

Portable and mobile RF communications equipment can affect the operation of this equipment. The compressor may be stacked on top on an Invacare HomeFill compatible oxygen concentrator during setup. The compressor operation should be observed to verify normal cylinder filling in either situation.

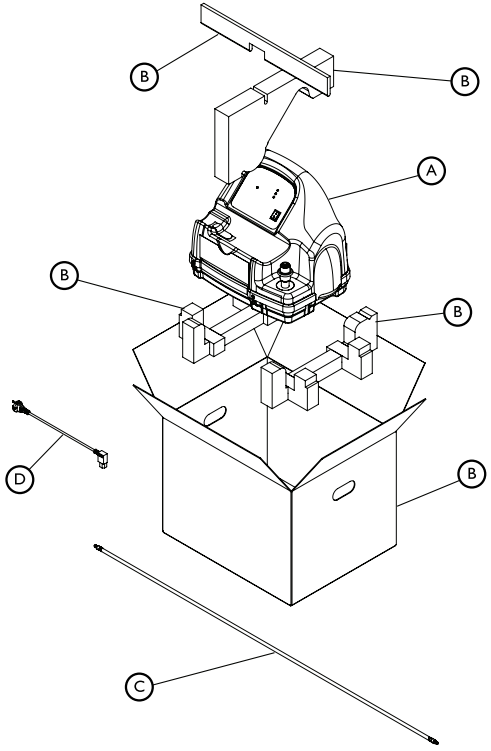
Other devices may experience interference from even the low levels of electromagnetic emissions permitted by the above standard. To determine if the emissions from the compressor are causing the interference, turn the compressor Off. If the interference with the other device operation stops, then the compressor 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 devices.
- Connect either line powered device to a different electrical power circuit.

For additional information, refer to *8.4 Electromagnetic Compliance (EMC), page 36*.

3 Setup

3.1 Unpacking



DESCRIPTION	
Compressor Assembly	A
Packaging Assembly	B
Supply Line Assembly	C
Power Cord	D
User Manual (not shown)	N/A

1. Check for any obvious damage to the carton or its contents. If damage is evident, notify the carrier, or your local provider.
2. Remove all loose packing from the carton.
3. Carefully remove all of the components from the carton.

Unless the compressor is to be used IMMEDIATELY, leave the compressor in its packaging for storage until use of the compressor is required.

3.2 Compressor Initial Setup Checklist

Providers ONLY — Refer to Dealer Information in the Safety section of this manual before performing this procedure.

Users ONLY — Contact your Invacare provider or Invacare for assistance with the setup procedure and to report unexpected operation or events.

Before operating the HomeFill Compressor for the first time, complete the following checklist:

- ❑ Choose a location for the compressor.
- ❑ Transport the compressor to the desired location.

- ❑ Connect the power cord to the compressor.
- ❑ Connect the compressor to the concentrator.

3.3 Choosing a Location

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:

- DO NOT SMOKE while using this device.
- DO NOT use near OPEN FLAME or IGNITION SOURCES.
- DO NOT use any lubricants on the compressor unless recommended by Invacare.
- NO SMOKING signs should be prominently displayed.
- Avoid creation of any spark near oxygen equipment. This includes sparks from static electricity created by any type of friction.
- Keep all matches, lighted cigarettes or other sources of ignition out of the room in which this compressor is located and away from where oxygen is being delivered.
- Keep the oxygen tubing, cord, and compressor out from under such items as blankets, bed coverings, chair cushions, clothing, and away from heated or hot surfaces including space heaters, stoves, and similar electrical appliances.

The compressor should be at least three inches (7.6 cm) away from walls, draperies or furniture to ensure sufficient air flow.

Avoid placing the compressor next to heaters, radiators or hot air registers.

DO NOT use in a closet.

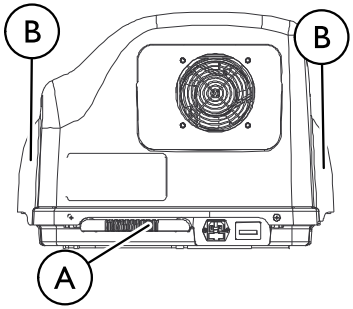
The compressor should sit on a hard flat stable surface, such as a table or the Ready Rack.

The HomeFill Ready Rack is sold separately and used to position the HomeFill compressor on top of a Perfecto$_2$ or Platinum® oxygen concentrator. Refer to the HomeFill Ready Rack instruction sheet part numbers 1148363 and 1134824 for more information.

3.4 Transporting the Compressor

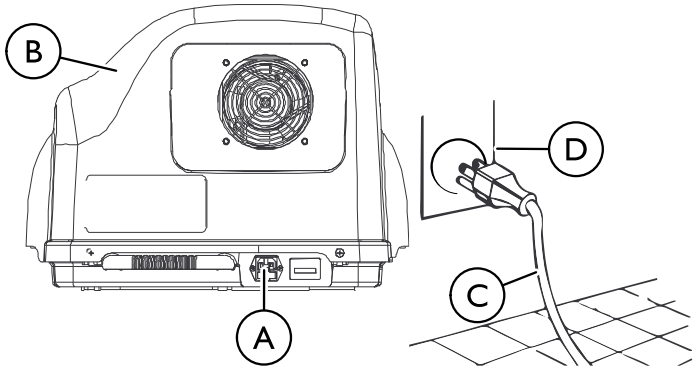
WARNING!
– NEVER transport a compressor with a cylinder connected to or stored on the compressor, otherwise injury or damage can occur.

CAUTION!
– When transporting the compressor, be careful not to bump the compressor or the connectors into obstacles. Otherwise, damage to the compressor may occur.



1. There are two methods to safely transport the compressor:
   - One Hand - Grasp the hand grip Ⓐ at the bottom rear of the compressor.
   - Two Hands - Grasp the hand grips Ⓑ on the sides of compressor.

3.5 Installing the Power Cord

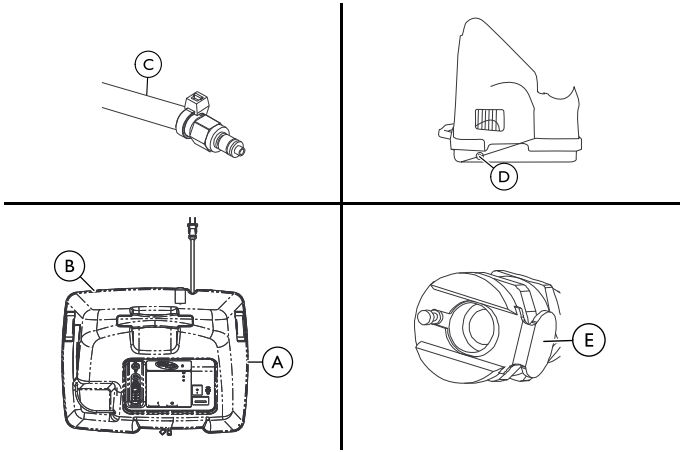


1. Choose a proper location. Refer to Choosing a Location in this section of the manual.
2. Make sure the power switch is in the Off (O) position.
3. Plug the power cord into the electric connector Ⓐ in the back of the compressor Ⓑ.
4. Plug the opposite end of the power cord Ⓒ into the wall outlet Ⓓ.
5. Leave a minimum of 3 in (7.6 cm) clearance to the power cord ends for disconnection access.

The power inlet acts as the mains disconnection device to remove all power to the unit when the line cord is disconnected.

3.6 Connecting the Compressor to the Concentrator

3.6.1 Connecting the Compressor to Invacare Concentrators



1. Insert one end of the interconnect hose Ⓒ into the outlet fitting Ⓑ on the back of the concentrator Ⓐ.
2. Insert the opposite end of the interconnect hose into the inlet fitting Ⓓ on the side of the compressor.

The metal tabs Ⓔ on the concentrator outlet fitting and the compressor inlet fitting will pop out with an audible “click” when the end of the interconnect hose is properly installed.

3.6.2 Connecting the Compressor to Non-Invacare Concentrators

1. Refer to the oxygen concentrator user manual outlet gas specifications to verify compatibility with the HomeFill compressor input gas requirements listed in *8.3 Specifications, page 35*.
2. Refer to the oxygen concentrator user manual for connecting instructions.

4 Usage

4.1 Compressor Operation Checklist

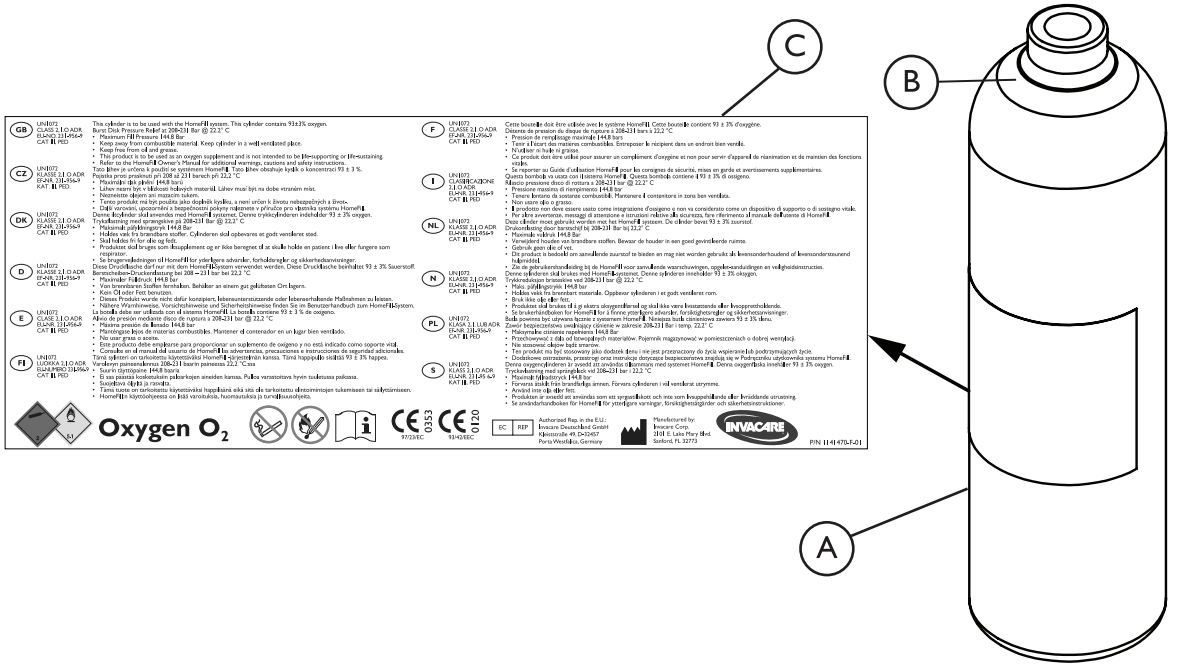
Each time the HomeFill Compressor is used to fill a cylinder, complete the following checklist:

- ❑ Ensure the concentrator has been On for at least thirty minutes. Refer to the concentrator User Manual.
- ❑ Perform the prefill inspection on the cylinder.
- ❑ Connect the cylinder to the compressor.
- ❑ Push the compressor power switch to the On (I) position.
- ❑ Examine the indicator lights on the control panel.
- ❑ Disconnect and remove the full cylinder.
- ❑ Push the compressor power switch to the Off (O) position.
- ❑ If filling another cylinder, repeat this checklist.

4.2 Cylinder Prefill Inspection

WARNING!
– ONLY use cylinders that have the Invacare HomeFill II connection and HomeFill II label.
– All cylinders MUST be inspected before attempting to fill. Otherwise, injury or damage may occur.

To identify a HomeFill II compatible cylinder Ⓐ, look for a black stripe Ⓑ on the top of the cylinder and look for the HomeFill II label Ⓒ.



The Hydrostatic Testing Date

Aluminum cylinders MUST undergo testing every ten years.

WARNING!
Risk of Injury
To reduce the risk of injury:
– DO NOT fill cylinders that have not been tested in the past ten years. Otherwise, serious personal injury may result. Contact your equipment provider for replacement.

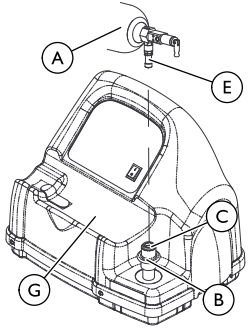
External Examination

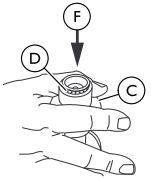
1. Examine the outside of the cylinder for the following conditions, and replace the cylinder if they exist:
    - Dents or dings
    - Arc burns
    - Oil or grease
    - Any other signs of damage that might cause a cylinder to be unacceptable or unsafe for use.
2. Examine the cylinder for evidence of fire or thermal damage. Evidence includes charring or blistering of the paint, or other protective coating or heat sensitive indicator. If fire or thermal damage is found, replace the cylinder.
3. Inspect the cylinder/regulator assembly for the following and replace if found:
    - Debris, oil or grease
    - Noticeable signs of damage
    - Signs of corrosion inside the valve
    - Signs of excessive heat or fire damage

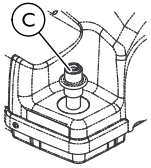
4.3 Connecting the Cylinder to the Compressor

WARNING!
– NEVER use tools of any kind to connect/disconnect the cylinder and the compressor. Otherwise, severe injury and/or damage may occur.

WARNING!
– DO NOT drop oxygen cylinders. Use two hands when handling/transporting oxygen cylinders. Otherwise, injury or damage may occur.
– DO NOT use a liquid leak detector to test for leaks.







Fillport covers not shown for clarity.

1. Prior to each use, inspect product for visible damage. Refer to the External Examination section. DO NOT use if any damage is found.

   If for any reason, any label becomes illegible or lost, contact your equipment provider.

2. Examine the cylinder gauge. If the cylinder pressure is less than 1500 psig (10342 kPa), proceed to STEP 3.

   For location of the cylinder gauge, refer to the cylinder's manual.
   If the cylinder pressure is **greater** than 1500 psig (10342 kPa), DO NOT attempt to top off this cylinder. It may not fill.

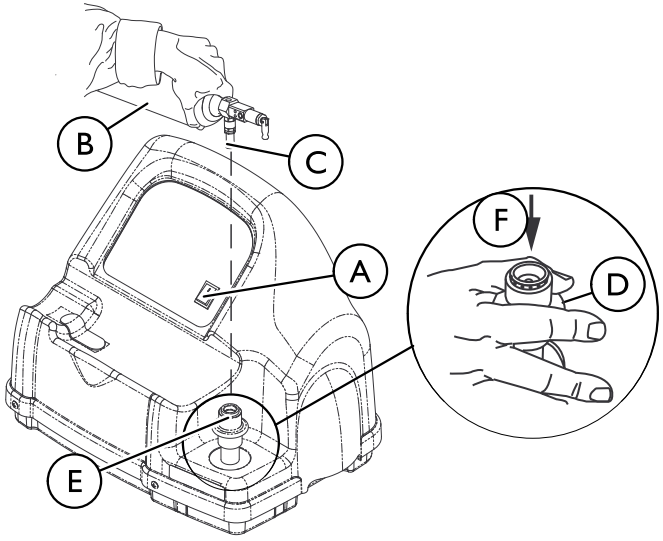
3. Set the regulator flow dial on the cylinder Ⓐ to Off. Refer to the cylinder's manual.
4. Remove the cylinder and connector fillport covers (if present).
5. Momentarily push DOWN on the outer ring (sleeve) Ⓑ of the connector fillport Ⓒ until GREEN dots Ⓓ are visible to reset the connector.

   If the outer ring (sleeve) is in the UP position (GREEN dots not visible), the connector fillport will not be able to accept the cylinder fillport Ⓔ. Pushing DOWN Ⓕ momentarily will reset the connector fillport (GREEN dots visible) to accept the cylinder fillport.

6. Grasp the cylinder in the area behind the cylinder fillport.
7. Position the cylinder in the compressor cradle Ⓖ.
8. Align the cylinder fillport with the connector fillport.
9. Pull UP on the outer ring (sleeve) of the connector fillport while pushing DOWN on the cylinder to couple the cylinder fillport into the connector fillport.

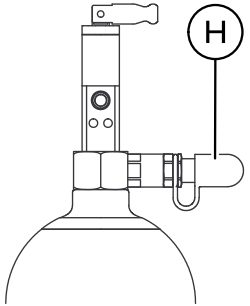
   The cylinder is properly connected when an audible "click" is heard.

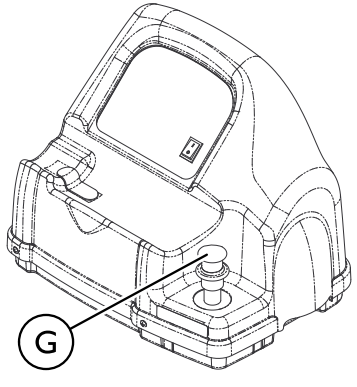
4.4 Disconnecting the Cylinder from the Compressor



WARNING!
– NEVER use tools of any kind to connect/disconnect the cylinder and the compressor. Otherwise, severe injury and/or damage may occur.

1. Press the compressor power switch Ⓐ to the Off (O) position.
2. Grasp the cylinder Ⓑ in the area behind the cylinder fillport Ⓒ.
3. With the other hand, grasp the outer ring (sleeve) of the connector fillport Ⓔ and push DOWN Ⓕ.
4. Lift up on the cylinder to remove from the connector fillport.
5. When the cylinder fillport is disconnected from the connector fillport, release the outer ring (sleeve) of the connector fillport and use two hands to remove the cylinder from the compressor cradle.





WARNING!
– The fillport cover on the connector fillport and the cylinder fillport MUST be replaced after filling and whenever not in use. If either of the fillport covers are missing contact your healthcare provider before using.

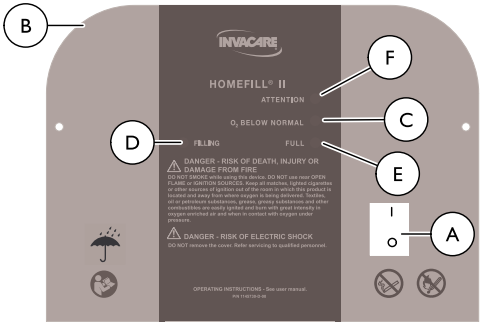
6. Place the fillport covers onto the connector fillport Ⓖ and cylinder fillport Ⓗ.

   When using the post valve type cylinder, attach an oxygen regulator per manufacturers instructions.

7. Examine the cylinder gauge to ensure cylinder is full (needle pointing into GREEN area). If the cylinder is not full, perform the following:

   a. Repeat Connecting the Cylinder to the Compressor, in this section of the manual.
   b. If cylinder is not full after second attempt to fill, contact the provider.

4.5 Turning the Compressor On and Off



1. Make sure the concentrator is On. Refer to the concentrator User Manual.

   The maximum oxygen concentrator flow rate for patient use is listed in the table below. Otherwise, the oxygen level to the compressor will be <90% and the compressor will not fill the cylinder.

Oxygen Concentrator	Maximum Output Flow for Patient Use
5L models	2.5 L/min
9L models	5 L/min

   Patients with a higher prescribed flow should not refill a cylinder while receiving supplemental oxygen treatment from the oxygen concentrator. If your concentrator is not in the ranges listed in the table, refer to your user manual or contact your provider.

2. Set the concentrator flow rate to the patient to one of the following settings. Refer to the concentrator User Manual.
   - 2.5 L/min or less for 5L models
   - 5 L/min or less for 9L models

   Non-Invacare concentrators may require lower output flow rates to the patient in order to provide ≥ 90% oxygen levels to the HomeFill compressor.

3. Make sure the cylinder is connected to the compressor. Refer to Connecting the Cylinder to the Compressor in this section of the manual.
4. Push the power switch Ⓐ on the control panel to the On (I) position.
5. Examine the control panel Ⓑ. The following sequence of events should occur:

   a. 0-3 minutes - The O_2 Below Normal (YELLOW) light Ⓒ will be lit while the compressor warms up.
   b. After three minutes - The FILLING (GREEN) light Ⓓ will be on while the cylinder is filling.
   c. The FULL (GREEN) light Ⓔ will be on when the cylinder is finished filling. Proceed to STEP 6.

   The O_2 BELOW NORMAL (YELLOW) light may come on if the oxygen level from the concentrator has not yet reached or drops below 90%. The compressor will begin or resume filling when the oxygen level reaches 90%. If light does not go Off within 10 minutes, refer to Troubleshooting in this manual.
   If the ATTENTION (RED) light and audible alarm Ⓕ are on refer to Troubleshooting in this manual.

6. Remove the full cylinder. Refer to Disconnecting the cylinder from the Compressor in this section of the manual.
7. Push the power switch to the Off (O) position.

For cylinder operation and use, refer to the specific user manual for the cylinder/regulator assembly.

5 Maintenance

5.1 Maintenance Info

DANGER!
Risk of Electric Shock
This unit contains moving and high pressure components. There are no user serviceable parts inside the cover. To avoid electric shock, injury or death:
– DO NOT remove the cover.
– Refer servicing to qualified personnel.

WARNING!
– Only the parts and procedures identified in this section are to be performed by the operator. All other parts and procedures are to be performed by a qualified technician.

5.2 Wear and Tear

Invacare reserves the right to ask for any item back that has an alleged defect in workmanship. See the warranty in this manual for specific warranty information.

Refer to the procedures in this User Manual for proper preventative maintenance schedule and use of the product.

This is just a general guideline and does not include items damaged due to abuse and misuse. Useful life is dependent upon many factors.

Normal wear and tear items and components for this product are listed below.

- All types of filters
- All types of tubing

5.3 Service Life

The expected service life of this product is 5 years or 5000 hours 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 frequency and intensity of use. Maintenance should be done at least every week.

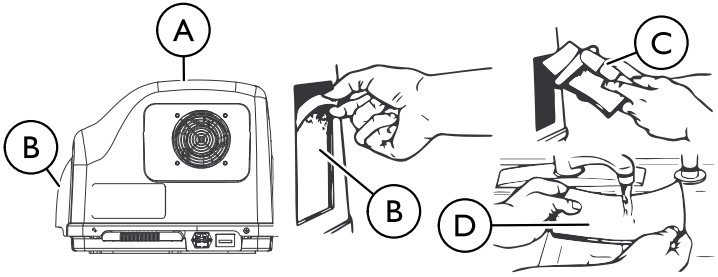
5.4 Cleaning the Compressor Filter

WARNING!
– Push the power switch to the Off (O) position and unplug the compressor before cleaning.
– DO NOT operate the compressor without the filter installed.

CAUTION!
– DO NOT unplug by pulling on cord. To unplug, grasp the plug not the cord, otherwise damage may occur.

All compressors have one filter on the back of the cabinet.

Perform this procedure at least once a week.



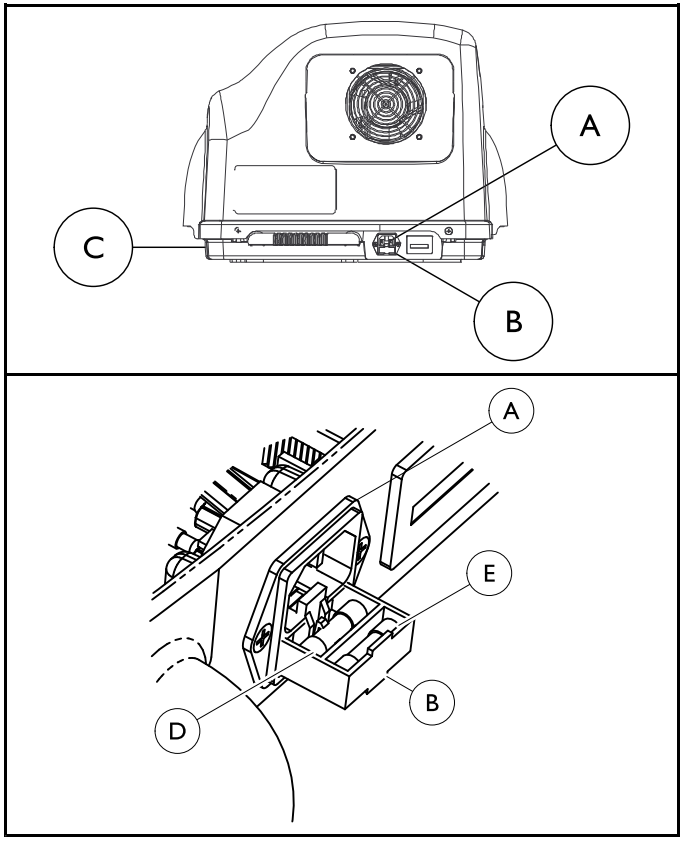
1. Unplug the compressor Ⓐ. Grasp the plug not the cord.
2. Remove the filter Ⓑ.
3. Clean the filter with a vacuum cleaner Ⓒ or wash in warm soapy water and rinse thoroughly Ⓓ.
4. Dry the filter thoroughly before reinstallation.

5.5 Cleaning the Cabinet

DANGER!
Risk of Electric Shock
This unit contains moving and high pressure components. There are no user serviceable parts inside the cover. To avoid electric shock, injury or death:
– DO NOT remove the cover.
– Refer servicing to qualified personnel.

1. Clean the cabinet with a mild household cleaner and non-abrasive cloth or sponge.

5.6 Replacing the Fuse



1. Unplug the power cord from the electrical outlet.
2. Remove the power cord from the power inlet Ⓐ on the compressor base Ⓒ.
3. Pull out the fuse drawer Ⓑ at the bottom of the power inlet.
4. Using a fuse puller or a small flat blade screw driver, remove the front fuse inside the fuse drawer and discard.

   The fuse drawer contains space for two fuses. The front location is for the operational fuse. The unit is supplied with the front fuse only. The rear location is for an optional spare fuse. When replacing the front fuse, ensure that there is a spare fuse with the same type and rating in the fuse drawer.

5. Install replacement fuse in front fuse Ⓓ slot.

   Use a 5 mm x 20 mm, time lag, low breaking capacity, 250V, 2 Amp, IEC 60127 style only (Invacare part number 1099820).

6. Push fuse drawer back into the power inlet.
7. Install power cord into the power inlet on the compressor base.
8. Plug power cord into electrical outlet.
9. Turn the power switch to the On (**I**) position and check to see that the unit powers up properly.
10. If the unit does not come on, turn the power switch off, unplug the power cord, and call your provider or Invacare for service.

6 After Use

6.1 Disposal

This product has been supplied from an environmentally aware manufacturer that complies with the Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EU.

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.

The 'crossed out wheelie bin' symbol is placed on this product to encourage you to recycle wherever possible.

Follow local governing ordinances and recycling plans regarding disposal of the device or components normally used in operation. The device does not generate waste or residue in operation. DO NOT dispose of the device in the normal waste stream. Any accessories not part of the device MUST be handled in accordance with the individual product marking for disposal.

Please be environmentally responsible and recycle this product at its end of life. Contact Invacare or your service provider for product recycling information.

7 Troubleshooting

7.1 Indicator Lights

Indicator Light Color	Compressor Status	Effect
None	Compressor is Off.	O_2 flowing to user if concentrator is on.
O_2 BELOW NORMAL - YELLOW	Compressor is On and warming up (0-3 minutes after power is On).	Cylinder filling not started.
		O_2 flowing to user if concentrator is On.
	O_2 from concentrator is < 90% (any time after three minute warmup).	Cylinder filling stops, will restart when O_2 > 90%.
		O_2 flowing to user if concentrator is On.
FILLING - GREEN	Compressor is On and cylinder is filling. O_2 from concentrator is >90% (any time after three minute warmup).	Cylinder is filling.
		O_2 flowing to user if concentrator is On.
FULL - GREEN	Compressor is On. Cylinder is finished filling (full) -remove cylinder (FULL light is On in >10 mins.) or Cylinder is not attached properly - check connection (FULL light is On in <10 mins.).	Cylinder filling stops. Cannot fill another cylinder until compressor is turned Off and On again. O_2 flowing to user if concentrator is On.
ATTENTION - RED (Audible Alarm)	Compressor is On. Cylinder NOT filling. Causes: Full cylinder attached when unit turned On - replace with empty cylinder or	Compressor does not begin to fill or stops filling. Unit must be turned Off and On before filling can occur.

Indicator Light Color	Compressor Status	Effect
	Internal failure - contact provider.	O_2 flowing to user if concentrator is On.

7.2 Troubleshooting

Problem	Solution
No indicator lights on when compressor turned On.	1. Turn compressor Off (O). 2. Check that power cord is properly plugged into compressor and wall outlet. 3. Turn the compressor On (I). 4. Clean air filters. Refer to Cleaning the Compressor Filter in the Maintenance section of the manual. 5. If performing Steps 1-4 does not cause any indicator lights to come on, contact your home health care provider or Invacare for service.
RED Light On	1. Check the cylinder gauge to see if it is full: • Cylinder full - Remove the cylinder and turn the unit Off. Perform the Cylinder Prefill Inspection in the Usage section of the manual with a cylinder that is not full. • Cylinder not full - Proceed to Step 2. 2. Check that the cylinder is connected properly. • Turn the compressor Off (O). • Remove the cylinder and reinstall. • Turn the compressor On (I). If cylinder is not full and is connected properly, the compressor may have internal failure. Contact your home health care provider or Invacare.

Problem	Solution
Compressor cycles on and Off or O_2 Below Normal (yellow) and filling (green) lights are alternating or O_2 below normal (yellow) light goes On and Off	1. Check that the concentrator liter flow setting is at or below the flow setting listed in *4.5 Turning the Compressor On and Off, page 24*. If necessary, adjust the liter flow setting (refer to the concentrator User manual). Wait at least 20 minutes for the GREEN light to appear. If it does not appear, proceed to step 2. 2. The concentrator may need service, contact your home health care provider or Invacare.
O_2 below normal (YELLOW) light stays On	1. Ensure the concentrator has warmed up for at least 20 minutes. If it has not been 20 minutes, turn the compressor Off until the concentrator warms up. If the YELLOW light still remains on proceed to step 2. 2. Inspect the connection between the compressor and the concentrator for damage or pinching. • If damaged, replace. • If pinched, straighten tubing. Turn the compressor Off (O) for at least 10 seconds. Turn the compressor On (I). If the YELLOW light still remains on after 10 minutes, proceed to step 3. 3. The concentrator may need service, contact your home health care provider or Invacare.

Problem	Solution
Fill times exceed maximum as recommended fill times OR GREEN filling light stays On.	1. Ensure the cylinder regulator is set to Off (O). 2. Check the recommended fill times shown in the individual cylinder's manual. 3. Check that the cylinder is connected properly. Turn the compressor Off (O). Remove the cylinder and reinstall. Turn the compressor On (I). 4. Check the compressor/concentrator line for proper connection and/or damage (i.e. - leaks or kinks). 5. Check that the concentrator liter flow setting is at or below the flow setting listed in *4.5 Turning the Compressor On and Off, page 24*. If necessary, adjust the liter flow setting (refer to the concentrator User manual). If the GREEN filling light does not go Off, the compressor and/or concentrator may need service. Contact your home health care provider or Invacare.
Excessive noise when compressor is On	1. Call home health care provider or Invacare for service.
Hissing sound from Regulator when flow selector is Off	1. Turn flow selector Off. 2. If hissing sounds continue, call home health care provider or Invacare.
Regulator is On but O_2 is not being delivered	1. Refill cylinder 2. Check that cannula is straight and not pinched. If damaged, replace. 3. Call home health care provider or Invacare for service.

Refer to the cylinder's manual for proper fill times.

Filling times are approximate and may vary on environmental conditions.

8 Technical Data

8.1 Technical Description

The HomeFill II Oxygen System (IOH200AW) is an electro-mechanical prescription system for use in the home. Its intended function and use is to supply pressurized oxygen to fill Invacare proprietary gas cylinders for ambulatory use while the patient receives therapeutic oxygen from an oxygen concentrator. The IOH200AW gas system is designed for use with oxygen concentrators that meet the input specifications for pressure, flow, and oxygen purity.

The HomeFill II Oxygen system consists of IOH200AW gas compressor, connection tubing, and the Invacare supplied portable gas cylinders with the integral flow regulator and interlocking fill fitting.

The IOH200AW compressor consists of a multistage compressor, internal reservoir, control electronics with an integral oxygen concentration sensor, interlocking fill fitting, inlet fitting, and drive motor. The compressor operation is controlled by the electronics assembly. The motor/compressor is allowed to fill a cylinder only when the oxygen concentration of the inlet gas stream is greater than 90% and the cylinder pressure is not already greater than 1500 PSI (10342 kPa). The motor/compressor fill operation is completed when the gas in a cylinder reaches the maximum fill pressure of 2000 PSI (13786 kPa).

The IOH200AW compressor can fill cylinders for portable use by ambulatory patients. The Invacare supplied portable gas cylinders have an interlocking fill fitting that mates only with the Invacare IOH200AW compressor assembly. The gas cylinder also contains an integral flow regulator with fixed, selectable flow settings.

8.2 Cylinder Fill Times

CYLINDER FILLING TIMES	**Concentrator Flow Rate to Patient:** 5L models up to 2.5 L/min. 9L models up to 5 L/min.	
	HF2PCE9A	HF2PCE6
NORMAL	2 hr 20 min	1 hr 25 min
MAXIMUM	2 hr 45 min	1 hr 50 min

Typical fill times assume the input requirements are met.

Filling times may vary on environmental conditions.

8.3 Specifications

Regulatory Listings

Regulatory Listings:	EN/IEC 60601–1
	EN/IEC 60601–1–2

Input Specifications

Input Pressure Required:	5 – 25 psi (34.5 – 172.4 kPa)
Input Flow Required:	2 L/min
Input Oxygen Purity:	>90% O_2

General Specifications

Electrical Ratings:	230 V~, 1.0 A, 50 Hz
Operating Environmental Conditions:	41 to 104° F (5 to 40° C) at 15 to 60% non-condensing humidity
Atmospheric Pressure:	700 to 1060 hPa
Storage and Transport:	-25 to 158° F (-23 to 70° C) at 15 to 95% non-condensing humidity.
Width:	20 ¼ inches (51.44 cm)
Height:	15 inches (38.1 cm)
Depth:	16 inches (40.64 cm)
Weight:	33 lbs (14.97 kg)
Shipping Weight:	39 lbs (17.69 kg)

8.4 Electromagnetic Compliance (EMC)

Guidance and manufacturer´s declaration—electromagnetic emission

The Device is intended for use in the electromagnetic environment specified below. The customer or the user of the Device should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group I	The Device uses RF energy only for its internal function. 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 IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer´s declaration—electromagnetic immunity

The Device is intended for use in the electromagnetic environment specified below. The customer or the user of the Device should assure that 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	± 2, 4, 8 kV contact ± 2, 4, 8, 15 kV air	± 2, 4, 8 kV contact ± 2, 4, 8, 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 mains, 100kHz	± 2 kV mains, 100kHz	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to ground	± 1 kV line(s) to line(s) ± 2 kV line(s) to ground	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips IEC 61000-4-11	0% U_T ; 1/2 cycle @ 0, 45, 90, 135, 180, 225, 270, and 315 and 0% U_T ; 1 cycle and 70% U_T ; 25/30 cycles Single phase: at 0°	0% U_T ; 1/2 cycle @ 0, 45, 90, 135, 180, 225, 270, and 315 and 0% U_T ; 1 cycle and 70% U_T ; 25/30 cycles Single phase: at 0°	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Device requires continued operation during power mains interruptions, it is recommended that the Device be powered from an un-interruptible power supply or a battery. U_T is the a. c. mains voltage prior to application of the test level.
Voltage Interruptions IEC 61000-4-11	0% U_T ; 250/300 cycle	0% U_T ; 250/300 cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Device requires continued operation during power mains interruptions, it is recommended that the Device be powered from an un-interruptible power supply or a battery. U_T is the a. c. mains voltage prior to application of the test level.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m, 50/60 Hz	30 A/m, 50/60 Hz	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

			Portable and mobile RF communications equipment should be used no closer to any part of the Device including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance:
Conducted RF IEC 61000-4-6	3 Vrms, 6 Vrms	3 Vrms, 6 Vrms	d = 1.2√P 150 kHz to 80 MHz
Radiated RF IEC 61000-4-3	10 V/m	10 V/m	d = 0.35√P 80 MHz to 800 MHz d = 0.7√P 800 MHz to 2,5 GHz where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and *d* is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the

measured field strength in the location in which the Device is used exceeds the applicable RF compliance level above, the Device should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Device.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than [V1] V/m.

At 80 MHz and 800 MHz, the higher frequency range applies.

Recommended separation distances between portable and mobile RF communications equipment and the Device

The Device is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Device as recommended below, according to the maximum output power of the communications equipment

Rated maximum output of transmitter [W]	**Separation distance according to frequency of transmitter [m]**		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	80 MHz to 800 MHz $d = 0.35\sqrt{P}$	800 MHz to 2,5 GHz $d = 0.7\sqrt{P}$
0.01	0.12	0.04	0.07
0.1	0.37	0.11	0.22
1	1.17	0.35	0.70
10	3.69	1.11	2.21
100	11.67	3.50	7.00

For transmitters rated at a maximum output power not listed above the recommended separation, distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

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