Invacare® Element™
Pneumatic Conserver
For HomeFill® Oxygen System
en IOC100P
User Manual

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

– 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.

Read the manual

No open flame

DO NOT Smoke

Oxidizer

Recycle

DO NOT dispose of in household waste

Manufacturer
1.2 Intended Use

This oxygen conserving regulator is intended for prescription use only, to be part of a portable oxygen delivery system for patients that require supplemental oxygen in their home and for ambulatory use. It is for patients who would normally receive the oxygen via a nasal cannula. This product is to be used as an oxygen supplement and is not intended to be life supporting or life sustaining.

**DANGER!**
Risk of Injury or Death
This product is to be used as an oxygen supplement and is not intended to be life-supporting or life-sustaining. ONLY use this product if the patient is capable of spontaneous breath, able to inhale and exhale without the use of a machine.

**WARNING!**
Risk of Injury or Damage
Use of this product outside of the intended use and specifications has not been tested and may lead to product damage, loss of product function, or personal injury.
- DO NOT use this product in any way other than described in the specifications and intended use sections of this manual.

1.3 User Profile

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.

Only personnel instructed and trained in the use of HomeFill® cylinder assemblies should operate this product.

The use of this product is limited to the oxygen patient. Oxygen conserving regulators MUST be used only by the oxygen patient and are not to be distributed to any other individual for any purpose.

This product is NOT to be used by patients who breathe through their mouths.

1.4 Service Life

**WARNING!**
Risk of Injury or Damage
The product has been tested for the service life stated in this manual. Use of the product beyond this time period may cause injury or product damage.
- ONLY use the product for the service life stated in this manual. DO NOT exceed the service life of the product.
- Perform all maintenance according to the recommended schedule in this manual.

The expected service life of the conserving regulator is five years when used in accordance with the safety instructions, maintenance intervals and correct use stated in this manual. Refer to the Maintenance section.

The expected service life of the cylinder is based on testing the cylinder every five years and using it in accordance with the safety instructions, maintenance intervals and correct use stated in this manual. Refer to the following procedures:

- The Hydrostatic Testing Date, External Examination, Maintenance
1.5 Limited Warranty

THE WARRANTY BELOW HAS BEEN DRAFTED TO COMPLY WITH FEDERAL LAW APPLICABLE TO PRODUCTS MANUFACTURED AFTER JULY 4, 1975.

This warranty is extended only to original purchaser who purchases this product when new and unused from Invacare Corporation or a dealer. This warranty is not extended to any other person or entity and is not transferable or assignable to any subsequent purchaser or User Coverage under this warranty will end upon any such subsequent sale or other transfer of title to any other person. This warranty gives you specific legal rights and you may also have other legal rights which may vary from state to state.

Invacare warrants this product to be free from defects in materials and workmanship for a period of three years from date of purchase from Invacare or a dealer, with a copy of the seller’s invoice required for coverage under this warranty.

For Model Nos. IOH2MD, IOH2M6, IOH2M9, HF2PCL4, HF2PCL6 and HF2PC9, Invacare warrants the HomeFill conserver or regulator (NOT including the cylinder) to be free from defects in materials and workmanship for a period of two years from date of purchase from Invacare or a dealer, with a copy of the seller’s invoice required for coverage under this warranty.

DO NOT OPEN OR ATTEMPT TO SERVICE UNLESS SERVICE IS PROVIDED BY AN INVACARE-CERTIFIED TECHNICIAN; otherwise, this will void any and all warranties. If within such warranty periods any such product shall be proven to Invacare’s satisfaction to be defective, such product shall be repaired or replaced, at Invacare’s option. This warranty only applies to the labor for repairs performed by the Invacare Service Department or Invacare dealers. It does not apply to the labor performed by the purchaser or user or shipping charges incurred in replacement part installation or repair of any such product. This warranty does not include normal wear and tear and failure to adhere to the product instructions. Invacare’s sole obligation and your exclusive remedy under this warranty shall be limited to such repair or replacement. Routine maintenance items, such as filters, are excluded from this warranty.

For warranty service, please contact Invacare’s service department at the toll free number on the back page during normal working hours.

Upon receiving notice of an alleged defect in a product, Invacare will issue a serialized return authorization. It shall be the responsibility of the purchaser, at the purchaser’s cost, to return the unit, pack the unit in a manner to avoid shipping damage and to ship the unit to either Invacare’s plant or service center as specified by Invacare in advance. Defective units must be returned for warranty inspection using the serial number as identification within thirty days of return authorization date. Do not return products to our factory without prior consent. C.O.D. shipments will be refused; please prepay shipping charges.

LIMITATIONS AND EXCLUSIONS: THE FOREGOING WARRANTY SHALL NOT APPLY TO PRODUCTS SUBJECTED TO NEGLIGENCE, ACCIDENT, IMPROPER OPERATION, MAINTENANCE OR STORAGE, SOOT OR SMOKE-FILLED ENVIRONMENTS, OR OTHER THAN NORMAL APPLICATION, USE OR SERVICE, OR TO PRODUCTS MODIFIED WITHOUT INVACARE CORPORATION’S EXPRESS WRITTEN CONSENT (INCLUDING, BUT NOT LIMITED TO, MODIFICATION THROUGH THE USE OF UNAUTHORIZED PARTS OR ATTACHMENTS) OR TO PRODUCTS DAMAGED BY REASON OF REPAIRS MADE TO ANY COMPONENT WITHOUT THE SPECIFIC CONSENT OF INVACARE CORPORATION OR TO PRODUCTS DAMAGED BY CIRCUMSTANCES BEYOND INVACARE CORPORATION’S CONTROL.
THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND THE SOLE REMEDY FOR VIOLATIONS OF ANY WARRANTY WHATSOEVER, SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT PURSUANT TO THE TERMS CONTAINED HEREIN. THE APPLICATION OF ANY IMPLIED WARRANTY WHATSOEVER SHALL NOT EXTEND BEYOND THE DURATION OF THE EXPRESS WARRANTY PROVIDED HEREIN. INVACARE SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES WHATSOEVER.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGE, OR LIMITATION OF HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

THIS WARRANTY SHALL BE EXTENDED TO COMPLY WITH STATE/PROVINCIAL LAWS AND REQUIREMENTS.
## 1.6 Component Identification

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2 Safety

2.1 General Guidelines
In order to ensure the safe installation, assembly and operation of the product these instructions MUST be followed.

DANGER!
Risk of Death, Injury or Damage
Improper use of this 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, dealer 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.
– THE INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.

DANGER!
Risk of Death, Injury or Damage
– Use this oxygen conserving regulator and cylinder in accordance with the HomeFill compressor user manual.
– DO NOT handle the conserving regulator/cylinder assembly or use the contents until you are professionally trained, including emergency procedures. Training required to operate the product is contained in the user manual.
– This product is not intended for supplying oxygen therapy during refilling.
– This product is intended to be used by or under adult supervision.
– Oxygen Cylinders filled by the Invacare HomeFill oxygen system shall be used for personal use only. They are not to be filled for resale or use by professional users.
– This conserving regulator is to be used with an Invacare HomeFill oxygen system cylinder. The cylinder contains 93±3% oxygen produced by an oxygen concentrator using the pressure swing adsorption process.
– ALWAYS open the valve slowly and close the valve after each use and when empty.
**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 product.
- DO NOT use near OPEN FLAME or IGNITION SOURCES.
- DO NOT use any lubricants on the cylinder 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, electronic cigarettes or other sources of ignition out of the room in which the cylinder is located and away from where oxygen is being delivered.
- Keep the oxygen tubing, cord, and cylinder 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.

**CAUTION!**

Federal (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.

**Operating Information**

**DANGER!**

**Risk of Fire**
Dirt or contaminants on the cylinder assembly or conserving regulator can cause fire, injury or death.
- DO NOT use if dirt or contaminants are present on or around cylinder or conserving regulator.
- DO NOT use or fill cylinder assembly if the cylinder fillport is dirty or contaminated. Contact your provider for service or repair.
- DO NOT allow oil from your hands or other sources to come into contact with the compressor coupling or cylinder assembly fittings. These substances may become flammable in the presence of oxygen and cause injury. Examples of items to avoid are hand cream or lotion, cooking oil, suntan oil or sunblock and similar oily products. If you use these types of products Invacare suggests you wash your hands prior to using the HomeFill system. If the cylinder fillport should come in contact with such substances, contact your provider for service. Avoid touching the cylinder fillport.
- NEVER oil or lubricate the compressor coupler or cylinder fillport. NEVER use any penetrating oil or lubricant such as WD-40® or 3-IN-ONE®. If connection difficulty is experienced, verify that the cylinder fillport is being inserted straight down into the compressor coupler. If continued difficulty is experienced, contact your provider for assistance.
- DO NOT clean with aromatic hydrocarbons, including, but not limited to benzene and toluene.
DANGER!
Risk of Fire
Dirt or contaminants on the cylinder assembly or conserving regulator can cause fire, injury or death.
– DO NOT use cleaning/disinfecting solutions on the fillport fitting.
– DO NOT immerse product in any kind of liquid.
– DO NOT allow any kind of liquid to get inside openings of the conserving regulator.
– DO NOT spray cleaning/disinfecting solutions on product.
– DO NOT autoclave.
– DO NOT gas sterilize with ethylene oxide.
– DO NOT attempt to repair conserving regulator or cylinder assembly. All repairs MUST be performed by Invacare Corporation or in an Invacare approved repair center.
– Store conserving regulator and cylinder assembly in a clean, dry and cool area when not in use.

WARNING!
Risk of Injury or Death
Contaminants in the oxygen may cause injury or death.
– DO NOT use if the oxygen has an unusual odor.
– DO NOT use if particulates are inhaled.
– Contact Invacare or a dealer for service.

WARNING!
Risk of Injury or Damage
To avoid injury or damage from product misuse:
– The flow dial should be turned with normal pressure from one's hand. If the flow dial is stiff to turn, do not force, otherwise damage or injury could occur.
– DO NOT use a flow outlet for driving any medical equipment.

CAUTION!
Risk of Injury or Damage
To reduce the risk of injury or damage from dropped or impacted cylinder assemblies:
– Use two hands when handling/transporting oxygen cylinders.
– Only use Invacare Corporation carrying bag.
– DO NOT allow cylinder assemblies to tip or fall. DO NOT drop cylinder assemblies.
– Secure gas cylinders so they cannot fall.
– Ensure cylinder is always in upright position when not connected to the HomeFill compressor.
– DO NOT allow cylinders to impact inanimate objects.
CAUTION!
Risk of Damage
To avoid product damage:
- DO NOT block the outlet fitting or kink the cannula when the product is in use, as this may damage the unit.
- DO NOT fill the cylinder assembly outdoors or anywhere below 13°C (55°F).

DANGER!
Risk of Injury or Death
The cannula can cause tripping, falling, or other injury if improperly positioned and secured. To avoid injury or death:
- The cannula MUST be routed and secured properly.
- DO NOT position the cannula around the neck. Ensure the patient can move freely while wearing the cannula.
- Avoid positioning cannulas across areas of high foot traffic (i.e. aisles, doorways, hallways, etc.)

WARNING!
Risk of Injury or Death
To reduce the risk of injury or death from illness:
- Before the first patient use, the provider MUST disinfect the product. Refer to the Disinfecting section.
- Replace the nasal cannula on a regular basis. Check with your equipment provider or physician to determine how often the cannula should be replaced.
- DO NOT share cannulas between patients.

WARNING!
Risk of Injury or Death
To avoid choking and/or strangulation from tubing entanglement:
- Keep children and pets away from nasal cannula and tubing.
- Close supervision is necessary when the nasal cannula is used by or near children and/or disabled persons.

The cylinder poses no biocompatibility hazards and is latex and phthalate free. The biocompatibility of cylinder accessories may vary by manufacturer. Invacare accessories such as the cylinder bag and Invacare oxygen tubing are latex and phthalate free. Refer to the packaging on any cylinder accessories to determine the biocompatibility hazard.
The cylinder assembly MUST be emptied of gas prior to shipping by courier or postal service. Refer to Emptying the Cylinder Assembly in the cylinder’s user manual.

Because the cylinder contains magnetic, ferrous material, it is not suitable to be in an MRI room.

Be sure all connections are tight and leak free. DO NOT use a liquid leak detector to test for leaks. Leaks are indicated by loss of pressure when the cylinder assembly is not in use and by hissing sounds. This product is equipped with a relief valve. If you hear a loud hissing or popping sound coming from the product, discontinue use of product, turn the flow dial to the “Off” setting, and contact your dealer/Home Care equipment provider.

ALWAYS confirm prescribed dose before administering to patient and monitor on a frequent basis.

NO OXYGEN is delivered when the conserving regulator flow dial setting is “Off”.

DO NOT use a humidifier with this product.

Keep cylinder in a well ventilated place.

This product is designed to operate with a standard or high flow single lumen, adult oxygen nasal cannula with a maximum length of 2.1 m (7 ft).

The cannula is for single patient use only.

Cannula MUST be installed on outlet connection prior to use.

Refer to the HomeFill User Manual for additional warnings, cautions and safety instructions.
3 Setup

3.1 Dealer Setup

**WARNING!**
- Before the first patient use, the provider MUST disinfect the product. Refer to the Disinfecting section.
- Before patient use, the provider MUST check the hydrostatic testing date. Refer to The Hydrostatic Testing Date section.

**WARNING!**
Risk of Injury
For medical applications, it is very important to select the prescribed level of oxygen flow. Uninterrupted use of high concentrations of oxygen over a long duration, without monitoring its effect on oxygen content of arterial blood, may be harmful.
- Use ONLY as directed by a licensed practitioner.
- DO NOT increase or decrease the flow unless a change has been prescribed by your physician or therapist.

3.2 User Setup

**WARNING!**
- When receiving the oxygen conserving regulator and cylinder assembly from the provider, the user/patient MUST perform a receiving inspection. Refer to the Receiving Inspection section.

3.3 Receiving Inspection
Remove product from package and inspect for damage. If there is any damage, DO NOT use. Contact your dealer/Home Care equipment provider.

3.4 Cylinder Prefill Inspection

**WARNING!**
Risk of Injury or Damage
- Oxygen cylinder assemblies shall be used for personal use only. Not to be filled for resale or use by professional users.
- Filling of cylinder assemblies is performed by Invacare HomeFill Oxygen System only.
- The cylinder assembly is to be used with the HomeFill system. This cylinder contains 93±3% oxygen produced by an oxygen concentrator using the pressure swing adsorption process.
- DO NOT handle the cylinder assembly or use contents until you are professionally trained, including emergency procedures.
- Use this cylinder assembly in accordance with the HomeFill user manual.
- Secure the cylinder assembly during storage and use. DO NOT drop.
- No smoking in cylinder assembly area. Keep away from heat, flame or spark.
- Keep out of the reach of children.
3.4.1 The Hydrostatic Testing Date
Aluminum cylinders MUST undergo testing every five years.

DANGER!
Risk of Death, Injury or Damage from Fire
To avoid fire, death, injury or damage:
– Cylinders that have been refinished and/or exposed to elevated temperatures MUST be hydrostatically tested before filling. Cylinder temperature should not exceed 60° C (140° F). Aluminum cylinders subject to the action of fire or heated temperatures in excess of 177° C (350° F) MUST be withdrawn from service and condemned by trained personnel. DO NOT use caustic paint strippers. Valve and safety relief devices MUST be removed and replaced by trained and authorized personnel. DO NOT alter or change valve assembly.
– All cylinders MUST be inspected before attempting to fill; otherwise, injury or damage may occur.

WARNING!
Risk of Injury
To reduce the risk of injury:
– DO NOT use oxygen conserving regulators that have not been tested in the past five years. Otherwise, serious personal injury may result. Contact your dealer/Home Care equipment provider for replacement.

3.4.2 External Examination

DANGER!
Risk of Injury or Death
Improper filling or abuse of the cylinder assembly, or failure to follow these safety instructions may cause serious bodily injury or death. High pressure oxidizing gas vigorously accelerates combustion.
– DO NOT alter or modify cylinder assembly or related components.
– DO NOT use oil or grease. Keep cylinder, all equipment and connections free of oil and grease to avoid violent ignition resulting in serious bodily injury or death.

WARNING!
Risk of Injury
To reduce the risk of injury:
– DO NOT use the cylinder if any of the following items are found. Contact your dealer/Home Care equipment provider for a replacement.

1. Examine the outside of the cylinder for the following conditions. If they exist, contact your provider for service.
   • Dents or dings, arc burn, soil 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, contact your dealer/Home Care equipment provider for a replacement.
3. Inspect the cylinder assembly for the following conditions. If they exist, contact your provider for a replacement.
   • Debris, oil or grease, noticeable signs of damage, signs of corrosion, signs of excessive heat or fire damage, signs of pressure leaks

DANGER!
Risk of Injury or Death
To avoid fire, death, injury or damage:
– Cylinders that have been refinished and/or exposed to elevated temperatures MUST be hydrostatically tested before filling. Cylinder temperature should not exceed 60° C (140° F). Aluminum cylinders subject to the action of fire or heated temperatures in excess of 177° C (350° F) MUST be withdrawn from service and condemned by trained personnel. DO NOT use caustic paint strippers. Valve and safety relief devices MUST be removed and replaced by trained and authorized personnel. DO NOT alter or change valve assembly.
– All cylinders MUST be inspected before attempting to fill; otherwise, injury or damage may occur.
4 Usage

4.1 Installing the Conserving Regulator

**WARNING!**
- DO NOT allow oil from your hands or other sources to come into contact with the conserving regulator gasket or cylinder post valve. These substances may become flammable in the presence of oxygen and cause injury. Avoid touching the cylinder post valve whenever possible. Example of items to avoid are hand creams or lotions, cooking oils, suntan oils or sun blocks and similar oily products. If you use these types of products, wash your hands prior to use. If the cylinder post valve should come in contact with such substances it should be cleaned off with a damp cloth prior to connecting it to the conserving regulator.
- DO NOT direct flow of oxygen at any person or flammable material when opening the cylinder.
- DO NOT use without CGA870 Seal Washer (metal washer with elastomer seal).
- DO NOT use plastic yoke seals (plastic compression gasket).
- Use CGA870 Seal Washer made of viton and brass.
- The CGA870 Seal Washer supplied with the oxygen conserving regulator is reusable.

**CAUTION!**
- DO NOT use tools to tighten T-handle. This can lead to over tightening and will cause damage to the oxygen conserving regulator.
- Ensure all connections are tight and leak free.
- DO NOT use liquid leak detector to test for leaks.

For information on how to operate the cylinder, consult your equipment provider.

1. Loosen the T-Handle A on the conserving regulator device.
2. Lower the conserving regulator device over any CGA870 post valve cylinder with the alignment pins B toward the holes on the cylinder neck as displayed by the connection to cylinder view I.
3. Align the two pins and gasket with the corresponding holes on the cylinder post valve.

The T-Handle on the conserving regulator device should be aligned with indentation on the post valve.
4. While holding the unit in place, tighten the T-Handle on the conserving regulator device by turning clockwise.

5. Attach a standard cannula (7 ft (2.1 m) or less in length) to the oxygen supply outlet fitting.
   - Tighten only by hand. The use of a tool to tighten the T-Handle may damage the unit.

4.2 Oxygen Conserving Regulator and Cylinder Assembly Operation

**DANGER!**
**Risk of Fire**
- NEVER smoke in an area where oxygen is being administered.
- NEVER use near any type of flame or flammable/explosive substances, vapors or atmosphere.

If for any reason, any label becomes illegible or lost, contact your dealer/Home Care equipment provider.

**WARNING!**
- When cylinder gauge needle enters red zone, it is recommended to refill the cylinder assembly on the Invacare HomeFill Compressor.

6. Ensure that the vent hole on the side of the unit is not obstructed.

7. Position the cylinder assembly so the outlet connection is pointing away from the user and any other person(s).

8. Remove the outlet connection cap, if present.

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

2. Turn the selector switch G on the oxygen conserving regulator to the “Off” position before opening the cylinder valve.

3. To reduce the risk of rapid oxygen recompression and fire, open the cylinder post valve slowly and completely so the pressure gauge moves slowly as it indicates the cylinder pressure.

4. Listen for leaks. If a leak is present, close the cylinder valve, check the CGA870 Seal Washer H, and reinstall. If the leak persists, DO NOT use the equipment. Contact your home care provider for repair.

5. Inspect the cylinder gauge C to ensure the pressure is at least 1500 psig (10342 kPa). If below 1500 psig (10342 kPa), then refill the cylinder assembly using the HomeFill system.

**WARNING!**
- To reduce the risk of injury:
  - DO NOT direct flow of oxygen at any person, or flammable material when adjusting the selector switch.
9. Attach a standard or high flow single lumen adult oxygen nasal cannula with a maximum length of 2.1 m (7 feet) to the product’s outlet connection according to the cannula manufacturer’s instructions.

   DO NOT use pediatric cannulas with this product.

   A unit without cannula attached may pulse if set at position 1–6.

DANGER!
Risk of Injury or Death
The cannula can cause tripping, falling, or other injury if improperly positioned and secured. To avoid injury or death:
- The cannula MUST be routed and secured properly.
- DO NOT position the cannula around the neck.
- Ensure the patient can move freely while wearing the cannula.
- Avoid positioning cannulas across areas of high foot traffic (i.e. aisles, doorways, hallways, etc.)

10. Place the cannula over your ears and position the prongs in your nose as instructed by your health care provider or cannula manufacturer.

11. Ensure there are no kinks or twists in the cannula tubing.

12. Turn the selector switch G to the prescribed setting.

WARNING!
- To avoid injury to patient, ALWAYS confirm prescribed setting before administering to patient and monitor flow on a frequent basis.
- Only use the Invacare Corporation carrying bag.

The continuous flow (CF) setting is designed for emergency use only. The amount of oxygen delivered when using the oxygen conserving regulator in continuous flow mode is preset to 2 L/min (liters per minute). Remember that in this mode the oxygen will be consumed at a much faster rate. Return to another source before running out of oxygen.

13. Breathe through the nose and feel a flow of oxygen as you inhale.

When on the pulse setting, there is flow or a pulse only at the beginning of each breath. If you do not feel the pulse at the beginning of each breath, check the setting. If there is still no pulse, turn dial to 2 L/min continuous setting.

Because each patient’s breathing pattern is different and the environment varies, it may be difficult to feel some low setting pulses.
14. When finished using the cylinder assembly, perform the following steps:
   a. Close the conserving regulator device and continue breathing through the nasal cannula until no further oxygen flow is detected.
   b. Remove the nasal cannula and turn the selector switch to setting “Off”.

15. When not in use, store in a clean, dry location.

4.3 Removing the Conserving Regulator

DANGER!
− NEVER attempt to remove the oxygen conserving regulator from an oxygen cylinder unless the cylinder valve is completely closed.

CAUTION!
− DO NOT try to loosen the T-handle beyond the stop. Otherwise, damage to the oxygen conserving regulator will occur.

For information on how to operate the cylinder, consult your equipment provider.

1. Completely close the oxygen cylinder post valve.
2. Turn the oxygen conserving regulator selector switch ☢ to 2 L/min. continuous flow position.
3. Wait for oxygen to stop flowing from the oxygen conserving regulator.
4. Turn the conserving regulator to “Off”.
5. Turn the T-Handle A to loosen the connection to the post.
6. Remove the oxygen conserving regulator from the post.
5 Maintenance

5.1 Maintenance

![WARNING! Risk of Injury or Damage]
Lack of product maintenance can lead to injury and loss of product function or damage.
- Maintenance MUST be performed ONLY by qualified personnel.
- Regular maintenance is necessary to assure proper operation.

![DANGER! Risk of Fire]
Dirt or contaminants on the cylinder assembly or conserving regulator can cause fire.
- DO NOT use or fill cylinder assembly if the cylinder fillport is dirty or contaminated. Contact your provider for service or repair.
- DO NOT clean with aromatic hydrocarbons, including, but not limited to benzene and toluene.
- DO NOT use cleaning/disinfecting solutions on the fillport fitting.
- DO NOT immerse product in any kind of liquid.
- DO NOT allow any kind of liquid to get inside openings of the regulator.
- DO NOT spray cleaning/disinfecting solutions on product.
- All repairs MUST be performed by Invacare Corporation or in an Invacare approved repair center.

The cannula does not require maintenance and needs to be replaced at the manufacturer's recommended interval.

The conserving regulator should be inspected and tested at a minimum every 5 years. This inspection and test MUST be performed by Invacare Corporation or by an Invacare approved repair center.

The aluminum cylinder must undergo hydrostatic testing every 5 years. Refer to The Hydrostatic Testing Date.

5.2 Emptying the Cylinder Assembly

![DANGER! Risk of Fire]
- NEVER smoke in an area where oxygen is being administered.
- NEVER use near any type of flame or flammable/explosive substances, vapors or atmosphere.
- DO NOT direct flow of oxygen at any person, or flammable material when adjusting the flow dial.
CAUTION!
Risk of Damage
– DO NOT completely empty the cylinder. Otherwise, damage to the cylinder could occur.

1. Position the cylinder assembly so the outlet connection is pointing away from the user and any other person(s).
2. Ensure the selector switch G to setting “Off”.
3. To reduce the risk of rapid oxygen recompression and fire, open the cylinder post valve slowly and completely so the pressure gauge moves slowly as it indicates the cylinder pressure.
4. Slowly turn the selector switch G to setting “2”.
5. Examine the cylinder gauge C until the pressure is below 500 psig (3447 kPa).
   Cylinder pressure is below 500 psig (3447 kPa) when the cylinder gauge needle is in the red zone.
6. Turn the selector switch G to setting “Off”.

5.3 Cleaning
- Refer to the safety information in the Maintenance section before performing this procedure.

Follow the cleaning/disinfectant product manufacturer’s instructions for use, handling, storage and disposal of the product.

Follow this procedure to clean the cylinder assembly as required when visibly soiled.

1. Ensure the cover is installed on the fillport.
2. Clean exterior surfaces of the cylinder with a lint free cloth dampened with 70% isopropyl alcohol.
3. Clean the exterior surfaces of the conserving regulator with a dry, lint free cloth.
4. If the conserving regulator is still visibly soiled, clean with a lint free cloth dampened with 70% isopropyl alcohol. DO NOT wipe the fillport or outlet fitting.
5. Wipe the cylinder and conserving regulator with a dry lint free cloth. Ensure the product is dry before using.

5.4 Disinfecting
- Refer to the safety information in the Maintenance section before performing this procedure.

Follow the cleaning/disinfectant product manufacturer’s instructions for use, handling, storage and disposal of the product.

This procedure is for disinfecting the cylinder assembly and is to be performed by the provider prior to a patient change and as otherwise required.

Recommended disinfectant products:
- Quaternary ammonium based wipes selected by the provider for the desired disinfecting characteristics
• 70% isopropyl alcohol wipes

1. Ensure the cover is on the fillport.
2. If heavily soiled, first clean the cylinder assembly. Refer to the Cleaning section.
3. Use a wipe to disinfect the external surfaces of the conserving regulator and cylinder. Follow the disinfectant manufacturer’s instructions. DO NOT wipe the fillport or outlet connection.
4. Wipe the cylinder and conserving regulator with a dry lint free cloth. Ensure the product is dry before using.

5.5 Reuse

**WARNING!**

Before transferring the product to a different user, providers MUST inspect the product for damage and disinfect the product. Refer to the following procedures:
– Disinfecting, Cylinder Prefill Inspection, The Hydrostatic Testing Date, External Examination

The cylinder assembly and conserving regulator can be transferred to a different patient. The cannula is for single patient use only.

5.6 Storage

1. Disconnect all connections before cleaning.
2. After each use, clean exterior of the conserver with a clean, lint-free cloth.
3. Store conserver in a clean area free from grease, oil, and other sources of contamination.

5.7 Optional Accessories

**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.
– DO NOT use non-Invacare accessories.
– To obtain Invacare accessories, contact Invacare by phone or at www.invacare.com.
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 2002/96/CE. 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 product 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.

6.2 Wear and Tear
Invacare reserves the right to ask for any item back that has an alleged defect in workmanship. See Warranty that shipped with the product for specific warranty information.

Refer to the Maintenance section for proper preventative maintenance schedule and use of the product.
7 Troubleshooting

7.1 Troubleshooting

If oxygen conserving regulator fails to function, consult the Troubleshooting guide. If problem cannot be corrected, consult your dealer/Home Care equipment provider.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>No flow. Unit does not pulse.</td>
<td>1. Cylinder valve is closed.</td>
<td>1. Turn the cylinder valve to the “ON” position.</td>
</tr>
<tr>
<td></td>
<td>2. Conserving regulator in “Off” position.</td>
<td>2. Set to prescribed setting.</td>
</tr>
<tr>
<td></td>
<td>3. Cylinder empty.</td>
<td>3. Replace cylinder.</td>
</tr>
<tr>
<td></td>
<td>4. Kinked or blocked cannula.</td>
<td>4. Check to see if the cannula is kinked.</td>
</tr>
<tr>
<td></td>
<td>5. Shutoff valve closed.</td>
<td>5. Slowly open shutoff valve.</td>
</tr>
<tr>
<td>Unit flows or pulses continuously.</td>
<td>1. Unit is set to the “CF” position.</td>
<td>1. Turn the selector switch to the appropriate delivery setting.</td>
</tr>
<tr>
<td></td>
<td>2. Unit was not set to “Off” prior to opening the cylinder valve.</td>
<td>2. Turn the selector switch to “OFF”, wait a few moments, then set at proper delivery settings.</td>
</tr>
<tr>
<td></td>
<td>3. Vent hole is obstructed</td>
<td>3. Remove obstructions, such as labels or carrying bag, and resume use as usual.</td>
</tr>
</tbody>
</table>
8 Technical Data

8.1 Technical Description
The Invacare IOCI00P Element Pneumatic Conserver is designed for use with high pressure oxygen systems, which can deliver up to 2 L/min of continuous and/or pulse flow oxygen to the patient via a nasal cannula. The cylinders are designed to store compressed oxygen up to 2,100 psig (14479 kPa). The continuous flow conserver consists of a cylinder connection, cylinder contents gauge (if equipped), high to low pressure conserving regulator, orifice plate and a conserving demand module. The conserving regulator reduces the high pressure of the cylinder to the working pressure of the orifice plate. The orifice plate uses calibrated orifices to deliver a selected flow to the conserving demand module. The conserving demand module controls the pulse size and timing to the patient. It supplies a pulse of oxygen at the beginning of each breath. This reduces the oxygen demand on the system and limits the drying of airways. The flow is determined by setting the flow control knob to the prescribed flow. The conserving regulator reduces the pressure at the cannula connection to 50 psig (345 kPa) and contains a rotary flow dial that is used to adjust the oxygen flow rate to the prescribed setting. The cylinders are filled with USP 93±3% oxygen using their proprietary fillports that allow filling only through the use of an Invacare HomeFill System. The duration of oxygen flow between fills is dependent on the size of the cylinder and the flow setting.

8.2 Specifications

Flows

<table>
<thead>
<tr>
<th>Selector Switch Position</th>
<th>Liter Flow Equivalency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Off</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>
### Pressures

<table>
<thead>
<tr>
<th>Continuous Flow Emergency Bypass Setting:</th>
<th>Factory Preset at 2 ± .5 L/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Operating Pressure:</td>
<td>200 psig to 3000 psig (1379 kPa to 20684 kPa)</td>
</tr>
<tr>
<td>Regulator:</td>
<td>Built-in, 25 ± 5 psig (172 kPa ± 35 kPa), brass high pressure with aluminum low pressure materials</td>
</tr>
</tbody>
</table>

### Environmental Temperature Range

| Operating Conditions Temperature:       | 32°F to 122 °F (0°C to 50°C) |
| Operating Relative Humidity:            | 15% to 95%                   |
| Operating Altitude:                     | 0 to 10,000 ft (0 to 3,048 m) |
| Maximum Storage Temperature:            | –40°F (–40°C), 1% RH         |
| Maximum Transportation Temperature:     | 145°F (63°C), 44% RH         |
| Shock Vibration:                        | Not to exceed IEC 601–1 requirements |
|                                         | Not to exceed IEC 68–2–6, IEC 68–2–34 |

### Dimensions

| Weight | Approximately 14.8 ounces (420 grams) |
| Overall Length | Approximately 5” L x 2.5” H x 2.5” W (12.7 cm x 6.4 cm x 6.4 cm) |
## Estimated Cylinder Oxygen Duration in Hours (Based on 20 breaths/min.)

<table>
<thead>
<tr>
<th>Cylinder Type</th>
<th>Cylinder Volume Liters at 2015 psig</th>
<th>Setting 1</th>
<th>Setting 2</th>
<th>Setting 3</th>
<th>Setting 4</th>
<th>Setting 5</th>
<th>Setting 6</th>
<th>Continuous Flow 2 L/min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2</td>
<td>36</td>
<td>1.9</td>
<td>.9</td>
<td>.6</td>
<td>.5</td>
<td>.4</td>
<td>.3</td>
<td>.3</td>
</tr>
<tr>
<td>M4(A)</td>
<td>113</td>
<td>5.9</td>
<td>2.9</td>
<td>2.0</td>
<td>1.5</td>
<td>1.2</td>
<td>1.0</td>
<td>.9</td>
</tr>
<tr>
<td>M6(B)</td>
<td>164</td>
<td>8.5</td>
<td>4.3</td>
<td>2.8</td>
<td>2.1</td>
<td>1.7</td>
<td>1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>ML6</td>
<td>171</td>
<td>8.9</td>
<td>4.5</td>
<td>3.0</td>
<td>2.2</td>
<td>1.8</td>
<td>1.5</td>
<td>1.4</td>
</tr>
<tr>
<td>M9(C)</td>
<td>246</td>
<td>12.8</td>
<td>6.4</td>
<td>4.3</td>
<td>3.2</td>
<td>2.6</td>
<td>2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>D</td>
<td>425</td>
<td>22.1</td>
<td>11.1</td>
<td>7.4</td>
<td>5.5</td>
<td>4.4</td>
<td>3.7</td>
<td>3.5</td>
</tr>
<tr>
<td>E</td>
<td>680</td>
<td>35.4</td>
<td>17.7</td>
<td>11.8</td>
<td>8.9</td>
<td>7.1</td>
<td>5.9</td>
<td>5.7</td>
</tr>
</tbody>
</table>

### Accessories

| Single Lumen Cannula | 4' (1.21 m) recommended. 7' (2.1 m) tubing length maximum |

### Regulatory Compliance

| CGA G-4.1 (Cleaning Equipment For Oxygen Service) |
| DOT & TC (3AL & 3ALM) |