

# Operator's Manual

## HomeFill<sup>®</sup> Cylinder Oxygen 540 Valve

**HF2E540M9**



**“Caution: Federal law restricts this device to sale or rental by or on order of a physician, or any other practitioner licensed by the law of the State in which he/she practices to use or order the use of this device.”**

**Dealer:** This manual MUST be given to the end user.

**User:** Before using this cylinder, read this manual and save for future reference.

**For more information regarding Invacare products, parts, and services, please visit [www.invacare.com](http://www.invacare.com)**



**Yes, you can.®**

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**⚠ WARNING**

**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 OWNER'S 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 - OTHERWISE, INJURY OR DAMAGE MAY OCCUR.**

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**⚠ WARNING**

**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.**

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**⚠ DANGER**

**DO NOT SMOKE** while using this device. Keep all matches, lit cigarettes or other sources of ignition out of the room in which this product is located and away from where oxygen is being delivered.

**NO SMOKING** signs should be prominently displayed. Textiles and other materials that normally would not burn are easily ignited and burn with great intensity in oxygen enriched air. Failure to observe this warning can result in severe fire, property damage and cause physical injury or death.

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*NOTE: Updated versions of this manual are available on [www.invacare.com](http://www.invacare.com).*

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## SPECIAL NOTES

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

SIGNAL WORD	MEANING
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.

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### NOTICE

The information contained in this document is subject to change without notice.

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## 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.

## INTENDED USE

To store supplemental oxygen for use with a CGA 540 valve compatible conserver or regulator to be used by patients who may have difficulty extracting oxygen from the air they breathe.

## SECTION I—GENERAL GUIDELINES

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### **⚠ WARNING**

**SECTION I - GENERAL GUIDELINES** contains important information for the safe operation and use of this product.

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### **⚠ DANGER**

**This product is not intended as a life-sustaining or life-supporting device.**

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### **⚠ WARNING**

Only personnel instructed and trained in the use of the HF2E540M9 Cylinder Assembly should operate this product.

Product contains magnetic, ferrous material that may affect the results of an MRI.

Be sure all connections are tight and leak free.

DO NOT use a liquid leak detector to test for leaks.

DO NOT autoclave.

DO NOT gas sterilize with ethylene oxide.

DO NOT clean with aromatic hydrocarbons.

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**⚠ WARNING**

DO NOT attempt to repair product.

DO NOT immerse product in any kind of liquid.

Store product in a clean area when not in use.

Only use an Invacare Corporation HF2POST9BAG carrying bag.

NEVER smoke in an area where oxygen is being administered.

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

DO NOT use if dirt or contaminants are present on or around cylinder, valve, product or connecting devices.

NEVER use near any type of flame or flammable/explosive substances, vapors or atmosphere.

ALWAYS follow ANSI and CGA standards for Medical Gas Products and Flowmeters (E-7) and Oxygen Handling (G-4).

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

DO NOT allow oil from your hands or other sources to come into contact with the 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 this product. 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.

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**⚠ WARNING**

NEVER oil or lubricate the cylinder fittings. NEVER use any penetrating oil or lubricant such as WD-40 or 3 in One. 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.

DO NOT allow cylinders to tip or fall. Secure gas cylinders so they cannot fall. Ensure cylinder is always in upright position.

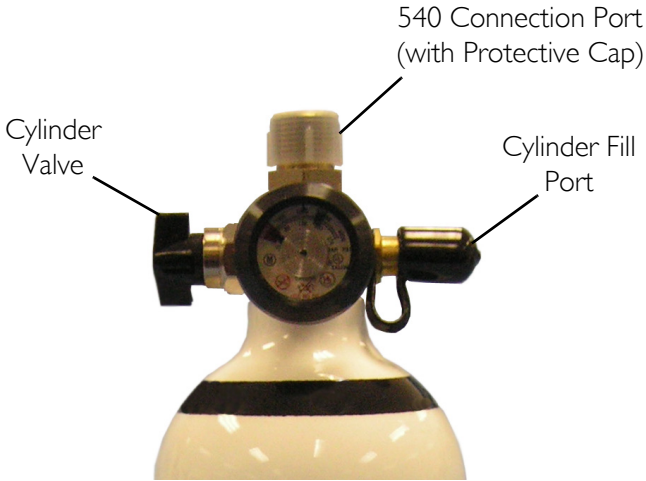
DO NOT store cylinders near sources of heat or flame.

DO NOT use while sleeping without consulting your healthcare provider.

DO NOT place the unit under clothing while in use. When this product is in use a small amount of oxygen is vented. Wearing the unit under clothing may saturate fabrics with oxygen and cause them to burn rapidly if exposed to sparks or flame. It may take several hours for oxygen levels in fabrics to return to normal.

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# SECTION 2—FEATURES



**FIGURE 2.1** Product Diagram



## SECTION 3—TYPICAL PRODUCT PARAMETERS

<b>DIMENSIONS:</b>	
Weight	5.1 lbs (2.31 kg)
Overall Length	13.25 in (33.6 cm)
Diameter	4.4 in (11.1 cm)
<b>STORAGE CONDITIONS TEMPERATURE:</b>	-40°F (-40°C) to 140°F (60°C)
<b>MAXIMUM HUMIDITY:</b>	95%

## SECTION 4—INSPECTION AND COMPRESSOR INTERFACE

*NOTE: Refer to the HomeFill® Compressor Owner's Manual for compressor operating instructions.*

### Cylinder Prefill Inspection

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#### **WARNING**

**All cylinders MUST be inspected before attempting to fill; otherwise, injury or damage may occur.**

**NEVER smoke in an area where oxygen is being administered.**

**NEVER use near any type of flame or flammable/explosive substances, vapors or atmosphere.**

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*NOTE: For this procedure, refer to on page 12.*

### The Hydrostatic Testing Date

Aluminum cylinders **MUST** undergo testing every five years.

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#### **WARNING**

**DO NOT fill cylinders that have not been tested in the past five years. Otherwise, serious personal injury may result. Contact your dealer for replacement.**

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## **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 fillport 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

## Checking Cylinder Pressure

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### **WARNING**

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

**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.

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*NOTE: For this procedure, refer to FIGURE 4.1 on page 13.*

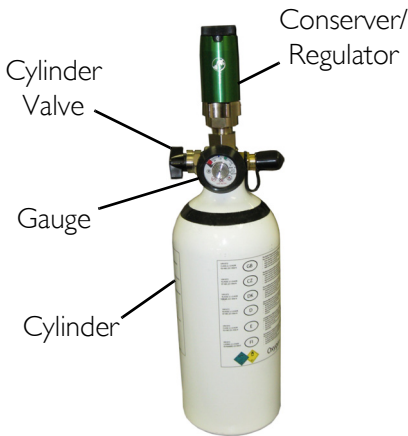
1. Install a conserver or regulator onto the cylinder according to the device manufacturer instructions.
2. Ensure cylinder valve is open. Open the cylinder valve by rotating counterclockwise.
3. Examine the gauge on the connected conserver or regulator. Perform one of the following:
  - If the cylinder pressure is **less** than 1500 psig, fill the cylinder. Connect the cylinder to the compressor. Refer to Filling the Cylinder on page 13.
  - If the cylinder pressure is **greater** than 1500 psig., **DO NOT** attempt to fill this cylinder. It may not fill. Use cylinder as normal.

## Filling the Cylinder

*NOTE: For this procedure, refer to FIGURE 4.1 thru FIGURE 4.6.*

1. Check the cylinder pressure before attempting to fill cylinder. Refer to Checking Cylinder Pressure on page 12.
2. Close the cylinder valve by rotating clockwise (FIGURE 4.1).
3. Remove the conserver or regulator according to the device manufacturer instructions (FIGURE 4.1).

### CONSERVER/REGULATOR INSTALLED

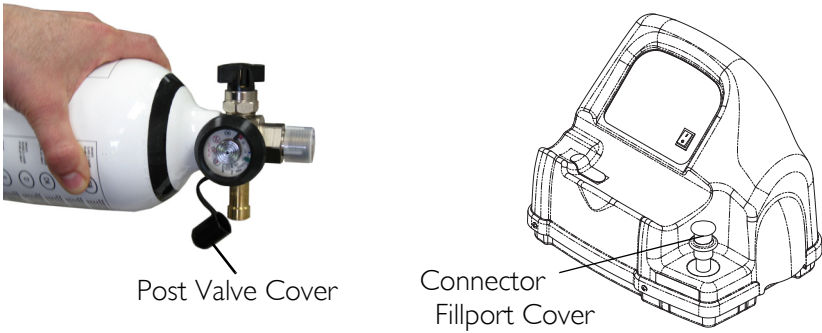


### CONSERVER/REGULATOR REMOVED



**FIGURE 4.1** Component Identification

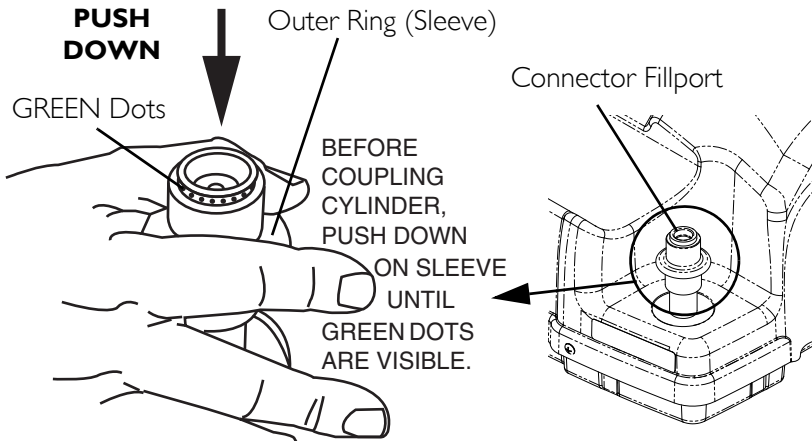
4. Remove the post valve cover (located on the cylinder) and the connector fillport covers (located on the compressor) (FIGURE 4.2).



**FIGURE 4.2** Fillport Covers

5. On the compressor unit, momentarily push **DOWN** on the outer ring (sleeve) of the connector fillport to reset the connector (FIGURE 4.3).

**NOTE:** 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.



**FIGURE 4.3** Resetting Connector Fillport

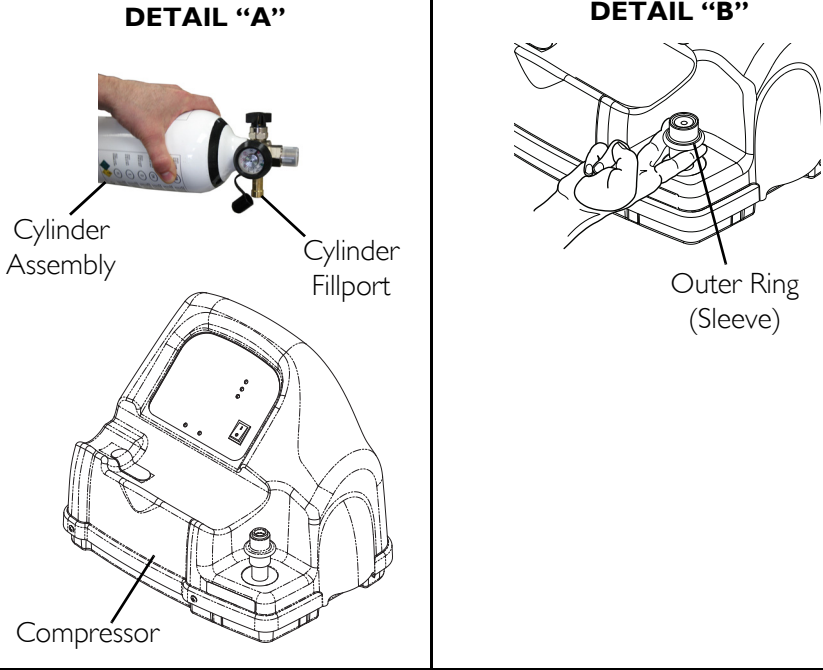
6. Grasp the cylinder assembly as shown in Detail "A" in FIGURE 4.4.
7. Position the cylinder in the compressor cradle as shown in Detail "C" in FIGURE 4.4.
8. Align the cylinder fillport with the connector fillport as shown in Detail "C" in FIGURE 4.4.
9. Pull UP on the outer ring (sleeve) of the connector fillport (Detail "B") while pushing DOWN on the cylinder assembly to couple the cylinder fillport into the connector fillport as shown in Detail "B" in FIGURE 4.4.

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

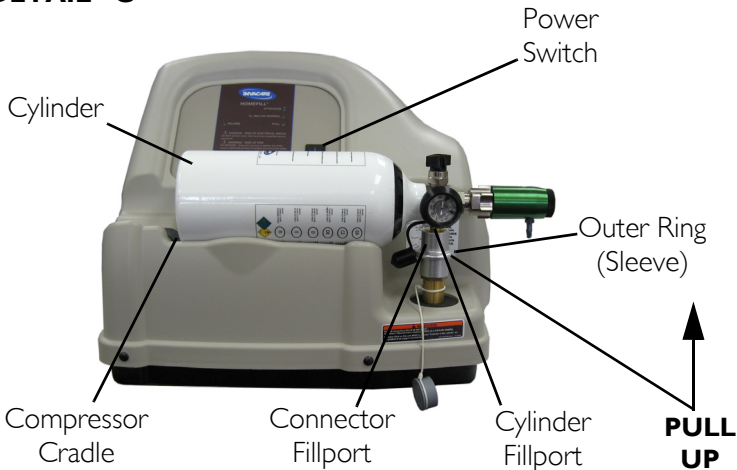
10. Press the compressor power switch to the On (I) position.

## SECTION 4—INSPECTION AND COMPRESSOR INTERFACE

*NOTE: Refer to Cylinder Fill Times on page 20 for the length of time it will take to fill the cylinder.*



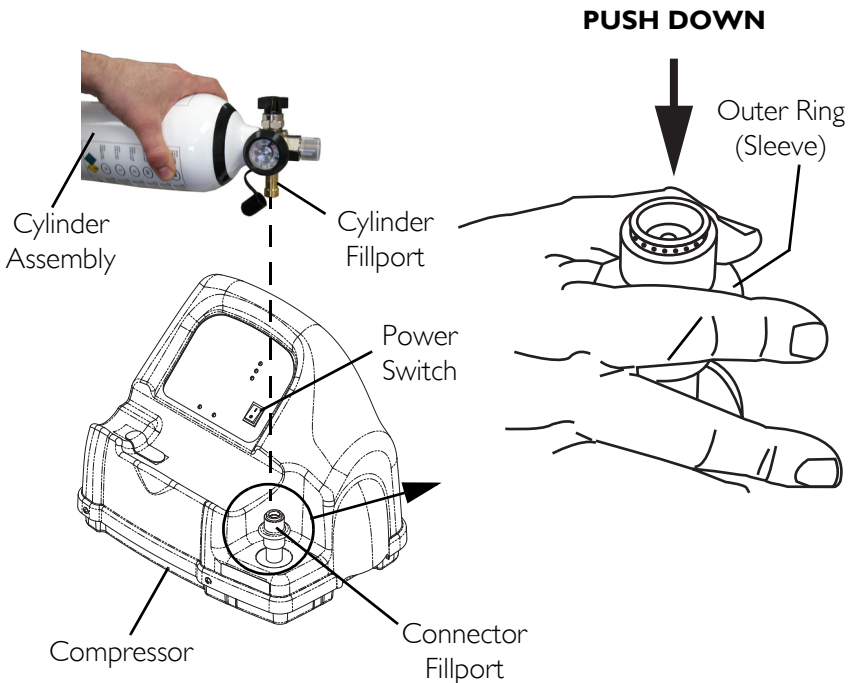
### DETAIL "C"



**FIGURE 4.4** Connecting the Cylinder to the Compressor



11. After the cylinder is full, press the compressor power switch to the Off (O) position (FIGURE 4.5).
12. Grasp the cylinder assembly (FIGURE 4.5).
13. With the other hand, grasp the outer ring (sleeve) of the connector fillport and push DOWN (FIGURE 4.5).
14. Lift up on the cylinder assembly to remove from the connector fillport (FIGURE 4.5).



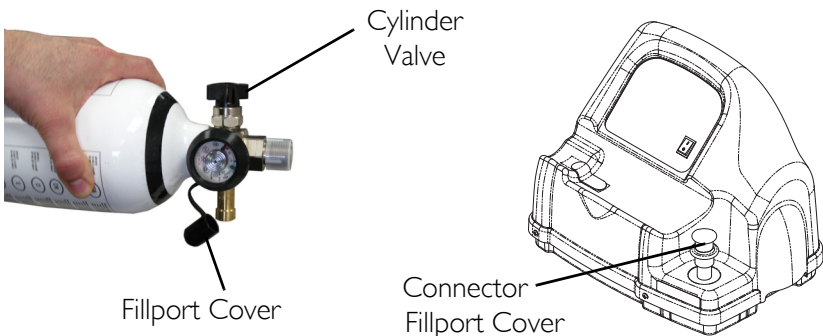
**FIGURE 4.5** Disconnecting the Cylinder from the Compressor

15. When the cylinder fillport is disconnected from the connector fillport, release the outer ring (sleeve) of the connector fillport (FIGURE 4.5).
16. Remove the cylinder from the compressor cradle (FIGURE 4.5).

**⚠ WARNING**

The fillport cover on the connector fillport and the post valve 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.

17. Place the fillport covers onto the connector fillport (located on the compressor) and post valve fillport (located on the cylinder) (FIGURE 4.6).
18. Install a 540 post valve compatible converter or regulator according to the manufacturer's instructions.
19. Open the cylinder valve by turning counterclockwise and examine the converter or regulator gauge to ensure cylinder is full (needle pointing into GREEN area). If the cylinder is not full, perform the following:
  - Repeat Filling the Cylinder on page 13.
  - If cylinder is not full after second attempt to fill, contact the provider.



**FIGURE 4.6** Connector Fillport

## **SECTION 5—MAINTENANCE**

1. After each use, clean exterior of the product with a dry, lint free cloth only.
2. Store product in a clean area free from grease, oil, and other sources of contamination.

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### **CAUTION**

**DO NOT** use cleaning solutions.

**DO NOT** immerse product in any kind of liquid.

**All repairs MUST** be done by Invacare Corporation.

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## SECTION 6—CYLINDER FILL TIMES

*NOTE: All filling times are approximate and may vary on environmental conditions.*

<b>Cylinder Filling Times</b>	<b>Concentrator Flow Rate to Patient:</b> (Platinum 5 up to 2.5 L/min and Platinum 10 up to 5 L/min)
<b>NORMAL</b>	2 hr 20 min
<b>MAXIMUM</b>	2 hr 45 min

### Troubleshooting

If post valve cylinder fails to function, try the following solutions. If problem cannot be corrected, consult your dealer/home care equipment provider.

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>SOLUTION</b>
No flow.	<ol style="list-style-type: none"> <li>1. Regulator or conserver is in “Off” position.</li> <li>2. Cylinder empty.</li> <li>3. Cylinder Valve closed.</li> <li>4. Conserver not sensing breath.</li> </ol>	<ol style="list-style-type: none"> <li>1. Set to prescribed setting.</li> <li>2. Replace/fill cylinder.</li> <li>3. Open toggle valve.</li> <li>4a. Check position of cannula in nose. Do not breathe through mouth.</li> <li>4b. Check to see if the cannula is kinked.</li> </ol>

### Replacement Parts - Accessories

HF2POST9BAG Carrying Bag.

# NOTES

## LIMITED WARRANTY

**PLEASE NOTE: 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 the original purchaser/user of our products.

This warranty gives you specific legal rights and you may also have other legal rights which 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. If within such warranty period 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 does not apply to problems arising from normal wear and tear or failure to adhere to these instructions, nor does it include shipping charges incurred in replacement part installation or repair of any such product. Invacare's sole obligation and your exclusive remedy under this warranty shall be limited to such repair and/or replacement.

For warranty service, please contact the Invacare service department during normal business hours at the toll-free telephone number identified on the back cover of this manual.

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 to pack the product(s) or part(s) in an appropriate manner to avoid shipping damage and return the product(s) or part(s), at the purchaser's expense, to either Invacare's plant or service center as specified by Invacare in advance. The defective product(s) or component part(s) must be returned for warranty inspection using the serial number as identification within 30 days of the return authorization date. **DO NOT** return any product(s) or part(s) to our factory or service center without prior consent. **C.O.D.** shipments will be refused - please pre-pay shipping charges.

**LIMITATIONS AND EXCLUSIONS: THE FOREGOING WARRANTY SHALL NOT APPLY TO SERIAL NUMBERED PRODUCTS IF THE SERIAL NUMBER HAS BEEN REMOVED OR DEFACED; PRODUCTS SUBJECTED TO NEGLIGENCE, ACCIDENT, IMPROPER OPERATION, MAINTENANCE, OR STORAGE; PRODUCTS MODIFIED WITHOUT INVACARE'S EXPRESS WRITTEN CONSENT (INCLUDING, BUT NOT LIMITED TO, MODIFICATION THROUGH THE USE OF UNAUTHORIZED PARTS OR ATTACHMENTS); PRODUCTS DAMAGED BY REASON OF REPAIRS MADE TO ANY COMPONENT WITHOUT THE SPECIFIC CONSENT OF INVACARE; PRODUCTS DAMAGED BY CIRCUMSTANCES BEYOND INVACARE'S CONTROL; OR PRODUCTS REPAIRED BY ANYONE OTHER THAN INVACARE OR AN INVACARE SERVICE CENTER. SUCH EVALUATION SHALL BE SOLELY DETERMINED BY INVACARE.**

**THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES WHATSOEVER, WHETHER EXPRESSED 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 BE APPLICABLE.**

**THIS WARRANTY SHALL BE EXTENDED TO COMPLY WITH STATE/PROVINCIAL LAWS AND REQUIREMENTS.**



**Yes, you can:**

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