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.

**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.

ℹ️ Gives useful tips, recommendations and information for efficient, trouble-free use.

1.2 Overview
**Important Information**
The best way to avoid problems related to pressure sores is to understand their causes and your role in a skin management program.

Your therapist and physician should be consulted if you have questions regarding individual limitations and needs.

All cushions should be selected carefully. Working with your therapist and physician is the best way to assure that a cushion choice matches your individual needs.

As the needs of the individual become more complex, cushion evaluation becomes more important.

**Invacare Matrx Elite**
The Invacare Matrx Elite back is contoured to provide precise orientation within the wheelchair for optimal postural support. The foam is oversized to provide extra comfort and protection.

The Invacare Matrx Elite back includes a movable foam lumbar pad that can be installed/inserted behind the existing foam cushion to provide additional positioning capability. Refer to **Lumbar Support (Optional)** on page 10 for instructions on how to insert and adjust your lumbar support.

**Outer Cover**
The outer cover is made of a mesh material that is moisture resistant and breathable. Regular cleaning and inspection of the outer cover is recommended. Refer to **Care and Maintenance** on page 10.
2 Safety

Check ALL parts for shipping damage. If shipping damage is noted, DO NOT use. Contact carrier/dealer for further instruction.

2.1 Transporting the Client Within a Wheelchair Fitted with a Matrx Back in a Motor Vehicle

The following guidelines should be made available to all parties who are responsible for the transportation of the client, such as schools and transport providers.

Wherever practicable the client should be transferred out of the wheelchair into a vehicle seat and use a lap and diagonal seat belt or an appropriate child safety seat.

The Matrx back has been dynamically tested and meets the requirements of ISO 16840-4 and Section 20, ANSI/RESNA WC/Volume 4 “Wheelchair Seating Systems for Use in Motor Vehicles”. A Surrogate Wheelchair Base (SWCB) and a Hybrid III Midsize-Adult Male Anthropomorphic Test Device were used in a forward facing frontal impact test. The SWCB was secured by a four-point, strap type wheelchair tie-down and the occupant restraint was a vehicle anchored lap and diagonal occupant restraint system.

Matrx backs should only be used in conjunction with wheelchairs that comply with the performance requirements of ANSI WC19 or ISO 7176-19.

Before Entering the Vehicle Check the Following:

Matrix Back - must be securely fastened into the wheelchair as described in the user manual.

Posture Belts and Harnesses - should remain fitted during transportation, although they are designed to provide postural support only, they are not intended for safety during transportation.

Head Support - must be securely fitted and correctly adjusted close to the rear of the client’s head during transportation, in order to reduce the risk of whiplash injuries.

The Wheelchair Tie-down and Occupant Restraint System (WTORS)

Wheelchair Tie-down - The wheelchair must be securely tied down within the vehicle, in a forward facing position, in accordance with the wheelchair and tiedown manufacturers instructions.

Occupant Restraint - A suitable occupant restraint system must also be fitted in accordance with the manufacturer’s instructions. A minimum is a lap and diagonal belt (lap belts on their own are not suitable). Restraints that loop over the shoulder and anchor to the vehicle floor should be avoided where possible, as they can cause a heavy downward load through the client during an impact, the preferred type anchor above and behind the shoulder as with a car seat belt. The lap section of the belt should fit snugly over the pelvis of the client and should not be able to ride up to the abdominal area. The upper torso section of belt should be in contact with the client’s chest and fit over the shoulder(s), while not cutting into the neck or slipping off the shoulder(s).

If the wheelchair and Matrx back are to be transported unoccupied, the wheelchair should be tied down with suitable equipment according to the manufacturer’s instructions. If the equipment is to be dismantled for transportation, ensure that all parts are secured safely within the vehicle.

2.2 Intended Use

The Invacare Matrx Elite back is designed to provide precise orientation within the wheelchair for optimal postural support.
2.3 General Warnings

**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.

**ACCESSORIES 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 and are not recommended for use with Invacare products.

**INSTALLATION WARNING**

The procedures in this manual should be performed by a qualified technician.

After any adjustments, repair or service and before use, make sure that all attaching component parts are secure.

DO NOT install the Invacare Matrx Elite assembly onto back canes with an outside diameter greater than 1-inch or less than 3/4-inch. Otherwise, injury or damage may occur.

The mounting position of the Invacare Matrx Elite is directly related to the chair's stability. When the Invacare Matrx Elite is added to a TILT and/or RECLINING chair, it may cause a decrease in the chair's stability. It may be necessary to reposition the FRONT CASTERS, REAR WHEELS, BACK ANGLE, TILT-IN-SPACE, RECLINE POSITION and/or SEAT DEPTH before use. Use extreme caution when using a new seating position.

When a Matrx Elite is added to a TILT and/or RECLINING chair, a RIGIDIZER BAR or CROSSBAR must be present to stabilize the back canes.

Ensure the Invacare Matrx Elite is properly secured to the wheelchair before using. Otherwise injury or damage may occur.

**WARNING**

Skin condition should be checked very frequently after the installation of any new seating system. Your therapist and physician should be consulted if you have any questions regarding individual limitations and needs.

Working with your therapist, physician, and equipment supplier is the best way to assure that a seating choice matches your individual needs.

As the needs of the individual become more complex, the seating evaluation becomes more important.
### 2.4 Weight Limitation and Model Numbers

Refer to the chart for the weight limitation and stock model numbers. Configured model numbers are: PBE and EDB

- **PBE** = Matrx Elite Back, **PBE-FB** = Matrx Elite Full Back, **EDB** = Matrx Elite Deep Back

Grey = size not available

<table>
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<tr>
<th>WIDTH</th>
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</tr>
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<td>13 in (33 cm)</td>
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</tr>
<tr>
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<tr>
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<td>18 IN (46 CM)</td>
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<tr>
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<tr>
<td>18 in (46 cm)</td>
<td>20 IN (51 CM)</td>
<td>PBE1810</td>
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### 3 Setup

#### 3.1 Hardware Kit Contents

If any of the hardware is missing or misplaced, please contact our customer service department and arrangements will be made to send you the necessary replacements.

**Canada:** 866-748-7943, **USA:** 888-433-6818

3/4” (19 mm) cane inserts are available from Motion Concepts upon request.

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<thead>
<tr>
<th>QTY</th>
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<tr>
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<tr>
<td>2</td>
<td>Cane Inserts (7/8” (22 mm))</td>
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<td>Depth/Recline Adjustment Screws</td>
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<td>Cane Clamp Screws</td>
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<td>Set Screws</td>
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<tr>
<td>2</td>
<td>Cane Clamp Nut Plates</td>
</tr>
<tr>
<td>4</td>
<td>Long Mounting Pins (optional)</td>
</tr>
</tbody>
</table>

#### 3.2 Tools Required

Wrenches: 7/8” (22 mm) Phillips Screwdriver

Allen Keys: (provided) Tape Measure/Ruler

Utility Knife/Scissors
3.3 Before Installation

Mounting Configuration

**WARNING**

When establishing the mounting position for the Invacare Matrx Elite, ensure the stability of the wheelchair is not compromised.

Adjusting the forward and aft position of the backrest will alter the user’s center of gravity within the wheelchair. A recessed back position can significantly reduce the rearward stability of the wheelchair. Similarly, a more forward back position will reduce the wheelchair’s forward stability.

The mounting plates are shipped pre-assembled on the cane clamps in the rearmost mounting configuration. This maximizes the seat depth on the wheelchair seat (up to a maximum 2.5” (64 mm) rearward offset - see image A).

By changing the orientation of the mounting plates on the cane clamps, the assembly can be reconfigured* to provide a more forward mounting position for the back if desired (up to a maximum 2.5” (64 mm) forward offset - see image B).

*To reconfigure a mounting plate/cane clamp to the forwardmost orientation:

1. Detach the mounting plate from the cane clamp (3 screws);
2. Rotate the cane clamp 180° and re-fasten it to mounting plate;
3. Install cane clamp as illustrated in image B.

**Accommodating Back Cane Size**

On some wheelchairs, there may be an uneven seam along the back posts where a smaller diameter tube is inserted into a larger diameter tube. If the cane clamps must be mounted over this seam, the plastic inserts may be cut in half to allow the clamp to fasten securely onto the back posts (see image B).

For wheelchairs with short back canes, it may be necessary to install Matrx PB Cane Replacements (PBCR’s). The PBCR’s are designed to replace existing push handles or cane extensions on standard 1” (25 mm) back posts. The cane clamps can be mounted directly onto the replacement back canes in order to allow proper installation of the Invacare Matrx Elite.

Cane replacements are available from Motion Concepts (part#-TRX2810).

- 1” (25 mm) back cane - Cane clamps are installed without plastic inserts.
- 7/8” (22 mm) back cane - Requires 7/8” (22 mm) plastic inserts (provided)
- 3/4” (19 mm) back cane - Requires 3/4” (19 mm) plastic inserts*

*3/4” (19 mm) inserts are available from Motion Concepts upon request.
3.4 Installing the Invacare Matrix Elite

Installing the Mounting Plates

**WARNING**
The installation hardware provided is high strength and tested for durability. DO NOT substitute hardware. Use only the hardware supplied.

1. Remove existing wheelchair back upholstery (if applicable).
2. Establish the desired mounting plate setup/configuration for the user. Refer to Before Installation on page 5.
3. Loosen cane clamp screws (x3) and loosely install the cane clamp (with mounting bracket) onto each back post. (Install plastic inserts if required).
4. Starting on one side, position the cane clamp at the desired height on the back post and tighten the clamp screws enough to hold it in place. Clamps and set screws will be fully tightened after the back is installed and all final adjustments have been made.
5. From a fixed point on the wheelchair (e.g. seat frame) measure the exact height of the installed cane clamp assembly, and install the second cane clamp at the same height on the opposite back post - see image A on page 7. Ensure the cane clamps/mounting plates are mounted parallel with each other.

Additional upper and lower adjustment slots are provided on the mounting plate to allow alternate mounting heights if obstacles are encountered. Using these alternate mounting slots will increase or decrease the back height by 7/8" (22 mm). These alternate slots will limit the range of available depth and/or recline angle adjustment.

6. To install the Invacare Matrix Elite onto the mounting plates:
   A. Slide the lower mounting pins into the hooked slots at the bottom of each mounting plate (see image B).
   B. With the lower pins in place, lock/snap the upper mounting pins into the latch mechanism at the top of the mounting plates.
Mounting Pin Configurations/Setup

Invacare Matrx Elite backs are available in a range of widths (12” (31 cm) - 20” (51 cm)) and 6 different heights (10” (26 cm); 12” (31 cm); 14” (36 cm); 16” (41 cm); 18” (46 cm) and 20” (51 cm)). Due to variances that exist between different wheelchair manufacturers, the depth of the mounting pins may require some adjustment to properly fit the Invacare Matrx Elite onto the wheelchair back posts. Refer to Mounting Pin Adjustment on page 7. Two sets of mounting pins are supplied with every Invacare Matrx Elite (standard pins and long pins). The standard pins are installed at the factory and are suitable for most typical wheelchair configurations. The long pins are designed to allow installation onto back posts that are up to 1” (25 mm) wider than the width of the actual backrest.

*Elite back widths are offered in 1” (25 mm) increments).

Example: for a 16” (41 cm) Invacare Matrx Elite:

16” (41 cm) wheelchair seat frame (back post) width = standard pins
17” (43 cm) wheelchair seat frame (back post) width = long pins

When the narrowest setting is used for the back, the depth/recline range will be less than in wider positions.

Extended Mounting Pins (EMP) are available (sold separately) to allow interfacing of our Invacare Matrx Elite backs onto wheelchair seat frames up to 2” (5 cm) wider than the actual back width.

CAUTION

*EMP’s are only for use with our standard back sizes (for up to 300lb (136 kg) weight capacity); EMP’s are not recommended for use in tilt applications.

Mounting Pin Adjustment

CAUTION

Improper pin set-up may cause damage to the back pan and/or the mounting plates. Ensure sufficient spacing is provided between the mounting plates and the mounting pins (a min. gap of 1/8” (3mm) is recommended).

Ensure flange nuts are fully tightened; Failure to do so may cause damage/cracking in the back pan.
Ensure pins do not rotate when tightening the flange nuts. NEVER use Loctite® on mounting pin hardware.

1. With the back secured in place on the wheelchair, determine the amount of adjustment required for each mounting pin (see figure).
2. Remove the backrest from the wheelchair and use a wrench to loosen the flange nut on each pin that requires adjustment. If necessary, replace the standard mounting pins with long mounting pins.
3. Adjust the mounting pin depth (clockwise to shorten/counter-clock wise to lengthen) so that a minimum gap of 1/8” (3mm) exists between the top of the pin and the mounting plate.
4. Re-tighten each flange nut to secure the pins in place.
Installing the Back

1. Verify that the overall fit and alignment of the back is correct (make adjustments as needed).
2. Fully secure the cane clamp screws onto both back posts, and tighten the set screws to ensure the mounting plates do not slip or rotate.
3. To best determine the optimal depth and recline settings for the back, the user should be seated in the wheelchair. While seated, loosen the depth/recline screws on the mounting plates and adjust the back to the desired depth and recline angle. Re-tighten all screws to lock the back in position.

Ensure that the depth/recline adjustment for the back is made symmetrically* on the left and right mounting plates.

The vertical score lines on the mounting plates are designed as a point of reference to assist with symmetrical mounting (see image). Since the back can be mounted in a rotated (reclined) position if desired, it will not always be mounted parallel with these vertical lines.

4 Usage

4.1 Disengaging the Back from the Wheelchair

1. Perform one of the following:
   - No Cord Release Mechanism - Simultaneously lift the release levers (left and right) to unlock the latch mechanism and release the upper pins from the mounting plates. Refer to the figure.
2. Lift entire backrest up and forward to disengage the lower pins from the lower slots in the mounting plates.

*Use score lines to make symmetrical adjustments on the left and right mounting plates.
4.2 Lateral Supports (Optional)

Lateral Pads are available from Motion Concepts as an option for additional lateral support. Lateral Pads are offered in small, large and offset styles (see Figure). Mounting slots in the back shell and the lateral support brackets allow for adjustment both vertically and laterally. Upper and lower mounting slots are provided on the back pan for an even greater range of adjustment. Lateral Supports may be further customized by carefully bending the lateral to a more desirable contour/position for the client. Refer to Installing Lateral Supports.

WARNING

*For best results and to prevent damage, the lateral supports must be removed from the back pan prior to bending the lateral.

Installing Lateral Supports

1. Pull up the bottom of the cover (release hook and loop fasteners) to expose the mounting slots/channels in the back pan.
2. Determine the desired mounting height/orientation for the lateral pads (upper or lower mounting slot position).
3. If applicable, carefully bend the lateral support(s) to the desired contour (prior to installation).
4. Loosely install the lateral supports onto the back pan using the hardware provided.
5. Adjust laterals to the desired position via the mounting slots on the backpan and via the slots in the lateral support bracket. Secure each lateral support into place.
6. Re-attach the back cover via the hook and loop fasteners.

Hardware can be installed in either orientation on the back pan (with the backing plates located on the inside or outside of the back pan). The standard mounting orientation is shown at right.

4.3 One-Hand Cord Release Mechanism

1. Thread the nylon cord through the holes in the latch mechanism at the top of the left and right mounting plates (see image A).
2. Install the cord lock mechanism onto the cord (see image B). Press the button to open the lock mechanism and slide the two open ends of the nylon cord through the opening.
3. With the back properly installed on the wheelchair, adjust the cord length so that it hangs at approximately a 45° angle along the back pan (this allows the release mechanism to operate more effectively). If necessary, cut/remove excess cord to eliminate any risk of entanglement. Once adjusted, combine the loose cord ends into a single knot to prevent the cord-lock from slipping.

Part No 1171724 9 Invacare® Matrx® PB Elite
4.4 Lumbar Support (Optional)

The Lumbar Support is a prefabricated foam insert that provides lower back support for additional comfort. The position of the lumbar insert can be adjusted inside the Invacare Matrx Elite cover, or it may be removed if no lumbar support is desired.

Lumbar Support Adjustment
1. To access the Lumbar Support, open the hook and loop fastening strips on the outer cover at the bottom rear of the back pan.
2. The foam lumbar support/insert is installed inside the Invacare Matrx Elite cover between the foam back cushion and the back pan (see image B).
3. The lumbar support can be adjusted manually to any desired height/position.
4. Refasten the cover onto the back pan.

5 Care and Maintenance

5.1 Cleaning
The cover may be easily wiped down with a damp cloth when necessary. The cover can be removed for laundering or providing access to the inside of the back for modification. Carefully remove the cover by releasing the hook and loop fasteners along the top and bottom edge and inside of the back shell. Remove the inner foam cushion from the cover prior to laundering.
5.2 Inspection

**WARNING**
Check ALL fasteners weekly to ensure that mechanical connections and attaching hardware are tightened securely - otherwise injury or damage may occur.

DO NOT continue to use this product if problems are discovered. Corrective maintenance can be performed at or arranged through your equipment supplier.

Visually inspect parts including hardware, brackets, upholstery materials, foams (if accessible), and plastics, for deformation, corrosion, breakage, wear or compression.

6 After Use

6.1 Reuse

**WARNING: Risk of Injury**
Always have a dealer inspect the product for damage before transferring the product to a different user. If any damage is found, DO NOT use the product. Otherwise injury may occur.

7 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/Motion Concepts warrants this product to be free from defects in materials and workmanship for two years of use by original purchaser. This warranty does not apply to punctures, tears or burns, nor to the removable cushion cover. If within such warranty period any such product shall be proven to be defective, such product shall be repaired or replaced, at Invacare's/Motion Concepts' option, with refurbished or new parts. This warranty does not include any labor or shipping charges incurred in replacement part installation or repair of any such product. Product repairs shall not extend this warranty - coverage for repaired product shall end when this limited warranty terminates. Invacare's/Motion Concepts' sole obligation and your exclusive remedy under this warranty shall be limited to such repair and/or replacement.

For warranty service, please contact the dealer from whom you purchased your Invacare/Motion Concepts product. In the event you do not receive satisfactory warranty service, please write directly to Invacare/Motion Concepts at the address on the back cover. Provide dealer's name, address, model number, the date of purchase, indicate nature of the defect and, if the product is serialized, indicate the serial number.

Invacare Corporation/Motion Concepts will issue a return authorization. The defective unit or parts must be returned for warranty inspection using the serial number, when applicable, as identification within thirty (30) days of return authorization date. DO NOT return products to our factory without our prior consent. C.O.D. shipments will be refused; please prepay shipping charges.

LIMITATIONS AND EXCLUSIONS: THE WARRANTY SHALL NOT APPLY TO PROBLEMS ARISING FROM NORMAL WEAR OR FAILURE TO ADHERE TO THE ENCLOSED INSTRUCTIONS. IN ADDITION, THE FOREGOING WARRANTY SHALL NOT APPLY TO SERIAL NUMBERED PRODUCTS IF THE SERIAL NUMBER HAS BEEN REMOVED OR DEFACED; PRODUCTS SUBJECT TO NEGLIGENCE, ACCIDENT, IMPROPER OPERATION, MAINTENANCE OR STORAGE; OR PRODUCTS MODIFIED WITHOUT INVACARE/MOTION CONCEPTS' 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/MOTION CONCEPTS; PRODUCTS DAMAGED BY CIRCUMSTANCES BEYOND INVACARES/MOTION CONCEPTS' CONTROL; PRODUCTS REPAIRED BY ANYONE OTHER THAN AN INVACARE/MOTION CONCEPTS DEALER, SUCH EVALUATION SHALL BE SOLELY DETERMINED BY INVACARE/MOTION CONCEPTS.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES, IF ANY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IT SHALL NOT EXTEND BEYOND THE DURATION OF THE EXPRESSED WARRANTY PROVIDED HEREIN AND THE REMEDY FOR VIOLATIONS OF ANY IMPLIED WARRANTY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT PURSUANT TO THE TERMS CONTAINED HEREIN. INVACARE/MOTION CONCEPTS SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES WHATSOEVER.

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