



Matrix MX2 Back

for **FIXED MOUNT Hardware** and
REMOVABLE MOUNT Hardware

INSTALLATION/SET-UP

i IMPORTANT! The installation instructions contained in this manual should only be carried out by a qualified technician.

DEALER: This manual **MUST** be given to the user of the product.

USER: Before using this product, read this manual and save for future reference.



60101840-A

USER MANUAL

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 SUBJECTED TO NEGLIGENCE, ACCIDENT, IMPROPER OPERATION, MAINTENANCE OR STORAGE; OR PRODUCTS MODIFIED WITHOUT INVACARE'S/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 INVACARE'S/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.

This manual may not be reproduced or reprinted either partly or completely without previous written consent from Motion Concepts or its statutory representatives.

This user manual is compiled from the latest specifications and product information available at the time of publication. We reserve the right to make any necessary as they become necessary. Any changes made to our products may cause slight variations between the illustrations and explanations in this manual and the product you have purchased. If you have any questions or concerns regarding the information provided in this manual, please contact our Customer Service Department for assistance.

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SAFETY SYMBOLS:


Proper set-up and safe use of your Invacare Matrix MX2 Back depends on your own good judgement and common sense, as well as that of your provider, caregiver and/or health professional.


Signal symbols and/or 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.

 **IMPORTANT!** Please refer to the Wheelchair Owners/Operators Manual for additional safety information, warnings and cautions related to the operation of your wheelchair.

1.0 GENERAL WARNINGS/INFO

1.1 Overview

⚠ WARNING! Risk of Death, Injury or Damage

Improper use of this product may cause injury or damage. If you are unable to understand the warnings, cautions or instructions, contact a health care professional or dealer before attempting to use this equipment.

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.

i 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 back 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, the evaluation becomes more important.

Invacare® Matrx® MX2 Backs

The Invacare® Matrx® MX2 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® MX2 back includes a movable foam lumbar pad that can be installed/inserted behind the existing foam cushion to provide additional positioning capability. Refer to **Section 6.0 - Lumbar Support**.

The outer cover is made of a breathable spacer mesh, combined with a leatherette material for added durability. Regular cleaning and inspection of the outer cover is recommended. Refer to **Section 5.0 -Care and Maintenance**.

1.2 Wear and Tear Items

i IMPORTANT! Normal wear and tear items and components include but are not limited to: all upholstery items including back upholstery and cushions. Invacare reserves the right to ask for any item back that has an alleged defect in workmanship. See **Warranty Policy** (back page) for specific warranty information. Refer to this User Manual for preventative maintenance schedule and proper use of the product. This is just a general guideline and does not include items damaged due to abuse and misuse. Useful life is dependant upon many factors.

1.3 Intended Use

Our Invacare® Matrx® MX2 backs are designed to provide precise orientation within the wheelchair for optimal postural support.

2.0 SAFETY INFORMATION

2.1 Transportation Warnings!

⚠ WARNING! Risk of Injury, Damage or Death

Failure to observe and follow transport warnings and instructions may result in injury, damage or death.

- Wheelchair occupants should transfer into the vehicle seat and use the OEM (Original Equipment Manufacturer) vehicle-installed restraint system.
- Ensure wheelchair is secured using proper restraining systems. Use ONLY wheelchair Tie-down and Occupant Restraint Systems (WTORS) which meet the requirements of the SAE (Society of Automotive Engineers) J2249 Recommended Practice during travel in a motor vehicle.

2.2 General Safety

⚠ WARNING! Risk of Death, Injury or Damage

Improper use of this product may cause injury or damage. If you are unable to understand the warnings, cautions or instructions, contact a health care professional or dealer before attempting to use this equipment. 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.

⚠ WARNING! Risk of Death, Serious Injury, or Damage

Lighted cigarettes dropped onto an upholstered seating system can cause a fire resulting in death, serious injury or damage. Wheelchair occupants are at particular risk of death or serious injury from these fires and resulting fumes because they may not have the ability to move away from the wheelchair.

- DO NOT smoke while using this wheelchair

⚠ 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® Matrx® accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.

⚠ DANGER! Risk of Injury

To avoid risk of injury due to pressure ulcers:

Skin condition should be checked frequently after the installation and during the use of this product. Proper product evaluation becomes more important as the needs of the individual become more complex. Work with your therapist, physician and equipment supplier to assure that a product matches your individual needs. Consult your therapist or physician if you have questions regarding individual limitations and needs.

2.0 SAFETY INFORMATION

2.3 Installation Warnings

⚠ WARNING! Risk of Serious Injury or Damage

Adjusting the forward and aft position of the Invacare® Matrx® MX2 back can alter the user's center of gravity within the wheelchair, and may compromise the stability of 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. When establishing the final mounting position of the backrest, it may be necessary to reposition the anti-tippers, front casters, rear wheels, back angle, tilt-in-space and/or seat depth before use.

⚠ WARNING! Risk of Injury or Damage

To avoid injury or product damage:

- Set-up and Assembly instructions MUST be performed by qualified technicians only.

⚠ WARNING! Risk of Serious Injury or Damage

Attaching hardware that is loosely secured could cause loss of stability resulting in serious injury or damage.

- After ANY adjustments, repair or service and before use, make sure that all attaching hardware is tightened securely.

⚠ WARNING! Risk of Serious Injury or Damage

Ensure the Invacare® Matrx® MX2 back is properly installed and secured to the wheelchair before use, otherwise serious injury or damage may occur.

- DO NOT install the Invacare® Matrx® MX2 back assembly onto back canes with an outside diameter greater than 1" (25mm) or less than 3/4" (19mm).
- The Invacare Matrx MX2 back is NOT configured for a headrest support, and is NOT intended for use in power positioning (Tilt or Recline) applications.

⚠ DANGER! Risk of Death, Serious Injury, or Damage

Alteration or substitution may result in injury, damage, or death.

- DO NOT alter or substitute product parts, components or systems.

2.4 Back Sizes/ Weight Capacity:

CONFIGURED MODEL	DESCRIPTION	CONTOUR DEPTH	WEIGHT CAPACITY
IMX2wwhh	Matrx MX2 Back	3 in. (76mm)	250 lbs/ (113 kg)

* ww hh = width/height

Available Sizes: Width: 14" - 18" (355mm - 460mm) ;

Height: 6" (150mm), 9" (230mm), 12" (310mm), 16" (410mm)

Please contact your Dealer or Therapist to determine the appropriate back model/size for your individual needs. For further information on any of our Matrx backs, including all available models/sizes, please visit www.motionconcepts.com or www.invacare.com.

3.0 MX2 BACK - FIXED MOUNT INSTALLATION

3.1 Fixed Mounting Hardware Kit

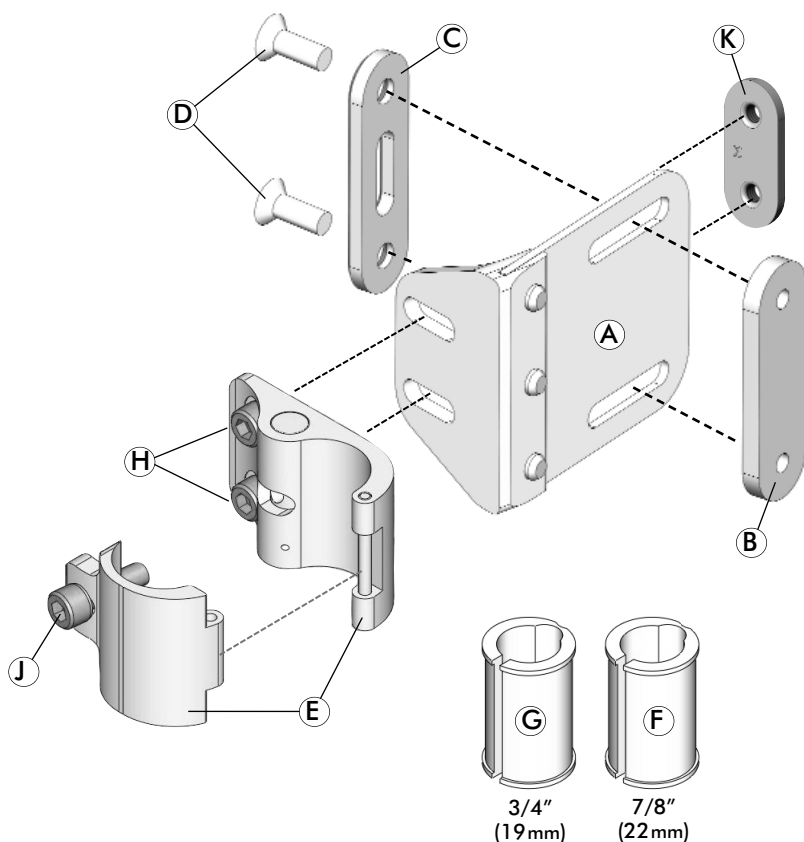
i) Mounting Bracket Assembly (*installs onto Mx2 Back Shell*):

- | | |
|----------------------------------|-------------------------------------|
| 2 - Fixed Mounting Brackets (A) | 2 - Fixed Bracket Washer Plates (C) |
| 2 - Fixed Bracket Nut Plates (B) | 4 - Fixed Bracket Screws (D) |
-

ii) Cane Clamp Assembly (*installs onto Wheelchair Back Canes*):

- | | |
|----------------------------------|---|
| 2 - Cane Clamp (E) | 4 - Depth/Recline Adjustment Screws (H) |
| 2 - Cane Inserts 7/8" (22mm) (F) | 2 - Cane Clamp Screws (J) |
| 2 - Cane Inserts 3/4" (19mm) (G) | 2 - Cane Clamp Nut Plates (K) |
-

(Right Hardware Assembly Shown)



3.0 MX2 BACK - FIXED MOUNT INSTALLATION

3.2 Tools Required

Hex Key Tool (4mm/5mm) (provided)

Tape Measure/Ruler



PLEASE NOTE

If any of the supplied mounting hardware is missing or misplaced, please contact your local Invacare/Motion Concepts Representative to obtain the necessary replacements parts.

3.3 MX2 Fixed Mounting Bracket Installation:



NOTE: Prior to installing the Fixed Mounting Brackets

Carefully remove or loosen the MX2 cover by releasing the velcro hook and loop fasteners along the bottom edge and inside of the back shell.

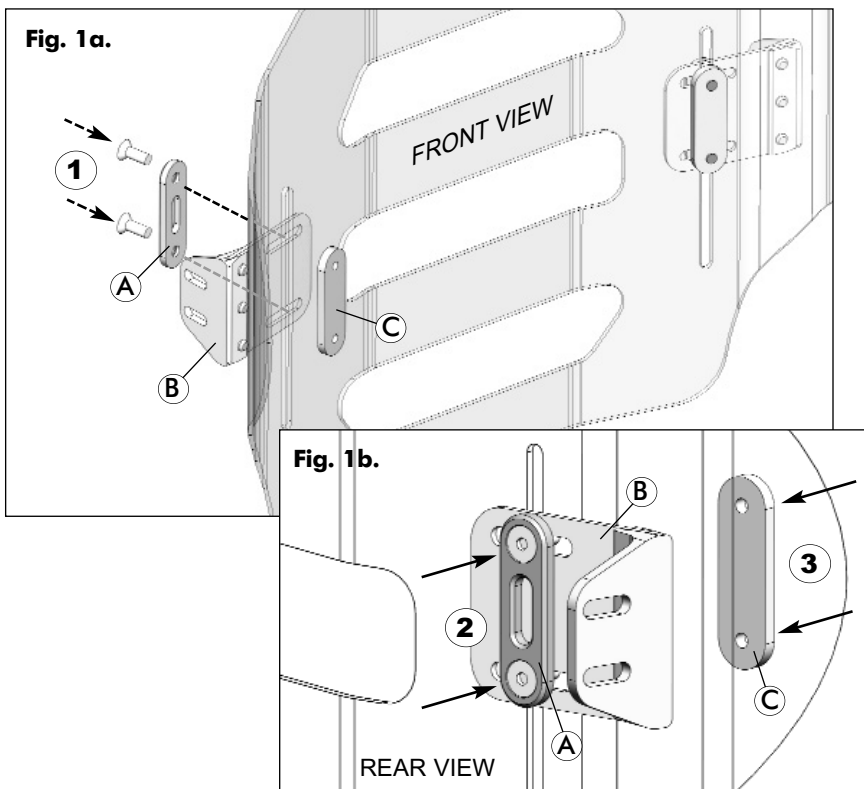


NOTE: The MX2 Back is assembled using metric hardware. When performing an installation or adjustment, always use the metric hex key tool provided.

- 1 Working on one side of the back shell, install the fixed mounting bracket onto the Invacare® Matrix® MX2 back shell as follows:
 - Align the washer plate (A) with the slots in the fixed mounting bracket (B) and insert screws through both components (1); (Refer to **Fig. 1a**)
 - From the rear of the back shell, install the 2 protruding screws from the mounting bracket through the vertical slot in the MX2 back shell (2); (Refer to **Fig. 1b**)
 - To secure the mounting bracket to the Mx2 back shell, thread the screws into the nut plate (C) on the front (inside) of the back shell (3); (Refer to **Fig.1b**)
- 2 Install the remaining fixed mounting bracket onto the opposite side of the back shell (as per **Step 1** above).

3.0 MX2 BACK - FIXED MOUNT INSTALLATION

Fixed Mounting Bracket Installation



3.4 Pre-Installation: MX2 Cane Clamp Orientation:

❗ IMPORTANT! Prior to Installing the MX2 Cane Clamps the orientation of the clamps must first be determined.

For a **standard configuration**, the Cane Clamps (A) are assembled and mounted to the back canes in the *rearmost* orientation. This configuration maximizes the available seat depth on the wheelchair- refer to **Fig. 2a**.

For an **inverted configuration***, the Cane Clamps (A) are rotated 180° on the back canes. This configuration minimizes the available seat depth, and places the MX2 back in a more *forward* position if needed- refer to **Fig. 2a**.

The cane clamps (A) provide **1.5" (38mm)** of fore or aft adjustment (relative to the back cane) depending on the chosen mounting configuration

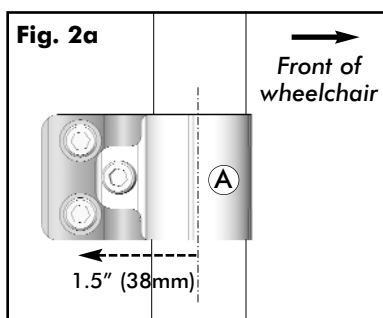
3.0 MX2 BACK - FIXED MOUNT INSTALLATION

3.4 Pre-Installation: MX2 Cane Clamp Orientation: ...cont'd

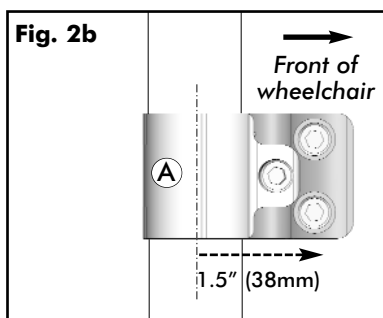
⚠ WARNING! Risk of Serious Injury or Damage

Adjusting the forward and aft position of the Invacare® Matrix® MX2 back can alter the user's center of gravity within the wheelchair, and may compromise the stability of 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. When establishing the final mounting position of the backrest, it may be necessary to reposition the anti-tippers, front casters, rear wheels, back angle, tilt-in-space and/or seat depth before use.

MX2 Cane Clamp Orientation



**Standard Cane
Clamp Configuration**
(maximum seat depth)



**Inverted Cane
Clamp Configuration**
(minimum seat depth)

3.5 MX2 Cane Clamp Installation:

The MX2 cane clamps are designed to allow installation onto 1" (25mm), 7/8" (22mm) and 3/4" (19mm) back cane diameters. (Plastic Inserts (A) are provided to accommodate smaller diameter back canes*).

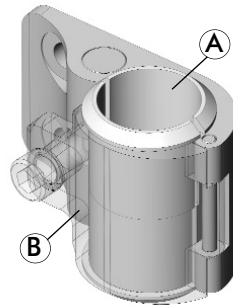
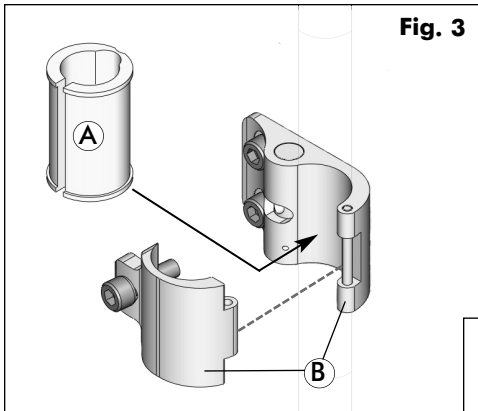
- 1 Remove existing wheelchair back (if applicable).
- 2 Loosely install the Cane Clamp Assembly (B) onto each back cane in the desired orientation- refer to **Fig. 3** and **Fig. 4** for an installation overview.

***Accommodating Different Sized Back Canes:**

- 1" (25mm) canes - No plastic inserts required
- 7/8" (22mm) canes - Install 7/8" (22mm) plastic inserts (x2)
- 3/4" (19mm) canes - Install 3/4" (19mm) plastic inserts (x2)

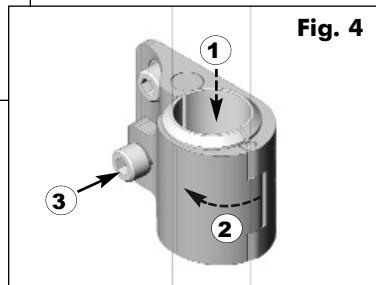
3.0 MX2 BACK - FIXED MOUNT INSTALLATION

MX2 Cane Clamp Installation



HELPFUL HINT

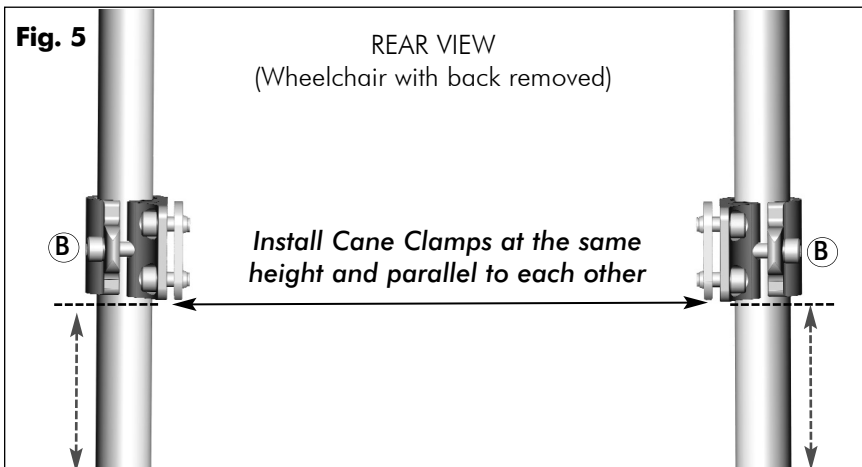
Spray a small amount of hairspray on the back canes and on the inside of the plastic inserts to create a secure 'no-slip' bond.



- 3 Starting on one side, slide/adjust the Cane Clamp assembly (B) to the desired height/position along the back cane and tighten secure it in place.

Note: The final back height may be further adjusted/fine tuned following installation of the MX2 back shell onto the cane clamps (see Fig. 5)

MX2 Cane Clamp Height Adjustment



3.0 MX2 BACK - FIXED MOUNT INSTALLATION

3.5 MX2 Cane Clamp Installation: (... cont'd)

- 4 From a fixed point on the wheelchair (e.g. seat frame/rigidizer bar) measure the height of the first cane clamp (B), and secure the second cane clamp (B) at the same height on the opposite back cane (refer to Fig. 5)

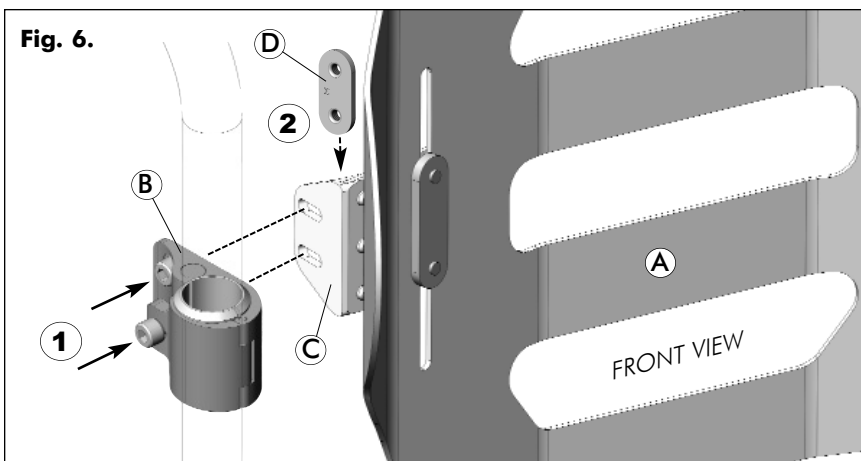
Note: Ensure installed Cane Clamps are aligned parallel with each other.

3.6 Installing the MX2 Back onto Fixed Cane Clamps:

- 1 Working on one side of the back shell, install the Matrix MX2 back (A) onto the cane clamps* (refer to Fig. 6):
 - Align the 2 mounting screws in the Cane Clamp Assembly (B) with the corresponding slots in the MX2 fixed mounting bracket (C) (1).
 - Secure the cane clamp assembly to the MX2 mounting bracket using the threaded nut plate (D) provided (2).
 - Repeat steps (1) and (2) to secure the MX2 Back Shell onto the opposite back cane.

***NOTE:** Prior to installing the Matrix MX2 back onto the cane clamps, the fixed mounting brackets should be loosened slightly to help align and install the back shell. Refer to **Section 3.7 (Fig. 8)** for more detailed Width/Height Adjustment instructions

MX2 Back Installation: FIXED Mounting Hardware



3.0 MX2 BACK - FIXED MOUNT INSTALLATION

3.7 MX2 Fixed Mount Back Adjustments:

i IMPORTANT! The MX2 Fixed Mounting brackets are designed to install onto back canes that are up to **1" (25mm) wider or 1" (25mm) narrower** than the nominal back width. For a standard set-up, the MX2 back should be installed symmetrically (centered) between the back canes.

i IMPORTANT! To best determine the optimal back depth/height/angle configurations, the user should be seated in the wheelchair during set-up.

- 1 With the MX2 back shell installed onto the wheelchair (cane clamps), the final depth, height/width and back angle of the MX2 Back can be further adjusted to fit the end user:
 - i. **Depth Adjustment:** The depth of the MX2 Back (relative to back canes) is controlled via two separate adjustments:

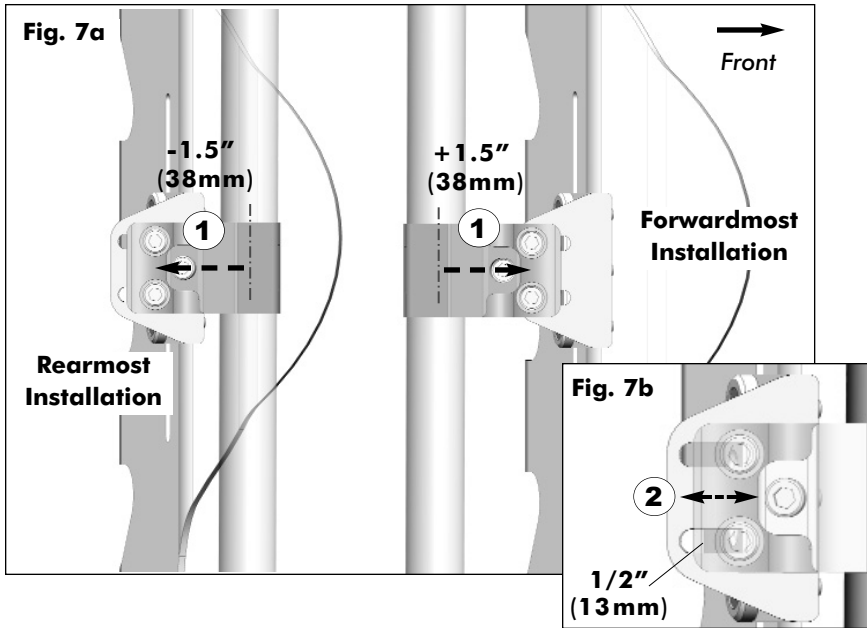
MX2 Cane Clamp Orientation: (see also **Section 3.4**)
The orientation of the MX2 cane clamps (forwardmost installation or rearmost installation) will position the back shell (+/- 1.5" (38mm)) relative to the back canes (1). Refer to **Fig. 7a**.
The maximum range of fore and aft depth adjustment for the MX2 Fixed Mounting Hardware = 3" (76mm) (+/- 1.5" (38mm)).

MX2 Mounting Plates:
The slotted channels in the MX2 mounting plates allow for up to 1/2" (13mm) of depth adjustment (2) within the maximum adjustment range. Refer to **Fig. 7b**.
 - ii. **Width/Height Adjustment:** To accommodate variances in back cane widths, fine-tune width adjustments are available via the horizontal slots in the MX2 mounting brackets (1). The height of the MX2 back (relative to the cane clamps) is adjustable using the vertical slots in the MX2 back shell (2). The slot length (height adjustment) will vary depending on the size (height) of the back shell. Refer to **Fig. 8a** and **8b**.
 - iii. **Angle Adjustment:** Back angle adjustments of $\pm 15^\circ$ are achieved by rotating the back shell forward (1) or rearward (2) within the slotted channels of the MX2 mounting brackets. Refer to **Fig. 9**.
- 2 Verify that the overall comfort, fit and alignment of the back on the wheelchair is correct for the client. Make further adjustments as needed.
- 3 Fully secure/tighten all installation/mounting hardware, and ensure the MX2 mounting brackets/cane clamps do not slip or rotate out of position.

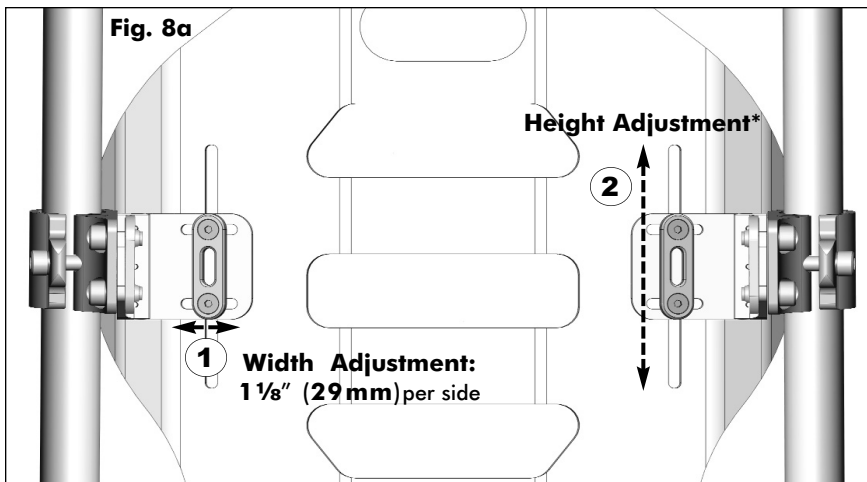
3.0 MX2 BACK - FIXED MOUNT INSTALLATION

i IMPORTANT! Unless otherwise required, **all** depth, height and angle adjustments are to be made symmetrically on the left & right mounting plates.

MX2 Fixed Mount: DEPTH Adjustment



MX2 Fixed Mount: WIDTH/HEIGHT Adjustment *(relative to Cane Clamp)*



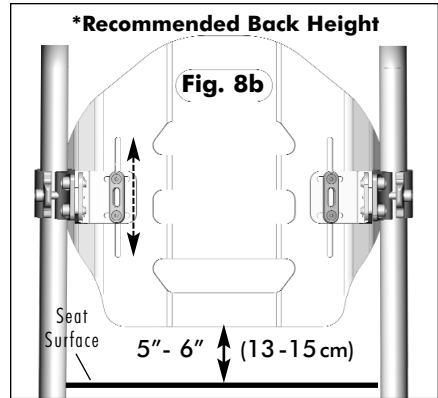
3.0 MX2 BACK - FIXED MOUNT INSTALLATION

***NOTE:** The range of MX2 **Back Height Adjustment** varies depending on the height (slot length) on the MX2 Back Shell- see **Table 1.0**:

Table 1.0:
MX2 Height (Slot) Adjustment

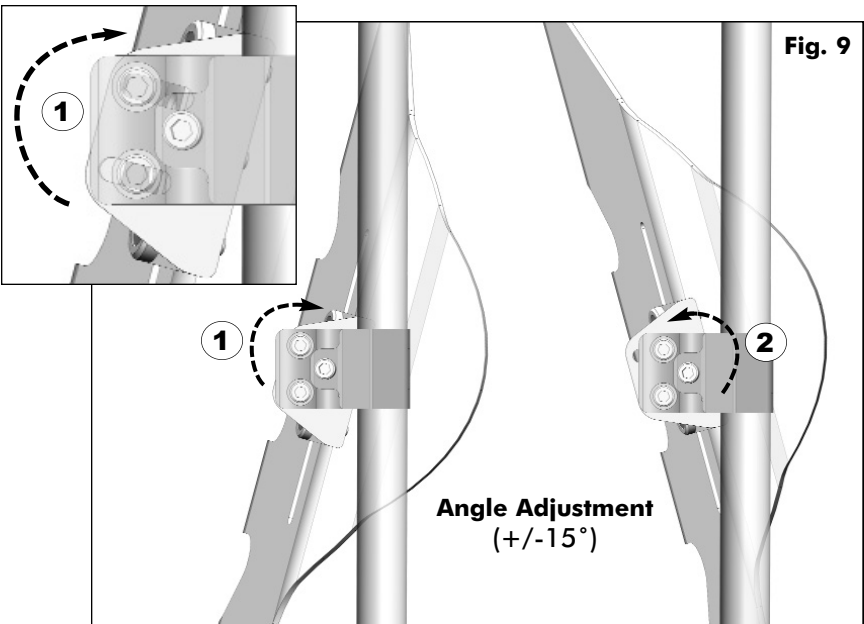
Back Shell Height	Range of Adjustment
6" (150mm)	1/2" (13mm)
9" (230mm)	2" (51mm)
12" (310mm)	2" (51mm)
16" (410mm)	3.5" (89mm)

***Note:** The recommended MX2 back height is provided as a guideline only. Slight variances may be necessary- see **Important!** note below.



i IMPORTANT! Always ensure that the bottom of the back is positioned anatomically below the Posterior Superior Iliac Spine (PSIS). If you have any questions or concerns regarding proper back height, please contact your provider and/or health professional for proper counseling.

MX2 Fixed Mount: BACK ANGLE Adjustment

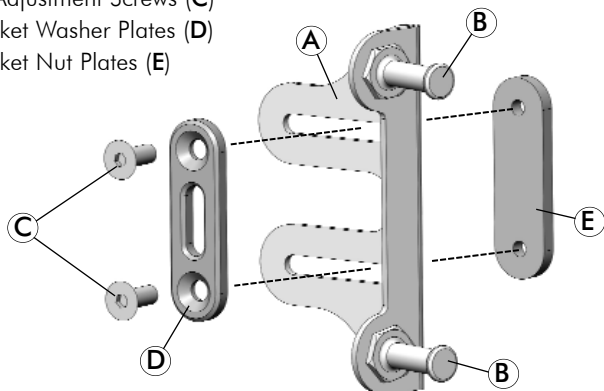


4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

4.1 Removable (Quick-Release) Mount Hardware Kit:

i) QR Mounting Bracket Assembly (*installs onto MX2 Back Shell*):

- 2 - MX2 QR Mounting Brackets (A)
- 4 - Quick Release Mounting Pins (B)
- 4 - Width/Height Adjustment Screws (C)
- 2 - Mounting Bracket Washer Plates (D)
- 2 - Mounting Bracket Nut Plates (E)

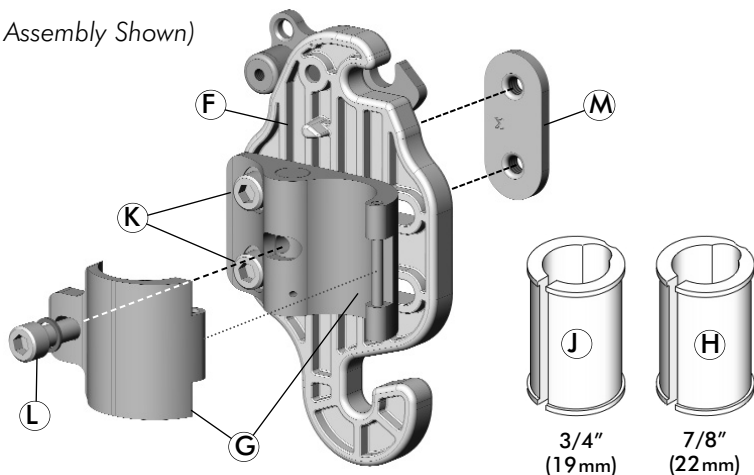


(Right Assembly Shown)

ii) Cane Clamp Assembly (*installs onto Wheelchair Back Canes*):

- | | |
|----------------------------------|---------------------------------------|
| 2 - Mini Mounting Plates (F) | 4 - Depth/Angle Adjustment Screws (K) |
| 2 - Cane Clamp (G) | 2 - Cane Clamp Screws (L) |
| 2 - Cane Inserts 7/8" (22mm) (H) | 2 - Cane Clamp Nut Plates (M) |
| 2 - Cane Inserts 3/4" (19mm) (J) | |

(Right Assembly Shown)



4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

4.2 Tools Required

Hex Key Tool (4mm/5mm) (provided)

Tape Measure/Ruler

! PLEASE NOTE

If any of the supplied mounting hardware is missing or misplaced, please contact your local Invacare/Motion Concepts Representative to obtain the necessary replacements parts.

4.3 MX2 Quick-Release Mounting Bracket Installation:

i NOTE: Prior to installing the Quick Release (QR) Mounting Brackets Carefully remove the MX2 cover by releasing the velcro hook and loop fasteners along the top & bottom edge and inside of the back shell.

i NOTE: The MX2 Back is assembled using metric hardware. When performing an installation or adjustment, always use the metric hex key tool provided.

- 1 Working on one side of the back shell, install the quick-release mounting bracket (A) onto the Matrix MX2 back shell as follows:
 - Align the washer plate (B) with the slots in the mounting bracket (A) and insert screws through both components (1); (Refer to **Fig. 1a** (p.18))
 - From the rear of the back shell, install the 2 protruding screws from the mounting bracket through the vertical slot in the MX2 back shell (2); (Refer to **Fig. 1b**)
 - To secure the mounting bracket to the Mx2 back shell, thread the screws into the nut plate (C) on the front (inside) of the back shell (3); (Refer to **Fig.1b**)
- 2 Install the remaining quick-release mounting bracket (A) onto the opposite side of the back shell (as per **Step 1** above).

4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

Quick Release Mounting Bracket Installation

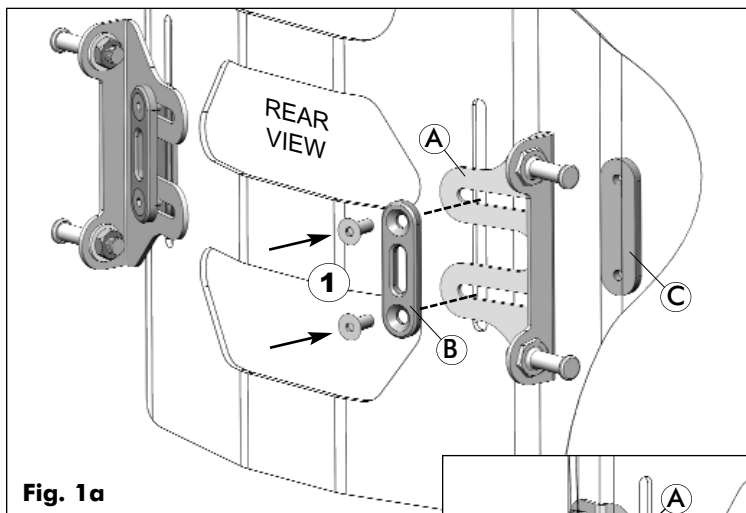


Fig. 1a



HELPFUL HINT

The quick-release mounting brackets/hardware can be loosely assembled onto the MX2 Back shell in order to assist with bracket alignment (width/height) during installation onto the MX2 mounting plates.

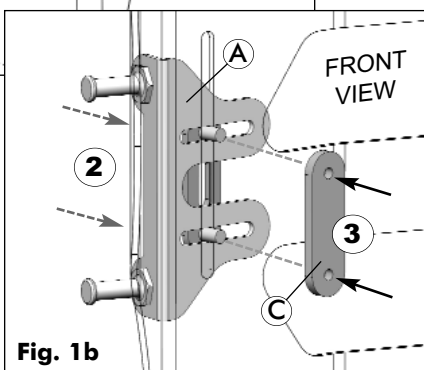


Fig. 1b

4.4 Pre-Installation: MX2 Cane Clamp Orientation

ⓘ IMPORTANT! Prior to Installing the MX2 Cane Clamp Assemblies, the orientation of the clamps must first be determined.

⚠ WARNING! Risk of Serious Injury or Damage

Adjusting the forward and aft position of the Invacare® Matrix® MX2 back can alter the user's center of gravity within the wheelchair, and may compromise the stability of 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. When establishing the final mounting position of the backrest, it may be necessary to reposition the anti-tippers, front casters, rear wheels, back angle, tilt-in-space and/or seat depth before use.

4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

For a **standard configuration**, the MX2 Cane Clamps (A) and Mounting Plates (B) are assembled and mounted to the back canes in the *rearmost* orientation. This configuration maximizes the available seat depth on the wheelchair- see **Fig. 2**.

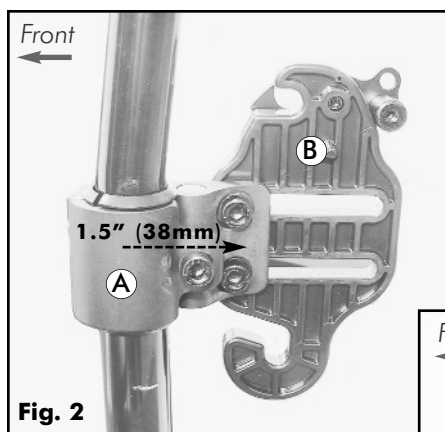
For an **inverted configuration***, the Cane Clamps (A) are rotated 180° on the back canes. This configuration minimizes the available seat depth, and places the MX2 back in a more *forward* position if needed- see **Fig. 3**.

The Cane Clamps (A) provide **1.5" (38mm)** of fore or aft adjustment (relative to the back cane) depending on the chosen mounting configuration.

Note: Please refer to **Section 4.8** for more detailed instructions on MX2 Removable Mount Depth Adjustments.

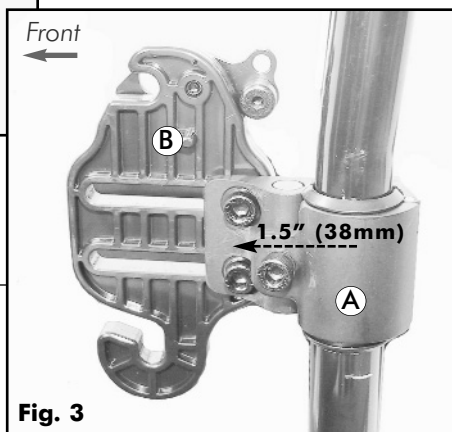
***To invert the mounting plate/cane clamp to the forwardmost orientation:**

- 1 Disassemble the Mounting Plate (B) from the Cane Clamp (A) (2 screws);
- 2 Rotate the Cane Clamp (A) 180°, then re-assemble the Mounting Plate (B) in the same orientation (as illustrated in **Fig. 3**)



Standard Cane Clamp Configuration
(maximum seat depth)

Inverted Cane Clamp Configuration
(minimum seat depth)



4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

4.5 MX2 Cane Clamp/Mounting Plate Installation:

The MX2 Cane Clamps are designed to allow installation onto 1" (25mm), 7/8" (22mm) and 3/4" (19mm) back cane diameters. (Plastic Inserts (A) are provided to accommodate smaller diameter back canes*).

- 1 Remove existing wheelchair back (if applicable).
- 2 Loosely install the Cane Clamp Assembly (B) onto each back cane in the desired configuration- refer to **Fig. 4** and **Fig. 5** for an installation overview.

*Accommodating Different Sized Back Canes:

- 1" (25mm) canes - Plastic inserts not required
- 7/8" (22mm) canes - Install 7/8" (22mm) plastic inserts (x2)
- 3/4" (19mm) canes - Install 3/4" (19mm) plastic inserts (x2)

MX2 Cane Clamp Installation

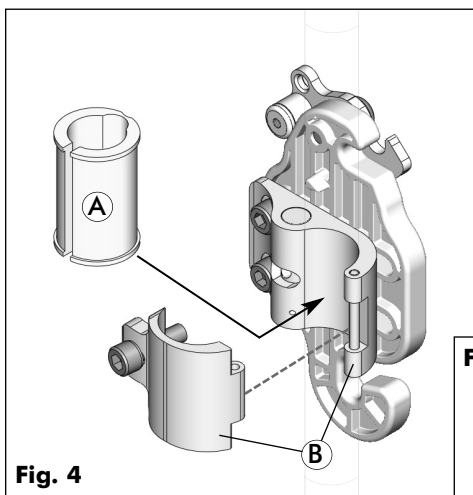


Fig. 4



HELPFUL HINT

Spray a small amount of hairspray on the back canes and on the inside of the plastic inserts to create a secure 'no-slip' bond.

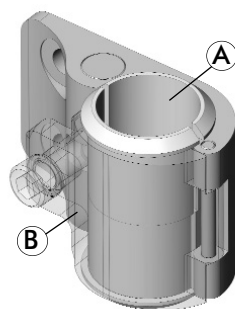
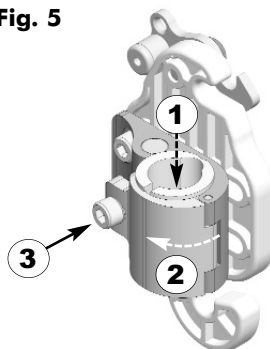


Fig. 5



4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

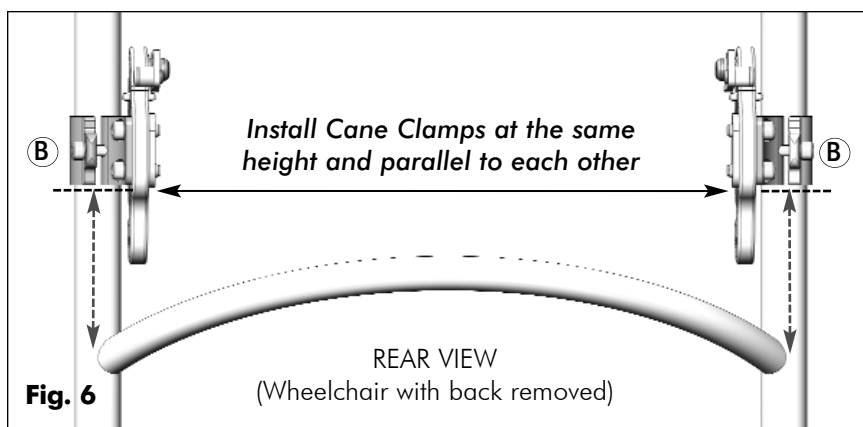
- 3 Starting on one side, slide/adjust the Cane Clamp (B) to the desired height/ position along the back cane and secure it in place.

Note: The final back height may be further adjusted/fine tuned following installation of the MX2 back shell onto the mounting plates

- 4 From a fixed point on the wheelchair (e.g. seat frame/rigidizer bar) measure the height of the first cane clamp assembly, and secure the second cane clamp at the same height on the opposite back cane- see Fig. 6 below.

Note: Ensure installed Cane Clamps/Mounting plates are aligned parallel with each other.

MX2 Cane Clamp/Mounting Plate Height Adjustment



4.6 Installing the MX2 Back onto Quick-Release Hardware

⚠ WARNING! Risk of Serious Injury or Damage

Improper mounting pin set-up may cause excess strain on the back pan and/or mounting plates, which may result in damage or breakage. ALWAYS ensure sufficient space is provided between the mounting plates and the head of the mounting pins (a minimum gap of 1/8" (3mm) is recommended).

⚠ IMPORTANT! Risk of Damage

Never use Loctite® adhesive on mounting hardware or backshell; Non-metal components may degrade and become brittle (break) if contaminated.

- ⓘ IMPORTANT!** Unless otherwise necessary, **always** ensure that adjustments are made **symmetrically** on the left and right mounting brackets.

4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

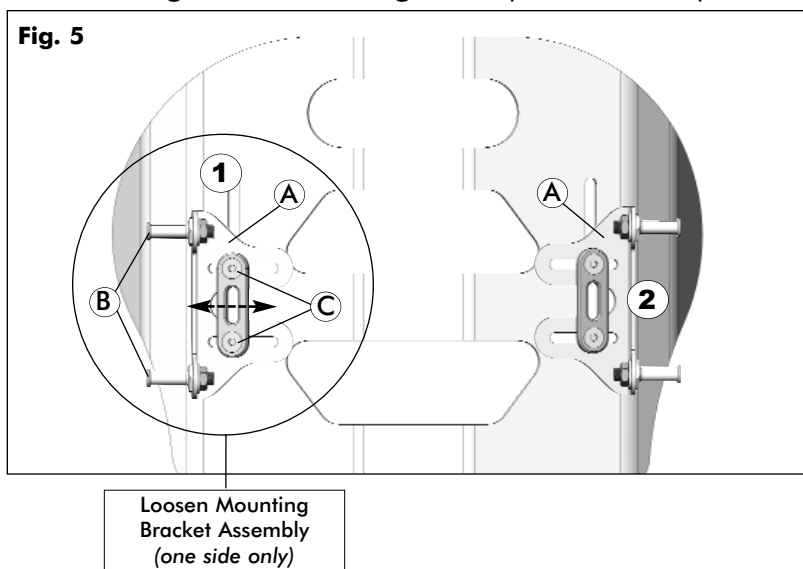
i IMPORTANT! Please note that loosening the QR Mounting Brackets (A) will simultaneously adjust the **Width and Height** of the MX2 back. Please read through **all instructions** prior to beginning the installation. During installation it is recommended to make adjustments to one mounting bracket at a time.

! PLEASE NOTE

Each Quick-Release Mounting Bracket (A) comes with the mounting pins (B) pre-installed, and is designed with width adjustable slots that allow the MX2 Back to be installed onto back canes that are up to 1" (25mm) wider or 1" (25mm) narrower than the nominal back width.

- 1 Before installing the Invacare® Matrx® MX2 back: (Refer to **Fig. 5**)
 - i. Working on one side only, slightly loosen the mounting bracket washer plate and hardware (C) so that the QR mounting bracket (A) and mounting pins (B) can be adjusted inward or outward (1) (as necessary) to align with the cane clamp mounting plates- see **Step 2. (Fig. 6a/6b)**
 - ii. Leave the remaining (opposite) QR Mounting Bracket Assembly secured to the MX2 back shell (2).

QR Mounting Pin/Bracket Alignment (Pre-Installation)



4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

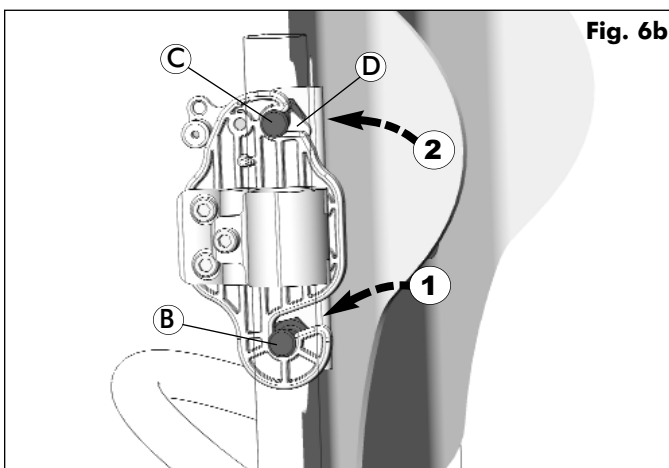
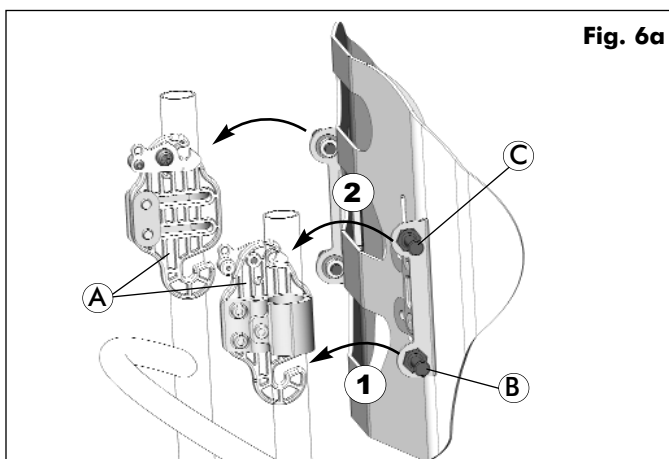
- 2 Install the MX2 back onto the mounting plates (A) as follows: (Refer to Fig. 6a and 6b)
 - i. Align and insert the lower mounting pins (B) into the hooked slots at the bottom of each mounting plate (1).
 - ii. With the lower pins in place, lock/snap the upper mounting pins (C) into the latch mechanism (D) at the top of each mounting plate (2).



WARNING! Risk of Serious Injury or Damage

When installing the MX2 Back, always ensure both latch mechanisms (D) are fully engaged around the upper mounting pins to secure the back in place, otherwise serious injury or damage may occur.

MX2 Back Installation onto Mounting Plates



4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

4.7 MX2 Back: Width & Height Adjustments

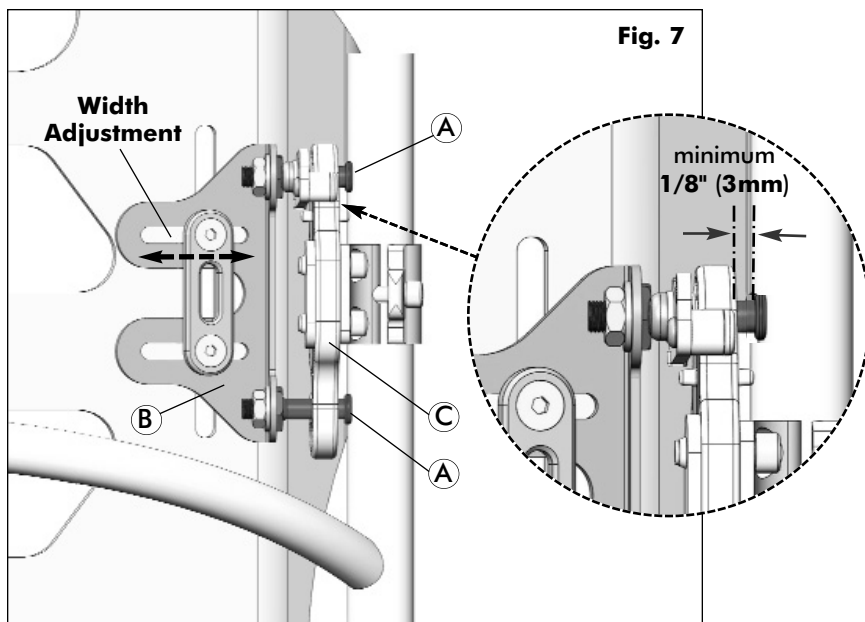
i IMPORTANT! Please note that **Width** and **Height** adjustments on the MX2 back are made simultaneously. During installation, we recommend making adjustments one bracket at a time and securing each bracket just enough to prevent slipping following each adjustment. The mounting hardware can be fully tightened upon completion of the installation/set-up.

- 1 **Mounting Pin Width Adjustment:** With the MX2 Back latched into the mounting plates, adjust the mounting pin (A) width on each mounting bracket (B) so that a **minimum gap of 1/8" (3mm)** exists between the head of the mounting pins and the outside of the mounting plate (C)*. (Refer to Fig. 7).

***NOTE:** for a standard MX2 Back installation, the back shell should remain centered between the back canes following a width adjustment. (Mounting brackets should be adjusted symmetrically on the back shell)

- 2 Tighten both the mounting bracket assemblies just enough to prevent them from slipping.

MX2 Installation: Mounting Pin Set-Up/Width Adjustment



4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

- 3 **MX2 Height Adjustment:** The MX2 back height can be adjusted as necessary, via the slotted channel in the MX2 Back shell (refer to **Fig. 8a**). The recommended back height* is approximately **5"-6" (13-15 cm)** from the top of the **seat surface** (seat cushion or seat pan; Refer to **Fig. 8b**).
- 4 Working on one side at a time, loosen the mounting bracket hardware (**A**), and slide the MX2 Back shell up/down until the desired back height is achieved. **NOTE:** The range of MX2 **Back Height Adjustment** varies depending on the height (slot length) on the MX2 Back Shell- see **Table 1.0**:
- 5 Tighten the mounting bracket plate/hardware (**A**) to secure the MX2 back in place, making certain to maintain the proper mounting pin width/position (per **Fig. 7**). Repeat the same back height adjustment on the opposite mounting bracket.
- 6 Once all width & height adjustments are finalized, fully secure **all** hardware.

Note: The recommended MX2 back height is provided as a guideline only. Slight variances may be necessary- see **Important! note below.*

MX2 Installation: Back Height Adjustment

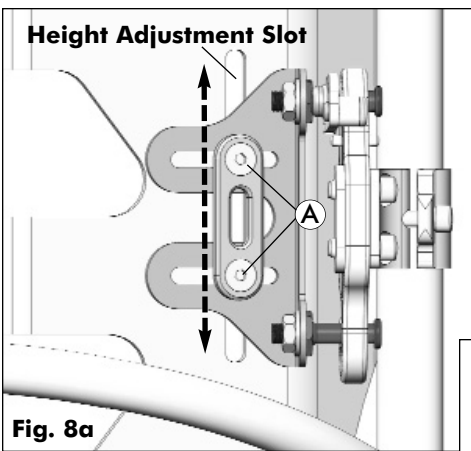


Table 1.0:
MX2 Height (Slot) Adjustment

Back Shell Height	Range of Adjustment
6" (150mm)	1/2" (13mm)
9" (230mm)	2" (51mm)
12" (310mm)	2" (51mm)
16" (410mm)	3.5" (89mm)

Fig. 8a

i IMPORTANT!

Always ensure that the bottom of the back is positioned anatomically below the Posterior Superior Iliac Spine (PSIS). If you have any questions or concerns regarding proper back height, please contact your provider and/or health professional for proper counseling.

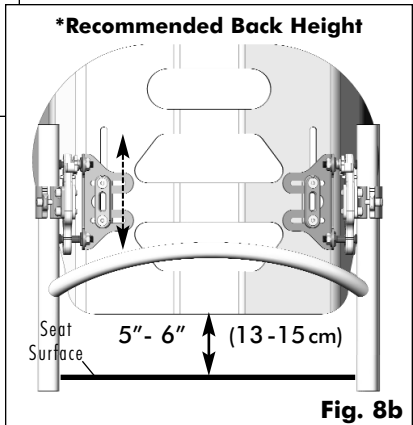


Fig. 8b

4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

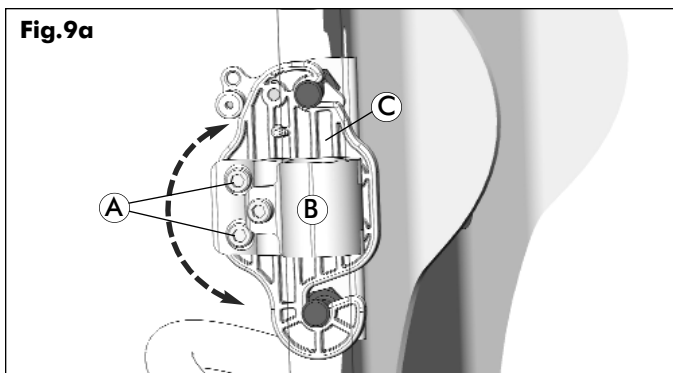
4.8 MX2 Back: Angle & Depth Adjustments

! IMPORTANT! Please note that **Angle** and **Depth** adjustments on the MX2 back are also made simultaneously. These two adjustments are more easily completed by first loosening the adjustment hardware on both clamp assemblies. (**Note:** For a standard installation, the depth & angle adjustments should be made symmetrically on both mounting plates).

- 1 **MX2 Angle Adjustment:** If necessary, the MX2 back angle can be adjusted via the two depth/angle adjustment screws (A) on each mounting clamp assembly (B) (refer to Fig. 9a).
- 2 Loosen the depth/angle adjustment screws (x2) on each clamp assembly, and rotate the mounting plate (C) forward or backward to achieve the desired back angle (angle adjustment range = $\pm 15^\circ$, refer to Fig. 9b)

MX2 Installation: Back Angle Adjustment

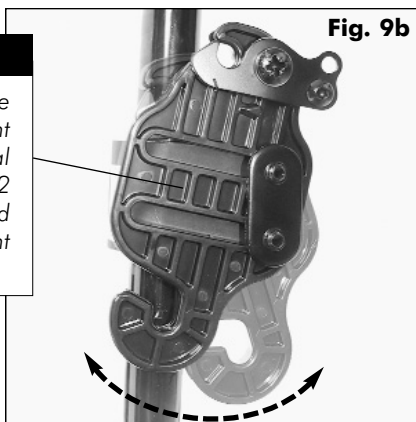
Fig. 9a



! PLEASE NOTE

The moulded vertical lines on the mounting plates are designed as a point of reference to assist with symmetrical adjustments. When adjusting the MX2 back angle, the vertical lines may be used to help set the same angle adjustment on both mounting plates.

Fig. 9b



Angle Adjustment ($\pm 15^\circ$)

4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

- 3 **MX2 Depth Adjustment:** The overall MX2 back depth is controlled via two separate adjustments:

MX2 Cane Clamp Orientation: (see also Section 4.4)

The MX2 cane clamps (B) can be mounted in either the standard (rearward) orientation or in an inverted (forward) orientation for shorter seat depths (refer to Fig. 10).

At the **rearmost installation (1)**, the back depth = **-1.75" (44mm)**.

At the **forwardmost installation (2)**, the back depth = **+2.25" (57mm)**.

(**Note:** measurements are relative to the back canes and measured to the mounting pin position).

The maximum range of fore/aft depth adjustment (from rearmost installation to the forwardmost installation) = **4.25" (108mm)**

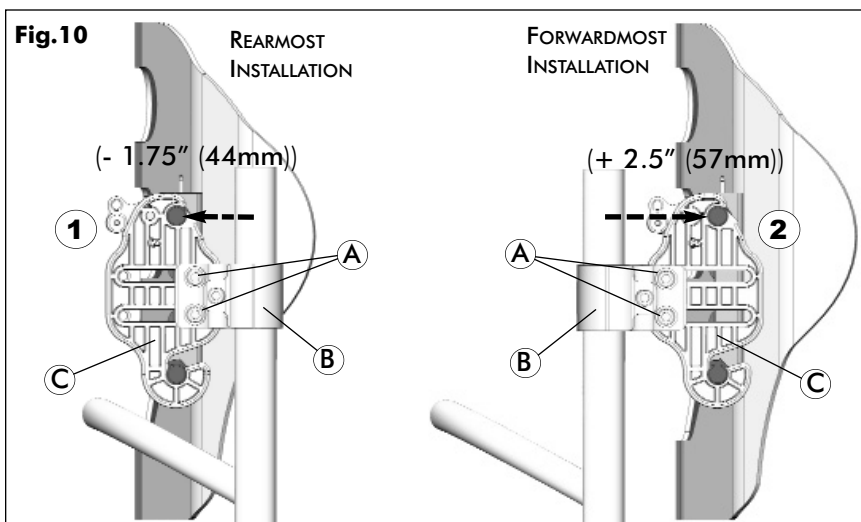
MX2 Mounting Plate Depth Adjustment*:

The slotted channels in the MX2 mounting plates (C) allow for up to **1.75" (44mm)** of depth adjustment within the maximum adjustment range (Refer to Fig. 11 (p.28)).

***NOTE:** The range of available mounting plate depth adjustment will be more limited when the angle of the MX2 Back is altered.

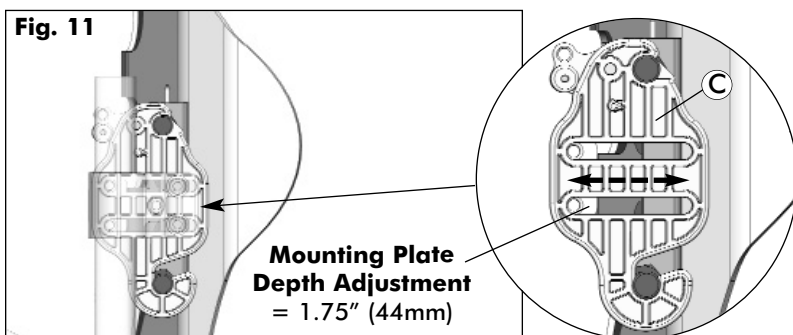
- 4 To adjust, loosen the two adjustment screws (A) on each cane clamp assembly and slide the mounting plates (C) forward or rearward via the adjustment slots to achieve the desired back depth.
- 5 Once all angle and depth adjustments are finalized, fully secure **all** hardware.

MX2 Installation: Back Depth Adjustment



4.0 MX2 BACK- REMOVABLE MOUNT INSTALLATION

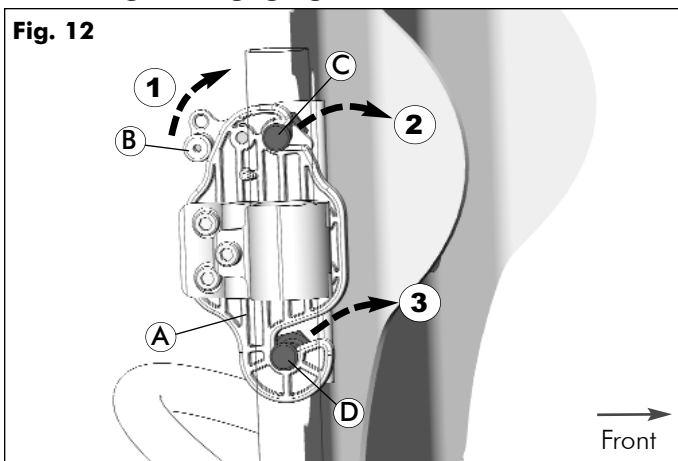
MX2 Installation: Back Depth Adjustment



4.9 Removing the MX2 Back from QR Hardware

- 1 Remove/disengage the MX2 back from the mounting plates (A) as follows (Refer to Fig.12 below):
 - i. Standing behind the wheelchair, **simultaneously** lift up on the latch release mechanism (B) on both mounting plates (1);
 - ii. With the latches open, push the top of the MX2 back forward (2) to disengage the upper mounting pins (C) from the mounting plates (A).
 - iii. With the upper pins disengaged, lift the MX2 Back upward and forward (3) to release the lower mounting pins (D) from the mounting plates.

Removing/Disengaging the MX2 Back



5.0 CARE AND MAINTENANCE

5.1 Care and Laundering:

i IMPORTANT! All cleaning agents and disinfectants used must be effective, compatible with one another and must protect the materials they are used to clean.

Cleaning—Use the following instructions to clean this product unless otherwise specified.

- Upholstery—Warm water and mild non-abrasive soap.
- Metal—Hot water and mild non-abrasive soap. Car polish and soft wax may be used to remove abrasions and restore gloss.
- Plastic—Hot water and mild non-abrasive soap.
- Dry surface with dry cloth.
- DO NOT use solvents or kitchen cleaners.

General Care and Cleaning:

The cover may be easily wiped down with a damp cloth when necessary.

Laundering Directions (Outer Cover):

1. Carefully remove the cover by releasing the velcro hook & loop fasteners along the top & bottom edge and inside of the back shell.

NOTE: Before laundering, the inner foam cushion must be removed.

2. Machine wash at 60°C using the delicate cycle (see Instructions on label).

i IMPORTANT! Washing at higher temperatures may cause shrinkage

3. Hang cover to drip dry in a clean indoor environment; **or**
Tumble dry on a low heat setting.

i IMPORTANT!

- Tumble dry setting must not exceed 40°C
- Do Not tumble dry for longer than 10 minutes
- Dry thoroughly before re-fitting to the foam
- Do Not Iron
- Do Not Dry Clean

5.2 Maintenance and Inspection:

Monthly: Perform a visual inspection of parts including hardware, brackets, upholstery materials, foams, and plastics for deformation, corrosion, breakage, wear or compression.

⚠ DANGER! Risk of Death, Serious Injury, or Damage

Missing attaching hardware could cause instability resulting in death, serious injury or damage.

Ensure all attaching hardware is present and tightened securely.

⚠ WARNING! Risk of Death, Injury, or Damage

Continued use of the product with damaged parts could lead to the product malfunctioning, causing injury to the user and/or caregiver.

- Check all product components for damage and test components before use and after adjustment or maintenance.
- In case of damage or if the product is not working properly, stop using the product and contact a qualified technician or Invacare or Motion Concepts for repair.

6.0 MX2 OPTIONS

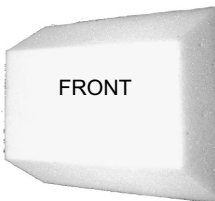
6.1 (Optional) Lumbar Support Installation/Adjustment

! PLEASE NOTE

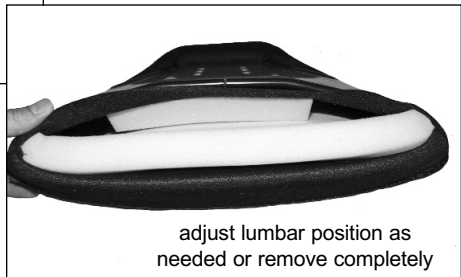
The **Lumbar Support** is a pre-fabricated foam insert that provides lower back support for additional comfort. The position of the lumbar insert can be adjusted inside the Invacare® Matr^x® MX2 cover (see *instructions below*), or it may be removed if no lumbar support is desired.

- 1.To access the lumbar support, open the hook and loop fastening strips on the outer cover A at the bottom rear of the back shell.
- 2.The foam lumbar support B is installed inside the Invacare® Matr^x® MX2 cover between the foam back cushion C and the back shell D.
- 3.The lumbar support can be adjusted to any desired height/position.
- 4.Refasten the cover (via hook and loop strips) onto the back pan.

Lumbar Support



***NOTE:** The lumbar foam may be cut/modified as needed, to meet the needs of the end user.



6.0 MX2 OPTIONS

6.2 (Optional) Privacy Flap (Sold Separately)

Privacy Flaps are available (sold separately) for use with all standard sized MX2 backs. All standard sized backs come with a pre-sewn loop strip across the bottom rear of the cushion cover for installation of the privacy flap.

Refer to the chart for proper sizing of the Privacy Flap for the MX2 back:.

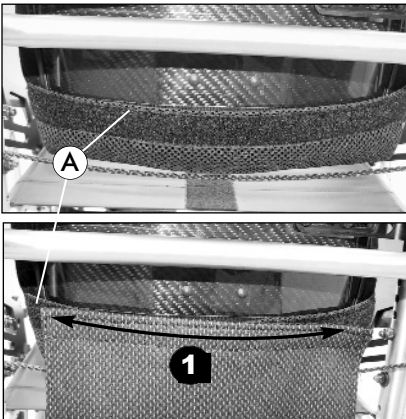
WIDTH	PRIVACY FLAP
14 in (36 cm)	PFLAP-XS 10" x 16" (26 cm x 41 cm)
15 in (38 cm)	PFLAP-S
16 in (41 cm)	13" x 16" (33 cm x 41 cm)
17 in (43 cm)	PFLAP-M
18 in (46 cm)	15" x 16" (38 cm x 41 cm)



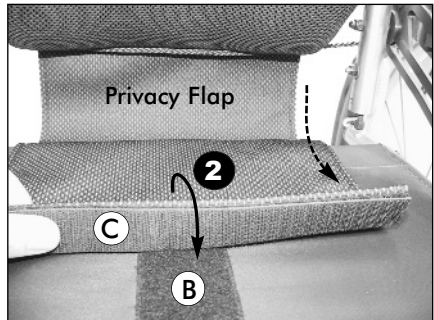
Installation Instructions:

1. Remove the wheelchair seat cushion (if installed).
2. Ensure the back is adjusted to the desired height. (Refer to **Section 4.0, Figure 8.**)
3. Standing behind the wheelchair (and facing the front); Align/attach the hook strip on the privacy flap onto the loop strip sewn into the bottom rear of the MX2 back cover (**A**). (see Step **1** below).
4. Pull the opposite (unattached) end of the privacy flap through the gap between the lower back shell and the wheelchair seat.
5. Secure the loop strip on the privacy flap to the pre-existing Velcro strip* (**B**) on the wheelchair sling seat or seat pan. (see Step **2** below).

***NOTE:** If the wheelchair seat has a matching loop strip installed, secure the Privacy Flap using the double hook adapter strip (**C**) provided.



REAR VIEW



FRONT VIEW



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