

# **Safe•t mate<sup>®</sup> SM2-3**

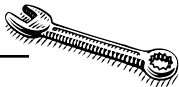
## **Advanced Wheelchair Anti-Rollback Device**

### INSTALLATION INSTRUCTIONS

#### MODELS

**SM2-3** 16" -20" wide wheelchairs  
**SM2-3A** 16" -20" with optional alarm

**SM2-3W** 22" -24" wide wheelchairs  
**SM2-3WA** 22" -24" with optional alarm



### *Before you begin!*

#### Tools required:

- 3/8" wrench or socket
- 2 ea. 7/16" wrenches or sockets
- 1/4" open end or adjustable wrench

#### **PRECAUTIONS**

**Safe•t mate Model SM-008 or similar rear anti-tippers are recommended when using this device.**

The Safe•t mate in not designed for use with a solid drop seat or solid seat insert.

If the tires on the wheelchair are hard or brittle due to age, it may degrade the performance of this device. In this case we recommend replacing the tires.

This device is not a replacement for the factory installed brakes. The Safe•t mate Wheelchair Anti-rollback Device is a supplemental system that may reduce injuries when factory brakes are not used.

Not a substitute for proper supervision. Supervise fall risk patients closely.



### **CALL US FIRST !**

Our highly trained customer service staff is ready to provide friendly assistance.

If parts become damaged or missing during shipping, notify us immediately and replacement parts will ship from our facility on the same day.



**Lot No.** \_\_\_\_\_

4 Digit number found on sticker applied to left side of seat lever

**Date Purchased:**

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_

**Purchased From:**

\_\_\_\_\_

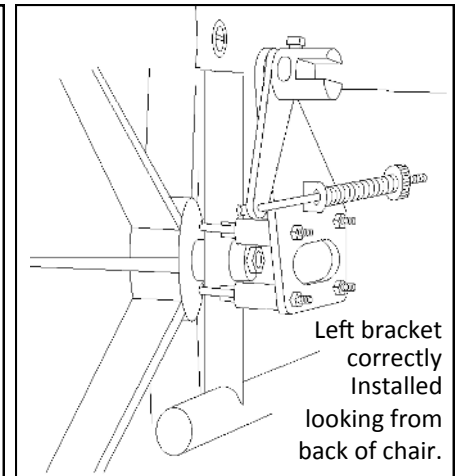
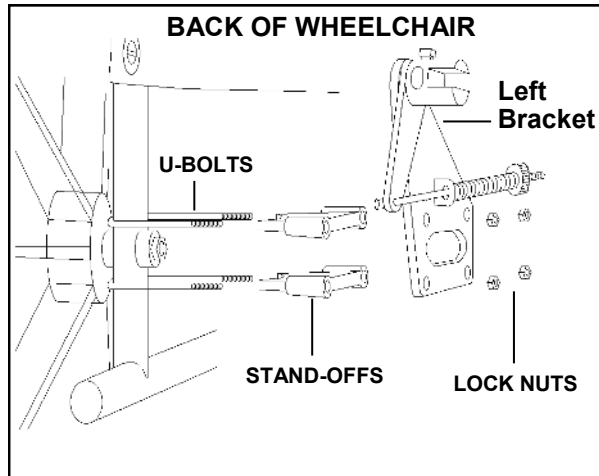
# 1. Install Mounting Brackets

**IMPORTANT!** Mounting brackets must be installed at the axle in use on wheelchairs with multiple axle positions.

Begin with left bracket. Locate left bracket. U-bolts (2 ea.), Stand-offs (2 ea.) and lock nuts (4 ea.)

Install U-bolts around frame as illustrated with 1 U-bolt above axle and 1 below axle. Slide 1 stand-off onto each U-bolt as shown. Slide left bracket onto remaining portion of U-bolts. Install 4 lock nuts (3/8" wrench) and snug enough to hold bracket in position but still allow rotation of bracket on wheelchair frame for later brake arm alignment (Step 4).

Repeat these steps for right bracket.



# 2. Configure Seat Lever

There are 2 seat lever depth adjustments, **A** or **B** and 3 seat lever height adjustments, **1**, **2** or **3**.

## Select Lever Depth Adjustment

### Position A

Floating seat pad contacts back third of seat. *This position is suitable for most patients.* (Seat lever depth comes pre-configured in this position).

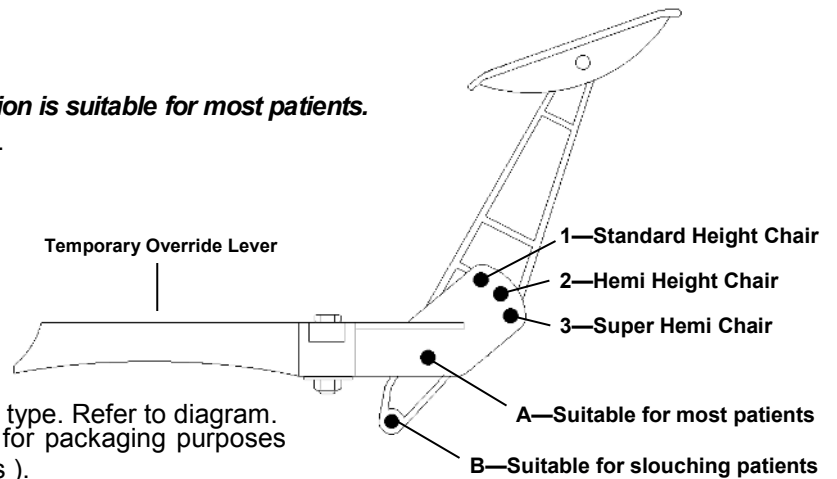
### Position B

Seat Pad is 2" further forward.

This position is better suited for patients who slouch or sit forward in the seat and will better depress the seat lever to disengage the brake arms.

## Select Lever Height Adjustment 1, 2 or 3

This adjustment sets the lever height according to chair type. Refer to diagram. (Seat lever height comes pre-configured in position 3 for packaging purposes but this position is only used for super hemi wheelchairs).

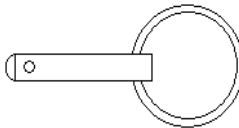


Once the seat lever is configured, tighten both 1/4" nuts and bolts (7/16" wrenches)

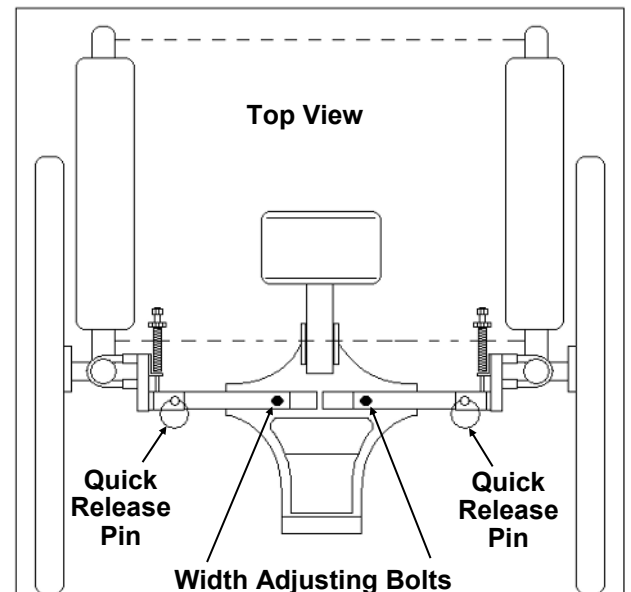
# 3. Install Seat Lever

Loosen the width adjusting bolts just enough to slide the width adjusting bars .

Locate the Quick-release pins (2 ea.).



With the floating seat pad **beneath the sling seat**, slide the seat lever assembly into position as shown. Align and insert the Quick-release pins from above.



## Helpful Hint

Quick-release pins are meant to be a tight fit. If having difficulty inserting them, rock lever assembly back and forth.

Do not tighten the width adjusting bolts at this time.

#### 4. Install Brake Arms and Align Mounting Brackets

There is a left and a right brake arm. When properly installed, machined flats face up as shown.

Begin with left side. Slide brake arm into pivoting collar as shown but do not tighten set screw.

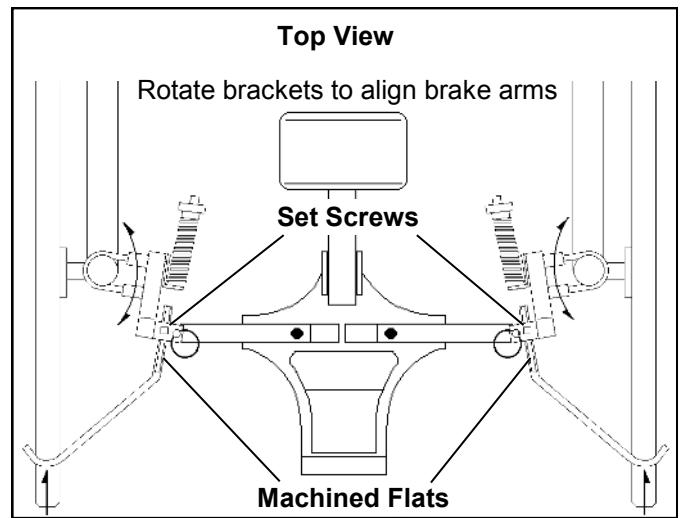
The tire grabbing bend in brake arm needs to wrap around as illustrated.

Hold left mounting bracket and rotate on chair as necessary to achieve proper brake arm alignment. **Do not use brake arm to rotate bracket.**

Evenly tighten left mounting bracket nuts (4 ea.) (3/8" wrench).

**Over-tightening of nuts will risk stripping threads.**

Repeat procedure for right side.



#### 5. Center the seat lever assembly (left to right) and securely tighten bolts (7/16" wrenches)

#### 6. Adjust and Tighten Brake Arms

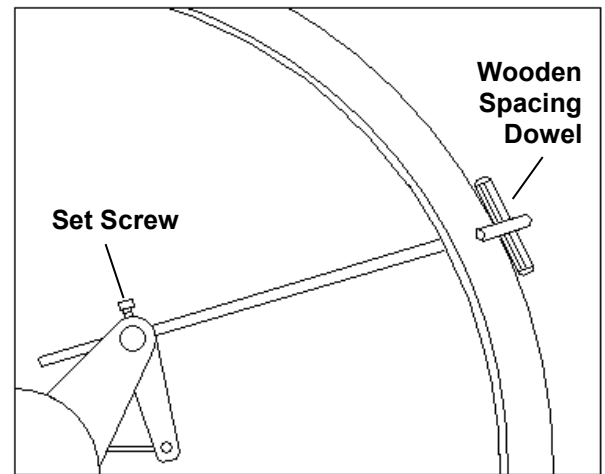


**STEP 6 REQUIRES CHAIR SEAT TO BE OCCUPIED**

**NOTE** Green thread locking compound has been pre-applied to brake arm set screws to prevent loosening. This may cause resistance while tightening.

Begin with left side. **With chair occupied**, place wooden spacing dowel provided between brake arm and tire as shown. Press firmly inward on brake arm so that dowel is held in place and **firmly tighten** left set screw (1/4" wrench). Repeat procedure for right side.

With chair occupied, check to make sure spacing between brake arms and tires is the same on both sides. Make fine adjustments if necessary. Install brake arm protective end caps.



#### 7. Adjust spring tension - Chair unoccupied

The pre-installed springs will work for most applications including the use of many seat cushions. If a cushion weighing 8 lbs or more will be used, remove the pre-installed springs and replace them with the **Heavy Seat Cushion Springs** supplied. Retain the original springs for future applications.

**With Chair unoccupied and seat cushion (if used) in place**, check the initial spring tension by standing in front of the wheelchair and exerting rearward force. *As a rule, the ideal spring tension is one that engages the anti-rollback device using the least amount of tension needed.*

**If brake arms firmly grab and prevent rearward rotation of the tires, no more tension is needed.**

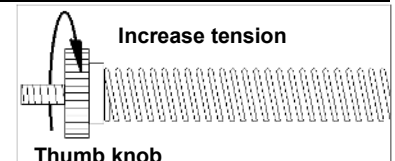
If brake arms do not firmly grab the tires while pushing back on the chair, read cautions below before proceeding.



- Under no circumstances should pre-installed springs be fully compressed ("bottomed out") when seat is occupied. This will cause discomfort and excess stress on anti-rollback device components. If needed spring tension exceeds limits, install Heavy Seat Cushion Springs.
- Do not use Heavy Seat Cushion springs without a seat cushion. This will cause excessive pressure and discomfort. Always re-install original springs and repeat tension adjustment procedure when cushion is no longer needed in current application or device is transferred to a different chair.

Increase left and right side spring tension incrementally by counting equal number of thumb knob rotations until brake arms grab and prevent rearward rotation of tires.

Test device several times for consistent operation before returning wheelchair to service.



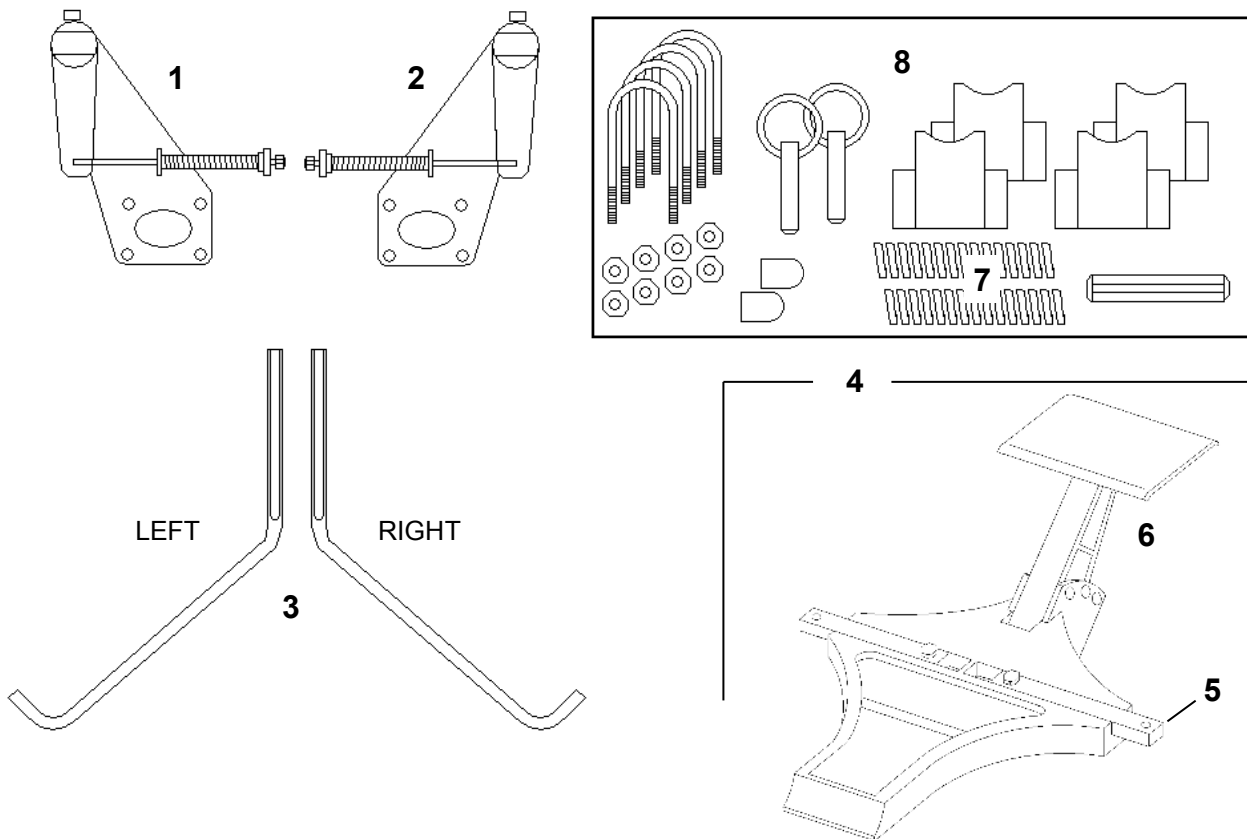
## Temporary Override Lever Function and Use

The Temporary Override Lever is a caregiver feature that facilitates moving an unoccupied chair backward.

**Lifting** the lever will temporarily disengage the anti-rollback device allowing free rearward rotation of the large wheels.

An unoccupied wheelchair equipped with an SM2-3 can always be rolled forward even when the device is engaged.

## SAFE•T MATE SM2-3 PARTS BREAKDOWN



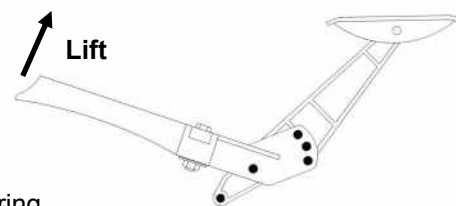
REF.	PART NO.	DESCRIPTION
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REF.	PART NO.	DESCRIPTION
1	SM2-3BRKTL	Left mounting bracket assembly complete
2	SM2-3BRKTR	Right mounting bracket assembly complete
3	SM2-3BAS	Left / Right Brake Arm Set with Set Screws
4	SM2-3LEVASSEMB	Lever assembly complete (includes SM2-3HS, SM2-3SLP)
5	SM2-3HS	Width Adjusting Bar Set
	SM2-3HSW	Width Adjusting Bar Set - Wide Model
6	SM2-3SLP	Seat Lever / Pad
7	SM2-3SCK	Heavy Seat Cushion Springs
8	SM2-3HWARE	4 U-bolts / 4 Stand-offs / 8 10-24 Lock Nuts / 2 Quick Release Pins / 2 End Caps / 1 Wooden Spacing dowel

# STAFF TRAINING TIPS

The Safe•t mate wheelchair Anti-rollback Device is designed to prevent a wheelchair from rolling back and away from the user as he/she attempts to sit down in or stand up from the chair. The chair will still move forward when the unit is engaged.

To facilitate moving an unoccupied chair in reverse, **LIFT** the temporary override lever to release the brake arms from the tires. **Do not attempt to rig the override feature to permanently disengage the device as this may cause a patient fall and serious injury.**



Whenever a new cushion is put into use, check for proper operation and readjust spring tension if required.

A wheelchair with the Safe•t mate Anti-rollback Device installed may be folded (for storage or transport) by removing the 2 quick-release pins that hold the center lever assembly in place. Be sure to retain the pins for reinstalling the lever assembly. No additional adjustments are required after reinstalling pins.

If the optional integrated alarm is in use, the alarm box should be removed prior to wheelchair washing. Once reinstalled, the alarm needs no further adjustment. However, it should be checked periodically for proper operation.

The Anti-rollback Device should be inspected periodically to ensure that all the mounting hardware is securely tightened and that the brake arms are in proper adjustment. If the optional alarm is in use, change the battery monthly.

## Troubleshooting guide

### ATTENTION

Condition	Possible Cause	Check/Remedy
Brake arms do not lift off tires with seat occupied.	Step 6 <b>not</b> performed with chair <b>occupied</b> . Mounting brackets at improper frame location.	Review installation instructions.
Only one brake arm grabs tire when patient rises from chair.	Mounting brackets at different heights on frame. Faulty brake arm adjustment procedure.	Re-align mounting brackets. Repeat Step 6
Brake arms rotate out of position or loosen.	Loose set screws or left and right brake arms swapped.	Ensure machined flat surfaces face up, readjust and <b>FIRMLY</b> tighten set screws. Thread locking compound (ie: Loctite) may be re-applied to set screw threads to maintain optimal grip.
Quick release pins are difficult to remove.	Quick release pins intended to be tight to prevent tampering or accidental removal.	When removing pins, gently rotate lever assembly to relieve tension on pins.
<b>Optional Alarm</b>		
Horn volume is low or does not sound	Low / dead battery. Faulty switch	Replace 9 volt battery. If alarm box is functioning correctly and switch and magnet are aligned but alarm does not sound, contact us for replacement switch.
Horn sounds intermittently	Switch improperly aligned with magnet.	Perform switch alignment procedure

## Warranty

The SM2-3, SM2-3A, SM2-3W and SM2-3WA are warranted to be free from defects in material and workmanship under normal operating conditions for a period of **one year**. 210 Innovations sole obligation under this warranty is limited to repair or replacement of defective parts. This warranty does not cover failure due to abuse, misuse, alteration, improper assembly or installation.

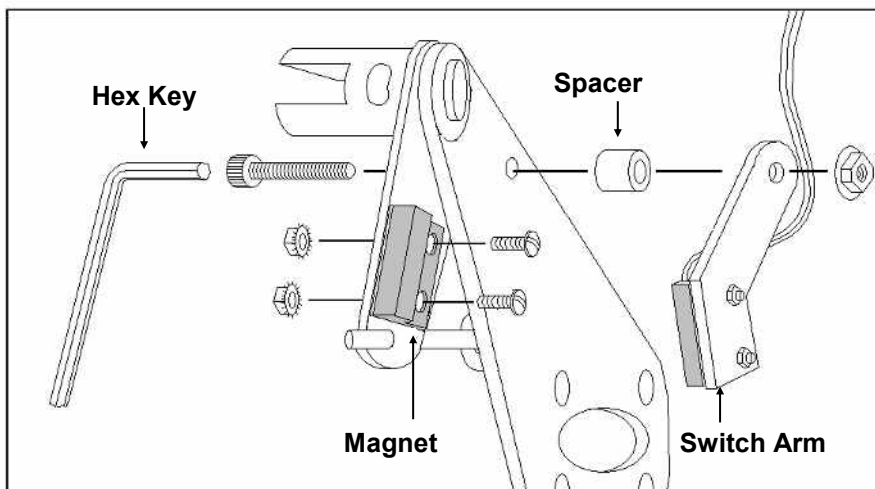
1. The alarm system is installed on the **Right Mounting Bracket** of the anti-rollback device as illustrated.

### 2. Mount Magnet

Using screws and nuts provided, install the magnet on the **outer side** of the right spring rod support at pre-drilled holes. (Mounting tab forward and magnet aligned with back edge of spring rod support as illustrated).

### 3. Install Switch Arm

Attach the pre-assembled Switch Arm through hole in mounting bracket as illustrated. Make sure switch wire is routed as shown. Install the screw, spacer and lock-nut as shown and snug using hex key provided but do not completely tighten.



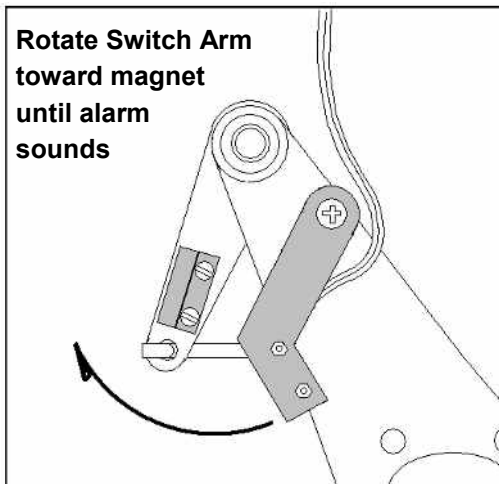
### 4. Mount Alarm Box and mate connector with switch wire

### 5. Adjust Switch Arm

Install 9 volt battery supplied into alarm box.  
**With the wheelchair unoccupied**, switch on the alarm box.

The alarm is activated when the magnet and switch come within close proximity of each other.

Slowly rotate switch arm toward magnet, as illustrated, until alarm sounds.



### Helpful Hint

Continuing rotation of switch arm *slightly* past the point where alarm sounds will help prevent false alarms caused by occupant shifting in seat.

Hold switch arm firmly in position with right hand and tighten lock-nut in this position using hex key provided.

### 6. Check for proper operation

Sitting in wheelchair seat should rotate magnet away from switch and silence alarm. Make fine adjustments as required. Sit and stand from wheelchair several times to verify consistent operation before returning chair to service.

### Troubleshooting

**Alarm does not silence when resident is seated. With chair occupied**, loosen lock-nut, rotate switch arm downward until alarm silences and re-tighten lock-nut in this position.

**Alarm does not sound when resident stands. With chair un-occupied**, loosen lock-nut, rotate arm toward magnet until alarm sounds and re-tighten lock-nut in this position.

### Replacement Parts

Part	Part No.
Switch Arm Assembly And Hardware	SM2-3ASA
Alarm Box	SMABX
Hex Key	SM2-3AHK

## CAUTION

This device is not a substitute for proper supervision.  
Check fall risk patients frequently. Change battery monthly.