

# *Manual Wheelchair Maintenance Manual*

## **KM-8022/KM-8522 series**



**ISO 9001**

*Lead the way, all the way!*

## Introduction

This manual contains basic detail information about the Removal / Replacement for **Karma KM-8022/KM-8522** series to enable Karma's authorized dealers to provide better after service. It is not intended to be a comprehensive maintenance guide or provide detail assembly/disassembly of the products. The parts and names may be different from countries to countries due to the area difference and customers' spec selection. The step, therefore, may be not the same. If you need to inquire more detail information, please contact Karma. Karma reserves the rights to modify the contents without prior notification.

1. This wheelchair is designed and manufactured by:

Karma Medical Products Co., Ltd.

No.2363 Sec.2, University Rd., Min-Hsiung Shiang, Chia-Yi 621, Taiwan

Tel:+886-5-2066688

Fax:+886-5-2067788

Web: [www.karmamedical.com](http://www.karmamedical.com)

E-Mail: [globalsales@karma.com.tw](mailto:globalsales@karma.com.tw)

### **Authorized representative in the European Union**

Karma Mobility Ltd.

Unit 6 Target Park, Shawbank Road, Redditch, B98 8YN U.K.

Tel: 0845 630-3436

Fax: 0845 630 3736

Web: [www.karmamobility.co.uk](http://www.karmamobility.co.uk)

E-Mail: [info@karmamobility.co.uk](mailto:info@karmamobility.co.uk)

2. For after service, including repairs, service and spare parts demand, please contact the dealer shop where you purchased the products.
3. Please quote the following information at all times:
  - Part section and Part Number
  - Part Name/Description
  - Quantity required
4. Warranty Policy- Do use the parts Karma provides to meet the requirement of product quality and warranty policy. For more detail, please refer to user manual / distribution contract
5. Technical Data
  - 5.1 Seat Width/ Depth Options: Refer to user manual.
  - 5.2 Wheels Options (Caster X Rear Wheels): Refer to section 3.1 and 3.2.

### 5.3 Limited Loading Weight: 130KG

#### 6. Accessories

- Footrest: Amputee support / 90 degree footrest/ Footrest extension kit
- Footplate: Angle adjustable footplate / Aluminum footplate
- Others: Multi-function safety / Backrest bag / Lateral backrest support bar / Tension adjustable backrest upholstery / Tension adjustable seat upholstery / Net sack /1” ,2” Seat depth extension tube” (should adapt Footrest extension kit ) / IV Pole/ Oxygen tank holder/

# TABLE OF CONTENTS

1. Instructions of Replacement -----	1
1.1 Backrest-----	1
1.2 Armrest -----	2
1.3 Footrest -----	5
1.4 Brake -----	8
1.5 Frame -----	10
1.6 Wheels -----	11
1.7 Rear Wheel Assembly -----	12
1.8 Casters -----	13
2. Instructions of Replacement for Optional Devices -----	14
2.1 Anti-Tipper -----	14
2.2 Tie Down Hook -----	15
2.3 Oxygen Tank Holder -----	16
2.4 IV Pole Assembly -----	17
2.5 Walking Stick Box Assembly-----	18
2.6 Lateral Support Assembly -----	19
2.7 Hemi Armrest Assembly-----	20
2.8 Elevating & Swing Away Footrest -----	22
2.9 Stump Footrest -----	24
2.10 Vertical Swing-Away Footrest-----	26
2.11 Angle and Depth Adjustable Footrest -----	28
2.12 Drum Brake-----	29
2.13 Adjustable Backrest Tube -----	30
3. Instructions of Adjustment -----	31
3.1 Adjusting Seat Height for Wheelchair Equipped with 20, 22 or 24 Inch Rear Wheels-----	31
3.2 Seat Height Adjustment for Wheelchair Equipped with 14 inch Rear Wheels -----	34
3.3 Caster Adjustment for wheelchair Equipped with 20, 22 or 24 Inch Rear Wheels -----	35
3.4 Caster Adjustment for Wheelchair Equipped with 14 inch Rear Wheels -----	38

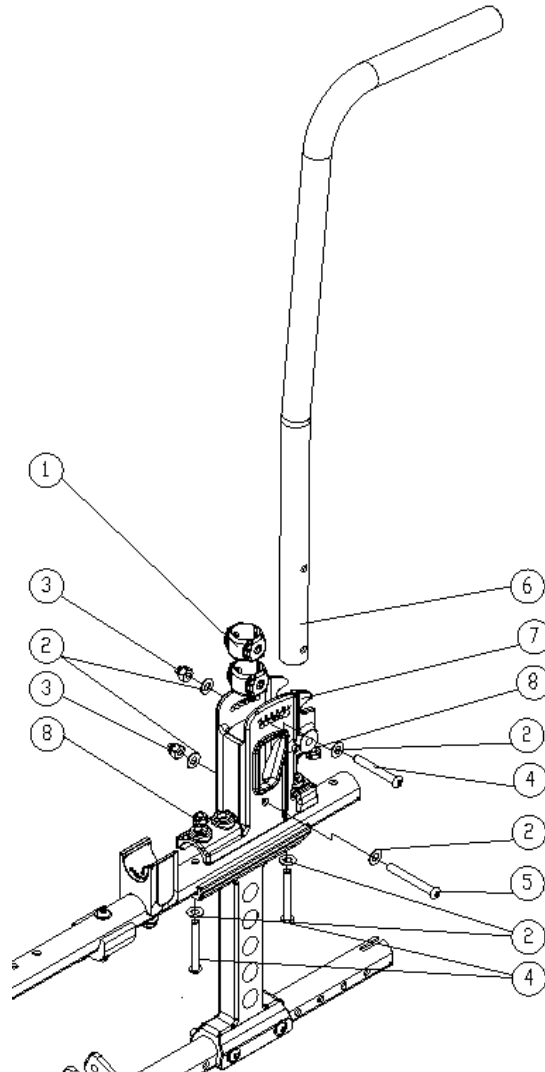
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# 1. Instructions of Replacement

## 1.1 Backrest

### 1.1.1 Backrest Frame

Figure 1.1.1



1. Backrest Tube Sleeve
2. M6 Flat Washer
3. Hex Nylon Dome Nut
4. Button Head Cap Screw M6\*45L
5. Button Head Cap Screw M6\*50L
6. Backrest Push Handle Tube-Lengthened
7. Backrest Tube Base KM-8022
8. Hex Nylon Nut

#### Tools:

- 4 mm L-shape Allen Key
- 10 mm open end wrench

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## Removal and Replacement:

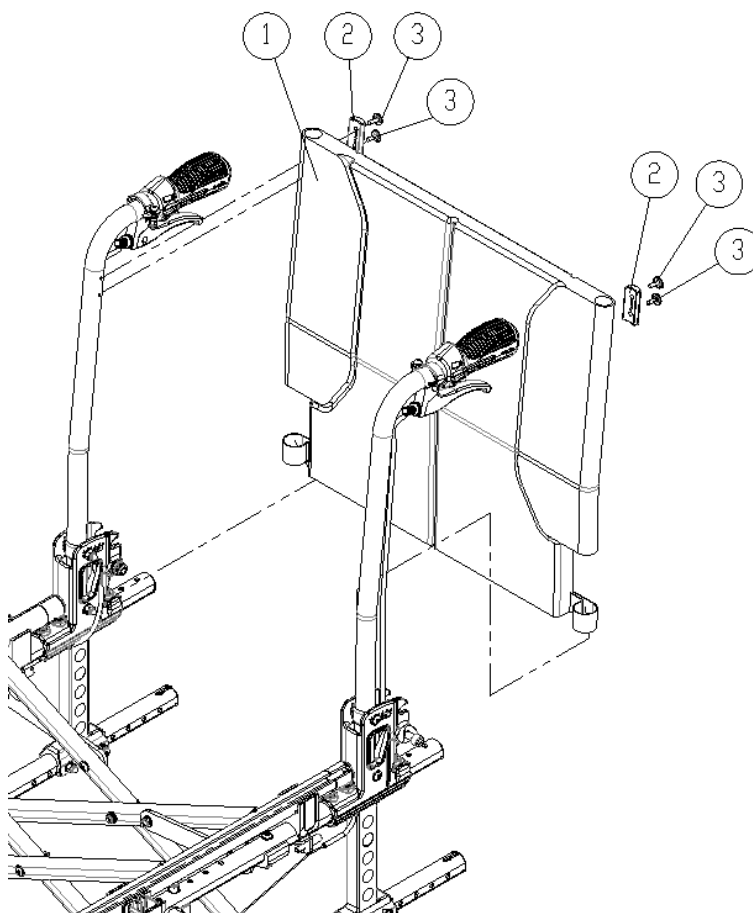
- 1.1.1.1 Use 4 mm L-shape Allen Key and 10 mm open end wrench to loosen part 4 and 5.
- 1.1.1.2 Remove part 6.
- 1.1.1.3 Re-assembly is done in reverse order.

## Key Inspection:

- Make sure all screws are properly tightened.

### 1.1.2 Backrest Upholstery

Figure 1.1.2



- 1. Backrest Upholstery
- 2. Backrest Upholstery Two Holed Arc Washer
- 3. Button Head Phillips Tap Screw

## Tools:

- Philips screwdriver

## Removal and Replacement:

- 1.1.2.1 Use a Philips screwdriver to loosen part 3.
- 1.1.2.2 Remove part 2 and part 1.
- 1.1.2.3 Re-assembly is done in reverse order.

## Key Inspection:

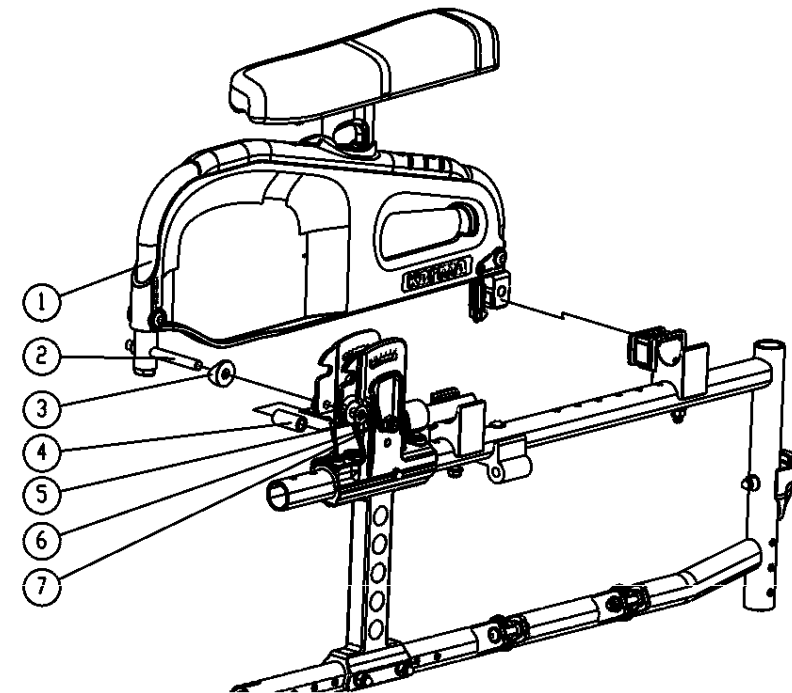
- Make sure all screws are properly tightened.

---

## 1.2 Armrest

### 1.2.1 Flip-Back Armrest

Figure 1.2.1



1. Flip-back Elevating Armrest Assembly
2. M8 Socket Head Cap Screw
3. 7/8" Plastic Arc Washer
4. Armrest Clamp Bushing
5. M8 Flat Washer
6. M8 Spring Washer
7. M8 Hex Nylon Dome Nut

#### Tools:

- 13 mm open end wrench X 2

#### Removal and Replacement:

- 1.2.1.1 Use two 13 mm open end wrenches to loosen part 2 and part 7.
- 1.2.1.2 Replace part 1.
- 1.2.1.3 Re-assembly is done in reverse order.

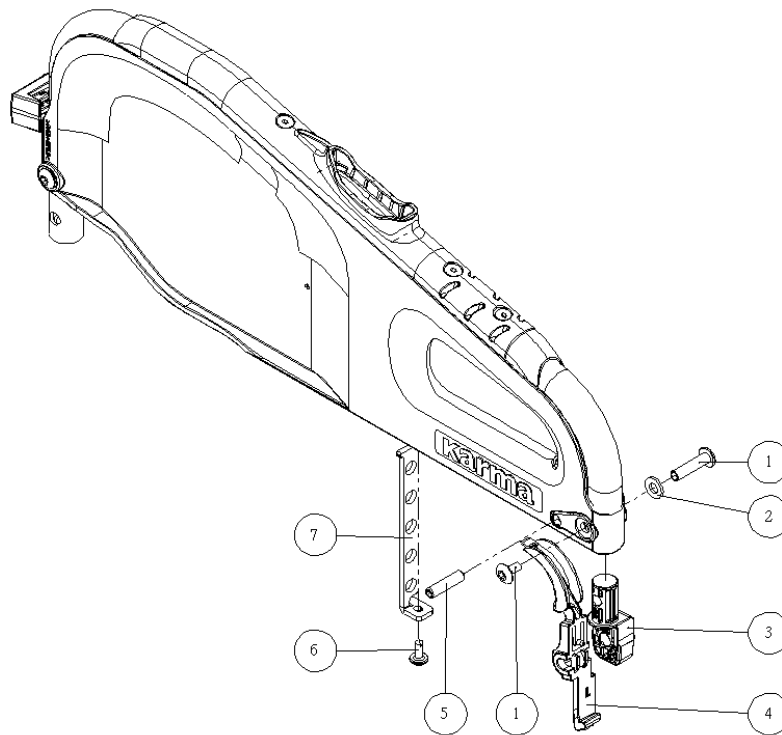
#### Key Inspection:

- Make sure all screws are properly tightened.

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## 1.2.2 Side Panel Assembly

Figure 1.2.2



1. Screw Binding Post Set
2. M6 Plastic Washer
3. Side Panel Positioning Part
4. Side Panel Lock
5. Spring Pin
6. Truss Phillips Tapping Screw
7. Armrest Elevating Bracket

### Tools:

- 4 mm L-shape Allen Key x2
- Philips Screwdriver
- $\Phi 6$  Rod
- Hammer

### Removal and Replacement:

- 1.2.1.1 Use Philips screwdriver to loosen part 6 and remove part 7.
- 1.2.1.2 Use 4 mm L-shape Allen Key to loosen part 1 and remove part 3.
- 1.2.1.3 Use rod and hammer to remove part 5 and replace part 4.
- 1.2.1.4 Re-assembly is done in reverse order.

### Key Inspection:

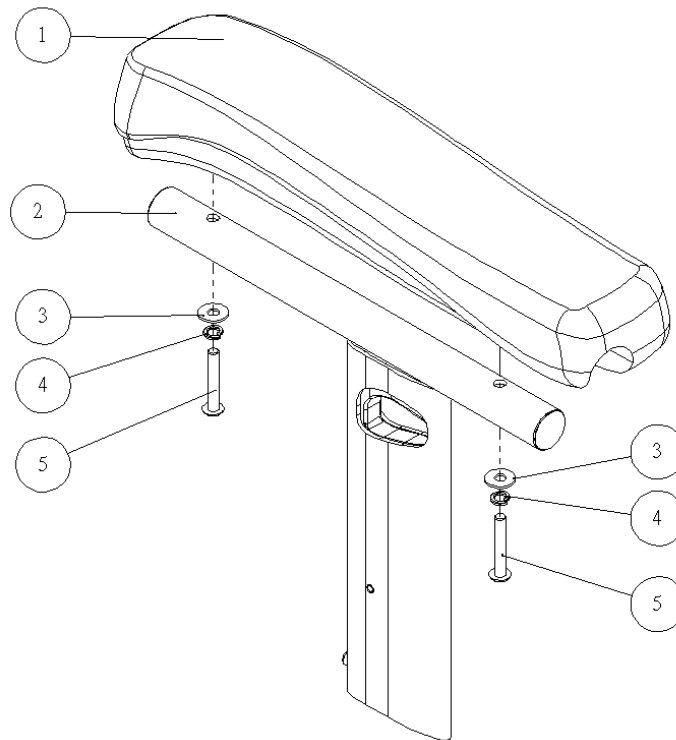
- Make sure all screws are properly tightened.



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### 1.2.3 Height Adjustable Armrest Assembly

Figure 1.2.3



- 1. Ergo Armrest
- 2. Gold Trigger Elevating Armrest
- 3. M5 Flat Washer
- 4. M5 Spring Washer
- 5. M5 Button Head Cap Screw

**Tools:**

- 3 mm L-shape Allen Key

**Removal and Replacement:**

- 1.2.3.1 Use 3 mm L-shape Allen Key to loosen part 5. Remove part 1 and part 2.
- 1.2.3.2 Re-assembly is done in reverse order.

**Key Inspection:**

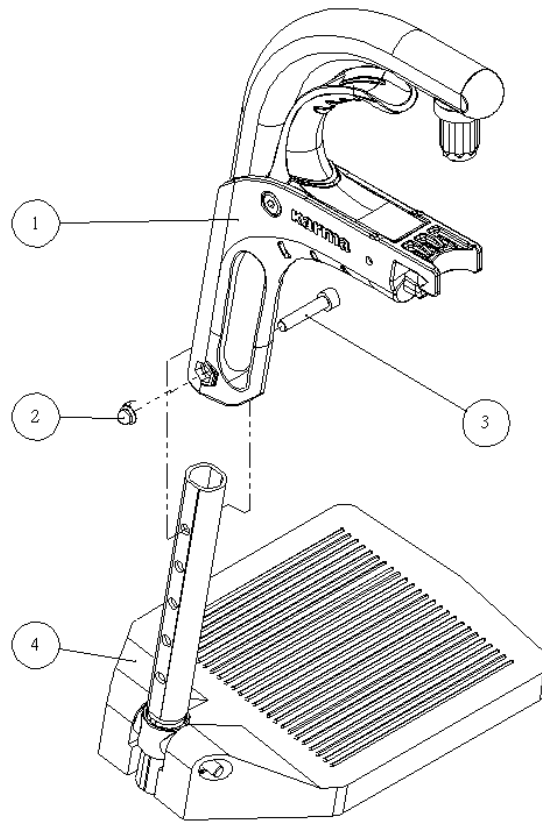
- Make sure all screws are properly tightened.

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## 1.3 Footrest

### 1.3.1 Footplate

Figure 1.3.1



1. Grip Footrest
2. M6 Hex Nylon Dome Nut
3. M6 Hex Socket Head Cap Screw
4. Footplate

#### Tools:

- 4 mm L-shape Allen Key
- 10 mm open end wrench

#### Removal and Replacement:

- 1.3.1.1 Use 4 mm L-shape Allen Key and 10 mm open end wrench to loosen part 2 and part 3.
- 1.3.1.2 Remove part 4.
- 1.3.1.3 Re-assembly is done in reverse order.

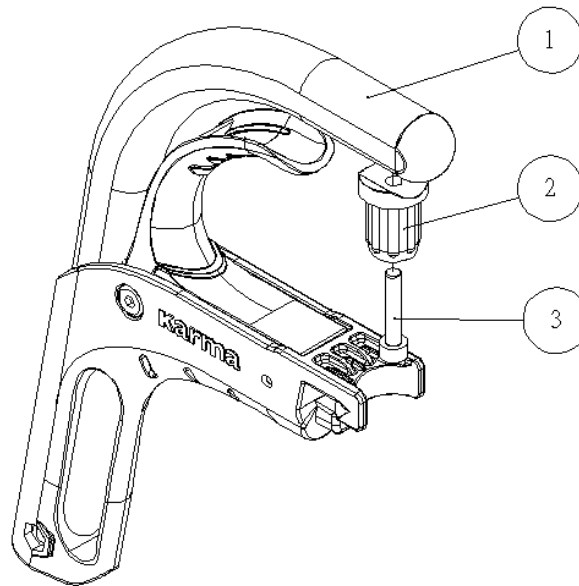
#### Key Inspection:

- Make sure all screws are properly tightened.

---

### 1.3.2 Grip Footrest

Figure 1.3.2



1. Grip Footrest
2. Y-shaped Tube Plug
3. M6 Hex Socket Head Cap Screw

**Tools:**

-4 mm L-shape Allen Key

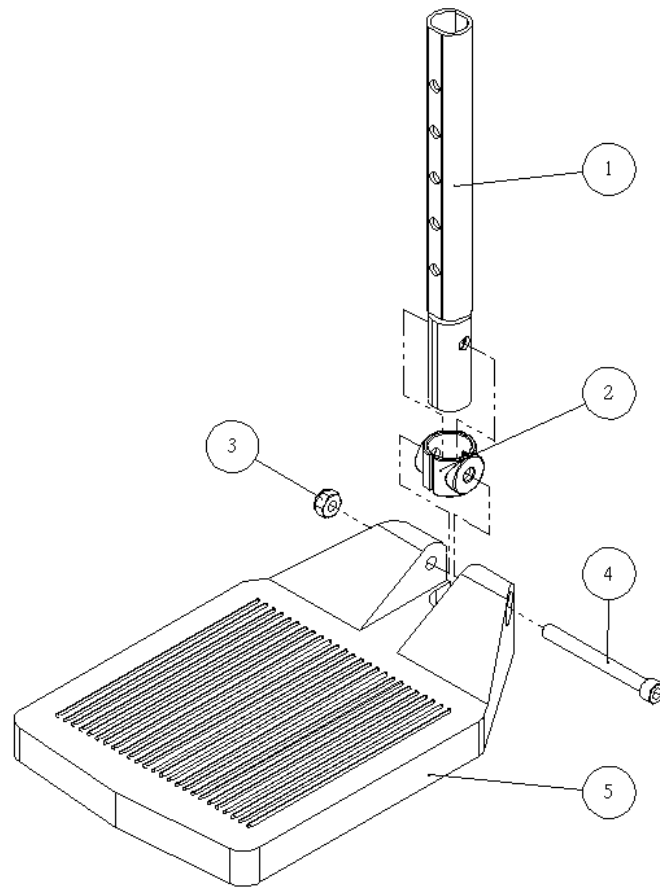
**Removal and Replacement:**

- 1.3.2.1 Use 4 mm L-shape Allen Key to loosen part 2.
- 1.3.2.2 Remove part 3.
- 1.3.3.3 Re-assembly is done in reverse order.

**Key Inspection:**

- Make sure all screws are properly tightened.

Figure 1.3.3



- 1. Footplate Tube
- 2. Sleeve
- 3. 1/4" Nylon Lock
- 4. 1/4" Hex Socket Head Cap Screw
- 5. Footplate

**Tools:**

-5 mm L-shape Allen Key

**Removal and Replacement:**

- 1.3.2.1 Use 5 mm L-shape Allen Key to loosen part 3 and part 4.
- 1.3.2.2 Remove part 5.
- 1.3.3.3 Re-assembly is done in reverse order.

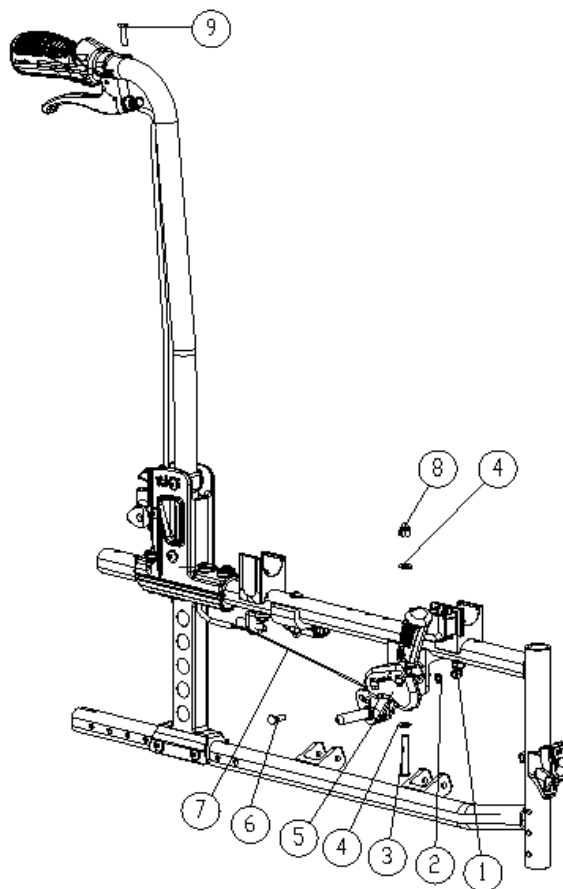
**Key Inspection:**

- Make sure all screws are properly tightened.

---

## 1.4 Brake

Figure 1.4



1. M6 Hex Nylon Dome Nut
2. M6 Spring Washer
3. M5 Button Head Cap Screw
4. M5 Flat Washer
5. Brake
6. Brake Cable Bolt
7. Brake Cable
8. M6 Hex Nylon Dome Nut
9. M5 Button Head Cap Screw

### Tools:

- 4 mm L-shape Allen Key
- 8 mm open end wrench
- 10 mm open end wrench

---

**Removal and Replacement:**

- 1.4.1 Use 8 mm open end wrench to loosen part 1.
- 1.4.2 Remove part 7.
- 1.4.3 Use 4 mm L-shape Allen Key and 10 mm open end wrench to loosen part 3 and part 8.
- 1.3.4 Remove part 5.
- 1.3.5 Re-assembly is done in reverse order.

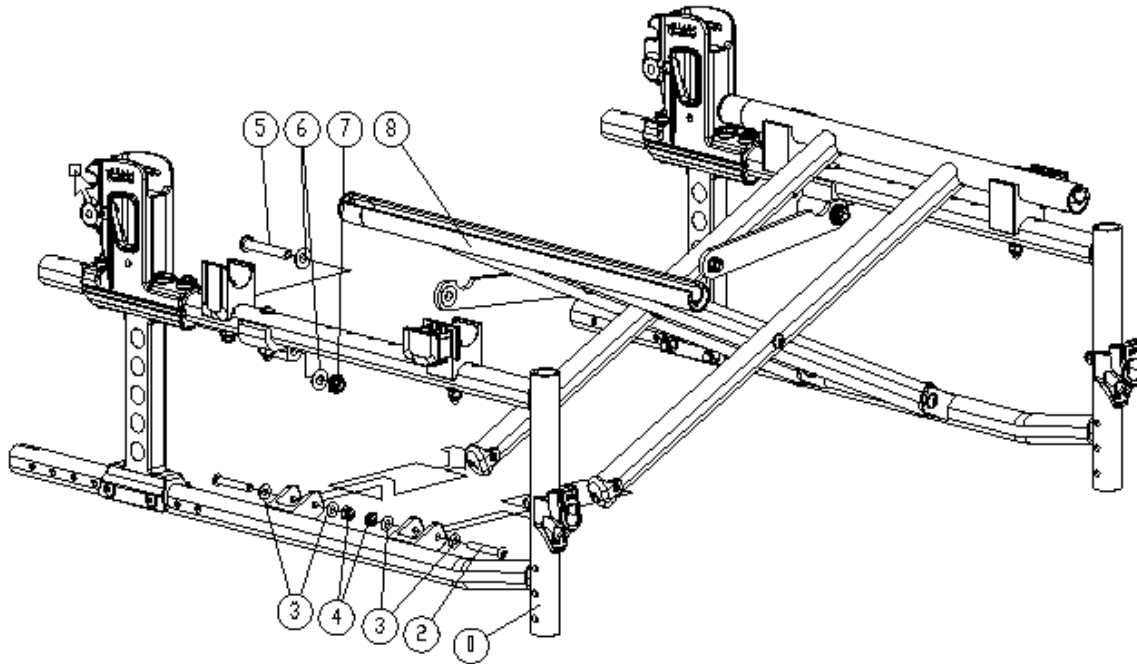
**Key Inspection:**

- Make sure all screws are properly tightened.

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## 1.5 Frame

Figure 1.5



1. Side Frame
2. M6 Button Head Cap Screw
3. M6 Flat Washer
4. M6 Nylon Lock
5. M8 Button Head Cap Screw
6. M8 Plastic Washer
7. M8 Nylon Lock
8. Cross Bar-Slide Groove Type

### Tools:

- 4 mm L-shape Allen Key
- 5 mm L-shape Allen Key
- 10 mm open end wrench
- 13 mm open end wrench

### Removal and Replacement:

- 1.5.1 Use 4 mm L-shape Allen Key and 10 mm open end wrench to loosen part 2 and part 4.
- 1.5.2 Use 5 mm L-shape Allen Key and 13 mm open end wrench to loosen part 5 and part 7.
- 1.5.3 Remove part 1 away from part 8.
- 1.5.4 Repeat steps from 1.5.1 to 1.5.3 for replacement of the other side.
- 1.5.5 Re-assembly is done in reverse order.

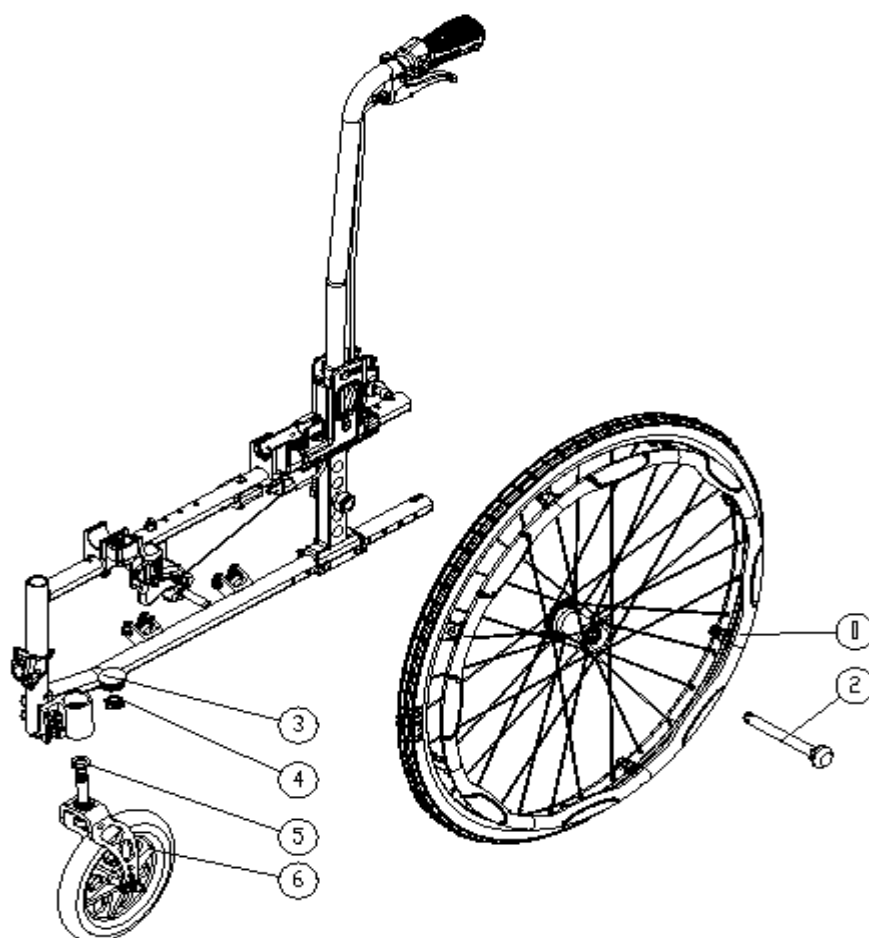
### Key Inspection:

- Make sure all screws are properly tightened.

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## 1.6 Wheels

Figure 1.6



1. Rear Wheel Assembly
2. Quick release axle
3. Caster Bracket Dust Cover
4. Nylon Lock Nut
5. 1/2" Flat Washer
6. Caster

### Tools:

- 19 mm socket wrench

### Removal and Replacement:

- 1.6.1 Press part 2 and pull out part 1 from the side frame.
- 1.6.2 Remove part 3.
- 1.6.3 Use 19mm socket wrench to remove part 4.
- 1.6.4 Remove part 6.
- 1.6.5 Re-assembly is done in reverse order.

### Key Inspection:

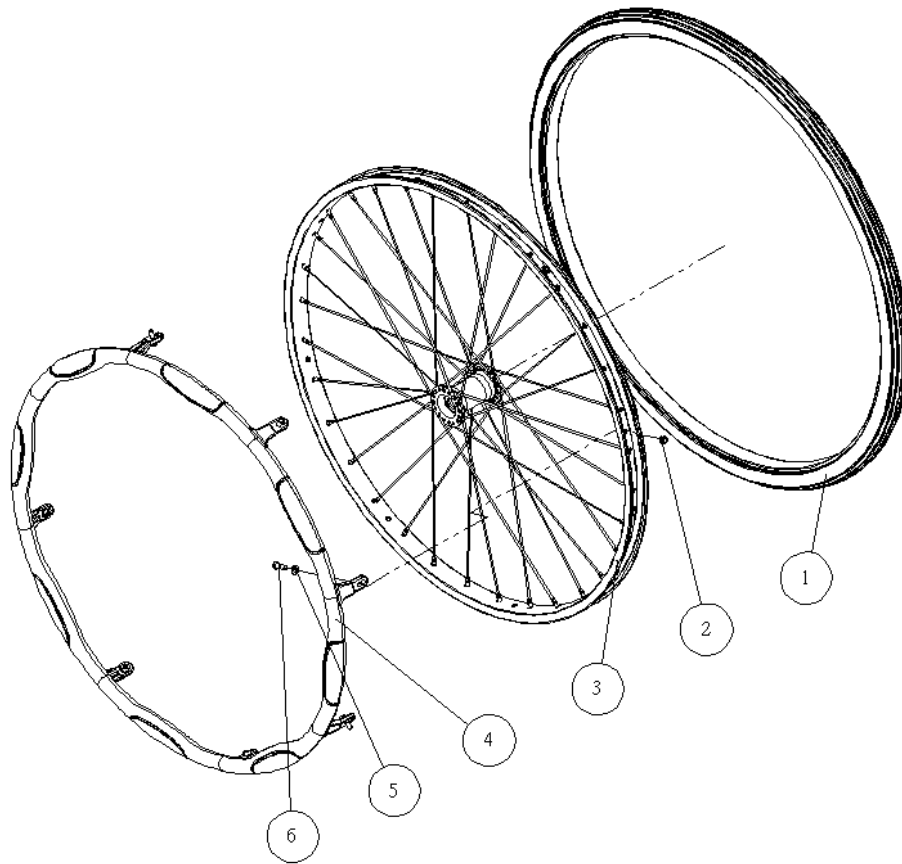
- After the replacement of wheels, do propel the wheelchair to assure it works smoothly without abnormal movement.



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## 1.7 Rear Wheel Assembly

Figure 1.7



1. Tire
2. Nylon Lock
3. Rear Wheel Rim
4. Ergo Rear Wheel
5. M5 Flat Washer
6. Phillips Round Head Screw

### Tools:

- 8 mm open end wrench
- Tire spoon \*2
- Philips screwdriver

### Removal and Replacement:

- 1.7.1 Use two tire spoons, one for either side of part 1, to remove part 1.
- 1.7.2 Use 8 mm open end wrench and Philips screwdriver to loosen part 2 and part 6.
- 1.7.3 Remove part 4.
- 1.7.4 Re-assembly is done in reverse order.

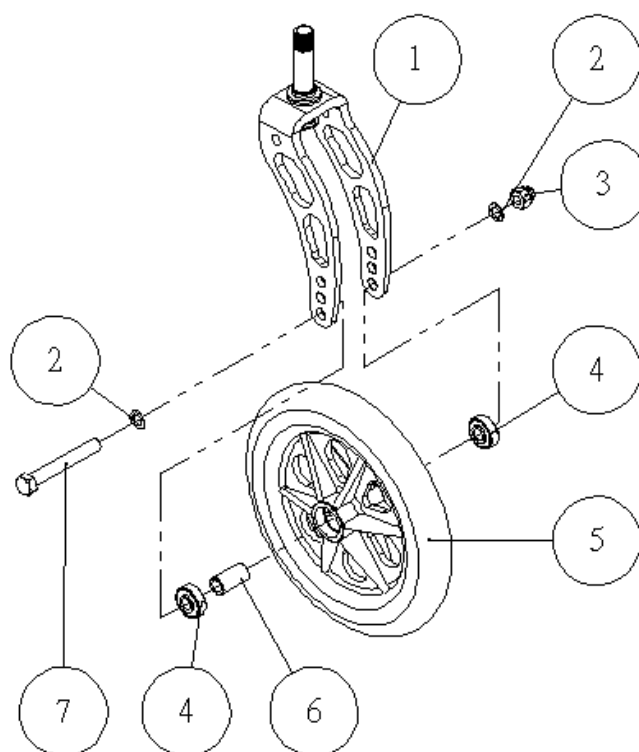
### Key Inspection:

- After the replacement of tires or hand rims, do propel the wheelchair to assure it works smoothly without abnormal movement.

---

## 1.8 Casters

Figure 1.8



- 1. Long Vigor Fork
- 2. M8 Flat Washer
- 3. M8 Hex Nylon Dome Nut
- 4. Bearing
- 5. Caster
- 6. Caster Sleeve

### Tools:

- 13 mm open end wrench \*2

### Removal and Replacement:

- 1.8.1 Use two 13mm open end wrench to loosen part 3 and part 7.
- 1.8.2 Remove part 5.
- 1.8.3 Re-assembly is done in reverse order.

### Key Inspection:

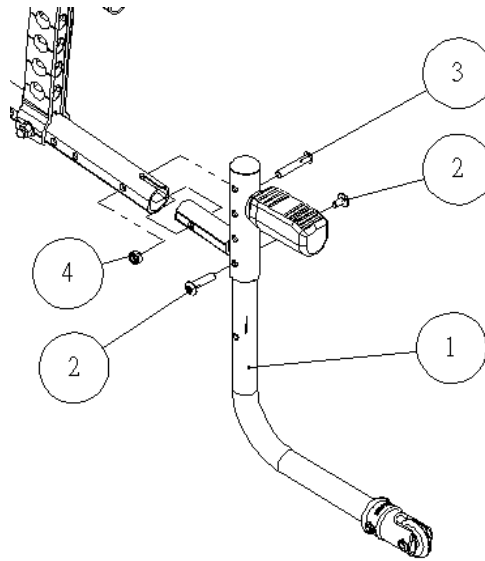
- After replacing casters, do propel the wheelchair to assure it works smoothly without abnormal movement.

---

## 2. Instructions of Replacement for Optional Devices

### 2.1 Anti-Tipper

Figure 2.1



- 1. Anti-tipper Assembly
- 2. Screw Binding Post Set
- 3. M6 Button Head Cap Screw
- 4. M6 Nylon Lock

#### Tools:

- 10 mm open end wrench
- 4 mm L-shape Allen Key \*2

#### Removal and Replacement:

- 2.1.1 Use 4 mm L-shape Allen Key and 10mm open end wrench to loosen part 3 and part 4.
- 2.1.2 Replace part 1 by pulling out.
- 2.1.3 Use two 4 mm L-shape Allen Keys to loosen part 2.
- 2.1.4 Adjust part 1 by selecting an appropriate hole to install part 2..
- 2.1.5 Re-assembly is done in reverse order.

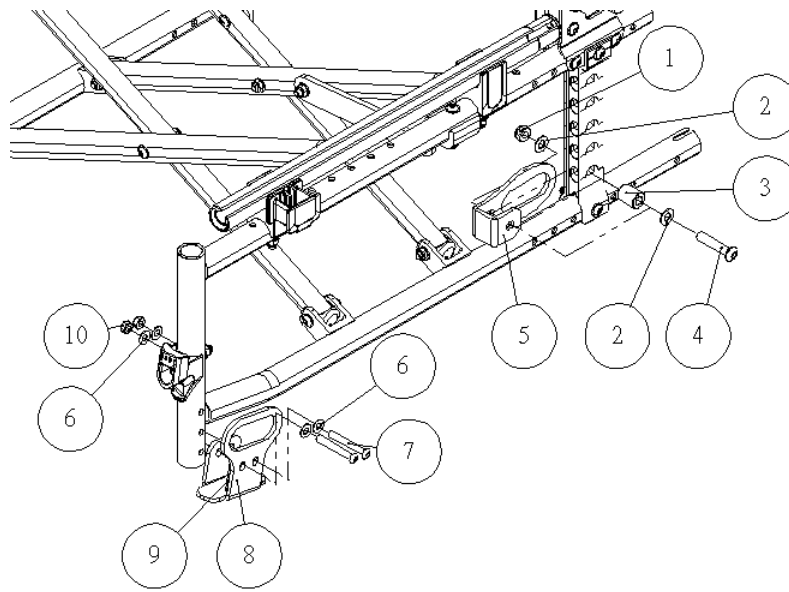
#### Key Inspection:

- Make sure all screws are properly tightened.
- Make sure the anti-tipper is 3-5cm high above the ground.

---

## 2.2 Tie Down Hook

Figure 2.2



- 1. M8 Nylon Lock
- 2. M8 Flat Washer
- 3. Sleeve
- 4. M8 Button Head Cap Screw
- 5. Hook
- 6. M6 Flat Washer
- 7. M6 Button Head Cap Screw
- 8. Hook
- 9. Washer
- 10. M6 Nylon Lock

### Tools:

- 10 mm open end wrench
- 13 mm open end wrench
- 4 mm L-shape Allen Key
- 5 mm L-shape Allen Key

### Removal and Replacement:

- 2.2.1 Use 4 mm L-shape Allen Key and 10mm open end wrench to loosen part 7 and part 10.
- 2.2.2 Remove part 8.
- 2.2.3 Use 5 mm L-shape Allen Key and 13mm open end wrench to loosen part 1 and part 4.
- 2.2.4 Remove part 5.
- 2.1.5 Re-assembly is done in reverse order.

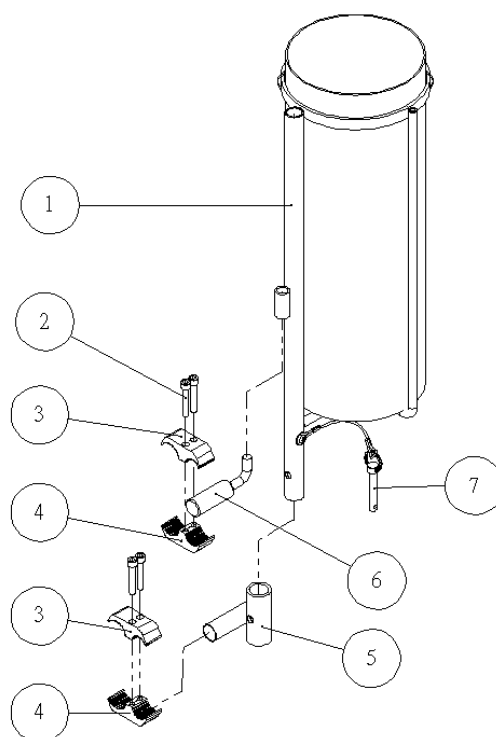
### Key Inspection:

- Make sure all screws are properly tightened.

---

## 2.3 Oxygen Tank Holder

Figure 2.3



1. Oxygen Tank Holder
2. M6 Hex Socket Head Cap Screw
3. Brake Clamp- Untapped
4. Brake Clamp-Tapped
5. Oxygen holder bracket
6. Hook for Oxygen Cylinder
7. Pin  $\Phi 8$  w/ Pull Ring

### Tools:

- 5 mm L-shape Allen Key

### Removal and Replacement:

- 2.3.1 Pull part 7 out.
- 2.3.2 Replace part 1 by pulling out.
- 2.3.3 Use 5 mm L-shape Allen Key to loosen part 2.
- 2.3.4 Remove part 3 and part 4.
- 2.3.5 Re-assembly is done in reverse order.

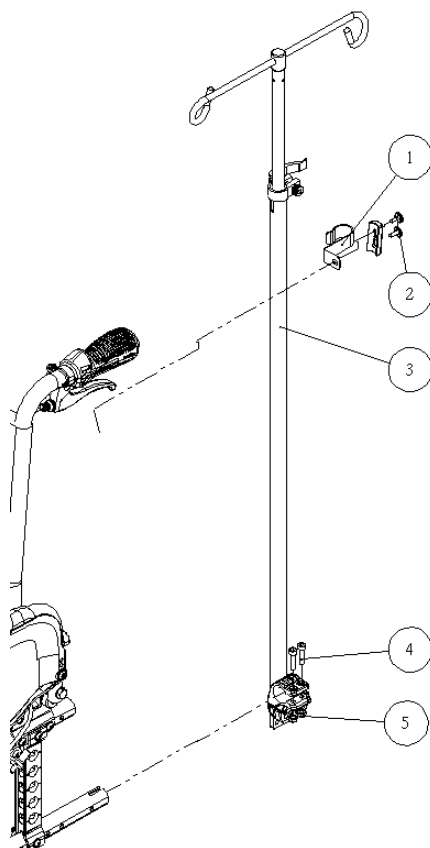
### Key Inspection:

- Make sure all screws are properly tightened.

---

## 2.4 IV Pole Assembly

Figure 2.4



1. Hook
2. Phillips Button Tapping Screw
3. IV Pole Assembly
4. M6 Hex Socket Head Cap Screw
5. M6 Nylon Lock

### Tools:

- 5 mm L-shape Allen Key
- Philips Screwdriver

### Removal and Replacement:

- 2.4.1 Use Philips screwdriver to loosen part 2.
- 2.4.2 Use 5 mm L-shape Allen Key to loosen part 4.
- 2.4.3 Remove part 3.
- 2.4.4 Re-assembly is done in reverse order.

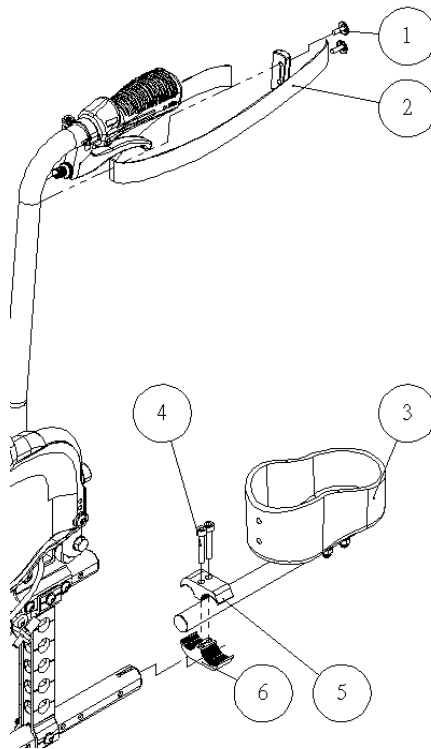
### Key Inspection:

- Make sure all screws are properly tightened.

---

## 2.5 Walking Stick Box Assembly

Figure 2.5



1. Phillips Button Tapping Screw
2. Walking Stick Velcro Fix Strap
3. Walking Stick Box Assembly
4. M6 Hex Socket Head Cap Screw
5. Brake Clamp-Untapped
6. Brake Clamp-Tapped

### Tools:

- 5 mm L-shape Allen Key
- Philips screwdriver

### Removal and Replacement:

- 2.5.1 Use Philips screwdriver to loosen part 1.
- 2.5.2 Remove part 2.
- 2.5.3 Use 5 mm L-shape Allen Key to loosen part 4.
- 2.5.4 Remove part 3.
- 2.5.5 Re-assembly is done in reverse order.

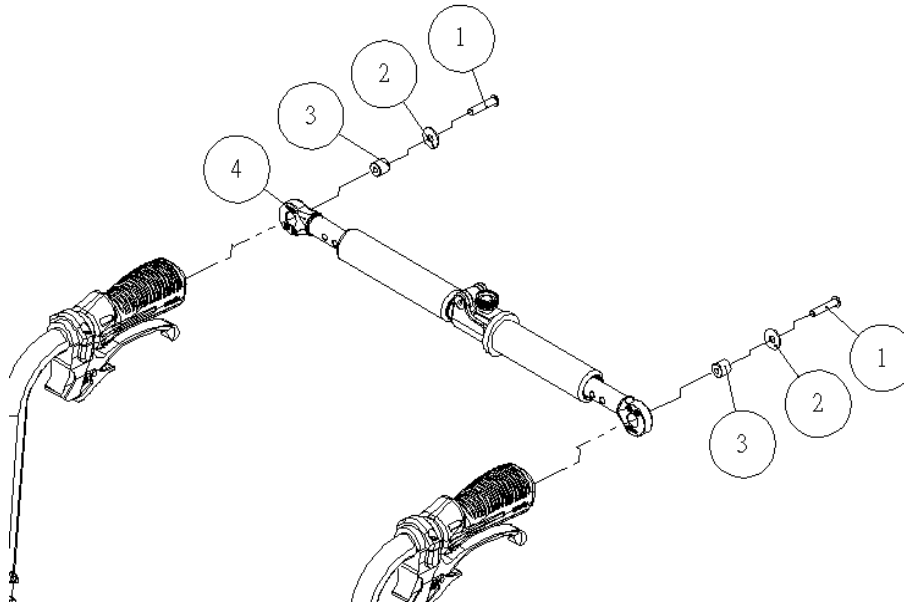
### Key Inspection:

- Make sure all screws are properly tightened.

---

## 2.6 Lateral Support Assembly

Figure 2.6



- 1. M6 Hex Socket Head Cap Screw
- 2. M6 Flat Washer
- 3. Nut
- 4. Lateral Support Assembly

### Tools:

- 4 mm L-shape Allen Key

### Removal and Replacement:

- 2.6.1 Use 4 mm L-shape Allen Key to loosen part 1.
- 2.6.2 Remove part 4.
- 2.6.3 Re-assembly is done in reverse order.

### Key Inspection:

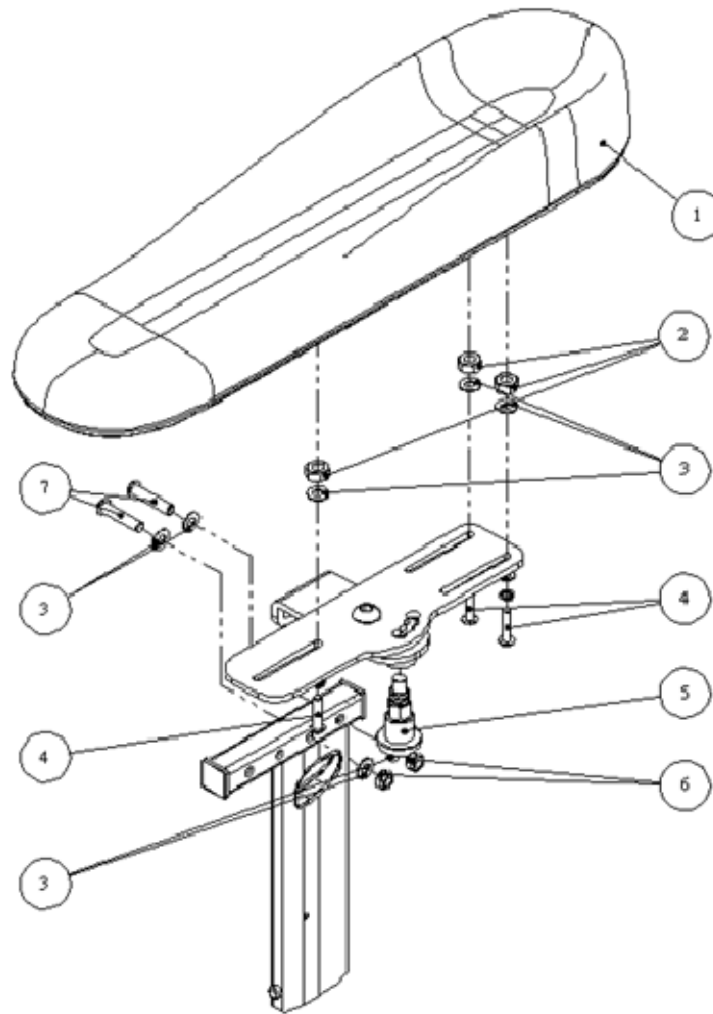
- Make sure all screws are properly tightened.



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## 2.7 Hemi Armrest Assembly

Figure 2.7



1. Hemi Armrest
2. M8 Hex Nut
3. M6 Flat Washer
4. M5 Hex Socket Head Cap Screw
5. Pin
6. M6 Hex Nylon Dome Nut
7. M6 Hex Socket Head Cap Screw

### Tools:

- 3 mm L-shape Allen Key
- 6 mm L-shape Allen Key
- 10 mm open end wrench
- 12 mm open end wrench

---

**Removal and Replacement:**

- 2.7.1 Use 3 mm L-shape Allen Key to loosen part 4.
- 2.7.2 Part 1 can be removed or adjusted.
- 2.7.3 Use 4 mm L-shape Allen Key and 10 mm open end wrench to loosen part 7 and part 6.
- 2.7.4 The location of part 1 can be adjusted.
- 2.7.5 Use 12 mm open end wrench to loosen part 5.
- 2.7.6 Re-assembly is done in reverse order.

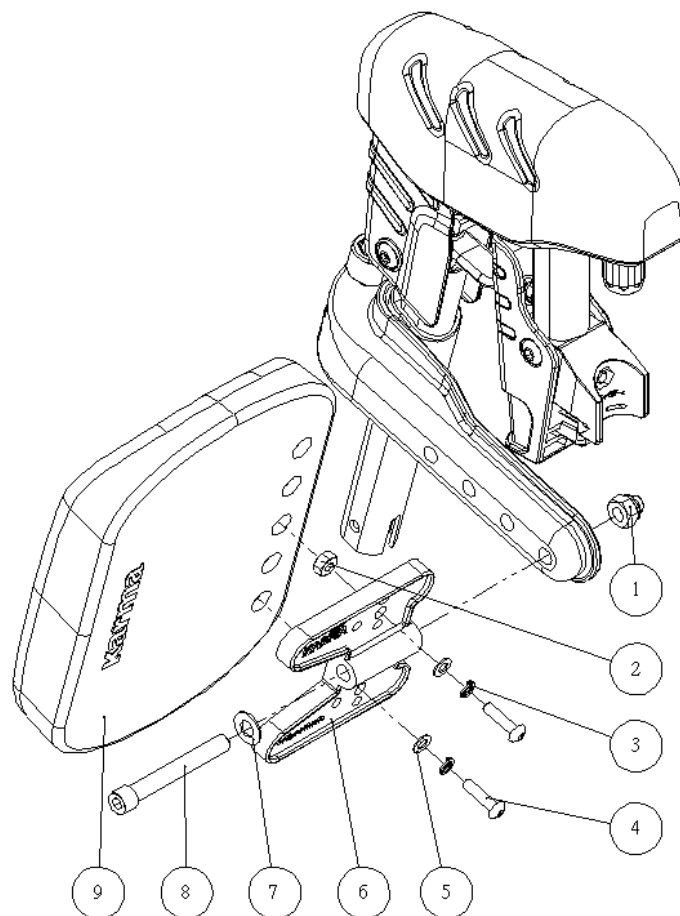
**Key Inspection:**

- Make sure all screws are properly tightened.

---

## 2.8 Elevating & Swing Away Footrest

Figure 2.8



1. M8 Hex Nylon Dome Nut
2. M6 Hex Nut
3. M5 Spring Washer
4. M5 Hex Socket Head Cap Screw
5. M5 Flat Washer
6. Mounting Plate
7. M8 Flat Washer
8. M8 Hex Socket Head Cap Screw
9. Calf Pad

### Tools:

- 3 mm L-shape Allen Key
- 6 mm L-shape Allen Key

---

**Removal and Replacement:**

- 2.8.1 Use 3 mm L-shape Allen Key to loosen part 4.
- 2.8.2 Remove or adjust part 9.
- 2.8.3 Use 6 mm L-shape Allen Key to loosen part 8.
- 2.8.4 The location of part 6 can be adjusted.
- 2.8.5 Re-assembly is done in reverse order.

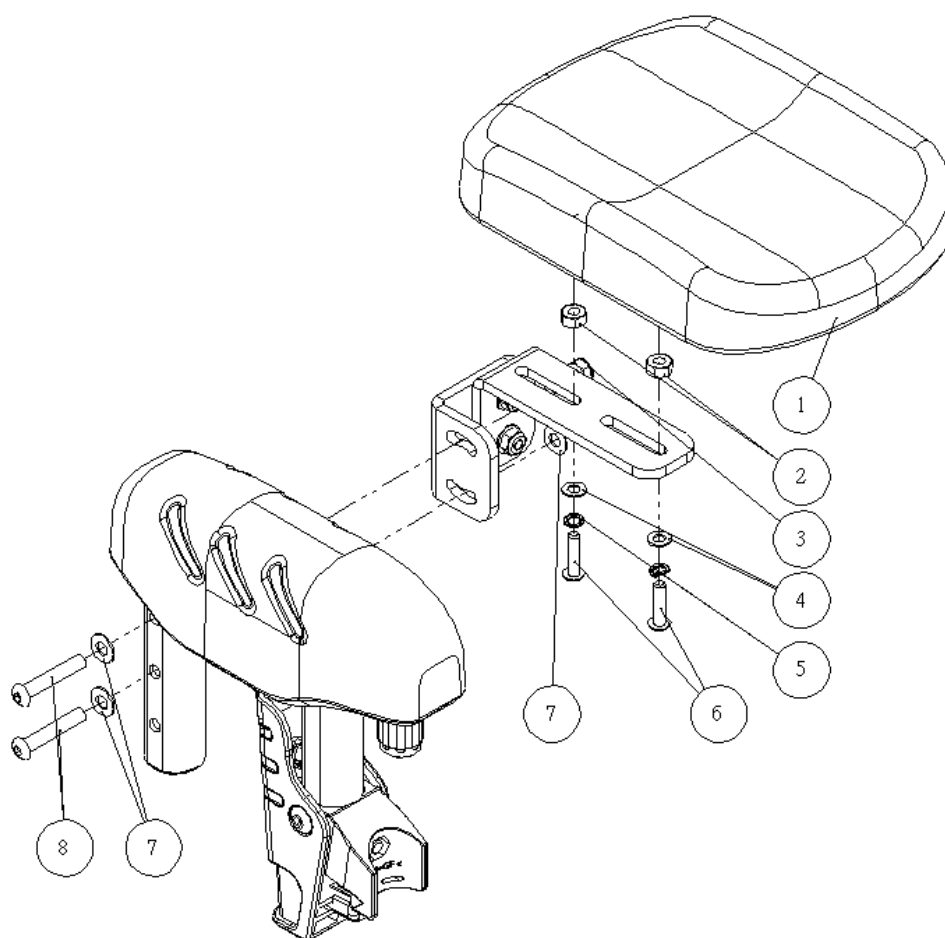
**Key Inspection:**

- Make sure all screws are properly tightened.

---

## 2.9 Stump Footrest

Figure 2.9



1. Calf Pad
2. M6 Hex Nut
3. M6 Hex Nylon Dome Nut
4. M5 Flat Washer
5. M5 Spring Washer
6. M5 Hex Socket Head Cap Screw
7. M6 Flat Washer
8. M6 Hex Socket Head Cap Screw

### Tools:

- 3 mm L-shape Allen Key
- 4 mm L-shape Allen Key
- 10 mm open end wrench

---

**Removal and Replacement:**

- 2.9.1 Use 3 mm L-shape Allen Key to loosen part 6.
- 2.9.2 Part 1 can be removed or adjusted.
- 2.9.3 Use 4 mm L-shape Allen Key and 10 mm open end wrench to loosen part 8 and part 3.
- 2.9.4 The location of part 1 can be adjusted.
- 2.9.5 Re-assembly is done in reverse order.

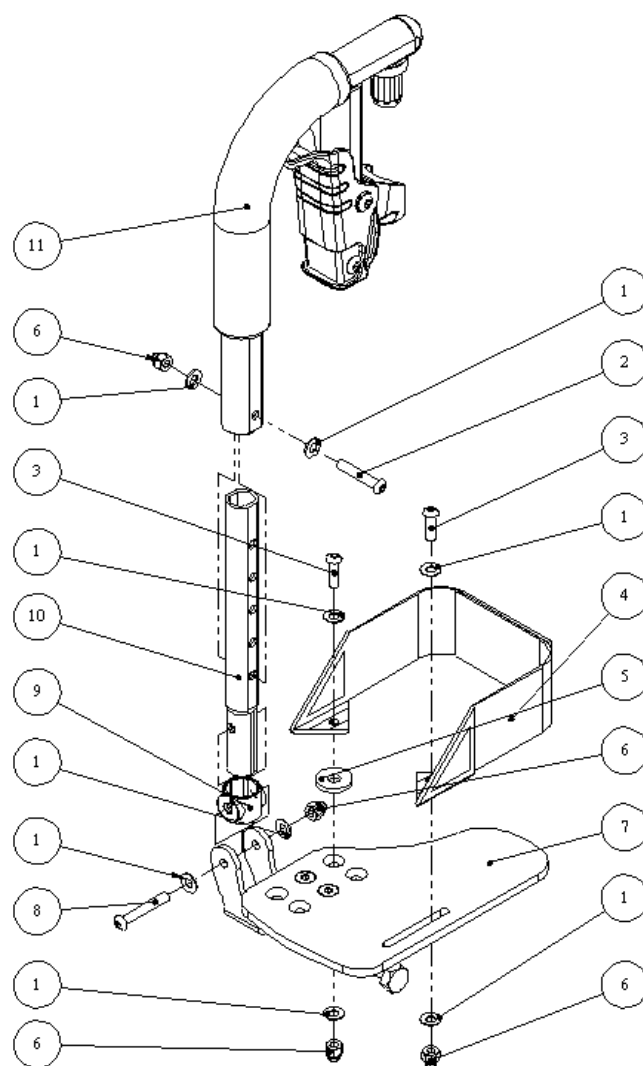
**Key Inspection:**

- Make sure all screws are properly tightened.

---

## 2.10 Vertical Swing-Away Footrest

Figure 2.10



- 1. M6 Flat Washer
- 2. M6 Hex Socket Head Cap Screw
- 3. M6 Hex Socket Head Cap Screw
- 4. Heel Loop
- 5. M8 Flat Washer
- 6. M6 Hex Nylon Dome Nut
- 7. Angle and Depth Adjustable Footrest
- 8. M6 Hex Socket Head Cap Screw
- 9. Sleeve
- 10. Support Tube of Footplate
- 11. Vertical Swing-Away Footrest

---

**Tools:**

- 4 mm L-shape Allen Key
- 10 mm open end wrench

**Removal and Replacement:**

- 2.10.1 Use 4 mm L-shape Allen Key and 10 mm open end wrench to loosen part 2 and part 6.
- 2.10.2 Part 11 can be removed or adjusted.
- 2.10.3 Use 4 mm L-shape Allen Key and 10 mm open end wrench to loosen part 3 and part 6.
- 2.10.4 Remove part 4.
- 2.10.5 Use 4 mm L-shape Allen Key and 10 mm open end wrench to loosen part 8 and part 6.
- 2.10.6 Remove part 7.
- 2.10.7 Re-assembly is done in reverse order.

**Key Inspection:**

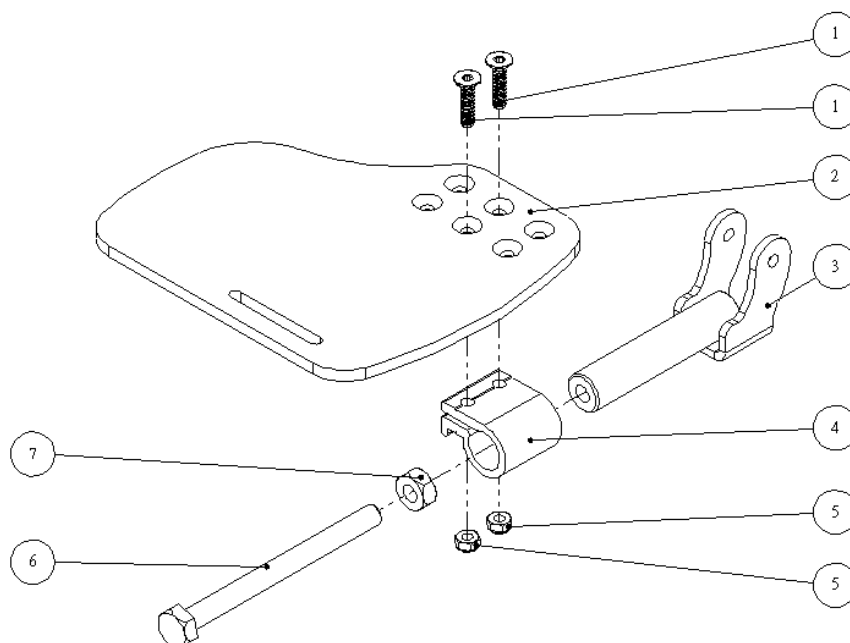
- Make sure all screws are properly tightened.



---

## 2.11 Angle and Depth Adjustable Footrest

Figure 2.11



- 1. M6 Flat Head Socket Cap Screw
- 2. Footplate
- 3. Angle and Depth Adjustable Footrest
- 4. Adjustable Footplate Base
- 5. M6 Hex Nylon Dome Nut
- 6. M10 Hex Socket Head Cap Screw
- 7. M10 Hex Nut

### Tools:

- 4 mm L-shape Allen Key

### Removal and Replacement:

- 2.11.1 Use 4 mm L-shape Allen Key to loosen part 1.
- 2.11.2 Replace or adjust part 2.
- 2.11.3 Re-assembly is done in reverse order.

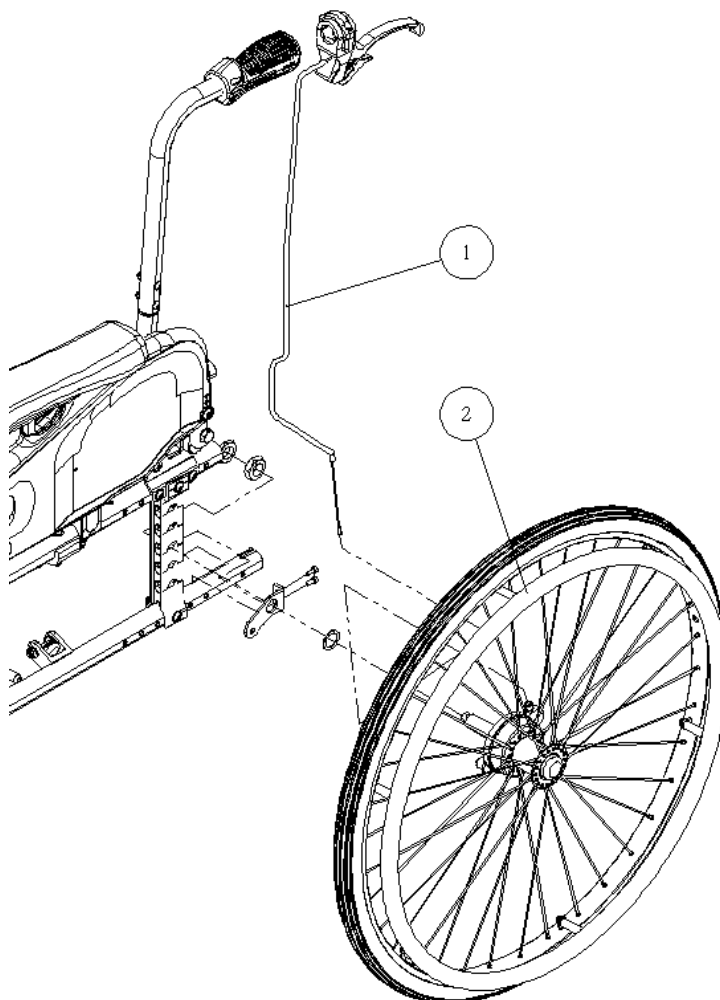
### Key Inspection:

- Make sure all screws are properly tightened.

---

## 2.12 Drum Brake

Figure 2.12



1. Brake Cable

2. Rear Wheel

### Tools:

- 10 mm open end wrench

### Removal and Replacement:

- 2.12.1 Use 10 mm open end wrench to loosen the nut below part 2
- 2.12.2 Remove part 1.
- 2.12.3 Re-assembly is done in reverse order.

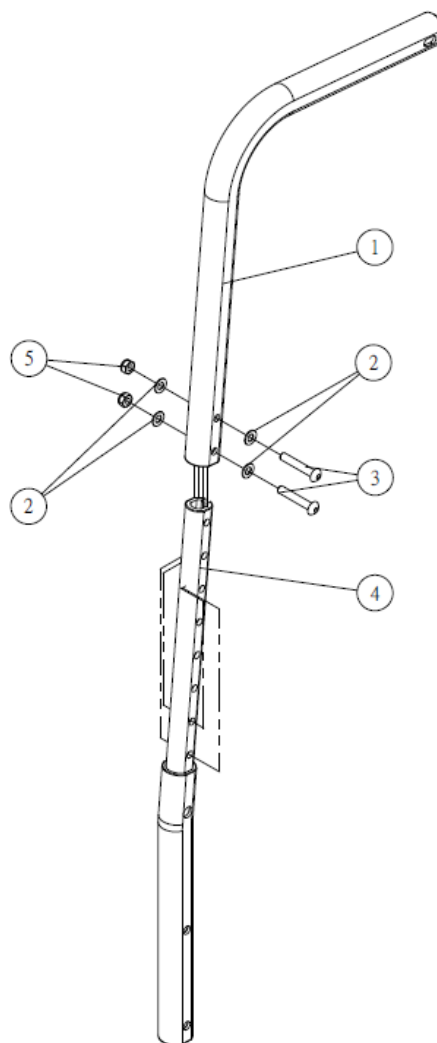
### Key Inspection:

- Make sure all screws are properly tightened.

---

## 2.13 Adjustable Backrest Tube

Figure 2.13



1. Adjustable Backrest Push Handle Tube
2. M5 Flat Washer
3. M5 Button Head Cap Screw
4. Adjustable Backrest Lower Tube
5. M5 Nylon Lock

### Tools:

- 4 mm L-shape Allen Key
- 8 mm open end wrench

### Removal and Replacement:

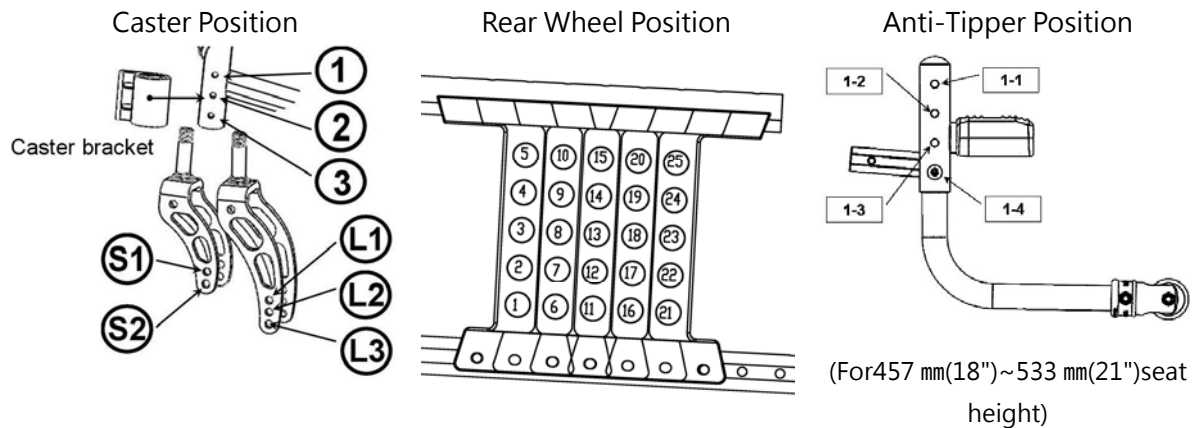
- 2.11.1 Use 4 mm L-shape Allen Key and 8 mm open end wrench to loosen part 3 and part 5.
- 2.11.2 Replace or adjust part 6.
- 2.11.3 Re-assembly is done in reverse order.

### Key Inspection:

- Make sure all screws are properly tightened.

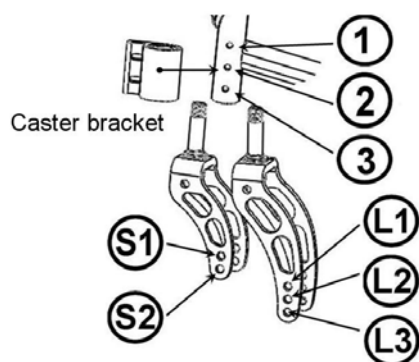
### 3. Instructions of Adjustment

#### 3.1 Adjusting Seat Height for Wheelchair Equipped with 20, 22 or 24 Inch Rear Wheels

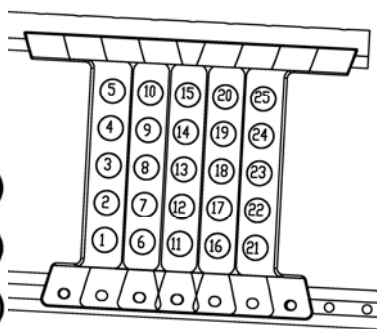


Seat Height	Caster Size Caster Position		Rear Wheel Size	Caster Bracket	Rear Wheel Position	Seat Angle	Anti-Tipper Position
533 mm (21")	8" L3		24"	2 3	6	6.6 °	1-4
					11	6.1 °	
					16	5.7 °	
508 mm (20")	8" L3		24"	2 3	7	6.3 °	1-3
					12	6 °	
					17	5.8 °	
	8" L3		22"	2 3	6	5.5 °	
					11	5.3 °	
					16	5.1 °	
	8" L3		20"	2 3	6	7.8 °	
					11	7.2 °	
					16	6.9 °	
483 mm (19")	7" L2	6" L3	24"	2 3	8	5.5 °	1-2
					13	5.3 °	
					18	5.1 °	
	7" L2	6" L3	22"	2 3	7	5.8 °	
					12	5.6 °	
					17	5.3 °	
	7" L2	6" L3	20"	2 3	6	5.2 °	
					11	5.0 °	
					16	4.6 °	

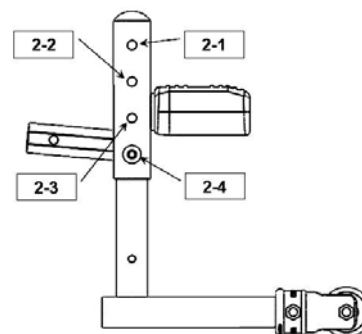
Caster Position



Rear Wheel Position (



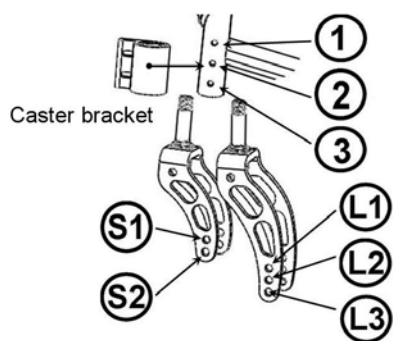
Anti-Tipper Position



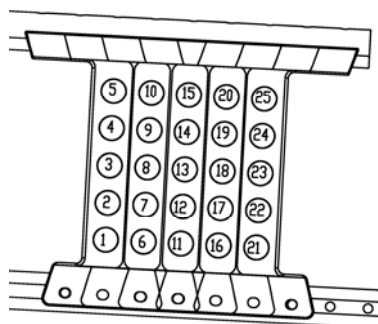
(For 304 mm(15.5")~457 mm  
(18") seat height)

Seat Height	Caster Size Caster Position		Rear Wheel Size	Caster Bracket	Rear Wheel Position	Seat Angle	Anti-Tipper Position	
457 mm (18")	6"	5"	22"	②③	8	5.5°	1-1	2-4
	①L1	①L2			13	5.3°		
					18	5.1°		
	6"	5"	20"	②③	7	5.1°		
	①L1	①L2			12	5.0°		
432 mm (17")			22"	②③	17	4.8°	2-3	
	5"				9	5.4°		
	①S2				14	5.0°		
	5"		20"	②③	19	4.5°		
	①S2				8	5.1°		
406 mm (16")			22"	①②	13	4.7°	2-2	
	5"				18	4.5°		
	①S2				10	4.8°		
	5"		20"	①②	15	4.6°		
	①S2				20	4.3°		
					9	5.1°		
					14	4.9°		
					19	4.7°		

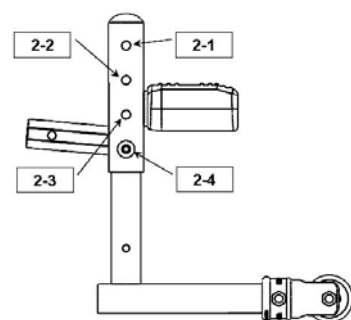
Caster Position



Rear Wheel Position



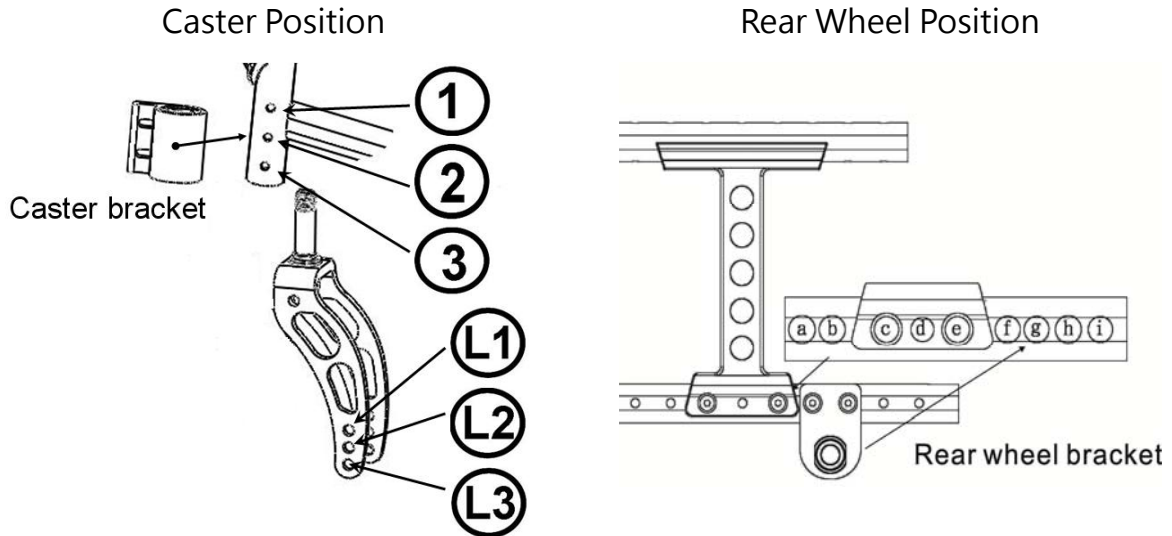
Anti-Tipper Position



(For 394 mm(15.5")~457 mm(18")  
seat height)

Seat Height	Caster Size Caster Position	Rear Wheel Size	Caster Bracket	Rear Wheel Position	Seat Angle	Anti-Tipper Position
394 mm (15.5")	5" S1	22"	①②	10	4.0°	2-1
				15	3.8°	
				20	3.7°	
	5" S1	20"	①②	9	4.0°	
				14	3.7°	
				19	3.4°	

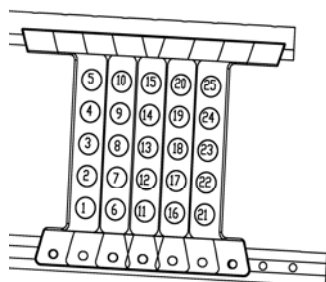
### 3.2 Seat Height Adjustment for Wheelchair Equipped with 14 inch Rear Wheels



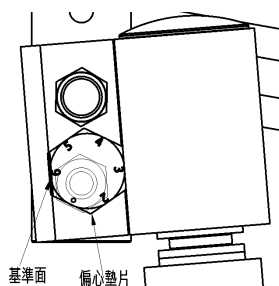
Seat Height	Caster Size Caster Position		Rear Wheel Size	Caster Bracket	Rear Wheel Posotion	Seat Angle
508 mm (20")	8" L2	7" L3	14"	2 3	f g	8.5 °
483 mm (19")	7" L2	6" L3	14"	2 3	f g	6.0 °
457 mm (18")	6" L1	5" L2	14"	2 3	f g	3.5 °

### 3.3 Caster Adjustment for wheelchair Equipped with 20, 22 or 24 Inch Rear Wheels

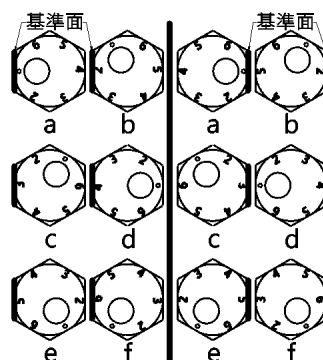
Rear Wheel Position



Eccentric Hex Spacer



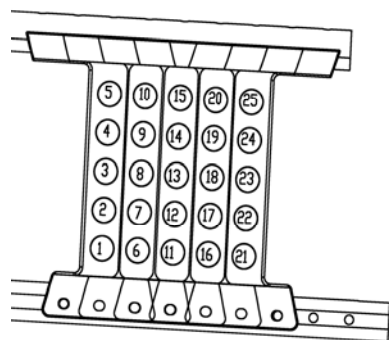
Direction of Eccentric Hex Spacer



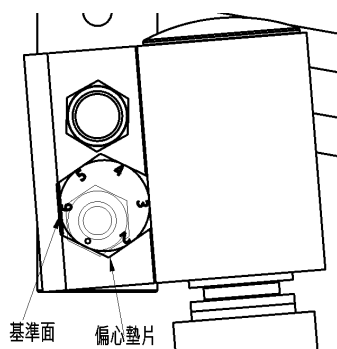
Seat Height	Caster Size		Rear Wheel Size	Rear Wheel Bracket	Direction of Eccentric Hex Spacer			
					Right	Left		
533 mm (21")	8"		24"	6	b	b		
				11	b	b		
				16	b	b		
508 mm (20")	8"		24"	7	b	b		
				12	b	b		
				17	b	b		
	8"		22"	6	b	b		
				11	b	b		
				16	b	b		
	8"		20"	6	b	b		
				11	b	b		
				16	b	b		
483 mm (19")	7"	6"	24"	8	b	b		
				13	b	b		
				18	b	b		
	7"	6"	22"	7	b	b		
				12	b	b		
				17	b	b		
	7"	6"	20"	6	b	b		
				11	b	b		
				16	b	b		



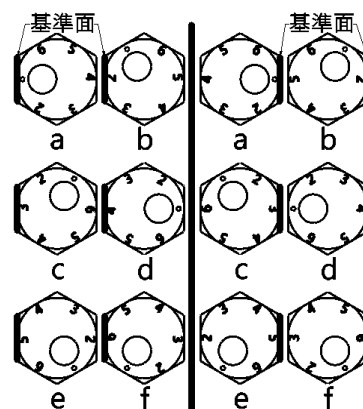
Rear Wheel Position



Eccentric Hex Spacer

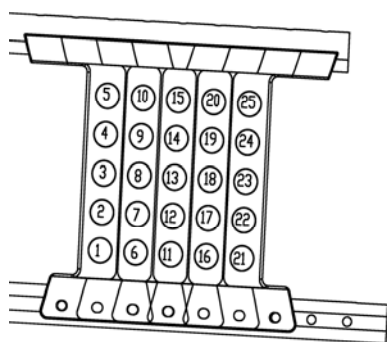


Direction of Eccentric Hex Spacer

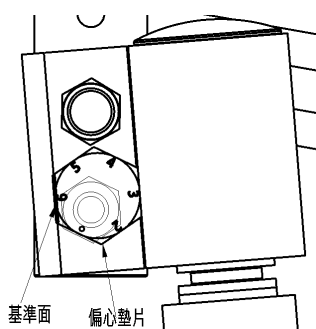


Seat Height	Caster Size		Rear Wheel Size	Rear Wheel Bracket	Direction of Eccentric Hex Spacer			
457 mm (18")	6"	5"	22"	8	b	b		
				13	b	b		
				18	b	b		
	6"	5"	20"	7	b	b		
				12	b	b		
				17	b	b		
432 mm (17")	5"		22"	9	b	b		
				14	b	b		
				19	b	b		
	5"		20"	8	b	b		
				13	b	b		
				18	b	b		
406 mm (16")	5"		22"	10	b	b		
				15	b	b		
				20	b	b		
	5"		20"	9	b	b		
				14	b	b		
				19	b	b		

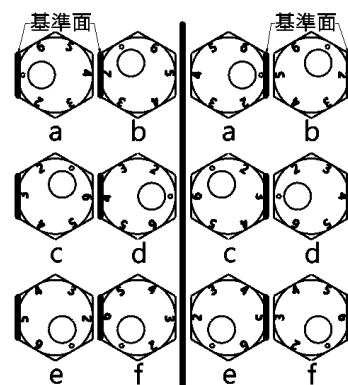
Rear Wheel Position



Eccentric Hex Spacer

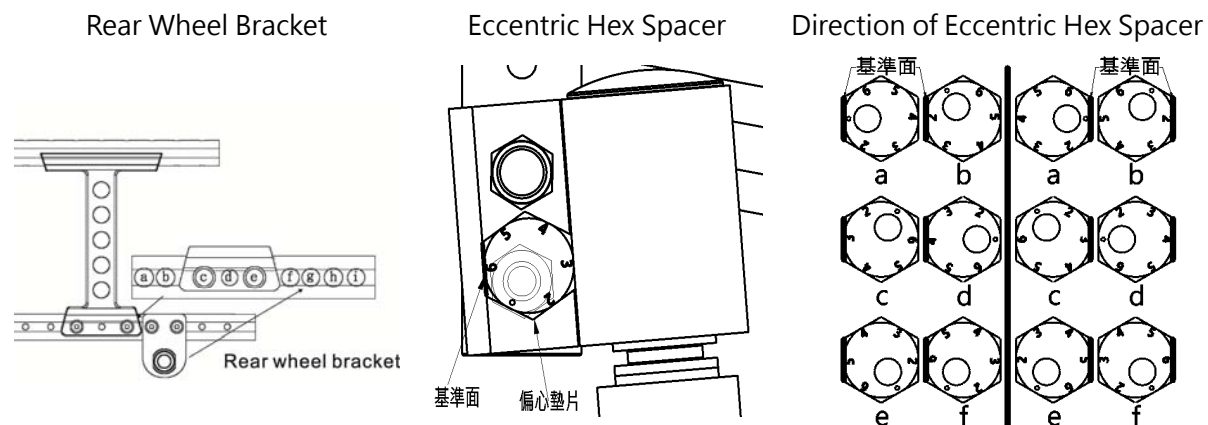


Direction of Eccentric Hex Spacer



座高	Caster Size	Rear Wheel Size	Rear Wheel Bracket	Direction of Eccentric Hex Spacer			
394 mm (15.5")	5"	22"	10	b	b		
			15	b	b		
			20	b	b		
	5"	20"	9	b	b		
			14	b	b		
			19	b	b		

### 3.4 Caster Adjustment for Wheelchair Equipped with 14 inch Rear Wheels



Seat Height	Caster Size		Rear Wheel Size	Rear Wheel Bracket	Direction of Eccentric Hex Spacer			
508 mm (20")	8"		14"	(f)(g)	a	a		
483 mm (19")	7"	6"	14"	(f)(g)	b	b		
457 mm (18")	6"	5"	14"	(f)(g)	b	b		

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