

## *Invacare **Blade Plus Chair***

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### ***Maintenance and Spares Parts Manual***

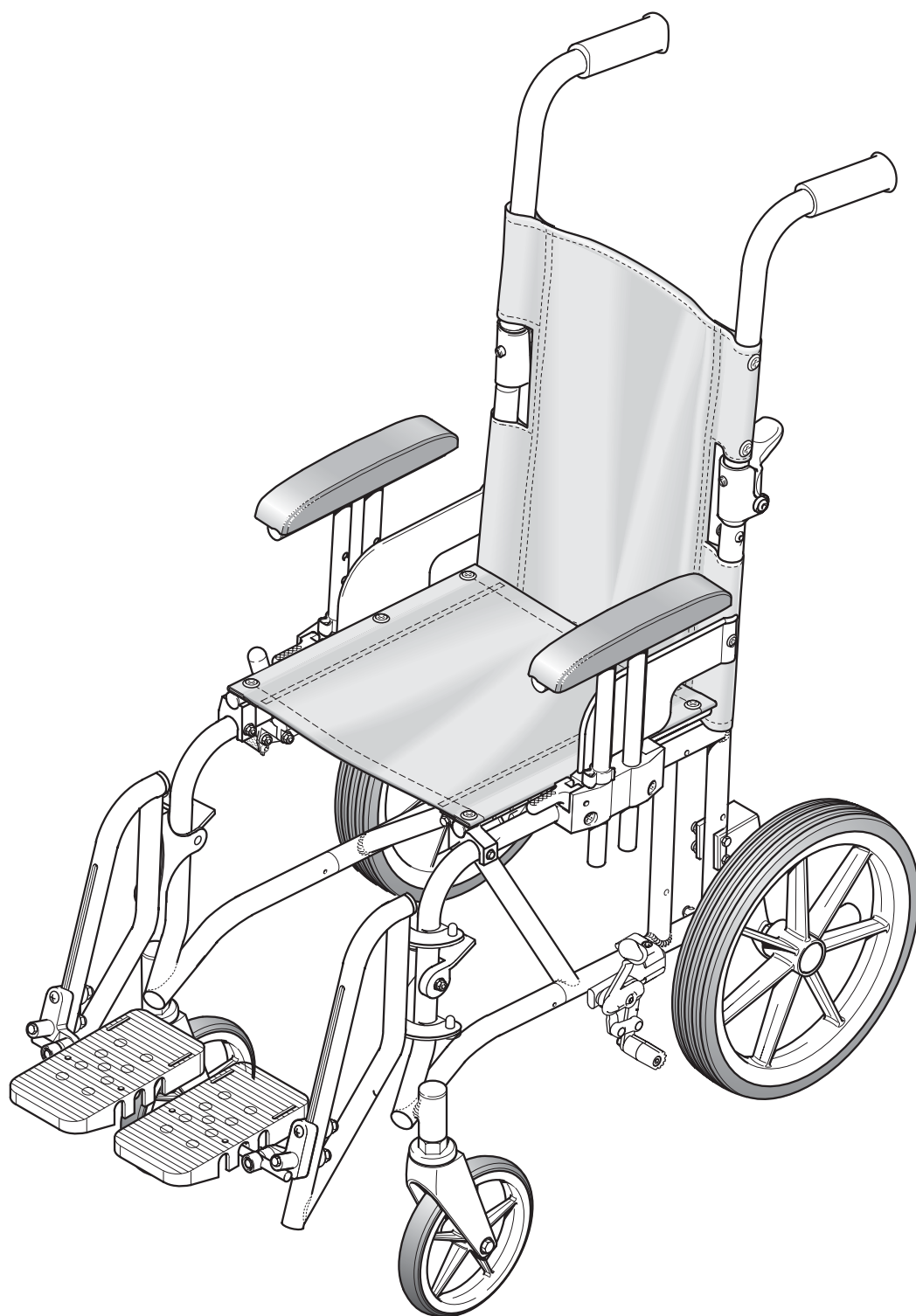
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<b>Contents</b>	<b>Page</b>
<b>Chapter 1 Introduction</b>	
Introduction .....	1.3
Policy .....	1.5
Technical Details .....	1.5
<b>Chapter 2 Maintenance</b>	
Scope .....	2.3
Inspection .....	2.3
Tools .....	2.4
Removing And Replacing Backrest Canvas .....	2.7
Removing And Replacing An Armrest Assembly .....	2.9
Removing And Replacing Main Wheel Assemblies .....	2.11
Removing And Replacing A Brake Assembly .....	2.15
Removing And Replacing A Castor Wheel Assembly .....	2.17
Removing And Replacing An Adjustable Footrest Assembly .....	2.19
Removing And Replacing Seat Canvas .....	2.21
Configuring The Chair For 20 inches or 22 inches Wheel And Brake Assembly .....	2.23
<b>Chapter 3 Illustrated Parts Catalogue</b>	
General .....	3.3
Ordering Information .....	3.3
Blade Plus Wheel Chair Assembly .....	3.5
Backrest Assembly .....	3.7
Armrest Assembly .....	3.9
Main Wheel Assemblies (Transit, 20 inches or 22 inches Diameter) .....	3.11
Brake Assembly .....	3.15
Castor Wheel Assembly .....	3.19
Adjustable Footrest Assembly .....	3.21
Seat And Chassis Assembly .....	3.23
Optional Extras .....	3.25

## Chapter 1

### Introduction

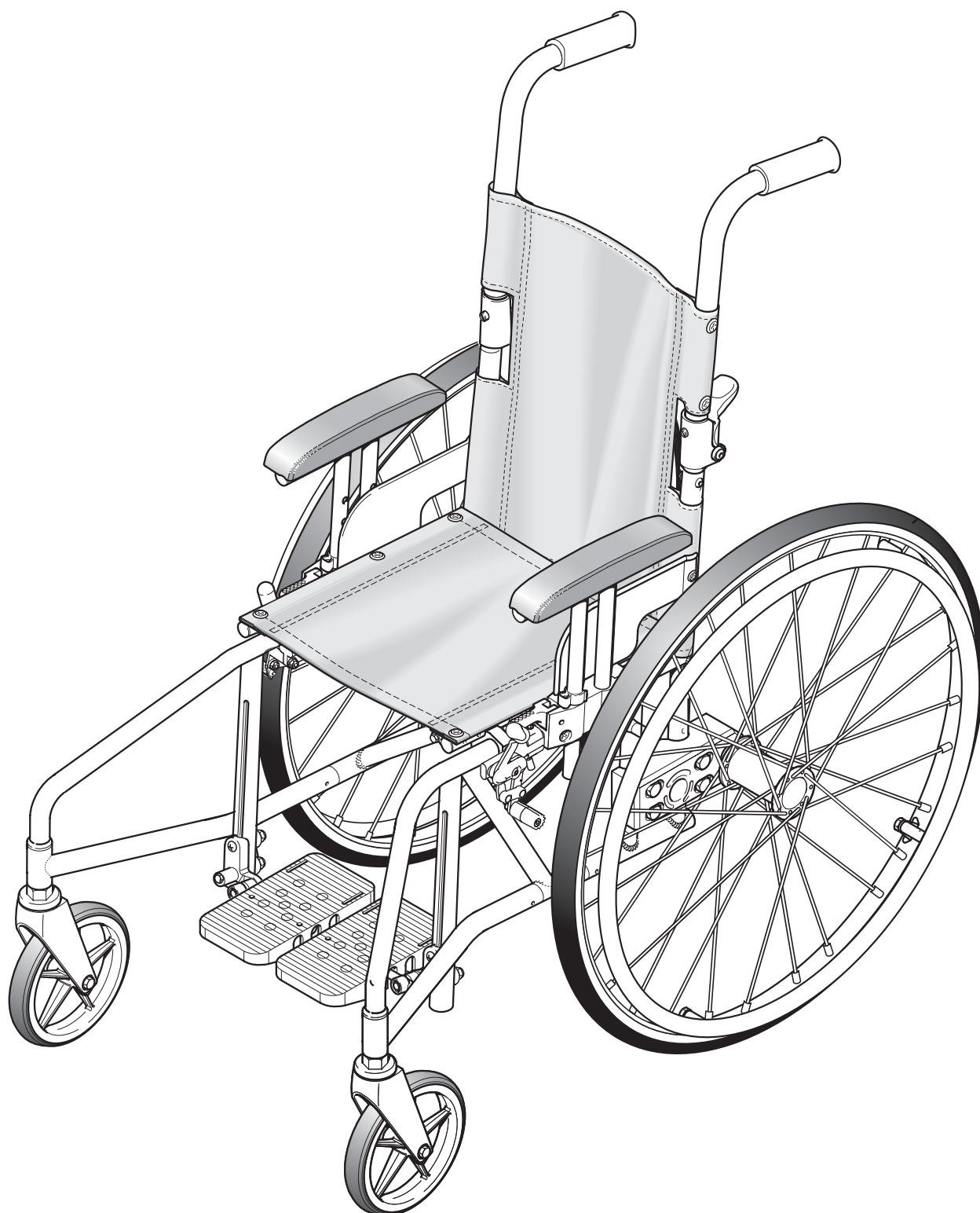


**Figure 1.0 Blade Plus Fitted with Transit Wheels and Swingaway Footrests**

## Introduction

- 1 This manual provides basic details to enable the Blade Plus Wheelchair to be maintained. It is not intended to be a comprehensive maintenance guide/policy, but is intended for use by competent personnel to enable the chair to be adequately maintained.
- 2 The manual is split into the following chapters:  

Chapter 2	Detailing assemblies that are maintainable and the relevant procedures.
Chapter 3	Detailing parts that are available to enable the maintenance in Chapter 2 to be complied with.
- 3 The Blade Plus Wheelchair is manufactured by:  
INVACARE Ltd  
South Road  
Bridgend Industrial Estate  
Bridgend  
Mid-Glamorgan  
CF31 3PY
- 4 For Customer Service enquiries, repairs, servicing and spares, contact INVACARE Ltd at the address below and quote all the details as indicated in paragraphs 6.
- 5 INVACARE Ltd  
South Road  
Bridgend Industrial Estate  
Bridgend  
Mid-Glamorgan  
CF31 3PY  
  
Tel No: 01656 647327  
Fax No: 01656 649016
- 6 Quote the following details:
  - 6.1 Part Number
  - 6.2 Description
  - 6.3 Quantity required of each item
  - 6.4 Serial or batch number
  - 6.5 End user



**Figure 1.1 Blade Plus Fitted with Self-Propelling Wheels with Outrigged Castors**

## Policy

- 8 INVACARE Ltd repair policy is as follows:

Repairs to ANY component other than those detailed in Chapter 2 are not covered. Repairs to ANY metal work is not generally permitted without express permission of INVACARE Ltd. ALL fasteners i.e. bolts, Nyloc nuts, and any fastener showing damage MUST be renewed.

Failure to comply with the above absolves INVACARE Ltd of liability.

**+ Note:** Certain components will require removal to carry out maintenance. With the exception of fasteners, these components should be refitted.

## Technical Details

- 9 The following data applies to the Blade+.

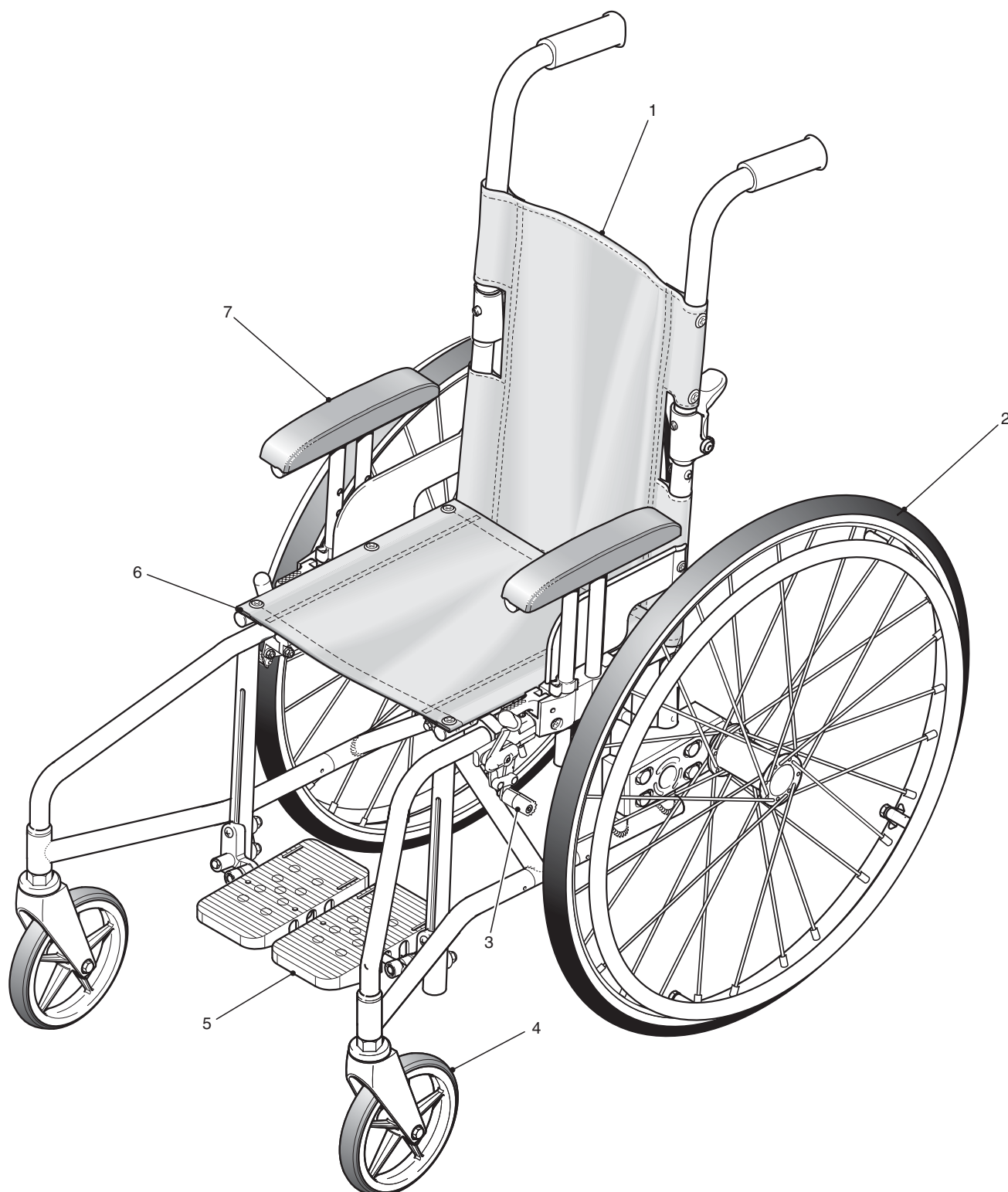
- 9.1 Available seat widths:  
10 inches to 14 inches.
- 9.2 Chair depth available (adjusted using telescopic tube):  
9 inches to 15 inches.
- 9.3 Seat to ground height:  
18 inches.
- 9.4 Wheel types available:  
12 1/2 inches transit (located to frame).  
20 inches and 22 inches quick release with pneumatic or solid tyre (located to frame).
- 9.5 Maximum user weight:  
8 stone (50 kg).
- 9.6 Backrest type:  
14 inches hinge angled backrest (3°).
- 9.7 Chair finish:  
Painted in black, red, blue and purple.
- 9.8 Transit weight of chair:  
28 lbs (12.6 kg) to 34 lbs (15.4 kg) dependent on configuration.

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## **Chapter 2**

# **Maintenance**



- 1 Backrest
- 2 Rear wheels
- 3 Brake assembly
- 4 Castor assembly

- 5 Adjustable footrest
- 6 Seat
- 7 Armrest assembly

**Figure 2.0.1 General Arrangement with Self-Propelling Wheels**

## Scope

1 This chapter details the removal and/or replacement procedures required for the following assemblies and/or items. It is not intended to be a strict policy of maintenance but should be used as a guide only.

2 The assemblies covered (refer to Fig 2.0.1) are as follows:

Section	Assembly	Page
2.1	Folding backrest assembly	2.6
2.2	Armrest assembly	2.8
2.3	Rear wheels assembly - Transit	2.10
2.4	Brake assembly	2.14
2.5	Removing and replacing a castor wheel assembly	2.16
2.6	Adjustable footrest	2.18
2.7	Seat canvas	2.20

3 For the tools required refer to the list of tools detailed in paragraph 12. Any special tooling and/or torque requirements will be referred to within the relevant text.

4 General engineering practices and safe working practices must be adhered to at all times.

5 For further information on the assemblies contained within this chapter, contact Customer Services, INVACARE Ltd., (refer to address in chapter 1) quoting the following details:

- 5.1 Part Number
- 5.2 Description
- 5.3 Quantity required
- 5.4 Serial or batch number
- 5.5 End user

6 For any ordering or spares procurement, contact INVACARE Ltd., (refer to address in Chapter 1) quoting the details in paragraphs 5 and 6.

## Inspection

7 In general, a weekly visual check will meet all the inspection requirements.

8 Ensure that the following are checked:

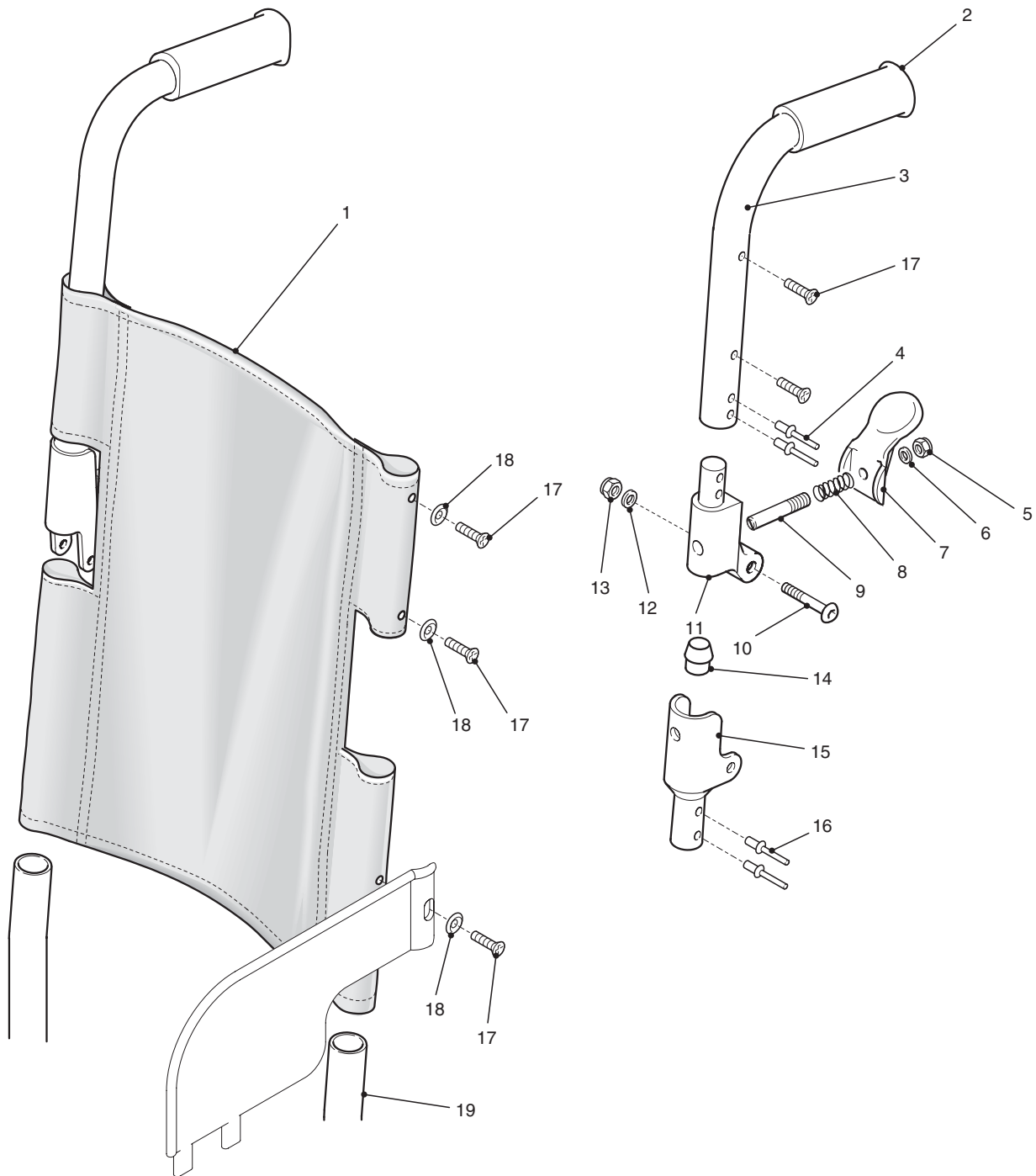
- 8.1 Fabric is undamaged and has no signs of sagging.
- 8.2 The footrest is correctly fitted.
- 8.3 Both armrests are securely fitted in place.
- 8.4 Brake mechanism operates freely and when locked, the chair does not move.
- 8.5 Footplates are undamaged and are correctly fitted.
- 8.6 Tyres are in good order and the wheels are not damaged.
- 8.7 If stabilisers are fitted, they are firmly locked in place.

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- 9 Check the finish of the chair for any damage.
- + **Note:** Some finishes are unique to the chair. Check with INVACARE Ltd for details.
- 10 Check that all bungs and handgrips are fitted and undamaged.

## Tools

- 11 The following list details the basic tools required to carry out the maintenance given in the following sub-chapters.
- 11.1 Pliers
  - 11.2 Drills (Metric and Imperial)
  - 11.3 Spanners (Metric and Imperial)
  - 11.4 Pozidrive screwdriver
  - 11.5 Thin flat bladed screwdriver
  - 11.6 Adjustable spanner
  - 11.7 Torque wrench (20 to 40 lbf.ft rating)
  - 11.8 Set of Allen keys (Metric and Imperial)
  - 11.9 Protected jaw grips
  - 11.10 Nylon mallet
  - 11.11 Pop rivet gun
- + **Note:** The above list is not exhaustive.



- 1 Backrest canvas
- 2 Hand grips
- 3 Push handle LH
- 4 Pop rivet
- 5 Nyloc nut
- 6 Washer
- 7 Backrest lever
- 8 Spring
- 9 Backrest pin

- 10 Button head bolt
- 11 Top casting
- 12 Plain washer
- 13 Nyloc nut
- 14 Rubber buffer
- 15 Bottom casting
- 16 Pop rivet
- 17 Taptite screw
- 18 Cup washer
- 19 Frame

**Figure 2.1.1 Folding Backrest Assembly**

## 2.1 Removing And Replacing The Backrest Canvas

### General

- 1 Check the backrest canvas (1) and push handles (3) for any defects, (refer to paragraphs 4 and 5). If any defects are observed then refer to paragraphs 6 to 7 for maintenance details and to Chapter 3 for parts information.
- 2 Ensure that the push handle locks securely into place and that the locking mechanism functions correctly.

### Tools

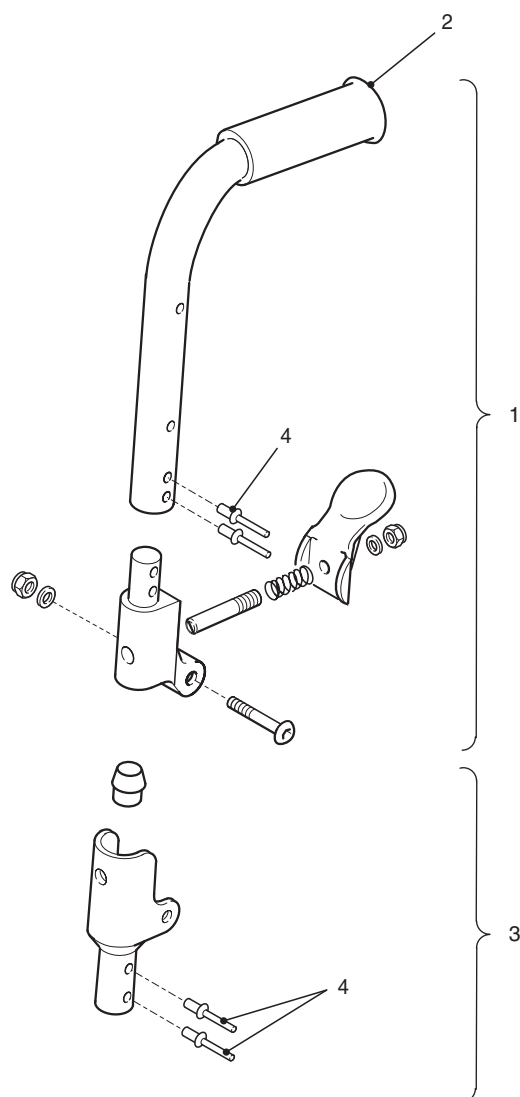
- 3 Refer to the tool list at the beginning of this Chapter.

### Inspection

- 4 Inspect on a weekly basis for the following:
  - 4.1 No signs of sagging, stretching or excessive wear in the canvas (1).
  - 4.2 No evidence of fraying, especially around the fastener points.
  - 4.3 Pozidrive head screws (17) not missing.
  - 4.4 Cup washers (18) not missing.
- 5 Inspect the locking mechanism for the following:
  - 5.1 Rubber buffer (14) are not deformed or damaged.
  - 5.2 Locks safely when the push handle (3) is in the upright position.
  - 5.3 Not excessively stiff to operate (action should be smooth and positive).

### Removal of the backrest canvas and push handle assembly

- 6 To remove or replace the backrest canvas (1) proceed as follows:
  - 6.1 Release the locking levers (7) and fold the push handle (3) down.
  - 6.2 Unscrew and remove the four taptite screws (17) and cup washers (18) from push handle (3).
  - 6.3 Unscrew and remove the two button head bolts (10), Nyloc nuts (13) and plain washers (12).
  - 6.4 Remove the two taptite screws (17), cupwasher (18), Nyloc nut (5), washer (6), lever (7), spring (8) and pin (9).
  - 6.5 Slide the backrest canvas (1) off the push handle (3).
  - 6.6 Slide the backrest canvas (1) off the lower half of the back frame (19).
- 7 Replacing the backrest canvas and push handle assembly.
  - 7.1 To replace the backrest canvas is the reverse of the removal, however ensure the following:
  - 7.2 New nyloc nuts are fitted.
  - 7.3 The securing points are undamaged.
  - 7.4 New cup washers are fitted as required.
  - 7.5 The backrest canvas is stretched evenly and is taut.



- 1 Handle assembly
- 2 Black hand grip
- 3 Hinge casting kit
- 4 Pop rivet

**Figure 2.1.2 Push Handle Tube Assembly**



## Removal of snap-in bottom casting kit

8 To remove the snap in bottom casting kit proceed as follows:

8.1 Ensure that armrest is removed (Section 2.2). Support the wheelchair as stable as possible.



**CAUTION:** Ensure that when drilling out the rivets (4) the holes in the frame are not damaged.

8.2 Using a 5 mm Ø drill bit, drill out the four rivets (4) and remove casting.

## Replacing snap-in bottom casting kit

9 To replace the snap-in bottom casting kit proceed as follows:

9.1 Ensure that the casting is located correctly and secure. Use pop rivets supplied.

## Removal of hand grip

10 To remove the hand grip proceed as follows:

10.1 Remove push handle assembly (Paragraph 6). Support the push handle in a soft jawed vice.



**CAUTION:** Great care must be taken when using sharp instruments.

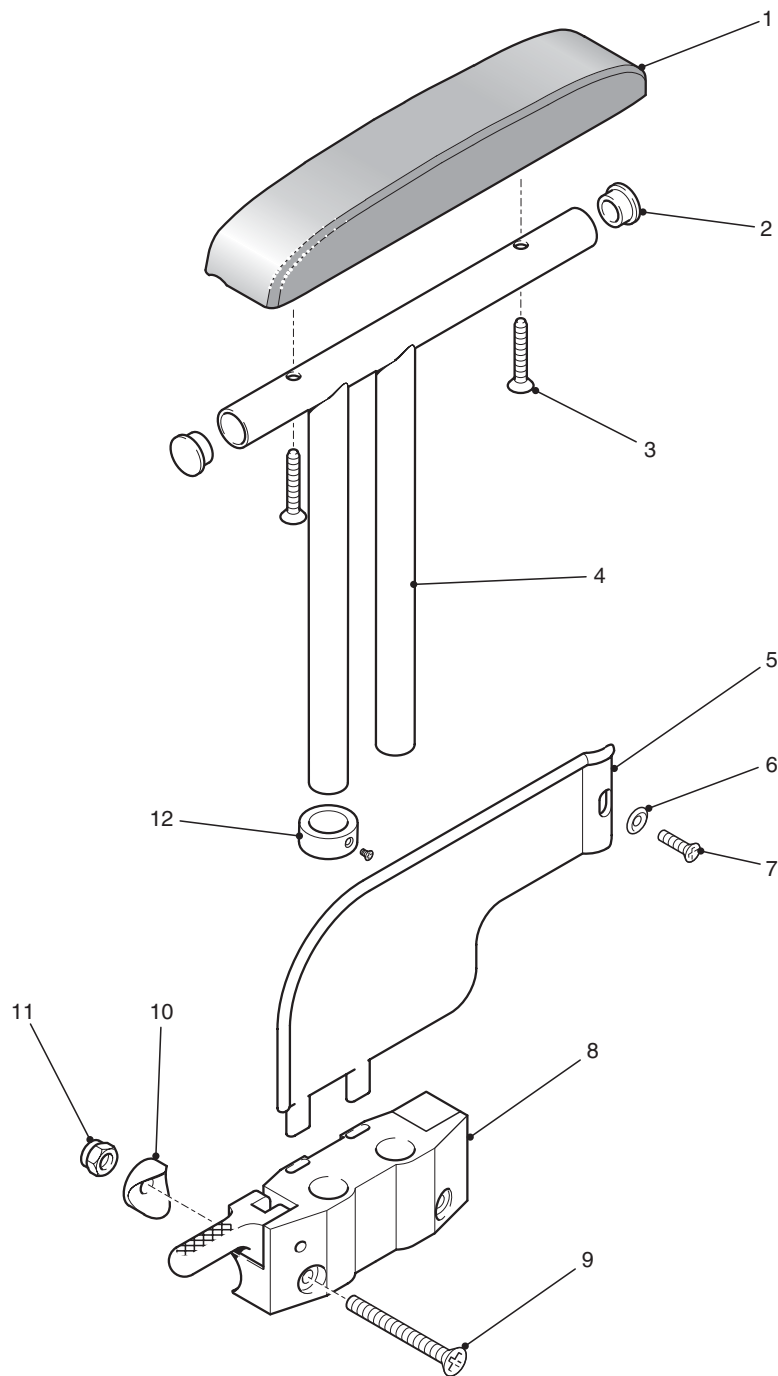
10.2 Carefully cut the hand grip (2) along its length. The hand grip can then be removed.

## Replacement of hand grip

11 To replace the hand grip proceed as follows:

11.1 Apply a few drops of instant glue inside the mouth of the hand grip.

11.2 Align hand grip onto push handle and fully locate hand grip onto push handle using a nylon mallet.



- |   |               |    |                      |
|---|---------------|----|----------------------|
| 1 | Armrest pad   | 7  | Taptite screw        |
| 2 | Bung          | 8  | Armrest block        |
| 3 | Taptite screw | 9  | Pozidrive head screw |
| 4 | Armrest frame | 10 | Dished washer        |
| 5 | Skirt guard   | 11 | Nyloc nut            |
| 6 | Cup washer    | 12 | Armrest stop         |

**Figure 2.2 Armrest Assembly**

## 2.2 Removing And Replacing An Armrest Assembly

### General

+ **Note:** The armrest assembly comprises the following:

The armrest pad (1), skirt guard (5), frame (4) and armrest stop (12).

- 1 Check the armrest (1) and frame (4) for any defects (refer to paragraph 4). If any defects are observed then refer to paragraphs 5 to 8 for maintenance details and to Chapter 3 for parts information.
- 2 The armrest can be renewed as either:
  - 2.1 A complete assembly.
  - 2.2 The frame, skirt guard and armpad.

### Tools

- 3 Refer to the tool list at the beginning of this Chapter.

### Inspection

- 4 Inspect on a regularly basis for the following:
  - 4.1 Frame (4), skirt guard (5) and finish are undamaged.
  - 4.2 Armrest pad (1) is undamaged and securely fastened in place.

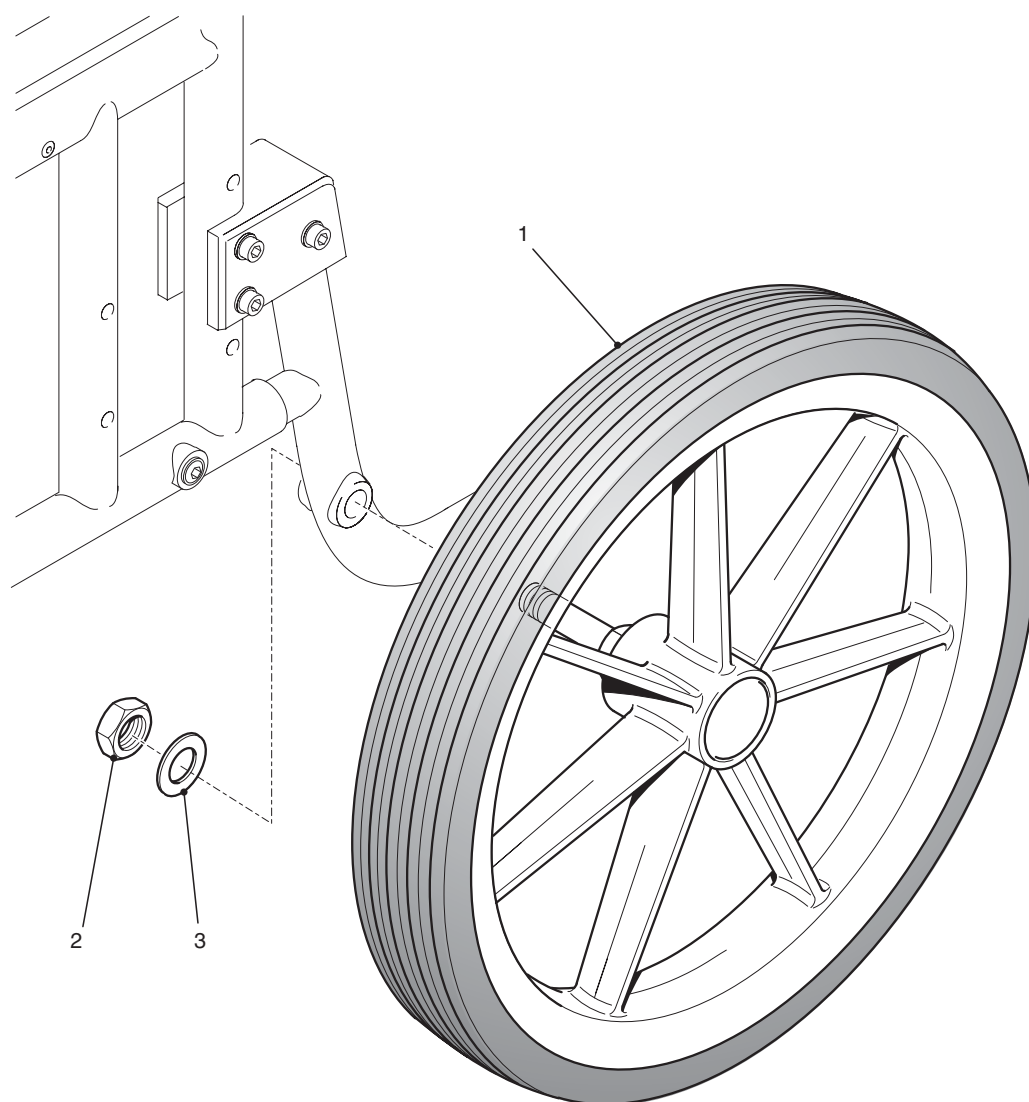
### Repairing An Armrest Assembly

+ **Note:** For ease of maintenance the armrest assembly can be replaced as a complete assembly.

- 5 To repair the armrest assembly proceed as follows:
  - 5.1 Support the frame (4) using a soft jawed vice.
- 6 Removing the armrest pad (1).
  - 6.1 Unscrew and remove the two taptite screws (3).
  - 6.2 Remove the armrest pad from the frame.
- 7 Removing a skirt guard (5).
  - 7.1 Unscrew and remove the taptite screw (7) and cup washer (6) and slide the skirt guard from the armrest block (8).
- 8 Removing the armrest block.
  - 8.1 Unscrew and remove the two pozidrive head screws (9), nyloc nut (11) and dished washer (10).

### Replacing Armrest Components

- 9 To replace any of the components of the armrest is the reverse of the removal; however ensure the following:
  - 9.1 The skirt guard (5) is flush fitting to the frame (4).
  - 9.2 Bungs (2) are undamaged when replaced.



1 Transit wheel

2 Locknut

3 Washer

**Figure 2.3 Rear Wheel Assembly - Transit Type**

## 2.3 Removing And Replacing Rear Wheel Assemblies

### General

+ **Note:** This chair can be fitted with the following wheel types:

- (a) Transit style.
- (b) A 20 inches or 22 inches diameter wheel with hand rim and Q/R hub, solid or pneumatic tyres.

- 1 Refer to section 2.8 for details on how to configure the chair when fitting larger 20 inches or 22 inches diameter wheels.
- 2 Check the wheel assembly for any defects (refer to paragraph 5). If any defects are observed then refer to paragraphs 6 to 11 for maintenance details and to Chapter 3 for parts.
- 3 The main wheel assembly can be renewed as either:
  - 3.1 A complete assembly.
  - 3.2 Replacement for the hand rim (20 inches or 22 inches diameter wheel only).

### Tools

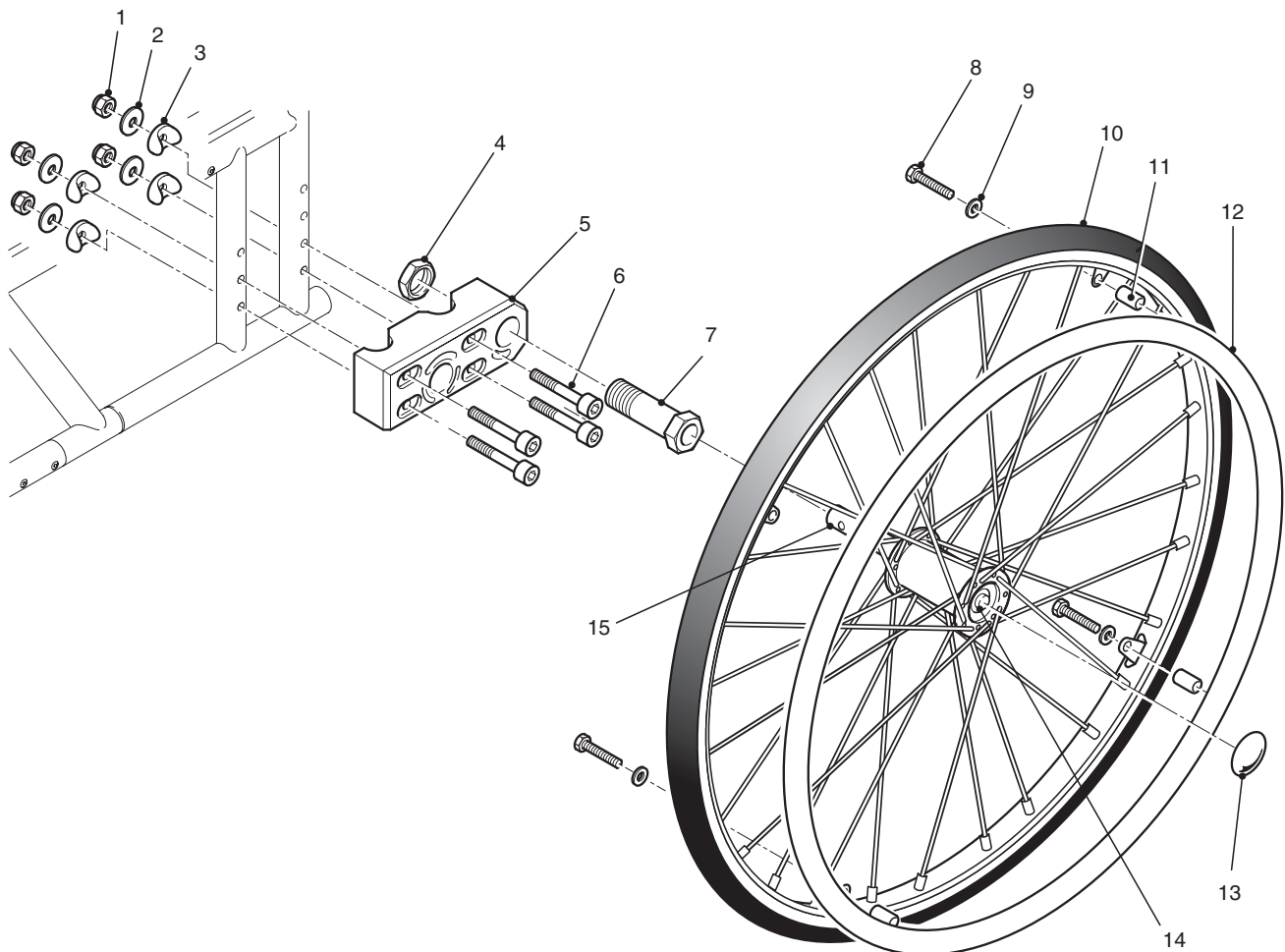
- 4 Refer to the tool list at the beginning of this Chapter.
  - 4.1 A torque wrench of 25 lbf.ft rating is required.

### Inspection

- 5 Inspect on a weekly basis for the following:
  - 5.1 Damage and excessive wear to either wheel or tyre.
  - 5.2 When the wheel assembly is allowed to free wheel that no binding, grating noise or unconcentric rotation are present.
  - 5.3 Wheel rim and spokes are undamaged.
  - 5.4 If fitted, the hand rim is undamaged.

### Removing A Transit Wheel Assembly

- 6 To remove a transit wheel (1) (refer to Fig 2.3) proceed as follows:
  - 6.1 Raise and support the chair so the damaged wheel is free of the ground.
  - 6.2 Using a suitable size spanner grip the nut located behind the wheel hub.
  - 6.3 Using the torque wrench, unscrew and remove the locknut (2).
  - 6.4 Slide the wheel free from its location on the frame.



- 1 Nyloc nut
- 2 Flat washer
- 3 Dished washer
- 4 Locknut
- 5 Mounting block
- 6 Bolt, Socket Hd
- 7 Wheel mounting bush
- 8 Screw

- 9 Washer
- 10 Wheel
- 11 Spacer, handrim
- 12 Handrim
- 13 Cap
- 14 Inner button
- 15 Axle

**Figure 2.3.1 Main Wheel Assembly (20 inches or 22 inches diameter - Q/R Hub)**

## Removing A 20 inches or 22 inches Diameter Main Wheel Assembly Fitted With A Q/R Hub

- 7 To remove a Q/R hub fitted wheel, proceed as follows:
  - 7.1 Remove the hub cap (13).
  - 7.1 Push the inner button (14) and slide the wheel assembly out of the locating block.
- 8 Prior to fitting the wheel assemblies, ensure that the location is undamaged.
  - 8.1 Replacing Q/R hub fitted wheel is the reverse of removal.
  - 8.2 Ensure that each Q/R wheel locates correctly in both Q/R axle bushes.

## Replacing A Quick Release Axle

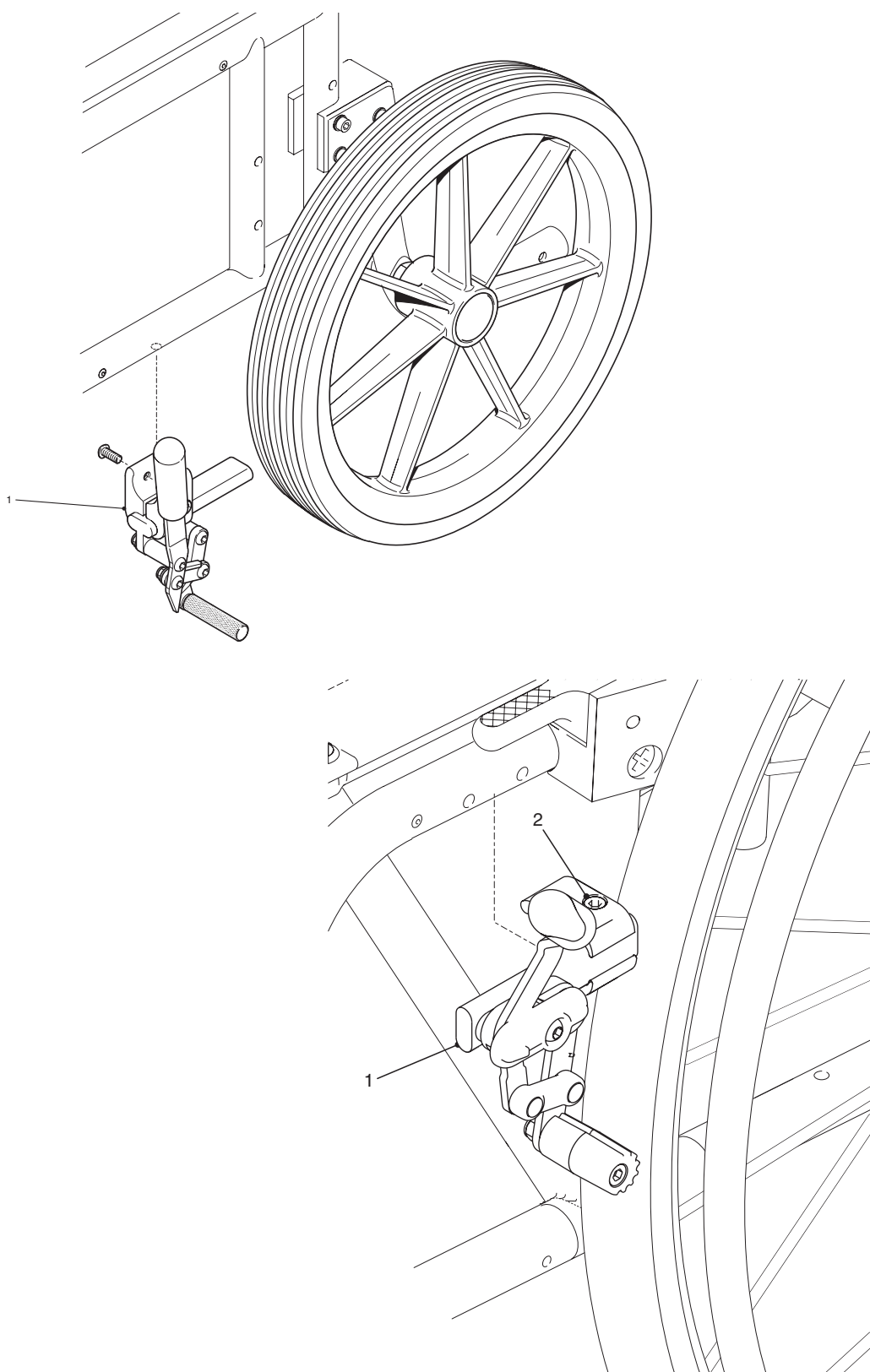
- 9 To remove a quick release axle (15), proceed as follows:
  - 9.1 Remove quick release hub wheel (refer to paragraph 7).
  - 9.2 Using circlip pliers remove circlip and washer.
  - 9.3 Remove axle from hub.
- 10 Replacing a quick release axle is the reverse of the removal.

## Adjusting A Quick Release Axle

- 11 To adjust a quick release axle (15), proceed as follows:
  - 11.1 Using circlip pliers remove circlip and washer.
  - 11.2 Using a suitable socket on the nut and a suitable spanner on the axle end, adjust to give a secured fit into the axle bushes.
  - 11.3 Ensure that each quick release wheel locates correctly in both quick release axle bushes.
- 12 To replace a hand rim is the reverse of the removal. Tighten the four securing screws (8) evenly to prevent distortion.



**CAUTION:** When or if changing wheel size or position, refer to page 3.27 for correct brake part number



1 Brake Assembly

2 Socket Head Screw

**Figure 2.4 Brake Assembly - Transit and Self-Propelling Wheel Arrangement**



## 2.4 Removing And Replacing A Brake Assembly

### General

**+ Note:** The brake assembly is handed, ensure that if both assemblies are removed that the correct assembly is fitted to the correct side.

- 1 Check the brake assembly for any defects (refer to paragraph 4). If any defects are observed then refer to paragraphs 5 to 6 for maintenance details and to Chapter 3 for parts information.
- 2 It is not intended that any other part is maintainable.

### Tools

- 3 Refer to the tool list at the beginning of this Chapter.

### Inspection

- 4 Check the following:
  - 4.1 Brake assembly fully locks and the chair is unable to move.
  - 4.2 Brake action is positive and is not stiff.
  - 4.3 That the stop bar is abraded.

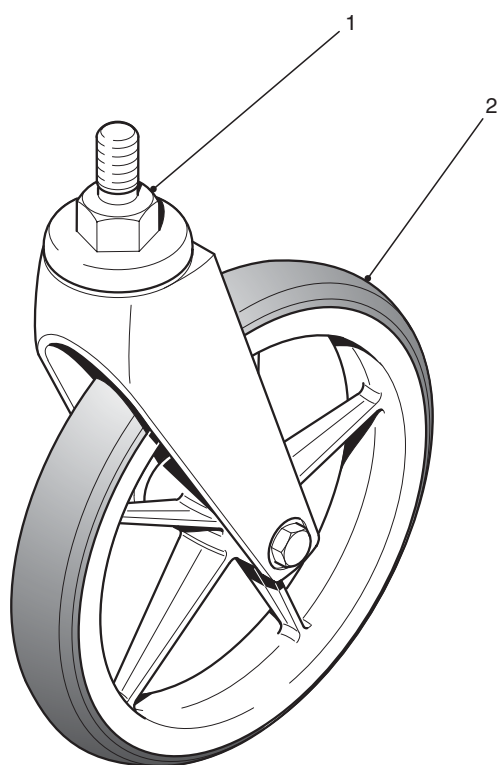
### Removing A Brake assembly

- + Note:**
- (a) For ease of maintenance the brake assembly can be removed as a complete assembly.
  - (b) Note the position of the brake assembly.
  - (b) The following procedure applies to any brake assembly.
- 5 To remove the brake assembly (1) proceed as follows:
    - 5.1 Ensure that brake assembly is in the unlocked position.
    - 5.2 Support the brake assembly and unscrew the socket head screw (2).
    - 5.3 Remove the brake assembly from its location.

### Replacing A Brake Assembly

**+ Note:** Refer to sub-chapter 2.8 for further information.

- 6 To replace a brake assembly is the reverse of the removal.



1 Fork stem nut

2 Castor assembly

**Figure 2.5 Castor Assembly**

## 2.5 Removing And Replacing A Castor Assembly

### General

- 1 Check the castor wheel assembly for any defects (refer to paragraph 4). If any defects are observed then refer to paragraphs 5 to 8 for maintenance details and to Chapter 3 for parts information.
- 2 It is not intended that any other part is maintainable.

### Tools

- 3 Refer to the tool list at the beginning of this Chapter.

### Inspection

- 4 Check the following:
  - 4.1 Castor fork is undamaged.
  - 4.2 Tyre is not cracked or excessively worn.
  - 4.3 Castor wheel rotates freely when lifted clear of the ground and spun.
  - 4.4 The tyre is firmly fitted and concentric within the rim.

### Removing A Castor Assembly

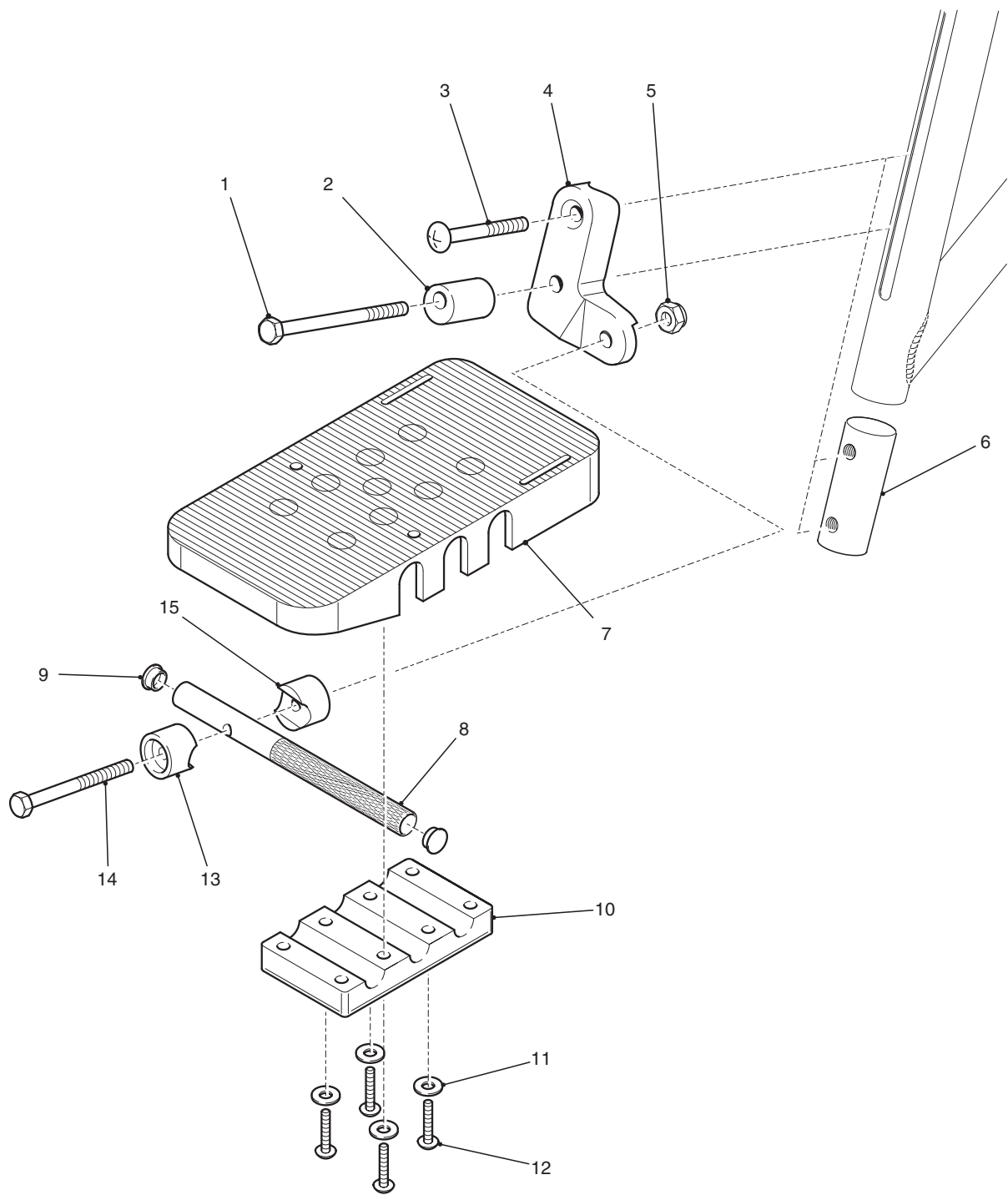
- 5 To remove the castor wheel assembly proceed as follows:
  - 5.1 Raise and support the front of the chair.
  - 5.2 Using the fork nut (1) unscrew the castor wheel until the castor assembly releases from its location.
  - 5.3 Remove the castor wheel assembly.
  - 5.4 Check that the castor wheel location is undamaged and clean.

### Replacing A Castor Wheel Assembly



**CAUTION:** Apply Loctite 242 to the thread of the castor wheel shaft and ensure that the castor wheel is tightened using the fork nut to a torque of 30 lbf.ft.

- 6 Replacing the castor wheel assembly is the reverse of the removal; ensure the following:
  - 6.1 It is firmly located and secure.
  - 6.2 Freely to rotate through 360 degrees.
  - 6.3 Is undamaged.
- 7 Once correctly fitted, remove the support and allow the chair to sit on all four wheels. Check that it functions correctly.



- |   |                        |    |                      |
|---|------------------------|----|----------------------|
| 1 | Bolt                   | 9  | Plastic cap          |
| 2 | Cam roller             | 10 | Clamp plate          |
| 3 | Countersunk head screw | 11 | Washer               |
| 4 | Fixing bracket RH      | 12 | Screw                |
| 5 | Nyloc nut              | 13 | Footplate spacer 'A' |
| 6 | Insert                 | 14 | Bolt                 |
| 7 | Footplate              | 15 | Footplate spacer 'B' |
| 8 | Adjustment tube        |    |                      |

**Figure 2.6 Adjustable Footrest Assembly**

## 2.6 Removing And Replacing An Adjustable Footrest Assembly

### General

- 1 Check the adjustable footrest assembly for any defects (refer to paragraph 3). If any defects are observed then refer to paragraphs 5 to 9 for maintenance details and to Chapter 3 for parts information.

### Tools

- 2 Refer to the tool list at the beginning of this Chapter.

### Inspection

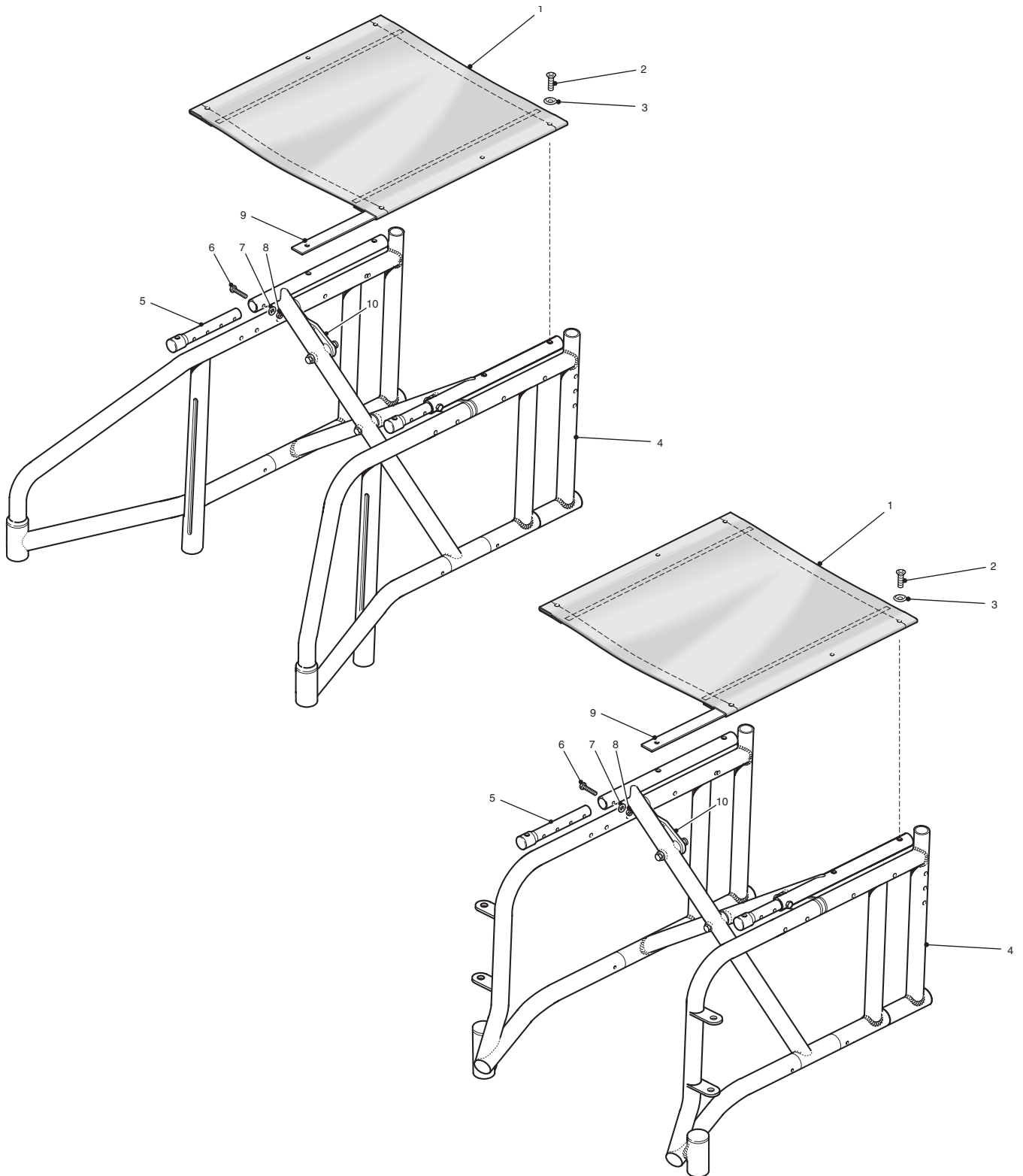
- 3 Check the following:
  - 3.1 Footplate (16) undamaged and securely fitted in place.
  - 3.2 Footrest is securely in place.
  - 3.3 Stem assembly is undamaged.
  - 3.4 Locating holes and bracket are free from damage.
- 4 Any defects to the above will require the assembly to be repaired.

### Removing An Adjustable Footrest Assembly

- 5 To remove the adjustable footrest assembly proceed as follows:
  - 5.1 Unscrew bolt (1), screw (3) and dished washer (6). Withdraw bolts (1) and (3) and spacer (2).
- 6 To remove a footplate (7), proceed as follows:
  - 6.1 Loosen but do not remove screws (12).
  - 6.2 Slide the foot plate (16) free of the pivot assembly (8).

### Replacing An Adjustable Footrest Assembly

- 7 Replacing any component previously mentioned is the reverse of the removal, refer to paragraphs (5) to (6).



- 1 Seat canvas
- 2 Taptite screw
- 3 Cup washer
- 4 Side frame
- 5 Seat adjustment tube

- 6 Hex head bolt
- 7 Washer
- 8 Nut
- 9 Upholstery strip
- 10 Seat stay

**Figure 2.7 Seat Canvas Assembly**

## 2.7 Removing And Replacing Seat Canvas

### General

- 1 Check the seat canvas (1) for any defects (refer to paragraph 3). If any defects are observed then refer to paragraphs 5 to 6 for maintenance details and to Chapter 3 for parts information.

### Tools

- 2 Refer to the tool list at the beginning of this Chapter.

### Inspection

- 3 Check for the following:
  - 3.1 Damage to seat canvas (1).
  - 3.2 Sagging.
  - 3.3 Upholstery strip missing and/or damaged.
- 4 Replace and/or tighten any screws (2) or cup washers (3) that are missing/damaged.

### Removing The Seat Canvas

- 5 To remove the seat canvas (1) proceed as follows:
  - 5.1 Unscrew and remove the six taptite screws (2) and cup washers (3).
  - 5.2 Remove the two upholstery strips (9) located inside the seat canvas.
  - 5.3 Remove the seat canvas (1).

### Replacing The Seat Canvas

**+ Note:** Check the order for the correct seat canvas size.

- 6 Replacing the seat canvas (1) is the reverse of the removal, refer to Chapter 3 for parts information.
- 7 Ensure that the seat canvas (1) is correct for the size of chair being repaired. If a new size is being fitted then check the following:
  - 7.1 Correct size reinforcing bar (9) is used.
  - 7.2 Seat adjustment tubes (5) have been correctly adjusted.
  - 7.3 The two seat stays (10) have been correctly adjusted to allow the chassis to take the fitted seat canvas.

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## **Chapter 3**

### **PARTS LIST**

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## General

- 1 This chapter has been split into sections which correspond to the sections in Chapter 2.
- 2 Refer to the general assembly Figure 3.0 for location of the assemblies covered by the following sections:

Section	Assembly	Pages
3.1	General Arrangement - Fixed Footrest	3.4
3.2	General Arrangement - Swing Away Footrest	3.6
3.3	Sideframe Assemblies	3.8
3.4	Cross Bar Assembly	3.10
3.5	Seat Upholstery Assembly	3.12
3.6	Backrest Upholstery Assembly	3.14
3.7	Push Handle Assembly	3.16
3.8	Armrest Assembly	3.18
3.9	Castor Wheel Assembly	3.20
3.10	Footrest Assembly	3.22
3.11	Swing Away hanger Assembly	3.24
3.12	Brake Assembly	3.26
3.13	Wheel Mounting Block Assembly	3.28
3.14	Wheel and Handrim Assembly	3.30
3.15	Transit Wheel Mounting Block Assembly	3.32
3.16	Safety Belt	3.34
3.17	Backrest Extension Assembly	3.36
3.18	Anti Tippers Assembly	3.38
3.19	Spoke Guards	3.40

- 3 Each section contains the following information in table format:

- 3.1 Fig/Item reference number
- 3.2 Part Number
- 3.3 Description
- 3.4 Quantity fitted

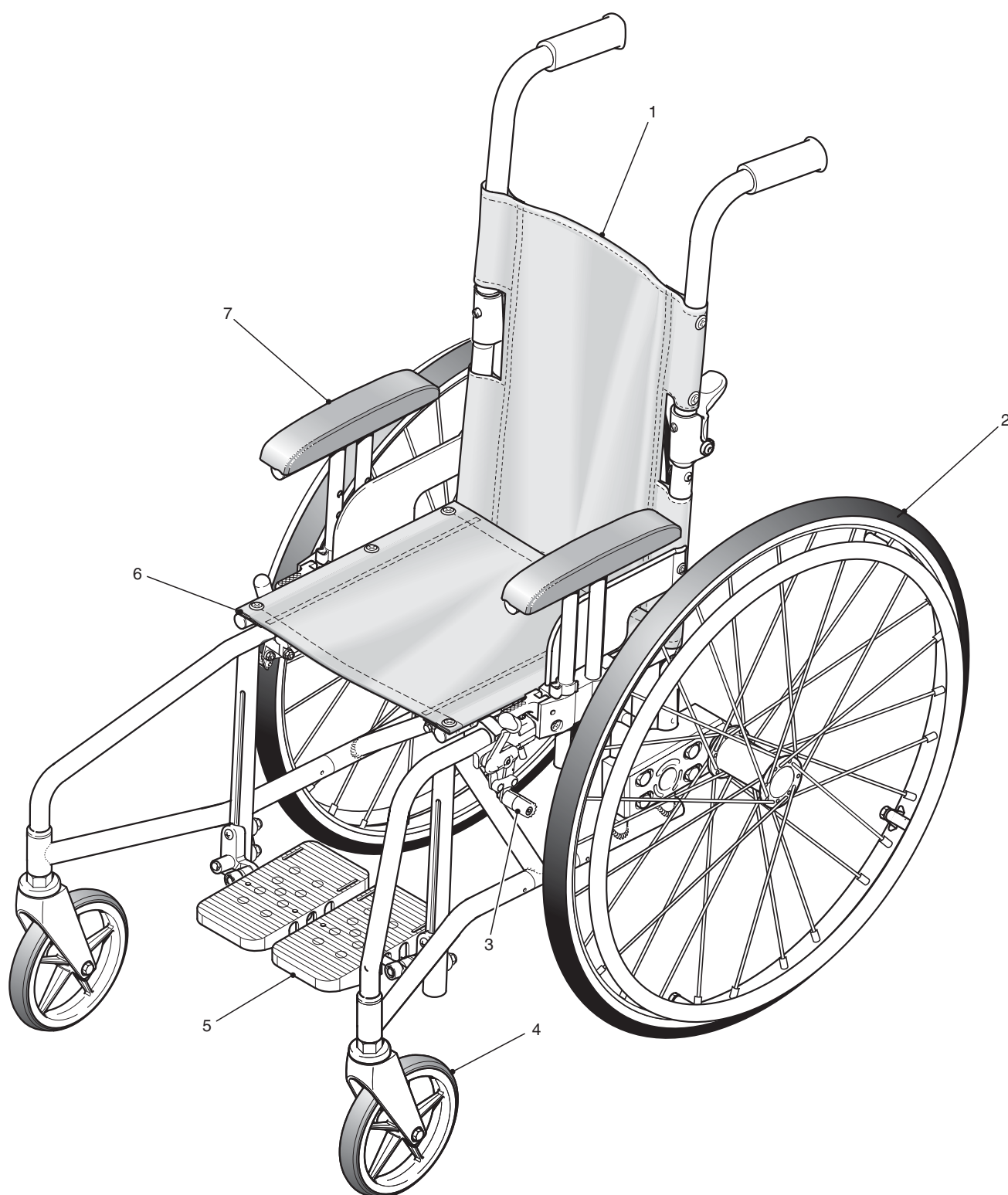
**+Note:** The following references are used:

A/R Denote fasteners etc where the fastener, such as nuts are common to the chair.

NI When an assembly or component is not illustrated.

## Ordering Information

- 4 To order components or parts information from the relevant address, refer to Chapter 1. Always quote the following:
  - 4.1 Part Number
  - 4.2 Description
  - 4.3 Quantity required
  - 4.4 Serial or batch number
  - 4.5 End user

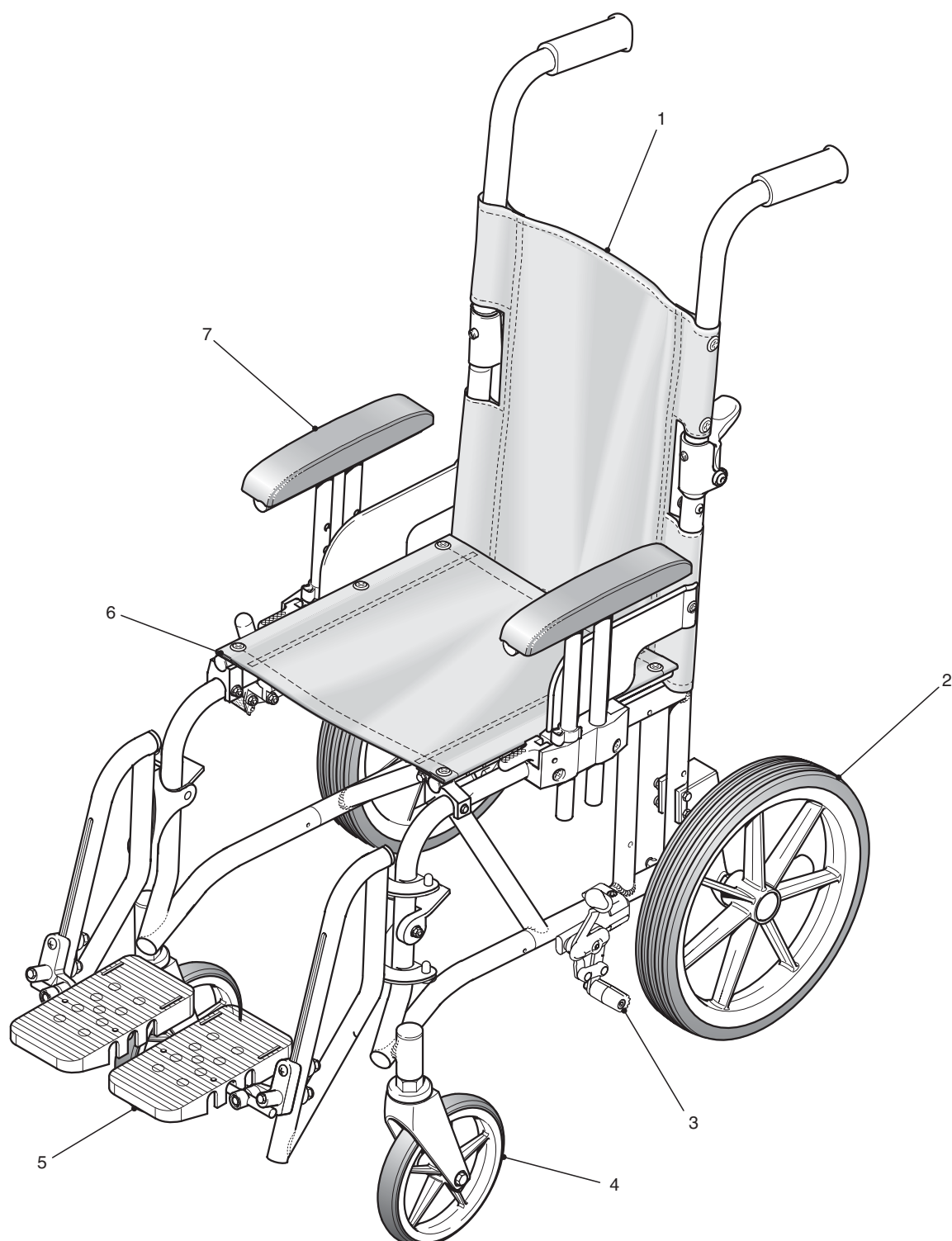


**Figure 3.1 General Arrangement of Blade Plus with Self-Propelling Wheels**

## Blade Plus Wheelchair Assembly - Fixed Footrest

+ **Note:** Optional chair sizes, 10 inches to 15 inches width.

Item	Part Number	Description	Qty
1		Backrest Assembly	1
2		Main Wheels (Dependant on order)	2
3		Brake Assembly (RH)	1
NI		Brake Assembly (LH)	1
4		Castor Assembly	2
5		Adjustable Footrest Assembly (RH)	1
NI		Adjustable Footrest Assembly (LH)	1
6		Seat Canvas (Dependant on chair size)	1
7		Armrest Assembly (LH)	1
NI		Armrest Assembly (RH)	1



**Figure 3.2 General Arrangement of Blade Plus with Transit Wheels**

## Blade Plus Wheelchair Assembly - Swing Away Footrest

+ **Note:** Optional chair sizes, 10 inches to 15 inches width.

Item	Part Number	Description	Qty
1		Backrest Assembly	1
2		Main Wheels (Dependant on order)	2
3		Brake Assembly (RH)	1
NI		Brake Assembly (LH)	1
4		Castor Assembly	2
5		Adjustable Footrest Assembly (RH)	1
NI		Adjustable Footrest Assembly (LH)	1
6		Seat Canvas (Dependant on chair size)	1
7		Armrest Assembly (LH)	1
NI		Armrest Assembly (RH)	1

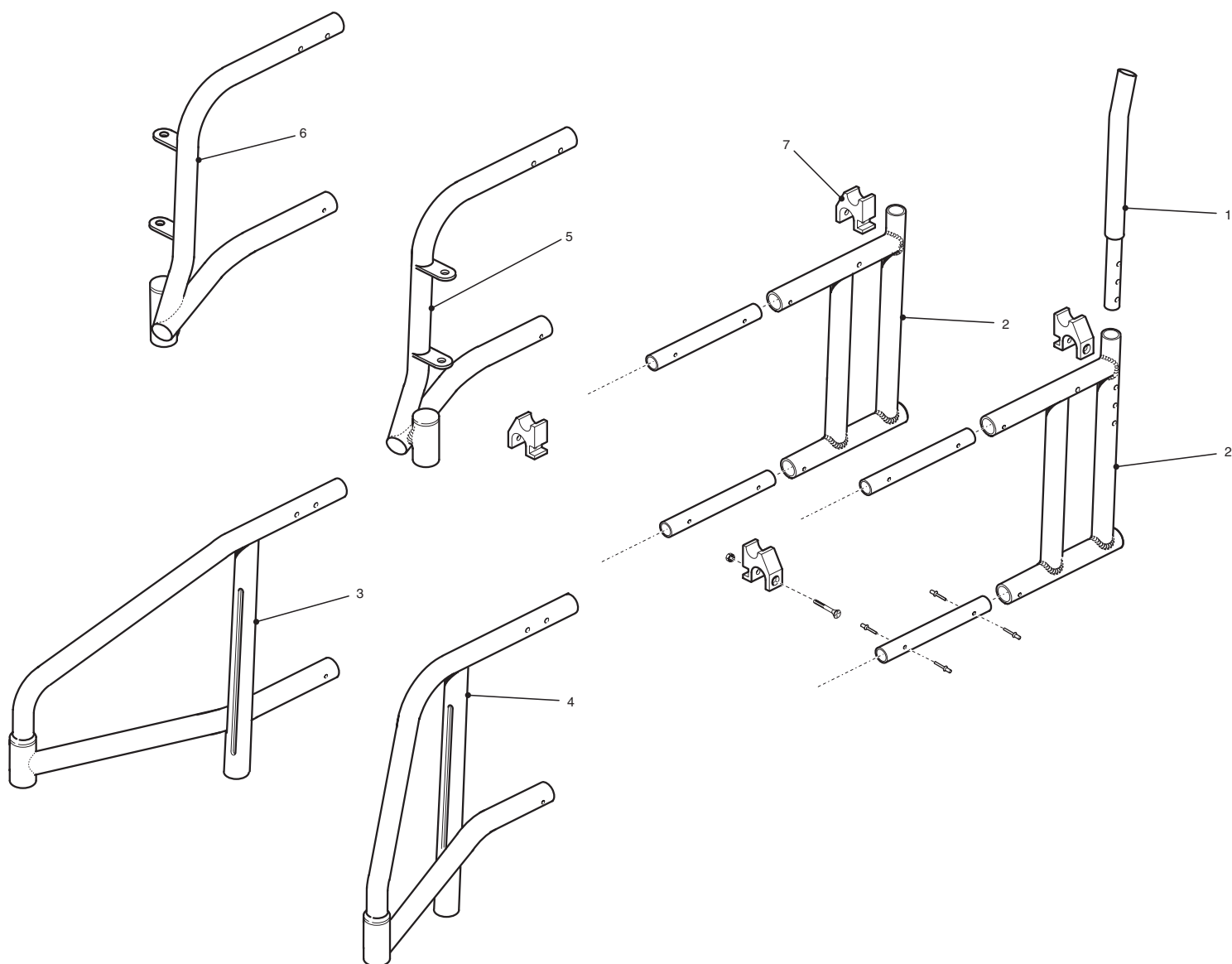


Figure 3.3 Sideframe Assemblies



## Sideframe Assemblies

Item	Part Number	Description	Qty
3	1416095-9005	Front outriggered assy R/H Black	1
	1416095-0200	Front outriggered assy R/H Red	1
	1416095-0201	Front outriggered assy R/H Blue	1
	1416095-0202	Front outriggered assy R/H Purple	1
	1416096-9005	Front outriggered assy L/H Black	1
4	1416096-0200	Front outriggered assy L/H Red	1
	1416096-0201	Front outriggered assy L/H Blue	1
	1416096-0202	Front outriggered assy L/H Purple	1
	1416137-9005	Front Outriggered Assy R/H Black (small)	1
NI	1416137-0200	Front Outriggered Assy R/H Red (small)	1
	1416137-0201	Front Outriggered Assy R/H Blue (small)	1
	1416137-0202	Front Outriggered Assy R/H Purple(small)	1
	1416138-9005	Front Outriggered Assy L/H Black(small)	1
	1416138-0200	Front Outriggered Assy L/H Red(small)	1
	1416138-0201	Front Outriggered Assy L/H Blue(small)	1
	1416138-0202	Front Outriggered Assy L/H Purple(small)	1
	1416120-9005	Sideframe Swingaway R/H Black	1
6	1416120-0200	Sideframe Swingaway R/H Red	1
	1416120-0201	Sideframe Swingaway R/H Blue	1
	1416120-0202	Sideframe Swingaway R/H Purple	1
	1416121-9005	Sideframe Swingaway L/H Black	1
	1416121-0200	Sideframe Swingaway L/H Red	1
5	1416121-0201	Sideframe Swingaway L/H Blue	1
	1416121-0202	Sideframe Swingaway L/H Purple	1
	1416131-9005	Sideframe Swingaway R/H Black(Small)	1
	1416131-0200	Sideframe Swingaway R/H Red(Small)	1
NI	1416131-0201	Sideframe Swingaway R/H Blue(Small)	1
	1416131-0202	Sideframe Swingaway R/H Purple(Small)	1
	1416132-9005	Sideframe Swingaway L/H Black(Small)	1
	1416132-0200	Sideframe Swingaway L/H Red(Small)	1
	1416132-0201	Sideframe Swingaway L/H Blue(Small)	1
	1416132-0202	Sideframe Swingaway L/H Purple(Small)	1
	1416048	Backrest tube s/assy 3 deg kink	1
	1415378	Seat Location Kit	1
2	1416041-9005	Rear sideframe assy Black	1
	1416041-0200	Rear sideframe assy Red	1
	1416041-0201	Rear sideframe assy Blue	1
	1416041-0202	Rear sideframe assy Purple	1

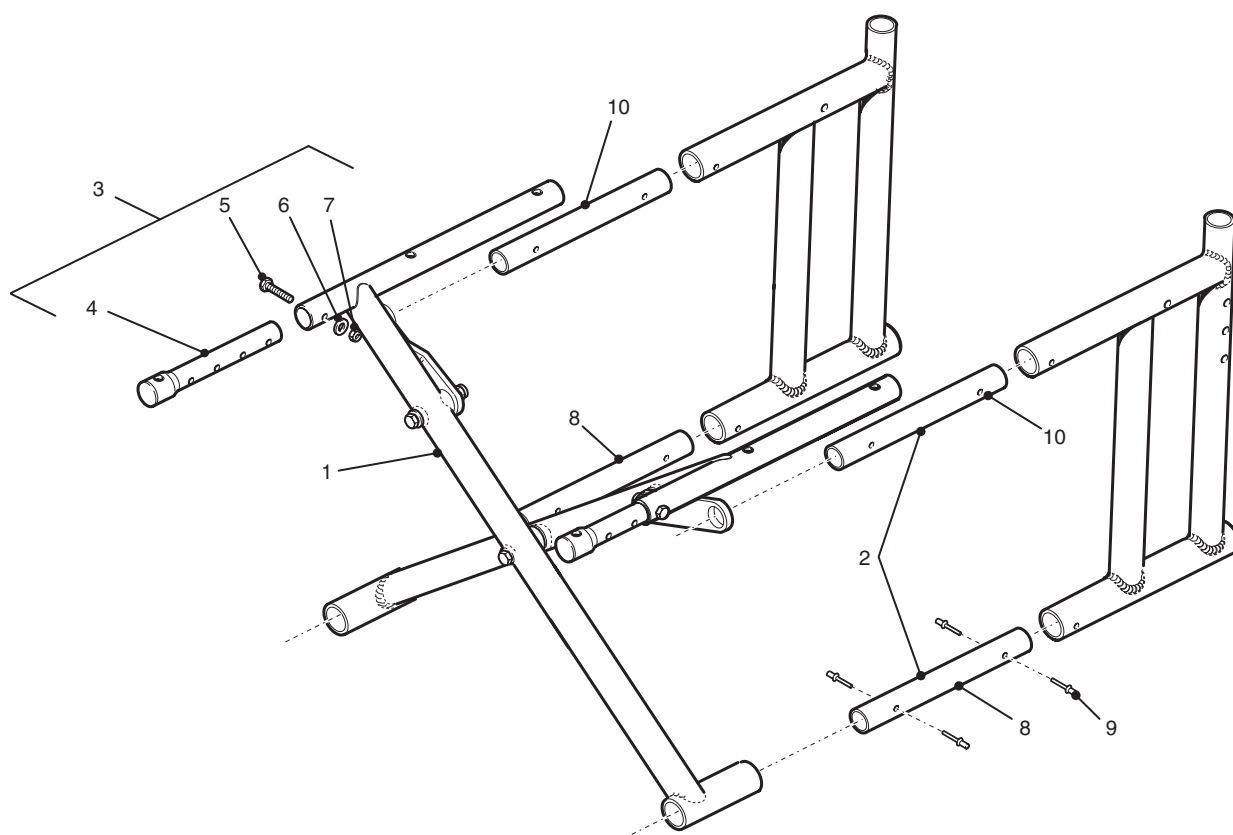


Figure 3.4 Cross Bars

**Cross Bar Assembly**

Item	Part Number	Description	Qty
1	2000/20	254 (10") Wide Seat Brace Assy	1
	2010/20	279 (11") Wide Seat Brace Assy	1
	2020/20	305 (12") Wide Seat Brace Assy	1
	2030/20	330 (13") Wide Seat Brace Assy	1
	2040/20	356 (14") Wide Seat Brace Assy	1
3	1415376	Seat Adjustment Tube Kit Std (4, 5, 6 and 7)	1
NI	1415377	Seat Adjustment Tube Kit 381 (15")	1
2	1420247	Seat Brace Pivot Kit (incl. 8, 9 and 10)	1

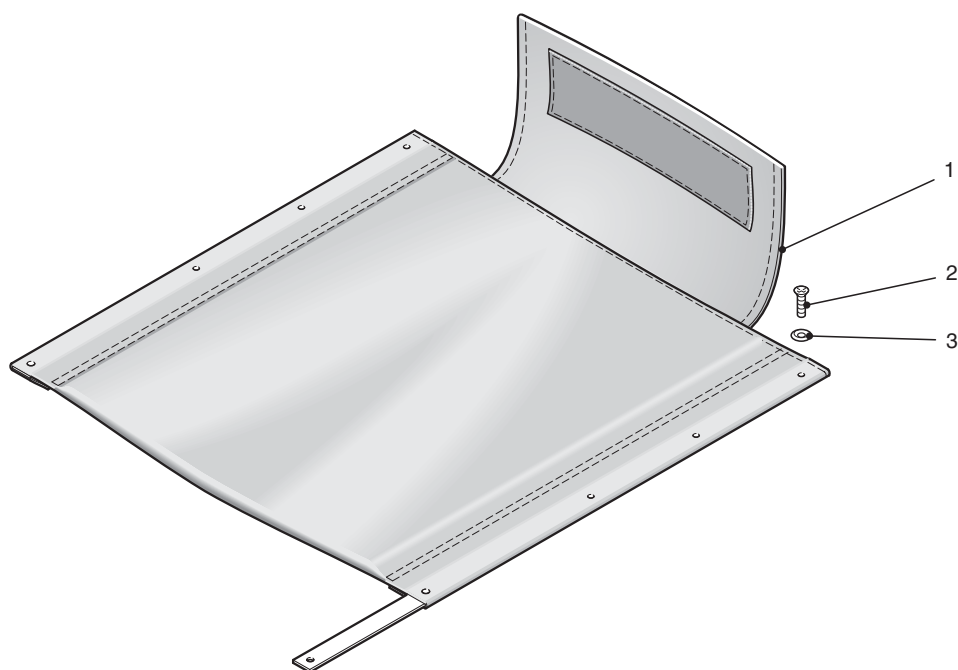


Figure 3.5 Seat Upholstery

## Seat Upholstery

Item	Part Number	Description	Qty
1	1415325	Seat canvas Assy Kit Black 254 x 229 (10"x 9")	1
	1415326	Seat canvas Assy Kit Pattern 254 x 229 (10" x 9")	1
	1415327	Seat canvas Assy Kit Black 254 x 254 (10" x 10")	1
	1415328	Seat canvas Assy Kit Pattern 254 x 254 (10" x 10")	1
	1415329	Seat canvas Assy Kit Black 254 x 279 (10" x 11")	1
	1415330	Seat canvas Assy Kit Pattern 254 x 279 (10" x 11")	1
	1415331	Seat canvas Assy Kit Black 279 x 229 (11" x 9")	1
	1415332	Seat canvas Assy Kit Pattern 279 x 229 (11" x 9")	1
	1415333	Seat canvas Assy Kit Black 279 x 254 (11" x 10")	1
	1415334	Seat canvas Assy Kit Pattern 279 x 254 (11" x 10")	1
	1415335	Seat canvas Assy Kit Black 279 x 279 (11" x 11")	1
	1415336	Seat canvas Assy Kit Pattern 279 x 279 (11" x11")	1
	1415337	Seat canvas Assy Kit Black 305 x 305 (12" x 12")	1
	1415338	Seat canvas Assy Kit Pattern 305 x 305 (12" x 12")	1
	1415339	Seat canvas Assy Kit Black 305 x 330 (12" x 13")	1
	1415340	Seat canvas Assy Kit Pattern 305 x 330 (12" x13")	1
	1415341	Seat canvas Assy Kit Black 305 x 356 (12" x14")	1
	1415342	Seat canvas Assy Kit Pattern 305 x 356 (12" x 14")	1
	1415343	Seat canvas Assy Kit Black 330 x 305 (13" x 12")	1
	1415344	Seat canvas Assy Kit Pattern 330 x 305 (13" x12")	1
	1415345	Seat canvas Assy Kit Black 330 x 330 (13" x 13")	1
	1415346	Seat canvas Assy Kit Pattern 330 x 330 (13" x 13")	1
	1415347	Seat canvas Assy Kit Black 330 x 356 (13" x 14")	1
	1415348	Seat canvas Assy Kit Pattern 330 x 356 (13" x 14")	1
	1415349	Seat canvas Assy Kit Black 356 x 305 (14" x 12")	1
	1415350	Seat canvas Assy Kit Pattern 356 x 305 (14" x 12")	1
	1415351	Seat canvas Assy Kit Black 356 x 330 (14" x 13")	1
	1415352	Seat canvas Assy Kit Pattern 356 x 330 (14" x 13")	1
	1415353	Seat canvas Assy Kit Black 356 x 356 (14" x 14")	1
	1415354	Seat canvas Assy Kit Pattern 356 x 356 (14" x 14")	1
	1415355	Seat canvas Assy Kit Black 356 x 381 (14" x15")	1
	1415356	Seat canvas Assy Kit Pattern 356 x 381 (14" x 15")	1
2	D20101	M5 x 20 Taptite Screw	1
3	5009551	Upholstery Plastic Washer	1

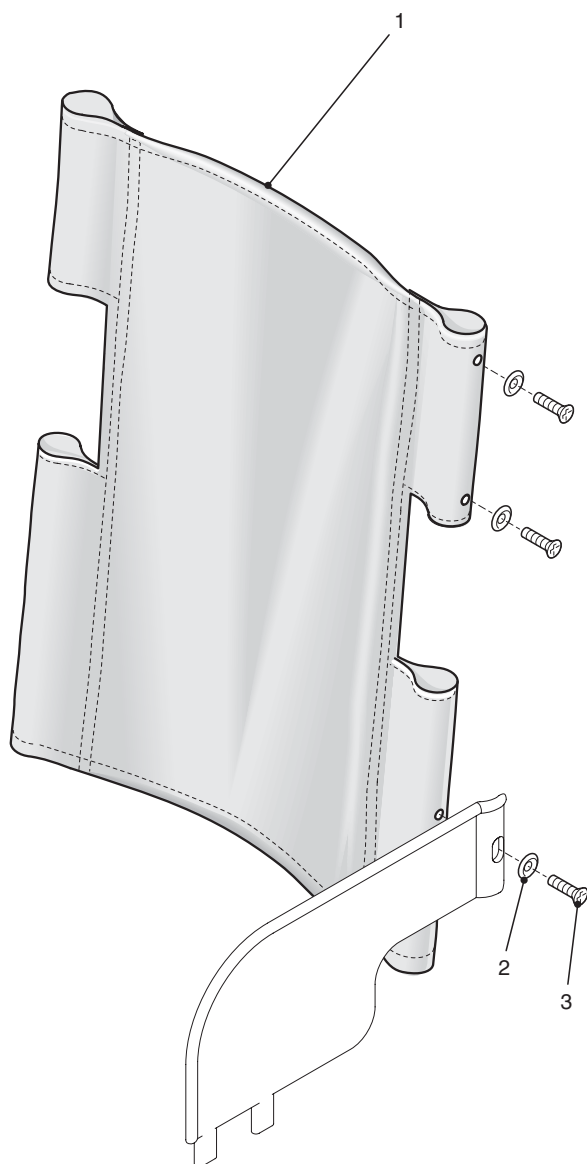


Figure 3.6 Backrest Upholstery

## Backrest Upholstery

Item	Part Number	Description	Qty
1	1415357	Backrest canvas Kit 254 (10") Wide Black	1
	1415358	Backrest canvas Kit 254 (10") Wide Pattern	1
	1415359	Backrest canvas Kit 297 (11") Wide Black	1
	1415360	Backrest canvas Kit 297 (11") Wide Pattern	1
	1415361	Backrest canvas Kit 305 (12") Wide Black	1
	1415362	Backrest canvas Kit 305 (12") Wide Pattern	1
	1415363	Backrest canvas Kit 330 (13") Wide Black	1
	1415364	Backrest canvas Kit 330 (13") Wide Pattern	1
	1415365	Backrest canvas Kit 356 (14") Wide Black	1
	1415366	Backrest canvas Kit 356 (14") Wide Pattern	1
3	D20101	M5 x 20 Taptite Screw	1
2	5009551	Upholstery Plastic Washer	1

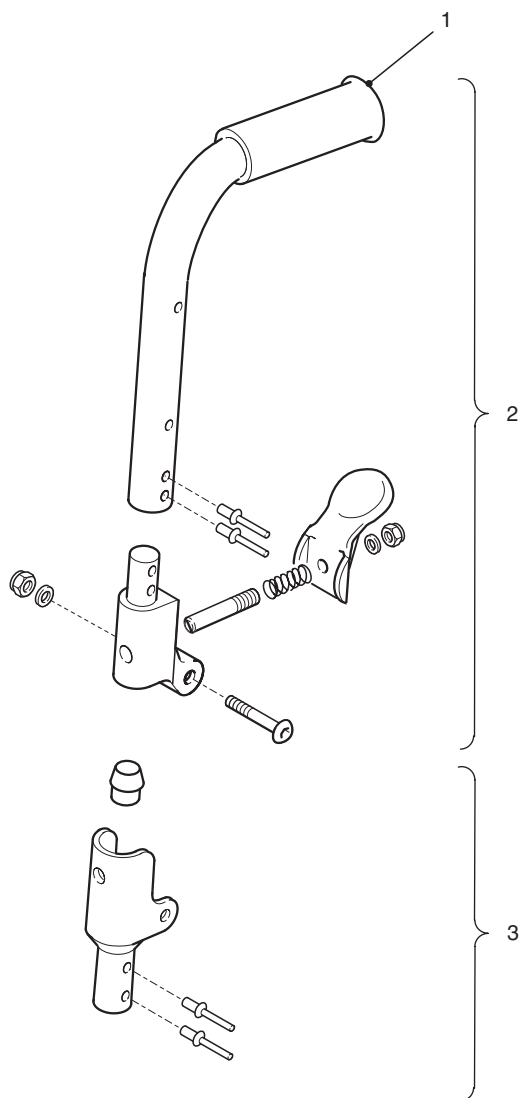


Figure 3.7 Push Handle Assembly



## Push Handle Assembly

+ **Note:** Optional chair sizes, 10 inches to 14 inches width.

Item	Part Number	Description	
2	1415379-9005	Push Handle Assy Kit Black	1
	1415379-9005	Push Handle Assy Kit Black	1
	1415379-0200	Push Handle Assy Kit Red	1
	1415379-0201	Push Handle Assy Kit Blue	1
	1415379-0202	Push Handle Assy Kit Purple	1
1	L10009	Black Handgrip 22mm	1
3	6003030	Snap-in Bottom Casting Kit	1

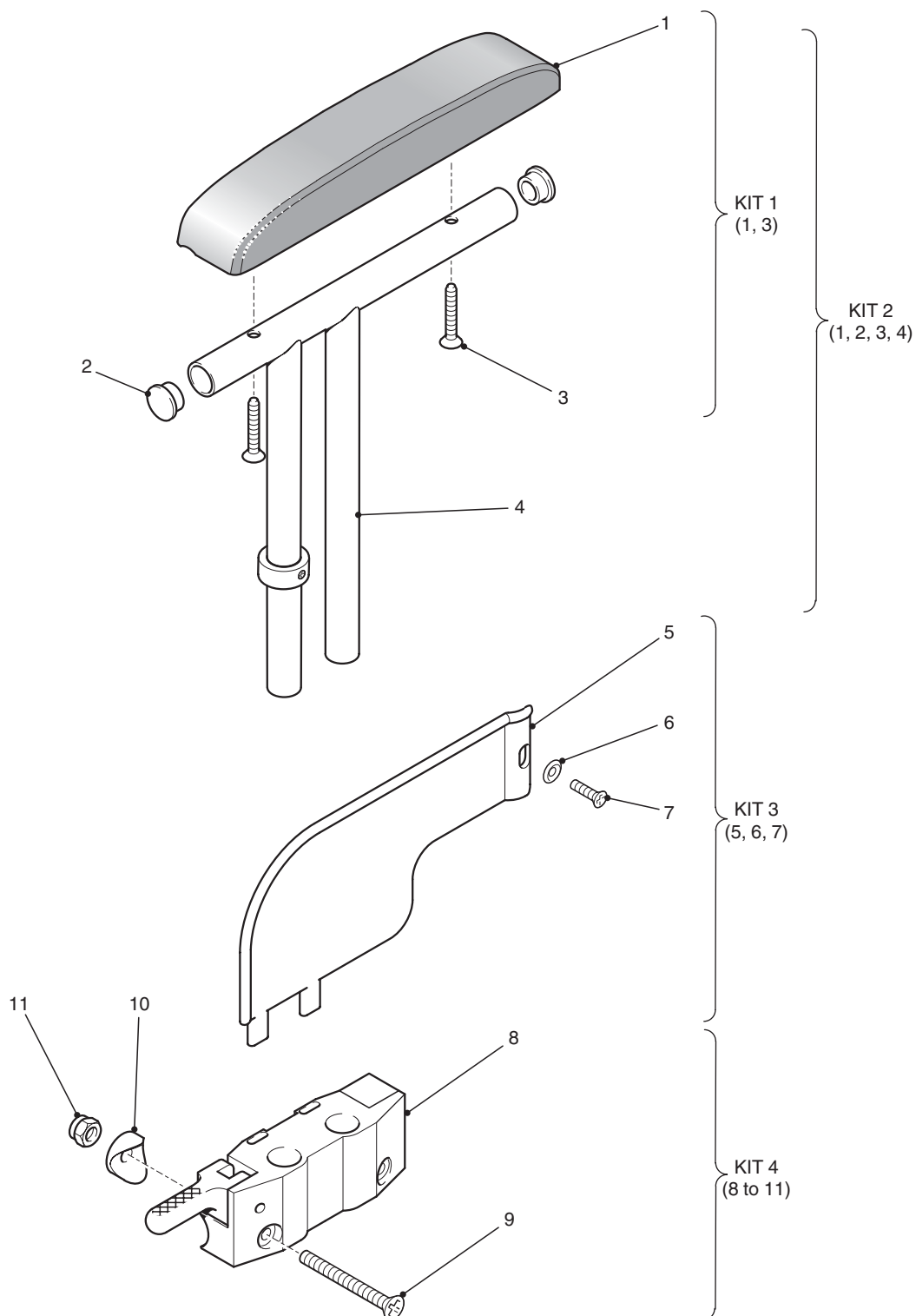


Figure 3.8 Armrest Assembly

**Armrest Assembly**

Item	Part Number	Description	Qty
KIT 1	7017/36/01	Armrest Pad (Items 1 and 3 only)	1
KIT 2	1415387	Armrest/Pad Assy RH	1
	1415388	Armrest/Pad Assy LH	1
KIT 3	1415389	Armrest Panel RH kit	1
	1415390	Armrest Panel LH kit	1
KIT 4	1420210	Armrest Mounting Block Kit RH	1
	1420211	Armrest Mounting Block Kit LH	1

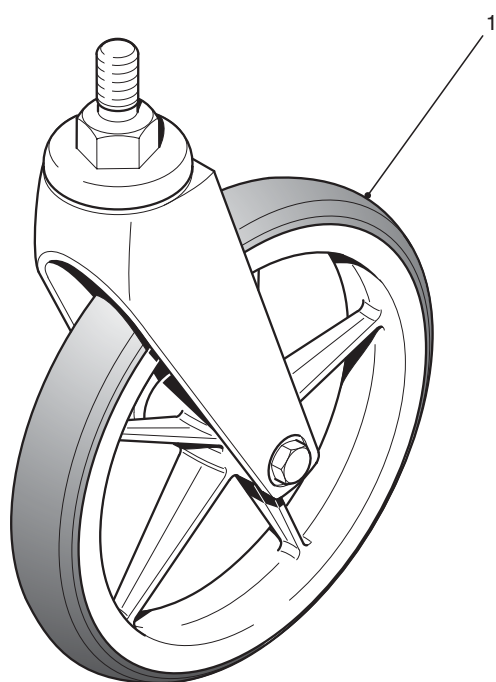


Figure 3.9 Castor

## Castor Assembly

+ **Note:** Optional wheel sizes and types can be fitted.

### Standard Wheel Option

Item	Part Number	Description	Qty
1	1125/00BLK	125mm Castor Black	2
NI	1125/00WPBLK	125mm Wide Profile Castor Black	2

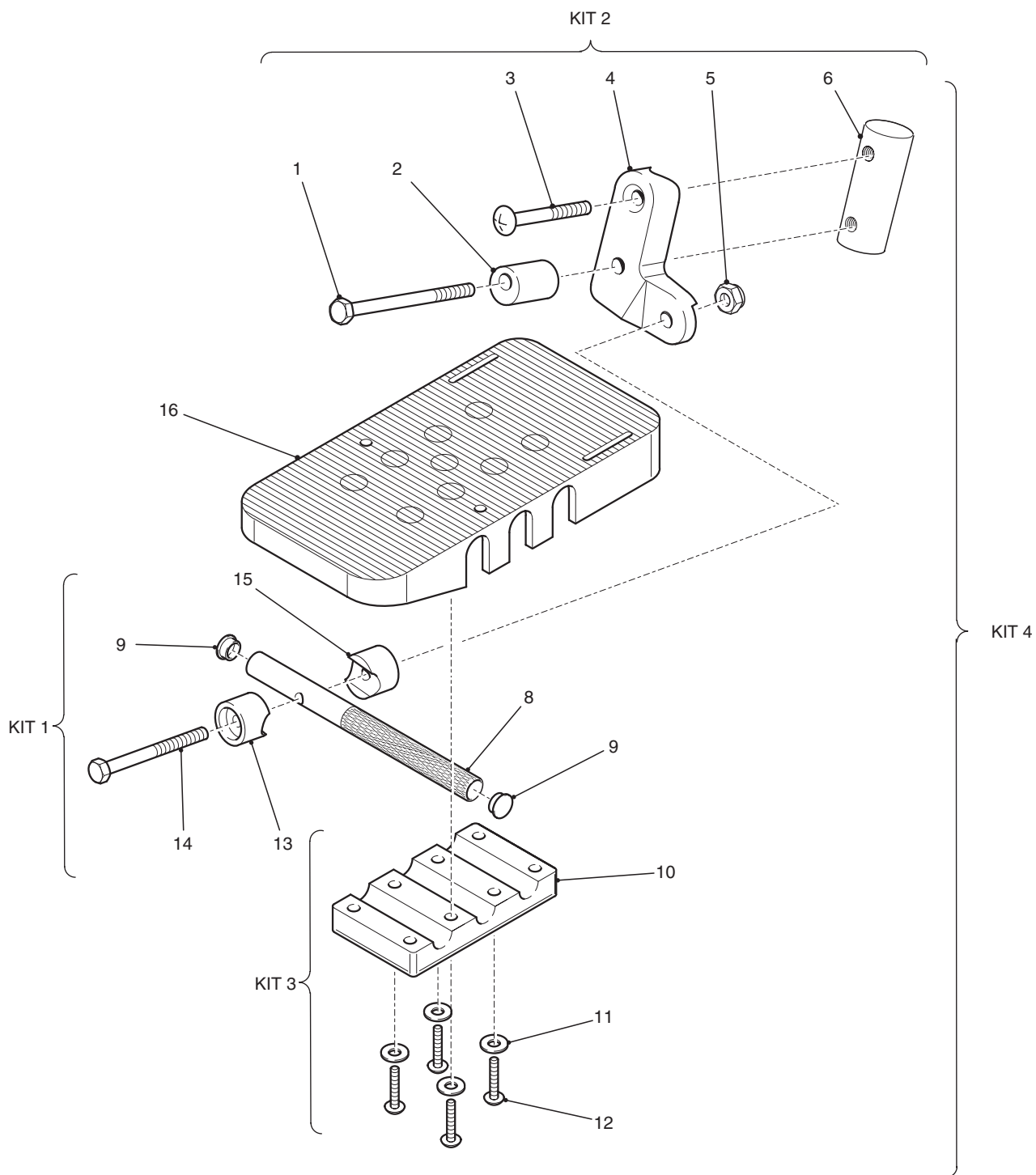
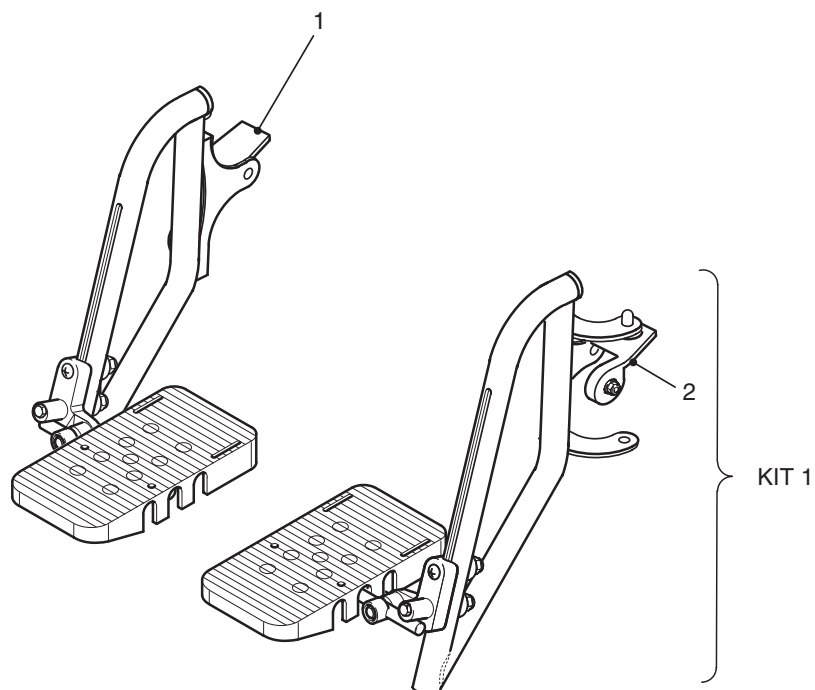


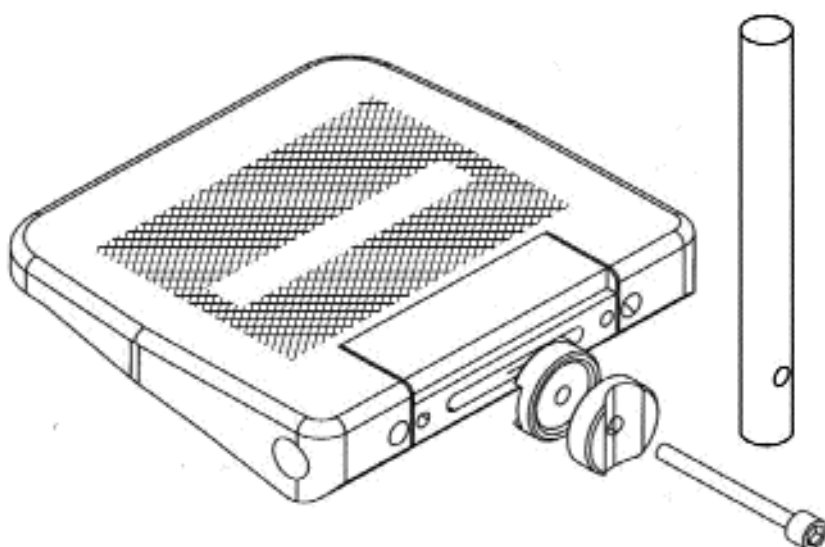
Figure 3.10 Footrest Assembly

## Footrest Assembly

Item	Part Number	Description	Qty
KIT 4	1415367	Adj Footrest assy complete large RH	1
	1415368	Adj Footrest assy complete large LH	1
	1415369	Adj Footrest assy complete Small RH	1
	1415370	Adj Footrest assy complete Small LH	1
KIT 3	1415371	Footplate Kit Large (Items 10, 11, 12 and 16)	1
	1415372	Footplate Kit Small (Items 10, 11, 12 and 16)	1
KIT 1	1415373	Adjustable Tube Kit Large (154mm) (Items 5, 8, 9, 13, 14 and 15)	1
	1415374	Adjustable Tube Kit Small (128mm) (Items 5, 8, 9, 13, 14 and 15)	1
KIT 2	1415375	Fixing Bracket Kit RH (Items 1, 2, 3, 4 and 6)	1
	1420238	Fixing Bracket Kit LH (Items 1, 2, 3, 4 and 6)	1



**Figure 3.11a Swing Away Hanger Assembly**



**Figure 3.11b Adapt Footrest Assembly**

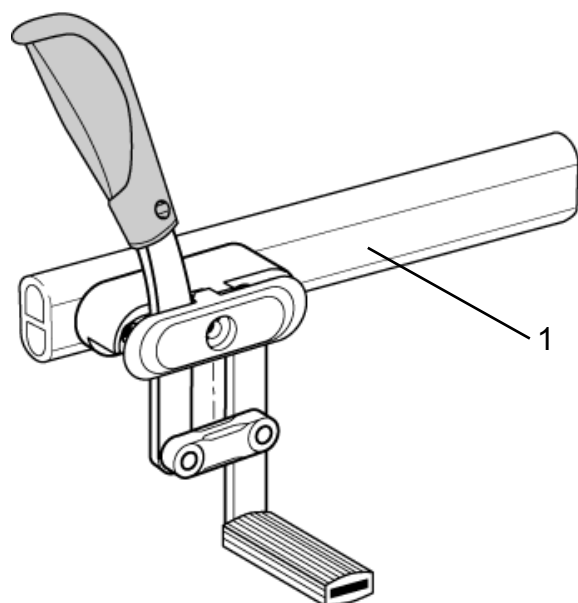


## Swing Away Hanger Assembly

Item	Part Number	Description	Qty
KIT 1	1415380-9005	Hanger Assy Complete RH Black Large	1
	1415380-0200	Hanger Assy Complete RH Red Large	1
	1415380-0201	Hanger Assy Complete RH Blue Large	1
	1415380-0202	Hanger Assy Complete RH Purple Large	1
	1415381-9005	Hanger Assy Complete LH Black Large	1
	1415381-0200	Hanger Assy Complete LH Red Large	1
	1415381-0201	Hanger Assy Complete LH Blue Large	1
	1415381-0202	Hanger Assy Complete LH Purple Large	1
	1415382-9005	Hanger Assy Complete RH Black Small	1
	1415382-0200	Hanger Assy Complete RH Red Small	1
	1415382-0201	Hanger Assy Complete RH Blue Small	1
	1415382-0202	Hanger Assy Complete RH Purple Small	1
	1415383-9005	Hanger Assy Complete LH Black Small	1
	1415383-0200	Hanger Assy Complete LH Red Small	1
	1415383-0201	Hanger Assy Complete LH Blue Small	1
	1415383-0202	Hanger Assy Complete LH Purple Small	1
1	1415384	Hanger Locking Lever Kit RH	1
2	1420246	Hanger Locking Lever Kit LH	1

## Adapt Footplate Assembly

Item	Part Number	Description	Qty
3	1426002	Small Adapt Footplate Assembly	2
	1426003	Large Adapt Footplate Assembly	2
	1485107	X Large Adapt Footplate Assembly	2
NI	1451239	MTG BRKT Kit 14" - 15" Deep	2



**Note!**

Dim A 58mm = Short  
 Dim A 82mm = Medium  
 Dim A 100mm = Long

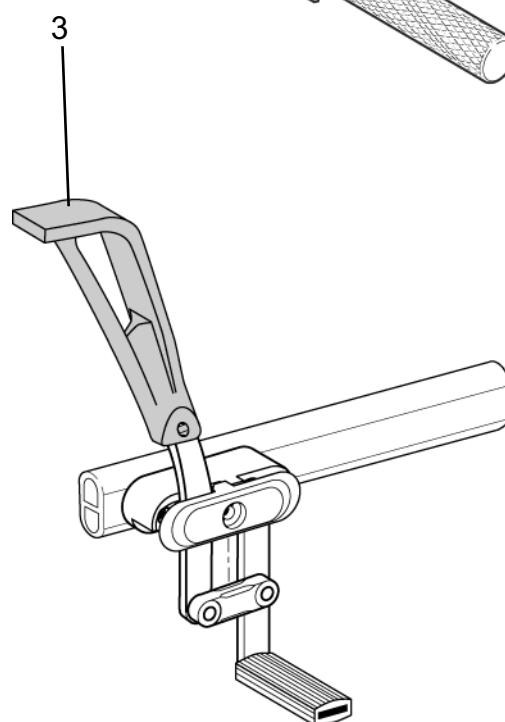
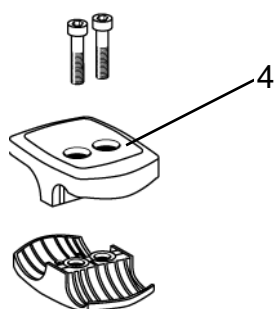
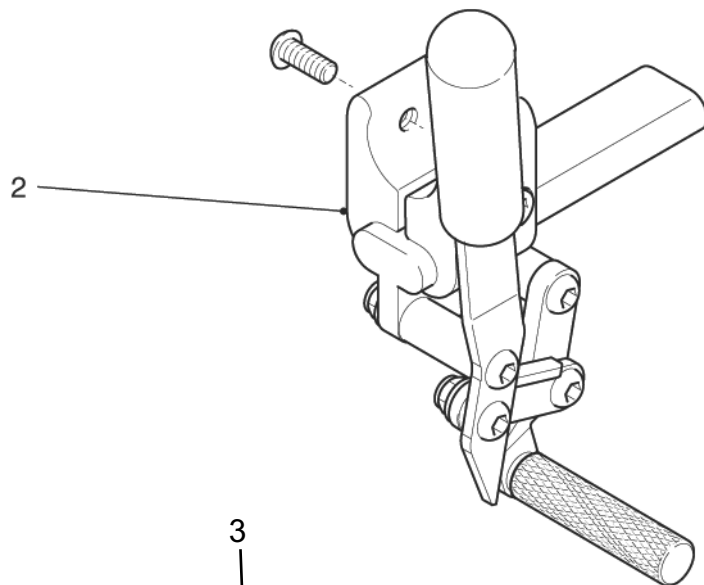
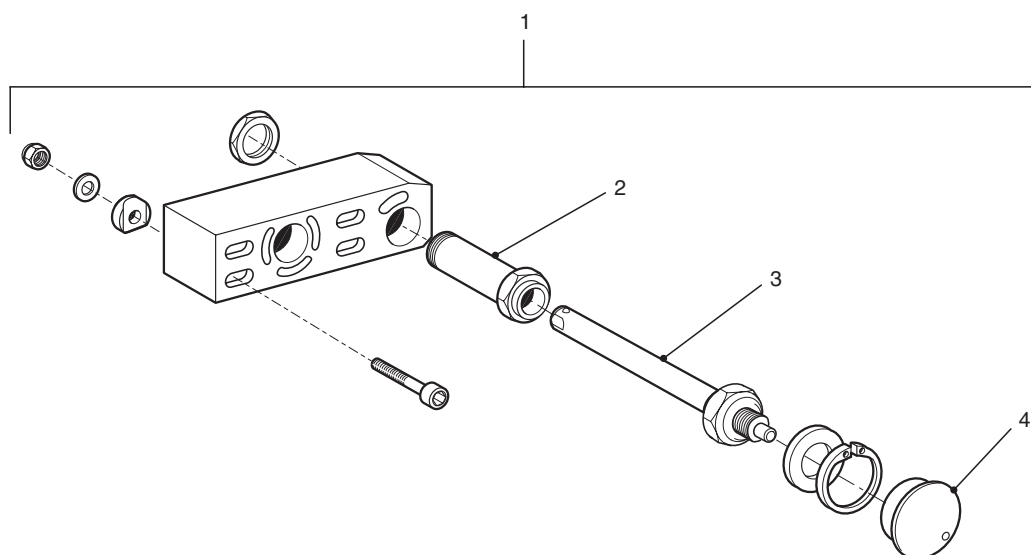


Figure 3.12 Brake Assembly

## Brake Assembly

Item	Part Number	Description	Qty
1	1444885	Brake Assy RH Short	1
	1444886	Brake Assy LH Short	1
	1444883	Brake Assy RH Medium	1
	1444884	Brake Assy LH Medium	1
	1425635	Brake Assy RH Long	1
	1425634	Brake Assy LH Long	1
2	2000/48	Brake Assy RH (Used on 12 1/2" Wheel)	1
	2000/49	Brake Assy LH (Used on 12 1/2" Wheel)	1
NI	SKA3095	Brake Knob Extension (Used on 12 1/2" Wheel)	1
		Note: Short Brakes used on 20" wheels Medium brakes used on 22" wheels - set to rear Long brakes used on 22" wheels - set forward	
3	1448630	Extended Brake Assy RH (Short)	1
	1448631	Extended Brake Assy LH (Short)	1
	1444887	Extended Brake Assy RH (Medium)	1
	1444888	Extended Brake Assy LH (Medium)	1
	1423603	Extended Brake Assy RH (Long)	1
	1425602	Extended Brake Assy LH (Long)	1
4	6003039	Brake Fixation Kit	1



**Figure 3.13 Mounting Block Assembly - 20 inches or 22 inches Diameter Wheels**

**Wheel Mounting Block Assembly - 20 inches or 22 inches Wheels**

Item	Part Number	Description	Qty
1	6003037	1/2" Q/R Axle & mounting block assembly	1
	6003038	1/2" Q/R Axle & mounting block assembly	1
2	7017/00/11	Q/R Mounting bush	1
	3017/00/02	Mounting bush nut	1
3	SKA2671	1/2" Q/R Axle and nut	1
4	1022/03Q/RCAP	Rubber cap	1

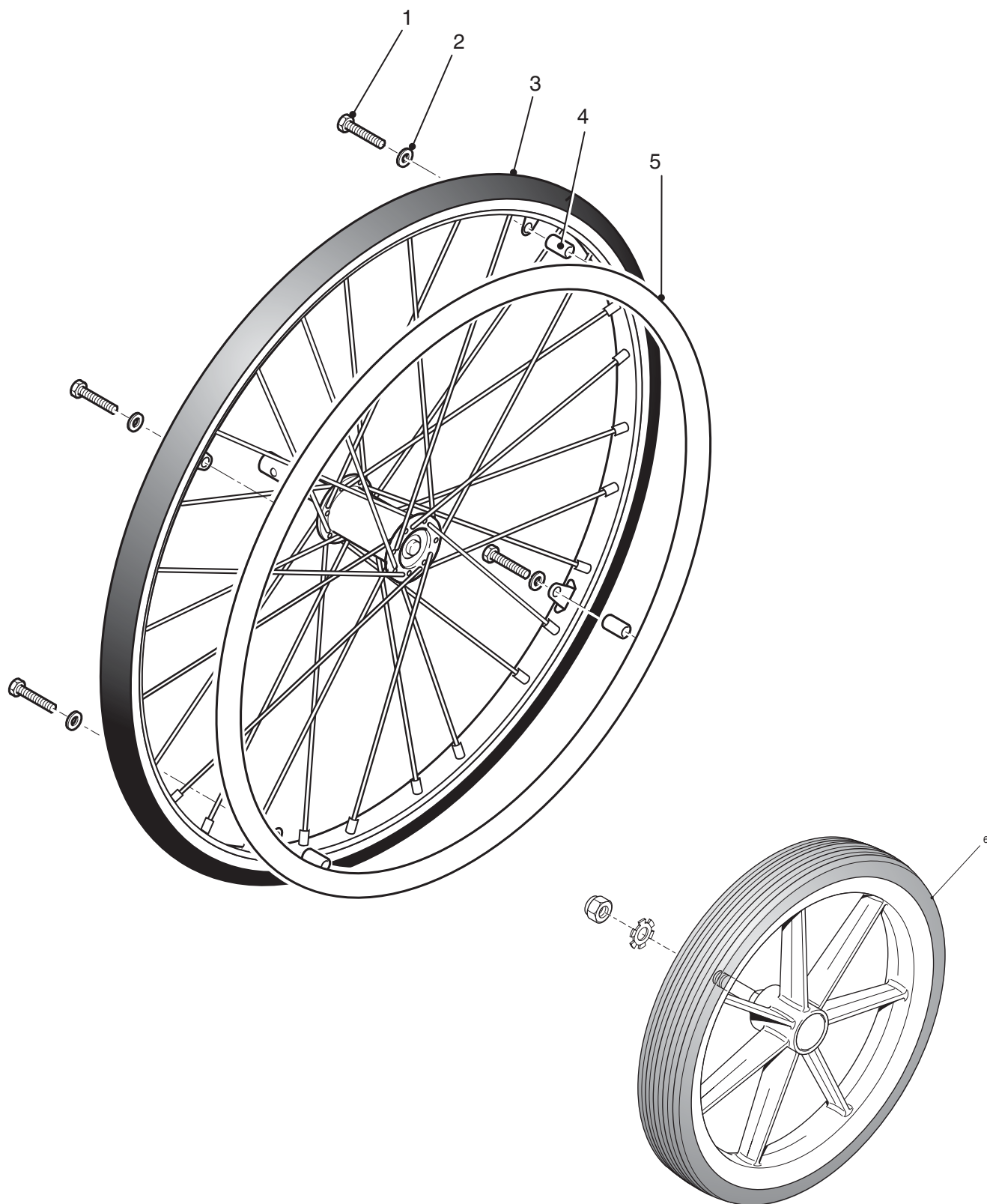


Figure 3.14 Wheel and Handrim Assembly

## Wheel and Handrim Assembly

Item	Part Number	Description	Qty
6	1315/02WPLWBLK	315mm Black Plastic Wheel - Solid	1
	1315/02PNUBLK	315mm Black Plastic Wheel - Pneumatic	1
	1WSE2002	1/2 Shakeproof Washer	1
	M12004	Inner Tube	1
	M11005	Tyre	1
	INPH3003	Axle Nut	1
5	1020/00SQRBLK	20" x 1 3/8" Spoked Wheel - Pneumatic	1
	1020/00SQRSOLBLK	20" x 1 3/8" Spoked Wheel -Solid	1
	1020/03BLK	20" Handrim Black Coated Steel	1
	1TYR2002	20" x 1 3/8" Solid Tyre	1
	M11009	20" x 1 3/8" Pneumatic Tyre	1
	M12005	Inner Tube	1
3	1022/00LW	22" Light/W Spoked Wheel- Solid	1
	1TYR3001	22" x 1" Solid Tyre - Black	1
	1022/00LWPN	22" Light/W Spoked Wheel- Pneumatic	1
	1TYR1007	22" x 1" Pneumatic Tyre	1
	2TUB1007	22" x 1" Inner Tube	1
5	7017/63	22" Handrim Black Coated	1
1	0029-40520	M5 x 35 screw	1
4	0880N51000	Handrim spacer	1
NI	1488791	22" Rear Wheel Hub Brake Kit	

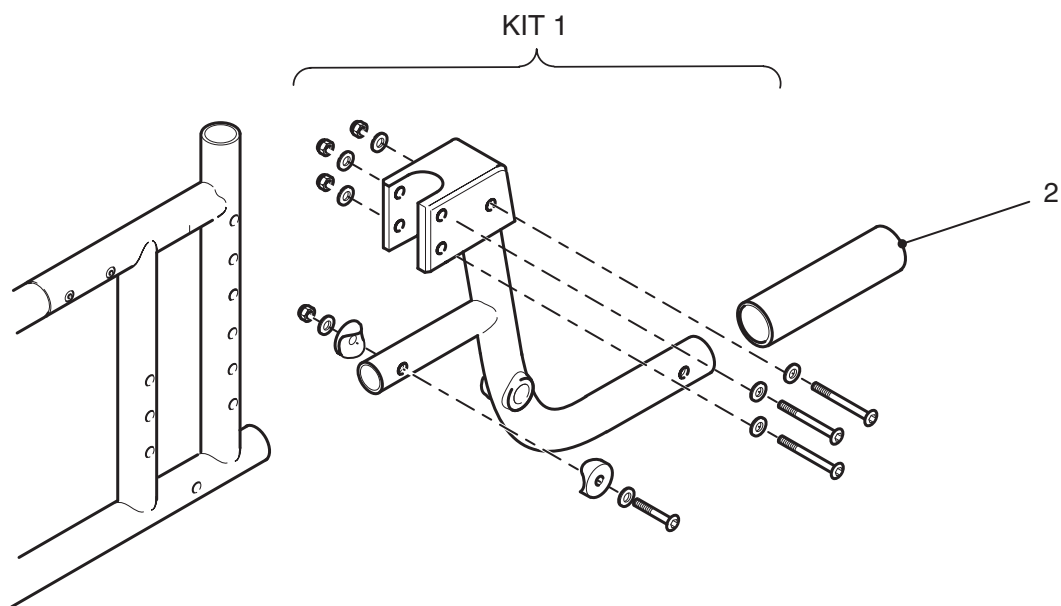


Figure 3.15 Transit Mounting Assembly

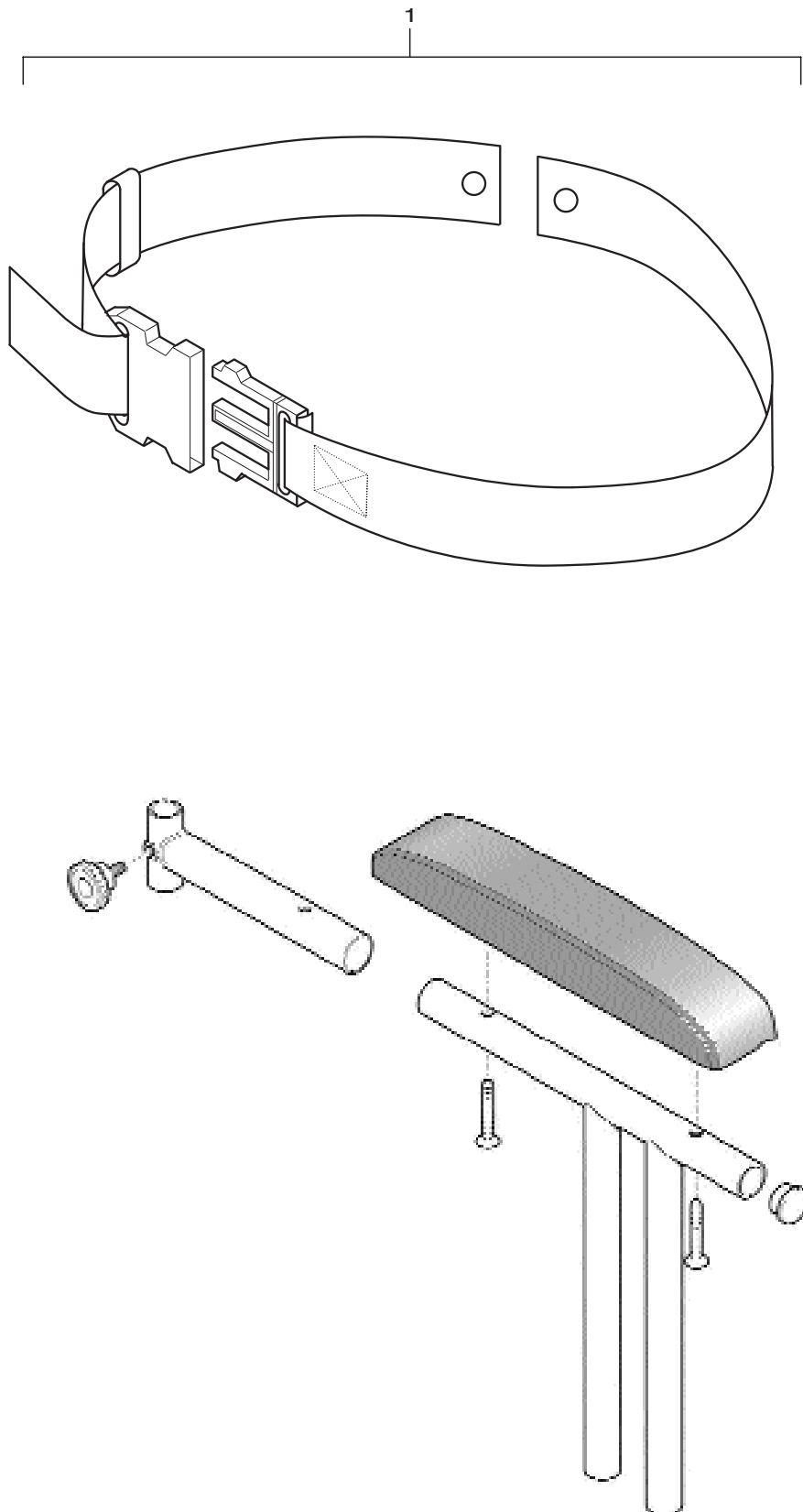


## Transit Mounting Assembly

+ **Note:** There are two adjustable footrest assemblies. These are 6 3/4 inches or 7 3/4 inches.

Item	Part Number	Description	Qty
KIT 1	1415385	Transit Wheel Mtg Kit RH	1
	1415386	Transit Wheel Mtg Kit LH	1
2	4PTS1002	22mm Sleeve	1

Figure 3.16 Safety Lap Belt and Armrest with Tray Bracket



**Safety Belt Assembly**

Item	Part Number	Description	Qty
1	1448745	Safety Lap Belt	1
2	2000/89	Tray Bracket	2

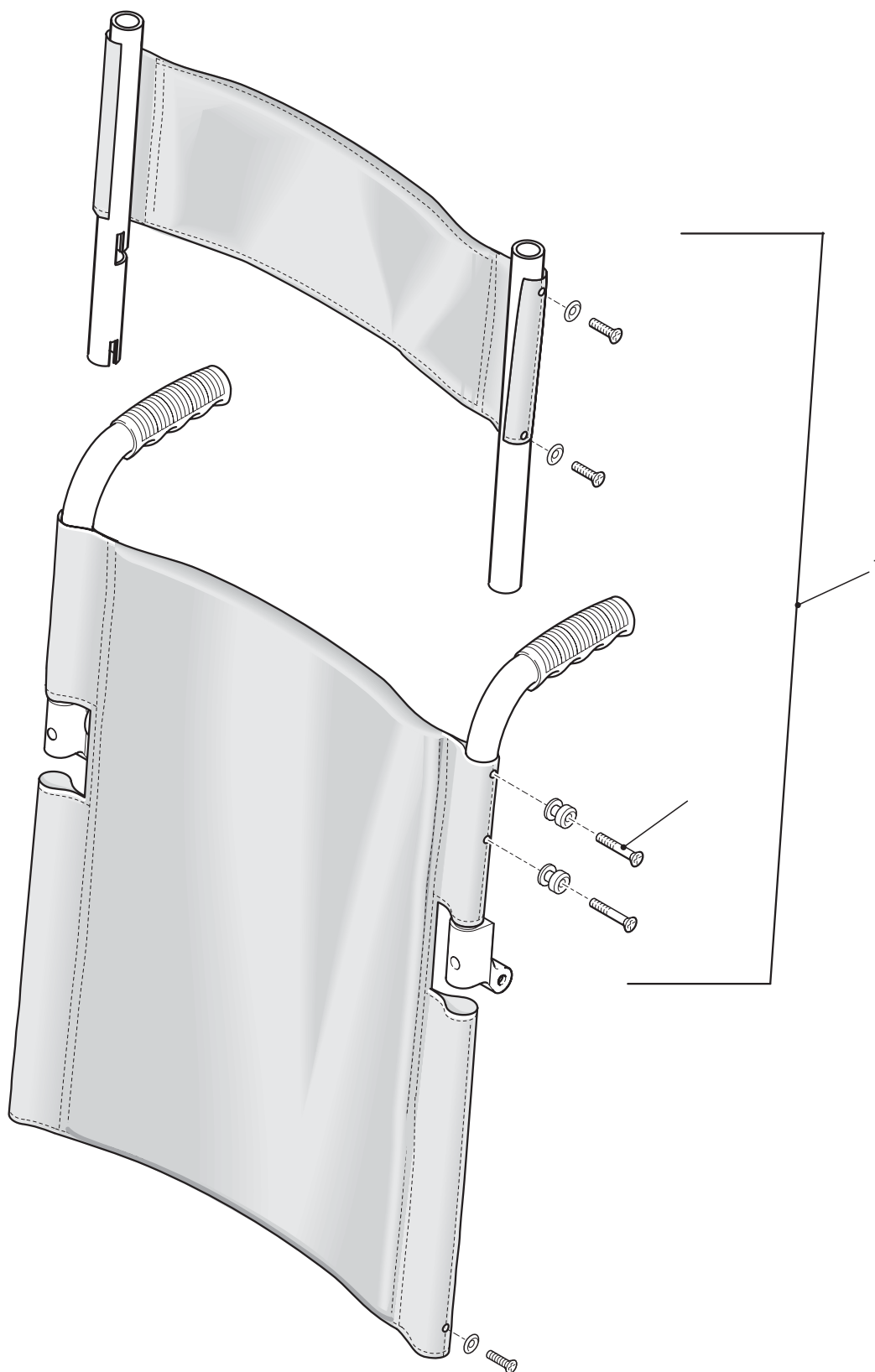


Figure 3.17 Backrest Extension Assembly

## Backrest Extension Assembly

Item	Part Number	Description	Qty
1	1415320	B/rest ext Assy 254 (10") x 230 (9") Pattern	1
	1415321	B/rest ext Assy 279 (11") x 230 (9") Pattern	1
	1415322	B/rest ext Assy 305 (12") x 230 (9") Pattern	1
	1415323	B/rest ext Assy 330 (13") x 230 (9") Pattern	1
	1415324	B/rest ext Assy 356 (14") x 230 (9") Pattern	1
	1436890	B/rest ext Assy 356 (15") x 230 (9") Pattern	1
	2000/86BLK	B/rest ext Assy 254 (10") x 230 (9") - Black	1
	2010/86BLK	B/rest ext Assy 279 (11") x 230 (9") - Black	1
	2020/86BLK	B/rest ext Assy 305 (12") x 230 (9") - Black	1
	2030/86BLK	B/rest ext Assy 330 (13") x 230 (9") - Black	1
	2040/86BLK	B/rest ext Assy 356 (14") x 230 (9") - Black	1
	2050/86BLK	B/rest ext Assy 356 (15") x 230 (9") - Black	1

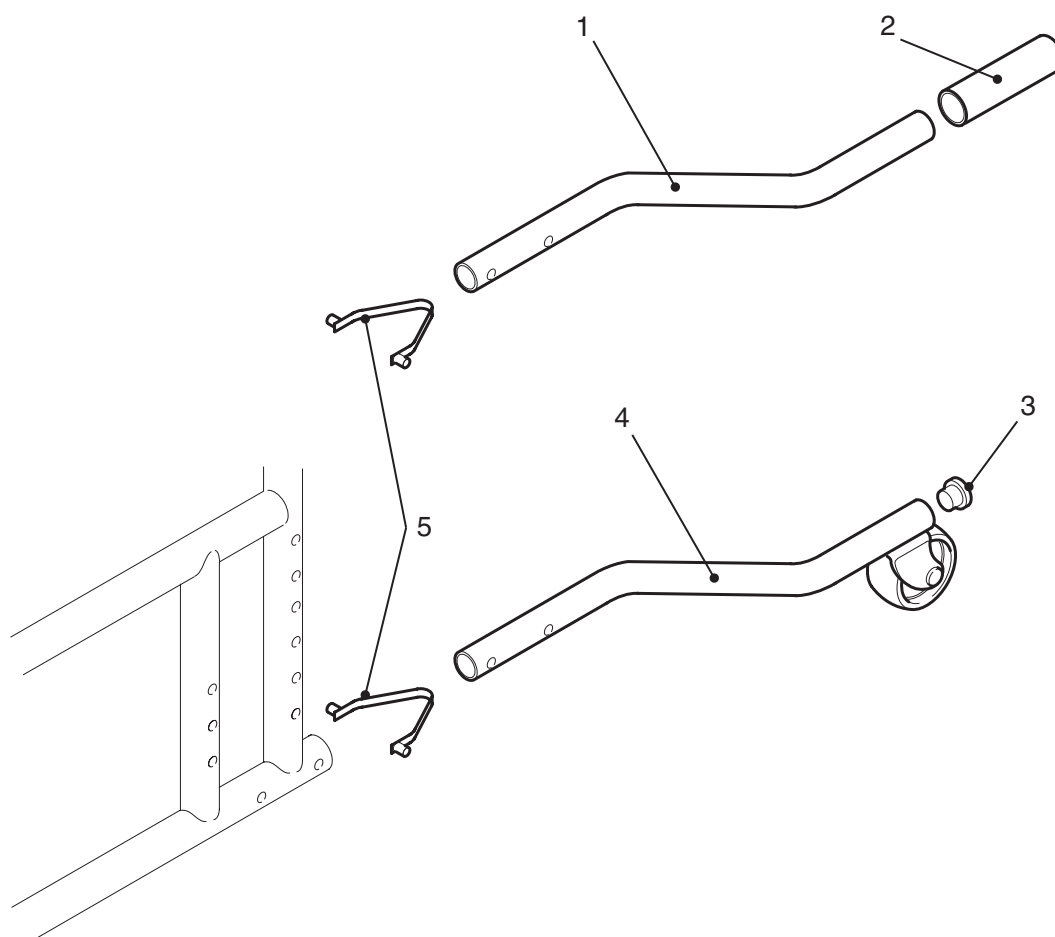


Figure 3.18 Anti-Tipper Assemblies

## Anti-Tipper Assemblies

Item	Part Number	Description	Qty
4	1415395	Anti-Tipping Tube Assy (Self Propel)	1
1	1420212	Tipping Lever Assy (Self Propel)	1
5	1DSB1001	6mm Button Spring	1
2	4PTS1001	16mm Sleeve	1
3	1PIC1005	19mm Plastic Tube Plug	1
NI	1420213	Anti-Tipping Tube Assy (Transit)	1

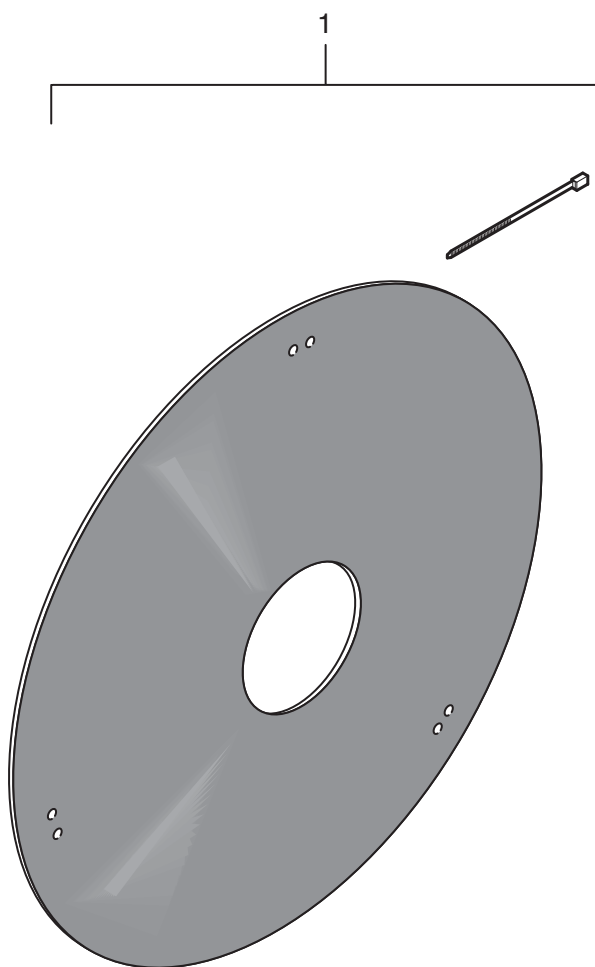


Figure 3.19 Spoke Guard Assembly



## Spoke Guard Assembly

Item	Part Number	Description	Qty
1	6002995	Spokeguard Kit (Pair) 20"	1
	6002996	Spokeguard Kit (Pair) 22"	1

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## **INVACARE INTERNATIONAL**

**Deutschland, Österreich, Switzerland:** Dehmer Straße 66, D-32549 Bad Oeynhausen.

**France:** Les Roches, F-37230 Fondettes.

**United Kingdom:** South Road, Industrial Estate, Bridgend - UK - CF31 3PY.

**España:** c/ Areny, s/n, Polígon Industrial de Celrà, E-17460 Celrà (Girona).

**Portugal:** Rua Senhora de Campanhã, 105 P-4369-001 Porto.

**Belgium:** Autobaan 14, B-8210 Loppem, Brügge.

**Denmark:** Sdr. Ringvej 39, DK-2605 Brøndby.

**Sweden:** Fagerstagatan 9, S-163 91 Spånga.

**Norge:** Grensesvingen 9, Etterstad, N-0603 Oslo 6.

**Nederland:** Celsiusstraat 46, NL-6716 BZ Ede.

