

# Invacare® Action® Ampla™



en Medium active wheelchair  
Service Manual



PROVIDER: Keep this manual.  
The procedures in this manual MUST be performed by a qualified technician.



**Yes, you can.®**

© 2021 Invacare Corporation

All rights reserved. Reproduction, duplication or modification in whole or in part is prohibited without prior written permission from Invacare. Trademarks are identified by ™ and ®. All trademarks are owned by or licensed to Invacare Corporation or its subsidiaries unless otherwise noted.

Making Life's Experiences Possible is a registered trademark in the U.S.A.

---

# Contents

---

<b>1 General</b> .....	<b>4</b>
1.1 Introduction .....	4
1.2 Symbols in This Manual .....	4
<b>2 Safety</b> .....	<b>5</b>
2.1 General Safety Information .....	5
2.2 Personal safety information .....	5
2.3 General repair information .....	5
<b>3 Product Overview</b> .....	<b>7</b>
3.1 Main parts of the wheelchair .....	7
3.2 Dimensions .....	7
<b>4 Servicing</b> .....	<b>9</b>
4.1 Inspection checklist .....	9
4.2 Spare parts .....	9
<b>5 Reconditioning</b> .....	<b>10</b>
5.1 Cleaning .....	10
5.2 Disinfection .....	10
5.3 Materials .....	10
5.4 Reconditioning scheme .....	12
<b>6 Instructions</b> .....	<b>13</b>
6.1 Frame .....	13
6.1.1 Installing the Frame Supports .....	13
6.2 Seat .....	14
6.2.1 Adjusting the front seat-to-floor height (FSTF) .....	14
6.2.2 Replacing the seat cover .....	14
6.3 Backrest .....	15
6.3.1 Replacing the Backrest .....	15
6.3.2 Installing the backrest plate and cushion .....	16
6.4 Leg rests .....	17
6.4.1 Assembling the leg rest .....	17
6.4.2 Installing the foot plate .....	17
6.4.3 Replacing the Footrest / Adjusting the Footrest Height .....	18
6.5 Sideparts .....	19
6.5.1 Assembling the Mudguard .....	19
6.5.2 Installing the Parking Brakes .....	19
6.5.3 Installing the Mudguard with Parking Brake .....	20
6.5.4 Installing/Adjusting the Attendant Running Brake .....	21
6.5.5 Installing the transfer help .....	22
6.6 Castors .....	23
6.6.1 Replacing the castor wheel .....	23
6.6.2 Replacing the Castor Fork .....	23
6.7 Options .....	24
6.7.1 Installing the Antitippers .....	24
6.7.2 Installing the transportation bearing .....	25
6.7.3 Installing the push bar .....	27
6.7.4 Installing the Drip Stand .....	27
6.7.5 Installing the cane holder .....	28
6.7.6 Installing the oxygen holder .....	29
6.7.7 Installing the tie-down shackles .....	29
6.7.8 Installing the posture belt .....	30

---

# 1 General

---

## 1.1 Introduction

This document contains important information about assembly, adjustment and advanced maintenance of the product. To ensure safety when handling the product, read this document and the user manual carefully and follow the safety instructions.

Find the user manual on Invacare's website or contact your Invacare representative. See addresses at the end of this document.

Invacare reserves the right to alter product specifications without further notice.

Before reading this document, make sure you have the latest version. You find the latest version as a PDF on the Invacare website.

For pre-sale and user information, see the user manual.

For more information about the product, for example product safety notices and product recalls, contact your Invacare representative. See addresses at the end of this document.

## 1.2 Symbols in This Manual

Symbols and signal words are used in this manual and apply to hazards or unsafe practices which could result in personal injury or property damage. See the information below for definitions of the signal words.

**WARNING**

Indicates a hazardous situation that could result in serious injury or death if it is not avoided.

**CAUTION**

Indicates a hazardous situation that could result in minor or slight injury if it is not avoided.

**IMPORTANT**

Indicates a hazardous situation that could result in damage to property if it is not avoided.

**Tips**

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

**Tools**

Identifies required tools, components and items which are needed to carry out certain work.

## 2 Safety

### 2.1 General Safety Information



**WARNING!**

**Risk of injury or damage to property**

- The procedures in this manual must only be performed by a qualified technician.
- Only use original options and spare parts.
- Do not handle this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as user manuals, installation manuals or instruction sheets supplied with this product or optional equipment.
- After each assembly, check that all fittings are properly tightened and that all parts have the correct function.



**WARNING!**

**Risk of contamination**

- Clean and disinfect the product before servicing.



**IMPORTANT!**

Assembly of optional equipment might not be described in this service manual. Refer to the manual, delivered with the optional equipment.

- Additional manuals can be ordered from Invacare. See addresses at the end of this document.
- Due to regional differences, refer to your local Invacare catalog or website for available optional equipment or contact your local Invacare representative. See addresses at the end of this document.



**IMPORTANT!**

Some replacement parts are only available as a kit. Always use the complete new kit when replacing a part.

- Spare parts can be ordered from Invacare. Refer to your local Invacare website to access the electronic spare parts catalogue (ESPC).



**IMPORTANT!**

Refer to the user manual of this product for information on

- Technical data
- Product components
- Labels
- Additional safety instructions



The information contained in this document is subject to change without notice.

### 2.2 Personal safety information

These safety instructions are intended to help avoid accidents during work and must be observed under all circumstances.

All employees coming into contact with contaminated products must regularly consult a company doctor. Work clothing and personal protective equipment must be available in necessary quantities and be in proper condition. Reliable hand and surface disinfection must be ensured.



**WARNING!**

**Risk of contamination**

- Clean and disinfect the product before carrying out repairs.

### 2.3 General repair information

Repairs require a high level of expertise. These assembly instructions therefore break down the various tasks into 3 categories:

Requirement	Symbol
Easy – technical understanding required	■□□
Medium – technical knowledge required	■ ■ □
Difficult – technical knowledge and expertise in assembling required	■ ■ ■

The required tools and their sizes are listed before the instructions.

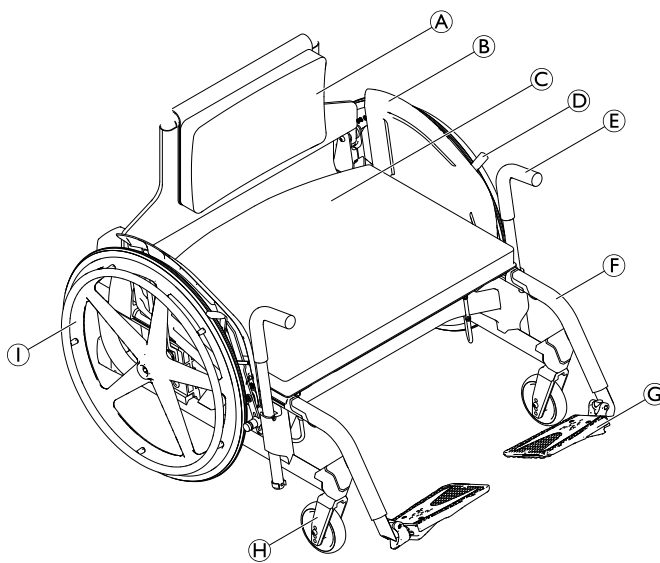
- !** **IMPORTANT!**
- If possible, continue to use the old identification label; if this is not possible, the new identification label must contain the same information and the old serial number. (Replacement of spare parts with serial numbers).
  - When components are replaced it is necessary to ensure the traceability of the components replaced.
  - If screws with thread locker are loosened, these must be replaced with new screws with thread locker. Alternatively, new thread locker must be applied.
  - If screws with circlip rings are loosened, these must be replaced with new ones.
  - Parts that become damaged during removal must be replaced with new ones.
  - All bolts must be tightened with the torque specified in the following instructions. Liquid high-strength and low-strength adhesives are available. After the torque specifications, the adhesive to be used (high-strength or low-strength) is indicated in brackets.

**Fastening with hexagon socket bolts**

<p>Hexagon socket bolts are not designed to withstand an excessive application of force. When tightening or undoing a hexagon socket bolt, force should be applied to the nut wherever possible to avoid damaging the bolt.</p>	
<p><b>Tightening and undoing</b></p> <p>Turn the nut using a socket spanner (only use an open-end spanner if there is insufficient space), using the Allen key simply to stop the bolt turning.</p>	
<p><b>Tightening and undoing when no nut is present</b></p> <p>If a hexagon socket bolt is screwed directly into a thread, the bolt must be tightened using the Allen key.</p>	
<p>Ensure that the Allen key is of good quality and not worn.</p>	

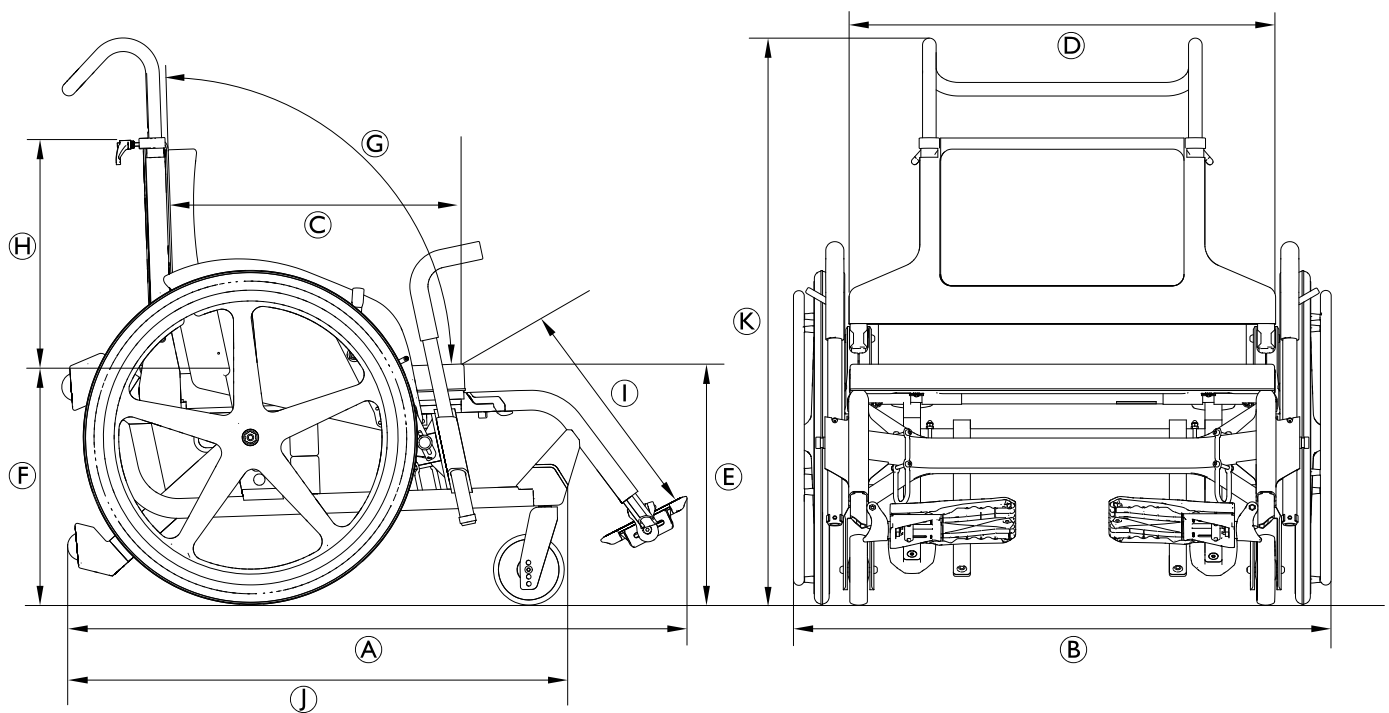
### 3 Product Overview

#### 3.1 Main parts of the wheelchair



- Ⓐ Backrest with cushion
- Ⓑ Clothes-guard
- Ⓒ Seat with seat cushion
- Ⓓ Parking brake
- Ⓔ Transfer help
- Ⓕ Hanger
- Ⓖ Footplate
- Ⓗ Castor fork with castor
- Ⓘ Rear wheel with handrim

#### 3.2 Dimensions



		Seat width 505 mm	Seat width 750 mm
Ⓐ	Overall length with leg rests	1065 mm	1145 mm
Ⓑ	Overall width	705 mm	960 mm
	Static stability downhill	25°	
	Static stability uphill	23°	
	Static stability sideways	24°	
	Seat plane angle	5°	6°
Ⓒ	Effective seat depth	450 mm	495 mm
Ⓓ	Effective seat width	518 mm	765 mm
Ⓔ	Seat surface height at front edge	350 mm	410 mm
Ⓕ	Seat surface height at rear edge	340 mm	400 mm
Ⓖ	Backrest angle	102°	104°
Ⓗ	Backrest height	485 mm	520 mm
Ⓘ	Footrest-to-seat distance	380 – 408 mm	333 – 420 mm
	Leg-to-seat-surface angle	136°	
	Hand rim diameter	520 mm	
	Horizontal location of axle	87 mm	90 mm
	Minimum turning radius	855 mm	970 mm
	Stowage width	648 mm	875 mm
	Stowage height	481 mm	415 mm
	Stowage length	875 mm	975 mm
Ⓙ	Overall length without leg rests	855 mm	920 mm
Ⓚ	Overall height	805 – 955 mm	
	Pivot width	1420 mm	1660 mm
	Maximum slope angle brake	7°	



## 4 Servicing

### 4.1 Inspection checklist

<b>General inspection</b>	☺	☹
Is the product in good condition and is it complete (product and optional equipment)?	<input type="checkbox"/>	<input type="checkbox"/>
Is the product free from damage or weaknesses of any kind?	<input type="checkbox"/>	<input type="checkbox"/>
Does the product operate correctly under nominal load?	<input type="checkbox"/>	<input type="checkbox"/>
Is the product fully functional in accordance with the user manual?	<input type="checkbox"/>	<input type="checkbox"/>
<b>Eradication of faults</b>	☺	☹
Have all the faults found been eliminated and have faulty components been replaced?	<input type="checkbox"/>	<input type="checkbox"/>
Are all screws/bolts firmly fitted and is the product securely assembled?	<input type="checkbox"/>	<input type="checkbox"/>
<b>Completion of checks</b>	☺	☹
Is the product technically and functionally safe?	<input type="checkbox"/>	<input type="checkbox"/>
Has the product been cleaned and disinfected?	<input type="checkbox"/>	<input type="checkbox"/>
Is the identification label easily readable and is it securely mounted on the product?	<input type="checkbox"/>	<input type="checkbox"/>
Is the product accompanied by the latest revision of the user manual?	<input type="checkbox"/>	<input type="checkbox"/>

### 4.2 Spare parts



**WARNING!**

Original spare parts must be used in all repairs. Otherwise the warranty and product declaration of conformity shall be rendered invalid.

All spare parts must be obtained from the Invacare customer service department. An electronic spare parts catalogue can be found on your local Invacare website.



**WARNING!**

**Risk of injury due to damaged or worn parts**

Some replacement parts are only available as a kit.  
– Always use the complete new kit when replacing a part.


## 5 Reconditioning

### 5.1 Cleaning

- !** **IMPORTANT!**  
– The product does not tolerate cleaning in automatic washing plants, with high-pressure cleaning equipment or steam.


- !** **IMPORTANT!**  
Dirt, sand and seawater can damage the bearings and steel parts can rust if the surface is damaged.  
– Only expose the wheelchair to sand and seawater for short periods and clean it after every trip to the beach.  
– If the wheelchair is dirty, wipe off the dirt as soon as possible with a damp cloth and dry it carefully.

1. Remove any installed optional equipment (only optional equipment which does not require tools).
2. Wipe down the individual parts using a cloth or soft brush, ordinary household cleaning agents (pH = 6 - 8) and warm water.
3. Rinse the parts with warm water.
4. Thoroughly dry the parts with a dry cloth.

 Car polish and soft wax can be used on painted metal surfaces to remove abrasions and restore gloss.


#### Cleaning upholstery

For cleaning upholstery refer to the instructions on the labels of the seat, cushion and backrest cover.

 If possible, always overlap hook and loop strips (the self-gripping parts) when washing, to minimize lint and thread build-up on hook strips and prevent damage to upholstery fabric by these.

### 5.2 Disinfection

The wheelchair may be disinfected by spraying or wiping with tested, approved disinfectants.


 Spray a soft cleaning and disinfecting product (bactericidal and fungicide meeting the EN1040 / EN1276 / EN1650 standards) and follow the instructions given by the manufacturer.

1. Wipe down all generally accessible surfaces with a soft cloth and ordinary household disinfectant.
2. Allow the product to air-dry.

### 5.3 Materials

The components used to manufacture the wheelchair consist of the following materials:

Frame tubes	Aluminum
Backrest tubes	Aluminum
Axle tube	Aluminum
Seat cover / Backrest cover	PA / PE / PVC
Push handles	Steel / Aluminum / TPE
Clothes-guard	Plastic
Castor forks	Aluminum
Leg rests	Aluminum
Footplate	Plastic
Parking brakes	Steel / Plastic
Solid tyres	Rubber
Handrim	Aluminum
Supporting parts / Attachments	Steel / Aluminum
Screws and bolts	Steel

 All materials used are protected against corrosion. We use only REACH compliant materials and components.



Theft and metal detection systems: in seldom cases the materials used in the wheelchair may activate theft and metal detection systems.

## 5.4 Reconditioning scheme

The following items must be reviewed and checked when reconditioning is required:

Symptoms	Faults	Solution
The wheelchair does not travel in a straight line	Incorrect tyre pressure on one rear wheel	Correct tyre pressure, see user manual
	Castor wheel bearings are dirty or damaged	Clean or replace the bearings or the complete castor wheel <i>6.6.1 Replacing the castor wheel, page 23.</i>
	Support bearings in forks faulty	Replace the support bearings, see <i>6.6.2 Replacing the Castor Fork, page 23.</i>
	Castor wheels not set to the same height	Position the front wheels in such a way that they touch the ground at the same time, see <i>6.6.2 Replacing the Castor Fork, page 23.</i>
The rolling resistance is very high	Incorrect tyre pressure in one or both rear wheels	Correct tyre pressure, see user manual
	Bearings are dirty or faulty	Replace the bearings, see <i>6.6.1 Replacing the castor wheel, page 23</i>
The castors wobble when moving fast	Too little tension on the clevis pin housing	Tighten the nut on the castor fork slightly, see <i>6.6.2 Replacing the Castor Fork, page 23</i>
	Castor wheel is worn out	Replace the castor wheel, see <i>6.6.1 Replacing the castor wheel, page 23</i>
The castor wheel is stiff or stuck	Bearings are dirty or faulty	Replace the bearings, see <i>6.6.1 Replacing the castor wheel, page 23</i>

## 6 Instructions

### 6.1 Frame

#### 6.1.1 Installing the Frame Supports



**WARNING!**

**Risk of overturning**

The longitudinal position of the rear wheels axis of the wheelchair compared to the backrest position can affect its stability.

- A forwards position makes the wheelchair less stable and increase the risk of tipping backwards, but improves its maneuverability by a better grip position of the handrim and a short turning radius.
- Conversely, by moving the rear wheels axis backwards, the wheelchair is more stable and tilts less easily, but its maneuverability is reduced.
- Depending on the user's abilities and its particular safety limits, the decrease in stability can be compensated for by installing an anti-tipper device.

The frame supports must be installed according to the positions in the tables below to meet the 2 different seat depths.

**Mudguard Fixation (F) in Pos. A:**

Seat depth	Rear wheel support (A)
460 mm	(Maneuverability +++) <b>Pos.1</b> (Stability +)
	(Maneuverability ++) <b>Pos.2</b> (Stability ++)
	(Maneuverability +) <b>Pos.3</b> (Stability +++)

**Mudguard Fixation (F) in Pos. B:**

Seat depth	Rear wheel support (A)
510 mm	(Maneuverability +++) <b>Pos.3</b> (Stability +)
	(Maneuverability ++) <b>Pos.4</b> (Stability ++)
	(Maneuverability +) <b>Pos.5</b> (Stability +++)



**WARNING!**

**Risk of tipping**

- When the mudguard is mounted in Position B, never mount the rear wheel support in Pos. 1 or 2.



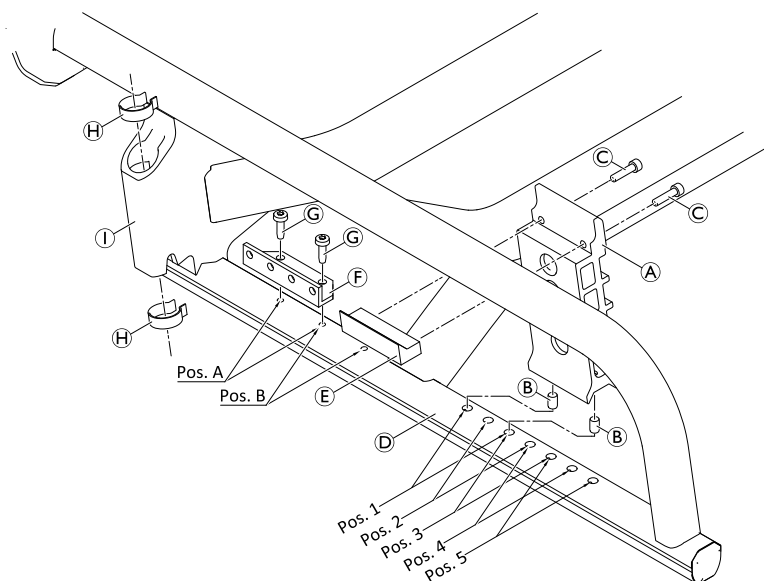
Allen key (4 mm)



1. Insert the pins (B) into the holes of position 1 or 2 in the frame (D).
2. Install the left and right rear wheel support in the same positions (1, 2, 3, 4 or 5) using bolts (C) and the left and right rear flanges (E).
3. Install the mudguard fixation (F) to the front frame part in the positions A or B using bolts (G).
4. Insert clips (H) into the transfer lever holder (I).
5. To remove the frame supports follow steps 4 - 1 in reverse order.

(C) = 8 Nm

(G) = 8 Nm

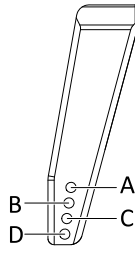
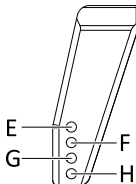
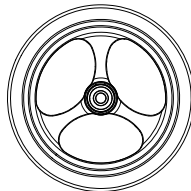
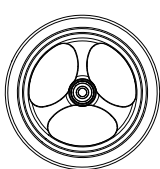
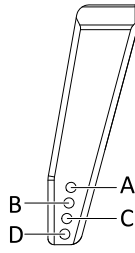
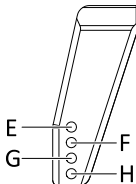


## 6.2 Seat

### 6.2.1 Adjusting the front seat-to-floor height (FSTF)

The front seat-to-floor height (FSTF) can be adjusted to four defined positions.

#### Front seat-to-floor height (FSTF) according to castor fork position and castor wheel size

FSTF [mm]	Castor fork position		6"	5"		
	Castor wheel size 5"	Castor wheel size 6"				
380	F	E				
405	H	G				
430	B	A				
455	D	C				

To change the castor wheel, see 6.6.1 Replacing the castor wheel, page 23.

To change the castor fork, see 6.6.2 Replacing the Castor Fork, page 23.

The mudguard with the rear wheel axle must be installed according to the FSTF, see 6.5.3 Installing the Mudguard with Parking Brake, page 20.

### 6.2.2 Replacing the seat cover

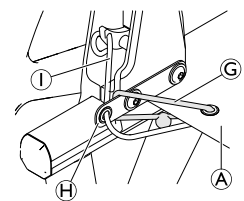
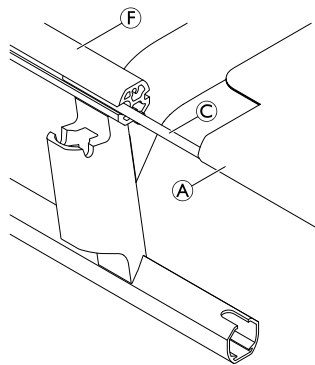
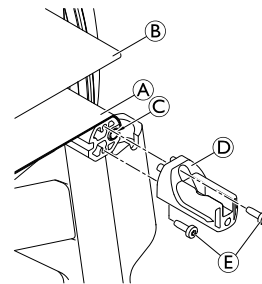


Allen key (3 mm)



1. Remove the seat upholstery **B** from the seat cover **A**.
2. Remove bolts **E**.
3. Remove the leg rest receiver **D** from the frame **F**.
4. Untie the backrest cord **I** and remove it from the cord fixation **H**.
5. Unhook the rear seat cord **G** from the cord fixation.
6. Remove the rod **C** and the seat cover from the frame.
7. Reinstall a new seat cover by reversing steps 5 to 1.

**E** = 6 Nm / 800 rpm max.



## 6.3 Backrest

### 6.3.1 Replacing the Backrest



**WARNING!**  
**Risk of overturning**

The longitudinal position of the rear wheels axis of the wheelchair compared to the backrest position can affect its stability.

- A forwards position makes the wheelchair less stable and increase the risk of tipping backwards, but improves its maneuverability by a better grip position of the handrim and a short turning radius.
- Conversely, by moving the rear wheels axis backwards, the wheelchair is more stable and tilts less easily, but its maneuverability is reduced.
- Depending on the user's abilities and its particular safety limits, the decrease in stability can be compensated for by installing an anti-tipper device.



Allen key (4 mm, 5 mm) / Adhesive



**Removing:**

1. Remove bolts (L), threaded axle sleeve (C) and screw (E) on both sides.
2. Remove the backrest plates (B) and (P) on both sides from the backrest (A) and the frame (L).
3. Remove saddle washers (D), pin (H), torque spring (J), bumper (F), locking hook (G) and slide pin (I) on both sides.

**Installing:**

1. Press the blind rivet nuts (M) into the 4 holes of the backrest tube (N).
2. Press the slide pin (I) into the locking hook (G).
3. Place the pin (H) with the torque spring (J) and the bumper (F) into the holes of backrest plate (P) on both sides.
4. Slide the locking hook (G) onto pin (H) on both sides.
5. Position the backrest plate (B) and install with the strap fixation (K) using bolts (L) on both sides.



Do not yet tighten the bolts completely. Leave a 5 mm space on both sides to be able to slide the backrest assembly on the frame.

6. Install the backrest tube (A) with saddle washers (D) between the backrest plates (B) and (P) using the threaded axle sleeve (C) and screw (E) on both sides. Do not completely tighten screw (E).



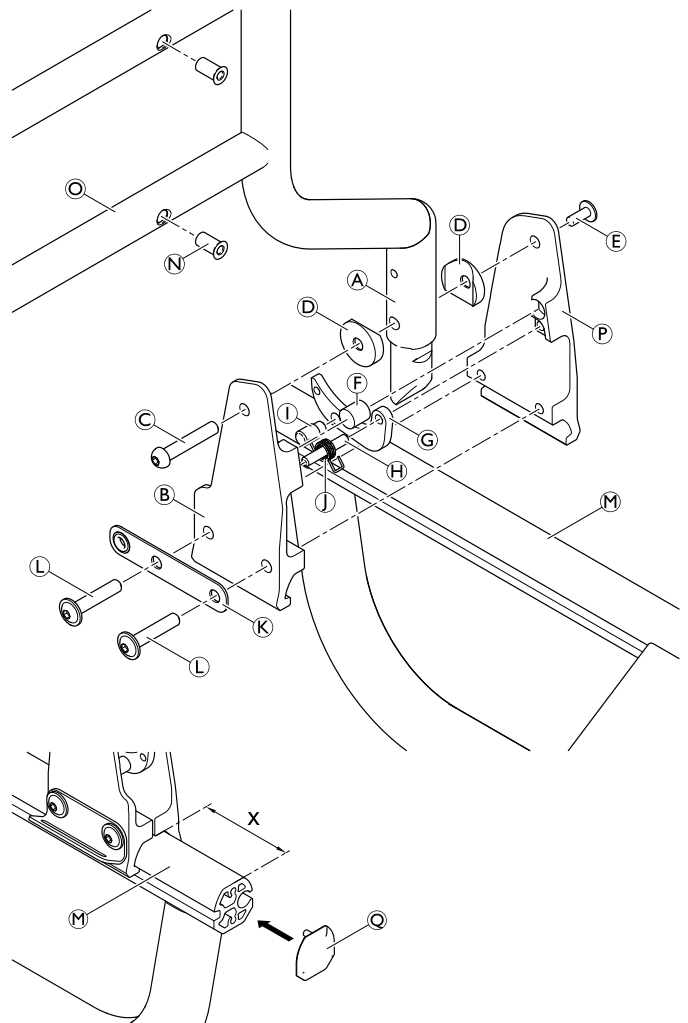
Two seat depths are available. Measure the distance X accordingly:

Seat depth	X
460 mm	70 mm (Stability +)
510 mm	20 mm (Maneuverability +)

7. Slide the backrest assembly to the correct position and tighten bolts (L) and the screw (E) on both sides.
8. Apply adhesive to the reflector cap (Q) and place it on the end of the frame.

(E) = 4 Nm

(L) = 16 Nm



### 6.3.2 Installing the backrest plate and cushion



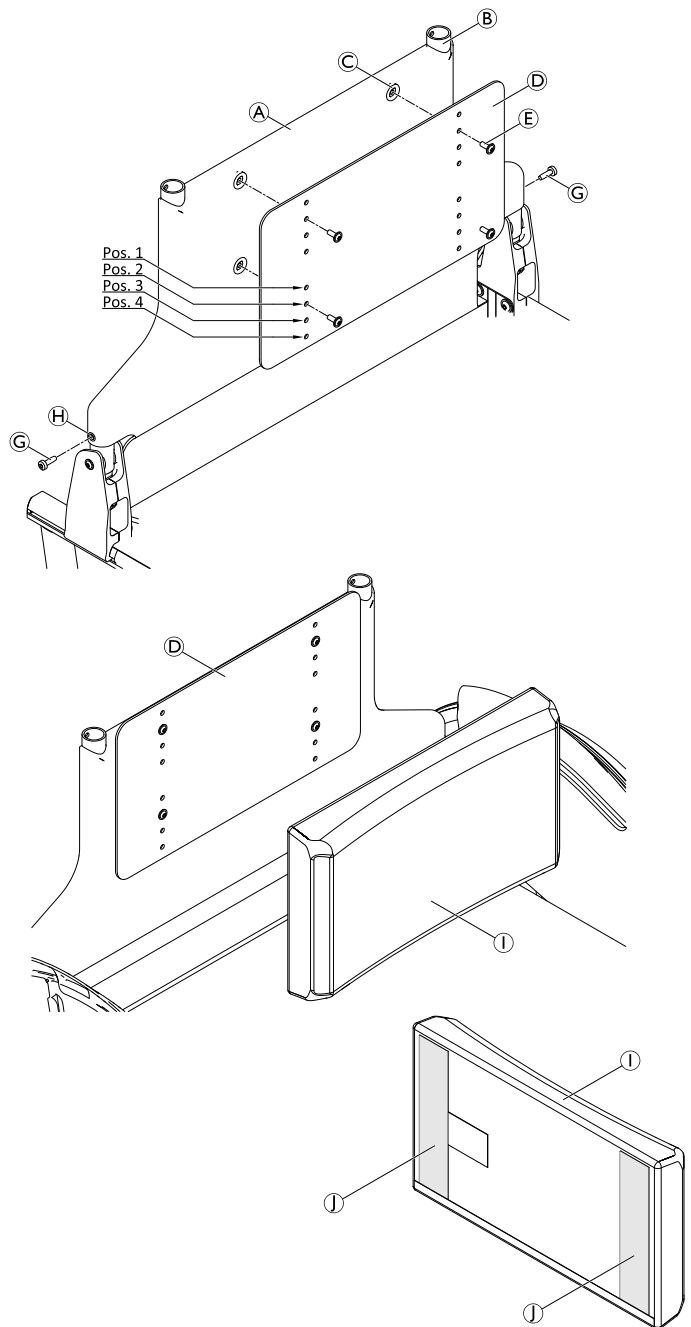
Allen key (3 mm)



1. Slide the backrest shroud (A) from above over the backrest frame (B).
2. Mount the backrest shroud through its holes (H) to the backrest tube using bolts (G).
3. Place the rubber spacers (C) into the holes of the backrest shroud.
4. Position the backrest plate (D) to the required height (see table below).
5. Mount the backrest plate to the backrest using bolts (E).
6. Remove the protective film from the adhesive surfaces (I) of the backrest cushion (J).
7. Glue the backrest cushion to the backrest plate by positioning it flush and pressing it against it.
8. Remove the backrest plate and cushion by reversing steps 7 to 1.

(E) = 6 Nm

(G) = 6 Nm



#### Adjusting the backrest height

The backrest height depends on the mounting position of the backrest plate. The following 4 heights are possible.

Backrest height [mm]	Mounting position
425	Pos. 1
450	Pos. 2
475	Pos. 3
500	Pos. 4



## 6.4 Leg rests

The leg rests can be adjusted in 5 positions with steps of 25 mm.

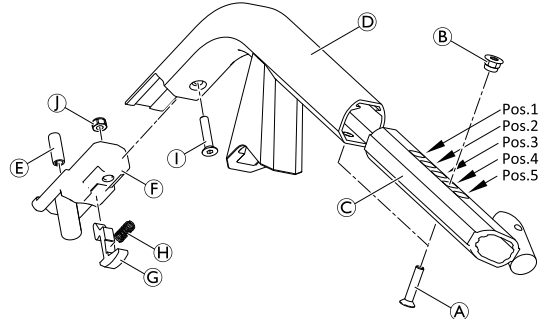
### 6.4.1 Assembling the leg rest



Allen key (4 mm)



1. Place the nut **B** to the required position (1 – 5) in the telescopic tube **C**.
2. Slide the telescopic tube into the leg rest tube **D** and secure with bolt **A**.
3. Press the nut **J** into the adapter **F**.
4. Insert the pin **E** into the adapter.
5. Place the lever **G** into the adapter.
6. Slide the spring **H** between the lever and the adapter.
7. Position the adapter assembly in the leg rest tube and secure with bolt **I**.



**A** = 6 Nm

**I** = 6 Nm

### 6.4.2 Installing the foot plate

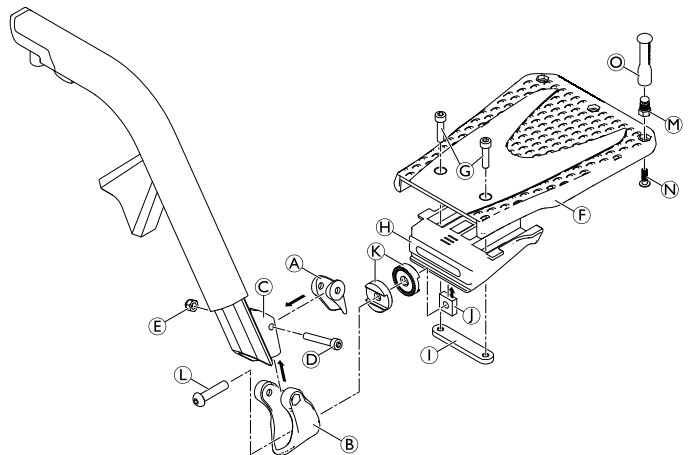


Allen key (4 mm) / Wrench (8 mm)



1. Assemble part **B** with spacers **K** to the footrest joint **H** using bolt **L** and square nut **J**.
2. Mount the foot plate **F** to the footrest joint using bolts **G** and threaded plate **I**.
3. Install the heel strap holder (**O** and **M**) to the foot plate using screw **N**.
4. Install the footrest assembly with part **A** to the leg rest **C** using bolt **D** and nut **E**.

**L** = 8 Nm



### Adjusting the foot plate angle

The footrest can be angled up to 10° from the horizontal.

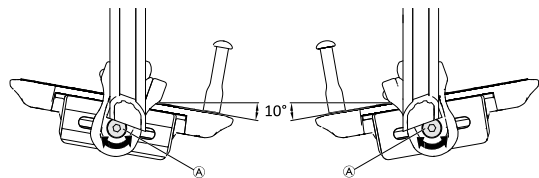


Allen key (4 mm)



1. Loosen the bolt **A**.
2. Adjust the footrest angle as required.
3. Retighten the bolt.

**A** = 8 Nm



### 6.4.3 Replacing the Footrest / Adjusting the Footrest Height

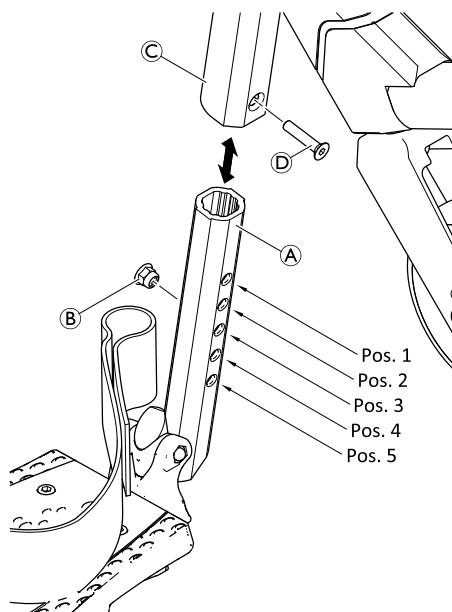


Allen key (4 mm)



1. Remove bolt ④ from the leg rest hanger ③.
2. Remove the footrest ①.
3. Place the nut ② in the required hole (pos. 1 - 5) in the footrest.
4. Reinsert the footrest into the leg rest hanger and secure with bolt through the nut.

④ = 5 Nm



## 6.5 Sideparts

### 6.5.1 Assembling the Mudguard

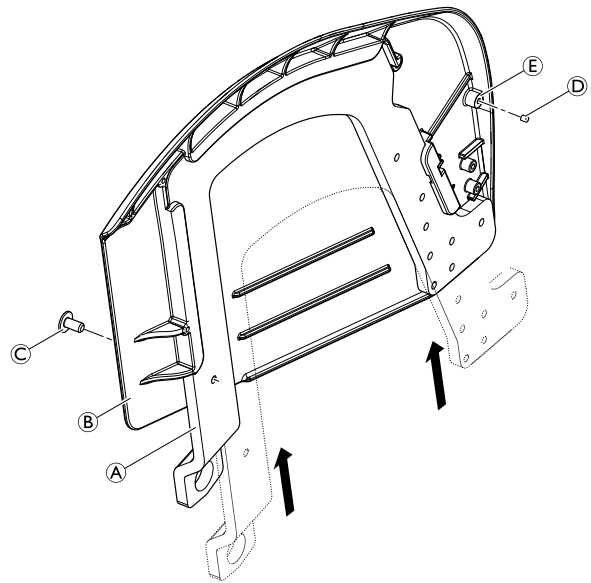


Allen key (4 mm)



1. Slide the mudguard support **A** into the mudguard **B**.
2. Secure both parts with bolt **C**.
3. Press the magnet **D** into the hole **E**.

**C** = 5 Nm



### 6.5.2 Installing the Parking Brakes

The parking brakes are installed directly to the mudguard.

#### Installing the Brake Lever



Allen key (4 mm)

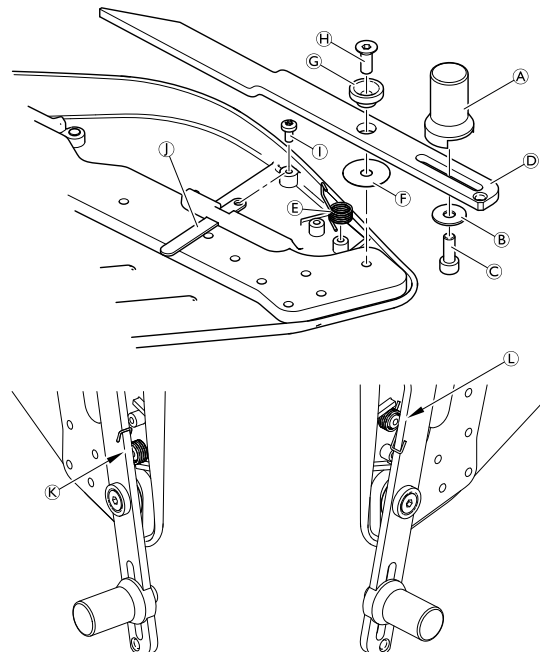


1. Install the slide sheet **I** using screw **I**.
2. Install the brake shoe **A** to the brake lever **D** using washer **B** and bolt **C**.
3. Insert the torque spring **E** according to the position **K** for the right side and position **L** for the left side.
4. Install the brake lever to the mudguard using washer **F**, hub **G** and bolt **H** and hook the ends of the torque spring according to positions **K** and **L**.

**I** = 1.5 Nm (max.)

**C** = 8 Nm

**H** = 5 Nm



## Installing the Brake Handle



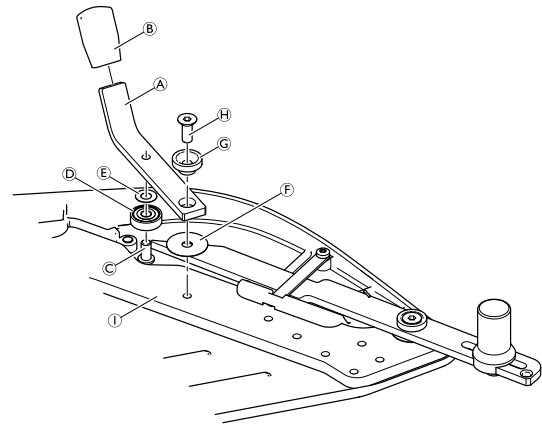
Allen key (4 mm)



1. Install the bearing **D** with washer **E** to the brake lever **A** using bolt **C**.
2. Completely slide the brake lever cover **B** on the brake lever end.
3. Install the brake lever to the mudguard using washer **F**, hub **G** and bolt **H**.

**C** = 5 Nm

**H** = 5 Nm



## 6.5.3 Installing the Mudguard with Parking Brake

Mounting positions of the mudguard according to the front seat-to-floor height (FSTF)

FSTF [mm]	Position
380	1
405	2
430	3
455	4



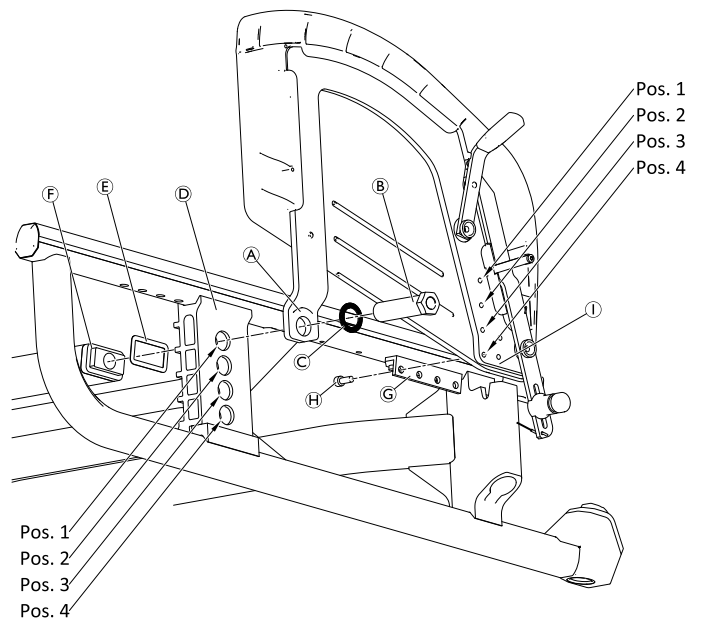
Allen key (4 mm) / Socket spanner (22 mm)



1. Align the transversal support **F** with the form washer **E** in the required position on the vertical brace **D**.
2. Install the rear end of the mudguard with parking brake **A** through the vertical brace to the transversal support using the adapter sleeve **B** and washer **C**.
3. Install the front end of the mudguard with parking brake **I** to the required position (see table) of the frame profile **G** using bolt **H**.

**B** = 45 Nm

**H** = 8 Nm



## 6.5.4 Installing/Adjusting the Attendant Running Brake



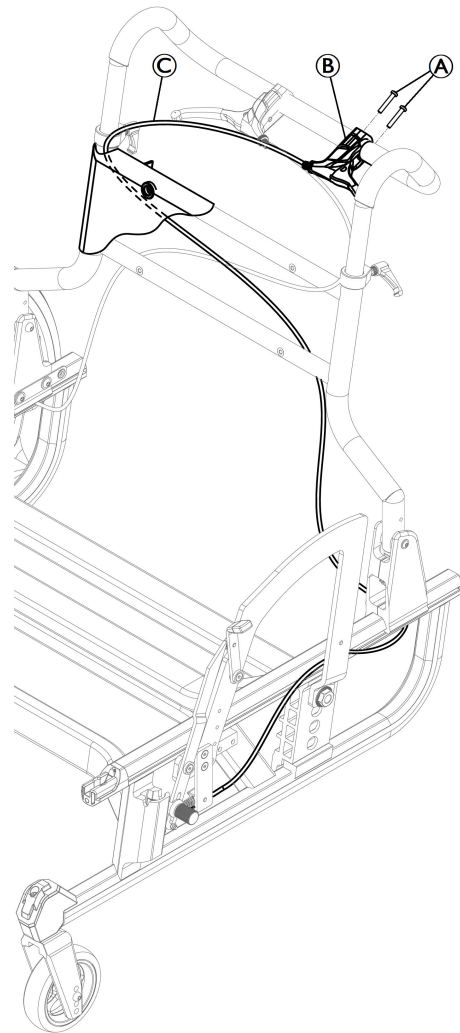
Allen key (4 mm) / Phillips screwdriver / Open-end spanner (8 mm) / Socket spanner (6 mm, 8 mm)



Parts and components are removed from the diagram for clarity.

1. Install the brake lever **B** on the push handle with 2 screws **A** to 40° from the floor, secure the brake cable and the cable sheath (Bowden cable) **C** with the installation set.
2. Place the Bowden cable **C** in the backrest upholstery in order to hold it in place.
3. Install the Bowden cable **C** on the chair frame and mudguard bracket as shown on the diagram.
4. Repeat steps 1 to 3 on the other side.
5. Adjust the distance between the two brake levers **B** to 120 mm, angle of 40° from the floor.

**A** = 1.6 – 2.2 Nm



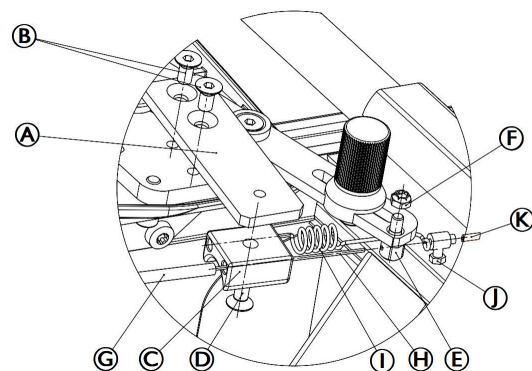
1. Install the support attendant brake **A** using 2 screws **B** on the mudguard bracket.
2. Set the housing stopper **C** to the support attendant brake **A** using screw **D**.
3. Install the cable slider **E** using lock nut **F** on the brake lever.
4. Insert the Bowden cable **G** into housing stopper **C**.
5. Insert the brake cable **H** into cable slider **E**.
6. Insert the spring cable **I** into housing stopper **C**.
7. Insert the brake cable **H** into spring cable **I** and the lock cable **J**.
8. Secure the brake cable **H** into the lock cable **J** and adjust its tension.
9. Install the tip for cable protection **K** on brake cable **H**.
10. Suppress the brake cable **H** free play by adjusting the opened clamp bolt on brake lever **B**, see diagram above.
11. Repeat steps 1 to 10 on the other side.

**B** = 6 – 8 Nm

**D** = 4 – 5 Nm

**F** = 4 – 6 Nm

**J** = 2 – 3 Nm



## 6.5.5 Installing the transfer help



Allen key (5 mm) / Socket spanner (10 mm)



1. Install the stopper **(B)** into the required hole of the transfer help tube **(A)** using bolt **(C)**.

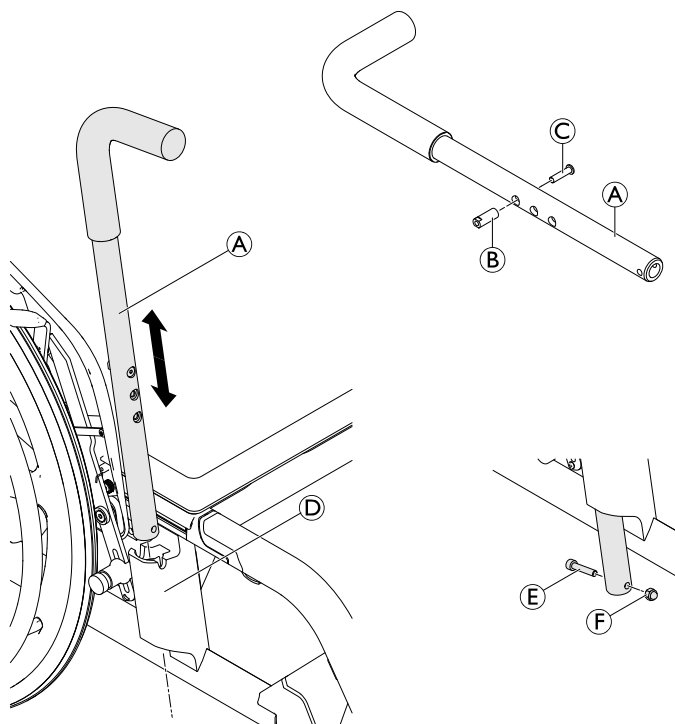


Make sure that both clips **(H)** are placed in the transfer lever holder, see 6.1.1 *Installing the Frame Supports*, page 13.

2. Place the transfer help in the transfer lever holder **(D)** with the handle facing forwards.
3. Install the bolt **(E)** and the nut **(F)** to the transfer help tube.
4. Install the second transfer help on the other side.

**(C)** = 4 Nm

**(E)** = 8 Nm



## 6.6 Castors

### 6.6.1 Replacing the castor wheel



Allen key (3 mm)

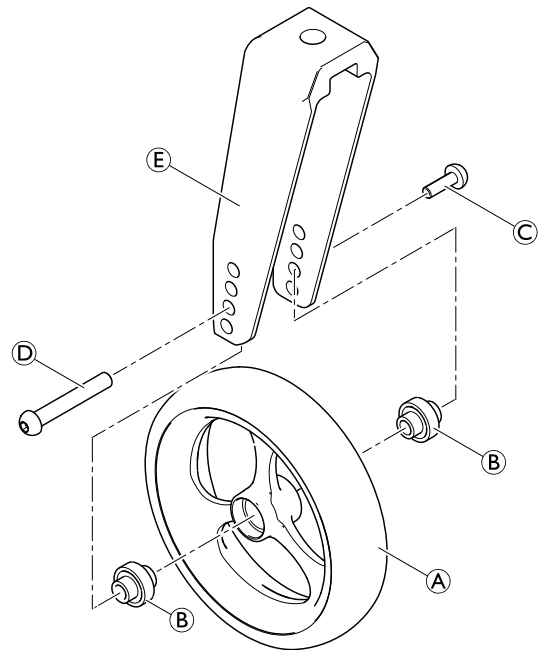


1. Remove the sleeve nut (E) and bolt (D).
2. Remove the castor wheel (A) with bearings (B) from the castor fork (F).
3. Install the new castor wheel and the bearings in the required position of the castor fork.
4. Secure the castor wheel to the castor fork using the sleeve nut and the bolt.

(E) = 5 Nm

Function check:

The wheel may not wobble, but must rotate easily.



### 6.6.2 Replacing the Castor Fork



Allen key (5 mm) / Socket spanner (10 mm)



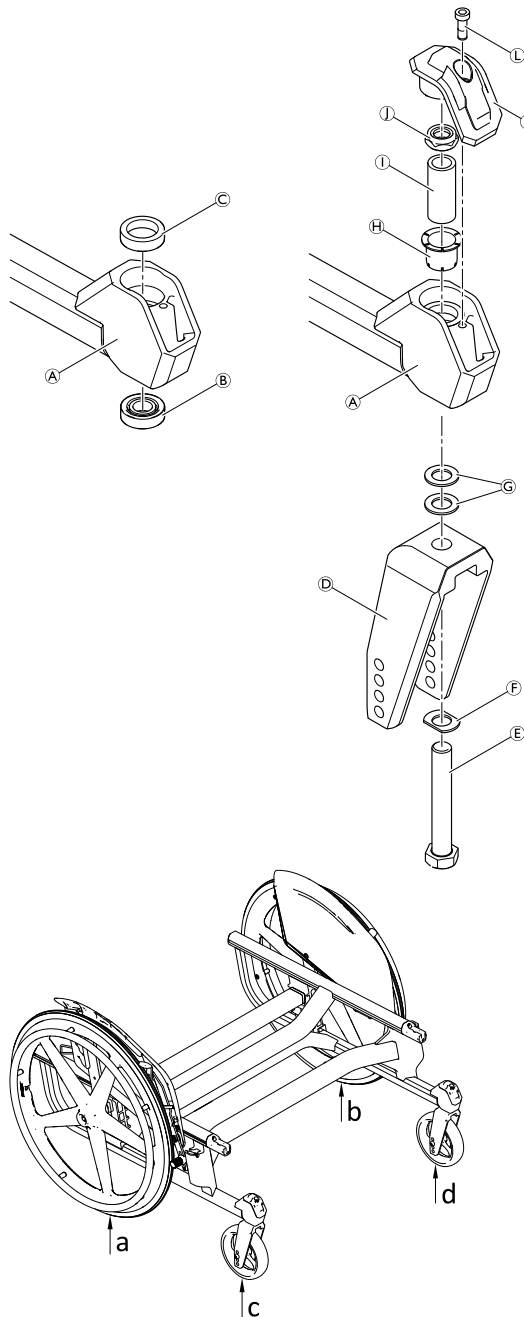
1. Remove the castor wheel, see 6.6.1 *Replacing the castor wheel, page 23*.
2. Remove bolt ① from the leg rest lock ②.
3. Remove the nut ① from the bolt ⑤ and remove washer(s) ⑥, the castor fork ④, washers ③, insert ⑧ and sleeve ① from the castor fork support ①.
4. If necessary, change the bearing ② and the spacer ③ in the castor fork support.
5. Replace the castor fork and reinstall in reverse order.

**IMPORTANT!**

Risk of damaging the castor fork bearing  
 – Do not overtighten the bolt ⑤.  
 – Tighten the bolt only so far that the fork can still be turned freely.

6. Reinstall the castor wheel.
7. Place the wheelchair on a flat surface. The rear wheels (a & b) and the castor wheels (c & d) should equally touch the floor.
8. Check the flatness of the wheelchair by measuring the ground clearance (c & d) of the castor wheels. If the ground clearance of one castor wheel is more than 1.5 mm and the other touches the floor, add an additional washer ③ when assembling the castor fork on the respective side.

- ① = 5 Nm
- ② = 15 Nm



## 6.7 Options

### 6.7.1 Installing the Antitippers



Allen key (4 mm, 5 mm) / Socket spanner (22 mm)



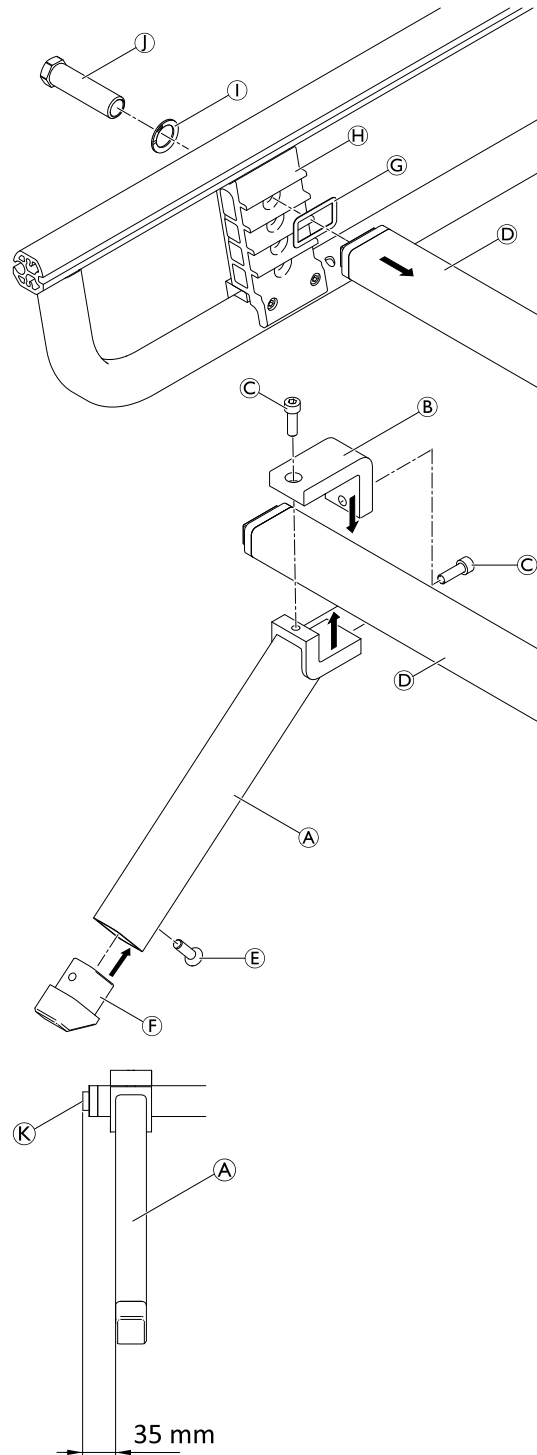


1. Dismount the transversal bar ④ with the form washer ③ from the vertical brace ⑧ by removing the adapter sleeve ① and washer ② on both sides.
2. Install the antitipper shoe ⑥ to the antitipper tube ⑤ using bolt ⑦.
3. Install the antitipper tube to the transversal bar ④ using the flange ② and bolts ③. Do not completely tighten the bolts.
4. Position the antitipper ⑤ at a distance of 35 mm measured from the end of the axis ⑧.
5. Tighten the bolts ③.
6. Install the second antitipper in the same way on the other side.
7. Reinstall the transversal bar with the antitippers to the vertical braces.

③ = 16 Nm

⑦ = 7 Nm

① = 45 Nm



### 6.7.2 Installing the transportation bearing



Allen key (4 mm , 5 mm) / Socket spanner (22 mm)

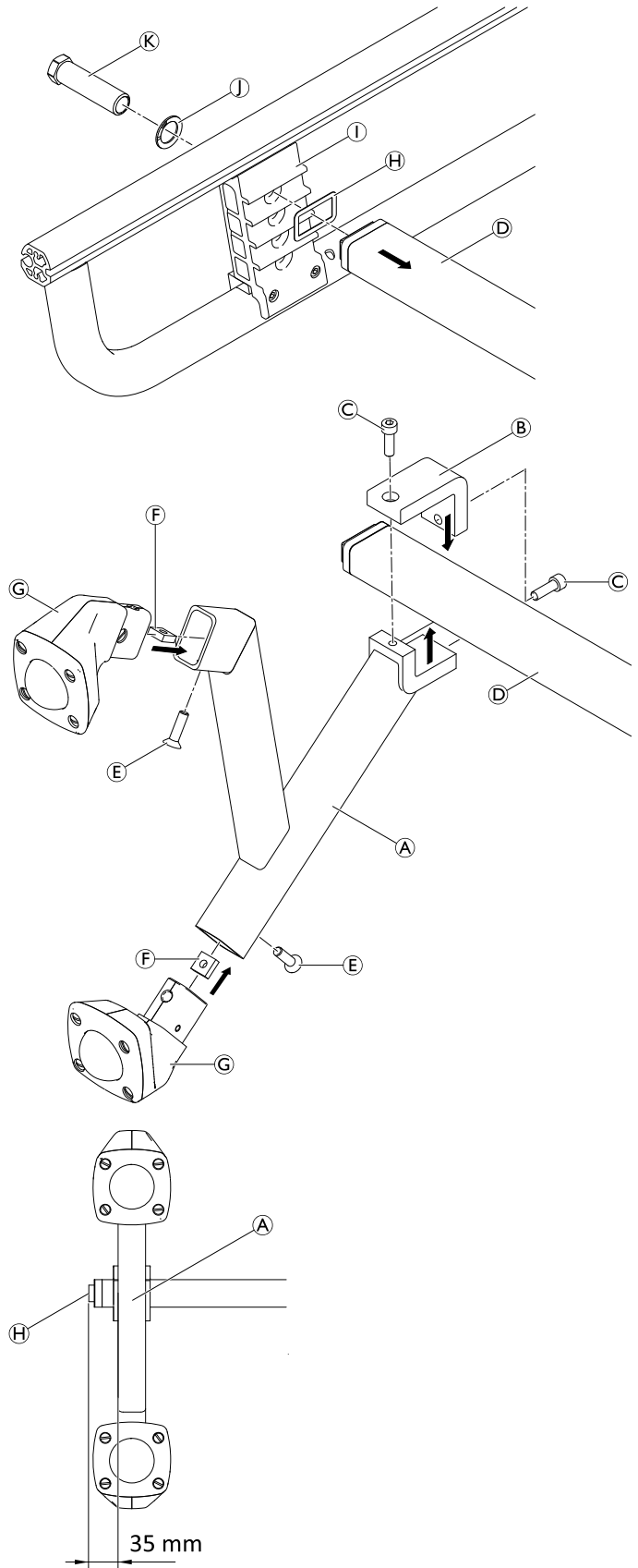


1. Dismount the transversal bar ④ with the form washer ⑧ from the vertical brace ① by removing the adapter sleeve ⑫ and washer ⑩ on both sides.
2. Install the ball castors ⑥ to the transportation bearing support ③ using bolts ⑤ and square nut ⑦.
3. Install the transportation bearing to the transversal bar ④ using the flange ② and bolts ③. Do not completely tighten the bolts.
4. Position the transportation bearing ③ in a distance of 35 mm measured from the end of the axis ⑧.
5. Tighten the bolts ③.
6. Install the second transportation bearing in the same way on the other side.
7. Reinstall the transversal bar with the transportation bearing to the vertical braces.

③ = 16 Nm

⑤ = 7 Nm

⑫ = 45 Nm



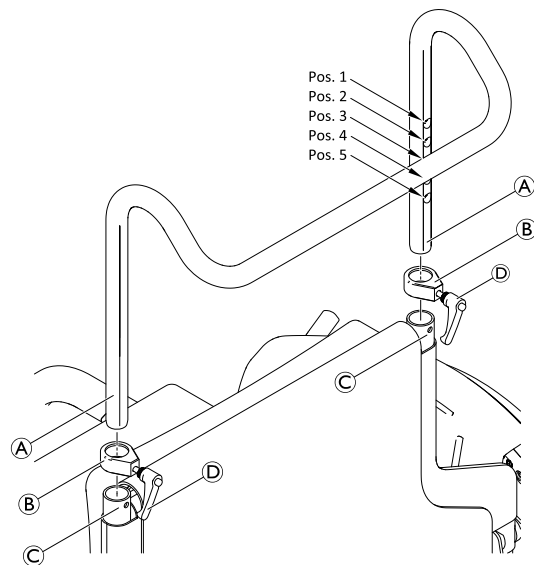
### 6.7.3 Installing the push bar



—

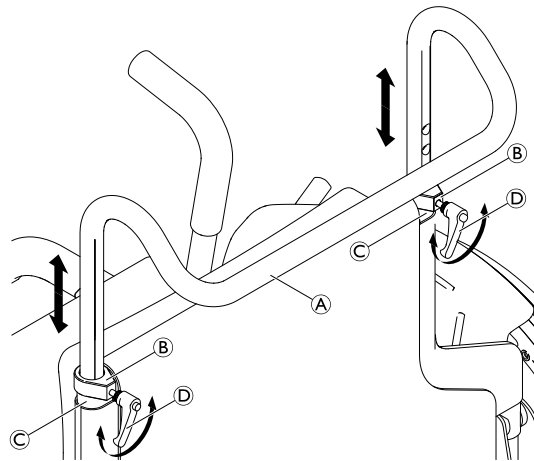


1. Place both clamping parts **B** on the ends of the backrest tubes **C**. Make sure that the holes of the clamping parts are aligned with the holes of the backrest tube ends.
2. Insert the push bar **A** into the backrest tubes.
3. Move the push bar to the required height (Pos. 1 – 5) and secure by turning the levers **D** of the clamping part clockwise.
4. To remove the push bar reverse steps 3 to 1.



#### Adjusting the height

1. Loosen both clamping parts **B** by turning the levers **D** counterclockwise.
2. Move the push bar **A** to the required height and secure by turning the levers **D** of the clamping part clockwise.



### 6.7.4 Installing the Drip Stand

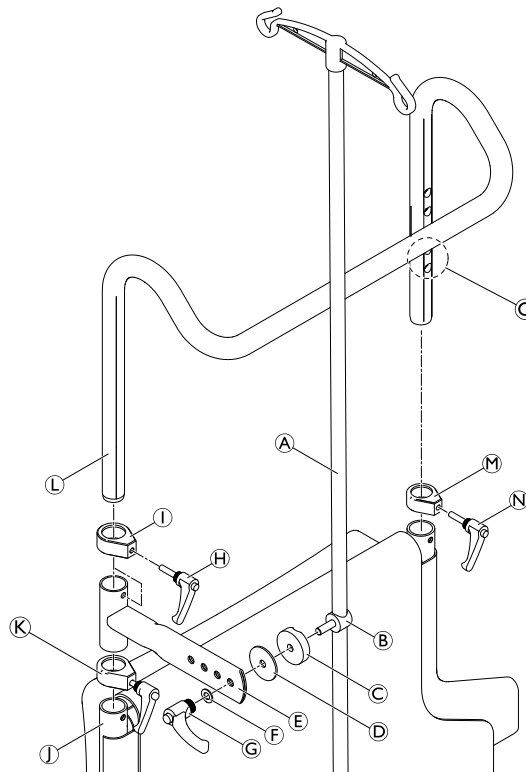
To install the drip stand the wheelchair has to be equipped with the push bar.




—



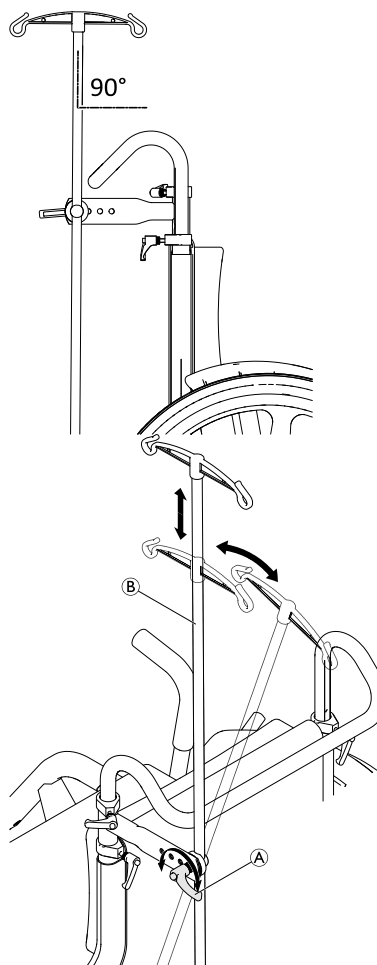
1. Insert the drip stand rod (A) with its screw element (B) through the lock washer (C) and washer (D) into the required hole of the drip stand support (E).
2. Secure the drip stand assembly to the drip stand support using the washer (F) and handle (G) by turning it clockwise.
3. Loosen the clamping parts (I) and (M) by turning the levers (H) and (N) counterclockwise.
4. Remove the push bar (L).
5. Position the clamping part (K) on the frame tube (J).
6. Position the drip stand support (E) on the clamping part (K).
7. Position the clamping part (I) on the drip stand support.
8. Insert the push bar through the parts (I), (E) and (K) into the frame tube (only through clamping part (M) on the other side).
9. Insert and secure the lever (N) in one of the two lower holes (O) on the push bar.
10. Secure the push bar by turning the lever (H) clockwise.



### Adjusting the Height and Angle


 The rod of the drip stand must always be placed in a vertical position, i.e. in a 90° angle to the ground, no matter the position of the backrest or the wheelchair.

1. Loosen the lever (A).
2. Adjust the drip stand (B) to the desired height and correct the angle for vertical alignment (90° angle to the ground).
3. Re-tighten the lever (A).



### 6.7.5 Installing the cane holder

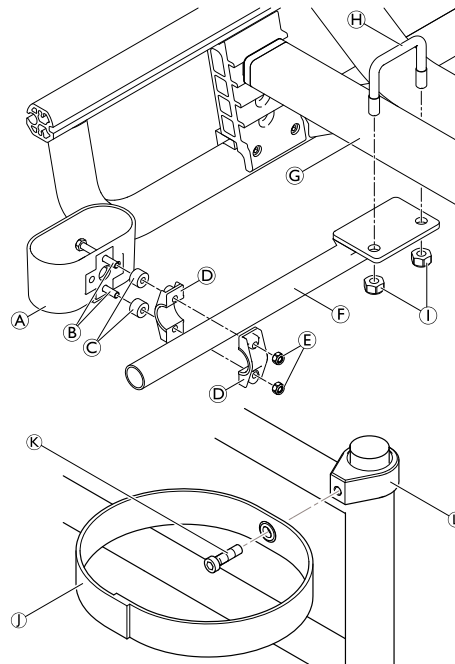
The cane holder can be installed either on the left or on the right rear side of the wheelchair.

 Allen key (4 mm, 5 mm)



1. Install the plastic casing (A) to the holder bar (F) using bolts (B), spacers (C), clamps (D) and nuts (E).
2. Install the holder bar assembly to the cross brace (G) using the U-bolt (H) and nuts (I).
3. Install the can holder strap (J) to the backrest fixation part (L) using the bolt (K).

- Ⓛ = 20 Nm
- ⓔ = 7 Nm
- Ⓚ = 7 Nm



### 6.7.6 Installing the oxygen holder



Allen key (5 mm) / Socket spanner (17 mm) / Wrench (10 mm)



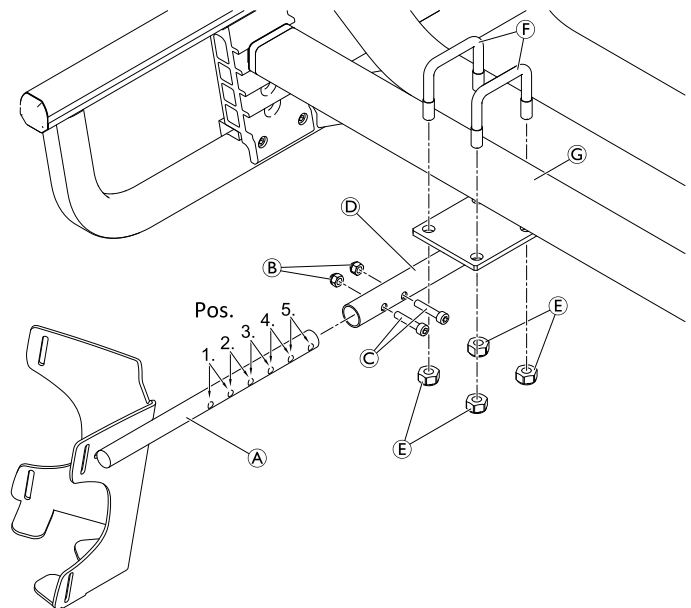
1. Mount the oxygen holder tube (A) to the supporter tube (D) in the required position (Pos. 1 – 5) using bolts (C) and nuts (B).



The oxygen holder is standard-mounted in position 2.

2. Install the oxygen holder assembly to the cross brace (G) using U-bolts (F) and nuts (E).

- ⓑ = 8 Nm
- ⓔ = 20 Nm



### 6.7.7 Installing the tie-down shackles

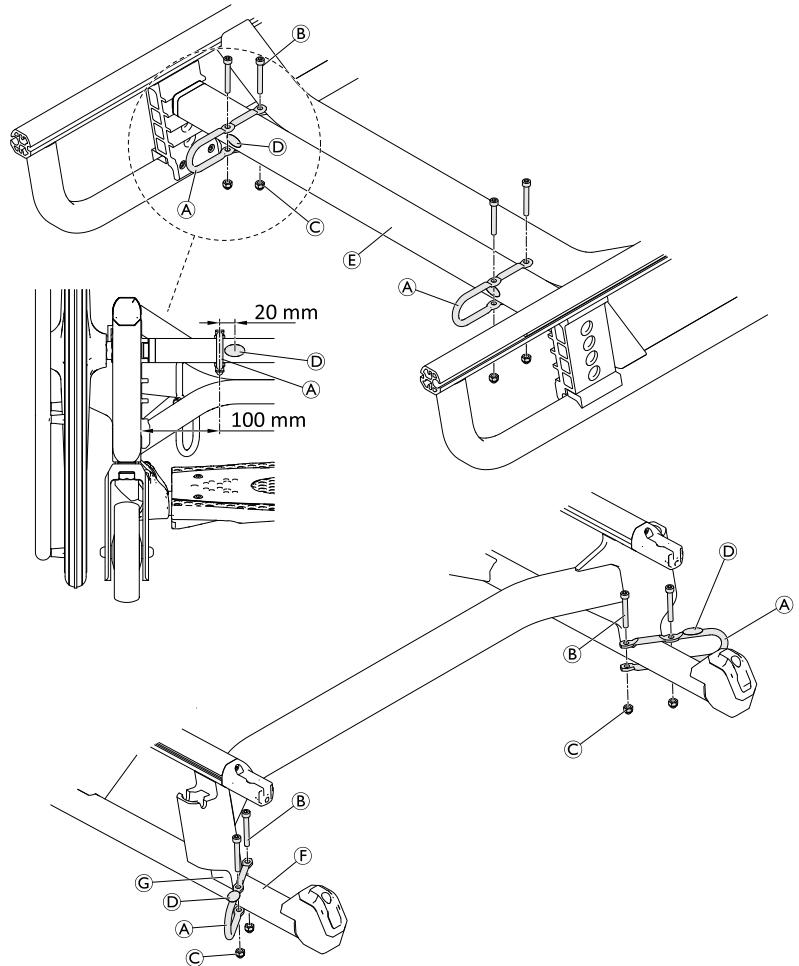


Allen key (5 mm) / Socket spanner (10 mm)



1. Install the tie-down shackles to the rear transversal bar **E** using bolts **B** and nuts **C**.
2. Install the tie-down shackles to the front frame **F** using bolts **B** and nuts **C**. The shackles must lie against the vertical bracing **G**.
3. Stick the snap hook labels **D** to the rear transversal bar and the front tie-down shackles.

**C** = 8 Nm



### 6.7.8 Installing the posture belt

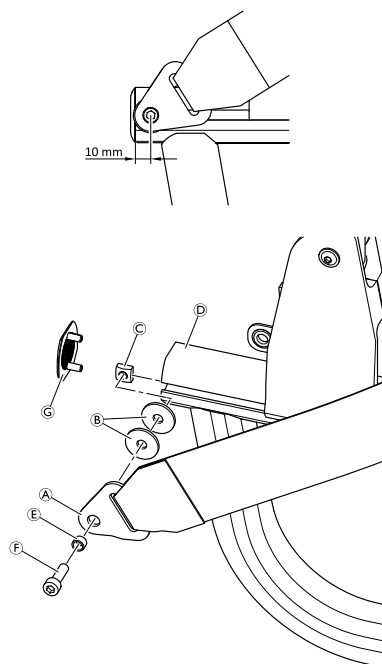


Allen key (5 mm) / Socket spanner (17 mm) / Wrench (10 mm)



1. Install the posture belt **A** to the rear frame **D** using two washers **B**, spacer **E**, bolt **F** and threaded insert **C**.
2. Cover the frame end with cap **G**.

**F** = 8 Nm





## Invacare distributors

### United Kingdom:

Invacare Limited  
Pencoed Technology Park, Pencoed  
Bridgend CF35 5AQ  
Tel: (44) (0) 1656 776 222  
Fax: (44) (0) 1656 776 220  
uk@invacare.com  
www.invacare.co.uk

### Ireland:

Invacare Ireland Ltd,  
Unit 5 Seatown Business Campus  
Seatown Road, Swords, County Dublin  
EirCode: K67 K271 — Ireland  
Tel : (353) 1 810 7084  
Fax: (353) 1 810 7085  
ordersireland@invacare.com  
www.invacare.ie

### Australia:

Invacare Australia Pty. Ltd.  
1 Lenton Place, North Rocks NSW 2151  
Australia  
Phone: 1800 460 460  
Fax: 1800 814 367  
orders@invacare.com.au  
www.invacare.com.au

### New Zealand:

Invacare New Zealand Ltd  
4 Westfield Place, Mt Wellington 1060  
New Zealand  
Phone: 0800 468 222  
Fax: 0800 807 788  
sales@invacare.co.nz  
www.invacare.co.nz

### Asia:

Invacare Asia Ltd.  
1 Lenton Place, North Rocks NSW 2151  
Australia  
Phone: (61) (02) 8839 5333  
Fax: (61) (02) 8839 5343  
asiasales@invacare.com  
www.invacare.com



Invacare France Operations SAS  
Route de St Roch  
F-37230 Fondettes  
France

