

Aquatec® Ocean/Ocean Ergo family

Ocean/Ocean XL, Ocean Ergo/Ocean Ergo XL, Ocean VIP/Ocean Dual VIP, Ocean VIP Ergo/Ocean Dual VIP Ergo, Ocean E-VIP

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

AQUATEC



Yes, you can.

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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 and Recommendations

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



This product complies with Directive 93/42/EEC concerning medical devices. The launch date of this product is stated in the CE declaration of conformity.



Manufacturer of the product.

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.
- Use only original accessories 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 accessories might not be described in this service manual. Refer to the manual, delivered with the accessory.

- Additional manuals are available on request. 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
- Cleaning and disinfection 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 Electrical safety check



IMPORTANT!

Regular electrical checks according to EN 62353 (VDE0751) must be carried out in line with national requirements.

1. Inspect all electronic components for damage to the casing or cable, test functions and check for stray current.

3 Servicing

3.1 Inspection checklist

General inspection	☺	☹
Is the product in good condition and is it complete (product and accessories)?	<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"/>
Eradication of faults	☺	☹
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"/>
Completion of checks	☺	☹
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"/>

3.2 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 at www.invacare.co.uk.

3.3 Color codes for frame

Item	Color code (RAL)
Frame tubes	White, RAL 9003
Basis tubes (Ocean E-VIP)	Grey RAL7042 / coatless
Footrest tubes / Headrest tubes	coatless
Armrest holder	Blue, RAL 5002

4 Reconditioning

4.1 Cleaning and disinfection

The product can be cleaned and disinfected using commercially available agents.

1. Remove any accessories fitted (only accessories which do not require tools).
2. Pull the footrests out of the guides.
3. Remove the seat plate and the backrest cover.
4. For Ocean VIP Ergo/Ocean Dual VIP Ergo: Remove the brake covers and clamping protection.
5. Wipe down the individual parts using a cloth or brush and commercially available cleaning agents and disinfectants.
6. Rinse the parts with warm water.
7. Dry the parts with a cloth.
8. Re-assemble the product.



IMPORTANT!

All cleaning agents and disinfectants used must be effective, compatible with one another and must protect the materials they are used to clean. For further information on decontamination in Healthcare Environments, please refer to your local guidelines on infection control and your local infection control policy.

- Clean by hand or in a washing machine or autoclave.
- Clean without scouring agent.

Cleaning in a clinical environment



In addition to cleaning as described above we recommend to clean the product after the release of each patient, after ending of the period of use or on a regular basis (depending on which occurs first) at

- 90°C for 1 minute
- 85°C for 3 minutes
- 80°C for 10 minutes

in the washing machine or autoclave.



CAUTION!

Risk of burning your skin

– Allow the product to cool after cleaning in the autoclave.

Cleaning the backrest cover

1. Remove the backrest cover.
2. Machine-wash the cover at max. 60 °C using a mild detergent.

4.3 Reconditioning scheme

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

General

	Check for	Troubleshooting action	OK
1	Correct assembly of all parts, are all screws tightened incl. castors	Tighten screws, with thread locker if applicable. See graphics for torques.	<input type="checkbox"/>



IMPORTANT!

Risk of damage

- Washing at higher temperatures can cause damage.
- Do not tumble dry covers.



IMPORTANT!

Excessive cleaning can damage textile.

- We recommend to change the backrest cover every two years for hygiene reasons.

Cleaning the toilet pan (optional)

The toilet pan can be cleaned in an autoclave at following temperatures/times:

- 90 °C for 1 minute
- 85 °C for 3 minutes
- 80 °C for 10 minutes.

Disinfection

1. Disinfect the product by wiping down all generally accessible surfaces with disinfectant (after disassembling the product, if possible).

4.2 Material overview

For product materials see corresponding User Manual.

For accessory materials refer to the following table:

Accessory	Material(s)
Special Softseat / Variable Softseat / Soft Seats	PUR
Splash guard Ocean range	PUR
Splash guard Ocean Ergo range	PP
Comfort backrest	Vinyl leather / PVC liner
Backrest	PE-HD
Headrests pads / Pelotte	PUR
Calf- and Amputee support / Calf support with foot support	PUR (leg support) / PP (foot support)
Toilet pan holder	Stainless steel
Toilet pan with lid	PP

Frame (all frame parts, tubes incl. backrest)

	Check for	Troubleshooting action	OK
1	Mechanical damage of the frame parts (cracks, fractures)	Discard frame and replace with new one, see 5.8 <i>Replacing the side parts (Ocean VIP Ergo / Ocean Dual VIP Ergo)</i> , page 16 respectively the user manual. Otherwise discard the product.	<input type="checkbox"/>
2	Mechanical damage of the antitipper (Ocean Dual VIP / Ocean Dual VIP Ergo)	Replace the antitipper, see user manual.	<input type="checkbox"/>

Side parts

	Check for	Troubleshooting action	OK
1	Mechanical damage	Discard the side parts and replace with new one, see 5.8 <i>Replacing the side parts (Ocean VIP Ergo / Ocean Dual VIP Ergo)</i> , page 16 respectively the user manual.	<input type="checkbox"/>

Seat

	Check for	Troubleshooting action	OK
1	Seat damage (cracks, sharp edges)	Replace the seat, see user manual.	<input type="checkbox"/>
2	Wobbling, less stable seating		<input type="checkbox"/>
3	Damaged snaps on the underside		<input type="checkbox"/>

Backrest cover

	Check for	Troubleshooting action	OK
1	Backrest cover damage (cracks, open seams, damaged buckles)	Replace the backrest cover, see user manual.	<input type="checkbox"/>

Footrest

	Check for	Troubleshooting action	OK
1	Foot plate damage (cracks, sharp edges)	Replace the foot plates, 5.4 <i>Replacing the foot plates</i> , page 12	<input type="checkbox"/>
2	Damage to the foot rest fixation at the frame (Ocean VIP / Ocean E-VIP)	Replace the foot rest fixation, 5.3 <i>Replacing the footrest holder (Ocean VIP / Ocean Dual VIP / Ocean E-VIP)</i> , page 12	<input type="checkbox"/>
3	Damage to the tubes	Replace the complete footrest with new one, see user manual.	<input type="checkbox"/>
4	Damage to the attachment clips	Replace the footrest attachment clips with new ones.	<input type="checkbox"/>

Armrest

	Check for	Troubleshooting action	OK
1	Damage to the armrest tubes or armrest holders (cracks, sharp edges)	Replace the armrest with new one, 5.2 <i>Replacing the armrest</i> , page 11	<input type="checkbox"/>
2	Damage to the armrest pads (cracks, sharp edges)	Replace the armrest pad, 5.2.1 <i>Replacing the armrest pad</i> , page 11	<input type="checkbox"/>

Castors

	Check for	Troubleshooting action	OK
1	Sluggish or damaged swivel bearings	Replace the complete castor with a new one, 5.5 <i>Replacing the castors, page 13</i>	<input type="checkbox"/>
2	Sluggish castor wheel (bearings)		<input type="checkbox"/>
3	Damaged castor wheel running surface		<input type="checkbox"/>
4	Castor fork damage		<input type="checkbox"/>
5	Securely tightened connecting bolts to the frame	Replace connecting bolts with new tread locking adhesive.	<input type="checkbox"/>

24" wheels (Ocean / Ocean Ergo)

	Check for	Troubleshooting action	OK
1	Damage to the 24" wheels	Replace the 24" wheels, see mounting instruction.	<input type="checkbox"/>
2	Correct function of the brake (wheel must lock)	Carry out brake adjustment or replace the brakes, see mounting instruction.	<input type="checkbox"/>
3	Correct assembly of the 24" wheels, the locking pins protrude past the end of the hub to fully release	Carry out hub adjustment or replace the hub or axle, see mounting instruction.	<input type="checkbox"/>

Headrest (Ocean VIP / Ocean Dual VIP / Ocean E-VIP / Ocean VIP Ergo / Ocean Dual VIP Ergo)

	Check for	Troubleshooting action	OK
1	Damage to the headrest hardware (cracks, sharp edges)	Replace the headrest, see mounting instruction.	<input type="checkbox"/>
2	Damage to the headrest pad	Replace the headrest pad, see mounting instruction.	<input type="checkbox"/>

Seat tilting mechanism (Ocean VIP / Ocean Dual VIP / Ocean VIP Ergo / Ocean Dual VIP Ergo)

	Check for	Troubleshooting action	OK
1	Damage to the Bowden wire system or cable shells	Replace the Bowden wire system, 5.11 <i>Replacing the Bowden cable for seat tilting (Ocean VIP Ergo / Ocean Dual VIP Ergo), page 24 / 5.10 Replacing the gas spring — release mechanism — Bowden cable for seat tilting (Ocean VIP / Ocean Dual VIP), page 22</i>	<input type="checkbox"/>
2	Damage to the activation handle	Replace the activation handle, see user manual.	<input type="checkbox"/>
3	Function of tilting and fixation of the position, easy tilting and secure locking of the position is mandatory.	Adjust the Bowden wire, 5.11 <i>Replacing the Bowden cable for seat tilting (Ocean VIP Ergo / Ocean Dual VIP Ergo), page 24 / 5.10 Replacing the gas spring — release mechanism — Bowden cable for seat tilting (Ocean VIP / Ocean Dual VIP), page 22.</i>	<input type="checkbox"/>
4	Gas Spring damage	Replace the gas spring, 5.11 <i>Replacing the Bowden cable for seat tilting (Ocean VIP Ergo / Ocean Dual VIP Ergo), page 24 / 5.10 Replacing the gas spring — release mechanism — Bowden cable for seat tilting (Ocean VIP / Ocean Dual VIP), page 22.</i>	<input type="checkbox"/>
5	Release mechanism damage	Replace the release mechanism, 5.11 <i>Replacing the Bowden cable for seat tilting (Ocean VIP Ergo / Ocean Dual VIP Ergo), page 24 / 5.10 Replacing the gas spring — release mechanism — Bowden cable for seat tilting (Ocean VIP / Ocean Dual VIP), page 22.</i>	<input type="checkbox"/>

Backrest tilting mechanism (Ocean Dual VIP / Ocean Dual VIP Ergo)

	Check for	Troubleshooting action	OK
1	Damage to the Bowden wire system or cable shells	Replace the Bowden wire system, <i>5.9 Replacing the gas spring – release mechanism – Bowden cable for backrest tilting (Ocean Dual VIP / Ocean Dual VIP Ergo), page 17.</i>	<input type="checkbox"/>
2	Damage to the activation handle	Replace the activation handle, see user manual.	<input type="checkbox"/>
3	Function of tilting and fixation of the position, easy tilting and secure locking of the position is mandatory.	Adjust the Bowden wire, <i>5.9 Replacing the gas spring – release mechanism – Bowden cable for backrest tilting (Ocean Dual VIP / Ocean Dual VIP Ergo), page 17.</i>	<input type="checkbox"/>
4	Gas spring damage	Replace the gas spring, <i>5.9 Replacing the gas spring – release mechanism – Bowden cable for backrest tilting (Ocean Dual VIP / Ocean Dual VIP Ergo), page 17.</i>	<input type="checkbox"/>
5	Release mechanism damage	Replace the release mechanism, <i>5.9 Replacing the gas spring – release mechanism – Bowden cable for backrest tilting (Ocean Dual VIP / Ocean Dual VIP Ergo), page 17.</i>	<input type="checkbox"/>

Cover plates (Ocean VIP Ergo / Ocean Dual VIP Ergo)

	Check for	Troubleshooting action	OK
1	Damage to the brake cover plates, clamping protection covers and covering of the tilting mechanism	Replace the damaged clamping protection covers by new one, see user manual. Replace the covering of the tilting mechanism, <i>5.6 Replacing the inner/outer side part covers (Ocean VIP Ergo / Ocean Dual VIP Ergo), page 14.</i>	<input type="checkbox"/>

Electrical height adjustment/tilting (Ocean E-VIP)

	Check for	Troubleshooting action	OK
1	Damage to all cables	Replace the damaged components by new ones.	<input type="checkbox"/>
2	Damage to hand control	Replace the hand control with a new one.	<input type="checkbox"/>
3	Damage to electronic cover	Replace the electronic cover with new one, see user manual.	<input type="checkbox"/>
4	Correct function of height adjustment / tilting adjustment and emergency release.	Refer to the user manual (Chapter Troubleshooting).	<input type="checkbox"/>

Accessories

	Check for	Troubleshooting action	OK
1	Damage to the accessories	Replace the defect component or the complete accessory	<input type="checkbox"/>

5 Instructions

5.1 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 in front of 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 (e.g. Loctite 2701).
- 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.

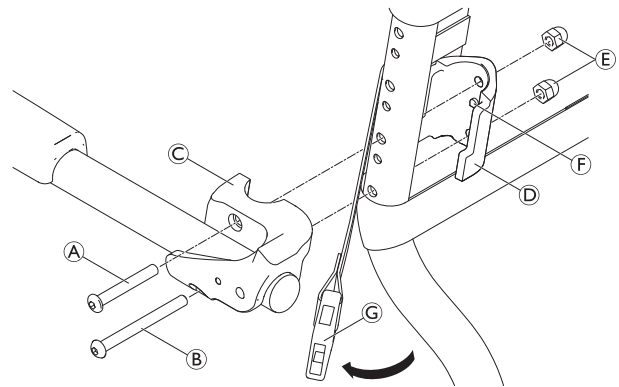
5.2 Replacing the armrest



Allen key (4 mm)



1. Unscrew the screws **A** and **B** of the armrest bracket **C** using the Allen key supplied.
2. Remove the securing clamp **D** with the nuts **E** from the inside of the backrest frame.
3. Remove the armrest bracket **C** with the armrest.
 -  The smaller hole serves to fix the retaining clamp.
4. Insert the screws into the new armrest bracket and guide them through the holes in the backrest frame.
5. If required, put the nuts back into the retaining clamp.
6. Place the retaining clamp on the backrest frame so that the fixing **F** on the retaining clamp projects into the smaller hole.
7. Turn the screws in the nuts and tighten.
8. The replacement procedure is the same for the right and left armrest.



A / **B** = 8 Nm

5.2.1 Replacing the armrest pad

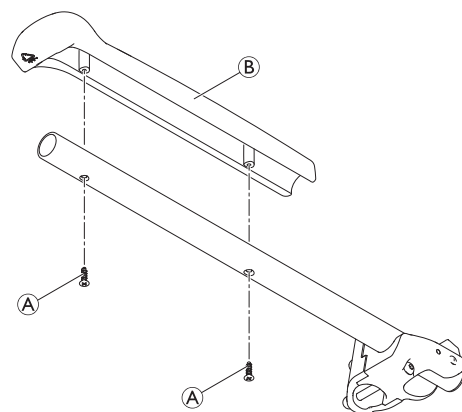


Phillips screwdriver



1. Remove screws **A**.
2. Replace the armrest pad **B**.
3. Re-insert screws and tighten.

A = Hand-tight.



5.3 Replacing the footrest holder (Ocean VIP / Ocean Dual VIP / Ocean E-VIP)



Allen key (4 mm)



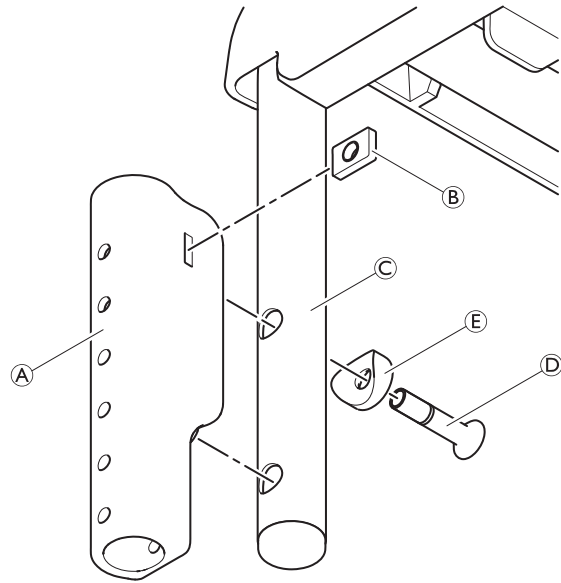
1. Remove bolt ④ and distance piece ⑤.
2. Remove the footrest holder ① from the frame tube ③.

To install the footrest holder reverse steps 2 to 1.

Make sure both guide nipples on the backside of the footrest holder mate with the holes of the frame tube when re-installing.

Make sure that the threaded plate ② is assembled into the slot of the footrest holder.

④ = 7 Nm



5.4 Replacing the foot plates



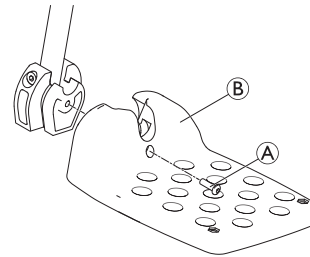
Allen key (4 mm)



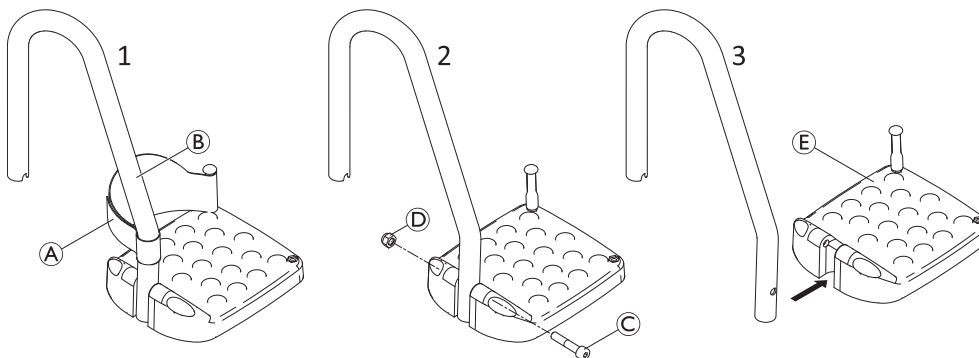
1. Remove the heel strap from the footrest tube.
2. Remove bolt ①.
3. Remove the foot plate ②.

To install the foot plate reverse steps 3 to 1.

① = 2 – 3 Nm



Ocean E-VIP:



1. Remove the heel strap ① from the footrest tube ②.
2. Remove bolt ③ and nut ④.
3. Remove the foot plate ⑤.

To install the foot plate reverse steps 3 to 1.

③ = 4 – 5 Nm

5.4.1 Replacing the flexible mounting pin



Phillips screwdriver

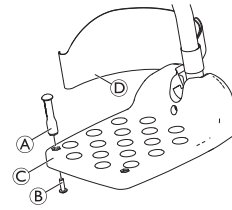


1. Remove the flexible mounting pin **A** by unscrewing the screw **B** on the underside of the foot plate **C**.
2. Remove the heel strap **D**.



To install the flexible mounting pin reverse steps 2 – 1.

B = 4 Nm



5.4.2 Removing/Installing the swivel joint

In case the legrest tubes must be cut to length, the swivel joints must be removed.



Allen key (6 mm)

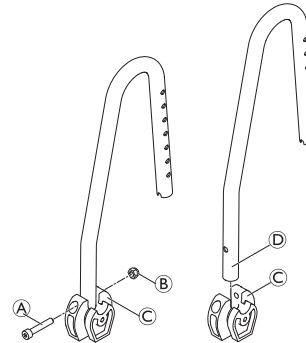


1. Remove bolt **A** and nut **B**.
2. Remove the swivel joint **C** from the legrest tube **D**.



To install the swivel joint reverse steps 2 – 1.

A = 4 – 5 Nm



5.5 Replacing the castors



Allen key (10 mm) / Thread locking adhesive (e.g. Loctite 2701)

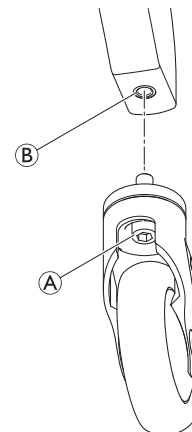


1. Remove the castor from the side part by unscrewing bolt **A** from the threaded hole **B**.



To install the castor reverse step 1.


A = 35 Nm, apply thread locker e.g. Loctite 2701




5.5.1 Removing/installing the castor wheel

For cleaning reasons the castor wheel can be dismantled.

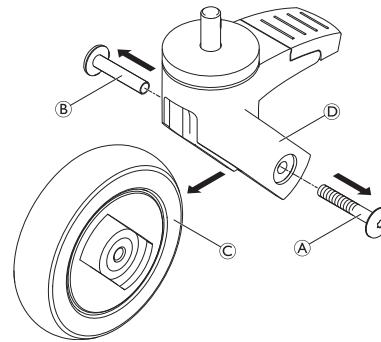
Ocean Ergo / Ocean VIP Ergo / Ocean Dual VIP Ergo

 Torx screwdriver (T30) ■ ■ ■


1. Unscrew the screw **A** from the threaded sleeve **B** and remove from the castor housing **D**.
2. Remove the castor wheel **C**.

 To re-install the castor wheel reverse steps 2 – 1.


A = 4 – 6 Nm



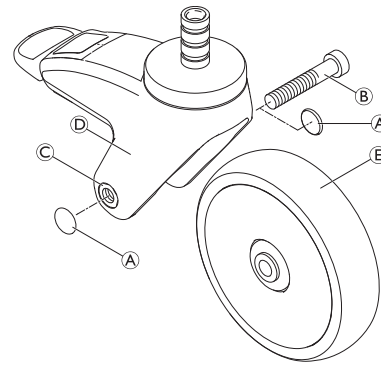
Ocean / Ocean VIP / Ocean Dual VIP / Ocean E-VIP

 Allen key (5 mm) ■ ■ ■


1. Remove the plastic caps **A**.
2. Unscrew the bolt **B** from the nut **C** and remove from the castor housing **D**.
3. Remove the castor wheel **E**.

 To re-install the castor wheel reverse steps 3 – 1.


B = 3 Nm



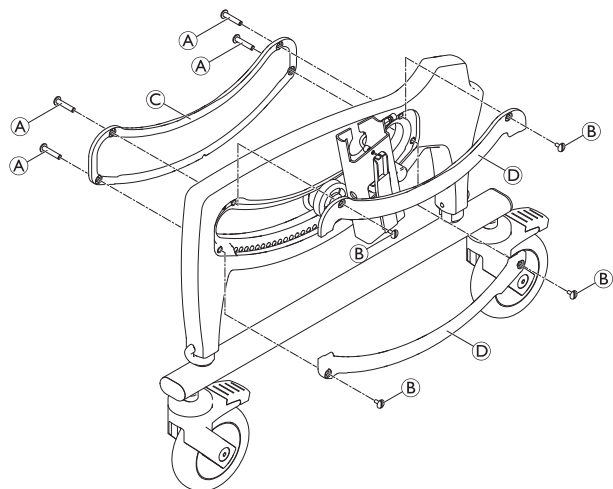
5.6 Replacing the inner/outer side part covers (Ocean VIP Ergo / Ocean Dual VIP Ergo)

 Slotted screwdriver ■ ■ ■

1. Remove the brake cover from the seat frame, see user manual.
2. Remove book screw nuts **A** and book screws **B**.
3. Remove the outer side part cover **C**.
4. Remove the inner side part covers **D**.

 To install the inner/outer side part covers reverse steps 4 – 1.

B = Hand-tight



5.7 Replacing the seat bearing fixation (Ocean VIP Ergo / Ocean Dual VIP Ergo)



Slotted screwdriver / Allen key (4 mm)



1. Remove the brake cover from the seat frame, see user manual.
2. Remove book screw nuts (A) and book screws.
3. Remove the outer side part cover (B).
4. Remove the inner side part covers.
5. Remove bolts (C), washers (D) and flanged wheels (E).
6. Insert new flanged wheels, washers and bolts and tighten.

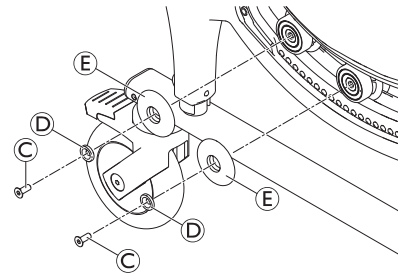
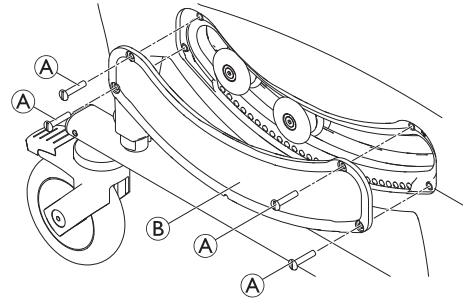


Check the outer side part cover (B) for damage and replace if necessary.

7. Re-mount the outer side part cover using book screw nut (A).
8. Repeat the same steps on the other side.

(A) = Hand-tight

(C) = 6 Nm



5.8 Replacing the side parts (Ocean VIP Ergo / Ocean Dual VIP Ergo)



Slotted screwdriver / Allen key (4 mm)



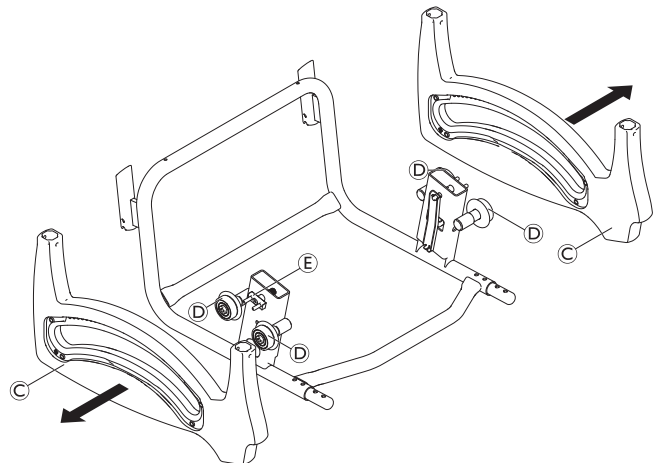
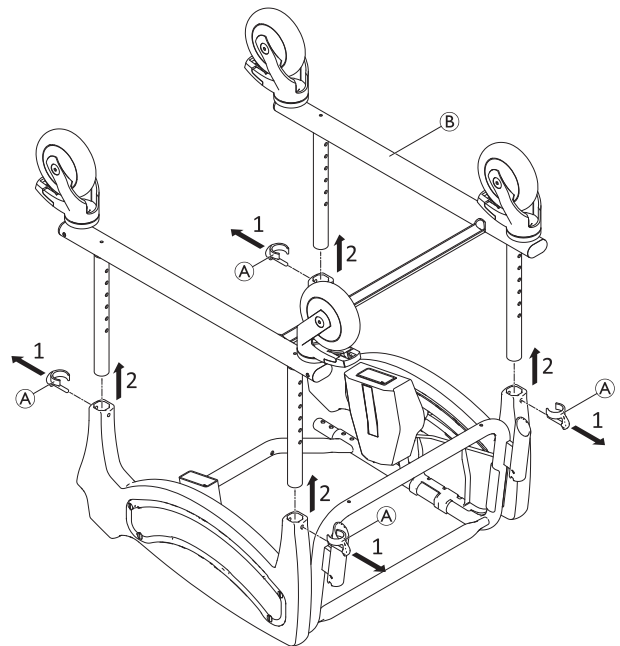
i For easier handling remove the backrest from the seat frame, see user manual.

1. Remove the seat plate, see user manual.
2. Place the seat frame with side parts upside down on a stable surface.
3. Remove clips **A** and pull the complete lower frame **B** out of the side parts.
4. Remove the brake covers from the seat frame, see user manual.
5. Remove the inner and outer side part covers and the seat bearing fixations on both sides, see chapters 5.6 *Replacing the inner/outer side part covers (Ocean VIP Ergo / Ocean Dual VIP Ergo)*, page 14 and 5.7 *Replacing the seat bearing fixation (Ocean VIP Ergo / Ocean Dual VIP Ergo)*, page 15.
6. Remove the side parts **C** by pulling them from the bearings **D**.

i To install the side parts reverse steps 6 – 1.

IMPORTANT!

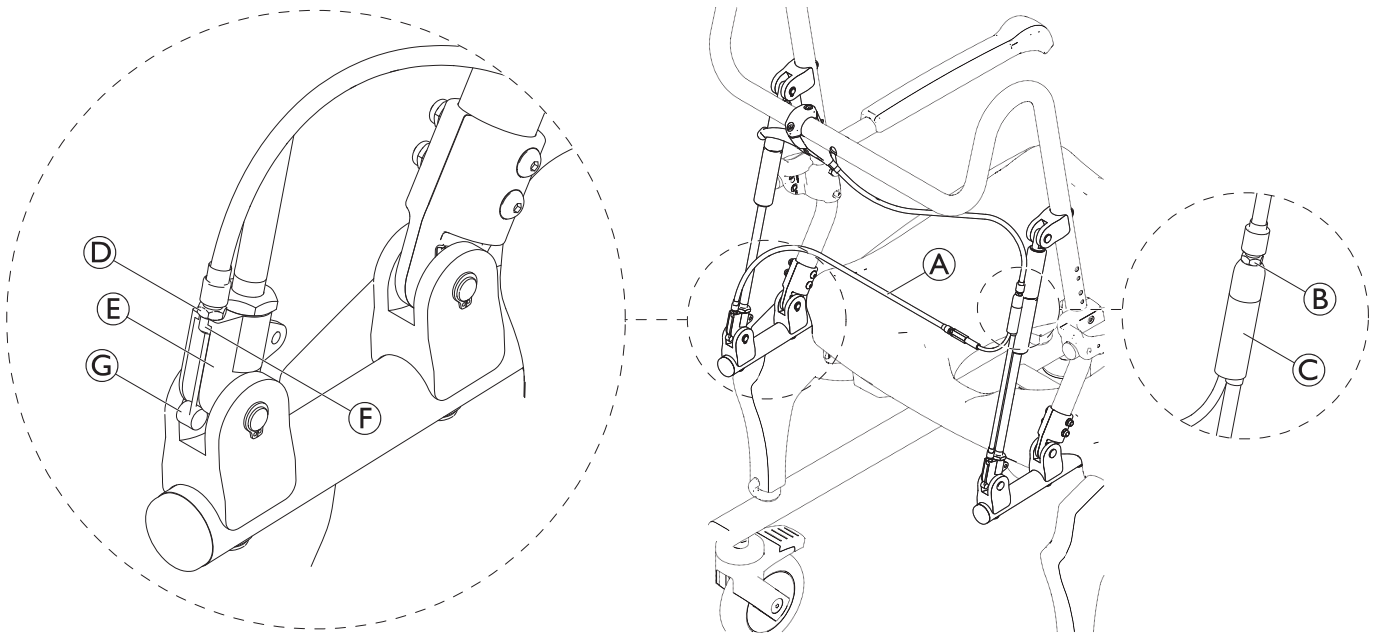
- Make sure that the brake pins **E** are inserted in the same positions on the left and right side.




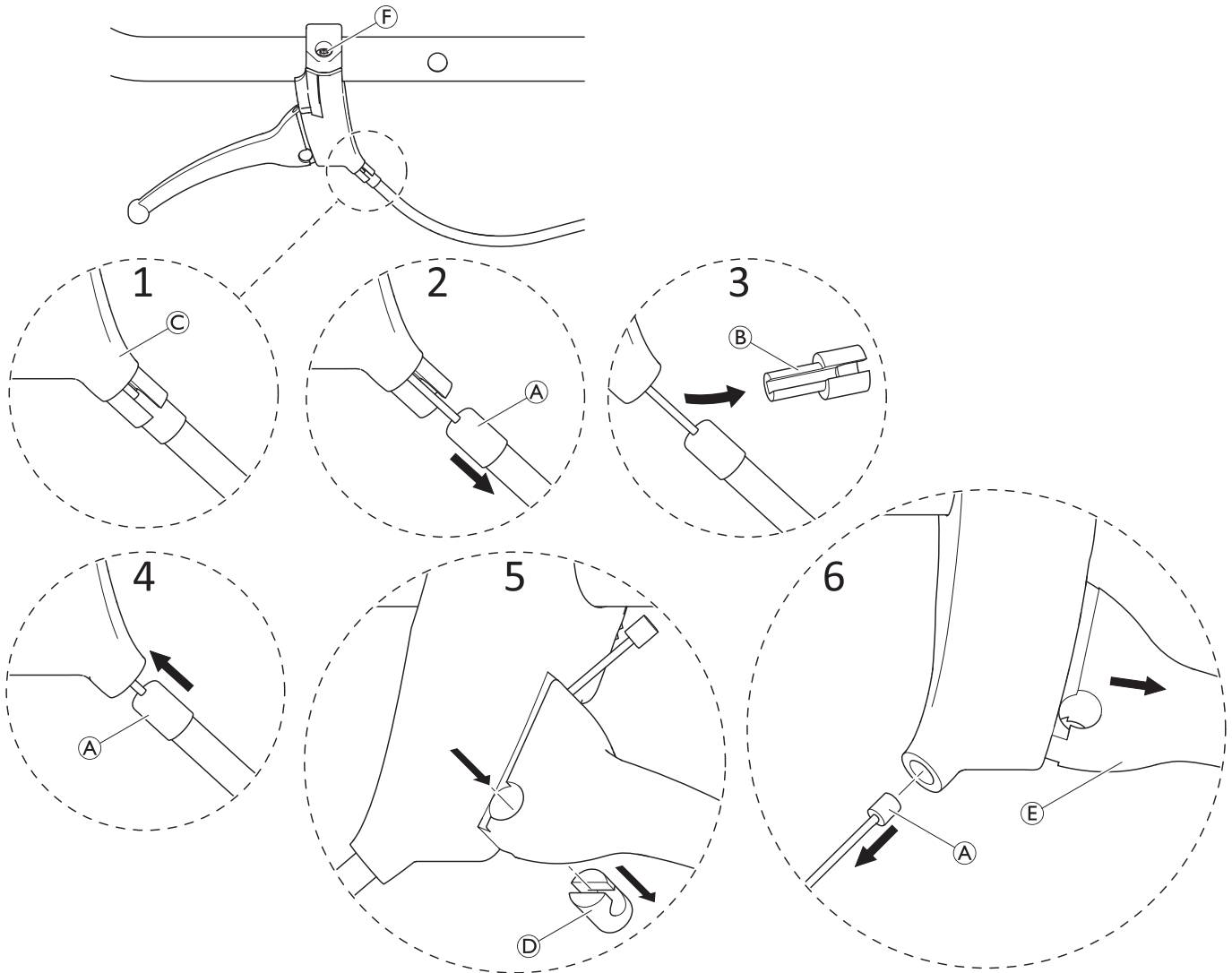
5.9 Replacing the gas spring — release mechanism — Bowden cable for backrest tilting (Ocean Dual VIP / Ocean Dual VIP Ergo)




Wrench (6, 8) / Allen key (4 mm) / Snap ring pliers



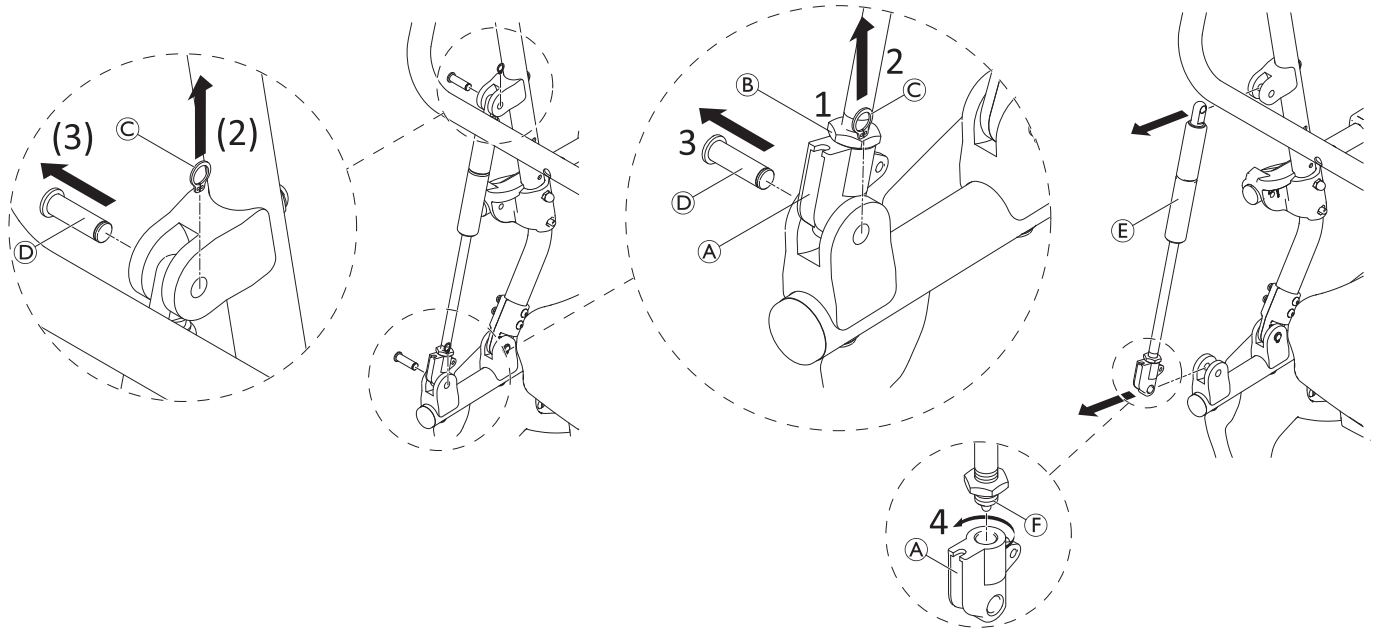
1. Loosen the nut **B** on the distributor **C** completely and turn it all the way up. Turn the upper piece into the distributor.
2. Loosen the nut **D** on the release mechanism **E** and turn it all the way up. Unscrew threaded piece **F** from the release mechanism.
 -  Pull the Bowden cable **A** slightly upwards to make it easier.
3. Unhook the Bowden wire head **G**.




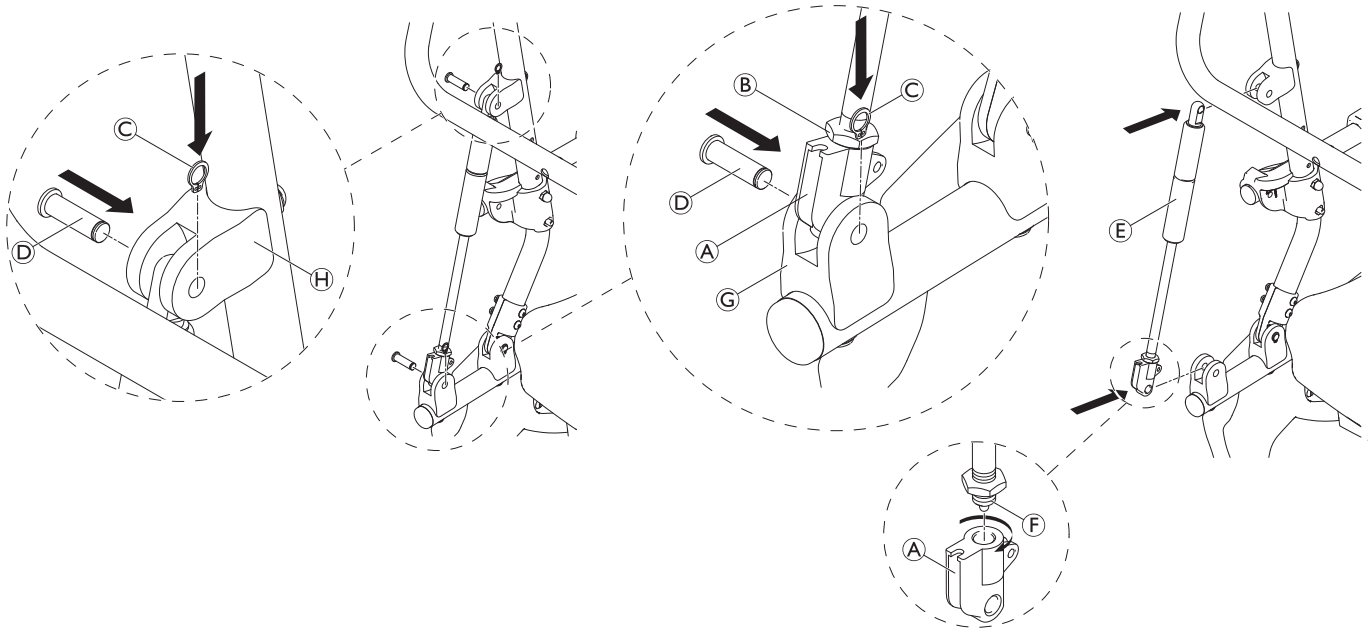
1. If the activation handle incl. Bowden cable has to be replaced: Unscrew the old activation handle from the push bar and screw on the new one.
2. If the Bowden cable **A** or the activation handle **C** has to be replaced: Pull the Bowden cable slightly out of the activation handle.
3. Remove sleeve **B**.
4. Push the Bowden cable inwards and open the brake lock (brake lock not shown).
5. Push out the sleeve **D**.
6. Completely pull out the Bowden cable and remove the brake lever **E**.
7. If the activation handle has to be replaced: unscrew the screws **F** and remove the activation handle. Assemble the new activation handle. Remove the brake lever **E**.
8. For re-assembly insert the Bowden cable into the activation handle and the brake lever.


 If a new Bowden cable has to be installed, make sure that the cable is free from tension, see page 17 steps 1 and 2.

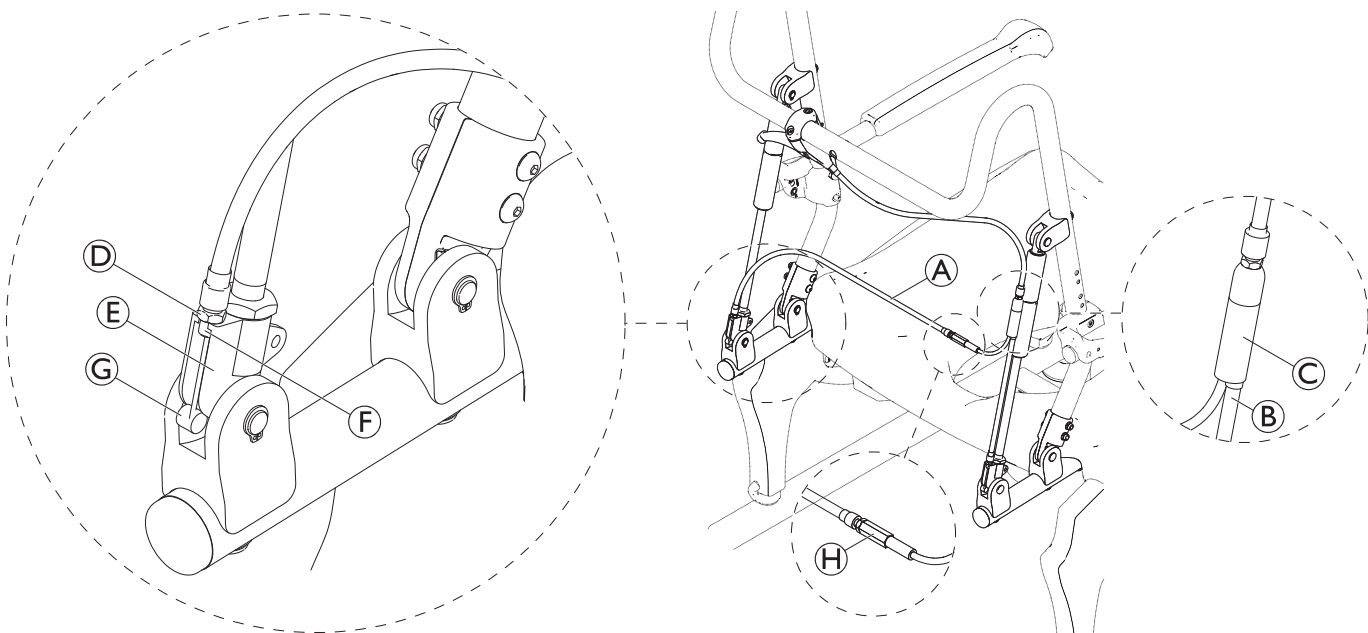
9. Reassemble the sleeve **D**. Pay attention to the correct orientation.
10. Reinstall the brake lever **E**.
11. Reassemble the sleeve **B** by pulling slightly on the cable.




1. If the release mechanism **A** has to be replaced: Loosen nut **B**.
2. Remove circlip **C**.
3. Remove bolt **D** (If the entire gas spring is to be replaced, also remove the upper circlip and bolt and remove the gas spring **E**.)
 -  If necessary, push the backrest slightly forwards to make it easier to remove the bolt.
4. If the release mechanism has to be replaced: Turn down the release mechanism **A** from the threaded piece **F**.



1. If the release mechanism (A) has to be replaced: Screw on new release mechanism again (release 2 threads or 1.5 - 2 mm distance between the release mechanism and thread start of piston rod (E)).
2. Refit bolts (D) and circlips (C) to lower fixations (G) and if necessary upper fixations (H) if the whole gas spring was replaced.
 -  If necessary, push the backrest slightly forwards to make it easier to insert the bolt.
3. Tighten the nut (B) on the release mechanism.



1. Prepare the Bowden cable (A): Make sure that the cable end (B) is correctly positioned in the distributor (C).
2. Hang the Bowden wire head (G) in the release mechanism (E).
 -  The longer end is mounted on the left release mechanism, the shorter one on the right.
3. Position the thread (F) of nut (D) on the release mechanism and screw it in (make sure that enough threads are engaged). For this, pull up the cable slightly.


IMPORTANT!

- Make sure that the plastic part in the release mechanism remains down when screwing.


IMPORTANT!

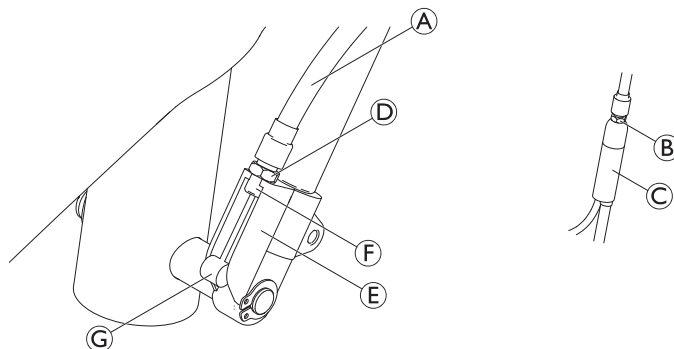
- Make sure that the settings are the same on the left and the right side. The play which is present when the cable is pulled up must be the same on both sides. This can be adjusted via the thread/nut at the end of the cable at the release mechanism and through the thread/nut on the adjusting element ④ on the longer cable by unscrewing or screwing.
4. After completing the adjustment, lock the nuts on the release mechanism and on the adjusting element.
 5. Adjust the Bowden cable via the distributor ③ and lock the nut so that the play on the handle and on the release mechanisms is reduced (if you pull on the cable). Due to the setting on the distributor, the plastic part on the release mechanism must not be pulled upwards.
 6. Check function: Both gas springs must trigger simultaneously.


5.10 Replacing the gas spring — release mechanism — Bowden cable for seat tilting (Ocean VIP / Ocean Dual VIP)

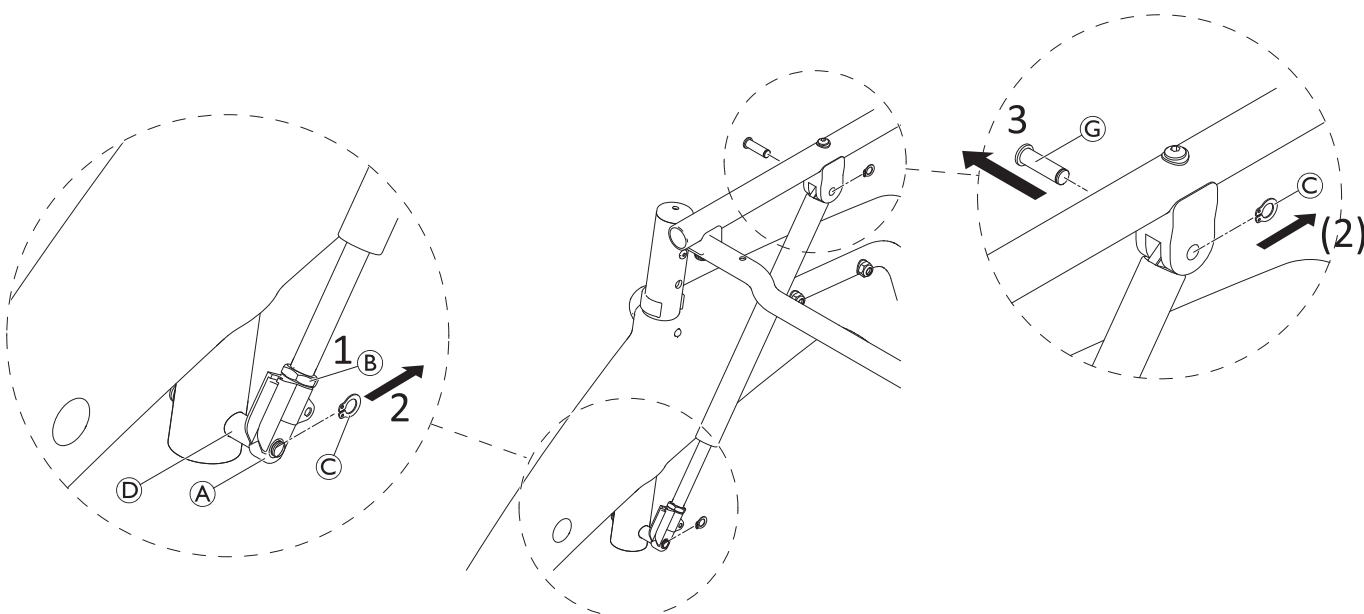
 Wrench (6, 8) / Allen key (4 mm) / Snap ring pliers



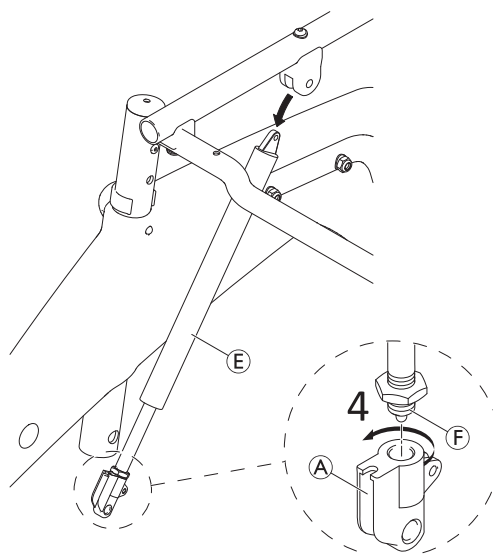
1. Loosen the nut **B** on the distributor **C** completely and turn it all the way up. Turn the upper piece into the distributor.
2. Loosen the nut **D** on the release mechanism **E** and turn it all the way up. Unscrew threaded piece **F** from the release mechanism.
 -  Pull slightly the Bowden cable **A** upwards to make it easier.
3. Unhook the Bowden wire head **G**.

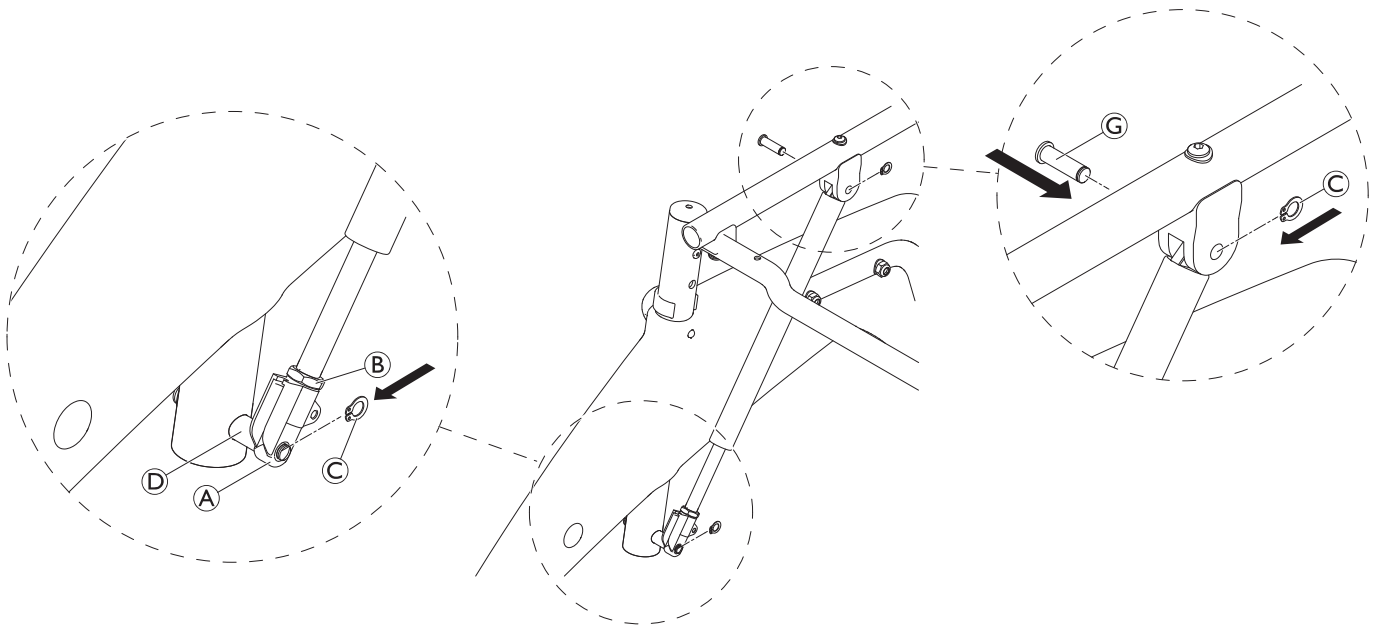


 If the activation handle / Bowden cable has to be replaced refer to chapter 5.9 *Replacing the gas spring — release mechanism — Bowden cable for backrest tilting (Ocean Dual VIP / Ocean Dual VIP Ergo)*, page 17.




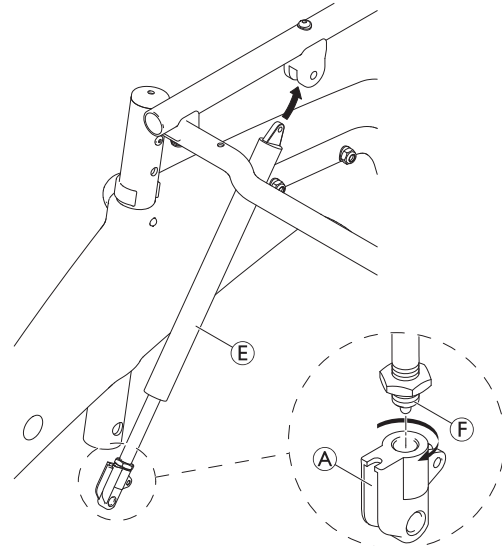
1. If the release mechanism **A** has to be replaced: Loosen nut **B**.
2. Remove circlip **C**.
3. Remove the gas spring **E** from the bolt **D**.
4. If the entire gas spring is to be replaced, also remove the upper circlip and bolt **G** and remove the gas spring **E**.
5. If the release mechanism has to be replaced: Turn down the release mechanism **A** from the threaded piece **F**.






1. If the release mechanism (A) has to be replaced: Screw on new release mechanism again (release 2 threads or 1.5 - 2 mm distance between the release mechanism and thread start of piston rod (F)).
2. Refit the gas spring (E) on bolt (D) and secure with circlips (C) and if necessary refit bolt (G) and circlips (C) on upper fixation if the whole gas spring was replaced.
3. Tighten the nut (B) on the release mechanism.
4. Prepare the Bowden cable (A): Make sure that the cable end (B) is correctly positioned in the distributor (C).
5. Hang the Bowden wire head (G) in the release mechanism (E).

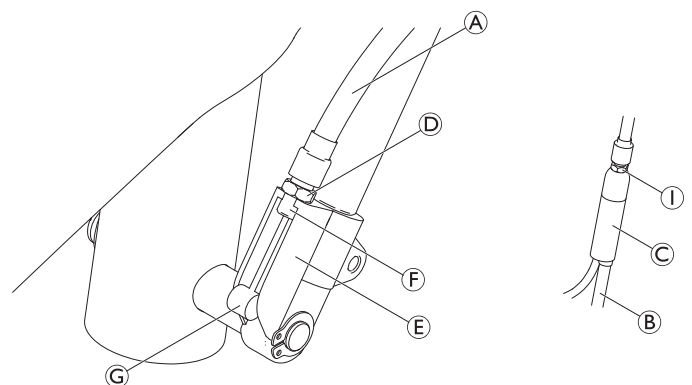
 If necessary, push the backrest slightly forwards to make it easier to insert the bolt.



-  The longer end is mounted on the right release mechanism, the shorter one on the left.
6. Position the thread (F) of nut (D) on the release mechanism and screw it in (make sure that enough threads are engaged). For this, pull up the cable slightly.

IMPORTANT!

- Make sure that the plastic part in the release mechanism remains down when screwing.
- Make sure that the settings are the same on the left and the right side. The play which is present when the cable is pulled up must be the same on both sides. This can be adjusted via the thread/nut at the end of the cable at the release mechanism.

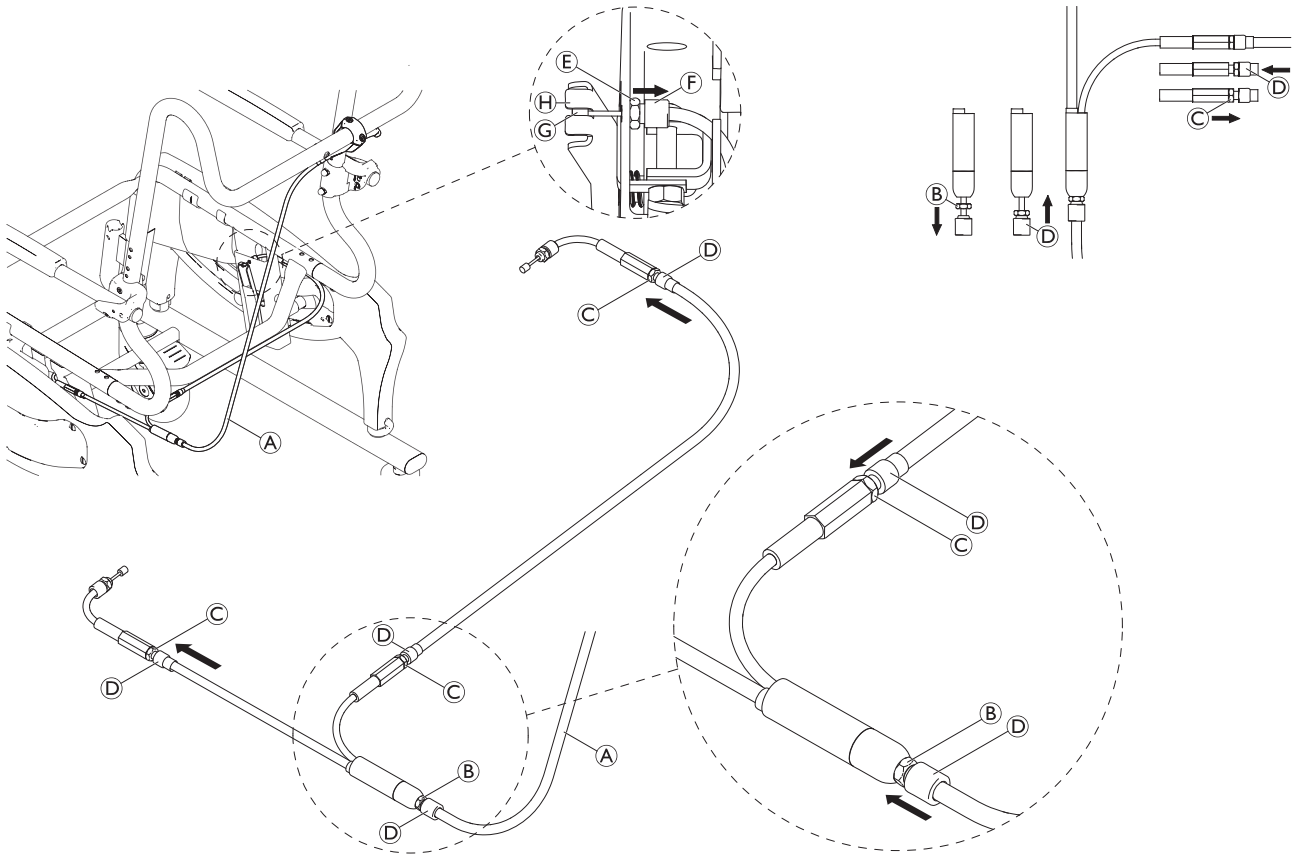


7. After completing the adjustment, lock the nuts (D) on the release mechanism (E).
8. Adjust the Bowden cable via the distributor (C) and lock the nut (D) so that the play on the handle and on the release mechanisms is reduced (if you pull on the cable). Due to the setting on the distributor, the plastic part on the release mechanism must not be pulled upwards.
9. Check function: Both gas springs must trigger simultaneously.

5.11 Replacing the Bowden cable for seat tilting (Ocean VIP Ergo / Ocean Dual VIP Ergo)



Allen key (4)



1. Remove the seat plate for easier access, therefore refer to user manual.
2. Remove the brake cover, therefore refer to user manual.
3. Remove cable ties.
4. Make Bowden wire **A** free from tension. Therefore, unscrew all nuts **C** on the stroke cable adjusters and the nut **B** on the distributor completely. Screw threaded sleeves **D** completely into all stroke cable adjuster and the distributor.
5. Unscrew the nuts **E** on the cable ends.
6. Unscrew the threaded sleeve **F** at the cable ends and hang the cable ends **G** out of the brake levers **H**.

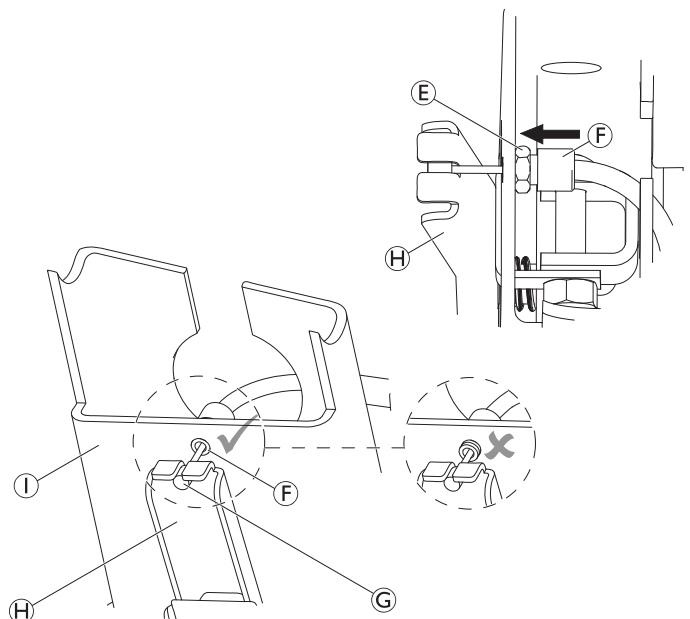
i If the Bowden cable has to be replaced without the activation handle, the Bowden cable has to be disassembled from the activation handle, see chapter 5.9 *Replacing the gas spring — release mechanism — Bowden cable for backrest tilting (Ocean Dual VIP / Ocean Dual VIP Ergo)*, page 17.

If the Bowden cable has to be replaced including the activation handle, the activation handle has to be replaced, see user manual.

7. Install the new Bowden cable (shorter end on the left side) and hook the cable ends **G** into the brake levers **H**. Screw in the threaded sleeve **F** until it sits flush with the brake housing **I**.

i The threaded sleeve must not overlap.

8. Lock the nut **E**.



Adjusting the system

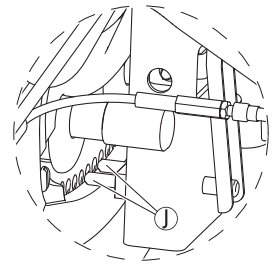


Allen key (4)

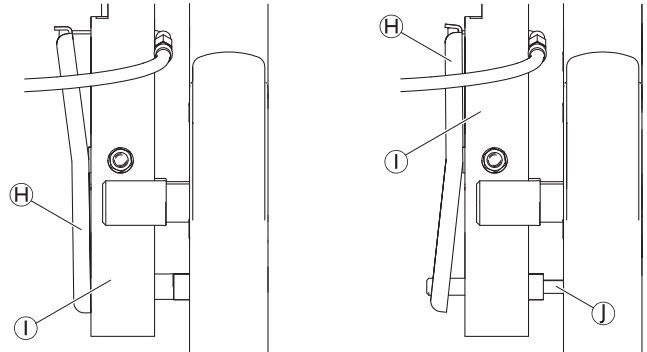


IMPORTANT!

- The brake pins ① must be completely pulled out of the holes of the side part when the brake handle is activated and the brake pins must be engaged when the brake handle is released.
- When the brake handle is activated the brake pins need to be pulled out simultaneously on both sides and a visible gap between side part and brake pins is mandatory.
- The brake levers ② must be flush with the brake housing ① when the brake handle is released / activated.



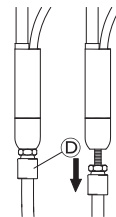
Remove the side part covers for better view and easier access.



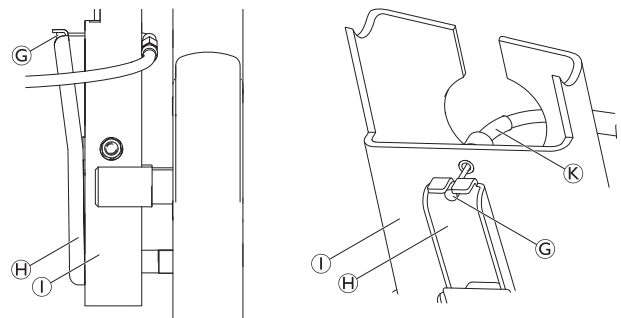
1. On the distributor unscrew the threaded sleeve ④ as far as possible. This will reduce the gap between the end of the cable ③ and the brake lever ②. Thereby the actuating distance of the brake handle will also be reduced.



During adjustment ensure that the black plastic sleeves ⑤ are in correct position.



2. Make sure that the lower part of the brake lever ② lies flush with the brake housing ①.
3. Pull at the cable end ③ to check the play. The adjustment is good, when it is not possible to pull out the cable end.
4. If there is a different gap on the right and left side this needs to be adjusted. Therefore, unscrew the threaded sleeve on the stroke cable adjuster on the affected side.
5. When all adjustments are good, lock nuts ⑥ and ⑦ (see first graphic in this chapter).
6. Check the tilting function. In all positions it is mandatory that the brake pins lock correctly.
7. Assemble the cable ties.
8. Assemble all covers.



5.12 Cutting the headrest / footrest / amputation support to length

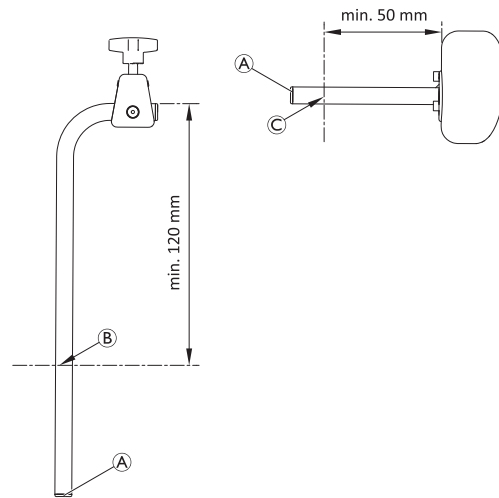


Allen key (M6 / SW4), Saw, Ruler, Drill with drill bit \varnothing 8.1)



Headrest

1. Remove the plug(s) **A**.
2. Cut the height adjustment tube **B** to length (min. remaining length 120 mm).
3. Cut the depth adjustment tube **C** to length (min. remaining length 50 mm).
4. Deburr all sharp edges.
5. Re-insert the plug(s).



Footrest

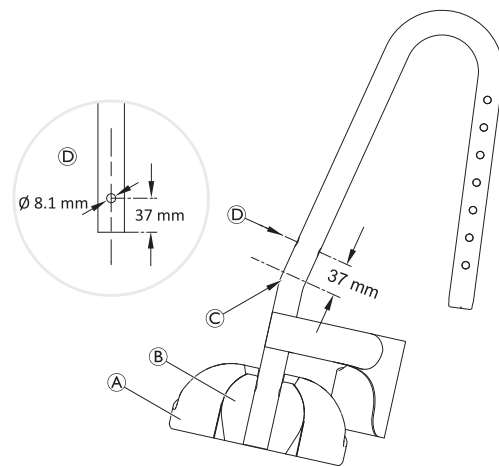
1. Remove the foot plate **A** and the swivel joint **B**.
2. Cut the tube to length just above the bend **C**.
3. Drill a \varnothing 8,1 mm hole **D**, 37 mm from the lower edge of the tube.
4. Deburr all sharp edges.
5. Re-mount the swivel joint and the foot plate.



For removing/installing the foot plates, refer to chapter 5.4 *Replacing the foot plates*, page 12.

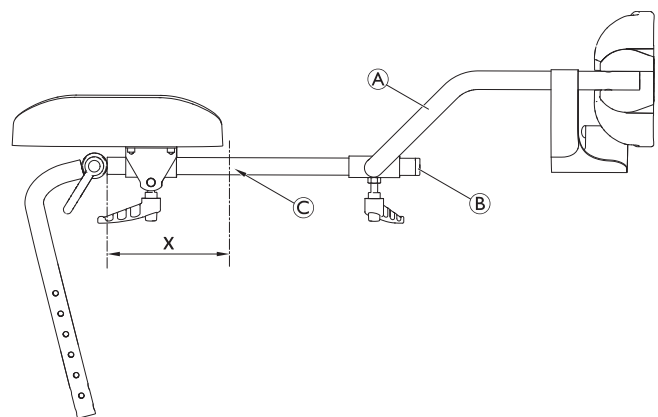


For removing/installing the swivel joint, refer to chapter 5.4.2 *Removing/Installing the swivel joint*, page 13.




Amputation support


1. Remove the footrest assembly **A**.
2. Remove the plug **B**.
3. Cut the tube **C** to length (min. remaining length x mm).
If footrest is used x = 140 mm
If footrest is not used x = 80 mm
4. Deburr all sharp edges.
5. Re-insert the plug.
6. Re-mount the footrest assembly (if needed).

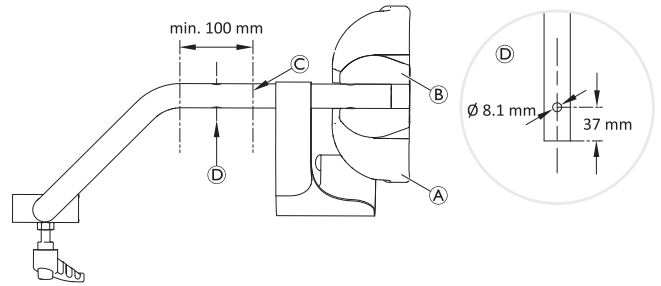


Amputation support (footrest)

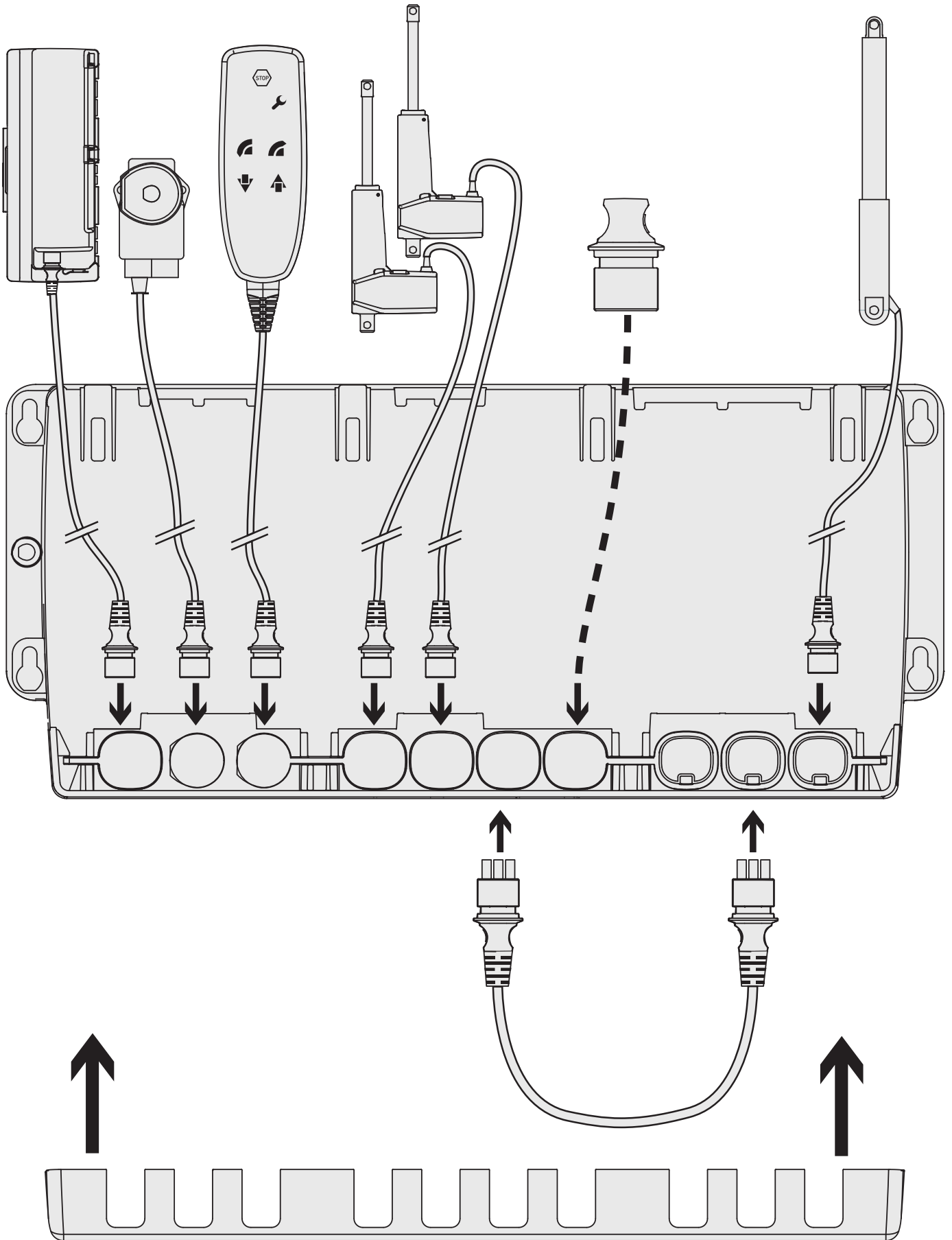
1. Remove the foot plate **A** and the swivel joint **B**.
2. Cut the tube **C** to length (min. remaining length 100 mm).
3. Drill a \varnothing 8.1 mm hole **D**, 37 mm from the lower edge of the tube.
4. Deburr all sharp edges.
5. Re-mount the swivel joint and the foot plate.

 For removing/installing the foot plates, refer to chapter 5.4 *Replacing the foot plates*, page 12.

 For removing/installing the swivel joint, refer to chapter 5.4.2 *Removing/Installing the swivel joint*, page 13.





5.13 Connecting diagram (Ocean E-VIP)



Implementing a reset

1. Hold down the following three buttons simultaneously for about three seconds on the hand control: Red STOP button (A), Forward button (B) and Up button (C). An acoustic signal will be heard while the three buttons are held down.
2. When „SERVICE“ indicator lamp (D) goes out, release the buttons. The device is ready to use again.
3. Then move the drives for adjusting the height to the lowest position until you hear the drives switch off.
4. Move the tilt drive to the rear end position until you hear the drive switch off. (The red LED flashes and an acoustic signal is heard).

-  Replace the safety clips with new ones if the actuators are replaced.
-  Make sure that all cables are re-installed the same way as supplied if components have to be changed.

